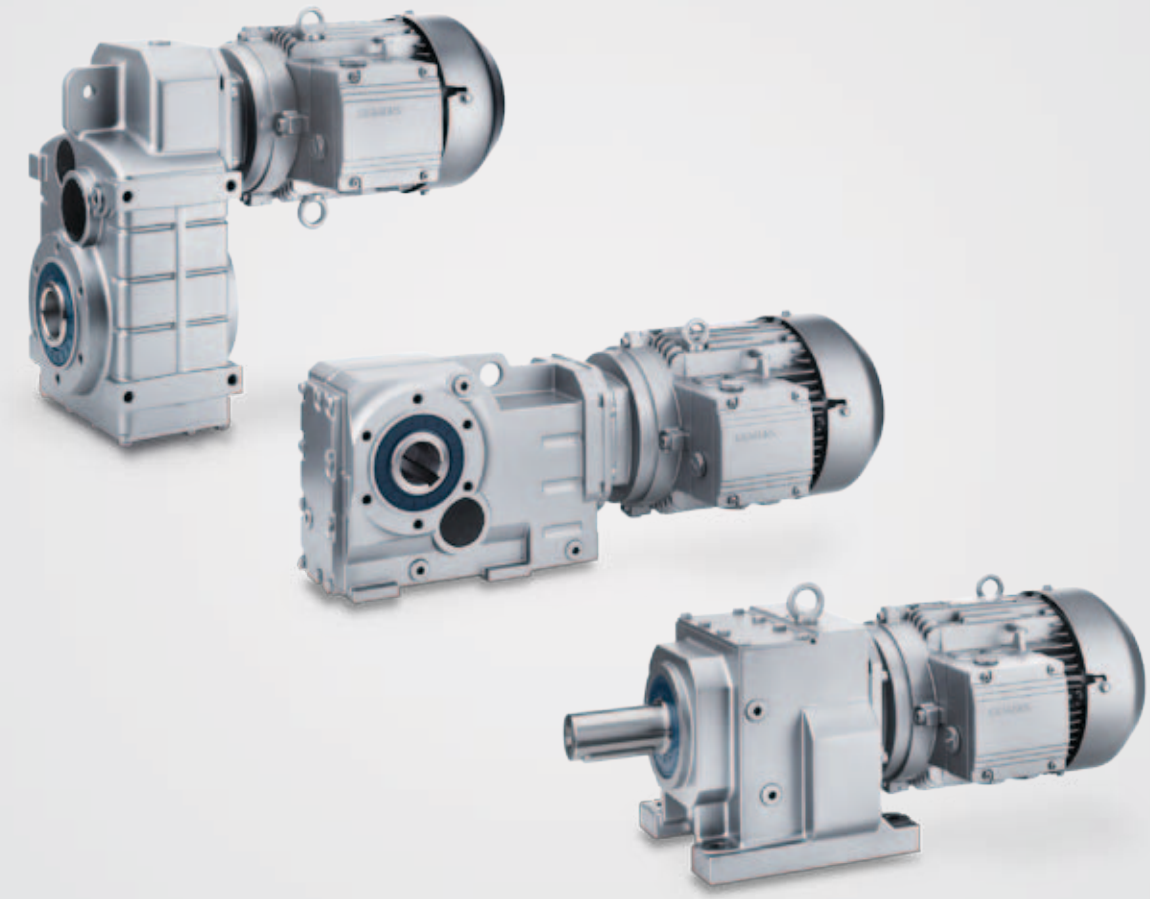
MOTOX Geared Motors

Catalog D 87.1 · 2011



MOTOX

Answers for industry.

SIEMENS

Related catalogs

Low-Voltage Motors D 81.1
IEC Squirrel-Cage Motors

E86060-K5581-A111-A3-7600

FLENDER
Standard Couplings MD 10.1

E86060-K5710-A111-A3-7600

SINAMICS G110, SINAMICS G120 D 11.1
Standard Inverters
SINAMICS G110D, SINAMICS G120D
Distributed Inverters

E86060-K5511-A111-A6-7600

SINAMICS G130 D 11
Drive Converter Chassis Units
SINAMICS G150
Drive Converter Cabinet Units

E86060-K5511-A101-A4-7600

MICROMASTER DA 51.2
MICROMASTER 420/430/440
Inverters
0.12 kW to 250 kW

E86060-K5151-A121-A6-7600

MICROMASTER/COMBIMASTER DA 51.3
MICROMASTER 411 Inverter
COMBIMASTER 411
Distributed Drive Solutions

E86060-K5251-A131-A2-7600

Industrial Communication IK PI
Part 5:
SIMATIC ET 200 Distributed I/O
ET 200S FC Frequency converter

E86060-K6710-A101-B6-7600

AC NEMA & IEC Motors D81.2
Further details available on the Internet at: U.S./Canada

Only PDF
http://www.sea.siemens.com/motors

MOTOX Konfigurator MOTOX
MOTOX Configurator
Information / Configuration
(CD)

E86060-D5203-A100-A5-X100

Additional documentation

You will find all information material, such as brochures, catalogs, manuals and operating instructions for standard drive systems up-to-date on the Internet at the address:

http://www.siemens.com/gearedmotors

You can order the listed documentation or download it in common file formats (PDF, ZIP).

MOTOX
Geared Motors

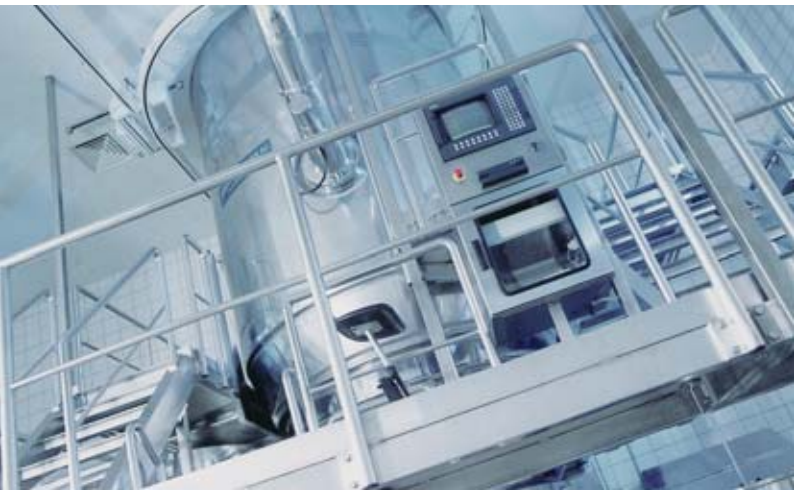
Catalog D 87.1 · 2011

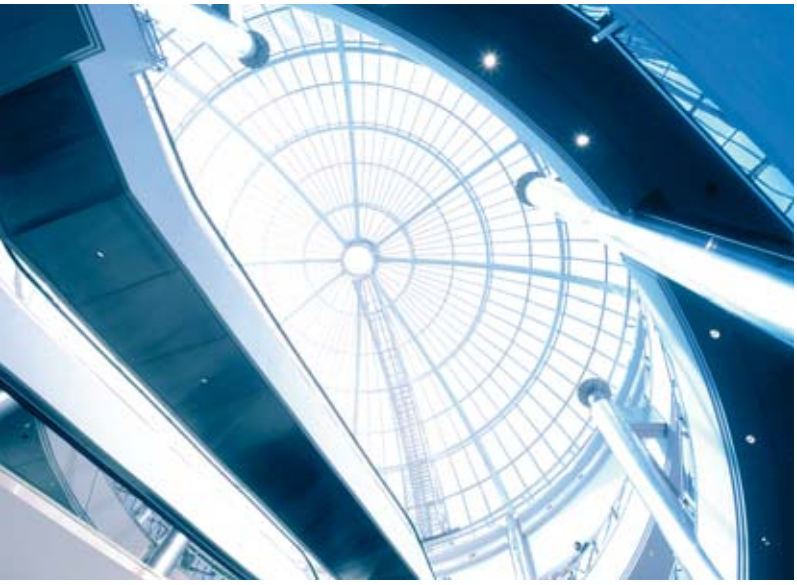
The products and systems described in this catalog are manufactured/distributed under application of a certified quality management system in accordance with DIN EN ISO 9001 (Certified Registration No. DE-409908 QM08). The certificate is recognized by all IQNet countries.

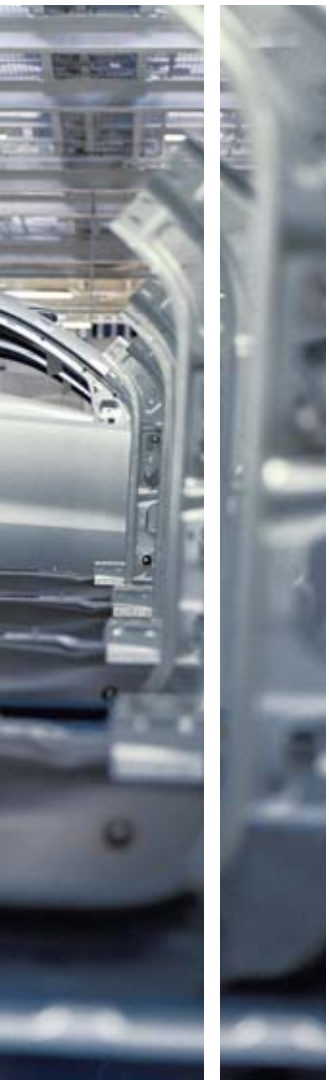
Supersedes:
Catalogs D 87.1 · 2008 and 2010

The products contained in this catalog can also be found in the electronic catalog MOTOX Configurator 7.4.
Order No.:
E86060-D5203-A100-A5-X100 (CD-ROM)

Please contact your local Siemens branch







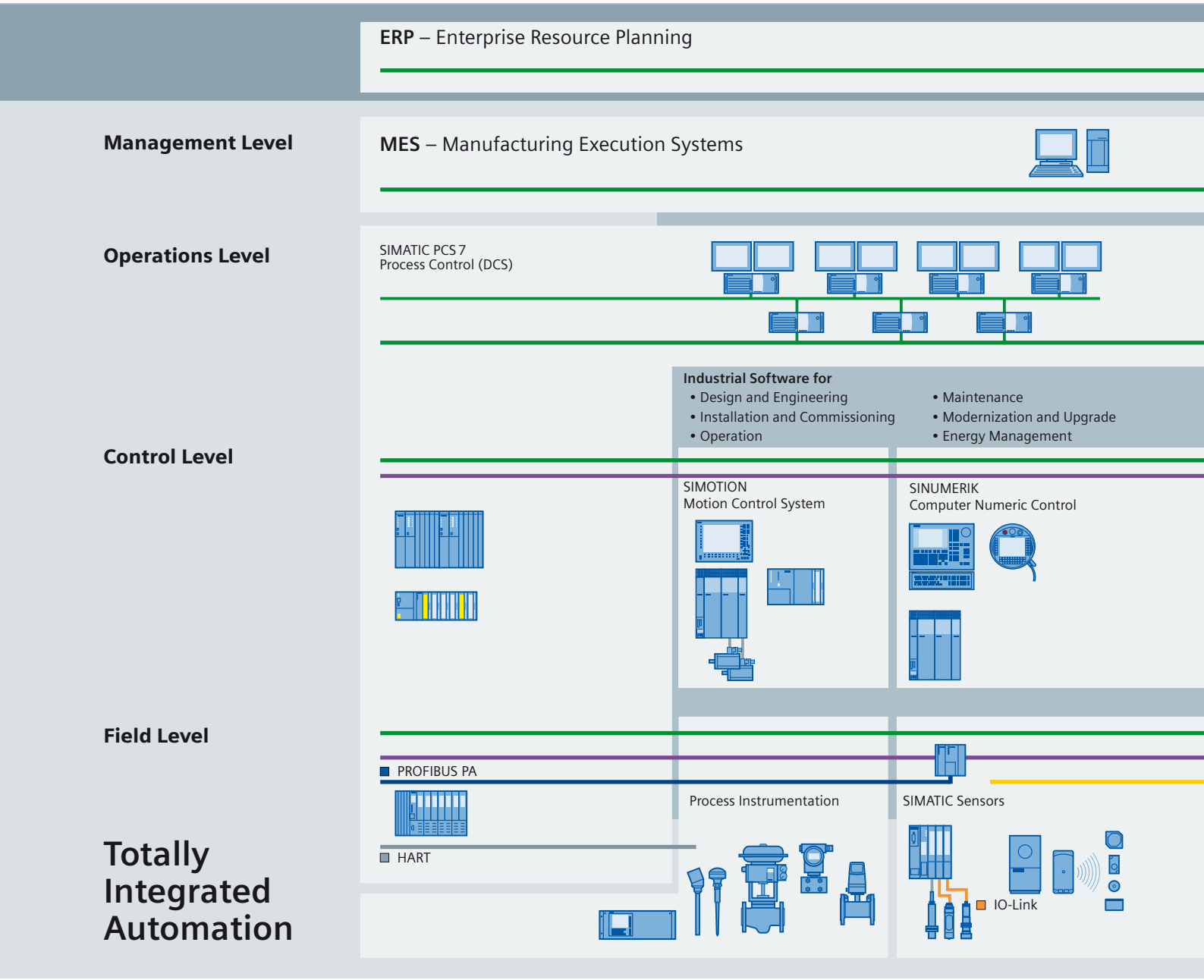
Answers for industry.

Siemens Industry answers the challenges in the manufacturing and the process industry as well as in the building automation business. Our drive and automation solutions based on Totally Integrated Automation (TIA) and Totally Integrated Power (TIP) are employed in all kinds of industry. In the manufacturing and the process industry. In industrial as well as in functional buildings.

Siemens offers automation, drive, and low-voltage switching technology as well as industrial software from standard products up to entire industry solutions. The industry software enables our industry customers to optimize the entire value chain – from product design and development through manufacture and sales up to after-sales service. Our electrical and mechanical components offer integrated technologies for the entire drive train – from couplings to gear units, from motors to control and drive solutions for all engineering industries. Our technology platform TIP offers robust solutions for power distribution.

The high quality of our products sets industry-wide benchmarks. High environmental aims are part of our eco-management, and we implement these aims consistently. Right from product design, possible effects on the environment are examined. Hence many of our products and systems are RoHS compliant (Restriction of Hazardous Substances). As a matter of course, our production sites are certified according to DIN EN ISO 14001, but to us, environmental protection also means most efficient utilization of valuable resources. The best example are our energy-efficient drives with energy savings up to 60 %.

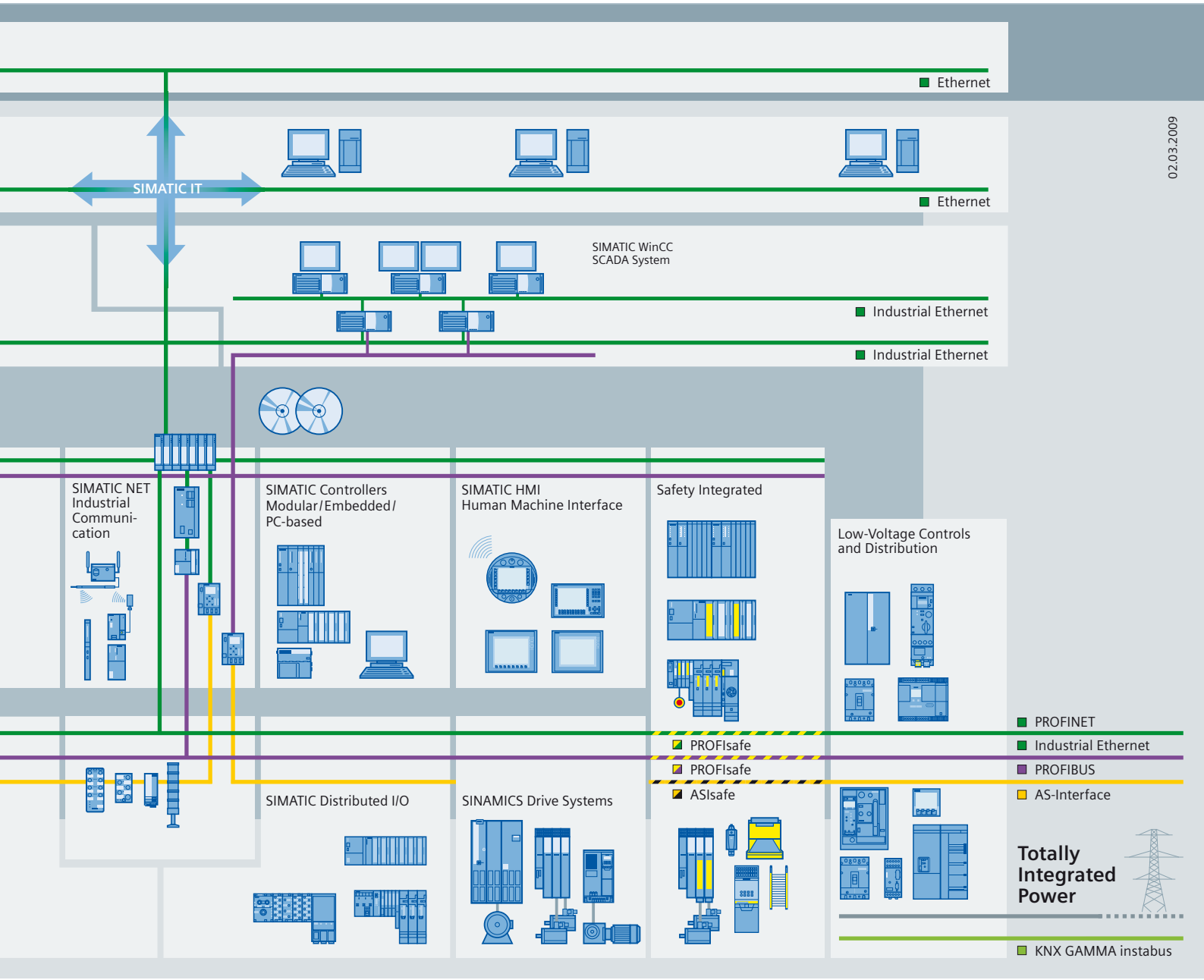
Check out the opportunities our automation and drive solutions provide. And discover how you can sustainably enhance your competitive edge with us.



Setting standards in productivity and competitiveness.

Totally Integrated Automation.

Thanks to Totally Integrated Automation, Siemens is the only provider of an integrated basis for implementation of customized automation solutions – in all industries from inbound to outbound.



TIA is characterized by its unique continuity.

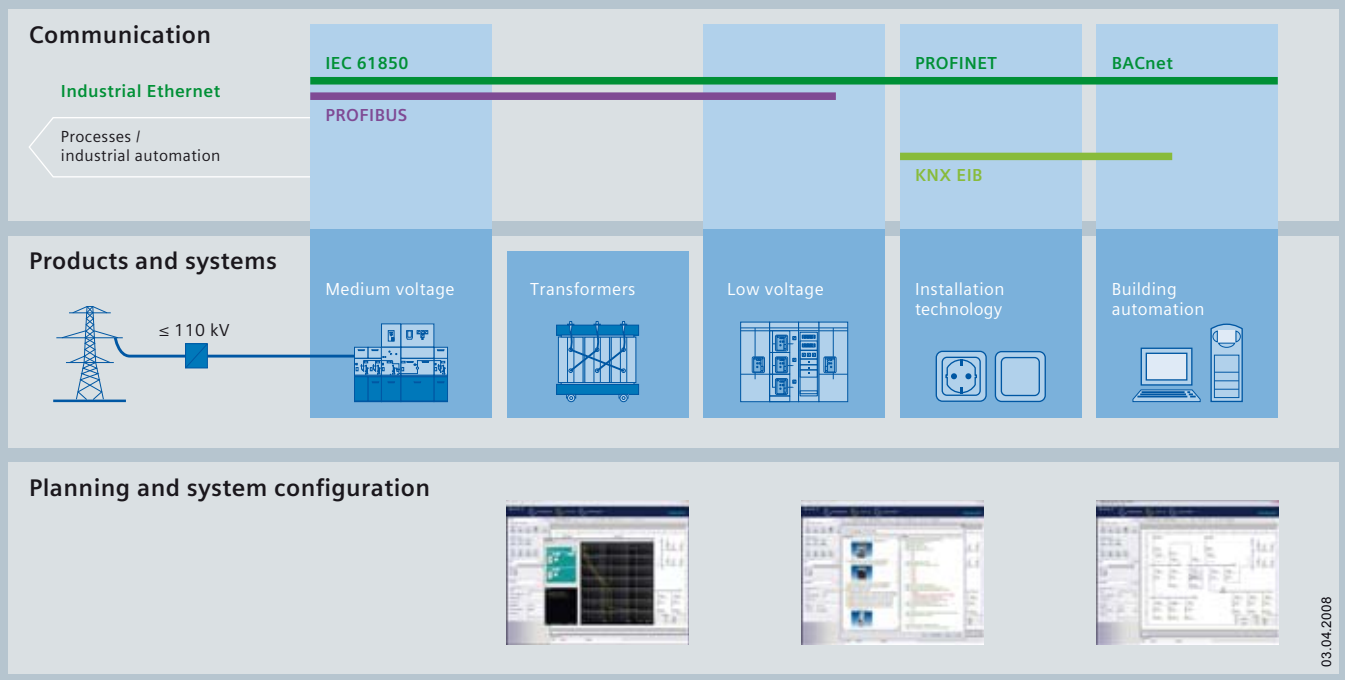
It provides maximum transparency at all levels with reduced interfacing requirements – covering the field level, production control level, up to the corporate management level. With TIA you also profit throughout the complete life cycle of your plant – starting with the initial planning steps through operation up to modernization, where we offer a high measure of investment security resulting from continuity in the further development of our products and from reducing the number of interfaces to a minimum.

The unique continuity is already a defined characteristic at the development stage of our products and systems.

The result: maximum interoperability – covering the controller, HMI, drives, up to the process control system. This reduces the complexity of the automation solution in your plant. You will experience this, for example, in the engineering phase of the automation solution in the form of reduced time requirements and cost, or during operation using the continuous diagnostics facilities of Totally Integrated Automation for increasing the availability of your plant.

Integrated power distribution from one source.

Totally Integrated Power.



Electrical power distribution in buildings requires integrated solutions. Our response: Totally Integrated Power. This means innovative and integrated, interface-optimized products and systems which have been optimally coordinated and complemented with communication and software modules that link power distribution to building automation or industrial automation. Totally Integrated Power accompanies power distribution projects from one end to the other. From A to Z.
From the planning to the building's use: Totally Integrated Power offers significant advantages in every project stage and to everyone involved in the project – the investors, electrical planning engineers, electricians, users and building facility managers.

Our portfolio comprises everything from engineering tools to the matching hardware: from switchgear and distribution systems for medium voltage to transformers, from switching and circuit-protection devices to low-voltage switchgear and busbar trunking systems, as far as to the small distribution board and the wall outlet. It goes without saying that both the medium-voltage switchgear, which requires no maintenance, and the low-voltage switchgear are type-tested, and their busbar connections, too. Comprehensive protection systems ensure the safety of man and machine at any time.

Much more than a catalog. The Industry Mall.

You have a catalog in your hands that will serve you well for selecting and ordering your products. But have you heard of the electronic online catalog (the Industry Mall) and all its benefits? Take a look around it sometime:

www.siemens.com/industrymall

Selecting

Find your products in the structure tree, in the new "Bread-crumb" navigation or with the integral search machine with expert functions. Electronic configurators are also integrated into the Mall. Enter the various characteristic values and the appropriate product will be displayed with the relevant order numbers. You can save configurations, load them and reset them to their initial status.

Ordering

You can load the products that you have selected in this way into the shopping basket at a click of the mouse. You can create your own templates and you will be informed about the availability of the products in your shopping cart. You can load the completed parts lists directly into Excel or Word.

Delivery status

When you have sent the order, you will receive a short e-mail confirmation which you can print out or save. With a click on "Carrier", you will be directly connected to the website of the carrier where you can easily track the delivery status.

Added value due to additional information

So you have found your product and want more information about it? In just a few clicks of the mouse, you will arrive at the image data base, manuals and operating instructions. Create your own user documentation with My Documentation Manager.
Also available are FAQs, software downloads, certificates and technical data sheets as well as our training programs. In the image database you will find, depending on the product, 2D/3Dgraphics, dimension drawings and exploded drawings, characteristic curves or circuit diagrams which you can download.

Convinced? We look forward to your visit!

Introduction

Guide to selecting and ordering geared motors

1

Description of the range of geared motors

MOTOX geared motors are available in an almost infinite number of combinations for adaptation to a wide range of drive scenarios.
All geared motors can be supplied with a mounted brake.
All the usual additional components and variants are also offered.

Made-to-measure solutions for all kinds of drive technology tasks are achieved with different gearbox types (helical, parallel shaft, bevel helical, helical worm, and worm).

Electronic catalog

MOTOX Configurator (CD)

The MOTOX Configurator makes it easy to select the right geared motor, providing you with the correct geared motor order numbers, prices and relevant documentation.

Data sheets and dimension drawings can be created for the different products.

Product range

The printed catalog contains the basic selection of standard MOTOX geared motors. The MOTOX Configurator, however, contains practically all combinations of MOTOX geared motors which are theoretically possible. It also contains additional sector-specific applications, such as:

- Monorail conveyor drives
- Extruder geared motors
- Cooling tower drives
- Mixer and agitator geared motors

You can also use the electronic catalog to configure explosion-proof ATEX geared motors for zones 1, 2, 21, and 22.

The MOTOX Configurator can also be accessed online at: www.siemens.com/gearedmotors.

Description of the range of geared motors (continued)

Helical geared motor D/Z

Helical geared motors and gearboxes

Torque	20 000 Nm
Power rating (50 Hz)	200 kW
Output speed (50 Hz)	0.05 ... 1 085 / min

Parallel shaft geared motor FD/FZ

Parallel shaft geared motors and gearboxes

Torque	34 000 Nm
Power rating (50 Hz)	200 kW
Output speed (50 Hz)	0.05 ... 738 / min

Bevel helical geared motor K

Bevel helical geared motors and gearboxes

Torque	20 000 Nm
Power rating (50 Hz)	200 kW
Output speed (50 Hz)	0.05 ... 403 / min

Helical worm geared motor C

Helical worm geared motors and gearboxes

Torque	1 590 Nm
Power rating (50 Hz)	9.2 kW
Output speed (50 Hz)	0.21 ... 149 / min

Worm geared motor S

Worm geared motors and gearboxes

Torque	116 Nm
Power rating (50 Hz)	1.1 kW
Output speed (50 Hz)	8.5 ... 566 / min

1

Guide to selecting and ordering geared motors

Guide to drive selection

This "guide to drive selection" takes you to the geared motor you require in easy-to-follow steps.

1st step	**Technical requirements of the geared motor -> see the "Configuring guide" section of this chapter**
Determine the required product profile, the following are required:	Gearbox type
	Power rating
	Output speed
	Service factor
	Radial force
	Ambient temperature
2nd step	**Preselection of the geared motor -> see subsequent pages**
Determine the range of possible geared motors	Size of the gearbox and the motor in accordance with the power rating and output speed
3rd step	**Detailed selection of the geared motor -> see the individual chapters for the different gearbox types**
Determine the basic order number	Define the order number in accordance with the power / torque and output speed
	Add more details to the order number in accordance with the mounting type, shaft, and mounting position of the geared motor
	Define the order code for the mounting type / mounting position
4th step	**Selection of motor options -> see chapter "Technical explanations and motor options"**
Complete the order number	Add more details to the order number in accordance with the voltage and frequency
	Define additional components and the associated order codes

Order number code

The order number consists of a combination of digits and letters and is divided into three blocks linked with hyphens for a better overview,

e.g.:

2KJ1503-1CE13-1AE2-Z

+D06+M55

The first block (positions 1 to 7) identifies the gearbox type, the second (positions 8 to 12) codes the output shaft and the motor type and additional design characteristics are coded in the third block (positions 13 to 16).

Ordering data:

- Complete order number, with a **-Z** suffix, and order code(s) or plain text.
- If a quotation is available, please specify the quotation number in addition to the order number.
- When ordering a complete geared motor as a spare part, please specify the works serial number for the previously supplied geared motor as well as the order number.

Structure of the order number		Position	1	2	3	4	5	6	7	–	8	9	10	11	12	–	13	14	15	16	
MOTOX geared motors																					
1st to 5th positions: Digit, letter, letter, digit, digit	Helical gearbox E, 1-stage		**2**	**K**	**J**	**1**	**0**														
	Helical gearbox Z, 2-stage		**2**	**K**	**J**	**1**	**1**														
	Helical gearbox D, 3-stage		**2**	**K**	**J**	**1**	**2**														
	Parallel shaft gearbox FZ, 2-stage		**2**	**K**	**J**	**1**	**3**														
	Parallel shaft gearbox FD, 3-stage		**2**	**K**	**J**	**1**	**4**														
	Bevel helical gearboxes B and K		**2**	**K**	**J**	**1**	**5**														
	Helical worm gearbox C		**2**	**K**	**J**	**1**	**6**														
	Worm gearbox S		**2**	**K**	**J**	**1**	**7**														
6th and 7th positions: Digit, digit	Gearbox size																				
8th position: Digit	Output shaft																				
9th to 10th positions: Letter Letter	Motor size																				
11th position: Digit	Without motor													**0**							
	Standard motor													**1**							
12th position: Digit	Motor generation														**3**						
13th position: Digit	Frequency, voltage																				
14th position: Letter	Foot-mounted design																	**A**			
	Foot / flange-mounted design																	**B**			
	Torque arm																	**D**			
	Extruder flange																	**E**			
	Flange-mounted design (A-type)																	**F**			
	Housing flange (C-type)																	**H**			
	Mixer flange																	**M**			
	Agitator flange																	**R**			
15th to 16th positions: Letter, digit	Transmission ratio																				
	Special order versions: • Coded: order code also required • Non-coded: plain text also required																			–	**Z**

Guide to selecting and ordering geared motors

1

Order number code (continued)

Ordering example:

A bevel helical geared motor is required:

- Gearbox type / gearbox size K48
- Motor 0.37 kW, 4-pole with 50 Hz line frequency
- Output speed 13, transmission ratio i = 107.47
- Solid shaft V 30 x 60
- Mounting type / mounting position B3-00-A
- Terminal box position 1A

This results in the order number and order codes below:

Selection criteria	Requirements	Structure of the order number
Gearbox type	Bevel helical gearbox K, size 48	**2KJ1503**-■■■■■- ■■■■
Output shaft	Solid shaft V 30 x 60	2KJ1503-**1**■■■■- ■■■■
Motor size	Size 71; 0.37 kW; 4-pole	2KJ1503-1**CE**■■- ■■■■
Motor type	Standard motor	2KJ1503-1CE**1**■- ■■■■
Motor generation	LA / LG	2KJ1503-1CE1**3**- ■■■■
Frequency, line voltage	50 Hz, 220 … 240 / 380 … 420 V, D/Y (S100)	2KJ1503-1CE13-**1**■■■
Mounting type	Foot-mounted design	2KJ1503-1CE13-1**A**■■
Transmission ratio	i = 107.47	2KJ1503-1CE13-1A**E2**
Mounting position	B3-00-A	2KJ1503-1CE13-1AE2**-Z+D06**
Terminal box position	1A	2KJ1503-1CE13-1AE2-Z+D06**+M55**

Determining the gearbox type in accordance with the power rating and output speed

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Torque T_2 Nm	Gearbox ratio i_{tot}	For further information, see page
	Helical geared motors E, D, and Z			
0.09	3.00 … 6.7	285 … 128.0	208.77 … 133.57	2/8
0.12	0.05 … 313.0	15 788 … 3.7	28 260.00 … 4.47	2/8 … 2/11
0.18	0.06 … 383.0	23 784 … 4.5	24 996.00 … 3.58	2/11 … 2/15
0.25	0.08 … 405.0	23 171 … 5.9	16 361.00 … 3.33	2/15 … 2/19
0.37	0.12 … 383.0	24 391 … 9.2	11 066.00 … 3.58	2/19 … 2/22
0.55	0.20 … 414.0	23 625 … 13.0	7 008.00 … 3.31	2/22 … 2/26
0.75	0.27 … 560.0	23 327 … 13.0	5 107.00 … 2.50	2/26 … 2/30
1.1	0.40 … 906.0	23 626 … 12.0	3 580.00 … 1.59	2/30 … 2/34
1.5	0.54 … 906.0	24 171 … 16.0	2 666.00 … 1.59	2/34 … 2/39
2.2	0.85 … 944.0	22 590 … 22.0	1 682.00 … 1.52	2/39 … 2/44
3	1.10 … 1 018.0	23 069 … 28.0	1 255.00 … 1.41	2/44 … 2/49
4	1.60 … 1 021.0	21 939 … 37.0	896.00 … 1.41	2/49 … 2/54
5.5	1.90 … 1 025.0	25 081 … 51.0	746.00 … 1.41	2/54 … 2/59
7.5	2.70 … 1 032.0	24 896 … 69.0	546.00 … 1.41	2/59 … 2/59
9.2	5.70 … 1 032.0	15 282 … 85.0	253.08 … 1.41	2/64 … 2/67
11	4.40 … 1 035.0	24 093 … 101.0	243.82 … 1.41	2/67 … 2/70
15	6.00 … 1 074.0	23 923 … 133.0	243.82 … 1.36	2/70 … 2/74
18.5	7.10 … 1 081.0	24 799 … 163.0	206.34 … 1.36	2/74 … 2/77
22	9.60 … 1 077.0	21 959 … 195.0	153.12 … 1.36	2/77 … 2/80
30	12.10 … 1 085.0	23 633 … 264.0	121.67 … 1.36	2/80 … 2/83
37	14.60 … 1 081.0	24 268 … 327.0	100.96 … 1.36	2/83 … 2/85
45	18.30 … 1 085.0	23 533 … 396.0	80.77 … 1.36	2/85 … 2/88
55	21.00 … 902.0	24 634 … 582.0	69.41 … 1.64	2/88 … 2/89
75	35.00 … 512.0	20 716 … 1 399.0	42.95 … 2.90	2/89 … 2/91
90	35.00 … 512.0	24 859 … 1 678.0	42.95 … 2.90	2/91 … 2/92
110	88.00 … 180.0	11 887 … 5 852.0	16.86 … 8.30	2/92
132	88.00 … 179.0	14 312 … 7 046.0	16.86 … 8.30	2/92
160	88.00 … 179.0	17 348 … 8 540.0	16.86 … 8.30	2/92
200	88.00 … 180.0	21 612 … 10 640.0	16.86 … 8.30	2/92
	Parallel shaft geared motors FZ and FD			
0.09	2.30 … 4.7	367 … 184.0	280.41 … 191.34	3/6
0.12	0.05 … 111	16 202 … 10.0	29 000.00 … 12.62	3/6 … 3/9
0.18	0.05 … 210	24 072 … 8.2	25 299.00 … 6.53	3/9 … 3/12
0.25	0.09 … 355	22 462 … 6.7	15 519.00 … 3.80	3/12 … 3/15
0.37	0.13 … 73	23 944 … 49.0	10 863.00 … 18.86	3/15 … 3/15
0.55	0.19 … 170	24 147 … 31.0	7 163.00 … 8.06	3/18 … 3/20
0.75	0.28 … 368	22 934 … 19.0	5 021.00 … 3.80	3/20 … 3/23
1.1	0.38 … 379	24 675 … 28.0	3 739.00 … 3.80	3/23 … 3/26
1.5	0.61 … 379	21 388 … 38.0	2 359.00 … 3.80	3/26 … 3/26
2.2	0.82 … 372	23 638 … 56.0	1 760.00 … 4.33	3/30 … 3/33
3	1.2 … 639	22 720 … 45.0	1 236.00 … 3.80	3/33 … 3/33
4	1.4 … 671	24 905 … 57.0	1 030.00 … 4.33	3/37 … 3/39
5.5	2.4 … 364	22 097 … 144.0	403.86 … 3.97	3/39 … 3/42
7.5	3.0 … 738	24 243 … 97.0	403.86 … 3.97	3/42 … 3/45
9.2	4.9 … 305	18 067 … 288.0	299.20 … 4.77	3/45 … 3/47
11	3.0 … 306	35 066 … 343.0	299.20 … 4.77	3/47 … 3/49
15	3.5 … 306	40 468 … 468	248.85 … 4.77	3/49 … 3/51
18.5	4.5 … 259	39 601 … 683	242.01 … 5.68	3/51 … 3/53
22	5.5 … 386	37 909 … 545	242.01 … 3.80	3/53 … 3/55
30	6.7 … 388	42 449 … 738	218.54 … 3.80	3/55 … 3/56

Determining the gearbox type in accordance with the power rating and output speed (continued)

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm			Torque T_2 Nm			Gearbox ratio i_{tot}			For further information, see page
	Parallel shaft geared motors FZ and FD									
37	8.4	…	387	42 287	…	913	175.92	…	3.80	3/56 … 3/58
45	11.0	…	388	39 088	…	1 106	134.16	…	3.80	3/58 … 3/59
55	14.8	…	280	35 564	…	1 874	100.21	…	5.28	3/59 … 3/59
75	18.5	…	281	38 668	…	2 547	80.17	…	5.28	3/61
90	22.0	…	281	39 878	…	3 056	68.90	…	5.28	3/61 … 3/62
110	28.0	…	179	37 832	…	5 880	53.66	…	8.34	3/62 … 3/63
132	35.0	…	178	36 188	…	7 080	42.63	…	8.34	3/63
160	38.0	…	178	39 965	…	8 581	38.84	…	8.34	3/63
200	49.0	…	179	38 777	…	10 691	30.25	…	8.34	3/63 … 3/63
	Bevel helical geared motors B and K									
0.09	3.70	…	7.2	231	…	120.0	179.13	…	124.78	4/6
0.12	0.05	…	187.0	16 836	…	6.1	30 135.00	…	7.49	4/6 … 4/9
0.18	0.06	…	277.0	23 014	…	6.2	24 187.00	…	4.94	4/9 … 4/12
0.25	0.08	…	378.0	24 007	…	6.3	16 951.00	…	3.57	4/12 … 4/15
0.37	0.12	…	93.0	24 723	…	38.0	11 463.00	…	14.75	4/15 … 4/18
0.55	0.19	…	300.0	24 353	…	18.0	7 224.00	…	4.56	4/18 … 4/21
0.75	0.26	…	392.0	24 688	…	18.0	5 405.00	…	3.57	4/21 … 4/25
1.1	0.42	…	403.0	22 504	…	26.0	3 410.00	…	3.57	4/25 … 4/25
1.5	0.55	…	403.0	23 582	…	36.0	2 601.00	…	3.57	4/29 … 4/32
2.2	0.77	…	374.0	25 008	…	56.0	1 862.00	…	3.84	4/32 … 4/35
3	1.10	…	402.0	23 639	…	71.0	1 286.00	…	3.57	4/35 … 4/38
4	1.50	…	255.0	23 702	…	142.0	968.00	…	5.36	4/38 … 4/41
5.5	2.20	…	270.0	22 492	…	195.0	669.00	…	5.36	4/41 … 4/43
7.5	2.70	…	271.0	24 988	…	264.0	548.00	…	5.36	4/43 … 4/45
9.2	3.40	…	263.0	24 013	…	335.0	429.00	…	5.54	4/45 … 4/47
11	4.20	…	264.0	25 035	…	399.0	191.34	…	5.54	4/47 … 4/49
15	6.00	…	264.0	23 790	…	544.0	191.34	…	5.54	4/49 … 4/50
18.5	7.70	…	207.0	22 997	…	853.0	191.34	…	7.10	4/50 … 4/52
22	8.50	…	303.0	24 779	…	693.0	172.78	…	4.83	4/52 … 4/53
30	12.30	…	305.0	23 340	…	938.0	120.16	…	4.83	4/53 … 4/54
37	15.40	…	304.0	22 951	…	1 161.0	95.48	…	4.83	4/54 … 4/54
45	18.60	…	305.0	23 084	…	1 407.0	79.23	…	4.83	4/56 … 4/57
55	23.00	…	306.0	22 493	…	1 714.0	63.38	…	4.83	4/57
75	35.00	…	225.0	20 465	…	3 188.0	42.43	…	6.61	4/58
90	35.00	…	225.0	24 558	…	3 826.0	42.43	…	6.61	4/58
110	76.00	…	123.0	13 790	…	8 531.0	19.56	…	12.10	4/59
132	76.00	…	123.0	16 604	…	10 272.0	19.56	…	12.10	4/59
160	76.00	…	123.0	20 126	…	12 450.0	19.56	…	12.10	4/59
200	76.00	…	123.0	25 074	…	15 511.0	19.56	…	12.10	4/59
	Helical worm geared motors C									
0.09	2.00	…	4	241	…	125	320.67	…	223.36	5/7
0.12	0.21	…	55	1 913	…	19	6 722.00	…	25.28	5/7… 5/9
0.18	0.37	…	54	1 885	…	29	3 719.00	…	25.28	5/9 … 5/10
0.25	0.60	…	53	1 782	…	41	2 256.00	…	25.28	5/10 … 5/12
0.37	0.91	…	54	1 918	…	60	1 510.00	…	25.28	5/12 … 5/14
0.55	1.7	…	68	1 870	…	68	440.70	…	20.31	5/14 … 5/14
0.75	2.4	…	145	1 969	…	44	440.70	…	9.67	5/15 … 5/16
1.1	3.7	…	149	1 983	…	62	390.00	…	9.67	5/16 … 5/18
1.5	5.8	…	149	1 779	…	85	247.00	…	9.67	5/18 … 5/20
2.2	11.4	…	148	1 355	…	125	126.18	…	9.67	5/20 … 5/21

Determining the gearbox type in accordance with the power rating and output speed (continued)

Power rating	Output speed			Torque			Gearbox ratio			For further information,
P_{Motor}	n_2 (50 Hz)			T_2			i_{tot}			see page
kW (50 Hz)	rpm			Nm						
Helical worm geared motors C										
3	14.6	…	148	1 668	…	170	98.17	…	9.67	5/21 … 5/22
4	22.0	…	149	1 482	…	227	65.32	…	9.67	5/22 … 5/23
5.5	34.0	…	130	1 302	…	367	41.85	…	11.15	5/23 ... 5/24
7.5	62.0	…	130	992	…	497	23.56	…	11.15	5/24
9.2	109.0	…	130	732	…	609	13.39	…	11.15	5/24
11	109.0	…	131	872	…	726	13.39	…	11.15	5/24
Worm geared motors S										
0.09	8.5	…	21.2	46.2	…	23.5	100	…	40	6/5
0.12	13.5	…	270	40.3	…	3.8	100	…	5	6/5 ... 6/6
0.18	10.6	…	564	82.0	…	2.8	100	…	5	6/6 ... 6/7
0.25	14.3	…	566	94.9	…	3.8	80	…	5	6/7 ... 6/8
0.37	22.8	…	548	90.9	…	5.9	60	…	5	6/8
0.55	46.5	…	560	82.1	…	8.6	30	…	5	6/8
0.75	70.0	…	574	81.9	…	11.6	30	…	5	6/9
1.1	143.0	…	572	59.4	…	17.0	20	…	5	6/9

1

Guide to selecting and ordering geared motors

Determining the gearbox type in accordance with the max. torque, transmission ratio, and size

Max. gearbox torque	Gearbox type	Order No.	Transmission ratio	For further information,
Nm				see page
	Helical gearbox E			
82	E38	**2KJ1001**	1.59 ... 9.33	2/93
170	E48	**2KJ1002**	1.52 ... 11.30	2/93
250	E68	**2KJ1003**	1.41 ... 12.40	2/94
450	E88	**2KJ1004**	1.71 ... 10.33	2/94
745	E108	**2KJ1005**	1.81 ... 5.46	2/95
1 000	E128	**2KJ1006**	1.36 ... 10.14	2/95
1 550	E148	**2KJ1007**	1.64 ... 13.67	2/95
	Helical gearbox Z			
90	Z18	**2KJ1100**	3.58 ... 43.15	2/96
140	Z28	**2KJ1101**	3.33 ... 51.35	2/97
220	Z38	**2KJ1102**	4.77 ... 44.12	2/99
450	Z48	**2KJ1103**	4.28 ... 51.28	2/101
800	Z68	**2KJ1104**	3.49 ... 48.09	2/103
1 680	Z88	**2KJ1105**	3.11 ... 50.73	2/105
3 100	Z108	**2KJ1106**	3.42 ... 59.05	2/107
5 100	Z128	**2KJ1107**	3.07 ... 44.19	2/109
8 000	Z148	**2KJ1108**	4.44 ... 57.50	2/111
14 000	Z168	**2KJ1110**	4.46 ... 46.61	2/113
20 000	Z188	**2KJ1111**	8.30 ... 52.35	2/115
220	Z38 - Z28	**2KJ1112**	207.00 ... 1 258.00	2/98
220	Z38 - D28	**2KJ1113**	1 343.00 ... 5 905.00	2/98
	Helical gearbox D			
90	D18	**2KJ1200**	32.26 ... 200.36	2/96
140	D28	**2KJ1201**	48.38 ... 241.05	2/97
220	D38	**2KJ1202**	30.74 ... 191.75	2/99
450	D48	**2KJ1203**	35.59 ... 208.77	2/101
800	D68	**2KJ1204**	37.80 ... 281.01	2/103
1 680	D88	**2KJ1205**	34.14 ... 300.41	2/105
3 100	D108	**2KJ1206**	42.61 ... 359.30	2/107
5 100	D128	**2KJ1207**	37.57 ... 268.16	2/109
8 000	D148	**2KJ1208**	34.15 ... 336.11	2/111
14 000	D168	**2KJ1210**	40.99 ... 341.61	2/113
20 000	D188	**2KJ1211**	42.95 ... 243.82	2/115
450	D48 - Z28	**2KJ1212**	223.00 ... 5 019.00	2/100
450	D48 - D28	**2KJ1213**	5 608.00 ... 27 940.00	2/100
800	D68 - Z28	**2KJ1214**	320.00 ... 7 548.00	2/102
800	D68 - D28	**2KJ1215**	8 422.00 ... 41 961.00	2/102
800	D88 - Z28	**2KJ1218**	341.00 ... 8 305.00	2/104
800	D88 - D28	**2KJ1220**	9 279.00 ... 46 233.00	2/104
3 100	D108 - Z38	**2KJ1223**	392.00 ... 15 853.00	2/106
3 100	D108 - D38	**2KJ1224**	15 280.00 ... 68 896.00	2/106
5 100	D128 - Z38	**2KJ1225**	1 280.00 ... 51 420.00	2/108
5 100	D128 - D38	**2KJ1226**	11 404.00 ... 51 420.00	2/108
5 100	D128 - Z48	**2KJ1227**	285.00 ... 1 271.00	2/108
8 000	D148 - Z38	**2KJ1228**	1 604.00 ... 14 830.00	2/110
8 000	D148 - D38	**2KJ1230**	14 294.00 ... 64 450.00	2/110
8 000	D148 - Z48	**2KJ1231**	398.00 ... 1 631.00	2/110
14 000	D168 - Z48	**2KJ1232**	1 463.00 ... 17 519.00	2/112
14 000	D168 - D48	**2KJ1233**	17 080 ... 71 317	2/112
14 000	D168 - Z68	**2KJ1234**	376 ... 1 226	2/112
20 000	D188 - Z48	**2KJ1235**	1 044 ... 12 504	2/114

Determining the gearbox type in accordance with the max. torque, transmission ratio, and size (continued)

Max. gearbox torque	Gearbox type	Order No.	Transmission ratio	For further information,
Nm				see page
	Helical gearbox D			
20 000	D188 - D48	**2KJ1236**	12 191 ... 50 901	2/114
20 000	D188 - Z68	**2KJ1237**	322 ... 896	2/114
	Parallel shaft gearbox FZ			
150	FZ28	**2KJ1300**	56.20 ... 280.00	3/65
290	FZ38B	**2KJ1301**	4.52 ... 56.72	3/67
540	FZ48B	**2KJ1302**	4.33 ... 60.71	3/69
1 000	FZ68B	**2KJ1303**	3.97 ... 61.17	3/71
1 900	FZ88B	**2KJ1304**	4.77 ... 64.58	3/73
3 400	FZ108B	**2KJ1305**	5.68 ... 64.21	3/75
6 100	FZ128B	**2KJ1306**	3.80 ... 56.42	3/77
9 000	FZ148B	**2KJ1307**	5.39 ... 68.23	3/79
14 000	FZ168B	**2KJ1308**	5.28 ... 53.48	3/81
20 000	FZ188B	**2KJ1310**	8.34 ... 52.63	3/83
32 681	FZ208	**2KJ1311**	9.01 ... 20.06	3/85
290	FZ38B - Z28	**2KJ1313**	303.00 ... 1 617.00	3/66
290	FZ38B - D28	**2KJ1314**	1 726.00 ... 7 591.00	3/66
	Parallel shaft gearbox FD			
150	FD28	**2KJ1400**	3.80 ... 59.65	3/65
290	FD38B	**2KJ1401**	56.28 ... 280.41	3/67
540	FD48B	**2KJ1402**	43.09 ... 268.80	3/69
1 000	FD68B	**2KJ1403**	50.48 ... 296.18	3/71
1 900	FD88B	**2KJ1404**	54.47 ... 404.92	3/73
3 400	FD108B	**2KJ1405**	48.24 ... 424.49	3/75
6 100	FD128B	**2KJ1406**	53.13 ... 447.96	3/77
9 000	FD148B	**2KJ1407**	62.93 ... 449.21	3/79
14 000	FD168B	**2KJ1408**	41.85 ... 369.26	3/81
20 000	FD188B	**2KJ1410**	48.46 ... 403.86	3/83
34 000	FD208	**2KJ1411**	24.03 ... 242.01	3/85
540	FD48B - Z28	**2KJ1413**	299.00 ... 4 197.00	3/68
540	FD48B - D28	**2KJ1414**	4 480.00 ... 19 701.00	3/68
1 000	FD68B - Z28	**2KJ1417**	317.00 ... 4 454.00	3/70
1 000	FD68B - D28	**2KJ1418**	4 755.00 ... 39 638.00	3/70
1 900	FD88B - Z28	**2KJ1422**	461.00 ... 6 000.00	3/72
1 900	FD88B - D28	**2KJ1423**	6 703.00 ... 54 705.00	3/72
3 400	FD108B - Z38	**2KJ1426**	466.00 ... 15 230.00	3/74
3 400	FD108B - D38	**2KJ1427**	16 603.00 ... 66 190.00	3/74
6 100	FD128B - Z38	**2KJ1428**	1 970.00 ... 15 663.00	3/76
6 100	FD128B - D38	**2KJ1430**	17 075.00 ... 68 070.00	3/76
6 100	FD128B - Z48	**2KJ1431**	439.00 ... 1 504.00	3/76
9 000	FD148B - Z38	**2KJ1432**	1 757.00 ... 16 239.00	3/78
9 000	FD148B - D38	**2KJ1433**	17 704.00 ... 70 576.00	3/78
9 000	FD148B - Z48	**2KJ1434**	477.00 ... 1 634.00	3/78
14 000	FD168B - Z48	**2KJ1435**	1 337.00 ... 16 007.00	3/80
14 000	FD168B - D48	**2KJ1436**	17 454.00 ... 65 160.00	3/80
14 000	FD168B - Z68	**2KJ1437**	398.00 ... 1 298.00	3/82
20 000	FD188B - Z48	**2KJ1438**	1 465.00 ... 17 537.00	3/82
20 000	FD188B - D48	**2KJ1440**	19 122.00 ... 71 388.00	3/82
20 000	FD188B - Z68	**2KJ1441**	444.00 ... 1 449.00	3/82
34 000	FD208 - Z68	**2KJ1442**	766.00 ... 8 251.00	3/84
34 000	FD208 - D68	**2KJ1443**	9 924.00 ... 61 412.00	3/84
34 000	FD208 - Z88	**2KJ1444**	284.00 ... 694.00	3/84

Determining the gearbox type in accordance with the max. torque, transmission ratio, and size (continued)

Max. gearbox torque	Gearbox type	Order No.	Transmission ratio	For further information,
Nm				see page
	Bevel helical gearbox B and K			
130	B28	**2KJ1500**	3.57 … 57.53	4/60
250	B38	**2KJ1501**	3.84 … 65.69	4/61
250	K38	**2KJ1502**	5.65 … 179.13	4/63
450	K48	**2KJ1503**	7.22 … 169.53	4/65
820	K68	**2KJ1504**	5.36 … 243.72	4/67
1 650	K88	**2KJ1505**	5.54 … 302.68	4/69
3 000	K108	**2KJ1506**	7.68 … 307.24	4/71
4 700	K128	**2KJ1507**	7.10 … 295.38	4/73
8 000	K148	**2KJ1508**	4.83 … 306.08	4/75
13 500	K168	**2KJ1510**	6.61 … 287.95	4/77
20 000	K188	**2KJ1511**	12.10 … 191.34	4/79
250	K38 - Z28	**2KJ1514**	181.00 … 2 797.00	4/62
250	K38 - D28	**2KJ1515**	2 986.00 … 13 129.00	4/62
450	K48 - Z28	**2KJ1516**	181.00 … 2 798.00	4/64
450	K48 - D28	**2KJ1517**	2 987.00 … 13 135.00	4/64
820	K68 - Z28	**2KJ1518**	277.00 … 4 282.00	4/66
820	K68 - D28	**2KJ1520**	4 572.00 … 20 103.00	4/66
1 650	K88 - Z28	**2KJ1523**	344.00 … 5 309.00	4/68
1 650	K88 - D28	**2KJ1524**	5 667.00 … 24 920.00	4/68
3 000	K108 - Z38	**2KJ1527**	1 466.00 … 13 556.00	4/70
3 000	K108 - D38	**2KJ1528**	13 066.00 … 58 914.00	4/70
3 000	K108 - Z48	**2KJ1530**	301.00 … 1 343.00	4/70
4 700	K128 - Z38	**2KJ1531**	1 410.00 … 13 032.00	4/72
4 700	K128 - D38	**2KJ1532**	12 562.00 … 56 640.00	4/72
4 700	K128 - Z48	**2KJ1533**	313.00 … 1 400.00	4/72
8 000	K148 - Z38	**2KJ1534**	1 466.00 … 13 505.00	4/74
8 000	K148 - D38	**2KJ1535**	13 017.00 … 58 692.00	4/74
8 000	K148 - Z68	**2KJ1536**	296.00 … 1 392.00	4/74
13 500	K168 - Z48	**2KJ1537**	1 233.00 … 14 767.00	4/76
13 500	K168 - D48	**2KJ1538**	14 397.00 … 60 115.00	4/76
13 500	K168 - Z68	**2KJ1540**	317.00 … 1 033.00	4/76
20 000	K188 - Z68	**2KJ1541**	669.00 … 9 201.00	4/78
20 000	K188 - D68	**2KJ1542**	8 689.00 … 53 767.00	4/78
20 000	K188 - Z88	**2KJ1543**	225.00 … 669.00	4/78
	Helical worm gearbox C			
118	C28	**2KJ1600**	25.28 … 372.00	5/25 … 5/26
243	C38	**2KJ1601**	9.67 … 320.67	5/28 … 5/30
387	C48	**2KJ1602**	9.67 … 320.67	5/32 … 5/34
687	C68	**2KJ1603**	11.67 … 364.00	5/36 … 5/38
1 590	C88	**2KJ1604**	11.15 … 440.70	5/40 … 5/42
225	C38 - Z28	**2KJ1605**	324.00 … 4 222.00	5/27
222	C38 - D28	**2KJ1606**	4 717.00 … 23 503.00	5/27
369	C48 - Z28	**2KJ1607**	324.00 … 4 222.00	5/31
364	C48 - D28	**2KJ1608**	4 717.00 … 23 503.00	5/31
680	C68 - Z28	**2KJ1610**	398.00 … 5 066.00	5/35
675	C68 - D28	**2KJ1611**	5 661.00 … 28 203.00	5/35
1 590	C88 - Z28	**2KJ1614**	6 722.00 … 33 491.00	5/39
1 590	C88 - D28	**2KJ1615**	462.00 … 6 016.00	5/39
	Worm gearbox S			
33	S08	**2KJ1730**	5 … 80	6/10 ... 6/10
64	S18	**2KJ1731**	5 … 80	6/10 ... 6/10
116	S28	**2KJ1732**	5 … 100	6/10 ... 6/10

Overview of "special versions"

Order code	Special version Designation	For further information, see page
	Input units	
A00	Input unit A with free input shaft	7/3, 7/30
A03	Input unit K2 (coupling lantern) with flexible coupling for connecting an IEC motor	7/3, 7/20
A04	Input unit K4 (short coupling lantern) with clamp connection for connecting an IEC motor	7/3, 7/23
A07	Input unit KQ (lantern for servomotor) with zero-free, flexible coupling for connecting a servomotor (with feather key)	7/3, 7/28
A08	Input unit KQS attachment (lantern for servomotor) with zero-free, flexible coupling for connecting a servomotor (with plain shaft)	7/3, 7/28
A09	Input unit P with free input shaft and piggy back for connecting an IEC motor	7/3, 7/33
A10	Input unit PS with free input shaft, piggy back and protective belt cover	7/3
N61	Size index .2 for KQ/KQS coupling lantern for servomotor	7/3
N62	Size index .3 for KQ/KQS coupling lantern for servomotor	7/3
N63	Size index .4 for KQ/KQS coupling lantern for servomotor	7/3
	Backstop in the input unit	
A15	Backstop X	7/18
	Coupling types and input unit options	
A16	Flexible coupling	7/3
A17	Friction clutch	7/18
A18	Proximity switch	7/18
A19	Speed monitor	7/18
	Piggy back position	
A22	3h	7/33
A23	9h	7/33
A24	12h	7/33
	Brake type	
B00 to B66	Brake types according to size and braking torque	8/29 … 8/30
	Brake design	
C01	Enclosed brake	8/42
C02	Manual brake release lever	8/39
C03	Manual brake release lever with locking mechanism	8/39
C04	Microswitch for release monitoring	8/38
C06	Reduced-noise rotor-hub connection and wear-resistant friction lining	8/36
C09	Basic anti-corrosion protection	8/42
C10	Increased anti-corrosion protection	8/42
C11	Enclosed brake with condensation drain hole	8/42
	Manual brake release lever position	
C26	1	8/39
C27	2	8/39
C28	3	8/39
C29	4	8/39
	Brake control voltage	
C46 ... C70	Brake standard voltage	8/32
	Mounting types / mounting positions	
D00 to E17	Geared motor mounting types and mounting positions	2/119 ... 2/129, 3/92 ... 3/95, 4/87 ... 4/91, 5/47 ... 5/49, 6/15
	Torque arm figure	
G09	Figure 1	4/81, 5/44
G10	Figure 2	4/81, 5/44
	Output shaft bearings	
G20	Radially reinforced output shaft bearings	2/133, 3/99, 4/95, 5/53

Overview of "special versions" (continued)

Order code	Special version Designation	For further information, see page
	Output sealing	
G22 + G31	Double radial shaft seal	2/132, 3/98, 4/94, 5/52
G23	Double sealing MSS1	2/132, 3/98, 4/94, 5/52
G24	Combination shaft sealing	2/132, 3/98, 4/94, 5/52
G25	High temperature resistant sealing	2/132, 3/98, 4/94, 5/52
	Oil level control	
G34	Oil sight glass	2/130, 3/96, 4/93, 5/50
	Gearbox ventilation	
G44	Vent filter	2/131, 3/97, 4/93, 5/51
G45	Pressure ventilation valve	2/131, 3/97, 4/93, 5/51
	Oil drain	
G53	Magnetic oil drain plug	2/131, 3/97, 4/94, 5/51
G54	Oil drain valve, straight	2/131, 3/97, 4/94, 5/51
	Hollow-shaft cover	
G60	Steel protection cover	3/99, 4/95, 5/52
G61	Steel protection cover (ATEX)	3/99, 4/95, 5/52
G62	Protection cover	3/99, 4/95, 5/52
G63	Protection cover (ATEX)	3/99, 4/95, 5/52
	Backstop for bevel helical gearbox	
G72	Backstop (gearbox)	4/96
	Options for gearbox output shafts	
G73	2nd shaft extension (output shaft on both sides)	4/96, 5/53, 6/16
	Dry-well options for mixer and agitator drives	
G89	Dry-well design with sight glass	2/133, 3/100, 4/97
G90	Dry-well design with sensor	2/133, 3/100, 4/97
	Reduced-backlash version	
G99	Reduced-backlash version	1/23, 2/93, 3/65, 4/62
	Flange diameter	
H01 to H06	Flange diameter	2/118, 3/91, 4/86, 5/46, 6/14
	Degree of protection	
K01	IP 55	8/8
K02	IP 56	8/8
K03	IP 65	8/8
	Lubricants	
K06	CLP ISO VG 220 - Mineral oil	1/46, 2/130, 3/94, 4/92
K07	CLP ISO PG VG 220 - Synthetic oil	1/46, 2/130, 3/96, 4/92
K08	CLP ISO PG VG 460 - Synthetic oil	1/46, 2/130, 3/96, 4/92, 5/50, 6/16
K10	CLP ISO E VG 220 - Biologically degradable oil	1/46, 2/130, 3/96, 4/92, 5/50
K11	CLP ISO H1 VG 460 - Oil for use in the food industry	1/46, 2/130, 3/96, 4/92, 5/50, 6/16
K12	CLP ISO PAO VG 220 - Oil for low temperature usage	1/46, 2/130, 3/96, 4/92, 5/50
K13	CLP ISO PAO VG 68 - Oil for lowest temperature usage	1/46, 2/130, 3/96, 4/92
	Long-term preservation	
K17	Long-term preservation up to 36 months	1/46
	Direction of rotation of the output shaft (required with backstop)	
K18	Clockwise	1/43, 4/96
K19	Counterclockwise	1/43, 4/96
	Rating plate and additional rating plates	
K26	Rating plate on stainless steel support plate	1/49
K41	2nd rating plate, enclosed separately	1/49
K68	2nd rating plate, mounted	1/49

Overview of "special versions" (continued)

Order code	Special version Designation	For further information, see page
	Surface treatment	
L00	Unpainted	1/48
L01	Primed according to corrosion category C2 G	1/48
L02	Surface protection for normal environmental stress	1/47
L03	Surface protection for minimal environmental stress	1/47
L04	Surface protection for medium environmental stress	1/47
L05	Surface protection for extremely high environmental stress	1/47
L09	Primed according to corrosion category C4 G	1/48
L19	Special pre-treatment before painting	1/48
L20	Surface protection for high environmental stress	1/47
	RAL colors	
L50	RAL 5015 Sky blue	1/48
L51	RAL 7011 Steel gray	1/48
L53	RAL 7031 Blue gray	1/48
L54	RAL 7035 Light gray	1/48
L55	RAL 7030 Stone gray	1/48
	Other colors can be selected by entering order code Y80 and plain text	1/48
	Insulating material class	
M08	Temperature class 180 (H)	8/25
M09	Special insulation for inverter-fed operation up to 690 V	8/25
	Thermal motor protection	
M10	PTC thermistor for disconnection	8/23
M11	PTC thermistor for warning and disconnection	8/23
M12	Winding thermostat for disconnection (WT)	8/23
M13	Winding thermostat for warning and disconnection for sizes 71 to 200 (WT)	8/23
M16	KTY 84-130 temperature sensor	8/24
	Fan	
M21	Metal fan	8/9
M22	High inertia fan	8/9
M23	External fan	8/10
	Anti-condensation heating	
M40	115 V supply voltage	8/24
M41	230 V supply voltage	8/24
	Terminal box position	
M55 to M86	Location and position of the terminal box	8/11
	ECOFAST motor plugs	
N04	ECOFAST motor plug HAN 10E (single-bracket lock)	8/18
N05	ECOFAST motor plug HAN 10E with counterplug HAN 10B (single-bracket lock)	8/18
N06	ECOFAST motor plug HAN 10E, EMC design (single-bracket lock)	8/18
N07	ECOFAST motor plug HAN 10E with counterplug HAN 10B, EMC design (single-bracket lock)	8/18
	Canopy	
N22	Canopy	8/8
	Backstop on motor	
N23	Motor backstop	8/63
	2nd shaft extension on motor	
N39	2nd shaft extension	8/64
	Handwheel	
N40	Handwheel	8/65
	Motor side B, can be retrofitted	
N48	Motor side B, can be retrofitted	8/2

Overview of "special versions" (continued)

Order code	Special version Designation	For further information, see page
	Additional feet	
N49	Additional feet	8/65
	Designs in accordance with standards and specifications	
N30	Design in accordance with GOST-R	1/40, 8/3
N36	Design in accordance with CSA	1/40, 8/3
N37	Design in accordance with UL-R	1/40, 8/3
N38	Design in accordance with UL-R and CSA	1/40, 8/3
N65	Design in accordance with NEMA (electrical)	1/39, 8/3
N67	Design in accordance with CCC	1/40, 8/3
N69	Design in accordance with China Energy Efficiency Label	1/40, 8/3
	Versions for special environmental conditions	
N41	Motor-internal anti-corrosion protection	8/19
	Protection against humidity and acid	
N43	Increased protection against humidity and tropical climate	1/48
N44	Increased protection against acid and alkali	1/48
N54	Motor winding protection against humidity and acid	8/26
	External earthing	
N53	External earthing	8/19
	Motors prepared for encoder mounting	
N50	Encoder mounting prepared	8/60
	Pole number of the motor	
P00	2-pole	8/68, 8/68, 8/96
P01	6-pole	8/70, 8/84, 8/70, 8/98, 8/102, 8/132, 8/136, 8/132, 8/136
P02	8-pole	8/72, 8/86, 8/104, 8/122, 8/128
P04	4/2-pole	8/74, 8/106
P08	8/4-pole	8/76, 8/78
P07	8/2-pole	8/80
	Gateways EnDAT for absolute encoders	
Q02	Gateway EnDAT Profibus DP	8/63
Q03	Gateway EnDAT CANopen	8/63
Q04	Gateway EnDAT DeviceNET	8/63
	Incremental encoder IN	
Q44	Rotary pulse encoder 1XP8032-20 (IN 1024 TTL with coupling socket)	8/51
Q45	Rotary pulse encoder 1XP8032-21 (IN 2048 TTL with coupling socket)	8/51
Q46	Rotary pulse encoder 1XP8032-22 (IN 512 TTL with coupling socket)	8/51
Q47	Rotary pulse encoder 1XP8032-10 (IN 1024 HTL with coupling socket)	8/51
Q48	Rotary pulse encoder 1XP8032-11 (IN 2048 HTL with coupling socket)	8/51
Q49	Rotary pulse encoder 1XP8032-12 (IN 512 HTL with coupling socket)	8/51
Q50	Rotary pulse encoder 1XP8012-20 (IN 1024 TTL with flange socket)	8/50
Q51	Rotary pulse encoder 1XP8012-21 (IN 2048 TTL with flange socket)	8/50
Q52	Rotary pulse encoder 1XP8012-22 (IN 512 TTL with flange socket)	8/50
Q53	Rotary pulse encoder 1XP8012-10 (IN 1024 HTL with flange socket)	8/50
Q54	Rotary pulse encoder 1XP8012-11 (IN 2048 HTL with flange socket)	8/50
Q55	Rotary pulse encoder 1XP8012-12 (IN 512 HTL with flange socket)	8/50
Q56	Rotary pulse encoder 1XP8022-20 (IN 1024 TTL with cable terminal box)	8/52
Q57	Rotary pulse encoder 1XP8022-21 (IN 2048 TTL with cable terminal box)	8/52
Q58	Rotary pulse encoder 1XP8022-22 (IN 512 TTL with cable terminal box)	8/52
Q59	Rotary pulse encoder 1XP8022-10 (IN 1024 HTL with cable terminal box)	8/52
Q60	Rotary pulse encoder 1XP8022-11 (IN 2048 HTL with cable terminal box)	8/52
Q61	Rotary pulse encoder 1XP8022-12 (IN 512 HTL with cable terminal box)	8/52

Overview of "special versions" (continued)

Order code	Special version Designation	For further information, see page
	Cable terminal boxes for encoders 1XP8012, 1XP8032, 1XP8013, 1XP8023.1XP8014 and 1XP8024	
Q62	Connector	8/61
Q69	Cable with connector and ferrules, 2 m	8/61
Q70	Cable with connector and ferrules, 8 m	8/61
Q71	Cable with connector and ferrules, 15 m	8/61
Q72	Cable with coupling socket, 2 m	8/62
Q73	Cable with coupling socket, 8 m	8/62
Q74	Cable with coupling socket, 15 m	8/62
	Cable terminal boxes for encoders 1XP8022	
Q63	Cable with ferrules, 2 m	8/61
Q64	Cable with ferrules, 8 m	8/61
Q65	Cable with ferrules, 15 m	8/61
Q66	Cable with coupling socket, 2 m	8/62
Q67	Cable with coupling socket, 8 m	8/62
Q68	Cable with coupling socket, 15 m	8/62
	Absolute encoder IA	
Q80	Absolute encoder 1XP8014-20 (IA SSI protocol with flange socket)	8/55
Q81	Absolute encoder 1XP8024-20 (IA SSI protocol cable with coupling socket)	8/55
Q82	Absolute encoder 1XP8014-10 (IA EnDAT protocol with flange socket)	8/55
Q83	Absolute encoder 1XP8024-10 (IA EnDAT protocol cable with coupling socket)	8/55
	Resolver IR	
Q85	Resolver 1XP8013-10 (IR with flange socket)	8/54
Q86	Resolver 1XP8023-11 (IR cable with coupling socket)	8/54
Q87	Resolver 1XP8013-11 (IR with flange socket)	8/54
Q88	Resolver 1XP8023-10 (IR cable with coupling socket)	8/54
	Rugged encoder	
Q92	Rotary pulse encoder LL Leine & Linde	8/57
Q93	Rotary pulse encoder HOG 9	8/58
Q94	Rotary pulse encoder HOG 10	8/59
	Mechanical protection	
Q95	Encoder under cover	8/60

Configuring guide

Determining the drive data

Data relating to the machine to be driven (machine type, mass, input speed, speed range, etc.) is required in order to size the machine correctly. This data is then used to determine the required power rating, torque, and input speed of the geared motor. The correct drive can be selected based on its calculated power rating and speed.

Data required for selection

The following data is required in order to select the correct gearbox:

1. Type of driven machine
2. Daily operating time h
3. Required input power kW or required torque Nm
4. Required output speed n_2 of the geared motor rpm or gearbox ratio i
5. Operating voltage V and frequency Hz
6. Operating mode, number of startings, inverter-fed operation, type of startup
7. Moment of inertia J_{Load} kgm^2 of the driving machine reduced to the motor shaft
8. Type of power transmission on gearbox shafts (direct, coupling, belt, chain, gear wheel)
9. Radial force F_r N at the input shaft and direction of force with distance from the shaft shoulder to the point of application and axial force F_{ax} [N] with direction of force
10. Ambient temperature °C
11. Degree of protection
12. Mounting position
13. Required braking torque Nm
14. Any regulations (CSA, VIK, etc.)

Efficiency of the geared motor

The efficiency of the gearbox is determined by the gear teeth, rolling-contact bearing friction, and the shaft sealing rings, among other things. The starting efficiency also has to be taken into account, particularly as regards helical worm and worm gearboxes. Efficiency may be impaired at high input speeds, if a relatively large amount of oil is used (depending on mounting position), and during cold operation in low temperature ranges.

Helical, bevel helical, and parallel shaft gearboxes

MOTOX helical, parallel shaft, and bevel helical gearboxes are extremely efficient. As a rule, efficiencies of 98 % (1-stage), 96 % (2-stage), and 94 % (3-stage) can be assumed.

Helical worm and worm gearboxes

The gear teeth of the worm gearboxes lead to high sliding friction losses at high transmission ratios. Therefore, these gearboxes can be less efficient than other types. The efficiencies of the helical worm and worm gearboxes primarily depend on the transmission ratio in question.
With helical worm gearboxes, some of the transmission ratio is realized by the helical gear stage. In this way, higher degrees of efficiency can be achieved.
For further information see the chapter dealing with helical worm gearboxes.

Self-locking with worm gearboxes

In respect of restoring torques on worm gearboxes, the efficiency is considerably reduced in comparison to standard efficiency. The restoring efficiency can be calculated as follows: $\eta' = 2 - 1/\eta$. At a standard efficiency of $\eta \leq 0.5$, worm gearboxes are usually self-locking, which is determined by the particular lead angle of the worm gear teeth.
Self-locking only occurs with certain combinations of MOTOX gearboxes and is not always of benefit, as the associated loss of efficiency is then relatively high, which in turn requires increased motor power.

A worm gearbox is "self-locking while stationary" (static self-locking), if it is not possible to start from stationary when the worm wheel is driving.
A worm gearbox is "self-braking while running" (dynamic self-locking), if it is not possible to continue running when the worm wheel is driving while the gearbox is running – that is, if the running gearbox comes to a stop while the worm wheel is driving.

Shocks can neutralize self-locking.
A self-locking gearbox is, therefore, no substitute for a brake or backstop. If you want to use the self-locking braking effect for a technical purpose, please contact us.

Run-in phase for helical worm and worm gearboxes

The tooth flanks on new helical worm and worm gearboxes will not yet be fully smoothed, meaning that the friction angle will be greater and efficiency lower during initial operation. The higher the transmission ratio, the more pronounced the effect.

The run-in procedure should take approximately 24 hours of operation at full load. In most cases, the catalog values will then be reached.

Losses of splashing

With certain gearbox mounting positions, the first stage can become completely immersed in the gear lubricant. In the case of large gearboxes with a high input speed, particularly with vertical mounting positions, this may lead to increased losses of splashing, which must not be ignored. Please contact us if you want to use such gearboxes. If at all possible, you should choose horizontal mounting positions in order to keep losses of splashing to a minimum.

Determining the required service factor

The operating conditions are crucial in determining the service factor and for selecting the geared motor. These conditions are taken into account with service factor f_B.

The gearbox size or rated gear torque and the resulting service factor are not standardized and depend on the manufacturer.

In standard operation, i.e. with a uniform load provided by the driving machine, small masses to be accelerated, and a low number of startings, the service factor of $f_B = 1$ can be selected.

For different operating conditions see the tables found under "Service factor". If the motor power and the gearbox output speed are known, a gearbox type is selected with a service factor that meets the following condition.

$$f_{Btot} \leq f_B$$

For drives operating under special conditions, e.g. frequent reversing, short-time or intermittent duty, abnormal temperature ratios, reversal braking, extreme or rotating transverse forces on the gear output shaft, etc. please contact us for advice on how to design the drive configuration.

The operating conditions can vary greatly.
To determine the service factor, empirical values can be derived from the configuration of other similar applications. The driving machines can be assigned to three load groups according to their shock load. These groups can be assessed by means of their mass acceleration factor (m_{AF}).

In the case of high mass acceleration factors (m_{AF} >10), a large amount of play in the transmission elements, or high transverse forces, unexpected additional loads may arise.
Please contact us in such an event.

The mass acceleration factor m_{AF} is calculated as follows:

$$m_{AF} = \frac{J_{Load}}{(J_M + J_B + J_{add})}$$

All external moments of inertia are moments of inertia of the driving machine and the gearbox, which are to be reduced to the motor speed. In most cases the moment of inertia of the gearbox has no effect and can be ignored.
The calculation is made using the following formula:

$$J_{Load} = J_2 \cdot \left(\frac{n_2}{n_1}\right)^2 = \frac{J_2}{i^2}$$

Code	Description	Unit
f_{Btot}	Service factor of the driving machine	–
f_B	Service factor of the geared motor	–
m_{AF}	Mass acceleration factor	–
J_{Load}	All external moments of inertia (based on the motor shaft)	kgm²
J_M	Moment of inertia of the motor	kgm²
J_B	Moment of inertia of the brake	kgm²
J_{add}	Additional moment of inertia (e.g. centrifugal mass or high inertia fan)	kgm²
J_2	Moment of inertia based on the output speed of the gearbox	kgm²
n_1	Input speed of the motor	rpm
n_2	Output speed of the gearbox	rpm
i	Gearbox ratio	–
DC	Relative duty cycle	%

Required service factor

Service factor for helical, parallel shaft, and bevel helical gearboxes

The service factor of the driving machine f_{Btot} is determined from the tables by taking the load classification, number of startings, and duration of service per day into account.
Contact our drive experts to check drive sizing in the case of high shock loads and, for example, high motor and braking torques that are greater than 2.5x the rated motor torque.

$f_{Btot} = f_{B1}$

Load classification for driving machines

Shock load	Driving machine
I Light shock loads	Mass acceleration factor ≤ 0.3: Electric generators, belt conveyors, apron conveyors, screw conveyors, lightweight elevators, electric hoists, machine tool feed drives, turbo blowers, centrifugal compressors, mixers and agitators for uniform densities.
II Moderate shock loads	Mass acceleration factor ≤ 3: Machine tool main drives, heavyweight elevators, turning tools, cranes, shaft ventilators, mixers and agitators for non-uniform densities, piston pumps with multiple cylinders, metering pumps.
III Heavy shock loads	Mass acceleration factor ≤ 10: Punching presses, shears, rubber kneaders, machinery used in rolling mills and the iron and steel industry, mechanical shovels, heavyweight centrifuges, heavyweight metering pumps, rotary drilling rigs, briquetting presses, pug mills.

Service factors f_{B1}:

Daily operating duration		**4 hours**			**8 hours**			**16 hours**			**24 hours**		
Starts*) / h		< 10	10 … 200	> 200	< 10	10 … 200	> 200	< 10	10 … 200	> 200	< 10	10 … 200	> 200
Shock load	I	0.8	0.9	1.0	0.9	1.0	1.1	1.0	1.1	1.2	1.2	1.3	1.5
	II	1.0	1.1	1.3	1.1	1.2	1.3	1.2	1.4	1.5	1.4	1.5	1.6
	III	1.3	1.4	1.5	1.4	1.5	1.6	1.5	1.6	1.7	1.6	1.7	1.8

*) The number of startings is calculated from the sum of times it is switched on, braking operations, and changeovers.

Service factors for helical worm and worm gearboxes:

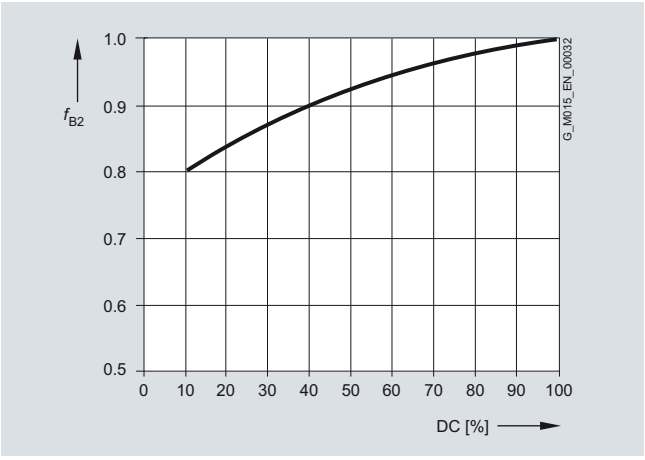
With worm gearboxes, two additional service factors are used, which take the duty cycle and ambient temperature into account. These additional factors can be determined from the graph opposite.

$f_{Btot} = f_{B1} \cdot f_{B2} \cdot f_{B3}$

In the standard version the gearboxes can operate at an ambient temperature of –20 °C to +40 °C.

In the case of a service factor $f_{B3} < 1$ for temperatures below 20 °C please contact us.

Service factor f_{B2} for short-time duty:



$$DC = \frac{\text{Loading time in min/h}}{60} \cdot 100$$

Required service factor (continued)

Example worm gearbox:

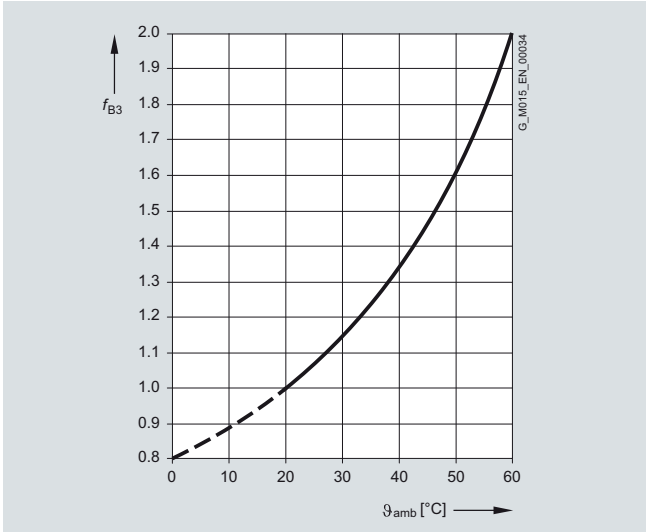
Mass acceleration factor 2.5 (shock load II), runtime 15 hours per day (read off at 16 hours), and 70 starts / h gives a service factor of f_{B1} = 1.4 for service factor f_{B1} according to the table.

A load duration of 30 minutes per hour gives a duty cycle (*DC*) of 50 %. According to the diagram, this results in a service factor of f_B = 0.94 for service factor f_{B2}.

At an ambient temperature of ϑ_{amb} = 20 °C, the diagram gives a service factor of f_{B3} = 1.0 for service factor f_{B3}.

So, the required service factor is
$f_{Btot} = 1.4 \cdot 0.94 \cdot 1.0 = 1.32$.

Service facor f_{B3} for the ambient temperature:



ϑ_{amb} = Ambient temperature

Maximum motor speed

At high motor speeds (>1.500 rpm) you will generally experience higher than average noise emissions and a lower than average bearing service life. This depends to a large extent on the transmission ratio and gearbox size in question. Furthermore, high speeds affect the thermal properties and service intervals of the gearbox.

The maximum input speed of the gearbox is usually 3.600 rpm. If you require higher speeds, please contact us.

Ambient temperature

In the standard version the gearboxes can operate at an ambient temperature of –20 °C to +40 °C, if the lubricant recommendations are kept. In the case of a few additional options the category temperatures must be checked.

Other temperature ranges -10 °C ... +50 °C on request.

Required torque T_{2req}

If the drive data and the service factor are selecetd, the required output torque can be determined.

$$T_{2req} = \frac{9550 \cdot P_1}{n_2} \cdot f_{Btot}$$

Selection of the gearbox

The following conditions need to be observed:

$P_1 > P_{req}$
$T_{2rated} > T_{2req}$
$f_B > f_{Btot}$
$T_2 > T_{req}$

Code	Description	Unit
f_{Btot}	Service factor of the driving machine	–
f_B	Service factor of the geared motor	–
P_{2m}	Input power of the motor	kW
P_{req}	Required input power	kW
T_{req}	Required torque	Nm
T_2	Output torque of the geared motor	Nm
T_{2rated}	Nominal output torque of the geared motor	Nm
T_{2req}	Required output torque of the driving machine	Nm

Reduced-backlash gearbox version

Helical, parallel shaft and bevel-helical gearboxes are available on request in a reduced-backlash version. In the transmission table, the torsion angle (φ) is specified for the reduced-backlash version. If a value is not specified, this gearbox cannot be realized with reduced backlash.

A high degree of positioning accuracy is achieved with reduced-backlash gearboxes and the shock loads in the gearbox are reduced at load changeover. When a gearbox is used that has a certain amount of play, the relative position of the output shaft of the gearbox cannot be determined precisely because the controller cannot detect whether the right or left flank of the tooth is engaged.

- Accurate positioning and repeatability
- Maintain position information in the case of a change of direction of rotation
- Reduced shock loading of the tooth flanks

Order code:

Reduced-backlash version **G99**

Permissible radial force

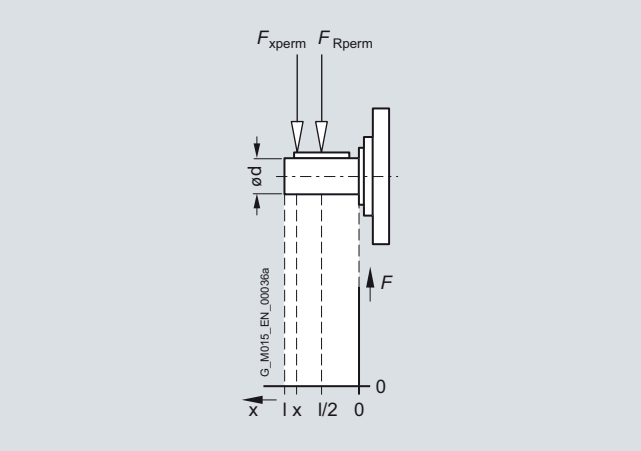
Available radial force

The available radial force F_{Ravail} at the shaft journals results from the available output torque of the geared motor T and the diameter d and type of the output element (e.g. sprocket wheel).

The type of output element determines factor C (see table below), by which the available radial force is to be increased.

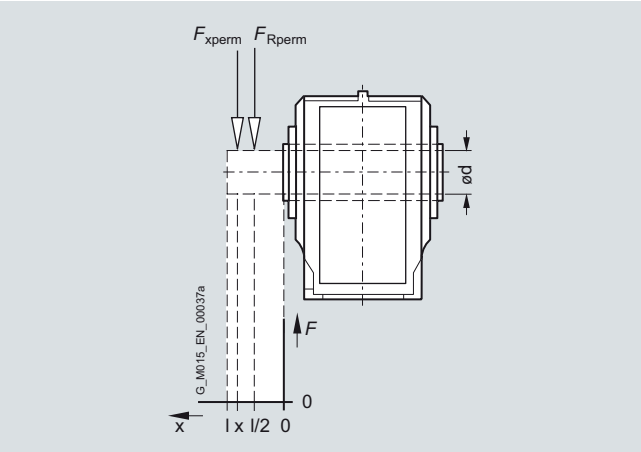
$$F_{Ravail} = 2000 \cdot \frac{T_2}{d} \cdot C$$

Code	Description	Unit
F_{Ravail}	Available radial force resulting from the output torque and the diameter of the output element	N
F_{Rperm}	Permissible radial force at the center of shaft extension	N
d	Diameter of the input element	mm
T_2	Output torque of the geared motor	Nm
F_{xperm1}	Permissible radial force, limited by the bearing service life, at a distance of x from the shaft shoulder	N
F_{xperm2}	Permissible radial force, limited by the shaft strength, at a distance of x from the shaft shoulder	N
C	Additional factor	–
b, d, l, y, z	Gearbox constants	mm
a	Gearbox constant	kNmm
F_{ax}	Axial force at d	N
α	Angle of action of the radial force	°



Factor C for the type of the transmission element

Transmission element	Design	C
Gear wheel	> 17 teeth	1.00
	≤ 17 teeth	1.15
Sprocket wheel	≥ 20 teeth	1.00
	14 – 19 teeth	1.25
	≤ 13 teeth	1.40
Toothed belt	Preload	1.50
V belt	Preload	2.00
Flat belt	Preload	2.50
Agitator / mixer	Rotating radial force	2.50



Permissible radial force (continued)

Permissible radial force

The permissible radial force F_{Rperm} is determined by the required bearing service life, among other things. The nominal service life L_{h10} is determined in accordance with ISO 281. The bearing service life can be calculated for special operating conditions on request, based on the calculation procedure for the modified service life L_{na}.

Furthermore, the permissible radial force is determined by the housing and shaft strength of the gearbox. The selection tables specify the permissible radial force F_{Rperm} for the output shafts. These values refer to the point of load at the center of the shaft extension and are minimum values, which apply to the worst possible conditions in the gearbox (force angle, mounting position, direction of rotation).

If the point of load is not at the center of the shaft extension, the permissible radial force must be calculated as follows: the smaller value of F_{xperm1} (bearing service life) and F_{xperm2} (shaft strength) is the permissible radial force. The calculation does not include additional axial forces.

If the direction of rotation of the output shaft and the additional axial forces are known, or the values in the table are insufficient, our drive experts have to perform the calculation. Our agitator and mixer drives allow you to achieve higher permissible radial forces. These drives are particularly well suited to large and rotating radial forces.

Permissible radial force in accordance with bearing service life for all gearbox types:

$$F_{xperm1} = F_{Rperm} \cdot \frac{y}{(z + x)}$$

Permissible radial force in accordance with shaft strength for bevel helical, parallel shaft, and helical worm gearboxes:

$$F_{xperm2} = \frac{a}{x}$$

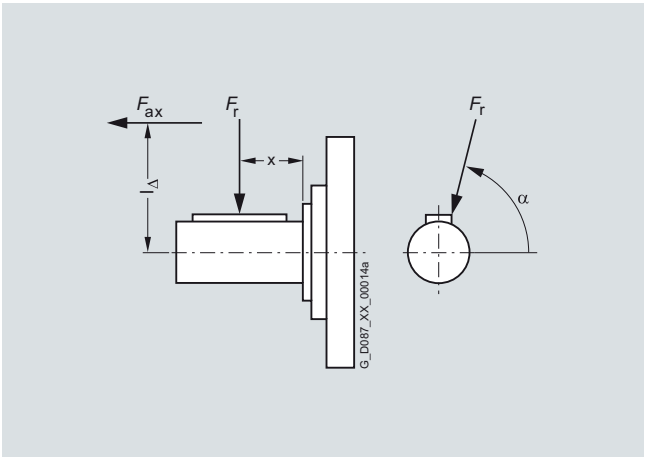
Permissible radial force in accordance with shaft strength for helical and worm gearboxes:

$$F_{xperm2} = \frac{a}{(b + x)}$$

The shaft strength only has to be calculated for solid shafts, with hollow shafts this step can be omitted.

Higher permissible radial forces

The permissible radial force load can be increased, taking the angle of force action α and the direction of rotation into account. Installing reinforced bearings also means that higher loads are permitted on the input shaft.



Permissible axial loads

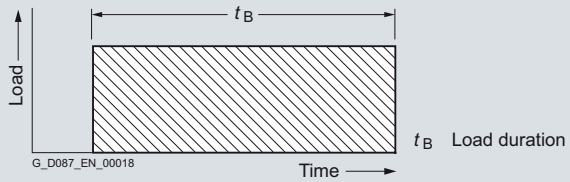
If no transverse force load is present, an axial force F_{ax} (tension or compression) of around 50 % of the specified radial force with standard bearings can be achieved for gearbox sizes 18 to 148.

You can use our "Calculation of input shaft bearing arrangement" assistant in the MOTOX Configurator to calculate the permissible forces. Combined forces with an axial and a radial component can also be calculated. Please contact us in case of doubt.

The permissible radial forces are specified in the gearbox chapters.

Determining the operating mode

If no specifications are made in the power tables, the power ratings specified in the power tables apply to the **S1 operating mode** (continuous duty with constant load) according to EN 60034-1. The same regulation defines the groups of operating modes specified below:



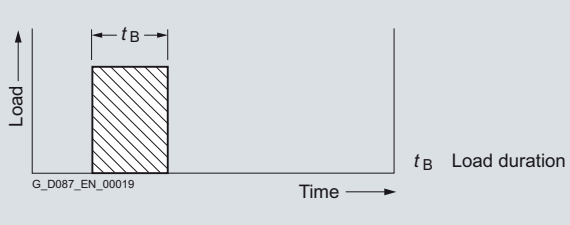
Operating mode S1 · Continuous duty

Operating modes in which starting and electrical braking **do not affect the overtemperature of the stator winding** of the motor:

Operating mode **S2**:

Short-time duty

Operating times of 10, 30, 60, and 90 min. are recommended. After each period of duty the motor remains at zero current until the winding has cooled down to the coolant temperature.

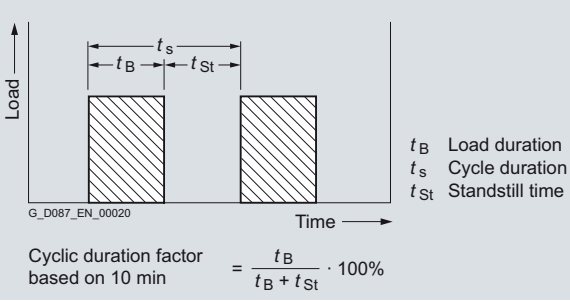


Operating mode S2 · Short-time duty

Operating mode **S3**:

Intermittent duty

Starting does not affect the temperature. Unless any agreement is made to the contrary, the cycle duration is 10 minutes. Values of 15 %, 25 %, 40 %, and 60 % are recommended for the cyclic duration factor.

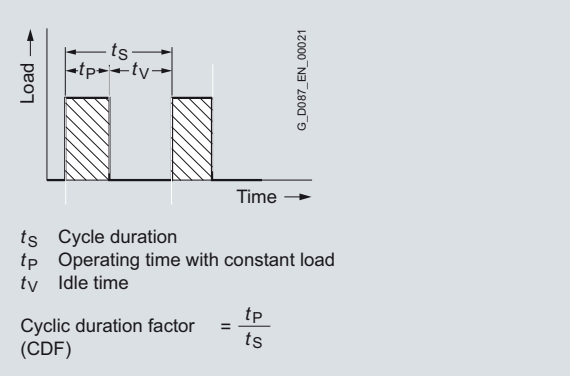


Operating mode S3 · Intermittent periodic duty

Operating mode **S6**:

Continuous duty with intermittent loading

Unless any agreement is made to the contrary, the cycle duration here is also 10 minutes. Values of 15 %, 25 %, 40 %, and 60 % are recommended for the load duration factor.

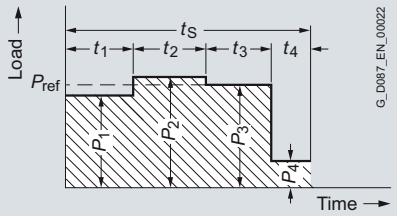


Determining the operating mode (continued)

Operating mode **S10**:

Duty with discrete constant loads

In this mode a maximum of four discrete loads are available, of which each load achieves the thermal steady state.
A load of the same value as the one used in S1 operating mode should be selected for this operating mode.

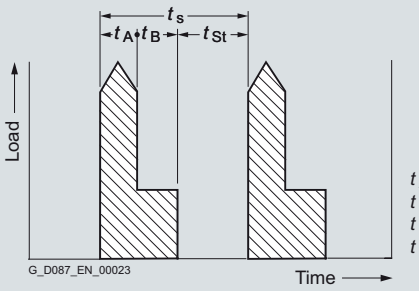


P_i Constant load within one load cycle
P_{ref} Reference load
t_S Cycle duration

Operating modes in which starting and braking have a corresponding **effect on the overtemperature of the stator winding** and of the rotor cage:

Operating mode **S4**:

Intermittent duty where starting affects the temperature



t_A Starting time
t_B Load duration
t_s Cycle duration
t_{St} Standstill time

Cyclic duration factor based on 10 min $= \frac{t_A + t_B}{t_A + t_B + t_{St}} \cdot 100\%$

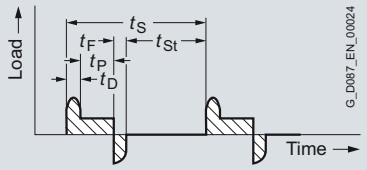
Operating mode S4 · Intermittent periodic duty with starting

Operating mode **S5**:

Intermittent duty where starting and braking affects the temperature

For the **S4** and **S5 operating modes**, this code should be followed by the cyclic duration factor, the moment of inertia of the motor (J_M), and the moment of inertia of the load (J_{Load}), both based on the motor shaft.

Unless any agreement is made to the contrary, the cycle duration here is also 10 minutes. Values of 15 %, 25 %, 40 %, and 60 % are recommended for the cyclic duration factor.



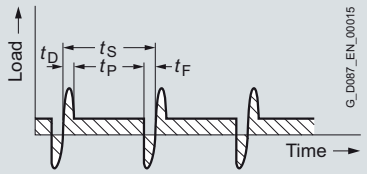
t_S Cycle duration
t_D Starting time
t_P Operating time with constant load
t_F Time with electrical braking
t_{St} Standstill time with windings at zero current

Cyclic duration factor (CDF) $= \frac{t_D + t_P + t_F}{t_S}$

Operating mode **S7**:

Continuous-operation periodic duty with starting and braking

For the S7 and S8 operating modes, the moment of inertia of the load (J_{Load}) based on the motor shaft must be known.



t_S Cycle duration
t_D Starting time
t_P Operating time with constant load
t_F Time with electrical braking

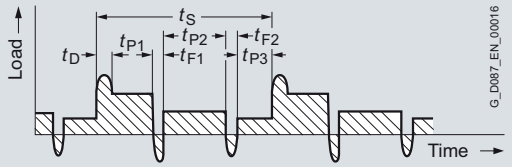
Cyclic duration factor = 1

Determining the operating mode (continued)

Operating mode **S8**:

Continuous-operation duty with non-periodic load and speed variations (inverter-fed operation)

Most of the intermittent operating conditions which occur in real situations are a combination of the operating modes defined above. All operating conditions must be specified in order to accurately define a suitable motor.



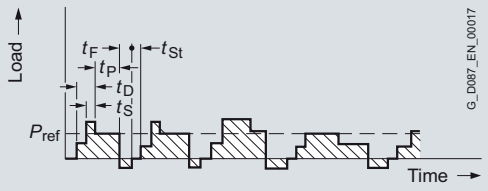
t_S Cycle duration
t_D Starting time
t_P Operating time with constant load (P1, P2, P3)
t_F Time with electrical braking (F1, F2)

Cyclic duration factor (CDF) $= \frac{t_D + t_{P1}}{t_S} \cdot \frac{t_{F1} + t_{P2}}{t_S} \cdot \frac{t_{F2} + t_{P3}}{t_S}$

Operating mode **S9**:

Continuous-operation duty with non-periodic load and speed variations (inverter-fed operation)

Most of the intermittent operating conditions which occur in real situations are a combination of the operating modes defined above. All operating conditions must be specified in order to accurately define a suitable motor.



t_D Starting time
t_P Operating time with constant load
t_F Time with electrical braking
t_{St} Standstill time with windings at zero current
t_S Time with overload

Operating modes according to EN 60034 (IEC 60034-1)

Operating mode	Description	Information required		k_{DC}
S1	Continuous duty with 100 % DC	–		
S2	Constant load for brief period, e.g. S2 - 30 min	Load duration	60 min	1.10
			30 min	1.20
			10 min	1.40
S3	Intermittent periodic duty without starting (cyclic operation), e.g. S3 - 40 %	Cyclic duration factor DC in % (based on 10 min)	60 %	1.10
			40 %	1.15
			25 %	1.30
			15 %	1.40
S4 … S10	Intermittent periodic duty with starting	Cyclic duration factor DC in %, times switched on per hour, load torque, and moment of inertia The operating mode and motor power can be determined if the number of startings per hour, starting time, load duration, type of braking, braking time, idle time, cycle time, standstill time, and required power are specified.	On request	

According to the table below, the motor list powers can be converted to the lower duty cycle using the corresponding k_{DC} factors for the S1, S2, and S3 operating modes.

With enhanced performance, you should note that the breakdown torque ratio must not fall below 1.6.

$$\frac{T_{Bd}}{T_{DC}}$$

$$P_{DC} = P_{rated} \cdot k_{DC}$$
$$T_{DC} \sim T_{rated} \cdot k_{DC}$$

Code	Description	Unit
P_{DC}	Power rating for the new duty cycle	–
P_{rated}	Rated motor power	kW
k_{DC}	Factor for enhanced performance	kgm^2
T_{DC}	Torque for the new duty cycle	Nm
T_{Bd}	Breakdown torque	Nm
T_{rated}	Rated torque	Nm

Coolant temperature and site altitude

The rated power specified in the selection tables in section 8 applies to continuous duty (S1) or inverter-fed operation (S9) according to IEC 60034-1 at the corresponding rated frequency, a coolant temperature of 40 °C and a site altitude of 1.000 m above sea level. Please contact us if higher coolant temperatures are to be used. The table containing correction factors provides a rough idea of derating if conditions are different.

This results in a permissible motor power of:

$$P_{perm} = P_{rated} \cdot k_{HT}$$

If the permissible motor power is no longer adequate for the drive, a check should be performed as to whether or not the motor with the next higher rated power fulfills the requirements.

Code	Description	Unit
P_{perm}	Permissible motor power	kW
P_{rated}	Rated motor power	kW
k_{HT}	Factor for abnormal coolant temperature and site altitude	–

Factor k_{HT} for different site altitudes and / or coolant temperatures

Site altitude (SA)	Coolant temperature (CT)					
m	< 30 °C	30… 40 °C	45 °C	50 °C	55 °C	60 °C
1 000	1.07	1.00	0.96	0.92	0.87	0.82
1 500	1.04	0.97	0.93	0.89	0.84	0.79
2 000	1.00	0.94	0.90	0.86	0.82	0.77
2 500	0.96	0.90	0.86	0.83	0.78	0.74
3 000	0.92	0.86	0.82	0.79	0.75	0.70
3 500	0.88	0.82	0.79	0.75	0.71	0.67
4 000	0.82	0.77	0.74	0.71	0.67	0.63

Selecting the brake

MOTOX geared motors can be supplied with fail-safe spring-operated disk brakes in order to reduce the motor's follow-on time or to hold loads, for example. Our MODULOG modular system can be used to assign / attach several brake sizes to one motor size. See Chapter 8 for information on assigning brake sizes to motor sizes, and on possible brake options.

The following information is required in order to select and check the brake:

- Speed
- Load torque
- Moments of inertia
- Number of startings

Selecting the braking torque

The braking torque must be selected in accordance with the particular drive scenario. The following criteria are crucial when it comes to making this selection: static safety, required braking time, permissible deceleration rate, and possible braking distance and brake wear.

The ambient conditions and number of startings are also important. Our drive experts will be able to provide optimum brake sizing.

In principle the selection is made according to the formula:

$$T_{br} > T_x \cdot \frac{k}{\eta}$$

Where k = 1.0 - 2.5 is selected. As a general rule of thumb, the factor for horizontal motion is around 1.0 - 1.5 and for vertical motion around 2.0 - 2.5. However, the exact specification of the braking torque depends to a large extent on the particular operating conditions.

Operating time of the brake

The time it takes the motor to come to a standstill comprises the following components: the application time of the brake t_1 and the braking time t_{br}. The first is the time it takes the brake to reach 90 % of its braking torque. This time may be circuit- and actuation-dependent. This information is provided for each brake in Chapter 8. The braking time can be calculated as follows:

$$t_{br} = \frac{(J_M + J_{add} + J_x \cdot \eta) \cdot n_{br}}{9.55 \cdot (T_{br} \pm T_x \cdot \eta)} \quad [s]$$

If T_x supports the braking operation, T_x is positive, otherwise it is negative.

Braking distance and positioning accuracy

Braking distance s_{br} is the distance traveled by the driven machine during braking time t_{br} and application time t_1. The formula below applies to horizontal motion and upward vertical motion. With linear motion, a positioning accuracy of around ± 15 % can be assumed. However, this can be heavily influenced by the condition of the brake.

$$s_{br} = v \cdot 100 \cdot (t_1 + 0.5 \cdot t_{br}) \quad [mm]$$

Braking energy per braking operation

The braking energy W per braking operation comprises the energy of the moments of inertia to be braked and the energy which must be applied in order to brake against a load torque:

$$W = \frac{T_{br}}{T_{br} \pm T_x \cdot \eta} \cdot \frac{(J_M + J_{perm} + J_x \cdot \eta) \cdot n_{br}^2}{182.5}$$

T_x is positive if the load torque is working against the braking torque
(horizontal motion, upward vertical motion).

T_x is negative if it supports the braking operation
(downward vertical motion).

The permissible operating energy Q_{perm} must be checked against the relevant number of startings using the "Permissible operating energy" diagram (see Chapter 8). This is of particular importance for emergency-stop circuits.

$$W < Q_{perm}$$

Code	Description	Unit
T_{br}	Rated braking torque	Nm
T_x	Load torque	Nm
k	Factor for taking operating conditions into account	kgm²
η	Efficiency	%
t_{br}	Braking time	s
t_1	Application time of the brake	ms
J_{mot}	Moment of inertia of the motor	kgm²
J_{add}	Additional moment of inertia (e.g. centrifugal mass or high inertia fan)	kgm²
J_x	Reduced moment of inertia of the load	kgm²
n_{br}	Braking speed	rpm
s_{br}	Braking distance	mm
W	Friction energy per braking operation	J
Q_{perm}	Permissible operating energy	J
L_{rated}	Service life of the brake lining until readjustment	h
$L_{ratedmax}$	Service life of the brake lining until replacement = total service life	h
v	Conveying speed	m/s
W_V	Friction energy until the brake is adjusted	MJ
W_{tot}	Friction energy until the brake lining is replaced	MJ
Z	Number of startings	1/h

Brake service life

The brake lining wears due to friction, which increases the air gap and the application time of the brake. The air gap can be readjusted. The friction lining should be replaced after it has been readjusted a certain number of times.

Service life of the brake lining until readjustment:

$$L_{rated} = \frac{W_V}{W \cdot Z}$$

Service life of the brake lining until replacement:

$$L_{ratedmax} = \frac{W_{tot}}{W \cdot Z}$$

Motors for inverter-fed operation

Selection of motors on the inverter

For selecting electrical drives on the inverter, the torque-speed response of the motors and the driving machine is important.

With inverter-fed operation, it is particularly important to pay attention to the torque limit curve. The torque of the driving machine must be smaller during continuous operation than the motor limit torque. The design of the motor depends to a large extent on the desired speed control range. In general, a range from 25 to 50 Hz is preferable.

The effectiveness of the self-ventilation is reduced with decreasing speed, which in turn also reduces the continuous output torque. Forced ventilation can be used to prevent the torque from decreasing.

The fan noise can increase at speeds that are higher than the rated speed of self-ventilated geared motors.
Above the frequency limit, the continuous output torque decreases (field weakening).

Bearings and bearing currents

With operation with inverters, additional bearing currents can occur. They are mainly caused by the steep voltage rises which occur during switching. Without output filters, significant voltage variations can occur on the winding terminals. This phenomenon mainly occurs with larger machines.

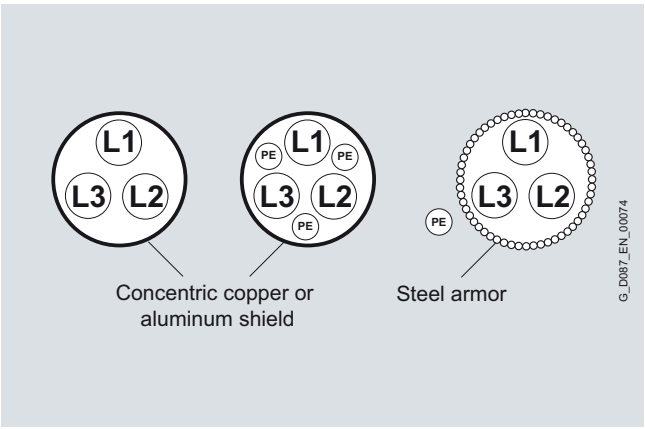
EMC-compliant installation of the drive system is a basic prerequisite for preventing premature bearing damage via bearing currents.

The most important measures for reducing bearing currents:

- Use of cables with a symmetrical cable cross-section,
- Use of grounding cables with low impedance in a large frequency range (0 Hz up to approximately 70 MHz), for example, plaited copper ribbon cables, HF litz wires,
- Separate HF equipotential-bonding cable between the motor housing and the driving machine,
- Separate HF equipotential-bonding cable between the motor housing and the inverter PE busbar,
- 360° HF contacting of the cable shield on the motor housing and the inverter PE busbar. This can be achieved using EMC cable glands at the motor end and EMC shield clips at the inverter end, for example,
- Use of motor reactors,
- Common-mode filters at the inverter output,
- Insulated motor bearing at the non-drive end.
  Motors from size 280 are delivered with bearing insulation for inverter-fed operation.

Mechanical stress and grease lifetime

High speeds that exceed the rated speed and the resulting increased vibrations alter the mechanical running smoothness and the bearings are subjected to increased mechanical stress. This reduces the grease lifetime and the bearing service life. More detailed information is available on request.



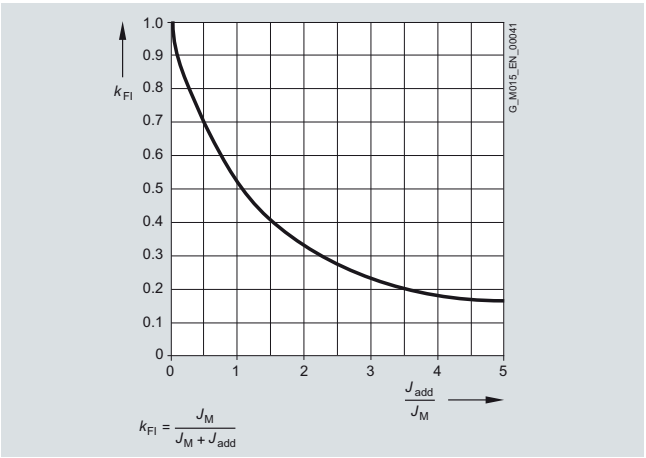
Determining the permissible number of startings Z_{perm}

A high number of startings means that the motor winding will be subject to a thermal load. The permissible no-load operating Z_0 for brake motors is specified in the no-load operating tables. The permissible number of startings Z_{perm} has to be determined for different operating cases. This value is influenced by the corresponding load torque, any additional moment of inertia, the power requirement, and the cyclic duration factor. These can be evaluated using the factors k_M, k_{FI}, and k_P.

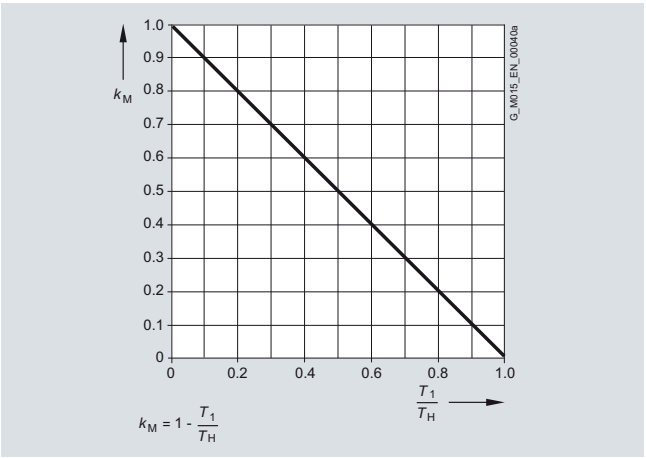
$$Z_{perm} = Z_0 \cdot k_M \cdot k_{FI} \cdot k_P$$

Code	Description	Unit
J_{mot}	Moment of inertia of the motor	kgm^2
J_{add}	Additional moment of inertia (e.g. centrifugal mass or high inertial fan)	kgm^2
k_M	Factor for taking the counter torque during acceleration into account	–
k_{FI}	Factor for taking the additional moment of inertia into account	–
k_P	Factor for taking the required power and duty cycle into account	–
T_{rated}	Rated torque of the motor	Nm
T_H	Acceleration torque of the motor	Nm
P_{rated}	Rated motor power	kW
Z_{perm}	Permissible number of startings	rph
Z_0	No-load operating from the list	rph

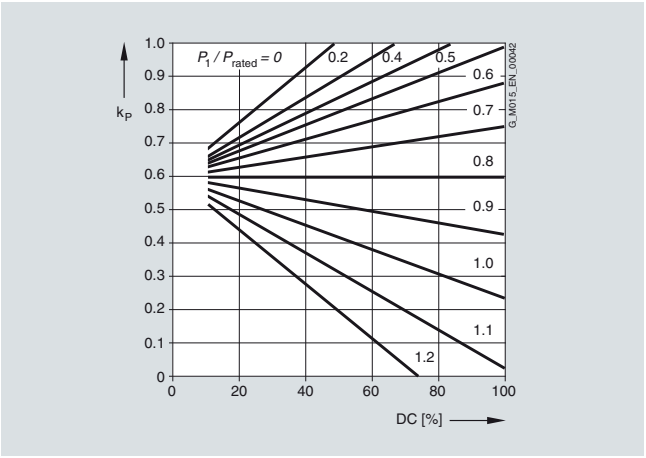
During operation at 60 Hz, the calculated permissible number of startings Z_{perm} must be reduced by 25 %. See the technical data for brakes found in Chapter 8 for the permissible number of startings during operation with function rectifiers.



Additional moment of inertia



Torque during acceleration



Required power and duty cycle

Checking the input torque for mounted units

Geared motors are usually integrated, i.e. they are mounted on the gearbox directly and the products are supplied as complete drives. Alternatively, the gearboxes can also be supplied with various input units for motor mounting. The criteria below must be taken into account, particularly for special motors.

Maximum input speed

We recommend that four-pole motors are mounted in order to achieve optimum gearbox service life. Higher input speeds can have an effect on bearing service life and the thermal properties of the gearbox, among other things.
See the section titled "Maximum speed", page 1/22.

Permissible radial force of the input shaft

Input units A and P can be powered by a V belt drive, for example. This results in a radial load on the input shaft. The permissible radial forces are specified in the section titled "Input unit".

Maximum input torque

The input units are primarily designed for four-pole standard three-phase AC motors. Considerably higher motor torques, which are above the maximum permissible input torque, may occur with special motors.

First of all, the continuous torque T_{1mot} of the motor and the permissible input torque of the input unit T_1 must be checked, along with the maximum torques (starting, breakdown, and braking). The torques for input units are specified in the section titled "Input unit". Please contact us if you have any questions.

$$T_{1mot} < T_1 = \frac{P_1 \cdot 9550}{n_1}$$

$$T_{1max} < 2.5 \cdot T_1$$

Code	Description	Unit
T_1	Permissible input torque of the input unit	Nm
T_{rated}	Rated torque of the motor	Nm
T_{1max}	Temporarily permissible max. input torque of the input unit	Nm
n_1	Input speed of the motor	rpm
P_1	Input power of the motor	kW

Overview of drive sizing data

Code	Description	Unit
a	Gearbox constant	kNmm
b, d, l, y, z	Gearbox constants	mm
C	Factor	–
d	Diameter of the input element	mm
DC	Cyclic duration factor (CDF)	%
f_{Btot}	Service factor of the driving machine	–
f_B	Service factor of the geared motor	–
F_{ax}	Axial force at d	N
F_r	Radial force at the output shaft	N
F_{Ravail}	Available radial force resulting from the output torque and the diameter of the output element	N
F_{Rperm}	Permissible radial force at the center of shaft extension (l/2)	N
F_{xperm1}	Permissible radial force, limited by the bearing service life, at a distance of x from the shaft shoulder	N
F_{xperm2}	Permissible radial force, limited by the shaft strength, at a distance of x from the shaft shoulder	N
i	Gearbox ratio	–
J_2	Moment of inertia based on the output speed of the gearbox	kgm^2
J_B	Moment of inertia of the brake	kgm^2
J_{Load}	All external moments of inertia (based on the motor shaft)	kgm^2
J_M	Moment of inertia of the motor	kgm^2
J_x	Reduced moment of inertia of the load	kgm^2
J_{add}	Additional moment of inertia (e.g. centrifugal mass or high inertia fan)	kgm^2
J_{Fan}	Centrifugal mass fan of handwheel	kgm^2
k	Factor for taking operating conditions into account	–
k_{DC}	Factor for enhanced performance	–
k_{FI}	Factor for taking the additional moment of inertia into account	–
k_{HT}	Factor for abnormal coolant temperature and site altitude	–
k_M	Factor for taking the counter torque during acceleration into account	–
k_P	Factor for taking the required power and duty cycle into account	–
L_{rated}	Service life of the brake lining until readjustment	h
$L_{ratedmax}$	Service life of the brake lining until replacement	h
m_{AF}	Mass acceleration factor	–
n_1	Input speed of the gearbox	rpm
n_2	Output speed of the gearbox	rpm
n_{br}	Braking speed	rpm

Code	Description	Unit
P_{2m}	Input power of the motor	kW
P_2	Output power of the gearbox	kW
P_{DC}	Power rating for the new duty cycle	kW
P_{req}	Required input power	kW
P_{rated}	Rated motor power	kW
P_{perm}	Permissible motor power	kW
Q_{perm}	Permissible operating energy	J
r	Radius of the output element	m
s_{br}	Braking distance	m
t_1	Application time of the brake	ms
t_{br}	Braking time	s
T_1	Permissible input torque of the input unit	Nm
T_{rated}	Rated torque of the motor	Nm
T_{1max}	Temporarily permissible max. input torque of the input unit	Nm
T_2	Output torque of the geared motor	Nm
T_{2req}	Required output torque of the driving machine	Nm
T_{2rated}	Nominal output torque of the geared motor	Nm
T_{br}	Rated braking torque	Nm
T_{DC}	Torque for the new duty cycle	Nm
T_{req}	Required torque	Nm
T_H	Acceleration torque of the motor	Nm
T_{Bd}	Breakdown torque	Nm
T_{rated}	Nominal torque	Nm
T_{avail}	Available torque of the geared motor	Nm
T_x	Load torque	Nm
v	Conveying speed	m/s
W	Friction energy per braking operation	J
W_{tot}	Friction energy until the brake lining is replaced	MJ
W_V	Friction energy until the brake is adjusted	MJ
Z	Number of startings	1/h
Z_{perm}	Permissible number of startings	1/h
Z_0	No-load operating from the list	1/h
α	Angle of action of the radial force	°
η	Efficiency	%
ϑ_{amb}	Ambient temperature	°C

Important drive technology variables

SI unit Variable	Abbreviation		Unit abbreviation		Designation or conversion rate *)
	SI	Previously	SI	Previously	
Length (distance)	l	L, s	m	m	1 km = 1.000 m
Area	A	F	m^2	m^2	1 m^2 = 100 dm^2
Volume	V	V	m^3	m^3	1 m^3 = 1.000 dm^3 1 dm^3 = 1 l
Plane angle	α, β, γ	α, β, γ	rad	Degrees °	1 rad = 1 m/m 1 L = π/2 rad 1° = π/180 rad
Rotation angle	ϕ	φ		Degrees °	1' = 1°/60; 1'' = 1'/60
Time					1 min = 60 s 1 h = 60 min
Time range	t	t	s	s	1 d = 24 h
Duration					1 a = 24 h
Frequency	f	f	Hz	1/s	1 Hz = 1/s
Speed	n	n	rpm	rev/min	Revolutions per minute
Velocity	v	v	m/s	m/s	1 km/h = $\frac{1}{3.6}$ m/s
Acceleration Free-fall acceleration	a g	b g	m/s^2	m/s^2	g = 9.81 m/s^2
Angular velocity	ω	Ω	rad/s	1/s	
Angular acceleration	α	ξ	rad/s^2	$1/s^2$	
Mass	m	m	kg	kg	1
Density		d	kg/dm^3	kg/dm^3	10^3
Force Weight force	F G	P, K G	N	kp	9.81 1 N = 1 kg · 1 m/s^2
Pressure Mechanical tension	p σ	p σ	Pa N/m^2 N/mm^2	 kp/cm^2 kp/mm^2	1 Pa = 1 N/m^2 9.81 · 10^4 9.81
Work Energy Quantity of heat	W W Q	A E Q	 J 	kpm kcal 	9.81 4.187 1 J = 1 Nm = 1 Ws
Force torque Torque Bending torque	 T 	M_t M_d M_b	 Nm 	 kpm 	9.81 1 Nm = 1 J
Power rating	P	N	W	PS	735.5; 1 W = 1 J/s = 1 Nm/s = $\frac{kgm^2}{s^3}$
Moment of inertia	J	θ	kgm^2	kpm^2	9.81

*) The numerical value of a variable in previously used units multiplied by the conversion rate gives the numerical value of the variable in the SI unit.

Conversion between kW and hp:

1 kW = 1.34102 hp

1 hp = 0.745700 kW

1 hp = 1.01387 PS

hp = horse power (US)
PS = Pferdestärke

Important drive technology variables (continued)

SI unit Variable	Abbreviation		Unit abbreviation		Designation or conversion rate *)
	SI	Previously	SI	Previously	
Dynamic viscosity	η	η	Pa · s	P	10^{-1}
Kinematic viscosity	υ	υ	m^2/s	St	10^{-4}
Electrical current intensity	I	I	A	A	1 A = 1 W/V = 1 V/Ω
Electrical voltage	U	U	V	V	1 V = 1 W/A
Electrical resistance	R	R	Ω	Ω	1 Ω = 1 V/A = 1/S
Electrical conductance	G	G	S	S	1 S = 1/Ω
Electrical capacitance	C	C	F	F	1 F = 1 C/V
Electric charge	Q	Q	C	C	1 C = 1 A · s
Inductance	L	L	H	H	1 H = 1 Vs/A
Magnetic flux density Induction	B	B	T	G	10^4 1 T = 1 Wb/m^2
Magnetic field strength	H	H	A/m	A/m	
Magnetic flux	ϕ	ϕ	Wb	M	10^8 1 Wb = 1 V · s
Temperature	T(ϑ)	t	K(°C)	°C	0 K = -273.15 °C

*) The numerical value of a variable in previously used units multiplied by the conversion rate gives the numerical value of the variable in the SI unit.

General technical data

1

Overview

MOTOX geared motors are available in an almost infinite number of combinations for adaptation to a wide range of drive scenarios. All the usual additional components and variants are also offered.

Made-to-measure solutions for all kinds of drive technology tasks are achieved with different gearbox types (helical, parallel shaft, bevel helical, helical worm, and worm), combined with motors by means of modular mounting technology.

Designs in accordance with standards and specifications

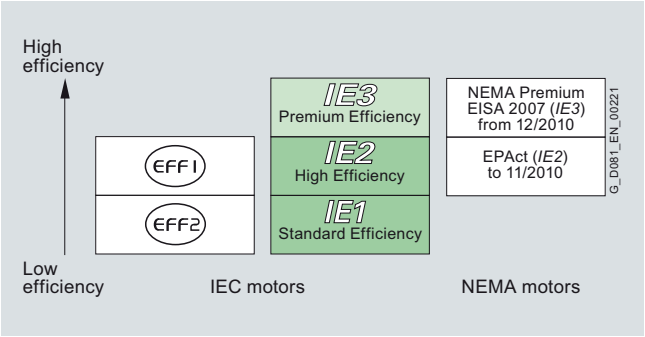
New efficiency classes and efficiences according to IEC 60034-30:2008 and IEC 60034-2-1:2007

New efficiency classes according to IEC 60034-30:2008

Different energy efficiency standards exist worldwide for asynchronous motors. To promote international harmonization, the international standard IEC 60034-30:2008 (Rotating electrical machines – Part 30: Efficiency classes of single-speed, three-phase, cage-induction motors (IE code)) was created. This groups low-voltage asynchronous motors into new efficiency classes (valid since October 2008). The efficiencies of IEC 60034-30:2008 are based on losses determined in accordance with the IEC 60034-2-1:2007 standard. This has been valid since November 2007 and will replace the previous standard IEC 60034-2:1996 as of November 2010. The supplementary losses are now measured and no longer added as a percentage.

New standard classes for efficiencies
A new nomenclature applies to the new efficiency classes (IE = International Efficiency):

- IE1 (Standard Efficiency)
- IE2 (High Efficiency)
- IE3 (Premium Efficiency)



New efficiency classes

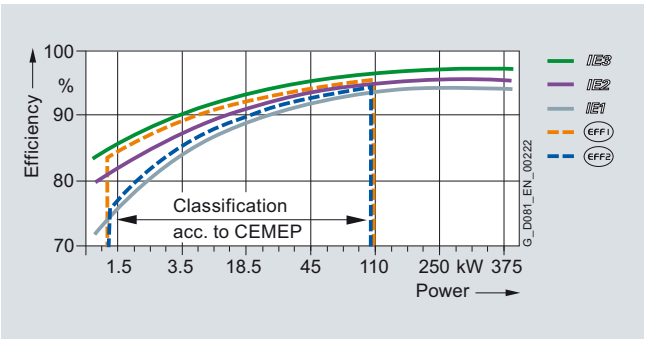
New measuring method according to IEC 60034-2-1:2007

With the new measuring method, the supplementary losses are no longer applied as a percentage (0.5 %), but instead they are determined with measurements (IEC 60034-2-1: 2007). The nominal efficiencies are therefore reduced from EFF1 to IE2 and from EFF2 to IE1, even though there have been no technical or physical changes to the motors.

Previously: P_{LL} = 0.5 % of *P* added

Now: P_{LL} = individual measurement

P_{LL} = load-dependent supplementary losses.



IE1 to IE3 efficiencies 4-pole 50 Hz

The following table shows examples of the efficiency values according to the new and old loss calculating methods.

	EFF measuring method (incl. percentage losses) EN / IEC 60034-2:1996 50 Hz	Losses determined according to IEC 60034-2:2007 50 Hz	Losses determined according to IEC 60034-2:2007 60 Hz
5.5 kW 4-pole	89.2 %	87.7 %	89.5 %
45 kW 4-pole	93.9 %	93.1 %	93.6 %
110 kW 4-pole	Not defined	94.5 %	95.0 %

Background information

The EuP directive (Energy Using Products) is implemented in the national laws of EU member countries. The framework conditions for the European directives have already been agreed. EU directive 2005/32/EC (= EuP directive) is based on IEC 60034-30:2008 with regard to the minimum efficiency values.

This directive is implemented in Germany in the form of the so-called "Energiebetriebene-Produkte-Gesetz" (EBPG - Energy Using Products Directive).

Designs in accordance with standards and specifications (continued)

The most important changes at a glance:

	CEMEP voluntary EU agreement	NEMA	EuP directive based on IEC 60034-30:2008 standard EuP = Energy Using Products
Description	Voluntary agreement between the EU commission and the European sector committee of manufacturers of electrical machines (CEMEP)	The current legislature in USA/CAN/MX also governs efficiencies	The EuP directive must be implemented in national law in all EU countries. The determination of losses, and therefore of efficiency classes, is based on IEC 60034-2-1:2007
Number of poles	2, 4	2, 4, 6	2, 4, 6
Performance range	1.1 – 90 kW	0.75 – 150 kW	0.75 – 375 kW
Level	Standard – EFF3 Enhanced efficiency – EFF2 Highly efficient – EFF1	High Efficiency NEMA Premium	Standard Efficiency – IE1 High Efficiency – IE2 Premium Efficiency – IE3
Voltage	400 V, 50 Hz	230 / 460 V, 60 Hz	< 1000 V, 50 / 60 Hz
Degree of protection	IP5X	Open + closed motors	All
Motors with brake	NO	YES	In agreement
Geared motors	NO	NO	YES
Ex motors	NO	YES	EuP directive – NO IEC 60034-30 – YES (but explosion protection always has a higher priority)
Law	Voluntary agreement; will be replaced on implementation of the national measures.	Up to 11/2010 EPACT (IE2) From 12/2010 EISA 2007 Premium (IE3) minimum efficiency	IEC 600034-30 standard, valid since October 2008, EuP

For more information on EuP:

- Excluded: Explosion-proof motors according to ATEX, brake motors, smoke-extraction motors
- Deadline 16 June 2011: IE2 minimum efficiency for motors from 0.75 kW to 375 kW
- Deadline 01 January 2015: IE3 minimum efficiency for motors from 7.5 kW to 375 kW or a combination of IE2 motor and frequency converter
- Deadline 01 January 2017: IE3 minimum efficiency for all motors from 0.75 kW to 375 kW or a combination of IE2 motor and frequency converter

Abbreviations

CEMEP – Comité Européen de Constructeurs de Machines Électriques et d'Électronique de Puissance (European sector committee of manufacturers of electrical machines)

EISA 2007 – Energy Independence and Security Act of 2007

EPACT – Energy Policy Act

NEMA – National Electrical Manufacturers Association

IEC – International Electrotechnical Commission

IE – International Efficiency

What will change?

The rating plates of the motors will be adapted to the new technical data and their clarity and readability will be enhanced (for examples, see page 1/38).

For motors up to frame size 315 L, this means:

- Nominal efficiencies in accordance with the IEC 60034-30 standard are specified regardless of the actual efficiency, i.e. in accordance with the standardized performance classes such as 7.5 kW, 11 kW and 15 kW, nominal efficiencies only will be offered in accordance with efficiency class IE1 and IE2.
- The rated currents have been adapted in accordance with the new efficiencies. The motor rated currents will increase minimally (by up to 3 %).
- There is no need for a voltage range to be specified on the new rating plates. The rated voltages only are specified.

  Note: The transition period for adjustment of mains voltages with increased tolerances within the EU expired on January 1, 2008. Since then the permissible mains tolerances are 230 / 400 V ±10 %, 50 Hz and 400 / 690 V ±10 %, 50 Hz.

Summary

The standard motor series LA and LG will be converted to the new efficiency designations "IE1" and "IE2" in accordance with IEC 60034-30:2008. The order numbers will remain unchanged.

This affects all motors that were previously designated with "EFF2" and "EFF1" as well as the motor types that have been added due to the IEC 60034-30:2008 efficiency standard:

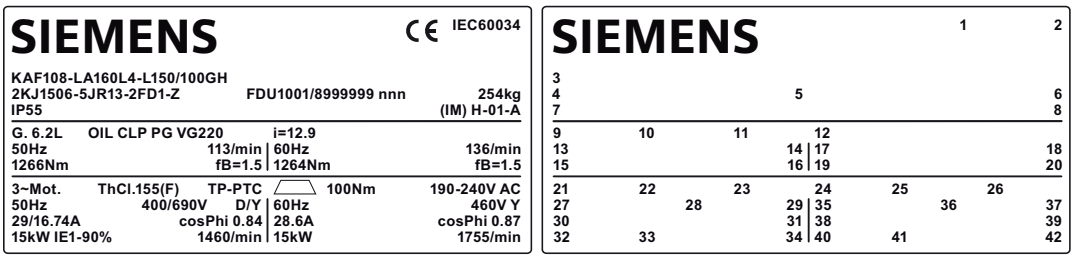
- 2-pole, 4-pole and 6-pole motors (only "single-speed motors", not pole-changing motors and not 8-pole motors)
- Output range from 0.75 kW to 375 kW

A detailed presentation of the affected motors, including their frame sizes, can be found in the overview tables in the separate catalog parts under "Orientation" in the "Selection and ordering data". The changed technical data is also listed here.

Designs in accordance with standards and specifications (continued)

Example of rating plate

Due to the IE changeover, the affected motors will be equipped with new rating plates complete with the new technical data.



1 CE marking or, if required, other marking
2 Standard taken as a basis
3 Type - Type of construction - Size
4 Order No.
5 Serial No.
6 Weight m [kg]
7 Degree of protection acc. to IEC 60034-5 and IEC 60529
8 Mounting position (IM)
9 Oil quantity [l] main gearbox / intermediate gearbox + extruder flange
10 Kind of oil
11 Oil viscosity ISO VG Class acc. to DIN 51519 / ISO 3448
12 Total transmission ratio *i*

Frequency 1
13 Rated frequency *f* [Hz]
14 Speed at the output n_2 [rpm]
15 Torque at the output T_2 [Nm]
16 Service factor f_B

Frequency 2
17 Rated frequency *f* [Hz]
18 Speed at the output n_2 [rpm]
19 Torque at the output T_2 [Nm]
20 Service factor f_B

Motor data
21 Phase number and kind of current of the motor
22 Temperature class Th.Cl.
23 Motor protection (TP)
24 Symbols (IEC 60617-2): = Brake
25 Braking torque T_{br} [Nm]
26 Brake supply voltage *U* [V]

Frequency 1
27 Rated frequency *f* [Hz]
28 Rated voltage / rated voltage range *U* [V]
29 Circuit, graphical symbol acc. to DIN EN 60617 T6 / IEC 60617-6
30 Rated current *I* [A]
31 Power factor cos φ
32 Rated power *P* [kW], operating mode (if ≠ S1)
33 Designation of the efficiency class acc. to IEC 60034-30
34 Rated speed n_1 [rpm]

Frequency 2
35 Rated frequency *f* [Hz]
36 Rated voltage / rated voltage range *U* [V]
37 Rated current *I* [A]
38 Power factor cos φ
39 Circuit, graphical symbol acc. to DIN EN 60617 T6 / IEC 60617-6
40 Rated power *P* [kW], operating mode (if ≠ S1)
41 Designation of the efficiency class
42 Rated speed n_1 [rpm]

Designs in accordance with standards and specifications (continued)

Minimum efficiencies required by law

In 1997, an act was passed in the USA to define minimum efficiencies for low-voltage three-phase AC motors (EPACT = Energy Policy Act). An act is in force in Canada that is largely identical, although it is based on different verification methods. The efficiency is verified for these motors for the USA using IEEE 112, Test Method B and for Canada using CSA-C390. Apart from a few exceptions, all low-voltage three-phase AC motors exported to the USA or Canada must comply with the legal efficiency requirements.

The law demands minimum efficiency levels for motors with a voltage of 230 and 460 V at 60 Hz, in the power range 1 to 200 hp (0.75 to 160 kW) with 2, 4, and 6 poles. Explosion-proof motors must also be included. The EPACT efficiency requirements exclude, for example:

- Motors whose size power classification does not correspond with the standard series according to NEMA MG1-12.
- Flange-mounting motors without feet
- Brake motors
- Inverter-fed motors
- Motors with design letter C and higher.

For more information on EPACT:

www.eren.doe.gov/

Special requirements for the USA: Energy Policy Act

The act lays down that the nominal efficiency at full load and a "CC" number (Compliance Certification) must be included on the rating plate.
The "CC" number is issued by the US Department of Energy (DOE).
The following information is stamped on the rating plate of EPACT motors which must be marked by law:
Nominal efficiency (service factor SF 1.15), design letter, code letter, CONT, CC no. CC 032A (Siemens), and NEMA MG1-12.

Special requirements for Canada: CSA – Energy Efficiency Verification

These motors fulfill the minimum efficiency requirements laid down by the CSA standard C390. These motors can be ordered and feature the CSA-E mark on their rating plates.

NEMA – National Electrical Manufacturing Association

Data on the rating plate:

Rated voltage range, design letter, code letter, CONT, and NEMA MG1-12.

Order code:
Design in accordance with NEMA **N65**

UL-R – Underwriters Laboratories Inc. listing

The motors are listed for up to 600 V by Underwriters Laboratories Inc. ("Recognition Mark" = R/C).

Motor voltages up to 600 V are certified in accordance with UL.

"UL Recognition Mark" is included on the rating plate of the motor.

In addition, the motor is designed to meet the NEMA MG1-12 electrical standard and includes the following data on the rating plate:
Rated voltage, nominal efficiency, design letter, code letter, CONT, and NEMA MG1-12.

Externally or internally mounted components such as:

- Motor protection
- Heating element
- External fan unit
- Brake
- Encoder
- Plug connection

are UL-R/C, CSA, or C-US listed or used by manufacturers in accordance with regulations.

UL-R/C cable glands must be used for cable entry.

Order code:
Design in accordance with UL-R **N37**

Designs in accordance with standards and specifications (continued)

CSA – Canadian Standard Association

Motors are approved for up to 690 V in accordance with the Canadian regulations of the "Canadian Standard Association" (CSA). Externally or internally mounted components which are used are listed by CSA or are used by manufacturers in accordance with regulations. The CSA mark and the rated voltage are included on the rating plate.

When energy-saving motors are ordered, they also include the CSA-E mark on the rating plate.

Order code:
Design in accordance with CSA **N36**

UL-R and CSA approval

UL-R approval and CSA approval can also be ordered together for the motors.

Order code:
Design in accordance with UL-R and CSA **N38**

CCC – China Compulsory Certification

"Small power motors" which are exported to China must be certified up to a rated power of:

2-pole: ≤ 2.2 kW

4-pole: ≤ 1.1 kW

6-pole: ≤ 0.75 kW

8-pole: ≤ 0.55 kW

The **LA motors which must be certified** are certified by the CQC (China Quality Cert. Center). When one of these motors is ordered, the logo "CCC (Safety Mark)" is included on the rating plate and the packaging.

Notes:

Chinese customs checks the need for certification of imported products by means of the commodity code.

The following do not need to be certified:

- Motors imported to China which have already been installed in a machine
- Repair parts

Order code:
Design in accordance with CCC **N67**

CEEL – China Energy Efficiency Label

In June 2008 China introduced mandatory energy efficiency labeling for electric motors.

Since September 1, 2008, when the transition period expired, the applicable electrical motors could only be imported and sold in China with a valid "China Energy Efficiency Label".

The motor must be labeled with the "China Energy Efficiency Label" sticker, which states the efficiency class.

Apart from the Energy Label sticker (dimensions 80 x 54 mm) the efficiency must also be stated on the rating plate.

The labeling requirements apply to 2, 4 and 6-pole motors with a line frequency of 50 Hz and rated voltages of up to 690 V.

Efficiency classes 2 and 3 apply here to motors with a rated power of 0.55 kW to 315 kW and efficiency class 1 applies to motors with a rated power from 3 kW to 315 kW.

Order code:
Design in accordance with China Energy Efficiency Label **K69**

GOST-R conformity

The following gearboxes can be supplied, certified according to GOST-R:

- Helical gearboxes
- Bevel helical gearboxes
- Parallel shaft gearboxes
- Helical worm gearboxes
- Worm gearboxes
- CAVEX worm gearboxes

Order code:
Design in accordance with GOST **N30**

VIK version

For a VIK version, select an IEC motor from Catalog D 81.1 that can be mounted on gearboxes with an input unit K2 or K4.

Explosion protection as per ATEX

In the European market ATEX Directive 94/9/EC applies to all types of equipment used in potentially explosive atmospheres - which include geared motors. It became mandatory on July 1, 2003 and has unrestricted validity for the use of all geared motors within the European Union. Other countries too have now complied with this regulation.

Helical gearboxes, parallel shaft gearboxes, bevel helical gearboxes, and helical worm gearboxes are available to comply with this Directive. A wide range of gearbox and motor designs and sizes are approved for zones 1, 2 (gases) and zones 21 and 22 (dusts).

Ex-atmosphere / Zone		Category	Frequency
G (gas and steam)	D (dust)		
0	20	1	Continuously or long-term
1	21	2	Intermittent
2	22	3	Rarely or briefly

MOTOX geared motors can be provided for categories 2 and 3.

Use in explosive atmospheres caused by gases is permissible for temperature classes T1 to T4. With use in explosive atmospheres caused by dust, the maximum temperature of 120 °C must be taken into consideration for the gearbox. An oil level sensor can be integrated for monitoring in inaccessible areas.

Motors are available in the following protection types: flameproof enclosure (Exd), flameproof enclosure and terminal box with increased safety (Exde), increased safety (Exe), and non sparking (ExnA) as well as motors for dust explosion protection.

The motors are mounted on the gearbox with an input unit K4 or K2.

General technical data

Standards

The motors comply with all applicable international (IEC), European (EN, CENELEC), and national (DIN/VDE) standards:

IEC	EN / HD	DIN / VDE	Title
IEC 60027-4	EN 60027-4	DIN EN 60027-4	Letter symbols for electrical engineering, part 4: Rotating electrical machines
IEC 60034-1	EN 60034-1	DIN EN 60034-1 VDE 0530-1	Rotating electrical machines: - Rating and performance
IEC 60034-2-1	EN 60034-2-1	DIN EN 60034-2-1 VDE 0530-2-1	- Standard methods for determining losses and efficiency from tests (excluding machines for traction vehicles) (IEC 60034-2-1:2007); German version EN 60034-2-1:2007
IEC 60034-5	EN 60034-5	DIN EN 60034-5 VDE 0530-5	- Degrees of protection provided by integral design of rotating electrical machines (IP code) - Classification
IEC 60034-6	EN 60034-6	DIN EN 60034-6 VDE 0530-6	- Methods of cooling (IC code)
IEC 60034-7	EN 60034-7	DIN EN 60034-7 VDE 0530-7	- Classification of types of construction, mounting arrangements and terminal box position (IM code)
IEC 60034-8	EN 60034-8	DIN EN 60034-8 VDE 0530-8	- Terminal markings and direction of rotation
IEC 60034-9	EN 60034-9	DIN EN 60034-9 VDE 0530-9	- Noise limits
IEC 60034-12	EN 60034-12	DIN EN 60034-12 VDE 0530-12	- Starting performance of three-phase cage induction motors except for pole-changing motors
IEC 60034-14	EN 60034-14	DIN EN 60034-14 VDE 0530-14	- Mechanical vibration of certain machines with shaft heights 56 mm and higher
IEC TS 60034-17	–	DIN VDE 0530-17	- Cage induction motors when fed from converters - Application guide
IEC 60038	HD 472	DIN IEC 60038	IEC standard voltages
–	EN 50347	DIN EN 50347	General purpose three-phase induction motors having standard dimensions and outputs - Sizes 56 to 315 and flange sizes 65 to 740
IEC 60085	EN 60085	DIN EN 60085	Electrical insulation, thermal evaluation and designation
IEC 60445	EN 60445	DIN EN 60445 VDE 0197	Identification of equipment terminals and conductor terminations
IEC 60529	EN 60529	DIN EN 60529 VDE 0470-1	Degrees of protection provided by enclosures (IP code)
–	EN 50262	DIN EN 50262 VDE 0619	Cable glands for electrical installations
–	–	DIN 42925	Terminal box cable entries for three-phase cage induction motors at rated voltages from 400 V to 690 V

The main dimensions of all gearboxes comply with the following DIN standards:

DIN 747	Shaft heights for machines
DIN 748-1	Cylindrical shaft extensions; dimensions, nominal torques
DIN 42955	Concentricity of shaft extensions, concentricity and axial eccentricity of mounting flange
DIN 6885-1	Drive-type fastenings without taper action; feather key, slots, high format
DIN 332-2	Center holes in shaft ends

Fits

Flange form A, C:

$b1 \leq \varnothing 230$ = j6

$b1 > \varnothing 230$ = h6

Drive-side shaft extension:

$d1 < \varnothing 55$ = k6

$d1 \geq \varnothing 55$ = m6

See the dimension drawings for other fits.

Degrees of protection

The geared motors are supplied with IP55 to standard IEC 60034-5. For higher degrees of protection for motors, see Chapter 8 "Motor degrees of protection".

Direction of rotation of geared motors

The geared motors are configured so the motor shaft rotates clockwise (IEC 60034-8).

The direction of rotation of the gearbox output shaft can be reversed by swapping two external connection wires on the motor.

Specifying the direction of rotation for geared motors and gearboxes with backstop

It is necessary to specify the desired direction of rotation of the output shaft when ordering a gearbox with backstop. The direction of rotation is determined by the front view of the output shaft (shaft end face). With parallel shaft, bevel helical, and helical worm gearboxes, it is again necessary to specify the side on which the output shaft is located, i.e. either "Output side A" or "Output side B". The output side is defined by specifying the mounting position.

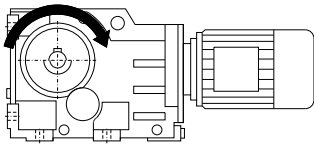
Direction of rotation of the geared motor when viewing the output shaft

Output shaft direction of rotation order codes:

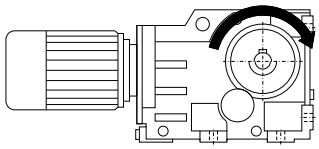
Clockwise **K18**

Counterclockwise **K19**

Clockwise

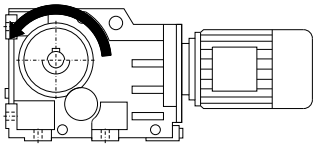


Output side A

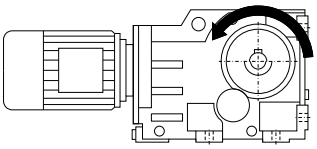


Output side B

Counterclockwise



Output side A



Output side B

Gearbox	Size	Gear stages	Front view	Output shaft direction of rotation	Input shaft direction of rotation
Z	38 ... 188	2	Output shaft	Clockwise	Clockwise
				Counterclockwise	Counterclockwise
D	38 ... 188	3	Output shaft	Clockwise	Counterclockwise
				Counterclockwise	Clockwise
FZ	38B ... 188B, 208	2	Drive end of output shaft	Clockwise	Clockwise
				Counterclockwise	Counterclockwise
FD	38B ... 188B, 208	3	Drive end of output shaft	Clockwise	Counterclockwise
				Counterclockwise	Clockwise
C	38 ... 88	2	Drive end of output shaft	Clockwise	Clockwise
				Counterclockwise	Counterclockwise
B	28 ... 38	2	Drive end of output shaft	Clockwise	Clockwise
				Counterclockwise	Counterclockwise
K	38 ... 88	3	Drive end of output shaft	Clockwise	Counterclockwise
				Counterclockwise	Clockwise
K	108 ... 188	3	Drive end of output shaft	Clockwise	Clockwise
				Counterclockwise	Counterclockwise
K	38 ... 188	3	Non-drive end of output shaft	Clockwise	Counterclockwise
				Counterclockwise	Clockwise

General technical data

Power ratings and torques

The specified power ratings and torques refer to standard versions, mounting positions B3../ B5../H01 and other comparable mounting positions, whereby the first stage is not completely immersed in oil. Normal ambient conditions and standard lubrication are also required.

Speeds

The specified output speeds are guide values, rounded to the first decimal place. You can use the rated motor speed and the gearbox speed to calculate the rated drive speed.

Please note that the actual output speed will depend on the motor load and the power supply conditions.

Noise

Noise emitted by the motors during mains operation

Noise is measured in accordance with ISO 1680 in a dead room. The noise level is specified as A-weighted measuring surface sound pressure level L_{pfA} in dB (A). This value is the spatial average value of the sound pressure levels measured at the measuring surface. The measuring surface is a cube 1 m away from the surface of the motor. The sound power level is also specified as L_{WA} in dB (A).

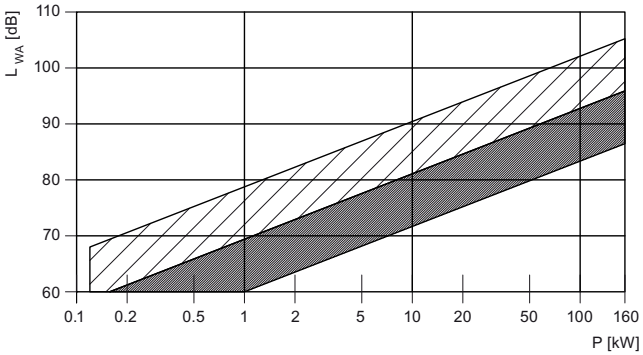
The values specified in the motor selection tables apply to the motor without gearbox at 50 Hz (see the selection and ordering data in the corresponding sections of the catalog).
The tolerance is +3 dB. At 60 Hz, the values are approximately 4 dB (A) higher. Please enquire about noise levels for pole-changing motors, geared motors, and inverter-fed motors.

Noise emitted by the geared motors

The geared motors do not exceed the permissible noise levels defined for gearboxes in VDI guideline 2159 and for motors in IEC 60034-9.
The values L_{pA} and L_S increase in each case by a general average of 3-5 dB (A) for geared motors as compared to motors without gears.

However, there is a strong correlation between noise level and:
- gear design
- speed and transmission ratios
- mounting positions
- other influencing factors

Precise data is available on request.



Weight of geared motors

The weight data contained in the dimension drawings are averaged values and do not take account of oil. The weights vary according to the gearbox design and size. The oil quantity depends on the mounting position.

The exact weight of the drive will be specified on the order confirmation.

Three-phase AC motors

Three-phase AC motors are designed to be perfectly coordinated with the gearbox system and can be supplied with or without a brake.

The motor series covers sizes 63 to 315.

The power ratings of the 2-, 4-, 6-, 8-, 8/2-, 8/4-, and 4/2-pole motors are classified in accordance with IEC. Pole-changing design with pole number 6/4 is available on request.
The housings of motors up to size 160 are made from high-quality aluminum alloy. Housings for sizes 180 and above are made from gray cast iron.

Brakes

The motors can be supplied with spring-operated disk brakes. These are double-disk brakes, which are spring-operated at zero current. (Safety brake)

The torque can be set within certain limits for every brake size.

Lubricants

All gearboxes are filled with lubricant at the factory. The lubricants used meet the requirements of DIN 51502. The gearboxes are filled with varying oil quantities (see operating instructions and rating plate) depending on their mounting position.
If no specifications are made to the contrary, the standard lubricant is used.

Required quality of gear lubricants

The oils used in the MOTOX gearboxes are subject to stringent quality control. For MOTOX gearboxes, only CLP-quality oils are approved which contain ingredients to DIN 51517-3 for improvement of corrosion protection, resistance to ageing, and which reduce wear in mixed-friction areas. The scuffing resistance in the FZG test to DIN 51354-2 must comply with stage 12 or higher under A/8.3/90 test conditions. In the FE-8 rolling bearing test to DIN 51817 rolling element wear must be under 30 mg and cage wear under 100 mg under D-7.5/80-80 test conditions.

In addition, the lubricants must meet the following quality requirements demanded by FLENDER:

- Sufficiently high gray-staining resistance in accordance with FVA 54 gray-staining test
- Low degree of foaming with less than 15 % foam formation in the FLENDER foam test
- Suitable for the elastomer material used in the radial shaft sealing of gearboxes
- Compatible with residues of corrosion-protection agent and run-in oils
- Compatible with the paints used by Siemens in the gearbox interiors
- Compatible with liquid sealing between bolted-joint surfaces.

For a list of approved oils from different manufacturers please refer to the Operating Instructions BA 7300.

Furthermore, for use in worm gearboxes:

Low wear, high pitting resistance, and high efficiency (low temperature) in the cylindrical worm gearbox test.

For a list of approved oils from different manufacturers please refer to the Operating Instructions BA 7303.

Lubricants (continued)

Lubricants for helical gearboxes E / D / Z, parallel shaft gearbox F, bevel helical gearbox K:

Area of application	Ambient temperature [1]	DIN 51 502 designation	Order code
Standard oils			
Standard temperature	-10 … +40 °C	CLP ISO VG220	**K06**
Improved oil service life	-20 … +50 °C	CLP ISO PG VG220	**K07**
High temperature usage	0 … +60 °C	CLP ISO PG VG460	**K08**
Low temperature usage	-40 … +40 °C	CLP ISO PAO VG220	[2]
Lowest temperature usage	-40 … +10 °C	CLP ISO PAO VG68	[2]
Physiologically safe oils (for use in the food industry) in acc. with NSF (USDA)-H1			
Standard temperature	-30 … +40 °C	CLP ISO H1 VG460	**K11**
Biologically degradable oils			
Standard temperature	-20 … +40 °C	CLP ISO E VG220	**K10**

[1] Recommended
[2] On request

Lubricants for bevel helical gearbox B and helical worm gearbox C:

Area of application	Ambient temperature [1]	DIN 51 502 designation	Order code
Standard oils			
Standard temperature	0 … +60 °C	CLP ISO PG VG460	**K08**
Low temperature usage	-20 … +50 °C	CLP ISO PG VG220	**K07**
Lowest temperature usage	-40 … +40 °C	CLP ISO PAO VG220	[2]
Physiologically safe oils (for use in the food industry) in acc. with NSF (USDA)-H1			
Standard temperature	-30 … +40 °C	CLP ISO H1 VG460	**K11**
Biologically degradable oils			
Standard temperature	-20 … +40 °C	CLP ISO E VG220	**K10**

[1] Recommended
[2] On request

Lubricants for worm gearbox S:

Area of application	Ambient temperature [1]	DIN 51 502 designation	Order code
Standard oils			
Standard temperature	0 … +60 °C	CLP ISO PG VG460	**K08**
Lowest temperature usage	-40 … +40 °C	CLP ISO PAO VG 220	[2]
Physiologically safe oils (for use in the food industry) in acc. with NSF (USDA)-H1			
Standard temperature	-30 … +50 °C	CLP ISO H1 VG460	**K11**

[1] Recommended
[2] On request

The ambient temperatures are applicable for gearboxes in standard operation. The data is based on our experience with standard applications. The oil sump temperature is a decisive factor for the service life of the lubricant and depends to a large extent on the gearbox type, gearbox size, transmission ratio, mounting position, input speed, and operating mode.

The standard gearbox version can be used in the range -20 °C to +40°C. Operation outside this range requires a variety of measures. Please contact us.

The data on usage in high, low, and lowest temperature ranges only refers to the lubricant.

It may be necessary to take other design measures. Please contact us.

With low ambient temperatures, critical startup characteristics need to be taken into account.

With higher ambient temperatures (> 40 °C), the permissible oil sump temperature must not be exceeded. Please contact us if you require your drive to be thermally tested.

Long-term preservation

Helical gearboxes, parallel shaft gearboxes, bevel helical gearboxes, and helical worm gearboxes can be delivered with a long-term preservation of up to 36 months. The free shaft extensions, sealing elements, and flanges are coated with a protective layer of grease. The gearbox is completely filled with oil for long-term preservation.

See the operating instructions for information on storage and commissioning.

Order code:
Long-term preservation up to 36 months **K17**

Surface treatment

We offer 5 high-quality paint systems in different hues to protect drives against corrosion and external influences.

Our corrosion protection range is available in accordance with the corrosion categories of the DIN EN ISO 12944-2 standard.

Geared motors of size 38 and above are painted in RAL 5015 (sky blue) as standard according to corrosion category C1. This ensures that they are protected against corrosion for installation in interior areas. Gearboxes of size 08,18 and 28 with an aluminum housing are supplied unpainted as standard.

For transport, the bare parts are coated with anti-corrosion paint which will last for a limited amount of time.

Overview of surface treatment

Corrosion category	Order code	Paint system	Hue	Description
Surface protection for normal environmental stress				
C1	**L02**	1-component water-based coating	Standard: 5015 On request: RAL 1003, 1007, 1012, 1018, 1023, 2000, 2004, 3000, 5007, 5009, 5010, 5012, 6011, 6018, 7001, 7011, 7016, 7030, 7031, 7032, 7035, 9005, 9006, 9010	• Indoor installation • Heated buildings with neutral atmospheres • Resistance to greases and some resistance to mineral oils, aliphatic solvents • Standard paint finish
Surface protection for minimal environmental stress				
C2	**L03**	2-component polyurethane primer 2-component polyurethane top coat	Standard: RAL 7031 On request: RAL 1003, 1012, 1018, 1023, 2004, 3000, 5002, 5007, 5009, 5010, 5012, 5015, 6011, 6018, 7000, 7001, 7011, 7030, 7032, 7035, 9005, 9006, 9010, 9011, 9016	• Indoor and outdoor installation • Unheated buildings with condensation, production areas with low humidity, e. g. warehouses and sports facilities • Atmospheres with little contamination, mostly rural areas • Resistant to greases, mineral oils and sulfuric acid (10 %), caustic soda (10 %) and some resistance to aliphatic solvents
Surface protection for medium environmental stress				
C3	**L04**	2-component polyurethane primer 2-component polyurethane top coat	Standard: RAL 7031 On request: RAL 1003, 1012, 1018, 1023, 2004, 3000, 5002, 5007, 5009, 5010, 5012, 5015, 6011, 6018, 7000, 7001, 7011, 7016, 7030, 7031, 7032, 7035, 9005, 9006, 9010, 9011, 9016	• Indoor and outdoor installation • Production areas with high levels of humidity and some air pollution, e. g. plants for food manufacturing, dairies, laundries and breweries • Urban and industrial atmospheres, moderate contamination from sulfur dioxide, coastal areas with low salt levels • Resistant to greases, mineral oils, aliphatic solvents, sulfuric acid (10 %), caustic soda (10 %)
Surface protection for high environmental stress				
C4	**L20**	2-component epoxy zinc phosphate primer 2-component polyurethane top coat	Standard: RAL 7031 On request: RAL 1003, 1012, 1018, 1023, 2004, 3000, 5002, 5007, 5009, 5010, 5012, 5015, 6011, 6018, 7000, 7001, 7011, 7016, 7030, 7031, 7032, 7035, 9005, 9006, 9010, 9011, 9016	• Indoor and outdoor installation • Chemical plants, swimming pools, wastewater treatment plants, electroplating shops, and boathouses above seawater • Industrial areas and coastal areas with moderate salt levels • Resistant to greases, mineral oils, aliphatic solvents, sulfuric acid (10 %), caustic soda (10 %)
Surface protection for extremely high environmental stress				
C5	**L05**	2-component epoxy zinc phosphate primer 2-component epoxy iron mica 2-component polyurethane top coat	Standard: RAL 7031 On request: RAL 1003, 1012, 1018, 1023, 2004, 3000, 5002, 5007, 5009, 5010, 5012, 5015, 6011, 6018, 7000, 7001, 7011, 7016, 7030, 7031, 7032, 7035, 9005, 9006, 9010, 9011, 9016	• Indoor and outdoor installation • Buildings and areas with almost constant condensation and with heavy pollution, e. g. malt factories and aseptic areas • Industrial areas with high humidity and aggressive atmosphere, coastal areas and offshore environments with high salt levels • Resistant to greases, mineral oils, aliphatic solvents, sulfuric acid (10 %), caustic soda (20 %)

Surface treatment (continued)

Corrosion category	Order code	Paint system	Hue	Description
Primed according to corrosion category C2 G				**Repaintability with *)**
C2 G	**L01**	2-component polyurethane primer		• 2-component polyurethane paint, 2-component epoxide paint and acid hardening paint, 2-component acrylic paint
Primed according to corrosion category C4 G				**Repaintability with *)**
C4 G	**L09**	2-component epoxy zinc phosphate primer		• 2-component polyurethane paint, 2-component epoxide paint and acid hardening paint, 2-component acrylic paint
Unpainted				**Repaintability with *)**
C1 G	**L00**			• Plastic paint, synthetic resin paint, oil paint, 2-component polyurethane paint, 2-component epoxide paint
Special pre-treatment before painting				
	L19			• For special requirements for the surface treatment and priming of drives, especially as a primer and intermediate coating for surface protection under severe environmental stress

* Note:
Information about repaintability is not a guarantee of the quality of the paint product purchased from your supplier. Only the paint manufacturer is liable for the quality and compatibility.

Order codes for RAL colors:

5015 Sky blue (standard)	**L50**
7011 Steel gray	**L51**
7031 Blue gray	**L53**
7035 Light gray	**L54**
7030 Stone gray	**L55**

The colors listed above can be specified using order code Y80 and the RAL color code in plain text.

Example: Reseda green (RAL6011)

Order code: **Y80**

Plain text: **Y80*RAL @ 6011***

Increased protection against humidity and tropical climate

Increased protection against humidity and tropical climate can be supplied as an option for (geared) motors of frame sizes 71 to 200L. This version is designed for humidity in the range from 30 to 60 g water per m^3 air depending on the temperature (see page 8/26). This version comprises a surface treatment for corrosion category C2 (**L03**), increased humidity and acid protection for the winding (**N54**), motor-internal corrosion protection (**N41**) and temperature class (155) F.

Combination with increased acid and alkali protection is not possible.

If function expansions (brakes, backstop, encoder systems) are required on the motor, consultation with the manufacturer is necessary beforehand.

Increased protection against humidity and tropical climate is not possible together with worm geared motors S.

Order code:

Increased protection against humidity and tropical climate **N43**

Increased protection against acid and alkali

Increased protection against acid and alkali can be supplied as an option for (geared) motors of frame sizes 71 to 200L. This version is suitable for city and industrial atmospheres with moderate pollution with sulfur dioxide, coastal areas with low salt levels and aggressive atmospheres with up to 1 % concentrations of acids or alkalis. This version comprises a surface treatment for corrosion category C3 (**L04**), increased humidity and acid protection for the winding (**N54**), motor-internal corrosion protection (**N41**), temperature class (155) F and pressure ventilation in the gearbox (**G45**).

Combination with increased humidity and tropical climate protection is not possible.

If function expansions (brakes, backstop, encoder systems) are required on the motor, consultation with the manufacturer is necessary beforehand.

Increased protection against acid and alkali is not possible together with worm geared motors S.

Order code:

Increased protection against acid and alkali **N44**

Rating plate

The rating plates of the gearboxes or geared motors are made of coated aluminum foil. They are covered by a special adhesive foil which gives them permanent resistance to ultraviolet rays and a variety of other substances (oils, greases, salt water, cleaning agents, etc.).

The adhesives and materials have been specially selected to ensure reliable adhesion and good legibility for the service life of the product, even when it is operated at the boundaries of the permissible temperature range (-40 °C ... +155 °C).

In accordance with DIN EN 60034-1, the total weight (as of approximately 30 kg) is specified on the rating plate for all geared motors.

Rating plate on stainless steel support plate

For geared motors with motors up to and including size 200, the rating plate can also be attached to a stainless steel support plate.

Order code:

Rating plate on stainless steel support plate **K26**

2nd rating plate enclosed separately

An additional rating plate can be supplied as a separately enclosed item for all gearboxes and geared motors.

Order code:

2nd rating plate, enclosed separately **K41**

2nd rating plate mounted

On request, the 2nd rating plate can be supplied mounted to the motor for geared motors with motors up to and including size 200.

Order code:

2nd rating plate, mounted **K68**

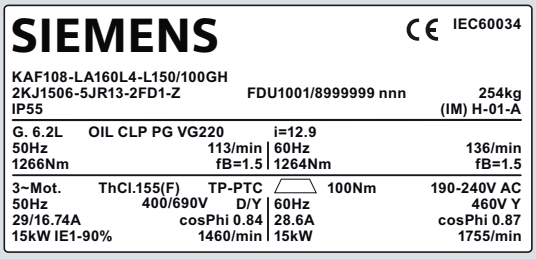
The rating plate is labeled in international format as standard.

For geared motors with motors up to and including size 200, the rating plate is mounted on an aluminum support plate which is attached to the motor.

In the case of gearboxes without motor and geared motors with motor of size 225 to 315, the rating plate is attached to the gearbox housing.

Motors of ≥ size 225 also have a rating plate with the motor data.

Example of a rating plate:



Documentation

The geared motors are supplied with the following documentation as standard:

- Commissioning guide (paper) English/German
- Manual Collection (on CD) with all operating instructions in Czech, Dutch, English, French, German, Italian, Russian, Spanish, and Swedish.

The following documents are optionally available:

- Circuit diagram of motor
- Certificate of compliance with the order EN 10204-2.1 and works test certificate EN 10204-2.2 for the geared motor on request
- Works test certificate EN 10204-2.2 for the material on request
- Works test certificate EN 10204-3.1 for the gearbox, tests carried out on:
  - Output shaft diameter
  - The concentricity of the output shaft
  - The concentricity of input shaft (for solo gearboxes only, input units A and P)
  - The input shaft diameter (for solo gearboxes only, input units A and P)
  - Noise (subjective evaluation) The concentricity of the input shaft (for solo gearboxes only)
- Works test certificate EN 10204-3.1 for motors, tests carried out on:
  - The 3 no-load currents of the 3 phases
  - The power loss during no-load operation
  - The no-load speed.

1

Notes

Helical geared motors

2

Orientation

Overview

Helical gearbox E

Helical gearbox D/Z

MOTOX helical gearboxes are part of the MOTOX modular system. With bevel helical, parallel shaft, helical worm or variable speed gearboxes, three-phase motors with and without brakes, this system covers all possible drive combinations, right up to the electronic variable speed drive.

MOTOX helical gearboxes are designed for continuous duty. The gearbox housings made of gray cast iron or aluminium are developed in 3D CAD and have an optimized structure in terms of rigidity and vibration absorption. Radial shaft seals with dust-protection lips prevent oil from leaking out of the housing, dust and water from entering it. All the gear wheels are milled and their surfaces hardened. The tooth flanks are ground or honed so that they are convex and corrected in terms of the profile.

MOTOX helical gearboxes are of 1-stage, 2-stage and 3-stage design. The MOTOX helical gearbox series can be supplied in foot-mounted or flange-mounted design for mounting in any position. Flange housings can be supplied with an integrated housing flange (C type). Combined foot / flange-mounted design or foot-mounted housings with housing flange are available on request.

Overview (continued)

The helical gearboxes are designated as follows:

Gearbox type:

(-) Helical gearboxes

Transmission stage
- **E** 1-stage
- **Z** 2-stage
- **D** 3-stage

Type:

Shaft
- (-) Solid shaft

Mounting
- (-) Foot-mounted design
- **F** Flange-mounted design (A-type)
- **Z** Housing flange (C-type)
- **R** Agitator flange
- **K** Cooling tower flange [1)]

Connections
- (-) Feather key

Special features
- **W** Reduced-backlash version

Type of intermediate gearbox

(-) Helical gearboxes

Transmission stage
- **Z** 2-stage
- **D** 3-stage

Input unit

- **K2** Coupling lantern with flexible coupling for connecting an IEC motor
- **K2TC** Coupling lantern with flexible coupling for connecting a NEMA motor [1)]
- **K4** Short coupling lantern with clamp connection for connecting an IEC motor
- **K5** Short coupling lantern with clamp connection for connecting a NEMA motor [1)]
- **KQ** Lantern for servomotor with feather key and zero-backlash flexible coupling for connecting a servomotor
- **KQS** Lantern for servomotor without feather key and zero-backlash flexible coupling for connecting a servomotor
- **A** Input unit with free input shaft
- **A5** Input unit with free input shaft (NEMA design) [1)]
- **P** Input unit with free input shaft and piggy back for connecting an IEC motor
- **P5** Input unit with free input shaft and piggy back for connecting a NEMA motor [1)]
- **PS** Input unit with free input shaft and piggy back with protection cover

Example:

D F 108 - Z 38 - K4 (100)

- Gearbox type
- Type
- Size
- Type of intermediate gearbox
- Size
- Input unit
- (for motor size)

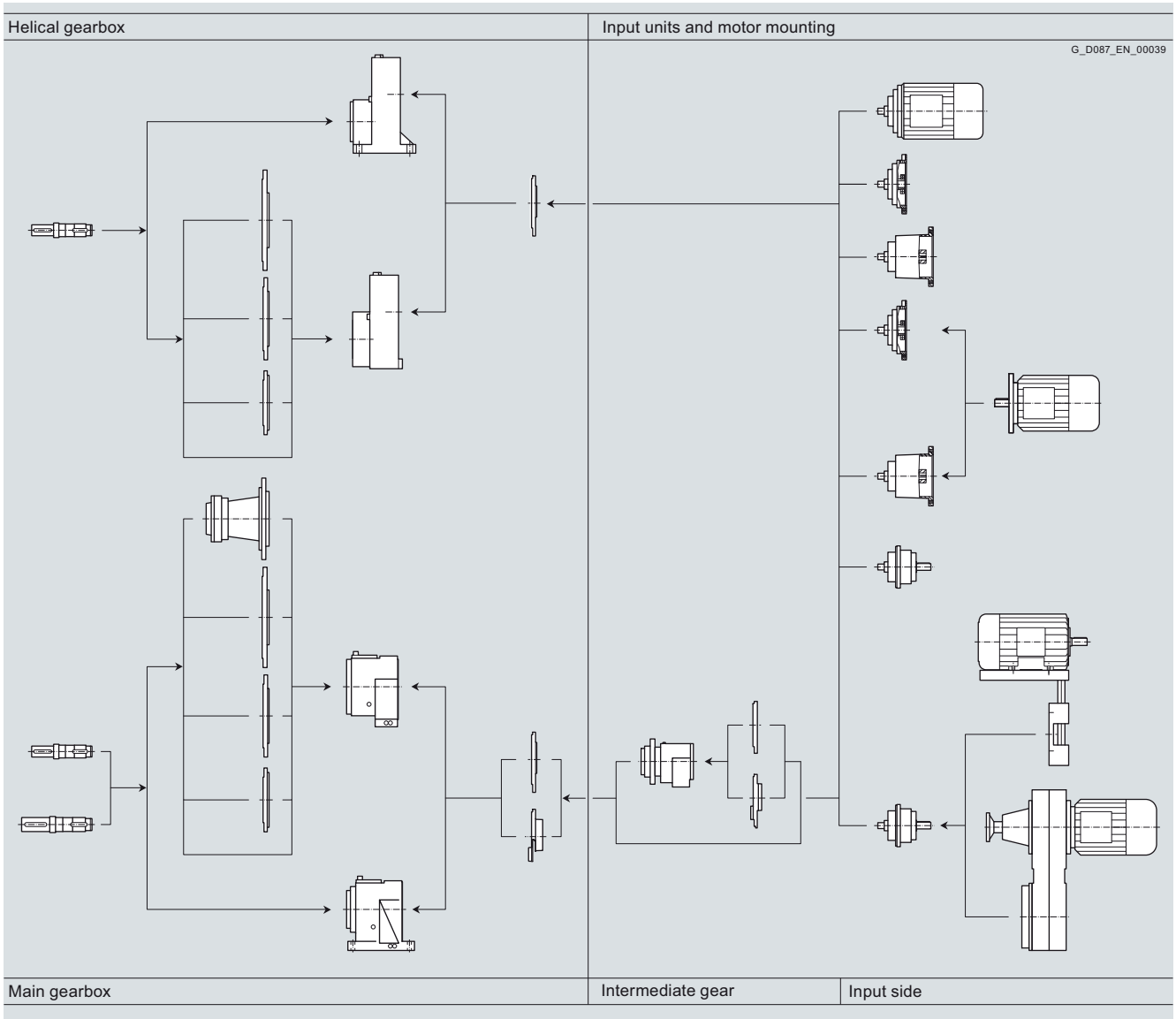
The series currently comprises 11 sizes for D and Z gearboxes and 7 sizes for E gearboxes.

E gearboxes are available as 1-stage, Z gearboxes as 2-stage and D gearboxes as 3-stage.

[1)] These designs can be selected from our MOTOX Configurator electronic catalog.

Orientation

Modular system



Use

MOTOX helical geared motors have a high efficiency and are characterized by their very low noise emission.

The geared motors offer high economical efficiency with their favorable price and low maintenance expenses.

The housings offer a wide range of mounting options due to their flange-mounted or foot-mounted designs.

Oil quantities

The oil quantities corresponding to the applicable mounting positions are specified in the operating instructions and on the rating plate.

Permissible radial force F_{Rperm}

1-stage helical gearboxes – standard bearing arrangement

Gearbox type	d mm	l mm	y mm	z mm	a kNmm	b mm	F_{Rperm} in N with x = l/2 for output speeds n_2 in rpm: Direction of rotation when viewing the output shaft	≤ 183	≤ 229	≤ 287	≤ 358	≤ 448	≤ 502
E.38	20	40	105	85	70.9	24.0	Left	4 070	3 722	3 209	2 978	2 358	1 918
					93.3		Right	4 227	3 805	2 603	2 423	1 657	1 152
E.48	25	50	114	89	45.7	24.0	Left	3 687	3 174	2 823	2 283	1 992	1 744
					93.9		Right	3 888	3 437	2 801	1 352	854	441
E.68	30	60	155	125	165.0	29.5	Left	7 175	6 052	4 468	3 606	2 441	2 055
					257.0		Right	6 098	4 813	2 931	2 021	713	327
E.88	40	80	171	131	668.0	32.5	Left	8 403	7 543	6 430	5 764	4 886	4 645
					755.0		Right	8 778	7 976	6 850	5 635	3 496	3 080
E.108	50	100	194	144	904.0	36.5	Left	11 241	9 759	7 901	7 118	5 017	4 933
					1 063.0		Right	9 104	7 169	4 979	4 356	1 797	1 944
E.128	60	120	228	168	2 064.0	36.5	Left	15 781	13 912	12 554	11 239	10 100	9 566
					2 277.0		Right	16 567	14 537	12 052	9 416	7 235	6 307
E.148	70	140	260	190	2 344.0	46.5	Left	19 286	17 125	15 100	13 777	10 937	10 977
					2 688.0		Right	19 631	15 610	11 864	10 015	5 915	6 451

Gearbox type	d mm	l mm	y mm	z mm	a kNmm	b mm	F_{Rperm} in N with x = l/2 for output speeds n_2 in rpm: Direction of rotation when viewing the output shaft	≤ 562	≤ 629	≤ 705	≤ 789	≤ 884	≤ 990
E.38	20	40	105	85	70.9	24.0	Left	1 900	1 641	1 233	991	–	–
					93.3		Right	1 199	942	455	221	–	–
E.48	25	50	114	89	45.7	24.0	Left	1 688	1 663	1 712	1 752	1 666	–
					93.9		Right	475	554	719	869	846	–
E.68	30	60	155	125	165.0	29.5	Left	1 948	1 787	1 662	1 799	1 811	1 736
					257.0		Right	304	232	211	495	627	656
E.88	40	80	171	131	668.0	32.5	Left	4 424	4 113	3 911	3 891	–	–
					755.0		Right	2 756	2 175	1 879	2 055	–	–
E.108	50	100	194	144	904.0	36.5	Left	4 350	3 950	3 921	–	–	–
					1 063.0		Right	1 331	1 007	1 213	–	–	–
E.128	60	120	228	168	2 064.0	36.5	Left	9 171	8 876	8 586	8 298	7 980	7 623
					2 277.0		Right	5 696	5 443	5 283	5 191	4 950	4 681
E.148	70	140	260	190	2 344.0	46.5	Left	10 977	10 156	9 758	9 587	–	–
					2 688.0		Right	6 874	6 079	5 883	6 028	–	–

The values in the table apply to the worst-case scenario.
The output shaft bearing arrangement can be calculated using our MOTOX Configurator electronic catalog.
See Chapter 1 "Configuring guide" for more information on calculating the permissible radial force.

2

Permissible radial force F_{Rperm} (continued)

2-stage and 3-stage helical gearboxes – standard bearing arrangement

Gearbox type	d mm	l mm	y mm	z mm	a kNmm	b mm	Direction of rotation when viewing the output shaft	F_{Rperm} in N with x = l/2 for output speeds n_2 in rpm ≤ 16	≤ 25	≤ 40	≤ 63	≤ 100	≤ 160	≤ 250	≤ 400
D./Z.18	20	40	91.0	71.0	51.2	12	Left	1 600	1 600	1 600	1 600	1 600	1 600	1 550	1 420
							Right	1 600	1 600	1 600	1 600	1 600	1 600	1 480	1 370
D./Z.F18	20	40	99.0	79.0	57.2	20	Left	1 430	1 430	1 430	1 430	1 430	1 430	1 420	1 310
							Right	1 430	1 430	1 430	1 430	1 430	1 430	1 360	1 260
D./Z.28	25	50	104.0	79.0	129.5	12	Left	2 890	2 890	2 890	2 890	1 650	960	1 130	1 070
							Right	3 420	3 420	3 420	3 420	2 190	1 500	1 620	1 490
D./Z.F28	25	50	110.0	85.0	129.5	18	Left	2 540	2 540	2 540	2 540	1 450	850	990	940
							Right	3 012	3 012	3 012	3 012	1 930	1 320	1 430	1 310
D./Z.38	30	60	111.0	81.0	210.0	16	Left	4 565	4 565	4 560	3 230	1 990	1 580	1 110	1 020
							Right	4 565	4 565	4 565	3 880	2 630	2 200	1 730	1 560
	25	50	106.0	81.0	169.0	0	Left	6 760	6 310	5 010	3 570	2 180	1 740	1 230	1 110
							Right	6 760	6 010	5 080	4 140	2 890	2 430	1 910	1 710
D./Z.48	40	80	145.0	105.0	499.0	19	Left	8 457	8 457	7 480	5 470	4 150	3 400	3 020	2 350
							Right	8 457	8 457	7 600	6 300	5 130	4 280	3 690	2 950
	30	60	135.0	105.0	265.0	0	Left	8 833	8 833	8 670	6 450	4 850	3 970	3 520	2 740
							Right	8 833	8 833	8 170	6 760	5 630	4 860	4 310	3 460
D./Z.68	50	100	179.5	129.5	943.0	23	Left	12 917	12 917	10 820	7 690	4 970	3 670	3 380	3 010
							Right	12 917	12 917	12 520	9 380	6 710	5 270	4 760	3 880
	40	80	170.0	129.5	564.0	0	Left	14 100	14 100	12 230	8 650	5 630	4 180	3 810	3 390
							Right	14 100	14 100	14 100	10 600	7 580	5 960	5 400	4 380
D./Z.88	60	120	219.0	159.0	1 533.0	21	Left	18 925	18 925	18 925	18 925	16 330	14 060	11 770	11 300
							Right	18 925	18 925	18 925	18 710	15 100	12 960	11 310	10 630
	50	100	209.0	159.0	1 150.0	0	Left	23 000	23 000	23 000	21 010	17 110	14 700	12 830	12 000
							Right	23 000	23 000	23 000	19 630	15 850	13 600	11 880	11 140
D./Z.108	70	140	259.0	189.0	2 328.0	29	Left	23 515	23 515	23 515	23 515	20 860	15 920	13 780	14 760
							Right	23 515	23 515	23 515	22 340	18 830	14 350	13 280	13 690
	60	120	249.0	189.0	2 113.0	0	Left	35 216	35 216	30 120	25 340	21 740	16 980	15 170	15 400
							Right	35 216	33 940	28 090	23 210	19 610	14 940	13 820	14 220
D./Z.128	90	170	320.5	235.5	5 181.0	30	Left	45 052	45 052	36 770	31 220	26 070	22 270	18 010	19 340
							Right	45 052	44 170	34 000	28 490	23 260	19 750	15 860	18 050
	70	140	305.5	235.5	3 120.0	0	Left	44 571	44 571	38 510	32 740	27 300	23 360	18 880	20 280
							Right	44 571	44 571	35 740	29 790	24 420	20 690	16 680	18 920
D./Z.148	100	210	361.0	256.0	6 900.0	33	Left	50 000	50 000	45 040	38 930	31 140	27 200	23 760	21 590
							Right	50 000	50 000	41 490	35 280	27 600	23 660	20 600	19 330
	90	170	341.0	256.0	6 359.0	0	Left	67 600	61 030	47 700	41 090	32 920	28 780	25 140	22 870
							Right	63 750	58 650	43 850	37 450	29 170	25 030	21 780	20 410
D./Z.168	120	210	420.5	315.5	11 652	30	Left	86 311	86 311	86 311	86 311	86 311	86 311	86 311	86 311
							Right	86 311	86 311	86 311	86 311	86 311	86 311	86 311	86 311
	100	210	420.5	315.5	7 958.0	0	Left	75 790	75 790	75 790	75 790	75 790	75 790	75 790	75 790
							Right	75 790	75 790	75 790	75 790	75 790	75 790	75 790	75 790
D./Z.188	120	210	445.5	340.5	16 920	36	Left	120 000	120 000	120 000	120 000	87 920	101 570	114 610	–
							Right	120 000	120 000	120 000	120 000	106 270	116 020	120 000	–

The values in the table apply to the worst-case scenario.
The output shaft bearing arrangement can be calculated using our MOTOX Configurator electronic catalog.
See Chapter 1 "Configuring guide" for more information on calculating the permissible radial force.

Permissible radial force F_{Rperm} (continued)

2-stage and 3-stage helical gearboxes – radially reinforced bearing arrangement

Gearbox type	d mm	l mm	y mm	z mm	a kNmm	b mm	F_{Rperm} in N with x = l/2 for output speeds n_2 in rpm: Direction of rotation when viewing the output shaft	≤ 16	≤ 25	≤ 40	≤ 63	≤ 100	≤ 160	≤ 250	≤ 400
D./Z.68	50	100	179.5	129.5	943	23	Left	12 917	12 917	12 917	12 917	12 917	12 917	12 917	12 917
							Right	12 917	12 917	12 917	12 917	12 917	12 917	12 917	12 917
	40	80	170.0	129.5	564	0	Left	14 100	14 100	14 100	14 100	14 100	14 100	14 100	14 100
							Right	14 100	14 100	14 100	14 100	14 100	14 100	14 100	14 100
D./Z.88	60	120	219.0	159.0	1 533	21	Left	18 925	18 925	18 925	18 925	18 820	16 250	12 320	13 710
							Right	18 925	18 925	18 925	18 925	18 925	18 925	14 570	15 540
	50	100	209.0	159.0	1 150	0	Left	23 000	23 000	23 000	23 000	20 990	18 130	13 740	15 290
							Right	23 000	23 000	23 000	23 000	23 000	21 180	16 250	17 330
D./Z.108	70	140	259.0	189.0	2 328	29	Left	23 515	23 515	23 515	23 515	23 515	15 970	13 870	21 240
							Right	23 515	23 515	23 515	23 515	23 515	20 780	18 680	23 515
	60	120	249.0	189.0	2 113	0	Left	35 216	35 216	35 216	34 530	27 240	17 390	15 080	23 240
							Right	35 216	35 216	35 216	35 216	32 630	22 790	20 530	26 160
D./Z.128	90	170	320.5	235.5	5 181	30	Left	45 052	45 052	45 052	45 052	45 052	45 052	42 010	45 052
							Right	45 052	45 052	45 052	45 052	45 052	45 052	44 110	45 052
	70	140	305.5	235.5	3 120	0	Left	44 571	44 571	44 571	44 571	44 571	44 571	44 571	44 571
							Right	44 571	44 571	44 571	44 571	44 571	44 571	44 571	44 571
D./Z.148	100	210	361.0	256.0	6 900	33	Left	50 000	50 000	50 000	50 000	50 000	50 000	50 000	50 000
							Right	50 000	50 000	50 000	50 000	50 000	50 000	50 000	50 000
	90	170	341.0	256.0	6 359	0	Left	74 811	74 811	74 811	74 811	74 811	74 811	66 220	60 710
							Right	74 811	74 811	74 811	74 811	74 811	71 170	62 530	58 280
D./Z.168	120	210	420.5	315.5	11 652	30	Left	86 311	86 311	86 311	86 311	86 311	86 311	86 311	86 311
							Right	86 311	86 311	86 311	86 311	86 311	86 311	86 311	86 311
	100	210	420.5	315.5	7 958	0	Left	75 790	75 790	75 790	75 790	75 790	75 790	75 790	75 790
							Right	75 790	75 790	75 790	75 790	75 790	75 790	75 790	75 790
D./Z.188	120	210	445.5	340.5	16 920	36	Left	120 000	120 000	120 000	120 000	87 920	101 570	114 610	–
							Right	120 000	120 000	120 000	120 000	106 270	116 020	120 000	–

The values in the table apply to the worst-case scenario.
The output shaft bearing arrangement can be calculated using our MOTOX Configurator electronic catalog.
See Chapter 1 "Configuring guide" for more information on calculating the permissible radial force.

Geared motors up to 200 kW

Selection and ordering data

The selection tables show the most common variants and combinations. Other combinations can be selected using our MOTOX Configurator or made available on request.

At an identical power rating and output speed, priority is given in the selection tables to 4-pole geared motors.

At the available transmission ratios, they cover the majority of output speeds.

Due to their prevalence, 4-pole geared motors are easily available, with short delivery times and at a low cost. They also feature a favorable size / power ratio.

Power rating P_{Motor} kW (50 Hz)	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
0.09	**D.48-LA71M8**							
	3.0	285	1.6	208.77	★	**2KJ1203 - ■CE13 - ■■S1**	**P02**	27
	3.4	253	1.8	185.66		**2KJ1203 - ■CE13 - ■■R1**	**P02**	27
	3.9	220	2.0	161.05	★	**2KJ1203 - ■CE13 - ■■Q1**	**P02**	27
	D.38-LA71M8							
	3.3	262	0.84	191.75	★	**2KJ1202 - ■CE13 - ■■S1**	**P02**	18
	3.7	232	0.95	170.24		**2KJ1202 - ■CE13 - ■■R1**	**P02**	18
	4.2	204	1.1	149.26	★	**2KJ1202 - ■CE13 - ■■Q1**	**P02**	18
	D.38-LA71B6							
	4.7	184	1.2	191.75	★	**2KJ1202 - ■CB13 - ■■S1**	**P01**	18
	5.3	163	1.3	170.24		**2KJ1202 - ■CB13 - ■■R1**	**P01**	18
	6.0	143	1.5	149.26	★	**2KJ1202 - ■CB13 - ■■Q1**	**P01**	18
	6.7	128	1.7	133.57		**2KJ1202 - ■CB13 - ■■P1**	**P01**	18
0.12	**D.188-D48-LA71B4**							
	0.05	15 788	1.3	28 260		**2KJ1236 - ■CB13 - ■■J1**		604
	0.06	12 656	1.6	22 654		**2KJ1236 - ■CB13 - ■■G1**		604
	0.06	13 965	1.4	24 996	★	**2KJ1236 - ■CB13 - ■■H1**		604
	0.07	11 172	1.8	19 997	★	**2KJ1236 - ■CB13 - ■■F1**		604
	0.08	10 078	2.0	18 039		**2KJ1236 - ■CB13 - ■■E1**		604
	D.168-D48-LA71B4							
	0.05	15 652	0.89	28 017	★	**2KJ1234 - ■CB13 - ■■F1**		460
	0.06	12 807	1.1	22 923	★	**2KJ1234 - ■CB13 - ■■D1**		460
	0.06	14 120	0.99	25 274		**2KJ1234 - ■CB13 - ■■E1**		460
	0.07	11 668	1.2	20 886		**2KJ1234 - ■CB13 - ■■C1**		460
	D.168-Z48-LA71B4							
	0.08	10 003	1.4	17 519		**2KJ1232 - ■CB13 - ■■A2**		459
	0.09	8 852	1.6	15 504	★	**2KJ1232 - ■CB13 - ■■X1**		459
	0.10	8 047	1.7	14 094		**2KJ1232 - ■CB13 - ■■W1**		459
	0.11	7 229	1.9	12 661	★	**2KJ1232 - ■CB13 - ■■V1**		459
	D.148-D38-LA71B4							
	0.08	9 926	0.81	17 767		**2KJ1230 - ■CB13 - ■■C1**		284
	D.148-Z38-LA71B4							
	0.09	8 467	0.94	14 830		**2KJ1228 - ■CB13 - ■■X1**		283
	0.11	7 530	1.1	13 188		**2KJ1228 - ■CB13 - ■■W1**		283
	0.12	6 532	1.2	11 440		**2KJ1228 - ■CB13 - ■■V1**		283
	0.13	6 103	1.3	10 689		**2KJ1228 - ■CB13 - ■■U1**		283
	0.15	5 368	1.5	9 401		**2KJ1228 - ■CB13 - ■■T1**		283
	0.17	4 701	1.7	8 233		**2KJ1228 - ■CB13 - ■■S1**		283
	0.19	4 158	1.9	7 282		**2KJ1228 - ■CB13 - ■■R1**		283

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
0.12	**D.128-Z38-LA71B4**							
	0.13	6 007	0.85	10 521		**2KJ1225 - ■CB13 - ■■W1**		198
	0.15	5 211	0.98	9 127	★	**2KJ1225 - ■CB13 - ■■V1**		198
	0.16	4 869	1.0	8 528		**2KJ1225 - ■CB13 - ■■U1**		198
	0.19	4 282	1.2	7 500	★	**2KJ1225 - ■CB13 - ■■T1**		198
	0.21	3 751	1.4	6 569		**2KJ1225 - ■CB13 - ■■S1**		198
	0.24	3 317	1.5	5 810	★	**2KJ1225 - ■CB13 - ■■R1**		198
	0.27	3 007	1.7	5 266		**2KJ1225 - ■CB13 - ■■Q1**		198
	0.30	2 654	1.9	4 648	★	**2KJ1225 - ■CB13 - ■■P1**		198
	D.108-Z38-LA71B4							
	0.22	3 556	0.87	6 228		**2KJ1223 - ■CB13 - ■■F2**		127
	0.25	3 208	0.97	5 618		**2KJ1223 - ■CB13 - ■■E2**		127
	0.28	2 910	1.1	5 096		**2KJ1223 - ■CB13 - ■■D2**		127
	0.30	2 651	1.2	4 643		**2KJ1223 - ■CB13 - ■■C2**		127
	0.33	2 424	1.3	4 246		**2KJ1223 - ■CB13 - ■■B2**		127
	0.37	2 168	1.4	3 797		**2KJ1223 - ■CB13 - ■■A2**		127
	0.39	2 069	1.5	3 624		**2KJ1223 - ■CB13 - ■■X1**		127
	0.43	1 840	1.7	3 223		**2KJ1223 - ■CB13 - ■■W1**		127
	0.50	1 596	1.9	2 796		**2KJ1223 - ■CB13 - ■■V1**		127
	D.88-Z28-LA71B4							
	0.39	2 041	0.82	3 574		**2KJ1218 - ■CB13 - ■■A2**		76
	0.45	1 778	0.94	3 114	★	**2KJ1218 - ■CB13 - ■■X1**		76
	0.50	1 597	1.1	2 797		**2KJ1218 - ■CB13 - ■■W1**		76
	0.55	1 442	1.2	2 525	★	**2KJ1218 - ■CB13 - ■■V1**		76
	0.61	1 307	1.3	2 290		**2KJ1218 - ■CB13 - ■■U1**		76
	0.67	1 190	1.4	2 084	★	**2KJ1218 - ■CB13 - ■■T1**		76
	0.76	1 052	1.6	1 842		**2KJ1218 - ■CB13 - ■■S1**		76
	0.82	971	1.7	1 701	★	**2KJ1218 - ■CB13 - ■■R1**		76
	0.96	836	2.0	1 465		**2KJ1218 - ■CB13 - ■■Q1**		76
	D.68-Z28-LA71B4							
	0.84	955	0.84	1 672		**2KJ1214 - ■CB13 - ■■S1**		46
	0.91	882	0.91	1 544	★	**2KJ1214 - ■CB13 - ■■R1**		46
	1.1	759	1.1	1 329		**2KJ1214 - ■CB13 - ■■Q1**		46
	1.2	690	1.2	1 208	★	**2KJ1214 - ■CB13 - ■■P1**		46
	1.3	627	1.3	1 098	★	**2KJ1214 - ■CB13 - ■■N1**		46
	1.4	569	1.4	996		**2KJ1214 - ■CB13 - ■■M1**		46
	1.5	517	1.5	906	★	**2KJ1214 - ■CB13 - ■■L1**		46
	1.7	457	1.7	801		**2KJ1214 - ■CB13 - ■■K1**		46
	1.9	423	1.9	740	★	**2KJ1214 - ■CB13 - ■■J1**		46
	D.68-LA71MB8							
	2.3	499	1.6	281.01		**2KJ1204 - ■CF13 - ■■U1**	**P02**	46
	2.6	442	1.8	248.68	★	**2KJ1204 - ■CF13 - ■■T1**	**P02**	46
	2.9	402	2.0	226.07		**2KJ1204 - ■CF13 - ■■S1**	**P02**	46

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

2

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
0.12	**D.48-Z28-LA71B4**							
	1.6	505	0.89	885		**2KJ1212 - ■CB13 - ■■Q1**		29
	1.7	460	0.98	805	★	**2KJ1212 - ■CB13 - ■■P1**		29
	1.9	417	1.1	731	★	**2KJ1212 - ■CB13 - ■■N1**		29
	2.1	379	1.2	663		**2KJ1212 - ■CB13 - ■■M1**		29
	2.3	344	1.3	603	★	**2KJ1212 - ■CB13 - ■■L1**		29
	2.6	305	1.5	534		**2KJ1212 - ■CB13 - ■■K1**		29
	2.8	281	1.6	493	★	**2KJ1212 - ■CB13 - ■■J1**		29
	D.48-LA71MB8							
	3.1	371	1.2	208.77	★	**2KJ1203 - ■CF13 - ■■S1**	**P02**	27
	3.5	330	1.4	185.66		**2KJ1203 - ■CF13 - ■■R1**	**P02**	27
	D.48-LA71C6							
	4.1	278	1.6	208.77	★	**2KJ1203 - ■CC13 - ■■S1**	**P01**	27
	4.6	247	1.8	185.66		**2KJ1203 - ■CC13 - ■■R1**	**P01**	27
	5.3	215	2.1	161.05	★	**2KJ1203 - ■CC13 - ■■Q1**	**P01**	27
	Z.38-Z28-LA71B4							
	3.0	268	0.82	464	★	**2KJ1112 - ■CB13 - ■■H1**		20
	D.38-LA71MB8							
	4.3	265	0.83	149.26	★	**2KJ1202 - ■CF13 - ■■Q1**	**P02**	18
	D.38-LA71C6							
	4.5	256	0.86	191.75	★	**2KJ1202 - ■CC13 - ■■S1**	**P01**	18
	5.1	227	0.97	170.24		**2KJ1202 - ■CC13 - ■■R1**	**P01**	18
	5.8	199	1.1	149.26	★	**2KJ1202 - ■CC13 - ■■Q1**	**P01**	18
	6.4	178	1.2	133.57		**2KJ1202 - ■CC13 - ■■P1**	**P01**	18
	D.38-LA71B4							
	7.3	157	1.4	191.75	★	**2KJ1202 - ■CB13 - ■■S1**		18
	8.2	139	1.6	170.24		**2KJ1202 - ■CB13 - ■■R1**		18
	9.4	122	1.8	149.26	★	**2KJ1202 - ■CB13 - ■■Q1**		18
	10.5	109	2.0	133.57		**2KJ1202 - ■CB13 - ■■P1**		18
	D.28-LA71B4							
	6.7	170	0.82	207.96	★	**2KJ1201 - ■CB13 - ■■M1**		10
	7.8	146	0.96	178.66		**2KJ1201 - ■CB13 - ■■L1**		10
	8.5	135	1.0	164.48	★	**2KJ1201 - ■CB13 - ■■K1**		10
	9.4	122	1.1	149.53		**2KJ1201 - ■CB13 - ■■J1**		10
	10.6	108	1.3	132.35	★	**2KJ1201 - ■CB13 - ■■H1**		10
	12.6	91	1.5	110.86		**2KJ1201 - ■CB13 - ■■G1**		10
	14.8	77	1.8	94.52	★	**2KJ1201 - ■CB13 - ■■F1**		10
	17.4	66	2.1	80.34	★	**2KJ1201 - ■CB13 - ■■E1**		10
	20	57	2.4	69.82		**2KJ1201 - ■CB13 - ■■D1**		10
	23	50	2.8	60.77	★	**2KJ1201 - ■CB13 - ■■C1**		10
	Z.28-LA71B4							
	27	42	3.3	51.35		**2KJ1101 - ■CB13 - ■■C2**		10
	32	35	3.9	43.3	★	**2KJ1101 - ■CB13 - ■■B2**		10
	36	32	4.4	38.45		**2KJ1101 - ■CB13 - ■■A2**		10

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
0.12	**Z.28-LA71B4**							
	42	28	5.1	33.71	★	**2KJ1101 - ■CB13 - ■■X1**		10
	46	25	5.7	30.16		**2KJ1101 - ■CB13 - ■■W1**		10
	52	22	6.4	26.77	★	**2KJ1101 - ■CB13 - ■■V1**		10
	60	19	7.3	23.46		**2KJ1101 - ■CB13 - ■■U1**		10
	68	17	8.3	20.63	★	**2KJ1101 - ■CB13 - ■■T1**		10
	75	15	9.2	18.63		**2KJ1101 - ■CB13 - ■■S1**		10
	86	13	10.5	16.24	★	**2KJ1101 - ■CB13 - ■■R1**		10
	96	12	11.7	14.58		**2KJ1101 - ■CB13 - ■■Q1**		10
	106	11	13.0	13.17	★	**2KJ1101 - ■CB13 - ■■P1**		10
	117	9.8	14.3	11.94		**2KJ1101 - ■CB13 - ■■N1**		10
	D.18-LA71B4							
	10.2	112	0.8	136.71	★	**2KJ1200 - ■CB13 - ■■L1**		9
	11.3	102	0.88	124.29		**2KJ1200 - ■CB13 - ■■K1**		9
	12.7	90	1.0	110.01	★	**2KJ1200 - ■CB13 - ■■J1**		9
	15.2	75	1.2	92.14		**2KJ1200 - ■CB13 - ■■H1**		9
	17.8	64	1.4	78.56	★	**2KJ1200 - ■CB13 - ■■G1**		9
	21	55	1.6	66.78	★	**2KJ1200 - ■CB13 - ■■F1**		9
	24	48	1.9	58.03		**2KJ1200 - ■CB13 - ■■E1**		9
	28	41	2.2	50.51	★	**2KJ1200 - ■CB13 - ■■D1**		9
	Z.18-LA71B4							
	32	35	2.5	43.15		**2KJ1100 - ■CB13 - ■■U1**		9
	38	30	3.0	37.23	★	**2KJ1100 - ■CB13 - ■■T1**		9
	44	26	3.4	31.98		**2KJ1100 - ■CB13 - ■■S1**		9
	48	24	3.7	29.45	★	**2KJ1100 - ■CB13 - ■■R1**		9
	52	22	4.1	26.77		**2KJ1100 - ■CB13 - ■■Q1**		9
	59	19	4.6	23.69	★	**2KJ1100 - ■CB13 - ■■P1**		9
	70	16	5.5	19.85		**2KJ1100 - ■CB13 - ■■N1**		9
	83	14	6.5	16.92	★	**2KJ1100 - ■CB13 - ■■M1**		9
	97	12	7.6	14.38	★	**2KJ1100 - ■CB13 - ■■L1**		9
	112	10	8.8	12.5		**2KJ1100 - ■CB13 - ■■K1**		9
	129	8.9	9.8	10.88	★	**2KJ1100 - ■CB13 - ■■J1**		9
	143	8	10.3	9.81		**2KJ1100 - ■CB13 - ■■H1**		9
	162	7.1	11.3	8.66		**2KJ1100 - ■CB13 - ■■G1**		9
	189	6.1	9.1	7.42	★	**2KJ1100 - ■CB13 - ■■F1**		9
	217	5.3	10.0	6.45		**2KJ1100 - ■CB13 - ■■E1**		9
	250	4.6	11.1	5.61	★	**2KJ1100 - ■CB13 - ■■D1**		9
	277	4.1	11.8	5.06		**2KJ1100 - ■CB13 - ■■C1**		9
	313	3.7	13.4	4.47		**2KJ1100 - ■CB13 - ■■B1**		9
0.18	**D.188-D48-LA71C4**							
	0.06	21 556	0.93	22 654		**2KJ1236 - ■CC13 - ■■G1**		604
	0.06	23 784	0.84	24 996	★	**2KJ1236 - ■CC13 - ■■H1**		604
	0.07	19 027	1.1	19 997	★	**2KJ1236 - ■CC13 - ■■F1**		604
	0.08	15 568	1.3	16 361	★	**2KJ1236 - ■CC13 - ■■D1**		604

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

2

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
0.18	**D.188-D48-LA71C4**							
	0.08	17 164	1.2	18 039		**2KJ1236 - ■CC13 - ■■E1**		604
	0.09	14 184	1.4	14 907		**2KJ1236 - ■CC13 - ■■C1**		604
	D.188-Z48-LA71C4							
	0.11	12 159	1.6	12 504		**2KJ1235 - ■CC13 - ■■X1**		603
	0.12	10 761	1.9	11 066	★	**2KJ1235 - ■CC13 - ■■W1**		603
	D.168-Z48-LA71C4							
	0.08	17 036	0.82	17 519		**2KJ1232 - ■CC13 - ■■A2**		459
	0.09	15 077	0.93	15 504	★	**2KJ1232 - ■CC13 - ■■X1**		459
	0.10	13 705	1.0	14 094		**2KJ1232 - ■CC13 - ■■W1**		459
	0.11	12 312	1.1	12 661	★	**2KJ1232 - ■CC13 - ■■V1**		459
	0.13	10 554	1.3	10 853		**2KJ1232 - ■CC13 - ■■U1**		459
	0.14	9 548	1.5	9 819	★	**2KJ1232 - ■CC13 - ■■T1**		459
	0.15	8 814	1.6	9 064		**2KJ1232 - ■CC13 - ■■S1**		459
	0.17	7 664	1.8	7 881	★	**2KJ1232 - ■CC13 - ■■R1**		459
	0.19	6 959	2.0	7 156		**2KJ1232 - ■CC13 - ■■Q1**		459
	D.148-Z38-LA71C4							
	0.15	9 142	0.88	9 401		**2KJ1228 - ■CC13 - ■■T1**		283
	0.17	8 006	1.0	8 233		**2KJ1228 - ■CC13 - ■■S1**		283
	0.19	7 081	1.1	7 282		**2KJ1228 - ■CC13 - ■■R1**		283
	0.21	6 418	1.2	6 600		**2KJ1228 - ■CC13 - ■■Q1**		283
	0.24	5 665	1.4	5 826		**2KJ1228 - ■CC13 - ■■P1**		283
	0.26	5 111	1.6	5 256		**2KJ1228 - ■CC13 - ■■N1**		283
	0.29	4 636	1.7	4 767		**2KJ1228 - ■CC13 - ■■M1**		283
	0.32	4 223	1.9	4 343		**2KJ1228 - ■CC13 - ■■L1**		283
	D.128-Z38-LA71C4							
	0.21	6 388	0.8	6 569		**2KJ1225 - ■CC13 - ■■S1**		198
	0.24	5 650	0.9	5 810	★	**2KJ1225 - ■CC13 - ■■R1**		198
	0.26	5 121	1.0	5 266		**2KJ1225 - ■CC13 - ■■Q1**		198
	0.30	4 520	1.1	4 648	★	**2KJ1225 - ■CC13 - ■■P1**		198
	0.33	4 077	1.3	4 193		**2KJ1225 - ■CC13 - ■■N1**		198
	0.36	3 698	1.4	3 803	★	**2KJ1225 - ■CC13 - ■■M1**		198
	0.40	3 369	1.5	3 465		**2KJ1225 - ■CC13 - ■■L1**		198
	0.43	3 082	1.7	3 169	★	**2KJ1225 - ■CC13 - ■■K1**		198
	0.48	2 756	1.9	2 834		**2KJ1225 - ■CC13 - ■■J1**		198
	0.53	2 530	2.0	2 602	★	**2KJ1225 - ■CC13 - ■■H1**		198
	D.108-Z38-LA71C4							
	0.36	3 692	0.84	3 797		**2KJ1223 - ■CC13 - ■■A2**		127
	0.38	3 524	0.88	3 624		**2KJ1223 - ■CC13 - ■■X1**		127
	0.42	3 134	0.99	3 223		**2KJ1223 - ■CC13 - ■■W1**		127
	0.49	2 719	1.1	2 796		**2KJ1223 - ■CC13 - ■■V1**		127
	0.52	2 540	1.2	2 612		**2KJ1223 - ■CC13 - ■■U1**		127
	0.60	2 234	1.4	2 297		**2KJ1223 - ■CC13 - ■■T1**		127
	0.68	1 957	1.6	2 012		**2KJ1223 - ■CC13 - ■■S1**		127

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
0.18	**D.108-Z38-LA71C4**							
	0.77	1 731	1.8	1 780		**2KJ1223 - ■CC13 - ■■R1**		127
	0.85	1 569	2.0	1 613		**2KJ1223 - ■CC13 - ■■Q1**		127
	D.88-Z28-LA71C4							
	0.66	2 027	0.83	2 084	★	**2KJ1218 - ■CC13 - ■■T1**		76
	0.74	1 791	0.94	1 842		**2KJ1218 - ■CC13 - ■■S1**		76
	0.8	1 654	1.0	1 701	★	**2KJ1218 - ■CC13 - ■■R1**		76
	0.94	1 425	1.2	1 465		**2KJ1218 - ■CC13 - ■■Q1**		76
	1.0	1 294	1.3	1 331	★	**2KJ1218 - ■CC13 - ■■P1**		76
	1.1	1 177	1.4	1 210	★	**2KJ1218 - ■CC13 - ■■N1**		76
	1.2	1 067	1.6	1 097		**2KJ1218 - ■CC13 - ■■M1**		76
	1.4	971	1.7	999	★	**2KJ1218 - ■CC13 - ■■L1**		76
	1.6	859	2.0	883		**2KJ1218 - ■CC13 - ■■K1**		76
	D.68-Z28-LA71C4							
	1.4	969	0.83	996		**2KJ1214 - ■CC13 - ■■M1**		46
	1.5	881	0.91	906	★	**2KJ1214 - ■CC13 - ■■L1**		46
	1.7	779	1.0	801		**2KJ1214 - ■CC13 - ■■K1**		46
	1.9	720	1.1	740	★	**2KJ1214 - ■CC13 - ■■J1**		46
	2.2	619	1.3	637		**2KJ1214 - ■CC13 - ■■H1**		46
	D.68-LA80S8							
	2.4	716	1.1	281.01		**2KJ1204 - ■DB13 - ■■U1**	**P02**	50
	2.7	633	1.3	248.68	★	**2KJ1204 - ■DB13 - ■■T1**	**P02**	50
	D.68-LA71S6							
	3.0	568	1.4	281.01		**2KJ1204 - ■CD13 - ■■U1**	**P01**	46
	3.4	503	1.6	248.68	★	**2KJ1204 - ■CD13 - ■■T1**	**P01**	46
	3.8	457	1.7	226.07		**2KJ1204 - ■CD13 - ■■S1**	**P01**	46
	4.2	411	1.9	203.09	★	**2KJ1204 - ■CD13 - ■■R1**	**P01**	46
	D.48-Z28-LA71C4							
	2.6	519	0.87	534		**2KJ1212 - ■CC13 - ■■K1**		29
	2.8	479	0.94	493	★	**2KJ1212 - ■CC13 - ■■J1**		29
	D.48-LA80S8							
	3.2	532	0.85	208.77	★	**2KJ1203 - ■DB13 - ■■S1**	**P02**	31
	3.6	473	0.95	185.66		**2KJ1203 - ■DB13 - ■■R1**	**P02**	31
	D.48-LA71S6							
	4.1	422	1.1	208.77	★	**2KJ1203 - ■CD13 - ■■S1**	**P01**	27
	4.6	375	1.2	185.66		**2KJ1203 - ■CD13 - ■■R1**	**P01**	27
	5.3	326	1.4	161.05	★	**2KJ1203 - ■CD13 - ■■Q1**	**P01**	27
	5.6	304	1.5	150.48		**2KJ1203 - ■CD13 - ■■P1**	**P01**	27
	D.48-LA71C4							
	6.6	262	1.7	208.77	★	**2KJ1203 - ■CC13 - ■■S1**		27
	7.4	233	1.9	185.66		**2KJ1203 - ■CC13 - ■■R1**		27
	D.38-LA71S6							
	6.4	270	0.81	133.57		**2KJ1202 - ■CD13 - ■■P1**	**P01**	18

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

2

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
0.18	**D.38-LA71C4**							
	7.1	241	0.91	191.75	★	**2KJ1202 - ■CC13 - ■■S1**		18
	8.0	214	1.0	170.24		**2KJ1202 - ■CC13 - ■■R1**		18
	9.2	187	1.2	149.26	★	**2KJ1202 - ■CC13 - ■■Q1**		18
	10.3	168	1.3	133.57		**2KJ1202 - ■CC13 - ■■P1**		18
	11.6	149	1.5	118.55	★	**2KJ1202 - ■CC13 - ■■N1**		18
	13.2	130	1.7	103.89		**2KJ1202 - ■CC13 - ■■M1**		18
	15.0	115	1.9	91.34	★	**2KJ1202 - ■CC13 - ■■L1**		18
	16.6	104	2.1	82.52		**2KJ1202 - ■CC13 - ■■K1**		18
	D.28-LA71C4							
	10.4	166	0.84	132.35	★	**2KJ1201 - ■CC13 - ■■H1**		10
	12.4	139	1.0	110.86		**2KJ1201 - ■CC13 - ■■G1**		10
	14.5	119	1.2	94.52	★	**2KJ1201 - ■CC13 - ■■F1**		10
	17.1	101	1.4	80.34	★	**2KJ1201 - ■CC13 - ■■E1**		10
	19.6	88	1.6	69.82		**2KJ1201 - ■CC13 - ■■D1**		10
	22	76	1.8	60.77	★	**2KJ1201 - ■CC13 - ■■C1**		10
	Z.28-LA71C4							
	27	64	2.2	51.35		**2KJ1101 - ■CC13 - ■■C2**		10
	32	54	2.6	43.3	★	**2KJ1101 - ■CC13 - ■■B2**		10
	36	48	2.9	38.45		**2KJ1101 - ■CC13 - ■■A2**		10
	41	42	3.3	33.71	★	**2KJ1101 - ■CC13 - ■■X1**		10
	45	38	3.7	30.16		**2KJ1101 - ■CC13 - ■■W1**		10
	51	34	4.2	26.77	★	**2KJ1101 - ■CC13 - ■■V1**		10
	58	29	4.8	23.46		**2KJ1101 - ■CC13 - ■■U1**		10
	66	26	5.4	20.63	★	**2KJ1101 - ■CC13 - ■■T1**		10
	74	23	6.0	18.63		**2KJ1101 - ■CC13 - ■■S1**		10
	84	20	6.9	16.24	★	**2KJ1101 - ■CC13 - ■■R1**		10
	94	18	7.7	14.58		**2KJ1101 - ■CC13 - ■■Q1**		10
	104	16	8.5	13.17	★	**2KJ1101 - ■CC13 - ■■P1**		10
	115	15	9.3	11.94		**2KJ1101 - ■CC13 - ■■N1**		10
	126	14	10.3	10.87	★	**2KJ1101 - ■CC13 - ■■M1**		10
	143	12	11.6	9.61		**2KJ1101 - ■CC13 - ■■L1**		10
	154	11	12.6	8.87	★	**2KJ1101 - ■CC13 - ■■K1**		10
	179	9.6	14.2	7.64		**2KJ1101 - ■CC13 - ■■J1**		10
	217	7.9	12.0	6.31	★	**2KJ1101 - ■CC13 - ■■G1**		10
	240	7.2	13.0	5.72		**2KJ1101 - ■CC13 - ■■F1**		10
	263	6.5	14.1	5.21	★	**2KJ1101 - ■CC13 - ■■E1**		10
	D.18-LA71C4							
	17.4	99	0.91	78.56	★	**2KJ1200 - ■CC13 - ■■G1**		9
	20	84	1.1	66.78	★	**2KJ1200 - ■CC13 - ■■F1**		9
	24	73	1.2	58.03		**2KJ1200 - ■CC13 - ■■E1**		9
	27	63	1.4	50.51	★	**2KJ1200 - ■CC13 - ■■D1**		9

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
0.18	**Z.18-LA71C4**							
	32	54	1.7	43.15		**2KJ1100 - ■CC13 - ■■U1**		9
	37	47	1.9	37.23	★	**2KJ1100 - ■CC13 - ■■T1**		9
	43	40	2.2	31.98		**2KJ1100 - ■CC13 - ■■S1**		9
	46	37	2.4	29.45	★	**2KJ1100 - ■CC13 - ■■R1**		9
	51	34	2.7	26.77		**2KJ1100 - ■CC13 - ■■Q1**		9
	58	30	3.0	23.69	★	**2KJ1100 - ■CC13 - ■■P1**		9
	69	25	3.6	19.85		**2KJ1100 - ■CC13 - ■■N1**		9
	81	21	4.2	16.92	★	**2KJ1100 - ■CC13 - ■■M1**		9
	95	18	5.0	14.38	★	**2KJ1100 - ■CC13 - ■■L1**		9
	110	16	5.7	12.5		**2KJ1100 - ■CC13 - ■■K1**		9
	126	14	6.4	10.88	★	**2KJ1100 - ■CC13 - ■■J1**		9
	140	12	6.7	9.81		**2KJ1100 - ■CC13 - ■■H1**		9
	158	11	7.4	8.66		**2KJ1100 - ■CC13 - ■■G1**		9
	185	9.3	5.9	7.42	★	**2KJ1100 - ■CC13 - ■■F1**		9
	212	8.1	6.5	6.45		**2KJ1100 - ■CC13 - ■■E1**		9
	244	7	7.2	5.61	★	**2KJ1100 - ■CC13 - ■■D1**		9
	271	6.3	7.7	5.06		**2KJ1100 - ■CC13 - ■■C1**		9
	306	5.6	8.7	4.47		**2KJ1100 - ■CC13 - ■■B1**		9
	383	4.5	10.2	3.58	★	**2KJ1100 - ■CC13 - ■■A1**		9
	E.38-LA71C4							
	147	12	2.7	9.33	★	**2KJ1001 - ■CC13 - ■■S1**		13
	165	10	3.1	8.3		**2KJ1001 - ■CC13 - ■■R1**		13
	190	9	4.2	7.2	★	**2KJ1001 - ■CC13 - ■■Q1**		13
0.25	**D.188-D48-LA71S4**							
	0.08	23 171	0.86	16 361	★	**2KJ1236 - ■CD13 - ■■D1**		604
	0.09	21 112	0.95	14 907		**2KJ1236 - ■CD13 - ■■C1**		604
	D.188-Z48-LA71S4							
	0.11	18 098	1.1	12 504		**2KJ1235 - ■CD13 - ■■X1**		603
	0.12	16 016	1.2	11 066	★	**2KJ1235 - ■CD13 - ■■W1**		603
	0.15	13 080	1.5	9 037	★	**2KJ1235 - ■CD13 - ■■V1**		603
	0.17	11 211	1.8	7 746		**2KJ1235 - ■CD13 - ■■U1**		603
	0.19	10 143	2.0	7 008	★	**2KJ1235 - ■CD13 - ■■T1**		603
	D.168-Z48-LA71S4							
	0.12	15 708	0.89	10 853		**2KJ1232 - ■CD13 - ■■U1**		459
	0.14	14 212	0.99	9 819	★	**2KJ1232 - ■CD13 - ■■T1**		459
	0.15	13 119	1.1	9 064		**2KJ1232 - ■CD13 - ■■S1**		459
	0.17	11 407	1.2	7 881	★	**2KJ1232 - ■CD13 - ■■R1**		459
	0.19	10 357	1.4	7 156		**2KJ1232 - ■CD13 - ■■Q1**		459
	0.21	9 457	1.5	6 534	★	**2KJ1232 - ■CD13 - ■■P1**		459
	0.22	8 677	1.6	5 995		**2KJ1232 - ■CD13 - ■■N1**		459
	0.24	7 994	1.8	5 523	★	**2KJ1232 - ■CD13 - ■■M1**		459
	0.27	7 260	1.9	5 016		**2KJ1232 - ■CD13 - ■■L1**		459

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

2

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
0.25	**D.148-Z38-LA71S4**							
	0.20	9 553	0.84	6 600		**2KJ1228 - ■CD13 - ■■Q1**		283
	0.23	8 432	0.95	5 826		**2KJ1228 - ■CD13 - ■■P1**		283
	0.26	7 607	1.1	5 256		**2KJ1228 - ■CD13 - ■■N1**		283
	0.28	6 900	1.2	4 767		**2KJ1228 - ■CD13 - ■■M1**		283
	0.31	6 286	1.3	4 343		**2KJ1228 - ■CD13 - ■■L1**		283
	0.34	5 749	1.4	3 972		**2KJ1228 - ■CD13 - ■■K1**		283
	0.38	5 141	1.6	3 552		**2KJ1228 - ■CD13 - ■■J1**		283
	0.41	4 720	1.7	3 261		**2KJ1228 - ■CD13 - ■■H1**		283
	0.46	4 254	1.9	2 939		**2KJ1228 - ■CD13 - ■■G1**		283
	D.128-Z38-LA71S4							
	0.32	6 069	0.84	4 193		**2KJ1225 - ■CD13 - ■■N1**		198
	0.36	5 504	0.93	3 803	★	**2KJ1225 - ■CD13 - ■■M1**		198
	0.39	5 015	1.0	3 465		**2KJ1225 - ■CD13 - ■■L1**		198
	0.43	4 587	1.1	3 169	★	**2KJ1225 - ■CD13 - ■■K1**		198
	0.48	4 102	1.2	2 834		**2KJ1225 - ■CD13 - ■■J1**		198
	0.52	3 766	1.4	2 602	★	**2KJ1225 - ■CD13 - ■■H1**		198
	0.58	3 394	1.5	2 345		**2KJ1225 - ■CD13 - ■■G1**		198
	0.67	2 911	1.8	2 011	★	**2KJ1225 - ■CD13 - ■■E1**		198
	0.67	2 919	1.7	2 017	★	**2KJ1225 - ■CD13 - ■■F1**		198
	0.75	2 602	2.0	1 798		**2KJ1225 - ■CD13 - ■■D1**		198
	D.108-Z38-LA71S4							
	0.52	3 780	0.82	2 612		**2KJ1223 - ■CD13 - ■■U1**		127
	0.59	3 325	0.93	2 297		**2KJ1223 - ■CD13 - ■■T1**		127
	0.67	2 912	1.1	2 012		**2KJ1223 - ■CD13 - ■■S1**		127
	0.76	2 576	1.2	1 780		**2KJ1223 - ■CD13 - ■■R1**		127
	0.84	2 335	1.3	1 613		**2KJ1223 - ■CD13 - ■■Q1**		127
	0.95	2 061	1.5	1 424		**2KJ1223 - ■CD13 - ■■P1**		127
	1.1	1 858	1.7	1 284		**2KJ1223 - ■CD13 - ■■N1**		127
	1.2	1 686	1.8	1 165		**2KJ1223 - ■CD13 - ■■M1**		127
	1.3	1 536	2.0	1 061		**2KJ1223 - ■CD13 - ■■L1**		127
	D.88-Z28-LA71S4							
	1.0	1 926	0.87	1 331	★	**2KJ1218 - ■CD13 - ■■P1**		76
	1.1	1 751	0.96	1 210	★	**2KJ1218 - ■CD13 - ■■N1**		76
	1.2	1 588	1.1	1 097		**2KJ1218 - ■CD13 - ■■M1**		76
	1.4	1 446	1.2	999	★	**2KJ1218 - ■CD13 - ■■L1**		76
	1.5	1 278	1.3	883		**2KJ1218 - ■CD13 - ■■K1**		76
	1.7	1 180	1.4	815	★	**2KJ1218 - ■CD13 - ■■J1**		76
	1.9	1 016	1.7	702		**2KJ1218 - ■CD13 - ■■H1**		76
	2.1	936	1.8	647	★	**2KJ1218 - ■CD13 - ■■G1**		76
	D.88-LA80M8							
	2.3	1 047	1.6	300.41	★	**2KJ1205 - ■DC13 - ■■V1**	**P02**	82
	2.5	944	1.8	270.9		**2KJ1205 - ■DC13 - ■■U1**	**P02**	82
	2.8	851	2.0	244.29	★	**2KJ1205 - ■DC13 - ■■T1**	**P02**	82

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
0.25	**D.88-LA71M6**							
	2.9	834	2.0	300.41	★	**2KJ1205 - ■CE13 - ■■V1**	**P01**	78
	D.68-Z28-LA71S4							
	2.1	922	0.87	637		**2KJ1214 - ■CD13 - ■■H1**		46
	2.2	879	0.91	607	★	**2KJ1214 - ■CD13 - ■■G1**		46
	D.68-LA80M8							
	2.4	979	0.82	281.01		**2KJ1204 - ■DC13 - ■■U1**	**P02**	50
	2.8	867	0.92	248.68	★	**2KJ1204 - ■DC13 - ■■T1**	**P02**	50
	D.68-LA71M6							
	3.1	780	1.0	281.01		**2KJ1204 - ■CE13 - ■■U1**	**P01**	46
	3.5	690	1.2	248.68	★	**2KJ1204 - ■CE13 - ■■T1**	**P01**	46
	3.8	628	1.3	226.07		**2KJ1204 - ■CE13 - ■■S1**	**P01**	46
	4.2	564	1.4	203.09	★	**2KJ1204 - ■CE13 - ■■R1**	**P01**	46
	D.68-LA71S4							
	4.8	497	1.6	281.01		**2KJ1204 - ■CD13 - ■■U1**		46
	5.4	440	1.8	248.68	★	**2KJ1204 - ■CD13 - ■■T1**		46
	6.0	400	2.0	226.07		**2KJ1204 - ■CD13 - ■■S1**		46
	D.48-LA71M6							
	4.6	515	0.87	185.66		**2KJ1203 - ■CE13 - ■■R1**	**P01**	27
	5.3	447	1.0	161.05	★	**2KJ1203 - ■CE13 - ■■Q1**	**P01**	27
	5.7	418	1.1	150.48		**2KJ1203 - ■CE13 - ■■P1**	**P01**	27
	D.48-LA71S4							
	6.5	369	1.2	208.77	★	**2KJ1203 - ■CD13 - ■■S1**		27
	7.3	328	1.4	185.66		**2KJ1203 - ■CD13 - ■■R1**		27
	8.4	285	1.6	161.05	★	**2KJ1203 - ■CD13 - ■■Q1**		27
	9.0	266	1.7	150.48		**2KJ1203 - ■CD13 - ■■P1**		27
	10.2	234	1.9	132.34	★	**2KJ1203 - ■CD13 - ■■N1**		27
	11.6	205	2.2	115.91		**2KJ1203 - ■CD13 - ■■M1**		27
	D.38-LA71S4							
	9.0	264	0.83	149.26	★	**2KJ1202 - ■CD13 - ■■Q1**		18
	10.1	236	0.93	133.57		**2KJ1202 - ■CD13 - ■■P1**		18
	11.4	210	1.0	118.55	★	**2KJ1202 - ■CD13 - ■■N1**		18
	13.0	184	1.2	103.89		**2KJ1202 - ■CD13 - ■■M1**		18
	14.8	162	1.4	91.34	★	**2KJ1202 - ■CD13 - ■■L1**		18
	16.4	146	1.5	82.52		**2KJ1202 - ■CD13 - ■■K1**		18
	18.8	127	1.7	71.91	★	**2KJ1202 - ■CD13 - ■■J1**		18
	21	114	1.9	64.58		**2KJ1202 - ■CD13 - ■■H1**		18
	23	103	2.1	58.3	★	**2KJ1202 - ■CD13 - ■■G1**		18
	26	94	2.4	52.86		**2KJ1202 - ■CD13 - ■■F1**		18
	D.28-LA71S4							
	14.3	167	0.84	94.52	★	**2KJ1201 - ■CD13 - ■■F1**		10
	16.8	142	0.99	80.34	★	**2KJ1201 - ■CD13 - ■■E1**		10
	19.3	123	1.1	69.82		**2KJ1201 - ■CD13 - ■■D1**		10
	22	107	1.3	60.77	★	**2KJ1201 - ■CD13 - ■■C1**		10

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

2

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
0.25	**Z.28-LA71S4**							
	26	91	1.5	51.35		**2KJ1101 - ■CD13 - ■■C2**		10
	31	77	1.8	43.3	★	**2KJ1101 - ■CD13 - ■■B2**		10
	35	68	2.1	38.45		**2KJ1101 - ■CD13 - ■■A2**		10
	40	60	2.3	33.71	★	**2KJ1101 - ■CD13 - ■■X1**		10
	45	53	2.6	30.16		**2KJ1101 - ■CD13 - ■■W1**		10
	50	47	3.0	26.77	★	**2KJ1101 - ■CD13 - ■■V1**		10
	58	42	3.4	23.46		**2KJ1101 - ■CD13 - ■■U1**		10
	65	36	3.8	20.63	★	**2KJ1101 - ■CD13 - ■■T1**		10
	72	33	4.2	18.63		**2KJ1101 - ■CD13 - ■■S1**		10
	83	29	4.9	16.24	★	**2KJ1101 - ■CD13 - ■■R1**		10
	93	26	5.4	14.58		**2KJ1101 - ■CD13 - ■■Q1**		10
	103	23	6.0	13.17	★	**2KJ1101 - ■CD13 - ■■P1**		10
	113	21	6.6	11.94		**2KJ1101 - ■CD13 - ■■N1**		10
	124	19	7.3	10.87	★	**2KJ1101 - ■CD13 - ■■M1**		10
	140	17	8.2	9.61		**2KJ1101 - ■CD13 - ■■L1**		10
	152	16	8.9	8.87	★	**2KJ1101 - ■CD13 - ■■K1**		10
	177	14	10.1	7.64		**2KJ1101 - ■CD13 - ■■J1**		10
	195	12	10.8	6.94	★	**2KJ1101 - ■CD13 - ■■H1**		10
	214	11	8.5	6.31	★	**2KJ1101 - ■CD13 - ■■G1**		10
	236	10	9.2	5.72		**2KJ1101 - ■CD13 - ■■F1**		10
	259	9.2	10.0	5.21	★	**2KJ1101 - ■CD13 - ■■E1**		10
	293	8.1	10.8	4.6		**2KJ1101 - ■CD13 - ■■D1**		10
	318	7.5	12.0	4.25	★	**2KJ1101 - ■CD13 - ■■C1**		10
	369	6.5	12.4	3.66		**2KJ1101 - ■CD13 - ■■B1**		10
	405	5.9	13.1	3.33	★	**2KJ1101 - ■CD13 - ■■A1**		10
	D.18-LA71S4							
	23	103	0.88	58.03		**2KJ1200 - ■CD13 - ■■E1**		9
	27	89	1.0	50.51	★	**2KJ1200 - ■CD13 - ■■D1**		9
	Z.18-LA71S4							
	31	76	1.2	43.15		**2KJ1100 - ■CD13 - ■■U1**		9
	36	66	1.4	37.23	★	**2KJ1100 - ■CD13 - ■■T1**		9
	42	57	1.6	31.98		**2KJ1100 - ■CD13 - ■■S1**		9
	46	52	1.7	29.45	★	**2KJ1100 - ■CD13 - ■■R1**		9
	50	47	1.9	26.77		**2KJ1100 - ■CD13 - ■■Q1**		9
	57	42	2.1	23.69	★	**2KJ1100 - ■CD13 - ■■P1**		9
	68	35	2.6	19.85		**2KJ1100 - ■CD13 - ■■N1**		9
	80	30	3.0	16.92	★	**2KJ1100 - ■CD13 - ■■M1**		9
	94	25	3.5	14.38	★	**2KJ1100 - ■CD13 - ■■L1**		9
	108	22	4.1	12.5		**2KJ1100 - ■CD13 - ■■K1**		9
	124	19	4.5	10.88	★	**2KJ1100 - ■CD13 - ■■J1**		9
	138	17	4.8	9.81		**2KJ1100 - ■CD13 - ■■H1**		9
	156	15	5.2	8.66		**2KJ1100 - ■CD13 - ■■G1**		9
	182	13	4.2	7.42	★	**2KJ1100 - ■CD13 - ■■F1**		9

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
0.25	**Z.18-LA71S4**							
	209	11	4.6	6.45		**2KJ1100 - ■CD13 - ■■E1**		9
	241	9.9	5.1	5.61	★	**2KJ1100 - ■CD13 - ■■D1**		9
	267	8.9	5.5	5.06		**2KJ1100 - ■CD13 - ■■C1**		9
	302	7.9	6.2	4.47		**2KJ1100 - ■CD13 - ■■B1**		9
	377	6.3	7.3	3.58	★	**2KJ1100 - ■CD13 - ■■A1**		9
	E.48-LA71S4							
	119	20	2.8	11.3		**2KJ1002 - ■CD13 - ■■U1**		16
	149	16	4.0	9.09		**2KJ1002 - ■CD13 - ■■S1**		16
	E.38-LA71S4							
	145	16	1.9	9.33	★	**2KJ1001 - ■CD13 - ■■S1**		13
	163	15	2.2	8.3		**2KJ1001 - ■CD13 - ■■R1**		13
	188	13	3.0	7.2	★	**2KJ1001 - ■CD13 - ■■Q1**		13
	201	12	4.0	6.73		**2KJ1001 - ■CD13 - ■■P1**		13
0.37	**D.188-Z48-LA71M4**							
	0.12	24 391	0.82	11 066	★	**2KJ1235 - ■CE13 - ■■W1**		603
	0.15	19 919	1.0	9 037	★	**2KJ1235 - ■CE13 - ■■V1**		603
	0.18	17 073	1.2	7 746		**2KJ1235 - ■CE13 - ■■U1**		603
	0.20	15 447	1.3	7 008	★	**2KJ1235 - ■CE13 - ■■T1**		603
	0.21	14 259	1.4	6 469		**2KJ1235 - ■CE13 - ■■S1**		603
	0.24	12 398	1.6	5 625	★	**2KJ1235 - ■CE13 - ■■R1**		603
	0.27	11 257	1.8	5 107		**2KJ1235 - ■CE13 - ■■Q1**		603
	0.29	10 278	1.9	4 663	★	**2KJ1235 - ■CE13 - ■■P1**		603
	D.168-Z48-LA71M4							
	0.17	17 371	0.81	7 881	★	**2KJ1232 - ■CE13 - ■■R1**		459
	0.19	15 773	0.89	7 156		**2KJ1232 - ■CE13 - ■■Q1**		459
	0.21	14 402	0.97	6 534	★	**2KJ1232 - ■CE13 - ■■P1**		459
	0.23	13 214	1.1	5 995		**2KJ1232 - ■CE13 - ■■N1**		459
	0.25	12 174	1.2	5 523	★	**2KJ1232 - ■CE13 - ■■M1**		459
	0.27	11 056	1.3	5 016		**2KJ1232 - ■CE13 - ■■L1**		459
	0.3	10 071	1.4	4 569	★	**2KJ1232 - ■CE13 - ■■K1**		459
	0.33	9 227	1.5	4 186		**2KJ1232 - ■CE13 - ■■J1**		459
	0.37	8 233	1.7	3 735	★	**2KJ1232 - ■CE13 - ■■H1**		459
	D.148-Z38-LA71M4							
	0.32	9 573	0.84	4 343		**2KJ1228 - ■CE13 - ■■L1**		283
	0.34	8 755	0.91	3 972		**2KJ1228 - ■CE13 - ■■K1**		283
	0.39	7 829	1.0	3 552		**2KJ1228 - ■CE13 - ■■J1**		283
	0.42	7 188	1.1	3 261		**2KJ1228 - ■CE13 - ■■H1**		283
	0.47	6 478	1.2	2 939		**2KJ1228 - ■CE13 - ■■G1**		283
	0.54	5 557	1.4	2 521		**2KJ1228 - ■CE13 - ■■E1**		283
	0.54	5 572	1.4	2 528		**2KJ1228 - ■CE13 - ■■F1**		283
	0.61	4 968	1.6	2 254		**2KJ1228 - ■CE13 - ■■D1**		283
	0.66	4 563	1.8	2 070		**2KJ1228 - ■CE13 - ■■C1**		283
	0.74	4 111	1.9	1 865		**2KJ1228 - ■CE13 - ■■B1**		283

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

2

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
0.37	**D.128-Z48-LA71M4**							
	1.1	2 801	1.8	1 271		**2KJ1227 - ■CE13 - ■■P1**		208
	1.2	2 570	2.0	1 166		**2KJ1227 - ■CE13 - ■■N1**		208
	D.128-Z38-LA71M4							
	0.48	6 247	0.82	2 834		**2KJ1225 - ■CE13 - ■■J1**		198
	0.53	5 735	0.89	2 602	★	**2KJ1225 - ■CE13 - ■■H1**		198
	0.58	5 169	0.99	2 345		**2KJ1225 - ■CE13 - ■■G1**		198
	0.68	4 433	1.2	2 011	★	**2KJ1225 - ■CE13 - ■■E1**		198
	0.68	4 446	1.1	2 017	★	**2KJ1225 - ■CE13 - ■■F1**		198
	0.76	3 963	1.3	1 798		**2KJ1225 - ■CE13 - ■■D1**		198
	0.83	3 639	1.4	1 651	★	**2KJ1225 - ■CE13 - ■■C1**		198
	0.92	3 280	1.6	1 488		**2KJ1225 - ■CE13 - ■■B1**		198
	1.1	2 821	1.8	1 280	★	**2KJ1225 - ■CE13 - ■■A1**		198
	D.108-Z38-LA71M4							
	0.85	3 555	0.87	1 613		**2KJ1223 - ■CE13 - ■■Q1**		127
	0.96	3 139	0.99	1 424		**2KJ1223 - ■CE13 - ■■P1**		127
	1.1	2 830	1.1	1 284		**2KJ1223 - ■CE13 - ■■N1**		127
	1.2	2 568	1.2	1 165		**2KJ1223 - ■CE13 - ■■M1**		127
	1.3	2 339	1.3	1 061		**2KJ1223 - ■CE13 - ■■L1**		127
	1.4	2 140	1.4	971		**2KJ1223 - ■CE13 - ■■K1**		127
	1.6	1 913	1.6	868		**2KJ1223 - ■CE13 - ■■J1**		127
	1.7	1 757	1.8	797		**2KJ1223 - ■CE13 - ■■H1**		127
	D.108-LA90SA8							
	1.9	1 881	1.6	359.3		**2KJ1206 - ■EB13 - ■■V1**	**P02**	133
	2.1	1 702	1.8	325.21	★	**2KJ1206 - ■EB13 - ■■U1**	**P02**	133
	D.88-Z28-LA71M4							
	1.6	1 946	0.86	883		**2KJ1218 - ■CE13 - ■■K1**		76
	1.7	1 796	0.94	815	★	**2KJ1218 - ■CE13 - ■■J1**		76
	2.0	1 547	1.1	702		**2KJ1218 - ■CE13 - ■■H1**		76
	2.1	1 426	1.2	647	★	**2KJ1218 - ■CE13 - ■■G1**		76
	D.88-LA90SA8							
	2.2	1 573	1.1	300.41	★	**2KJ1205 - ■EB13 - ■■V1**	**P02**	85
	2.5	1 418	1.2	270.9		**2KJ1205 - ■EB13 - ■■U1**	**P02**	85
	2.8	1 279	1.3	244.29	★	**2KJ1205 - ■EB13 - ■■T1**	**P02**	85
	D.88-LA80S6							
	3.1	1 154	1.5	300.41	★	**2KJ1205 - ■DB13 - ■■V1**	**P01**	82
	3.4	1 040	1.6	270.9		**2KJ1205 - ■DB13 - ■■U1**	**P01**	82
	3.8	938	1.8	244.29	★	**2KJ1205 - ■DB13 - ■■T1**	**P01**	82
	4.3	821	2.0	213.64		**2KJ1205 - ■DB13 - ■■S1**	**P01**	82
	D.68-LA80S6							
	3.7	955	0.84	248.68	★	**2KJ1204 - ■DB13 - ■■T1**	**P01**	50
	4.1	868	0.92	226.07		**2KJ1204 - ■DB13 - ■■S1**	**P01**	50
	4.5	780	1.0	203.09	★	**2KJ1204 - ■DB13 - ■■R1**	**P01**	50

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
0.37	**D.68-LA71M4**							
	4.9	725	1.1	281.01		**2KJ1204 - ■CE13 - ■■U1**		46
	5.5	641	1.2	248.68	★	**2KJ1204 - ■CE13 - ■■T1**		46
	6.1	583	1.4	226.07		**2KJ1204 - ■CE13 - ■■S1**		46
	6.7	524	1.5	203.09	★	**2KJ1204 - ■CE13 - ■■R1**		46
	7.9	449	1.8	174.08		**2KJ1204 - ■CE13 - ■■Q1**		46
	8.7	406	2.0	157.5	★	**2KJ1204 - ■CE13 - ■■P1**		46
	9.4	375	2.1	145.38		**2KJ1204 - ■CE13 - ■■N1**		46
	D.48-LA71M4							
	6.6	538	0.84	208.77	★	**2KJ1203 - ■CE13 - ■■S1**		27
	7.4	479	0.94	185.66		**2KJ1203 - ■CE13 - ■■R1**		27
	8.5	415	1.1	161.05	★	**2KJ1203 - ■CE13 - ■■Q1**		27
	9.1	388	1.2	150.48		**2KJ1203 - ■CE13 - ■■P1**		27
	10.4	341	1.3	132.34	★	**2KJ1203 - ■CE13 - ■■N1**		27
	11.8	299	1.5	115.91		**2KJ1203 - ■CE13 - ■■M1**		27
	13.4	264	1.7	102.52	★	**2KJ1203 - ■CE13 - ■■L1**		27
	14.7	240	1.9	92.91		**2KJ1203 - ■CE13 - ■■K1**		27
	16.7	212	2.1	82.02	★	**2KJ1203 - ■CE13 - ■■J1**		27
	Z.48-LA71M4							
	27	132	2.2	51.28		**2KJ1103 - ■CE13 - ■■A2**		27
	D.38-LA71M4							
	13.2	268	0.82	103.89		**2KJ1202 - ■CE13 - ■■M1**		18
	15.0	236	0.93	91.34	★	**2KJ1202 - ■CE13 - ■■L1**		18
	16.6	213	1.0	82.52		**2KJ1202 - ■CE13 - ■■K1**		18
	19.1	185	1.2	71.91	★	**2KJ1202 - ■CE13 - ■■J1**		18
	21	167	1.3	64.58		**2KJ1202 - ■CE13 - ■■H1**		18
	24	150	1.5	58.3	★	**2KJ1202 - ■CE13 - ■■G1**		18
	26	136	1.6	52.86		**2KJ1202 - ■CE13 - ■■F1**		18
	Z.38-LA71M4							
	31	114	1.9	44.12	★	**2KJ1102 - ■CE13 - ■■A2**		17
	35	101	2.1	39.24		**2KJ1102 - ■CE13 - ■■X1**		17
	40	88	2.5	34.04	★	**2KJ1102 - ■CE13 - ■■W1**		17
	43	82	2.7	31.8		**2KJ1102 - ■CE13 - ■■V1**		17
	D.28-LA71M4							
	22	157	0.89	60.77	★	**2KJ1201 - ■CE13 - ■■C1**		10
	Z.28-LA71M4							
	27	132	1.1	51.35		**2KJ1101 - ■CE13 - ■■C2**		10
	32	112	1.3	43.3	★	**2KJ1101 - ■CE13 - ■■B2**		10
	36	99	1.4	38.45		**2KJ1101 - ■CE13 - ■■A2**		10
	41	87	1.6	33.71	★	**2KJ1101 - ■CE13 - ■■X1**		10
	45	78	1.8	30.16		**2KJ1101 - ■CE13 - ■■W1**		10
	51	69	2.0	26.77	★	**2KJ1101 - ■CE13 - ■■V1**		10
	58	60	2.3	23.46		**2KJ1101 - ■CE13 - ■■U1**		10
	66	53	2.6	20.63	★	**2KJ1101 - ■CE13 - ■■T1**		10

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

2

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
0.37	**Z.28-LA71M4**							
	74	48	2.9	18.63		**2KJ1101 - ■CE13 - ■■S1**		10
	84	42	3.3	16.24	★	**2KJ1101 - ■CE13 - ■■R1**		10
	Z.18-LA71M4							
	32	111	0.81	43.15		**2KJ1100 - ■CE13 - ■■U1**		9
	37	96	0.94	37.23	★	**2KJ1100 - ■CE13 - ■■T1**		9
	43	82	1.1	31.98		**2KJ1100 - ■CE13 - ■■S1**		9
	46	76	1.2	29.45	★	**2KJ1100 - ■CE13 - ■■R1**		9
	51	69	1.3	26.77		**2KJ1100 - ■CE13 - ■■Q1**		9
	58	61	1.5	23.69	★	**2KJ1100 - ■CE13 - ■■P1**		9
	69	51	1.8	19.85		**2KJ1100 - ■CE13 - ■■N1**		9
	81	44	2.1	16.92	★	**2KJ1100 - ■CE13 - ■■M1**		9
	95	37	2.4	14.38	★	**2KJ1100 - ■CE13 - ■■L1**		9
	110	32	2.8	12.5		**2KJ1100 - ■CE13 - ■■K1**		9
	126	28	3.1	10.88	★	**2KJ1100 - ■CE13 - ■■J1**		9
	140	25	3.3	9.81		**2KJ1100 - ■CE13 - ■■H1**		9
	158	22	3.6	8.66		**2KJ1100 - ■CE13 - ■■G1**		9
	185	19	2.9	7.42	★	**2KJ1100 - ■CE13 - ■■F1**		9
	212	17	3.2	6.45		**2KJ1100 - ■CE13 - ■■E1**		9
	244	14	3.5	5.61	★	**2KJ1100 - ■CE13 - ■■D1**		9
	271	13	3.8	5.06		**2KJ1100 - ■CE13 - ■■C1**		9
	306	12	4.3	4.47		**2KJ1100 - ■CE13 - ■■B1**		9
	383	9.2	5.0	3.58	★	**2KJ1100 - ■CE13 - ■■A1**		9
	E.68-LA71M4							
	110	32	2.5	12.4	★	**2KJ1003 - ■CE13 - ■■W1**		26
	123	29	3.2	11.18		**2KJ1003 - ■CE13 - ■■V1**		26
	136	26	3.7	10.08	★	**2KJ1003 - ■CE13 - ■■U1**		26
	E.48-LA71M4							
	121	29	1.9	11.3		**2KJ1002 - ■CE13 - ■■U1**		16
	137	26	3.1	10	★	**2KJ1002 - ■CE13 - ■■T1**		16
	151	23	2.7	9.09		**2KJ1002 - ■CE13 - ■■S1**		16
	168	21	4.0	8.17	★	**2KJ1002 - ■CE13 - ■■R1**		16
	E.38-LA71M4							
	147	24	1.3	9.33	★	**2KJ1001 - ■CE13 - ■■S1**		13
	165	21	1.5	8.3		**2KJ1001 - ■CE13 - ■■R1**		13
	190	19	2.0	7.2	★	**2KJ1001 - ■CE13 - ■■Q1**		13
	204	17	2.8	6.73		**2KJ1001 - ■CE13 - ■■P1**		13
	231	15	3.5	5.92	★	**2KJ1001 - ■CE13 - ■■N1**		13
0.55	**D.188-Z48-LA71ZMP4**							
	0.20	23 625	0.85	7 008	★	**2KJ1235 - ■CG13 - ■■T1**		603
	0.21	21 808	0.92	6 469		**2KJ1235 - ■CG13 - ■■S1**		603
	0.24	18 962	1.1	5 625	★	**2KJ1235 - ■CG13 - ■■R1**		603
	0.27	17 216	1.2	5 107		**2KJ1235 - ■CG13 - ■■Q1**		603
	0.29	15 719	1.3	4 663	★	**2KJ1235 - ■CG13 - ■■P1**		603

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
0.55	**D.188-Z48-LA71ZMP4**							
	0.32	14 425	1.4	4 279		**2KJ1235 - ■CG13 - ■■N1**		603
	0.35	13 289	1.5	3 942	★	**2KJ1235 - ■CG13 - ■■M1**		603
	0.38	12 068	1.7	3 580		**2KJ1235 - ■CG13 - ■■L1**		603
	0.42	10 993	1.8	3 261	★	**2KJ1235 - ■CG13 - ■■K1**		603
	0.46	10 073	2.0	2 988		**2KJ1235 - ■CG13 - ■■J1**		603
	D.168-Z48-LA71ZMP4							
	0.27	16 909	0.83	5 016		**2KJ1232 - ■CG13 - ■■L1**		459
	0.30	15 402	0.91	4 569	★	**2KJ1232 - ■CG13 - ■■K1**		459
	0.33	14 111	0.99	4 186		**2KJ1232 - ■CG13 - ■■J1**		459
	0.37	12 591	1.1	3 735	★	**2KJ1232 - ■CG13 - ■■H1**		459
	0.59	7 818	1.8	2 319	★	**2KJ1232 - ■CG13 - ■■D1**		459
	D.148-Z48-LA71ZMP4							
	0.84	5 498	1.5	1 631		**2KJ1231 - ■CG13 - ■■N1**		292
	0.91	5 063	1.6	1 502		**2KJ1231 - ■CG13 - ■■M1**		292
	1	4 598	1.7	1 364		**2KJ1231 - ■CG13 - ■■L1**		292
	1.1	4 190	1.9	1 243		**2KJ1231 - ■CG13 - ■■K1**		292
	D.148-Z38-LA71ZMP4							
	0.47	9 908	0.81	2 939		**2KJ1228 - ■CG13 - ■■G1**		283
	0.54	8 498	0.94	2 521		**2KJ1228 - ■CG13 - ■■E1**		283
	0.54	8 522	0.94	2 528		**2KJ1228 - ■CG13 - ■■F1**		283
	0.61	7 598	1.1	2 254		**2KJ1228 - ■CG13 - ■■D1**		283
	0.66	6 978	1.1	2 070		**2KJ1228 - ■CG13 - ■■C1**		283
	0.74	6 287	1.3	1 865		**2KJ1228 - ■CG13 - ■■B1**		283
	0.85	5 407	1.5	1 604		**2KJ1228 - ■CG13 - ■■A1**		283
	D.128-Z38-LA71ZMP4							
	0.76	6 061	0.84	1 798		**2KJ1225 - ■CG13 - ■■D1**		198
	0.83	5 566	0.92	1 651	★	**2KJ1225 - ■CG13 - ■■C1**		198
	0.92	5 016	1.0	1 488		**2KJ1225 - ■CG13 - ■■B1**		198
	1.1	4 315	1.2	1 280	★	**2KJ1225 - ■CG13 - ■■A1**		198
	D.128-Z48-LA71ZMP4							
	1.1	4 285	1.2	1 271		**2KJ1227 - ■CG13 - ■■P1**		208
	1.2	3 931	1.3	1 166		**2KJ1227 - ■CG13 - ■■N1**		208
	1.3	3 621	1.4	1 074		**2KJ1227 - ■CG13 - ■■M1**		208
	1.4	3 287	1.6	975		**2KJ1227 - ■CG13 - ■■L1**		208
	1.5	2 997	1.7	889		**2KJ1227 - ■CG13 - ■■K1**		208
	1.7	2 744	1.9	814		**2KJ1227 - ■CG13 - ■■J1**		208
	D.108-Z38-LA71ZMP4							
	1.3	3 577	0.87	1 061		**2KJ1223 - ■CG13 - ■■L1**		127
	1.4	3 273	0.95	971		**2KJ1223 - ■CG13 - ■■K1**		127
	1.6	2 926	1.1	868		**2KJ1223 - ■CG13 - ■■J1**		127
	1.7	2 687	1.2	797		**2KJ1223 - ■CG13 - ■■H1**		127

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
0.55	**D.108-LA90LA8**							
	1.9	2 796	1.1	359.3		**2KJ1206 - ■EE13 - ■■V1**	**P02**	136
	2.1	2 531	1.2	325.21	★	**2KJ1206 - ■EE13 - ■■U1**	**P02**	136
	2.4	2 216	1.4	284.73		**2KJ1206 - ■EE13 - ■■T1**	**P02**	136
	D.108-LA80M6							
	2.5	2 074	1.5	359.3		**2KJ1206 - ■DC13 - ■■V1**	**P01**	130
	2.8	1 877	1.7	325.21	★	**2KJ1206 - ■DC13 - ■■U1**	**P01**	130
	3.2	1 643	1.9	284.73		**2KJ1206 - ■DC13 - ■■T1**	**P01**	130
	D.88-LA90LA8							
	2.5	2 108	0.8	270.9		**2KJ1205 - ■EE13 - ■■U1**	**P02**	88
	2.8	1 901	0.88	244.29	★	**2KJ1205 - ■EE13 - ■■T1**	**P02**	88
	D.88-LA80M6							
	3.0	1 734	0.97	300.41	★	**2KJ1205 - ■DC13 - ■■V1**	**P01**	82
	3.4	1 564	1.1	270.9		**2KJ1205 - ■DC13 - ■■U1**	**P01**	82
	3.7	1 410	1.2	244.29	★	**2KJ1205 - ■DC13 - ■■T1**	**P01**	82
	4.3	1 233	1.4	213.64		**2KJ1205 - ■DC13 - ■■S1**	**P01**	82
	D.88-LA71ZMP4							
	4.6	1 152	1.5	300.41	★	**2KJ1205 - ■CG13 - ■■V1**		78
	5.1	1 039	1.6	270.9		**2KJ1205 - ■CG13 - ■■U1**		78
	5.6	937	1.8	244.29	★	**2KJ1205 - ■CG13 - ■■T1**		78
	6.4	819	2.1	213.64		**2KJ1205 - ■CG13 - ■■S1**		78
	D.68-LA71ZMP4							
	5.5	953	0.84	248.68	★	**2KJ1204 - ■CG13 - ■■T1**		46
	6.1	867	0.92	226.07		**2KJ1204 - ■CG13 - ■■S1**		46
	6.7	779	1	203.09	★	**2KJ1204 - ■CG13 - ■■R1**		46
	7.9	667	1.2	174.08		**2KJ1204 - ■CG13 - ■■Q1**		46
	8.7	604	1.3	157.5	★	**2KJ1204 - ■CG13 - ■■P1**		46
	9.4	557	1.4	145.38		**2KJ1204 - ■CG13 - ■■N1**		46
	10.8	485	1.7	126.41	★	**2KJ1204 - ■CG13 - ■■M1**		46
	11.9	440	1.8	114.78		**2KJ1204 - ■CG13 - ■■L1**		46
	13.1	402	2.0	104.8	★	**2KJ1204 - ■CG13 - ■■K1**		46
	14.2	369	2.2	96.16		**2KJ1204 - ■CG13 - ■■J1**		46
	D.48-LA71ZMP4							
	10.4	507	0.89	132.34	★	**2KJ1203 - ■CG13 - ■■N1**		27
	11.8	444	1.0	115.91		**2KJ1203 - ■CG13 - ■■M1**		27
	13.4	393	1.1	102.52	★	**2KJ1203 - ■CG13 - ■■L1**		27
	14.7	356	1.3	92.91		**2KJ1203 - ■CG13 - ■■K1**		27
	16.7	314	1.4	82.02	★	**2KJ1203 - ■CG13 - ■■J1**		27
	18.5	284	1.6	73.99		**2KJ1203 - ■CG13 - ■■H1**		27
	20	257	1.7	67.1	★	**2KJ1203 - ■CG13 - ■■G1**		27
	22	234	1.9	61.14		**2KJ1203 - ■CG13 - ■■F1**		27
	27	192	2.3	50		**2KJ1203 - ■CG13 - ■■D1**		27
	Z.48-LA71ZMP4							
	27	197	1.5	51.28		**2KJ1103 - ■CG13 - ■■A2**		27

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
0.55	**D.38-LA71ZMP4**							
	19.1	276	0.8	71.91	★	**2KJ1202 - ■CG13 - ■■J1**		18
	21	248	0.89	64.58		**2KJ1202 - ■CG13 - ■■H1**		18
	24	224	0.98	58.3	★	**2KJ1202 - ■CG13 - ■■G1**		18
	26	203	1.1	52.86		**2KJ1202 - ■CG13 - ■■F1**		18
	Z.38-LA71ZMP4							
	31	169	1.3	44.12	★	**2KJ1102 - ■CG13 - ■■A2**		17
	35	150	1.4	39.24		**2KJ1102 - ■CG13 - ■■X1**		17
	40	131	1.7	34.04	★	**2KJ1102 - ■CG13 - ■■W1**		17
	43	122	1.8	31.8		**2KJ1102 - ■CG13 - ■■V1**		17
	49	107	2.1	27.97	★	**2KJ1102 - ■CG13 - ■■U1**		17
	56	94	2.3	24.5		**2KJ1102 - ■CG13 - ■■T1**		17
	63	83	2.6	21.67	★	**2KJ1102 - ■CG13 - ■■S1**		17
	70	75	2.9	19.64		**2KJ1102 - ■CG13 - ■■R1**		17
	Z.28-LA71ZMP4							
	32	166	0.84	43.3	★	**2KJ1101 - ■CG13 - ■■B2**		10
	36	147	0.95	38.45		**2KJ1101 - ■CG13 - ■■A2**		10
	41	129	1.1	33.71	★	**2KJ1101 - ■CG13 - ■■X1**		10
	45	116	1.2	30.16		**2KJ1101 - ■CG13 - ■■W1**		10
	51	103	1.4	26.77	★	**2KJ1101 - ■CG13 - ■■V1**		10
	58	90	1.6	23.46		**2KJ1101 - ■CG13 - ■■U1**		10
	66	79	1.8	20.63	★	**2KJ1101 - ■CG13 - ■■T1**		10
	74	71	2.0	18.63		**2KJ1101 - ■CG13 - ■■S1**		10
	84	62	2.2	16.24	★	**2KJ1101 - ■CG13 - ■■R1**		10
	94	56	2.5	14.58		**2KJ1101 - ■CG13 - ■■Q1**		10
	104	50	2.8	13.17	★	**2KJ1101 - ■CG13 - ■■P1**		10
	115	46	3.1	11.94		**2KJ1101 - ■CG13 - ■■N1**		10
	126	42	3.4	10.87	★	**2KJ1101 - ■CG13 - ■■M1**		10
	143	37	3.8	9.61		**2KJ1101 - ■CG13 - ■■L1**		10
	217	24	3.9	6.31	★	**2KJ1101 - ■CG13 - ■■G1**		10
	240	22	4.2	5.72		**2KJ1101 - ■CG13 - ■■F1**		10
	263	20	4.6	5.21	★	**2KJ1101 - ■CG13 - ■■E1**		10
	298	18	5	4.6		**2KJ1101 - ■CG13 - ■■D1**		10
	Z.18-LA71ZMP4							
	46	113	0.8	29.45	★	**2KJ1100 - ■CG13 - ■■R1**		9
	51	103	0.88	26.77		**2KJ1100 - ■CG13 - ■■Q1**		9
	58	91	0.99	23.69	★	**2KJ1100 - ■CG13 - ■■P1**		9
	69	76	1.2	19.85		**2KJ1100 - ■CG13 - ■■N1**		9
	81	65	1.4	16.92	★	**2KJ1100 - ■CG13 - ■■M1**		9
	95	55	1.6	14.38	★	**2KJ1100 - ■CG13 - ■■L1**		9
	110	48	1.9	12.5		**2KJ1100 - ■CG13 - ■■K1**		9
	126	42	2.1	10.88	★	**2KJ1100 - ■CG13 - ■■J1**		9
	140	38	2.2	9.81		**2KJ1100 - ■CG13 - ■■H1**		9
	158	33	2.4	8.66		**2KJ1100 - ■CG13 - ■■G1**		9

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

2

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
0.55	**Z.18-LA71ZMP4**							
	185	28	1.9	7.42	★	**2KJ1100 - ■CG13 - ■■F1**		9
	212	25	2.1	6.45		**2KJ1100 - ■CG13 - ■■E1**		9
	244	22	2.4	5.61	★	**2KJ1100 - ■CG13 - ■■D1**		9
	271	19	2.5	5.06		**2KJ1100 - ■CG13 - ■■C1**		9
	306	17	2.9	4.47		**2KJ1100 - ■CG13 - ■■B1**		9
	383	14	3.4	3.58	★	**2KJ1100 - ■CG13 - ■■A1**		9
	E.68-LA71ZMP4							
	110	48	1.7	12.4	★	**2KJ1003 - ■CG13 - ■■W1**		26
	123	43	2.1	11.18		**2KJ1003 - ■CG13 - ■■V1**		26
	136	39	2.5	10.08	★	**2KJ1003 - ■CG13 - ■■U1**		26
	E.48-LA71ZMP4							
	121	43	1.3	11.3		**2KJ1002 - ■CG13 - ■■U1**		16
	137	38	2.1	10	★	**2KJ1002 - ■CG13 - ■■T1**		16
	151	35	1.8	9.09		**2KJ1002 - ■CG13 - ■■S1**		16
	168	31	2.7	8.17	★	**2KJ1002 - ■CG13 - ■■R1**		16
	196	27	3.6	7		**2KJ1002 - ■CG13 - ■■Q1**		16
	E.38-LA71ZMP4							
	147	36	0.89	9.33	★	**2KJ1001 - ■CG13 - ■■S1**		13
	165	32	1.0	8.3		**2KJ1001 - ■CG13 - ■■R1**		13
	190	28	1.4	7.2	★	**2KJ1001 - ■CG13 - ■■Q1**		13
	204	26	1.9	6.73		**2KJ1001 - ■CG13 - ■■P1**		13
	231	23	2.3	5.92	★	**2KJ1001 - ■CG13 - ■■N1**		13
	264	20	3.5	5.18		**2KJ1001 - ■CG13 - ■■M1**		13
	299	18	4.4	4.58	★	**2KJ1001 - ■CG13 - ■■L1**		13
	330	16	3.9	4.15		**2KJ1001 - ■CG13 - ■■K1**		13
	373	14	5.0	3.67	★	**2KJ1001 - ■CG13 - ■■J1**		13
	414	13	5.1	3.31		**2KJ1001 - ■CG13 - ■■H1**		13
0.75	**D.188-Z48-LA80ZMB4E**							
	0.27	23 327	0.86	5 107		**2KJ1235 - ■DE13 - ■■Q1**		607
	0.30	21 299	0.94	4 663	★	**2KJ1235 - ■DE13 - ■■P1**		607
	0.33	19 545	1.0	4 279		**2KJ1235 - ■DE13 - ■■N1**		607
	0.36	18 006	1.1	3 942	★	**2KJ1235 - ■DE13 - ■■M1**		607
	0.39	16 352	1.2	3 580		**2KJ1235 - ■DE13 - ■■L1**		607
	0.43	14 895	1.3	3 261	★	**2KJ1235 - ■DE13 - ■■K1**		607
	0.47	13 648	1.5	2 988		**2KJ1235 - ■DE13 - ■■J1**		607
	0.52	12 177	1.6	2 666	★	**2KJ1235 - ■DE13 - ■■H1**		607
	0.59	10 866	1.8	2 379		**2KJ1235 - ■DE13 - ■■G1**		607
	D.168-Z48-LA80ZMB4E							
	0.38	17 060	0.82	3 735	★	**2KJ1232 - ■DE13 - ■■H1**		463
	0.42	15 224	0.92	3 333		**2KJ1232 - ■DE13 - ■■G1**		463
	0.50	12 931	1.1	2 831		**2KJ1232 - ■DE13 - ■■F1**		463
	0.59	10 766	1.3	2 357	★	**2KJ1232 - ■DE13 - ■■E1**		463
	0.60	10 592	1.3	2 319	★	**2KJ1232 - ■DE13 - ■■D1**		463

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
0.75	**D.168-Z48-LA80ZMB4E**							
	0.68	9 455	1.5	2 070		**2KJ1232 - ■DE13 - ■■C1**		463
	0.80	8 030	1.7	1 758		**2KJ1232 - ■DE13 - ■■B1**		463
	D.148-Z48-LA80ZMB4E							
	0.86	7 450	1.1	1 631		**2KJ1231 - ■DE13 - ■■N1**		296
	0.93	6 861	1.2	1 502		**2KJ1231 - ■DE13 - ■■M1**		296
	1.0	6 230	1.3	1 364		**2KJ1231 - ■DE13 - ■■L1**		296
	1.1	5 678	1.4	1 243		**2KJ1231 - ■DE13 - ■■K1**		296
	1.2	5 203	1.5	1 139		**2KJ1231 - ■DE13 - ■■J1**		296
	1.4	4 641	1.7	1 016		**2KJ1231 - ■DE13 - ■■H1**		296
	1.5	4 143	1.9	907		**2KJ1231 - ■DE13 - ■■G1**		296
	D.148-Z38-LA80ZMB4E							
	0.68	9 455	0.85	2 070		**2KJ1228 - ■DE13 - ■■C1**		287
	0.75	8 519	0.94	1 865		**2KJ1228 - ■DE13 - ■■B1**		287
	0.87	7 326	1.1	1 604		**2KJ1228 - ■DE13 - ■■A1**		287
	D.128-Z48-LA80ZMB4E							
	1.1	5 805	0.88	1 271		**2KJ1227 - ■DE13 - ■■P1**		212
	1.2	5 326	0.96	1 166		**2KJ1227 - ■DE13 - ■■N1**		212
	1.3	4 906	1.0	1 074		**2KJ1227 - ■DE13 - ■■M1**		212
	1.4	4 453	1.1	975		**2KJ1227 - ■DE13 - ■■L1**		212
	1.6	4 061	1.3	889		**2KJ1227 - ■DE13 - ■■K1**		212
	1.7	3 718	1.4	814		**2KJ1227 - ■DE13 - ■■J1**		212
	1.9	3 316	1.5	726		**2KJ1227 - ■DE13 - ■■H1**		212
	2.2	2 960	1.7	648		**2KJ1227 - ■DE13 - ■■G1**		212
	D.128-Z38-LA80ZMB4E							
	1.1	5 847	0.87	1 280	★	**2KJ1225 - ■DE13 - ■■A1**		202
	D.128-LA100LA8							
	2.5	2 825	1.8	268.16	★	**2KJ1207 - ■FB13 - ■■U1**	**P02**	221
	2.8	2 590	2.0	245.93		**2KJ1207 - ■FB13 - ■■T1**	**P02**	221
	D.108-Z38-LA80ZMB4E							
	1.8	3 640	0.85	797		**2KJ1223 - ■DE13 - ■■H1**		131
	D.108-LA100LA8							
	2.4	2 999	1.0	284.73		**2KJ1206 - ■FB13 - ■■T1**	**P02**	144
	D.108-LA90SB6E							
	2.6	2 782	1.1	359.3		**2KJ1206 - ■ED13 - ■■V1**	**P01**	133
	2.8	2 518	1.2	325.21	★	**2KJ1206 - ■ED13 - ■■U1**	**P01**	133
	3.2	2 205	1.4	284.73		**2KJ1206 - ■ED13 - ■■T1**	**P01**	133
	3.6	1 989	1.6	256.86	★	**2KJ1206 - ■ED13 - ■■S1**	**P01**	133
	D.108-LA80ZMB4E							
	3.9	1 838	1.7	359.3		**2KJ1206 - ■DE13 - ■■V1**		130
	4.3	1 664	1.9	325.21	★	**2KJ1206 - ■DE13 - ■■U1**		130
	D.88-LA90SB6E							
	3.4	2 098	0.80	270.9		**2KJ1205 - ■ED13 - ■■U1**	**P01**	85
	3.8	1 892	0.89	244.29	★	**2KJ1205 - ■ED13 - ■■T1**	**P01**	85

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Geared motors up to 200 kW

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
0.75	**D.88-LA90SB6E**							
	4.3	1 654	1.0	213.64		**2KJ1205 - ■ED13 - ■■S1**	**P01**	85
	D.88-LA80ZMB4E							
	4.7	1 537	1.1	300.41	★	**2KJ1205 - ■DE13 - ■■V1**		82
	5.2	1 386	1.2	270.9		**2KJ1205 - ■DE13 - ■■U1**		82
	5.7	1 250	1.3	244.29	★	**2KJ1205 - ■DE13 - ■■T1**		82
	6.6	1 093	1.5	213.64		**2KJ1205 - ■DE13 - ■■S1**		82
	7.3	981	1.7	191.8	★	**2KJ1205 - ■DE13 - ■■R1**		82
	8.0	896	1.9	175.18		**2KJ1205 - ■DE13 - ■■Q1**		82
	9.0	795	2.1	155.46	★	**2KJ1205 - ■DE13 - ■■P1**		82
	D.68-LA80ZMB4E							
	8.0	891	0.90	174.08		**2KJ1204 - ■DE13 - ■■Q1**		50
	8.9	806	0.99	157.5	★	**2KJ1204 - ■DE13 - ■■P1**		50
	9.6	744	1.1	145.38		**2KJ1204 - ■DE13 - ■■N1**		50
	11.1	647	1.2	126.41	★	**2KJ1204 - ■DE13 - ■■M1**		50
	12.2	587	1.4	114.78		**2KJ1204 - ■DE13 - ■■L1**		50
	13.4	536	1.5	104.8	★	**2KJ1204 - ■DE13 - ■■K1**		50
	14.6	492	1.6	96.16		**2KJ1204 - ■DE13 - ■■J1**		50
	15.8	453	1.8	88.59	★	**2KJ1204 - ■DE13 - ■■H1**		50
	17.4	412	1.9	80.46		**2KJ1204 - ■DE13 - ■■G1**		50
	19.1	375	2.1	73.3	★	**2KJ1204 - ■DE13 - ■■F1**		50
	21	343	2.3	67.14		**2KJ1204 - ■DE13 - ■■E1**		50
	Z.68-LA80ZMB4E							
	29	246	2.2	48.09	★	**2KJ1104 - ■DE13 - ■■X1**		48
	D.48-LA80ZMB4E							
	13.7	524	0.86	102.52	★	**2KJ1203 - ■DE13 - ■■L1**		31
	15.1	475	0.95	92.91		**2KJ1203 - ■DE13 - ■■K1**		31
	17.1	420	1.1	82.02	★	**2KJ1203 - ■DE13 - ■■J1**		31
	18.9	379	1.2	73.99		**2KJ1203 - ■DE13 - ■■H1**		31
	21	343	1.3	67.1	★	**2KJ1203 - ■DE13 - ■■G1**		31
	23	313	1.4	61.14		**2KJ1203 - ■DE13 - ■■F1**		31
	25	286	1.6	55.92	★	**2KJ1203 - ■DE13 - ■■E1**		31
	28	256	1.8	50		**2KJ1203 - ■DE13 - ■■D1**		31
	Z.48-LA80ZMB4E							
	27	262	1.1	51.28		**2KJ1103 - ■DE13 - ■■A2**		31
	31	232	1.9	45.38	★	**2KJ1103 - ■DE13 - ■■X1**		31
	34	211	2.1	41.26		**2KJ1103 - ■DE13 - ■■W1**		31
	38	190	2.4	37.06	★	**2KJ1103 - ■DE13 - ■■V1**		31
	D.38-LA80ZMB4E							
	26	270	0.81	52.86		**2KJ1202 - ■DE13 - ■■F1**		22
	Z.38-LA80ZMB4E							
	32	226	0.97	44.12	★	**2KJ1102 - ■DE13 - ■■A2**		21
	36	201	1.0	39.24		**2KJ1102 - ■DE13 - ■■X1**		21
	41	174	1.3	34.04	★	**2KJ1102 - ■DE13 - ■■W1**		21

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
0.75	**Z.38-LA80ZMB4E**							
	44	163	1.4	31.8		**2KJ1102 - ■DE13 - ■■V1**		21
	50	143	1.5	27.97	★	**2KJ1102 - ■DE13 - ■■U1**		21
	57	125	1.8	24.5		**2KJ1102 - ■DE13 - ■■T1**		21
	65	111	2.0	21.67	★	**2KJ1102 - ■DE13 - ■■S1**		21
	71	100	2.2	19.64		**2KJ1102 - ■DE13 - ■■R1**		21
	81	89	2.5	17.33	★	**2KJ1102 - ■DE13 - ■■Q1**		21
	90	80	2.7	15.64		**2KJ1102 - ■DE13 - ■■P1**		21
	99	72	3.0	14.18	★	**2KJ1102 - ■DE13 - ■■N1**		21
	108	66	3.3	12.92		**2KJ1102 - ■DE13 - ■■M1**		21
	118	60	3.6	11.82	★	**2KJ1102 - ■DE13 - ■■L1**		21
	Z.28-LA80ZMB4E							
	42	172	0.81	33.71	★	**2KJ1101 - ■DE13 - ■■X1**		14
	46	154	0.91	30.16		**2KJ1101 - ■DE13 - ■■W1**		14
	52	137	1.0	26.77	★	**2KJ1101 - ■DE13 - ■■V1**		14
	60	120	1.2	23.46		**2KJ1101 - ■DE13 - ■■U1**		14
	68	106	1.3	20.63	★	**2KJ1101 - ■DE13 - ■■T1**		14
	75	95	1.5	18.63		**2KJ1101 - ■DE13 - ■■S1**		14
	86	83	1.7	16.24	★	**2KJ1101 - ■DE13 - ■■R1**		14
	96	75	1.9	14.58		**2KJ1101 - ■DE13 - ■■Q1**		14
	106	67	2.1	13.17	★	**2KJ1101 - ■DE13 - ■■P1**		14
	117	61	2.3	11.94		**2KJ1101 - ■DE13 - ■■N1**		14
	129	56	2.5	10.87	★	**2KJ1101 - ■DE13 - ■■M1**		14
	146	49	2.8	9.61		**2KJ1101 - ■DE13 - ■■L1**		14
	158	45	3.1	8.87	★	**2KJ1101 - ■DE13 - ■■K1**		14
	183	39	3.5	7.64		**2KJ1101 - ■DE13 - ■■J1**		14
	202	36	3.7	6.94	★	**2KJ1101 - ■DE13 - ■■H1**		14
	222	32	2.9	6.31	★	**2KJ1101 - ■DE13 - ■■G1**		14
	245	29	3.2	5.72		**2KJ1101 - ■DE13 - ■■F1**		14
	269	27	3.5	5.21	★	**2KJ1101 - ■DE13 - ■■E1**		14
	304	24	3.7	4.6		**2KJ1101 - ■DE13 - ■■D1**		14
	329	22	4.1	4.25	★	**2KJ1101 - ■DE13 - ■■C1**		14
	383	19	4.3	3.66		**2KJ1101 - ■DE13 - ■■B1**		14
	420	17	4.5	3.33	★	**2KJ1101 - ■DE13 - ■■A1**		14
	E.68-LA80ZMB4E							
	113	63	1.3	12.4	★	**2KJ1003 - ■DE13 - ■■W1**		30
	125	57	1.6	11.18		**2KJ1003 - ■DE13 - ■■V1**		30
	139	52	1.8	10.08	★	**2KJ1003 - ■DE13 - ■■U1**		30
	159	45	3.3	8.82		**2KJ1003 - ■DE13 - ■■T1**		30
	177	40	4.2	7.92	★	**2KJ1003 - ■DE13 - ■■S1**		30
	194	37	4.1	7.23		**2KJ1003 - ■DE13 - ■■R1**		30
	E.48-LA80ZMB4E							
	124	58	0.95	11.3		**2KJ1002 - ■DE13 - ■■U1**		20
	140	51	1.6	10	★	**2KJ1002 - ■DE13 - ■■T1**		20

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
0.75	**E.48-LA80ZMB4E**							
	154	46	1.4	9.09		**2KJ1002 - ■DE13 - ■■S1**		20
	171	42	2.0	8.17	★	**2KJ1002 - ■DE13 - ■■R1**		20
	200	36	2.7	7		**2KJ1002 - ■DE13 - ■■Q1**		20
	221	32	3.6	6.33	★	**2KJ1002 - ■DE13 - ■■P1**		20
	239	30	4.0	5.85		**2KJ1002 - ■DE13 - ■■N1**		20
	276	26	4.6	5.08	★	**2KJ1002 - ■DE13 - ■■M1**		20
	E.38-LA80ZMB4E							
	194	37	1.0	7.2	★	**2KJ1001 - ■DE13 - ■■Q1**		17
	208	34	1.4	6.73		**2KJ1001 - ■DE13 - ■■P1**		17
	236	30	1.7	5.92	★	**2KJ1001 - ■DE13 - ■■N1**		17
	270	26	2.6	5.18		**2KJ1001 - ■DE13 - ■■M1**		17
	306	23	3.3	4.58	★	**2KJ1001 - ■DE13 - ■■L1**		17
	337	21	2.9	4.15		**2KJ1001 - ■DE13 - ■■K1**		17
	381	19	3.7	3.67	★	**2KJ1001 - ■DE13 - ■■J1**		17
	423	17	3.8	3.31		**2KJ1001 - ■DE13 - ■■H1**		17
	467	15	5.2	3	★	**2KJ1001 - ■DE13 - ■■G1**		17
	513	14	5.7	2.73		**2KJ1001 - ■DE13 - ■■F1**		17
	560	13	5.7	2.5	★	**2KJ1001 - ■DE13 - ■■E1**		17
1.1	**D.188-Z48-LA90SB4E**							
	0.40	23 626	0.85	3 580		**2KJ1235 - ■EM13 - ■■L1**		610
	0.44	21 521	0.93	3 261	★	**2KJ1235 - ■EM13 - ■■K1**		610
	0.48	19 719	1.0	2 988		**2KJ1235 - ■EM13 - ■■J1**		610
	0.54	17 594	1.1	2 666	★	**2KJ1235 - ■EM13 - ■■H1**		610
	0.60	15 700	1.3	2 379		**2KJ1235 - ■EM13 - ■■G1**		610
	0.71	13 337	1.5	2 021		**2KJ1235 - ■EM13 - ■■F1**		610
	0.86	11 100	1.8	1 682	★	**2KJ1235 - ■EM13 - ■■E1**		610
	0.87	10 922	1.8	1 655	★	**2KJ1235 - ■EM13 - ■■D1**		610
	D.168-Z48-LA90SB4E							
	0.61	15 555	0.90	2 357	★	**2KJ1232 - ■EM13 - ■■E1**		466
	0.62	15 304	0.91	2 319	★	**2KJ1232 - ■EM13 - ■■D1**		466
	0.70	13 661	1.0	2 070		**2KJ1232 - ■EM13 - ■■C1**		466
	0.82	11 602	1.2	1 758		**2KJ1232 - ■EM13 - ■■B1**		466
	0.98	9 655	1.5	1 463	★	**2KJ1232 - ■EM13 - ■■A1**		466
	D.168-Z68-LA90SB4E							
	0.99	9 642	1.5	1 461		**2KJ1233 - ■EM13 - ■■J1**		483
	1.2	8 091	1.7	1 226		**2KJ1233 - ■EM13 - ■■H1**		483
	1.4	6 903	2.0	1 046		**2KJ1233 - ■EM13 - ■■G1**		483
	D.148-Z48-LA90SB4E							
	0.96	9 912	0.81	1 502		**2KJ1231 - ■EM13 - ■■M1**		299
	1.1	9 002	0.89	1 364		**2KJ1231 - ■EM13 - ■■L1**		299
	1.2	8 203	0.98	1 243		**2KJ1231 - ■EM13 - ■■K1**		299
	1.3	7 517	1.1	1 139		**2KJ1231 - ■EM13 - ■■J1**		299
	1.4	6 705	1.2	1 016		**2KJ1231 - ■EM13 - ■■H1**		299

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
1.1	**D.148-Z48-LA90SB4E**							
	1.6	5 986	1.3	907		**2KJ1231 - ■EM13 - ■■G1**		299
	1.9	5 082	1.6	770		**2KJ1231 - ■EM13 - ■■F1**		299
	D.148-LA100L8							
	2.0	5 192	1.5	336.11		**2KJ1208 - ■FL13 - ■■W1**	**P02**	311
	2.3	4 655	1.7	301.34	★	**2KJ1208 - ■FL13 - ■■V1**	**P02**	311
	2.5	4 267	1.9	276.23		**2KJ1208 - ■FL13 - ■■U1**	**P02**	311
	2.7	3 935	2.0	254.7	★	**2KJ1208 - ■FL13 - ■■T1**	**P02**	311
	D.128-Z48-LA90SB4E							
	1.6	5 867	0.87	889		**2KJ1227 - ■EM13 - ■■K1**		215
	1.8	5 372	0.95	814		**2KJ1227 - ■EM13 - ■■J1**		215
	2.0	4 791	1.1	726		**2KJ1227 - ■EM13 - ■■H1**		215
	2.2	4 276	1.2	648		**2KJ1227 - ■EM13 - ■■G1**		215
	D.128-LA100L8							
	2.5	4 143	1.2	268.16	★	**2KJ1207 - ■FL13 - ■■U1**	**P02**	221
	2.8	3 799	1.3	245.93		**2KJ1207 - ■FL13 - ■■T1**	**P02**	221
	3.1	3 394	1.5	219.72	★	**2KJ1207 - ■FL13 - ■■S1**	**P02**	221
	D.128-LA90ZLD6E							
	3.5	2 997	1.7	268.16	★	**2KJ1207 - ■EQ13 - ■■U1**	**P01**	213
	3.8	2 748	1.9	245.93		**2KJ1207 - ■EQ13 - ■■T1**	**P01**	213
	D.108-LA90ZLD6E							
	2.9	3 634	0.85	325.21	★	**2KJ1206 - ■EQ13 - ■■U1**	**P01**	136
	3.3	3 182	0.97	284.73		**2KJ1206 - ■EQ13 - ■■T1**	**P01**	136
	3.7	2 871	1.1	256.86	★	**2KJ1206 - ■EQ13 - ■■S1**	**P01**	136
	D.108-LA90SB4E							
	4.0	2 621	1.2	359.3		**2KJ1206 - ■EM13 - ■■V1**		133
	4.4	2 372	1.3	325.21	★	**2KJ1206 - ■EM13 - ■■U1**		133
	5.1	2 077	1.5	284.73		**2KJ1206 - ■EM13 - ■■T1**		133
	5.6	1 874	1.7	256.86	★	**2KJ1206 - ■EM13 - ■■S1**		133
	6.1	1 716	1.8	235.19		**2KJ1206 - ■EM13 - ■■R1**		133
	6.9	1 526	2.0	209.21	★	**2KJ1206 - ■EM13 - ■■Q1**		133
	D.88-LA90SB4E							
	5.3	1 976	0.85	270.9		**2KJ1205 - ■EM13 - ■■U1**		85
	5.9	1 782	0.94	244.29	★	**2KJ1205 - ■EM13 - ■■T1**		85
	6.7	1 559	1.1	213.64		**2KJ1205 - ■EM13 - ■■S1**		85
	7.5	1 399	1.2	191.8	★	**2KJ1205 - ■EM13 - ■■R1**		85
	8.2	1 278	1.3	175.18		**2KJ1205 - ■EM13 - ■■Q1**		85
	9.3	1 134	1.5	155.46	★	**2KJ1205 - ■EM13 - ■■P1**		85
	10.0	1 047	1.6	143.5		**2KJ1205 - ■EM13 - ■■N1**		85
	11.1	947	1.8	129.79	★	**2KJ1205 - ■EM13 - ■■M1**		85
	12.0	872	1.9	119.52		**2KJ1205 - ■EM13 - ■■L1**		85
	13.0	806	2.1	110.54	★	**2KJ1205 - ■EM13 - ■■K1**		85
	14.0	749	2.2	102.61		**2KJ1205 - ■EM13 - ■■J1**		85

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

2

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
1.1	**D.68-LA90SB4E**							
	11.4	922	0.87	126.41	★	**2KJ1204 - ■EM13 - ■■M1**		53
	12.5	837	0.96	114.78		**2KJ1204 - ■EM13 - ■■L1**		53
	13.7	765	1.0	104.8	★	**2KJ1204 - ■EM13 - ■■K1**		53
	15	702	1.1	96.16		**2KJ1204 - ■EM13 - ■■J1**		53
	16.3	646	1.2	88.59	★	**2KJ1204 - ■EM13 - ■■H1**		53
	17.9	587	1.4	80.46		**2KJ1204 - ■EM13 - ■■G1**		53
	19.6	535	1.5	73.3	★	**2KJ1204 - ■EM13 - ■■F1**		53
	21	490	1.6	67.14		**2KJ1204 - ■EM13 - ■■E1**		53
	24	437	1.8	59.91	★	**2KJ1204 - ■EM13 - ■■D1**		53
	27	390	2.1	53.47		**2KJ1204 - ■EM13 - ■■C1**		53
	Z.68-LA90SB4E							
	30	351	1.5	48.09	★	**2KJ1104 - ■EM13 - ■■X1**		51
	34	307	2.6	42.06		**2KJ1104 - ■EM13 - ■■W1**		51
	D.48-LA90SB4E							
	19.5	540	0.83	73.99		**2KJ1203 - ■EM13 - ■■H1**		34
	22	490	0.92	67.1	★	**2KJ1203 - ■EM13 - ■■G1**		34
	24	446	1.0	61.14		**2KJ1203 - ■EM13 - ■■F1**		34
	26	408	1.1	55.92	★	**2KJ1203 - ■EM13 - ■■E1**		34
	29	365	1.2	50		**2KJ1203 - ■EM13 - ■■D1**		34
	Z.48-LA90SB4E							
	32	331	1.4	45.38	★	**2KJ1103 - ■EM13 - ■■X1**		34
	35	301	1.5	41.26		**2KJ1103 - ■EM13 - ■■W1**		34
	39	270	1.7	37.06	★	**2KJ1103 - ■EM13 - ■■V1**		34
	45	232	1.9	31.77		**2KJ1103 - ■EM13 - ■■U1**		34
	50	210	2.1	28.74	★	**2KJ1103 - ■EM13 - ■■T1**		34
	54	194	2.3	26.53		**2KJ1103 - ■EM13 - ■■S1**		34
	62	168	2.7	23.07	★	**2KJ1103 - ■EM13 - ■■R1**		34
	69	153	2.9	20.95		**2KJ1103 - ■EM13 - ■■Q1**		34
	75	140	3.2	19.13	★	**2KJ1103 - ■EM13 - ■■P1**		34
	Z.38-LA90SB4E							
	42	248	0.89	34.04	★	**2KJ1102 - ■EM13 - ■■W1**		24
	45	232	0.95	31.8		**2KJ1102 - ■EM13 - ■■V1**		24
	52	204	1.1	27.97	★	**2KJ1102 - ■EM13 - ■■U1**		24
	59	179	1.2	24.5		**2KJ1102 - ■EM13 - ■■T1**		24
	66	158	1.4	21.67	★	**2KJ1102 - ■EM13 - ■■S1**		24
	73	143	1.5	19.64		**2KJ1102 - ■EM13 - ■■R1**		24
	83	126	1.7	17.33	★	**2KJ1102 - ■EM13 - ■■Q1**		24
	92	114	1.9	15.64		**2KJ1102 - ■EM13 - ■■P1**		24
	102	103	2.1	14.18	★	**2KJ1102 - ■EM13 - ■■N1**		24
	111	94	2.3	12.92		**2KJ1102 - ■EM13 - ■■M1**		24
	122	86	2.6	11.82	★	**2KJ1102 - ■EM13 - ■■L1**		24
	136	77	2.7	10.57		**2KJ1102 - ■EM13 - ■■K1**		24
	148	71	2.8	9.7	★	**2KJ1102 - ■EM13 - ■■J1**		24

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
1.1	**Z.38-LA90SB4E**							
	165	64	3.1	8.75		**2KJ1102 - ■EM13 - ■■H1**		24
	191	55	3.5	7.52	★	**2KJ1102 - ■EM13 - ■■G1**		24
	192	55	3.4	7.5	★	**2KJ1102 - ■EM13 - ■■F1**		24
	215	49	3.7	6.71		**2KJ1102 - ■EM13 - ■■D1**		24
	234	45	3.8	6.16	★	**2KJ1102 - ■EM13 - ■■C1**		24
	259	40	4.1	5.55		**2KJ1102 - ■EM13 - ■■B1**		24
	302	35	4.6	4.77	★	**2KJ1102 - ■EM13 - ■■A1**		24
	Z.38-LA80ZMB2E							
	165	64	3.5	17.33	★	**2KJ1102 - ■DN13 - ■■Q1**	**P00**	21
	183	57	3.8	15.64		**2KJ1102 - ■DN13 - ■■P1**	**P00**	21
	202	52	4.2	14.18	★	**2KJ1102 - ■DN13 - ■■N1**	**P00**	21
	Z.28-LA90SB4E							
	61	171	0.82	23.46		**2KJ1101 - ■EM13 - ■■U1**		17
	70	150	0.93	20.63	★	**2KJ1101 - ■EM13 - ■■T1**		17
	77	136	1.0	18.63		**2KJ1101 - ■EM13 - ■■S1**		17
	89	118	1.2	16.24	★	**2KJ1101 - ■EM13 - ■■R1**		17
	99	106	1.3	14.58		**2KJ1101 - ■EM13 - ■■Q1**		17
	109	96	1.5	13.17	★	**2KJ1101 - ■EM13 - ■■P1**		17
	121	87	1.6	11.94		**2KJ1101 - ■EM13 - ■■N1**		17
	132	79	1.8	10.87	★	**2KJ1101 - ■EM13 - ■■M1**		17
	150	70	2.0	9.61		**2KJ1101 - ■EM13 - ■■L1**		17
	162	65	2.2	8.87	★	**2KJ1101 - ■EM13 - ■■K1**		17
	188	56	2.4	7.64		**2KJ1101 - ■EM13 - ■■J1**		17
	207	51	2.6	6.94	★	**2KJ1101 - ■EM13 - ■■H1**		17
	228	46	2.1	6.31	★	**2KJ1101 - ■EM13 - ■■G1**		17
	252	42	2.2	5.72		**2KJ1101 - ■EM13 - ■■F1**		17
	276	38	2.4	5.21	★	**2KJ1101 - ■EM13 - ■■E1**		17
	313	34	2.6	4.6		**2KJ1101 - ■EM13 - ■■D1**		17
	339	31	2.9	4.25	★	**2KJ1101 - ■EM13 - ■■C1**		17
	393	27	3.0	3.66		**2KJ1101 - ■EM13 - ■■B1**		17
	432	24	3.2	3.33	★	**2KJ1101 - ■EM13 - ■■A1**		17
	E.88-LA90SB4E							
	139	75	3.1	10.33	★	**2KJ1004 - ■EM13 - ■■S1**		50
	152	69	3.0	9.46		**2KJ1004 - ■EM13 - ■■R1**		50
	171	61	4.0	8.42	★	**2KJ1004 - ■EM13 - ■■Q1**		50
	E.68-LA90SB4E							
	116	90	0.9	12.4	★	**2KJ1003 - ■EM13 - ■■W1**		33
	129	82	1.1	11.18		**2KJ1003 - ■EM13 - ■■V1**		33
	143	74	1.3	10.08	★	**2KJ1003 - ■EM13 - ■■U1**		33
	163	64	2.3	8.82		**2KJ1003 - ■EM13 - ■■T1**		33
	182	58	2.9	7.92	★	**2KJ1003 - ■EM13 - ■■S1**		33
	199	53	2.8	7.23		**2KJ1003 - ■EM13 - ■■R1**		33
	224	47	3.6	6.42	★	**2KJ1003 - ■EM13 - ■■P1**		33

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
1.1	**E.68-LA90SB4E**							
	243	43	4.4	5.92		**2KJ1003 - ■EM13 - ■■N1**		33
	E.48-LA90SB4E							
	144	73	1.1	10	★	**2KJ1002 - ■EM13 - ■■T1**		23
	158	66	0.97	9.09		**2KJ1002 - ■EM13 - ■■S1**		23
	176	60	1.4	8.17	★	**2KJ1002 - ■EM13 - ■■R1**		23
	206	51	1.9	7		**2KJ1002 - ■EM13 - ■■Q1**		23
	227	46	2.5	6.33	★	**2KJ1002 - ■EM13 - ■■P1**		23
	246	43	2.8	5.85		**2KJ1002 - ■EM13 - ■■N1**		23
	283	37	3.2	5.08	★	**2KJ1002 - ■EM13 - ■■M1**		23
	312	34	3.9	4.62		**2KJ1002 - ■EM13 - ■■L1**		23
	342	31	4.9	4.21	★	**2KJ1002 - ■EM13 - ■■K1**		23
	404	26	5.4	3.56	★	**2KJ1002 - ■EM13 - ■■H1**		23
	E.38-LA90SB4E							
	214	49	0.98	6.73		**2KJ1001 - ■EM13 - ■■P1**		20
	243	43	1.2	5.92	★	**2KJ1001 - ■EM13 - ■■N1**		20
	278	38	1.9	5.18		**2KJ1001 - ■EM13 - ■■M1**		20
	314	33	2.3	4.58	★	**2KJ1001 - ■EM13 - ■■L1**		20
	347	30	2.0	4.15		**2KJ1001 - ■EM13 - ■■K1**		20
	392	27	2.6	3.67	★	**2KJ1001 - ■EM13 - ■■J1**		20
	435	24	2.7	3.31		**2KJ1001 - ■EM13 - ■■H1**		20
	480	22	3.7	3	★	**2KJ1001 - ■EM13 - ■■G1**		20
	527	20	4.0	2.73		**2KJ1001 - ■EM13 - ■■F1**		20
	576	18	4.0	2.5	★	**2KJ1001 - ■EM13 - ■■E1**		20
	643	16	4.4	2.24		**2KJ1001 - ■EM13 - ■■D1**		20
	702	15	5.3	2.05	★	**2KJ1001 - ■EM13 - ■■C1**		20
	778	14	6.1	1.85		**2KJ1001 - ■EM13 - ■■B1**		20
	906	12	6.2	1.59	★	**2KJ1001 - ■EM13 - ■■A1**		20
1.5	**D.188-Z68-LA90ZLB4E**							
	1.2	11 342	1.8	1 251		**2KJ1237 - ■EQ13 - ■■J1**		630
	D.188-Z48-LA90ZLB4E							
	0.54	24 171	0.83	2 666	★	**2KJ1235 - ■EQ13 - ■■H1**		613
	0.60	21 569	0.93	2 379		**2KJ1235 - ■EQ13 - ■■G1**		613
	0.71	18 323	1.1	2 021		**2KJ1235 - ■EQ13 - ■■F1**		613
	0.86	15 250	1.3	1 682	★	**2KJ1235 - ■EQ13 - ■■E1**		613
	0.87	15 005	1.3	1 655	★	**2KJ1235 - ■EQ13 - ■■D1**		613
	0.98	13 391	1.5	1 477		**2KJ1235 - ■EQ13 - ■■C1**		613
	1.1	11 378	1.8	1 255		**2KJ1235 - ■EQ13 - ■■B1**		613
	D.168-Z48-LA90ZLB4E							
	0.82	15 939	0.88	1 758		**2KJ1232 - ■EQ13 - ■■B1**		469
	0.98	13 264	1.1	1 463	★	**2KJ1232 - ■EQ13 - ■■A1**		469
	D.168-Z68-LA90ZLB4E							
	0.99	13 246	1.1	1 461		**2KJ1233 - ■EQ13 - ■■J1**		486
	1.2	11 116	1.3	1 226		**2KJ1233 - ■EQ13 - ■■H1**		486

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
1.5	**D.168-Z68-LA90ZLB4E**							
	1.4	9 484	1.5	1 046		**2KJ1233 - ■EQ13 - ■■G1**		486
	D.148-Z48-LA90ZLB4E							
	1.4	9 212	0.87	1 016		**2KJ1231 - ■EQ13 - ■■H1**		302
	1.6	8 223	0.97	907		**2KJ1231 - ■EQ13 - ■■G1**		302
	1.9	6 981	1.1	770		**2KJ1231 - ■EQ13 - ■■F1**		302
	D.148-LA112M8							
	2.1	6 829	1.2	336.11		**2KJ1208 - ■GG13 - ■■W1**	**P02**	318
	2.3	6 123	1.3	301.34	★	**2KJ1208 - ■GG13 - ■■V1**	**P02**	318
	2.6	5 613	1.4	276.23		**2KJ1208 - ■GG13 - ■■U1**	**P02**	318
	D.148-LA100ZLP6E							
	2.8	5 149	1.6	336.11		**2KJ1208 - ■FM13 - ■■W1**	**P01**	311
	3.1	4 617	1.7	301.34	★	**2KJ1208 - ■FM13 - ■■V1**	**P01**	311
	3.4	4 232	1.9	276.23		**2KJ1208 - ■FM13 - ■■U1**	**P01**	311
	D.128-Z48-LA90ZLB4E							
	2.2	5 875	0.87	648		**2KJ1227 - ■EQ13 - ■■G1**		218
	D.128-LA112M8							
	2.6	5 449	0.94	268.16	★	**2KJ1207 - ■GG13 - ■■U1**	**P02**	228
	2.9	4 997	1.0	245.93		**2KJ1207 - ■GG13 - ■■T1**	**P02**	228
	3.2	4 465	1.1	219.72	★	**2KJ1207 - ■GG13 - ■■S1**	**P02**	228
	D.128-LA100ZLP6E							
	3.5	4 108	1.2	268.16	★	**2KJ1207 - ■FM13 - ■■U1**	**P01**	221
	3.8	3 768	1.4	245.93		**2KJ1207 - ■FM13 - ■■T1**	**P01**	221
	4.3	3 366	1.5	219.72	★	**2KJ1207 - ■FM13 - ■■S1**	**P01**	221
	4.6	3 083	1.7	201.22		**2KJ1207 - ■FM13 - ■■R1**	**P01**	221
	5.0	2 840	1.8	185.36	★	**2KJ1207 - ■FM13 - ■■Q1**	**P01**	221
	D.128-LA90ZLB4E							
	5.4	2 668	1.9	268.16	★	**2KJ1207 - ■EQ13 - ■■U1**		213
	5.9	2 446	2.1	245.93		**2KJ1207 - ■EQ13 - ■■T1**		213
	D.108-LA90ZLB4E							
	4.0	3 574	0.87	359.3		**2KJ1206 - ■EQ13 - ■■V1**		136
	4.4	3 235	0.96	325.21	★	**2KJ1206 - ■EQ13 - ■■U1**		136
	5.1	2 832	1.1	284.73		**2KJ1206 - ■EQ13 - ■■T1**		136
	5.6	2 555	1.2	256.86	★	**2KJ1206 - ■EQ13 - ■■S1**		136
	6.1	2 340	1.3	235.19		**2KJ1206 - ■EQ13 - ■■R1**		136
	6.9	2 081	1.5	209.21	★	**2KJ1206 - ■EQ13 - ■■Q1**		136
	7.5	1 902	1.6	191.21		**2KJ1206 - ■EQ13 - ■■P1**		136
	8.2	1 749	1.8	175.78	★	**2KJ1206 - ■EQ13 - ■■N1**		136
	8.9	1 616	1.9	162.4		**2KJ1206 - ■EQ13 - ■■M1**		136
	9.6	1 499	2.1	150.7	★	**2KJ1206 - ■EQ13 - ■■L1**		136
	10.3	1 396	2.2	140.37		**2KJ1206 - ■EQ13 - ■■K1**		136
	D.88-LA90ZLB4E							
	7.5	1 908	0.88	191.8	★	**2KJ1205 - ■EQ13 - ■■R1**		88
	8.2	1 743	0.96	175.18		**2KJ1205 - ■EQ13 - ■■Q1**		88

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

2

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
1.5	**D.88-LA90ZLB4E**							
	9.3	1 547	1.1	155.46	★	**2KJ1205 - ■EQ13 - ■■P1**		88
	10.0	1 428	1.2	143.5		**2KJ1205 - ■EQ13 - ■■N1**		88
	11.1	1 291	1.3	129.79	★	**2KJ1205 - ■EQ13 - ■■M1**		88
	12.0	1 189	1.4	119.52		**2KJ1205 - ■EQ13 - ■■L1**		88
	13.0	1 100	1.5	110.54	★	**2KJ1205 - ■EQ13 - ■■K1**		88
	14.0	1 021	1.6	102.61		**2KJ1205 - ■EQ13 - ■■J1**		88
	15.9	901	1.9	90.53	★	**2KJ1205 - ■EQ13 - ■■H1**		88
	17.2	831	2.0	83.58		**2KJ1205 - ■EQ13 - ■■G1**		88
	19.2	745	2.3	74.88	★	**2KJ1205 - ■EQ13 - ■■F1**		88
	21	687	2.4	69.05		**2KJ1205 - ■EQ13 - ■■E1**		88
	D.68-LA90ZLB4E							
	15.0	957	0.84	96.16		**2KJ1204 - ■EQ13 - ■■J1**		56
	16.3	881	0.91	88.59	★	**2KJ1204 - ■EQ13 - ■■H1**		56
	17.9	800	1.0	80.46		**2KJ1204 - ■EQ13 - ■■G1**		56
	19.6	729	1.1	73.3	★	**2KJ1204 - ■EQ13 - ■■F1**		56
	21	668	1.2	67.14		**2KJ1204 - ■EQ13 - ■■E1**		56
	24	596	1.3	59.91	★	**2KJ1204 - ■EQ13 - ■■D1**		56
	27	532	1.5	53.47		**2KJ1204 - ■EQ13 - ■■C1**		56
	Z.68-LA90ZLB4E							
	30	478	1.1	48.09	★	**2KJ1104 - ■EQ13 - ■■X1**		54
	34	418	1.9	42.06		**2KJ1104 - ■EQ13 - ■■W1**		54
	38	376	2.1	37.76	★	**2KJ1104 - ■EQ13 - ■■V1**		54
	42	343	2.3	34.49		**2KJ1104 - ■EQ13 - ■■U1**		54
	47	304	2.6	30.6	★	**2KJ1104 - ■EQ13 - ■■T1**		54
	51	281	2.8	28.25		**2KJ1104 - ■EQ13 - ■■S1**		54
	D.48-LA90ZLB4E							
	26	556	0.81	55.92	★	**2KJ1203 - ■EQ13 - ■■E1**		37
	29	497	0.90	50		**2KJ1203 - ■EQ13 - ■■D1**		37
	Z.48-LA90ZLB4E							
	32	451	1.0	45.38	★	**2KJ1103 - ■EQ13 - ■■X1**		37
	35	410	1.1	41.26		**2KJ1103 - ■EQ13 - ■■W1**		37
	39	369	1.2	37.06	★	**2KJ1103 - ■EQ13 - ■■V1**		37
	45	316	1.4	31.77		**2KJ1103 - ■EQ13 - ■■U1**		37
	50	286	1.6	28.74	★	**2KJ1103 - ■EQ13 - ■■T1**		37
	54	264	1.7	26.53		**2KJ1103 - ■EQ13 - ■■S1**		37
	62	229	2.0	23.07	★	**2KJ1103 - ■EQ13 - ■■R1**		37
	69	208	2.2	20.95		**2KJ1103 - ■EQ13 - ■■Q1**		37
	75	190	2.4	19.13	★	**2KJ1103 - ■EQ13 - ■■P1**		37
	82	175	2.6	17.55		**2KJ1103 - ■EQ13 - ■■N1**		37
	89	161	2.7	16.17	★	**2KJ1103 - ■EQ13 - ■■M1**		37
	98	146	2.9	14.68		**2KJ1103 - ■EQ13 - ■■L1**		37
	108	133	3.1	13.38	★	**2KJ1103 - ■EQ13 - ■■K1**		37
	118	122	3.3	12.25		**2KJ1103 - ■EQ13 - ■■J1**		37

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
1.5	**Z.48-LA90ZLB4E**							
	132	109	3.6	10.93	★	**2KJ1103 - ■EQ13 - ■■H1**		37
	148	97	3.9	9.76		**2KJ1103 - ■EQ13 - ■■G1**		37
	212	68	4.0	6.79	★	**2KJ1103 - ■EQ13 - ■■D1**		37
	238	60	4.5	6.06		**2KJ1103 - ■EQ13 - ■■C1**		37
	Z.38-LA90ZLB4E							
	59	244	0.9	24.5		**2KJ1102 - ■EQ13 - ■■T1**		27
	66	216	1.0	21.67	★	**2KJ1102 - ■EQ13 - ■■S1**		27
	73	195	1.1	19.64		**2KJ1102 - ■EQ13 - ■■R1**		27
	83	172	1.3	17.33	★	**2KJ1102 - ■EQ13 - ■■Q1**		27
	92	156	1.4	15.64		**2KJ1102 - ■EQ13 - ■■P1**		27
	102	141	1.6	14.18	★	**2KJ1102 - ■EQ13 - ■■N1**		27
	111	129	1.7	12.92		**2KJ1102 - ■EQ13 - ■■M1**		27
	122	118	1.9	11.82	★	**2KJ1102 - ■EQ13 - ■■L1**		27
	136	105	2.0	10.57		**2KJ1102 - ■EQ13 - ■■K1**		27
	148	96	2.1	9.7	★	**2KJ1102 - ■EQ13 - ■■J1**		27
	165	87	2.2	8.75		**2KJ1102 - ■EQ13 - ■■H1**		27
	191	75	2.5	7.52	★	**2KJ1102 - ■EQ13 - ■■G1**		27
	192	75	2.5	7.5	★	**2KJ1102 - ■EQ13 - ■■F1**		27
	215	67	2.7	6.71		**2KJ1102 - ■EQ13 - ■■D1**		27
	234	61	2.8	6.16	★	**2KJ1102 - ■EQ13 - ■■C1**		27
	259	55	3.0	5.55		**2KJ1102 - ■EQ13 - ■■B1**		27
	302	48	3.4	4.77	★	**2KJ1102 - ■EQ13 - ■■A1**		27
	Z.38-LA90SB2E							
	167	86	2.6	17.33	★	**2KJ1102 - ■EM13 - ■■Q1**	**P00**	24
	185	78	2.8	15.64		**2KJ1102 - ■EM13 - ■■P1**	**P00**	24
	204	70	3.1	14.18	★	**2KJ1102 - ■EM13 - ■■N1**	**P00**	24
	224	64	3.4	12.92		**2KJ1102 - ■EM13 - ■■M1**	**P00**	24
	245	59	3.8	11.82	★	**2KJ1102 - ■EM13 - ■■L1**	**P00**	24
	273	52	4.0	10.57		**2KJ1102 - ■EM13 - ■■K1**	**P00**	24
	298	48	4.2	9.7	★	**2KJ1102 - ■EM13 - ■■J1**	**P00**	24
	330	43	4.5	8.75		**2KJ1102 - ■EM13 - ■■H1**	**P00**	24
	384	37	5.1	7.52	★	**2KJ1102 - ■EM13 - ■■G1**	**P00**	24
	385	37	5.0	7.5	★	**2KJ1102 - ■EM13 - ■■F1**	**P00**	24
	431	33	5.4	6.71		**2KJ1102 - ■EM13 - ■■D1**	**P00**	24
	469	30	5.6	6.16	★	**2KJ1102 - ■EM13 - ■■C1**	**P00**	24
	Z.28-LA90ZLB4E							
	89	162	0.87	16.24	★	**2KJ1101 - ■EQ13 - ■■R1**		20
	99	145	0.97	14.58		**2KJ1101 - ■EQ13 - ■■Q1**		20
	109	131	1.1	13.17	★	**2KJ1101 - ■EQ13 - ■■P1**		20
	121	119	1.2	11.94		**2KJ1101 - ■EQ13 - ■■N1**		20
	132	108	1.3	10.87	★	**2KJ1101 - ■EQ13 - ■■M1**		20
	150	96	1.5	9.61		**2KJ1101 - ■EQ13 - ■■L1**		20
	162	88	1.6	8.87	★	**2KJ1101 - ■EQ13 - ■■K1**		20

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
1.5	**Z.28-LA90ZLB4E**							
	188	76	1.8	7.64		**2KJ1101 - ■EQ13 - ■■J1**		20
	207	69	1.9	6.94	★	**2KJ1101 - ■EQ13 - ■■H1**		20
	228	63	1.5	6.31	★	**2KJ1101 - ■EQ13 - ■■G1**		20
	252	57	1.6	5.72		**2KJ1101 - ■EQ13 - ■■F1**		20
	276	52	1.8	5.21	★	**2KJ1101 - ■EQ13 - ■■E1**		20
	313	46	1.9	4.6		**2KJ1101 - ■EQ13 - ■■D1**		20
	339	42	2.1	4.25	★	**2KJ1101 - ■EQ13 - ■■C1**		20
	393	36	2.2	3.66		**2KJ1101 - ■EQ13 - ■■B1**		20
	432	33	2.3	3.33	★	**2KJ1101 - ■EQ13 - ■■A1**		20
	E.88-LA90ZLB4E							
	139	103	2.2	10.33	★	**2KJ1004 - ■EQ13 - ■■S1**		53
	152	94	2.2	9.46		**2KJ1004 - ■EQ13 - ■■R1**		53
	171	84	2.9	8.42	★	**2KJ1004 - ■EQ13 - ■■Q1**		53
	187	76	3.2	7.69		**2KJ1004 - ■EQ13 - ■■P1**		53
	204	70	4.1	7.07	★	**2KJ1004 - ■EQ13 - ■■N1**		53
	238	60	4.6	6.06	★	**2KJ1004 - ■EQ13 - ■■L1**		53
	E.68-LA90ZLB4E							
	129	111	0.83	11.18		**2KJ1003 - ■EQ13 - ■■V1**		36
	143	100	0.95	10.08	★	**2KJ1003 - ■EQ13 - ■■U1**		36
	163	88	1.7	8.82		**2KJ1003 - ■EQ13 - ■■T1**		36
	182	79	2.2	7.92	★	**2KJ1003 - ■EQ13 - ■■S1**		36
	199	72	2.1	7.23		**2KJ1003 - ■EQ13 - ■■R1**		36
	224	64	2.7	6.42	★	**2KJ1003 - ■EQ13 - ■■P1**		36
	243	59	3.2	5.92		**2KJ1003 - ■EQ13 - ■■N1**		36
	269	53	4.1	5.36	★	**2KJ1003 - ■EQ13 - ■■M1**		36
	292	49	4.6	4.93		**2KJ1003 - ■EQ13 - ■■L1**		36
	316	45	4.8	4.56	★	**2KJ1003 - ■EQ13 - ■■K1**		36
	E.48-LA90ZLB4E							
	144	100	0.8	10	★	**2KJ1002 - ■EQ13 - ■■T1**		26
	176	81	1.0	8.17	★	**2KJ1002 - ■EQ13 - ■■R1**		26
	206	70	1.4	7		**2KJ1002 - ■EQ13 - ■■Q1**		26
	227	63	1.8	6.33	★	**2KJ1002 - ■EQ13 - ■■P1**		26
	246	58	2.1	5.85		**2KJ1002 - ■EQ13 - ■■N1**		26
	283	50	2.4	5.08	★	**2KJ1002 - ■EQ13 - ■■M1**		26
	312	46	2.8	4.62		**2KJ1002 - ■EQ13 - ■■L1**		26
	342	42	3.6	4.21	★	**2KJ1002 - ■EQ13 - ■■K1**		26
	372	38	4.2	3.87		**2KJ1002 - ■EQ13 - ■■J1**		26
	404	35	4.0	3.56	★	**2KJ1002 - ■EQ13 - ■■H1**		26
	444	32	4.7	3.24		**2KJ1002 - ■EQ13 - ■■G1**		26
	787	18	6.3	1.83		**2KJ1002 - ■EQ13 - ■■B1**		26
	E.38-LA90ZLB4E							
	243	59	0.9	5.92	★	**2KJ1001 - ■EQ13 - ■■N1**		23
	278	52	1.4	5.18		**2KJ1001 - ■EQ13 - ■■M1**		23

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
1.5	**E.38-LA90ZLB4E**							
	314	46	1.7	4.58	★	**2KJ1001 - ■EQ13 - ■■L1**		23
	347	41	1.5	4.15		**2KJ1001 - ■EQ13 - ■■K1**		23
	392	36	1.9	3.67	★	**2KJ1001 - ■EQ13 - ■■J1**		23
	435	33	2.0	3.31		**2KJ1001 - ■EQ13 - ■■H1**		23
	480	30	2.7	3	★	**2KJ1001 - ■EQ13 - ■■G1**		23
	527	27	2.9	2.73		**2KJ1001 - ■EQ13 - ■■F1**		23
	576	25	2.9	2.5	★	**2KJ1001 - ■EQ13 - ■■E1**		23
	643	22	3.2	2.24		**2KJ1001 - ■EQ13 - ■■D1**		23
	702	20	3.9	2.05	★	**2KJ1001 - ■EQ13 - ■■C1**		23
	778	18	4.5	1.85		**2KJ1001 - ■EQ13 - ■■B1**		23
	906	16	4.6	1.59	★	**2KJ1001 - ■EQ13 - ■■A1**		23
2.2	**D.188-Z48-LA100ZLP4E**							
	0.85	22 590	0.89	1 682	★	**2KJ1235 - ■FM13 - ■■E1**		621
	0.87	22 228	0.9	1 655	★	**2KJ1235 - ■FM13 - ■■D1**		621
	0.97	19 837	1.0	1 477		**2KJ1235 - ■FM13 - ■■C1**		621
	1.1	16 855	1.2	1 255		**2KJ1235 - ■FM13 - ■■B1**		621
	1.4	14 022	1.4	1 044	★	**2KJ1235 - ■FM13 - ■■A1**		621
	D.188-Z68-LA100ZLP4E							
	1.1	16 802	1.2	1 251		**2KJ1237 - ■FM13 - ■■J1**		638
	1.4	14 102	1.4	1 050		**2KJ1237 - ■FM13 - ■■H1**		638
	1.6	12 034	1.7	896	★	**2KJ1237 - ■FM13 - ■■G1**		638
	1.9	10 019	2.0	746		**2KJ1237 - ■FM13 - ■■F1**		638
	D.168-Z68-LA100ZLP4E							
	1.2	16 466	0.85	1 226		**2KJ1233 - ■FM13 - ■■H1**		494
	1.4	14 048	1.0	1 046		**2KJ1233 - ■FM13 - ■■G1**		494
	1.6	11 698	1.2	871		**2KJ1233 - ■FM13 - ■■F1**		494
	D.168-LA132S8							
	2.0	10 253	1.4	341.61	★	**2KJ1210 - ■HE13 - ■■U1**	**P02**	499
	2.2	9 407	1.5	313.41		**2KJ1210 - ■HE13 - ■■T1**	**P02**	499
	2.4	8 681	1.6	289.23	★	**2KJ1210 - ■HE13 - ■■S1**	**P02**	499
	2.6	8 053	1.7	268.29		**2KJ1210 - ■HE13 - ■■R1**	**P02**	499
	D.148-LA132S8							
	2.3	9 045	0.88	301.34	★	**2KJ1208 - ■HE13 - ■■V1**	**P02**	328
	2.5	8 291	0.96	276.23		**2KJ1208 - ■HE13 - ■■U1**	**P02**	328
	2.7	7 645	1.0	254.7	★	**2KJ1208 - ■HE13 - ■■T1**	**P02**	328
	D.148-LA112ZMP6E							
	2.8	7 394	1.1	336.11		**2KJ1208 - ■GJ13 - ■■W1**	**P01**	318
	3.2	6 629	1.2	301.34	★	**2KJ1208 - ■GJ13 - ■■V1**	**P01**	318
	3.5	6 077	1.3	276.23		**2KJ1208 - ■GJ13 - ■■U1**	**P01**	318
	3.7	5 603	1.4	254.7	★	**2KJ1208 - ■GJ13 - ■■T1**	**P01**	318
	4.0	5 193	1.5	236.05		**2KJ1208 - ■GJ13 - ■■S1**	**P01**	318

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

2

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
2.2	**D.148-LA100ZLP4E**							
	4.3	4 921	1.6	336.11		**2KJ1208 - ■FM13 - ■■W1**		311
	4.8	4 412	1.8	301.34	★	**2KJ1208 - ■FM13 - ■■V1**		311
	5.2	4 044	2.0	276.23		**2KJ1208 - ■FM13 - ■■U1**		311
	5.6	3 729	2.1	254.7	★	**2KJ1208 - ■FM13 - ■■T1**		311
	D.128-LA112ZMP6E							
	3.6	5 900	0.86	268.16	★	**2KJ1207 - ■GJ13 - ■■U1**	**P01**	228
	3.9	5 410	0.94	245.93		**2KJ1207 - ■GJ13 - ■■T1**	**P01**	228
	4.3	4 834	1.1	219.72	★	**2KJ1207 - ■GJ13 - ■■S1**	**P01**	228
	4.7	4 427	1.2	201.22		**2KJ1207 - ■GJ13 - ■■R1**	**P01**	228
	5.2	4 078	1.3	185.36	★	**2KJ1207 - ■GJ13 - ■■Q1**	**P01**	228
	D.128-LA100ZLP4E							
	5.4	3 926	1.3	268.16	★	**2KJ1207 - ■FM13 - ■■U1**		221
	5.8	3 601	1.4	245.93		**2KJ1207 - ■FM13 - ■■T1**		221
	6.5	3 217	1.6	219.72	★	**2KJ1207 - ■FM13 - ■■S1**		221
	7.1	2 946	1.7	201.22		**2KJ1207 - ■FM13 - ■■R1**		221
	7.7	2 714	1.9	185.36	★	**2KJ1207 - ■FM13 - ■■Q1**		221
	8.4	2 513	2.0	171.62		**2KJ1207 - ■FM13 - ■■P1**		221
	D.108-LA100ZLP4E							
	5.6	3 761	0.82	256.86	★	**2KJ1206 - ■FM13 - ■■S1**		144
	6.1	3 443	0.90	235.19		**2KJ1206 - ■FM13 - ■■R1**		144
	6.9	3 063	1.0	209.21	★	**2KJ1206 - ■FM13 - ■■Q1**		144
	7.5	2 800	1.1	191.21		**2KJ1206 - ■FM13 - ■■P1**		144
	8.2	2 574	1.2	175.78	★	**2KJ1206 - ■FM13 - ■■N1**		144
	8.8	2 378	1.3	162.4		**2KJ1206 - ■FM13 - ■■M1**		144
	9.5	2 206	1.4	150.7	★	**2KJ1206 - ■FM13 - ■■L1**		144
	10.2	2 055	1.5	140.37		**2KJ1206 - ■FM13 - ■■K1**		144
	11.3	1 858	1.7	126.9	★	**2KJ1206 - ■FM13 - ■■J1**		144
	12.3	1 711	1.8	116.83		**2KJ1206 - ■FM13 - ■■H1**		144
	13.7	1 538	2.0	105.08	★	**2KJ1206 - ■FM13 - ■■G1**		144
	14.8	1 419	2.2	96.94		**2KJ1206 - ■FM13 - ■■F1**		144
	D.88-LA100ZLP4E							
	10.0	2 101	0.80	143.5		**2KJ1205 - ■FM13 - ■■N1**		96
	11.1	1 900	0.88	129.79	★	**2KJ1205 - ■FM13 - ■■M1**		96
	12.0	1 750	0.96	119.52		**2KJ1205 - ■FM13 - ■■L1**		96
	13.0	1 618	1.0	110.54	★	**2KJ1205 - ■FM13 - ■■K1**		96
	14.0	1 502	1.1	102.61		**2KJ1205 - ■FM13 - ■■J1**		96
	15.9	1 325	1.3	90.53	★	**2KJ1205 - ■FM13 - ■■H1**		96
	17.2	1 224	1.4	83.58		**2KJ1205 - ■FM13 - ■■G1**		96
	19.2	1 096	1.5	74.88	★	**2KJ1205 - ■FM13 - ■■F1**		96
	21	1 011	1.7	69.05		**2KJ1205 - ■FM13 - ■■E1**		96
	25	848	2.0	57.93		**2KJ1205 - ■FM13 - ■■D1**		96

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
2.2	**Z.88-LA100ZLP4E**							
	28	743	2.0	50.73		**2KJ1105 - ■FM13 - ■■B2**		94
	31	670	2.5	45.76	★	**2KJ1105 - ■FM13 - ■■A2**		94
	D.68-LA100ZLP4E							
	21	983	0.81	67.14		**2KJ1204 - ■FM13 - ■■E1**		64
	24	877	0.91	59.91	★	**2KJ1204 - ■FM13 - ■■D1**		64
	27	783	1.0	53.47		**2KJ1204 - ■FM13 - ■■C1**		64
	Z.68-LA100ZLP4E							
	34	616	1.3	42.06		**2KJ1104 - ■FM13 - ■■W1**		62
	38	553	1.4	37.76	★	**2KJ1104 - ■FM13 - ■■V1**		62
	42	505	1.6	34.49		**2KJ1104 - ■FM13 - ■■U1**		62
	47	448	1.8	30.6	★	**2KJ1104 - ■FM13 - ■■T1**		62
	51	414	1.9	28.25		**2KJ1104 - ■FM13 - ■■S1**		62
	56	374	2.1	25.55	★	**2KJ1104 - ■FM13 - ■■R1**		62
	61	345	2.3	23.53		**2KJ1104 - ■FM13 - ■■Q1**		62
	66	319	2.5	21.76	★	**2KJ1104 - ■FM13 - ■■P1**		62
	71	296	2.7	20.2		**2KJ1104 - ■FM13 - ■■N1**		62
	80	261	3.1	17.82	★	**2KJ1104 - ■FM13 - ■■M1**		62
	87	241	3.3	16.45		**2KJ1104 - ■FM13 - ■■L1**		62
	D.48-LA100ZLP4E							
	40	521	0.86	35.59		**2KJ1203 - ■FM13 - ■■A1**		45
	Z.48-LA100ZLP4E							
	45	465	0.97	31.77		**2KJ1103 - ■FM13 - ■■U1**		45
	50	421	1.1	28.74	★	**2KJ1103 - ■FM13 - ■■T1**		45
	54	388	1.2	26.53		**2KJ1103 - ■FM13 - ■■S1**		45
	62	338	1.3	23.07	★	**2KJ1103 - ■FM13 - ■■R1**		45
	68	307	1.5	20.95		**2KJ1103 - ■FM13 - ■■Q1**		45
	75	280	1.6	19.13	★	**2KJ1103 - ■FM13 - ■■P1**		45
	82	257	1.8	17.55		**2KJ1103 - ■FM13 - ■■N1**		45
	89	237	1.8	16.17	★	**2KJ1103 - ■FM13 - ■■M1**		45
	98	215	2.0	14.68		**2KJ1103 - ■FM13 - ■■L1**		45
	107	196	2.1	13.38	★	**2KJ1103 - ■FM13 - ■■K1**		45
	117	179	2.2	12.25		**2KJ1103 - ■FM13 - ■■J1**		45
	131	160	2.4	10.93	★	**2KJ1103 - ■FM13 - ■■H1**		45
	147	143	2.7	9.76		**2KJ1103 - ■FM13 - ■■G1**		45
	173	121	3.0	8.29		**2KJ1103 - ■FM13 - ■■F1**		45
	208	101	3.4	6.9	★	**2KJ1103 - ■FM13 - ■■E1**		45
	211	99	2.7	6.79	★	**2KJ1103 - ■FM13 - ■■D1**		45
	237	89	3.0	6.06		**2KJ1103 - ■FM13 - ■■C1**		45
	279	75	3.6	5.15		**2KJ1103 - ■FM13 - ■■B1**		45
	335	63	4.1	4.28	★	**2KJ1103 - ■FM13 - ■■A1**		45
	Z.48-LA90ZLB2E							
	151	139	3.2	19.13	★	**2KJ1103 - ■EQ13 - ■■P1**	**P00**	37
	165	128	3.5	17.55		**2KJ1103 - ■EQ13 - ■■N1**	**P00**	37

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

2

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
2.2	**Z.48-LA90ZLB2E**							
	179	118	3.7	16.17	★	**2KJ1103 - ■EQ13 - ■■M1**	**P00**	37
	197	107	3.9	14.68		**2KJ1103 - ■EQ13 - ■■L1**	**P00**	37
	216	97	4.2	13.38	★	**2KJ1103 - ■EQ13 - ■■K1**	**P00**	37
	236	89	4.5	12.25		**2KJ1103 - ■EQ13 - ■■J1**	**P00**	37
	426	49	5.5	6.79	★	**2KJ1103 - ■EQ13 - ■■D1**	**P00**	37
	Z.38-LA100ZLP4E							
	83	254	0.87	17.33	★	**2KJ1102 - ■FM13 - ■■Q1**		35
	92	229	0.96	15.64		**2KJ1102 - ■FM13 - ■■P1**		35
	101	208	1.1	14.18	★	**2KJ1102 - ■FM13 - ■■N1**		35
	111	189	1.2	12.92		**2KJ1102 - ■FM13 - ■■M1**		35
	121	173	1.3	11.82	★	**2KJ1102 - ■FM13 - ■■L1**		35
	136	155	1.4	10.57		**2KJ1102 - ■FM13 - ■■K1**		35
	148	142	1.4	9.7	★	**2KJ1102 - ■FM13 - ■■J1**		35
	164	128	1.5	8.75		**2KJ1102 - ■FM13 - ■■H1**		35
	191	110	1.7	7.5	★	**2KJ1102 - ■FM13 - ■■F1**		35
	191	110	1.7	7.52	★	**2KJ1102 - ■FM13 - ■■G1**		35
	214	98	1.8	6.71		**2KJ1102 - ■FM13 - ■■D1**		35
	233	90	1.9	6.16	★	**2KJ1102 - ■FM13 - ■■C1**		35
	259	81	2.0	5.55		**2KJ1102 - ■FM13 - ■■B1**		35
	301	70	2.3	4.77	★	**2KJ1102 - ■FM13 - ■■A1**		35
	Z.38-LA90ZLB2E							
	167	126	1.7	17.33	★	**2KJ1102 - ■EQ13 - ■■Q1**	**P00**	27
	185	114	1.9	15.64		**2KJ1102 - ■EQ13 - ■■P1**	**P00**	27
	204	103	2.1	14.18	★	**2KJ1102 - ■EQ13 - ■■N1**	**P00**	27
	224	94	2.3	12.92		**2KJ1102 - ■EQ13 - ■■M1**	**P00**	27
	245	86	2.6	11.82	★	**2KJ1102 - ■EQ13 - ■■L1**	**P00**	27
	273	77	2.7	10.57		**2KJ1102 - ■EQ13 - ■■K1**	**P00**	27
	298	70	2.8	9.7	★	**2KJ1102 - ■EQ13 - ■■J1**	**P00**	27
	330	64	3.1	8.75		**2KJ1102 - ■EQ13 - ■■H1**	**P00**	27
	384	55	3.5	7.52	★	**2KJ1102 - ■EQ13 - ■■G1**	**P00**	27
	385	54	3.4	7.5	★	**2KJ1102 - ■EQ13 - ■■F1**	**P00**	27
	431	49	3.7	6.71		**2KJ1102 - ■EQ13 - ■■D1**	**P00**	27
	469	45	3.8	6.16	★	**2KJ1102 - ■EQ13 - ■■C1**	**P00**	27
	521	40	4.1	5.55		**2KJ1102 - ■EQ13 - ■■B1**	**P00**	27
	606	35	4.6	4.77	★	**2KJ1102 - ■EQ13 - ■■A1**	**P00**	27
	E.128-LA100ZLP4E							
	142	148	3.7	10.14	★	**2KJ1006 - ■FM13 - ■■T1**		119
	E.88-LA100ZLP4E							
	139	151	1.5	10.33	★	**2KJ1004 - ■FM13 - ■■S1**		61
	152	139	1.5	9.46		**2KJ1004 - ■FM13 - ■■R1**		61
	170	123	2.0	8.42	★	**2KJ1004 - ■FM13 - ■■Q1**		61
	187	113	2.2	7.69		**2KJ1004 - ■FM13 - ■■P1**		61
	203	104	2.8	7.07	★	**2KJ1004 - ■FM13 - ■■N1**		61

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
2.2	**E.88-LA100ZLP4E**							
	220	96	3.1	6.53		**2KJ1004 - ■FM13 - ■■M1**		61
	237	89	3.2	6.06	★	**2KJ1004 - ■FM13 - ■■L1**		61
	254	83	3.9	5.65		**2KJ1004 - ■FM13 - ■■K1**		61
	281	75	4.9	5.11	★	**2KJ1004 - ■FM13 - ■■J1**		61
	E.68-LA100ZLP4E							
	163	129	1.2	8.82		**2KJ1003 - ■FM13 - ■■T1**		44
	181	116	1.5	7.92	★	**2KJ1003 - ■FM13 - ■■S1**		44
	198	106	1.4	7.23		**2KJ1003 - ■FM13 - ■■R1**		44
	224	94	1.8	6.42	★	**2KJ1003 - ■FM13 - ■■P1**		44
	242	87	2.2	5.92		**2KJ1003 - ■FM13 - ■■N1**		44
	268	78	2.8	5.36	★	**2KJ1003 - ■FM13 - ■■M1**		44
	291	72	3.1	4.93		**2KJ1003 - ■FM13 - ■■L1**		44
	315	67	3.3	4.56	★	**2KJ1003 - ■FM13 - ■■K1**		44
	338	62	3.7	4.24		**2KJ1003 - ■FM13 - ■■J1**		44
	384	55	4.2	3.74	★	**2KJ1003 - ■FM13 - ■■H1**		44
	416	50	4.8	3.45		**2KJ1003 - ■FM13 - ■■G1**		44
	464	45	5.5	3.09	★	**2KJ1003 - ■FM13 - ■■F1**		44
	E.48-LA100ZLP4E							
	205	102	0.95	7		**2KJ1002 - ■FM13 - ■■Q1**		34
	227	93	1.2	6.33	★	**2KJ1002 - ■FM13 - ■■P1**		34
	245	86	1.4	5.85		**2KJ1002 - ■FM13 - ■■N1**		34
	282	74	1.6	5.08	★	**2KJ1002 - ■FM13 - ■■M1**		34
	311	68	1.9	4.62		**2KJ1002 - ■FM13 - ■■L1**		34
	341	62	2.4	4.21	★	**2KJ1002 - ■FM13 - ■■K1**		34
	371	57	2.8	3.87		**2KJ1002 - ■FM13 - ■■J1**		34
	403	52	2.7	3.56	★	**2KJ1002 - ■FM13 - ■■H1**		34
	443	47	3.2	3.24		**2KJ1002 - ■FM13 - ■■G1**		34
	486	43	3.9	2.95	★	**2KJ1002 - ■FM13 - ■■F1**		34
	531	40	4.0	2.7		**2KJ1002 - ■FM13 - ■■E1**		34
	595	35	4.3	2.41	★	**2KJ1002 - ■FM13 - ■■D1**		34
	667	32	4.3	2.15		**2KJ1002 - ■FM13 - ■■C1**		34
	784	27	4.3	1.83		**2KJ1002 - ■FM13 - ■■B1**		34
	944	22	4.5	1.52	★	**2KJ1002 - ■FM13 - ■■A1**		34
	E.38-LA100ZLP4E							
	277	76	0.92	5.18		**2KJ1001 - ■FM13 - ■■M1**		31
	313	67	1.2	4.58	★	**2KJ1001 - ■FM13 - ■■L1**		31
	346	61	1.0	4.15		**2KJ1001 - ■FM13 - ■■K1**		31
	391	54	1.3	3.67	★	**2KJ1001 - ■FM13 - ■■J1**		31
	434	48	1.3	3.31		**2KJ1001 - ■FM13 - ■■H1**		31
	478	44	1.8	3	★	**2KJ1001 - ■FM13 - ■■G1**		31
	526	40	2.0	2.73		**2KJ1001 - ■FM13 - ■■F1**		31
	574	37	2.0	2.5	★	**2KJ1001 - ■FM13 - ■■E1**		31
	641	33	2.2	2.24		**2KJ1001 - ■FM13 - ■■D1**		31

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

2

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
2.2	**E.38-LA100ZLP4E**							
	700	30	2.7	2.05	★	**2KJ1001 - ■FM13 - ■■C1**		31
	776	27	3.0	1.85		**2KJ1001 - ■FM13 - ■■B1**		31
	903	23	3.1	1.59	★	**2KJ1001 - ■FM13 - ■■A1**		31
3	**D.188-Z68-LA100ZLD4E**							
	1.1	22 996	0.87	1 251		**2KJ1237 - ■FP13 - ■■J1**		638
	1.4	19 301	1.0	1 050		**2KJ1237 - ■FP13 - ■■H1**		638
	1.6	16 470	1.2	896	★	**2KJ1237 - ■FP13 - ■■G1**		638
	1.9	13 713	1.5	746		**2KJ1237 - ■FP13 - ■■F1**		638
	2.3	11 378	1.8	619	★	**2KJ1237 - ■FP13 - ■■E1**		638
	2.6	10 037	2.0	546		**2KJ1237 - ■FP13 - ■■D1**		638
	D.188-Z48-LA100ZLD4E							
	1.1	23 069	0.87	1 255		**2KJ1235 - ■FP13 - ■■B1**		621
	1.4	19 191	1.0	1 044	★	**2KJ1235 - ■FP13 - ■■A1**		621
	D.188-LA132MA8							
	2.9	9 979	2.0	243.82		**2KJ1211 - ■HG13 - ■■N1**	**P02**	652
	D.168-Z68-LA100ZLD4E							
	1.6	16 011	0.87	871		**2KJ1233 - ■FP13 - ■■F1**		494
	D.168-LA132MA8							
	2.0	13 982	1.0	341.61	★	**2KJ1210 - ■HG13 - ■■U1**	**P02**	507
	2.2	12 827	1.1	313.41		**2KJ1210 - ■HG13 - ■■T1**	**P02**	507
	2.4	11 838	1.2	289.23	★	**2KJ1210 - ■HG13 - ■■S1**	**P02**	507
	2.6	10 981	1.3	268.29		**2KJ1210 - ■HG13 - ■■R1**	**P02**	507
	D.168-LA132SB6E							
	2.8	10 302	1.4	341.61	★	**2KJ1210 - ■HF13 - ■■U1**	**P01**	507
	3.0	9 452	1.5	313.41		**2KJ1210 - ■HF13 - ■■T1**	**P01**	507
	3.3	8 723	1.6	289.23	★	**2KJ1210 - ■HF13 - ■■S1**	**P01**	507
	3.5	8 091	1.7	268.29		**2KJ1210 - ■HF13 - ■■R1**	**P01**	507
	3.8	7 632	1.8	253.08	★	**2KJ1210 - ■HF13 - ■■Q1**	**P01**	507
	4.0	7 139	2.0	236.72		**2KJ1210 - ■HF13 - ■■P1**	**P01**	507
	D.148-LA132SB6E							
	3.2	9 088	0.88	301.34	★	**2KJ1208 - ■HF13 - ■■V1**	**P01**	336
	3.4	8 331	0.96	276.23		**2KJ1208 - ■HF13 - ■■U1**	**P01**	336
	3.7	7 681	1.0	254.7	★	**2KJ1208 - ■HF13 - ■■T1**	**P01**	336
	4.0	7 119	1.1	236.05		**2KJ1208 - ■HF13 - ■■S1**	**P01**	336
	D.148-LA100ZLD4E							
	4.3	6 710	1.2	336.11		**2KJ1208 - ■FP13 - ■■W1**		311
	4.8	6 016	1.3	301.34	★	**2KJ1208 - ■FP13 - ■■V1**		311
	5.2	5 515	1.5	276.23		**2KJ1208 - ■FP13 - ■■U1**		311
	5.6	5 085	1.6	254.7	★	**2KJ1208 - ■FP13 - ■■T1**		311
	6.1	4 713	1.7	236.05		**2KJ1208 - ■FP13 - ■■S1**		311
	6.4	4 481	1.8	224.43	★	**2KJ1208 - ■FP13 - ■■R1**		311
	6.8	4 188	1.9	209.76		**2KJ1208 - ■FP13 - ■■Q1**		311

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
3	**D.128-LA132SB6E**							
	4.7	6 068	0.84	201.22		**2KJ1207 - ■HF13 - ■■R1**	**P01**	246
	5.1	5 590	0.91	185.36	★	**2KJ1207 - ■HF13 - ■■Q1**	**P01**	246
	D.128-LA100ZLD4E							
	5.4	5 354	0.95	268.16	★	**2KJ1207 - ■FP13 - ■■U1**		221
	5.8	4 910	1.0	245.93		**2KJ1207 - ■FP13 - ■■T1**		221
	6.5	4 387	1.2	219.72	★	**2KJ1207 - ■FP13 - ■■S1**		221
	7.1	4 017	1.3	201.22		**2KJ1207 - ■FP13 - ■■R1**		221
	7.7	3 701	1.4	185.36	★	**2KJ1207 - ■FP13 - ■■Q1**		221
	8.4	3 426	1.5	171.62		**2KJ1207 - ■FP13 - ■■P1**		221
	9.0	3 186	1.6	159.6	★	**2KJ1207 - ■FP13 - ■■N1**		221
	9.6	2 975	1.7	148.99		**2KJ1207 - ■FP13 - ■■M1**		221
	10.8	2 661	1.9	133.3	★	**2KJ1207 - ■FP13 - ■■L1**		221
	11.6	2 466	2.1	123.53		**2KJ1207 - ■FP13 - ■■K1**		221
	D.108-LA100ZLD4E							
	7.5	3 818	0.81	191.21		**2KJ1206 - ■FP13 - ■■P1**		144
	8.2	3 509	0.88	175.78	★	**2KJ1206 - ■FP13 - ■■N1**		144
	8.8	3 242	0.96	162.4		**2KJ1206 - ■FP13 - ■■M1**		144
	9.5	3 009	1.0	150.7	★	**2KJ1206 - ■FP13 - ■■L1**		144
	10.2	2 803	1.1	140.37		**2KJ1206 - ■FP13 - ■■K1**		144
	11.3	2 534	1.2	126.9	★	**2KJ1206 - ■FP13 - ■■J1**		144
	12.3	2 333	1.3	116.83		**2KJ1206 - ■FP13 - ■■H1**		144
	13.7	2 098	1.5	105.08	★	**2KJ1206 - ■FP13 - ■■G1**		144
	14.8	1 935	1.6	96.94		**2KJ1206 - ■FP13 - ■■F1**		144
	17.5	1 640	1.9	82.14		**2KJ1206 - ■FP13 - ■■E1**		144
	20	1 429	2.2	71.59	★	**2KJ1206 - ■FP13 - ■■D1**		144
	Z.108-LA100ZLD4E							
	24	1 179	2	59.05	★	**2KJ1106 - ■FP13 - ■■E2**		140
	26	1 081	2.1	54.15		**2KJ1106 - ■FP13 - ■■D2**		140
	D.88-LA100ZLD4E							
	14.0	2 049	0.82	102.61		**2KJ1205 - ■FP13 - ■■J1**		96
	15.9	1 807	0.93	90.53	★	**2KJ1205 - ■FP13 - ■■H1**		96
	17.2	1 669	1.0	83.58		**2KJ1205 - ■FP13 - ■■G1**		96
	19.2	1 495	1.1	74.88	★	**2KJ1205 - ■FP13 - ■■F1**		96
	21	1 379	1.2	69.05		**2KJ1205 - ■FP13 - ■■E1**		96
	25	1 157	1.5	57.93		**2KJ1205 - ■FP13 - ■■D1**		96
	Z.88-LA100ZLD4E							
	28	1 013	1.4	50.73		**2KJ1105 - ■FP13 - ■■B2**		94
	31	914	1.8	45.76	★	**2KJ1105 - ■FP13 - ■■A2**		94
	34	837	2.0	41.9		**2KJ1105 - ■FP13 - ■■X1**		94
	38	744	2.3	37.27	★	**2KJ1105 - ■FP13 - ■■W1**		94
	42	680	2.5	34.07		**2KJ1105 - ■FP13 - ■■V1**		94
	46	625	2.7	31.32	★	**2KJ1105 - ■FP13 - ■■U1**		94

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

2

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
3	**Z.68-LA100ZLD4E**							
	34	840	0.95	42.06		**2KJ1104 - ■FP13 - ■■W1**		62
	38	754	1.1	37.76	★	**2KJ1104 - ■FP13 - ■■V1**		62
	42	689	1.2	34.49		**2KJ1104 - ■FP13 - ■■U1**		62
	47	611	1.3	30.6	★	**2KJ1104 - ■FP13 - ■■T1**		62
	51	564	1.4	28.25		**2KJ1104 - ■FP13 - ■■S1**		62
	56	510	1.6	25.55	★	**2KJ1104 - ■FP13 - ■■R1**		62
	61	470	1.7	23.53		**2KJ1104 - ■FP13 - ■■Q1**		62
	66	434	1.8	21.76	★	**2KJ1104 - ■FP13 - ■■P1**		62
	71	403	2.0	20.2		**2KJ1104 - ■FP13 - ■■N1**		62
	80	356	2.2	17.82	★	**2KJ1104 - ■FP13 - ■■M1**		62
	87	328	2.4	16.45		**2KJ1104 - ■FP13 - ■■L1**		62
	97	294	2.7	14.74	★	**2KJ1104 - ■FP13 - ■■K1**		62
	106	271	2.9	13.59		**2KJ1104 - ■FP13 - ■■J1**		62
	126	228	3.4	11.4		**2KJ1104 - ■FP13 - ■■H1**		62
	147	194	3.8	9.73	★	**2KJ1104 - ■FP13 - ■■G1**		62
	242	118	4.1	5.93		**2KJ1104 - ■FP13 - ■■D1**		62
	284	101	4.8	5.06	★	**2KJ1104 - ■FP13 - ■■C1**		62
	Z.48-LA100ZLD4E							
	54	530	0.85	26.53		**2KJ1103 - ■FP13 - ■■S1**		45
	62	461	0.98	23.07	★	**2KJ1103 - ■FP13 - ■■R1**		45
	68	418	1.1	20.95		**2KJ1103 - ■FP13 - ■■Q1**		45
	75	382	1.2	19.13	★	**2KJ1103 - ■FP13 - ■■P1**		45
	82	350	1.3	17.55		**2KJ1103 - ■FP13 - ■■N1**		45
	89	323	1.3	16.17	★	**2KJ1103 - ■FP13 - ■■M1**		45
	98	293	1.4	14.68		**2KJ1103 - ■FP13 - ■■L1**		45
	107	267	1.5	13.38	★	**2KJ1103 - ■FP13 - ■■K1**		45
	117	245	1.6	12.25		**2KJ1103 - ■FP13 - ■■J1**		45
	131	218	1.8	10.93	★	**2KJ1103 - ■FP13 - ■■H1**		45
	147	195	2.0	9.76		**2KJ1103 - ■FP13 - ■■G1**		45
	173	166	2.2	8.29		**2KJ1103 - ■FP13 - ■■F1**		45
	208	138	2.5	6.9	★	**2KJ1103 - ■FP13 - ■■E1**		45
	211	136	2.0	6.79	★	**2KJ1103 - ■FP13 - ■■D1**		45
	237	121	2.2	6.06		**2KJ1103 - ■FP13 - ■■C1**		45
	279	103	2.6	5.15		**2KJ1103 - ■FP13 - ■■B1**		45
	335	86	3.0	4.28	★	**2KJ1103 - ■FP13 - ■■A1**		45
	Z.48-LA100ZLB2E							
	151	190	2.4	19.13	★	**2KJ1103 - ■FM13 - ■■P1**		45
	165	174	2.6	17.55		**2KJ1103 - ■FM13 - ■■N1**		45
	179	160	2.7	16.17	★	**2KJ1103 - ■FM13 - ■■M1**		45
	197	146	2.9	14.68		**2KJ1103 - ■FM13 - ■■L1**		45
	216	133	3.1	13.38	★	**2KJ1103 - ■FM13 - ■■K1**		45
	236	121	3.3	12.25		**2KJ1103 - ■FM13 - ■■J1**		45
	264	108	3.6	10.93	★	**2KJ1103 - ■FM13 - ■■H1**		45

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
3	**Z.48-LA100ZLB2E**							
	296	97	3.9	9.76		**2KJ1103 - ■FM13 - ■■G1**	**P00**	45
	349	82	4.4	8.29		**2KJ1103 - ■FM13 - ■■F1**	**P00**	45
	419	68	5.0	6.9	★	**2KJ1103 - ■FM13 - ■■E1**	**P00**	45
	426	67	4.0	6.79	★	**2KJ1103 - ■FM13 - ■■D1**	**P00**	45
	477	60	4.5	6.06		**2KJ1103 - ■FM13 - ■■C1**	**P00**	45
	561	51	5.3	5.15		**2KJ1103 - ■FM13 - ■■B1**	**P00**	45
	675	42	6.1	4.28	★	**2KJ1103 - ■FM13 - ■■A1**	**P00**	45
	Z.38-LA100ZLD4E							
	111	258	0.85	12.92		**2KJ1102 - ■FP13 - ■■M1**		35
	121	236	0.93	11.82	★	**2KJ1102 - ■FP13 - ■■L1**		35
	136	211	1.0	10.57		**2KJ1102 - ■FP13 - ■■K1**		35
	148	194	1.0	9.7	★	**2KJ1102 - ■FP13 - ■■J1**		35
	164	175	1.1	8.75		**2KJ1102 - ■FP13 - ■■H1**		35
	191	150	1.2	7.5	★	**2KJ1102 - ■FP13 - ■■F1**		35
	191	150	1.3	7.52	★	**2KJ1102 - ■FP13 - ■■G1**		35
	214	134	1.3	6.71		**2KJ1102 - ■FP13 - ■■D1**		35
	233	123	1.4	6.16	★	**2KJ1102 - ■FP13 - ■■C1**		35
	259	111	1.5	5.55		**2KJ1102 - ■FP13 - ■■B1**		35
	301	95	1.7	4.77	★	**2KJ1102 - ■FP13 - ■■A1**		35
	Z.38-LA100ZLB2E							
	167	172	1.3	17.33	★	**2KJ1102 - ■FM13 - ■■Q1**	**P00**	35
	185	155	1.4	15.64		**2KJ1102 - ■FM13 - ■■P1**	**P00**	35
	204	141	1.6	14.18	★	**2KJ1102 - ■FM13 - ■■N1**	**P00**	35
	224	128	1.7	12.92		**2KJ1102 - ■FM13 - ■■M1**	**P00**	35
	245	117	1.9	11.82	★	**2KJ1102 - ■FM13 - ■■L1**	**P00**	35
	273	105	2.0	10.57		**2KJ1102 - ■FM13 - ■■K1**	**P00**	35
	298	96	2.1	9.7	★	**2KJ1102 - ■FM13 - ■■J1**	**P00**	35
	330	87	2.2	8.75		**2KJ1102 - ■FM13 - ■■H1**	**P00**	35
	384	74	2.5	7.52	★	**2KJ1102 - ■FM13 - ■■G1**	**P00**	35
	385	74	2.5	7.5	★	**2KJ1102 - ■FM13 - ■■F1**	**P00**	35
	431	66	2.7	6.71		**2KJ1102 - ■FM13 - ■■D1**	**P00**	35
	469	61	2.8	6.16	★	**2KJ1102 - ■FM13 - ■■C1**	**P00**	35
	521	55	3.0	5.55		**2KJ1102 - ■FM13 - ■■B1**	**P00**	35
	606	47	3.4	4.77	★	**2KJ1102 - ■FM13 - ■■A1**	**P00**	35
	Z.28-LA100ZLD4E							
	188	153	0.89	7.64		**2KJ1101 - ■FP13 - ■■J1**		28
	207	139	0.95	6.94	★	**2KJ1101 - ■FP13 - ■■H1**		28
	251	114	0.81	5.72		**2KJ1101 - ■FP13 - ■■F1**		28
	275	104	0.88	5.21	★	**2KJ1101 - ■FP13 - ■■E1**		28
	312	92	0.96	4.6		**2KJ1101 - ■FP13 - ■■D1**		28
	338	85	1.1	4.25	★	**2KJ1101 - ■FP13 - ■■C1**		28
	392	73	1.1	3.66		**2KJ1101 - ■FP13 - ■■B1**		28
	431	66	1.2	3.33	★	**2KJ1101 - ■FP13 - ■■A1**		28

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

2

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
3	**E.128-LA100ZLD4E**							
	142	202	2.7	10.14	★	**2KJ1006 - ■FP13 - ■■T1**		119
	153	188	3.1	9.4		**2KJ1006 - ■FP13 - ■■S1**		119
	161	178	3.6	8.94	★	**2KJ1006 - ■FP13 - ■■R1**		119
	E.88-LA100ZLD4E							
	139	206	1.1	10.33	★	**2KJ1004 - ■FP13 - ■■S1**		61
	152	189	1.1	9.46		**2KJ1004 - ■FP13 - ■■R1**		61
	170	168	1.5	8.42	★	**2KJ1004 - ■FP13 - ■■Q1**		61
	187	154	1.6	7.69		**2KJ1004 - ■FP13 - ■■P1**		61
	203	141	2.1	7.07	★	**2KJ1004 - ■FP13 - ■■N1**		61
	220	130	2.3	6.53		**2KJ1004 - ■FP13 - ■■M1**		61
	237	121	2.3	6.06	★	**2KJ1004 - ■FP13 - ■■L1**		61
	254	113	2.8	5.65		**2KJ1004 - ■FP13 - ■■K1**		61
	281	102	3.6	5.11	★	**2KJ1004 - ■FP13 - ■■J1**		61
	305	94	4.1	4.7		**2KJ1004 - ■FP13 - ■■H1**		61
	339	84	4.7	4.23	★	**2KJ1004 - ■FP13 - ■■G1**		61
	368	78	4.9	3.9		**2KJ1004 - ■FP13 - ■■F1**		61
	E.68-LA100ZLD4E							
	163	176	0.85	8.82		**2KJ1003 - ■FP13 - ■■T1**		44
	181	158	1.1	7.92	★	**2KJ1003 - ■FP13 - ■■S1**		44
	198	144	1.0	7.23		**2KJ1003 - ■FP13 - ■■R1**		44
	224	128	1.3	6.42	★	**2KJ1003 - ■FP13 - ■■P1**		44
	242	118	1.6	5.92		**2KJ1003 - ■FP13 - ■■N1**		44
	268	107	2.1	5.36	★	**2KJ1003 - ■FP13 - ■■M1**		44
	291	98	2.3	4.93		**2KJ1003 - ■FP13 - ■■L1**		44
	315	91	2.4	4.56	★	**2KJ1003 - ■FP13 - ■■K1**		44
	338	85	2.7	4.24		**2KJ1003 - ■FP13 - ■■J1**		44
	384	75	3.1	3.74	★	**2KJ1003 - ■FP13 - ■■H1**		44
	416	69	3.5	3.45		**2KJ1003 - ■FP13 - ■■G1**		44
	464	62	4.1	3.09	★	**2KJ1003 - ■FP13 - ■■F1**		44
	504	57	4.4	2.85		**2KJ1003 - ■FP13 - ■■E1**		44
	600	48	4.8	2.39		**2KJ1003 - ■FP13 - ■■D1**		44
	703	41	5.2	2.04	★	**2KJ1003 - ■FP13 - ■■C1**		44
	844	34	5.2	1.7		**2KJ1003 - ■FP13 - ■■B1**		44
	1 018	28	5.3	1.41	★	**2KJ1003 - ■FP13 - ■■A1**		44
	E.48-LA100ZLD4E							
	227	126	0.91	6.33	★	**2KJ1002 - ■FP13 - ■■P1**		34
	245	117	1.0	5.85		**2KJ1002 - ■FP13 - ■■N1**		34
	282	101	1.2	5.08	★	**2KJ1002 - ■FP13 - ■■M1**		34
	311	92	1.4	4.62		**2KJ1002 - ■FP13 - ■■L1**		34
	341	84	1.8	4.21	★	**2KJ1002 - ■FP13 - ■■K1**		34
	371	77	2.1	3.87		**2KJ1002 - ■FP13 - ■■J1**		34
	403	71	2.0	3.56	★	**2KJ1002 - ■FP13 - ■■H1**		34
	443	65	2.3	3.24		**2KJ1002 - ■FP13 - ■■G1**		34

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
3	**E.48-LA100ZLD4E**							
	486	59	2.9	2.95	★	**2KJ1002 - ■FP13 - ■■F1**		34
	531	54	3.0	2.7		**2KJ1002 - ■FP13 - ■■E1**		34
	595	48	3.1	2.41	★	**2KJ1002 - ■FP13 - ■■D1**		34
	667	43	3.1	2.15		**2KJ1002 - ■FP13 - ■■C1**		34
	784	36	3.1	1.83		**2KJ1002 - ■FP13 - ■■B1**		34
	944	30	3.3	1.52	★	**2KJ1002 - ■FP13 - ■■A1**		34
	E.38-LA100ZLD4E							
	313	91	0.85	4.58	★	**2KJ1001 - ■FP13 - ■■L1**		31
	391	73	0.96	3.67	★	**2KJ1001 - ■FP13 - ■■J1**		31
	434	66	0.98	3.31		**2KJ1001 - ■FP13 - ■■H1**		31
	478	60	1.3	3	★	**2KJ1001 - ■FP13 - ■■G1**		31
	526	54	1.5	2.73		**2KJ1001 - ■FP13 - ■■F1**		31
	574	50	1.5	2.5	★	**2KJ1001 - ■FP13 - ■■E1**		31
	641	45	1.6	2.24		**2KJ1001 - ■FP13 - ■■D1**		31
	700	41	2.0	2.05	★	**2KJ1001 - ■FP13 - ■■C1**		31
	776	37	2.2	1.85		**2KJ1001 - ■FP13 - ■■B1**		31
	903	32	2.3	1.59	★	**2KJ1001 - ■FP13 - ■■A1**		31
4	**D.188-Z68-LA112ZMP4E**							
	1.6	21 939	0.91	896	★	**2KJ1237 - ■GJ13 - ■■G1**		645
	1.9	18 266	1.1	746		**2KJ1237 - ■GJ13 - ■■F1**		645
	2.3	15 157	1.3	619	★	**2KJ1237 - ■GJ13 - ■■E1**		645
	2.6	13 369	1.5	546		**2KJ1237 - ■GJ13 - ■■D1**		645
	D.188-LA160M8							
	2.9	13 026	1.5	243.82		**2KJ1211 - ■JE13 - ■■N1**	**P02**	676
	3.2	11 763	1.7	220.17		**2KJ1211 - ■JE13 - ■■M1**	**P02**	676
	3.5	11 024	1.8	206.34		**2KJ1211 - ■JE13 - ■■L1**	**P02**	676
	D.188-LA132ZMB6E							
	3.9	9 804	2.0	243.82		**2KJ1211 - ■HJ13 - ■■N1**	**P01**	652
	D.168-LA132ZMB6E							
	2.8	13 736	1.0	341.61	★	**2KJ1210 - ■HJ13 - ■■U1**	**P01**	507
	3.0	12 602	1.1	313.41		**2KJ1210 - ■HJ13 - ■■T1**	**P01**	507
	3.3	11 630	1.2	289.23	★	**2KJ1210 - ■HJ13 - ■■S1**	**P01**	507
	3.5	10 788	1.3	268.29		**2KJ1210 - ■HJ13 - ■■R1**	**P01**	507
	3.8	10 176	1.4	253.08	★	**2KJ1210 - ■HJ13 - ■■Q1**	**P01**	507
	4.0	9 519	1.5	236.72		**2KJ1210 - ■HJ13 - ■■P1**	**P01**	507
	D.148-LA132ZMB6E							
	4.0	9 492	0.84	236.05		**2KJ1208 - ■HJ13 - ■■S1**	**P01**	336
	D.148-LA112ZMP4E							
	4.3	8 916	0.9	336.11		**2KJ1208 - ■GJ13 - ■■W1**		318
	4.8	7 994	1.0	301.34	★	**2KJ1208 - ■GJ13 - ■■V1**		318
	5.2	7 328	1.1	276.23		**2KJ1208 - ■GJ13 - ■■U1**		318
	5.7	6 757	1.2	254.7	★	**2KJ1208 - ■GJ13 - ■■T1**		318
	6.1	6 262	1.3	236.05		**2KJ1208 - ■GJ13 - ■■S1**		318

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

2

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
4	**D.148-LA112ZMP4E**							
	6.4	5 954	1.3	224.43	★	**2KJ1208 - ■GJ13 - ■■R1**		318
	6.9	5 564	1.4	209.76		**2KJ1208 - ■GJ13 - ■■Q1**		318
	7.8	4 908	1.6	185.03	★	**2KJ1208 - ■GJ13 - ■■P1**		318
	8.3	4 630	1.7	174.53		**2KJ1208 - ■GJ13 - ■■N1**		318
	9.2	4 148	1.9	156.38	★	**2KJ1208 - ■GJ13 - ■■M1**		318
	10.0	3 830	2.1	144.39		**2KJ1208 - ■GJ13 - ■■L1**		318
	D.128-LA112ZMP4E							
	6.6	5 829	0.87	219.72	★	**2KJ1207 - ■GJ13 - ■■S1**		228
	7.2	5 338	0.96	201.22		**2KJ1207 - ■GJ13 - ■■R1**		228
	7.8	4 917	1.0	185.36	★	**2KJ1207 - ■GJ13 - ■■Q1**		228
	8.4	4 553	1.1	171.62		**2KJ1207 - ■GJ13 - ■■P1**		228
	9.0	4 234	1.2	159.6	★	**2KJ1207 - ■GJ13 - ■■N1**		228
	9.7	3 952	1.3	148.99		**2KJ1207 - ■GJ13 - ■■M1**		228
	10.8	3 536	1.4	133.3	★	**2KJ1207 - ■GJ13 - ■■L1**		228
	11.7	3 277	1.6	123.53		**2KJ1207 - ■GJ13 - ■■K1**		228
	12.7	3 004	1.7	113.24	★	**2KJ1207 - ■GJ13 - ■■J1**		228
	13.9	2 754	1.9	103.8		**2KJ1207 - ■GJ13 - ■■H1**		228
	16.3	2 347	2.2	88.46		**2KJ1207 - ■GJ13 - ■■G1**		228
	D.108-LA112ZMP4E							
	10.3	3 724	0.83	140.37		**2KJ1206 - ■GJ13 - ■■K1**		151
	11.3	3 366	0.92	126.9	★	**2KJ1206 - ■GJ13 - ■■J1**		151
	12.3	3 099	1.0	116.83		**2KJ1206 - ■GJ13 - ■■H1**		151
	13.7	2 788	1.1	105.08	★	**2KJ1206 - ■GJ13 - ■■G1**		151
	14.9	2 572	1.2	96.94		**2KJ1206 - ■GJ13 - ■■F1**		151
	17.5	2 179	1.4	82.14		**2KJ1206 - ■GJ13 - ■■E1**		151
	20	1 899	1.6	71.59	★	**2KJ1206 - ■GJ13 - ■■D1**		151
	24	1 616	1.9	60.9		**2KJ1206 - ■GJ13 - ■■C1**		151
	Z.108-LA112ZMP4E							
	24	1 566	1.5	59.05	★	**2KJ1106 - ■GJ13 - ■■E2**		147
	27	1 436	1.6	54.15		**2KJ1106 - ■GJ13 - ■■D2**		147
	30	1 283	2.4	48.38	★	**2KJ1106 - ■GJ13 - ■■C2**		147
	D.88-LA112ZMP4E							
	19.2	1 986	0.85	74.88	★	**2KJ1205 - ■GJ13 - ■■F1**		103
	21	1 832	0.92	69.05		**2KJ1205 - ■GJ13 - ■■E1**		103
	25	1 537	1.1	57.93		**2KJ1205 - ■GJ13 - ■■D1**		103
	Z.88-LA112ZMP4E							
	32	1 214	1.4	45.76	★	**2KJ1105 - ■GJ13 - ■■A2**		101
	34	1 112	1.5	41.9		**2KJ1105 - ■GJ13 - ■■X1**		101
	39	989	1.7	37.27	★	**2KJ1105 - ■GJ13 - ■■W1**		101
	42	904	1.9	34.07		**2KJ1105 - ■GJ13 - ■■V1**		101
	46	831	2.0	31.32	★	**2KJ1105 - ■GJ13 - ■■U1**		101
	50	767	2.2	28.93		**2KJ1105 - ■GJ13 - ■■T1**		101
	54	712	2.4	26.85	★	**2KJ1105 - ■GJ13 - ■■S1**		101

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
4	**Z.88-LA112ZMP4E**							
	58	663	2.5	25.01		**2KJ1105 - ■GJ13 - ■■R1**		101
	64	600	2.8	22.61	★	**2KJ1105 - ■GJ13 - ■■Q1**		101
	69	552	3.0	20.81		**2KJ1105 - ■GJ13 - ■■P1**		101
	Z.68-LA112ZMP4E							
	38	1 002	0.80	37.76	★	**2KJ1104 - ■GJ13 - ■■V1**		69
	42	915	0.87	34.49		**2KJ1104 - ■GJ13 - ■■U1**		69
	47	812	0.99	30.6	★	**2KJ1104 - ■GJ13 - ■■T1**		69
	51	749	1.1	28.25		**2KJ1104 - ■GJ13 - ■■S1**		69
	56	678	1.2	25.55	★	**2KJ1104 - ■GJ13 - ■■R1**		69
	61	624	1.3	23.53		**2KJ1104 - ■GJ13 - ■■Q1**		69
	66	577	1.4	21.76	★	**2KJ1104 - ■GJ13 - ■■P1**		69
	71	536	1.5	20.2		**2KJ1104 - ■GJ13 - ■■N1**		69
	81	473	1.7	17.82	★	**2KJ1104 - ■GJ13 - ■■M1**		69
	88	436	1.8	16.45		**2KJ1104 - ■GJ13 - ■■L1**		69
	98	391	2.0	14.74	★	**2KJ1104 - ■GJ13 - ■■K1**		69
	106	361	2.2	13.59		**2KJ1104 - ■GJ13 - ■■J1**		69
	126	302	2.6	11.4		**2KJ1104 - ■GJ13 - ■■H1**		69
	148	258	2.9	9.73	★	**2KJ1104 - ■GJ13 - ■■G1**		69
	178	215	3.3	8.11		**2KJ1104 - ■GJ13 - ■■F1**		69
	214	178	3.6	6.72	★	**2KJ1104 - ■GJ13 - ■■E1**		69
	243	157	3.1	5.93		**2KJ1104 - ■GJ13 - ■■D1**		69
	285	134	3.6	5.06	★	**2KJ1104 - ■GJ13 - ■■C1**		69
	341	112	4.2	4.22		**2KJ1104 - ■GJ13 - ■■B1**		69
	413	93	4.5	3.49	★	**2KJ1104 - ■GJ13 - ■■A1**		69
	Z.68-LA112ZMP2E							
	163	234	3.4	17.82	★	**2KJ1104 - ■GJ13 - ■■M1**	**P00**	69
	177	216	3.7	16.45		**2KJ1104 - ■GJ13 - ■■L1**	**P00**	69
	197	194	4.1	14.74	★	**2KJ1104 - ■GJ13 - ■■K1**	**P00**	69
	214	179	4.5	13.59		**2KJ1104 - ■GJ13 - ■■J1**	**P00**	69
	Z.48-LA112ZMP4E							
	69	556	0.81	20.95		**2KJ1103 - ■GJ13 - ■■Q1**		52
	75	507	0.89	19.13	★	**2KJ1103 - ■GJ13 - ■■P1**		52
	82	466	0.97	17.55		**2KJ1103 - ■GJ13 - ■■N1**		52
	89	429	1.0	16.17	★	**2KJ1103 - ■GJ13 - ■■M1**		52
	98	389	1.1	14.68		**2KJ1103 - ■GJ13 - ■■L1**		52
	108	355	1.2	13.38	★	**2KJ1103 - ■GJ13 - ■■K1**		52
	118	325	1.2	12.25		**2KJ1103 - ■GJ13 - ■■J1**		52
	132	290	1.3	10.93	★	**2KJ1103 - ■GJ13 - ■■H1**		52
	148	259	1.5	9.76		**2KJ1103 - ■GJ13 - ■■G1**		52
	174	220	1.6	8.29		**2KJ1103 - ■GJ13 - ■■F1**		52
	209	183	1.9	6.9	★	**2KJ1103 - ■GJ13 - ■■E1**		52
	212	180	1.5	6.79	★	**2KJ1103 - ■GJ13 - ■■D1**		52
	238	161	1.7	6.06		**2KJ1103 - ■GJ13 - ■■C1**		52

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

2

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
4	**Z.48-LA112ZMP4E**							
	280	137	2.0	5.15		**2KJ1103 - ■GJ13 - ■■B1**		52
	336	114	2.3	4.28	★	**2KJ1103 - ■GJ13 - ■■A1**		52
	Z.48-LA112ZMP2E							
	152	252	1.8	19.13	★	**2KJ1103 - ■GJ13 - ■■P1**	**P00**	52
	166	231	1.9	17.55		**2KJ1103 - ■GJ13 - ■■N1**	**P00**	52
	180	213	2.0	16.17	★	**2KJ1103 - ■GJ13 - ■■M1**	**P00**	52
	198	193	2.2	14.68		**2KJ1103 - ■GJ13 - ■■L1**	**P00**	52
	217	176	2.3	13.38	★	**2KJ1103 - ■GJ13 - ■■K1**	**P00**	52
	237	161	2.5	12.25		**2KJ1103 - ■GJ13 - ■■J1**	**P00**	52
	266	144	2.7	10.93	★	**2KJ1103 - ■GJ13 - ■■H1**	**P00**	52
	298	128	3.0	9.76		**2KJ1103 - ■GJ13 - ■■G1**	**P00**	52
	350	109	3.3	8.29		**2KJ1103 - ■GJ13 - ■■F1**	**P00**	52
	421	91	3.7	6.9	★	**2KJ1103 - ■GJ13 - ■■E1**	**P00**	52
	428	89	3.0	6.79	★	**2KJ1103 - ■GJ13 - ■■D1**	**P00**	52
	479	80	3.4	6.06		**2KJ1103 - ■GJ13 - ■■C1**	**P00**	52
	564	68	4.0	5.15		**2KJ1103 - ■GJ13 - ■■B1**	**P00**	52
	679	56	4.6	4.28	★	**2KJ1103 - ■GJ13 - ■■A1**	**P00**	52
	Z.38-LA112ZMP4E							
	165	232	0.84	8.75		**2KJ1102 - ■GJ13 - ■■H1**		42
	191	199	0.95	7.52	★	**2KJ1102 - ■GJ13 - ■■G1**		42
	192	199	0.93	7.5	★	**2KJ1102 - ■GJ13 - ■■F1**		42
	215	178	1.0	6.71		**2KJ1102 - ■GJ13 - ■■D1**		42
	234	163	1.0	6.16	★	**2KJ1102 - ■GJ13 - ■■C1**		42
	259	147	1.1	5.55		**2KJ1102 - ■GJ13 - ■■B1**		42
	302	127	1.3	4.77	★	**2KJ1102 - ■GJ13 - ■■A1**		42
	Z.38-LA112ZMP2E							
	168	228	0.97	17.33	★	**2KJ1102 - ■GJ13 - ■■Q1**	**P00**	42
	186	206	1.1	15.64		**2KJ1102 - ■GJ13 - ■■P1**	**P00**	42
	205	186	1.2	14.18	★	**2KJ1102 - ■GJ13 - ■■N1**	**P00**	42
	225	170	1.3	12.92		**2KJ1102 - ■GJ13 - ■■M1**	**P00**	42
	246	155	1.4	11.82	★	**2KJ1102 - ■GJ13 - ■■L1**	**P00**	42
	275	139	1.5	10.57		**2KJ1102 - ■GJ13 - ■■K1**	**P00**	42
	299	128	1.6	9.7	★	**2KJ1102 - ■GJ13 - ■■J1**	**P00**	42
	332	115	1.7	8.75		**2KJ1102 - ■GJ13 - ■■H1**	**P00**	42
	386	99	1.9	7.52	★	**2KJ1102 - ■GJ13 - ■■G1**	**P00**	42
	387	99	1.9	7.5	★	**2KJ1102 - ■GJ13 - ■■F1**	**P00**	42
	433	88	2.0	6.71		**2KJ1102 - ■GJ13 - ■■D1**	**P00**	42
	472	81	2.1	6.16	★	**2KJ1102 - ■GJ13 - ■■C1**	**P00**	42
	523	73	2.3	5.55		**2KJ1102 - ■GJ13 - ■■B1**	**P00**	42
	609	63	2.6	4.77	★	**2KJ1102 - ■GJ13 - ■■A1**	**P00**	42
	E.128-LA112ZMP4E							
	142	269	2.0	10.14	★	**2KJ1006 - ■GJ13 - ■■T1**		126
	153	249	2.3	9.4		**2KJ1006 - ■GJ13 - ■■S1**		126

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
4	**E.128-LA112ZMP4E**							
	161	237	2.7	8.94	★	**2KJ1006 - ■GJ13 - ■■R1**		126
	172	222	3.2	8.35		**2KJ1006 - ■GJ13 - ■■Q1**		126
	195	196	4.2	7.37	★	**2KJ1006 - ■GJ13 - ■■P1**		126
	E.108-LA112ZMP4E							
	264	145	4.6	5.46	★	**2KJ1005 - ■GJ13 - ■■K1**		89
	E.88-LA112ZMP4E							
	139	274	0.84	10.33	★	**2KJ1004 - ■GJ13 - ■■S1**		68
	152	251	0.84	9.46		**2KJ1004 - ■GJ13 - ■■R1**		68
	171	223	1.1	8.42	★	**2KJ1004 - ■GJ13 - ■■Q1**		68
	187	204	1.2	7.69		**2KJ1004 - ■GJ13 - ■■P1**		68
	204	188	1.5	7.07	★	**2KJ1004 - ■GJ13 - ■■N1**		68
	221	173	1.7	6.53		**2KJ1004 - ■GJ13 - ■■M1**		68
	238	161	1.7	6.06	★	**2KJ1004 - ■GJ13 - ■■L1**		68
	255	150	2.1	5.65		**2KJ1004 - ■GJ13 - ■■K1**		68
	282	136	2.7	5.11	★	**2KJ1004 - ■GJ13 - ■■J1**		68
	306	125	3.1	4.7		**2KJ1004 - ■GJ13 - ■■H1**		68
	340	112	3.6	4.23	★	**2KJ1004 - ■GJ13 - ■■G1**		68
	369	103	3.7	3.9		**2KJ1004 - ■GJ13 - ■■F1**		68
	436	88	5.1	3.3		**2KJ1004 - ■GJ13 - ■■E1**		68
	500	76	5.7	2.88	★	**2KJ1004 - ■GJ13 - ■■D1**		68
	E.68-LA112ZMP4E							
	182	210	0.81	7.92	★	**2KJ1003 - ■GJ13 - ■■S1**		51
	224	170	1.0	6.42	★	**2KJ1003 - ■GJ13 - ■■P1**		51
	243	157	1.2	5.92		**2KJ1003 - ■GJ13 - ■■N1**		51
	269	142	1.5	5.36	★	**2KJ1003 - ■GJ13 - ■■M1**		51
	292	131	1.7	4.93		**2KJ1003 - ■GJ13 - ■■L1**		51
	316	121	1.8	4.56	★	**2KJ1003 - ■GJ13 - ■■K1**		51
	340	112	2.0	4.24		**2KJ1003 - ■GJ13 - ■■J1**		51
	385	99	2.3	3.74	★	**2KJ1003 - ■GJ13 - ■■H1**		51
	417	92	2.6	3.45		**2KJ1003 - ■GJ13 - ■■G1**		51
	466	82	3.0	3.09	★	**2KJ1003 - ■GJ13 - ■■F1**		51
	505	76	3.3	2.85		**2KJ1003 - ■GJ13 - ■■E1**		51
	603	63	3.6	2.39		**2KJ1003 - ■GJ13 - ■■D1**		51
	706	54	3.9	2.04	★	**2KJ1003 - ■GJ13 - ■■C1**		51
	847	45	3.9	1.7		**2KJ1003 - ■GJ13 - ■■B1**		51
	1 021	37	4.0	1.41	★	**2KJ1003 - ■GJ13 - ■■A1**		51
	E.48-LA112ZMP4E							
	283	135	0.89	5.08	★	**2KJ1002 - ■GJ13 - ■■M1**		41
	312	123	1.1	4.62		**2KJ1002 - ■GJ13 - ■■L1**		41
	342	112	1.3	4.21	★	**2KJ1002 - ■GJ13 - ■■K1**		41
	372	103	1.6	3.87		**2KJ1002 - ■GJ13 - ■■J1**		41
	404	94	1.5	3.56	★	**2KJ1002 - ■GJ13 - ■■H1**		41
	444	86	1.7	3.24		**2KJ1002 - ■GJ13 - ■■G1**		41

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

2

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
4	**E.48-LA112ZMP4E**							
	488	78	2.2	2.95	★	**2KJ1002 - ■GJ13 - ■■F1**		41
	533	72	2.2	2.7		**2KJ1002 - ■GJ13 - ■■E1**		41
	598	64	2.3	2.41	★	**2KJ1002 - ■GJ13 - ■■D1**		41
	670	57	2.4	2.15		**2KJ1002 - ■GJ13 - ■■C1**		41
	787	48	2.4	1.83		**2KJ1002 - ■GJ13 - ■■B1**		41
	947	40	2.5	1.52	★	**2KJ1002 - ■GJ13 - ■■A1**		41
	E.38-LA112ZMP4E							
	480	80	1.0	3	★	**2KJ1001 - ■GJ13 - ■■G1**		38
	527	72	1.1	2.73		**2KJ1001 - ■GJ13 - ■■F1**		38
	702	54	1.5	2.05	★	**2KJ1001 - ■GJ13 - ■■C1**		38
	778	49	1.7	1.85		**2KJ1001 - ■GJ13 - ■■B1**		38
	906	42	1.7	1.59	★	**2KJ1001 - ■GJ13 - ■■A1**		38
5.5	**D.188-Z68-LA132SP4E**							
	1.9	25 081	0.8	746		**2KJ1237 - ■HG13 - ■■F1**		663
	2.3	20 811	0.96	619	★	**2KJ1237 - ■HG13 - ■■E1**		663
	2.6	18 357	1.1	546		**2KJ1237 - ■HG13 - ■■D1**		663
	D.188-LA160MB8							
	2.9	18 038	1.1	243.82		**2KJ1211 - ■JF13 - ■■N1**	**P02**	676
	3.2	16 288	1.2	220.17		**2KJ1211 - ■JF13 - ■■M1**	**P02**	676
	3.4	15 265	1.3	206.34		**2KJ1211 - ■JF13 - ■■L1**	**P02**	676
	D.188-LA132ZMD6E							
	3.9	13 340	1.5	243.82		**2KJ1211 - ■HK13 - ■■N1**	**P01**	652
	4.4	12 046	1.7	220.17		**2KJ1211 - ■HK13 - ■■M1**	**P01**	652
	4.7	11 290	1.8	206.34		**2KJ1211 - ■HK13 - ■■L1**	**P01**	652
	5.4	9 697	2.1	177.23	★	**2KJ1211 - ■HK13 - ■■K1**	**P01**	652
	D.168-LA132ZMD6E							
	3.1	17 148	0.82	313.41		**2KJ1210 - ■HK13 - ■■T1**	**P01**	507
	3.3	15 825	0.88	289.23	★	**2KJ1210 - ■HK13 - ■■S1**	**P01**	507
	3.6	14 679	0.95	268.29		**2KJ1210 - ■HK13 - ■■R1**	**P01**	507
	3.8	13 847	1.0	253.08	★	**2KJ1210 - ■HK13 - ■■Q1**	**P01**	507
	D.168-LA132SP4E							
	4.2	12 417	1.1	341.61	★	**2KJ1210 - ■HG13 - ■■U1**		507
	4.6	11 392	1.2	313.41		**2KJ1210 - ■HG13 - ■■T1**		507
	5.0	10 513	1.3	289.23	★	**2KJ1210 - ■HG13 - ■■S1**		507
	5.4	9 752	1.4	268.29		**2KJ1210 - ■HG13 - ■■R1**		507
	5.7	9 199	1.5	253.08	★	**2KJ1210 - ■HG13 - ■■Q1**		507
	6.1	8 605	1.6	236.72		**2KJ1210 - ■HG13 - ■■P1**		507
	6.9	7 651	1.8	210.49	★	**2KJ1210 - ■HG13 - ■■N1**		507
	7.3	7 223	1.9	198.71		**2KJ1210 - ■HG13 - ■■M1**		507
	D.148-LA132SP4E							
	5.2	10 041	0.80	276.23		**2KJ1208 - ■HG13 - ■■U1**		336
	5.7	9 258	0.86	254.7	★	**2KJ1208 - ■HG13 - ■■T1**		336
	6.1	8 580	0.93	236.05		**2KJ1208 - ■HG13 - ■■S1**		336

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
5.5	**D.148-LA132SP4E**							
	6.4	8 158	0.98	224.43	★	**2KJ1208 - ■HG13 - ■■R1**		336
	6.9	7 625	1.0	209.76		**2KJ1208 - ■HG13 - ■■Q1**		336
	7.8	6 726	1.2	185.03	★	**2KJ1208 - ■HG13 - ■■P1**		336
	8.3	6 344	1.3	174.53		**2KJ1208 - ■HG13 - ■■N1**		336
	9.2	5 684	1.4	156.38	★	**2KJ1208 - ■HG13 - ■■M1**		336
	10.0	5 249	1.5	144.39		**2KJ1208 - ■HG13 - ■■L1**		336
	11.7	4 484	1.8	123.37		**2KJ1208 - ■HG13 - ■■K1**		336
	13.0	4 053	2.0	111.5	★	**2KJ1208 - ■HG13 - ■■J1**		336
	13.5	3 905	2.0	107.42		**2KJ1208 - ■HG13 - ■■H1**		336
	Z.148-LA132SP4E							
	25	2 090	2.2	57.5		**2KJ1108 - ■HG13 - ■■B2**		324
	D.128-LA132SP4E							
	8.4	6 238	0.82	171.62		**2KJ1207 - ■HG13 - ■■P1**		246
	9.1	5 801	0.88	159.6	★	**2KJ1207 - ■HG13 - ■■N1**		246
	9.7	5 416	0.94	148.99		**2KJ1207 - ■HG13 - ■■M1**		246
	10.8	4 845	1.1	133.3	★	**2KJ1207 - ■HG13 - ■■L1**		246
	11.7	4 490	1.1	123.53		**2KJ1207 - ■HG13 - ■■K1**		246
	12.8	4 116	1.2	113.24	★	**2KJ1207 - ■HG13 - ■■J1**		246
	13.9	3 773	1.4	103.8		**2KJ1207 - ■HG13 - ■■H1**		246
	16.3	3 215	1.6	88.46		**2KJ1207 - ■HG13 - ■■G1**		246
	18.5	2 837	1.8	78.06	★	**2KJ1207 - ■HG13 - ■■F1**		246
	22	2 415	2.1	66.43		**2KJ1207 - ■HG13 - ■■E1**		246
	25	2 092	2.4	57.56	★	**2KJ1207 - ■HG13 - ■■D1**		246
	Z.128-LA132SP4E							
	33	1 606	2.0	44.19	★	**2KJ1107 - ■HG13 - ■■D2**		237
	35	1 489	2.1	40.96		**2KJ1107 - ■HG13 - ■■C2**		237
	D.108-LA132SP4E							
	13.8	3 820	0.81	105.08	★	**2KJ1206 - ■HG13 - ■■G1**		169
	14.9	3 524	0.88	96.94		**2KJ1206 - ■HG13 - ■■F1**		169
	17.6	2 986	1.0	82.14		**2KJ1206 - ■HG13 - ■■E1**		169
	20	2 602	1.2	71.59	★	**2KJ1206 - ■HG13 - ■■D1**		169
	24	2 214	1.4	60.9		**2KJ1206 - ■HG13 - ■■C1**		169
	Z.108-LA132SP4E							
	30	1 759	1.8	48.38	★	**2KJ1106 - ■HG13 - ■■C2**		165
	33	1 611	1.9	44.31		**2KJ1106 - ■HG13 - ■■B2**		165
	35	1 484	2.1	40.82	★	**2KJ1106 - ■HG13 - ■■A2**		165
	38	1 374	2.3	37.79		**2KJ1106 - ■HG13 - ■■X1**		165
	41	1 277	2.4	35.14	★	**2KJ1106 - ■HG13 - ■■W1**		165
	44	1 193	2.6	32.81		**2KJ1106 - ■HG13 - ■■V1**		165
	D.88-LA132SP4E							
	25	2 106	0.80	57.93		**2KJ1205 - ■HG13 - ■■D1**		121
	29	1 796	0.94	49.42	★	**2KJ1205 - ■HG13 - ■■C1**		121
	35	1 497	1.1	41.19		**2KJ1205 - ■HG13 - ■■B1**		121

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

2

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
5.5	**Z.88-LA132SP4E**							
	39	1 355	1.2	37.27	★	**2KJ1105 - ■HG13 - ■■W1**		119
	42	1 238	1.4	34.07		**2KJ1105 - ■HG13 - ■■V1**		119
	46	1 138	1.5	31.32	★	**2KJ1105 - ■HG13 - ■■U1**		119
	50	1 052	1.6	28.93		**2KJ1105 - ■HG13 - ■■T1**		119
	54	976	1.7	26.85	★	**2KJ1105 - ■HG13 - ■■S1**		119
	58	909	1.8	25.01		**2KJ1105 - ■HG13 - ■■R1**		119
	64	822	2.0	22.61	★	**2KJ1105 - ■HG13 - ■■Q1**		119
	69	756	2.2	20.81		**2KJ1105 - ■HG13 - ■■P1**		119
	77	680	2.5	18.72	★	**2KJ1105 - ■HG13 - ■■N1**		119
	84	628	2.7	17.27		**2KJ1105 - ■HG13 - ■■M1**		119
	99	532	3.0	14.63		**2KJ1105 - ■HG13 - ■■L1**		119
	113	463	3.3	12.75	★	**2KJ1105 - ■HG13 - ■■K1**		119
	133	394	3.7	10.85		**2KJ1105 - ■HG13 - ■■J1**		119
	325	162	4.9	4.45	★	**2KJ1105 - ■HG13 - ■■C1**		119
	381	138	5.4	3.79	★	**2KJ1105 - ■HG13 - ■■B1**		119
	Z.68-LA132SP4E							
	57	929	0.86	25.55	★	**2KJ1104 - ■HG13 - ■■R1**		87
	61	855	0.94	23.53		**2KJ1104 - ■HG13 - ■■Q1**		87
	66	791	1.0	21.76	★	**2KJ1104 - ■HG13 - ■■P1**		87
	72	734	1.1	20.2		**2KJ1104 - ■HG13 - ■■N1**		87
	81	648	1.2	17.82	★	**2KJ1104 - ■HG13 - ■■M1**		87
	88	598	1.3	16.45		**2KJ1104 - ■HG13 - ■■L1**		87
	98	536	1.5	14.74	★	**2KJ1104 - ■HG13 - ■■K1**		87
	106	494	1.6	13.59		**2KJ1104 - ■HG13 - ■■J1**		87
	127	414	1.9	11.4		**2KJ1104 - ■HG13 - ■■H1**		87
	149	354	2.1	9.73	★	**2KJ1104 - ■HG13 - ■■G1**		87
	178	295	2.4	8.11		**2KJ1104 - ■HG13 - ■■F1**		87
	215	244	2.7	6.72	★	**2KJ1104 - ■HG13 - ■■E1**		87
	244	216	2.3	5.93		**2KJ1104 - ■HG13 - ■■D1**		87
	286	184	2.6	5.06	★	**2KJ1104 - ■HG13 - ■■C1**		87
	342	153	3.1	4.22		**2KJ1104 - ■HG13 - ■■B1**		87
	414	127	3.3	3.49	★	**2KJ1104 - ■HG13 - ■■A1**		87
	Z.68-LA132SB2E							
	164	319	2.5	17.82	★	**2KJ1104 - ■HF13 - ■■M1**	**P00**	79
	178	295	2.7	16.45		**2KJ1104 - ■HF13 - ■■L1**	**P00**	79
	199	264	3.0	14.74	★	**2KJ1104 - ■HF13 - ■■K1**	**P00**	79
	216	244	3.3	13.59		**2KJ1104 - ■HF13 - ■■J1**	**P00**	79
	257	204	3.8	11.4		**2KJ1104 - ■HF13 - ■■H1**	**P00**	79
	301	174	4.3	9.73	★	**2KJ1104 - ■HF13 - ■■G1**	**P00**	79
	361	145	4.8	8.11		**2KJ1104 - ■HF13 - ■■F1**	**P00**	79
	436	120	5.4	6.72	★	**2KJ1104 - ■HF13 - ■■E1**	**P00**	79
	494	106	4.6	5.93		**2KJ1104 - ■HF13 - ■■D1**	**P00**	79
	579	91	5.3	5.06	★	**2KJ1104 - ■HF13 - ■■C1**	**P00**	79

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
5.5	**Z.68-LA132SB2E**							
	694	76	6.2	4.22		**2KJ1104 - ■HF13 - ■■B1**	**P00**	79
	Z.48-LA132SP4E							
	108	486	0.84	13.38	★	**2KJ1103 - ■HG13 - ■■K1**		70
	118	445	0.90	12.25		**2KJ1103 - ■HG13 - ■■J1**		70
	132	397	0.98	10.93	★	**2KJ1103 - ■HG13 - ■■H1**		70
	148	355	1.1	9.76		**2KJ1103 - ■HG13 - ■■G1**		70
	174	301	1.2	8.29		**2KJ1103 - ■HG13 - ■■F1**		70
	209	251	1.4	6.9	★	**2KJ1103 - ■HG13 - ■■E1**		70
	213	247	1.1	6.79	★	**2KJ1103 - ■HG13 - ■■D1**		70
	238	220	1.2	6.06		**2KJ1103 - ■HG13 - ■■C1**		70
	281	187	1.4	5.15		**2KJ1103 - ■HG13 - ■■B1**		70
	338	156	1.7	4.28	★	**2KJ1103 - ■HG13 - ■■A1**		70
	Z.48-LA132SB2E							
	153	343	1.3	19.13	★	**2KJ1103 - ■HF13 - ■■P1**	**P00**	62
	167	315	1.4	17.55		**2KJ1103 - ■HF13 - ■■N1**	**P00**	62
	181	290	1.5	16.17	★	**2KJ1103 - ■HF13 - ■■M1**	**P00**	62
	200	263	1.6	14.68		**2KJ1103 - ■HF13 - ■■L1**	**P00**	62
	219	240	1.7	13.38	★	**2KJ1103 - ■HF13 - ■■K1**	**P00**	62
	239	220	1.8	12.25		**2KJ1103 - ■HF13 - ■■J1**	**P00**	62
	268	196	2.0	10.93	★	**2KJ1103 - ■HF13 - ■■H1**	**P00**	62
	300	175	2.2	9.76		**2KJ1103 - ■HF13 - ■■G1**	**P00**	62
	353	149	2.4	8.29		**2KJ1103 - ■HF13 - ■■F1**	**P00**	62
	425	124	2.7	6.9	★	**2KJ1103 - ■HF13 - ■■E1**	**P00**	62
	432	122	2.2	6.79	★	**2KJ1103 - ■HF13 - ■■D1**	**P00**	62
	483	109	2.5	6.06		**2KJ1103 - ■HF13 - ■■C1**	**P00**	62
	569	92	2.9	5.15		**2KJ1103 - ■HF13 - ■■B1**	**P00**	62
	685	77	3.4	4.28	★	**2KJ1103 - ■HF13 - ■■A1**	**P00**	62
	E.148-LA132SP4E							
	106	497	1.2	13.67	★	**2KJ1007 - ■HG13 - ■■U1**		168
	115	456	1.3	12.54		**2KJ1007 - ■HG13 - ■■T1**		168
	125	421	1.6	11.57	★	**2KJ1007 - ■HG13 - ■■S1**		168
	135	390	1.9	10.73		**2KJ1007 - ■HG13 - ■■R1**		168
	143	368	2.2	10.13	★	**2KJ1007 - ■HG13 - ■■Q1**		168
	153	344	2.7	9.47		**2KJ1007 - ■HG13 - ■■P1**		168
	172	306	3.3	8.42	★	**2KJ1007 - ■HG13 - ■■N1**		168
	182	289	3.7	7.95		**2KJ1007 - ■HG13 - ■■M1**		168
	202	260	4.3	7.14	★	**2KJ1007 - ■HG13 - ■■L1**		168
	E.128-LA132SP4E							
	143	369	1.5	10.14	★	**2KJ1006 - ■HG13 - ■■T1**		144
	154	342	1.7	9.4		**2KJ1006 - ■HG13 - ■■S1**		144
	162	325	2.0	8.94	★	**2KJ1006 - ■HG13 - ■■R1**		144
	173	304	2.3	8.35		**2KJ1006 - ■HG13 - ■■Q1**		144
	196	268	3.0	7.37	★	**2KJ1006 - ■HG13 - ■■P1**		144

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

2

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
5.5	**E.128-LA132SP4E**							
	208	253	3.5	6.95		**2KJ1006 - ■HG13 - ■■N1**		144
	232	226	4.1	6.23	★	**2KJ1006 - ■HG13 - ■■M1**		144
	251	209	4.6	5.75		**2KJ1006 - ■HG13 - ■■L1**		144
	E.108-LA132SP4E							
	265	198	3.3	5.46	★	**2KJ1005 - ■HG13 - ■■K1**		107
	289	182	3.7	5		**2KJ1005 - ■HG13 - ■■J1**		107
	339	155	4.6	4.26		**2KJ1005 - ■HG13 - ■■H1**		107
	384	137	4.4	3.76	★	**2KJ1005 - ■HG13 - ■■G1**		107
	E.88-LA132SP4E							
	172	306	0.80	8.42	★	**2KJ1004 - ■HG13 - ■■Q1**		86
	188	280	0.88	7.69		**2KJ1004 - ■HG13 - ■■P1**		86
	204	257	1.1	7.07	★	**2KJ1004 - ■HG13 - ■■N1**		86
	221	237	1.3	6.53		**2KJ1004 - ■HG13 - ■■M1**		86
	238	220	1.3	6.06	★	**2KJ1004 - ■HG13 - ■■L1**		86
	256	205	1.6	5.65		**2KJ1004 - ■HG13 - ■■K1**		86
	283	186	2.0	5.11	★	**2KJ1004 - ■HG13 - ■■J1**		86
	307	171	2.3	4.7		**2KJ1004 - ■HG13 - ■■H1**		86
	342	154	2.6	4.23	★	**2KJ1004 - ■HG13 - ■■G1**		86
	371	142	2.7	3.9		**2KJ1004 - ■HG13 - ■■F1**		86
	438	120	3.8	3.3		**2KJ1004 - ■HG13 - ■■E1**		86
	502	105	4.2	2.88	★	**2KJ1004 - ■HG13 - ■■D1**		86
	590	89	4.7	2.45		**2KJ1004 - ■HG13 - ■■C1**		86
	691	76	5.5	2.09	★	**2KJ1004 - ■HG13 - ■■B1**		86
	845	62	5.7	1.71	★	**2KJ1004 - ■HG13 - ■■A1**		86
	E.68-LA132SP4E							
	244	215	0.88	5.92		**2KJ1003 - ■HG13 - ■■N1**		69
	270	195	1.1	5.36	★	**2KJ1003 - ■HG13 - ■■M1**		69
	293	179	1.3	4.93		**2KJ1003 - ■HG13 - ■■L1**		69
	317	166	1.3	4.56	★	**2KJ1003 - ■HG13 - ■■K1**		69
	341	154	1.5	4.24		**2KJ1003 - ■HG13 - ■■J1**		69
	386	136	1.7	3.74	★	**2KJ1003 - ■HG13 - ■■H1**		69
	419	125	1.9	3.45		**2KJ1003 - ■HG13 - ■■G1**		69
	468	112	2.2	3.09	★	**2KJ1003 - ■HG13 - ■■F1**		69
	507	104	2.4	2.85		**2KJ1003 - ■HG13 - ■■E1**		69
	605	87	2.6	2.39		**2KJ1003 - ■HG13 - ■■D1**		69
	708	74	2.8	2.04	★	**2KJ1003 - ■HG13 - ■■C1**		69
	850	62	2.8	1.7		**2KJ1003 - ■HG13 - ■■B1**		69
	1 025	51	2.9	1.41	★	**2KJ1003 - ■HG13 - ■■A1**		69
	E.48-LA132SP4E							
	343	153	0.98	4.21	★	**2KJ1002 - ■HG13 - ■■K1**		59
	373	141	1.1	3.87		**2KJ1002 - ■HG13 - ■■J1**		59
	406	129	1.1	3.56	★	**2KJ1002 - ■HG13 - ■■H1**		59
	446	118	1.3	3.24		**2KJ1002 - ■HG13 - ■■G1**		59

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
5.5	**E.48-LA132SP4E**							
	490	107	1.6	2.95	★	**2KJ1002 - ■HG13 - ■■F1**		59
	535	98	1.6	2.7		**2KJ1002 - ■HG13 - ■■E1**		59
	600	88	1.7	2.41	★	**2KJ1002 - ■HG13 - ■■D1**		59
	672	78	1.7	2.15		**2KJ1002 - ■HG13 - ■■C1**		59
	790	66	1.7	1.83		**2KJ1002 - ■HG13 - ■■B1**		59
	951	55	1.8	1.52	★	**2KJ1002 - ■HG13 - ■■A1**		59
7.5	**D.188-Z68-LA132ZMP4E**							
	2.7	24 896	0.80	546		**2KJ1237 - ■HK13 - ■■D1**		663
	D.188-LA160LB8							
	2.9	24 425	0.82	243.82		**2KJ1211 - ■JJ13 - ■■N1**	**P02**	688
	3.2	22 055	0.91	220.17		**2KJ1211 - ■JJ13 - ■■M1**	**P02**	688
	3.5	20 670	0.97	206.34		**2KJ1211 - ■JJ13 - ■■L1**	**P02**	688
	D.188-LA160MD6E							
	4.0	18 097	1.1	243.82		**2KJ1211 - ■JJ13 - ■■N1**	**P01**	688
	4.4	16 342	1.2	220.17		**2KJ1211 - ■JJ13 - ■■M1**	**P01**	688
	4.7	15 315	1.3	206.34		**2KJ1211 - ■JJ13 - ■■L1**	**P01**	688
	5.4	13 155	1.5	177.23	★	**2KJ1211 - ■JJ13 - ■■K1**	**P01**	688
	D.188-LA132ZMP4E							
	6.0	12 002	1.7	243.82		**2KJ1211 - ■HK13 - ■■N1**		652
	6.6	10 838	1.8	220.17		**2KJ1211 - ■HK13 - ■■M1**		652
	7.1	10 157	2.0	206.34		**2KJ1211 - ■HK13 - ■■L1**		652
	D.168-LA132ZMP4E							
	4.3	16 816	0.83	341.61	★	**2KJ1210 - ■HK13 - ■■U1**		507
	4.6	15 428	0.91	313.41		**2KJ1210 - ■HK13 - ■■T1**		507
	5.0	14 238	0.98	289.23	★	**2KJ1210 - ■HK13 - ■■S1**		507
	5.4	13 207	1.1	268.29		**2KJ1210 - ■HK13 - ■■R1**		507
	5.7	12 458	1.1	253.08	★	**2KJ1210 - ■HK13 - ■■Q1**		507
	6.1	11 653	1.2	236.72		**2KJ1210 - ■HK13 - ■■P1**		507
	6.9	10 362	1.4	210.49	★	**2KJ1210 - ■HK13 - ■■N1**		507
	7.3	9 782	1.4	198.71		**2KJ1210 - ■HK13 - ■■M1**		507
	8.2	8 781	1.6	178.38	★	**2KJ1210 - ■HK13 - ■■L1**		507
	8.9	8 059	1.7	163.72		**2KJ1210 - ■HK13 - ■■K1**		507
	10.3	6 955	2	141.28		**2KJ1210 - ■HK13 - ■■J1**		507
	D.148-LA132ZMP4E							
	7.9	9 108	0.88	185.03	★	**2KJ1208 - ■HK13 - ■■P1**		336
	8.3	8 592	0.93	174.53		**2KJ1208 - ■HK13 - ■■N1**		336
	9.3	7 698	1.0	156.38	★	**2KJ1208 - ■HK13 - ■■M1**		336
	10.1	7 108	1.1	144.39		**2KJ1208 - ■HK13 - ■■L1**		336
	11.8	6 073	1.3	123.37		**2KJ1208 - ■HK13 - ■■K1**		336
	13.0	5 489	1.5	111.5	★	**2KJ1208 - ■HK13 - ■■J1**		336
	13.5	5 288	1.5	107.42		**2KJ1208 - ■HK13 - ■■H1**		336
	15.7	4 574	1.7	92.91		**2KJ1208 - ■HK13 - ■■G1**		336
	18.0	3 989	2.0	81.04	★	**2KJ1208 - ■HK13 - ■■F1**		336

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

2

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
7.5	**D.148-LA132ZMP4E**							
	21	3 414	2.3	69.36	★	**2KJ1208 - ■HK13 - ■■E1**		336
	Z.148-LA132ZMP4E							
	25	2 831	1.6	57.5		**2KJ1108 - ■HK13 - ■■B2**		324
	D.128-LA132ZMP4E							
	11.8	6 081	0.84	123.53		**2KJ1207 - ■HK13 - ■■K1**		246
	12.8	5 574	0.91	113.24	★	**2KJ1207 - ■HK13 - ■■J1**		246
	14.0	5 110	1.0	103.8		**2KJ1207 - ■HK13 - ■■H1**		246
	16.4	4 355	1.2	88.46		**2KJ1207 - ■HK13 - ■■G1**		246
	18.6	3 843	1.3	78.06	★	**2KJ1207 - ■HK13 - ■■F1**		246
	22	3 270	1.6	66.43		**2KJ1207 - ■HK13 - ■■E1**		246
	25	2 833	1.8	57.56	★	**2KJ1207 - ■HK13 - ■■D1**		246
	30	2 385	2.1	48.44	★	**2KJ1207 - ■HK13 - ■■C1**		246
	33	2 152	2.4	43.71		**2KJ1207 - ■HK13 - ■■B1**		246
	Z.128-LA132ZMP4E							
	33	2 175	1.5	44.19	★	**2KJ1107 - ■HK13 - ■■D2**		237
	36	2 016	1.6	40.96		**2KJ1107 - ■HK13 - ■■C2**		237
	D.108-LA132ZMP4E							
	20	3 524	0.88	71.59	★	**2KJ1206 - ■HK13 - ■■D1**		169
	24	2 998	1.0	60.9		**2KJ1206 - ■HK13 - ■■C1**		169
	Z.108-LA132ZMP4E							
	30	2 382	1.3	48.38	★	**2KJ1106 - ■HK13 - ■■C2**		165
	33	2 181	1.4	44.31		**2KJ1106 - ■HK13 - ■■B2**		165
	36	2 009	1.5	40.82	★	**2KJ1106 - ■HK13 - ■■A2**		165
	38	1 860	1.7	37.79		**2KJ1106 - ■HK13 - ■■X1**		165
	41	1 730	1.8	35.14	★	**2KJ1106 - ■HK13 - ■■W1**		165
	44	1 615	1.9	32.81		**2KJ1106 - ■HK13 - ■■V1**		165
	50	1 445	2.1	29.35	★	**2KJ1106 - ■HK13 - ■■U1**		165
	54	1 339	2.3	27.2		**2KJ1106 - ■HK13 - ■■T1**		165
	58	1 228	2.5	24.94	★	**2KJ1106 - ■HK13 - ■■S1**		165
	64	1 125	2.8	22.86		**2KJ1106 - ■HK13 - ■■R1**		165
	75	959	3.2	19.48		**2KJ1106 - ■HK13 - ■■Q1**		165
	278	258	4.4	5.24	★	**2KJ1106 - ■HK13 - ■■D1**		165
	D.88-LA132ZMP4E							
	35	2 028	0.83	41.19		**2KJ1205 - ■HK13 - ■■B1**		121
	Z.88-LA132ZMP4E							
	39	1 835	0.92	37.27	★	**2KJ1105 - ■HK13 - ■■W1**		119
	43	1 677	1.0	34.07		**2KJ1105 - ■HK13 - ■■V1**		119
	46	1 542	1.1	31.32	★	**2KJ1105 - ■HK13 - ■■U1**		119
	50	1 424	1.2	28.93		**2KJ1105 - ■HK13 - ■■T1**		119
	54	1 322	1.3	26.85	★	**2KJ1105 - ■HK13 - ■■S1**		119
	58	1 231	1.4	25.01		**2KJ1105 - ■HK13 - ■■R1**		119
	64	1 113	1.5	22.61	★	**2KJ1105 - ■HK13 - ■■Q1**		119
	70	1 024	1.6	20.81		**2KJ1105 - ■HK13 - ■■P1**		119

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
7.5	**Z.88-LA132ZMP4E**							
	78	922	1.8	18.72	★	**2KJ1105 - ■HK13 - ■■N1**		119
	84	850	2.0	17.27		**2KJ1105 - ■HK13 - ■■M1**		119
	100	720	2.2	14.63		**2KJ1105 - ■HK13 - ■■L1**		119
	114	628	2.5	12.75	★	**2KJ1105 - ■HK13 - ■■K1**		119
	134	534	2.8	10.85		**2KJ1105 - ■HK13 - ■■J1**		119
	157	456	3.0	9.26	★	**2KJ1105 - ■HK13 - ■■H1**		119
	192	374	3.5	7.59	★	**2KJ1105 - ■HK13 - ■■G1**		119
	209	343	3.7	6.96		**2KJ1105 - ■HK13 - ■■F1**		119
	245	292	4.1	5.94	★	**2KJ1105 - ■HK13 - ■■E1**		119
	299	240	4.6	4.87	★	**2KJ1105 - ■HK13 - ■■D1**		119
	327	219	3.7	4.45	★	**2KJ1105 - ■HK13 - ■■C1**		119
	384	187	4.0	3.79	★	**2KJ1105 - ■HK13 - ■■B1**		119
	468	153	4.3	3.11	★	**2KJ1105 - ■HK13 - ■■A1**		119
	Z.88-LA132ZSD2E							
	157	458	3.7	18.72	★	**2KJ1105 - ■HJ13 - ■■N1**	**P00**	119
	170	422	4.0	17.27		**2KJ1105 - ■HJ13 - ■■M1**	**P00**	119
	Z.68-LA132ZMP4E							
	72	994	0.80	20.2		**2KJ1104 - ■HK13 - ■■N1**		87
	82	877	0.91	17.82	★	**2KJ1104 - ■HK13 - ■■M1**		87
	88	810	0.99	16.45		**2KJ1104 - ■HK13 - ■■L1**		87
	99	726	1.1	14.74	★	**2KJ1104 - ■HK13 - ■■K1**		87
	107	669	1.2	13.59		**2KJ1104 - ■HK13 - ■■J1**		87
	128	561	1.4	11.4		**2KJ1104 - ■HK13 - ■■H1**		87
	150	479	1.6	9.73	★	**2KJ1104 - ■HK13 - ■■G1**		87
	179	399	1.8	8.11		**2KJ1104 - ■HK13 - ■■F1**		87
	217	331	2.0	6.72	★	**2KJ1104 - ■HK13 - ■■E1**		87
	245	292	1.7	5.93		**2KJ1104 - ■HK13 - ■■D1**		87
	288	249	1.9	5.06	★	**2KJ1104 - ■HK13 - ■■C1**		87
	345	208	2.3	4.22		**2KJ1104 - ■HK13 - ■■B1**		87
	417	172	2.4	3.49	★	**2KJ1104 - ■HK13 - ■■A1**		87
	Z.68-LA132ZSD2E							
	164	436	1.8	17.82	★	**2KJ1104 - ■HJ13 - ■■M1**	**P00**	87
	178	402	2.0	16.45		**2KJ1104 - ■HJ13 - ■■L1**	**P00**	87
	199	360	2.2	14.74	★	**2KJ1104 - ■HJ13 - ■■K1**	**P00**	87
	216	332	2.4	13.59		**2KJ1104 - ■HJ13 - ■■J1**	**P00**	87
	257	279	2.8	11.4		**2KJ1104 - ■HJ13 - ■■H1**	**P00**	87
	301	238	3.1	9.73	★	**2KJ1104 - ■HJ13 - ■■G1**	**P00**	87
	361	198	3.5	8.11		**2KJ1104 - ■HJ13 - ■■F1**	**P00**	87
	436	164	4.0	6.72	★	**2KJ1104 - ■HJ13 - ■■E1**	**P00**	87
	494	145	3.4	5.93		**2KJ1104 - ■HJ13 - ■■D1**	**P00**	87
	579	124	3.9	5.06	★	**2KJ1104 - ■HJ13 - ■■C1**	**P00**	87
	694	103	4.6	4.22		**2KJ1104 - ■HJ13 - ■■B1**	**P00**	87
	840	85	4.9	3.49	★	**2KJ1104 - ■HJ13 - ■■A1**	**P00**	87

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

2

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
7.5	**Z.48-LA132ZMP4E**							
	176	408	0.88	8.29		**2KJ1103 - ■HK13 - ■■F1**		70
	211	340	1.0	6.9	★	**2KJ1103 - ■HK13 - ■■E1**		70
	214	334	0.81	6.79	★	**2KJ1103 - ■HK13 - ■■D1**		70
	240	298	0.91	6.06		**2KJ1103 - ■HK13 - ■■C1**		70
	283	254	1.1	5.15		**2KJ1103 - ■HK13 - ■■B1**		70
	340	211	1.2	4.28	★	**2KJ1103 - ■HK13 - ■■A1**		70
	Z.48-LA132ZSD2E							
	153	468	0.96	19.13	★	**2KJ1103 - ■HJ13 - ■■P1**	**P00**	70
	167	429	1.0	17.55		**2KJ1103 - ■HJ13 - ■■N1**	**P00**	70
	181	395	1.1	16.17	★	**2KJ1103 - ■HJ13 - ■■M1**	**P00**	70
	200	359	1.2	14.68		**2KJ1103 - ■HJ13 - ■■L1**	**P00**	70
	219	327	1.3	13.38	★	**2KJ1103 - ■HJ13 - ■■K1**	**P00**	70
	239	299	1.3	12.25		**2KJ1103 - ■HJ13 - ■■J1**	**P00**	70
	268	267	1.5	10.93	★	**2KJ1103 - ■HJ13 - ■■H1**	**P00**	70
	300	239	1.6	9.76		**2KJ1103 - ■HJ13 - ■■G1**	**P00**	70
	353	203	1.8	8.29		**2KJ1103 - ■HJ13 - ■■F1**	**P00**	70
	425	169	2.0	6.9	★	**2KJ1103 - ■HJ13 - ■■E1**	**P00**	70
	432	166	1.6	6.79	★	**2KJ1103 - ■HJ13 - ■■D1**	**P00**	70
	483	148	1.8	6.06		**2KJ1103 - ■HJ13 - ■■C1**	**P00**	70
	569	126	2.1	5.15		**2KJ1103 - ■HJ13 - ■■B1**	**P00**	70
	685	105	2.5	4.28	★	**2KJ1103 - ■HJ13 - ■■A1**	**P00**	70
	E.148-LA132ZMP4E							
	106	673	0.89	13.67	★	**2KJ1007 - ■HK13 - ■■U1**		168
	116	617	0.97	12.54		**2KJ1007 - ■HK13 - ■■T1**		168
	126	570	1.2	11.57	★	**2KJ1007 - ■HK13 - ■■S1**		168
	136	528	1.4	10.73		**2KJ1007 - ■HK13 - ■■R1**		168
	144	499	1.6	10.13	★	**2KJ1007 - ■HK13 - ■■Q1**		168
	154	466	2.0	9.47		**2KJ1007 - ■HK13 - ■■P1**		168
	173	414	2.4	8.42	★	**2KJ1007 - ■HK13 - ■■N1**		168
	183	391	2.7	7.95		**2KJ1007 - ■HK13 - ■■M1**		168
	204	351	3.2	7.14	★	**2KJ1007 - ■HK13 - ■■L1**		168
	222	322	3.6	6.55		**2KJ1007 - ■HK13 - ■■K1**		168
	E.128-LA132ZMP4E							
	143	499	1.1	10.14	★	**2KJ1006 - ■HK13 - ■■T1**		144
	155	463	1.3	9.4		**2KJ1006 - ■HK13 - ■■S1**		144
	163	440	1.5	8.94	★	**2KJ1006 - ■HK13 - ■■R1**		144
	174	411	1.7	8.35		**2KJ1006 - ■HK13 - ■■Q1**		144
	197	363	2.2	7.37	★	**2KJ1006 - ■HK13 - ■■P1**		144
	209	342	2.6	6.95		**2KJ1006 - ■HK13 - ■■N1**		144
	234	307	3.0	6.23	★	**2KJ1006 - ■HK13 - ■■M1**		144
	253	283	3.4	5.75		**2KJ1006 - ■HK13 - ■■L1**		144
	296	242	4.0	4.91		**2KJ1006 - ■HK13 - ■■K1**		144
	328	219	4.6	4.44	★	**2KJ1006 - ■HK13 - ■■J1**		144

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
7.5	**E.128-LA132ZMP4E**							
	340	211	4.7	4.28		**2KJ1006 - ■HK13 - ■■H1**		144
	E.108-LA132ZMP4E							
	266	269	2.5	5.46	★	**2KJ1005 - ■HK13 - ■■K1**		107
	291	246	2.8	5		**2KJ1005 - ■HK13 - ■■J1**		107
	342	210	3.4	4.26		**2KJ1005 - ■HK13 - ■■H1**		107
	387	185	3.2	3.76	★	**2KJ1005 - ■HK13 - ■■G1**		107
	455	158	4.7	3.2		**2KJ1005 - ■HK13 - ■■F1**		107
	525	136	4.9	2.77	★	**2KJ1005 - ■HK13 - ■■E1**		107
	624	115	5.9	2.33	★	**2KJ1005 - ■HK13 - ■■C1**		107
	690	104	6.0	2.11		**2KJ1005 - ■HK13 - ■■B1**		107
	804	89	6.2	1.81	★	**2KJ1005 - ■HK13 - ■■A1**		107
	E.88-LA132ZMP4E							
	206	348	0.83	7.07	★	**2KJ1004 - ■HK13 - ■■N1**		86
	223	321	0.93	6.53		**2KJ1004 - ■HK13 - ■■M1**		86
	240	298	0.94	6.06	★	**2KJ1004 - ■HK13 - ■■L1**		86
	258	278	1.2	5.65		**2KJ1004 - ■HK13 - ■■K1**		86
	285	252	1.5	5.11	★	**2KJ1004 - ■HK13 - ■■J1**		86
	310	231	1.7	4.7		**2KJ1004 - ■HK13 - ■■H1**		86
	344	208	1.9	4.23	★	**2KJ1004 - ■HK13 - ■■G1**		86
	373	192	2.0	3.9		**2KJ1004 - ■HK13 - ■■F1**		86
	441	162	2.8	3.3		**2KJ1004 - ■HK13 - ■■E1**		86
	505	142	3.1	2.88	★	**2KJ1004 - ■HK13 - ■■D1**		86
	594	121	3.5	2.45		**2KJ1004 - ■HK13 - ■■C1**		86
	696	103	4.1	2.09	★	**2KJ1004 - ■HK13 - ■■B1**		86
	851	84	4.2	1.71	★	**2KJ1004 - ■HK13 - ■■A1**		86
	E.68-LA132ZMP4E							
	271	264	0.83	5.36	★	**2KJ1003 - ■HK13 - ■■M1**		69
	295	243	0.93	4.93		**2KJ1003 - ■HK13 - ■■L1**		69
	319	224	0.98	4.56	★	**2KJ1003 - ■HK13 - ■■K1**		69
	343	209	1.1	4.24		**2KJ1003 - ■HK13 - ■■J1**		69
	389	184	1.2	3.74	★	**2KJ1003 - ■HK13 - ■■H1**		69
	422	170	1.4	3.45		**2KJ1003 - ■HK13 - ■■G1**		69
	471	152	1.6	3.09	★	**2KJ1003 - ■HK13 - ■■F1**		69
	511	140	1.8	2.85		**2KJ1003 - ■HK13 - ■■E1**		69
	609	118	2.0	2.39		**2KJ1003 - ■HK13 - ■■D1**		69
	713	100	2.1	2.04	★	**2KJ1003 - ■HK13 - ■■C1**		69
	856	84	2.1	1.7		**2KJ1003 - ■HK13 - ■■B1**		69
	1 032	69	2.2	1.41	★	**2KJ1003 - ■HK13 - ■■A1**		69
	E.48-LA132ZMP4E							
	376	191	0.84	3.87		**2KJ1002 - ■HK13 - ■■J1**		59
	409	175	0.80	3.56	★	**2KJ1002 - ■HK13 - ■■H1**		59
	449	159	0.94	3.24		**2KJ1002 - ■HK13 - ■■G1**		59
	493	145	1.2	2.95	★	**2KJ1002 - ■HK13 - ■■F1**		59
	539	133	1.2	2.7		**2KJ1002 - ■HK13 - ■■E1**		59

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

2

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
9.2	**D.188-LA160MB4E**							
	6.0	14 723	1.4	243.82		**2KJ1211 - ■JP13 - ■■N1**		676
	6.6	13 295	1.5	220.17		**2KJ1211 - ■JP13 - ■■M1**		676
	7.1	12 460	1.6	206.34		**2KJ1211 - ■JP13 - ■■L1**		676
	8.2	10 702	1.9	177.23	★	**2KJ1211 - ■JP13 - ■■K1**		676
	D.168-LA160MB4E							
	5.7	15 282	0.92	253.08	★	**2KJ1210 - ■JP13 - ■■Q1**		531
	6.1	14 294	0.98	236.72		**2KJ1210 - ■JP13 - ■■P1**		531
	6.9	12 710	1.1	210.49	★	**2KJ1210 - ■JP13 - ■■N1**		531
	7.3	11 999	1.2	198.71		**2KJ1210 - ■JP13 - ■■M1**		531
	8.2	10 771	1.3	178.38	★	**2KJ1210 - ■JP13 - ■■L1**		531
	8.9	9 886	1.4	163.72		**2KJ1210 - ■JP13 - ■■K1**		531
	10.3	8 531	1.6	141.28		**2KJ1210 - ■JP13 - ■■J1**		531
	11.8	7 463	1.9	123.59		**2KJ1210 - ■JP13 - ■■H1**		531
	13.5	6 490	2.2	107.48		**2KJ1210 - ■JP13 - ■■G1**		531
	D.148-LA160MB4E							
	9.3	9 443	0.85	156.38	★	**2KJ1208 - ■JP13 - ■■M1**		360
	10.1	8 719	0.92	144.39		**2KJ1208 - ■JP13 - ■■L1**		360
	11.8	7 450	1.1	123.37		**2KJ1208 - ■JP13 - ■■K1**		360
	13.0	6 733	1.2	111.5	★	**2KJ1208 - ■JP13 - ■■J1**		360
	13.5	6 487	1.2	107.42		**2KJ1208 - ■JP13 - ■■H1**		360
	15.7	5 610	1.4	92.91		**2KJ1208 - ■JP13 - ■■G1**		360
	18.0	4 894	1.6	81.04	★	**2KJ1208 - ■JP13 - ■■F1**		360
	21	4 188	1.9	69.36	★	**2KJ1208 - ■JP13 - ■■E1**		360
	23	3 751	2.1	62.12		**2KJ1208 - ■JP13 - ■■D1**		360
	Z.148-LA160MB4E							
	27	3 275	2.4	54.24	★	**2KJ1108 - ■JP13 - ■■A2**		348
	D.128-LA160MB4E							
	14.0	6 268	0.81	103.8		**2KJ1207 - ■JP13 - ■■H1**		270
	16.4	5 342	0.95	88.46		**2KJ1207 - ■JP13 - ■■G1**		270
	18.6	4 714	1.1	78.06	★	**2KJ1207 - ■JP13 - ■■F1**		270
	22	4 011	1.3	66.43		**2KJ1207 - ■JP13 - ■■E1**		270
	25	3 476	1.5	57.56	★	**2KJ1207 - ■JP13 - ■■D1**		270
	30	2 925	1.7	48.44	★	**2KJ1207 - ■JP13 - ■■C1**		270
	33	2 639	1.9	43.71		**2KJ1207 - ■JP13 - ■■B1**		270
	Z.128-LA160MB4E							
	37	2 351	2.2	38.94	★	**2KJ1107 - ■JP13 - ■■B2**		261
	40	2 197	2.3	36.39		**2KJ1107 - ■JP13 - ■■A2**		261
	45	1 939	2.6	32.11	★	**2KJ1107 - ■JP13 - ■■X1**		261
	48	1 828	2.8	30.28		**2KJ1107 - ■JP13 - ■■W1**		261
	D.108-LA160MB4E							
	24	3 677	0.84	60.9		**2KJ1206 - ■JP13 - ■■C1**		193
	28	3 138	0.99	51.97	★	**2KJ1206 - ■JP13 - ■■B1**		193
	34	2 573	1.2	42.61	★	**2KJ1206 - ■JP13 - ■■A1**		193

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
9.2	**Z.108-LA160MB4E**							
	41	2 122	1.5	35.14	★	**2KJ1106 - ■JP13 - ■■W1**		189
	44	1 981	1.6	32.81		**2KJ1106 - ■JP13 - ■■V1**		189
	50	1 772	1.7	29.35	★	**2KJ1106 - ■JP13 - ■■U1**		189
	54	1 642	1.9	27.2		**2KJ1106 - ■JP13 - ■■T1**		189
	58	1 506	2.1	24.94	★	**2KJ1106 - ■JP13 - ■■S1**		189
	64	1 380	2.2	22.86		**2KJ1106 - ■JP13 - ■■R1**		189
	75	1 176	2.6	19.48		**2KJ1106 - ■JP13 - ■■Q1**		189
	85	1 038	3.0	17.19	★	**2KJ1106 - ■JP13 - ■■P1**		189
	100	883	3.5	14.63		**2KJ1106 - ■JP13 - ■■N1**		189
	205	429	4.2	7.1	★	**2KJ1106 - ■JP13 - ■■H1**		189
	227	387	4.5	6.41		**2KJ1106 - ■JP13 - ■■G1**		189
	278	316	3.6	5.24	★	**2KJ1106 - ■JP13 - ■■D1**		189
	330	266	4.3	4.41	★	**2KJ1106 - ■JP13 - ■■C1**		189
	366	240	4.7	3.98		**2KJ1106 - ■JP13 - ■■B1**		189
	425	207	5.2	3.42	★	**2KJ1106 - ■JP13 - ■■A1**		189
	Z.88-LA160MB4E							
	54	1 621	1.0	26.85	★	**2KJ1105 - ■JP13 - ■■S1**		143
	58	1 510	1.1	25.01		**2KJ1105 - ■JP13 - ■■R1**		143
	64	1 365	1.2	22.61	★	**2KJ1105 - ■JP13 - ■■Q1**		143
	70	1 257	1.3	20.81		**2KJ1105 - ■JP13 - ■■P1**		143
	78	1 130	1.5	18.72	★	**2KJ1105 - ■JP13 - ■■N1**		143
	84	1 043	1.6	17.27		**2KJ1105 - ■JP13 - ■■M1**		143
	100	883	1.8	14.63		**2KJ1105 - ■JP13 - ■■L1**		143
	114	770	2.0	12.75	★	**2KJ1105 - ■JP13 - ■■K1**		143
	134	655	2.2	10.85		**2KJ1105 - ■JP13 - ■■J1**		143
	157	559	2.5	9.26	★	**2KJ1105 - ■JP13 - ■■H1**		143
	192	458	2.8	7.59	★	**2KJ1105 - ■JP13 - ■■G1**		143
	209	420	3.0	6.96		**2KJ1105 - ■JP13 - ■■F1**		143
	245	359	3.3	5.94	★	**2KJ1105 - ■JP13 - ■■E1**		143
	299	294	3.8	4.87	★	**2KJ1105 - ■JP13 - ■■D1**		143
	327	269	3.0	4.45	★	**2KJ1105 - ■JP13 - ■■C1**		143
	384	229	3.2	3.79	★	**2KJ1105 - ■JP13 - ■■B1**		143
	468	188	3.5	3.11	★	**2KJ1105 - ■JP13 - ■■A1**		143
	Z.68-LA160MB4E							
	88	993	0.81	16.45		**2KJ1104 - ■JP13 - ■■L1**		111
	99	890	0.90	14.74	★	**2KJ1104 - ■JP13 - ■■K1**		111
	107	821	0.97	13.59		**2KJ1104 - ■JP13 - ■■J1**		111
	128	688	1.1	11.4		**2KJ1104 - ■JP13 - ■■H1**		111
	150	588	1.3	9.73	★	**2KJ1104 - ■JP13 - ■■G1**		111
	179	490	1.4	8.11		**2KJ1104 - ■JP13 - ■■F1**		111
	217	406	1.6	6.72	★	**2KJ1104 - ■JP13 - ■■E1**		111
	245	358	1.4	5.93		**2KJ1104 - ■JP13 - ■■D1**		111
	288	306	1.6	5.06	★	**2KJ1104 - ■JP13 - ■■C1**		111

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

2

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
9.2	**Z.68-LA160MB4E**							
	345	255	1.8	4.22		**2KJ1104 - ■JP13 - ■■B1**		111
	417	211	2.0	3.49	★	**2KJ1104 - ■JP13 - ■■A1**		111
	E.148-LA160MB4E							
	144	612	1.3	10.13	★	**2KJ1007 - ■JP13 - ■■Q1**		192
	154	572	1.6	9.47		**2KJ1007 - ■JP13 - ■■P1**		192
	173	508	2.0	8.42	★	**2KJ1007 - ■JP13 - ■■N1**		192
	183	480	2.2	7.95		**2KJ1007 - ■JP13 - ■■M1**		192
	204	431	2.6	7.14	★	**2KJ1007 - ■JP13 - ■■L1**		192
	222	396	2.9	6.55		**2KJ1007 - ■JP13 - ■■K1**		192
	258	341	4.0	5.65		**2KJ1007 - ■JP13 - ■■J1**		192
	295	298	4.7	4.94		**2KJ1007 - ■JP13 - ■■H1**		192
	338	260	5.1	4.3		**2KJ1007 - ■JP13 - ■■G1**		192
	E.128-LA160MB4E							
	163	540	1.2	8.94	★	**2KJ1006 - ■JP13 - ■■R1**		168
	174	504	1.4	8.35		**2KJ1006 - ■JP13 - ■■Q1**		168
	197	445	1.8	7.37	★	**2KJ1006 - ■JP13 - ■■P1**		168
	209	420	2.1	6.95		**2KJ1006 - ■JP13 - ■■N1**		168
	234	376	2.5	6.23	★	**2KJ1006 - ■JP13 - ■■M1**		168
	253	347	2.8	5.75		**2KJ1006 - ■JP13 - ■■L1**		168
	296	296	3.2	4.91		**2KJ1006 - ■JP13 - ■■K1**		168
	328	268	3.7	4.44	★	**2KJ1006 - ■JP13 - ■■J1**		168
	340	258	3.9	4.28		**2KJ1006 - ■JP13 - ■■H1**		168
	393	223	4.5	3.7		**2KJ1006 - ■JP13 - ■■G1**		168
	450	195	5.1	3.23	★	**2KJ1006 - ■JP13 - ■■F1**		168
	E.108-LA160MB4E							
	266	330	2.0	5.46	★	**2KJ1005 - ■JP13 - ■■K1**		131
	291	302	2.3	5		**2KJ1005 - ■JP13 - ■■J1**		131
	342	257	2.8	4.26		**2KJ1005 - ■JP13 - ■■H1**		131
	387	227	2.6	3.76	★	**2KJ1005 - ■JP13 - ■■G1**		131
	455	193	3.9	3.2		**2KJ1005 - ■JP13 - ■■F1**		131
	525	167	4.0	2.77	★	**2KJ1005 - ■JP13 - ■■E1**		131
	624	141	4.8	2.33	★	**2KJ1005 - ■JP13 - ■■C1**		131
	690	127	4.9	2.11		**2KJ1005 - ■JP13 - ■■B1**		131
	804	109	5.0	1.81	★	**2KJ1005 - ■JP13 - ■■A1**		131
	E.88-LA160MB4E							
	258	341	0.94	5.65		**2KJ1004 - ■JP13 - ■■K1**		110
	285	309	1.2	5.11	★	**2KJ1004 - ■JP13 - ■■J1**		110
	310	284	1.4	4.7		**2KJ1004 - ■JP13 - ■■H1**		110
	344	255	1.6	4.23	★	**2KJ1004 - ■JP13 - ■■G1**		110
	373	236	1.6	3.9		**2KJ1004 - ■JP13 - ■■F1**		110
	441	199	2.3	3.3		**2KJ1004 - ■JP13 - ■■E1**		110
	505	174	2.5	2.88	★	**2KJ1004 - ■JP13 - ■■D1**		110
	594	148	2.8	2.45		**2KJ1004 - ■JP13 - ■■C1**		110

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
9.2	**E.88-LA160MB4E**							
	696	126	3.3	2.09	★	**2KJ1004 - ■JP13 - ■■B1**		110
	851	103	3.4	1.71	★	**2KJ1004 - ■JP13 - ■■A1**		110
	E.68-LA160MB4E							
	319	275	0.8	4.56	★	**2KJ1003 - ■JP13 - ■■K1**		93
	343	256	0.9	4.24		**2KJ1003 - ■JP13 - ■■J1**		93
	389	226	1.0	3.74	★	**2KJ1003 - ■JP13 - ■■H1**		93
	422	208	1.2	3.45		**2KJ1003 - ■JP13 - ■■G1**		93
	471	187	1.3	3.09	★	**2KJ1003 - ■JP13 - ■■F1**		93
	511	172	1.5	2.85		**2KJ1003 - ■JP13 - ■■E1**		93
	609	144	1.6	2.39		**2KJ1003 - ■JP13 - ■■D1**		93
	713	123	1.7	2.04	★	**2KJ1003 - ■JP13 - ■■C1**		93
	856	103	1.7	1.7		**2KJ1003 - ■JP13 - ■■B1**		93
	1 032	85	1.8	1.41	★	**2KJ1003 - ■JP13 - ■■A1**		93
11	**D.188-LA160ZLP6E**							
	4.4	24 093	0.83	220.17		**2KJ1211 - ■JT13 - ■■M1**	**P01**	688
	4.7	22 579	0.89	206.34		**2KJ1211 - ■JT13 - ■■L1**	**P01**	688
	5.4	19 394	1.0	177.23	★	**2KJ1211 - ■JT13 - ■■K1**	**P01**	688
	D.188-LA160MP4E							
	6.0	17 543	1.1	243.82		**2KJ1211 - ■JQ13 - ■■N1**		676
	6.6	15 842	1.3	220.17		**2KJ1211 - ■JQ13 - ■■M1**		676
	7.1	14 847	1.3	206.34		**2KJ1211 - ■JQ13 - ■■L1**		676
	8.2	12 752	1.6	177.23	★	**2KJ1211 - ■JQ13 - ■■K1**		676
	9.5	11 017	1.8	153.12		**2KJ1211 - ■JQ13 - ■■J1**		676
	10.8	9 725	2.1	135.16		**2KJ1211 - ■JQ13 - ■■H1**		676
	D.168-LA160MP4E							
	6.2	17 032	0.82	236.72		**2KJ1210 - ■JQ13 - ■■P1**		531
	6.9	15 145	0.92	210.49	★	**2KJ1210 - ■JQ13 - ■■N1**		531
	7.3	14 298	0.98	198.71		**2KJ1210 - ■JQ13 - ■■M1**		531
	8.2	12 835	1.1	178.38	★	**2KJ1210 - ■JQ13 - ■■L1**		531
	8.9	11 780	1.2	163.72		**2KJ1210 - ■JQ13 - ■■K1**		531
	10.3	10 165	1.4	141.28		**2KJ1210 - ■JQ13 - ■■J1**		531
	11.8	8 893	1.6	123.59		**2KJ1210 - ■JQ13 - ■■H1**		531
	13.6	7 733	1.8	107.48		**2KJ1210 - ■JQ13 - ■■G1**		531
	15.5	6 785	2.1	94.3	★	**2KJ1210 - ■JQ13 - ■■F1**		531
	D.148-LA160MP4E							
	11.8	8 877	0.9	123.37		**2KJ1208 - ■JQ13 - ■■K1**		360
	13.1	8 023	1.0	111.5	★	**2KJ1208 - ■JQ13 - ■■J1**		360
	13.6	7 729	1.0	107.42		**2KJ1208 - ■JQ13 - ■■H1**		360
	15.7	6 685	1.2	92.91		**2KJ1208 - ■JQ13 - ■■G1**		360
	18.0	5 831	1.4	81.04	★	**2KJ1208 - ■JQ13 - ■■F1**		360
	21	4 991	1.6	69.36	★	**2KJ1208 - ■JQ13 - ■■E1**		360
	24	4 470	1.8	62.12		**2KJ1208 - ■JQ13 - ■■D1**		360

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

2

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
11	**Z.148-LA160MP4E**							
	27	3 903	2.0	54.24	★	**2KJ1108 - ■JQ13 - ■■A2**		348
	29	3 651	2.2	50.74		**2KJ1108 - ■JQ13 - ■■X1**		348
	32	3 246	2.5	45.11	★	**2KJ1108 - ■JQ13 - ■■W1**		348
	34	3 064	2.6	42.59		**2KJ1108 - ■JQ13 - ■■V1**		348
	D.128-LA160MP4E							
	16.5	6 365	0.80	88.46		**2KJ1207 - ■JQ13 - ■■G1**		270
	18.7	5 617	0.91	78.06	★	**2KJ1207 - ■JQ13 - ■■F1**		270
	22	4 780	1.1	66.43		**2KJ1207 - ■JQ13 - ■■E1**		270
	25	4 142	1.2	57.56	★	**2KJ1207 - ■JQ13 - ■■D1**		270
	30	3 485	1.5	48.44	★	**2KJ1207 - ■JQ13 - ■■C1**		270
	33	3 145	1.6	43.71		**2KJ1207 - ■JQ13 - ■■B1**		270
	Z.128-LA160MP4E							
	38	2 802	1.8	38.94	★	**2KJ1107 - ■JQ13 - ■■B2**		261
	40	2 618	1.9	36.39		**2KJ1107 - ■JQ13 - ■■A2**		261
	46	2 310	2.2	32.11	★	**2KJ1107 - ■JQ13 - ■■X1**		261
	48	2 179	2.3	30.28		**2KJ1107 - ■JQ13 - ■■W1**		261
	54	1 952	2.6	27.13	★	**2KJ1107 - ■JQ13 - ■■V1**		261
	58	1 802	2.8	25.05		**2KJ1107 - ■JQ13 - ■■U1**		261
	D.108-LA160MP4E							
	28	3 739	0.83	51.97	★	**2KJ1206 - ■JQ13 - ■■B1**		193
	34	3 066	1.0	42.61	★	**2KJ1206 - ■JQ13 - ■■A1**		193
	Z.108-LA160MP4E							
	42	2 528	1.2	35.14	★	**2KJ1106 - ■JQ13 - ■■W1**		189
	44	2 361	1.3	32.81		**2KJ1106 - ■JQ13 - ■■V1**		189
	50	2 112	1.5	29.35	★	**2KJ1106 - ■JQ13 - ■■U1**		189
	54	1 957	1.6	27.2		**2KJ1106 - ■JQ13 - ■■T1**		189
	58	1 794	1.7	24.94	★	**2KJ1106 - ■JQ13 - ■■S1**		189
	64	1 645	1.9	22.86		**2KJ1106 - ■JQ13 - ■■R1**		189
	75	1 402	2.2	19.48		**2KJ1106 - ■JQ13 - ■■Q1**		189
	85	1 237	2.5	17.19	★	**2KJ1106 - ■JQ13 - ■■P1**		189
	100	1 053	2.9	14.63		**2KJ1106 - ■JQ13 - ■■N1**		189
	115	912	3.4	12.68	★	**2KJ1106 - ■JQ13 - ■■M1**		189
	206	511	3.5	7.1	★	**2KJ1106 - ■JQ13 - ■■H1**		189
	228	461	3.8	6.41		**2KJ1106 - ■JQ13 - ■■G1**		189
	265	396	4.3	5.51	★	**2KJ1106 - ■JQ13 - ■■E1**		189
	279	377	3.0	5.24	★	**2KJ1106 - ■JQ13 - ■■D1**		189
	331	317	3.6	4.41	★	**2KJ1106 - ■JQ13 - ■■C1**		189
	367	286	3.9	3.98		**2KJ1106 - ■JQ13 - ■■B1**		189
	427	246	4.4	3.42	★	**2KJ1106 - ■JQ13 - ■■A1**		189
	Z.88-LA160MP4E							
	54	1 932	0.87	26.85	★	**2KJ1105 - ■JQ13 - ■■S1**		143
	58	1 800	0.93	25.01		**2KJ1105 - ■JQ13 - ■■R1**		143
	65	1 627	1.0	22.61	★	**2KJ1105 - ■JQ13 - ■■Q1**		143

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
11	**Z.88-LA160MP4E**							
	70	1 497	1.1	20.81		**2KJ1105 - ■JQ13 - ■■P1**		143
	78	1 347	1.2	18.72	★	**2KJ1105 - ■JQ13 - ■■N1**		143
	84	1 243	1.4	17.27		**2KJ1105 - ■JQ13 - ■■M1**		143
	100	1 053	1.5	14.63		**2KJ1105 - ■JQ13 - ■■L1**		143
	115	917	1.7	12.75	★	**2KJ1105 - ■JQ13 - ■■K1**		143
	135	781	1.9	10.85		**2KJ1105 - ■JQ13 - ■■J1**		143
	158	666	2.1	9.26	★	**2KJ1105 - ■JQ13 - ■■H1**		143
	192	546	2.4	7.59	★	**2KJ1105 - ■JQ13 - ■■G1**		143
	210	501	2.5	6.96		**2KJ1105 - ■JQ13 - ■■F1**		143
	246	427	2.8	5.94	★	**2KJ1105 - ■JQ13 - ■■E1**		143
	300	350	3.2	4.87	★	**2KJ1105 - ■JQ13 - ■■D1**		143
	328	320	2.5	4.45	★	**2KJ1105 - ■JQ13 - ■■C1**		143
	385	273	2.7	3.79	★	**2KJ1105 - ■JQ13 - ■■B1**		143
	469	224	2.9	3.11	★	**2KJ1105 - ■JQ13 - ■■A1**		143
	Z.68-LA160MP4E							
	107	978	0.82	13.59		**2KJ1104 - ■JQ13 - ■■J1**		111
	128	820	0.96	11.4		**2KJ1104 - ■JQ13 - ■■H1**		111
	150	700	1.1	9.73	★	**2KJ1104 - ■JQ13 - ■■G1**		111
	180	584	1.2	8.11		**2KJ1104 - ■JQ13 - ■■F1**		111
	217	484	1.3	6.72	★	**2KJ1104 - ■JQ13 - ■■E1**		111
	246	427	1.1	5.93		**2KJ1104 - ■JQ13 - ■■D1**		111
	289	364	1.3	5.06	★	**2KJ1104 - ■JQ13 - ■■C1**		111
	346	304	1.5	4.22		**2KJ1104 - ■JQ13 - ■■B1**		111
	418	251	1.7	3.49	★	**2KJ1104 - ■JQ13 - ■■A1**		111
	E.148-LA160MP4E							
	144	729	1.1	10.13	★	**2KJ1007 - ■JQ13 - ■■Q1**		192
	154	681	1.4	9.47		**2KJ1007 - ■JQ13 - ■■P1**		192
	173	606	1.7	8.42	★	**2KJ1007 - ■JQ13 - ■■N1**		192
	184	572	1.9	7.95		**2KJ1007 - ■JQ13 - ■■M1**		192
	204	514	2.2	7.14	★	**2KJ1007 - ■JQ13 - ■■L1**		192
	223	471	2.4	6.55		**2KJ1007 - ■JQ13 - ■■K1**		192
	258	407	3.3	5.65		**2KJ1007 - ■JQ13 - ■■J1**		192
	296	355	3.9	4.94		**2KJ1007 - ■JQ13 - ■■H1**		192
	340	309	4.3	4.3		**2KJ1007 - ■JQ13 - ■■G1**		192
	387	271	5.0	3.77	★	**2KJ1007 - ■JQ13 - ■■F1**		192
	E.128-LA160MP4E							
	163	643	0.99	8.94	★	**2KJ1006 - ■JQ13 - ■■R1**		168
	175	601	1.2	8.35		**2KJ1006 - ■JQ13 - ■■Q1**		168
	198	530	1.5	7.37	★	**2KJ1006 - ■JQ13 - ■■P1**		168
	210	500	1.8	6.95		**2KJ1006 - ■JQ13 - ■■N1**		168
	234	448	2.1	6.23	★	**2KJ1006 - ■JQ13 - ■■M1**		168
	254	414	2.3	5.75		**2KJ1006 - ■JQ13 - ■■L1**		168
	297	353	2.7	4.91		**2KJ1006 - ■JQ13 - ■■K1**		168

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
11	**E.128-LA160MP4E**							
	329	319	3.1	4.44	★	**2KJ1006 - ■JQ13 - ■■J1**		168
	341	308	3.2	4.28		**2KJ1006 - ■JQ13 - ■■H1**		168
	395	266	3.8	3.7		**2KJ1006 - ■JQ13 - ■■G1**		168
	452	232	4.3	3.23	★	**2KJ1006 - ■JQ13 - ■■F1**		168
	529	199	5.0	2.76	★	**2KJ1006 - ■JQ13 - ■■E1**		168
	591	178	5.3	2.47		**2KJ1006 - ■JQ13 - ■■D1**		168
	695	151	5.7	2.1	★	**2KJ1006 - ■JQ13 - ■■C1**		168
	807	130	6.1	1.81		**2KJ1006 - ■JQ13 - ■■B1**		168
	E.108-LA160MP4E							
	267	393	1.7	5.46	★	**2KJ1005 - ■JQ13 - ■■K1**		131
	292	360	1.9	5		**2KJ1005 - ■JQ13 - ■■J1**		131
	343	307	2.3	4.26		**2KJ1005 - ■JQ13 - ■■H1**		131
	388	271	2.2	3.76	★	**2KJ1005 - ■JQ13 - ■■G1**		131
	456	230	3.2	3.2		**2KJ1005 - ■JQ13 - ■■F1**		131
	527	199	3.4	2.77	★	**2KJ1005 - ■JQ13 - ■■E1**		131
	627	168	4.1	2.33	★	**2KJ1005 - ■JQ13 - ■■C1**		131
	692	152	4.1	2.11		**2KJ1005 - ■JQ13 - ■■B1**		131
	807	130	4.2	1.81	★	**2KJ1005 - ■JQ13 - ■■A1**		131
	E.88-LA160MP4E							
	286	368	1.0	5.11	★	**2KJ1004 - ■JQ13 - ■■J1**		110
	311	338	1.1	4.7		**2KJ1004 - ■JQ13 - ■■H1**		110
	345	304	1.3	4.23	★	**2KJ1004 - ■JQ13 - ■■G1**		110
	374	281	1.4	3.9		**2KJ1004 - ■JQ13 - ■■F1**		110
	442	237	1.9	3.3		**2KJ1004 - ■JQ13 - ■■E1**		110
	507	207	2.1	2.88	★	**2KJ1004 - ■JQ13 - ■■D1**		110
	596	176	2.4	2.45		**2KJ1004 - ■JQ13 - ■■C1**		110
	699	150	2.8	2.09	★	**2KJ1004 - ■JQ13 - ■■B1**		110
	854	123	2.9	1.71	★	**2KJ1004 - ■JQ13 - ■■A1**		110
	E.68-LA160MP4E							
	390	269	0.85	3.74	★	**2KJ1003 - ■JQ13 - ■■H1**		93
	423	248	0.97	3.45		**2KJ1003 - ■JQ13 - ■■G1**		93
	472	222	1.1	3.09	★	**2KJ1003 - ■JQ13 - ■■F1**		93
	512	205	1.2	2.85		**2KJ1003 - ■JQ13 - ■■E1**		93
	1 035	101	1.5	1.41	★	**2KJ1003 - ■JQ13 - ■■A1**		93
15	**D.188-LA160ZLP4E**							
	6.0	23 923	0.84	243.82		**2KJ1211 - ■JT13 - ■■N1**		688
	6.6	21 602	0.93	220.17		**2KJ1211 - ■JT13 - ■■M1**		688
	7.1	20 245	0.99	206.34		**2KJ1211 - ■JT13 - ■■L1**		688
	8.2	17 389	1.2	177.23	★	**2KJ1211 - ■JT13 - ■■K1**		688
	9.5	15 024	1.3	153.12		**2KJ1211 - ■JT13 - ■■J1**		688
	10.8	13 261	1.5	135.16		**2KJ1211 - ■JT13 - ■■H1**		688
	12.0	11 938	1.7	121.67	★	**2KJ1211 - ■JT13 - ■■G1**		688
	14.5	9 906	2.0	100.96	★	**2KJ1211 - ■JT13 - ■■F1**		688

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
15	**D.188-LA160ZLP4E**							
	15.9	9 033	2.2	92.06		**2KJ1211 - ■JT13 - ■■E1**		688
	D.168-LA160ZLP4E							
	8.2	17 502	0.8	178.38	★	**2KJ1210 - ■JT13 - ■■L1**		543
	8.9	16 064	0.87	163.72		**2KJ1210 - ■JT13 - ■■K1**		543
	10.3	13 862	1.0	141.28		**2KJ1210 - ■JT13 - ■■J1**		543
	11.8	12 126	1.2	123.59		**2KJ1210 - ■JT13 - ■■H1**		543
	13.6	10 546	1.3	107.48		**2KJ1210 - ■JT13 - ■■G1**		543
	15.5	9 252	1.5	94.3	★	**2KJ1210 - ■JT13 - ■■F1**		543
	18.3	7 825	1.8	79.75	★	**2KJ1210 - ■JT13 - ■■E1**		543
	20	7 100	2.0	72.36		**2KJ1210 - ■JT13 - ■■D1**		543
	23	6 189	2.3	63.08	★	**2KJ1210 - ■JT13 - ■■C1**		543
	Z.168-LA160ZLP4E							
	31	4 573	2.2	46.61		**2KJ1110 - ■JT13 - ■■V1**		524
	D.148-LA160ZLP4E							
	15.7	9 116	0.88	92.91		**2KJ1208 - ■JT13 - ■■G1**		372
	18	7 951	1.0	81.04	★	**2KJ1208 - ■JT13 - ■■F1**		372
	21	6 805	1.2	69.36	★	**2KJ1208 - ■JT13 - ■■E1**		372
	24	6 095	1.3	62.12		**2KJ1208 - ■JT13 - ■■D1**		372
	Z.148-LA160ZLP4E							
	27	5 322	1.5	54.24	★	**2KJ1108 - ■JT13 - ■■A2**		360
	29	4 978	1.6	50.74		**2KJ1108 - ■JT13 - ■■X1**		360
	32	4 426	1.8	45.11	★	**2KJ1108 - ■JT13 - ■■W1**		360
	34	4 179	1.9	42.59		**2KJ1108 - ■JT13 - ■■V1**		360
	38	3 751	2.1	38.23	★	**2KJ1108 - ■JT13 - ■■U1**		360
	42	3 443	2.3	35.09		**2KJ1108 - ■JT13 - ■■T1**		360
	48	2 971	2.7	30.28		**2KJ1108 - ■JT13 - ■■S1**		360
	D.128-LA160ZLP4E							
	25	5 648	0.9	57.56	★	**2KJ1207 - ■JT13 - ■■D1**		282
	30	4 753	1.1	48.44	★	**2KJ1207 - ■JT13 - ■■C1**		282
	33	4 289	1.2	43.71		**2KJ1207 - ■JT13 - ■■B1**		282
	Z.128-LA160ZLP4E							
	38	3 821	1.3	38.94	★	**2KJ1107 - ■JT13 - ■■B2**		273
	40	3 570	1.4	36.39		**2KJ1107 - ■JT13 - ■■A2**		273
	46	3 151	1.6	32.11	★	**2KJ1107 - ■JT13 - ■■X1**		273
	48	2 971	1.7	30.28		**2KJ1107 - ■JT13 - ■■W1**		273
	54	2 662	1.9	27.13	★	**2KJ1107 - ■JT13 - ■■V1**		273
	58	2 458	2.1	25.05		**2KJ1107 - ■JT13 - ■■U1**		273
	68	2 101	2.4	21.41		**2KJ1107 - ■JT13 - ■■T1**		273
	76	1 899	2.7	19.35	★	**2KJ1107 - ■JT13 - ■■S1**		273
	78	1 829	2.8	18.64		**2KJ1107 - ■JT13 - ■■R1**		273
	91	1 582	3.2	16.12		**2KJ1107 - ■JT13 - ■■Q1**		273
	104	1 380	3.5	14.06	★	**2KJ1107 - ■JT13 - ■■P1**		273
	200	715	3.6	7.29	★	**2KJ1107 - ■JT13 - ■■J1**		273

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

2

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
15	**Z.128-LA160ZLP4E**							
	234	612	4.1	6.24	★	**2KJ1107 - ■JT13 - ■■H1**		273
	261	548	4.8	5.59	★	**2KJ1107 - ■JT13 - ■■F1**		273
	Z.108-LA160ZLP4E							
	42	3 448	0.90	35.14	★	**2KJ1106 - ■JT13 - ■■W1**		201
	44	3 219	0.96	32.81		**2KJ1106 - ■JT13 - ■■V1**		201
	50	2 880	1.1	29.35	★	**2KJ1106 - ■JT13 - ■■U1**		201
	54	2 669	1.2	27.2		**2KJ1106 - ■JT13 - ■■T1**		201
	58	2 447	1.3	24.94	★	**2KJ1106 - ■JT13 - ■■S1**		201
	64	2 243	1.4	22.86		**2KJ1106 - ■JT13 - ■■R1**		201
	75	1 911	1.6	19.48		**2KJ1106 - ■JT13 - ■■Q1**		201
	85	1 687	1.8	17.19	★	**2KJ1106 - ■JT13 - ■■P1**		201
	100	1 435	2.2	14.63		**2KJ1106 - ■JT13 - ■■N1**		201
	115	1 244	2.5	12.68	★	**2KJ1106 - ■JT13 - ■■M1**		201
	137	1 047	3.0	10.67	★	**2KJ1106 - ■JT13 - ■■L1**		201
	152	944	3.3	9.62		**2KJ1106 - ■JT13 - ■■K1**		201
	177	811	3.8	8.27	★	**2KJ1106 - ■JT13 - ■■J1**		201
	206	697	2.6	7.1	★	**2KJ1106 - ■JT13 - ■■H1**		201
	228	629	2.8	6.41		**2KJ1106 - ■JT13 - ■■G1**		201
	265	541	3.1	5.51	★	**2KJ1106 - ■JT13 - ■■E1**		201
	279	514	2.2	5.24	★	**2KJ1106 - ■JT13 - ■■D1**		201
	331	433	2.6	4.41	★	**2KJ1106 - ■JT13 - ■■C1**		201
	367	391	2.9	3.98		**2KJ1106 - ■JT13 - ■■B1**		201
	427	336	3.2	3.42	★	**2KJ1106 - ■JT13 - ■■A1**		201
	Z.88-LA160ZLP4E							
	70	2 042	0.82	20.81		**2KJ1105 - ■JT13 - ■■P1**		155
	78	1 837	0.91	18.72	★	**2KJ1105 - ■JT13 - ■■N1**		155
	84	1 694	0.99	17.27		**2KJ1105 - ■JT13 - ■■M1**		155
	100	1 435	1.1	14.63		**2KJ1105 - ■JT13 - ■■L1**		155
	115	1 251	1.2	12.75	★	**2KJ1105 - ■JT13 - ■■K1**		155
	135	1 065	1.4	10.85		**2KJ1105 - ■JT13 - ■■J1**		155
	158	909	1.5	9.26	★	**2KJ1105 - ■JT13 - ■■H1**		155
	192	745	1.7	7.59	★	**2KJ1105 - ■JT13 - ■■G1**		155
	210	683	1.8	6.96		**2KJ1105 - ■JT13 - ■■F1**		155
	246	583	2.0	5.94	★	**2KJ1105 - ■JT13 - ■■E1**		155
	300	478	2.3	4.87	★	**2KJ1105 - ■JT13 - ■■D1**		155
	328	437	1.8	4.45	★	**2KJ1105 - ■JT13 - ■■C1**		155
	385	372	2.0	3.79	★	**2KJ1105 - ■JT13 - ■■B1**		155
	469	305	2.2	3.11	★	**2KJ1105 - ■JT13 - ■■A1**		155
	Z.68-LA160ZLP4E							
	180	796	0.88	8.11		**2KJ1104 - ■JT13 - ■■F1**		123
	217	659	0.99	6.72	★	**2KJ1104 - ■JT13 - ■■E1**		123
	246	582	0.84	5.93		**2KJ1104 - ■JT13 - ■■D1**		123
	289	496	0.97	5.06	★	**2KJ1104 - ■JT13 - ■■C1**		123

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
15	**Z.68-LA160ZLP4E**							
	346	414	1.1	4.22		**2KJ1104 - ■JT13 - ■■B1**		123
	418	342	1.2	3.49	★	**2KJ1104 - ■JT13 - ■■A1**		123
	E.148-LA160ZLP4E							
	144	994	0.80	10.13	★	**2KJ1007 - ■JT13 - ■■Q1**		204
	154	929	0.99	9.47		**2KJ1007 - ■JT13 - ■■P1**		204
	173	826	1.2	8.42	★	**2KJ1007 - ■JT13 - ■■N1**		204
	184	780	1.4	7.95		**2KJ1007 - ■JT13 - ■■M1**		204
	204	701	1.6	7.14	★	**2KJ1007 - ■JT13 - ■■L1**		204
	223	643	1.8	6.55		**2KJ1007 - ■JT13 - ■■K1**		204
	258	554	2.5	5.65		**2KJ1007 - ■JT13 - ■■J1**		204
	296	485	2.9	4.94		**2KJ1007 - ■JT13 - ■■H1**		204
	340	422	3.2	4.3		**2KJ1007 - ■JT13 - ■■G1**		204
	387	370	3.6	3.77	★	**2KJ1007 - ■JT13 - ■■F1**		204
	458	313	5.0	3.19	★	**2KJ1007 - ■JT13 - ■■E1**		204
	503	285	4.9	2.9		**2KJ1007 - ■JT13 - ■■D1**		204
	579	247	4.9	2.52	★	**2KJ1007 - ■JT13 - ■■C1**		204
	682	210	5.7	2.14		**2KJ1007 - ■JT13 - ■■B1**		204
	890	161	6.0	1.64	★	**2KJ1007 - ■JT13 - ■■A1**		204
	E.128-LA160ZLP4E							
	175	819	0.87	8.35		**2KJ1006 - ■JT13 - ■■Q1**		180
	198	723	1.1	7.37	★	**2KJ1006 - ■JT13 - ■■P1**		180
	210	682	1.3	6.95		**2KJ1006 - ■JT13 - ■■N1**		180
	234	611	1.5	6.23	★	**2KJ1006 - ■JT13 - ■■M1**		180
	254	564	1.7	5.75		**2KJ1006 - ■JT13 - ■■L1**		180
	297	482	2.0	4.91		**2KJ1006 - ■JT13 - ■■K1**		180
	329	436	2.3	4.44	★	**2KJ1006 - ■JT13 - ■■J1**		180
	341	420	2.4	4.28		**2KJ1006 - ■JT13 - ■■H1**		180
	395	363	2.8	3.7		**2KJ1006 - ■JT13 - ■■G1**		180
	452	317	3.2	3.23	★	**2KJ1006 - ■JT13 - ■■F1**		180
	529	271	3.7	2.76	★	**2KJ1006 - ■JT13 - ■■E1**		180
	591	242	3.9	2.47		**2KJ1006 - ■JT13 - ■■D1**		180
	695	206	4.2	2.1	★	**2KJ1006 - ■JT13 - ■■C1**		180
	807	178	4.5	1.81		**2KJ1006 - ■JT13 - ■■B1**		180
	1 074	133	5.1	1.36	★	**2KJ1006 - ■JT13 - ■■A1**		180
	E.108-LA160ZLP4E							
	267	536	1.2	5.46	★	**2KJ1005 - ■JT13 - ■■K1**		143
	292	491	1.4	5		**2KJ1005 - ■JT13 - ■■J1**		143
	343	418	1.7	4.26		**2KJ1005 - ■JT13 - ■■H1**		143
	388	369	1.6	3.76	★	**2KJ1005 - ■JT13 - ■■G1**		143
	456	314	2.4	3.2		**2KJ1005 - ■JT13 - ■■F1**		143
	527	272	2.5	2.77	★	**2KJ1005 - ■JT13 - ■■E1**		143
	627	229	3.0	2.33	★	**2KJ1005 - ■JT13 - ■■C1**		143
	692	207	3.0	2.11		**2KJ1005 - ■JT13 - ■■B1**		143

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

2

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
15	**E.108-LA160ZLP4E**							
	807	178	3.1	1.81	★	**2KJ1005 - ■JT13 - ■■A1**		143
	E.88-LA160ZLP4E							
	311	461	0.83	4.7		**2KJ1004 - ■JT13 - ■■H1**		122
	345	415	0.96	4.23	★	**2KJ1004 - ■JT13 - ■■G1**		122
	374	383	1.0	3.9		**2KJ1004 - ■JT13 - ■■F1**		122
	442	324	1.4	3.3		**2KJ1004 - ■JT13 - ■■E1**		122
	507	283	1.5	2.88	★	**2KJ1004 - ■JT13 - ■■D1**		122
	596	240	1.7	2.45		**2KJ1004 - ■JT13 - ■■C1**		122
	699	205	2.0	2.09	★	**2KJ1004 - ■JT13 - ■■B1**		122
	854	168	2.1	1.71	★	**2KJ1004 - ■JT13 - ■■A1**		122
	E.68-LA160ZLP4E							
	472	303	0.82	3.09	★	**2KJ1003 - ■JT13 - ■■F1**		105
	512	280	0.89	2.85		**2KJ1003 - ■JT13 - ■■E1**		105
18.5	**D.188-LG180ZMB4E**							
	7.1	24 799	0.81	206.34		**2KJ1211 - ■KL13 - ■■L1**		743
	8.3	21 301	0.94	177.23	★	**2KJ1211 - ■KL13 - ■■K1**		743
	9.6	18 403	1.1	153.12		**2KJ1211 - ■KL13 - ■■J1**		743
	10.9	16 244	1.2	135.16		**2KJ1211 - ■KL13 - ■■H1**		743
	12.1	14 623	1.4	121.67	★	**2KJ1211 - ■KL13 - ■■G1**		743
	14.6	12 134	1.6	100.96	★	**2KJ1211 - ■KL13 - ■■F1**		743
	16.0	11 064	1.8	92.06		**2KJ1211 - ■KL13 - ■■E1**		743
	18.2	9 708	2.1	80.77	★	**2KJ1211 - ■KL13 - ■■D1**		743
	21	8 342	2.4	69.41		**2KJ1211 - ■KL13 - ■■C1**		743
	Z.188-LG180ZMB4E							
	28	6 292	2.5	52.35		**2KJ1111 - ■KL13 - ■■P1**		709
	D.168-LG180ZMB4E							
	10.4	16 980	0.82	141.28		**2KJ1210 - ■KL13 - ■■J1**		598
	11.9	14 854	0.94	123.59		**2KJ1210 - ■KL13 - ■■H1**		598
	13.7	12 918	1.1	107.48		**2KJ1210 - ■KL13 - ■■G1**		598
	15.6	11 334	1.2	94.3	★	**2KJ1210 - ■KL13 - ■■F1**		598
	18.4	9 585	1.5	79.75	★	**2KJ1210 - ■KL13 - ■■E1**		598
	20	8 697	1.6	72.36		**2KJ1210 - ■KL13 - ■■D1**		598
	23	7 581	1.8	63.08	★	**2KJ1210 - ■KL13 - ■■C1**		598
	27	6 437	2.2	53.56		**2KJ1210 - ■KL13 - ■■B1**		598
	Z.168-LG180ZMB4E							
	32	5 602	1.8	46.61		**2KJ1110 - ■KL13 - ■■V1**		579
	D.148-LG180ZMB4E							
	18.1	9 740	0.82	81.04	★	**2KJ1208 - ■KL13 - ■■F1**		427
	21	8 336	0.96	69.36	★	**2KJ1208 - ■KL13 - ■■E1**		427
	24	7 466	1.1	62.12		**2KJ1208 - ■KL13 - ■■D1**		427
	28	6 323	1.3	52.61	★	**2KJ1208 - ■KL13 - ■■C1**		427
	Z.148-LG180ZMB4E							
	33	5 422	1.5	45.11	★	**2KJ1108 - ■KL13 - ■■W1**		415

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
18.5	**Z.148-LG180ZMB4E**							
	34	5 119	1.6	42.59		**2KJ1108 - ■KL13 - ■■V1**		415
	38	4 595	1.7	38.23	★	**2KJ1108 - ■KL13 - ■■U1**		415
	42	4 217	1.9	35.09		**2KJ1108 - ■KL13 - ■■T1**		415
	48	3 639	2.2	30.28		**2KJ1108 - ■KL13 - ■■S1**		415
	56	3 184	2.5	26.49		**2KJ1108 - ■KL13 - ■■R1**		415
	64	2 769	2.9	23.04		**2KJ1108 - ■KL13 - ■■Q1**		415
	D.128-LG180ZMB4E							
	30	5 822	0.88	48.44	★	**2KJ1207 - ■KL13 - ■■C1**		337
	34	5 253	0.97	43.71		**2KJ1207 - ■KL13 - ■■B1**		337
	39	4 515	1.1	37.57	★	**2KJ1207 - ■KL13 - ■■A1**		337
	Z.128-LG180ZMB4E							
	46	3 859	1.3	32.11	★	**2KJ1107 - ■KL13 - ■■X1**		328
	48	3 639	1.4	30.28		**2KJ1107 - ■KL13 - ■■W1**		328
	54	3 261	1.6	27.13	★	**2KJ1107 - ■KL13 - ■■V1**		328
	59	3 011	1.7	25.05		**2KJ1107 - ■KL13 - ■■U1**		328
	69	2 573	2.0	21.41		**2KJ1107 - ■KL13 - ■■T1**		328
	76	2 326	2.2	19.35	★	**2KJ1107 - ■KL13 - ■■S1**		328
	79	2 240	2.3	18.64		**2KJ1107 - ■KL13 - ■■R1**		328
	91	1 937	2.6	16.12		**2KJ1107 - ■KL13 - ■■Q1**		328
	105	1 690	2.9	14.06	★	**2KJ1107 - ■KL13 - ■■P1**		328
	122	1 446	3.3	12.03	★	**2KJ1107 - ■KL13 - ■■N1**		328
	136	1 296	3.6	10.78		**2KJ1107 - ■KL13 - ■■M1**		328
	161	1 097	4.0	9.13	★	**2KJ1107 - ■KL13 - ■■L1**		328
	202	876	2.9	7.29	★	**2KJ1107 - ■KL13 - ■■J1**		328
	236	750	3.4	6.24	★	**2KJ1107 - ■KL13 - ■■H1**		328
	263	672	3.9	5.59	★	**2KJ1107 - ■KL13 - ■■F1**		328
	304	581	4.3	4.83		**2KJ1107 - ■KL13 - ■■E1**		328
	311	568	4.2	4.73	★	**2KJ1107 - ■KL13 - ■■D1**		328
	359	492	4.8	4.09	★	**2KJ1107 - ■KL13 - ■■C1**		328
	405	436	5.3	3.63	★	**2KJ1107 - ■KL13 - ■■B1**		328
	Z.108-LG180ZMB4E							
	50	3 527	0.88	29.35	★	**2KJ1106 - ■KL13 - ■■U1**		256
	54	3 269	0.95	27.2		**2KJ1106 - ■KL13 - ■■T1**		256
	59	2 997	1.0	24.94	★	**2KJ1106 - ■KL13 - ■■S1**		256
	64	2 747	1.1	22.86		**2KJ1106 - ■KL13 - ■■R1**		256
	76	2 341	1.3	19.48		**2KJ1106 - ■KL13 - ■■Q1**		256
	86	2 066	1.5	17.19	★	**2KJ1106 - ■KL13 - ■■P1**		256
	100	1 758	1.8	14.63		**2KJ1106 - ■KL13 - ■■N1**		256
	116	1 524	2.0	12.68	★	**2KJ1106 - ■KL13 - ■■M1**		256
	138	1 282	2.4	10.67	★	**2KJ1106 - ■KL13 - ■■L1**		256
	153	1 156	2.7	9.62		**2KJ1106 - ■KL13 - ■■K1**		256
	178	994	3.1	8.27	★	**2KJ1106 - ■KL13 - ■■J1**		256
	207	853	2.1	7.1	★	**2KJ1106 - ■KL13 - ■■H1**		256
	229	770	2.3	6.41		**2KJ1106 - ■KL13 - ■■G1**		256

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
18.5	**Z.108-LG180ZMB4E**							
	267	662	2.6	5.51	★	**2KJ1106 - ■KL13 - ■■E1**		256
	281	630	1.8	5.24	★	**2KJ1106 - ■KL13 - ■■D1**		256
	333	530	2.2	4.41	★	**2KJ1106 - ■KL13 - ■■C1**		256
	369	478	2.3	3.98		**2KJ1106 - ■KL13 - ■■B1**		256
	430	411	2.6	3.42	★	**2KJ1106 - ■KL13 - ■■A1**		256
	Z.88-LG180ZMB4E							
	85	2 076	0.81	17.27		**2KJ1105 - ■KL13 - ■■M1**		210
	100	1 758	0.92	14.63		**2KJ1105 - ■KL13 - ■■L1**		210
	115	1 532	1.0	12.75	★	**2KJ1105 - ■KL13 - ■■K1**		210
	135	1 304	1.1	10.85		**2KJ1105 - ■KL13 - ■■J1**		210
	159	1 113	1.2	9.26	★	**2KJ1105 - ■KL13 - ■■H1**		210
	194	912	1.4	7.59	★	**2KJ1105 - ■KL13 - ■■G1**		210
	211	837	1.5	6.96		**2KJ1105 - ■KL13 - ■■F1**		210
	247	714	1.7	5.94	★	**2KJ1105 - ■KL13 - ■■E1**		210
	302	585	1.9	4.87	★	**2KJ1105 - ■KL13 - ■■D1**		210
	330	535	1.5	4.45	★	**2KJ1105 - ■KL13 - ■■C1**		210
	388	456	1.6	3.79	★	**2KJ1105 - ■KL13 - ■■B1**		210
	473	374	1.8	3.11	★	**2KJ1105 - ■KL13 - ■■A1**		210
	E.148-LG180ZMB4E							
	175	1 012	0.99	8.42	★	**2KJ1007 - ■KL13 - ■■N1**		259
	185	955	1.1	7.95		**2KJ1007 - ■KL13 - ■■M1**		259
	206	858	1.3	7.14	★	**2KJ1007 - ■KL13 - ■■L1**		259
	224	787	1.5	6.55		**2KJ1007 - ■KL13 - ■■K1**		259
	260	679	2.0	5.65		**2KJ1007 - ■KL13 - ■■J1**		259
	298	594	2.4	4.94		**2KJ1007 - ■KL13 - ■■H1**		259
	342	517	2.6	4.3		**2KJ1007 - ■KL13 - ■■G1**		259
	390	453	3.0	3.77	★	**2KJ1007 - ■KL13 - ■■F1**		259
	461	383	4.0	3.19	★	**2KJ1007 - ■KL13 - ■■E1**		259
	507	349	4.0	2.9		**2KJ1007 - ■KL13 - ■■D1**		259
	583	303	4.0	2.52	★	**2KJ1007 - ■KL13 - ■■C1**		259
	687	257	4.7	2.14		**2KJ1007 - ■KL13 - ■■B1**		259
	896	197	4.9	1.64	★	**2KJ1007 - ■KL13 - ■■A1**		259
	E.128-LG180ZMB4E							
	199	886	0.92	7.37	★	**2KJ1006 - ■KL13 - ■■P1**		235
	212	835	1.1	6.95		**2KJ1006 - ■KL13 - ■■N1**		235
	236	749	1.2	6.23	★	**2KJ1006 - ■KL13 - ■■M1**		235
	256	691	1.4	5.75		**2KJ1006 - ■KL13 - ■■L1**		235
	299	590	1.6	4.91		**2KJ1006 - ■KL13 - ■■K1**		235
	331	534	1.9	4.44	★	**2KJ1006 - ■KL13 - ■■J1**		235
	343	514	1.9	4.28		**2KJ1006 - ■KL13 - ■■H1**		235
	397	445	2.2	3.7		**2KJ1006 - ■KL13 - ■■G1**		235
	455	388	2.6	3.23	★	**2KJ1006 - ■KL13 - ■■F1**		235
	533	332	3.0	2.76	★	**2KJ1006 - ■KL13 - ■■E1**		235

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
18.5	**E.128-LG180ZMB4E**							
	595	297	3.2	2.47		**2KJ1006 - ■KL13 - ■■D1**		235
	700	252	3.4	2.1	★	**2KJ1006 - ■KL13 - ■■C1**		235
	812	218	3.7	1.81		**2KJ1006 - ■KL13 - ■■B1**		235
	1 081	163	4.2	1.36	★	**2KJ1006 - ■KL13 - ■■A1**		235
	E.108-LG180ZMB4E							
	269	656	1.0	5.46	★	**2KJ1005 - ■KL13 - ■■K1**		198
	294	601	1.1	5		**2KJ1005 - ■KL13 - ■■J1**		198
	345	512	1.4	4.26		**2KJ1005 - ■KL13 - ■■H1**		198
	391	452	1.3	3.76	★	**2KJ1005 - ■KL13 - ■■G1**		198
	459	385	1.9	3.2		**2KJ1005 - ■KL13 - ■■F1**		198
	531	333	2.0	2.77	★	**2KJ1005 - ■KL13 - ■■E1**		198
	631	280	2.4	2.33	★	**2KJ1005 - ■KL13 - ■■C1**		198
	697	254	2.4	2.11		**2KJ1005 - ■KL13 - ■■B1**		198
	812	218	2.5	1.81	★	**2KJ1005 - ■KL13 - ■■A1**		198
	E.88-LG180ZMB4E							
	377	469	0.82	3.9		**2KJ1004 - ■KL13 - ■■F1**		177
	445	397	1.1	3.3		**2KJ1004 - ■KL13 - ■■E1**		177
	510	346	1.3	2.88	★	**2KJ1004 - ■KL13 - ■■D1**		177
	703	251	1.7	2.09	★	**2KJ1004 - ■KL13 - ■■B1**		177
	860	206	1.7	1.71	★	**2KJ1004 - ■KL13 - ■■A1**		177
22	**D.188-LG180ZLB4E**							
	9.6	21 959	0.91	153.12		**2KJ1211 - ■KP13 - ■■J1**		758
	10.8	19 384	1.0	135.16		**2KJ1211 - ■KP13 - ■■H1**		758
	12.0	17 449	1.1	121.67	★	**2KJ1211 - ■KP13 - ■■G1**		758
	14.5	14 479	1.4	100.96	★	**2KJ1211 - ■KP13 - ■■F1**		758
	15.9	13 203	1.5	92.06		**2KJ1211 - ■KP13 - ■■E1**		758
	18.1	11 583	1.7	80.77	★	**2KJ1211 - ■KP13 - ■■D1**		758
	21	9 954	2.0	69.41		**2KJ1211 - ■KP13 - ■■C1**		758
	Z.188-LG180ZLB4E							
	28	7 508	2.1	52.35		**2KJ1111 - ■KP13 - ■■P1**		724
	30	6 915	2.3	48.22		**2KJ1111 - ■KP13 - ■■N1**		724
	D.168-LG180ZLB4E							
	13.6	15 414	0.91	107.48		**2KJ1210 - ■KP13 - ■■G1**		613
	15.5	13 524	1.0	94.3	★	**2KJ1210 - ■KP13 - ■■F1**		613
	18.4	11 437	1.2	79.75	★	**2KJ1210 - ■KP13 - ■■E1**		613
	20	10 377	1.3	72.36		**2KJ1210 - ■KP13 - ■■D1**		613
	23	9 046	1.5	63.08	★	**2KJ1210 - ■KP13 - ■■C1**		613
	27	7 681	1.8	53.56		**2KJ1210 - ■KP13 - ■■B1**		613
	Z.168-LG180ZLB4E							
	31	6 684	1.5	46.61		**2KJ1110 - ■KP13 - ■■V1**		594
	35	6 036	2.3	42.09		**2KJ1110 - ■KP13 - ■■U1**		594
	37	5 658	2.5	39.45		**2KJ1110 - ■KP13 - ■■T1**		594

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

2

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
22	**D.148-LG180ZLB4E**							
	21	9 947	0.80	69.36	★	**2KJ1208 - ■KP13 - ■■E1**		442
	24	8 909	0.90	62.12		**2KJ1208 - ■KP13 - ■■D1**		442
	28	7 545	1.1	52.61	★	**2KJ1208 - ■KP13 - ■■C1**		442
	Z.148-LG180ZLB4E							
	32	6 469	1.2	45.11	★	**2KJ1108 - ■KP13 - ■■W1**		430
	34	6 108	1.3	42.59		**2KJ1108 - ■KP13 - ■■V1**		430
	38	5 483	1.5	38.23	★	**2KJ1108 - ■KP13 - ■■U1**		430
	42	5 032	1.6	35.09		**2KJ1108 - ■KP13 - ■■T1**		430
	48	4 343	1.8	30.28		**2KJ1108 - ■KP13 - ■■S1**		430
	55	3 799	2.1	26.49		**2KJ1108 - ■KP13 - ■■R1**		430
	64	3 304	2.4	23.04		**2KJ1108 - ■KP13 - ■■Q1**		430
	72	2 898	2.8	20.21	★	**2KJ1108 - ■KP13 - ■■P1**		430
	86	2 451	3.3	17.09	★	**2KJ1108 - ■KP13 - ■■N1**		430
	170	1 239	3.9	8.64	★	**2KJ1108 - ■KP13 - ■■H1**		430
	187	1 124	4.3	7.84		**2KJ1108 - ■KP13 - ■■G1**		430
	D.128-LG180ZLB4E							
	34	6 269	0.81	43.71		**2KJ1207 - ■KP13 - ■■B1**		352
	39	5 388	0.95	37.57	★	**2KJ1207 - ■KP13 - ■■A1**		352
	Z.128-LG180ZLB4E							
	46	4 605	1.1	32.11	★	**2KJ1107 - ■KP13 - ■■X1**		343
	48	4 343	1.2	30.28		**2KJ1107 - ■KP13 - ■■W1**		343
	54	3 891	1.3	27.13	★	**2KJ1107 - ■KP13 - ■■V1**		343
	58	3 592	1.4	25.05		**2KJ1107 - ■KP13 - ■■U1**		343
	68	3 070	1.7	21.41		**2KJ1107 - ■KP13 - ■■T1**		343
	76	2 775	1.8	19.35	★	**2KJ1107 - ■KP13 - ■■S1**		343
	79	2 673	1.9	18.64		**2KJ1107 - ■KP13 - ■■R1**		343
	91	2 312	2.2	16.12		**2KJ1107 - ■KP13 - ■■Q1**		343
	104	2 016	2.4	14.06	★	**2KJ1107 - ■KP13 - ■■P1**		343
	122	1 725	2.7	12.03	★	**2KJ1107 - ■KP13 - ■■N1**		343
	136	1 546	3.0	10.78		**2KJ1107 - ■KP13 - ■■M1**		343
	160	1 309	3.4	9.13	★	**2KJ1107 - ■KP13 - ■■L1**		343
	186	1 130	3.8	7.88		**2KJ1107 - ■KP13 - ■■K1**		343
	201	1 045	2.4	7.29	★	**2KJ1107 - ■KP13 - ■■J1**		343
	235	895	2.8	6.24	★	**2KJ1107 - ■KP13 - ■■H1**		343
	247	850	4.6	5.93	★	**2KJ1107 - ■KP13 - ■■G1**		343
	262	802	3.3	5.59	★	**2KJ1107 - ■KP13 - ■■F1**		343
	303	693	3.6	4.83		**2KJ1107 - ■KP13 - ■■E1**		343
	310	678	3.5	4.73	★	**2KJ1107 - ■KP13 - ■■D1**		343
	358	587	4.0	4.09	★	**2KJ1107 - ■KP13 - ■■C1**		343
	404	521	4.4	3.63	★	**2KJ1107 - ■KP13 - ■■B1**		343
	477	440	5.0	3.07	★	**2KJ1107 - ■KP13 - ■■A1**		343

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
22	**Z.108-LG180ZLB4E**							
	59	3 577	0.87	24.94	★	**2KJ1106 - ■KP13 - ■■S1**		271
	64	3 278	0.95	22.86		**2KJ1106 - ■KP13 - ■■R1**		271
	75	2 794	1.1	19.48		**2KJ1106 - ■KP13 - ■■Q1**		271
	85	2 465	1.3	17.19	★	**2KJ1106 - ■KP13 - ■■P1**		271
	100	2 098	1.5	14.63		**2KJ1106 - ■KP13 - ■■N1**		271
	116	1 818	1.7	12.68	★	**2KJ1106 - ■KP13 - ■■M1**		271
	137	1 530	2.0	10.67	★	**2KJ1106 - ■KP13 - ■■L1**		271
	152	1 380	2.2	9.62		**2KJ1106 - ■KP13 - ■■K1**		271
	177	1 186	2.6	8.27	★	**2KJ1106 - ■KP13 - ■■J1**		271
	206	1 018	1.8	7.1	★	**2KJ1106 - ■KP13 - ■■H1**		271
	229	919	1.9	6.41		**2KJ1106 - ■KP13 - ■■G1**		271
	266	790	2.2	5.51	★	**2KJ1106 - ■KP13 - ■■E1**		271
	280	751	1.5	5.24	★	**2KJ1106 - ■KP13 - ■■D1**		271
	332	632	1.8	4.41	★	**2KJ1106 - ■KP13 - ■■C1**		271
	368	571	2.0	3.98		**2KJ1106 - ■KP13 - ■■B1**		271
	428	490	2.2	3.42	★	**2KJ1106 - ■KP13 - ■■A1**		271
	Z.88-LG180ZLB4E							
	115	1 829	0.85	12.75	★	**2KJ1105 - ■KP13 - ■■K1**		225
	135	1 556	0.94	10.85		**2KJ1105 - ■KP13 - ■■J1**		225
	158	1 328	1.0	9.26	★	**2KJ1105 - ■KP13 - ■■H1**		225
	193	1 089	1.2	7.59	★	**2KJ1105 - ■KP13 - ■■G1**		225
	210	998	1.3	6.96		**2KJ1105 - ■KP13 - ■■F1**		225
	247	852	1.4	5.94	★	**2KJ1105 - ■KP13 - ■■E1**		225
	301	698	1.6	4.87	★	**2KJ1105 - ■KP13 - ■■D1**		225
	329	638	1.3	4.45	★	**2KJ1105 - ■KP13 - ■■C1**		225
	387	544	1.4	3.79	★	**2KJ1105 - ■KP13 - ■■B1**		225
	471	446	1.5	3.11	★	**2KJ1105 - ■KP13 - ■■A1**		225
	E.148-LG180ZLB4E							
	174	1 208	0.83	8.42	★	**2KJ1007 - ■KP13 - ■■N1**		274
	184	1 140	0.93	7.95		**2KJ1007 - ■KP13 - ■■M1**		274
	205	1 024	1.1	7.14	★	**2KJ1007 - ■KP13 - ■■L1**		274
	224	939	1.2	6.55		**2KJ1007 - ■KP13 - ■■K1**		274
	259	810	1.7	5.65		**2KJ1007 - ■KP13 - ■■J1**		274
	297	708	2.0	4.94		**2KJ1007 - ■KP13 - ■■H1**		274
	341	617	2.2	4.3		**2KJ1007 - ■KP13 - ■■G1**		274
	389	541	2.5	3.77	★	**2KJ1007 - ■KP13 - ■■F1**		274
	459	457	3.4	3.19	★	**2KJ1007 - ■KP13 - ■■E1**		274
	505	416	3.4	2.9		**2KJ1007 - ■KP13 - ■■D1**		274
	581	361	3.4	2.52	★	**2KJ1007 - ■KP13 - ■■C1**		274
	685	307	3.9	2.14		**2KJ1007 - ■KP13 - ■■B1**		274
	893	235	4.1	1.64	★	**2KJ1007 - ■KP13 - ■■A1**		274

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

2

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
22	**E.128-LG180ZLB4E**							
	211	997	0.88	6.95		**2KJ1006 - ■KP13 - ■■N1**		250
	235	893	1.0	6.23	★	**2KJ1006 - ■KP13 - ■■M1**		250
	255	825	1.2	5.75		**2KJ1006 - ■KP13 - ■■L1**		250
	298	704	1.4	4.91		**2KJ1006 - ■KP13 - ■■K1**		250
	330	637	1.6	4.44	★	**2KJ1006 - ■KP13 - ■■J1**		250
	342	614	1.6	4.28		**2KJ1006 - ■KP13 - ■■H1**		250
	396	531	1.9	3.7		**2KJ1006 - ■KP13 - ■■G1**		250
	454	463	2.2	3.23	★	**2KJ1006 - ■KP13 - ■■F1**		250
	531	396	2.5	2.76	★	**2KJ1006 - ■KP13 - ■■E1**		250
	593	354	2.7	2.47		**2KJ1006 - ■KP13 - ■■D1**		250
	698	301	2.9	2.1	★	**2KJ1006 - ■KP13 - ■■C1**		250
	809	260	3.1	1.81		**2KJ1006 - ■KP13 - ■■B1**		250
	1 077	195	3.5	1.36	★	**2KJ1006 - ■KP13 - ■■A1**		250
	E.108-LG180ZLB4E							
	268	783	0.84	5.46	★	**2KJ1005 - ■KP13 - ■■K1**		213
	293	717	0.95	5		**2KJ1005 - ■KP13 - ■■J1**		213
	344	611	1.2	4.26		**2KJ1005 - ■KP13 - ■■H1**		213
	390	539	1.1	3.76	★	**2KJ1005 - ■KP13 - ■■G1**		213
	458	459	1.6	3.2		**2KJ1005 - ■KP13 - ■■F1**		213
	529	397	1.7	2.77	★	**2KJ1005 - ■KP13 - ■■E1**		213
	629	334	2.0	2.33	★	**2KJ1005 - ■KP13 - ■■C1**		213
	694	303	2.0	2.11		**2KJ1005 - ■KP13 - ■■B1**		213
	809	260	2.1	1.81	★	**2KJ1005 - ■KP13 - ■■A1**		213
	E.88-LG180ZLB4E							
	444	473	0.95	3.3		**2KJ1004 - ■KP13 - ■■E1**		192
	509	413	1.1	2.88	★	**2KJ1004 - ■KP13 - ■■D1**		192
30	**D.188-LG200LB4E**							
	12.1	23 633	0.85	121.67	★	**2KJ1211 - ■LM13 - ■■G1**		808
	14.6	19 610	1.0	100.96	★	**2KJ1211 - ■LM13 - ■■F1**		808
	16.0	17 881	1.1	92.06		**2KJ1211 - ■LM13 - ■■E1**		808
	18.3	15 689	1.3	80.77	★	**2KJ1211 - ■LM13 - ■■D1**		808
	21	13 482	1.5	69.41		**2KJ1211 - ■LM13 - ■■C1**		808
	27	10 500	1.9	54.06	★	**2KJ1211 - ■LM13 - ■■B1**		808
	34	8 342	2.4	42.95	★	**2KJ1211 - ■LM13 - ■■A1**		808
	Z.188-LG200LB4E							
	28	10 168	1.5	52.35		**2KJ1111 - ■LM13 - ■■P1**		774
	31	9 366	1.7	48.22		**2KJ1111 - ■LM13 - ■■N1**		774
	35	8 129	2.0	41.85	★	**2KJ1111 - ■LM13 - ■■M1**		774
	40	7 165	2.3	36.89		**2KJ1111 - ■LM13 - ■■L1**		774
	D.168-LG200LB4E							
	18.5	15 490	0.90	79.75	★	**2KJ1210 - ■LM13 - ■■E1**		663
	20	14 055	1.0	72.36		**2KJ1210 - ■LM13 - ■■D1**		663
	23	12 252	1.1	63.08	★	**2KJ1210 - ■LM13 - ■■C1**		663

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
30	**D.168-LG200LB4E**							
	28	10 403	1.3	53.56		**2KJ1210 - ■LM13 - ■■B1**		663
	Z.168-LG200LB4E							
	32	9 053	1.1	46.61		**2KJ1110 - ■LM13 - ■■V1**		644
	35	8 175	1.7	42.09		**2KJ1110 - ■LM13 - ■■U1**		644
	37	7 663	1.8	39.45		**2KJ1110 - ■LM13 - ■■T1**		644
	44	6 581	2.1	33.88	★	**2KJ1110 - ■LM13 - ■■S1**		644
	50	5 685	2.5	29.27		**2KJ1110 - ■LM13 - ■■Q1**		644
	57	5 019	2.8	25.84		**2KJ1110 - ■LM13 - ■■P1**		644
	Z.148-LG200LB4E							
	33	8 762	0.91	45.11	★	**2KJ1108 - ■LM13 - ■■W1**		480
	35	8 273	0.97	42.59		**2KJ1108 - ■LM13 - ■■V1**		480
	39	7 426	1.1	38.23	★	**2KJ1108 - ■LM13 - ■■U1**		480
	42	6 816	1.2	35.09		**2KJ1108 - ■LM13 - ■■T1**		480
	49	5 882	1.4	30.28		**2KJ1108 - ■LM13 - ■■S1**		480
	56	5 145	1.6	26.49		**2KJ1108 - ■LM13 - ■■R1**		480
	64	4 475	1.8	23.04		**2KJ1108 - ■LM13 - ■■Q1**		480
	73	3 926	2.0	20.21	★	**2KJ1108 - ■LM13 - ■■P1**		480
	86	3 320	2.4	17.09	★	**2KJ1108 - ■LM13 - ■■N1**		480
	95	3 013	2.7	15.51		**2KJ1108 - ■LM13 - ■■M1**		480
	109	2 626	3.0	13.52	★	**2KJ1108 - ■LM13 - ■■L1**		480
	128	2 230	3.6	11.48		**2KJ1108 - ■LM13 - ■■K1**		480
	171	1 678	2.9	8.64	★	**2KJ1108 - ■LM13 - ■■H1**		480
	188	1 523	3.2	7.84		**2KJ1108 - ■LM13 - ■■G1**		480
	195	1 470	3.8	7.57	★	**2KJ1108 - ■LM13 - ■■F1**		480
	216	1 329	3.6	6.84	★	**2KJ1108 - ■LM13 - ■■E1**		480
	229	1 249	4.3	6.43		**2KJ1108 - ■LM13 - ■■D1**		480
	254	1 127	3.7	5.8		**2KJ1108 - ■LM13 - ■■C1**		480
	332	862	4.5	4.44	★	**2KJ1108 - ■LM13 - ■■A1**		480
	Z.128-LG200LB4E							
	46	6 237	0.82	32.11	★	**2KJ1107 - ■LM13 - ■■X1**		393
	49	5 882	0.87	30.28		**2KJ1107 - ■LM13 - ■■W1**		393
	54	5 270	0.97	27.13	★	**2KJ1107 - ■LM13 - ■■V1**		393
	59	4 866	1.0	25.05		**2KJ1107 - ■LM13 - ■■U1**		393
	69	4 159	1.2	21.41		**2KJ1107 - ■LM13 - ■■T1**		393
	76	3 758	1.4	19.35	★	**2KJ1107 - ■LM13 - ■■S1**		393
	79	3 621	1.4	18.64		**2KJ1107 - ■LM13 - ■■R1**		393
	92	3 131	1.6	16.12		**2KJ1107 - ■LM13 - ■■Q1**		393
	105	2 731	1.8	14.06	★	**2KJ1107 - ■LM13 - ■■P1**		393
	123	2 337	2.0	12.03	★	**2KJ1107 - ■LM13 - ■■N1**		393
	137	2 094	2.2	10.78		**2KJ1107 - ■LM13 - ■■M1**		393
	162	1 773	2.5	9.13	★	**2KJ1107 - ■LM13 - ■■L1**		393
	187	1 531	2.8	7.88		**2KJ1107 - ■LM13 - ■■K1**		393
	202	1 416	1.8	7.29	★	**2KJ1107 - ■LM13 - ■■J1**		393

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

2

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
30	**Z.128-LG200LB4E**							
	236	1 212	2.1	6.24	★	**2KJ1107 - ■LM13 - ■■H1**		393
	249	1 152	3.4	5.93	★	**2KJ1107 - ■LM13 - ■■G1**		393
	264	1 086	2.4	5.59	★	**2KJ1107 - ■LM13 - ■■F1**		393
	305	938	2.7	4.83		**2KJ1107 - ■LM13 - ■■E1**		393
	312	919	2.6	4.73	★	**2KJ1107 - ■LM13 - ■■D1**		393
	361	794	3.0	4.09	★	**2KJ1107 - ■LM13 - ■■C1**		393
	406	705	3.3	3.63	★	**2KJ1107 - ■LM13 - ■■B1**		393
	480	596	3.7	3.07	★	**2KJ1107 - ■LM13 - ■■A1**		393
	Z.108-LG200LB4E							
	76	3 784	0.82	19.48		**2KJ1106 - ■LM13 - ■■Q1**		321
	86	3 339	0.93	17.19	★	**2KJ1106 - ■LM13 - ■■P1**		321
	101	2 842	1.1	14.63		**2KJ1106 - ■LM13 - ■■N1**		321
	116	2 463	1.3	12.68	★	**2KJ1106 - ■LM13 - ■■M1**		321
	138	2 073	1.5	10.67	★	**2KJ1106 - ■LM13 - ■■L1**		321
	153	1 869	1.7	9.62		**2KJ1106 - ■LM13 - ■■K1**		321
	178	1 606	1.9	8.27	★	**2KJ1106 - ■LM13 - ■■J1**		321
	208	1 379	1.3	7.1	★	**2KJ1106 - ■LM13 - ■■H1**		321
	230	1 245	1.4	6.41		**2KJ1106 - ■LM13 - ■■G1**		321
	268	1 070	1.6	5.51	★	**2KJ1106 - ■LM13 - ■■E1**		321
	281	1 018	1.1	5.24	★	**2KJ1106 - ■LM13 - ■■D1**		321
	334	857	1.3	4.41	★	**2KJ1106 - ■LM13 - ■■C1**		321
	371	773	1.4	3.98		**2KJ1106 - ■LM13 - ■■B1**		321
	431	664	1.6	3.42	★	**2KJ1106 - ■LM13 - ■■A1**		321
	E.148-LG200LB4E							
	207	1 387	0.81	7.14	★	**2KJ1007 - ■LM13 - ■■L1**		324
	225	1 272	0.90	6.55		**2KJ1007 - ■LM13 - ■■K1**		324
	261	1 097	1.2	5.65		**2KJ1007 - ■LM13 - ■■J1**		324
	299	960	1.5	4.94		**2KJ1007 - ■LM13 - ■■H1**		324
	343	835	1.6	4.3		**2KJ1007 - ■LM13 - ■■G1**		324
	391	732	1.8	3.77	★	**2KJ1007 - ■LM13 - ■■F1**		324
	462	620	2.5	3.19	★	**2KJ1007 - ■LM13 - ■■E1**		324
	509	563	2.5	2.9		**2KJ1007 - ■LM13 - ■■D1**		324
	585	489	2.5	2.52	★	**2KJ1007 - ■LM13 - ■■C1**		324
	689	416	2.9	2.14		**2KJ1007 - ■LM13 - ■■B1**		324
	899	319	3.0	1.64	★	**2KJ1007 - ■LM13 - ■■A1**		324
	E.128-LG200LB4E							
	257	1 117	0.86	5.75		**2KJ1006 - ■LM13 - ■■L1**		300
	300	954	1.0	4.91		**2KJ1006 - ■LM13 - ■■K1**		300
	332	862	1.2	4.44	★	**2KJ1006 - ■LM13 - ■■J1**		300
	345	831	1.2	4.28		**2KJ1006 - ■LM13 - ■■H1**		300
	399	719	1.4	3.7		**2KJ1006 - ■LM13 - ■■G1**		300
	457	627	1.6	3.23	★	**2KJ1006 - ■LM13 - ■■F1**		300
	534	536	1.9	2.76	★	**2KJ1006 - ■LM13 - ■■E1**		300

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
30	**E.128-LG200LB4E**							
	597	480	2.0	2.47		**2KJ1006 - ■LM13 - ■■D1**		300
	702	408	2.1	2.1	★	**2KJ1006 - ■LM13 - ■■C1**		300
	815	352	2.3	1.81		**2KJ1006 - ■LM13 - ■■B1**		300
	1 085	264	2.6	1.36	★	**2KJ1006 - ■LM13 - ■■A1**		300
	E.108-LG200LB4E							
	346	827	0.87	4.26		**2KJ1005 - ■LM13 - ■■H1**		263
	392	730	0.82	3.76	★	**2KJ1005 - ■LM13 - ■■G1**		263
	461	622	1.2	3.2		**2KJ1005 - ■LM13 - ■■F1**		263
	532	538	1.2	2.77	★	**2KJ1005 - ■LM13 - ■■E1**		263
	633	453	1.5	2.33	★	**2KJ1005 - ■LM13 - ■■C1**		263
	699	410	1.5	2.11		**2KJ1005 - ■LM13 - ■■B1**		263
	815	352	1.6	1.81	★	**2KJ1005 - ■LM13 - ■■A1**		263
37	**D.188-LG225S4E**							
	14.6	24 268	0.82	100.96	★	**2KJ1211 - ■ME13 - ■■F1**		888
	16.0	22 129	0.90	92.06		**2KJ1211 - ■ME13 - ■■E1**		888
	18.2	19 415	1.0	80.77	★	**2KJ1211 - ■ME13 - ■■D1**		888
	21	16 684	1.2	69.41		**2KJ1211 - ■ME13 - ■■C1**		888
	27	12 995	1.5	54.06	★	**2KJ1211 - ■ME13 - ■■B1**		888
	34	10 324	1.9	42.95	★	**2KJ1211 - ■ME13 - ■■A1**		888
	Z.188-LG225S4E							
	28	12 584	1.2	52.35		**2KJ1111 - ■ME13 - ■■P1**		854
	30	11 591	1.4	48.22		**2KJ1111 - ■ME13 - ■■N1**		854
	35	10 060	1.6	41.85	★	**2KJ1111 - ■ME13 - ■■M1**		854
	40	8 867	1.9	36.89		**2KJ1111 - ■ME13 - ■■L1**		854
	45	7 781	2.4	32.37		**2KJ1111 - ■ME13 - ■■K1**		854
	D.168-LG225S4E							
	20	17 393	0.80	72.36		**2KJ1210 - ■ME13 - ■■D1**		743
	23	15 163	0.92	63.08	★	**2KJ1210 - ■ME13 - ■■C1**		743
	27	12 874	1.1	53.56		**2KJ1210 - ■ME13 - ■■B1**		743
	Z.168-LG225S4E							
	35	10 117	1.4	42.09		**2KJ1110 - ■ME13 - ■■U1**		724
	37	9 483	1.5	39.45		**2KJ1110 - ■ME13 - ■■T1**		724
	43	8 144	1.7	33.88	★	**2KJ1110 - ■ME13 - ■■S1**		724
	50	7 036	2.0	29.27		**2KJ1110 - ■ME13 - ■■Q1**		724
	57	6 211	2.3	25.84		**2KJ1110 - ■ME13 - ■■P1**		724
	63	5 591	2.5	23.26	★	**2KJ1110 - ■ME13 - ■■N1**		724
	76	4 639	3.0	19.3	★	**2KJ1110 - ■ME13 - ■■M1**		724
	84	4 231	3.3	17.6		**2KJ1110 - ■ME13 - ■■L1**		724
	159	2 226	3.5	9.26	★	**2KJ1110 - ■ME13 - ■■G1**		724
	204	1 731	4.1	7.2	★	**2KJ1110 - ■ME13 - ■■E1**		724
	Z.148-LG225S4E							
	38	9 190	0.87	38.23	★	**2KJ1108 - ■ME13 - ■■U1**		560
	42	8 435	0.95	35.09		**2KJ1108 - ■ME13 - ■■T1**		560

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

2

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
37	**Z.148-LG225S4E**							
	48	7 279	1.1	30.28		**2KJ1108 - ■ME13 - ■■S1**		560
	56	6 368	1.3	26.49		**2KJ1108 - ■ME13 - ■■R1**		560
	64	5 538	1.4	23.04		**2KJ1108 - ■ME13 - ■■Q1**		560
	73	4 858	1.6	20.21	★	**2KJ1108 - ■ME13 - ■■P1**		560
	86	4 108	1.9	17.09	★	**2KJ1108 - ■ME13 - ■■N1**		560
	95	3 728	2.1	15.51		**2KJ1108 - ■ME13 - ■■M1**		560
	109	3 250	2.5	13.52	★	**2KJ1108 - ■ME13 - ■■L1**		560
	128	2 759	2.9	11.48		**2KJ1108 - ■ME13 - ■■K1**		560
	167	2 113	3.8	8.79	★	**2KJ1108 - ■ME13 - ■■J1**		560
	170	2 077	2.3	8.64	★	**2KJ1108 - ■ME13 - ■■H1**		560
	188	1 885	2.5	7.84		**2KJ1108 - ■ME13 - ■■G1**		560
	194	1 820	3.1	7.57	★	**2KJ1108 - ■ME13 - ■■F1**		560
	215	1 644	2.9	6.84	★	**2KJ1108 - ■ME13 - ■■E1**		560
	229	1 546	3.5	6.43		**2KJ1108 - ■ME13 - ■■D1**		560
	253	1 394	3.0	5.8		**2KJ1108 - ■ME13 - ■■C1**		560
	299	1 183	4.3	4.92	★	**2KJ1108 - ■ME13 - ■■B1**		560
	331	1 067	3.6	4.44	★	**2KJ1108 - ■ME13 - ■■A1**		560
	Z.128-LG225S4E							
	59	6 021	0.85	25.05		**2KJ1107 - ■ME13 - ■■U1**		473
	69	5 146	0.99	21.41		**2KJ1107 - ■ME13 - ■■T1**		473
	76	4 651	1.1	19.35	★	**2KJ1107 - ■ME13 - ■■S1**		473
	79	4 481	1.1	18.64		**2KJ1107 - ■ME13 - ■■R1**		473
	91	3 875	1.3	16.12		**2KJ1107 - ■ME13 - ■■Q1**		473
	105	3 380	1.4	14.06	★	**2KJ1107 - ■ME13 - ■■P1**		473
	122	2 892	1.6	12.03	★	**2KJ1107 - ■ME13 - ■■N1**		473
	136	2 591	1.8	10.78		**2KJ1107 - ■ME13 - ■■M1**		473
	161	2 195	2.0	9.13	★	**2KJ1107 - ■ME13 - ■■L1**		473
	187	1 894	2.2	7.88		**2KJ1107 - ■ME13 - ■■K1**		473
	202	1 752	1.4	7.29	★	**2KJ1107 - ■ME13 - ■■J1**		473
	236	1 500	1.7	6.24	★	**2KJ1107 - ■ME13 - ■■H1**		473
	248	1 425	2.7	5.93	★	**2KJ1107 - ■ME13 - ■■G1**		473
	263	1 344	1.9	5.59	★	**2KJ1107 - ■ME13 - ■■F1**		473
	304	1 161	2.2	4.83		**2KJ1107 - ■ME13 - ■■E1**		473
	311	1 137	2.1	4.73	★	**2KJ1107 - ■ME13 - ■■D1**		473
	359	983	2.4	4.09	★	**2KJ1107 - ■ME13 - ■■C1**		473
	405	873	2.6	3.63	★	**2KJ1107 - ■ME13 - ■■B1**		473
	479	738	3.0	3.07	★	**2KJ1107 - ■ME13 - ■■A1**		473
	Z.108-K4-LGI225S4E							
	100	3 517	0.88	14.63		**2KJ1106 - ■ME13 - ■■N1**		401
	116	3 048	1.0	12.68	★	**2KJ1106 - ■ME13 - ■■M1**		401
	138	2 565	1.2	10.67	★	**2KJ1106 - ■ME13 - ■■L1**		401
	153	2 312	1.3	9.62		**2KJ1106 - ■ME13 - ■■K1**		401
	178	1 988	1.6	8.27	★	**2KJ1106 - ■ME13 - ■■J1**		401

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
37	**Z.108-K4-LGI225S4E**							
	207	1 707	1.1	7.1	★	**2KJ1106 - ■ME13 - ■■H1**		401
	229	1 541	1.1	6.41		**2KJ1106 - ■ME13 - ■■G1**		401
	267	1 324	1.3	5.51	★	**2KJ1106 - ■ME13 - ■■E1**		401
	281	1 260	0.91	5.24	★	**2KJ1106 - ■ME13 - ■■D1**		401
	333	1 060	1.1	4.41	★	**2KJ1106 - ■ME13 - ■■C1**		401
	369	957	1.2	3.98		**2KJ1106 - ■ME13 - ■■B1**		401
	430	822	1.3	3.42	★	**2KJ1106 - ■ME13 - ■■A1**		401
	E.148-LG225S4E							
	260	1 358	1.0	5.65		**2KJ1007 - ■ME13 - ■■J1**		404
	298	1 187	1.2	4.94		**2KJ1007 - ■ME13 - ■■H1**		404
	342	1 034	1.3	4.3		**2KJ1007 - ■ME13 - ■■G1**		404
	390	906	1.5	3.77	★	**2KJ1007 - ■ME13 - ■■F1**		404
	461	767	2.0	3.19	★	**2KJ1007 - ■ME13 - ■■E1**		404
	507	697	2.0	2.9		**2KJ1007 - ■ME13 - ■■D1**		404
	583	606	2.0	2.52	★	**2KJ1007 - ■ME13 - ■■C1**		404
	687	514	2.3	2.14		**2KJ1007 - ■ME13 - ■■B1**		404
	896	394	2.4	1.64	★	**2KJ1007 - ■ME13 - ■■A1**		404
	E.128-LG225S4E							
	299	1 180	0.81	4.91		**2KJ1006 - ■ME13 - ■■K1**		380
	331	1 067	0.94	4.44	★	**2KJ1006 - ■ME13 - ■■J1**		380
	343	1 029	0.97	4.28		**2KJ1006 - ■ME13 - ■■H1**		380
	397	889	1.1	3.7		**2KJ1006 - ■ME13 - ■■G1**		380
	455	776	1.3	3.23	★	**2KJ1006 - ■ME13 - ■■F1**		380
	533	663	1.5	2.76	★	**2KJ1006 - ■ME13 - ■■E1**		380
	595	594	1.6	2.47		**2KJ1006 - ■ME13 - ■■D1**		380
	700	505	1.7	2.1	★	**2KJ1006 - ■ME13 - ■■C1**		380
	812	435	1.8	1.81		**2KJ1006 - ■ME13 - ■■B1**		380
	1 081	327	2.1	1.36	★	**2KJ1006 - ■ME13 - ■■A1**		380
	E.108-K4-LGI225S4E							
	459	769	0.97	3.2		**2KJ1005 - ■ME13 - ■■F1**		343
	531	666	1.0	2.77	★	**2KJ1005 - ■ME13 - ■■E1**		343
45	**D.188-LG225ZM4E**							
	18.3	23 533	0.85	80.77	★	**2KJ1211 - ■MU13 - ■■D1**		888
	21	20 223	0.99	69.41		**2KJ1211 - ■MU13 - ■■C1**		888
	27	15 751	1.3	54.06	★	**2KJ1211 - ■MU13 - ■■B1**		888
	34	12 514	1.6	42.95	★	**2KJ1211 - ■MU13 - ■■A1**		888
	Z.188-LG225ZM4E							
	28	15 252	1.0	52.35		**2KJ1111 - ■MU13 - ■■P1**		854
	31	14 049	1.1	48.22		**2KJ1111 - ■MU13 - ■■N1**		854
	35	12 193	1.3	41.85	★	**2KJ1111 - ■MU13 - ■■M1**		854
	40	10 748	1.5	36.89		**2KJ1111 - ■MU13 - ■■L1**		854
	46	9 431	2.0	32.37		**2KJ1111 - ■MU13 - ■■K1**		854
	50	8 502	2.4	29.18	★	**2KJ1111 - ■MU13 - ■■J1**		854

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

2

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
45	**Z.188-LG225ZM4E**							
	60	7 217	2.8	24.77	★	**2KJ1111 - ■MU13 - ■■H1**		854
	64	6 704	3.0	23.01		**2KJ1111 - ■MU13 - ■■G1**		854
	D.168-LG225ZM4E							
	28	15 605	0.90	53.56		**2KJ1210 - ■MU13 - ■■B1**		743
	Z.168-LG225ZM4E							
	35	12 263	1.1	42.09		**2KJ1110 - ■MU13 - ■■U1**		724
	37	11 494	1.2	39.45		**2KJ1110 - ■MU13 - ■■T1**		724
	44	9 871	1.4	33.88	★	**2KJ1110 - ■MU13 - ■■S1**		724
	50	8 528	1.6	29.27		**2KJ1110 - ■MU13 - ■■Q1**		724
	57	7 529	1.9	25.84		**2KJ1110 - ■MU13 - ■■P1**		724
	63	6 777	2.1	23.26	★	**2KJ1110 - ■MU13 - ■■N1**		724
	76	5 623	2.5	19.3	★	**2KJ1110 - ■MU13 - ■■M1**		724
	84	5 128	2.7	17.6		**2KJ1110 - ■MU13 - ■■L1**		724
	96	4 499	3.0	15.44	★	**2KJ1110 - ■MU13 - ■■K1**		724
	111	3 866	3.4	13.27		**2KJ1110 - ■MU13 - ■■J1**		724
	159	2 698	2.9	9.26	★	**2KJ1110 - ■MU13 - ■■G1**		724
	205	2 098	3.4	7.2	★	**2KJ1110 - ■MU13 - ■■E1**		724
	238	1 806	4.2	6.2	★	**2KJ1110 - ■MU13 - ■■D1**		724
	263	1 635	4.1	5.61	★	**2KJ1110 - ■MU13 - ■■C1**		724
	299	1 436	4.9	4.93	★	**2KJ1110 - ■MU13 - ■■B1**		724
	331	1 299	5.0	4.46	★	**2KJ1110 - ■MU13 - ■■A1**		724
	D.148-LG225ZM4E							
	43	9 950	0.80	34.15	★	**2KJ1208 - ■MU13 - ■■A1**		572
	Z.148-LG225ZM4E							
	49	8 822	0.91	30.28		**2KJ1108 - ■MU13 - ■■S1**		560
	56	7 718	1.0	26.49		**2KJ1108 - ■MU13 - ■■R1**		560
	64	6 713	1.2	23.04		**2KJ1108 - ■MU13 - ■■Q1**		560
	73	5 888	1.4	20.21	★	**2KJ1108 - ■MU13 - ■■P1**		560
	86	4 979	1.6	17.09	★	**2KJ1108 - ■MU13 - ■■N1**		560
	95	4 519	1.8	15.51		**2KJ1108 - ■MU13 - ■■M1**		560
	109	3 939	2.0	13.52	★	**2KJ1108 - ■MU13 - ■■L1**		560
	128	3 345	2.4	11.48		**2KJ1108 - ■MU13 - ■■K1**		560
	168	2 561	3.1	8.79	★	**2KJ1108 - ■MU13 - ■■J1**		560
	171	2 517	1.9	8.64	★	**2KJ1108 - ■MU13 - ■■H1**		560
	188	2 284	2.1	7.84		**2KJ1108 - ■MU13 - ■■G1**		560
	195	2 206	2.5	7.57	★	**2KJ1108 - ■MU13 - ■■F1**		560
	216	1 993	2.4	6.84	★	**2KJ1108 - ■MU13 - ■■E1**		560
	229	1 873	2.9	6.43		**2KJ1108 - ■MU13 - ■■D1**		560
	254	1 690	2.5	5.8		**2KJ1108 - ■MU13 - ■■C1**		560
	300	1 433	3.5	4.92	★	**2KJ1108 - ■MU13 - ■■B1**		560
	332	1 294	3.0	4.44	★	**2KJ1108 - ■MU13 - ■■A1**		560

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
45	**Z.128-LG225ZM4E**							
	69	6 238	0.82	21.41		**2KJ1107 - ■MU13 - ■■T1**		473
	76	5 638	0.90	19.35	★	**2KJ1107 - ■MU13 - ■■S1**		473
	79	5 431	0.94	18.64		**2KJ1107 - ■MU13 - ■■R1**		473
	92	4 697	1.1	16.12		**2KJ1107 - ■MU13 - ■■Q1**		473
	105	4 096	1.2	14.06	★	**2KJ1107 - ■MU13 - ■■P1**		473
	123	3 505	1.3	12.03	★	**2KJ1107 - ■MU13 - ■■N1**		473
	137	3 141	1.5	10.78		**2KJ1107 - ■MU13 - ■■M1**		473
	162	2 660	1.7	9.13	★	**2KJ1107 - ■MU13 - ■■L1**		473
	187	2 296	1.9	7.88		**2KJ1107 - ■MU13 - ■■K1**		473
	202	2 124	1.2	7.29	★	**2KJ1107 - ■MU13 - ■■J1**		473
	236	1 818	1.4	6.24	★	**2KJ1107 - ■MU13 - ■■H1**		473
	249	1 728	2.3	5.93	★	**2KJ1107 - ■MU13 - ■■G1**		473
	264	1 629	1.6	5.59	★	**2KJ1107 - ■MU13 - ■■F1**		473
	305	1 407	1.8	4.83		**2KJ1107 - ■MU13 - ■■E1**		473
	312	1 378	1.7	4.73	★	**2KJ1107 - ■MU13 - ■■D1**		473
	361	1 192	2.0	4.09	★	**2KJ1107 - ■MU13 - ■■C1**		473
	406	1 058	2.2	3.63	★	**2KJ1107 - ■MU13 - ■■B1**		473
	480	894	2.5	3.07	★	**2KJ1107 - ■MU13 - ■■A1**		473
	Z.108-K4-LGI225ZM4E							
	116	3 690	0.84	12.68	★	**2KJ1106 - ■MU13 - ■■M1**		401
	138	3 105	1.0	10.67	★	**2KJ1106 - ■MU13 - ■■L1**		401
	153	2 799	1.1	9.62		**2KJ1106 - ■MU13 - ■■K1**		401
	178	2 407	1.3	8.27	★	**2KJ1106 - ■MU13 - ■■J1**		401
	208	2 066	0.87	7.1	★	**2KJ1106 - ■MU13 - ■■H1**		401
	230	1 865	0.94	6.41		**2KJ1106 - ■MU13 - ■■G1**		401
	268	1 603	1.1	5.51	★	**2KJ1106 - ■MU13 - ■■E1**		401
	334	1 283	0.89	4.41	★	**2KJ1106 - ■MU13 - ■■C1**		401
	371	1 158	0.97	3.98		**2KJ1106 - ■MU13 - ■■B1**		401
	431	995	1.1	3.42	★	**2KJ1106 - ■MU13 - ■■A1**		401
	E.148-LG225ZM4E							
	261	1 646	0.83	5.65		**2KJ1007 - ■MU13 - ■■J1**		404
	299	1 439	0.97	4.94		**2KJ1007 - ■MU13 - ■■H1**		404
	343	1 253	1.1	4.3		**2KJ1007 - ■MU13 - ■■G1**		404
	391	1 098	1.2	3.77	★	**2KJ1007 - ■MU13 - ■■F1**		404
	462	929	1.7	3.19	★	**2KJ1007 - ■MU13 - ■■E1**		404
	509	845	1.7	2.9		**2KJ1007 - ■MU13 - ■■D1**		404
	585	734	1.7	2.52	★	**2KJ1007 - ■MU13 - ■■C1**		404
	689	624	1.9	2.14		**2KJ1007 - ■MU13 - ■■B1**		404
	899	478	2.0	1.64	★	**2KJ1007 - ■MU13 - ■■A1**		404
	E.128-LG225ZM4E							
	345	1 247	0.80	4.28		**2KJ1006 - ■MU13 - ■■H1**		380
	399	1 078	0.93	3.7		**2KJ1006 - ■MU13 - ■■G1**		380
	457	941	1.1	3.23	★	**2KJ1006 - ■MU13 - ■■F1**		380

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

2

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
45	**E.128-LG225ZM4E**							
	534	804	1.2	2.76	★	**2KJ1006 - ■MU13 - ■■E1**		380
	815	527	1.5	1.81		**2KJ1006 - ■MU13 - ■■B1**		380
	1 085	396	1.7	1.36	★	**2KJ1006 - ■MU13 - ■■A1**		380
	E.108-K4-LGI225ZM4E							
	461	931	0.80	3.2		**2KJ1005 - ■MU13 - ■■F1**		343
	532	806	0.83	2.77	★	**2KJ1005 - ■MU13 - ■■E1**		343
55	**D.188-LG250ZM4E**							
	21	24 634	0.81	69.41		**2KJ1211 - ■NN13 - ■■C1**		978
	27	19 186	1.0	54.06	★	**2KJ1211 - ■NN13 - ■■B1**		978
	34	15 243	1.3	42.95	★	**2KJ1211 - ■NN13 - ■■A1**		978
	Z.188-LG250ZM4E							
	31	17 113	0.93	48.22		**2KJ1111 - ■NN13 - ■■N1**		944
	35	14 853	1.1	41.85	★	**2KJ1111 - ■NN13 - ■■M1**		944
	40	13 092	1.3	36.89		**2KJ1111 - ■NN13 - ■■L1**		944
	46	11 488	1.6	32.37		**2KJ1111 - ■NN13 - ■■K1**		944
	51	10 356	1.9	29.18	★	**2KJ1111 - ■NN13 - ■■J1**		944
	60	8 791	2.3	24.77	★	**2KJ1111 - ■NN13 - ■■H1**		944
	64	8 166	2.4	23.01		**2KJ1111 - ■NN13 - ■■G1**		944
	75	7 013	2.9	19.76	★	**2KJ1111 - ■NN13 - ■■F1**		944
	88	5 984	3.3	16.86		**2KJ1111 - ■NN13 - ■■E1**		944
	178	2 946	3.6	8.3		**2KJ1111 - ■NN13 - ■■A1**		944
	Z.168-LG250ZM4E							
	38	14 001	1.0	39.45		**2KJ1110 - ■NN13 - ■■T1**		814
	44	12 024	1.2	33.88	★	**2KJ1110 - ■NN13 - ■■S1**		814
	51	10 388	1.3	29.27		**2KJ1110 - ■NN13 - ■■Q1**		814
	57	9 171	1.5	25.84		**2KJ1110 - ■NN13 - ■■P1**		814
	64	8 255	1.7	23.26	★	**2KJ1110 - ■NN13 - ■■N1**		814
	77	6 850	2.0	19.3	★	**2KJ1110 - ■NN13 - ■■M1**		814
	84	6 246	2.2	17.6		**2KJ1110 - ■NN13 - ■■L1**		814
	96	5 480	2.5	15.44	★	**2KJ1110 - ■NN13 - ■■K1**		814
	112	4 710	2.8	13.27		**2KJ1110 - ■NN13 - ■■J1**		814
	143	3 670	3.4	10.34	★	**2KJ1110 - ■NN13 - ■■H1**		814
	160	3 286	2.4	9.26	★	**2KJ1110 - ■NN13 - ■■G1**		814
	180	2 914	4.0	8.21	★	**2KJ1110 - ■NN13 - ■■F1**		814
	206	2 555	2.8	7.2	★	**2KJ1110 - ■NN13 - ■■E1**		814
	239	2 200	3.4	6.2	★	**2KJ1110 - ■NN13 - ■■D1**		814
	264	1 991	3.4	5.61	★	**2KJ1110 - ■NN13 - ■■C1**		814
	300	1 750	4.0	4.93	★	**2KJ1110 - ■NN13 - ■■B1**		814
	332	1 583	4.1	4.46	★	**2KJ1110 - ■NN13 - ■■A1**		814
	Z.148-LG250ZM4E							
	56	9 401	0.85	26.49		**2KJ1108 - ■NN13 - ■■R1**		650
	64	8 177	0.98	23.04		**2KJ1108 - ■NN13 - ■■Q1**		650
	73	7 173	1.1	20.21	★	**2KJ1108 - ■NN13 - ■■P1**		650

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
55	**Z.148-LG250ZM4E**							
	87	6 065	1.3	17.09	★	**2KJ1108 - ■NN13 - ■■N1**		650
	95	5 504	1.5	15.51		**2KJ1108 - ■NN13 - ■■M1**		650
	109	4 798	1.7	13.52	★	**2KJ1108 - ■NN13 - ■■L1**		650
	129	4 074	2.0	11.48		**2KJ1108 - ■NN13 - ■■K1**		650
	168	3 120	2.6	8.79	★	**2KJ1108 - ■NN13 - ■■J1**		650
	171	3 066	1.6	8.64	★	**2KJ1108 - ■NN13 - ■■H1**		650
	189	2 782	1.7	7.84		**2KJ1108 - ■NN13 - ■■G1**		650
	196	2 687	2.1	7.57	★	**2KJ1108 - ■NN13 - ■■F1**		650
	216	2 428	2.0	6.84	★	**2KJ1108 - ■NN13 - ■■E1**		650
	230	2 282	2.4	6.43		**2KJ1108 - ■NN13 - ■■D1**		650
	255	2 058	2.0	5.8		**2KJ1108 - ■NN13 - ■■C1**		650
	301	1 746	2.9	4.92	★	**2KJ1108 - ■NN13 - ■■B1**		650
	333	1 576	2.4	4.44	★	**2KJ1108 - ■NN13 - ■■A1**		650
	Z.128-K4-LGI250ZM4E							
	92	5 721	0.87	16.12		**2KJ1107 - ■NN13 - ■■Q1**		563
	105	4 990	0.98	14.06	★	**2KJ1107 - ■NN13 - ■■P1**		563
	123	4 269	1.1	12.03	★	**2KJ1107 - ■NN13 - ■■N1**		563
	137	3 826	1.2	10.78		**2KJ1107 - ■NN13 - ■■M1**		563
	162	3 240	1.4	9.13	★	**2KJ1107 - ■NN13 - ■■L1**		563
	188	2 797	1.5	7.88		**2KJ1107 - ■NN13 - ■■K1**		563
	203	2 587	0.98	7.29	★	**2KJ1107 - ■NN13 - ■■J1**		563
	237	2 215	1.1	6.24	★	**2KJ1107 - ■NN13 - ■■H1**		563
	250	2 105	1.9	5.93	★	**2KJ1107 - ■NN13 - ■■G1**		563
	265	1 984	1.3	5.59	★	**2KJ1107 - ■NN13 - ■■F1**		563
	306	1 714	1.5	4.83		**2KJ1107 - ■NN13 - ■■E1**		563
	313	1 679	1.4	4.73	★	**2KJ1107 - ■NN13 - ■■D1**		563
	362	1 452	1.6	4.09	★	**2KJ1107 - ■NN13 - ■■C1**		563
	408	1 288	1.8	3.63	★	**2KJ1107 - ■NN13 - ■■B1**		563
	482	1 090	2.0	3.07	★	**2KJ1107 - ■NN13 - ■■A1**		563
	E.148-LG250ZM4E							
	300	1 753	0.80	4.94		**2KJ1007 - ■NN13 - ■■H1**		494
	344	1 526	0.87	4.3		**2KJ1007 - ■NN13 - ■■G1**		494
	393	1 338	1.0	3.77	★	**2KJ1007 - ■NN13 - ■■F1**		494
	464	1 132	1.4	3.19	★	**2KJ1007 - ■NN13 - ■■E1**		494
	510	1 029	1.4	2.9		**2KJ1007 - ■NN13 - ■■D1**		494
	692	759	1.6	2.14		**2KJ1007 - ■NN13 - ■■B1**		494
	902	582	1.6	1.64	★	**2KJ1007 - ■NN13 - ■■A1**		494
	E.128-K4-LGI250ZM4E							
	458	1 146	0.87	3.23	★	**2KJ1006 - ■NN13 - ■■F1**		470
	536	980	1.0	2.76	★	**2KJ1006 - ■NN13 - ■■E1**		470
75	**D.188-K4-LGI280S4E**							
	35	20 716	0.97	42.95	★	**2KJ1211 - ■PG13 - ■■A1**		1 103

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

2

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
75	**Z.188-K4-LGI280S4E**							
	40	17 793	0.93	36.89		**2KJ1111 - ■PG13 - ■■L1**		1 069
	46	15 613	1.2	32.37		**2KJ1111 - ■PG13 - ■■K1**		1 069
	51	14 074	1.4	29.18	★	**2KJ1111 - ■PG13 - ■■J1**		1 069
	60	11 947	1.7	24.77	★	**2KJ1111 - ■PG13 - ■■H1**		1 069
	64	11 098	1.8	23.01		**2KJ1111 - ■PG13 - ■■G1**		1 069
	75	9 531	2.1	19.76	★	**2KJ1111 - ■PG13 - ■■F1**		1 069
	88	8 132	2.5	16.86		**2KJ1111 - ■PG13 - ■■E1**		1 069
	112	6 405	2.9	13.28	★	**2KJ1111 - ■PG13 - ■■D1**		1 069
	139	5 156	3.1	10.69	★	**2KJ1111 - ■PG13 - ■■C1**		1 069
	160	4 481	3.2	9.29		**2KJ1111 - ■PG13 - ■■B1**		1 069
	179	4 003	2.7	8.3		**2KJ1111 - ■PG13 - ■■A1**		1 069
	Z.168-K4-LGI280S4E							
	51	14 118	0.99	29.27		**2KJ1110 - ■PG13 - ■■Q1**		939
	58	12 463	1.1	25.84		**2KJ1110 - ■PG13 - ■■P1**		939
	64	11 219	1.2	23.26	★	**2KJ1110 - ■PG13 - ■■N1**		939
	77	9 309	1.5	19.3	★	**2KJ1110 - ■PG13 - ■■M1**		939
	84	8 489	1.6	17.6		**2KJ1110 - ■PG13 - ■■L1**		939
	96	7 447	1.8	15.44	★	**2KJ1110 - ■PG13 - ■■K1**		939
	112	6 400	2.0	13.27		**2KJ1110 - ■PG13 - ■■J1**		939
	144	4 987	2.5	10.34	★	**2KJ1110 - ■PG13 - ■■H1**		939
	160	4 466	1.8	9.26	★	**2KJ1110 - ■PG13 - ■■G1**		939
	181	3 960	2.9	8.21	★	**2KJ1110 - ■PG13 - ■■F1**		939
	206	3 473	2.0	7.2	★	**2KJ1110 - ■PG13 - ■■E1**		939
	240	2 990	2.5	6.2	★	**2KJ1110 - ■PG13 - ■■D1**		939
	265	2 706	2.5	5.61	★	**2KJ1110 - ■PG13 - ■■C1**		939
	301	2 378	3.0	4.93	★	**2KJ1110 - ■PG13 - ■■B1**		939
	333	2 151	3.0	4.46	★	**2KJ1110 - ■PG13 - ■■A1**		939
	Z.148-K4-LGI280S4E							
	74	9 748	0.82	20.21	★	**2KJ1108 - ■PG13 - ■■P1**		775
	87	8 243	0.97	17.09	★	**2KJ1108 - ■PG13 - ■■N1**		775
	96	7 481	1.1	15.51		**2KJ1108 - ■PG13 - ■■M1**		775
	110	6 521	1.2	13.52	★	**2KJ1108 - ■PG13 - ■■L1**		775
	129	5 537	1.4	11.48		**2KJ1108 - ■PG13 - ■■K1**		775
	169	4 240	1.9	8.79	★	**2KJ1108 - ■PG13 - ■■J1**		775
	172	4 167	1.2	8.64	★	**2KJ1108 - ■PG13 - ■■H1**		775
	189	3 781	1.3	7.84		**2KJ1108 - ■PG13 - ■■G1**		775
	196	3 651	1.5	7.57	★	**2KJ1108 - ■PG13 - ■■F1**		775
	217	3 299	1.5	6.84	★	**2KJ1108 - ■PG13 - ■■E1**		775
	231	3 101	1.7	6.43		**2KJ1108 - ■PG13 - ■■D1**		775
	256	2 797	1.5	5.8		**2KJ1108 - ■PG13 - ■■C1**		775
	302	2 373	2.1	4.92	★	**2KJ1108 - ■PG13 - ■■B1**		775
	334	2 142	1.8	4.44	★	**2KJ1108 - ■PG13 - ■■A1**		775

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
75	**E.148-K4-LGI280S4E**							
	466	1 539	1.0	3.19	★	**2KJ1007 - ■PG13 - ■■E1**		619
	512	1 399	1.0	2.9		**2KJ1007 - ■PG13 - ■■D1**		619
90	**D.188-K4-LGI280ZM4E**							
	35	24 859	0.80	42.95	★	**2KJ1211 - ■PW13 - ■■A1**		1 143
	Z.188-K4-LGI280ZM4E							
	46	18 735	0.98	32.37		**2KJ1111 - ■PW13 - ■■K1**		1 109
	51	16 889	1.2	29.18	★	**2KJ1111 - ■PW13 - ■■J1**		1 109
	60	14 337	1.4	24.77	★	**2KJ1111 - ■PW13 - ■■H1**		1 109
	64	13 318	1.5	23.01		**2KJ1111 - ■PW13 - ■■G1**		1 109
	75	11 437	1.7	19.76	★	**2KJ1111 - ■PW13 - ■■F1**		1 109
	88	9 758	2.0	16.86		**2KJ1111 - ■PW13 - ■■E1**		1 109
	112	7 686	2.4	13.28	★	**2KJ1111 - ■PW13 - ■■D1**		1 109
	139	6 187	2.6	10.69	★	**2KJ1111 - ■PW13 - ■■C1**		1 109
	160	5 377	2.7	9.29		**2KJ1111 - ■PW13 - ■■B1**		1 109
	179	4 804	2.2	8.3		**2KJ1111 - ■PW13 - ■■A1**		1 109
	Z.168-K4-LGI280ZM4E							
	51	16 941	0.83	29.27		**2KJ1110 - ■PW13 - ■■Q1**		979
	58	14 956	0.94	25.84		**2KJ1110 - ■PW13 - ■■P1**		979
	64	13 463	1.0	23.26	★	**2KJ1110 - ■PW13 - ■■N1**		979
	77	11 171	1.3	19.3	★	**2KJ1110 - ■PW13 - ■■M1**		979
	84	10 187	1.4	17.6		**2KJ1110 - ■PW13 - ■■L1**		979
	96	8 936	1.5	15.44	★	**2KJ1110 - ■PW13 - ■■K1**		979
	112	7 681	1.7	13.27		**2KJ1110 - ■PW13 - ■■J1**		979
	144	5 985	2.1	10.34	★	**2KJ1110 - ■PW13 - ■■H1**		979
	160	5 360	1.5	9.26	★	**2KJ1110 - ■PW13 - ■■G1**		979
	181	4 752	2.4	8.21	★	**2KJ1110 - ■PW13 - ■■F1**		979
	206	4 167	1.7	7.2	★	**2KJ1110 - ■PW13 - ■■E1**		979
	240	3 588	2.1	6.2	★	**2KJ1110 - ■PW13 - ■■D1**		979
	265	3 247	2.1	5.61	★	**2KJ1110 - ■PW13 - ■■C1**		979
	301	2 853	2.5	4.93	★	**2KJ1110 - ■PW13 - ■■B1**		979
	333	2 581	2.5	4.46	★	**2KJ1110 - ■PW13 - ■■A1**		979
	Z.148-K4-LGI280ZM4E							
	87	9 891	0.81	17.09	★	**2KJ1108 - ■PW13 - ■■N1**		815
	96	8 977	0.89	15.51		**2KJ1108 - ■PW13 - ■■M1**		815
	110	7 825	1.0	13.52	★	**2KJ1108 - ■PW13 - ■■L1**		815
	129	6 644	1.2	11.48		**2KJ1108 - ■PW13 - ■■K1**		815
	169	5 088	1.6	8.79	★	**2KJ1108 - ■PW13 - ■■J1**		815
	172	5 001	0.96	8.64	★	**2KJ1108 - ■PW13 - ■■H1**		815
	189	4 538	1.1	7.84		**2KJ1108 - ■PW13 - ■■G1**		815
	196	4 381	1.3	7.57	★	**2KJ1108 - ■PW13 - ■■F1**		815
	217	3 959	1.2	6.84	★	**2KJ1108 - ■PW13 - ■■E1**		815
	231	3 722	1.5	6.43		**2KJ1108 - ■PW13 - ■■D1**		815
	256	3 357	1.3	5.8		**2KJ1108 - ■PW13 - ■■C1**		815

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

2

Selection and ordering data (continued)

Power rating P_{Motor} kW	Output speed n_2 (50 Hz) rpm	Output torque T_2 Nm	Service factor f_B	Gearbox ratio i_{tot}		Order No.	Order code (No. of poles)	Weight *) kg
90	**Z.148-K4-LGI280ZM4E**							
	302	2 848	1.8	4.92	★	**2KJ1108 - ■PW13 - ■■B1**		815
	334	2 570	1.5	4.44	★	**2KJ1108 - ■PW13 - ■■A1**		815
	E.148-K4-LGI280ZM4E							
	466	1 846	0.84	3.19	★	**2KJ1007 - ■PW13 - ■■E1**		659
	512	1 678	0.83	2.9		**2KJ1007 - ■PW13 - ■■D1**		659
110	**Z.188-K2-LGI315S4E**							
	88	11 887	1.7	16.86		**2KJ1111 - ■QQ13 - ■■E1**		1 289
	112	9 363	2.0	13.28	★	**2KJ1111 - ■QQ13 - ■■D1**		1 289
	139	7 537	2.1	10.69	★	**2KJ1111 - ■QQ13 - ■■C1**		1 289
	160	6 550	2.2	9.29		**2KJ1111 - ■QQ13 - ■■B1**		1 289
	180	5 852	1.8	8.3		**2KJ1111 - ■QQ13 - ■■A1**		1 289
132	**Z.188-K2-LGI315ZM4E**							
	88	14 312	1.4	16.86		**2KJ1111 - ■QS13 - ■■E1**		1 344
	112	11 273	1.7	13.28	★	**2KJ1111 - ■QS13 - ■■D1**		1 344
	139	9 075	1.8	10.69	★	**2KJ1111 - ■QS13 - ■■C1**		1 344
	160	7 886	1.8	9.29		**2KJ1111 - ■QS13 - ■■B1**		1 344
	179	7 046	1.5	8.3		**2KJ1111 - ■QS13 - ■■A1**		1 344
160	**Z.188-K2-LGI315L4E**							
	88	17 348	1.2	16.86		**2KJ1111 - ■QU13 - ■■E1**		1 469
	112	13 665	1.4	13.28	★	**2KJ1111 - ■QU13 - ■■D1**		1 469
	139	11 000	1.5	10.69	★	**2KJ1111 - ■QU13 - ■■C1**		1 469
	160	9 559	1.5	9.29		**2KJ1111 - ■QU13 - ■■B1**		1 469
	179	8 540	1.3	8.3		**2KJ1111 - ■QU13 - ■■A1**		1 469
200	**Z.188-K2-LGI315ZLB4E**							
	88	21 612	0.93	16.86		**2KJ1111 - ■QV13 - ■■E1**		1 584
	112	17 023	1.1	13.28	★	**2KJ1111 - ■QV13 - ■■D1**		1 584
	139	13 703	1.2	10.69	★	**2KJ1111 - ■QV13 - ■■C1**		1 584
	160	11 909	1.2	9.29		**2KJ1111 - ■QV13 - ■■B1**		1 584
	180	10 640	1.0	8.3		**2KJ1111 - ■QV13 - ■■A1**		1 584

★ Preferred transmission ratio

Shaft designs, see page 2/117 — **1, 2 or 9**

Frequency and voltage, see page 8/20 — **1 to 9**

Gearbox housing mounting position, see page 2/119 — **A, F, H or R**

*) For mounting type B3

Selection and ordering data

Gearbox size	Ratio code	Transmis-sion ratio	Output speed	Twisting angle [2]	Nominal torque	Permissible input torque T_1 [Nm] 2.5x the value is permissible for a brief period (e.g. motor starting torque)												
Max. gearbox torque	Order No.					3	3	5	10	20	26	61	98	198	198	291	356	580	1290
	15th and 16th position	i_{tot}	n_2 (50 Hz)	φ	T_{2N} (f_B=1)	Motor size												
Nm			rpm	arcmin	Nm	63	71	80	90	100	112	132	160	180	200	225	250	280	315
1-stage helical gearbox with 4-pole motors																		
E.38	**S1**	9.33 ★	155	15	32	•	•											
32 … 82	**R1**	8.30	175	15	32	•	•	•										
	Q1	7.20 ★	201	16	38	•	•	•	•									
	P1	6.73	215	16	48	•	•	•	•									
	N1	5.92 ★	245	17	53	•	•	•	•									
	M1	5.18	280	17	70	•	•	•	•	•								
	L1	4.58 ★	317	17	78	•	•	•	•	•	• [1]							
	K1	4.15	349	18	62	•	•	•	•	•	• [1]							
	J1	3.67 ★	395	18	70	•	•	•	•	•	• [1]							
	H1	3.31	438	18	65	•	•	•	•	•	• [1]							
	G1	3.00 ★	483	19	80	•	•	•	•	•	• [1]							
	F1	2.73	531	20	80	•	•	•	•	•	• [1]							
	E1	2.50 ★	580	22	73	•	•	•	•	•	• [1]							
	D1	2.24	647	22	72	•	•	•	•	•	• [1]							
	C1	2.05 ★	707	22	80	•	•	•	•	•	• [1]							
	B1	1.85	784	22	82	•	•	•	•	•	• [1]							
	A1	1.59 ★	912	24	72	•	•	•	•	•	• [1]							
E.48	**U1**	11.30	128	12	55	•	•	•										
55 … 170	**T1**	10.00 ★	145	12	80	•	•	•	•									
	S1	9.09	160	13	64	•	•	•	•									
	R1	8.17 ★	177	13	85	•	•	•	•									
	Q1	7.00	207	13	97	•	•	•	•	•								
	P1	6.33 ★	229	13	115	•	•	•	•	•	•							
	N1	5.85	248	13	120	•	•	•	•	•	•							
	M1	5.08 ★	285	14	120	•	•	•	•	•	•	• [1]						
	L1	4.62	314	14	130	•	•	•	•	•	•	• [1]						
	K1	4.21 ★	344	14	150	•	•	•	•	•	•	• [1]						
	J1	3.87	375	15	160	•	•	•	•	•	•	• [1]						
	H1	3.56 ★	407	15	140	•	•	•	•	•	•	• [1]						
	G1	3.24	448	15	150	•	•	•	•	•	•	• [1]						
	F1	2.95 ★	492	15	170	•	•	•	•	•	•	• [1]						
	E1	2.70	537	15	160	•	•	•	•	•	•	• [1]						
	D1	2.41 ★	602	15	150	•	•	•	•	•	•	• [1]						
	C1	2.15	674	18	135			•	•	•	•	• [1]						
	B1	1.83	792	19	115			•	•	•	•	• [1]						
	A1	1.52 ★	954	22	100			•	•	•	•	• [1]						

★ Preferred transmission ratio

[1] Only possible with integrated adapter.

[2] Twisting angle applies to reduced-backlash gearboxes.

In the case of gearboxes of size 18 or 28, only possible with integrated motor or input unit KQ and KQS.

Calculation of maximum output torque T_{2max} for gearboxes with input units:

$T_{2max} = T_1 \times i_{tot}$, if $T_{2max} \leq T_{2N}$

If $T_{2max} \geq T_{2N}$ the max. output torque T_{2N} of the gearbox is the decisive factor.

Transmission ratios and maximum torques

Selection and ordering data (continued)

Gearbox size	Ratio code	Transmission ratio	Output speed	Twisting angle [2]	Nominal torque	Permissible input torque T_1 [Nm] 2.5x the value is permissible for a brief period (e.g. motor starting torque)													
Max. gearbox torque	Order No.					3	3	5	10	20	26	61	98	198	198	291	356	580	1290
Nm	15th and 16th position	i_{tot}	n_2 (50 Hz) rpm	φ arcmin	T_{2N} (f_B=1) Nm	Motor size 63	71	80	90	100	112	132	160	180	200	225	250	280	315
E68	**W1**	12.40 ★	117	10	81	•	•	•	•										
81 … 250	**V1**	11.18	130	10	92	•	•	•	•										
	U1	10.08 ★	144	11	95	•	•	•	•										
	T1	8.82	164	11	150	•	•	•	•	•									
	S1	7.92 ★	183	11	170	•	•	•	•	•	•								
	R1	7.23	201	11	150	•	•	•	•	•	•								
	P1	6.42 ★	226	11	170	•	•	•	•	•	•	•							
	N1	5.92	245	11	190	•	•	•	•	•	•	•							
	M1	5.36 ★	271	11	220	•	•	•	•	•	•	•							
	L1	4.93	294	12	225	•	•	•	•	•	•	•							
	K1	4.56 ★	318	12	220	•	•	•	•	•	•	•	• [1]						
	J1	4.24	342	12	230	•	•	•	•	•	•	•	• [1]						
	H1	3.74 ★	388	12	230	•	•	•	•	•	•	•	• [1]						
	G1	3.45	420	13	240	•	•	•	•	•	•	•	• [1]						
	F1	3.09 ★	469	13	250	•	•	•	•	•	•	•	• [1]						
	E1	2.85	509	15	250			•	•	•	•	•	• [1]						
	D1	2.39	607	15	230			•	•	•	•	•	• [1]						
	C1	2.04 ★	711	17	210			•	•	•	•	•	• [1]						
	B1	1.70	853	17	175					•	•	•	• [1]						
	A1	1.41 ★	1 028	19	150					•	•	•	• [1]						
E88	**S1**	10.33 ★	140	8	230				•	•	•								
210 … 450	**R1**	9.46	153	8	210				•	•	•								
	Q1	8.42 ★	172	8	245				•	•	•	•							
	P1	7.69	189	8	245				•	•	•	•							
	N1	7.07 ★	205	9	290				•	•	•	•							
	M1	6.53	222	9	300				•	•	•	•							
	L1	6.06 ★	239	9	280				•	•	•	•	•						
	K1	5.65	257	9	320				•	•	•	•	•						
	J1	5.11 ★	284	9	370				•	•	•	•	•	• [1]					
	H1	4.70	309	9	385				•	•	•	•	•	• [1]					
	G1	4.23 ★	343	9	400				•	•	•	•	•	• [1]					
	F1	3.90	372	11	385				•	•	•	•	•	• [1]					
	E1	3.30	439	11	450				•	•	•	•	•	• [1]					
	D1	2.88 ★	503	12	435				•	•	•	•	•	• [1]					
	C1	2.45	592	13	420					•	•	•	•	• [1]					
	B1	2.09 ★	694	13	420					•	•	•	•	• [1]					
	A1	1.71 ★	848	14	355					•	•	•	•	• [1]					

★ Preferred transmission ratio

[1] Only possible with integrated adapter.

[2] Twisting angle applies to reduced-backlash gearboxes.

In the case of gearboxes of size 18 or 28, only possible with integrated motor or input unit KQ and KQS.

Calculation of maximum output torque T_{2max} for gearboxes with input units:

$T_{2max} = T_1 \times i_{tot}$, if $T_{2max} \leq T_{2N}$

If $T_{2max} \geq T_{2N}$ the max. output torque T_{2N} of the gearbox is the decisive factor.

Selection and ordering data (continued)

Gearbox size	Ratio code	Transmission ratio	Output speed	Twisting angle [2]	Nominal torque	Permissible input torque T_1 [Nm] 2.5x the value is permissible for a brief period (e.g. motor starting torque)													
Max. gearbox torque	Order No.					3	3	5	10	20	26	61	98	198	198	291	356	580	1290
	15th and 16th position	i_{tot}	n_2 (50 Hz)	φ	T_{2N} (f_B=1)	Motor size													
Nm			rpm	arcmin	Nm	63	71	80	90	100	112	132	160	180	200	225	250	280	315
E108	**K1**	5.46 ★	266	8	660				•	•	•	•	•	•	•	• [1]			
550 … 745	**J1**	5.00	290	9	680				•	•	•	•	•	•	•	• [1]			
	H1	4.26	340	9	720				•	•	•	•	•	•	•	• [1]			
	G1	3.76 ★	386	9	600				•	•	•	•	•	•	•	• [1]			
	F1	3.20	453	10	745					•	•	•	•	•	•	• [1]			
	E1	2.77 ★	523	10	670					•	•	•	•	•	•	• [1]			
	C1	2.33 ★	622	10	680					•	•	•	•	•	•	• [1]			
	B1	2.11	687	11	620							•	•	•	•	• [1]			
	A1	1.81 ★	801	12	550							•	•	•	•	• [1]			
E128	**T1**	10.14 ★	143	6	544					•	•	•							
544 … 1000	**S1**	9.40	154	7	584					•	•	•							
	R1	8.94 ★	162	7	640					•	•	•	•						
	Q1	8.35	174	7	712					•	•	•	•						
	P1	7.37 ★	197	7	816					•	•	•	•	•	•				
	N1	6.95	209	7	880					•	•	•	•	•	•				
	M1	6.23 ★	233	7	928					•	•	•	•	•	•	•			
	L1	5.75	252	8	960					•	•	•	•	•	•	•			
	K1	4.91	295	8	960					•	•	•	•	•	•	•			
	J1	4.44 ★	327	8	1 000					•	•	•	•	•	•	•			
	H1	4.28	339	9	1 000						•	•	•	•	•	•	• [1]		
	G1	3.70	392	9	1 000					•	•	•	•	•	•	•	• [1]		
	F1	3.23 ★	449	9	1 000					•	•	•	•	•	•	•	• [1]		
	E1	2.76 ★	525	9	1 000					•	•	•	•	•	•	•	• [1]		
	D1	2.47	587	9	950							•	•	•	•	•	• [1]		
	C1	2.10 ★	690	10	860							•	•	•	•	•	• [1]		
	B1	1.81	801	10	800								•	•	•	•	• [1]		
	A1	1.36 ★	1 066	12	680								•	•	•	•	• [1]		
E148	**U1**	13.67 ★	106	5	600							•							
600 … 1550	**T1**	12.54	116	5	600							•							
	S1	11.57 ★	125	6	680							•							
	R1	10.73	135	6	760							•							
	Q1	10.13 ★	143	6	800							•	•						
	P1	9.47	153	6	920							•	•						
	N1	8.42 ★	172	6	1 000							•	•	•	•				
	M1	7.95	182	6	1 060							•	•	•	•				
	L1	7.14 ★	203	6	1 120							•	•	•	•	•			
	K1	6.55	221	7	1 150							•	•	•	•	•			
	J1	5.65	257	7	1 360							•	•	•	•	•	•		
	H1	4.94	294	7	1 400							•	•	•	•	•	•		
	G1	4.30	337	8	1 330							•	•	•	•	•	•	•	
	F1	3.77 ★	385	8	1 350							•	•	•	•	•	•	•	
	E1	3.19 ★	455	8	1 550							•	•	•	•	•	•	•	
	D1	2.90	500	9	1 400							•	•	•	•	•	•	•	
	C1	2.52 ★	575	9	1 220							•	•	•	•	•	•	•	
	B1	2.14	678	9	1 200								•	•	•	•	•	•	
	A1	1.64 ★	884	10	960								•	•	•	•	•	•	

★ Preferred transmission ratio

[1] Only possible with integrated adapter.

[2] Twisting angle applies to reduced-backlash gearboxes.

In the case of gearboxes of size 18 or 28, only possible with integrated motor or input unit KQ and KQS.

Calculation of maximum output torque T_{2max} for gearboxes with input units:

$T_{2max} = T_1 \times i_{tot}$, if $T_{2max} \leq T_{2N}$

If $T_{2max} \geq T_{2N}$ the max. output torque T_{2N} of the gearbox is the decisive factor.

Transmission ratios and maximum torques

Selection and ordering data (continued)

Gearbox size	Ratio code	Transmission ratio	Output speed	Twisting angle [2]	Nominal torque	Permissible input torque T_1 [Nm] 2.5x the value is permissible for a brief period (e.g. motor starting torque)													
Max. gearbox torque	Order No.					3	3	5	10	20	26	61	98	198	198	291	356	580	1290
	15th and 16th position	i_{tot}	n_2 (50 Hz)	φ	T_{2N} (f_B=1)	Motor size													
Nm			rpm	arcmin	Nm	63	71	80	90	100	112	132	160	180	200	225	250	280	315
2-stage and 3-stage helical gearbox with 4-pole motors, 50 Hz (at service factor f_B =1 and ambient temperature of 20 °C)																			
D18	**P1**	200.36	7.2	31	90		•												
90	**N1**	172.85 ★	8.4	31	90		•												
	M1	148.50	9.8	31	90		•												
	L1	136.71 ★	10.6	31	90		•												
	K1	124.29	11.7	31	90		•												
	J1	110.01 ★	13.2	31	90		•												
	H1	92.14	15.7	31	90		•												
	G1	78.56 ★	18.5	31	90		•												
	F1	66.78 ★	22.0	31	90		•												
	E1	58.03	25.0	31	90		•												
	D1	50.51 ★	29.0	31	90		•												
	C1	45.56	32.0	31	90		•												
	B1	40.21	36.0	31	90		•												
	A1	32.26 ★	45.0	31	90		•												
Z18	**U1**	43.15	34	28	90		•												
46 ... 90	**T1**	37.23 ★	39	28	90		•												
	S1	31.98	45	29	90		•												
	R1	29.45 ★	49	29	90		•												
	Q1	26.77	54	29	90		•												
	P1	23.69 ★	61	29	90		•												
	N1	19.85	73	29	90		•												
	M1	16.92 ★	86	29	90		•												
	L1	14.38 ★	101	29	90		•												
	K1	12.50	116	30	90		•												
	J1	10.88 ★	133	30	87		•												
	H1	9.81	148	30	83		•												
	G1	8.66	167	30	80		•												
	F1	7.42 ★	195	38	55		•												
	E1	6.45	225	39	53		•												
	D1	5.61 ★	258	40	51		•												
	C1	5.06	286	40	49		•												
	B1	4.47	325	40	49		•												
	A1	3.58 ★	405	41	46		•												

★ Preferred transmission ratio

[1] Only possible with integrated adapter.

[2] Twisting angle applies to reduced-backlash gearboxes.

In the case of gearboxes of size 18 or 28, only possible with integrated motor or input unit KQ and KQS.

Calculation of maximum output torque T_{2max} for gearboxes with input units:

$T_{2max} = T_1 \times i_{tot}$, if $T_{2max} \leq T_{2N}$

If $T_{2max} \geq T_{2N}$ the max. output torque T_{2N} of the gearbox is the decisive factor.

Selection and ordering data (continued)

Gearbox size	Ratio code	Transmission ratio	Output speed	Twisting angle [2]	Nominal torque	Permissible input torque T_1 [Nm] 2.5x the value is permissible for a brief period (e.g. motor starting torque)													
Max. gearbox torque	Order No.					3	3	5	10	20	26	61	98	198	198	291	356	580	1290
Nm	15th and 16th position	i_{tot}	n_2 (50 Hz) rpm	φ arcmin	T_{2N} (f_B=1) Nm	Motor size 63	71	80	90	100	112	132	160	180	200	225	250	280	315
D28	**N1**	241.05	6.0	26	140		•												
140	**M1**	207.96 ★	7.0	26	140		•	•											
	L1	178.66	8.1	26	140		•	•											
	K1	164.48 ★	8.8	26	140		•	•	•										
	J1	149.53	9.7	26	140		•	•	•										
	H1	132.35 ★	11.0	26	140		•	•	•										
	G1	110.86	13.1	26	140		•	•	•										
	F1	94.52 ★	15.3	26	140		•	•	•										
	E1	80.34 ★	18.0	26	140		•	•	•										
	D1	69.82	21.0	26	140		•	•	•										
	C1	60.77 ★	24.0	26	140		•	•	•										
	B1	54.82	26.0	26	140		•	•	•										
	A1	48.38	30.0	26	140		•	•	•										
Z28	**C2**	51.35	28	24	140		•												
77 … 140	**B2**	43.30 ★	33	24	140		•	•											
	A2	38.45	38	24	140		•	•											
	X1	33.71 ★	43	24	140		•	•	•										
	W1	30.16	48	24	140		•	•	•										
	V1	26.77 ★	54	24	140		•	•	•										
	U1	23.46	62	24	140		•	•	•										
	T1	20.63 ★	70	24	140		•	•	•										
	S1	18.63	78	25	140		•	•	•	•									
	R1	16.24 ★	89	25	140		•	•	•										
	Q1	14.58	99	25	140		•	•	•										
	P1	13.17 ★	110	25	140		•	•	•	•									
	N1	11.94	121	25	140		•	•	•	•									
	M1	10.87 ★	133	25	140		•	•	•	•									
	L1	9.61	151	26	140		•	•	•	•									
	K1	8.87 ★	163	26	140		•	•	•	•									
	J1	7.64	190	26	136		•	•	•	•									
	H1	6.94 ★	209	26	132		•	•	•	•									
	G1	6.31 ★	230	35	95		•	•	•	•									
	F1	5.72	253	35	93		•	•	•	•									
	E1	5.21 ★	278	36	92		•	•	•	•									
	D1	4.60	315	36	88		•	•	•	•									
	C1	4.25 ★	341	36	90		•	•	•	•									
	B1	3.66	396	37	80		•	•	•	•									
	A1	3.33 ★	436	37	77		•	•	•	•									

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Calculation of maximum output torque T_{2max} for gearboxes with input units:

$T_{2max} = T_1 \times i_{tot}$, if $T_{2max} \leq T_{2N}$

If $T_{2max} \geq T_{2N}$ the max. output torque T_{2N} of the gearbox is the decisive factor.

Transmission ratios and maximum torques

Selection and ordering data (continued)

Gearbox size	Ratio code	Transmission ratio		Output speed	Twisting angle [2]	Nominal torque	Permissible input torque T_1 [Nm] 2.5x the value is permissible for a brief period (e.g. motor starting torque)													
Max. gearbox torque	Order No.						3	3	5	10	20	26	61	98	198	198	291	356	580	1290
	15th and 16th position	i_{tot}		n_2 (50 Hz)	φ	T_{2N} (f_B=1)	Motor size													
Nm				rpm	arcmin	Nm	63	71	80	90	100	112	132	160	180	200	225	250	280	315
Z.38-D28	**M1**	5 905		0.24	–	220		•												
220	**L1**	5 094	★	0.27	–	220		•	•											
	K1	4 376		0.32	–	220		•	•											
	J1	4 029	★	0.35	–	220		•	•	•										
	H1	3 663		0.38	–	220		•	•	•										
	G1	3 242	★	0.43	–	220		•	•	•										
	F1	2 715		0.52	–	220		•	•	•										
	E1	2 315	★	0.60	–	220		•	•	•										
	D1	1 968	★	0.71	–	220		•	•	•										
	C1	1 710		0.82	–	220		•	•	•										
	B1	1 489	★	0.94	–	220		•	•	•										
	A1	1 343		1.00	–	220		•	•	•										
Z38-Z28	**R1**	1 258		1.1	–	220		•												
220	**Q1**	1 061	★	1.3	–	220		•	•											
	P1	942		1.5	–	220		•	•											
	N1	890		1.6	–	220		•												
	M1	751	★	1.9	–	220		•	•											
	L1	666		2.1	–	220		•	•											
	K1	584	★	2.4	–	220		•	•	•										
	J1	523		2.7	–	220		•	•	•										
	H1	464	★	3.0	–	220		•	•	•										
	G1	407		3.4	–	220		•	•	•										
	F1	358	★	3.9	–	220		•	•	•										
	E1	323		4.3	–	220		•	•	•	•									
	D1	281	★	5.0	–	220		•	•	•										
	C1	253		5.5	–	220		•	•	•										
	B1	228	★	6.1	–	220		•	•	•	•									
	A1	207		6.8	–	220		•	•	•	•									

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Calculation of maximum output torque T_{2max} for gearboxes with input units:

$T_{2max} = T_1 \times i_{tot}$, if $T_{2max} \leq T_{2N}$

If $T_{2max} \geq T_{2N}$ the max. output torque T_{2N} of the gearbox is the decisive factor.

Selection and ordering data (continued)

Gearbox size	Ratio code	Transmission ratio	Output speed	Twisting angle [2]	Nominal torque	Permissible input torque T_1 [Nm] 2.5x the value is permissible for a brief period (e.g. motor starting torque)													
Max. gearbox torque	Order No.					3	3	5	10	20	26	61	98	198	198	291	356	580	1290
	15th and 16th position	i_{tot}	n_2 (50 Hz)	φ	T_{2N} (f_B=1)	Motor size													
Nm			rpm	arcmin	Nm	63	71	80	90	100	112	132	160	180	200	225	250	280	315
D38	**S1**	191.75 ★	7.6	19	220	•	•	•											
220	**R1**	170.24	8.5	19	220	•	•	•											
	Q1	149.26 ★	9.7	19	220	•	•	•	•										
	P1	133.57	10.9	19	220	•	•	•	•										
	N1	118.55 ★	12.2	19	220	•	•	•	•										
	M1	103.89	14.0	19	220	•	•	•	•										
	L1	91.34 ★	15.9	19	220	•	•	•	•										
	K1	82.52	17.6	19	220	•	•	•	•										
	J1	71.91 ★	20.0	20	220	•	•	•	•										
	H1	64.58	22.0	20	220	•	•	•	•										
	G1	58.30 ★	25.0	20	220	•	•	•	•										
	F1	52.86	27.0	20	220	•	•	•	•										
	E1	48.10 ★	30.0	20	220	•	•	•	•										
	D1	42.53	34.0	20	220	•	•	•	•										
	C1	39.28 ★	37.0	20	220	•	•	•	•										
	B1	33.82	43.0	20	220	•	•	•	•										
	A1	30.74 ★	47.0	20	220	•	•	•	•										
Z38	**A2**	44.12 ★	33	18	220	•	•	•											
160 … 220	**X1**	39.24	37	18	208	•	•	•											
	W1	34.04 ★	43	19	220	•	•	•	•										
	V1	31.80	46	19	220	•	•	•	•										
	U1	27.97 ★	52	19	220	•	•	•	•										
	T1	24.50	59	19	220	•	•	•	•	•									
	S1	21.67 ★	67	19	220	•	•	•	•	•	• [1]								
	R1	19.64	74	19	220	•	•	•	•	•	• [1]								
	Q1	17.33 ★	84	19	220	•	•	•	•	•	• [1]								
	P1	15.64	93	19	220	•	•	•	•	•	• [1]								
	N1	14.18 ★	102	19	220	•	•	•	•	•	• [1]								
	M1	12.92	112	19	220	•	•	•	•	•	• [1]								
	L1	11.82 ★	123	20	220	•	•	•	•	•	• [1]								
	K1	10.57	137	20	210	•	•	•	•	•	• [1]								
	J1	9.70 ★	149	20	200	•	•	•	•	•	• [1]								
	H1	8.75	166	20	195	•	•	•	•	•	• [1]								
	G1	7.52 ★	193	20	190	•	•	•	•	•	• [1]								
	F1	7.50 ★	193	24	185	•	•	•	•	•	• [1]								
	D1	6.71	216	24	180	•	•	•	•	•	• [1]								
	C1	6.16 ★	235	24	170	•	•	•	•	•	• [1]								
	B1	5.55	261	24	165	•	•	•	•	•	• [1]								
	A1	4.77 ★	304	24	160	•	•	•	•	•	• [1]								

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Calculation of maximum output torque T_{2max} for gearboxes with input units:

$T_{2max} = T_1 \times i_{tot}$, if $T_{2max} \leq T_{2N}$

If $T_{2max} \geq T_{2N}$ the max. output torque T_{2N} of the gearbox is the decisive factor.

Transmission ratios and maximum torques

Selection and ordering data (continued)

Gearbox size	Ratio code	Transmission ratio		Output speed	Twisting angle [2]	Nominal torque	Permissible input torque T_1 [Nm] 2.5x the value is permissible for a brief period (e.g. motor starting torque)													
Max. gearbox torque	Order No.						3	3	5	10	20	26	61	98	198	198	291	356	580	1290
Nm	15th and 16th position	i_{tot}		n_2 (50 Hz) rpm	φ arcmin	T_{2N} (f_B=1) Nm	Motor size 63	71	80	90	100	112	132	160	180	200	225	250	280	315
D48-D28	**N1**	27 940		0.05	–	450		•												
450	**M1**	24 104	★	0.06	–	450		•	•											
	L1	20 708		0.07	–	450		•	•											
	K1	19 065	★	0.07	–	450		•	•	•										
	J1	17 332		0.08	–	450		•	•	•										
	H1	15 341	★	0.09	–	450		•	•	•										
	G1	12 849		0.11	–	450		•	•	•										
	F1	10 956	★	0.13	–	450		•	•	•										
	E1	9 312	★	0.15	–	450		•	•	•										
	D1	8 093		0.17	–	450		•	•	•										
	C1	7 044	★	0.20	–	450		•	•	•										
	B1	6 354		0.22	–	450		•	•	•										
	A1	5 608		0.25	–	450		•	•	•										
D48-Z28	**H2**	5 019	★	0.28	–	450		•	•											
450	**G2**	4 456		0.31	–	450		•	•											
	F2	3 907	★	0.36	–	450		•	•	•										
	E2	3 496		0.40	–	450		•	•	•										
	D2	3 103	★	0.45	–	450		•	•	•										
	C2	2 720		0.51	–	450		•	•	•										
	B2	2 391		★0.59	–	450		•	•	•										
	A2	2 160		0.65	–	450		•	•	•	•									
	X1	1 882	★	0.74	–	450		•	•	•										
	W1	1 690		0.83	–	450		•	•	•										
	V1	1 526	★	0.92	–	450		•	•	•	•									
	U1	1 384		1.00	–	450		•	•	•	•									
	T1	1 259	★	1.10	–	450		•	•	•	•									
	S1	1 113		1.30	–	450		•	•	•	•									
	R1	1 028	★	1.40	–	450		•	•	•	•									
	Q1	885		1.60	–	450		•	•	•	•									
	P1	805	★	1.70	–	450		•	•	•	•									
	N1	731	★	1.90	–	450		•	•	•	•									
	M1	663		2.10	–	450		•	•	•	•									
	L1	603	★	2.30	–	450		•	•	•	•									
	K1	534		2.60	–	450		•	•	•	•									
	J1	493	★	2.80	–	450		•	•	•	•									
	H1	424		3.30	–	450		•	•	•	•									
	G1	423	★	3.30	–	450		•	•	•	•									
	F1	384		3.70	–	450		•	•	•	•									
	E1	349	★	4.00	–	450		•	•	•	•									
	D1	309		4.50	–	450		•	•	•	•									
	C1	285	★	4.90	–	450		•	•	•	•									
	B1	246		5.70	–	450		•	•	•	•									
	A1	223	★	6.30	–	450		•	•	•	•									

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If $T_{2max} \geq T_{2N}$ the max. output torque T_{2N} of the gearbox is the decisive factor.

Selection and ordering data (continued)

Gearbox size	Ratio code	Transmission ratio	Output speed	Twisting angle [2]	Nominal torque	Permissible input torque T_1 [Nm] 2.5x the value is permissible for a brief period (e.g. motor starting torque)													
Max. gearbox torque	Order No.					3	3	5	10	20	26	61	98	198	198	291	356	580	1290
	15th and 16th position	i_{tot}	n_2 (50 Hz)	φ	T_{2N} (f_B=1)	Motor size													
Nm			rpm	arcmin	Nm	63	71	80	90	100	112	132	160	180	200	225	250	280	315
D48	**S1**	208.77 ★	6.9	17	450	•	•	•											
450	**R1**	185.66	7.8	17	450	•	•	•											
	Q1	161.05 ★	9.0	17	450	•	•	•	•										
	P1	150.48	9.6	17	450	•	•	•	•										
	N1	132.34 ★	11.0	17	450	•	•	•	•										
	M1	115.91	12.5	17	450	•	•	•	•	•									
	L1	102.52 ★	14.1	17	450	•	•	•	•	•									
	K1	92.91	15.6	17	450	•	•	•	•	•									
	J1	82.02 ★	17.7	17	450	•	•	•	•	•									
	H1	73.99	19.6	18	450	•	•	•	•	•									
	G1	67.10 ★	22.0	18	450	•	•	•	•	•									
	F1	61.14	24.0	18	450	•	•	•	•	•									
	E1	55.92 ★	26.0	18	450	•	•	•	•	•									
	D1	50.00	29.0	18	450	•	•	•	•	•									
	C1	45.91 ★	32.0	18	450	•	•	•	•	•									
	B1	41.38	35.0	18	450	•	•	•	•	•									
	A1	35.59	41.0	18	450	•	•	•	•	•									
Z48	**A2**	51.28	28	16	292	•	•	•											
260 … 450	**X1**	45.38 ★	32	16	450	•	•	•	•										
	W1	41.26	35	16	450	•	•	•	•										
	V1	37.06 ★	39	17	450	•	•	•	•										
	U1	31.77	46	17	450	•	•	•	•	•									
	T1	28.74 ★	50	17	450	•	•	•	•	•	•								
	S1	26.53	55	17	450	•	•	•	•	•	•								
	R1	23.07 ★	63	17	450	•	•	•	•	•	•	• [1]							
	Q1	20.95	69	17	450	•	•	•	•	•	•	• [1]							
	P1	19.13 ★	76	17	450	•	•	•	•	•	•	• [1]							
	N1	17.55	83	17	450	•	•	•	•	•	•	• [1]							
	M1	16.17 ★	90	17	430	•	•	•	•	•	•	• [1]							
	L1	14.68	99	17	420	•	•	•	•	•	•	• [1]							
	K1	13.38 ★	108	17	410	•	•	•	•	•	•	• [1]							
	J1	12.25	118	17	400	•	•	•	•	•	•	• [1]							
	H1	10.93 ★	133	17	390	•	•	•	•	•	•	• [1]							
	G1	9.76	149	18	380			•	•	•	•	• [1]							
	F1	8.29	175	18	360			•	•	•	•	• [1]							
	E1	6.90 ★	210	19	340			•	•	•	•	• [1]							
	D1	6.79 ★	214	19	270	•	•	•	•	•	•	• [1]							
	C1	6.06	239	20	270			•	•	•	•	• [1]							
	B1	5.15	282	20	270			•	•	•	•	• [1]							
	A1	4.28 ★	339	21	260			•	•	•	•	• [1]							

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If $T_{2max} \geq T_{2N}$ the max. output torque T_{2N} of the gearbox is the decisive factor.

Transmission ratios and maximum torques

Selection and ordering data (continued)

Gearbox size	Ratio code	Transmission ratio		Output speed	Twisting angle [2]	Nominal torque	Permissible input torque T_1 [Nm] 2.5x the value is permissible for a brief period (e.g. motor starting torque)													
Max. gearbox torque	Order No.						3	3	5	10	20	26	61	98	198	198	291	356	580	1290
Nm	15th and 16th position	i_{tot}		n_2 (50 Hz) rpm	φ arcmin	T_{2N} (f_B=1) Nm	Motor size 63	71	80	90	100	112	132	160	180	200	225	250	280	315
D68-D28	**N1**	41 961		0.03	–	800		•												
800	**M1**	36 200	★	0.04	–	800		•	•											
	L1	31 101		0.05	–	800		•	•											
	K1	28 633	★	0.05	–	800		•	•	•										
	J1	26 030		0.05	–	800		•	•	•										
	H1	23 039	★	0.06	–	800		•	•	•										
	G1	19 297		0.07	–	800		•	•	•										
	F1	16 454	★	0.09	–	800		•	•	•										
	E1	13 986	★	0.10	–	800		•	•	•										
	D1	12 154		0.12	–	800		•	•	•										
	C1	10 579	★	0.13	–	800		•	•	•										
	B1	9 543		0.15	–	800		•	•	•										
	A1	8 422		0.17	–	800		•	•	•										
D68-Z28	**H2**	7 538	★	0.19	–	800		•	•											
800	**G2**	6 693		0.21	–	800		•	•											
	F2	5 868	★	0.24	–	800		•	•	•										
	E2	5 251		0.27	–	800		•	•	•										
	D2	4 660	★	0.30	–	800		•	•	•										
	C2	4 084		0.34	–	800		•	•	•										
	B2	3 591	★	0.39	–	800		•	•	•										
	A2	3 244		0.43	–	800		•	•	•	•									
	X1	2 827	★	0.50	–	800		•	•	•										
	W1	2 539		0.55	–	800		•	•	•										
	V1	2 292	★	0.61	–	800		•	•	•	•									
	U1	2 078		0.67	–	800		•	•	•	•									
	T1	1 891	★	0.74	–	800		•	•	•	•									
	S1	1 672		0.84	–	800		•	•	•	•									
	R1	1 544	★	0.91	–	800		•	•	•	•									
	Q1	1 329		1.10	–	800		•	•	•	•									
	P1	1 208	★	1.20	–	800		•	•	•	•									
	N1	1 098	★	1.30	–	800		•	•	•	•									
	M1	996		1.40	–	800		•	•	•	•									
	L1	906	★	1.50	–	800		•	•	•	•									
	K1	801		1.80	–	800		•	•	•	•									
	J1	740	★	1.90	–	800		•	•	•	•									
	H1	637		2.20	–	800		•	•	•	•									
	G1	607	★	2.30	–	800		•	•	•	•									
	F1	550		2.50	–	800		•	•	•	•									
	E1	501	★	2.80	–	800		•	•	•	•									
	D1	443		3.20	–	800		•	•	•	•									
	C1	409	★	3.40	–	800		•	•	•	•									
	B1	352		4.00	–	800		•	•	•	•									
	A1	320	★	4.40	–	800		•	•	•	•									

★ Preferred transmission ratio

[1] Only possible with integrated adapter.

[2] Twisting angle applies to reduced-backlash gearboxes.

In the case of gearboxes of size 18 or 28, only possible with integrated motor or input unit KQ and KQS.

Calculation of maximum output torque T_{2max} for gearboxes with input units:

$T_{2max} = T_1 \times i_{tot}$, if $T_{2max} \leq T_{2N}$

If $T_{2max} \geq T_{2N}$ the max. output torque T_{2N} of the gearbox is the decisive factor.

Selection and ordering data (continued)

Gearbox size	Ratio code	Transmission ratio	Output speed	Twisting angle [2]	Nominal torque	Permissible input torque T_1 [Nm] 2.5x the value is permissible for a brief period (e.g. motor starting torque)													
Max. gearbox torque	Order No.					3	3	5	10	20	26	61	98	198	198	291	356	580	1290
Nm	15th and 16th position	i_{tot}	n_2 (50 Hz) rpm	φ arcmin	T_{2N} (f_B=1) Nm	Motor size 63	71	80	90	100	112	132	160	180	200	225	250	280	315
D68	**U1**	281.01	5.2	–	800	•	•	•											
800	**T1**	248.68 ★	5.8	15	800	•	•	•	•										
	S1	226.07	6.4	15	800	•	•	•	•										
	R1	203.09 ★	7.1	15	800	•	•	•	•										
	Q1	174.08	8.3	15	800	•	•	•	•	•									
	P1	157.50 ★	9.2	15	800	•	•	•	•	•									
	N1	145.38	10.0	15	800	•	•	•	•	•									
	M1	126.41 ★	11.5	15	800	•	•	•	•	•									
	L1	114.78	12.6	15	800	•	•	•	•	•									
	K1	104.80 ★	13.8	15	800	•	•	•	•	•									
	J1	96.16	15.1	15	800	•	•	•	•	•									
	H1	88.59 ★	16.4	15	800	•	•	•	•	•									
	G1	80.46	18.0	15	800	•	•	•	•	•									
	F1	73.30 ★	19.8	15	800	•	•	•	•	•									
	E1	67.14	22.0	15	800	•	•	•	•	•									
	D1	59.91 ★	24.0	15	800	•	•	•	•	•									
	C1	53.47	27.0	15	800			•	•	•									
	B1	45.41	32.0	15	800			•	•	•									
	A1	37.80	38.0	15	800			•	•	•									
Z68	**X1**	48.09 ★	30	14	535	•	•	•	•										
420 … 800	**W1**	42.06	34	14	800	•	•	•	•	•									
	V1	37.76 ★	38	14	800	•	•	•	•	•	•								
	U1	34.49	42	14	800	•	•	•	•	•	•								
	T1	30.60 ★	47	14	800	•	•	•	•	•	•	•							
	S1	28.25	51	14	800	•	•	•	•	•	•	•							
	R1	25.55 ★	57	14	800	•	•	•	•	•	•	•							
	Q1	23.53	62	14	800	•	•	•	•	•	•	•							
	P1	21.76 ★	67	14	800	•	•	•	•	•	•	•	• [1]						
	N1	20.20	72	14	800	•	•	•	•	•	•	•	• [1]						
	M1	17.82 ★	81	14	800	•	•	•	•	•	•	•	• [1]						
	L1	16.45	88	14	800	•	•	•	•	•	•	•	• [1]						
	K1	14.74 ★	98	14	800	•	•	•	•	•	•	•	• [1]						
	J1	13.59	107	15	800			•	•	•	•	•	• [1]						
	H1	11.40	127	15	785			•	•	•	•	•	• [1]						
	G1	9.73 ★	149	15	745			•	•	•	•	•	• [1]						
	F1	8.11	179	15	700					•	•	•	• [1]						
	E1	6.72 ★	216	16	650					•	•	•	• [1]						
	D1	5.93	245	19	490			•	•	•	•	•	• [1]						
	C1	5.06 ★	287	20	480			•	•	•	•	•	• [1]						
	B1	4.22	344	20	470					•	•	•	• [1]						
	A1	3.49 ★	415	21	420					•	•	•	• [1]						

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Calculation of maximum output torque T_{2max} for gearboxes with input units:

$T_{2max} = T_1 \times i_{tot}$, if $T_{2max} \leq T_{2N}$

If $T_{2max} \geq T_{2N}$ the max. output torque T_{2N} of the gearbox is the decisive factor.

Transmission ratios and maximum torques

Selection and ordering data (continued)

Gearbox size	Ratio code	Transmission ratio		Output speed	Twisting angle [2]	Nominal torque	Permissible input torque T_1 [Nm] 2.5x the value is permissible for a brief period (e.g. motor starting torque)													
Max. gearbox torque	Order No.						3	3	5	10	20	26	61	98	198	198	291	356	580	1290
Nm	15th and 16th position	i_{tot}		n_2 (50 Hz) rpm	φ arcmin	T_{2N} (f_B=1) Nm	Motor size 63	71	80	90	100	112	132	160	180	200	225	250	280	315
D.88-D.28 800	N1	46 233		0.03	–	1 680		•												
	M1	39 885	★	0.04	–	1 680		•	•											
	L1	34 267		0.04	–	1 680		•	•											
	K1	31 547	★	0.04	–	1 680		•	•	•										
	J1	28 679		0.05	–	1 680		•	•	•										
	H1	25 384	★	0.06	–	1 680		•	•	•										
	G1	21 262		0.07	–	1 680		•	•	•										
	F1	18 129	★	0.08	–	1 680		•	•	•										
	E1	15 409	★	0.09	–	1 680		•	•	•										
	D1	13 391		0.10	–	1 680		•	•	•										
	C1	11 656	★	0.12	–	1 680		•	•	•										
	B1	10 514		0.13	–	1 680		•	•	•										
	A1	9 279		0.15	–	1 680		•	•	•										
D.88-Z.28 800	H2	8 305	★	0.17	–	1 680		•	•											
	G2	7 374		0.19	–	1 680		•	•											
	F2	6 465	★	0.22	–	1 680		•	•	•										
	E2	5 785		0.24	–	1 680		•	•	•										
	D2	5 134	★	0.27	–	1 680		•	•	•										
	C2	4 500		0.31	–	1 680		•	•	•										
	B2	3 957	★	0.35	–	1 680		•	•	•										
	A2	3 574		0.39	–	1 680		•	•	•	•									
	X1	3 114	★	0.45	–	1 680		•	•	•										
	W1	2 797		0.50	–	1 680		•	•	•										
	V1	2 525	★	0.55	–	1 680		•	•	•	•									
	U1	2 290		0.61	–	1 680		•	•	•	•									
	T1	2 084	★	0.67	–	1 680		•	•	•	•									
	S1	1 842		0.76	–	1 680		•	•	•	•									
	R1	1 701	★	0.82	–	1 680		•	•	•	•									
	Q1	1 465		0.96	–	1 680		•	•	•	•									
	P1	1 331	★	1.10	–	1 680		•	•	•	•									
	N1	1 210	★	1.20	–	1 680		•	•	•	•									
	M1	1 097		1.30	–	1 680		•	•	•	•									
	L1	999	★	1.40	–	1 680		•	•	•	•									
	K1	883		1.60	–	1 680		•	•	•	•									
	J1	815	★	1.70	–	1 680		•	•	•	•									
	H1	702		2.00	–	1 680		•	•	•	•									
	G1	647	★	2.20	–	1 680		•	•	•	•									
	F1	587		2.40	–	1 680		•	•	•	•									
	E1	534	★	2.60	–	1 680		•	•	•	•									
	D1	472		3.00	–	1 680		•	•	•	•									
	C1	436	★	3.20	–	1 680		•	•	•	•									
	B1	375		3.70	–	1 680		•	•	•	•									
	A1	341	★	4.10	–	1 680		•	•	•	•									

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Calculation of maximum output torque T_{2max} for gearboxes with input units:

$T_{2max} = T_1 \times i_{tot}$, if $T_{2max} \leq T_{2N}$

If $T_{2max} \geq T_{2N}$ the max. output torque T_{2N} of the gearbox is the decisive factor.

Selection and ordering data (continued)

Gearbox size	Ratio code	Transmission ratio	Output speed	Twisting angle [2]	Nominal torque	Permissible input torque T_1 [Nm] 2.5x the value is permissible for a brief period (e.g. motor starting torque)													
Max. gearbox torque	Order No.					3	3	5	10	20	26	61	98	198	198	291	356	580	1290
	15th and 16th position	i_{tot}	n_2 (50 Hz)	φ	T_{2N} (f_B=1)	Motor size													
Nm			rpm	arcmin	Nm	63	71	80	90	100	112	132	160	180	200	225	250	280	315
D.88	**V1**	300.41 ★	4.8	12	1 680	•	•	•	•										
1 680	**U1**	270.90	5.4	12	1 680	•	•	•	•										
	T1	244.29 ★	5.9	12	1 680	•	•	•	•										
	S1	213.64	6.8	12	1 680	•	•	•	•	•									
	R1	191.80 ★	7.6	12	1 680	•	•	•	•	•	•								
	Q1	175.18	8.3	12	1 680	•	•	•	•	•	•								
	R1	155.46 ★	9.3	12	1 680	•	•	•	•	•	•	•							
	N1	143.50	10.1	12	1 680	•	•	•	•	•	•	•							
	M1	129.79 ★	11.2	12	1 680	•	•	•	•	•	•	•							
	L1	119.52	12.1	12	1 680	•	•	•	•	•	•	•							
	K1	110.54 ★	13.1	12	1 680	•	•	•	•	•	•	•							
	J1	102.61	14.1	12	1 680	•	•	•	•	•	•	•							
	H1	90.53 ★	16.0	12	1 680	•	•	•	•	•	•	•							
	G1	83.58	17.3	12	1 680	•	•	•	•	•	•	•							
	F1	74.88 ★	19.4	12	1 680	•	•	•	•	•	•	•							
	E1	69.05	21.0	12	1 680			•	•	•	•	•							
	D1	57.93	25.0	12	1 680			•	•	•	•	•							
	C1	49.42 ★	29.0	12	1 680			•	•	•	•	•							
	B1	41.19	35.0	12	1 680					•	•	•							
	A1	34.14 ★	42.0	12	1 680					•	•	•							
Z.88	**B2**	50.73	29	11	1 468				•	•									
660 … 1 680	**A2**	45.76 ★	32	11	1 680				•	•	•								
	X1	41.90	35	11	1 680				•	•	•								
	W1	37.27 ★	39	11	1 680				•	•	•	•							
	V1	34.07	43	11	1 680				•	•	•	•							
	U1	31.32 ★	46	11	1 680				•	•	•	•							
	T1	28.93	50	11	1 680				•	•	•	•							
	S1	26.85 ★	54	11	1 680				•	•	•	•	•						
	R1	25.01	58	11	1 680				•	•	•	•	•						
	Q1	22.61 ★	64	11	1 680				•	•	•	•	•	• [1]					
	P1	20.81	70	11	1 680				•	•	•	•	•	• [1]					
	N1	18.72 ★	77	11	1 680				•	•	•	•	•	• [1]					
	M1	17.27	84	12	1 680				•	•	•	•	•	• [1]					
	L1	14.63	99	12	1 620				•	•	•	•	•	• [1]					
	K1	12.75 ★	114	12	1 550				•	•	•	•	•	• [1]					
	J1	10.85	134	12	1 470					•	•	•	•	• [1]					
	H1	9.26 ★	157	12	1 390					•	•	•	•	• [1]					
	G1	7.59 ★	191	13	1 300					•	•	•	•	• [1]					
	F1	6.96	208	15	1 260					•	•	•	•	• [1]					
	E1	5.94 ★	244	16	1 190					•	•	•	•	• [1]					
	D1	4.87 ★	298	16	1 110					•	•	•	•	• [1]					
	C1	4.45 ★	326	19	800					•	•	•	•	• [1]					
	B1	3.79 ★	383	20	740					•	•	•	•	• [1]					
	A1	3.11 ★	466	20	660					•	•	•	•	• [1]					

★ Preferred transmission ratio

[1] Only possible with integrated adapter.

[2] Twisting angle applies to reduced-backlash gearboxes.

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Calculation of maximum output torque T_{2max} for gearboxes with input units:

$T_{2max} = T_1 \times i_{tot}$, if $T_{2max} \leq T_{2N}$

If $T_{2max} \geq T_{2N}$ the max. output torque T_{2N} of the gearbox is the decisive factor.

Transmission ratios and maximum torques

Selection and ordering data (continued)

Gearbox size	Ratio code	Transmission ratio	Output speed	Twisting angle [2]	Nominal torque	Permissible input torque T_1 [Nm] 2.5x the value is permissible for a brief period (e.g. motor starting torque)													
Max. gearbox torque	Order No.					3	3	5	10	20	26	61	98	198	198	291	356	580	1290
	15th and 16th position	i_{tot}	n_2 (50 Hz)	φ	T_{2N} (f_B=1)	Motor size													
Nm			rpm	arcmin	Nm	63	71	80	90	100	112	132	160	180	200	225	250	280	315
D.108-D38	**P1**	68 896	0.02	–	3 100	•	•	•											
3 100	**N1**	61 169	0.02	–	3 100	•	•	•											
	M1	53 627	0.03	–	3 100	•	•	•	•										
	L1	47 990	0.03	–	3 100	•	•	•	•										
	K1	42 595	0.03	–	3 100	•	•	•	•										
	J1	37 326	0.04	–	3 100	•	•	•	•										
	H1	32 819	0.04	–	3 100	•	•	•	•										
	G1	29 650	0.05	–	3 100	•	•	•	•										
	F1	25 836	0.06	–	3 100	•	•	•	•										
	E1	23 204	0.06	–	3 100	•	•	•	•										
	D1	20 948	0.07	–	3 100	•	•	•	•										
	C1	18 993	0.08	–	3 100	•	•	•	•										
	B1	17 282	0.08	–	3 100	•	•	•	•										
	A1	15 280	0.09	–	3 100	•	•	•	•										
D.108-Z38	**P2**	15 853	0.09	–	3 100	•	•	•											
3 100	**N2**	14 098	0.10	–	3 100	•	•	•											
	M2	12 229	0.12	–	3 100	•	•	•	•										
	L2	11 426	0.13	–	3 100	•	•	•	•										
	K2	10 049	0.14	–	3 100	•	•	•	•										
	J2	8 801	0.16	–	3 100	•	•	•	•	•									
	H2	7 785	0.19	–	3 100	•	•	•	•	•									
	G2	7 055	0.21	–	3 100	•	•	•	•	•									
	F2	6 228	0.23	–	3 100	•	•	•	•	•									
	E2	5 618	0.26	–	3 100	•	•	•	•	•									
	D2	5 096	0.28	–	3 100	•	•	•	•	•									
	C2	4 643	0.31	–	3 100	•	•	•	•	•									
	B2	4 246	0.34	–	3 100	•	•	•	•	•									
	A2	3 797	0.38	–	3 100	•	•	•	•	•									
	X1	3 624	0.40	–	3 100	•	•	•											
	W1	3 223	0.45	–	3 100	•	•	•											
	V1	2 796	0.52	–	3 100	•	•	•	•										
	U1	2 612	0.56	–	3 100	•	•	•	•										
	T1	2 297	0.63	–	3 100	•	•	•	•										
	S1	2 012	0.72	–	3 100	•	•	•	•	•									
	R1	1 780	0.81	–	3 100	•	•	•	•	•									
	Q1	1 613	0.90	–	3 100	•	•	•	•	•									
	P1	1 424	1.00	–	3 100	•	•	•	•	•									
	N1	1 284	1.10	–	3 100	•	•	•	•	•									
	M1	1 165	1.20	–	3 100	•	•	•	•	•									
	L1	1 061	1.40	–	3 100	•	•	•	•	•									
	K1	971	1.50	–	3 100	•	•	•	•	•									
	J1	868	1.70	–	3 100	•	•	•	•	•									
	H1	797	1.80	–	3 100	•	•	•	•	•									
	G1	718	2.00	–	3 100	•	•	•	•	•									
	F1	618	2.30	–	3 100	•	•	•	•	•									
	E1	616	2.40	–	3 100	•	•	•	•	•									
	D1	551	2.60	–	3 100	•	•	•	•	•									
	C1	506	2.90	–	3 100	•	•	•	•	•									
	B1	456	3.20	–	3 100	•	•	•	•	•									
	A1	392	3.70	–	3 100	•	•	•	•	•									

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Calculation of maximum output torque T_{2max} for gearboxes with input units:

$T_{2max} = T_1 \times i_{tot}$, if $T_{2max} \leq T_{2N}$

If $T_{2max} \geq T_{2N}$ the max. output torque T_{2N} of the gearbox is the decisive factor.

Selection and ordering data (continued)

Gearbox size	Ratio code	Transmission ratio	Output speed	Twisting angle [2]	Nominal torque	Permissible input torque T_1 [Nm] 2.5x the value is permissible for a brief period (e.g. motor starting torque)													
Max. gearbox torque	Order No.					3	3	5	10	20	26	61	98	198	198	291	356	580	1290
	15th and 16th position	i_{tot}	n_2 (50 Hz)	φ	T_{2N} (f_B=1)	Motor size													
Nm			rpm	arcmin	Nm	63	71	80	90	100	112	132	160	180	200	225	250	280	315
D.108	**V1**	359.30	4.0	10	3 100			•	•										
3 100	**U1**	325.21 ★	4.5	10	3 100			•	•										
	T1	284.73	5.1	10	3 100			•	•	•									
	S1	256.86 ★	5.6	10	3 100			•	•	•	•								
	R1	235.19	6.2	10	3 100			•	•	•	•								
	Q1	209.21 ★	6.9	10	3 100			•	•	•	•	•							
	P1	191.21	7.6	10	3 100			•	•	•	•	•							
	N1	175.78 ★	8.2	10	3 100			•	•	•	•	•							
	M1	162.40	8.9	10	3 100			•	•	•	•	•							
	L1	150.70 ★	9.6	10	3 100			•	•	•	•	•	•						
	K1	140.37	10.3	10	3 100			•	•	•	•	•	•						
	J1	126.90 ★	11.4	10	3 100			•	•	•	•	•	•						
	H1	116.83	12.4	10	3 100			•	•	•	•	•	•						
	G1	105.08 ★	13.8	10	3 100			•	•	•	•	•	•						
	F1	96.94	15.0	10	3 100			•	•	•	•	•	•						
	E1	82.14	17.7	10	3 100			•	•	•	•	•	•						
	D1	71.59 ★	20.0	10	3 100			•	•	•	•	•	•						
	C1	60.90	24.0	10	3 100					•	•	•	•						
	B1	51.97 ★	28.0	10	3 100					•	•	•	•						
	A1	42.61 ★	34.0	10	3 100					•	•	•	•						
Z.108	**E2**	59.05 ★	25	9	2 368				•	•	•								
1 080 … 3 100	**D2**	54.15	27	9	2 306				•	•	•								
	C2	48.38 ★	30	9	3 100				•	•	•	•							
	B2	44.31	33	9	3 100				•	•	•	•							
	A2	40.82 ★	36	9	3 100				•	•	•	•							
	X1	37.79	38	9	3 100				•	•	•	•							
	W1	35.14 ★	41	9	3 100				•	•	•	•	•						
	V1	32.81	44	9	3 100				•	•	•	•	•						
	U1	29.35 ★	49	9	3 100				•	•	•	•	•	•	•				
	T1	27.20	53	9	3 100				•	•	•	•	•	•	•				
	S1	24.94 ★	58	9	3 100				•	•	•	•	•	•	•	• [1]			
	R1	22.86	63	9	3 100				•	•	•	•	•	•	•	• [1]			
	Q1	19.48	74	9	3 100				•	•	•	•	•	•	•	• [1]			
	P1	17.19 ★	84	10	3 100				•	•	•	•	•	•	•	• [1]			
	N1	14.63	99	10	3 100					•	•	•	•	•	•	• [1]			
	M1	12.68 ★	114	10	3 100					•	•	•	•	•	•	• [1]			
	L1	10.67 ★	136	10	3 100					•	•	•	•	•	•	• [1]			
	K1	9.62	151	10	3 100							•	•	•	•	• [1]			
	J1	8.27 ★	175	10	3 100							•	•	•	•	• [1]			
	H1	7.10 ★	204	12	1 800					•	•	•	•	•	•	• [1]			
	G1	6.41	226	12	1 760							•	•	•	•	• [1]			
	E1	5.51 ★	263	13	1 700							•	•	•	•	• [1]			
	D1	5.24 ★	277	15	1 140							•	•	•	•	• [1]			
	C1	4.41 ★	329	16	1 140							•	•	•	•	• [1]			
	B1	3.98 ★	364	16	1 120							•	•	•	•	• [1]			
	A1	3.42 ★	424	16	1 080							•	•	•	•	• [1]			

★ Preferred transmission ratio

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In the case of gearboxes of size 18 or 28, only possible with integrated motor or input unit KQ and KQS.

Calculation of maximum output torque T_{2max} for gearboxes with input units:

$T_{2max} = T_1 \times i_{tot}$, if $T_{2max} \leq T_{2N}$

If $T_{2max} \geq T_{2N}$ the max. output torque T_{2N} of the gearbox is the decisive factor.

Transmission ratios and maximum torques

Selection and ordering data (continued)

Gearbox size	Ratio code	Transmission ratio		Output speed	Twisting angle [2]	Nominal torque	Permissible input torque T_1 [Nm] 2.5x the value is permissible for a brief period (e.g. motor starting torque)													
Max. gearbox torque	Order No.						3	3	5	10	20	26	61	98	198	198	291	356	580	1290
	15th and 16th position	i_{tot}		n_2 (50 Hz)	φ	T_{2N} (f_B=1)	Motor size													
Nm				rpm	arcmin	Nm	63	71	80	90	100	112	132	160	180	200	225	250	280	315
D.128-D38	**P1**	51 420	★	0.03	–	5 100	•	•	•											
5 100	**N1**	45 652		0.03	–	5 100	•	•	•											
	M1	40 024	★	0.04	–	5 100	•	•	•	•										
	L1	35 817		0.04	–	5 100	•	•	•	•										
	K1	31 790	★	0.05	–	5 100	•	•	•	•										
	J1	27 858		0.05	–	5 100	•	•	•	•										
	H1	24 494	★	0.06	–	5 100	•	•	•	•										
	G1	22 129		0.07	–	5 100	•	•	•	•										
	F1	19 282	★	0.08	–	5 100	•	•	•	•										
	E1	17 318		0.08	–	5 100	•	•	•	•										
	D1	15 634	★	0.09	–	5 100	•	•	•	•										
	C1	14 175		0.10	–	5 100	•	•	•	•										
	B1	12 898	★	0.11	–	5 100	•	•	•	•										
	A1	11 404		0.13	–	5 100	•	•	•	•										
D.128-Z38	**X1**	11 831	★	0.12	–	5 100	•	•	•											
5 100	**W1**	10 521		0.14	–	5 100	•	•	•											
	V1	9 127	★	0.16	–	5 100	•	•	•	•										
	U1	8 528		0.17	–	5 100	•	•	•	•										
	T1	7 500	★	0.19	–	5 100	•	•	•	•										
	S1	6 569		0.22	–	5 100	•	•	•	•	•									
	R1	5 810	★	0.25	–	5 100	•	•	•	•	•									
	Q1	5 266		0.28	–	5 100	•	•	•	•	•									
	P1	4 648	★	0.31	–	5 100	•	•	•	•	•									
	N1	4 193		0.35	–	5 100	•	•	•	•	•									
	M1	3 803	★	0.38	–	5 100	•	•	•	•	•									
	L1	3 465		0.42	–	5 100	•	•	•	•	•									
	K1	3 169	★	0.46	–	5 100	•	•	•	•	•									
	J1	2 834		0.51	–	5 100	•	•	•	•	•									
	H1	2 602	★	0.56	–	5 100	•	•	•	•	•									
	G1	2 345		0.62	–	5 100	•	•	•	•	•									
	F1	2 017	★	0.72	–	5 100	•	•	•	•	•									
	E1	2 011	★	0.72	–	5 100	•	•	•	•	•									
	C1	1 798		0.81	–	5 100	•	•	•	•	•									
	D1	1 651	★	0.88	–	5 100	•	•	•	•	•									
	B1	1 488		0.97	–	5 100	•	•	•	•	•									
	A1	1 280	★	1.10	–	5 100	•	•	•	•	•									
D.128-Z48	**P1**	1 271		1.1	–	5 100	•	•	•	•	•	•								
5 100	**N1**	1 166		1.2	–	5 100	•	•	•	•	•	•								
	M1	1 074		1.4	–	5 100	•	•	•	•	•	•								
	L1	975		1.5	–	5 100	•	•	•	•	•	•								
	K1	889		1.6	–	5 100	•	•	•	•	•	•								
	J1	814		1.8	–	5 100	•	•	•	•	•	•								
	H1	726		2.0	–	5 100	•	•	•	•	•	•								
	G1	648		2.2	–	5 100			•	•	•	•								
	F1	551		2.6	–	5 100			•	•	•	•								
	E1	458		3.2	–	5 100			•	•	•	•								
	D1	451		3.2	–	5 100	•	•	•	•	•	•								
	C1	403		3.6	–	5 100			•	•	•	•								
	B1	342		4.2	–	5 100			•	•	•	•								
	A1	285		5.1	–	5 100			•	•	•	•								

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$T_{2max} = T_1 \times i_{tot}$, if $T_{2max} \leq T_{2N}$

If $T_{2max} \geq T_{2N}$ the max. output torque T_{2N} of the gearbox is the decisive factor.

Selection and ordering data (continued)

Gearbox size	Ratio code	Transmission ratio	Output speed	Twisting angle [2]	Nominal torque	Permissible input torque T_1 [Nm] 2.5x the value is permissible for a brief period (e.g. motor starting torque)													
Max. gearbox torque	Order No.					3	3	5	10	20	26	61	98	198	198	291	356	580	1290
	15th and 16th position	i_{tot}	n_2 (50 Hz)	φ	T_{2N} (f_B=1)	Motor size													
Nm			rpm	arcmin	Nm	63	71	80	90	100	112	132	160	180	200	225	250	280	315
D.128	**K1**	268.16 ★	5.4	10	5 100				•	•	•								
5 100	**T1**	245.93	5.9	10	5 100				•	•	•								
	S1	219.72 ★	6.6	10	5 100				•	•	•	•							
	R1	201.22	7.2	10	5 100				•	•	•	•							
	Q1	185.36 ★	7.8	10	5 100				•	•	•	•							
	P1	171.62	8.4	10	5 100				•	•	•	•							
	N1	159.60 ★	9.1	10	5 100				•	•	•	•	•						
	M1	148.99	9.7	10	5 100				•	•	•	•	•						
	L1	133.30 ★	10.9	10	5 100				•	•	•	•	•	•	•				
	K1	123.53	11.7	10	5 100				•	•	•	•	•	•	•				
	J1	113.24 ★	12.8	10	5 100				•	•	•	•	•	•	•				
	H1	103.80	14.0	10	5 100				•	•	•	•	•	•	•				
	G1	88.46	16.4	10	5 100				•	•	•	•	•	•	•				
	F1	78.06 ★	18.6	10	5 100				•	•	•	•	•	•	•				
	E1	66.43	22.0	10	5 100					•	•	•	•	•	•				
	D1	57.56 ★	25.0	10	5 100					•	•	•	•	•	•				
	C1	48.44 ★	30.0	10	5 100					•	•	•	•	•	•				
	B1	43.71	33.0	10	5 100							•	•	•	•				
	A1	37.57 ★	39.0	10	5 100							•	•	•	•				
Z.128	**D2**	44.19 ★	33	9	3 275					•	•	•							
2 220 … 5 100	**C2**	40.96	35	9	3 196					•	•	•							
	B2	38.94 ★	37	9	5 100					•	•	•	•						
	A2	36.39	40	9	5 100					•	•	•	•						
	X1	32.11 ★	45	9	5 100					•	•	•	•	•	•				
	W1	30.28	48	9	5 100					•	•	•	•	•	•				
	V1	27.13 ★	53	9	5 100					•	•	•	•	•	•	•			
	U1	25.05	58	9	5 100					•	•	•	•	•	•	•			
	T1	21.41	68	9	5 100					•	•	•	•	•	•	•	• [1]		
	S1	19.35 ★	75	10	5 100					•	•	•	•	•	•	•	• [1]		
	R1	18.64	78	10	5 100						•	•	•	•	•	•	• [1]		
	Q1	16.12	90	10	4 993					•	•	•	•	•	•	•	• [1]		
	P1	14.06 ★	103	10	4 868					•	•	•	•	•	•	•	• [1]		
	N1	12.03 ★	121	10	4 716					•	•	•	•	•	•	•	• [1]		
	M1	10.78	135	10	4 603							•	•	•	•	•	• [1]		
	L1	9.13 ★	159	10	4 425							•	•	•	•	•	• [1]		
	K1	7.88	184	10	4 258								•	•	•	•	• [1]		
	J1	7.29 ★	199	12	2 540								•	•	•	•	• [1]		
	H1	6.24 ★	232	12	2 530								•	•	•	•	• [1]		
	G1	5.93 ★	245	12	3 908								•	•	•	•	• [1]		
	F1	5.59 ★	259	12	2 607								•	•	•	•	• [1]		
	E1	4.83	300	12	2 512								•	•	•	•	• [1]		
	D1	4.73 ★	307	13	2 375								•	•	•	•	• [1]		
	C1	4.09 ★	355	13	2 360								•	•	•	•	• [1]		
	B1	3.63 ★	399	13	2 310								•	•	•	•	• [1]		
	A1	3.07 ★	472	14	2 220								•	•	•	•	• [1]		

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Calculation of maximum output torque T_{2max} for gearboxes with input units:

$T_{2max} = T_1 \times i_{tot}$, if $T_{2max} \leq T_{2N}$

If $T_{2max} \geq T_{2N}$ the max. output torque T_{2N} of the gearbox is the decisive factor.

Transmission ratios and maximum torques

Selection and ordering data (continued)

Gearbox size	Ratio code	Transmission ratio	Output speed	Twisting angle [2]	Nominal torque	Permissible input torque T_1 [Nm] 2.5x the value is permissible for a brief period (e.g. motor starting torque)													
Max. gearbox torque	Order No.					3	3	5	10	20	26	61	98	198	198	291	356	580	1290
Nm	15th and 16th position	i_{tot}	n_2 (50 Hz) rpm	φ arcmin	T_{2N} (f_B=1) Nm	Motor size 63	71	80	90	100	112	132	160	180	200	225	250	280	315
D.148-D38	**P1**	64 450	0.02	–	8 000	•	•	•											
8 000	**N1**	57 221	0.03	–	8 000	•	•	•											
	M1	50 166	0.03	–	8 000	•	•	•	•										
	L1	44 893	0.03	–	8 000	•	•	•	•										
	K1	39 846	0.04	–	8 000	•	•	•	•										
	J1	34 917	0.04	–	8 000	•	•	•	•										
	H1	30 701	0.05	–	8 000	•	•	•	•										
	G1	27 736	0.05	–	8 000	•	•	•	•										
	F1	24 169	0.06	–	8 000	•	•	•	•										
	E1	21 707	0.07	–	8 000	•	•	•	•										
	D1	19 596	0.07	–	8 000	•	•	•	•										
	C1	17 767	0.08	–	8 000	•	•	•	•										
	B1	16 167	0.09	–	8 000	•	•	•	•										
	A1	14 294	0.10	–	8 000	•	•	•	•										
D.148-Z38	**X1**	14 830	0.10	–	8 000	•	•	•											
8 000	**W1**	13 188	0.11	–	8 000	•	•	•											
	V1	11 440	0.13	–	8 000	•	•	•	•										
	U1	10 689	0.14	–	8 000	•	•	•	•										
	T1	9 401	0.15	–	8 000	•	•	•	•										
	S1	8 233	0.18	–	8 000	•	•	•	•	•									
	R1	7 282	0.20	–	8 000	•	•	•	•	•									
	Q1	6 600	0.22	–	8 000	•	•	•	•	•									
	P1	5 826	0.25	–	8 000	•	•	•	•	•									
	N1	5 256	0.28	–	8 000	•	•	•	•	•									
	M1	4 767	0.30	–	8 000	•	•	•	•	•									
	L1	4 343	0.33	–	8 000	•	•	•	•	•									
	K1	3 972	0.37	–	8 000	•	•	•	•	•									
	J1	3 552	0.41	–	8 000	•	•	•	•	•									
	H1	3 261	0.44	–	8 000	•	•	•	•	•									
	G1	2 939	0.49	–	8 000	•	•	•	•	•									
	F1	2 528	0.57	–	8 000	•	•	•	•	•									
	E1	2 521	0.58	–	8 000	•	•	•	•	•									
	D1	2 254	0.64	–	8 000	•	•	•	•	•									
	C1	2 070	0.70	–	8 000	•	•	•	•	•									
	B1	1 865	0.78	–	8 000	•	•	•	•	•									
	A1	1 604	0.90	–	8 000	•	•	•	•	•									
D.148-Z48	**N1**	1 631	0.89	–	8 000	•	•	•	•	•	•								
8 000	**M1**	1 502	0.97	–	8 000	•	•	•	•	•	•								
	L1	1 364	1.10	–	8 000	•	•	•	•	•	•								
	K1	1 243	1.20	–	8 000	•	•	•	•	•	•								
	J1	1 139	1.30	–	8 000	•	•	•	•	•	•								
	H1	1 016	1.40	–	8 000	•	•	•	•	•	•								
	G1	907	1.60	–	8 000			•	•	•	•								
	F1	770	1.90	–	8 000			•	•	•	•								
	E1	641	2.30	–	8 000			•	•	•	•								
	D1	631	2.30	–	8 000	•	•	•	•	•	•								
	C1	563	2.60	–	8 000			•	•	•	•								
	B1	478	3.00	–	8 000			•	•	•	•								
	A1	398	3.60	–	8 000			•	•	•	•								

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If $T_{2max} \geq T_{2N}$ the max. output torque T_{2N} of the gearbox is the decisive factor.

Selection and ordering data (continued)

Gearbox size	Ratio code	Transmission ratio	Output speed	Twisting angle [2]	Nominal torque	Permissible input torque T_1 [Nm] 2.5x the value is permissible for a brief period (e.g. motor starting torque)													
Max. gearbox torque	Order No.					3	3	5	10	20	26	61	98	198	198	291	356	580	1290
Nm	15th and 16th position	i_{tot}	n_2 (50 Hz) rpm	φ arcmin	T_{2N} (f_B=1) Nm	Motor size 63	71	80	90	100	112	132	160	180	200	225	250	280	315
D.148	**W1**	336.11	4.3	7	8 000					•	•								
8 000	**V1**	301.34 ★	4.8	7	8 000					•	•	•							
	U1	276.23	5.2	7	8 000					•	•	•							
	T1	254.70 ★	5.7	7	8 000					•	•	•							
	S1	236.05	6.1	7	8 000					•	•	•							
	R1	224.43 ★	6.5	7	8 000					•	•	•	•						
	Q1	209.76	6.9	7	8 000					•	•	•	•						
	P1	185.03 ★	7.8	7	8 000					•	•	•	•	•	•				
	N1	174.53	8.3	7	8 000					•	•	•	•	•	•				
	M1	156.38 ★	9.3	7	8 000					•	•	•	•	•	•	•			
	L1	144.39	10.0	7	8 000					•	•	•	•	•	•	•			
	K1	123.37	11.8	7	8 000					•	•	•	•	•	•	•			
	J1	111.50 ★	13.0	7	8 000					•	•	•	•	•	•	•			
	H1	107.42	13.5	7	8 000						•	•	•	•	•	•			
	G1	92.91	15.6	7	8 000					•	•	•	•	•	•	•			
	F1	81.04 ★	17.9	7	8 000					•	•	•	•	•	•	•			
	E1	69.36 ★	21.0	7	8 000					•	•	•	•	•	•	•			
	D1	62.12	23.0	7	8 000							•	•	•	•	•			
	C1	52.61 ★	28.0	7	8 000							•	•	•	•	•			
	B1	45.44	32.0	7	8 000								•	•	•	•			
	A1	34.15 ★	42.0	7	8 000								•	•	•	•			
Z.148	**B2**	57.50	25	7	4 664							•							
3 850 … 8 000	**A2**	54.24 ★	27	7	8 000							•	•						
	X1	50.74	29	7	8 000							•	•						
	W1	45.11 ★	32	7	8 000							•	•	•	•				
	V1	42.59	34	7	8 000							•	•	•	•				
	U1	38.23 ★	38	7	8 000							•	•	•	•	•			
	T1	35.09	41	7	8 000							•	•	•	•	•			
	S1	30.28	48	7	8 000							•	•	•	•	•	•		
	R1	26.49	55	7	8 000							•	•	•	•	•	•		
	Q1	23.04	63	7	8 000							•	•	•	•	•	•	•	
	P1	20.21 ★	72	7	8 000							•	•	•	•	•	•	•	
	N1	17.09 ★	85	7	8 000							•	•	•	•	•	•	•	
	M1	15.51	93	7	8 000							•	•	•	•	•	•	•	
	L1	13.52 ★	107	7	8 000							•	•	•	•	•	•	•	
	K1	11.48	126	7	8 000								•	•	•	•	•	•	
	J1	8.79 ★	165	9	8 000								•	•	•	•	•	•	
	H1	8.64 ★	168	9	4 800							•	•	•	•	•	•	•	
	G1	7.84 ★	185	9	4 800							•	•	•	•	•	•	•	
	F1	7.57 ★	192	10	5 600								•	•	•	•	•	•	
	E1	6.84 ★	212	10	4 800							•	•	•	•	•	•	•	
	D1	6.43	226	10	5 400								•	•	•	•	•	•	
	C1	5.80 ★	250	10	4 200								•	•	•	•	•	•	
	B1	4.92 ★	295	10	5 050								•	•	•	•	•	•	
	A1	4.44 ★	327	–	3 850								•	•	•	•	•	•	

★ Preferred transmission ratio

[1] Only possible with integrated adapter.

[2] Twisting angle applies to reduced-backlash gearboxes.

In the case of gearboxes of size 18 or 28, only possible with integrated motor or input unit KQ and KQS.

Calculation of maximum output torque T_{2max} for gearboxes with input units:

$T_{2max} = T_1 \times i_{tot}$, if $T_{2max} \leq T_{2N}$

If $T_{2max} \geq T_{2N}$ the max. output torque T_{2N} of the gearbox is the decisive factor.

Transmission ratios and maximum torques

Selection and ordering data (continued)

Gearbox size	Ratio code	Transmission ratio		Output speed	Twisting angle [2]	Nominal torque	Permissible input torque T_1 [Nm] 2.5x the value is permissible for a brief period (e.g. motor starting torque)													
Max. gearbox torque	Order No.						3	3	5	10	20	26	61	98	198	198	291	356	580	1290
	15th and 16th position	i_{tot}		n_2 (50 Hz)	φ	T_{2N} (f_B=1)	Motor size													
Nm				rpm	arcmin	Nm	63	71	80	90	100	112	132	160	180	200	225	250	280	315
D.168-D48	**P1**	71 317	★	0.02	–	14 000	•	•	•											
14 000	**N1**	63 421		0.02	–	14 000	•	•	•											
	M1	55 016	★	0.03	–	14 000	•	•	•	•										
	L1	51 404		0.03	–	14 000	•	•	•	•										
	K1	45 210	★	0.03	–	14 000	•	•	•	•										
	J1	39 595		0.04	–	14 000	•	•	•	•	•									
	H1	35 022	★	0.04	–	14 000	•	•	•	•	•									
	G1	31 740		0.05	–	14 000	•	•	•	•	•									
	F1	28 017	★	0.05	–	14 000	•	•	•	•	•									
	E1	25 274		0.06	–	14 000	•	•	•	•	•									
	D1	22 923	★	0.06	–	14 000	•	•	•	•	•									
	C1	20 886		0.07	–	14 000	•	•	•	•	•									
	B1	19 103	★	0.08	–	14 000	•	•	•	•	•									
	A1	17 080		0.08	–	14 000	•	•	•	•	•									
D.168-Z48	**A2**	17 519		0.08	–	14 000	•	•	•											
14 000	**X1**	15 504	★	0.09	–	14 000	•	•	•	•										
	W1	14 094		0.10	–	14 000	•	•	•	•										
	V1	12 661	★	0.11	–	14 000	•	•	•	•										
	U1	10 853		0.13	–	14 000	•	•	•	•	•									
	T1	9 819	★	0.15	–	14 000	•	•	•	•	•	•								
	S1	9 064		0.16	–	14 000	•	•	•	•	•	•								
	R1	7 881	★	0.18	–	14 000	•	•	•	•	•	•								
	Q1	7 156		0.20	–	14 000	•	•	•	•	•	•								
	P1	6 534	★	0.22	–	14 000	•	•	•	•	•	•								
	N1	5 995		0.24	–	14 000	•	•	•	•	•	•								
	M1	5 523	★	0.26	–	14 000	•	•	•	•	•	•								
	L1	5 016		0.29	–	14 000	•	•	•	•	•	•								
	K1	4 569	★	0.32	–	14 000	•	•	•	•	•	•								
	J1	4 186		0.35	–	14 000	•	•	•	•	•	•								
	H1	3 735	★	0.39	–	14 000	•	•	•	•	•	•								
	G1	3 333		0.44	–	14 000			•	•	•	•								
	F1	2 831		0.51	–	14 000			•	•	•	•								
	E1	2 357	★	0.62	–	14 000			•	•	•	•								
	D1	2 319	★	0.63	–	14 000	•	•	•	•	•	•								
	C1	2 070		0.70	–	14 000			•	•	•	•								
	B1	1 758		0.82	–	14 000			•	•	•	•								
	A1	1 463	★	0.99	–	14 000			•	•	•	•								
D.168-Z68	**H1**	1 226		1.2	–	14 000			•	•	•	•	•							
14 000	**G1**	1 046		1.4	–	14 000			•	•	•	•	•							
	F1	871		1.7	–	14 000					•	•	•							
	E1	722		2.0	–	14 000					•	•	•							
	D1	637		2.3	–	14 000			•	•	•	•	•							
	C1	544		2.7	–	14 000			•	•	•	•	•							
	B1	453		3.2	–	14 000					•	•	•							
	A1	376		3.9	–	14 000					•	•	•							

★ Preferred transmission ratio
[1] Only possible with integrated adapter.
[2] Twisting angle applies to reduced-backlash gearboxes.
In the case of gearboxes of size 18 or 28, only possible with integrated motor or input unit KQ and KQS.
Calculation of maximum output torque T_{2max} for gearboxes with input units:
$T_{2max} = T_1 \times i_{tot}$, if $T_{2max} \leq T_{2N}$
If $T_{2max} \geq T_{2N}$ the max. output torque T_{2N} of the gearbox is the decisive factor.

Selection and ordering data (continued)

Gearbox size	Ratio code	Transmission ratio	Output speed	Twisting angle [2]	Nominal torque	Permissible input torque T_1 [Nm] 2.5x the value is permissible for a brief period (e.g. motor starting torque)													
Max. gearbox torque	Order No.					3	3	5	10	20	26	61	98	198	198	291	356	580	1290
	15th and 16th position	i_{tot}	n_2 (50 Hz)	φ	T_{2N} (f_B=1)	Motor size													
Nm			rpm	arcmin	Nm	63	71	80	90	100	112	132	160	180	200	225	250	280	315
D.168	**U1**	341.61 ★	4.2	7	14 000							•							
14000	**T1**	313.41	4.6	7	14 000							•							
	S1	289.23 ★	5.0	7	14 000							•							
	R1	268.29	5.4	7	14 000							•							
	Q1	253.08 ★	5.7	7	14 000							•	•						
	P1	236.72	6.1	7	14 000							•	•						
	N1	210.49 ★	6.9	7	14 000							•	•	•	•				
	M1	198.71	7.3	7	14 000							•	•	•	•				
	L1	178.38 ★	8.1	7	14 000							•	•	•	•	•			
	K1	163.72	8.9	7	14 000							•	•	•	•	•			
	J1	141.28	10.3	7	14 000							•	•	•	•	•			
	H1	123.59	11.7	7	14 000							•	•	•	•	•			
	G1	107.48	13.5	7	14 000							•	•	•	•	•			
	F1	94.30 ★	15.4	7	14 000							•	•	•	•	•			
	E1	79.75 ★	18.2	7	14 000							•	•	•	•	•			
	D1	72.36	20.0	7	14 000							•	•	•	•	•			
	C1	63.08 ★	23.0	7	14 000							•	•	•	•	•			
	B1	53.56	27.0	7	14 000								•	•	•	•			
	A1	40.99 ★	35.0	7	14 000								•	•	•	•			
Z.168	**V1**	46.61	31	6	10 100							•	•	•	•				
6 470 …	**U1**	42.09	34	6	14 000							•	•	•	•	•			
14 000	**T1**	39.45	37	6	14 000							•	•	•	•	•	•		
	S1	33.88 ★	43	6	14 000							•	•	•	•	•	•		
	Q1	29.27	50	7	14 000							•	•	•	•	•	•	•	
	P1	25.84	56	7	14 000							•	•	•	•	•	•	•	
	N1	23.26 ★	62	7	14 000							•	•	•	•	•	•	•	
	M1	19.30 ★	75	7	14 000							•	•	•	•	•	•	•	
	L1	17.60	82	7	13 826							•	•	•	•	•	•	•	
	K1	15.44 ★	94	7	13 486							•	•	•	•	•	•	•	
	J1	13.27	109	7	13 081							•	•	•	•	•	•	•	
	H1	10.34 ★	140	7	12 345								•	•	•	•	•	•	
	G1	9.26 ★	157	-	7 850							•	•	•	•	•	•	•	
	F1	8.21 ★	177	7	11 622									•	•	•	•	•	
	E1	7.20 ★	201	9	7 100								•	•	•	•	•	•	
	D1	6.20 ★	234	9	7 507								•	•	•	•	•	•	
	C1	5.61 ★	258	10	6 780								•	•	•	•	•	•	
	B1	4.93 ★	294	10	7 064									•	•	•	•	•	
	A1	4.46 ★	325	10	6 470									•	•	•	•	•	

★ Preferred transmission ratio

[1] Only possible with integrated adapter.

[2] Twisting angle applies to reduced-backlash gearboxes.

In the case of gearboxes of size 18 or 28, only possible with integrated motor or input unit KQ and KQS.

Calculation of maximum output torque T_{2max} for gearboxes with input units:

$T_{2max} = T_1 \times i_{tot}$, if $T_{2max} \leq T_{2N}$

If $T_{2max} \geq T_{2N}$ the max. output torque T_{2N} of the gearbox is the decisive factor.

Transmission ratios and maximum torques

Selection and ordering data (continued)

Gearbox size	Ratio code	Transmission ratio		Output speed	Twisting angle [2]	Nominal torque	Permissible input torque T_1 [Nm] 2.5x the value is permissible for a brief period (e.g. motor starting torque)													
Max. gearbox torque	Order No.						3	3	5	10	20	26	61	98	198	198	291	356	580	1290
	15th and 16th position	i_{tot}		n_2 (50 Hz)	φ	T_{2N} (f_B=1)	Motor size													
Nm				rpm	arcmin	Nm	63	71	80	90	100	112	132	160	180	200	225	250	280	315
D.188-D48	**P1**	50 901	★	0.03	–	20 000	•	•	•											
20 000	**N1**	45 266		0.03	–	20 000	•	•	•											
	M1	39 267	★	0.04	–	20 000	•	•	•	•										
	L1	36 689		0.04	–	20 000	•	•	•	•										
	K1	32 268	★	0.04	–	20 000	•	•	•	•										
	I1	28 260		0.05	–	20 000	•	•	•	•										
	H1	24 996	★	0.06	–	20 000	•	•	•	•	•									
	G1	22 654		0.06	–	20 000	•	•	•	•	•									
	F1	19 997	★	0.07	–	20 000	•	•	•	•	•									
	E1	18 039		0.08	–	20 000	•	•	•	•	•									
	D1	16 361	★	0.09	–	20 000	•	•	•	•	•									
	C1	14 907		0.10	–	20 000	•	•	•	•	•									
	B1	13 634	★	0.11	–	20 000	•	•	•	•	•									
	A1	12 191		0.12	–	20 000	•	•	•	•	•									
D.188-Z48	**X1**	12 504		0.12	–	20 000	•	•	•											
20 000	**W1**	11 066	★	0.13	–	20 000	•	•	•	•										
	V1	9 037	★	0.16	–	20 000	•	•	•	•										
	U1	7 746		0.19	–	20 000	•	•	•	•	•									
	T1	7 008	★	0.21	–	20 000	•	•	•	•	•	•								
	S1	6 469		0.22	–	20 000	•	•	•	•	•	•								
	R1	5 625	★	0.26	–	20 000	•	•	•	•	•	•								
	Q1	5 107		0.28	–	20 000	•	•	•	•	•	•								
	P1	4 663	★	0.31	–	20 000	•	•	•	•	•	•								
	N1	4 279		0.34	–	20 000	•	•	•	•	•	•								
	M1	3 942	★	0.37	–	20 000	•	•	•	•	•	•								
	L1	3 580		0.41	–	20 000	•	•	•	•	•	•								
	K1	3 261	★	0.44	–	20 000	•	•	•	•	•	•								
	J1	2 988		0.49	–	20 000	•	•	•	•	•	•								
	H1	2 666	★	0.54	–	20 000	•	•	•	•	•	•								
	G1	2 379		0.61	–	20 000			•	•	•	•								
	F1	2 021		0.72	–	20 000			•	•	•	•								
	E1	1 682	★	0.86	–	20 000			•	•	•	•								
	D1	1 655	★	0.88	–	20 000	•	•	•	•	•	•								
	C1	1 477		0.98	–	20 000			•	•	•	•								
	B1	1 255		1.20	–	20 000			•	•	•	•								
	A1	1 044	★	1.40	–	20 000			•	•	•	•								
D.188-Z68	**G1**	896	★	1.6	–	20 000			•	•	•	•	•							
20 000	**F1**	746		1.9	–	20 000					•	•	•							
	E1	619	★	2.3	–	20 000					•	•	•							
	D1	546		2.7	–	20 000			•	•	•	•	•							
	C1	466	★	3.1	–	20 000			•	•	•	•	•							
	B1	388		3.7	–	20 000					•	•	•							
	A1	322	★	4.5	–	20 000					•	•	•							

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[2] Twisting angle applies to reduced-backlash gearboxes.

In the case of gearboxes of size 18 or 28, only possible with integrated motor or input unit KQ and KQS.

Calculation of maximum output torque T_{2max} for gearboxes with input units:

$T_{2max} = T_1 \times i_{tot}$, if $T_{2max} \leq T_{2N}$

If $T_{2max} \geq T_{2N}$ the max. output torque T_{2N} of the gearbox is the decisive factor.

Selection and ordering data (continued)

Gearbox size	Ratio code	Transmission ratio	Output speed	Twisting angle [2]	Nominal torque	Permissible input torque T_1 [Nm] 2.5x the value is permissible for a brief period (e.g. motor starting torque)													
Max. gearbox torque	Order No. 15th and 16th position	i_{tot}	n_2 (50 Hz)	φ	T_{2N} (f_B=1)	3	3	5	10	20	26	61	98	198	198	291	356	580	1290
Nm			rpm	arcmin	Nm	Motor size 63	71	80	90	100	112	132	160	180	200	225	250	280	315
D.188	**N1**	243.82	5.9	6	20 000					•	•	•	•						
20 000	**M1**	220.17	6.6	6	20 000					•	•	•	•	•					
	L1	206.34	7.0	6	20 000					•	•	•	•	•	•				
	K1	177.23 ★	8.2	6	20 000					•	•	•	•	•	•				
	J1	153.12	9.5	6	20 000					•	•	•	•	•	•	•			
	H1	135.16	10.7	6	20 000					•	•	•	•	•	•	•			
	G1	121.67 ★	11.9	6	20 000					•	•	•	•	•	•	•			
	F1	100.96 ★	14.4	6	20 000					•	•	•	•	•	•	•			
	E1	92.06	15.8	6	20 000					•	•	•	•	•	•	•			
	D1	80.77 ★	18.0	6	20 000					•	•	•	•	•	•	•			
	C1	69.41	21.0	6	20 000					•	•	•	•	•	•	•			
	B1	54.06 ★	27.0	6	20 000					•	•	•	•	•	•	•			
	A1	42.95 ★	34.0	–	20 000					•	•	•	•	•	•	•			
Z.188	**P1**	52.35	28	6	15 710								•	•	•	•			
13 040 …	**N1**	48.22	30	6	15 920								•	•	•	•	•		
20 000	**M1**	41.85 ★	35	6	16 110								•	•	•	•	•		
	L1	36.89	39	6	16 600								•	•	•	•	•	•	
	K1	32.37	45	6	18 450								•	•	•	•	•	•	
	J1	29.18 ★	50	6	20 000								•	•	•	•	•	•	
	H1	24.77 ★	59	6	20 000								•	•	•	•	•	•	
	G1	23.01	63	6	20 000								•	•	•	•	•	•	
	F1	19.76 ★	73	6	20 000								•	•	•	•	•	•	
	E1	16.86	86	6	20 000								•	•	•	•	•	•	•
	D1	13.28 ★	109	6	18 820								•	•	•	•	•	•	•
	C1	10.69 ★	136	6	16 170									•	•	•	•	•	•
	B1	9.29	156	6	14 310											•	•	•	•
	A1	8.30	175	6	13 040												•	•	•

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In the case of gearboxes of size 18 or 28, only possible with integrated motor or input unit KQ and KQS.

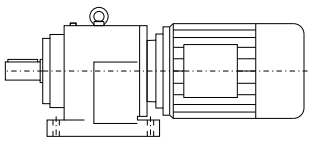
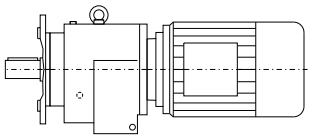
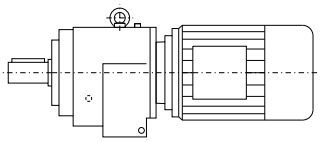
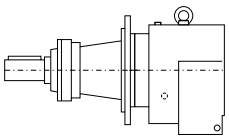
Calculation of maximum output torque T_{2max} for gearboxes with input units:

$T_{2max} = T_1 \times i_{tot}$, if $T_{2max} \leq T_{2N}$

If $T_{2max} \geq T_{2N}$ the max. output torque T_{2N} of the gearbox is the decisive factor.

Mounting types

Selection and ordering data

Mounting type	Order No. 14th position	Code in type designation 2nd position	Representation
Foot-mounted design	**A**	–	
Flange-mounted design (A-type)	**F**	F	
Housing flange (C-type)	**H**	Z	
Agitator flange	**R**	R	

Helical gearbox with agitator flange, sizes 68 to168

The agitator flange is fitted with a heavy-duty spherical roller bearing with a sizable bearing span for absorbing large radial and axial forces.

The optimized design ensures that no axial forces are transferred.

Helical gearboxes with an agitator flange are particularly well suited to agitator applications with very high radial forces.

Bearing life can be calculated on request or using the MOTOX Configurator calculation program.

Selection and ordering data

Shaft design	Order No. 8th position	Shaft dimensions					
1-stage helical gearbox E							
Size		**E38**	**E48**	**E68**	**E88**	**E108**	**E128**
Solid shaft with feather key	**1**	V20 x 40 *)	V25 x 50 *)	V30 x 60 *)	V40 x 80 *)	V50 x 100 *)	V60 x 120 *)
	2	V25 x 50	V30 x 60	V40 x 80	V45 x 90	V55 x 110	
Size		**E148**					
Solid shaft with feather key	**1**	V70 x 140 *)					
	2						
2-stage helical gearbox Z							
Size		**Z18**	**Z28**	**Z38**	**Z48**	**Z68**	**Z88**
Solid shaft with feather key	**1**	V16 x 28	V25 x 50 *)	V25 x 50 *)	V30 x 60 *)	V40 x 80 *)	V50 x 100 *)
	2	V20 x 40 *)		V30 x 60	V40 x 80	V50 x 100	V60 x 120
	3				V35 x 70	V35 x 70	
Size		**Z108**	**Z128**	**Z148**	**Z168**	**Z188**	
Solid shaft with feather key	**1**	V60 x 120 *)	V70 x 140 *)	V90 x 170 *)	V100 x 210 *)	V120 x 210 *)	
	2	V70 x 140	V90 x 170	V100 x 210	V120 x 210		
	3				V110 x 210		
3-stage helical gearbox D							
Size		**D18**	**D28**	**D38**	**D48**	**D68**	**D88**
Solid shaft with feather key	**1**	V16 x 28	V25 x 50 *)	V25 x 50 *)	V30 x 60 *)	V40 x 80 *)	V50 x 100 *)
	2	V20 x 40 *)		V30 x 60	V40 x 80	V50 x 100	V60 x 120
	3				V35 x 70	V35 x 70	
Size		**D108**	**D128**	**D148**	**D168**	**D188**	
Solid shaft with feather key	**1**	V60 x 120 *)	V70 x 140 *)	V90 x 170 *)	V100 x 210 *)	V120 x 210 *)	
	2	V70 x 140	V90 x 170	V100 x 210	V120 x 210		
	3				V110 x 210		

*) Preferred series

Shaft designs for helical gearbox with agitator flange

Shaft design	Order No. 8th position	Order No. suffix	Shaft dimensions					
2-stage helical gearbox ZR								
Size			**ZR68**	**ZR88**	**ZR108**	**ZR128**	**ZR148**	**ZR168**
Solid shaft with feather key	**2**		V50 x 100	V60 x 120	V70 x 140		V100 x 210	
	9	**H1A**				V80 x 170		V110 x 210
3-stage helical gearbox DR								
Size			**DR68**	**DR88**	**DR108**	**DR128**	**DR148**	**DR168**
Solid shaft with feather key	**2**		V50 x 100	V60 x 120	V70 x 140		V100 x 210	
	9	**H1A**				V80 x 170		V110 x 210

Flange-mounted designs (A-type)

Selection and ordering data

Order code	Flange diameter										
Helical gearbox EF, 1-stage											
Size	**EF38**	**EF48**	**EF68**	**EF88**	**EF108**	**EF128**	**EF148**				
H01	120	120									
H02	140	140	200	250	300	350	350				
H03	160	160	250	300	350	450	450				
H04	200	200	300	350	450		550				
H05	250	250									
Helical gearbox ZF, 2-stage											
Size	**ZF18**	**ZF28**	**ZF38**	**ZF48**	**ZF68**	**ZF88**	**ZF108**	**ZF128**	**ZF148**	**ZF168**	**ZF188**
H02	120	120	120								550
H03	140	140	140	200	250	300	350	350	450	450	660
H04	160	160	160	250	300	350	450	450	550	550	
H05			200	300	350	450		550		660	
H06			250								
Helical gearbox DF, 3-stage											
Size	**DF18**	**DF28**	**DF38**	**DF48**	**DF68**	**DF88**	**DF108**	**DF128**	**DF148**	**DF168**	**DF188**
H02	120	120	120								550
H03	140	140	140	200	250	300	350	350	450	450	660
H04	160	160	160	250	300	350	450	450	550	550	
H05			200	300	350	450		550		660	
H06			250								

Selection and ordering data

The mounting type / mounting position must be specified when, you place your order to ensure that the gearbox is supplied with the correct quantity of oil.

Please contact customer service if you wish to use a mounting position which is not shown here.

Position of the terminal box

The terminal box of the motor can be mounted in four different positions. See Chapter 8 for an accurate representation of the terminal box position and the corresponding order codes.

1-stage helical gearbox, foot-mounted design

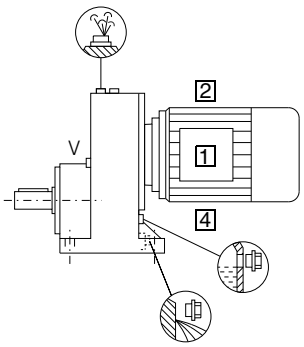
Oil control valves:

- Size 38: V Oil inlet
- From size 48 up: Oil level, Ventilation, Oil drain, Oil dipstick, * On opposite side

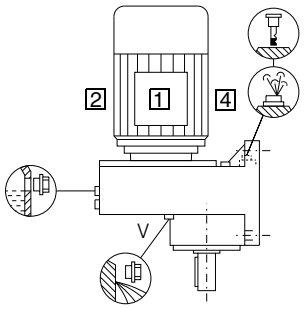
1 ... 4 Position of the terminal box, see Chapter 8

1) Standard mounting type

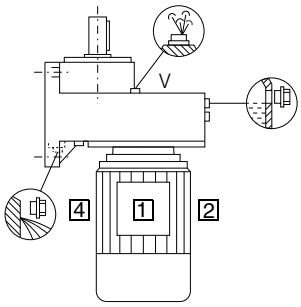
B3 (IM B3)[1)]
Order code: **D04**



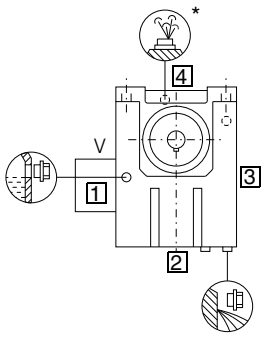
V5 (IM V5)
Order code: **E02**



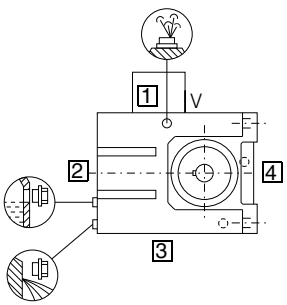
V6 (IM V6)
Order code: **E14**



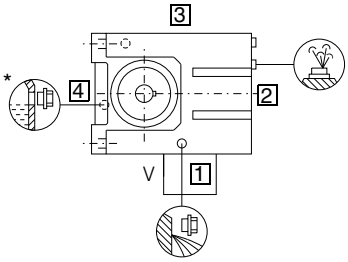
B8 (IM B8)
Order code: **D66**



B7 (IM B7)
Order code: **D57**



B6 (IM B6)
Order code: **D36**



Mounting types and mounting positions

Selection and ordering data (continued)

1-stage helical gearbox, flange-mounted design (EF) and with housing flange (EZ)

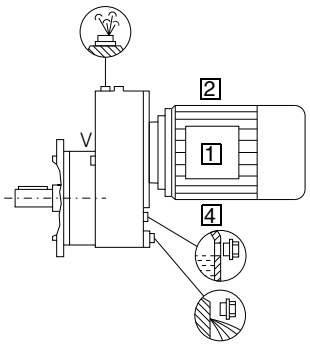
Oil control valves:

- Size 38: V Oil inlet
- From size 48 up: Oil level, Ventilation, Oil drain, Oil dipstick, * On opposite side

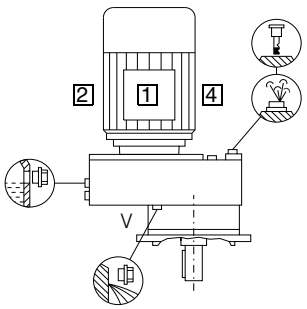
1 ... 4 Position of the terminal box, see Chapter 8

1) Standard mounting type

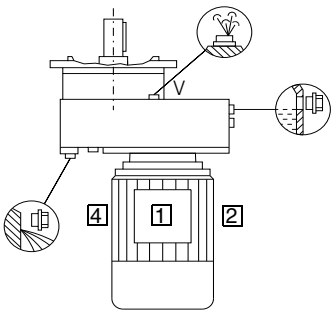
EF: B5 (IM B5)[1)]
Order code: **D16**
EZ: B14 (IM B14)
Order code: **D00**



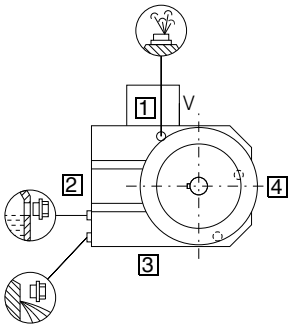
EF: V1 (IM V1)
Order code: **D88**
EZ: V18 (IM V18)
Order code: **D94**



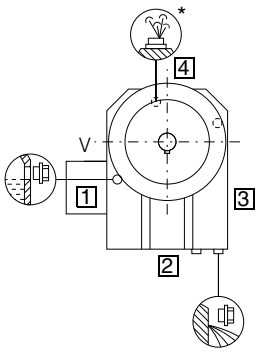
EF: V3 (IM V3)
Order code: **D96**
EZ: V19 (IM V19)
Order code: **D95**



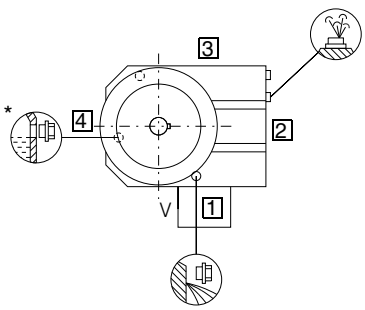
EF: B5-02 (IM B5-02)
Order code: **D26**
EZ: B14-02 (IM B14-02)
Order code: **D02**



EF: B5-03 (IM B5-03)
Order code: **D31**
EZ: B14-03 (IM B14-03)
Order code: **D03**



EF: B5-00 (IM B5-00)
Order code: **D17**
EZ: B14-00 (IM B14-00)
Order code: **D01**



Selection and ordering data (continued)

2- and 3-stage helical gearbox, foot-mounted design, sizes 18 - 88

Oil control valves:

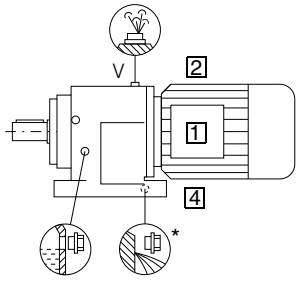
- Size 18/28: These types are lubricated for life. No ventilation, oil level, or drain plugs are present.
- Size 38: V Oil inlet
- From size 48 up: Oil level, Ventilation, Oil drain, * On opposite side

② 2-stage gearbox ③ 3-stage gearbox

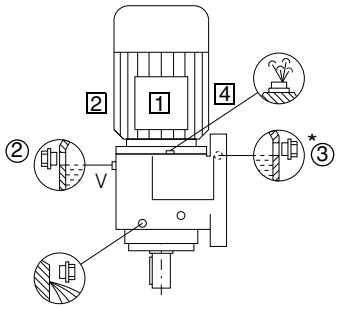
1 ... 4 Position of the terminal box, see Chapter 8

1) Standard mounting type

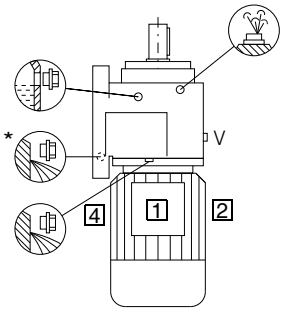
B3 (IM B3) 1)
Order code: **D04**



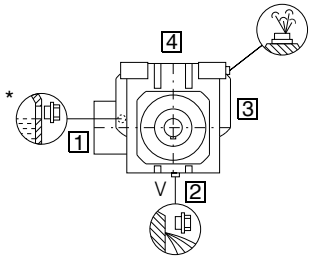
V5 (IM V5)
Order code: **E02**



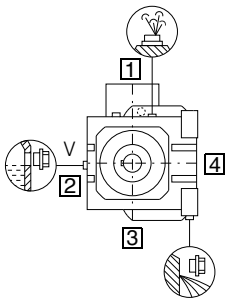
V6 (IM V6)
Order code: **E14**



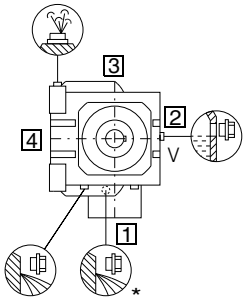
B8 (IM B8)
Order code: **D66**



B7 (IM B7)
Order code: **D57**



B6 (IM B6)
Order code: **D36**



Mounting types and mounting positions

Selection and ordering data (continued)

2- and 3-stage helical gearbox, foot-mounted design, sizes 108-168

Oil control valves:

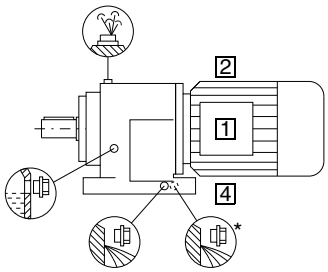
Oil level Ventilation Oil drain * On opposite side

② 2-stage gearbox ③ 3-stage gearbox

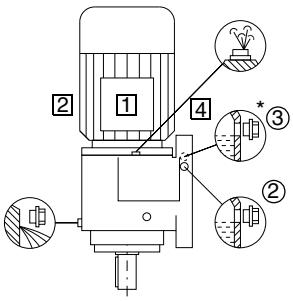
1 ... 4 Position of the terminal box, see Chapter 8

1) Standard mounting type

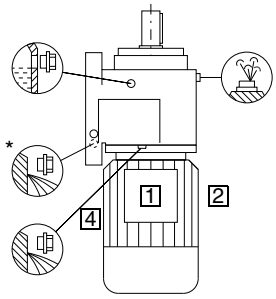
B3 (IM B3) 1)
Order code: **D04**



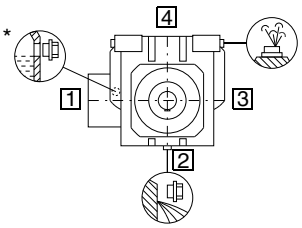
V5 (IM V5)
Order code: **E02**



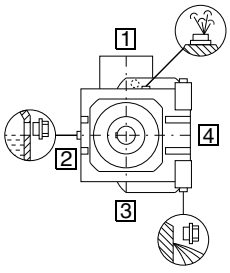
V6 (IM V6)
Order code: **E14**



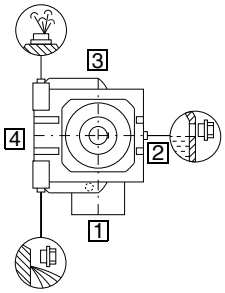
B8 (IM B8)
Order code: **D66**



B7 (IM B7)
Order code: **D57**



B6 (IM B6)
Order code: **D36**



Selection and ordering data (continued)

2- and 3-stage helical gearbox, foot-mounted design, size 188

Oil control valves:

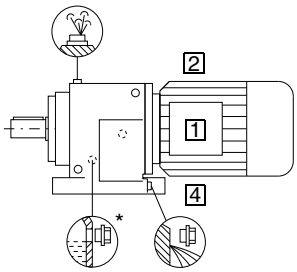
Oil level Ventilation Oil drain * On opposite side

② 2-stage gearbox ③ 3-stage gearbox ④ Tandem gearbox

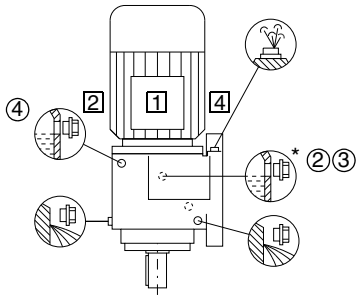
1 ... 4 Position of the terminal box, see Chapter 8

1) Standard mounting type

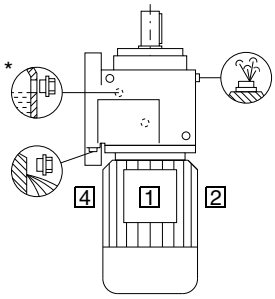
B3 (IM B3) 1)
Order code: **D04**



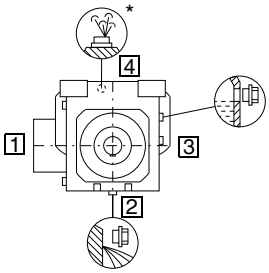
V5 (IM V5)
Order code: **E02**



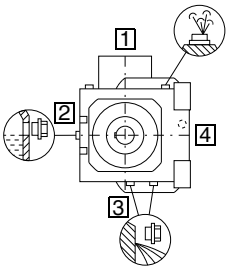
V6 (IM V6)
Order code: **E14**



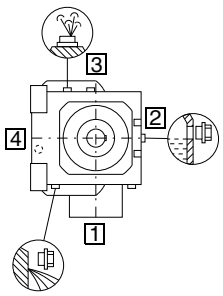
B8 (IM B8)
Order code: **D66**



B7 (IM B7)
Order code: **D57**



B6 (IM B6)
Order code: **D36**



Mounting types and mounting positions

Selection and ordering data (continued)

2- and 3-stage helical gearbox, flange-mounted design (DF/ZF) or with housing flange (DZ/ZZ), sizes 18 - 88

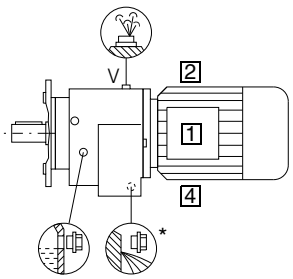
Oil control valves:

- Size 18/28: These types are lubricated for life. No ventilation, oil level, or drain plugs are present.
- Size 38: V Oil inlet
- From size 48 up: Oil level, Ventilation, Oil drain, Oil dipstick, * On opposite side

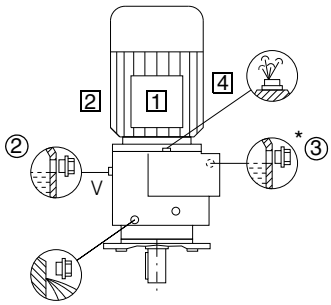
1 ... 4 Position of the terminal box, see Chapter 8

1) Standard mounting type

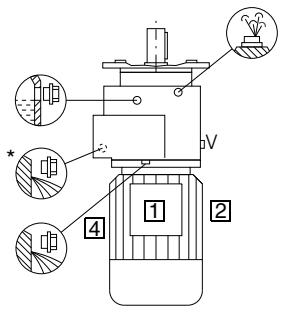
DF/ZF: B5 (IM B5) 1)
Order code: **D16**
DZ/ZZ: B14 (IM B14)
Order code: **D00**



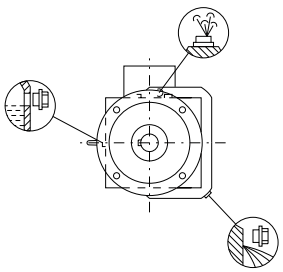
DF/ZF: V1 (IM V1)
Order code: **D88**
DZ/ZZ: V18 (IM V18
Order code: **D94**



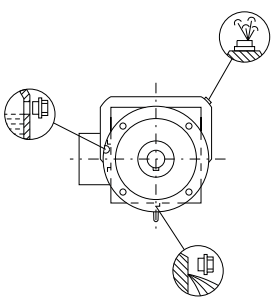
DF/ZF: V3 (IM V3)
Order code: **D96**
DZ/ZZ: V19 (IM V19)
Order code: **D95**



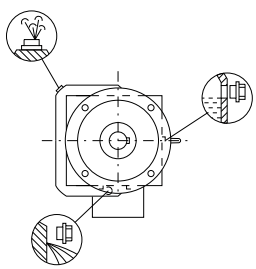
DF/ZF: B5-02(IM B5-02)
Order code: **D26**
DZ/ZZ: B14-02 (IM B14-02)
Order code: **D02**



DF/ZF: B5-03(IM B5-03)
Order code: **D31**
DZ/ZZ: B14-03 (IM B14-03)
Order code: **D03**



DF/ZF: B5-00 (IM B5-00)
Order code: **D17**
DZ/ZZ: B14-00 (IM B14-00)
Order code: **D01**



Selection and ordering data (continued)

2- and 3-stage helical gearbox, flange-mounted design (DF/ZF) or with housing flange (DZ/ZZ), sizes 108 - 168

Oil control valves:

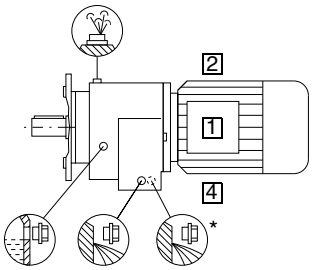
Oil level Ventilation Oil drain * On opposite side

② 2-stage gearbox ③ 3-stage gearbox

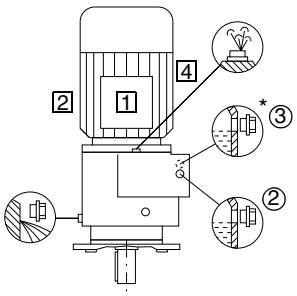
1 ... 4 Position of the terminal box, see Chapter 8

1) Standard mounting type

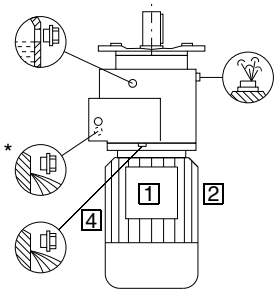
DF/ZF: B5 (IM B5) 1)
Order code: **D16**
DZ/ZZ: B14 (IM B14)
Order code: **D00**



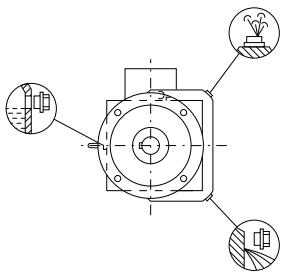
DF/ZF: V1 (IM V1)
Order code: **D88**
DZ/ZZ: V18 (IM V18)
Order code: **D94**



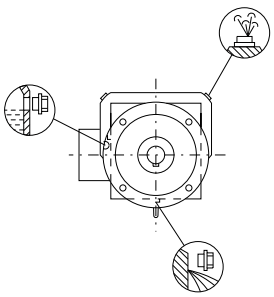
DF/ZF: V3 (IM V3)
Order code: **D96**
DZ/ZZ: V19 (IM V19)
Order code: **D95**



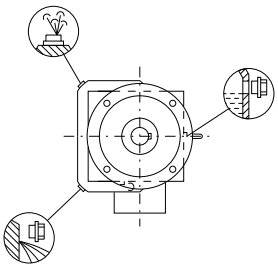
DF/ZF: B5-02(IM B5-02)
Order code: **D26**
DZ/ZZ: B14-02 (IM B14-02)
Order code: **D02**



DF/ZF: B5-03(IM B5-03)
Order code: **D31**
DZ/ZZ: B14-03 (IM B14-03)
Order code: **D03**



DF/ZF: B5-00 (IM B5-00)
Order code: **D17**
DZ/ZZ: B14-00 (IM B14-00)
Order code: **D01**



Mounting types and mounting positions

Selection and ordering data (continued)

2- and 3-stage helical gearbox, flange-mounted design (DF/ZF) or with housing flange (DZ/ZZ), size 188

Oil control valves:

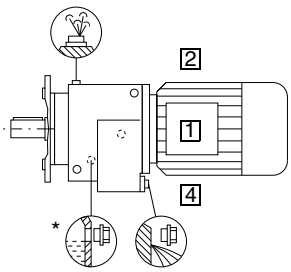
Oil level | Ventilation | Oil drain | * On opposite side

② 2-stage gearbox | ③ 3-stage gearbox | ④ Tandem gearbox

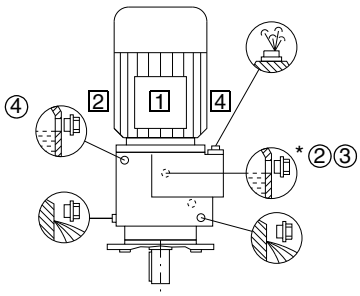
1 ... 4 Position of the terminal box, see Chapter 8

1) Standard mounting type

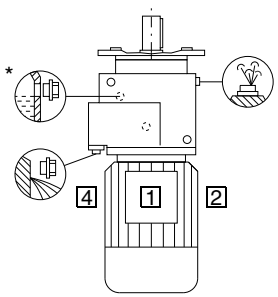
DF/ZF: B5 (IM B5) 1)
Order code: **D16**
DZ/ZZ: B14 (IM B14) 1)
Order code: **D00**



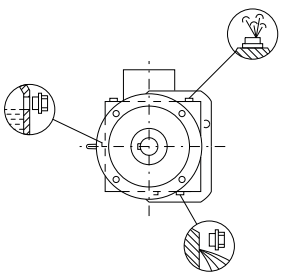
DF/ZF: V1 (IM V1)
Order code: **D88**
DZ/ZZ: V18 (IM V18)
Order code: **D94**



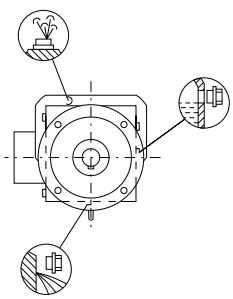
DF/ZF: V3 (IM V3)
Order code: **D96**
DZ/ZZ: V19 (IM V19)
Order code: **D95**



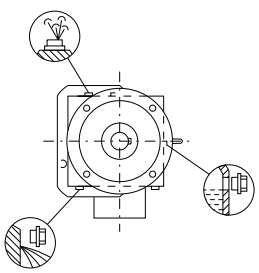
DF/ZF: B5-02(IM B5-02)
Order code: **D26**
DZ/ZZ: B14-02 (IM B14-02)
Order code: **D02**



DF/ZF: B5-03(IM B5-03)
Order code: **D31**
DZ/ZZ: B14-03 (IM B14-03)
Order code: **D03**



DF/ZF: B5-00 (IM B5-00)
Order code: **D17**
DZ/ZZ: B14-00 (IM B14-00)
Order code: **D01**



Selection and ordering data (continued)

2- and 3-stage helical gearbox with agitator flange (DR/ZR), sizes 68 - 88

Oil control valves:

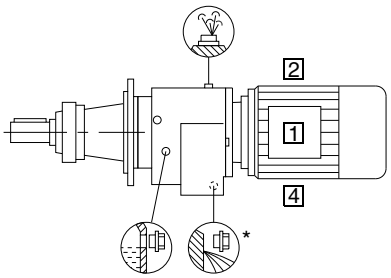
Oil level Ventilation Oil drain * On opposite side

② 2-stage gearbox ③ 3-stage gearbox

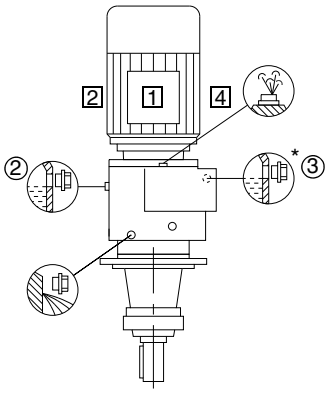
1 ... 4 Position of the terminal box, see Chapter 8

1) Standard mounting type

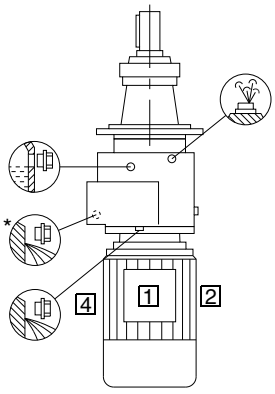
DR/ZR: B5 (IM B5) 1)
Order code: **D16**



DR/ZR: V1 (IM V1)
Order code: **D88**



DR/ZR: V3 (IM V3)
Order code: **D96**



2

Selection and ordering data (continued)

2- and 3-stage helical gearbox with agitator flange (DR/ZR), sizes 108 - 168

Oil control valves:

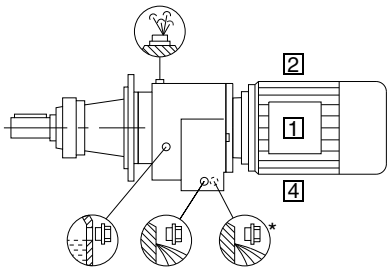
Oil level Ventilation Oil drain * On opposite side

② 2-stage gearbox ③ 3-stage gearbox

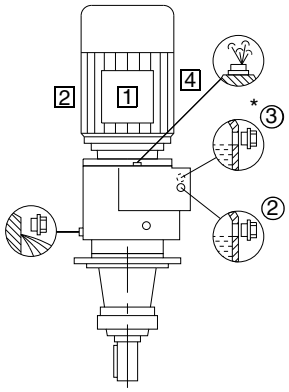
1 ... 4 Position of the terminal box, see Chapter 8

1) Standard mounting type

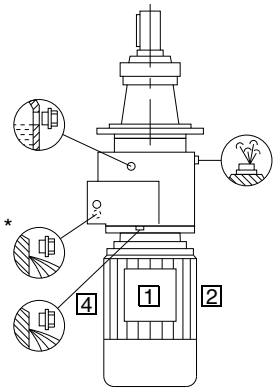
DR/ZR: B5 (IM B5) 1)
Order code: **D16**



DR/ZR: V1 (IM V1)
Order code: **D88**



DR/ZR: V3 (IM V3)
Order code: **D96**



Selection and ordering data (continued)

Helical tandem gearbox

The mounting type / mounting position of the tandem gearbox corresponds to that of the main gearbox.The figures below are only designed to show the position of the oil control valves of the 2nd gearbox.

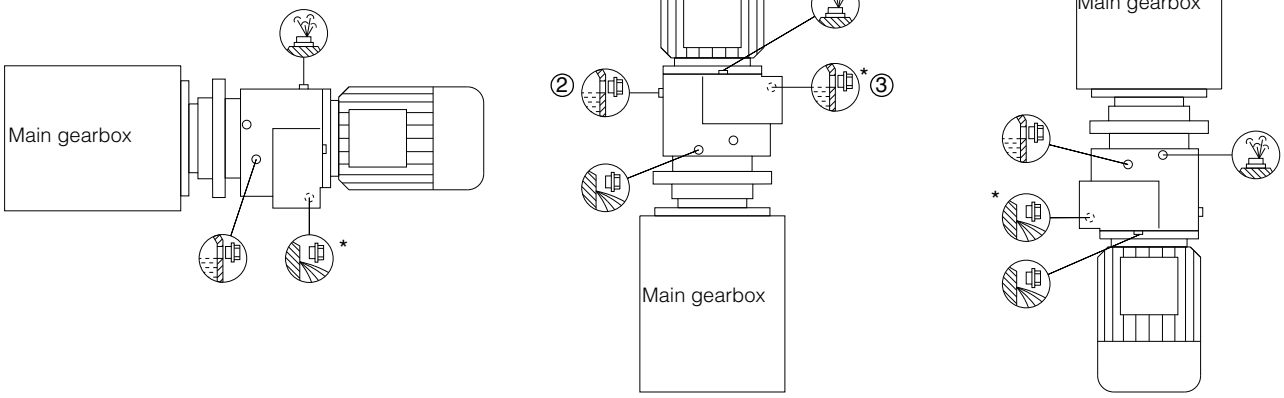
Note:

In a horizontal operating position the bulging part of the housing of the 2nd gearbox generally faces vertically downwards.

Oil control valves:

- Size 28/38 (2nd gearbox): These types are lubricated for life. No ventilation, oil level, or drain plugs are present.
- From size 48 up: Oil level Ventilation Oil drain * On opposite side

② 2-stage gearbox ③ 3-stage gearbox



Special versions

Lubricants

Helical gearboxes are filled with mineral oil and supplied ready for use as standard.

If the gearbox is to be used in an application with special requirements, the lubricants listed in the table below can be used.

Area of application	Ambient temperature [1]	DIN ISO designation	Order code
Standard oils			
Standard temperature	-10 … +40 °C	CLP ISO VG220	**K06**
Improved oil service life	-20 … +50 °C	CLP ISO PG VG220	**K07**
High temperature usage	0 … +60 °C	CLP ISO PG VG460	**K08**
Low temperature usage	-40 … +40 °C	CLP ISO PAO VG220	[2]
Lowest temperature usage	-40 … +10 °C	CLP ISO PAO VG68	[2]
Physiologically safe oils (for use in the food industry) in acc. with NSF (USDA)-H1			
Standard temperature	-30 … +40 °C	CLP ISO H1 VG460	**K11**
Biologically degradable oils			
Standard temperature	-20 … +40 °C	CLP ISO E VG220	**K10**

[1] Recommendation

[2] On request

Sizes 18 to 28 do not feature any ventilation, oil level, or drain plugs. The lubricant does not need to be changed, due to the low thermal load the gearbox is subjected to.

Helical gearboxes of size 38 have an oil screw; these gearboxes do not require ventilation or ventilation elements.

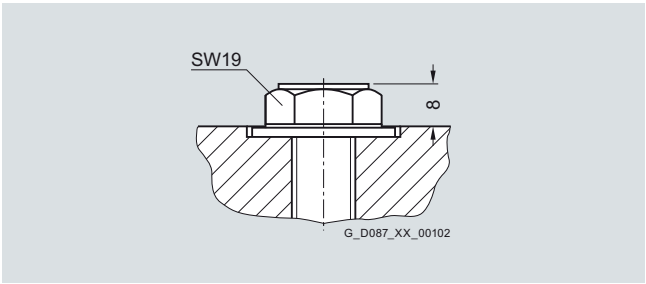
Gearboxes of sizes 48 to 188 are fitted with filler, oil level, and drain plugs as standard. The ventilation and vent filter, which is delivered loose, must be attached in place of the filler plug prior to startup.

Oil level control

Oil sight glass

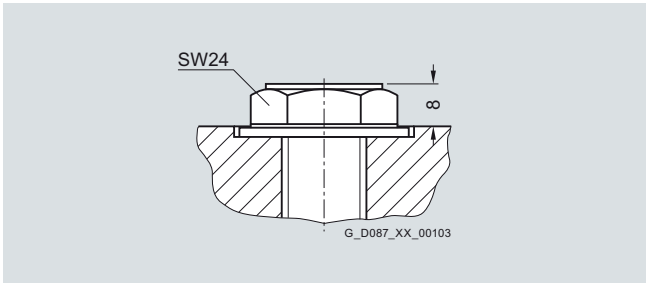
For size 48 and above, gearboxes can be equipped with a visual oil level indicator (oil sight glass) for most mounting types and mounting positions.

Order code:
Oil sight glass **G34**



SW = Wrench width

Gearbox	Size
Helical gearbox	E.48 … E.128 D./Z.48 … D./Z.128



SW = Wrench width

Gearbox	Size
Helical gearbox	E.148 D./Z.148 … D./Z.188

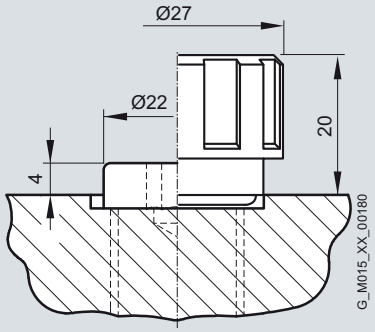
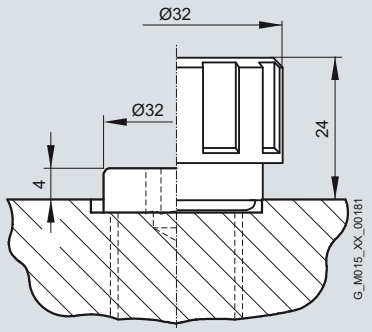
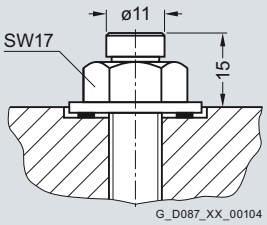
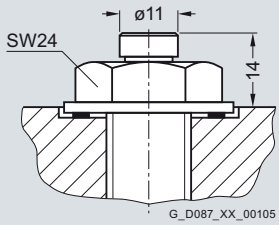
Electrical oil level monitoring system

On request, the gearbox can be supplied with an electrical oil level monitoring system, which enables the oil level of the gearbox to be monitored remotely. The oil level is monitored by a capacitive sensor only when the gearbox starts up; it is not measured continuously during operation.

Gearbox ventilation

The positions of the ventilation and ventilation elements can be seen on the mounting position diagrams.

If required, a pressure ventilation valve can be used for size 48 and above.

Order code	**E.48 … E.128** **D./Z.48 … D./Z.128**	**E.148** **D./Z.148 … D./Z.188**
Vent filter Order code: **G44**		
Pressure ventilation valve Order code: **G45**		

SW = Wrench width

Oil drain

Magnetic oil drain plug

A magnetic oil drain plug for inserting in the oil drainage hole is available for helical gearboxes of size 48 and above. This serves to collect any metal grit contained in the gear lubricant.

Order code:
Magnetic oil drain plug **G53**

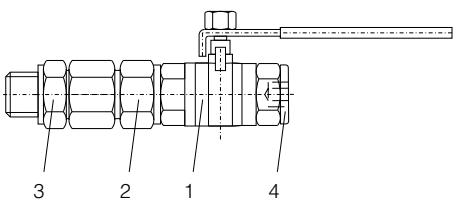
Oil drain valve

An oil drain valve is available for helical gearboxes of size 48 and above.

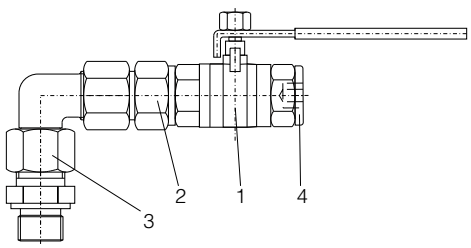
The oil drain valve may be designed as a complete unit featuring a screw plug, depending on the corresponding mounting position.

Order code:
Oil drain valve, straight **G54**

An angled oil drain valve is also available on request.



Pos.1 Oil drain valve
Pos.2 Screwed connection EGE
Pos.3 Screwed connection GE
Pos.4 Screw plug

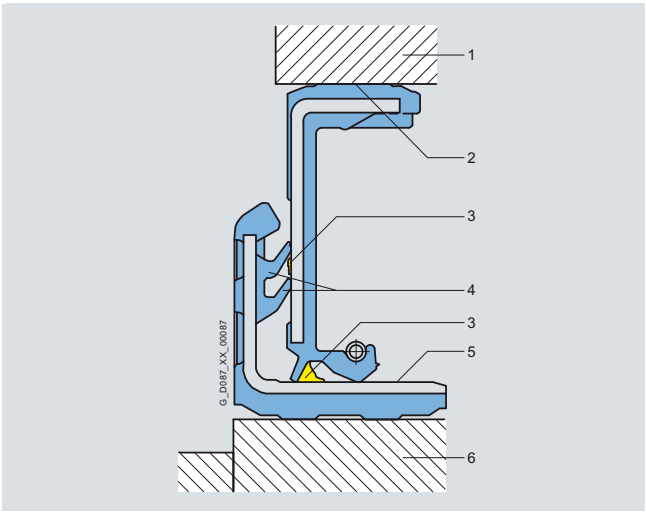


Pos.1 Oil drain valve
Pos.2 Screwed connection EGE
Pos.3 Screwed connection GE
Pos.4 Screw plug

Sealing

Combination shaft sealing

A combination shaft sealing, which helps to prevent oil from leaking, is available for helical gearboxes of sizes 38 to 168.



A combination shaft sealing is particulary well suited to external use.

Order code:

Combination shaft sealing **G24**

2 • Housing

3 • Rubberized inner and outer diameter

4 • Grease filling prevents dry running of the sealing lips

5 • Additional sealing lips to protect against dirt
• Decoupled sealing system prevents scoring of the shaft as a result of corrosion or dirt

6 • Protected running surface for radial shaft sealing ring
• No damage when mounting

7 • Shaft

Double sealing

Double sealing is possible for helical gearboxes of sizes 18, 28 and 188. Double sealing is particularly well suited to external use.

Order code:

Double sealing MSS1 (sizes 18, 28)	**G23**
Double radial shaft seal (size 188)	**G22+G31**

High temperature resistant sealing

High temperature resistant sealings (Viton/fluorinated rubber) for high operating and ambient temperatures of +60 °C and above are available for helical gearboxes.

Order code:

High temperature resistant sealing **G25**

Radially reinforced output shaft bearings

If required, gearboxes are available with a radially reinforced output shaft bearing arrangement. The reinforced bearings allow higher radial forces to be transferred.

Order code:
Radially reinforced output shaft bearing **G20**

Axially reinforced output shaft bearings

The gearboxes can be fitted with axially reinforced output shaft bearings on request.

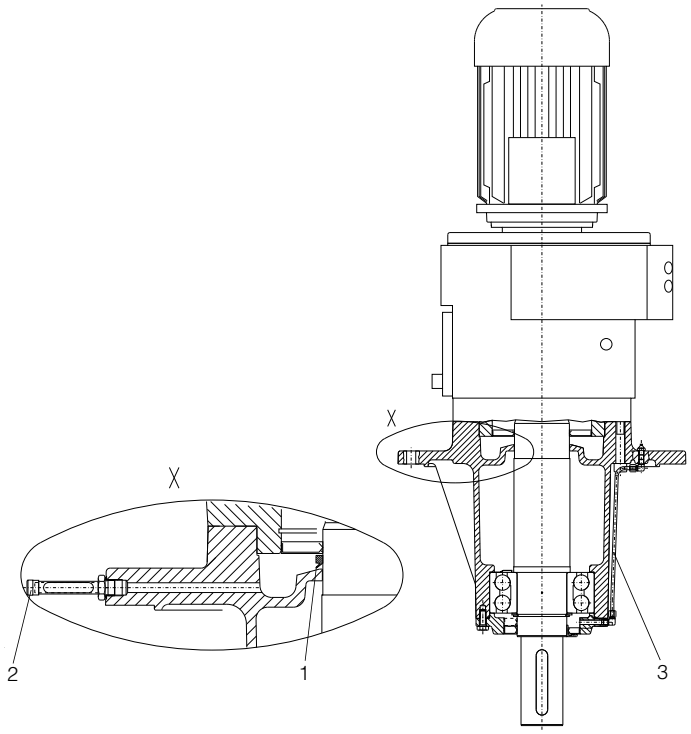
Order code:
Axially reinforced output shaft bearing **G21**

Agitator flange in dry-well design

The agitator flange can be fitted with an additional "V" ring (1) in mounting position V1 in order to drain off any leak oil to a safety chamber and protect the equipment against the effects of leakages.

The oil can either be viewed through a sight glass, or its presence indicated by an electrical sensor (2).

Order codes:
Design with sight glass **G89**
Design with sensor **G90**

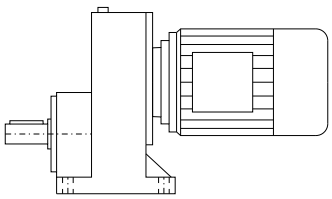
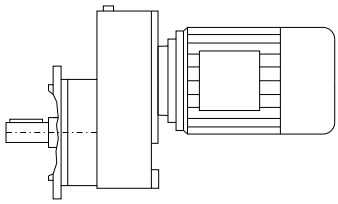
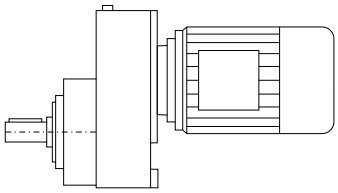
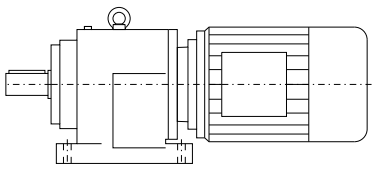
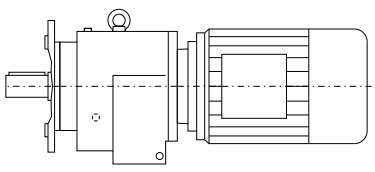


Regreasing device for the agitator flange (3)

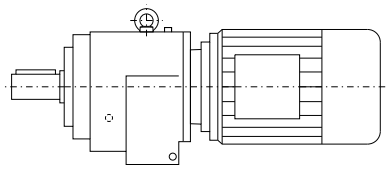
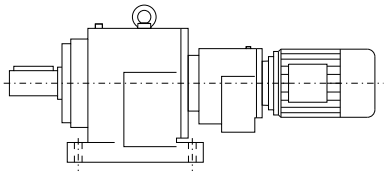
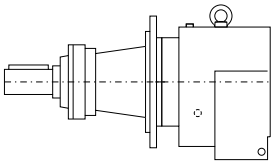
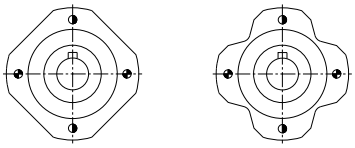
The agitator flange gearbox can be fitted with a regreasing device on request.

Dimensions

Dimension drawing overview

Representation	Gearbox type	Dimension drawing on page
	E38	2/136
	E48	2/139
	E68	2/142
	E88	2/145
	E108	2/148
	E128	2/151
	E148	2/154
	EF38	2/137
	EF48	2/140
	EF68	2/143
	EF88	2/146
	EF108	2/149
	EF128	2/152
	EF148	2/155
	EZ38	2/138
	EZ48	2/141
	EZ68	2/144
	EZ88	2/147
	EZ108	2/150
	EZ128	2/153
	EZ148	2/156
	D/Z18	2/157
	D/Z28	2/159
	D/Z38	2/161
	D/Z48	2/164
	D/Z68	2/167
	D/Z88	2/170
	D/Z108	2/173
	D/Z128	2/176
	D/Z148	2/179
	D/Z168	2/182
	D/Z188	2/185
	DF/ZF18	2/158
	DF/ZF28	2/160
	DF/ZF38	2/162
	DF/ZF48	2/165
	DF/ZF68	2/168
	DF/ZF88	2/171
	DF/ZF108	2/174
	DF/ZF128	2/177
	DF/ZF148	2/180
	DF/ZF168	2/183
	DF/ZF188	2/186

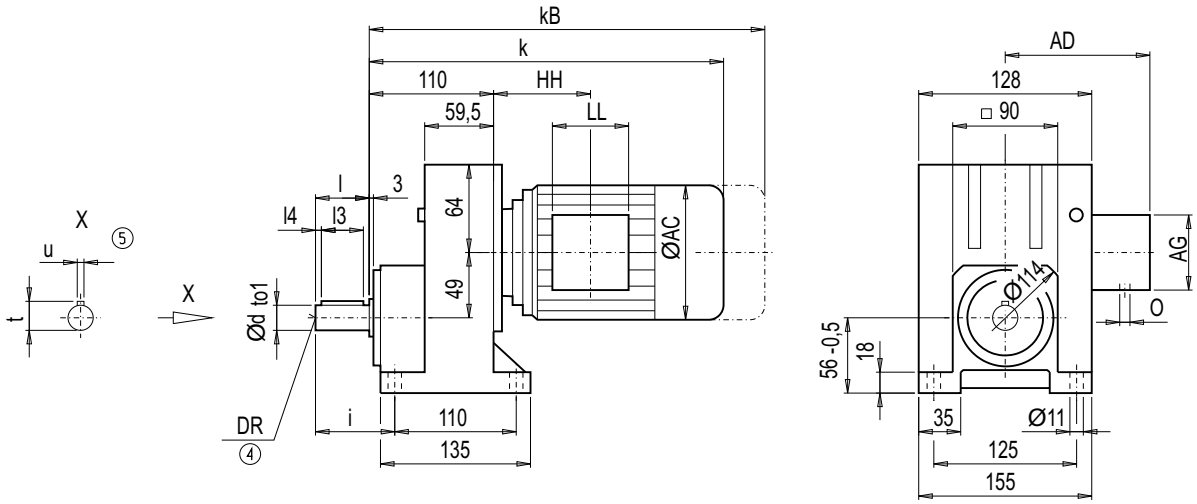
Dimension drawing overview (continued)

Representation	Gearbox type	Dimension drawing on page
	DZ/ZZ38	2/163
	DZ/ZZ48	2/166
	DZ/ZZ68	2/169
	DZ/ZZ88	2/172
	DZ/ZZ108	2/175
	DZ/ZZ128	2/178
	DZ/ZZ148	2/181
	DZ/ZZ168	2/184
	DZ/ZZ188	2/187
	D./Z.38-Z28 ... D.188-Z68	2/188
	DR/ZR68 ... DR/ZR168	2/191
	Pin holes	2/192

Dimensions

Gearbox E38 (1-stage), foot-mounted design

E011



d	to1	l	l4	l3	t	u	i	DR
20 *)	k6	40	5	30	22.5	6	56	M6x16
25	k6	50	7	40	28.0	8	66	M10x22

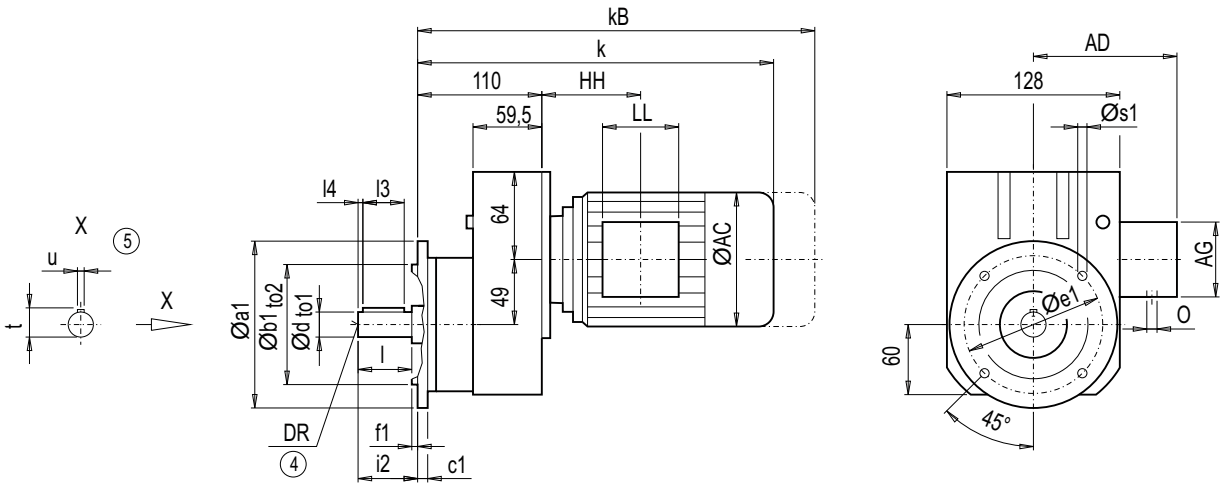
*) Preferred series

	E38								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**E38**
LA71	368.5	423.5	139.0	146	90	90	114.5	M20x1.5/M25x1.5	12
LA71Z	387.5	442.5	139.0	146	90	90	114.5	M20x1.5/M25x1.5	12
LA80	405.5	469.0	156.5	155	90	90	114.0	M20x1.5/M25x1.5	16
LA80Z	428.0	491.5	156.5	155	90	90	187.0	M20x1.5/M25x1.5	20
LA90S/L	436.5	507.5	174.0	163	90	90	114.0	M20x1.5/M25x1.5	21
LA90ZL	481.5	552.5	174.0	163	90	90	238.0	M20x1.5/M25x1.5	27
LA100L	482.5	563.5	195.0	168	120	120	154.5	2xM32x1.5	30
LA100ZL	552.5	633.5	195.0	168	120	120	286.5	2xM32x1.5	40
LA112M	512.5	593.5	219.0	181	120	120	160.5	2xM32x1.5	41
LA112ZM	540.5	621.5	219.0	181	120	120	264.5	2xM32x1.5	48

④ DIN 332 ⑤ Feather key / keyway DIN 6885

Gearbox EF38 (1-stage), flange-mounted design (A-type)

EF011



Flange	a1	b1	to2	c1	e1	f1	s1	d	to1	l	l4	l3	t	u	i2	DR
A120	120	80	j6	8	100	3.0	6.8	20 *)	k6	40	5	30	22.5	6	40	M6x16
								25	k6	50	7	40	28.0	8	50	M10x22
A140	140	95	j6	10	115	3.0	9.0	20 *)	k6	40	5	30	22.5	6	40	M6x16
								25	k6	50	7	40	28.0	8	50	M10x22
A160	160	110	j6	10	130	3.5	9.0	20 *)	k6	40	5	30	22.5	6	40	M6x16
								25	k6	50	7	40	28.0	8	50	M10x22
A200	200	130	j6	12	165	3.5	11.0	20 *)	k6	40	5	30	22.5	6	40	M6x16
								25	k6	50	7	40	28.0	8	50	M10x22
A250	250	180	j6	15	215	4.0	13.5	20 *)	k6	40	5	30	22.5	6	40	M6x16
								25	k6	50	7	40	28.0	8	50	M10x22

*) Preferred series

	EF38								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**EF38**
LA71	368.5	423.5	139.0	146	90	90	114.5	M20x1.5/M25x1.5	14
LA71Z	387.5	442.5	139.0	146	90	90	114.5	M20x1.5/M25x1.5	14
LA80	405.5	469.0	156.5	155	90	90	114.0	M20x1.5/M25x1.5	19
LA80Z	428.0	491.5	156.5	155	90	90	187.0	M20x1.5/M25x1.5	23
LA90S/L	436.5	507.5	174.0	163	90	90	114.0	M20x1.5/M25x1.5	24
LA90ZL	481.5	552.5	174.0	163	90	90	238.0	M20x1.5/M25x1.5	30
LA100L	482.5	563.5	195.0	168	120	120	154.5	2xM32x1.5	33
LA100ZL	552.5	633.5	195.0	168	120	120	286.5	2xM32x1.5	43
LA112M	512.5	593.5	219.0	181	120	120	160.5	2xM32x1.5	43
LA112ZM	540.5	621.5	219.0	181	120	120	264.5	2xM32x1.5	50

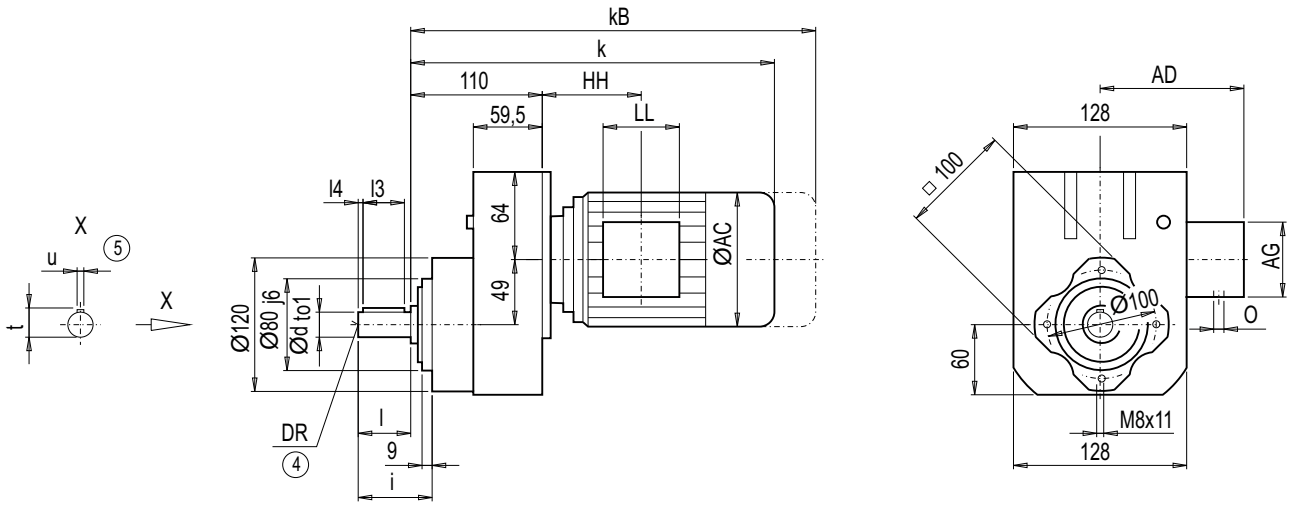
④ DIN 332

⑤ Feather key / keyway DIN 6885

Dimensions

Gearbox EZ38 (1-stage), housing-flange-mounted design (C-type)

EZ011



d	to1	l	l4	l3	t	u	i	DR
20 *)	k6	40	5	30	22.5	6	53	M6x16
25	k6	50	7	40	28.0	8	63	M10x22

*) Preferred series

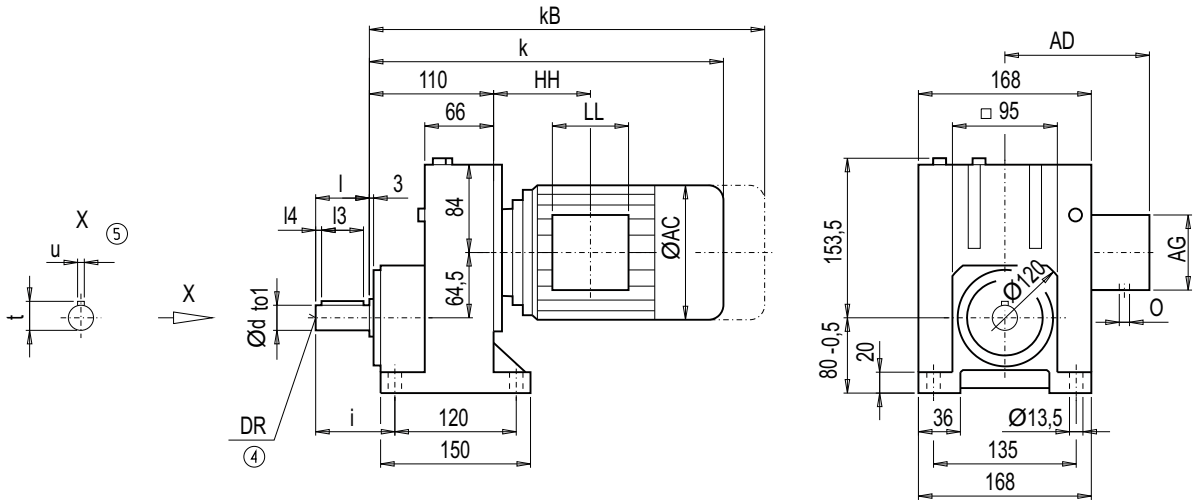
	EZ38								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**EZ38**
LA71	368.5	423.5	139.0	146	90	90	114.5	M20x1.5/M25x1.5	11
LA71Z	387.5	442.5	139.0	146	90	90	114.5	M20x1.5/M25x1.5	11
LA80	405.5	469.0	156.5	155	90	90	114.0	M20x1.5/M25x1.5	16
LA80Z	428.0	491.5	156.5	155	90	90	187.0	M20x1.5/M25x1.5	20
LA90S/L	436.5	507.5	174.0	163	90	90	114.0	M20x1.5/M25x1.5	20
LA90ZL	481.5	552.5	174.0	163	90	90	238.0	M20x1.5/M25x1.5	26
LA100L	482.5	563.5	195.0	168	120	120	154.5	2xM32x1.5	29
LA100ZL	552.5	633.5	195.0	168	120	120	286.5	2xM32x1.5	39
LA112M	512.5	593.5	219.0	181	120	120	160.5	2xM32x1.5	40
LA112ZM	540.5	621.5	219.0	181	120	120	264.5	2xM32x1.5	47

④ DIN 332

⑤ Feather key / keyway DIN 6885

Gearbox E48 (1-stage), foot-mounted design

E011



d	to1	l	l4	l3	t	u	i	DR
25 *)	k6	50	7	40	28	8	75	M10x22
30	k6	60	7	50	33	8	85	M10x22

*) Preferred series

	E48								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**E48**
LA71	363.0	418.0	139.0	146	90	90	109.0	M20x1.5/M25x1.5	15
LA71Z	382.0	437.0	139.0	146	90	90	109.0	M20x1.5/M25x1.5	15
LA80	400.0	463.5	156.5	155	90	90	108.5	M20x1.5/M25x1.5	20
LA80Z	422.5	486.0	156.5	155	90	90	181.5	M20x1.5/M25x1.5	24
LA90S/L	431.0	502.0	174.0	163	90	90	108.5	M20x1.5/M25x1.5	25
LA90ZL	476.0	547.0	174.0	163	90	90	232.5	M20x1.5/M25x1.5	31
LA100L	477.0	558.0	195.0	168	120	120	149.0	2xM32x1.5	34
LA100ZL	547.0	628.0	195.0	168	120	120	281.0	2xM32x1.5	44
LA112M	506.0	587.0	219.0	181	120	120	154.0	2xM32x1.5	45
LA112ZM	534.0	615.0	219.0	181	120	120	258.0	2xM32x1.5	52
LA132S/M	568.5	670.5	259.0	195	140	140	197.0	2xM32x1.5	55
LA132ZM	614.5	716.5	259.0	195	140	140	305.0	2xM32x1.5	76

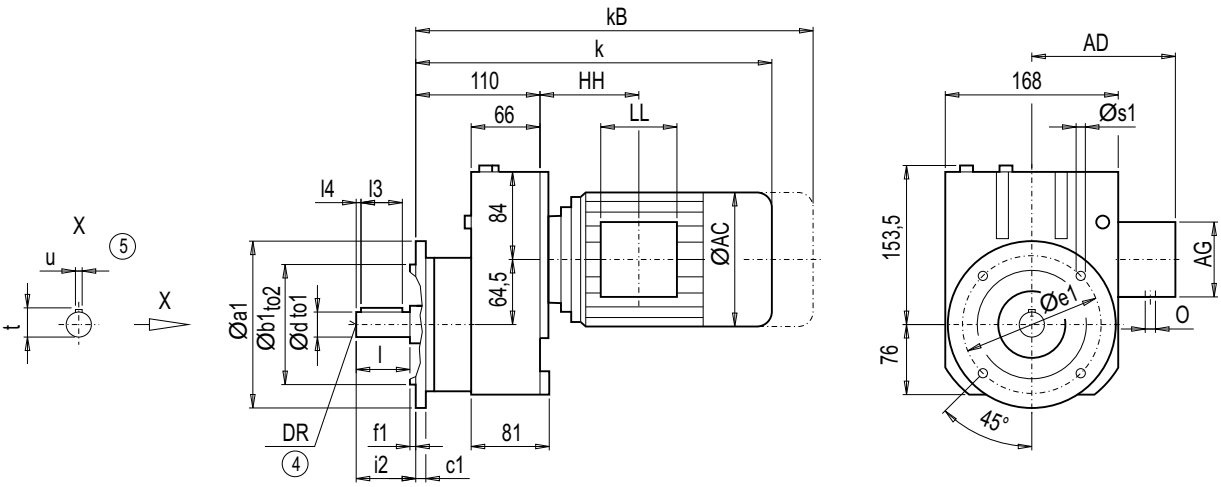
④ DIN 332

⑤ Feather key / keyway DIN 6885

Dimensions

Gearbox EF48 (1-stage), flange-mounted design (A-type)

EF011



Flange	a1	b1	to2	c1	e1	f1	s1	d	to1	l	l3	l4	t	u	i2	DR
A120	120	80	j6	8	100	3.0	6.8	25 *)	k6	50	7	40	28	8	50	M10x22
								30	k6	60	7	50	33	8	60	M10x22
A140	140	95	j6	10	115	3.0	9.0	25 *)	k6	50	7	40	28	8	50	M10x22
								30	k6	60	7	50	33	8	60	M10x22
A160	160	110	j6	10	130	3.5	9.0	25 *)	k6	50	7	40	28	8	50	M10x22
								30	k6	60	7	50	33	8	60	M10x22
A200	200	130	j6	12	165	3.5	11.0	25 *)	k6	50	7	40	28	8	50	M10x22
								30	k6	60	7	50	33	8	60	M10x22
A250	250	180	j6	15	215	4.0	13.5	25 *)	k6	50	7	40	28	8	50	M10x22
								30	k6	60	7	50	33	8	60	M10x22

*) Preferred series

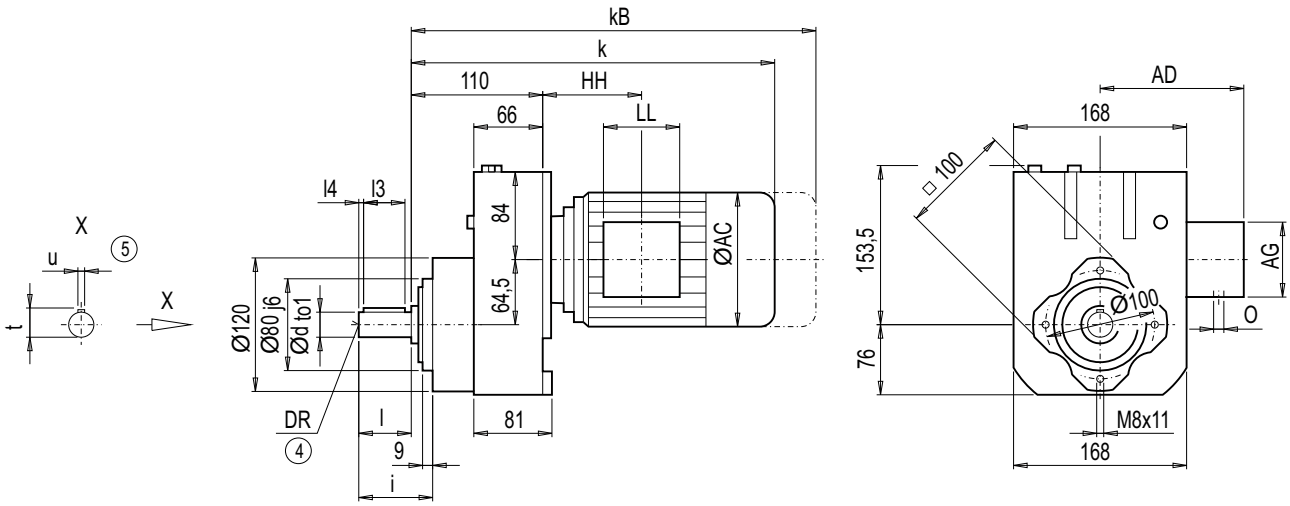
	EF48								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**EF48**
LA71	363.0	418.0	139.0	146	90	90	109.0	M20x1.5/M25x1.5	17
LA71Z	382.0	437.0	139.0	146	90	90	109.0	M20x1.5/M25x1.5	17
LA80	400.0	463.5	156.5	155	90	90	108.5	M20x1.5/M25x1.5	22
LA80Z	422.5	486.0	156.5	155	90	90	181.5	M20x1.5/M25x1.5	26
LA90S/L	431.0	502.0	174.0	163	90	90	108.5	M20x1.5/M25x1.5	27
LA90ZL	476.0	547.0	174.0	163	90	90	232.5	M20x1.5/M25x1.5	33
LA100L	477.0	558.0	195.0	168	120	120	149.0	2xM32x1.5	36
LA100ZL	547.0	628.0	195.0	168	120	120	281.0	2xM32x1.5	46
LA112M	506.0	587.0	219.0	181	120	120	154.0	2xM32x1.5	47
LA112ZM	534.0	615.0	219.0	181	120	120	258.0	2xM32x1.5	54
LA132S/M	568.5	670.5	259.0	195	140	140	197.0	2xM32x1.5	57
LA132ZM	614.5	716.5	259.0	195	140	140	305.0	2xM32x1.5	78

④ DIN 332

⑤ Feather key / keyway DIN 6885

Gearbox EZ48 (1-stage), housing-flange-mounted design (C-type)

EZ011



d	to1	l	l4	l3	t	u	i	DR
25 *)	k6	50	7	40	28	8	63	M10x22
30	k6	60	7	50	33	8	73	M10x22

*) Preferred series

	EZ48								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**EZ48**
LA71	363.0	418.0	139.0	146	90	90	109.0	M20x1.5/M25x1.5	14
LA71Z	382.0	437.0	139.0	146	90	90	109.0	M20x1.5/M25x1.5	14
LA80	400.0	463.5	156.5	155	90	90	108.5	M20x1.5/M25x1.5	19
LA80Z	422.5	486.0	156.5	155	90	90	181.5	M20x1.5/M25x1.5	23
LA90S/L	431.0	502.0	174.0	163	90	90	108.5	M20x1.5/M25x1.5	23
LA90ZL	476.0	547.0	174.0	163	90	90	232.5	M20x1.5/M25x1.5	29
LA100L	477.0	558.0	195.0	168	120	120	149.0	2xM32x1.5	33
LA100ZL	547.0	628.0	195.0	168	120	120	281.0	2xM32x1.5	43
LA112M	506.0	587.0	219.0	181	120	120	154.0	2xM32x1.5	44
LA112ZM	534.0	615.0	219.0	181	120	120	258.0	2xM32x1.5	51
LA132S/M	568.5	670.5	259.0	195	140	140	197.0	2xM32x1.5	54
LA132ZM	614.5	716.5	259.0	195	140	140	305.0	2xM32x1.5	75

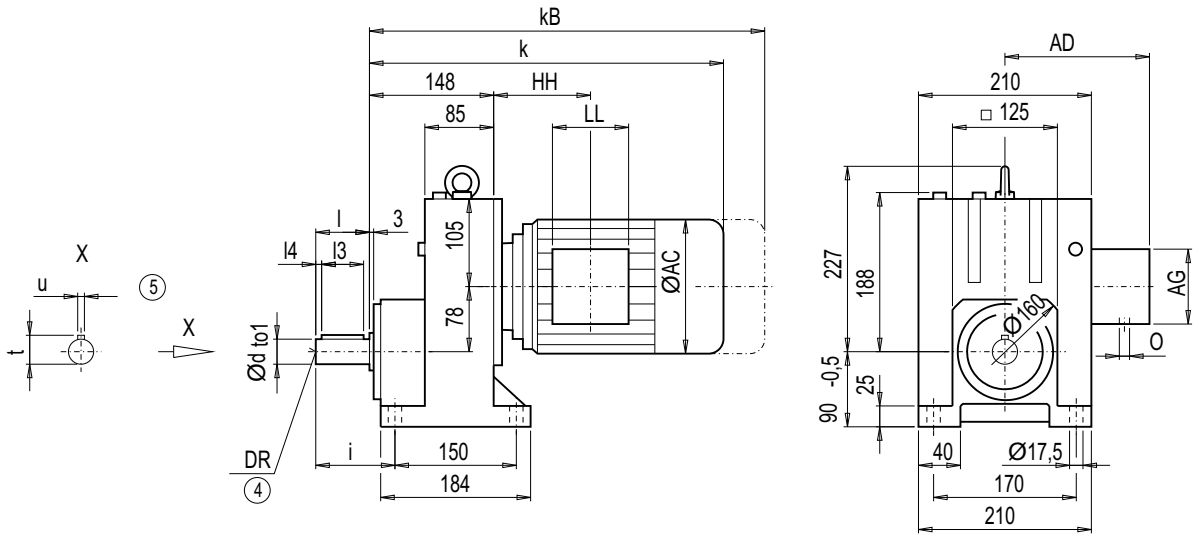
④ DIN 332

⑤ Feather key / keyway DIN 6885

Dimensions

Gearbox E68 (1-stage), foot-mounted design

E011



d	to1	l	l4	l3	t	u	i	DR
30 *)	k6	60	3.5	50	33	8	85	M10x22
40	k6	80	5	70	43	12	105	M16x36

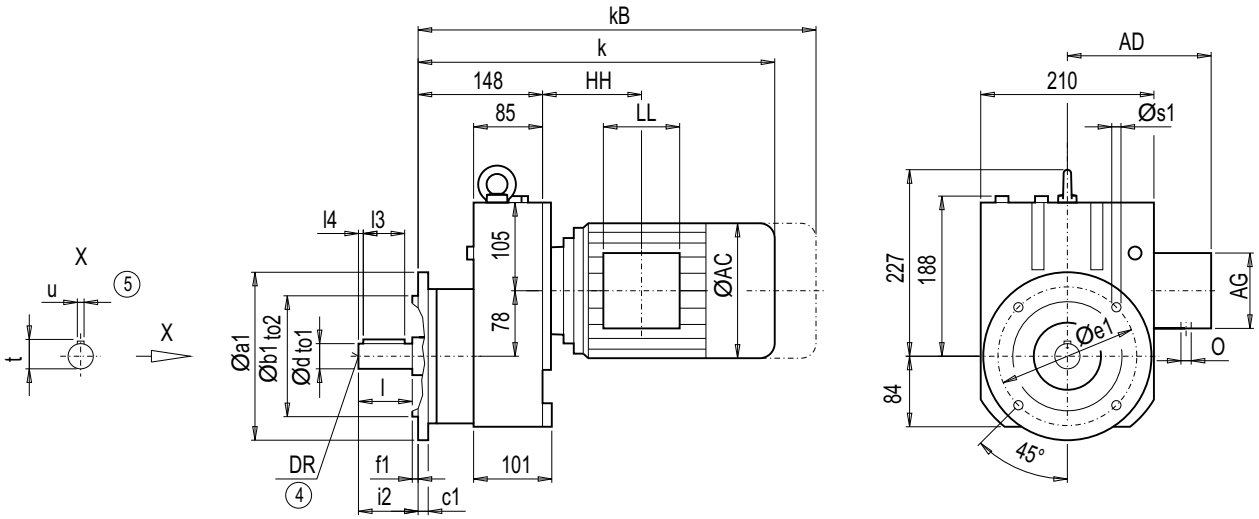
*) Preferred series

	E68								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**E68**
LA71	395.0	450.0	139.0	146	90	90	103.0	M20x1.5/M25x1.5	25
LA71Z	414.0	469.0	139.0	146	90	90	103.0	M20x1.5/M25x1.5	25
LA80	432.0	495.5	156.5	155	90	90	102.5	M20x1.5/M25x1.5	30
LA80Z	454.5	518.0	156.5	155	90	90	175.5	M20x1.5/M25x1.5	34
LA90S/L	463.0	534.0	174.0	163	90	90	102.5	M20x1.5/M25x1.5	40
LA90ZL	508.0	579.0	174.0	163	90	90	226.5	M20x1.5/M25x1.5	34
LA100L	509.0	590.0	195.0	168	120	120	143.0	2xM32x1.5	44
LA100ZL	579.0	660.0	195.0	168	120	120	275.0	2xM32x1.5	54
LA112M	536.0	617.0	219.0	181	120	120	146.0	2xM32x1.5	55
LA112ZM	564.0	645.0	219.0	181	120	120	250.0	2xM32x1.5	62
LA132S/M	596.0	698.0	259.0	195	140	140	186.5	2xM32x1.5	68
LA132ZM	642.0	744.0	259.0	195	140	140	294.5	2xM32x1.5	89
LA160M/L	699.0	817.5	313.5	227	165	165	212.5	2xM40x1.5	101
LA160ZL	747.0	865.5	313.5	227	165	165	365.5	2xM40x1.5	140

④ DIN 332 ⑤ Feather key / keyway DIN 6885

Gearbox EF68 (1-stage), flange-mounted design (A-type)

EF011



Flange	a1	b1	to2	c1	e1	f1	s1	d	to1	l	l4	l3	t	u	i2	DR
A200	200	130	j6	12	165	3.5	11.0	30 *)	k6	60	3.5	50	33	8	60	M10x22
								40	k6	80	5	70	43	12	80	M16x36
A250	250	180	j6	15	215	4.0	13.5	30 *)	k6	60	3.5	50	33	8	60	M10x22
								40	k6	80	5	70	43	12	80	M16x36
A300	300	230	j6	16	265	4.0	13.5	30 *)	k6	60	3.5	50	33	8	60	M10x22
								40	k6	80	5	70	43	12	80	M16x36

*) Preferred series

	EF68								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**EF68**
LA71	395.0	450.0	139.0	146	90	90	103.0	M20x1.5/M25x1.5	27
LA71Z	414.0	469.0	139.0	146	90	90	103.0	M20x1.5/M25x1.5	27
LA80	432.0	495.5	156.5	155	90	90	102.5	M20x1.5/M25x1.5	32
LA80Z	454.5	518.0	156.5	155	90	90	175.5	M20x1.5/M25x1.5	36
LA90S/L	463.0	534.0	174.0	163	90	90	102.5	M20x1.5/M25x1.5	36
LA90ZL	508.0	579.0	174.0	163	90	90	226.5	M20x1.5/M25x1.5	42
LA100L	509.0	590.0	195.0	168	120	120	143.0	2xM32x1.5	46
LA100ZL	579.0	660.0	195.0	168	120	120	275.0	2xM32x1.5	56
LA112M	536.0	617.0	219.0	181	120	120	146.0	2xM32x1.5	57
LA112ZM	564.0	645.0	219.0	181	120	120	250.0	2xM32x1.5	64
LA132S/M	596.0	698.0	259.0	195	140	140	186.5	2xM32x1.5	70
LA132ZM	642.0	744.0	259.0	195	140	140	294.5	2xM32x1.5	91
LA160M/L	699.0	817.5	313.5	227	165	165	212.5	2xM40x1.5	103
LA160ZL	747.0	865.5	313.5	227	165	165	365.5	2xM40x1.5	142

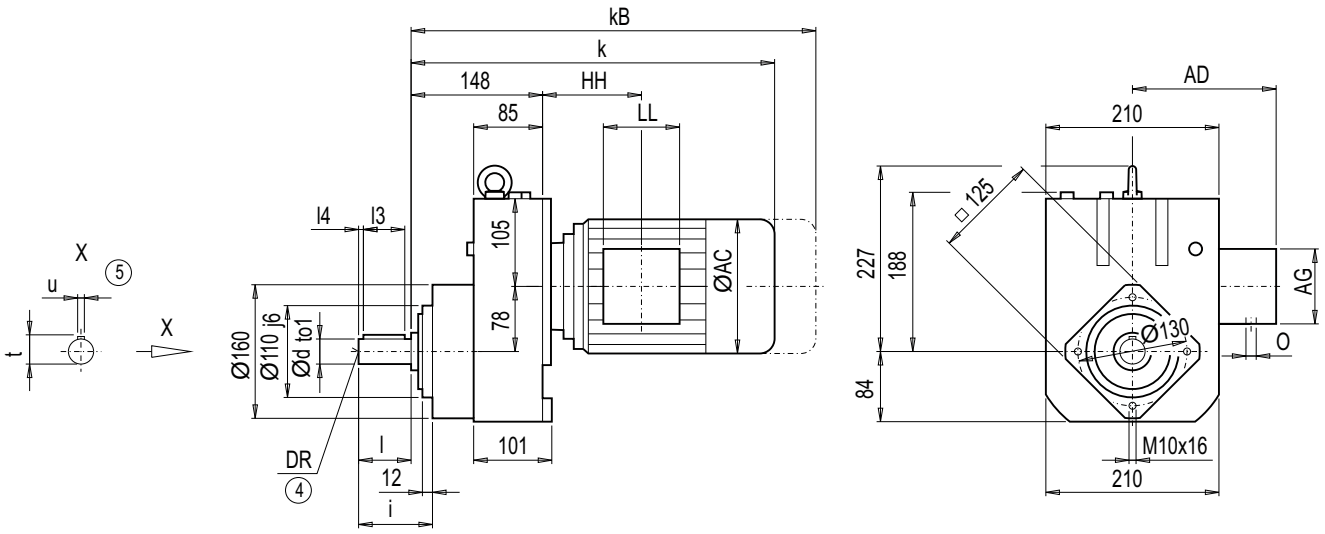
④ DIN 332

⑤ Feather key / keyway DIN 6885

Dimensions

Gearbox EZ68 (1-stage), housing-flange-mounted design (C-type)

EZ011



d	to1	l	l4	l3	t	u	i	DR
30 *)	k6	60	3.5	50	33	8	77	M10x22
40	k6	80	5	70	43	12	97	M16x36

*) Preferred series

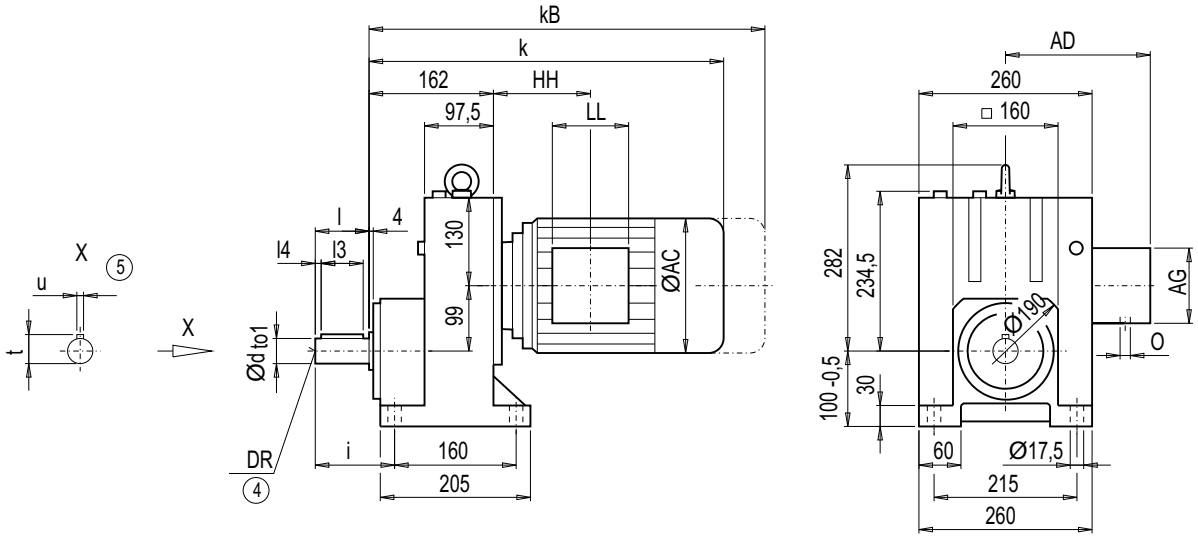
	EZ68								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**EZ68**
LA71	395.0	450.0	139.0	146	90	90	103.0	M20x1.5/M25x1.5	22
LA71Z	414.0	469.0	139.0	146	90	90	103.0	M20x1.5/M25x1.5	22
LA80	432.0	495.5	156.5	155	90	90	102.5	M20x1.5/M25x1.5	27
LA80Z	454.5	518.0	156.5	155	90	90	175.5	M20x1.5/M25x1.5	31
LA90S/L	463.0	534.0	174.0	163	90	90	102.5	M20x1.5/M25x1.5	32
LA90ZL	508.0	579.0	174.0	163	90	90	226.5	M20x1.5/M25x1.5	38
LA100L	509.0	590.0	195.0	168	120	120	143.0	2xM32x1.5	41
LA100ZL	579.0	660.0	195.0	168	120	120	275.0	2xM32x1.5	51
LA112M	536.0	617.0	219.0	181	120	120	146.0	2xM32x1.5	53
LA112ZM	564.0	645.0	219.0	181	120	120	250.0	2xM32x1.5	60
LA132S/M	596.0	698.0	259.0	195	140	140	186.5	2xM32x1.5	66
LA132ZM	642.0	744.0	259.0	195	140	140	294.5	2xM32x1.5	87
LA160M/L	699.0	817.5	313.5	227	165	165	212.5	2xM40x1.5	99
LA160ZL	747.0	865.5	313.5	227	165	165	365.5	2xM40x1.5	138

④ DIN 332

⑤ Feather key / keyway DIN 6885

Gearbox E88 (1-stage), foot-mounted design

E011



d	to1	l	l4	l3	t	u	i	DR
40 *)	k6	80	5	70	43	12	110	M16x36
45	k6	90	5	80	48.5	14	120	M16x36

*) Preferred series

	E88								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**E88**
LA90S/L	462.0	533.0	174.0	163.0	90	90	87.5	M20x1.5/M25x1.5	52
LA90ZL	507.0	578.0	174.0	163.0	90	90	211.5	M20x1.5/M25x1.5	58
LA100L	505.5	586.5	195.0	168.0	120	120	125.5	2xM32x1.5	60
LA100ZL	575.5	656.5	195.0	168.0	120	120	257.5	2xM32x1.5	70
LA112M	531.5	612.5	219.0	181.0	120	120	127.5	2xM32x1.5	72
LA112ZM	559.5	640.5	219.0	181.0	120	120	231.5	2xM32x1.5	79
LA132S/M	591.5	693.5	259.0	195.0	140	140	168.0	2xM32x1.5	84
LA132ZM	637.5	739.5	259.0	195.0	140	140	276.0	2xM32x1.5	105
LA160M/L	696.0	814.5	313.5	227.0	165	165	195.5	2xM40x1.5	119
LA160ZL	744.0	862.5	313.5	227.0	165	165	348.5	2xM40x1.5	158
LG180M/L	756.0	878.0	348.0	322.5	260	192	213.0	2xM40x1.5	211
LG180ZM/ZL	807.0	929.0	348.0	322.5	260	192	213.0	2xM40x1.5	241

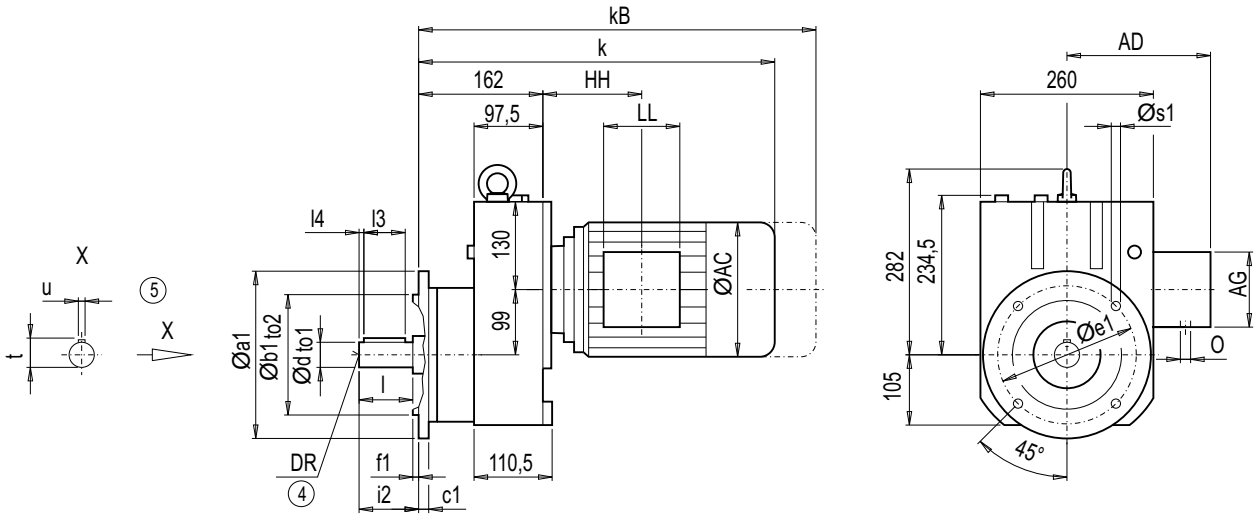
④ DIN 332

⑤ Feather key / keyway DIN 6885

Dimensions

Gearbox EF88 (1-stage), flange-mounted design (A-type)

EF011



Flange	a1	b1	to2	c1	e1	f1	s1	d	to1	l	l4	l3	t	u	i2	DR
A250	250	180	j6	15	215	4	13.5	40 *)	k6	80	5	70	43	12	80	M16x36
								45	k6	90	5	80	48.5	14	90	M16x36
A300	300	230	j6	16	265	4	13.5	40 *)	k6	80	5	70	43	12	80	M16x36
								45	k6	90	5	80	48.5	14	90	M16x36
A350	350	250	h6	18	300	4	17.5	40 *)	k6	80	5	70	43	12	80	M16x36
								45	k6	90	5	80	48.5	14	90	M16x36

*) Preferred series

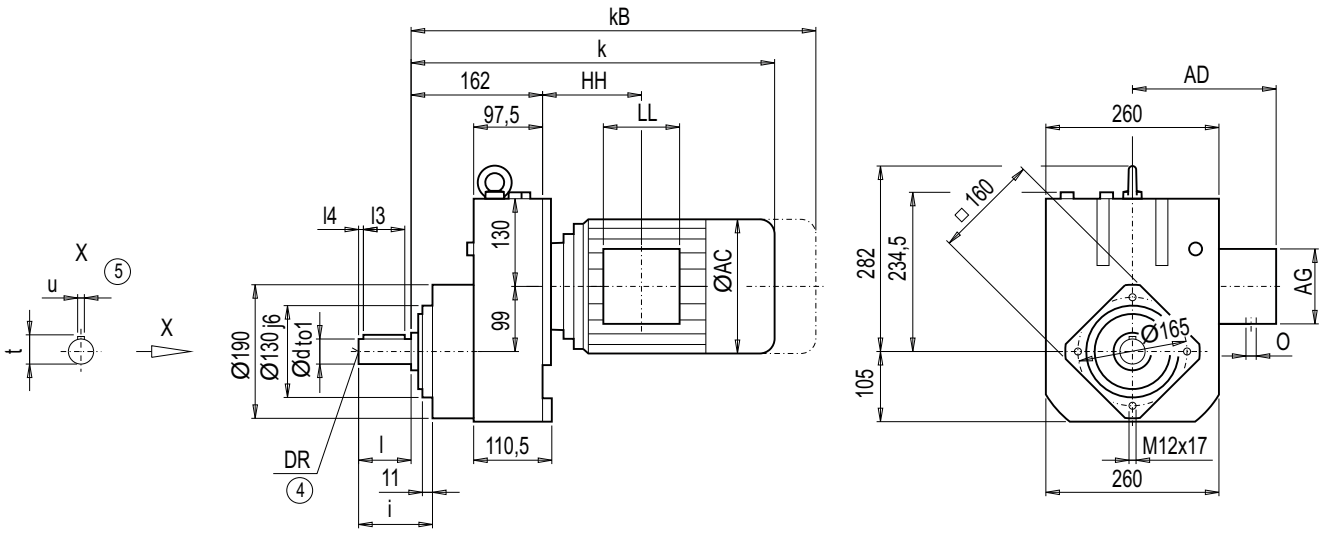
	EF88								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**EF88**
LA90S/L	462.0	533.0	174.0	163.0	90	90	87.5	M20x1.5/M25x1.5	54
LA90ZL	507.0	578.0	174.0	163.0	90	90	211.5	M20x1.5/M25x1.5	60
LA100L	505.5	586.5	195.0	168.0	120	120	125.5	2xM32x1.5	62
LA100ZL	575.5	656.5	195.0	168.0	120	120	257.5	2xM32x1.5	72
LA112M	531.5	612.5	219.0	181.0	120	120	127.5	2xM32x1.5	74
LA112ZM	559.5	640.5	219.0	181.0	120	120	231.5	2xM32x1.5	81
LA132S/M	591.5	693.5	259.0	195.0	140	140	168.0	2xM32x1.5	85
LA132ZM	637.5	739.5	259.0	195.0	140	140	276.0	2xM32x1.5	107
LA160M/L	696.0	814.5	313.5	227.0	165	165	195.5	2xM40x1.5	120
LA160ZL	744.0	862.5	313.5	227.0	165	165	348.5	2xM40x1.5	159
LG180M/L	756.0	878.0	348.0	322.5	260	192	213.0	2xM40x1.5	212
LG180ZM/ZL	807.0	929.0	348.0	322.5	260	192	213.0	2xM40x1.5	242

④ DIN 332

⑤ Feather key / keyway DIN 6885

Gearbox EZ88 (1-stage), housing-flange-mounted design (C-type)

EZ011



d	to1	l	l4	l3	t	u	i	DR
40 *)	k6	80	5	70	43	12	98	M16x36
45	k6	90	5	80	48.5	14	108	M16x36

*) Preferred series

	EZ88								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**EZ88**
LA90S/L	462.0	533.0	174.0	163.0	90	90	87.5	M20x1.5/M25x1.5	47
LA90ZL	507.0	578.0	174.0	163.0	90	90	211.5	M20x1.5/M25x1.5	53
LA100L	505.5	586.5	195.0	168.0	120	120	125.5	2xM32x1.5	55
LA100ZL	575.5	656.5	195.0	168.0	120	120	257.5	2xM32x1.5	65
LA112M	531.5	612.5	219.0	181.0	120	120	127.5	2xM32x1.5	67
LA112ZM	559.5	640.5	219.0	181.0	120	120	231.5	2xM32x1.5	74
LA132S/M	591.5	693.5	259.0	195.0	140	140	168.0	2xM32x1.5	79
LA132ZM	637.5	739.5	259.0	195.0	140	140	276.0	2xM32x1.5	100
LA160M/L	696.0	814.5	313.5	227.0	165	165	195.5	2xM40x1.5	114
LA160ZL	744.0	862.5	313.5	227.0	165	165	348.5	2xM40x1.5	153
LG180M/L	756.0	878.0	348.0	322.5	260	192	213.0	2xM40x1.5	206
LG180ZM/ZL	807.0	929.0	348.0	322.5	260	192	213.0	2xM40x1.5	236

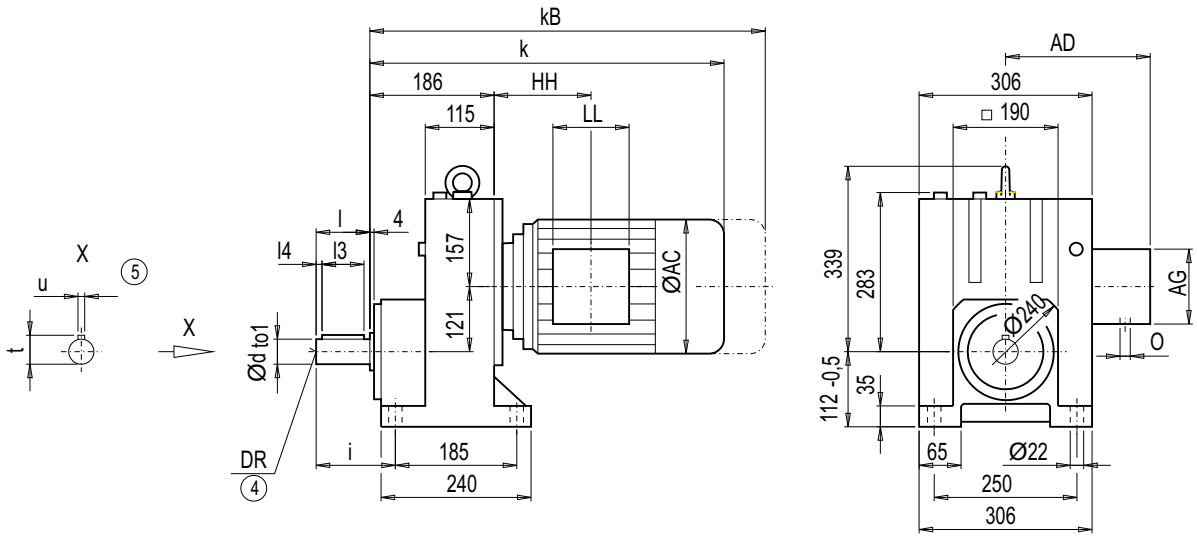
④ DIN 332

⑤ Feather key / keyway DIN 6885

Dimensions

Gearbox E108 (1-stage), foot-mounted design

E011



d	to1	l	l4	l3	t	u	i	DR
50 *)	k6	100	10	80	53.5	14	140	M16x36
55	k6	110	5	100	59.0	16	150	M20x42

*) Preferred series

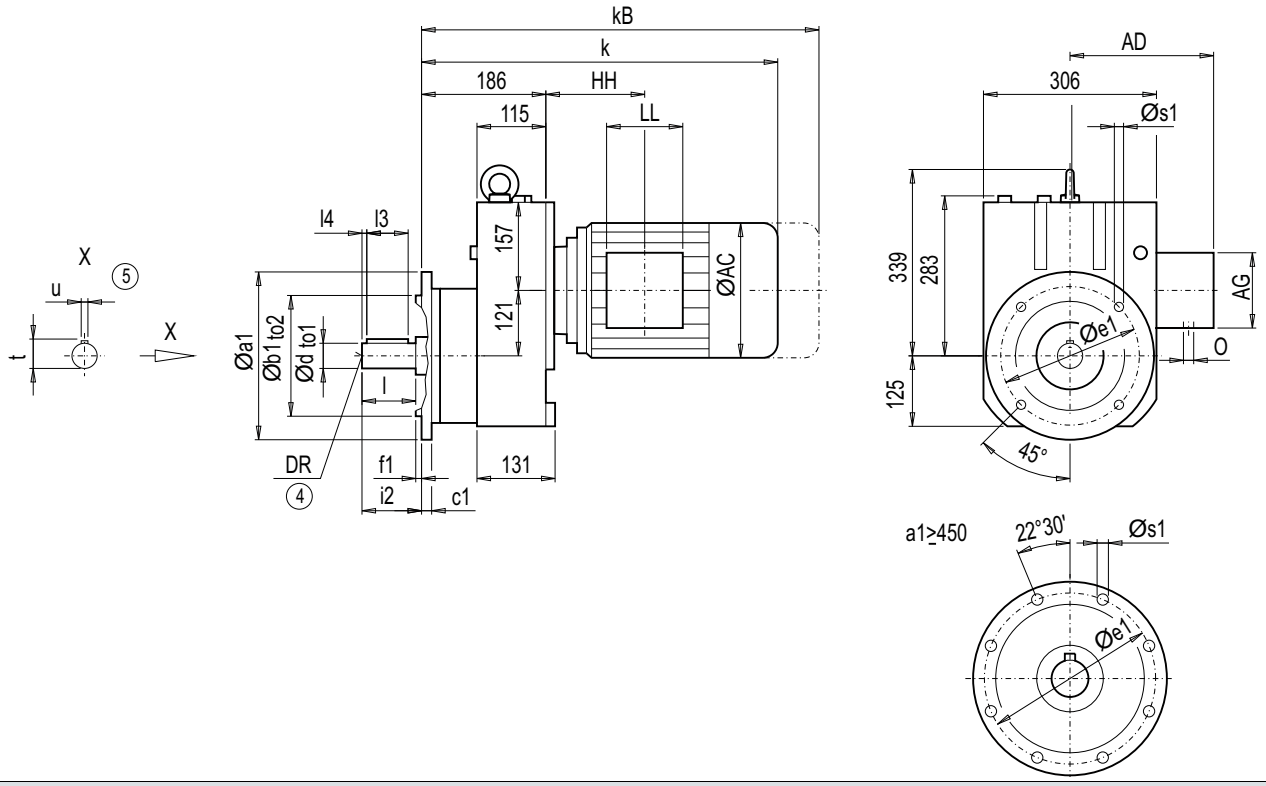
	E108								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**E108**
LA90S/L	474.5	545.5	174.0	163.0	90	90	76.0	M20x1.5/M25x1.5	74
LA90ZL	519.5	590.5	174.0	163.0	90	90	200.0	M20x1.5/M25x1.5	80
LA100L	517.5	598.5	195.0	168.0	120	120	113.5	2xM32x1.5	82
LA100ZL	587.5	668.5	195.0	168.0	120	120	245.5	2xM32x1.5	92
LA112M	544.0	625.0	219.0	181.0	120	120	116.0	2xM32x1.5	94
LA112ZM	572.0	653.0	219.0	181.0	120	120	220.0	2xM32x1.5	101
LA132S/M	603.0	705.0	259.0	195.0	140	140	155.5	2xM32x1.5	105
LA132ZM	649.0	751.0	259.0	195.0	140	140	263.5	2xM32x1.5	126
LA160M/L	708.5	827.0	313.5	227.0	165	165	184.0	2xM40x1.5	139
LA160ZL	756.5	875.0	313.5	227.0	165	165	337.0	2xM40x1.5	178
LG180M/L	765.0	887.0	348.0	322.5	260	192	198.0	2xM40x1.5	236
LG180ZM/ZL	816.0	938.0	348.0	322.5	260	192	198.0	2xM40x1.5	266
LG200L	821.0	947.0	385.0	301.0	260	192	228.0	2xM50x1.5	316
K4-LGI225S	1 082.0	1 321.0	442.0	325.0	260	192	443.0	2xM50x1.5	472
K4-LGI225M	1 082.0	1 321.0	442.0	325.0	260	192	443.0	2xM50x1.5	460
K4-LGI225ZM	1 142.0	1 381.0	442.0	325.0	260	192	443.0	2xM50x1.5	518

④ DIN 332

⑤ Feather key / keyway DIN 6885

Gearbox EF108 (1-stage), flange-mounted design (A-type)

EF011



Flange	a1	b1	to2	c1	e1	f1	s1	d	to1	l	l4	l3	t	u	i2	DR
A300	300	230	j6	16	265	4	13.5	50*)	k6	100	10	80	53.5	14	100	M16x36
								55	k6	110	5	100	59.0	16	110	M20x42
A350	350	250	h6	18	300	5	17.5	50*)	k6	100	10	80	53.5	14	100	M16x36
								55	k6	110	5	100	59.0	16	110	M20x42
A450	450	350	h6	22	400	5	17.5	50*)	k6	100	10	80	53.5	14	100	M16x36
								55	k6	110	5	100	59.0	16	110	M20x42

*) Preferred series

	EF108								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**EF108**
LA90S/L	474.5	545.5	174.0	163.0	90	90	76.0	M20x1.5/M25x1.5	84
LA90ZL	519.5	590.5	174.0	163.0	90	90	200.0	M20x1.5/M25x1.5	90
LA100L	517.5	598.5	195.0	168.0	120	120	113.5	2xM32x1.5	92
LA100ZL	587.5	668.5	195.0	168.0	120	120	245.5	2xM32x1.5	102
LA112M	544.0	625.0	219.0	181.0	120	120	116.0	2xM32x1.5	104
LA112ZM	572.0	653.0	219.0	181.0	120	120	220.0	2xM32x1.5	111
LA132S/M	603.0	705.0	259.0	195.0	140	140	155.5	2xM32x1.5	114
LA132ZM	649.0	751.0	259.0	195.0	140	140	263.5	2xM32x1.5	135
LA160M/L	708.5	827.0	313.5	227.0	165	165	184.0	2xM40x1.5	149
LA160ZL	756.5	875.0	313.5	227.0	165	165	337.0	2xM40x1.5	188
LG180M/L	765.0	887.0	348.0	322.5	260	192	198.0	2xM40x1.5	245
LG180ZM/ZL	816.0	938.0	348.0	322.5	260	192	198.0	2xM40x1.5	275
LG200L	821.0	947.0	385.0	301.0	260	192	228.0	2xM50x1.5	325
K4-LGI225S	1 082.0	1 321.0	442.0	325.0	260	192	443.0	2xM50x1.5	481
K4-LGI225M	1 082.0	1 321.0	442.0	325.0	260	192	443.0	2xM50x1.5	469
K4-LGI225ZM	1 142.0	1 381.0	442.0	325.0	260	192	443.0	2xM50x1.5	527

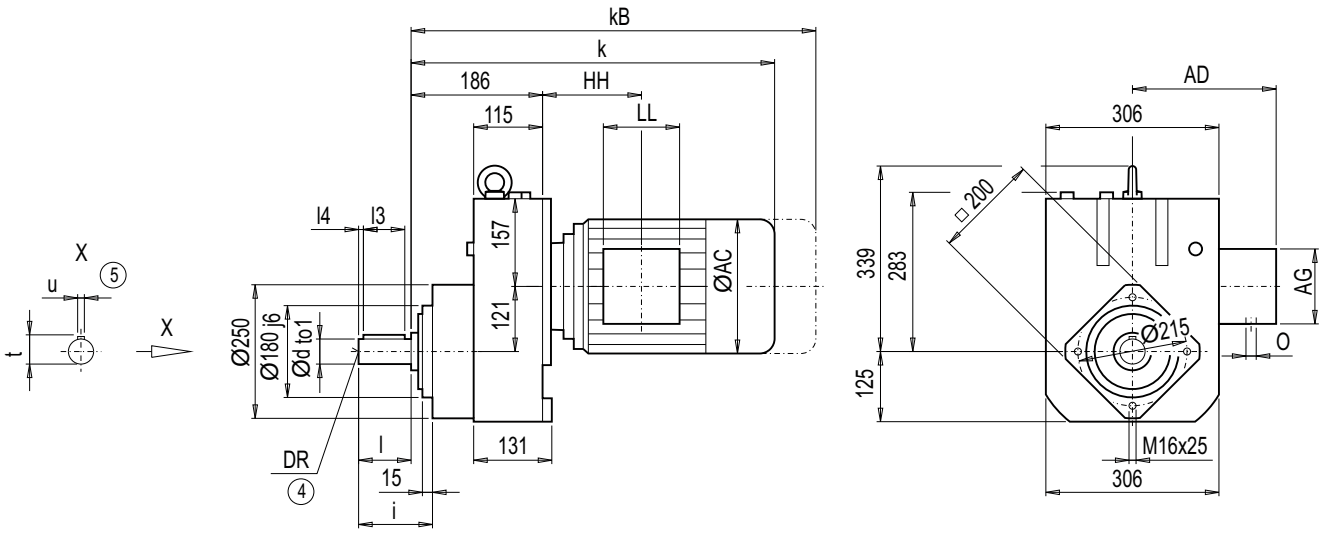
④ DIN 332

⑤ Feather key / keyway DIN 6885

Dimensions

Gearbox EZ108 (1-stage), housing-flange-mounted design (C-type)

EZ011



d	to1	l	l4	l3	t	u	i	DR
50 *)	k6	100	10	80	53.5	14	122	M16x36
55	k6	110	5	100	59.0	16	132	M20x42

*) Preferred series

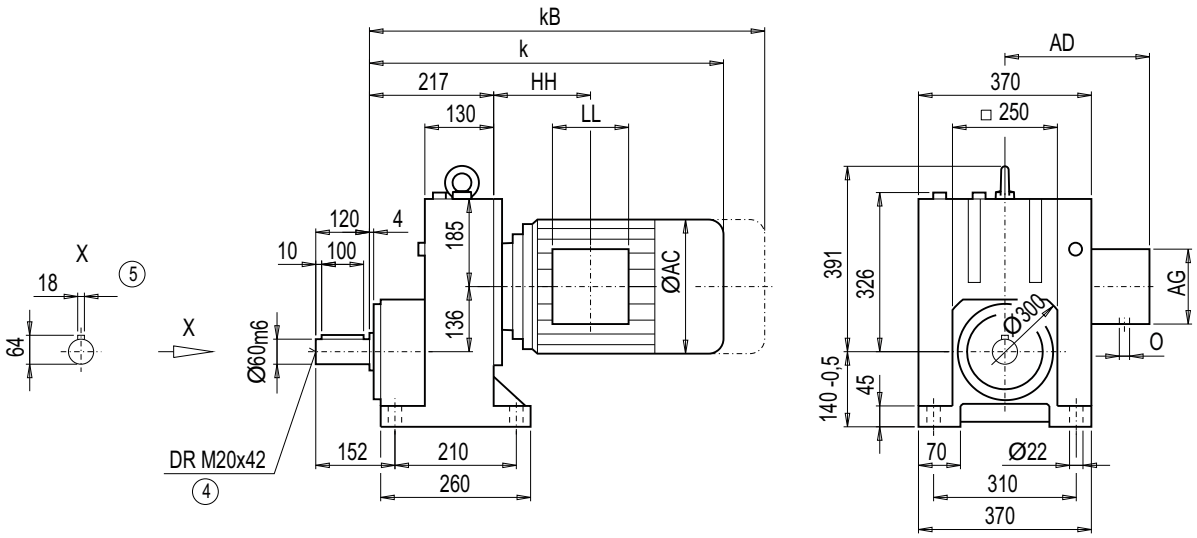
	EZ108								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**EZ108**
LA90S/L	474.5	545.5	174.0	163.0	90	90	76.0	M20x1.5/M25x1.5	67
LA90ZL	519.5	590.5	174.0	163.0	90	90	200.0	M20x1.5/M25x1.5	73
LA100L	517.5	598.5	195.0	168.0	120	120	113.5	2xM32x1.5	75
LA100ZL	587.5	668.5	195.0	168.0	120	120	245.5	2xM32x1.5	85
LA112M	544.0	625.0	219.0	181.0	120	120	116.0	2xM32x1.5	87
LA112ZM	572.0	653.0	219.0	181.0	120	120	220.0	2xM32x1.5	94
LA132S/M	603.0	705.0	259.0	195.0	140	140	155.5	2xM32x1.5	98
LA132ZM	649.0	751.0	259.0	195.0	140	140	263.5	2xM32x1.5	119
LA160M/L	708.5	827.0	313.5	227.0	165	165	184.0	2xM40x1.5	132
LA160ZL	756.5	875.0	313.5	227.0	165	165	337.0	2xM40x1.5	171
LG180M/L	765.0	887.0	348.0	322.5	260	192	198.0	2xM40x1.5	229
LG180ZM/ZL	816.0	938.0	348.0	322.5	260	192	198.0	2xM40x1.5	259
LG200L	821.0	947.0	385.0	301.0	260	192	228.0	2xM50x1.5	309
K4-LGI225S	1 082.0	1 321.0	442.0	325.0	260	192	443.0	2xM50x1.5	465
K4-LGI225M	1 082.0	1 321.0	442.0	325.0	260	192	443.0	2xM50x1.5	453
K4-LGI225ZM	1 142.0	1 381.0	442.0	325.0	260	192	443.0	2xM50x1.5	511

④ DIN 332

⑤ Feather key / keyway DIN 6885

Gearbox E128 (1-stage), foot-mounted design

E011



Motor	E128 k	kB	AC	AD	AG	LL	HH	O	Weight E128
LA100L	539.0	620.0	195.0	168.0	120	120	104.0	2xM32x1.5	121
LA100ZL	609.0	690.0	195.0	168.0	120	120	236.0	2xM32x1.5	131
LA112M	564.5	645.5	219.0	181.0	120	120	105.5	2xM32x1.5	132
LA112ZM	592.5	673.5	219.0	181.0	120	120	209.5	2xM32x1.5	139
LA132S/M	623.5	725.5	259.0	195.0	140	140	145.0	2xM32x1.5	142
LA132ZM	669.5	771.5	259.0	195.0	140	140	253.0	2xM32x1.5	163
LA160M/L	723.0	841.5	313.5	227.0	165	165	167.5	2xM40x1.5	181
LA160ZL	771.0	889.5	313.5	227.0	165	165	320.5	2xM40x1.5	220
LG180M/L	782.5	904.5	348.0	322.5	260	192	184.5	2xM40x1.5	272
LG180ZM/ZL	833.5	955.5	348.0	322.5	260	192	184.5	2xM40x1.5	302
LG200L	838.5	964.5	385.0	301.0	260	192	214.5	2xM50x1.5	352
LG225S	909.5	1 148.5	442.0	325.0	260	192	250.5	2xM50x1.5	428
LG225M	909.5	1 148.5	442.0	325.0	260	192	250.5	2xM50x1.5	416
LG225ZM	969.5	1 208.5	442.0	325.0	260	192	250.5	2xM50x1.5	474
K4-LGI250M	1 197.0	1 422.0	495.0	392.0	300	236	470.0	2xM63x1.5	596
K4-LGI250ZM	1 267.0	1 492.0	495.0	392.0	300	236	470.0	2xM63x1.5	699

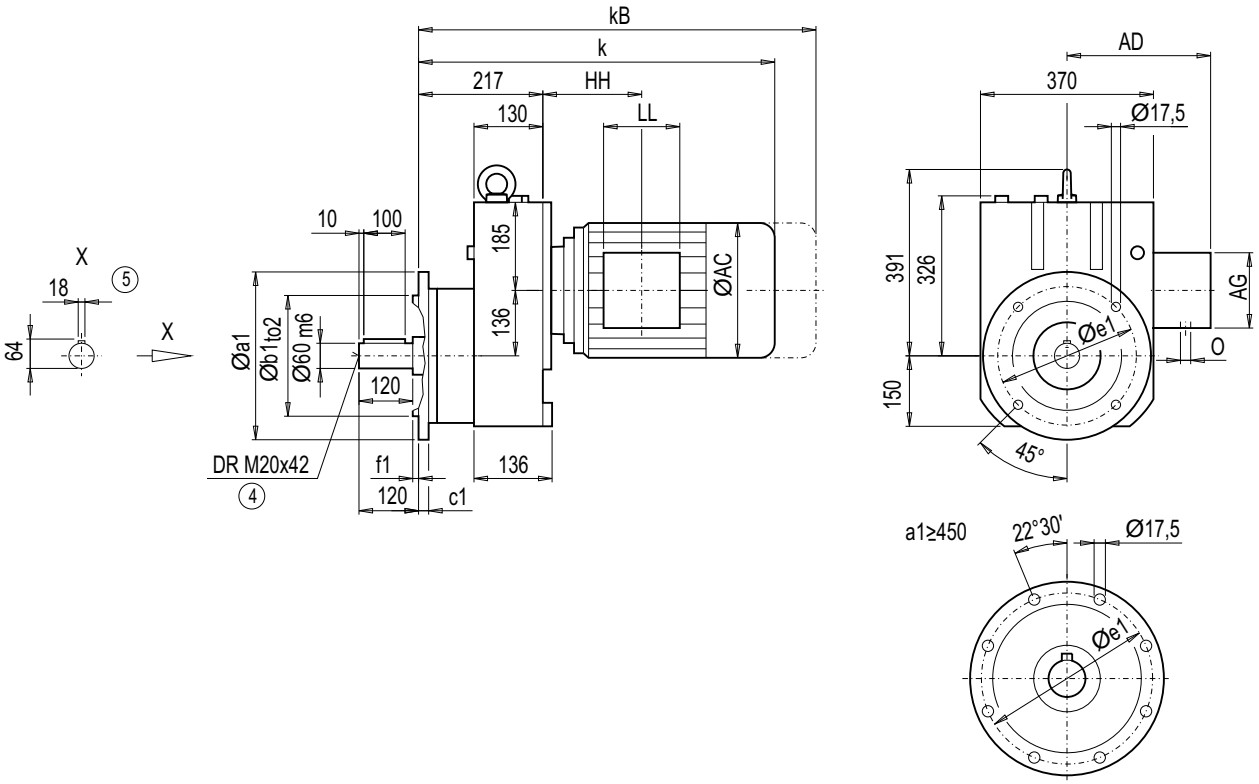
④ DIN 332

⑤ Feather key / keyway DIN 6885

Dimensions

Gearbox EF128 (1-stage), flange-mounted design (A-type)

EF011



Flange	a1	b1	to2	c1	e1	f1	s1
A350	350	250	h6	18	300	5	17.5
A450	450	350	h6	20	400	5	17.5

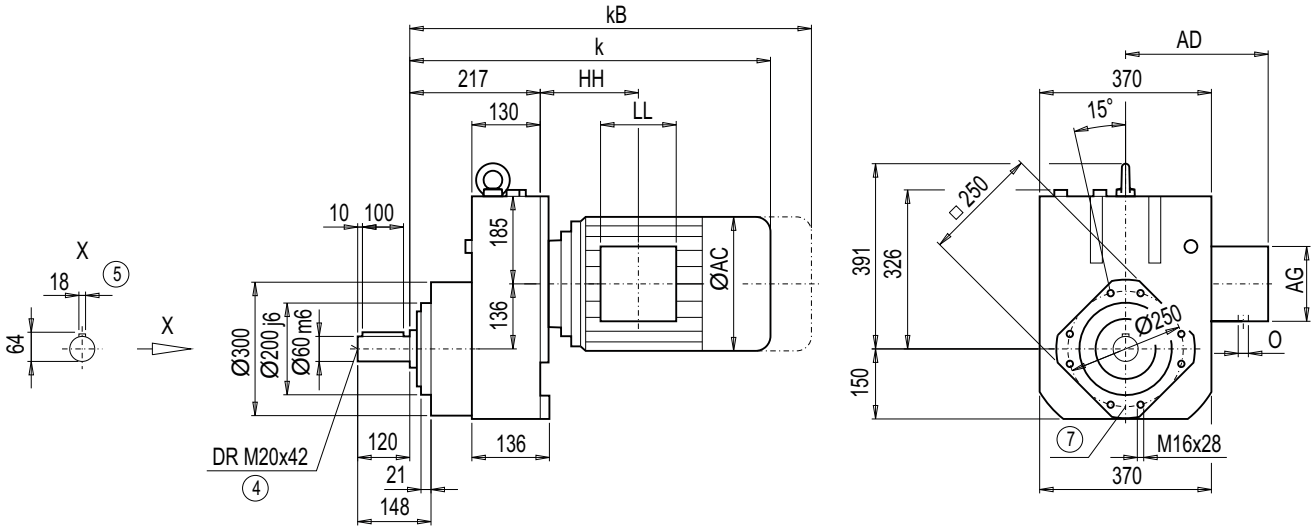
	EF128								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**EF128**
LA100L	539.0	620.0	195.0	168.0	120	120	104.0	2xM32x1.5	125
LA100ZL	609.0	690.0	195.0	168.0	120	120	236.0	2xM32x1.5	135
LA112M	564.5	645.5	219.0	181.0	120	120	105.5	2xM32x1.5	137
LA112ZM	592.5	673.5	219.0	181.0	120	120	209.5	2xM32x1.5	144
LA132S/M	623.5	725.5	259.0	195.0	140	140	145.0	2xM32x1.5	146
LA132ZM	669.5	771.5	259.0	195.0	140	140	253.0	2xM32x1.5	167
LA160M/L	723.0	841.5	313.5	227.0	165	165	167.5	2xM40x1.5	185
LA160ZL	771.0	889.5	313.5	227.0	165	165	320.5	2xM40x1.5	224
LG180M/L	782.5	904.5	348.0	322.5	260	192	184.5	2xM40x1.5	276
LG180ZM/ZL	833.5	955.5	348.0	322.5	260	192	184.5	2xM40x1.5	306
LG200L	838.5	964.5	385.0	301.0	260	192	214.5	2xM50x1.5	356
LG225S	909.5	1 148.5	442.0	325.0	260	192	250.5	2xM50x1.5	432
LG225M	909.5	1 148.5	442.0	325.0	260	192	250.5	2xM50x1.5	420
LG225ZM	969.5	1 208.5	442.0	325.0	260	192	250.5	2xM50x1.5	478
K4-LGI250M	1 197.0	1 422.0	495.0	392.0	300	236	470.0	2xM63x1.5	600
K4-LGI250ZM	1 267.0	1 492.0	495.0	392.0	300	236	470.0	2xM63x1.5	703

④ DIN 332

⑤ Feather key / keyway DIN 6885

Gearbox EZ128 (1-stage), housing-flange-mounted design (C-type)

EZ011



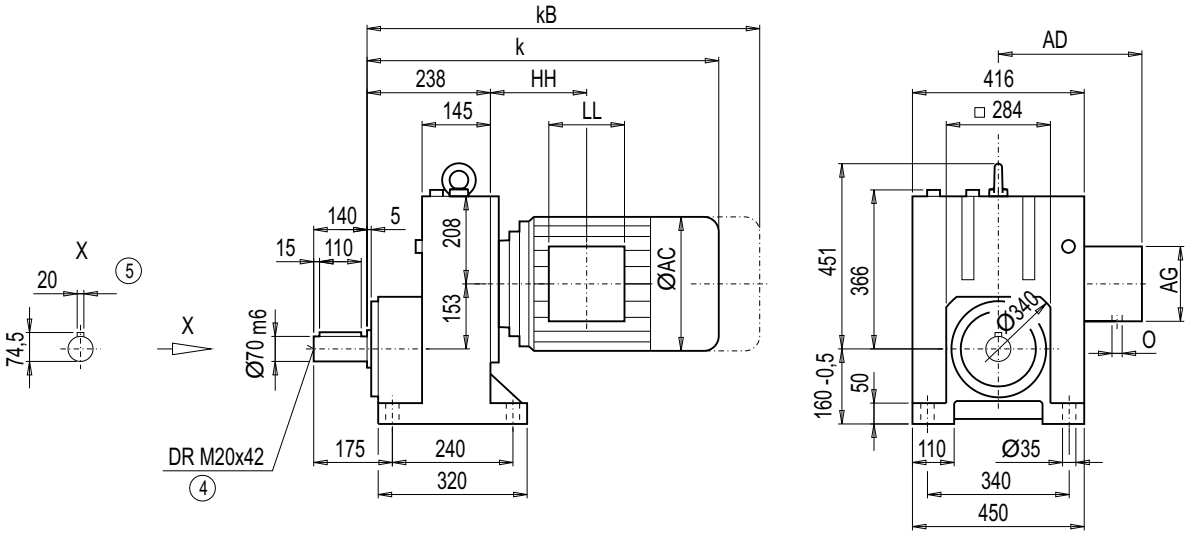
Motor	EZ128 k	kB	AC	AD	AG	LL	HH	O	Weight EZ128
LA100L	539.0	620.0	195.0	168.0	120	120	104.0	2xM32x1.5	108
LA100ZL	609.0	690.0	195.0	168.0	120	120	236.0	2xM32x1.5	118
LA112M	564.5	645.5	219.0	181.0	120	120	105.5	2xM32x1.5	119
LA112ZM	592.5	673.5	219.0	181.0	120	120	209.5	2xM32x1.5	126
LA132S/M	623.5	725.5	259.0	195.0	140	140	145.0	2xM32x1.5	129
LA132ZM	669.5	771.5	259.0	195.0	140	140	253.0	2xM32x1.5	150
LA160M/L	723.0	841.5	313.5	227.0	165	165	167.5	2xM40x1.5	168
LA160ZL	771.0	889.5	313.5	227.0	165	165	320.5	2xM40x1.5	207
LG180M/L	782.5	904.5	348.0	322.5	260	192	184.5	2xM40x1.5	259
LG180ZM/ZL	833.5	955.5	348.0	322.5	260	192	184.5	2xM40x1.5	289
LG200L	838.5	964.5	385.0	301.0	260	192	214.5	2xM50x1.5	339
LG225S	909.5	1 148.5	442.0	325.0	260	192	250.5	2xM50x1.5	415
LG225M	909.5	1 148.5	442.0	325.0	260	192	250.5	2xM50x1.5	403
LG225ZM	969.5	1 208.5	442.0	325.0	260	192	250.5	2xM50x1.5	461
K4-LGI250M	1 197.0	1 422.0	495.0	392.0	300	236	470.0	2xM63x1.5	583
K4-LGI250ZM	1 267.0	1 492.0	495.0	392.0	300	236	470.0	2xM63x1.5	686

④ DIN 332 ⑤ Feather key / keyway DIN 6885 ⑦ For note, see page 2/192

Dimensions

Gearbox E148 (1-stage), foot-mounted design

E011



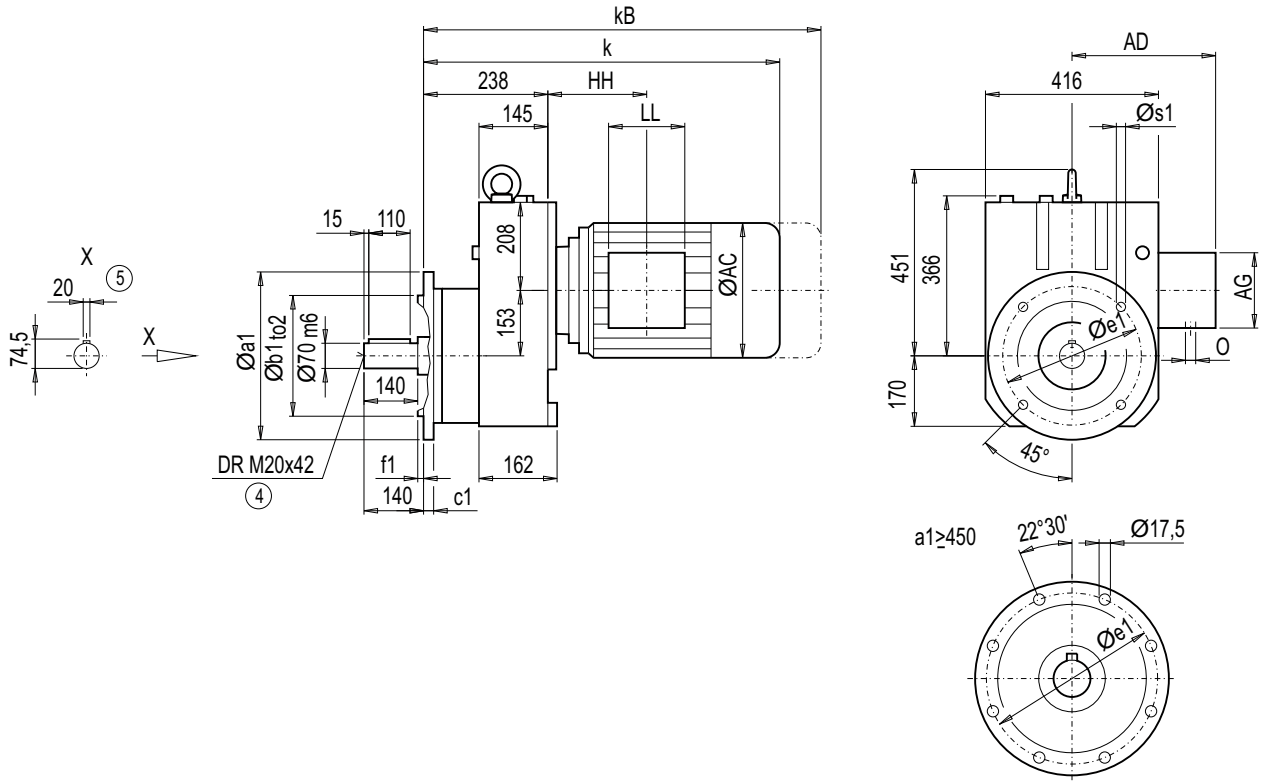
Motor	E148 k	kB	AC	AD	AG	LL	HH	O	Weight E148
LA132S/M	636.5	738.5	259.0	195.0	140	140	137.0	2xM32x1.5	169
LA132ZM	682.5	784.5	259.0	195.0	140	140	245.0	2xM32x1.5	190
LA160M/L	736.5	855.0	313.5	227.0	165	165	160.0	2xM40x1.5	203
LA160ZL	784.5	903	313.5	227.0	165	165	313.0	2xM40x1.5	242
LG180M/L	796.0	918.0	348.0	322.5	260	192	177.0	2xM40x1.5	298
LG180ZM/ZL	847.0	969.0	348.0	322.5	260	192	177.0	2xM40x1.5	328
LG200L	852.0	978.0	385.0	301.0	260	192	207.0	2xM50x1.5	378
LG225S	923.0	1 162.0	442.0	325.0	260	192	243.0	2xM50x1.5	452
LG225M	923.0	1 162.0	442.0	325.0	260	192	243.0	2xM50x1.5	440
LG225ZM	983.0	1 222.0	442.0	325.0	260	192	243.0	2xM50x1.5	498
LG250M	1 016.5	1 241.5	495.0	392.0	300	236	278.5	2xM63x1.5	542
LG250ZM	1 086.5	1 312.0	495.0	392.0	300	236	278.5	2xM63x1.5	645
K4-LGI280S	1 296.0	1 523.0	555.0	432.0	300	236	490.0	2xM63x1.5	774
K4-LGI280M	1 296.0	1 523.0	555.0	432.0	300	236	490.0	2xM63x1.5	785
K4-LGI280ZM	1 406.0	1 633.0	555.0	432.0	300	236	490.0	2xM63x1.5	874

④ DIN 332

⑤ Feather key / keyway DIN 6885

Gearbox EF148 (1-stage), flange-mounted design (A-type)

EF011



Flange	a1	b1	to2	c1	e1	f1	s1
A350	350	250	h6	18	300	5	17.5
A450	450	350	h6	22	400	5	17.5
A550	550	450	h6	25	500	5	17.5

	EF148								Weight
Motor	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**EF148**
LA132S/M	636.5	738.5	259.0	195.0	140	140	137.0	2xM32x1.5	180
LA132ZM	682.5	784.5	259.0	195.0	140	140	245.0	2xM32x1.5	202
LA160M/L	736.5	855.0	313.5	227.0	165	165	160.0	2xM40x1.5	214
LA160ZL	784.5	903	313.5	227.0	165	165	313.0	2xM40x1.5	253
LG180M/L	796.0	918.0	348.0	322.5	260	192	177.0	2xM40x1.5	310
LG180ZM/ZL	847.0	969.0	348.0	322.5	260	192	177.0	2xM40x1.5	340
LG200L	852.0	978.0	385.0	301.0	260	192	207.0	2xM50x1.5	390
LG225S	923.0	1 162.0	442.0	325.0	260	192	243.0	2xM50x1.5	464
LG225M	923.0	1 162.0	442.0	325.0	260	192	243.0	2xM50x1.5	452
LG225ZM	983.0	1 222.0	442.0	325.0	260	192	243.0	2xM50x1.5	510
LG250M	1 016.5	1 241.5	495.0	392.0	300	236	278.5	2xM63x1.5	554
LG250ZM	1 086.5	1 312.0	495.0	392.0	300	236	278.5	2xM63x1.5	657
K4-LGI280S	1 296.0	1 523.0	555.0	432.0	300	236	490.0	2xM63x1.5	786
K4-LGI280M	1 296.0	1 523.0	555.0	432.0	300	236	490.0	2xM63x1.5	797
K4-LGI280ZM	1 406.0	1 633.0	555.0	432.0	300	236	490.0	2xM63x1.5	886

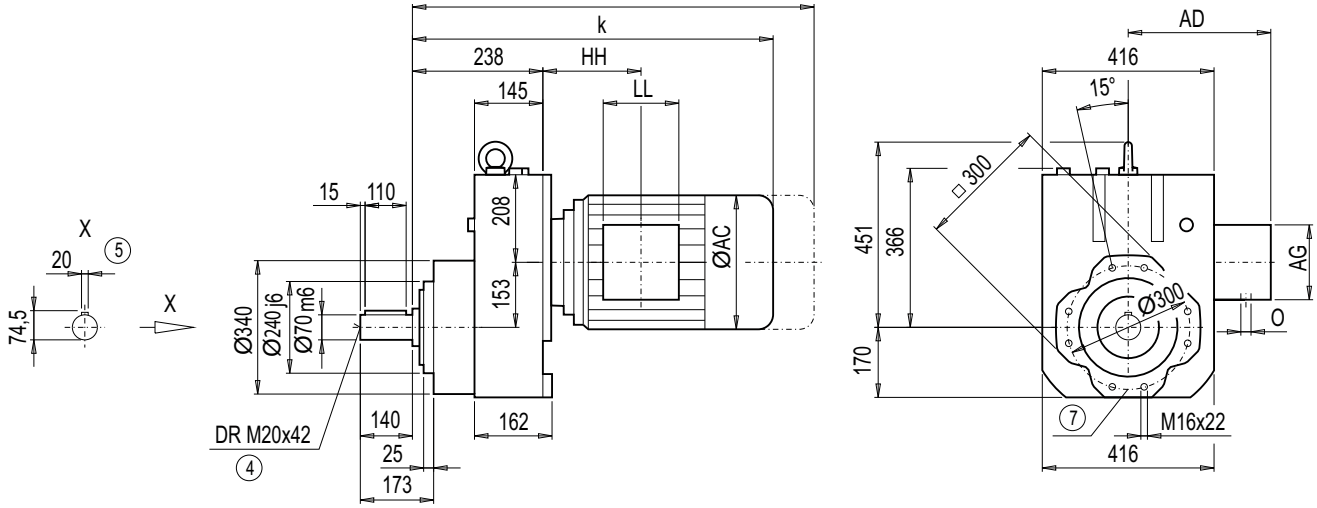
④ DIN 332

⑤ Feather key / keyway DIN 6885

Dimensions

Gearbox EZ148 (1-stage), housing-flange-mounted design (C-type)

EZ011

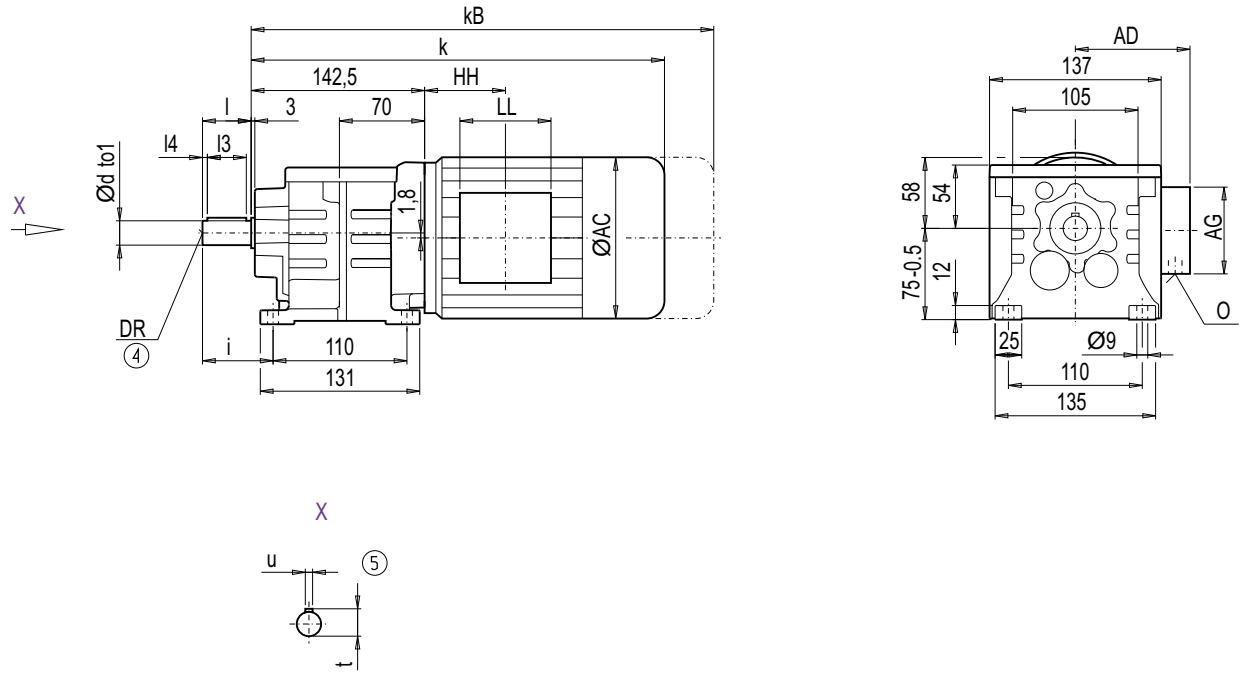


Motor	EZ148 k	kB	AC	AD	AG	LL	HH	O	Weight EZ148
LA132S/M	636.5	738.5	259.0	195.0	140	140	137.0	2xM32x1.5	154
LA132ZM	682.5	784.5	259.0	195.0	140	140	245.0	2xM32x1.5	175
LA160M/L	736.5	855.0	313.5	227.0	165	165	160.0	2xM40x1.5	188
LA160ZL	784.5	903	313.5	227.0	165	165	313.0	2xM40x1.5	227
LG180M/L	796.0	918.0	348.0	322.5	260	192	177.0	2xM40x1.5	283
LG180ZM/ZL	847.0	969.0	348.0	322.5	260	192	177.0	2xM40x1.5	313
LG200L	852.0	978.0	385.0	301.0	260	192	207.0	2xM50x1.5	363
LG225S	923.0	1 162.0	442.0	325.0	260	192	243.0	2xM50x1.5	437
LG225M	923.0	1 162.0	442.0	325.0	260	192	243.0	2xM50x1.5	425
LG225ZM	983.0	1 222.0	442.0	325.0	260	192	243.0	2xM50x1.5	483
LG250M	1 016.5	1 241.0	495.0	392.0	300	236	278.5	2xM63x1.5	527
LG250ZM	1 086.5	1 312.0	495.0	392.0	300	236	278.5	2xM63x1.5	630
K4-LGI280S	1 296.0	1 523.0	555.0	432.0	300	236	490.0	2xM63x1.5	759
K4-LGI280M	1 296.0	1 523.0	555.0	432.0	300	236	490.0	2xM63x1.5	770
K4-LGI280ZM	1 406.0	1 633.0	555.0	432.0	300	236	490.0	2xM63x1.5	859

④ DIN 332 ⑤ Feather key / keyway DIN 6885 ⑦ For note, see page 2/192

Gearbox D/Z18 (3- / 2-stage), foot-mounted design

DZ011



d	to1	l	l4	l3	t	u	i	DR
16	k6	28	3	22	18	5	46	M6x16
20*)	k6	40	4	32	22.5	6	58	M6x16

*) Preferred series

	Z18		D18								Weight	
Motor	**k**	**kB**	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**Z18**	**D18**
LA71	327	382	327	382	139	146	90	90	40.5	M20x1.5/M25x1.5	8	8
LA71Z	346	401	346	401	139	146	90	90	40.5	M20x1.5/M25x1.5	8	8

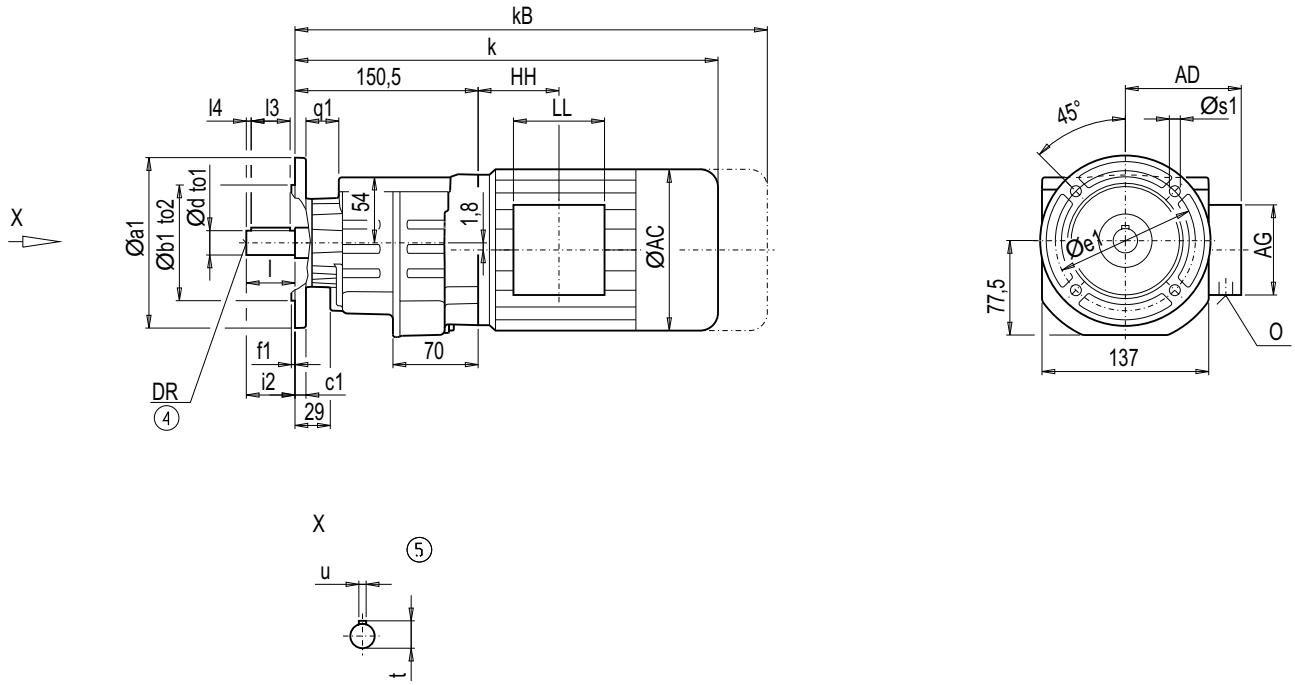
④ DIN 332

⑤ Feather key / keyway DIN 6885

Dimensions

Gearbox DF/ZF18 (3- / 2-stage), flange-mounted design (A-type)

DZF011



Flange	a1	b1	to2	c1	e1	f1	q1	s1	d	to1	l	l4	l3	t	u	i2	DR
A120	120	80	j6	8	100	3.0	28	6.6	16	k6	28	3	22	18	5	28	M6x16
									20*)	k6	40	4	32	22.5	6	40	M6x16
A140	140	95	j6	9	115	3.0	27	9.0	16	k6	28	3	22	18	5	28	M6x16
									20*)	k6	40	4	32	22.5	6	40	M6x16
A160	160	110	j6	9	130	3.5	27	9.0	16	k6	28	3	22	18	5	28	M6x16
									20*)	k6	40	4	32	22.5	6	40	M6x16

*) Preferred series

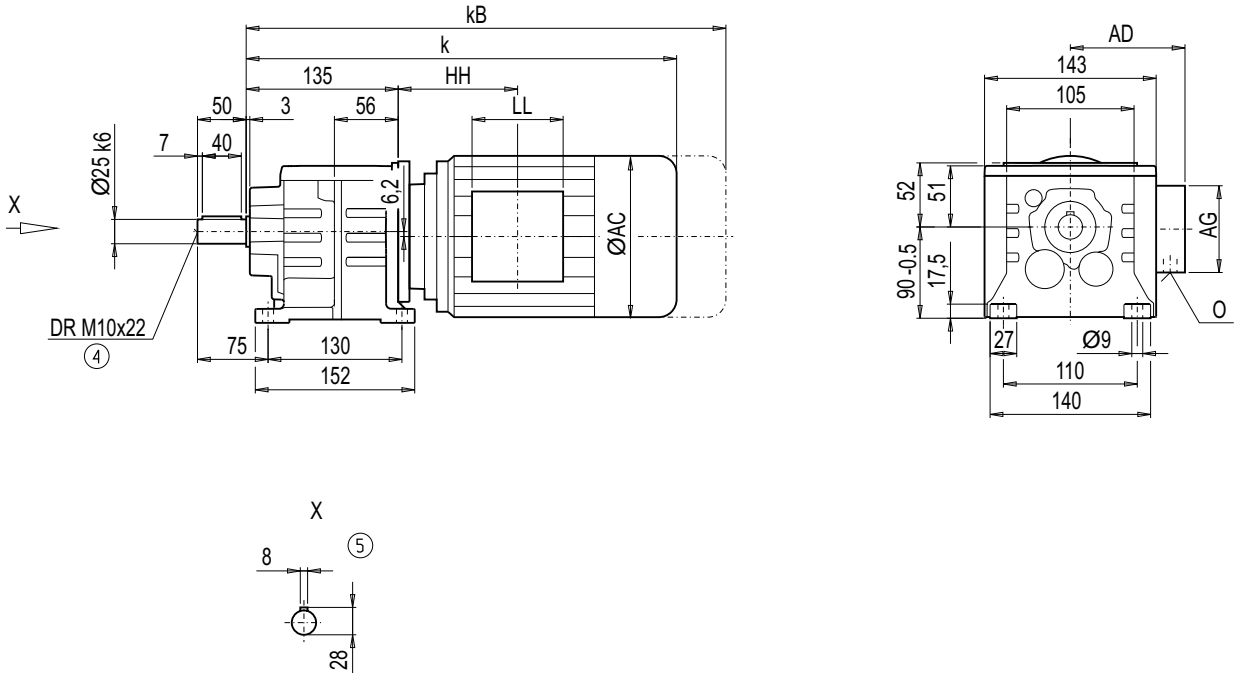
	ZF18		DF18								Weight	
Motor	**k**	**kB**	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**ZF18**	**DF18**
LA71	335	390	335	390	139	146	90	90	40.5	M20x1.5/M25x1.5	8	9
LA71Z	354	409	354	409	139	146	90	90	40.5	M20x1.5/M25x1.5	8	9

④ DIN 332

⑤ Feather key / keyway DIN 6885

Gearbox D/Z28 (3- / 2-stage), foot-mounted design

DZ011



Motor	Z28 k	Z28 kB	D28 k	D28 kB	AC	AD	AG	LL	HH	O	Weight Z28	Weight D28
LA71	337.5	392.5	337.5	392.5	139	146	90	90	58.5	M20x1.5/M25x1.5	9	9
LA71Z	356.5	411.5	356.5	411.5	139	146	90	90	58.5	M20x1.5/M25x1.5	9	9
LA80	439.5	503.0	439.5	503.0	156.5	155	90	90	123.0	M20x1.5/M25x1.5	14	14
LA80Z	462.0	525.5	462.0	525.5	156.5	155	90	90	196.0	M20x1.5/M25x1.5	18	18
LA90S/L	434.5	505.5	434.5	505.5	174	163	90	90	87.0	M20x1.5/M25x1.5	18	19
LA90ZL	479.5	550.5	479.5	550.5	174	163	90	90	211.0	M20x1.5/M25x1.5	27	28
LA100L	516.5	597.5	–	–	195	168	120	120	163.5	2xM32x1.5	28	–
LA100ZL	586.5	667.5	–	–	195	168	120	120	295.5	2xM32x1.5	38	–

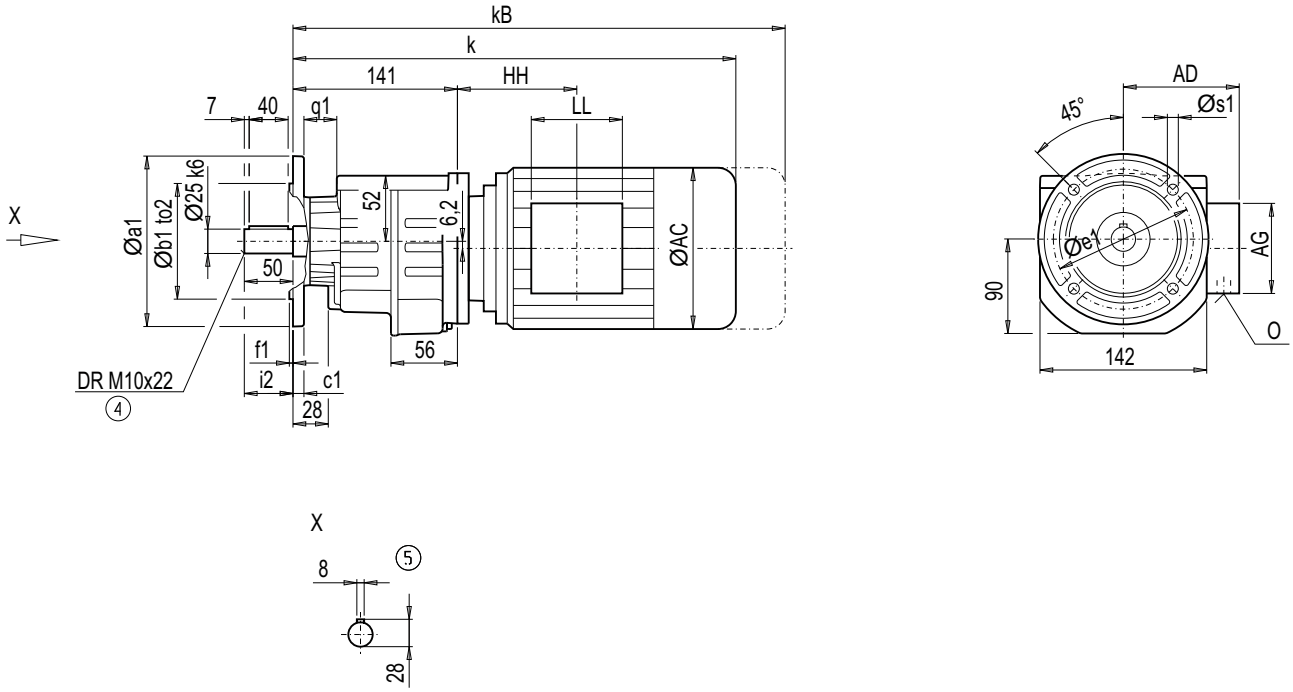
④ DIN 332

⑤ Feather key / keyway DIN 6885

Dimensions

Gearbox DF/ZF28 (3- / 2-stage), flange-mounted design (A-type)

DZF011



Flange	a1	b1	to2	c1	e1	f1	q1	s1	i2
A120	120	80	j6	8	100	3.0	28	6.6	50
A140	140	95	j6	9	115	3.0	27	9.0	50
A160	160	110	j6	9	130	3.5	27	9.0	50

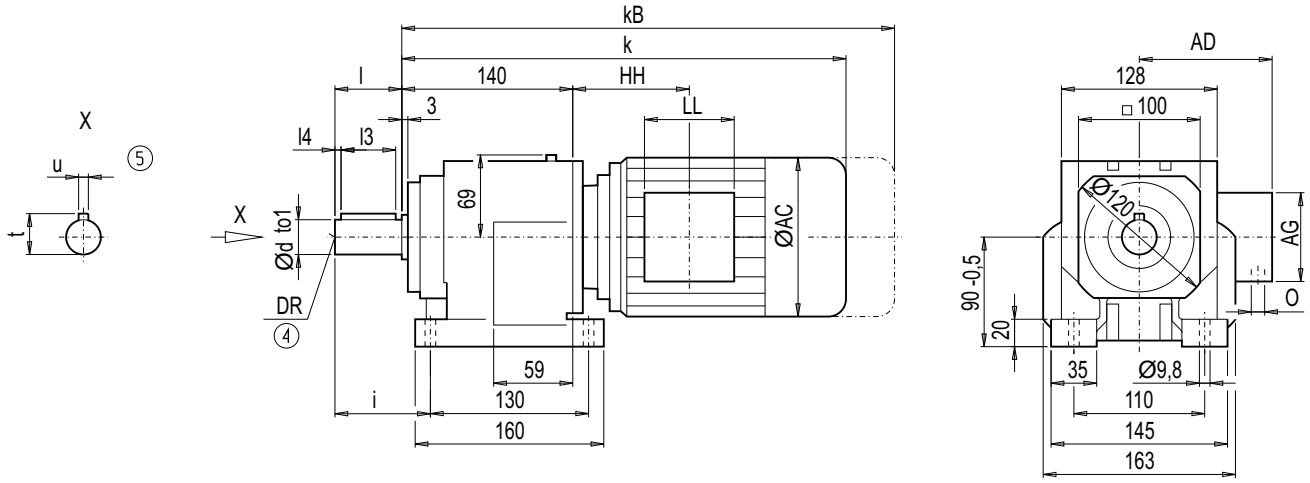
	ZF28		DF28								Weight	
Motor	**k**	**kB**	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**O**	**ZF28**	**DF28**
LA71	343.5	398.5	343.5	398.5	139	146	90	90	58.5	M20x1.5/M25x1.5	9	9
LA71Z	362.5	417.5	362.5	417.5	139	146	90	90	58.5	M20x1.5/M25x1.5	9	9
LA80	445.5	509.0	445.5	509.0	156.5	155	90	90	123.0	M20x1.5/M25x1.5	14	14
LA80Z	468.0	530.5	468.0	530.5	156.5	155	90	90	196.0	M20x1.5/M25x1.5	18	18
LA90S/L	440.5	511.5	440.5	511.5	174	163	90	90	87.0	M20x1.5/M25x1.5	18	19
LA90ZL	485.5	556.5	485.5	556.5	174	163	90	90	211.0	M20x1.5/M25x1.5	27	28
LA100L	522.5	603.5	–	–	195	168	120	120	163.5	2xM32x1.5	28	–
LA100ZL	592.5	673.5	–	–	195	168	120	120	295.5	2xM32x1.5	38	–

④ DIN 332

⑤ Feather key / keyway DIN 6885

Gearbox D/Z38 (3- / 2-stage), foot-mounted design

DZ011



d	to1	l	l4	l3	t	u	i	DR
25 *)	k6	50	7	40	28	8	75	M10x22
30	k6	60	7	50	33	8	85	M10x22

*) Preferred series

	Z38		D38						Z38	D38		Weight	
Motor	**k**	**kB**	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**HH**	**O**	**Z38**	**D38**
LA71	398.5	453.5	413.5	468.5	139.0	146	90	90	114.5	129.5	M20x1.5/M25x1.5	16	17
LA71Z	417.5	472.5	432.5	487.5	139.0	146	90	90	114.5	129.5	M20x1.5/M25x1.5	16	17
LA80	435.5	499.0	450.5	514.0	156.5	155	90	90	114.0	129.0	M20x1.5/M25x1.5	21	22
LA80Z	458.0	521.5	473.0	536.5	156.5	155	90	90	187.0	202.0	M20x1.5/M25x1.5	25	26
LA90S/L	466.5	537.5	481.5	552.5	174.0	163	90	90	114.0	129.0	M20x1.5/M25x1.5	26	27
LA90ZL	511.5	582.5	526.5	597.5	174.0	163	90	90	238.0	253.0	M20x1.5/M25x1.5	32	33
LA100L	512.5	593.5	–	–	195.0	168	120	120	154.5	–	2xM32x1.5	35	–
LA100ZL	582.5	663.5	–	–	195.0	168	120	120	286.5	–	2xM32x1.5	45	–
LA112M	542.0	623.0	–	–	219.0	181	120	120	160.0	–	2xM32x1.5	45	–
LA112ZM	570.0	651.0	–	–	219.0	181	120	120	264.0	–	2xM32x1.5	52	–

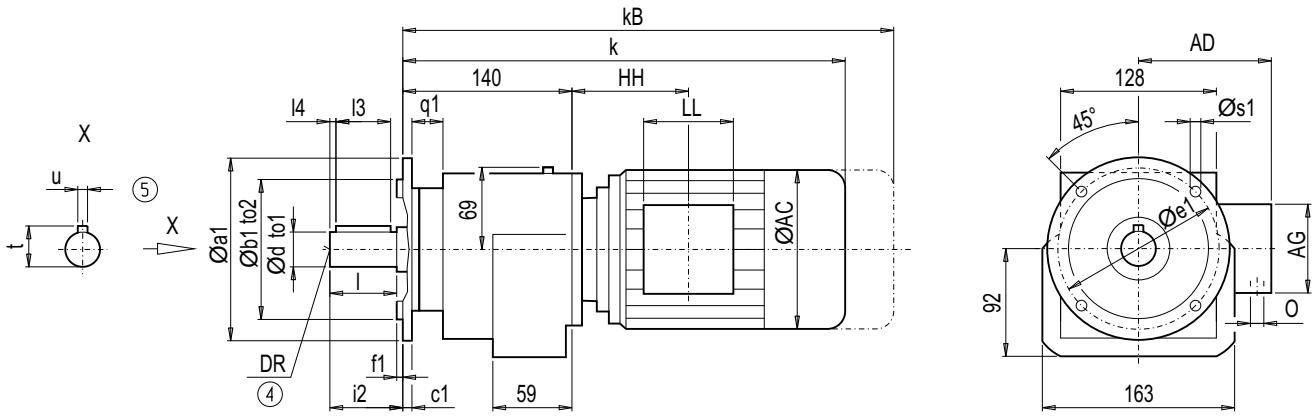
④ DIN 332

⑤ Feather key / keyway DIN 6885

Dimensions

Gearbox DF/ZF38 (3- / 2-stage), flange-mounted design (A-type)

DZF011



Flange	a1	b1	to2	c1	e1	f1	q1	s1	d	to1	l	l4	l3	t	u	i2	DR
A120	120	80	j6	8	100	3.0	23	6.8	25 *)	k6	50	7	40	28	8	50	M10x22
									30	k6	60	7	50	33	8	60	M10x22
A140	140	95	j6	7	115	3.0	26	9.0	25 *)	k6	50	7	40	28	8	50	M10x22
									30	k6	60	7	50	33	8	60	M10x22
A160	160	110	j6	10	130	3.5	26	9.0	25 *)	k6	50	7	40	28	8	50	M10x22
									30	k6	60	7	50	33	8	60	M10x22
A200 1)	200	130	j6	12	165	3.5	24	11.0	25 *)	k6	50	7	40	28	8	50	M10x22
									30	k6	60	7	50	33	8	60	M10x22
A250	250	180	j6	15	215	4.0	21	13.5	25 *)	k6	50	7	40	28	8	50	M10x22
									30	k6	60	7	50	33	8	60	M10x22

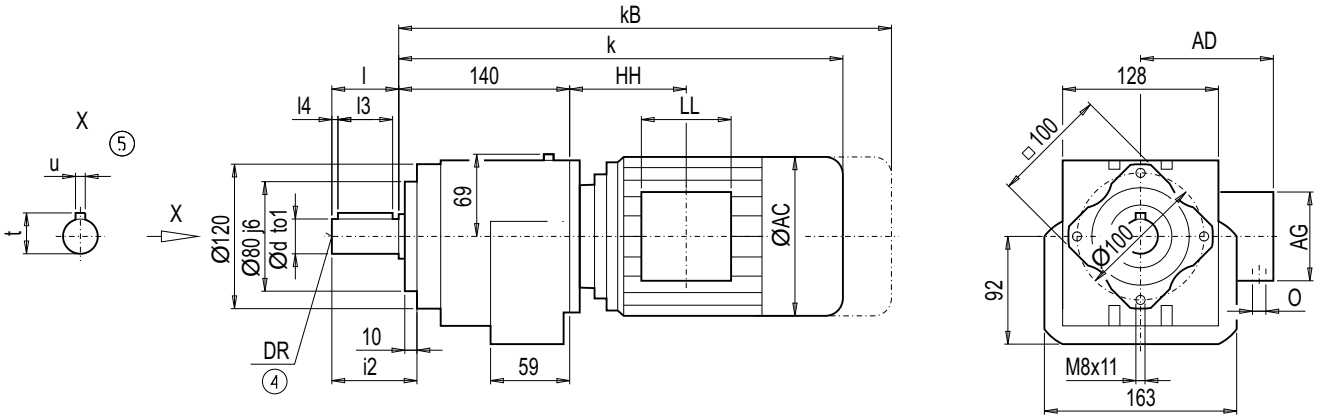
1) The A200 flange is connected to the machine using stud bolts.
*) Preferred series

	ZF38		DF38						ZF38	DF38		Weight	
Motor	**k**	**kB**	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**HH**	**O**	**ZF38**	**DF38**
LA71	398.5	453.5	413.5	468.5	139.0	146	90	90	114.5	129.5	M20x1.5/M25x1.5	17	18
LA71Z	417.5	472.5	432.5	487.5	139.0	146	90	90	114.5	129.5	M20x1.5/M25x1.5	17	18
LA80	435.5	499.0	450.5	514.0	156.5	155	90	90	114.0	129.0	M20x1.5/M25x1.5	22	22
LA80Z	458.0	521.5	473.0	536.5	156.5	155	90	90	187.0	202.0	M20x1.5/M25x1.5	26	26
LA90S/L	466.5	537.5	481.5	552.5	174.0	163	90	90	114.0	129.0	M20x1.5/M25x1.5	26	27
LA90ZL	511.5	582.5	526.5	597.5	174.0	163	90	90	238.0	253.0	M20x1.5/M25x1.5	32	33
LA100L	512.5	593.5	–	–	195.0	168	120	120	154.5	–	2xM32x1.5	35	–
LA100ZL	582.5	663.5	–	–	195.0	168	120	120	286.5	–	2xM32x1.5	45	–
LA112M	542.0	623.0	–	–	219.0	181	120	120	160.0	–	2xM32x1.5	46	–
LA112ZM	570.0	651.0	–	–	219.0	181	120	120	264.0	–	2xM32x1.5	53	–

④ DIN 332 ⑤ Feather key / keyway DIN 6885 .

Gearbox DZ/ZZ38 (3- / 2-stage), housing-flange-mounted design (C-type)

DZZ011



d	to1	l	l4	l3	t	u	i2	DR
25 *)	k6	50	7	40	28	8	63	M10x22
30	k6	60	7	50	33	8	73	M10x22

*) Preferred series

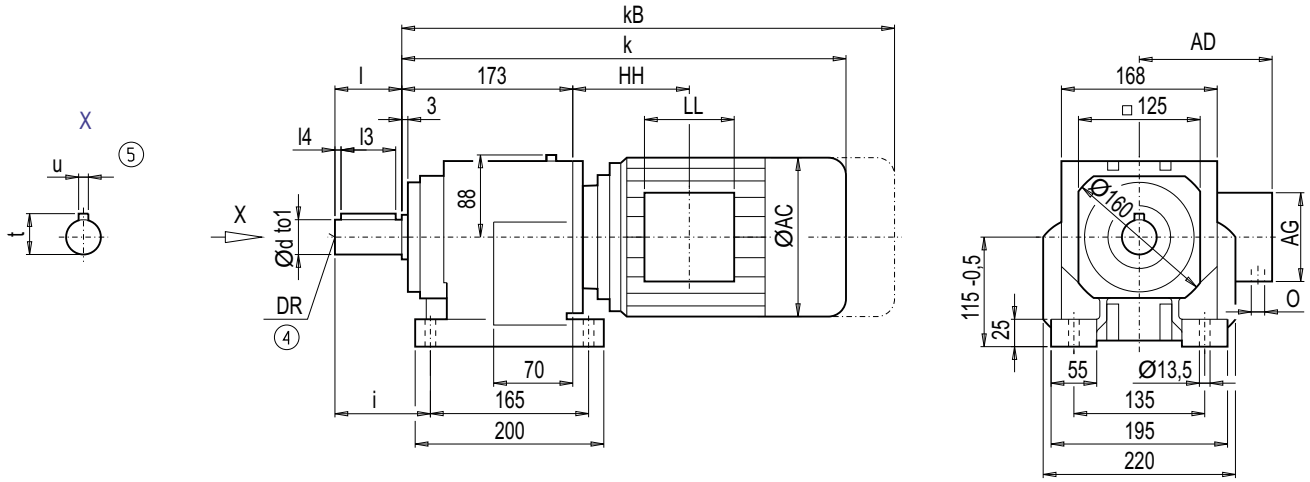
	ZZ38		DZ38						ZZ38	DZ38		Weight	
Motor	**k**	**kB**	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**HH**	**O**	**ZZ38**	**DZ38**
LA71	398.5	453.5	413.5	468.5	139.0	146	90	90	114.5	129.5	M20x1.5/M25x1.5	15	16
LA71Z	417.5	472.5	432.5	487.5	139.0	146	90	90	114.5	129.5	M20x1.5/M25x1.5	15	16
LA80	435.5	499.0	450.5	514.0	156.5	155	90	90	114.0	129.0	M20x1.5/M25x1.5	20	21
LA80Z	458.0	521.5	473.0	536.5	156.5	155	90	90	187.0	202.0	M20x1.5/M25x1.5	24	25
LA90S/L	466.5	537.5	481.5	552.5	174.0	163	90	90	114.0	129.0	M20x1.5/M25x1.5	24	25
LA90ZL	511.5	582.5	526.5	597.5	174.0	163	90	90	238.0	253.0	M20x1.5/M25x1.5	30	31
LA100L	512.5	593.5	–	–	195.0	168	120	120	154.5	–	2xM32x1.5	33	–
LA100ZL	582.5	663.5	–	–	195.0	168	120	120	286.5	–	2xM32x1.5	43	–
LA112M	542.0	623.0	–	–	219.0	181	120	120	160.0	–	2xM32x1.5	44	–
LA112ZM	570.0	651.0	–	–	219.0	181	120	120	264.0	–	2xM32x1.5	51	–

④ DIN 332 ⑤ Feather key / keyway DIN 6885

Dimensions

Gearbox D/Z48 (3- / 2-stage), foot-mounted design

DZ011



d	to1	l	l4	l3	t	u	i	DR
30 *)	k6	60	7	50	33	8	90	M10x22
35	k6	70	63	4	38	10	100	M10x22
40	k6	80	5	70	43	12	110	M16x36

*) Preferred series

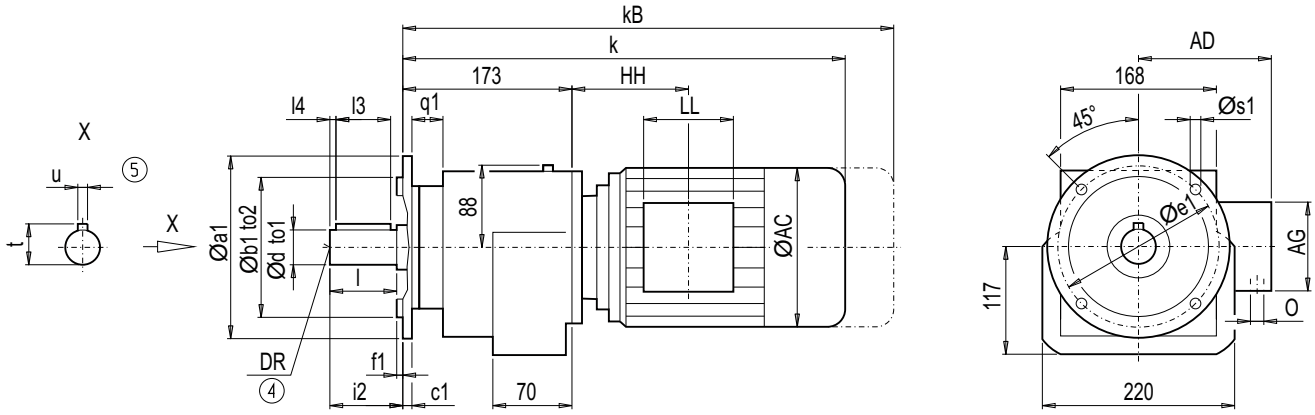
	Z48		D48						Z48	D48		Weight	
Motor	**k**	**kB**	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**HH**	**O**	**Z48**	**D48**
LA71	426.0	481.0	443.0	498.0	139.0	146	90	90	109.0	126.0	M20x1.5/M25x1.5	26	27
LA71Z	445.0	500.0	462.0	517.0	139.0	146	90	90	109.0	126.0	M20x1.5/M25x1.5	26	27
LA80	463.0	526.5	480.0	543.5	156.5	155	90	90	108.5	125.5	M20x1.5/M25x1.5	31	32
LA80Z	485.5	549.0	502.5	566.0	156.5	155	90	90	181.5	198.5	M20x1.5/M25x1.5	35	36
LA90S/L	494.0	565.0	511.0	582.0	174.0	163	90	90	108.5	125.5	M20x1.5/M25x1.5	35	36
LA90ZL	539.0	610.0	556.0	627.0	174.0	163	90	90	232.5	249.5	M20x1.5/M25x1.5	41	41
LA100L	540.0	621.0	557.0	638.0	195.0	168	120	120	149.0	166.0	2xM32x1.5	44	45
LA100ZL	610.0	691.0	627.0	708.0	195.0	168	120	120	281.0	298.0	2xM32x1.5	54	55
LA112M	569.0	650.0	–	–	219.0	181	120	120	154.0	–	2xM32x1.5	56	–
LA112ZM	597.0	678.0	–	–	219.0	181	120	120	258.0	–	2xM32x1.5	63	–
LA132S/M	631.0	733.0	–	–	259.0	195	140	140	196.5	–	2xM32x1.5	66	–
LA132ZM	677.0	779.0	–	–	259.0	195	140	140	304.5	–	2xM32x1.5	87	–

④ DIN 332

⑤ Feather key / keyway DIN 6885

Gearbox DF/ZF48 (3- / 2-stage), flange-mounted design (A-type)

DZF011



Flange	a1	b1	to2	c1	e1	f1	q1	s1	d	to1	l	l4	l3	t	u	i2	DR
A200	200	130	j6	12	165	3.5	29	11.0	30 *)	k6	60	7	50	33	8	60	M10x22
									35	k6	70	4	63	38	10	70	M10x22
									40	k6	80	5	70	43	12	80	M16x36
A250 [1]	250	180	j6	15	215	4.0	26	13.5	30 *)	k6	60	7	50	33	8	60	M10x22
									35	k6	70	4	63	38	10	70	M10x22
									40	k6	80	5	70	43	12	80	M16x36
A300	300	230	j6	15	265	4.0	26	13.5	30 *)	k6	60	7	50	33	8	60	M10x22
									35	k6	70	4	63	38	10	70	M10x22
									40	k6	80	5	70	43	12	80	M16x36

1) The A250 flange is connected to the machine using stud bolts.
*) Preferred series

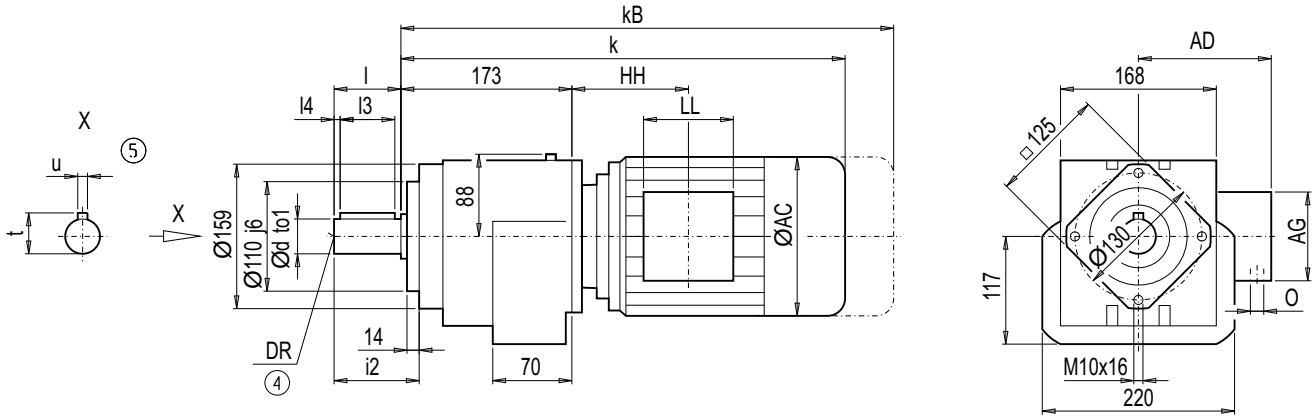
	ZF48		DF48						ZF48	DF48		Weight	
Motor	**k**	**kB**	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**HH**	**O**	**ZF48**	**DF48**
LA71	426.0	481.0	443.0	498.0	139.0	146	90	90	109.0	126.0	M20x1.5/M25x1.5	27	28
LA71Z	445.0	500.0	462.0	517.0	139.0	146	90	90	109.0	126.0	M20x1.5/M25x1.5	27	28
LA80	463.0	526.5	480.0	543.5	156.5	155	90	90	108.5	125.5	M20x1.5/M25x1.5	32	33
LA80Z	485.5	549.0	502.5	566.0	156.5	155	90	90	181.5	198.5	M20x1.5/M25x1.5	36	37
LA90S/L	494.0	565.0	511.0	582.0	174.0	163	90	90	108.5	125.5	M20x1.5/M25x1.5	37	38
LA90ZL	539.0	610.0	556.0	627.0	174.0	163	90	90	232.5	249.5	M20x1.5/M25x1.5	43	44
LA100L	540.0	621.0	557.0	638.0	195.0	168	120	120	149.0	166.0	2xM32x1.5	46	47
LA100ZL	610.0	691.0	627.0	708.0	195.0	168	120	120	281.0	298.0	2xM32x1.5	56	57
LA112M	569.0	650.0	–	–	219.0	181	120	120	154.0	–	2xM32x1.5	57	–
LA112ZM	597.0	678.0	–	–	219.0	181	120	120	258.0	–	2xM32x1.5	64	–
LA132S/M	631.0	733.0	–	–	259.0	195	140	140	196.5	–	2xM32x1.5	67	–
LA132ZM	677.0	779.0	–	–	259.0	195	140	140	304.5	–	2xM32x1.5	88	–

④ DIN 332 ⑤ Feather key / keyway DIN 6885

Dimensions

Gearbox DZ/ZZ48 (3- / 2-stage), housing-flange-mounted design (C-type)

DZZ011



d	to1	l	l4	l3	t	u	i2	DR
30 *)	k6	60	7	50	33	8	77	M10x22
35	k6	70	4	63	38	10	87	M10x22
40	k6	80	5	70	43	12	97	M16x36

*) Preferred series

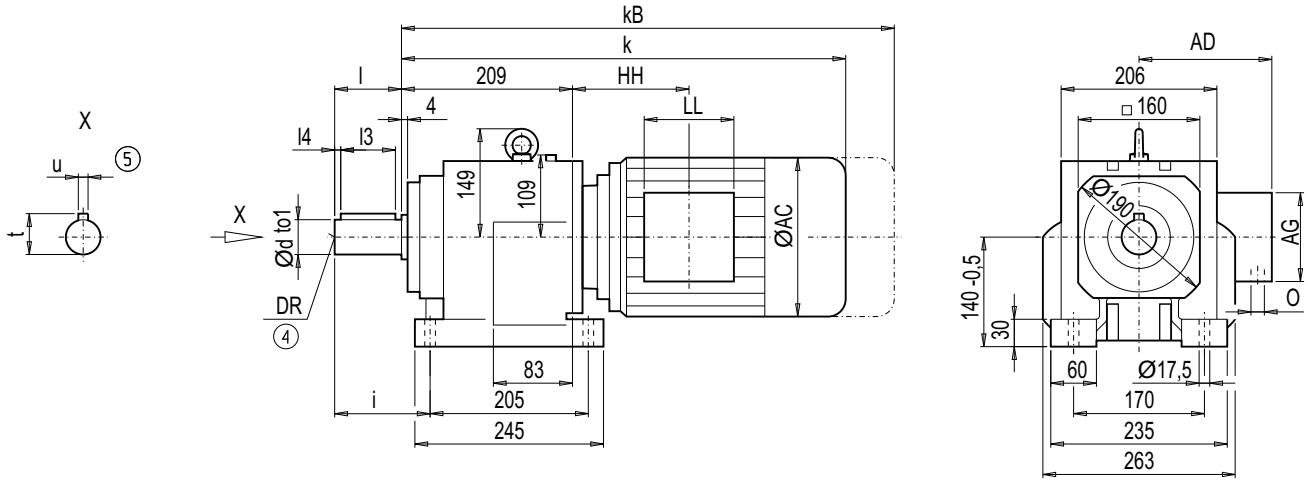
	ZZ48		DZ48						ZZ48	DZ48		Weight	
Motor	**k**	**kB**	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**HH**	**O**	**ZZ48**	**DZ48**
LA71	426.0	481.0	443.0	498.0	139.0	146	90	90	109.0	126.0	M20x1.5/M25x1.5	24	25
LA71Z	445.0	500.0	462.0	517.0	139.0	146	90	90	109.0	126.0	M20x1.5/M25x1.5	24	25
LA80	463.0	526.5	480.0	543.5	156.5	155	90	90	108.5	125.5	M20x1.5/M25x1.5	29	30
LA80Z	485.5	549.0	502.5	566.0	156.5	155	90	90	181.5	198.5	M20x1.5/M25x1.5	33	34
LA90S/L	494.0	565.0	511.0	582.0	174.0	163	90	90	108.5	125.5	M20x1.5/M25x1.5	33	34
LA90ZL	539.0	610.0	556.0	627.0	174.0	163	90	90	232.5	249.5	M20x1.5/M25x1.5	39	40
LA100L	540.0	621.0	557.0	638.0	195.0	168	120	120	149.0	166.0	2xM32x1.5	42	43
LA100ZL	610.0	691.0	627.0	708.0	195.0	168	120	120	281.0	298.0	2xM32x1.5	52	53
LA112M	569.0	650.0	–	–	219.0	181	120	120	154.0	–	2xM32x1.5	54	–
LA112ZM	597.0	678.0	–	–	219.0	181	120	120	258.0	–	2xM32x1.5	61	–
LA132S/M	631.0	733.0	–	–	259.0	195	140	140	196.5	–	2xM32x1.5	64	–
LA132ZM	677.0	779.0	–	–	259.0	195	140	140	304.5	–	2xM32x1.5	85	–

④ DIN 332

⑤ Feather key / keyway DIN 6885

Gearbox D/Z68 (3- / 2-stage), foot-mounted design

DZ011



d	to1	l	l4	l3	t	u	i	DR
35	k6	70	5	56	38.0	10	105	M12x28
40 *)	k6	80	5	70	43.0	12	115	M16x36
50	k6	100	10	80	53.5	14	135	M16x36

*) Preferred series

	Z68		D68						Z68	D68		Weight	
Motor	**k**	**kB**	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**HH**	**O**	**Z68**	**D68**
LA71	456.0	511.0	474.5	529.5	139.0	146	90	90	103.0	121.5	M20x1.5/M25x1.5	43	45
LA71Z	475.0	530.0	493.5	548.5	139.0	146	90	90	103.0	121.5	M20x1.5/M25x1.5	43	45
LA80	493.0	556.5	511.5	575.0	156.5	155	90	90	102.5	121.0	M20x1.5/M25x1.5	48	50
LA80Z	515.5	579.0	534.0	597.5	156.5	155	90	90	175.5	194.0	M20x1.5/M25x1.5	52	54
LA90S/L	524.0	595.0	542.5	613.5	174.0	163	90	90	102.5	121.0	M20x1.5/M25x1.5	52	55
LA90ZL	569.0	640.0	587.5	658.5	174.0	163	90	90	226.5	245.0	M20x1.5/M25x1.5	58	61
LA100L	570.0	651.0	588.5	669.5	195.0	168	120	120	143.0	161.5	2xM32x1.5	61	64
LA100ZL	640.0	721.0	658.5	739.5	195.0	168	120	120	275.0	293.5	2xM32x1.5	71	74
LA112M	597.0	678.0	–	–	219.0	181	120	120	146.0	–	2xM32x1.5	73	–
LA112ZM	625.0	706.0	–	–	219.0	181	120	120	250.0	–	2xM32x1.5	80	–
LA132S/M	657.0	759.0	–	–	259.0	195	140	140	186.5	–	2xM32x1.5	86	–
LA132ZM	703.0	805.0	–	–	259.0	195	140	140	294.5	–	2xM32x1.5	107	–
LA160M/L	759.5	878.0	–	–	313.5	227	165	165	212.0	–	2xM40x1.5	119	–
LA160ZL	807.5	926.0	–	–	313.5	227	165	165	365.0	–	2xM40x1.5	158	–

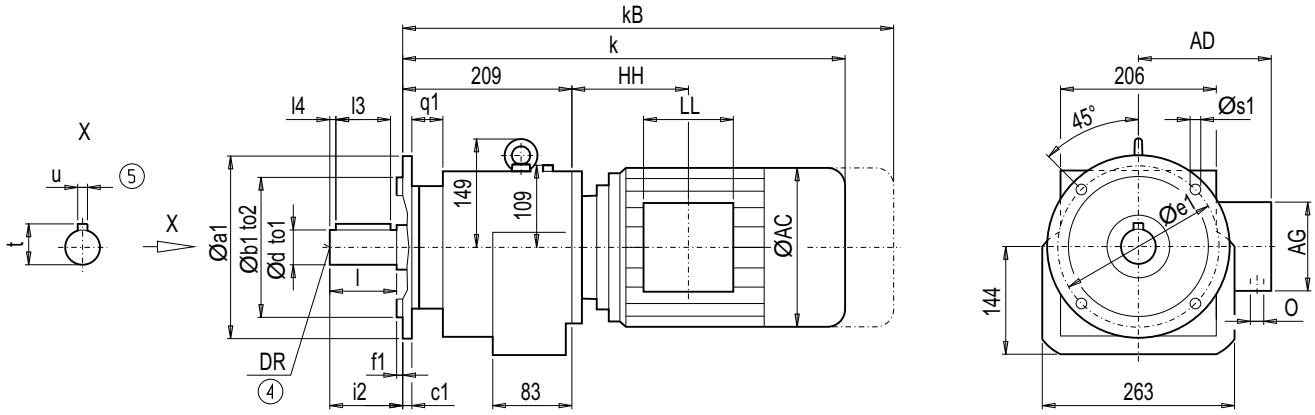
④ DIN 332

⑤ Feather key / keyway DIN 6885

Dimensions

Gearbox DF/ZF68 (3- / 2-stage), flange-mounted design (A-type)

DZF011



Flange	a1	b1	to2	c1	e1	f1	q1	s1	d	to1	l	l4	l3	t	u	i2	DR
A250	250	180	j6	15	215	4	40	13.5	35	k6	70	5	56	38.0	10	70	M12x28
									40 *)	k6	80	5	70	43.0	12	80	M16x36
									50	k6	100	10	80	53.5	14	100	M16x36
A300	300	230	j6	16	265	4	39	13.5	35	k6	70	5	56	38.0	10	70	M12x28
									40 *)	k6	80	5	70	43.0	12	80	M16x36
									50	k6	100	10	80	53.5	14	100	M16x36
A350	350	250	j6	18	300	4	39	17.5	35	k6	70	5	56	38.0	10	70	M12x28
									40 *)	k6	80	5	70	43.0	12	80	M16x36
									50	k6	100	10	80	53.5	14	100	M16x36

*) Preferred series

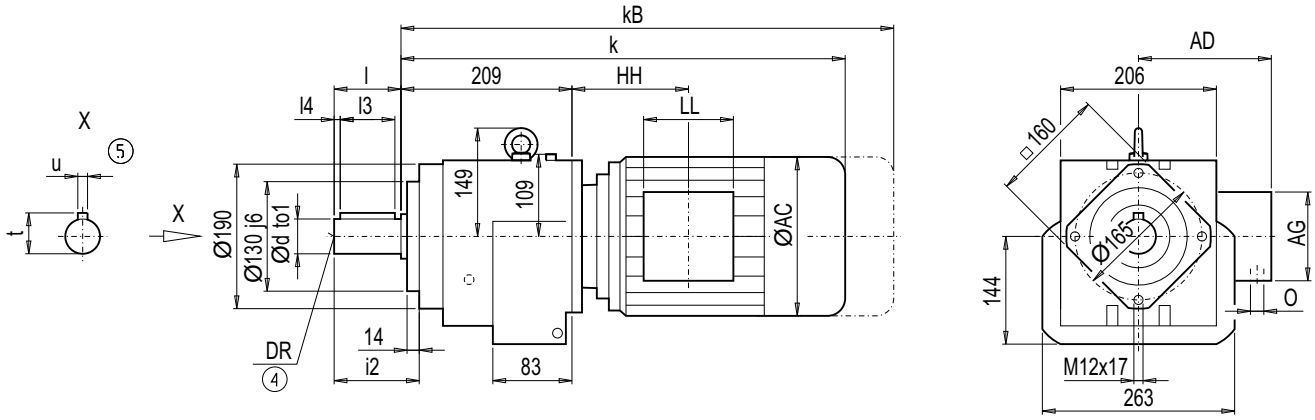
	ZF68		DF68						ZF68	DF68		Weight	
Motor	**k**	**kB**	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**HH**	**O**	**ZF68**	**DF68**
LA71	456.0	511.0	474.5	529.5	139.0	146	90	90	103.0	121.5	M20x1.5/M25x1.5	45	47
LA71Z	475.0	530.0	493.5	548.5	139.0	146	90	90	103.0	121.5	M20x1.5/M25x1.5	45	47
LA80	493.0	556.5	511.5	575.0	156.5	155	90	90	102.5	121.0	M20x1.5/M25x1.5	49	52
LA80Z	515.5	579.0	534.0	597.5	156.5	155	90	90	175.5	194.0	M20x1.5/M25x1.5	53	56
LA90S/L	524.0	595.0	542.5	613.5	174.0	163	90	90	102.5	121.0	M20x1.5/M25x1.5	54	56
LA90ZL	569.0	640.0	587.5	658.5	174.0	163	90	90	226.5	245.0	M20x1.5/M25x1.5	60	62
LA100L	570.0	651.0	588.5	669.5	195.0	168	120	120	143.0	161.5	2xM32x1.5	63	65
LA100ZL	640.0	721.0	658.5	739.5	195.0	168	120	120	275.0	293.5	2xM32x1.5	73	75
LA112M	597.0	678.0	–	–	219.0	181	120	120	146.0	–	2xM32x1.5	75	–
LA112ZM	625.0	706.0	–	–	219.0	181	120	120	250.0	–	2xM32x1.5	82	–
LA132S/M	657.0	759.0	–	–	259.0	195	140	140	186.5	–	2xM32x1.5	88	–
LA132ZM	703.0	805.0	–	–	259.0	195	140	140	294.5	–	2xM32x1.5	109	–
LA160M/L	759.5	878.0	–	–	313.5	227	165	165	212.0	–	2xM40x1.5	121	–
LA160ZL	807.5	926.0	–	–	313.5	227	165	165	365.0	–	2xM40x1.5	160	–

④ DIN 332

⑤ Feather key / keyway DIN 6885

Gearbox DZ/ZZ68 (3- / 2-stage), housing-flange-mounted design (C-type)

DZZ011



d	to1	l	l4	l3	t	u	i2	DR
35	k6	70	5	56	38.0	10	88	M12x28
40 *)	k6	80	5	70	43.0	12	98	M16x36
50	k6	100	10	80	53.5	14	118	M16x36

*) Preferred series

	ZZ68		DZ68						ZZ68	DZ68		Weight	
Motor	**k**	**kB**	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**HH**	**O**	**ZZ68**	**DZ68**
LA71	456.0	511.0	474.5	529.5	139.0	146	90	90	103.0	121.5	M20x1.5/M25x1.5	39	41
LA71Z	475.0	530.0	493.5	548.5	139.0	146	90	90	103.0	121.5	M20x1.5/M25x1.5	39	41
LA80	493.0	556.5	511.5	575.0	156.5	155	90	90	102.5	121.0	M20x1.5/M25x1.5	44	46
LA80Z	515.5	579.0	534.0	597.5	156.5	155	90	90	175.5	194.0	M20x1.5/M25x1.5	48	50
LA90S/L	524.0	595.0	542.5	613.5	174.0	163	90	90	102.5	121.0	M20x1.5/M25x1.5	49	51
LA90ZL	569.0	640.0	587.5	658.5	174.0	163	90	90	226.5	245.0	M20x1.5/M25x1.5	55	57
LA100L	570.0	651.0	588.5	669.5	195.0	168	120	120	143.0	161.5	2xM32x1.5	58	60
LA100ZL	640.0	721.0	658.5	739.5	195.0	168	120	120	275.0	293.5	2xM32x1.5	68	70
LA112M	597.0	678.0	–	–	219.0	181	120	120	146.0	–	2xM32x1.5	69	–
LA112ZM	625.0	706.0	–	–	219.0	181	120	120	250.0	–	2xM32x1.5	76	–
LA132S/M	657.0	759.0	–	–	259.0	195	140	140	186.5	–	2xM32x1.5	82	–
LA132ZM	703.0	805.0	–	–	259.0	195	140	140	294.5	–	2xM32x1.5	104	–
LA160M/L	759.5	878.0	–	–	313.5	227	165	165	212.0	–	2xM40x1.5	115	–
LA160ZL	807.5	926.0	–	–	313.5	227	165	165	365.0	–	2xM40x1.5	154	–

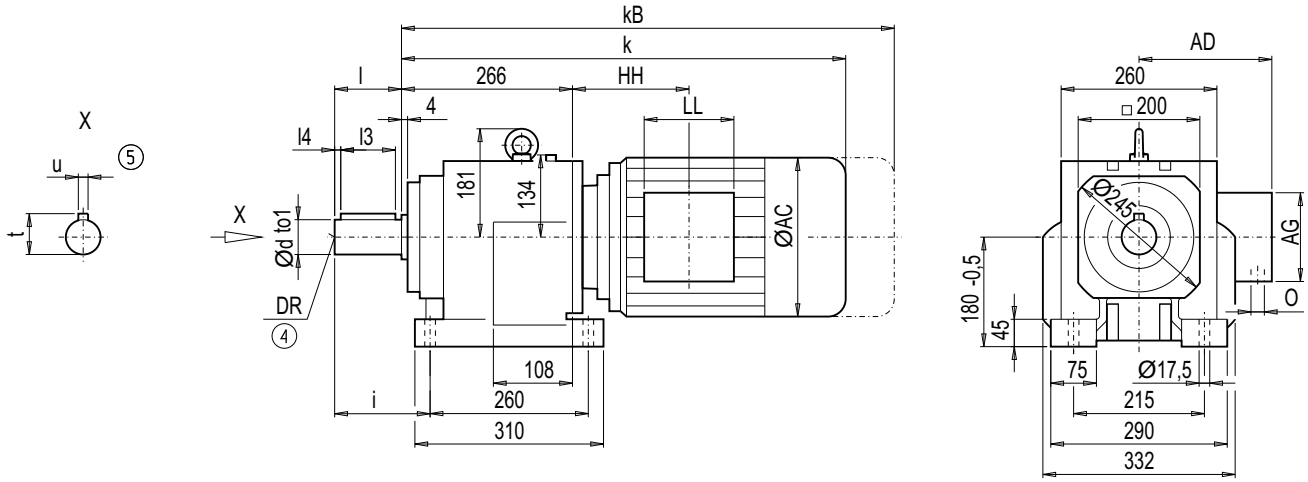
④ DIN 332

⑤ Feather key / keyway DIN 6885

Dimensions

Gearbox D/Z88 (3- / 2-stage), foot-mounted design

DZ011



d	to1	l	l4	l3	t	u	i	DR
50 *)	k6	100	10	80	53.5	14	140	M16x36
60	m6	120	10	100	64.0	18	160	M20x42

*) Preferred series

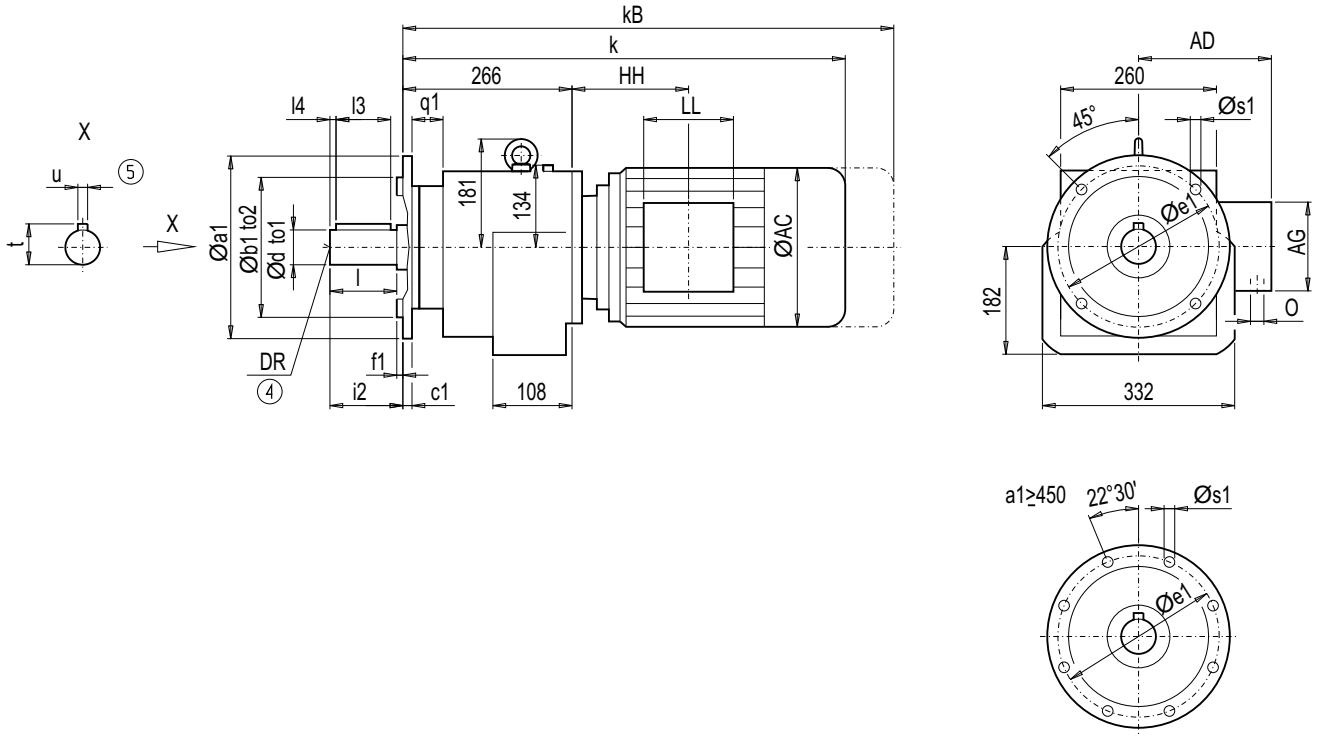
	Z88		D88						Z88	D88		Weight	
Motor	**k**	**kB**	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**HH**	**O**	**Z88**	**D88**
LA71	–	–	523.0	578.0	139.0	146.0	90	90	–	113.0	M20x1.5/M25x1.5	–	76
LA71Z	–	–	542.0	597.0	139.0	146.0	90	90	–	113.0	M20x1.5/M25x1.5	–	76
LA80	–	–	560.0	623.5	156.5	155.0	90	90	–	112.5	M20x1.5/M25x1.5	–	81
LA80Z	–	–	582.5	646.0	156.5	155.0	90	90	–	185.5	M20x1.5/M25x1.5	–	85
LA90S/L	566.0	637.0	591.0	662.0	174.0	163.0	90	90	87.5	112.5	M20x1.5/M25x1.5	85	86
LA90ZL	611.0	682.0	636.0	707.0	174.0	163.0	90	90	211.5	236.5	M20x1.5/M25x1.5	91	92
LA100L	609.5	690.5	637.0	718.0	195.0	168.0	120	120	125.5	153.0	2xM32x1.5	93	95
LA100ZL	679.5	760.5	707.0	788.0	195.0	168.0	120	120	257.5	285.0	2xM32x1.5	103	105
LA112M	635.5	716.5	664.5	745.5	219.0	181.0	120	120	127.5	156.5	2xM32x1.5	106	107
LA112ZM	663.5	744.6	692.5	773.5	219.0	181.0	120	120	231.5	260.5	2xM32x1.5	113	114
LA132S/M	695.5	797.5	723.5	825.5	259.0	195.0	140	140	168.0	196.0	2xM32x1.5	117	120
LA132ZM	741.5	843.5	769.5	871.5	259.0	195.0	140	140	276.0	304.0	2xM32x1.5	138	141
LA160M/L	800.0	918.5	–	–	313.5	227.0	165	165	195.5	–	2xM40x1.5	152	–
LA160ZL	848.0	966.5	–	–	313.5	227.0	165	165	348.5	–	2xM40x1.5	191	–
LG180M/L	859.5	981.5	–	–	348.0	322.5	260	192	212.5	–	2xM40x1.5	244	–
LG180ZM/ZL	910.5	1 032.5	–	–	348.0	322.5	260	192	212.5	–	2xM40x1.5	274	–

④ DIN 332

⑤ Feather key / keyway DIN 6885

Gearbox DF/ZF88 (3- / 2-stage), flange-mounted design (A-type)

DZF011



Flange	a1	b1	to2	c1	e1	f1	q1	s1	d	to1	l	l4	l3	t	u	i2	DR
A300	300	230	j6	16	265	4	54	13.5	50 *)	k6	100	10	80	53.5	14	100	M16x36
									60	m6	120	10	100	64.0	18	120	M20x42
A350	350	250	j6	18	300	5	52	17.5	50 *)	k6	100	10	80	53.5	14	100	M16x36
									60	m6	120	10	100	64.0	18	120	M20x42
A450	450	350	j6	18	400	5	52	17.5	50 *)	k6	100	10	80	53.5	14	100	M16x36
									60	m6	120	10	100	64.0	18	120	M20x42

*) Preferred series

	ZF88		DF88						ZF88	DF88		Weight	
Motor	**k**	**kB**	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**HH**	**O**	**ZF88**	**DF88**
LA71	–	–	523.0	578.0	139.0	146.0	90	90	–	113.0	M20x1.5/M25x1.5	–	78
LA71Z	–	–	542.0	597.0	139.0	146.0	90	90	–	113.0	M20x1.5/M25x1.5	–	78
LA80	–	–	560.0	623.5	156.5	155.0	90	90	–	112.5	M20x1.5/M25x1.5	–	83
LA80Z	–	–	582.5	646.0	156.5	155.0	90	90	–	185.5	M20x1.5/M25x1.5	–	87
LA90S/L	566.0	637.0	591.0	662.0	174.0	163.0	90	90	87.5	112.5	M20x1.5/M25x1.5	87	88
LA90ZL	611.0	682.0	636.0	707.0	174.0	163.0	90	90	211.5	236.5	M20x1.5/M25x1.5	93	94
LA100L	609.5	690.5	637.0	718.0	195.0	168.0	120	120	125.5	153.0	2xM32x1.5	95	97
LA100ZL	679.5	760.5	707.0	788.0	195.0	168.0	120	120	257.5	285.0	2xM32x1.5	105	107
LA112M	635.5	716.5	664.5	745.5	219.0	181.0	120	120	127.5	156.5	2xM32x1.5	108	109
LA112ZM	663.5	744.6	692.5	773.5	219.0	181.0	120	120	231.5	260.5	2xM32x1.5	115	116
LA132S/M	695.5	797.5	723.5	825.5	259.0	195.0	140	140	168.0	196.0	2xM32x1.5	119	122
LA132ZM	741.5	843.5	769.5	871.5	259.0	195.0	140	140	276.0	304.0	2xM32x1.5	140	143
LA160M/L	800.0	918.5	–	–	313.5	227.0	165	165	195.5	–	2xM40x1.5	154	–
LA160ZL	848.0	966.5	–	–	313.5	227.0	165	165	348.5	–	2xM40x1.5	193	–
LG180M/L	859.5	981.5	–	–	348.0	322.5	260	192	212.5	–	2xM40x1.5	246	–
LG180ZM/ZL	910.5	1 032.5	–	–	348.0	322.5	260	192	212.5	–	2xM40x1.5	276	–

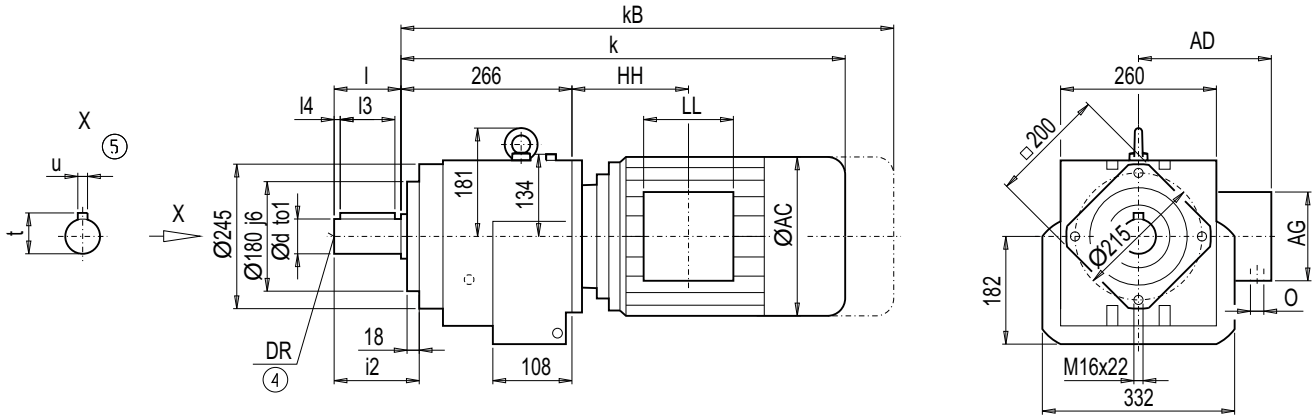
④ DIN 332

⑤ Feather key / keyway DIN 6885

Dimensions

Gearbox DZ/ZZ88 (3- / 2-stage), housing-flange-mounted design (C-type)

DZZ011



d	to1	l	l4	l3	t	u	i2	DR
50 *)	k6	100	10	80	53.5	14	122	M16x36
60	m6	120	10	100	64.0	18	142	M20x42

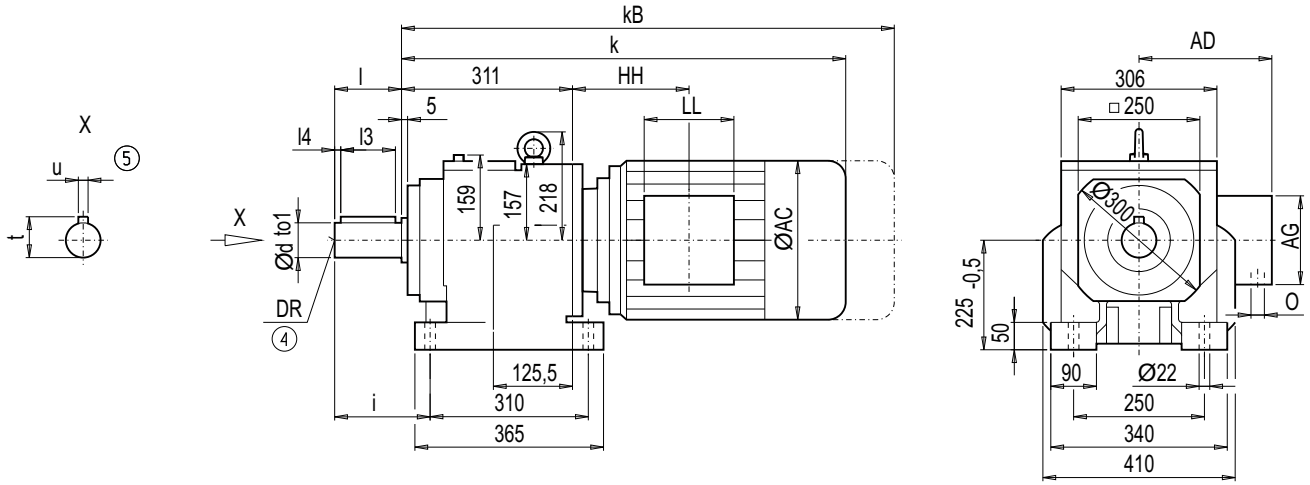
*) Preferred series

	ZZ88		DZ88						ZZ88	DZ88		Weight	
Motor	**k**	**kB**	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**HH**	**O**	**ZZ88**	**DZ88**
LA71	–	–	523.0	578.0	139.0	146.0	90	90	–	113.0	M20x1.5/M25x1.5	–	69
LA71Z	–	–	542.0	597.0	139.0	146.0	90	90	–	113.0	M20x1.5/M25x1.5	–	69
LA80	–	–	560.0	623.5	156.5	155.0	90	90	–	112.5	M20x1.5/M25x1.5	–	74
LA80Z	–	–	582.5	646.0	156.5	155.0	90	90	–	185.5	M20x1.5/M25x1.5	–	78
LA90S/L	566.0	637.0	591.0	662.0	174.0	163.0	90	90	87.5	112.5	M20x1.5/M25x1.5	79	79
LA90ZL	611.0	682.0	636.0	707.0	174.0	163.0	90	90	211.5	236.5	M20x1.5/M25x1.5	85	85
LA100L	609.5	690.5	637.0	718.0	195.0	168.0	120	120	125.5	153.0	2xM32x1.5	87	88
LA100ZL	679.5	760.5	707.0	788.0	195.0	168.0	120	120	257.5	285.0	2xM32x1.5	97	98
LA112M	635.5	716.5	664.5	745.5	219.0	181.0	120	120	127.5	156.5	2xM32x1.5	99	101
LA112ZM	663.5	744.6	692.5	773.5	219.0	181.0	120	120	231.5	260.5	2xM32x1.5	106	108
LA132S/M	695.5	797.5	723.5	825.5	259.0	195.0	140	140	168.0	196.0	2xM32x1.5	110	113
LA132ZM	741.5	843.5	769.5	871.5	259.0	195.0	140	140	276.0	304.0	2xM32x1.5	132	134
LA160M/L	800.0	918.5	–	–	313.5	227.0	165	165	195.5	–	2xM40x1.5	145	–
LA160ZL	848.0	966.5	–	–	313.5	227.0	165	165	348.5	–	2xM40x1.5	184	–
LG180M/L	859.5	981.5	–	–	348.0	322.5	260	192	212.5	–	2xM40x1.5	237	–
LG180ZM/ZL	910.5	1 032.5	–	–	348.0	322.5	260	192	212.5	–	2xM40x1.5	267	–

④ DIN 332 ⑤ Feather key / keyway DIN 6885

Gearbox D/Z108 (3- / 2-stage), foot-mounted design

DZ011



d	to1	l	l4	l3	t	u	i	DR
60 *)	m6	120	10	100	64.0	18	159.5	M20x42
70	m6	140	15	110	74.5	20	179.5	M20x42

*) Preferred series

	Z108		D108						Z108	D108		Weight	
Motor	**k**	**kB**	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**HH**	**O**	**Z108**	**D108**
LA80	–	–	599.0	662.5	156.5	155.0	90	90	–	106.5	M20x1.5/M25x1.5	–	130
LA80Z	–	–	621.5	685.0	156.5	155.0	90	90	–	179.5	M20x1.5/M25x1.5	–	134
LA90S/L	599.5	670.5	630.0	701.0	174.0	163.0	90	90	76.0	106.5	M20x1.5/M25x1.5	133	135
LA90ZL	644.5	715.5	675.0	746.0	174.0	163.0	90	90	200.0	230.5	M20x1.5/M25x1.5	139	141
LA100L	642.5	723.5	676.0	757.0	195.0	168.0	120	120	113.5	147.0	2xM32x1.5	141	144
LA100ZL	712.5	793.5	746.0	827.0	195.0	168.0	120	120	245.5	279.0	2xM32x1.5	151	154
LA112M	669.0	750.0	700.5	781.5	219.0	181.0	120	120	116.0	147.5	2xM32x1.5	152	156
LA112ZM	697.0	778.0	728.5	809.5	219.0	181.0	120	120	220.0	251.5	2xM32x1.5	159	163
LA132S/M	728.0	830.0	760.5	862.5	259.0	195.0	140	140	155.5	188.0	2xM32x1.5	163	168
LA132ZM	774.0	876.0	806.5	908.5	259.0	195.0	140	140	263.5	296.0	2xM32x1.5	184	189
LA160M/L	833.5	952.0	863.0	981.5	313.5	227.0	165	165	184.0	213.5	2xM40x1.5	198	205
LA160ZL	881.5	1 000.0	911.0	1 029.5	313.5	227.0	165	165	337.0	366.5	2xM40x1.5	237	244
LG180M/L	890.0	1 012.0	–	–	348.0	322.5	260	192	198.0	–	2xM40x1.5	294	–
LG180ZM/ZL	941.0	1 063.0	–	–	348.0	322.5	260	192	198.0	–	2xM40x1.5	324	–
LG200L	946.0	1 072.0	–	–	385.0	301.0	260	192	228.0	–	2xM50x1.5	374	–
K4-LGI225S	1 206.5	1 445.5	–	–	442.0	325.0	260	192	443.0	–	2xM50x1.5	530	–
K4-LGI225M	1 206.5	1 445.5	–	–	442.0	325.0	260	192	443.0	–	2xM50x1.5	518	–
K4-LGI225ZM	1 266.5	1 505.5	–	–	442.0	325.0	260	192	443.0	–	2xM50x1.5	576	–

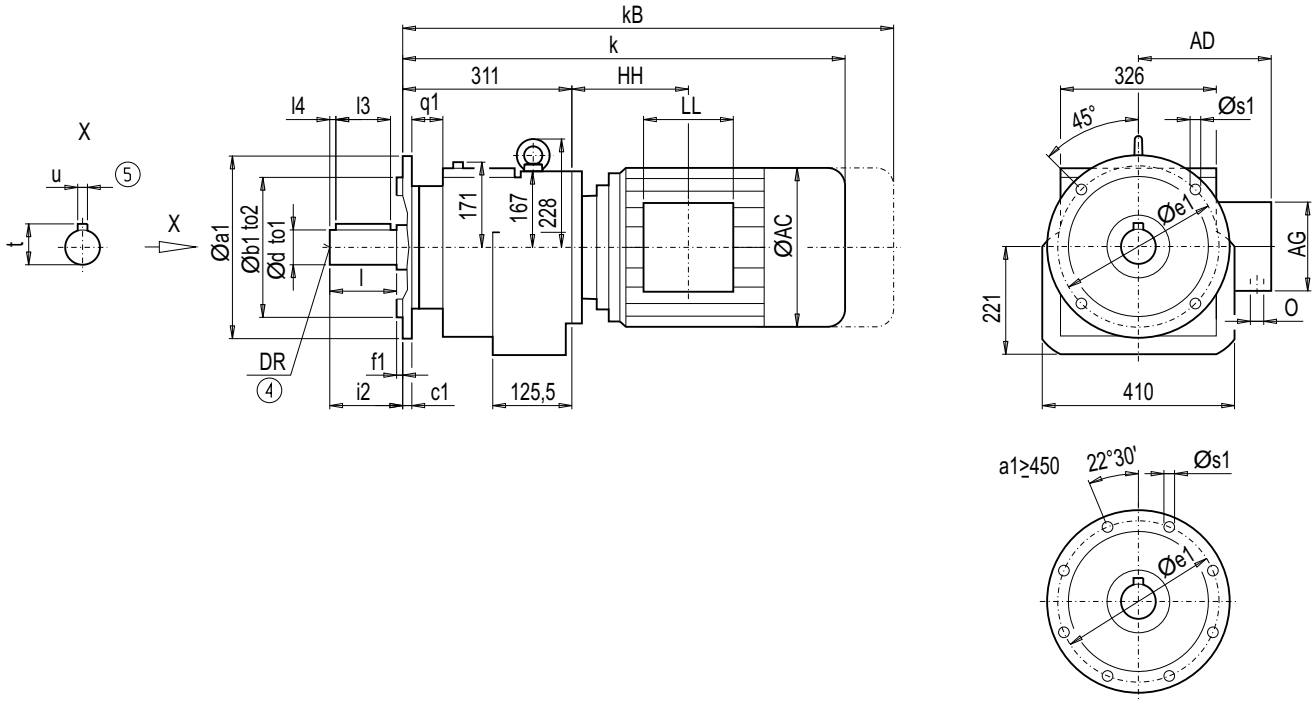
④ DIN 332

⑤ Feather key / keyway DIN 6885

Dimensions

Gearbox DF/ZF108 (3- / 2-stage), flange-mounted design (A-type)

DZF011



Flange	a1	b1	to2	c1	e1	f1	q1	s1	d	to1	l	l4	l3	t	u	i2	DR
A350	350	250	h6	18	300	5	41	17.5	60 *)	m6	120	10	100	64.0	18	120	M20x42
									70	m6	140	15	110	74.5	20	140	M20x42
A450	450	350	h6	20	400	5	39	17.5	60 *)	m6	120	10	100	64.0	18	120	M20x42
									70	m6	140	15	110	74.5	20	140	M20x42

*) Preferred series

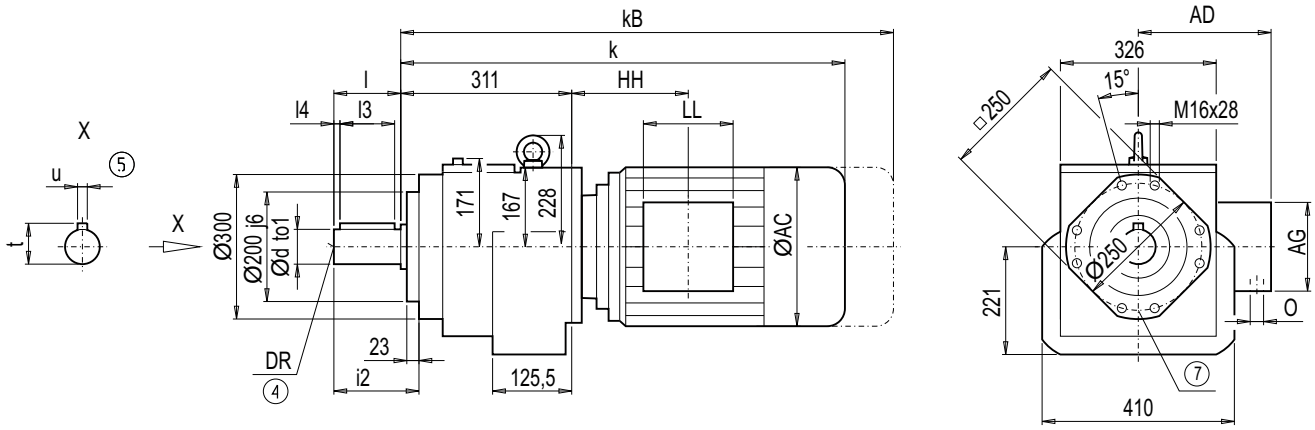
	ZF108		DF108						ZF108	DF108		Weight	
Motor	**k**	**kB**	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**HH**	**O**	**ZF108**	**DF108**
LA80	–	–	599.0	662.5	156.5	155.0	90	90	–	106.5	M20x1.5/M25x1.5	–	129
LA80Z	–	–	621.5	685.0	156.5	155.0	90	90	–	179.5	M20x1.5/M25x1.5	–	133
LA90S/L	599.5	670.5	630.0	701.0	174.0	163.0	90	90	76.0	106.5	M20x1.5/M25x1.5	131	134
LA90ZL	644.5	715.5	675.0	746.0	174.0	163.0	90	90	200.0	230.5	M20x1.5/M25x1.5	137	140
LA100L	642.5	723.5	676.0	757.0	195.0	168.0	120	120	113.5	147.0	2xM32x1.5	139	143
LA100ZL	712.5	793.5	746.0	827.0	195.0	168.0	120	120	245.5	279.0	2xM32x1.5	149	153
LA112M	669.0	750.0	700.5	781.5	219.0	181.0	120	120	116.0	147.5	2xM32x1.5	151	155
LA112ZM	697.0	778.0	728.5	809.5	219.0	181.0	120	120	220.0	251.5	2xM32x1.5	158	162
LA132S/M	728.0	830.0	760.5	862.5	259.0	195.0	140	140	155.5	188.0	2xM32x1.5	162	167
LA132ZM	774.0	876.0	806.5	908.5	259.0	195.0	140	140	263.5	296.0	2xM32x1.5	183	188
LA160M/L	833.5	952.0	863.0	981.5	313.5	227.0	165	165	184.0	213.5	2xM40x1.5	196	204
LA160ZL	881.5	1 000.0	911.0	1 029.5	313.5	227.0	165	165	337.0	366.5	2xM40x1.5	235	243
LG180M/L	890.0	1 012.0	–	–	348.0	322.5	260	192	198.0	–	2xM40x1.5	293	–
LG180ZM/ZL	941.0	1 063.0	–	–	348.0	322.5	260	192	198.0	–	2xM40x1.5	323	–
LG200L	946.0	1 072.0	–	–	385.0	301.0	260	192	228.0	–	2xM50x1.5	373	–
K4-LGI225S	1 206.5	1 445.5	–	–	442.0	325.0	260	192	443.0	–	2xM50x1.5	529	–
K4-LGI225M	1 206.5	1 445.5	–	–	442.0	325.0	260	192	443.0	–	2xM50x1.5	517	–
K4-LGI225ZM	1 266.5	1 505.5	–	–	442.0	325.0	260	192	443.0	–	2xM50x1.5	575	–

④ DIN 332

⑤ Feather key / keyway DIN 6885

Gearbox DZ/ZZ108 (3- / 2-stage), housing-flange-mounted design (C-type)

DZZ011



d	to1	l	l4	l3	t	u	i2	DR
60 *)	m6	120	10	100	64.0	18	148	M20x42
70	m6	140	15	110	74.5	20	168	M20x42

*) Preferred series

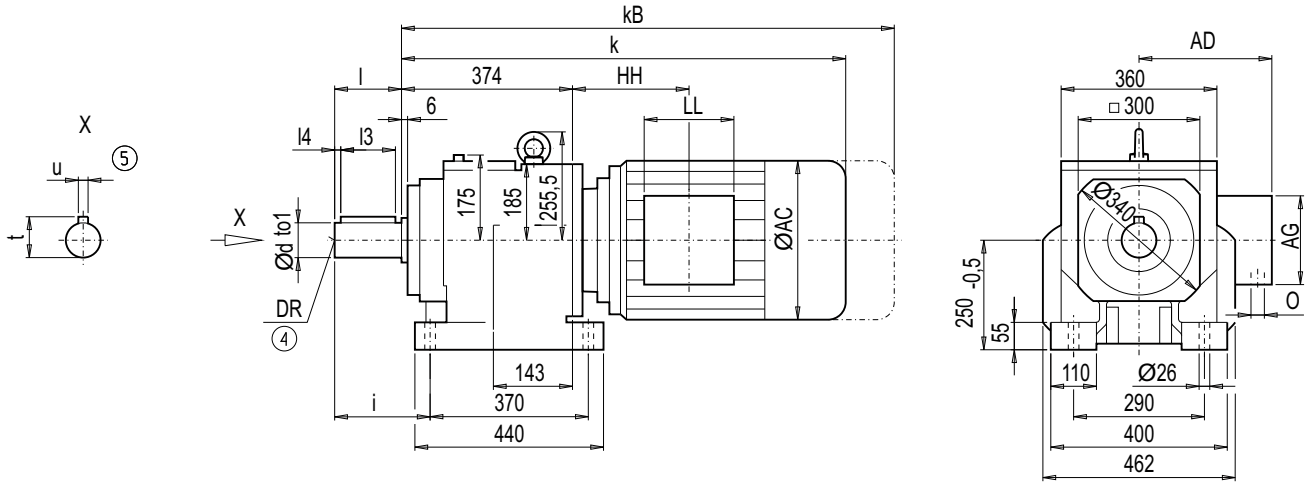
	ZZ108		DZ108						ZZ108	DZ108		Weight	
Motor	**k**	**kB**	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**HH**	**O**	**ZZ108**	**DZ108**
LA80	–	–	599.0	662.5	156.5	155.0	90	90	–	106.5	M20x1.5/M25x1.5	–	121
LA80Z	–	–	621.5	685.0	156.5	155.0	90	90	–	179.5	M20x1.5/M25x1.5	–	125
LA90S/L	599.5	670.5	630.0	701.0	174.0	163.0	90	90	76.0	106.5	M20x1.5/M25x1.5	124	126
LA90ZL	644.5	715.5	675.0	746.0	174.0	163.0	90	90	200.0	230.5	M20x1.5/M25x1.5	130	132
LA100L	642.5	723.5	676.0	757.0	195.0	168.0	120	120	113.5	147.0	2xM32x1.5	132	135
LA100ZL	712.5	793.5	746.0	827.0	195.0	168.0	120	120	245.5	279.0	2xM32x1.5	142	145
LA112M	669.0	750.0	700.5	781.5	219.0	181.0	120	120	116.0	147.5	2xM32x1.5	144	147
LA112ZM	697.0	778.0	728.5	809.5	219.0	181.0	120	120	220.0	251.5	2xM32x1.5	151	154
LA132S/M	728.0	830.0	760.5	862.5	259.0	195.0	140	140	155.5	188.0	2xM32x1.5	154	159
LA132ZM	774.0	876.0	806.5	908.5	259.0	195.0	140	140	263.5	296.0	2xM32x1.5	175	180
LA160M/L	833.5	952.0	863.0	981.5	313.5	227.0	165	165	184.0	213.5	2xM40x1.5	189	196
LA160ZL	881.5	1 000.0	911.0	1 029.5	313.5	227.0	165	165	337.0	366.5	2xM40x1.5	228	235
LG180M/L	890.0	1 012.0	–	–	348.0	322.5	260	192	198.0	–	2xM40x1.5	285	–
LG180ZM/ZL	941.0	1 063.0	–	–	348.0	322.5	260	192	198.0	–	2xM40x1.5	315	–
LG200L	946.0	1 072.0	–	–	385.0	301.0	260	192	228.0	–	2xM50x1.5	365	–
K4-LGI225S	1 206.5	1 445.5	–	–	442.0	325.0	260	192	443.0	–	2xM50x1.5	521	–
K4-LGI225M	1 206.5	1 445.5	–	–	442.0	325.0	260	192	443.0	–	2xM50x1.5	509	–
K4-LGI225ZM	1 266.5	1 505.5	–	–	442.0	325.0	260	192	443.0	–	2xM50x1.5	567	–

④ DIN 332 ⑤ Feather key / keyway DIN 6885 ⑦ For note, see page 2/192

Dimensions

Gearbox D/Z128 (3- / 2-stage), foot-mounted design

DZ011



d	to1	l	l4	l3	t	u	i	DR
70 *)	m6	140	15	110	74.5	20	186	M20x42
90	m6	170	15	140	95.0	25	216	M24x50

*) Preferred series

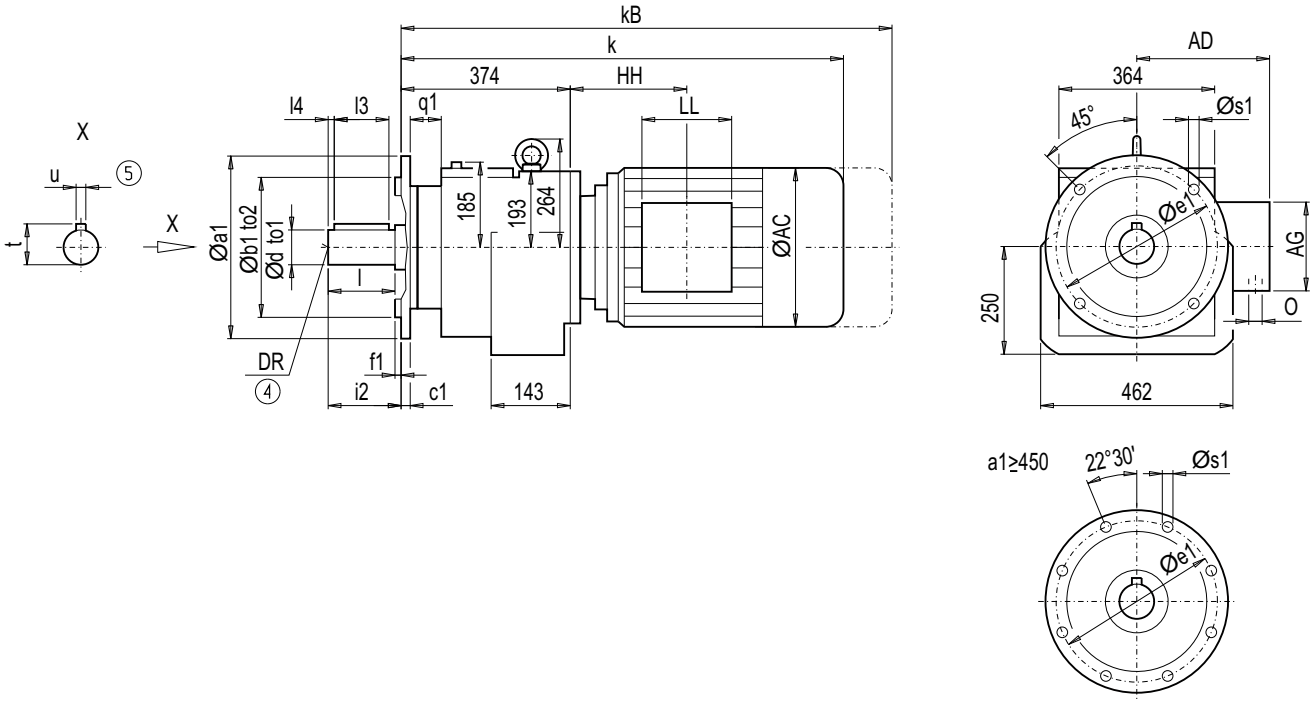
	Z128		D128						Z128	D128		Weight	
Motor	**k**	**kB**	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**HH**	**O**	**Z128**	**D128**
LA90S/L	–	–	686.0	757.0	174.0	163.0	90	90	–	99.5	M20x1.5/M25x1.5	–	212
LA90ZL	–	–	731.0	802.0	174.0	163.0	90	90	–	223.5	M20x1.5/M25x1.5	–	218
LA100L	696.0	777.0	732.0	813.0	195.0	168.0	120	120	104.0	140.0	2xM32x1.5	214	221
LA100ZL	766.0	847.0	802.0	883.0	195.0	168.0	120	120	236.0	272.0	2xM32x1.5	224	231
LA112M	721.5	802.5	755.5	836.5	219.0	181.0	120	120	105.5	139.5	2xM32x1.5	226	233
LA112ZM	749.5	830.5	783.5	864.5	219.0	181.0	120	120	209.5	243.5	2xM32x1.5	233	240
LA132S/M	780.5	882.5	814.5	916.5	259.0	195.0	140	140	145.0	179.0	2xM32x1.5	235	246
LA132ZM	826.5	928.5	860.5	962.5	259.0	195.0	140	140	253.0	287.0	2xM32x1.5	256	267
LA160M/L	880.0	998.5	917.0	1 035.5	313.5	227.0	165	165	167.5	204.5	2xM40x1.5	274	282
LA160ZL	928.0	1 046.5	965.0	1 083.5	313.5	227.0	165	165	320.5	357.5	2xM40x1.5	313	321
LG180M/L	939.5	1 061.5	976.5	1 098.5	348.0	322.5	260	192	184.5	221.5	2xM40x1.5	365	378
LG180ZM/ZL	990.5	1 112.5	1 027.5	1 149.5	348.0	322.5	260	192	184.5	221.5	2xM40x1.5	395	408
LG200L	995.5	1 121.5	1 032.5	1 158.5	385.0	301.0	260	192	214.5	251.5	2xM50x1.5	445	458
LG225S	1 066.5	1 305.5	–	–	442.0	325.0	260	192	250.5	–	2xM50x1.5	522	–
LG225M	1 066.5	1 305.5	–	–	442.0	325.0	260	192	250.5	–	2xM50x1.5	510	–
LG225ZM	1 126.5	1 365.5	–	–	442.0	325.0	260	192	250.5	–	2xM50x1.5	568	–
K4-LGI250M	1 353.5	1 578.5	–	–	495.0	392.0	300	236	469.5	–	2xM63x1.5	689	–
K4-LGI250ZM	1 423.5	1 648.5	–	–	495.0	392.0	300	236	469.5	–	2xM63x1.5	792	–

④ DIN 332

⑤ Feather key / keyway DIN 6885

Gearbox DF/ZF128 (3- / 2-stage), flange-mounted design (A-type)

DZF011



Flange	a1	b1	to2	c1	e1	f1	q1	s1	d	to1	l	l4	l3	t	u	i2	DR
A350 [1]	350	250	h6	18	300	5	60	17.5	70 *)	m6	140	15	110	74.5	20	140	M20x42
									90	m6	170	15	140	95.0	25	170	M24x50
A450	450	350	h6	22	400	5	56	17.5	70 *)	m6	140	15	110	74.5	20	140	M20x42
									90	m6	170	15	140	95.0	25	170	M24x50
A550	550	450	h6	22	500	5	56	17.5	70 *)	m6	140	15	110	74.5	20	140	M20x42
									90	m6	170	15	140	95.0	25	170	M24x50

[1] If torque > 3500 Nm, the flange must be pinned. We recommend you use 2 pins with a 12 mm diameter
*) Preferred series

	ZF128		DF128						ZF128	DF128		Weight	
Motor	**k**	**kB**	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**HH**	**O**	**ZF128**	**DF128**
LA90S/L	–	–	686.0	757.0	174.0	163.0	90	90	–	99.5	M20x1.5/M25x1.5	–	206
LA90ZL	–	–	731.0	802.0	174.0	163.0	90	90	–	223.5	M20x1.5/M25x1.5	–	212
LA100L	696.0	777.0	732.0	813.0	195.0	168.0	120	120	104.0	140.0	2xM32x1.5	209	216
LA100ZL	766.0	847.0	802.0	883.0	195.0	168.0	120	120	236.0	272.0	2xM32x1.5	219	226
LA112M	721.5	802.5	755.5	836.5	219.0	181.0	120	120	105.5	139.5	2xM32x1.5	220	227
LA112ZM	749.5	830.5	783.5	864.5	219.0	181.0	120	120	209.5	243.5	2xM32x1.5	227	234
LA132S/M	780.5	882.5	814.5	916.5	259.0	195.0	140	140	145.0	179.0	2xM32x1.5	230	240
LA132ZM	826.5	928.5	860.5	962.5	259.0	195.0	140	140	253.0	287.0	2xM32x1.5	251	261
LA160M/L	880.0	998.5	917.0	1 035.5	313.5	227.0	165	165	167.5	204.5	2xM40x1.5	269	276
LA160ZL	928.0	1 046.5	965.0	1 083.5	313.5	227.0	165	165	320.5	357.5	2xM40x1.5	308	315
LG180M/L	939.5	1 061.5	976.5	1 098.5	348.0	322.5	260	192	184.5	221.5	2xM40x1.5	360	372
LG180ZM/ZL	990.5	1 112.5	1 027.5	1 149.5	348.0	322.5	260	192	184.5	221.5	2xM40x1.5	390	402
LG200L	995.5	1 121.5	1 032.5	1 158.5	385.0	301.0	260	192	214.5	251.5	2xM50x1.5	440	452
LG225S	1 066.5	1 305.5	–	–	442.0	325.0	260	192	250.5	–	2xM50x1.5	517	–
LG225M	1 066.5	1 305.5	–	–	442.0	325.0	260	192	250.5	–	2xM50x1.5	505	–
LG225ZM	1 126.5	1 365.5	–	–	442.0	325.0	260	192	250.5	–	2xM50x1.5	563	–
K4-LGI250M	1 353.5	1 578.5	–	–	495.0	392.0	300	236	469.5	–	2xM63x1.5	684	–
K4-LGI250ZM	1 423.5	1 648.5	–	–	495.0	392.0	300	236	469.5	–	2xM63x1.5	787	–

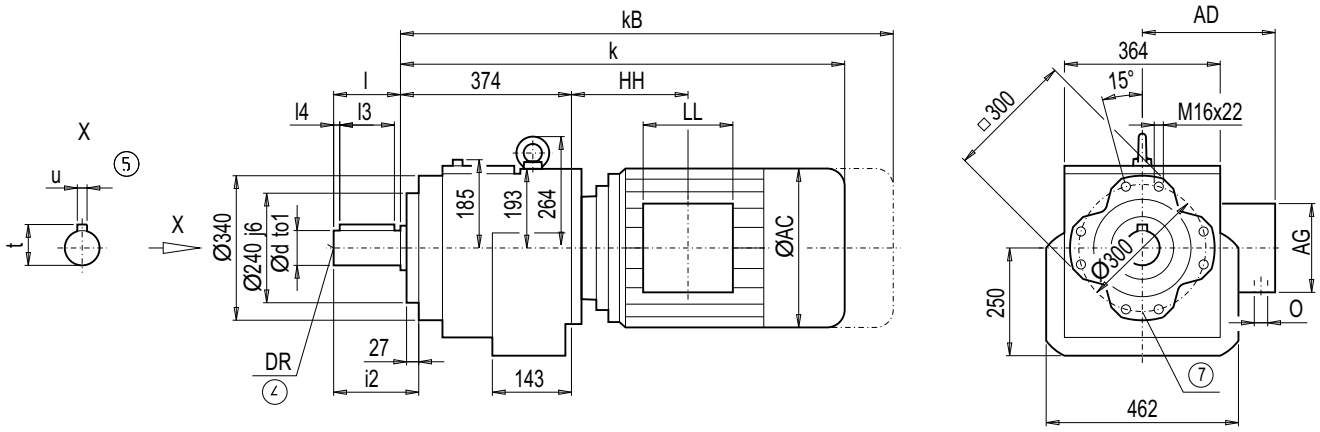
④ DIN 332

⑤ Feather key / keyway DIN 6885

Dimensions

Gearbox DZ/ZZ128 (3- / 2-stage), housing-flange-mounted design (C-type)

DZZ011



d	to1	l	l4	l3	t	u	i2	DR
70 *)	m6	140	15	110	74.5	20	173	M20x42
90	m6	170	15	140	95.0	25	203	M24x50

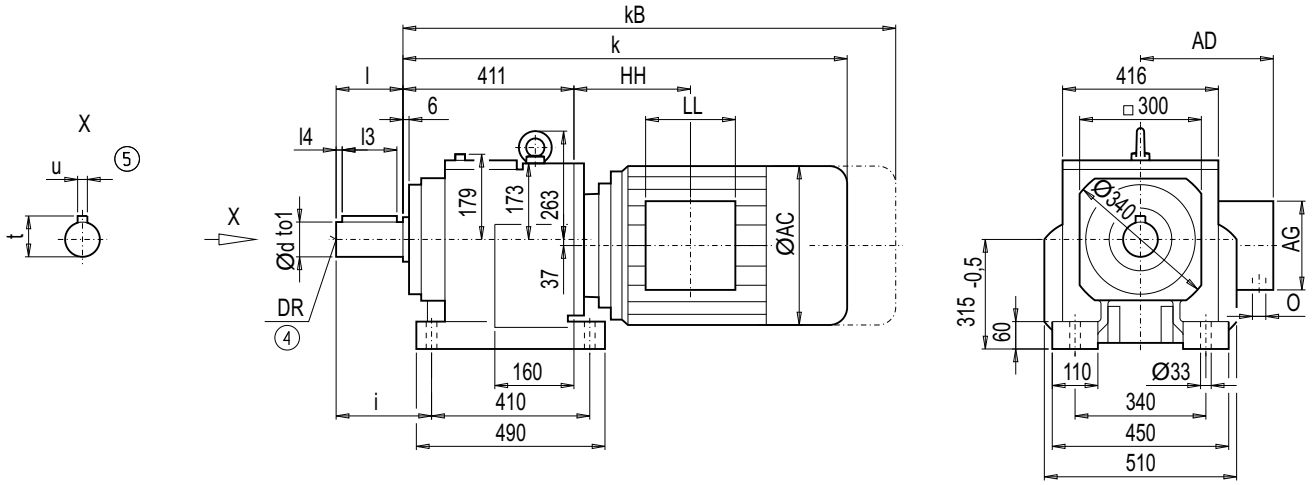
*) Preferred series

	ZZ128		DZ128						ZZ128	DZ128		Weight	
Motor	**k**	**kB**	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**HH**	**O**	**ZZ128**	**DZ128**
LA90S/L	–	–	686.0	757.0	174.0	163.0	90	90	–	99.5	M20x1.5/M25x1.5	–	190
LA90ZL	–	–	731.0	802.0	174.0	163.0	90	90	–	223.5	M20x1.5/M25x1.5	–	196
LA100L	696.0	777.0	732.0	813.0	195.0	168.0	120	120	104.0	140.0	2xM32x1.5	192	199
LA100ZL	766.0	847.0	802.0	883.0	195.0	168.0	120	120	236.0	272.0	2xM32x1.5	202	209
LA112M	721.5	802.5	755.5	836.5	219.0	181.0	120	120	105.5	139.5	2xM32x1.5	203	210
LA112ZM	749.5	830.5	783.5	864.5	219.0	181.0	120	120	209.5	243.5	2xM32x1.5	210	217
LA132S/M	780.5	882.5	814.5	916.5	259.0	195.0	140	140	145.0	179.0	2xM32x1.5	213	223
LA132ZM	826.5	928.5	860.5	962.5	259.0	195.0	140	140	253.0	287.0	2xM32x1.5	234	245
LA160M/L	880.0	998.5	917.0	1 035.5	313.5	227.0	165	165	167.5	204.5	2xM40x1.5	252	259
LA160ZL	928.0	1 046.5	965.0	1 083.5	313.5	227.0	165	165	320.5	357.5	2xM40x1.5	291	298
LG180M/L	939.5	1 061.5	976.5	1 098.5	348.0	322.5	260	192	184.5	221.5	2xM40x1.5	343	355
LG180ZM/ZL	990.5	1 112.5	1 027.5	1 149.5	348.0	322.5	260	192	184.5	221.5	2xM40x1.5	373	385
LG200L	995.5	1 121.5	1 032.5	1 158.5	385.0	301.0	260	192	214.5	251.5	2xM50x1.5	423	435
LG225S	1 066.5	1 305.5	–	–	442.0	325.0	260	192	250.5	–	2xM50x1.5	500	–
LG225M	1 066.5	1 305.5	–	–	442.0	325.0	260	192	250.5	–	2xM50x1.5	488	–
LG225ZM	1 126.5	1 365.5	–	–	442.0	325.0	260	192	250.5	–	2xM50x1.5	546	–
K4-LGI250M	1 353.5	1 578.5	–	–	495.0	392.0	300	236	469.5	–	2xM63x1.5	667	–
K4-LGI250ZM	1 423.5	1 648.5	–	–	495.0	392.0	300	236	469.5	–	2xM63x1.5	770	–

④ DIN 332 ⑤ Feather key / keyway DIN 6885 ⑦ For note, see page 2/192

Gearbox D/Z148 (3- / 2-stage), foot-mounted design

DZ011



d	to1	l	l4	l3	t	u	i	DR
90 *)	m6	170	15	140	95	25	220	M24x50
100	m6	210	15	180	106	28	260	M24x50

*) Preferred series

	Z148		D148						Z148	D148		Weight	
Motor	**k**	**kB**	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**HH**	**O**	**Z148**	**D148**
LA100L	–	–	764.0	845.0	195.0	168.0	120	120	–	135.0	2xM32x1.5	–	313
LA100ZL	–	–	834.0	915.0	195.0	168.0	120	120	–	267.0	2xM32x1.5	–	323
LA112M	–	–	789.5	870.5	219.0	181.0	120	120	–	136.5	2xM32x1.5	–	324
LA112ZM	–	–	817.5	898.5	219.0	181.0	120	120	–	240.5	2xM32x1.5	–	331
LA132S/M	809.5	911.5	847.5	949.5	259.0	195.0	140	140	137.0	175.0	2xM32x1.5	325	336
LA132ZM	855.5	957.5	893.5	995.5	259.0	195.0	140	140	245.0	283.0	2xM32x1.5	346	357
LA160M/L	909.5	1 028.0	947.5	1 066.0	313.5	227.0	165	165	160.0	198.0	2xM40x1.5	359	371
LA160ZL	957.5	1 076.0	995.5	1 114.0	313.5	227.0	165	165	313.0	351.0	2xM40x1.5	398	410
LG180M/L	969.0	1 091.0	1 007.0	1 129.0	348.0	322.5	260	192	177.0	215.0	2xM40x1.5	455	467
LG180ZM/ZL	1 020.0	1 142.0	1 058.0	1 180.0	348.0	322.5	260	192	177.0	215.0	2xM40x1.5	485	497
LG200L	1 025.0	1 151.0	1 063.0	1 189.0	385.0	301.0	260	192	207.0	245.0	2xM50x1.5	535	547
LG225S	1 096.0	1 335.0	1 134.0	1 373.0	442.0	325.0	260	192	243.0	281.0	2xM50x1.5	608	621
LG225M	1 096.0	1 335.0	1 134.0	1 373.0	442.0	325.0	260	192	243.0	281.0	2xM50x1.5	596	609
LG225ZM	1 156.0	1 395.0	1 194.0	1 433.0	442.0	325.0	260	192	243.0	281.0	2xM50x1.5	654	667
LG250M	1 189.5	1 414.5	–	–	495.0	392.0	300	236	278.5	–	2xM63x1.5	698	–
LG250ZM	1 259.5	1 485.0	–	–	495.0	392.0	300	236	278.5	–	2xM63x1.5	801	–
K4-LGI280S	1 468.5	1 695.5	–	–	555.0	432.0	300	236	489.5	–	2xM63x1.5	929	–
K4-LGI280M	1 468.5	1 695.5	–	–	555.0	432.0	300	236	489.5	–	2xM63x1.5	941	–
K4-LGI280ZM	1 578.5	1 805.5	–	–	555.0	432.0	300	236	489.5	–	2xM63x1.5	1 029	–

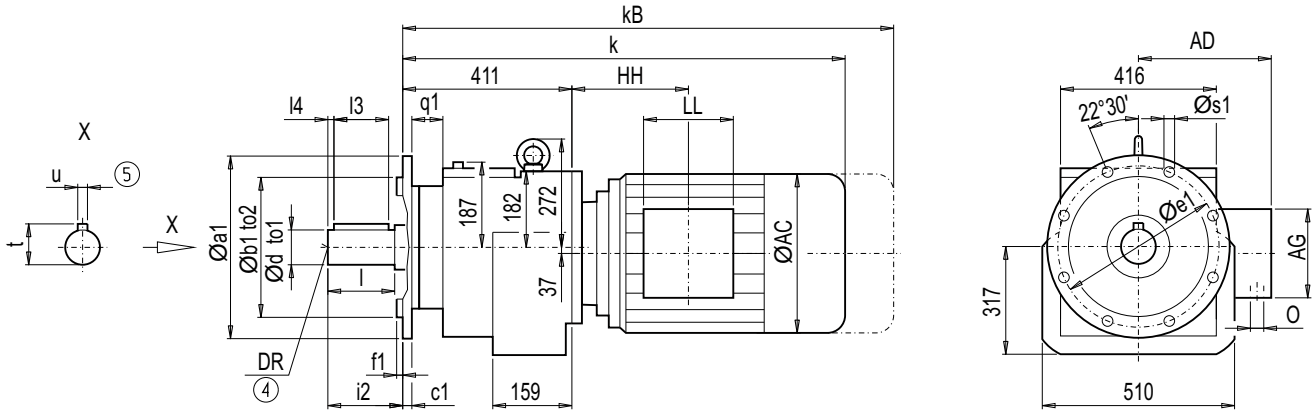
④ DIN 332

⑤ Feather key / keyway DIN 6885

Dimensions

Gearbox DF/ZF148 (3- / 2-stage), flange-mounted design (A-type)

DZF011



Flange	a1	b1	to2	c1	e1	f1	q1	s1	d	to1	l	l4	l3	t	u	i2	DR
A450	450	350	h6	22	400	5	68	17.5	90 *)	m6	170	15	140	95	25	170	M24x50
									100	m6	210	15	180	106	28	210	M24x50
A550	550	450	h6	25	500	5	65	17.5	90 *)	m6	170	15	140	95	25	170	M24x50
									100	m6	210	15	180	106	28	210	M24x50

*) Preferred series

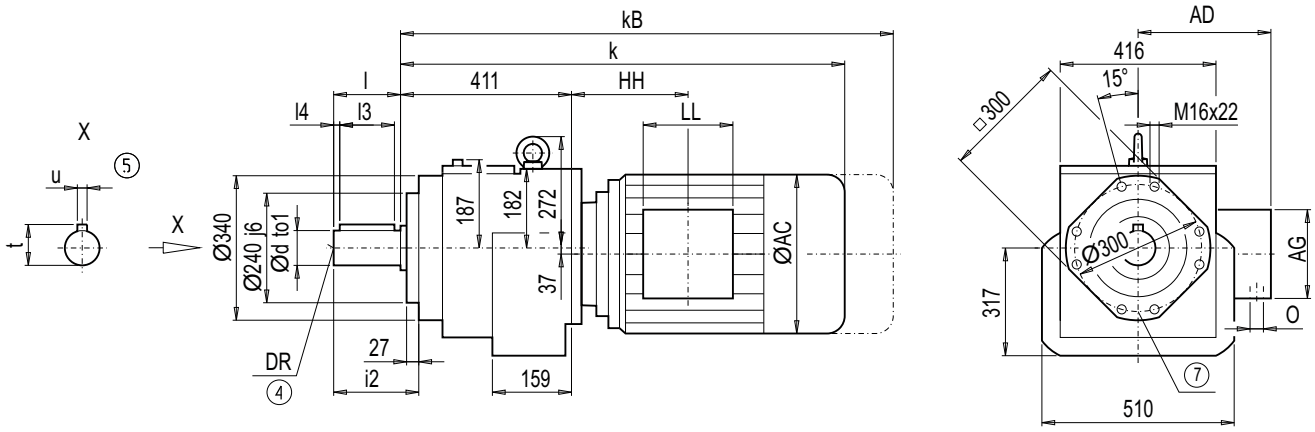
	ZF148		DF148						ZF148	DF148		Weight	
Motor	**k**	**kB**	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**HH**	**O**	**ZF148**	**DF148**
LA100L	–	–	764.0	845.0	195.0	168.0	120	120	–	135.0	2xM32x1.5	–	307
LA100ZL	–	–	834.0	915.0	195.0	168.0	120	120	–	267.0	2xM32x1.5	–	317
LA112M	–	–	789.5	870.5	219.0	181.0	120	120	–	136.5	2xM32x1.5	–	318
LA112ZM	–	–	817.5	898.5	219.0	181.0	120	120	–	240.5	2xM32x1.5	–	325
LA132S/M	809.5	911.5	847.5	949.5	259.0	195.0	140	140	137.0	175.0	2xM32x1.5	319	330
LA132ZM	855.5	957.5	893.5	995.5	259.0	195.0	140	140	245.0	283.0	2xM32x1.5	340	351
LA160M/L	909.5	1 028.0	947.5	1 066.0	313.5	227.0	165	165	160.0	198.0	2xM40x1.5	353	365
LA160ZL	957.5	1 076.0	995.5	1 114.0	313.5	227.0	165	165	313.0	351.0	2xM40x1.5	392	404
LG180M/L	969.0	1 091.0	1 007.0	1 129.0	348.0	322.5	260	192	177.0	215.0	2xM40x1.5	449	461
LG180ZM/ZL	1 020.0	1 142.0	1 058.0	1 180.0	348.0	322.5	260	192	177.0	215.0	2xM40x1.5	479	491
LG200L	1 025.0	1 151.0	1 063.0	1 189.0	385.0	301.0	260	192	207.0	245.0	2xM50x1.5	529	541
LG225S	1 096.0	1 335.0	1 134.0	1 373.0	442.0	325.0	260	192	243.0	281.0	2xM50x1.5	602	615
LG225M	1 096.0	1 335.0	1 134.0	1 373.0	442.0	325.0	260	192	243.0	281.0	2xM50x1.5	590	603
LG225ZM	1 156.0	1 395.0	1 194.0	1 433.0	442.0	325.0	260	192	243.0	281.0	2xM50x1.5	648	661
LG250M	1 189.5	1 414.5	–	–	495.0	392.0	300	236	278.5	–	2xM63x1.5	692	–
LG250ZM	1 259.5	1 485.0	–	–	495.0	392.0	300	236	278.5	–	2xM63x1.5	795	–
K4-LGI280S	1 468.5	1 695.5	–	–	555.0	432.0	300	236	489.5	–	2xM63x1.5	923	–
K4-LGI280M	1 468.5	1 695.5	–	–	555.0	432.0	300	236	489.5	–	2xM63x1.5	941	–
K4-LGI280ZM	1 578.5	1 805.5	–	–	555.0	432.0	300	236	489.5	–	2xM63x1.5	1 029	–

④ DIN 332

⑤ Feather key / keyway DIN 6885

Gearbox DZ/ZZ148 (3- / 2-stage), housing-flange-mounted design (C-type)

DZZ011



d	to1	l	l4	l3	t	u	i2	DR
90 *)	m6	170	15	140	95	25	203	M24x50
100	m6	210	15	180	106	28	243	M24x50

*) Preferred series

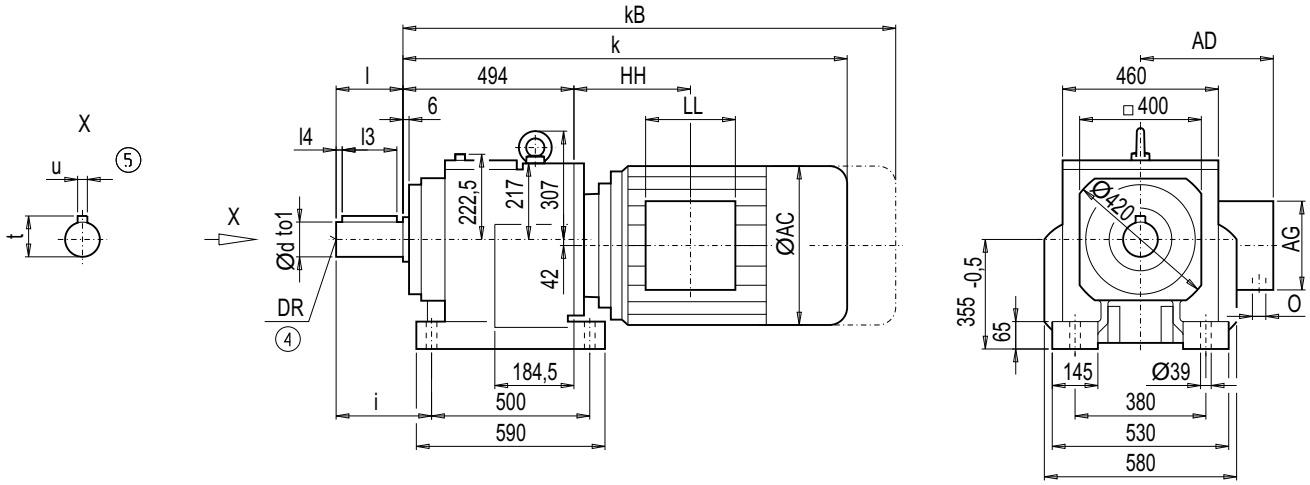
	ZZ148		DZ148						ZZ148	DZ148		Weight	
Motor	**k**	**kB**	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**HH**	**O**	**ZZ148**	**DZ148**
LA100L	–	–	764.0	845.0	195.0	168.0	120	120	–	135.0	2xM32x1.5	–	283
LA100ZL	–	–	834.0	915.0	195.0	168.0	120	120	–	267.0	2xM32x1.5	–	293
LA112M	–	–	789.5	870.5	219.0	181.0	120	120	–	136.5	2xM32x1.5	–	294
LA112ZM	–	–	817.5	898.5	219.0	181.0	120	120	–	240.5	2xM32x1.5	–	301
LA132S/M	809.5	911.5	847.5	949.5	259.0	195.0	140	140	137.0	175.0	2xM32x1.5	302	306
LA132ZM	855.5	957.5	893.5	995.5	259.0	195.0	140	140	245.0	283.0	2xM32x1.5	323	327
LA160M/L	909.5	1 028.0	947.5	1 066.0	313.5	227.0	165	165	160.0	198.0	2xM40x1.5	336	341
LA160ZL	957.5	1 076.0	995.5	1 114.0	313.5	227.0	165	165	313.0	351.0	2xM40x1.5	375	380
LG180M/L	969.0	1 091.0	1 007.0	1 129.0	348.0	322.5	260	192	177.0	215.0	2xM40x1.5	432	437
LG180ZM/ZL	1 020.0	1 142.0	1 058.0	1 180.0	348.0	322.5	260	192	177.0	215.0	2xM40x1.5	462	467
LG200L	1 025.0	1 151.0	1 063.0	1 189.0	385.0	301.0	260	192	207.0	245.0	2xM50x1.5	512	517
LG225S	1 096.0	1 335.0	1 134.0	1 373.0	442.0	325.0	260	192	243.0	281.0	2xM50x1.5	585	547
LG225M	1 096.0	1 335.0	1 134.0	1 373.0	442.0	325.0	260	192	243.0	281.0	2xM50x1.5	573	591
LG225ZM	1 156.0	1 395.0	1 194.0	1 433.0	442.0	325.0	260	192	243.0	281.0	2xM50x1.5	631	637
LG250M	1 189.5	1 414.5	–	–	495.0	392.0	300	236	278.5	–	2xM63x1.5	675	–
LG250ZM	1 259.5	1 485.0	–	–	495.0	392.0	300	236	278.5	–	2xM63x1.5	778	–
K4-LGI280S	1 468.5	1 695.5	–	–	555.0	432.0	300	236	489.5	–	2xM63x1.5	906	–
K4-LGI280M	1 468.5	1 695.5	–	–	555.0	432.0	300	236	489.5	–	2xM63x1.5	918	–
K4-LGI280ZM	1 578.5	1 805.5	–	–	555.0	432.0	300	236	489.5	–	2xM63x1.5	1 006	–

④ DIN 332 ⑤ Feather key / keyway DIN 6885 ⑦ For note, see page 2/192

Dimensions

Gearbox D/Z168 (3- / 2-stage), foot-mounted design

DZ011



d	to1	l	l4	l3	t	u	i	DR
100 *)	m6	210	15	180	106	28	260	M24x50
110	m6	210	15	180	116	28	260	M24x50
120	m6	210	15	180	127	32	260	M24x50

*) Preferred series

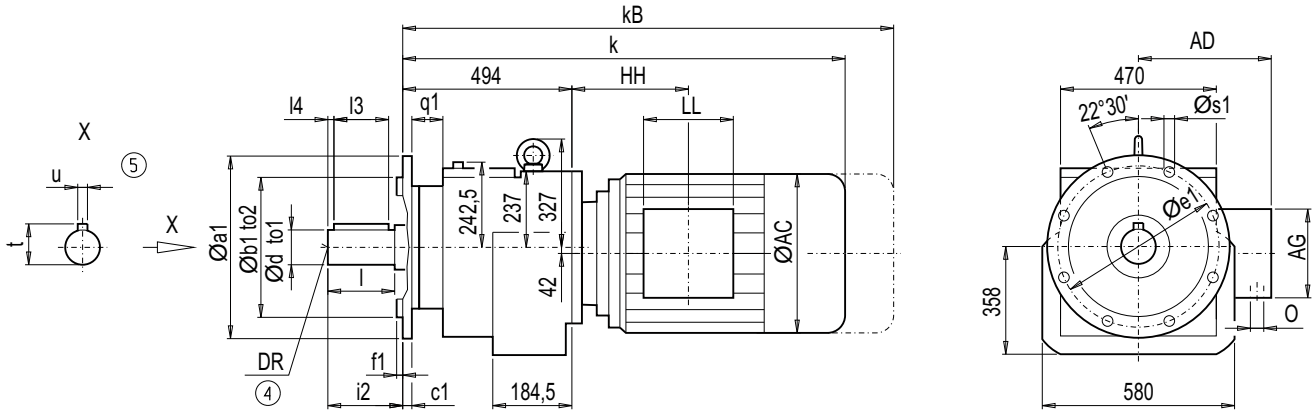
	Z168		D168						Z168	D168		Weight	
Motor	**k**	**kB**	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**HH**	**O**	**Z168**	**D168**
LA132S/M	878.0	980.0	919.0	1 021.0	259.0	195.0	140	140	122.5	163.5	2xM32x1.5	491	508
LA132ZM	924.0	1 026.0	965.0	1 067.0	259.0	195.0	140	140	230.5	271.5	2xM32x1.5	512	529
LA160M/L	978.0	1 096.5	1 019.0	1 137.5	313.5	227.0	165	165	145.5	186.5	2xM40x1.5	524	543
LA160ZL	1 026.0	1 144.5	1 067.0	1 185.5	313.5	227.0	165	165	298.5	339.5	2xM40x1.5	563	582
LG180M/L	1 037.5	1 159.5	1 078.5	1 200.5	348.0	322.5	260	192	162.5	203.5	2xM40x1.5	620	639
LG180ZM/ZL	1 088.5	1 210.5	1 129.5	1 251.5	348.0	322.5	260	192	162.5	203.5	2xM40x1.5	650	669
LG200L	1 093.5	1 219.5	1 134.5	1 260.5	385.0	301.0	260	192	192.5	233.5	2xM50x1.5	700	719
LG225S	1 164.5	1 403.5	1 205.5	1 444.5	442.0	325.0	260	192	228.5	269.5	2xM50x1.5	772	792
LG225M	1 164.5	1 403.5	1 205.5	1 444.5	442.0	325.0	260	192	228.5	269.5	2xM50x1.5	760	780
LG225ZM	1 224.5	1 463.5	1 265.5	1 504.5	442.0	325.0	260	192	228.5	269.5	2xM50x1.5	818	838
LG250M	1 258.0	1 483.0	–	–	495.0	392.0	300	236	264.0	–	2xM63x1.5	862	–
LG250ZM	1 328.0	1 553.5	–	–	495.0	392.0	300	236	264.0	–	2xM63x1.5	965	–
K4-LGI280S	1 537.5	1 764.5	–	–	555.0	432.0	300	236	475.5	–	2xM63x1.5	991	–
K4-LGI280M	1 537.5	1 764.5	–	–	555.0	432.0	300	236	475.5	–	2xM63x1.5	1 097	–
K4-LGI280ZM	1 647.5	1 874.5	–	–	555.0	432.0	300	236	475.5	–	2xM63x1.5	1 185	–

④ DIN 332

⑤ Feather key / keyway DIN 6885

Gearbox DF/ZF168 (3- / 2-stage), flange-mounted design (A-type)

DZF011



Flange	a1	b1	to2	c1	e1	f1	q1	s1	d	to1	l	l4	l3	t	u	i2	DR
A450	450	350	h6	31	400	5	65	17.5	100 *)	m6	210	15	180	106	28	210	M24x50
									110	m6	210	15	180	116	28	210	M24x50
									120	m6	210	15	180	127	32	210	M24x50
A550	550	450	h6	31	500	5	65	17.5	100 *)	m6	210	15	180	106	28	210	M24x50
									110	m6	210	15	180	116	28	210	M24x50
									120	m6	210	15	180	127	32	210	M24x50
A660	660	550	h6	31	600	5	65	22.0	100 *)	m6	210	15	180	106	28	210	M24x50
									110	m6	210	15	180	116	28	210	M24x50
									120	m6	210	15	180	127	32	210	M24x50

*) Preferred series

	ZF168		DF168						ZF168	DF168		Weight	
Motor	**k**	**kB**	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**HH**	**O**	**ZF168**	**DF168**
LA132S/M	878.0	980.0	919.0	1 021.0	259.0	195.0	140	140	122.5	163.5	2xM32x1.5	466	484
LA132ZM	924.0	1 026.0	965.0	1 067.0	259.0	195.0	140	140	230.5	271.5	2xM32x1.5	487	505
LA160M/L	978.0	1 096.5	1 019.0	1 137.5	313.5	227.0	165	165	145.5	186.5	2xM40x1.5	500	518
LA160ZL	1 026.0	1 144.5	1 067.0	1 185.5	313.5	227.0	165	165	298.5	339.5	2xM40x1.5	539	557
LG180M/L	1 037.5	1 159.5	1 078.5	1 200.5	348.0	322.5	260	192	162.5	203.5	2xM40x1.5	595	614
LG180ZM/ZL	1 088.5	1 210.5	1 129.5	1 251.5	348.0	322.5	260	192	162.5	203.5	2xM40x1.5	625	644
LG200L	1 093.5	1 219.5	1 134.5	1 260.5	385.0	301.0	260	192	192.5	233.5	2xM50x1.5	675	694
LG225S	1 164.5	1 403.5	1 205.5	1 444.5	442.0	325.0	260	192	228.5	269.5	2xM50x1.5	747	767
LG225M	1 164.5	1 403.5	1 205.5	1 444.5	442.0	325.0	260	192	228.5	269.5	2xM50x1.5	735	755
LG225ZM	1 224.5	1 463.5	1 265.5	1 504.5	442.0	325.0	260	192	228.5	269.5	2xM50x1.5	793	813
LG250M	1 258.0	1 483.0	–	–	495.0	392.0	300	236	264.0	–	2xM63x1.5	837	–
LG250ZM	1 328.0	1 553.5	–	–	495.0	392.0	300	236	264.0	–	2xM63x1.5	940	–
K4-LGI280S	1 537.5	1 764.5	–	–	555.0	432.0	300	236	475.5	–	2xM63x1.5	966	–
K4-LGI280M	1 537.5	1 764.5	–	–	555.0	432.0	300	236	475.5	–	2xM63x1.5	1 072	–
K4-LGI280ZM	1 647.5	1 874.5	–	–	555.0	432.0	300	236	475.5	–	2xM63x1.5	1 160	–

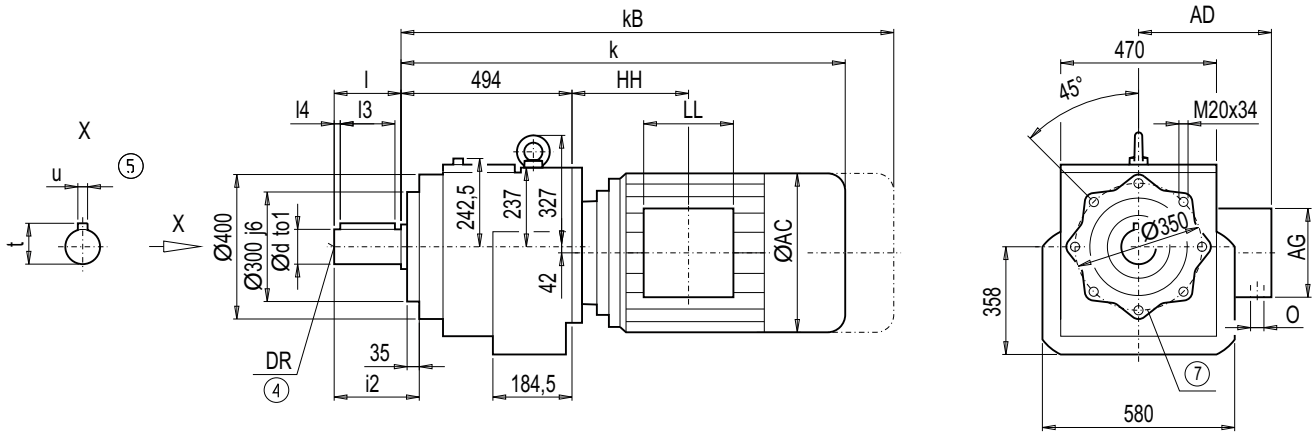
④ DIN 332

⑤ Feather key / keyway DIN 6885

Dimensions

Gearbox DZ/ZZ168 (3- / 2-stage), housing-flange-mounted design (C-type)

DZZ011



d	to1	l	l4	l3	t	u	i2	DR
100	m6	210	15	180	106	28	251	M24x50
110	m6	210	15	180	116	28	251	M24x50
120*)	m6	210	15	180	127	32	251	M24x50

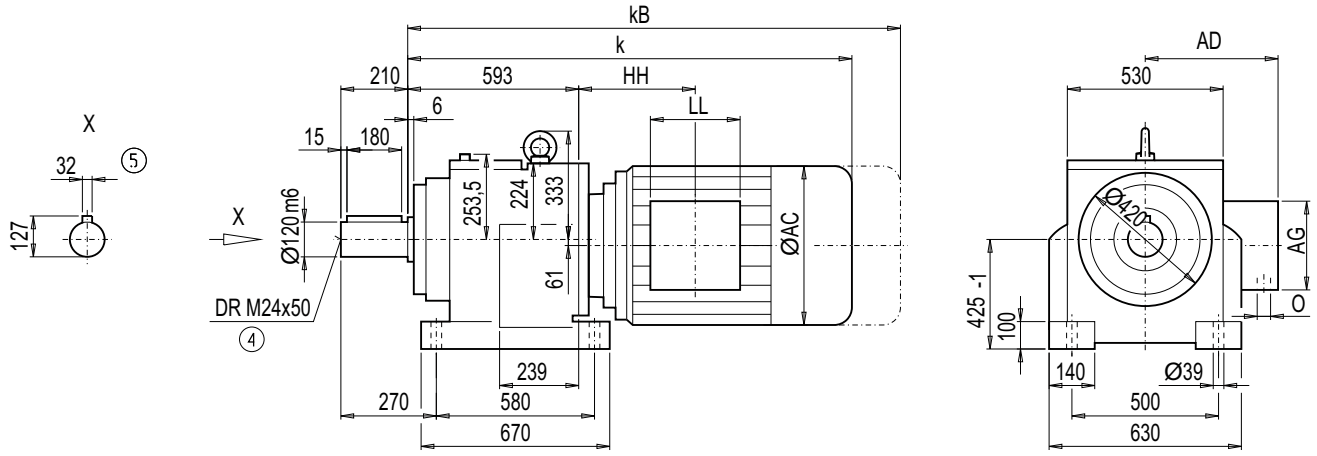
*) Preferred series

	ZZ168		DZ168						ZZ168	DZ168		Weight	
Motor	**k**	**kB**	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**HH**	**O**	**ZZ168**	**DZ168**
LA132S/M	878.0	980.0	919.0	1 021.0	259.0	195.0	140	140	122.5	163.5	2xM32x1.5	447	465
LA132ZM	924.0	1 026.0	965.0	1 067.0	259.0	195.0	140	140	230.5	271.5	2xM32x1.5	468	486
LA160M/L	978.0	1 096.5	1 019.0	1 137.5	313.5	227.0	165	165	145.5	186.5	2xM40x1.5	481	499
LA160ZL	1 026.0	1 144.5	1 067.0	1 185.5	313.5	227.0	165	165	298.5	339.5	2xM40x1.5	520	538
LG180M/L	1 037.5	1 159.5	1 078.5	1 200.5	348.0	322.5	260	192	162.5	203.5	2xM40x1.5	576	595
LG180ZM/ZL	1 088.5	1 210.5	1 129.5	1 251.5	348.0	322.5	260	192	162.5	203.5	2xM40x1.5	606	625
LG200L	1 093.5	1 219.5	1 134.5	1 260.5	385.0	301.0	260	192	192.5	233.5	2xM50x1.5	656	675
LG225S	1 164.5	1 403.5	1 205.5	1 444.5	442.0	325.0	260	192	228.5	269.5	2xM50x1.5	728	748
LG225M	1 164.5	1 403.5	1 205.5	1 444.5	442.0	325.0	260	192	228.5	269.5	2xM50x1.5	716	736
LG225ZM	1 224.5	1 463.5	1 265.5	1 504.5	442.0	325.0	260	192	228.5	269.5	2xM50x1.5	774	794
LG250M	1 258.0	1 483.0	–	–	495.0	392.0	300	236	264.0	–	2xM63x1.5	818	–
LG250ZM	1 328.0	1 553.5	–	–	495.0	392.0	300	236	264.0	–	2xM63x1.5	921	–
K4-LGI280S	1 537.5	1 764.5	–	–	555.0	432.0	300	236	475.5	–	2xM63x1.5	947	–
K4-LGI280M	1 537.5	1 764.5	–	–	555.0	432.0	300	236	475.5	–	2xM63x1.5	1 053	–
K4-LGI280ZM	1 647.5	1 874.5	–	–	555.0	432.0	300	236	475.5	–	2xM63x1.5	1 141	–

④ DIN 332 ⑤ Feather key / keyway DIN 6885 ⑦ For note, see page 2/192

Gearbox D/Z188 (3- / 2-stage), foot-mounted design

DZ011



Motor	Z188 k	Z188 kB	D188 k	D188 kB	AC	AD	AG	LL	Z188 HH	D188 HH	O	Weight Z188	Weight D188
LA132S/M	–	–	977.0	1 079.0	259.0	195.0	140	140	–	122.5	2xM32x1.5	–	652
LA132ZM	–	–	1 023.0	1 125.0	259.0	195.0	140	140	–	230.5	2xM32x1.5	–	673
LA160M/L	1 077.0	1 195.5	1 077.0	1 195.5	313.5	227.0	165	165	145.5	145.5	2xM40x1.5	654	684
LA160ZL	1 125.0	1 243.5	1 125.0	1 243.5	313.5	227.0	165	165	298.5	298.5	2xM40x1.5	693	723
LG180M/L	1 136.5	1 258.5	1 136.5	1 258.5	348.0	322.5	260	192	162.5	162.5	2xM40x1.5	750	779
LG180ZM/ZL	1 187.5	1 309.5	1 187.5	1 309.5	348.0	322.5	260	192	162.5	162.5	2xM40x1.5	780	809
LG200L	1 192.5	1 318.5	1 192.5	1 318.5	385.0	301.0	260	192	192.5	192.5	2xM50x1.5	830	859
LG225S	1 263.5	1 502.5	1 263.5	1 502.5	442.0	325.0	260	192	228.5	228.5	2xM50x1.5	903	932
LG225M	1 263.5	1 502.5	1 263.5	1 502.5	442.0	325.0	260	192	228.5	228.5	2xM50x1.5	891	920
LG225ZM	1 323.5	1 562.5	1 323.5	1 562.5	442.0	325.0	260	192	228.5	228.5	2xM50x1.5	949	978
LG250M	1 357.0	1 582.0	1 357.0	1 582.0	495.0	392.0	300	236	264.0	264.0	2xM63x1.5	993	1022
LG250ZM	1 427.0	1 652.5	1 427.0	1 652.5	495.0	392.0	300	236	264.0	264.0	2xM63x1.5	1 096	1 125
K4-LGI280S	1 636.5	1 863.5	1 636.5	1 863.5	555.0	432.0	300	236	475.5	475.5	2xM63x1.5	1 121	1 151
K4-LGI280M	1 636.5	1 863.5	1 636.5	1 863.5	555.0	432.0	300	236	475.5	475.5	2xM63x1.5	1 227	1 256
K4-LGI280ZM	1 746.5	1 973.5	1 746.5	1 973.5	555.0	432.0	300	236	475.5	475.5	2xM63x1.5	1 315	1 344
K2-LGI315S/M	1 824.5	2 089.5	–	–	610.0	500.0	380	307	584.5	–	2xM63x1.5	1 356	–
K2-LGI315ZM	1 984.5	2 249.5	–	–	610.0	500.0	380	307	584.5	–	2xM63x1.5	1 511	–
K2-LGI315L	1 984.5	2 249.5	–	–	610.0	500.0	380	307	584.5	–	2xM63x1.5	1 651	–
K2-LGI315ZL	2 124.5	2 389.5	–	–	610.0	500.0	380	307	584.5	–	2xM63x1.5	1 851	–

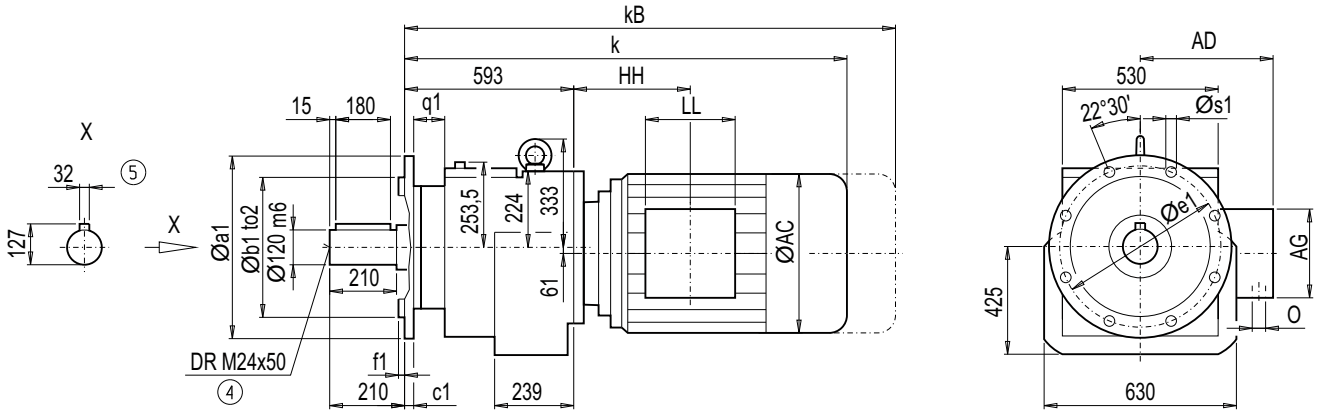
④ DIN 332

⑤ Feather key / keyway DIN 6885

Dimensions

Gearbox DF/ZF188 (3- / 2-stage), flange-mounted design (A-type)

DZF011



Flange	a1	b1	to2	c1	e1	f1	q1	s1
A550	550	450	h6	31	500	5	83	17.5
A660	660	550	h6	31	600	6	83	22.0

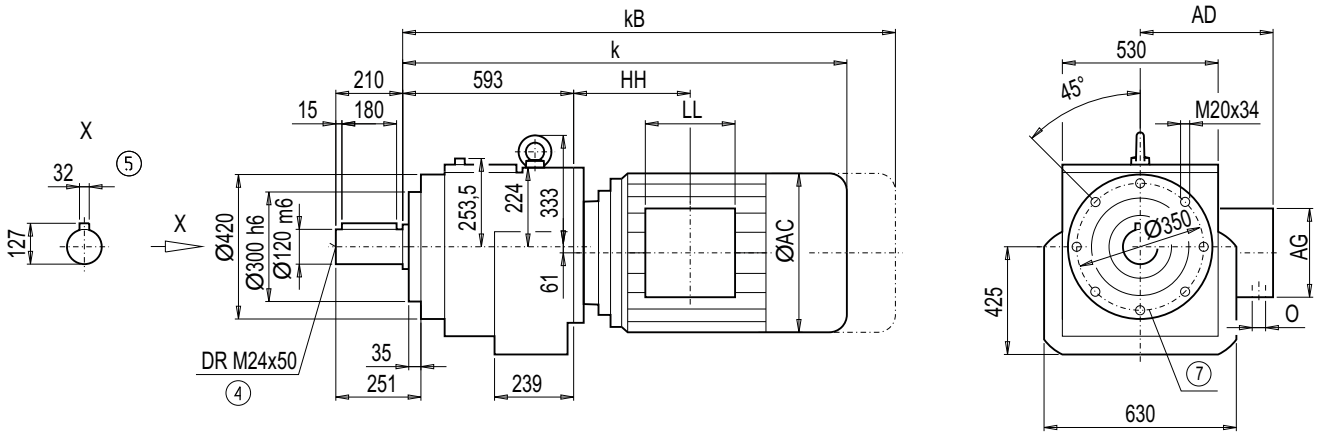
	ZF188		DF188						ZF188	DF188		Weight	
Motor	**k**	**kB**	**k**	**kB**	**AC**	**AD**	**AG**	**LL**	**HH**	**HH**	**O**	**ZF188**	**DF188**
LA132S/M	–	–	977.0	1 079.0	259.0	195.0	140	140	–	122.5	2xM32x1.5	–	600
LA132ZM	–	–	1 023.0	1 125.0	259.0	195.0	140	140	–	230.5	2xM32x1.5	–	609
LA160M/L	1 077.0	1 195.5	1 077.0	1 195.5	313.5	227.0	165	165	145.5	145.5	2xM40x1.5	602	632
LA160ZL	1 125.0	1 243.5	1 125.0	1 243.5	313.5	227.0	165	165	298.5	298.5	2xM40x1.5	602	632
LG180M/L	1 136.5	1 258.5	1 136.5	1 258.5	348.0	322.5	260	192	162.5	162.5	2xM40x1.5	698	727
LG180ZM/ZL	1 187.5	1 309.5	1 187.5	1 309.5	348.0	322.5	260	192	162.5	162.5	2xM40x1.5	728	757
LG200L	1 192.5	1 318.5	1 192.5	1 318.5	385.0	301.0	260	192	192.5	192.5	2xM50x1.5	778	807
LG225S	1 263.5	1 502.5	1 263.5	1 502.5	442.0	325.0	260	192	228.5	228.5	2xM50x1.5	851	880
LG225M	1 263.5	1 502.5	1 263.5	1 502.5	442.0	325.0	260	192	228.5	228.5	2xM50x1.5	839	868
LG225ZM	1 323.5	1 562.5	1 323.5	1 562.5	442.0	325.0	260	192	228.5	228.5	2xM50x1.5	897	926
LG250M	1 357.0	1 582.0	1 357.0	1 582.0	495.0	392.0	300	236	264.0	264.0	2xM63x1.5	941	970
LG250ZM	1 427.0	1 652.5	1 427.0	1 652.5	495.0	392.0	300	236	264.0	264.0	2xM63x1.5	1 044	1 073
K4-LGI280S	1 636.5	1 863.5	1 636.5	1 863.5	555.0	432.0	300	236	475.5	475.5	2xM63x1.5	1 069	1 099
K4-LGI280M	1 636.5	1 863.5	1 636.5	1 863.5	555.0	432.0	300	236	475.5	475.5	2xM63x1.5	1 175	1 204
K4-LGI280ZM	1 746.5	1 973.5	1 746.5	1 973.5	555.0	432.0	300	236	475.5	475.5	2xM63x1.5	1 263	1 292
K2-LGI315S/M	1 824.5	2 089.5	–	–	610.0	500.0	380	307	584.5	–	2xM63x1.5	1 304	–
K2-LGI315ZM	1 984.5	2 249.5	–	–	610.0	500.0	380	307	584.5	–	2xM63x1.5	1 459	–
K2-LGI315L	1 984.5	2 249.5	–	–	610.0	500.0	380	307	584.5	–	2xM63x1.5	1 599	–
K2-LGI315ZL	2 124.5	2 389.5	–	–	610.0	500.0	380	307	584.5	–	2xM63x1.5	1 801	–

④ DIN 332

⑤ Feather key / keyway DIN 6885

Gearbox DZ/ZZ188 (3- / 2-stage), housing-flange-mounted design (C-type)

DZZ011

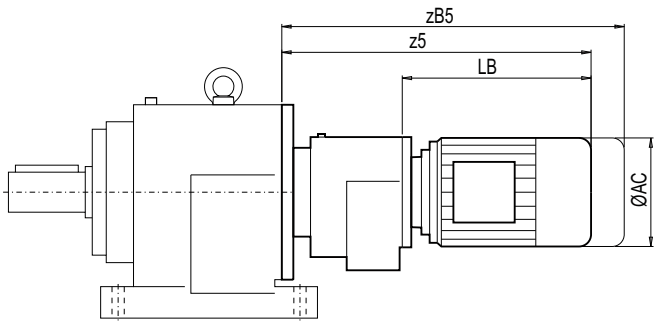


Motor	ZZ188 k	ZZ188 kB	DZ188 k	DZ188 kB	AC	AD	AG	LL	ZZ188 HH	DZ188 HH	O	Weight ZZ188	Weight DZ188
LA132S/M	–	–	977.0	1 079.0	259.0	195.0	140	140	–	122.5	2xM32x1.5	–	580
LA132ZM	–	–	1 023.0	1 125.0	259.0	195.0	140	140	–	230.5	2xM32x1.5	–	589
LA160M/L	1 077.0	1 195.5	1 077.0	1 195.5	313.5	227.0	165	165	145.5	145.5	2xM40x1.5	582	612
LA160ZL	1 125.0	1 243.5	1 125.0	1 243.5	313.5	227.0	165	165	298.5	298.5	2xM40x1.5	582	612
LG180M/L	1 136.5	1 258.5	1 136.5	1 258.5	348.0	322.5	260	192	162.5	162.5	2xM40x1.5	678	707
LG180ZM/ZL	1 187.5	1 309.5	1 187.5	1 309.5	348.0	322.5	260	192	162.5	162.5	2xM40x1.5	708	737
LG200L	1 192.5	1 318.5	1 192.5	1 318.5	385.0	301.0	260	192	192.5	192.5	2xM50x1.5	758	787
LG225S	1 263.5	1 502.5	1 263.5	1 502.5	442.0	325.0	260	192	228.5	228.5	2xM50x1.5	831	860
LG225M	1 263.5	1 502.5	1 263.5	1 502.5	442.0	325.0	260	192	228.5	228.5	2xM50x1.5	819	848
LG225ZM	1 323.5	1 562.5	1 323.5	1 562.5	442.0	325.0	260	192	228.5	228.5	2xM50x1.5	877	906
LG250M	1 357.0	1 582.0	1 357.0	1 582.0	495.0	392.0	300	236	264.0	264.0	2xM63x1.5	921	950
LG250ZM	1 427.0	1 652.5	1 427.0	1 652.5	495.0	392.0	300	236	264.0	264.0	2xM63x1.5	1 024	1 053
K4-LGI280S	1 636.5	1 863.5	1 636.5	1 863.5	555.0	432.0	300	236	475.5	475.5	2xM63x1.5	1 049	1 079
K4-LGI280M	1 636.5	1 863.5	1 636.5	1 863.5	555.0	432.0	300	236	475.5	475.5	2xM63x1.5	1 155	1 184
K4-LGI280ZM	1 746.5	1 973.5	1 746.5	1 973.5	555.0	432.0	300	236	475.5	475.5	2xM63x1.5	1 243	1 272
K2-LGI315S/M	1 824.5	2 089.5	–	–	610.0	500.0	380	307	584.5	–	2xM63x1.5	1 284	–
K2-LGI315ZM	1 984.5	2 249.5	–	–	610.0	500.0	380	307	584.5	–	2xM63x1.5	1 511	–
K2-LGI315L	1 984.5	2 249.5	–	–	610.0	500.0	380	307	584.5	–	2xM63x1.5	1 651	–
K2-LGI315ZL	2 124.5	2 389.5	–	–	610.0	500.0	380	307	584.5	–	2xM63x1.5	1 851	–

④ DIN 332 ⑤ Feather key / keyway DIN 6885 ⑦ For note, see page 2/192

Dimensions

Helical tandem geared motors

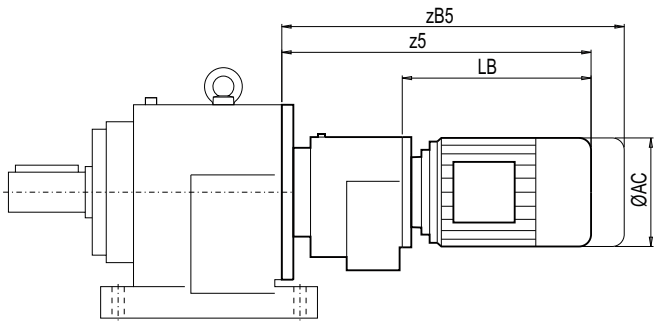


Gearbox	Motor	AC	z5	zB5	LB
Z.38-Z28	LA71	139.0	363.0	418.0	202.5
	LA71Z	139.0	382.0	437.0	221.5
	LA80	156.5	465.0	528.5	304.5
	LA80Z	156.5	487.5	551.0	327.0
	LA90S/L	174.0	460.0	531.0	299.5
	LA90ZL	174.0	505.0	576.0	344.5
	LA100L	195.0	542.0	623.0	381.5
	LA100ZL	195.0	612.0	693.0	451.5
Z.38-D28	LA71	139.0	363.0	418.0	202.5
	LA71Z	139.0	382.0	437.0	221.5
	LA80	156.5	465.0	528.5	304.5
	LA80Z	156.5	487.5	551.0	327.0
	LA90S/L	174.0	460.0	531.0	299.5
	LA90ZL	174.0	505.0	576.0	344.5
D.48-Z28	LA71	139.0	374.5	429.5	202.5
	LA71Z	139.0	393.5	448.5	221.5
	LA80	156.5	476.5	540.0	304.5
	LA80Z	156.5	499.0	562.5	327.0
	LA90S/L	174.0	471.5	542.5	299.5
	LA90ZL	174.0	516.5	587.5	344.5
	LA100L	195.0	553.5	634.5	381.5
	LA100ZL	195.0	623.5	704.5	451.5
D.48-D28	LA71	139.0	374.5	429.5	202.5
	LA71Z	139.0	393.5	448.5	221.5
	LA80	156.5	476.5	540.0	304.5
	LA80Z	156.5	499.0	562.5	327.0
	LA90S/L	174.0	471.5	542.5	299.5
	LA90ZL	174.0	516.5	587.5	344.5
D.68-Z28	LA71	139.0	370.0	425.0	202.5
	LA71Z	139.0	389.0	444.0	221.5
	LA80	156.5	472.0	535.5	304.5
	LA80Z	156.5	494.5	558.0	327.0
	LA90S/L	174.0	467.0	538.0	299.5
	LA90ZL	174.0	512.0	583.0	344.5
	LA100L	195.0	549.0	630.0	381.5
	LA100ZL	195.0	619.0	700.0	451.5

Gearbox	Motor	AC	z5	zB5	LB
D.68-D28	LA71	139.0	370.0	425.0	202.5
	LA71Z	139.0	389.0	444.0	221.5
	LA80	156.5	472.0	535.5	304.5
	LA80Z	156.5	494.5	558.0	327.0
	LA90S/L	174.0	467.0	538.0	299.5
	LA90ZL	174.0	512.0	583.0	344.5
D.88-Z28	LA71	139.0	361.5	416.5	202.5
	LA71Z	139.0	380.5	435.5	221.5
	LA80	156.5	463.5	527.0	304.5
	LA80Z	156.5	486.0	549.5	327.0
	LA90S/L	174.0	458.5	529.5	299.5
	LA90ZL	174.0	503.5	574.5	344.5
	LA100L	195.0	540.5	621.5	381.5
	LA100ZL	195.0	610.5	691.5	451.5
D.88-D28	LA71	139.0	361.5	416.5	202.5
	LA71Z	139.0	380.5	435.5	221.5
	LA80	156.5	463.5	527.0	304.5
	LA80Z	156.5	486.0	549.5	327.0
	LA90S/L	174.0	458.5	529.5	299.5
	LA90ZL	174.0	503.5	574.5	344.5
D.108-Z38	LA71 [1]	139.0	484.5	539.5	258.5
	LA71Z [1]	139.0	503.5	558.5	277.5
	LA80 [1]	156.5	521.5	585.0	295.5
	LA80Z [1]	156.5	544.0	607.5	318.0
	LA90S/L [1]	174.0	552.5	623.5	326.5
	LA90ZL [1]	174.0	597.5	668.5	371.5
	LA100L [1]	195.0	598.5	679.5	372.5
	LA100ZL [1]	195.0	668.5	749.5	442.5
	LA112M [1]	219.0	628.0	709.0	402.0
	LA112ZM [1]	219.0	656.0	737.0	430.0
	LA71 [2]	139.0	496.0	551.0	258.5
	LA71Z [2]	139.0	515.0	570.0	277.5
	LA80 [2]	156.5	533.0	596.5	295.5
	LA80Z [2]	156.5	555.5	619.0	318.0
	LA90S/L [2]	174.0	564.0	635.0	326.5
	LA90ZL [2]	174.0	609.0	680.0	371.5
	LA100L [2]	195.0	610.0	691.0	372.5
	LA100ZL [2]	195.0	680.0	761.0	442.5
	LA112M [2]	219.0	639.5	720.5	402.0
	LA112ZM [2]	219.0	667.5	748.5	430.0

1) $i_{tot} \geq 3797$ 2) $i_{tot} < 3797$

Helical tandem geared motors (continued)

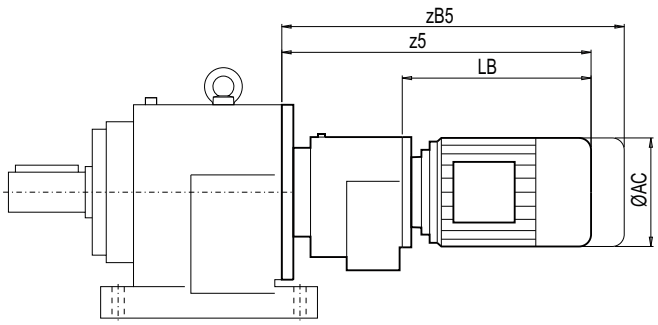


Gearbox	Motor	AC	z5	zB5	LB
D.108-D38	LA71	139.0	499.5	554.5	273.5
	LA71Z	139.0	518.5	573.5	292.5
	LA80	156.5	536.5	600.0	310.5
	LA80Z	156.5	559.0	622.5	333.0
	LA90S/L	174.0	567.5	638.5	341.5
	LA90ZL	174.0	612.5	683.5	386.5
D.128-Z38	LA71	139.0	488.0	543.0	258.5
	LA71Z	139.0	507.0	562.0	277.5
	LA80	156.5	525.0	588.5	295.5
	LA80Z	156.5	547.5	611.0	318.0
	LA90S/L	174.0	556.0	627.0	326.5
	LA90ZL	174.0	601.0	672.0	371.5
	LA100L	195.0	602.0	683.0	372.5
	LA100ZL	195.0	672.0	753.0	442.5
	LA112M	219.0	631.5	712.5	402.0
	LA112ZM	219.0	659.5	740.5	430.0
D.128-D38	LA71	139.0	503.0	558.0	273.5
	LA71Z	139.0	522.0	577.0	292.5
	LA80	156.5	540.0	603.5	310.5
	LA80Z	156.5	562.5	626.0	333.0
	LA90S/L	174.0	571.0	642.0	341.5
	LA90ZL	174.0	616.0	687.0	386.5
D.128-Z48	LA71	139.0	555.5	610.5	253.0
	LA71Z	139.0	574.5	629.5	272.0
	LA80	156.5	592.5	656.0	290.0
	LA80Z	156.5	615.0	678.5	312.5
	LA90S/L	174.0	623.5	694.5	321.0
	LA90ZL	174.0	668.5	739.5	366.0
	LA100L	195.0	669.5	750.5	367.0
	LA100ZL	195.0	739.5	820.5	437.0
	LA112M	219.0	698.5	779.5	396.0
	LA112ZM	219.0	726.5	807.5	424.0
	LA132S/M	259.0	760.5	862.5	458.0
	LA132ZM	259.0	806.5	908.5	504.0
D.148-Z38	LA71	139.0	485.0	540.0	258.5
	LA71Z	139.0	504.0	559.0	277.5
	LA80	156.5	522.0	585.5	295.5
	LA80Z	156.5	544.5	608.0	318.0

Gearbox	Motor	AC	z5	zB5	LB
D.148-Z38	LA90S/L	174.0	553.0	624.0	326.5
	LA90ZL	174.0	598.0	669.0	371.5
	LA100L	195.0	599.0	680.0	372.5
	LA100ZL	195.0	669.0	750.0	442.5
	LA112M	219.0	628.5	709.5	402.0
	LA112ZM	219.0	656.5	737.5	430.0
D.148-D38	LA71	139.0	500.0	555.0	273.5
	LA71Z	139.0	519.0	574.0	292.5
	LA80	156.5	537.0	600.5	310.5
	LA80Z	156.5	559.5	623.0	333.0
	LA90S/L	174.0	568.0	639.0	341.5
	LA90ZL	174.0	613.0	684.0	386.5
D.148-Z48	LA71	139.0	551.5	606.5	253.0
	LA71Z	139.0	570.5	625.5	272.0
	LA80	156.5	588.5	652.0	290.0
	LA80Z	156.5	611.0	674.5	312.5
	LA90S/L	174.0	619.5	690.5	321.0
	LA90ZL	174.0	664.5	735.5	366.0
	LA100L	195.0	665.5	746.5	367.0
	LA100ZL	195.0	735.5	816.5	437.0
	LA112M	219.0	694.5	775.5	396.0
	LA112ZM	219.0	722.5	803.5	424.0
	LA132S/M	259.0	756.5	858.5	458.0
	LA132ZM	259.0	802.5	904.5	504.0
D.168-Z48	LA71	139.0	540.0	595.0	253.0
	LA71Z	139.0	559.0	614.0	272.0
	LA80	156.5	577.0	640.5	290.0
	LA80Z	156.5	599.5	663.0	312.5
	LA90S/L	174.0	608.0	679.0	321.0
	LA90ZL	174.0	653.0	724.0	366.0
	LA100L	195.0	654.0	735.0	367.0
	LA100ZL	195.0	724.0	805.0	437.0
	LA112M	219.0	683.0	764.0	396.0
	LA112ZM	219.0	711.0	792.0	424.0
	LA132S/M	259.0	745.0	847.0	458.0
	LA132ZM	259.0	791.0	893.0	504.0

Dimensions

Helical tandem geared motors (continued)

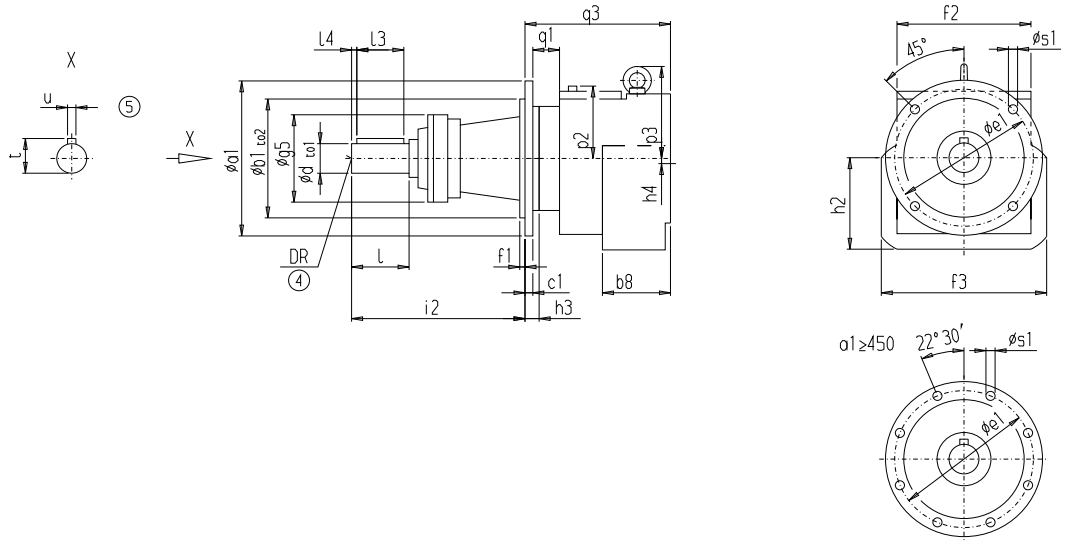


Gearbox	Motor	AC	z5	zB5	LB
D.168-D48	LA71	139.0	557.0	612.0	270.0
	LA71Z	139.0	576.0	631.0	289.0
	LA80	156.5	594.0	657.5	307.0
	LA80Z	156.5	616.5	680.0	329.5
	LA90S	174.0	625.0	696.0	338.0
	LA90L	174.0	625.0	696.0	338.0
	LA90ZL	174.0	670.0	741.0	383.0
	LA100L	195.0	671.0	752.0	384.0
	LA100ZL	195.0	741.0	822.0	454.0
D.168-Z68	LA71	139.0	626.0	681.0	247.0
	LA71Z	139.0	645.0	700.0	266.0
	LA80	156.5	663.0	726.5	284.0
	LA80Z	156.5	685.5	749.0	306.5
	LA90S/L	174.0	694.0	765.0	315.0
	LA90ZL	174.0	739.0	810.0	360.0
	LA100L	195.0	740.0	821.0	361.0
	LA100ZL	195.0	810.0	891.0	431.0
	LA132S/M	259.0	827.0	929.0	448.0
	LA132ZM	259.0	873.0	975.0	494.0
	LA160M/L	313.5	929.5	1 048.0	550.5
	LA160ZL	313.5	977.5	1 096.0	598.5
D.188-Z48	LA71	139.0	499.0	554.0	253.0
	LA71Z	139.0	518.0	573.0	272.0
	LA80	156.5	536.0	599.5	290.0
	LA80Z	156.5	558.5	622.0	312.5
	LA90S/L	174.0	567.0	638.0	321.0
	LA90ZL	174.0	612.0	683.0	366.0
	LA100L	195.0	613.0	694.0	367.0
	LA100ZL	195.0	683.0	764.0	437.0
	LA112M	219.0	642.0	723.0	396.0
	LA112ZM	219.0	670.0	751.0	424.0
	LA132S/M	259.0	704.0	806.0	458.0
	LA132ZM	259.0	750.0	852.0	504.0

Gearbox					
D.188-D48	LA71	139.0	516.0	571.0	270.0
	LA71Z	139.0	535.0	590.0	289.0
	LA80	156.5	553.0	616.5	307.0
	LA80Z	156.5	575.5	639.0	329.5
	LA90S/L	174.0	584.0	655.0	338.0
	LA90ZL	174.0	629.0	700.0	383.0
	LA100L	195.0	630.0	711.0	384.0
	LA100ZL	195.0	700.0	781.0	454.0
D.188-Z68	LA71	139.0	585.0	640.0	247.0
	LA71Z	139.0	604.0	659.0	266.0
	LA80	156.5	622.0	685.5	284.0
	LA80Z	156.5	644.5	708.0	306.5
	LA90S/L	174.0	653.0	724.0	315.0
	LA90ZL	174.0	698.0	769.0	360.0
	LA100L	195.0	699.0	780.0	361.0
	LA100ZL	195.0	769.0	850.0	431.0
	LA132S/M	259.0	786.0	888.0	448.0
	LA132ZM	259.0	832.0	934.0	494.0
	LA160M/L	313.5	888.5	1 007.0	550.5
	LA160ZL	313.5	936.5	1 055.0	598.5

Gearbox DR/ZR68-168 (3- / 2-stage) with agitator flange

DZZ011



Gearbox	p2	p3	h2	b8	q3	f3	f2	h4	Additional weight[1)]
DR/ZR68	109.0	149	144.0	91.5	248	263	206	0	24
DR/ZR88	134.0	181	182.0	129.0	306	332	260	0	46
DR/ZR108	177.0	228	219.5	126.5	355	410	326	0	82
DR/ZR128	194.0	263	250.0	146.0	422	462	364	0	85
DR/ZR148	190.5	270	317.0	160.0	459	510	416	37	94
DR/ZR168	248.0	325	358.0	188.5	539	580	470	42	248

Gearbox	a1	b1	to2	c1	e1	f1	q1	s1	g5	h3	d	to1	l	l4	l3	t	u	DR	i2
DR/ZR68	350	250	h6	18	300	7	79	17.5	165	57	50	k6	100	10.0	80	53.5	14	M16x36	300
DR/ZR88	350	250	h6	18	300	7	92	17.5	185	62	60	m6	120	10.0	100	64.0	18	M20x42	360
DR/ZR108	450	350	h6	22	400	7	78	17.5	210	72	70	m6	140	7.5	125	74.5	20	M20x42	420
DR/ZR128	550	450	h6	25	500	8	101	17.5	252	81	80	m6	170	20.0	125	85.0	22	M20x42	500
DR/ZR148	550	450	h6	25	500	8	113	17.5	252	81	100	m6	210	15.0	180	106	28	M24x50	600
DR/ZR168	660	550	h6	28	600	8	113	22.0	270	86	110	m6	210	15.0	180	116	28	M24x50	660

1) To calculate the overall weight of the drive, add the additional weight to the weight of the DZ/ZZ gearbox, flange-mounted design.
For example: weight of DZ88-M112M (97 kg) + additional weight DR88 (46 kg) = total weight of DR88-M112M (143 kg).

④ DIN 332

⑤ Feather key / keyway DIN 6885

Dimensions

Pin holes

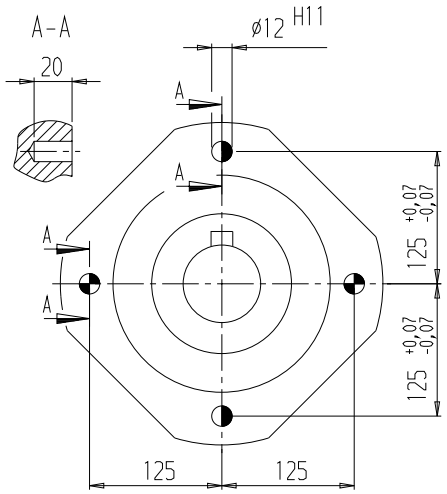
The customer's interface can be pinned to the housing flange (C-type) for sizes EZ128 to EZ148 and DZ/ZZ108 to DZ/ZZ188.

The output flanges have been designed to ensure the reliable transmission of the permissible torques and radial forces by the bolt connections.

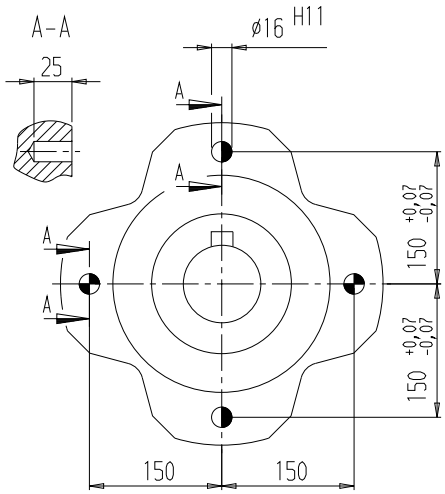
If an additional fuse, e. g. for high shock loads, is required, the existing pin holes can be used.

The gearbox and the machine can be drilled and pinned together. To do so, the provided dimensions must be observed.

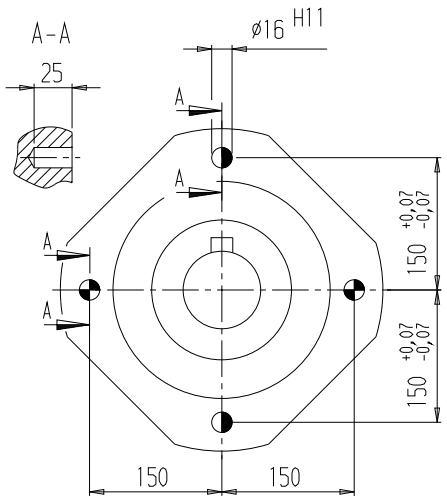
EZ128, DZ/ZZ108



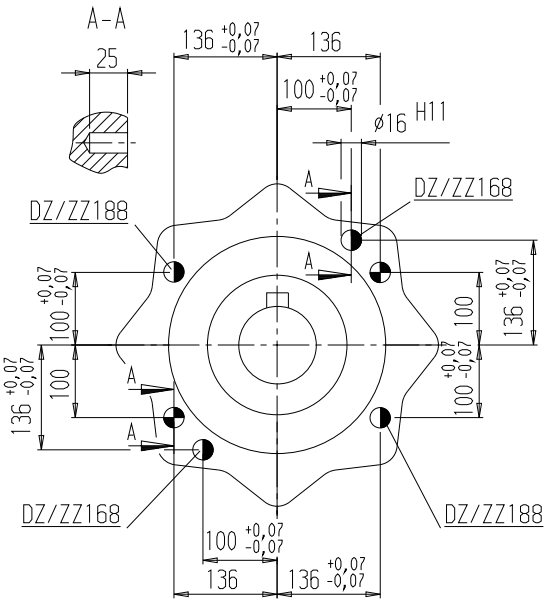
EZ148, DZ/ZZ128



DZ/ZZ148



DZ/ZZ168, DZ/ZZ188



◑ Spring pins, heavy-duty design, to DIN 1481: Use pin holes provided in the housing flange.

◕ Grooved cylindrical pins with chamfer to DIN EN 28740 / ISO 8740: Drill connecting component together with housing.

Input units

7

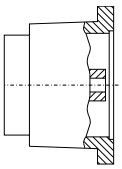
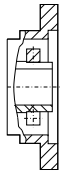
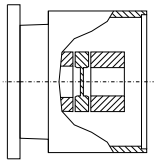
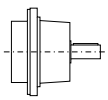
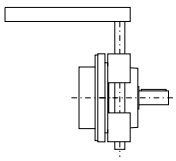
Input units

Orientation

Overview

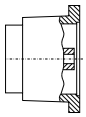
For most applications, it is best to mount the motor so that it is integrated on the gearbox. This provides an optimum solution in terms of a short overall length and the least weight.

On request, the gearboxes can also be fitted with an input unit for mounting standard motors.

Input unit	Description	Flexible coupling	Zero-backlash flexible coupling	Clamping hub	Backstop	Friction clutch	Speed encoder	Protective belt cover, optional
 **K2**	Coupling lantern with flexible coupling for connecting an IEC motor	✔			✔	✔	✔	
 **K4**	Short coupling lantern with clamp connection for connecting an IEC motor			✔				
 **KQ KQS**	Lantern for servomotor with zero-backlash flexible coupling for connecting a servomotor		✔	✔				
 **A**	Input unit with free input shaft				✔			
 **P**	Input unit with free input shaft and piggy back for connecting an IEC motor				✔			✔

Overview (continued)

Input unit K2 (coupling lantern)



This input unit for motors in IEC sizes is suitable for general applications with all load types. The input unit contains a torsionally flexible cam coupling which can compensate for axial movement.

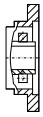
Input unit K2 is also available in an ATEX version.

Please refer to the Operating Instructions for information on mounting.

For additional options, see "Special versions".

Order codes:
Input unit K2 **A03**
Flexible coupling **A16**

Input unit K4 (short coupling lantern)



This input unit is designed for mounting situations that call for an extremely short overall length. The input units are suitable for connecting IEC standard motors within the context of general applications.

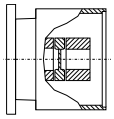
The connection between the shafts is rigid and there is no axial compensation. Therefore, we recommend using motors with a fixed bearing on the drive side for optimum service life. It is preferable to use K2 input units in situations involving a high mass inertia and a high number of starting operations in particular. With a class III load classification, you should use input unit K2 or contact us for more information.

Input unit K4 is also available in an ATEX version.

Please refer to the Operating Instructions for information on mounting.

Order code:
Input unit K4 **A04**

Input unit KQ / KQS (lantern for servomotor)



This input unit enables servomotors with a square mounting flange to be mounted on the gearbox. This provides the geared motor with a solid and attractive design. The input unit features a zero-backlash, torsionally flexible cam coupling which compensates for axial movement.

Input unit KQ is designed for motor shafts with feather key.

Input unit KQS is designed for motor shafts without feather key.

Order codes:
Input unit KQ **A07**
Input unit KQS **A08**

Size index	Order code
71.2	**N61**
80.3	**N62**
90.4	**N63**
112.3	**N62**
132.3	**N62**

Input unit A with free input shaft

Input unit A has a free solid input shaft and is designed for general solutions where the motor is mounted separately from the gearbox. It is also suitable for solutions that call for manual operation of the input shaft.

Order code:
Input unit A **A00**

Input unit P with free input shaft and piggy back

Input unit P has a free solid input shaft as well as a piggy back. A foot-mounted standard motor can be piggy backed onto the unit and connected to the gearbox input shaft by means of a V belt. A protective belt cover (PS version) is available on request.

Pulley and belt are not included in the scope of delivery.

Order codes:
Input unit P **A09**
Input unit PS **A10**

General technical data

Permissible radial forces and torques

Permissible torques for input units K, A and P

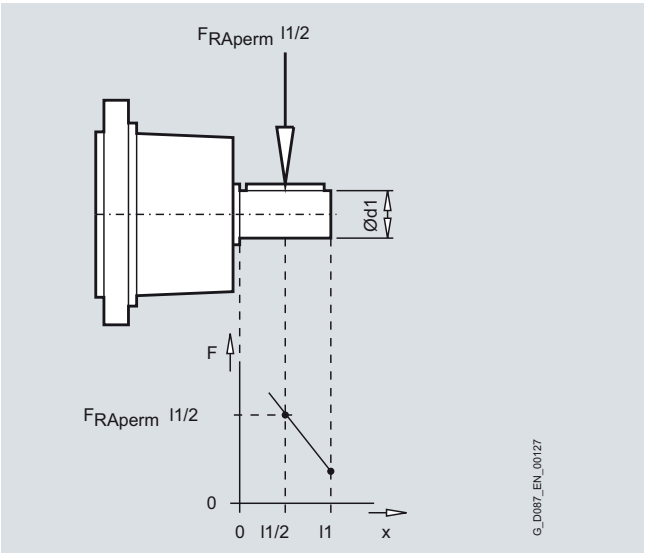
Size	Permissible input torque T_1 [1]
	Nm
71	3
80	5
90	10
100	20
112	26
132	61
160	98
180	198
200	198
225	291
250	356
280	580
315 [2]	1 290

[1] 2.5x the value is permissible for a brief period (e.g. motor starting torque)
[2] only for K2

Permissible radial force for input units A and P

Size	d1	l1	Permissible radial force F_{RAperm} l1/2 at 0.5xl1 [1]
	mm	mm	N
71	16	40	240
80	19	40	240
90	24	50	620
100	28	60	840
112	28	60	1 000
132	38	80	1 700
160	42	110	1 800
180	55	110	3 000
200	55	110	3 000
225	60	140	3 450
250	65	140	3 900
280	70	140	5 150
315	–	–	–

[1] based on 1 450 rpm with input units A, P



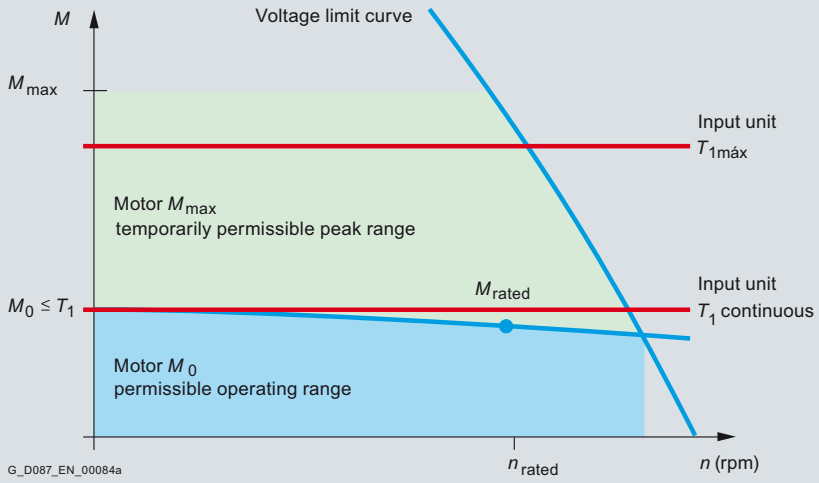
Permissible radial forces and torques (continued)

Permissible torque with input unit KQ (S)

Input unit KQ / KQS	Transmitted torques		Max. speed
	T_1	T_{1max}	n_{1max}
	Nm	Nm	rpm
71.2	3.0	7.5	3 600
80.3	5.0	12.5	3 600
90.4	10.0	25.0	3 600
112.3	26.0	65.0	3 600
132.3	61.0	152.5	3 600

T_1 = max. torque transmitted with continuous duty

T_{1max} = max. permissible peak torque



Speed-torque characteristic for servomotors and with S1 duty

Explanation of servomotor characteristic values

Abbreviation	Name	Explanation
M_0	Permanent static torque	Permanent torque acting on motor shaft at speed n = 0
M_{rated}	Rated torque	Permanent torque at rated speed
M_{max}	Maximum torque	Maximum transient torque
n_{rated}	Rated speed	Motor speed specified by manufacturer

General technical data

Maximum motor weight

Geared motors with an input unit should be designed to be as short as possible.

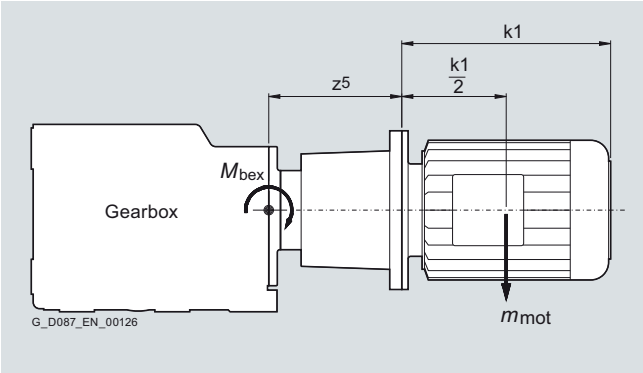
The prevailing bending moment can be calculated on the basis of the formulae below. If the permissible bending moment is exceeded, it means that a shorter design is required or that the motor requires additional support.

This particularly applies in the case of the following drive scenarios:

- Any geared motors that are not listed in this catalog
- Any motors that are mounted on the gearbox using a K2, K4 or KQ / KQS input unit
- Any gearboxes, particularly tandem gearboxes with input units that are exposed to high levels of impact and vibration.

However, if a connection to the input unit is necessary, the motor must be supported independently of the gearbox. Within this context, it is important to ensure that no additional forces are induced in the gearbox as a result of this support.

In the case of extremely long designs, you will need to contact us.



Code	Description	Unit
z5	For dimensions, see Chapter 7 "Input units"	mm
k1/2	Motor length	mm
m_{mot}	Motor weight force	N
M_{bex}	Prevailing bending moment	

IEC size	71	80	90	100	112	132	160	180	200	225	250	280	315
Permiss. bending moment M_{bperm} Nm	159	159	159	159	441	765	2 289	6 105	6 105	6 010	5 894	18 000	22 000

The prevailing bending moment M_{bex} is calculated as follows:

$$M_{bex} = m_{mot} \cdot \{z5 + (k1/2)\}$$

In the case of applications that involve powerful impacts or vibrations M_{bex} must be multiplied by 2.

The following condition applies here in respect of M_{bex}:

$$M_{bex} < M_{bperm}$$

Selection and ordering data

Gearboxes with K2 input units can be supplied as solo gearboxes or with an IEC standard motor. For possible gearbox ratios, see "Gearbox ratios and maximum torques" in the gearbox sections.

When selecting a solo gearbox configuration, remember to insert an **A** in the **10th position** of the order number, and a **0** in the **11th** to **13th positions**.

Order code:
Input unit K2 **A03**

Size Gearbox	Order No. Gearbox	IEC size, input unit													
		63	71	80	90	100	112	132	160	180	200	225	250	280	315
		Order No. 9th position													
		B	C	D	E	F	G	H	J	K	L	M	N	P	Q
1-stage helical gearbox E															
E38	**2KJ1001 - ■■■■■ - ■■■■**			✓	✓	✓									
E48	**2KJ1002 - ■■■■■ - ■■■■**			✓	✓	✓	✓	✓							
E68	**2KJ1003 - ■■■■■ - ■■■■**			✓	✓	✓	✓	✓							
E88	**2KJ1004 - ■■■■■ - ■■■■**			✓	✓	✓	✓	✓	✓						
E108	**2KJ1005 - ■■■■■ - ■■■■**				✓	✓	✓	✓	✓	✓	✓				
E128	**2KJ1006 - ■■■■■ - ■■■■**					✓	✓	✓	✓	✓	✓	✓			
E148	**2KJ1007 - ■■■■■ - ■■■■**							✓	✓	✓	✓	✓	✓	✓	
2-stage helical gearbox Z															
Z38	**2KJ1102 - ■■■■■ - ■■■■**			✓	✓	✓									
Z48	**2KJ1103 - ■■■■■ - ■■■■**			✓	✓	✓	✓	✓							
Z68	**2KJ1104 - ■■■■■ - ■■■■**			✓	✓	✓	✓	✓							
Z88	**2KJ1105 - ■■■■■ - ■■■■**			✓	✓	✓	✓	✓	✓						
Z108	**2KJ1106 - ■■■■■ - ■■■■**				✓	✓	✓	✓	✓	✓	✓				
Z128	**2KJ1107 - ■■■■■ - ■■■■**					✓	✓	✓	✓	✓	✓	✓			
Z148	**2KJ1108 - ■■■■■ - ■■■■**							✓	✓	✓	✓	✓	✓	✓	
Z168	**2KJ1110 - ■■■■■ - ■■■■**							✓	✓	✓	✓	✓	✓	✓	
Z188	**2KJ1111 - ■■■■■ - ■■■■**								✓	✓	✓	✓	✓	✓	✓
3-stage helical gearbox D															
D38	**2KJ1202 - ■■■■■ - ■■■■**			✓	✓										
D48	**2KJ1203 - ■■■■■ - ■■■■**			✓	✓	✓									
D68	**2KJ1204 - ■■■■■ - ■■■■**			✓	✓	✓									
D88	**2KJ1205 - ■■■■■ - ■■■■**			✓	✓	✓	✓	✓							
D108	**2KJ1206 - ■■■■■ - ■■■■**			✓	✓	✓	✓	✓	✓						
D128	**2KJ1207 - ■■■■■ - ■■■■**				✓	✓	✓	✓	✓	✓	✓				
D148	**2KJ1208 - ■■■■■ - ■■■■**					✓	✓	✓	✓	✓	✓	✓			
D168	**2KJ1210 - ■■■■■ - ■■■■**							✓	✓	✓	✓	✓			
D188	**2KJ1211 - ■■■■■ - ■■■■**							✓	✓	✓	✓	✓	✓		

Selection and ordering data (continued)

Size Gearbox	Order No. Gearbox	IEC size, input unit													
		63	71	80	90	100	112	132	160	180	200	225	250	280	315
		Order No. 9th position													
		B	C	D	E	F	G	H	J	K	L	M	N	P	Q
2-stage parallel-shaft gearbox FZ															
FZ38B	2KJ1301 - ■■■■■ - ■■■■			✓	✓	✓									
FZ48B	2KJ1302 - ■■■■■ - ■■■■			✓	✓	✓									
FZ68B	2KJ1303 - ■■■■■ - ■■■■			✓	✓	✓	✓	✓							
FZ88B	2KJ1304 - ■■■■■ - ■■■■			✓	✓	✓	✓	✓							
FZ108B	2KJ1305 - ■■■■■ - ■■■■			✓	✓	✓	✓	✓	✓						
FZ128B	2KJ1306 - ■■■■■ - ■■■■				✓	✓	✓	✓	✓	✓	✓				
FZ148B	2KJ1307 - ■■■■■ - ■■■■					✓	✓	✓	✓	✓	✓	✓			
FZ168B	2KJ1308 - ■■■■■ - ■■■■							✓	✓	✓	✓	✓	✓	✓	
FZ188B	2KJ1310 - ■■■■■ - ■■■■							✓	✓	✓	✓	✓	✓	✓	✓
FZ208	2KJ1311 - ■■■■■ - ■■■■								✓	✓	✓	✓	✓	✓	✓
3-stage parallel-shaft gearbox FD															
FD38B	2KJ1401 - ■■■■■ - ■■■■			✓	✓	✓									
FD48B	2KJ1402 - ■■■■■ - ■■■■			✓	✓	✓									
FD68B	2KJ1403 - ■■■■■ - ■■■■			✓	✓	✓	✓	✓							
FD88B	2KJ1404 - ■■■■■ - ■■■■			✓	✓	✓	✓	✓							
FD108B	2KJ1405 - ■■■■■ - ■■■■			✓	✓	✓	✓	✓	✓						
FD128B	2KJ1406 - ■■■■■ - ■■■■				✓	✓	✓	✓	✓	✓	✓				
FD148B	2KJ1407 - ■■■■■ - ■■■■					✓	✓	✓	✓	✓	✓	✓			
FD168B	2KJ1408 - ■■■■■ - ■■■■							✓	✓	✓	✓	✓	✓	✓	
FD188B	2KJ1410 - ■■■■■ - ■■■■							✓	✓	✓	✓	✓	✓	✓	
FD208	2KJ1411 - ■■■■■ - ■■■■							✓	✓	✓	✓	✓	✓	✓	✓
Bevel helical gearbox B															
B38	2KJ1501 - ■■■■■ - ■■■■			✓	✓	✓									
Bevel helical gearbox K															
K38	2KJ1502 - ■■■■■ - ■■■■			✓	✓	✓									
K48	2KJ1503 - ■■■■■ - ■■■■			✓	✓	✓									
K68	2KJ1504 - ■■■■■ - ■■■■			✓	✓	✓	✓	✓							
K88	2KJ1505 - ■■■■■ - ■■■■			✓	✓	✓	✓	✓							
K108	2KJ1506 - ■■■■■ - ■■■■			✓	✓	✓	✓	✓	✓						
K128	2KJ1507 - ■■■■■ - ■■■■				✓	✓	✓	✓	✓	✓	✓				
K148	2KJ1508 - ■■■■■ - ■■■■					✓	✓	✓	✓	✓	✓	✓			
K168	2KJ1510 - ■■■■■ - ■■■■							✓	✓	✓	✓	✓	✓	✓	
K188	2KJ1511 - ■■■■■ - ■■■■							✓	✓	✓	✓	✓	✓	✓	✓
Helical worm gearbox C															
C38	2KJ1601 - ■■■■■ - ■■■■			✓	✓	✓									
C48	2KJ1602 - ■■■■■ - ■■■■			✓	✓	✓									
C68	2KJ1603 - ■■■■■ - ■■■■			✓	✓	✓	✓	✓							
C88	2KJ1604 - ■■■■■ - ■■■■			✓	✓	✓	✓	✓							

Selection and ordering data

Gearboxes with K4 input units can be supplied as solo gearboxes or with an IEC standard motor. For possible gearbox ratios, see "Gearbox ratios and maximum torques" in the gearbox sections.

When selecting a solo gearbox configuration, remember to insert an **A** in the **10th position** of the order number, and a **0** in the **11th** to **13th positions**.

Order code:
Input unit K4 **A04**

Size Gearbox	Order No. Gearbox	IEC size, input unit													
		63	71	80	90	100	112	132	160	180	200	225	250	280	315
		Order No. 9th position													
		B	C	D	E	F	G	H	J	K	L	M	N	P	Q
1-stage helical gearbox E															
E38	**2KJ1001 - ■■■■■ - ■■■■**	✓	✓	✓	✓	✓									
E48	**2KJ1002 - ■■■■■ - ■■■■**	✓	✓	✓	✓	✓	✓	✓							
E68	**2KJ1003 - ■■■■■ - ■■■■**	✓	✓	✓	✓	✓	✓	✓	✓						
E88	**2KJ1004 - ■■■■■ - ■■■■**			✓	✓	✓	✓	✓	✓	✓					
E108	**2KJ1005 - ■■■■■ - ■■■■**				✓	✓	✓	✓	✓	✓	✓	✓			
E128	**2KJ1006 - ■■■■■ - ■■■■**					✓	✓	✓	✓	✓	✓	✓	✓		
E148	**2KJ1007 - ■■■■■ - ■■■■**							✓	✓	✓	✓	✓	✓	✓	
2-stage helical gearbox Z															
Z38	**2KJ1102 - ■■■■■ - ■■■■**	✓	✓	✓	✓	✓	✓								
Z48	**2KJ1103 - ■■■■■ - ■■■■**	✓	✓	✓	✓	✓	✓	✓							
Z68	**2KJ1104 - ■■■■■ - ■■■■**	✓	✓	✓	✓	✓	✓	✓	✓						
Z88	**2KJ1105 - ■■■■■ - ■■■■**			✓	✓	✓	✓	✓	✓	✓					
Z108	**2KJ1106 - ■■■■■ - ■■■■**				✓	✓	✓	✓	✓	✓	✓	✓			
Z128	**2KJ1107 - ■■■■■ - ■■■■**					✓	✓	✓	✓	✓	✓	✓	✓		
Z148	**2KJ1108 - ■■■■■ - ■■■■**							✓	✓	✓	✓	✓	✓	✓	
Z168	**2KJ1110 - ■■■■■ - ■■■■**							✓	✓	✓	✓	✓	✓	✓	
Z188	**2KJ1111 - ■■■■■ - ■■■■**								✓	✓	✓	✓	✓	✓	
3-stage helical gearbox D															
D38	**2KJ1202 - ■■■■■ - ■■■■**	✓	✓	✓	✓										
D48	**2KJ1203 - ■■■■■ - ■■■■**	✓	✓	✓	✓	✓									
D68	**2KJ1204 - ■■■■■ - ■■■■**	✓	✓	✓	✓	✓									
D88	**2KJ1205 - ■■■■■ - ■■■■**	✓	✓	✓	✓	✓	✓	✓							
D108	**2KJ1206 - ■■■■■ - ■■■■**			✓	✓	✓	✓	✓	✓						
D128	**2KJ1207 - ■■■■■ - ■■■■**				✓	✓	✓	✓	✓	✓	✓				
D148	**2KJ1208 - ■■■■■ - ■■■■**					✓	✓	✓	✓	✓	✓	✓			
D168	**2KJ1210 - ■■■■■ - ■■■■**							✓	✓	✓	✓	✓			
D188	**2KJ1211 - ■■■■■ - ■■■■**							✓	✓	✓	✓	✓	✓	✓	

Selection and ordering data (continued)

Size Gearbox	Order No. Gearbox	IEC size, input unit													
		63	71	80	90	100	112	132	160	180	200	225	250	280	315
		Order No. 9th position													
		B	C	D	E	F	G	H	J	K	L	M	N	P	Q
2-stage parallel-shaft gearbox FZ															
FZ38B	2KJ1301 - ■■■■■ - ■■■■	✓	✓	✓	✓	✓									
FZ48B	2KJ1302 - ■■■■■ - ■■■■	✓	✓	✓	✓	✓	✓								
FZ68B	2KJ1303 - ■■■■■ - ■■■■	✓	✓	✓	✓	✓	✓	✓							
FZ88B	2KJ1304 - ■■■■■ - ■■■■	✓	✓	✓	✓	✓	✓	✓	✓						
FZ108B	2KJ1305 - ■■■■■ - ■■■■			✓	✓	✓	✓	✓	✓	✓					
FZ128B	2KJ1306 - ■■■■■ - ■■■■				✓	✓	✓	✓	✓	✓	✓	✓			
FZ148B	2KJ1307 - ■■■■■ - ■■■■					✓	✓	✓	✓	✓	✓	✓	✓		
FZ168B	2KJ1308 - ■■■■■ - ■■■■							✓	✓	✓	✓	✓	✓	✓	
FZ188B	2KJ1310 - ■■■■■ - ■■■■							✓	✓	✓	✓	✓	✓	✓	
FZ208	2KJ1311 - ■■■■■ - ■■■■								✓	✓	✓	✓	✓	✓	
3-stage parallel-shaft gearbox FD															
FD38B	2KJ1401 - ■■■■■ - ■■■■	✓	✓	✓	✓	✓									
FD48B	2KJ1402 - ■■■■■ - ■■■■	✓	✓	✓	✓	✓	✓								
FD68B	2KJ1403 - ■■■■■ - ■■■■	✓	✓	✓	✓	✓	✓	✓							
FD88B	2KJ1404 - ■■■■■ - ■■■■	✓	✓	✓	✓	✓	✓	✓	✓						
FD108B	2KJ1405 - ■■■■■ - ■■■■			✓	✓	✓	✓	✓	✓	✓					
FD128B	2KJ1406 - ■■■■■ - ■■■■				✓	✓	✓	✓	✓	✓	✓	✓			
FD148B	2KJ1407 - ■■■■■ - ■■■■					✓	✓	✓	✓	✓	✓	✓	✓		
FD168B	2KJ1408 - ■■■■■ - ■■■■							✓	✓	✓	✓	✓	✓	✓	
FD188B	2KJ1410 - ■■■■■ - ■■■■							✓	✓	✓	✓	✓	✓	✓	
FD208	2KJ1411 - ■■■■■ - ■■■■							✓	✓	✓	✓	✓	✓	✓	
Bevel helical gearbox B															
B38	2KJ1501 - ■■■■■ - ■■■■	✓	✓	✓	✓	✓									
Bevel helical gearbox K															
K38	2KJ1502 - ■■■■■ - ■■■■	✓	✓	✓	✓	✓	✓								
K48	2KJ1503 - ■■■■■ - ■■■■	✓	✓	✓	✓	✓	✓								
K68	2KJ1504 - ■■■■■ - ■■■■	✓	✓	✓	✓	✓	✓	✓							
K88	2KJ1505 - ■■■■■ - ■■■■	✓	✓	✓	✓	✓	✓	✓	✓						
K108	2KJ1506 - ■■■■■ - ■■■■			✓	✓	✓	✓	✓	✓	✓					
K128	2KJ1507 - ■■■■■ - ■■■■				✓	✓	✓	✓	✓	✓	✓	✓			
K148	2KJ1508 - ■■■■■ - ■■■■					✓	✓	✓	✓	✓	✓	✓	✓		
K168	2KJ1510 - ■■■■■ - ■■■■							✓	✓	✓	✓	✓	✓	✓	
K188	2KJ1511 - ■■■■■ - ■■■■							✓	✓	✓	✓	✓	✓	✓	
Helical worm gearbox C															
C38	2KJ1601 - ■■■■■ - ■■■■	✓	✓	✓	✓	✓	✓								
C48	2KJ1602 - ■■■■■ - ■■■■	✓	✓	✓	✓	✓	✓								
C68	2KJ1603 - ■■■■■ - ■■■■	✓	✓	✓	✓	✓	✓	✓							
C88	2KJ1604 - ■■■■■ - ■■■■	✓	✓	✓	✓	✓	✓	✓	✓						

Selection and ordering data

For possible gearbox ratios, see "Gearbox ratios and maximum torques" in the gearbox sections.

Order code:
Input unit KQ **A07**
Input unit KQS **A08**

Size Gearbox	Order No. Gearbox	Size index				
		71.2	80.3	90.4	112.3	132.3
		Order code for size index				
		N61	N62	N63	N62	N62
		Order No. 9th position				
		C	D	E	G	H
1-stage helical gearbox E						
E38	**2KJ1001 - ■■■■■ - ■■■■**	✓	✓	✓		
E48	**2KJ1002 - ■■■■■ - ■■■■**	✓	✓	✓	✓	
E68	**2KJ1003 - ■■■■■ - ■■■■**	✓	✓	✓	✓	✓
E88	**2KJ1004 - ■■■■■ - ■■■■**		✓	✓	✓	✓
E108	**2KJ1005 - ■■■■■ - ■■■■**			✓	✓	✓
E128	**2KJ1006 - ■■■■■ - ■■■■**				✓	✓
E148	**2KJ1007 - ■■■■■ - ■■■■**					✓
2-stage helical gearbox Z						
Z28	**2KJ1101 - ■■■■■ - ■■■■**	✓	✓	✓		
Z38	**2KJ1102 - ■■■■■ - ■■■■**	✓	✓	✓		
Z48	**2KJ1103 - ■■■■■ - ■■■■**	✓	✓	✓	✓	
Z68	**2KJ1104 - ■■■■■ - ■■■■**	✓	✓	✓	✓	✓
Z88	**2KJ1105 - ■■■■■ - ■■■■**		✓	✓	✓	✓
Z108	**2KJ1106 - ■■■■■ - ■■■■**			✓	✓	✓
Z128	**2KJ1107 - ■■■■■ - ■■■■**				✓	✓
Z148	**2KJ1108 - ■■■■■ - ■■■■**					✓
Z168	**2KJ1110 - ■■■■■ - ■■■■**					✓
Z188	**2KJ1111 - ■■■■■ - ■■■■**					✓
3-stage helical gearbox D						
D28	**2KJ1202 - ■■■■■ - ■■■■**	✓	✓	✓		
D38	**2KJ1202 - ■■■■■ - ■■■■**	✓	✓	✓		
D48	**2KJ1203 - ■■■■■ - ■■■■**	✓	✓	✓		
D68	**2KJ1204 - ■■■■■ - ■■■■**	✓	✓	✓		
D88	**2KJ1205 - ■■■■■ - ■■■■**	✓	✓	✓	✓	✓
D108	**2KJ1206 - ■■■■■ - ■■■■**		✓	✓	✓	✓
D128	**2KJ1207 - ■■■■■ - ■■■■**			✓	✓	✓
D148	**2KJ1208 - ■■■■■ - ■■■■**				✓	✓
D168	**2KJ1210 - ■■■■■ - ■■■■**					✓
D188	**2KJ1211 - ■■■■■ - ■■■■**					✓

Selection and ordering data (continued)

Size Gearbox	Order No. Gearbox	Size index				
		71.2	80.3	90.4	112.3	132.3
		Order code for size index				
		N61	N62	N63	N62	N62
		Order No. 9th position				
		C	D	E	G	H
2-stage parallel-shaft gearbox FZ						
FZ28	2KJ1300 - ■■■■■ - ■■■■	✓	✓	✓		
FZ38B	2KJ1301 - ■■■■■ - ■■■■	✓	✓	✓		
FZ48B	2KJ1302 - ■■■■■ - ■■■■	✓	✓	✓		
FZ68B	2KJ1303 - ■■■■■ - ■■■■	✓	✓	✓	✓	
FZ88B	2KJ1304 - ■■■■■ - ■■■■	✓	✓	✓	✓	✓
FZ108B	2KJ1305 - ■■■■■ - ■■■■		✓	✓	✓	✓
FZ128B	2KJ1306 - ■■■■■ - ■■■■			✓	✓	✓
FZ148B	2KJ1307 - ■■■■■ - ■■■■				✓	✓
FZ168B	2KJ1308 - ■■■■■ - ■■■■					✓
3-stage parallel-shaft gearbox FD						
FD28	2KJ1400 - ■■■■■ - ■■■■	✓	✓	✓		
FD38B	2KJ1401 - ■■■■■ - ■■■■	✓	✓	✓		
FD48B	2KJ1402 - ■■■■■ - ■■■■	✓	✓	✓		
FD68B	2KJ1403 - ■■■■■ - ■■■■	✓	✓	✓	✓	
FD88B	2KJ1404 - ■■■■■ - ■■■■	✓	✓	✓	✓	✓
FD108B	2KJ1405 - ■■■■■ - ■■■■		✓	✓	✓	✓
FD128B	2KJ1406 - ■■■■■ - ■■■■			✓	✓	✓
FD148B	2KJ1407 - ■■■■■ - ■■■■				✓	✓
FD168B	2KJ1408 - ■■■■■ - ■■■■					✓
FD188B	2KJ1410 - ■■■■■ - ■■■■					✓
Bevel helical gearbox B						
B28	2KJ1500 - ■■■■■ - ■■■■	✓	✓	✓		
B38	2KJ1501 - ■■■■■ - ■■■■	✓	✓	✓		
Bevel helical gearbox K						
K38	2KJ1502 - ■■■■■ - ■■■■	✓	✓	✓		
K48	2KJ1503 - ■■■■■ - ■■■■	✓	✓	✓		
K68	2KJ1504 - ■■■■■ - ■■■■	✓	✓	✓	✓	
K88	2KJ1505 - ■■■■■ - ■■■■	✓	✓	✓	✓	✓
K108	2KJ1506 - ■■■■■ - ■■■■		✓	✓	✓	✓
K128	2KJ1507 - ■■■■■ - ■■■■			✓	✓	✓
K148	2KJ1508 - ■■■■■ - ■■■■				✓	✓
K168	2KJ1510 - ■■■■■ - ■■■■					✓
K188	2KJ1511 - ■■■■■ - ■■■■					✓
Helical worm gearbox C						
C38	2KJ1601 - ■■■■■ - ■■■■	✓	✓	✓		
C48	2KJ1602 - ■■■■■ - ■■■■	✓	✓	✓		
C68	2KJ1603 - ■■■■■ - ■■■■	✓	✓	✓	✓	
C88	2KJ1604 - ■■■■■ - ■■■■	✓	✓	✓	✓	✓

Selection and ordering data

For possible gearbox ratios, see "Gearbox ratios and maximum torques" in the gearbox sections.

Order code:
Input unit A **A00**

Size Gearbox	Order No. Gearbox	Size, input unit													
		63	71	80	90	100	112	132	160	180	200	225	250	280	315
		Order No. 9th position													
		B	C	D	E	F	G	H	J	K	L	M	N	P	Q
1-stage helical gearbox E															
E38	**2KJ1001 - ■■■■■ - ■■■■**		✓	✓	✓	✓									
E48	**2KJ1002 - ■■■■■ - ■■■■**		✓	✓	✓	✓	✓								
E68	**2KJ1003 - ■■■■■ - ■■■■**		✓	✓	✓	✓	✓	✓							
E88	**2KJ1004 - ■■■■■ - ■■■■**			✓	✓	✓	✓	✓	✓						
E108	**2KJ1005 - ■■■■■ - ■■■■**				✓	✓	✓	✓	✓		✓				
E128	**2KJ1006 - ■■■■■ - ■■■■**					✓	✓	✓	✓		✓	✓			
E148	**2KJ1007 - ■■■■■ - ■■■■**							✓	✓		✓	✓	✓	✓	
2-stage helical gearbox Z															
Z38	**2KJ1102 - ■■■■■ - ■■■■**		✓	✓	✓	✓									
Z48	**2KJ1103 - ■■■■■ - ■■■■**		✓	✓	✓	✓	✓								
Z68	**2KJ1104 - ■■■■■ - ■■■■**		✓	✓	✓	✓	✓	✓							
Z88	**2KJ1105 - ■■■■■ - ■■■■**			✓	✓	✓	✓	✓	✓						
Z108	**2KJ1106 - ■■■■■ - ■■■■**				✓	✓	✓	✓	✓		✓				
Z128	**2KJ1107 - ■■■■■ - ■■■■**					✓	✓	✓	✓		✓	✓			
Z148	**2KJ1108 - ■■■■■ - ■■■■**							✓	✓		✓	✓	✓	✓	
Z168	**2KJ1110 - ■■■■■ - ■■■■**							✓	✓		✓	✓	✓	✓	
Z188	**2KJ1111 - ■■■■■ - ■■■■**								✓		✓	✓	✓	✓	
3-stage helical gearbox D															
D38	**2KJ1202 - ■■■■■ - ■■■■**		✓	✓	✓										
D48	**2KJ1203 - ■■■■■ - ■■■■**		✓	✓	✓	✓									
D68	**2KJ1204 - ■■■■■ - ■■■■**		✓	✓	✓	✓									
D88	**2KJ1205 - ■■■■■ - ■■■■**		✓	✓	✓	✓	✓	✓							
D108	**2KJ1206 - ■■■■■ - ■■■■**			✓	✓	✓	✓	✓	✓						
D128	**2KJ1207 - ■■■■■ - ■■■■**				✓	✓	✓	✓	✓		✓				
D148	**2KJ1208 - ■■■■■ - ■■■■**					✓	✓	✓	✓		✓	✓			
D168	**2KJ1210 - ■■■■■ - ■■■■**							✓	✓		✓	✓			
D188	**2KJ1211 - ■■■■■ - ■■■■**							✓	✓		✓	✓	✓	✓	

Input unit A

Selection and ordering data (continued)

Size Gearbox	Order No. Gearbox	Size, input unit													
		63	71	80	90	100	112	132	160	180	200	225	250	280	315
		Order No. 9th position													
		B	C	D	E	F	G	H	J	K	L	M	N	P	Q
2-stage parallel-shaft gearbox FZ															
FZ38B	2KJ1301 - ■■■■■ - ■■■■		✓	✓	✓	✓									
FZ48B	2KJ1302 - ■■■■■ - ■■■■		✓	✓	✓	✓									
FZ68B	2KJ1303 - ■■■■■ - ■■■■		✓	✓	✓	✓	✓								
FZ88B	2KJ1304 - ■■■■■ - ■■■■		✓	✓	✓	✓	✓	✓							
FZ108B	2KJ1305 - ■■■■■ - ■■■■			✓	✓	✓	✓	✓	✓						
FZ128B	2KJ1306 - ■■■■■ - ■■■■				✓	✓	✓	✓	✓		✓				
FZ148B	2KJ1307 - ■■■■■ - ■■■■					✓	✓	✓	✓		✓	✓			
FZ168B	2KJ1308 - ■■■■■ - ■■■■							✓	✓		✓	✓	✓	✓	
FZ188B	2KJ1310 - ■■■■■ - ■■■■							✓	✓		✓	✓	✓	✓	
FZ208	2KJ1311 - ■■■■■ - ■■■■								✓		✓	✓	✓	✓	
3-stage parallel-shaft gearbox FD															
FD38B	2KJ1401 - ■■■■■ - ■■■■		✓	✓	✓	✓									
FD48B	2KJ1402 - ■■■■■ - ■■■■		✓	✓	✓	✓									
FD68B	2KJ1403 - ■■■■■ - ■■■■		✓	✓	✓	✓	✓								
FD88B	2KJ1404 - ■■■■■ - ■■■■		✓	✓	✓	✓	✓	✓							
FD108B	2KJ1405 - ■■■■■ - ■■■■			✓	✓	✓	✓	✓	✓						
FD128B	2KJ1406 - ■■■■■ - ■■■■				✓	✓	✓	✓	✓		✓				
FD148B	2KJ1407 - ■■■■■ - ■■■■					✓	✓	✓	✓		✓	✓			
FD168B	2KJ1408 - ■■■■■ - ■■■■							✓	✓		✓	✓	✓	✓	
FD188B	2KJ1410 - ■■■■■ - ■■■■							✓	✓		✓	✓	✓	✓	
FD208	2KJ1411 - ■■■■■ - ■■■■							✓	✓		✓	✓	✓	✓	
Bevel helical gearbox B															
B38	2KJ1501 - ■■■■■ - ■■■■		✓	✓	✓	✓									
Bevel helical gearbox K															
K38	2KJ1502 - ■■■■■ - ■■■■		✓	✓	✓	✓									
K48	2KJ1503 - ■■■■■ - ■■■■		✓	✓	✓	✓									
K68	2KJ1504 - ■■■■■ - ■■■■		✓	✓	✓	✓	✓								
K88	2KJ1505 - ■■■■■ - ■■■■		✓	✓	✓	✓	✓	✓							
K108	2KJ1506 - ■■■■■ - ■■■■			✓	✓	✓	✓	✓	✓						
K128	2KJ1507 - ■■■■■ - ■■■■				✓	✓	✓	✓	✓		✓				
K148	2KJ1508 - ■■■■■ - ■■■■					✓	✓	✓	✓		✓	✓			
K168	2KJ1510 - ■■■■■ - ■■■■							✓	✓		✓	✓	✓	✓	
K188	2KJ1511 - ■■■■■ - ■■■■							✓	✓		✓	✓	✓	✓	
Helical worm gearbox C															
C38	2KJ1601 - ■■■■■ - ■■■■		✓	✓	✓	✓									
C48	2KJ1602 - ■■■■■ - ■■■■		✓	✓	✓	✓									
C68	2KJ1603 - ■■■■■ - ■■■■		✓	✓	✓	✓	✓								
C88	2KJ1604 - ■■■■■ - ■■■■		✓	✓	✓	✓	✓	✓							

Selection and ordering data

For possible gearbox ratios, see "Gearbox ratios and maximum torques" in the gearbox sections.

Order code:
Input unit P **A09**

Size Gearbox	Order No. Gearbox	Size, input unit													
		63	71	80	90	100	112	132	160	180	200	225	250	280	315
		Order No. 9th position													
		B	C	D	E	F	G	H	J	K	L	M	N	P	Q
1-stage helical gearbox E															
E38	**2KJ1001 - ■■■■■ - ■■■■**			✓	✓	✓									
E48	**2KJ1002 - ■■■■■ - ■■■■**			✓	✓	✓	✓								
E68	**2KJ1003 - ■■■■■ - ■■■■**			✓	✓	✓	✓	✓							
E88	**2KJ1004 - ■■■■■ - ■■■■**			✓	✓	✓	✓	✓	✓						
E108	**2KJ1005 - ■■■■■ - ■■■■**				✓	✓	✓	✓	✓	✓	✓				
E128	**2KJ1006 - ■■■■■ - ■■■■**					✓	✓	✓	✓	✓	✓	✓			
E148	**2KJ1007 - ■■■■■ - ■■■■**							✓	✓	✓	✓	✓	✓	✓	
2-stage helical gearbox Z															
Z38	**2KJ1102 - ■■■■■ - ■■■■**			✓	✓	✓									
Z48	**2KJ1103 - ■■■■■ - ■■■■**			✓	✓	✓	✓								
Z68	**2KJ1104 - ■■■■■ - ■■■■**			✓	✓	✓	✓	✓							
Z88	**2KJ1105 - ■■■■■ - ■■■■**			✓	✓	✓	✓	✓	✓						
Z108	**2KJ1106 - ■■■■■ - ■■■■**				✓	✓	✓	✓	✓	✓	✓				
Z128	**2KJ1107 - ■■■■■ - ■■■■**					✓	✓	✓	✓	✓	✓	✓			
Z148	**2KJ1108 - ■■■■■ - ■■■■**							✓	✓	✓	✓	✓	✓	✓	
Z168	**2KJ1110 - ■■■■■ - ■■■■**							✓	✓	✓	✓	✓	✓	✓	
Z188	**2KJ1111 - ■■■■■ - ■■■■**								✓	✓	✓	✓	✓	✓	
3-stage helical gearbox D															
D38	**2KJ1202 - ■■■■■ - ■■■■**			✓	✓										
D48	**2KJ1203 - ■■■■■ - ■■■■**			✓	✓	✓									
D68	**2KJ1204 - ■■■■■ - ■■■■**			✓	✓	✓									
D88	**2KJ1205 - ■■■■■ - ■■■■**			✓	✓	✓	✓	✓							
D108	**2KJ1206 - ■■■■■ - ■■■■**			✓	✓	✓	✓	✓	✓						
D128	**2KJ1207 - ■■■■■ - ■■■■**				✓	✓	✓	✓	✓	✓	✓				
D148	**2KJ1208 - ■■■■■ - ■■■■**					✓	✓	✓	✓	✓	✓	✓			
D168	**2KJ1210 - ■■■■■ - ■■■■**							✓	✓	✓	✓	✓			
D188	**2KJ1211 - ■■■■■ - ■■■■**							✓	✓	✓	✓	✓	✓	✓	

Input unit P

Selection and ordering data (continued)

Size Gearbox	Order No. Gearbox	Size, input unit													
		63	71	80	90	100	112	132	160	180	200	225	250	280	315
		Order No. 9th position													
		B	C	D	E	F	G	H	J	K	L	M	N	P	Q
2-stage parallel-shaft gearbox FZ															
FZ38B	2KJ1301 - ■■■■■ - ■■■■			✓	✓	✓									
FZ48B	2KJ1302 - ■■■■■ - ■■■■			✓	✓	✓									
FZ68B	2KJ1303 - ■■■■■ - ■■■■			✓	✓	✓	✓								
FZ88B	2KJ1304 - ■■■■■ - ■■■■			✓	✓	✓	✓	✓							
FZ108B	2KJ1305 - ■■■■■ - ■■■■			✓	✓	✓	✓	✓	✓						
FZ128B	2KJ1306 - ■■■■■ - ■■■■				✓	✓	✓	✓	✓	✓	✓				
FZ148B	2KJ1307 - ■■■■■ - ■■■■					✓	✓	✓	✓	✓	✓	✓			
FZ168B	2KJ1308 - ■■■■■ - ■■■■							✓	✓	✓	✓	✓	✓	✓	
FZ188B	2KJ1310 - ■■■■■ - ■■■■							✓	✓	✓	✓	✓	✓	✓	
3-stage parallel-shaft gearbox FD															
FD38B	2KJ1401 - ■■■■■ - ■■■■			✓	✓	✓									
FD48B	2KJ1402 - ■■■■■ - ■■■■			✓	✓	✓									
FD68B	2KJ1403 - ■■■■■ - ■■■■			✓	✓	✓	✓								
FD88B	2KJ1404 - ■■■■■ - ■■■■			✓	✓	✓	✓	✓							
FD108B	2KJ1405 - ■■■■■ - ■■■■			✓	✓	✓	✓	✓	✓						
FD128B	2KJ1406 - ■■■■■ - ■■■■				✓	✓	✓	✓	✓	✓	✓				
FD148B	2KJ1407 - ■■■■■ - ■■■■					✓	✓	✓	✓	✓	✓	✓			
FD168B	2KJ1408 - ■■■■■ - ■■■■							✓	✓	✓	✓	✓	✓	✓	
FD188B	2KJ1410 - ■■■■■ - ■■■■							✓	✓	✓	✓	✓	✓	✓	
Bevel helical gearbox B															
B38	2KJ1501 - ■■■■■ - ■■■■			✓	✓	✓									
Bevel helical gearbox K															
K38	2KJ1502 - ■■■■■ - ■■■■			✓	✓	✓									
K48	2KJ1503 - ■■■■■ - ■■■■			✓	✓	✓									
K68	2KJ1504 - ■■■■■ - ■■■■			✓	✓	✓	✓								
K88	2KJ1505 - ■■■■■ - ■■■■			✓	✓	✓	✓	✓							
K108	2KJ1506 - ■■■■■ - ■■■■			✓	✓	✓	✓	✓	✓						
K128	2KJ1507 - ■■■■■ - ■■■■				✓	✓	✓	✓	✓	✓	✓				
K148	2KJ1508 - ■■■■■ - ■■■■					✓	✓	✓	✓	✓	✓	✓			
K168	2KJ1510 - ■■■■■ - ■■■■							✓	✓	✓	✓	✓	✓	✓	
K188	2KJ1511 - ■■■■■ - ■■■■							✓	✓	✓	✓	✓	✓	✓	
Helical worm gearbox C															
C38	2KJ1601 - ■■■■■ - ■■■■			✓	✓	✓									
C48	2KJ1602 - ■■■■■ - ■■■■			✓	✓	✓									
C68	2KJ1603 - ■■■■■ - ■■■■			✓	✓	✓	✓								
C88	2KJ1604 - ■■■■■ - ■■■■			✓	✓	✓	✓	✓							

Input units with backstop K2X, AX, PX

For applications that only require one permissible direction of rotation, input units K2, A and P can be supplied with a backstop feature. In this case, an **X** needs to be added to the input unit code.

The backstops have centrifugal sprags and are suitable for use up to a maximum speed of 3600 rpm.

The backstops have been designed to offer a long service life, provided that they are used at a higher speed than the minimum specified in the table. Once this speed is reached and exceeded, the sprags lift off so that the backstop is not subject to wear and is maintenance-free.

All backstops are integrated into the input units and have no impact on the dimensions.

Note:

It is necessary to specify the desired direction of rotation of the output shaft when ordering a gearbox with backstop. The direction of rotation is determined by front view of the output shaft. See also "Direction of rotation of geared motors", Page 1/43.

With parallel shaft gearboxes, bevel helical gearboxes and helical worm gearboxes, it is again necessary to specify the side on which the output shaft is located, i.e. either "Output side A" or "Output side B". The output side is defined by specifying the mounting position. See also "Mounting types and mounting positions", Pages 3/92, 4/87 and 5/47.

K2, A, P													
IEC size		**71**	**80**	**90**	**100**	**112**	**132**	**160**	**180**	**200**	**225**	**250**	**280**
Minimum speed	[rpm]	890	820	820	750	750	670	670	610	610	610	610	400
Max. backstop starting torque	[Nm]	12.3	12.3	25	49	66	151	247	305	494	741	906	1 482

Gearbox	Size	Gear stages	View in relation to the output shaft	Output shaft direction of rotation	Input shaft direction of rotation
Z	38 ... 188	2	Facing output shaft	Clockwise	Clockwise
Z	38 ... 188	2	Facing output shaft	Counterclockwise	Counterclockwise
D	38 ... 188	3	Facing output shaft	Clockwise	Counterclockwise
D	38 ... 188	3	Facing output shaft	Counterclockwise	Clockwise
FZ	38 ... 188B	2	Facing drive end of output shaft	Clockwise	Clockwise
FZ	38 ... 188B	2	Facing drive end of output shaft	Counterclockwise	Counterclockwise
FD	38 ... 188B	3	Facing drive end of output shaft	Clockwise	Counterclockwise
FD	38 ... 188B	3	Facing drive end of output shaft	Counterclockwise	Clockwise
C	38 ... 88	2	Facing drive end of output shaft	Clockwise	Clockwise
C	38 ... 88	2	Facing drive end of output shaft	Counterclockwise	Counterclockwise
B	28 ... 38	2	Facing drive end of output shaft	Clockwise	Clockwise
B	28 ... 38	2	Facing drive end of output shaft	Counterclockwise	Counterclockwise
K	38 ... 88	3	Facing drive end of output shaft	Clockwise	Counterclockwise
K	38 ... 88	3	Facing drive end of output shaft	Counterclockwise	Clockwise
K	108 ... 188	3	Facing drive end of output shaft	Clockwise	Clockwise
K	108 ... 188	3	Facing drive end of output shaft	Counterclockwise	Counterclockwise
K	38 ... 188	3	Facing non-drive end of output shaft	Clockwise	Counterclockwise
K	38 ... 188	3	Facing non-drive end of output shaft	Counterclockwise	Clockwise

Input units with backstop K2X, AX, PX (continued)

Example:

K 108 - 188

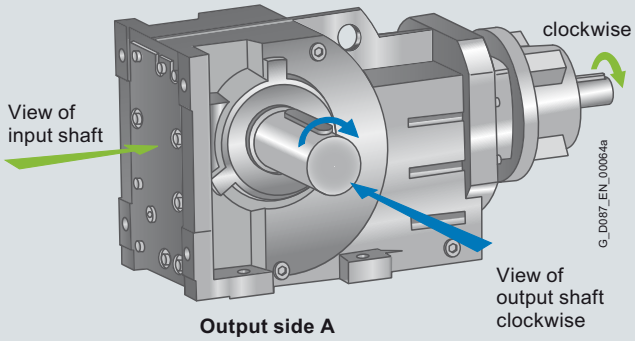
Facing drive end of output shaft

Output shaft direction of rotation = clockwise

Input shaft direction of rotation = clockwise

Additional order codes:
Backstop (X) **A15**

Output shaft direction of rotation:
Clockwise **K18**
Counterclockwise **K19**



Friction clutch

Gearboxes and geared motors with a K2 input unit can be fitted with a friction clutch as an option. The friction clutch creates a friction-locked connection between the motor output shaft and the gearbox input shaft until a set torque value is achieved. Once this torque is exceeded the clutch will slip.
Friction clutches are used when there is a risk of the geared motor sustaining damage as a result of stalling.

A torque setting can be specified in plain text for the friction clutch.

Order code:
Friction clutch **A17**
Set torque **Y00**
Plain text: **Y00*RKD(a) ....***

Example: required torque 125 Nm

Plain text: Y00*RKD(a)125*

Speed monitoring

For monitoring speed deviations, a speed monitor can be used in coupling lantern K2 together with a friction clutch (order code **A17**).

The complete speed monitor system consists of proximity switch and speed monitor. The proximity switch operates contact-free according to the sampling method and emits one signal per coupling rotation which is evaluated by the speed monitor.

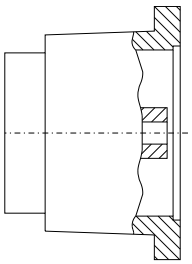
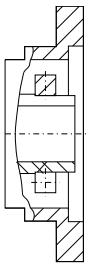
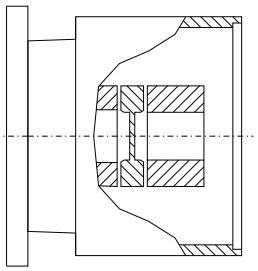
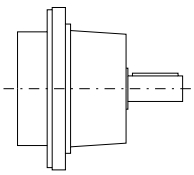
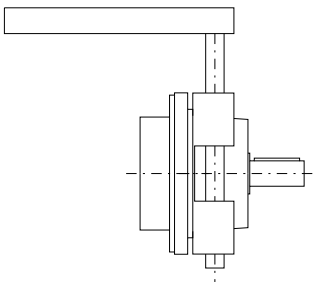
The signal sequence sent by the proximity switch is compared in the speed monitor with the set setpoint speed. If the speed is below or above the configured setpoint speed, a relay is actuated (depending on the function setting) via an output stage.

Both components can also be obtained separately.

Order code:

Proximity switch **A18**
Speed monitor **A19**

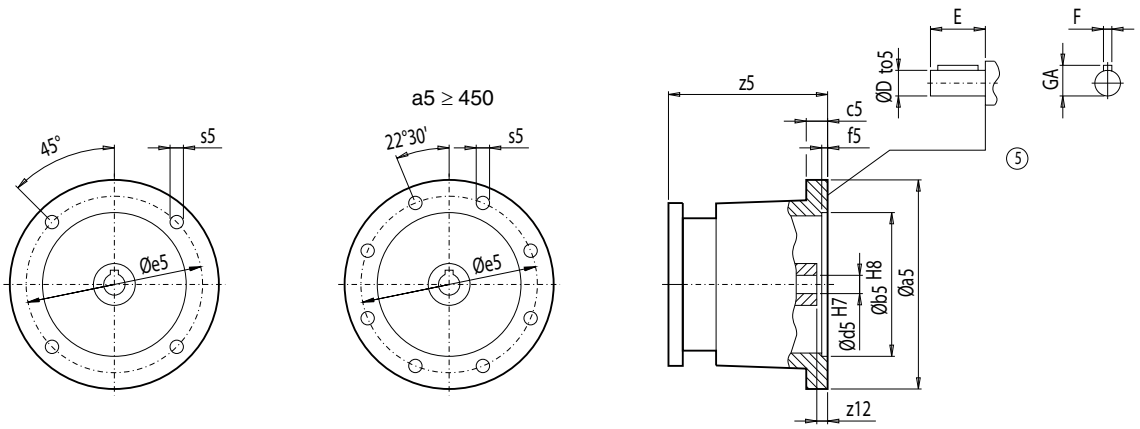
Dimension drawing overview

Representation	Input unit	Dimension drawing on page
	K2	7/20
	K4	7/23
	KQ and KQS	7/28
	A	7/30
	P	7/33

Input units

Dimensions

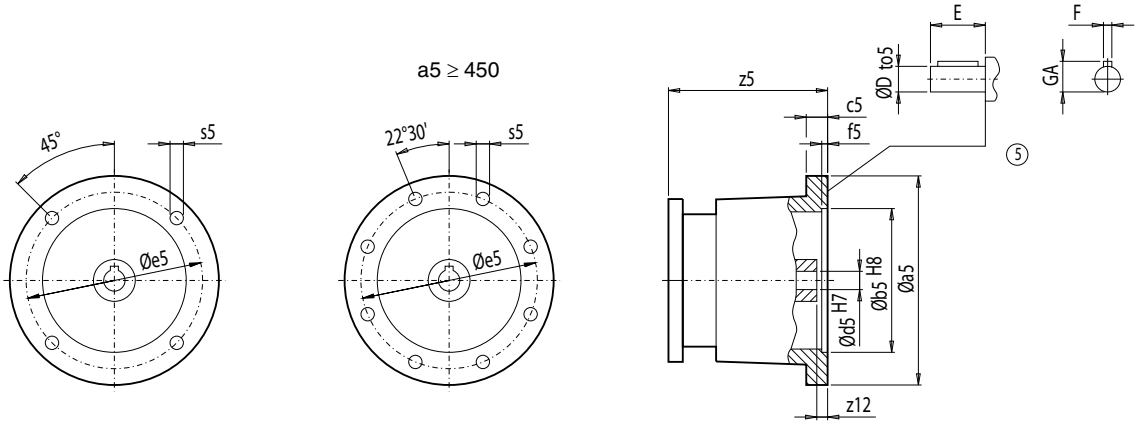
Input unit K2



Gearbox E.Z.	D.	K./C.	FZ./ FD.			a5	b5	c5	f5	e5	s5	z12	d5 D	to5	E	GA	F	z5
–	–	B38	38B	-K2	(80)	200	130	17	4.5	165	M10	15	19	k6	40	21.5	6	176.0
					(90)	200	130	17	4.5	165	M10	26	24	k6	50	27.0	8	176.0
					(100)	250	180	19	5.0	215	M12	30	28	k6	60	31.0	8	198.5
38	–	38 48	48B	-K2	(80)	200	130	17	4.5	165	M10	15	19	k6	40	21.5	6	201.0
					(90)	200	130	17	4.5	165	M10	26	24	k6	50	27.0	8	201.0
					(100)	250	180	19	5.0	215	M12	30	28	k6	60	31.0	8	223.5
–	38	–	–	-K2	(80)	200	130	17	4.5	165	M10	15	19	k6	40	21.5	6	216.0
					(90)	200	130	17	4.5	165	M10	26	24	k6	50	27.0	8	216.0
48	–	68	68B	-K2	(80)	200	130	17	4.5	165	M10	15	19	k6	40	21.5	6	195.5
					(90)	200	130	17	4.5	165	M10	26	24	k6	50	27.0	8	195.5
					(100)	250	180	19	5.0	215	M12	30	28	k6	60	31.0	8	218.0
					(112)	250	180	19	5.0	215	M12	30	28	k6	60	31.0	8	217.0
					(132)	300	230	19	5.0	265	M12	45	38	k6	80	41.0	10	280.0
–	48	–	–	-K2	(80)	200	130	17	4.5	165	M10	15	19	k6	40	21.5	6	212.5
					(90)	200	130	17	4.5	165	M10	26	24	k6	50	27.0	8	212.5
					(100)	250	180	19	5.0	215	M12	30	28	k6	60	31.0	8	235.0
68	–	88	88B	-K2	(80)	200	130	17	4.5	165	M10	15	19	k6	40	21.5	6	189.5
					(90)	200	130	17	4.5	165	M10	26	24	k6	50	27.0	8	189.5
					(100)	250	180	19	5.0	215	M12	30	28	k6	60	31.0	8	212.0
					(112)	250	180	19	5.0	215	M12	30	28	k6	60	31.0	8	209.0
					(132)	300	230	19	5.0	265	M12	45	38	k6	80	41.0	10	270.5
–	68	–	–	-K2	(80)	200	130	17	4.5	165	M10	15	19	k6	40	21.5	6	208.0
					(90)	200	130	17	4.5	165	M10	26	24	k6	50	27.0	8	208.0
					(100)	250	180	19	5.0	215	M12	30	28	k6	60	31.0	8	230.5
88	–	108	108B	-K2	(80)	200	130	17	4.5	165	M10	15	19	k6	40	21.5	6	174.5
					(90)	200	130	17	4.5	165	M10	26	24	k6	50	27.0	8	174.5
					(100)	250	180	19	5.0	215	M12	30	28	k6	60	31.0	8	194.5
					(112)	250	180	19	5.0	215	M12	30	28	k6	60	31.0	8	190.5
					(132)	300	230	19	5.0	265	M12	45	38	k6	80	41.0	10	252.0
					(160)	350	250	30	6.0	300	M16	66	42	k6	110	45.0	12	318.5
–	88	–	–	-K2	(80)	200	130	17	4.5	165	M10	15	19	k6	40	21.5	6	199.5
					(90)	200	130	17	4.5	165	M10	26	24	k6	50	27.0	8	199.5
					(100)	250	180	19	5.0	215	M12	30	28	k6	60	31.0	8	222.0
					(112)	250	180	19	5.0	215	M12	30	28	k6	60	31.0	8	219.5
					(132)	300	230	19	5.0	265	M12	45	38	k6	80	41.0	10	280.0

⑤ Feather key / keyway DIN 6885

Input unit K2 (continued)

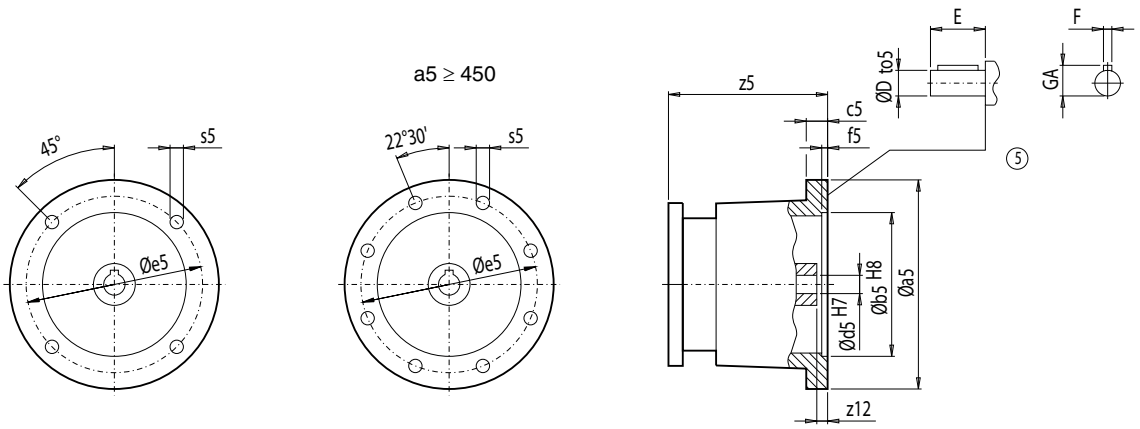


Gearbox E.Z.	D.	K./C.	FZ./ FD.			a5	b5	c5	f5	e5	s5	z12	d5 D	to5	E	GA	F	z5
108	–	128	128B	-K2	(90)	200	130	17	4.5	165	M10	26	24	k6	50	27.0	8	163.0
					(100)	250	180	19	5.0	215	M12	30	28	k6	60	31.0	8	182.5
					(112)	250	180	19	5.0	215	M12	30	28	k6	60	31.0	8	179.0
					(132)	300	230	19	5.0	265	M12	45	38	k6	80	41.0	10	239.5
					(160)	350	250	30	6.0	300	M16	66	42	k6	110	45.0	12	307.0
					(180)	350	250	25	6.0	300	M16	59	48	k6	110	51.5	14	357.5
					(200)	400	300	25	6.0	350	M16	60	55	m6	110	59.0	16	358.5
–	108	–	–	-K2	(80)	200	130	17	4.5	165	M10	15	19	k6	40	21.5	6	193.5
					(90)	200	130	17	4.5	165	M10	26	24	k6	50	27.0	8	193.5
					(100)	250	180	19	5.0	215	M12	30	28	k6	60	31.0	8	216.0
					(112)	250	180	19	5.0	215	M12	30	28	k6	60	31.0	8	210.5
					(132)	300	230	19	5.0	265	M12	45	38	k6	80	41.0	10	272.0
					(160)	350	250	30	6.0	300	M16	66	42	k6	110	45.0	12	336.5
128	–	148	148B	-K2	(100)	250	180	19	5.0	215	M12	30	28	k6	60	31.0	8	173.0
					(112)	250	180	19	5.0	215	M12	30	28	k6	60	31.0	8	168.5
					(132)	300	230	19	5.0	265	M12	45	38	k6	80	41.0	10	229.0
					(160)	350	250	30	6.0	300	M16	66	42	k6	110	45.0	12	290.5
					(180)	350	250	25	6.0	300	M16	59	48	k6	110	51.5	14	344.0
					(200)	400	300	25	6.0	350	M16	60	55	m6	110	59.0	16	345.0
					(225)	450	350	27	6.0	400	M16	90	60	m6	140	64.0	18	428.5
–	128	–	–	-K2	(90)	200	130	17	4.5	165	M10	26	24	k6	50	27.0	8	186.5
					(100)	250	180	19	5.0	215	M12	30	28	k6	60	31.0	8	209.0
					(112)	250	180	19	5.0	215	M12	30	28	k6	60	31.0	8	202.5
					(132)	300	230	19	5.0	265	M12	45	38	k6	80	41.0	10	263.0
					(160)	350	250	30	6.0	300	M16	66	42	k6	110	45.0	12	327.5
					(180)	350	250	25	6.0	300	M16	59	48	k6	110	51.5	14	381.0
					(200)	400	300	25	6.0	350	M16	60	55	m6	110	59.0	16	382.0
148	–	168	168B	-K2	(132)	300	230	19	5.0	265	M12	45	38	k6	80	41.0	10	221.0
					(160)	350	250	30	6.0	300	M16	66	42	k6	110	45.0	12	283.0
					(180)	350	250	25	6.0	300	M16	59	48	k6	110	51.5	14	336.5
					(200)	400	300	25	6.0	350	M16	60	55	m6	110	59.0	16	337.5
					(225)	450	350	27	6.0	400	M16	90	60	m6	140	64.0	18	421.0
					(250)	550	450	27	6.0	500	M16	75	65	m6	140	69.0	18	425.5
					(280)	550	450	27	7.0	500	M16	51	75	m6	140	79.5	18	469.0

⑤ Feather key / keyway DIN 6885

Dimensions

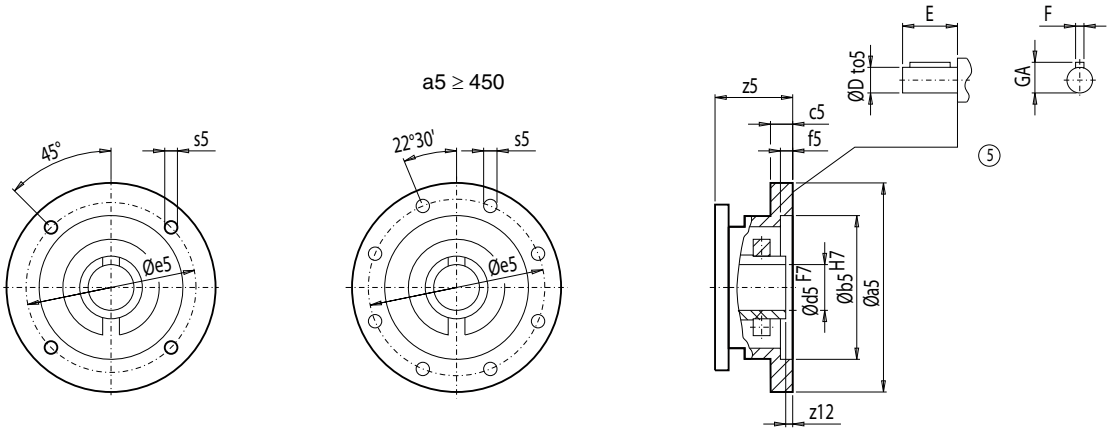
Input unit K2 (continued)



Gearbox E.Z.	D.	K./C.	FZ./ FD.			a5	b5	c5	f5	e5	s5	z12	d5 D	to5	E	GA	F	z5
–	148	–	–	-K2	(100)	250	180	19	5	215	M12	30	28	k6	60	31.0	8	204.0
					(112)	250	180	19	5	215	M12	30	28	k6	60	31.0	8	199.5
					(132)	300	230	19	5	265	M12	45	38	k6	80	41.0	10	259.0
					(160)	350	250	30	6	300	M16	66	42	k6	110	45.0	12	321.0
					(180)	350	250	25	6	300	M16	59	48	k6	110	51.5	14	374.5
					(200)	400	300	25	6	350	M16	60	55	m6	110	59.0	16	375.5
					(225)	450	350	27	6	400	M16	90	60	m6	140	64.0	18	459.0
168	–	188	188B 208	-K2	(132)	300	230	19	5	265	M12	45	38	k6	80	41.0	10	206.5
					(160)	350	250	30	6	300	M16	66	42	k6	110	45.0	12	268.5
					(180)	350	250	25	6	300	M16	59	48	k6	110	51.5	14	322.0
					(200)	400	300	25	6	350	M16	60	55	m6	110	59.0	16	323.0
					(225)	450	350	27	6	400	M16	90	60	m6	140	64.0	18	406.5
					(250)	550	450	27	6	500	M16	75	65	m6	140	69.0	18	411.0
					(280)	550	450	27	7	500	M16	51	75	m6	140	79.5	18	469.0
					(315) *)	660	550	32	8	600	M20	33	80	m6	170	85.0	22	299.0
–	168	–	–	-K2	(132)	300	230	19	5	265	M12	45	38	k6	80	41.0	10	247.5
					(160)	350	250	30	6	300	M16	66	42	k6	110	45.0	12	309.5
					(180)	350	250	25	6	300	M16	59	48	k6	110	51.5	14	363.0
					(200)	400	300	25	6	350	M16	60	55	m6	110	59.0	16	364.0
					(225)	450	350	27	6	400	M16	90	60	m6	140	64.0	18	447.5
188	–	–	–	-K2	(160)	350	250	30	6	300	M16	66	42	k6	110	45.0	12	268.5
					(180)	350	250	25	6	300	M16	59	48	k6	110	51.5	14	322.0
					(200)	400	300	25	6	350	M16	60	55	m6	110	59.0	16	323.0
					(225)	450	350	27	6	400	M16	90	60	m6	140	64.0	18	406.5
					(250)	550	450	27	6	500	M16	75	65	m6	140	69.0	18	411.0
					(280)	550	450	27	7	500	M16	51	75	m6	140	79.5	18	469.0
					(315)	660	550	32	8	600	M20	33	80	m6	170	85.0	22	299.0
–	188	–	–	-K2	(132)	300	230	19	5	265	M12	45	38	k6	80	41.0	10	206.5
					(160)	350	250	30	6	300	M16	66	42	k6	110	45.0	12	268.5
					(180)	350	250	25	6	300	M16	59	48	k6	110	51.5	14	322.0
					(200)	400	300	25	6	350	M16	60	55	m6	110	59.0	16	323.0
					(225)	450	350	27	6	400	M16	90	60	m6	140	64.0	18	406.5
					(250)	550	450	27	6	500	M16	75	65	m6	140	69.0	18	411.0
					(280)	550	450	27	7	500	M16	51	75	m6	140	79.5	18	469.0

⑤ Feather key / keyway DIN 6885 *) Not possible in conjunction with Z.168

Input unit K4



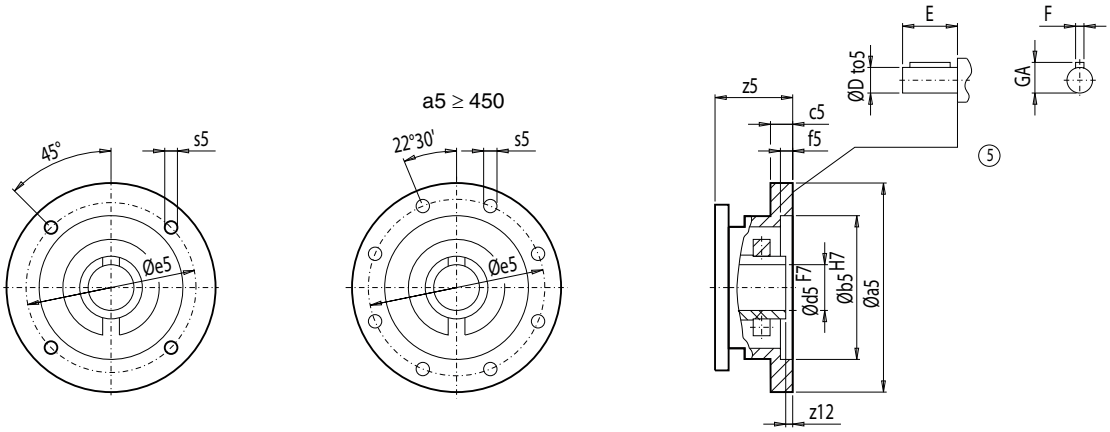
Gearbox E.Z.	D.	K./C.	FZ./ FD.			a5	b5	c5	f5	e5	s5	z12	d5 D	to5	E	GA	F	z5
–	–	B38	38B	-K4	(63)	140	95	10.0	4.5	115	M8x17	4.0	11	k6	23	12.5	4	48.5
					(71)	160	110	10.0	4.5	130	M8x17	4.0	14	k6	30	16.0	5	45.0
					(80)	200	130	15.5	4.5	165	M10	15.5	19	k6	40	21.5	6	69.0
					(90)	200	130	15.5	4.5	165	M10	15.5	24	k6	50	27.0	8	69.0
					(100)	250	180	20.5	5.0	215	M12	7.0	28	k6	60	31.0	8	76.5
38	–	38 48	48B	-K4	(63)	140	95	10.0	4.5	115	M8x17	4.0	11	k6	23	12.5	4	73.5
					(71)	160	110	10.0	4.5	130	M8x17	4.0	14	k6	30	16.0	5	70.0
					(80)	200	130	15.5	4.5	165	M10	15.5	19	k6	40	21.5	6	94.0
					(90)	200	130	15.5	4.5	165	M10	15.5	24	k6	50	27.0	8	94.0
					(100)	250	180	20.5	5.0	215	M12	7.0	28	k6	60	31.0	8	101.5
					(112)	250	180	20.0	5.0	215	M12	7.0	28	k6	60	31.0	8	110.5
–	38	–	–	-K4	(63)	140	95	10.0	4.5	115	M8x17	4.0	11	k6	23	12.5	4	88.5
					(71)	160	110	10.0	4.5	130	M8x17	4.0	14	k6	30	16.0	5	85.0
					(80)	200	130	15.5	4.5	165	M10	15.5	19	k6	40	21.5	6	109.0
					(90)	200	130	15.5	4.5	165	M10	15.5	24	k6	50	27.0	8	109.0
48	–	68	68B	-K4	(63)	140	95	10.0	4.5	115	M8x17	4.0	11	k6	23	12.5	4	68.0
					(71)	160	110	10.0	4.5	130	M8x17	4.0	14	k6	30	16.0	5	64.5
					(80)	200	130	15.5	4.5	165	M10	15.5	19	k6	40	21.5	6	88.5
					(90)	200	130	15.5	4.5	165	M10	15.5	24	k6	50	27.0	8	88.5
					(100)	250	180	20.5	5.0	215	M12	7.0	28	k6	60	31.0	8	96.0
					(112)	250	180	19.0	5.0	215	M12	7.0	28	k6	60	31.0	8	104.5
					(132)	300	230	20.0	5.0	265	M12	22.0	38	k6	80	41.0	10	147.5
–	48	–	–	-K4	(63)	140	95	10.0	4.5	115	M8x17	4.0	11	k6	23	12.5	4	85.0
					(71)	160	110	10.0	4.5	130	M8x17	4.0	14	k6	30	16.0	5	81.5
					(80)	200	130	15.5	4.5	165	M10	15.5	19	k6	40	21.5	6	105.5
					(90)	200	130	15.5	4.5	165	M10	15.5	24	k6	50	27.0	8	105.5
					(100)	250	180	20.5	5.0	215	M12	7.0	28	k6	60	31.0	8	113.0

⑤ Feather key / keyway DIN 6885

Input units

Dimensions

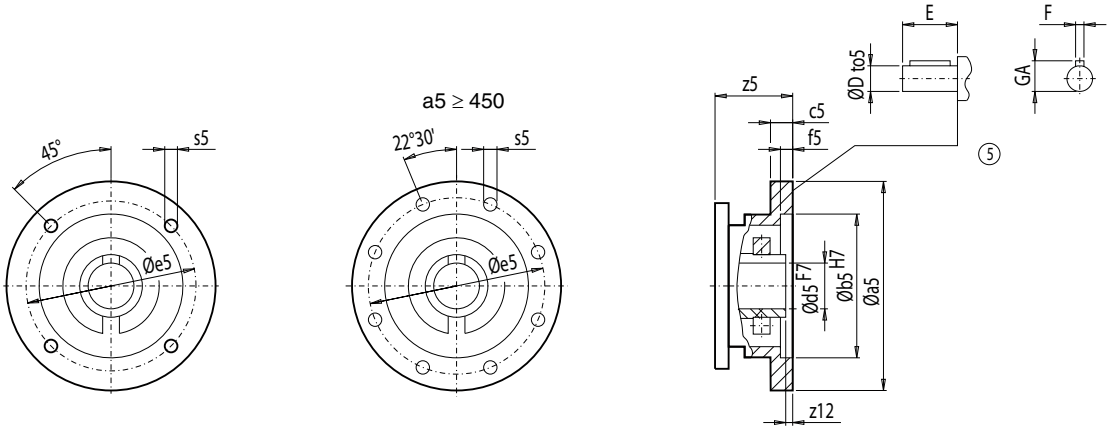
Input unit K4 (continued)



Gearbox E.Z.	D.	K./C.	FZ./ FD.			a5	b5	c5	f5	e5	s5	z12	d5 D	to5	E	GA	F	z5
68	–	88	88B	-K4	(63)	140	95	10.0	4.5	115	M8x17	4.0	11	k6	23	12.5	4	62.0
					(71)	160	110	10.0	4.5	130	M8x17	4.0	14	k6	30	16.0	5	58.5
					(80)	200	130	15.5	4.5	165	M10	15.5	19	k6	40	21.5	6	82.5
					(90)	200	130	15.5	4.5	165	M10	15.5	24	k6	50	27.0	8	82.5
					(100)	250	180	20.5	5.0	215	M12	7.0	28	k6	60	31.0	8	90.0
					(112)	250	180	19.0	5.0	215	M12	7.0	28	k6	60	31.0	8	96.5
					(132)	300	230	19.0	5.0	265	M12	22.0	38	k6	80	41.0	10	137.5
					(160)	350	250	26.0	6.0	300	M16	20.0	42	k6	110	45.0	12	178.5
–	68	–	–	-K4	(63)	140	95	10.0	4.5	115	M8x17	4.0	11	k6	23	12.5	4	80.5
					(71)	160	110	10.0	4.5	130	M8x17	4.0	14	k6	30	16.0	5	77.0
					(80)	200	130	15.5	4.5	165	M10	15.5	19	k6	40	21.5	6	101.0
					(90)	200	130	15.5	4.5	165	M10	15.5	24	k6	50	27.0	8	101.0
					(100)	250	180	20.5	5.0	215	M12	7.0	28	k6	60	31.0	8	108.5
88	–	108	108B	-K4	(90)	200	130	15.5	4.5	165	M10	15.5	24	k6	50	27.0	8	67.5
					(100)	250	180	20.5	5.0	215	M12	7.0	28	k6	60	31.0	8	72.5
					(112)	250	180	19.0	5.0	215	M12	7.0	28	k6	60	31.0	8	78.0
					(132)	300	230	19.0	5.0	265	M12	22.0	38	k6	80	41.0	10	119.0
					(160)	350	250	26.0	6.0	300	M16	20.0	42	k6	110	45.0	12	162.0
					(180)	350	250	26.0	6.0	300	M16x22	21.0	48	k6	110	51.5	14	179.0
–	88	–	–	-K4	(63)	140	95	10.0	4.5	115	M8x17	4.0	11	k6	23	12.5	4	72.0
					(71)	160	110	10.0	4.5	130	M8x17	4.0	14	k6	30	16.0	5	68.5
					(80)	200	130	15.5	4.5	165	M10	15.5	19	k6	40	21.5	6	92.5
					(90)	200	130	15.5	4.5	165	M10	15.5	24	k6	50	27.0	8	92.5
					(100)	250	180	20.5	5.0	215	M12	7.0	28	k6	60	31.0	8	100.0
					(112)	250	180	19.0	5.0	215	M12	7.0	28	k6	60	31.0	8	107.0
					(132)	300	230	19.0	5.0	265	M12	22.0	38	k6	80	41.0	10	147.0
108	–	128	128B	-K4	(90)	200	130	15.5	4.5	165	M10	15.5	24	k6	50	27.0	8	56.0
					(100)	250	180	20.5	5.0	215	M12	7.0	28	k6	60	31.0	8	60.5
					(112)	250	180	19.0	5.0	215	M12	7.0	28	k6	60	31.0	8	66.5
					(132)	300	230	19.0	5.0	265	M12	22.0	38	k6	80	41.0	10	106.5
					(160)	350	250	25.0	6.0	300	M16	20.0	42	k6	110	45.0	12	150.5
					(180)	350	250	15.5	6.0	300	M16x22	21.0	48	k6	110	51.5	14	164.0
					(200)	400	300	25.0	6.0	350	M16	30.0	55	m6	110	59.0	16	174.0
					(225)	450	350	27.0	6.0	400	M16	30.0	60	m6	140	64.0	18	247.0

⑤ Feather key / keyway DIN 6885

Input unit K4 (continued)

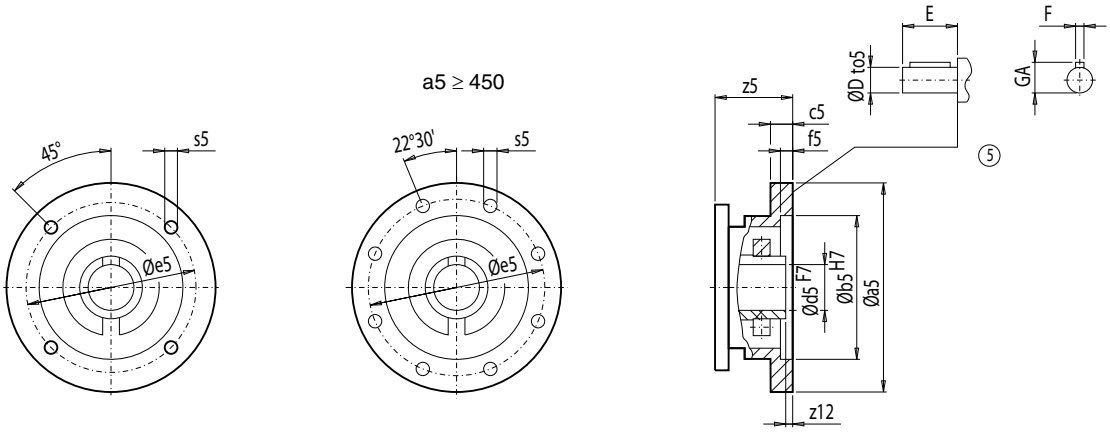


Gearbox E.Z.	D.	K./C.	FZ./ FD.			a5	b5	c5	f5	e5	s5	z12	d5 D	to5	E	GA	F	z5
–	108	–	–	-K4	(80)	200	130	15.5	4.5	165	M10	15.5	19	k6	40	21.5	6	86.5
					(90)	200	130	15.5	4.5	165	M10	15.5	24	k6	50	27.0	8	86.5
					(100)	250	180	20.5	5.0	215	M12	7.0	28	k6	60	31.0	8	94.0
					(112)	250	180	19.0	5.0	215	M12	7.0	28	k6	60	31.0	8	98.0
					(132)	300	230	19.0	5.0	265	M12	22.0	38	k6	80	41.0	10	139.0
					(160)	350	250	25.0	6.0	300	M16	20.0	42	k6	110	45.0	12	180.0
128	–	148	148B	-K4	(100)	250	180	20.5	5.0	215	M12	7.0	28	k6	60	31.0	8	51.0
					(112)	250	180	19.0	5.0	215	M12	7.0	28	k6	60	31.0	8	56.0
					(132)	300	230	19.0	5.0	265	M12	22.0	38	k6	80	41.0	10	96.0
					(160)	350	250	25.0	6.0	300	M16	20.0	42	k6	110	45.0	12	134.0
					(180)	350	250	15.5	6.0	300	M16x22	21.0	48	k6	110	51.5	14	150.5
					(200)	400	300	25.0	6.0	350	M16	30.0	55	m6	110	59.0	16	160.5
					(225)	450	350	27.0	6.0	400	M16	30.0	60	m6	140	64.0	18	233.0
					(250)	550	450	27.0	6.0	500	M16	30.0	65	m6	140	69.0	18	233.0
–	128	–	–	-K4	(90)	200	130	15.5	4.5	165	M10	15.5	24	k6	50	27.0	8	79.5
					(100)	250	180	20.5	5.0	215	M12	7.0	28	k6	60	31.0	8	87.0
					(112)	250	180	19.0	5.0	215	M12	7.0	28	k6	60	31.0	8	90.0
					(132)	300	230	19.0	5.0	265	M12	22.0	38	k6	80	41.0	10	130.0
					(160)	350	250	25.0	6.0	300	M16	20.0	42	k6	110	45.0	12	171.0
					(180)	350	250	15.5	6.0	300	M16x22	21.0	48	k6	110	51.5	14	187.5
					(200)	400	300	25.0	6.0	350	M16	30.0	55	m6	110	59.0	16	197.5
148	–	168	168B	-K4	(132)	300	230	19.0	5.0	265	M12	22.0	38	k6	80	41.0	10	88.0
					(160)	350	250	25.0	6.0	300	M16	20.0	42	k6	110	45.0	12	126.5
					(180)	350	250	15.5	6.0	300	M16x22	21.0	48	k6	110	51.5	14	143.0
					(200)	400	300	25.0	6.0	350	M16	30.0	55	m6	110	59.0	16	153.0
					(225)	450	350	27.0	6.0	400	M16	30.0	60	m6	140	64.0	18	225.5
					(250)	550	450	27.0	6.0	500	M16	30.0	65	m6	140	69.0	18	225.0
					(280)	550	450	27.0	6.0	500	M16	30.0	75	m6	140	79.5	20	238.0

⑤ Feather key / keyway DIN 6885

Dimensions

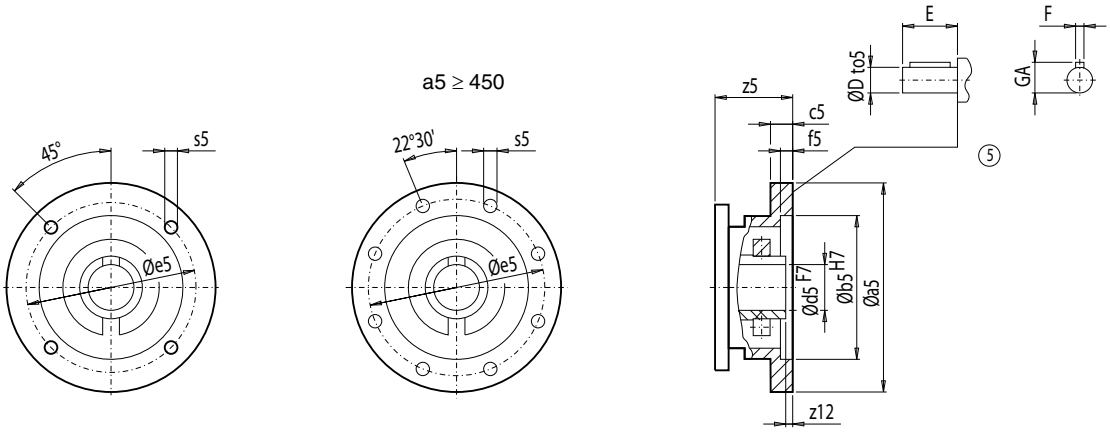
Input unit K4 (continued)



Gearbox E.Z.	D.	K./C.	FZ./ FD.			a5	b5	c5	f5	e5	s5	z12	d5 D	to5	E	GA	F	z5
–	148	–	–	-K4	(100)	250	180	20.5	5	215	M12	7	28	k6	60	31.0	8	82.0
					(112)	250	180	19.0	5	215	M12	7	28	k6	60	31.0	8	87.0
					(132)	300	230	19.0	5	265	M12	22	38	k6	80	41.0	10	126.0
					(160)	350	250	25.0	6	300	M16	20	42	k6	110	45.0	12	164.5
					(180)	350	250	15.5	6	300	M16x22	21	48	k6	110	51.5	14	181.0
					(200)	400	300	25.0	6	350	M16	30	55	m6	110	59.0	16	191.0
					(225)	450	350	27.0	6	400	M16	30	60	m6	140	64.0	18	263.5
168	–	188	188B 208	-K4	(132)	300	230	19.0	5	265	M12	22	38	k6	80	41.0	10	73.5
					(160)	350	250	25.0	6	300	M16	20	42	k6	110	45.0	12	112.0
					(180)	350	250	15.5	6	300	M16x22	21	48	k6	110	51.5	14	128.5
					(200)	400	300	25.0	6	350	M16	30	55	m6	110	59.0	16	138.5
					(225)	450	350	27.0	6	400	M16	30	60	m6	140	64.0	18	211.0
					(250)	550	450	27.0	6	500	M16	30	65	m6	140	69.0	18	210.5
					(280)	550	450	27.0	6	500	M16	30	75	m6	140	79.5	20	223.5
–	168	–	–	-K4	(132)	300	230	19.0	5	265	M12	22	38	k6	80	41.0	10	114.5
					(160)	350	250	25.0	6	300	M16	20	42	k6	110	45.0	12	153.0
					(180)	350	250	15.5	6	300	M16x22	21	48	k6	110	51.5	14	169.5
					(200)	400	300	25.0	6	350	M16	30	55	m6	110	59.0	16	179.5
					(225)	450	350	27.0	6	400	M16	30	60	m6	140	64.0	18	252.0
188	–	–	–	-K4	(160)	350	250	25.0	6	300	M16	20	42	k6	110	45.0	12	112.0
					(180)	350	250	15.5	6	300	M16x22	21	48	k6	110	51.5	14	128.5
					(200)	400	300	25.0	6	350	M16	30	55	m6	110	59.0	16	138.5
					(225)	450	350	27.0	6	400	M16	30	60	m6	140	64.0	18	211.0
					(250)	550	450	27.0	6	500	M16	30	65	m6	140	69.0	18	210.5
					(280)	550	450	27.0	6	500	M16	30	75	m6	140	79.5	20	223.5

⑤ Feather key / keyway DIN 6885

Input unit K4 (continued)



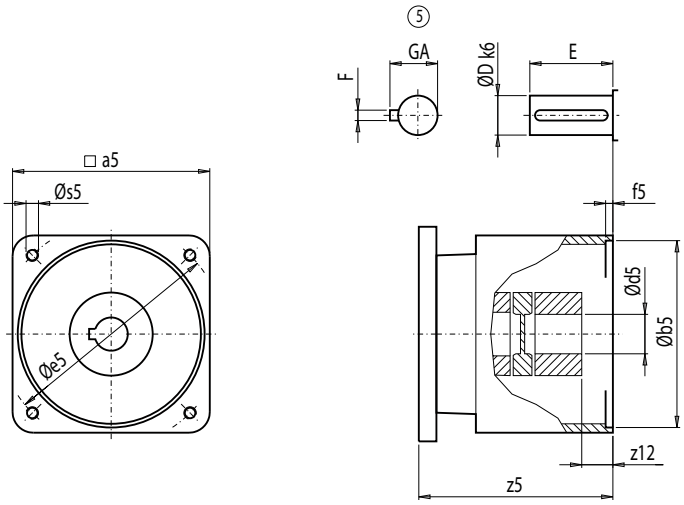
Gearbox E.Z.	D.	K./C.	FZ./ FD.			a5	b5	c5	f5	e5	s5	z12	d5 D	to5	E	GA	F	z5
–	188	–	–	-K4	(132)	300	230	19.0	5	265	M12	22	38	k6	80	41.0	10	73.5
					(160)	350	250	25.0	6	300	M16	20	42	k6	110	45.0	12	112.0
					(180)	350	250	15.5	6	300	M16x22	21	48	k6	110	51.5	14	128.5
					(200)	400	300	25.0	6	350	M16	30	55	m6	110	59.0	16	138.5
					(225)	450	350	27.0	6	400	M16	30	60	m6	140	64.0	18	211.0
					(250)	550	450	27.0	6	500	M16	30	65	m6	140	69.0	18	210.5
					(280)	550	450	27.0	6	500	M16	30	75	m6	140	79.5	20	223.5
168	–	188	188B 208	-K4	(132)	300	230	19.0	5	265	M12	22	38	k6	80	41.0	10	73.5
					(160)	350	250	25.0	6	300	M16	20	42	k6	110	45.0	12	112.0
					(180)	350	250	15.5	6	300	M16x22	21	48	k6	110	51.5	14	128.5
					(200)	400	300	25.0	6	350	M16	30	55	m6	110	59.0	16	138.5
					(225)	450	350	27.0	6	400	M16	30	60	m6	140	64.0	18	211.0
					(250)	550	450	27.0	6	500	M16	30	65	m6	140	69.0	18	210.5
					(280)	550	450	27.0	6	500	M16	30	75	m6	140	79.5	20	223.5
–	168	–	–	-K4	(132)	300	230	19.0	5	265	M12	22	38	k6	80	41.0	10	114.5
					(160)	350	250	25.0	6	300	M16	20	42	k6	110	45.0	12	153.0
					(180)	350	250	15.5	6	300	M16x22	21	48	k6	110	51.5	14	169.5
					(200)	400	300	25.0	6	350	M16	30	55	m6	110	59.0	16	179.5
					(225)	450	350	27.0	6	400	M16	30	60	m6	140	64.0	18	252.0
188	–	–	–	-K4	(160)	350	250	25.0	6	300	M16	20	42	k6	110	45.0	12	112.0
					(180)	350	250	15.5	6	300	M16x22	21	48	k6	110	51.5	14	128.5
					(200)	400	300	25.0	6	350	M16	30	55	m6	110	59.0	16	138.5
					(225)	450	350	27.0	6	400	M16	30	60	m6	140	64.0	18	211.0
					(250)	550	450	27.0	6	500	M16	30	65	m6	140	69.0	18	210.5
					(280)	550	450	27.0	6	500	M16	30	75	m6	140	79.5	20	223.5
–	188	–	–	-K4	(132)	300	230	19.0	5	265	M12	22	38	k6	80	41.0	10	73.5
					(160)	350	250	25.0	6	300	M16	20	42	k6	110	45.0	12	112.0
					(180)	350	250	15.5	6	300	M16x22	21	48	k6	110	51.5	14	128.5
					(200)	400	300	25.0	6	350	M16	30	55	m6	110	59.0	16	138.5
					(225)	450	350	27.0	6	400	M16	30	60	m6	140	64.0	18	211.0
					(250)	550	450	27.0	6	500	M16	30	65	m6	140	69.0	18	210.5
					(280)	550	450	27.0	6	500	M16	30	75	m6	140	79.5	20	223.5

⑤ Feather key / keyway DIN 6885

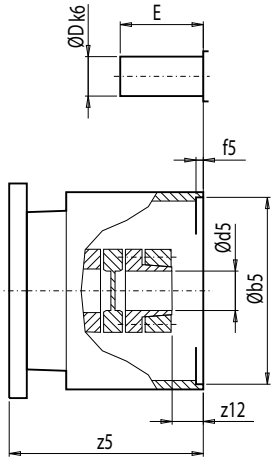
Dimensions

Input units KQ and KQS

KQ (keyway)



KQS (clamping ring hub / clamping collar hub)

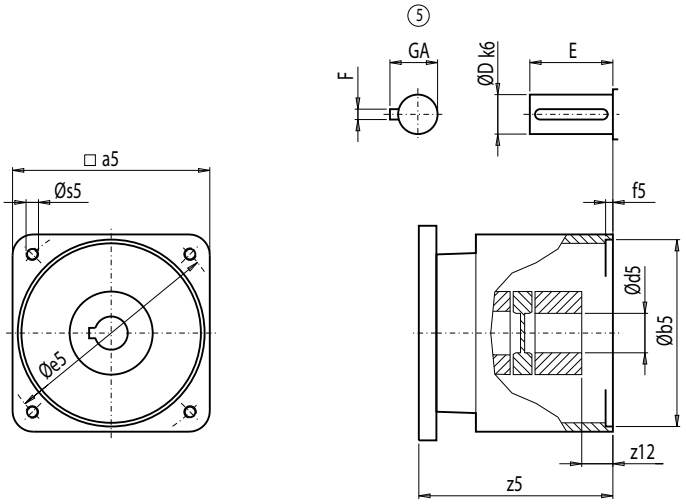


Gearbox E.Z.	D.	K./C.	FZ./ FD.			a5	b5	f5	e5	s5	z12	d5 D	E	GA	F	z5
Z28	28	B28	28	-KQ -KQS	(71.2)	82	60	5	75	M5	19	14	30	16.0	5	102.5
					(80.3)	100	80	5	100	M6	15	19	40	21.5	6	145.5
					(90.4)	115	110	7	130	M8	15	24	50	27.0	8	160.5
–	–	B38	38B	-KQ -KQS	(71.2)	82	60	5	75	M5	19	14	30	16.0	5	69.0
					(80.3)	100	80	5	100	M6	15	19	40	21.5	6	112.0
					(90.4)	115	110	7	130	M8	15	24	50	27.0	8	127.0
38	–	38 48	48B	-KQ -KQS	(71.2)	82	60	5	75	M5	19	14	30	16.0	5	94.0
					(80.3)	100	80	5	100	M6	15	19	40	21.5	6	137.0
					(90.4)	115	110	7	130	M8	15	24	50	27.0	8	152.0
–	38	–	–	-KQ -KQS	(71.2)	82	60	5	75	M5	19	14	30	16.0	5	109.0
					(80.3)	100	80	5	100	M6	15	19	40	21.5	6	152.0
					(90.4)	115	110	7	130	M8	15	24	50	27.0	8	167.0
48	–	68	68B	-KQ -KQS	(71.2)	82	60	5	75	M5	19	14	30	16.0	5	88.5
					(80.3)	100	80	5	100	M6	15	19	40	21.5	6	131.5
					(90.4)	115	110	7	130	M8	15	24	50	27.0	8	146.5
					(112.3)	140	130	5	165	M10	25	32	60	35.0	10	183.0
–	48	–	–	-KQ -KQS	(71.2)	82	60	5	75	M5	19	14	30	16.0	5	105.5
					(80.3)	100	80	5	100	M6	15	19	40	21.5	6	148.5
					(90.4)	115	110	7	130	M8	15	24	50	27.0	8	163.5
68	–	88	88B	-KQ -KQS	(71.2)	82	60	5	75	M5	19	14	30	16.0	5	82.5
					(80.3)	100	80	5	100	M6	15	19	40	21.5	6	125.5
					(90.4)	115	110	7	130	M8	15	24	50	27.0	8	140.5
					(112.3)	140	130	5	165	M10	25	32	60	35.0	10	175.0
					(132.3)	190	180	7	215	M12	30	38	80	41.0	10	224.5
–	68	–	–	-KQ -KQS	(71.2)	82	60	5	75	M5	19	14	30	16.0	5	101.0
					(80.3)	100	80	5	100	M6	15	19	40	21.5	6	144.0
					(90.4)	115	110	7	130	M8	15	24	50	27.0	8	159.0

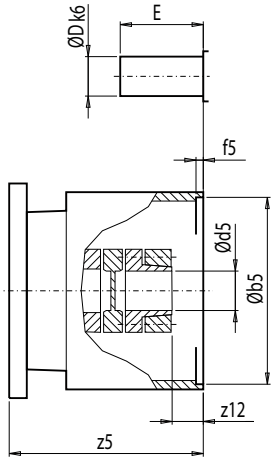
⑤ Feather key / keyway DIN 6885

Input units KQ and KQS (continued)

KQ (keyway)



KQS (clamping ring hub / clamping collar hub)



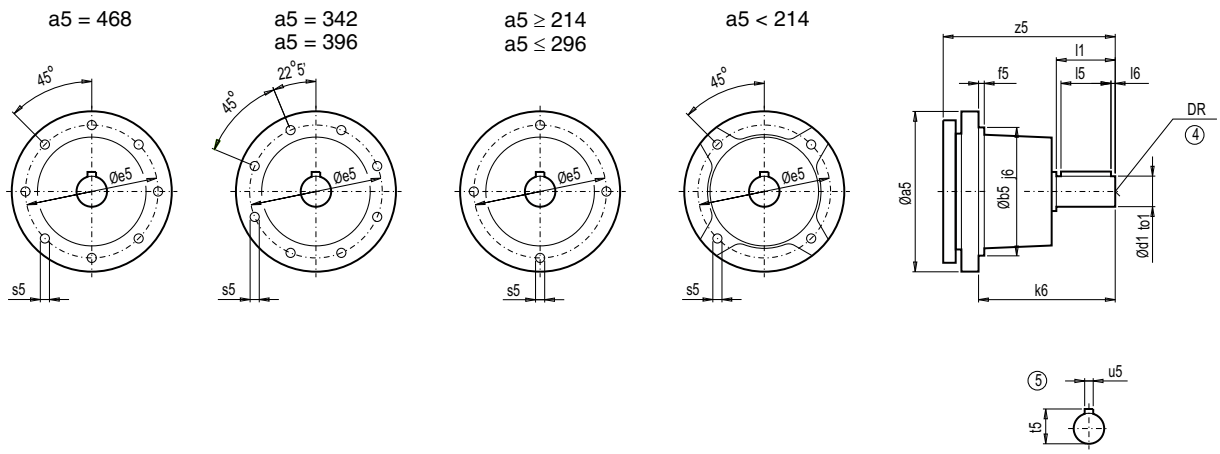
Gearbox E.Z.	D.	K./C.	FZ./ FD.			a5	b5	f5	e5	s5	z12	d5 D	E	GA	F	z5
88	–	108	108B	-KQ -KQS	(80.3)	100	80	5	100	M6	15	19	40	21.5	6	110.5
					(90.4)	115	110	7	130	M8	15	24	50	27.0	8	125.5
					(112.3)	140	130	5	165	M10	25	32	60	35.0	10	156.5
					(132.3)	190	180	7	215	M12	30	38	80	41.0	10	206.0
–	88	–	–	-KQ -KQS	(71.2)	82	60	5	75	M5	19	14	30	16.0	5	92.5
					(80.3)	100	80	5	100	M6	15	19	40	21.5	6	135.5
					(90.4)	115	110	7	130	M8	15	24	50	27.0	8	150.5
					(112.3)	140	130	5	165	M10	25	32	60	35.0	10	185.5
					(132.3)	190	180	7	215	M12	30	38	80	41.0	10	234.0
108	–	128	128B	-KQ -KQS	(90.4)	115	110	7	130	M8	15	24	50	27.0	8	114.0
					(112.3)	140	130	5	165	M10	25	32	60	35.0	10	145.0
					(132.3)	190	180	7	215	M12	30	38	80	41.0	10	193.5
–	108	–	–	-KQ -KQS	(80.3)	100	80	5	100	M6	15	19	40	21.5	6	129.5
					(90.4)	115	110	7	130	M8	15	24	50	27.0	8	144.5
					(112.3)	140	130	5	165	M10	25	32	60	35.0	10	176.5
					(132.3)	190	180	7	215	M12	30	38	80	41.0	10	226.0
128	–	148	148B	-KQ -KQS	(112.3)	140	130	5	165	M10	25	32	60	35.0	10	134.5
					(132.3)	190	180	7	215	M12	30	38	80	41.0	10	183.0
–	128	–	–	-KQ -KQS	(90.4)	115	110	7	130	M8	15	24	50	27.0	8	137.5
					(112.3)	140	130	5	165	M10	25	32	60	35.0	10	168.5
					(132.3)	190	180	7	215	M12	30	38	80	41.0	10	217.0
148	–	168	168B	-KQ -KQS	(132.3)	190	180	7	215	M12	30	38	80	41.0	10	175.0
–	148	–	–	-KQ -KQS	(112.3)	140	130	5	165	M10	25	32	60	35.0	10	165.5
					(132.3)	190	180	7	215	M12	30	38	80	41.0	10	213.0
168	–	188	188B	-KQ -KQS	(132.3)	190	180	7	215	M12	30	38	80	41.0	10	160.5
–	168	–	–	-KQ -KQS	(132.3)	190	180	7	215	M12	30	38	80	41.0	10	201.5
–	188	–	–	-KQ -KQS	(132.3)	190	180	7	215	M12	30	38	80	41.0	10	160.5

⑤ Feather key / keyway DIN 6885

Input units

Dimensions

Input unit A



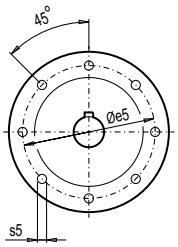
Gearbox E.Z.	D.	K./C.	FZ./ FD.			a5	b5	f5	e5	s5	d1	to1	l1	l5	l6	t5	u5	DR	k6	z5
–	–	B38	38B	-A	(71)	136	95	4.0	116	M8x14	16	k6	40	32	4	18.0	5	M5x12.5	61	125.5
					(80)	140	95	4.0	116	M8x14	19	k6	40	32	4	21.5	6	M6x16	61	160.5
					(90)	140	95	4.0	116	M8x14	24	k6	50	40	5	27.0	8	M8x19	71	170.5
					(100)	174	120	4.0	145	M10x17	28	k6	60	50	5	31.0	8	M10x22	83	186.5
38	–	38 48	48B	-A	(71)	136	95	4.0	116	M8x14	16	k6	40	32	4	18.0	5	M5x12.5	61	151.0
					(80)	140	95	4.0	116	M8x14	19	k6	40	32	4	21.5	6	M6x16	61	186.0
					(90)	140	95	4.0	116	M8x14	24	k6	50	40	5	27.0	8	M8x19	71	196.0
					(100)	174	120	4.0	145	M10x17	28	k6	60	50	5	31.0	8	M10x22	83	212.0
–	38	–	–	-A	(71)	136	95	4.0	116	M8x14	16	k6	40	32	4	18.0	5	M5x12.5	61	166.0
					(80)	140	95	4.0	116	M8x14	19	k6	40	32	4	21.5	6	M6x16	61	201.0
					(90)	140	95	4.0	116	M8x14	24	k6	50	40	5	27.0	8	M8x19	71	211.0
48	–	68	68B	-A	(71)	136	95	4.0	116	M8x14	16	k6	40	32	4	18.0	5	M5x12.5	61	145.5
					(80)	140	95	4.0	116	M8x14	19	k6	40	32	4	21.5	6	M6x16	61	180.5
					(90)	140	95	4.0	116	M8x14	24	k6	50	40	5	27.0	8	M8x19	71	190.5
					(100)	174	120	4.0	145	M10x17	28	k6	60	50	5	31.0	8	M10x22	83	206.5
					(112)	178	120	4.0	145	M10x17	28	k6	60	50	5	31.0	8	M10x22	83	207.5
–	48	–	–	-A	(71)	136	95	4.0	116	M8x14	16	k6	40	32	4	18.0	5	M5x12.5	61	162.5
					(80)	140	95	4.0	116	M8x14	19	k6	40	32	4	21.5	6	M6x16	61	197.5
					(90)	140	95	4.0	116	M8x14	24	k6	50	40	5	27.0	8	M8x19	71	207.5
					(100)	174	120	4.0	145	M10x17	28	k6	60	50	5	31.0	8	M10x22	83	223.5
68	–	88	88B	-A	(71)	136	95	4.0	116	M8x14	16	k6	40	32	4	18.0	5	M5x12.5	61	139.5
					(80)	140	95	4.0	116	M8x14	19	k6	40	32	4	21.5	6	M6x16	61	174.5
					(90)	140	95	4.0	116	M8x14	24	k6	50	40	5	27.0	8	M8x19	71	184.5
					(100)	174	120	4.0	145	M10x17	28	k6	60	50	5	31.0	8	M10x22	83	200.5
					(112)	178	120	4.0	145	M10x17	28	k6	60	50	5	31.0	8	M10x22	83	199.5
					(132)	214	160	3.5	184	M16x22	38	k6	80	70	5	41.0	10	M12x28	168	284.0
–	68	–	–	-A	(71)	136	95	4.0	116	M8x14	16	k6	40	32	4	18.0	5	M5x12.5	61	158.0
					(80)	140	95	4.0	116	M8x14	19	k6	40	32	4	21.5	6	M6x16	61	193.0
					(90)	140	95	4.0	116	M8x14	24	k6	50	40	5	27.0	8	M8x19	71	203.0
					(100)	174	120	4.0	145	M10x17	28	k6	60	50	5	31.0	8	M10x22	83	219.0

④ DIN 332

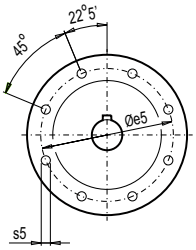
⑤ Feather key / keyway DIN 6885

Input unit A (continued)

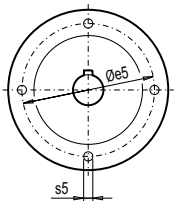
a5 = 468



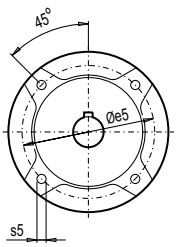
a5 = 342
a5 = 396

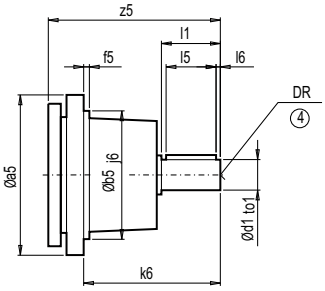


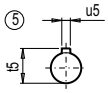
a5 ≥ 214
a5 ≤ 296



a5 < 214







Gearbox E.Z.	D.	K./C.	FZ./ FD.			a5	b5	f5	e5	s5	d1	to1	l1	l5	l6	t5	u5	DR	k6	z5
88	-	108	108B	-A	(90)	140	95	4.0	116	M8x14	24	k6	50	40	5	27.0	8	M8x19	71	169.0
					(100)	174	120	4.0	145	M10x17	28	k6	60	50	5	31.0	8	M10x22	83	182.5
					(112)	178	120	4.0	145	M10x17	28	k6	60	50	5	31.0	8	M10x22	83	180.5
					(132)	214	160	3.5	184	M16x22	38	k6	80	70	5	41.0	10	M12x28	168	265.0
					(160)	251	160	5.0	184	M16x28	42	k6	110	90	10	45.0	12	M16x36	215	308.5
–	88	–	–	-A	(71)	136	95	4.0	116	M8x14	16	k6	40	32	4	18.0	5	M5x12.5	61	149.5
					(80)	140	95	4.0	116	M8x14	19	k6	40	32	4	21.5	6	M6x16	61	184.5
					(90)	140	95	4.0	116	M8x14	24	k6	50	40	5	27.0	8	M8x19	71	194.5
					(100)	174	120	4.0	145	M10x17	28	k6	60	50	5	31.0	8	M10x22	83	210.5
					(112)	178	120	4.0	145	M10x17	28	k6	60	50	5	31.0	8	M10x22	83	210.0
					(132)	214	160	3.5	184	M16x22	38	k6	80	70	5	41.0	10	M12x28	168	293.5
108	–	128	128B	-A	(90)	140	95	4.0	116	M8x14	24	k6	50	40	5	27.0	8	M8x19	71	157.5
					(100)	174	120	4.0	145	M10x17	28	k6	60	50	5	31.0	8	M10x22	83	170.5
					(112)	178	120	4.0	145	M10x17	28	k6	60	50	5	31.0	8	M10x22	83	169.0
					(132)	214	160	3.5	184	M16x22	38	k6	80	70	5	41.0	10	M12x28	168	252.5
					(160)	251	160	5.0	184	M16x28	42	k6	110	90	10	45.0	12	M16x36	215	297.0
					(200)	296	195	5.0	230	M16x28	55	m6	110	90	10	59.0	16	M20x42	235	317.5
–	108	–	–	-A	(80)	140	95	4.0	116	M8x14	19	k6	40	32	4	21.5	6	M6x16	61	178.5
					(90)	140	95	4.0	116	M8x14	24	k6	50	40	5	27.0	8	M8x19	71	188.5
					(100)	174	120	4.0	145	M10x17	28	k6	60	50	5	31.0	8	M10x22	83	204.5
					(112)	178	120	4.0	145	M10x17	28	k6	60	50	5	31.0	8	M10x22	83	201.0
					(132)	214	160	3.5	184	M16x22	38	k6	80	70	5	41.0	10	M12x28	168	285.5
					(160)	251	160	5.0	184	M16x28	42	k6	110	90	10	45.0	12	M16x36	215	327.0
128	–	148	148B	-A	(100)	174	120	4.0	145	M10x17	28	k6	60	50	5	31.0	8	M10x22	83	161.0
					(112)	178	120	4.0	145	M10x17	28	k6	60	50	5	31.0	8	M10x22	83	158.5
					(132)	214	160	3.5	184	M16x22	38	k6	80	70	5	41.0	10	M12x28	168	242.0
					(160)	251	160	5.0	184	M16x28	42	k6	110	90	10	45.0	12	M16x36	215	280.5
					(200)	296	195	5.0	230	M16x28	55	m6	110	90	10	59.0	16	M20x42	235	304.0
					(225)	342	250	5.0	300	M16x22	60	m6	140	110	15	64.0	18	M20x42	259	361.5
–	128	–	–	-A	(90)	140	95	4.0	116	M8x14	24	k6	50	40	5	27.0	8	M8x19	71	181.5
					(100)	174	120	4.0	145	M10x17	28	k6	60	50	5	31.0	8	M10x22	83	197.5
					(112)	178	120	4.0	145	M10x17	28	k6	60	50	5	31.0	8	M10x22	83	193.0
					(132)	214	160	3.5	184	M16x22	38	k6	80	70	5	41.0	10	M12x28	168	276.5
					(160)	251	160	5.0	184	M16x28	42	k6	110	90	10	45.0	12	M16x36	215	318.0
					(200)	296	195	5.0	230	M16x28	55	m6	110	90	10	59.0	16	M20x42	235	341.5

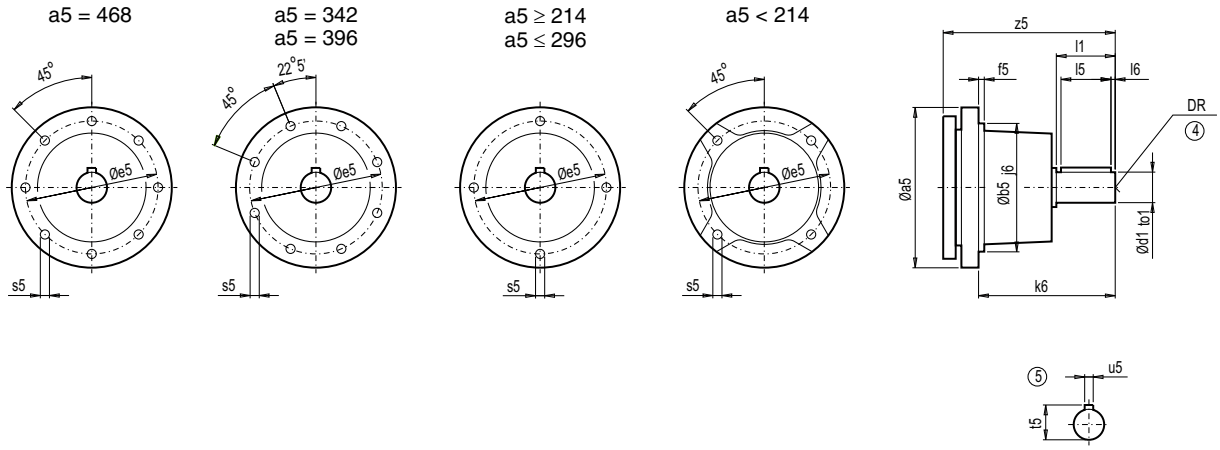
④ DIN 332

⑤ Feather key / keyway DIN 6885

Input units

Dimensions

Input unit A (continued)



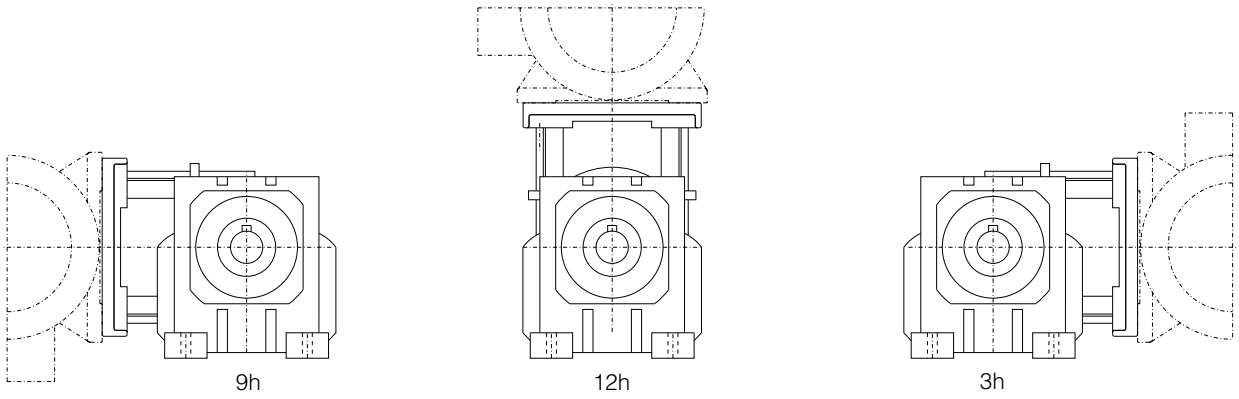
Gearbox E.Z.	D.	K./C.	FZ./ FD.			a5	b5	f5	e5	s5	d1	to1	l1	l5	l6	t5	u5	DR	k6	z5
148	–	168	168B	-A	(132)	214	160	3.5	184	M16x22	38	k6	80	70	5	41.0	10	M12x28	168.0	234.0
					(160)	251	160	5.0	184	M16x28	42	k6	110	90	10	45.0	12	M16x36	215.0	273.0
					(200)	296	195	5.0	230	M16x28	55	m6	110	90	10	59.0	16	M20x42	235.0	296.5
					(225)	342	250	5.0	300	M16x22	60	m6	140	110	15	64.0	18	M20x42	259.0	354.0
					(250)	396	250	5.0	300	M16x22	65	m6	140	110	15	69.0	18	M20x42	259.0	353.5
					(280)	485	250	5.0	300	M20x34	70	m6	140	110	15	74.5	20	M20x42	300.0	361.5
–	148	–	–	-A	(100)	174	120	4.0	145	M10x17	28	k6	60	50	5	31.0	8	M10x22	83.0	192.5
					(112)	178	120	4.0	145	M10x17	28	k6	60	50	5	31.0	8	M10x22	83.0	190.0
					(132)	214	160	3.5	184	M16x22	38	k6	80	70	5	41.0	10	M12x28	168.0	272.5
					(160)	251	160	5.0	184	M16x28	42	k6	110	90	10	45.0	12	M16x36	215.0	311.5
					(200)	296	195	5.0	230	M16x28	55	m6	110	90	10	59.0	16	M20x42	235.0	335.0
					(225)	342	250	5.0	300	M16x22	60	m6	140	110	15	64.0	18	M20x42	259.0	392.5
168	–	188	188B 208	-A	(132)	214	160	3.5	184	M16x22	38	k6	80	70	5	41.0	10	M12x28	168.0	220.0
					(160)	251	160	5.0	184	M16x28	42	k6	110	90	10	45.0	12	M16x36	215.0	259.0
					(200)	296	195	5.0	230	M16x28	55	m6	110	90	10	59.0	16	M20x42	235.0	282.5
					(225)	342	250	5.0	300	M16x22	60	m6	140	110	15	64.0	18	M20x42	259.0	340.0
					(250)	396	250	5.0	300	M16x22	65	m6	140	110	15	69.0	18	M20x42	259.0	339.5
					(280)	468	250	5.0	300	M20x34	70	m6	140	110	15	74.5	20	M20x42	288.5	347.5
–	168	–	–	-A	(132)	214	160	3.5	184	M16x22	38	k6	80	70	5	41.0	10	M12x28	168.0	261.0
					(160)	251	160	5.0	184	M16x28	42	k6	110	90	10	45.0	12	M16x36	215.0	300.0
					(200)	296	195	5.0	230	M16x28	55	m6	110	90	10	59.0	16	M20x42	235.0	323.5
					(225)	342	250	5.0	300	M16x22	60	m6	140	110	15	64.0	18	M20x42	259.0	381.0
188	–	–	–	A-	(160)	251	160	5.0	184	M16x28	42	k6	110	90	10	45.0	12	M16x36	215.0	259.0
					(200)	296	195	5.0	230	M16x28	55	m6	110	90	10	59.0	16	M20x42	235.0	282.5
					(225)	342	250	5.0	300	M16x22	60	m6	140	110	15	64.0	18	M20x42	259.0	340.0
					(250)	396	250	5.0	300	M16x22	65	m6	140	110	15	69.0	18	M20x42	259.0	339.5
					(280)	485	250	5.0	300	M20x34	70	m6	140	110	15	74.5	20	M20x42	286.0	347.5
–	188	–	–	-A	(132)	214	160	3.5	184	M16x22	38	k6	80	70	5	41.0	10	M12x28	168.0	220.0
					(160)	251	160	5.0	184	M16x28	42	k6	110	90	10	45.0	12	M16x36	215.0	259.0
					(200)	296	195	5.0	230	M16x28	55	m6	110	90	10	59.0	16	M20x42	235.0	282.5
					(225)	342	250	5.0	300	M16x22	60	m6	140	110	15	64.0	18	M20x42	259.0	340.0
					(250)	396	250	5.0	300	M16x22	65	m6	140	110	15	69.0	18	M20x42	259.0	339.5
					(280)	485	250	5.0	300	M20x34	70	m6	140	110	15	74.5	20	M20x42	286.0	347.5

④ DIN 332

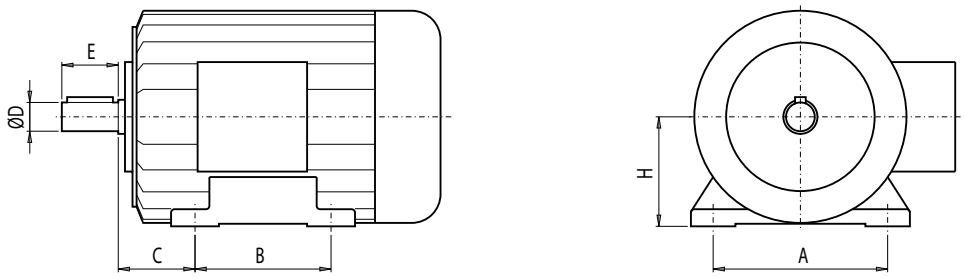
⑤ Feather key / keyway DIN 6885

Input unit P

Piggy back design position



Fixing dimensions for surface-cooled AC motors, mounting position IM B3 to DIN 42673/1

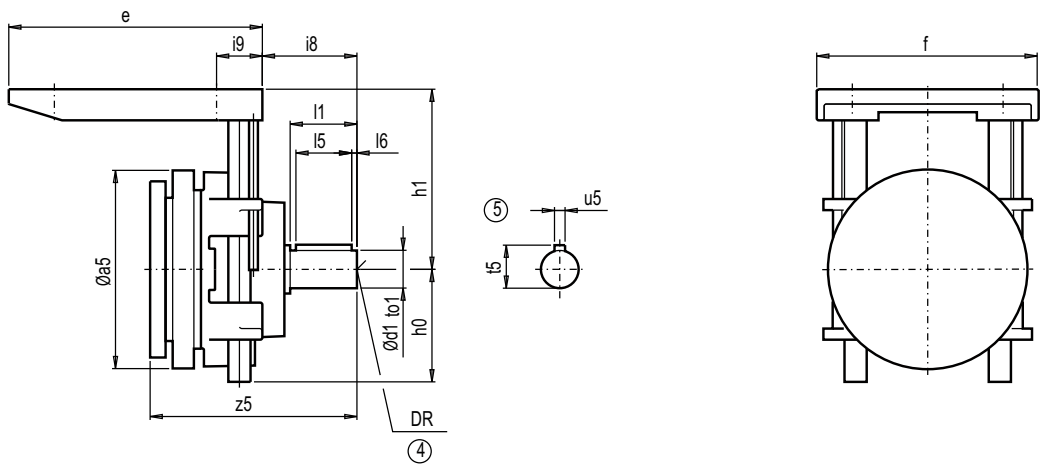


Size	D	E	C	H	B	A
80	19	40	50	80	100	125
90S	24	50	56	90	100	140
90L					125	
100L	28	60	63	100	140	160
112M	28	60	70	112	140	190
132S	38	80	89	132	140	216
132M					178	
160M	42	110	108	160	210	254
160L					254	
180M	48	110	121	180	241	279
180L					279	
200L	55	110	133	200	305	318
225S	55 60*)	110 140*)	149	225	286	356
225M					311	
250M	60 65*)	140	168	250	349	406
280S	65 75*)	140	190	280	368	457
280M					419	

*) 4-pole and multi-pole motors

Dimensions

Input unit P (continued)

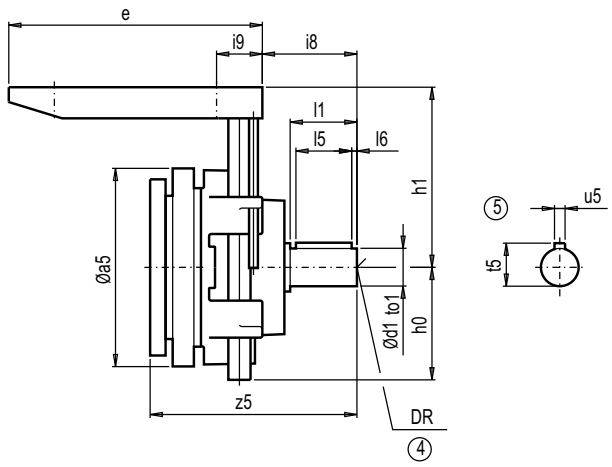


Gearbox			a5	e	f	i9	12h h0 Max.	12h h1 Min.	12h h1 Max.	3/9h h0 Max.	3/9h h1 Min.	3/9h h1 Max.	d1	to1	l1	l5	l6	t5	u5	DR	i8	z5
F.38B	-P	(80)	140	225	174	44	88	130	225	88	130	225	19	k6	40	32	4	21.5	6	M6x16	53	160.5
		(90)	140	225	174	53	88	130	225	88	130	225	24	k6	50	40	5	27.0	8	M8x19	63	170.5
		(100)	174	250	232	60	88	145	240	88	145	240	28	k6	60	50	5	31.0	8	M10x22	73	186.5
E./Z.38 K.38/48 C.38/48	-P	(80)	140	225	174	44	88	130	235	88	130	235	19	k6	40	32	4	21.5	6	M6x16	53	185.5
		(90)	140	225	174	53	88	130	235	88	130	235	24	k6	50	40	5	27.0	8	M8x19	63	195.5
		(100)	174	250	232	60	88	145	240	88	145	240	28	k6	60	50	5	31.0	8	M10x22	73	211.5
D.38	-P	(80)	140	225	174	44	88	130	235	88	130	235	19	k6	40	32	4	21.5	6	M6x16	53	200.5
		(90)	140	225	174	53	88	130	235	88	130	235	24	k6	50	40	5	27.0	8	M8x19	63	210.0
E./Z.48	-P	(80)	140	225	174	44	88	130	235	88	140	235	19	k6	40	32	4	21.5	6	M6x16	53	180.0
		(90)	140	225	174	53	88	130	235	88	140	235	24	k6	50	40	5	27.0	8	M8x19	63	190.0
		(100)	174	250	232	60	88	145	240	88	145	240	28	k6	60	50	5	31.0	8	M10x22	73	206.0
		(112)	178	250	232	67	88	145	240	88	145	240	28	k6	60	50	5	31.0	8	M10x22	73	207.0
D.48	-P	(80)	140	225	174	44	88	130	235	88	140	235	19	k6	40	32	4	21.5	6	M6x16	53	197.0
		(90)	140	225	174	53	88	130	235	88	140	235	24	k6	50	40	5	27.0	8	M8x19	63	207.0
		(100)	174	250	232	60	88	145	240	88	145	240	28	k6	60	50	5	31.0	8	M10x22	73	223.0
F.48B	-P	(80)	140	225	174	44	88	130	225	88	130	225	19	k6	40	32	4	21.5	6	M6x16	53	186.0
		(90)	140	225	174	53	88	130	225	88	130	225	24	k6	50	40	5	27.0	8	M8x19	63	196.0
		(100)	174	250	232	60	88	145	240	88	145	240	28	k6	60	50	5	31.0	8	M10x22	73	212.0
		(112)	178	250	232	67	88	145	240	88	145	240	28	k6	60	50	5	31.0	8	M10x22	73	181.0
E.68	-P	(80)	140	225	174	44	88	140	235	88	130	235	19	k6	40	32	4	21.5	6	M6x16	53	174.0
		(90)	140	225	174	53	88	140	235	88	130	235	24	k6	50	40	5	27.0	8	M8x19	63	184.0
		(100)	174	250	232	60	88	150	240	88	150	240	28	k6	60	50	5	31.0	8	M10x22	73	200.0
		(112)	178	250	232	67	88	150	240	88	150	240	28	k6	60	50	5	31.0	8	M10x22	73	199.0
		(132)	214	374	300	84	209	180	270	184	180	270	38	k6	80	70	5	41.0	10	M12x28	85	283.5
D.68	-P	(80)	140	225	174	44	88	140	235	88	160	235	19	k6	40	32	4	21.5	6	M6x16	53	192.5
		(90)	140	225	174	53	88	140	235	88	160	235	24	k6	50	40	5	27.0	8	M8x19	63	202.5
		(100)	174	250	232	60	88	145	240	88	160	240	28	k6	60	50	5	31.0	8	M10x22	73	218.5
Z.68	-P	(80)	140	225	174	44	88	140	235	88	160	235	19	k6	40	32	4	21.5	6	M6x16	53	174.0
		(90)	140	225	174	53	88	140	235	88	160	235	24	k6	50	40	5	27.0	8	M8x19	63	184.0
		(100)	174	250	232	60	88	145	240	88	160	240	28	k6	60	50	5	31.0	8	M10x22	73	200.0
		(112)	178	250	232	67	88	145	240	88	160	240	28	k6	60	50	5	31.0	8	M10x22	73	199.0
		(132)	214	374	300	84	139	180	230	139	180	230	38	k6	80	70	5	41.0	10	M12x28	85	283.5

④ DIN 332

⑤ Feather key / keyway DIN 6885

Input unit P (continued)



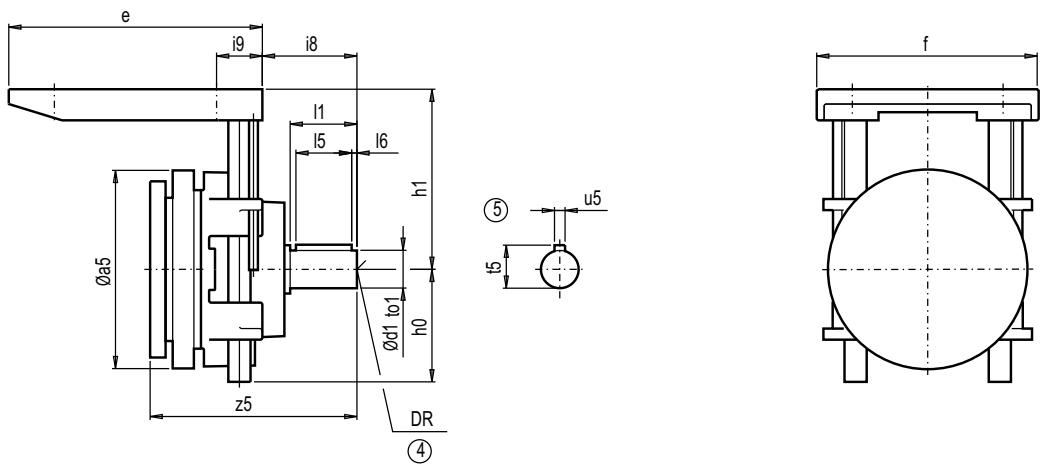
Gearbox							12h			3/9h												
			a5	e	f	i9	h0	h1	h1	h0	h1	h1	d1	to1	l1	l5	l6	t5	u5	DR	i8	z5
							Max.	Min.	Max.	Max.	Min.	Max.										
K.68	-P	(80)	140	225	174	44	88	140	235	88	160	235	19	k6	40	32	4	21.5	6	M6x16	53	180.5
		(90)	140	225	174	53	88	140	235	88	160	235	24	k6	50	40	5	27.0	8	M8x19	63	190.5
		(100)	174	250	232	60	88	145	240	88	160	240	28	k6	60	50	5	31.0	8	M10x22	73	206.5
		(112)	178	250	232	67	88	145	240	88	160	240	28	k6	60	50	5	31.0	8	M10x22	73	207.5
F.68B	-P	(80)	140	225	174	44	88	140	225	88	140	225	19	k6	40	32	4	21.5	6	M6x16	53	180.5
		(90)	140	225	174	53	88	140	225	88	140	225	24	k6	50	40	5	27.0	8	M8x19	63	190.5
		(100)	174	250	232	60	88	145	240	88	148	238	28	k6	60	50	5	31.0	8	M10x22	73	206.5
		(112)	178	250	232	67	88	145	240	88	148	238	28	k6	60	50	5	31.0	8	M10x22	73	207.5
C.68	-P	(80)	140	225	174	44	88	170	235	88	140	235	19	k6	40	32	4	21.5	6	M6x16	53	180.0
		(90)	140	225	174	53	88	170	235	88	140	235	24	k6	50	40	5	27.0	8	M8x19	63	190.0
		(100)	174	250	232	60	88	175	240	88	145	240	28	k6	60	50	5	31.0	8	M10x22	73	206.0
		(112)	178	250	232	67	88	175	240	88	145	240	28	k6	60	50	5	31.0	8	M10x22	73	207.0
E.88	-P	(90)	140	225	174	53	88	165	235	88	160	235	24	k6	50	40	5	27.0	8	M8x19	63	169.0
		(100)	174	250	232	60	88	160	240	88	160	240	28	k6	60	50	5	31.0	8	M10x22	73	182.5
		(112)	178	250	232	67	88	160	240	88	160	240	28	k6	60	50	5	31.0	8	M10x22	73	180.5
		(132)	214	374	300	84	139	200	270	139	180	270	38	k6	80	70	5	41.0	10	M12x29	85	265.0
		(160)	251	374	300	86	139	200	270	134	180	270	42	k6	110	90	10	45.0	12	M16x36	132	308.5
Z.88	-P	(90)	140	225	174	53	88	160	235	88	190	235	24	k6	50	40	5	27.0	8	M8x19	63	169.0
		(100)	174	250	232	60	88	160	240	88	190	240	28	k6	60	50	5	31.0	8	M10x22	73	182.5
		(112)	178	250	232	67	88	160	240	88	190	240	28	k6	60	50	5	31.0	8	M10x22	73	180.5
		(132)	214	374	300	84	154	180	230	124	220	270	38	k6	80	70	5	41.0	10	M12x29	85	265.0
		(160)	251	374	300	86	209	180	230	184	220	270	42	k6	110	90	10	45.0	12	M16x36	132	308.5
K.88	-P	(80)	140	225	174	44	88	160	235	88	190	235	19	k6	40	32	4	21.5	6	M6x16	53	174.5
		(90)	140	225	174	53	88	160	235	88	190	235	24	k6	50	40	5	27.0	8	M8x19	63	184.5
		(100)	174	250	232	60	88	160	240	88	190	240	28	k6	60	50	5	31.0	8	M10x22	73	200.5
		(112)	178	250	232	67	88	160	240	88	190	240	28	k6	60	50	5	31.0	8	M10x22	73	199.5
		(132)	214	374	300	84	139	180	230	139	180	230	38	k6	80	70	5	41.0	10	M12x28	85	284.0
F.88B	-P	(80)	140	225	174	44	88	163	228	88	168	228	19	k6	40	32	4	21.5	6	M6x16	53	174.5
		(90)	140	225	174	53	88	163	228	88	168	228	24	k6	50	40	5	27.0	8	M8x19	63	184.5
		(100)	174	250	232	60	88	163	238	88	160	240	28	k6	60	50	5	31.0	8	M10x22	73	200.5
		(112)	178	250	232	67	88	163	238	88	160	240	28	k6	60	50	5	31.0	8	M10x22	73	199.5
		(132)	214	374	300	84	137	178	228	127	188	228	38	k6	80	70	5	41.0	10	M12x28	85	284.0

④ DIN 332

⑤ Feather key / keyway DIN 6885

Dimensions

Input unit P (continued)

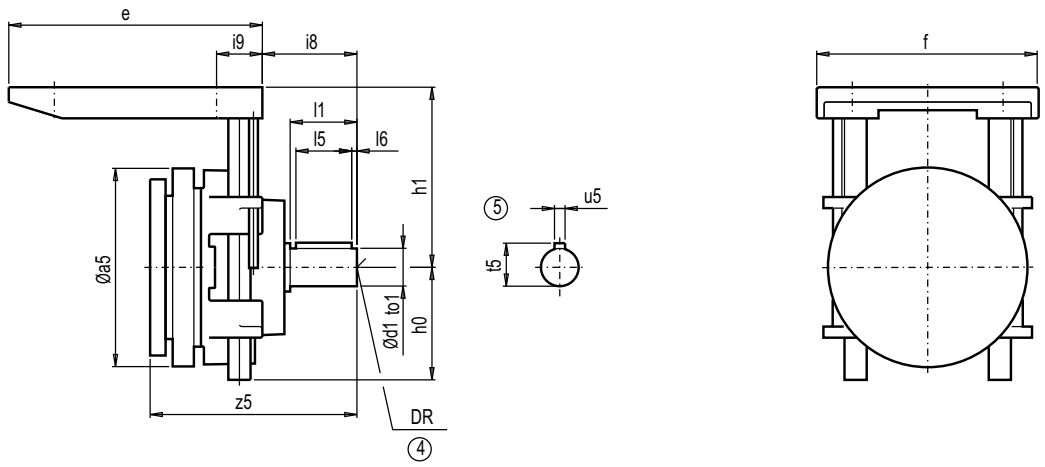


Gearbox							12h			3/9h												
			a5	e	f	i9	h0	h1	h1	h0	h1	h1	d1	to1	l1	l5	l6	t5	u5	DR	i8	z5
							Max.	Min.	Max.	Max.	Min.	Max.										
C.88	-P	(80)	140	225	174	44	88	200	235	88	150	235	19	k6	40	32	4	21.5	6	M6x16	53	174.0
		(90)	140	225	174	53	88	200	235	88	150	235	24	k6	50	40	5	27.0	8	M8x19	63	184.0
		(100)	174	250	232	60	88	200	240	88	145	240	28	k6	60	50	5	31.0	8	M10x22	73	200.0
		(112)	178	250	232	67	88	200	240	88	145	240	28	k6	60	50	5	31.0	8	M10x22	73	199.0
		(132)	214	374	300	84	139	220	270	134	220	270	38	k6	80	70	5	41.0	10	M12x28	85	283.5
D.88	-P	(80)	140	225	174	44	88	160	235	88	190	235	19	k6	40	32	4	21.5	6	M6x16	53	184.0
		(90)	140	225	174	53	88	160	235	88	190	235	24	k6	50	40	5	27.0	8	M8x19	63	194.0
		(100)	174	250	232	60	88	160	240	88	190	240	28	k6	60	50	5	31.0	8	M10x22	73	210.0
		(112)	178	250	232	67	88	160	240	88	190	240	28	k6	60	50	5	31.0	8	M10x22	73	209.5
		(132)	214	374	300	84	154	180	230	124	220	270	38	k6	80	70	5	41.0	10	M12x28	85	293.0
E.108	-P	(90)	140	225	174	53	88	195	300	88	195	300	24	k6	50	40	5	27.0	8	M8x19	63	157.5
		(100)	174	250	232	60	88	220	320	88	220	320	28	k6	60	50	5	31.0	8	M10x22	73	170.5
		(112)	178	250	232	67	88	220	320	88	220	320	28	k6	60	50	5	31.0	8	M10x22	73	169.0
		(132)	214	374	300	84	209	240	340	184	220	340	38	k6	80	70	5	41.0	10	M12x30	85	252.5
		(160)	251	374	300	86	184	240	340	159	220	340	42	k6	110	90	10	45.0	12	M16x36	132	297.0
		(180)	296	476	400	96	218	250	352	218	290	352	55	m6	110	90	10	59.0	16	M20x42	135	317.5
		(200)	296	476	400	108	218	250	352	218	290	352	55	m6	110	90	10	59.0	16	M20x42	135	317.5
Z.108	-P	(90)	140	225	174	53	88	190	300	88	230	300	24	k6	50	40	5	27.0	8	M8x19	63	157.5
		(100)	174	250	232	60	88	220	320	88	230	320	28	k6	60	50	5	31.0	8	M10x22	73	170.5
		(112)	178	250	232	67	88	220	320	88	230	320	28	k6	60	50	5	31.0	8	M10x22	73	169.0
		(132)	214	374	300	84	134	220	270	209	255	300	38	k6	80	70	5	41.0	10	M12x30	85	252.5
		(160)	251	374	300	86	134	220	270	209	255	305	42	k6	110	90	10	45.0	12	M16x36	132	297.0
		(180)	296	476	400	96	243	268	352	233	268	352	55	m6	110	90	10	59.0	16	M20x42	135	317.5
		(200)	296	476	400	108	243	268	352	233	268	352	55	m6	110	90	10	59.0	16	M20x42	135	317.5
K.108	-P	(80)	140	225	174	53	88	190	300	88	230	300	24	k6	50	40	5	27.0	8	M8x19	53	159.5
		(90)	140	225	174	53	88	190	300	88	230	300	24	k6	50	40	5	27.0	8	M8x19	63	169.5
		(100)	174	250	232	60	88	220	320	88	230	320	28	k6	60	50	5	31.0	8	M10x22	73	183.0
		(112)	178	250	232	67	88	220	320	88	230	320	28	k6	60	50	5	31.0	8	M10x22	73	181.0
		(132)	214	374	300	84	154	180	230	124	220	270	38	k6	80	70	5	41.0	10	M12x30	85	265.5
		(160)	251	374	300	86	209	180	230	184	220	270	42	k6	110	90	10	45.0	12	M16x36	132	309.0

④ DIN 332

⑤ Feather key / keyway DIN 6885

Input unit P (continued)



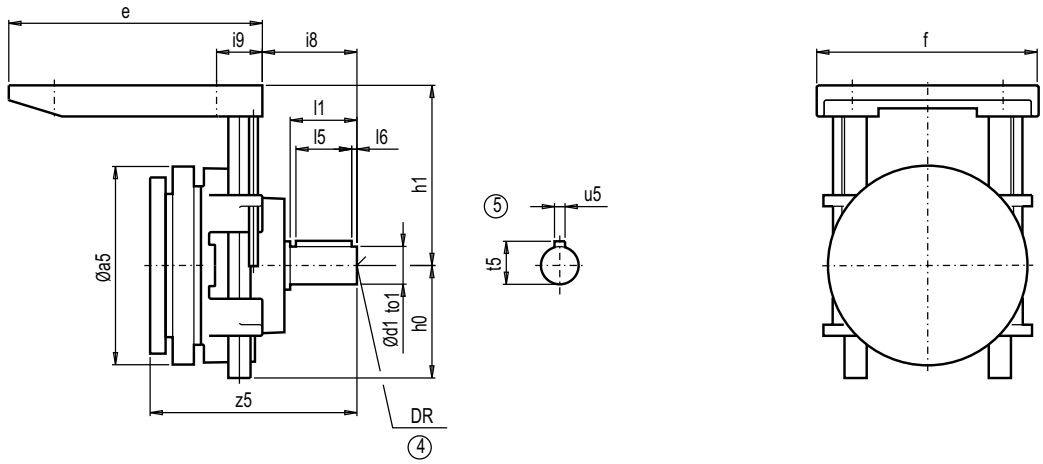
Gearbox			a5	e	f	i9	12h h0 Max.	12h h1 Min.	12h h1 Max.	3/9h h0 Max.	3/9h h1 Min.	3/9h h1 Max.	d1	to1	l1	l5	l6	t5	u5	DR	i8	z5
F.108B	-P	(80)	140	225	174	44	88	190	295	88	190	295	19	k6	40	32	4	21.5	6	M6x16	53	159.5
		(90)	140	225	174	53	88	190	295	88	190	295	24	k6	50	40	5	27.0	8	M8x19	63	169.5
		(100)	174	250	232	60	88	223	318	88	190	240	28	k6	60	50	5	31.0	8	M10x22	73	183.0
		(112)	178	250	232	67	88	223	318	88	190	240	28	k6	60	50	5	31.0	8	M10x22	73	181.0
		(132)	214	374	300	84	143	207	257	135	215	265	38	k6	80	70	5	41.0	10	M12x28	85	265.5
		(160)	251	374	300	86	143	207	257	135	215	265	42	k6	110	90	10	45.0	12	M16x36	132	309.0
D.108	-P	(80)	140	225	174	44	88	190	300	88	230	300	19	k6	40	32	4	21.5	6	M6x16	53	178.0
		(90)	140	225	174	53	88	190	300	88	230	300	24	k6	50	40	5	27.0	8	M8x19	63	188.0
		(100)	174	250	232	60	88	220	320	88	230	320	28	k6	60	50	5	31.0	8	M10x22	73	204.0
		(112)	178	250	232	67	88	220	320	88	230	320	28	k6	60	50	5	31.0	8	M10x22	73	200.5
		(132)	214	374	300	84	134	220	270	209	255	300	38	k6	80	70	5	41.0	10	M12x28	85	285.0
		(160)	251	374	300	86	134	220	270	209	255	305	42	k6	110	90	10	45.0	12	M16x36	132	326.5
E.128	-P	(100)	174	250	232	60	88	220	320	88	220	320	28	k6	60	50	5	31.0	8	M10x22	73	161.0
		(112)	178	250	232	67	88	220	320	88	220	320	28	k6	60	50	5	31.0	8	M10x22	73	158.5
		(132)	214	374	300	84	154	250	340	124	250	340	38	k6	80	70	5	41.0	10	M12x31	85	242.0
		(160)	251	374	300	86	209	250	340	184	250	340	42	k6	110	90	10	45.0	12	M16x36	132	280.5
		(180)	296	476	400	96	243	270	352	243	270	352	55	m6	110	90	10	59.0	16	M20x42	135	304.0
		(200)	296	476	400	108	243	270	352	243	270	352	55	m6	110	90	10	59.0	16	M20x42	135	304.0
		(225)	342	557	480	142	209	295	345	–	–	–	60	m6	140	110	15	64.0	18	M20x42	147	361.5
Z.128	-P	(100)	174	250	232	60	88	220	320	88	255	320	28	k6	60	50	5	31.0	8	M10x22	73	161.0
		(112)	178	250	232	67	88	220	320	88	255	320	28	k6	60	50	5	31.0	8	M10x22	73	158.5
		(132)	214	374	300	84	139	255	305	134	280	330	38	k6	80	70	5	41.0	10	M12x31	85	242.0
		(160)	251	374	300	86	139	255	305	134	280	330	42	k6	110	90	10	45.0	12	M16x36	132	280.5
		(180)	296	476	400	96	233	253	352	209	293	352	55	m6	110	90	10	59.0	16	M20x42	135	304.0
		(200)	296	476	400	108	233	253	352	209	293	352	55	m6	110	90	10	59.0	16	M20x42	135	304.0
		(225)	342	557	480	142	199	295	340	–	–	–	60	m6	140	110	15	64.0	18	M20x42	147	361.5
K.128	-P	(90)	140	225	174	53	88	230	300	88	255	300	24	k6	50	40	5	27.0	8	M8x19	63	158.0
		(100)	174	250	232	60	88	220	320	88	255	320	28	k6	60	50	5	31.0	8	M10x22	73	171.0
		(112)	178	250	232	67	88	220	320	88	255	320	28	k6	60	50	5	31.0	8	M10x22	73	169.5
		(132)	214	374	300	84	134	220	270	209	255	300	38	k6	80	70	5	41.0	10	M12x28	85	253.0
		(160)	251	374	300	86	134	220	270	209	255	305	42	k6	110	90	10	45.0	12	M16x36	132	297.5
		(180)	296	476	400	96	196	243	352	261	243	352	55	m6	110	90	10	59.0	16	M20x42	135	318.0
		(200)	296	476	400	108	196	243	352	261	243	352	55	m6	110	90	10	59.0	16	M20x42	135	318.0

④ DIN 332

⑤ Feather key / keyway DIN 6885

Dimensions

Input unit P (continued)

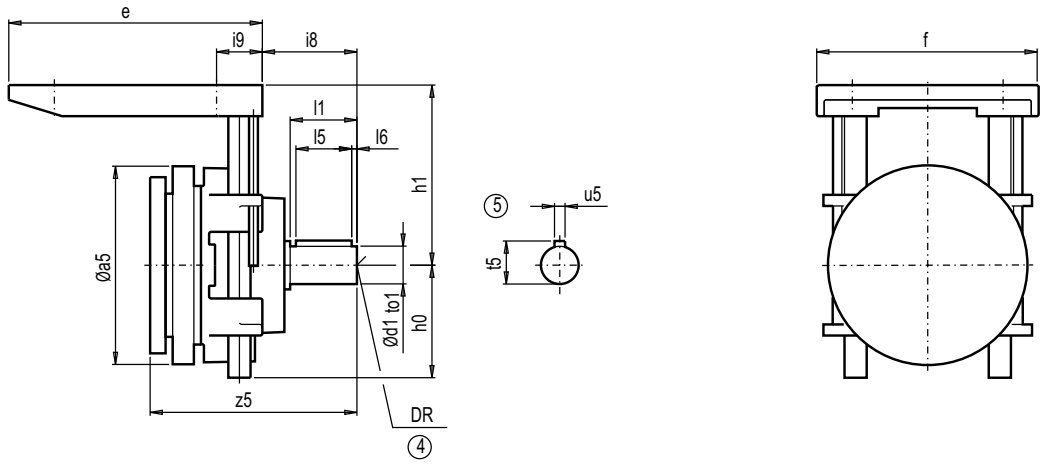


Gearbox			a5	e	f	i9	12h h0 Max.	12h h1 Min.	12h h1 Max.	3/9h h0 Max.	3/9h h1 Min.	3/9h h1 Max.	d1	to1	l1	l5	l6	t5	u5	DR	i8	z5
F.128B	-P	(90)	140	225	174	53	88	235	295	88	230	295	24	k6	50	40	5	27.0	8	M8x19	63	158.0
		(100)	174	250	232	60	88	250	320	88	235	320	28	k6	60	50	5	31.0	8	M10x22	73	171.0
		(112)	178	250	232	67	88	250	320	88	235	320	28	k6	60	50	5	31.0	8	M10x22	73	169.5
		(132)	214	374	300	84	195	265	365	175	285	365	38	k6	80	70	5	41.0	10	M12x28	85	253.0
		(160)	251	374	300	86	195	265	365	175	285	365	42	k6	110	90	10	45.0	12	M16x36	132	297.5
		(180)	296	476	400	96	217	268	358	217	268	358	55	m6	110	90	10	59.0	16	M20x42	135	318.0
		(200)	296	476	400	108	217	268	358	217	268	358	55	m6	110	90	10	59.0	16	M20x42	135	318.0
D.128	-P	(90)	140	225	174	53	88	230	300	88	255	300	24	k6	50	40	5	27.0	8	M8x19	63	181.0
		(100)	174	250	232	60	88	220	320	88	255	320	28	k6	60	50	5	31.0	8	M10x22	73	197.0
		(112)	178	250	232	67	88	220	320	88	255	320	28	k6	60	50	5	31.0	8	M10x22	73	192.5
		(132)	214	374	300	84	139	255	305	134	280	330	38	k6	80	70	5	41.0	10	M12x28	85	276.0
		(160)	251	374	300	86	139	255	305	134	280	330	42	k6	110	90	10	45.0	12	M16x36	132	317.5
		(180)	296	476	400	96	233	253	352	209	293	352	55	m6	110	90	10	59.0	16	M20x42	135	341.0
		(200)	296	476	400	108	233	253	352	209	293	352	55	m6	110	90	10	59.0	16	M20x42	135	341.0
E.148	-P	(132)	214	374	300	84	134	280	380	209	280	380	38	k6	80	70	5	41.0	10	M12x32	85	234.0
		(160)	251	374	300	86	134	280	380	209	280	380	42	k6	110	90	10	45.0	12	M16x36	132	273.0
		(180)	296	476	400	96	193	300	425	233	300	425	55	m6	110	90	10	59.0	16	M20x42	135	296.5
		(200)	296	476	400	108	193	300	425	233	300	425	55	m6	110	90	10	59.0	16	M20x42	135	296.5
		(225)	342	557	480	142	254	315	415	–	–	–	60	m6	140	110	15	64.0	18	M20x42	147	354.0
		(250)	396	557	480	161	254	305	350	–	–	–	65	m6	140	110	15	69.0	18	M20x42	147	353.5
		(280)	485	666	558	173	265	399	369	–	–	–	70	m6	140	110	15	74.5	20	M20x42	171	361.5
D.148	-P	(100)	174	250	232	60	88	245	320	88	280	320	28	k6	60	50	5	31.0	8	M10x22	73	192.0
		(112)	178	250	232	67	88	245	320	88	280	320	28	k6	60	50	5	31.0	8	M10x22	73	189.5
		(132)	214	374	300	84	184	280	330	159	305	355	38	k6	80	70	5	41.0	10	M12x28	85	272.0
		(160)	251	374	300	86	184	280	330	159	305	355	42	k6	110	90	10	45.0	12	M16x36	132	311.0
		(180)	296	476	400	96	248	318	407	248	318	407	55	m6	110	90	10	59.0	16	M20x42	135	334.5
		(200)	296	476	400	108	248	293	352	248	318	407	55	m6	110	90	10	59.0	16	M20x42	135	334.5
		(225)	342	557	480	142	199	305	350	–	–	–	60	m6	140	110	15	64.0	18	M20x42	147	392.0
Z.148	-P	(132)	214	374	300	84	184	280	330	159	305	355	38	k6	80	70	5	41.0	10	M12x28	85	234.0
		(160)	251	374	300	86	184	280	330	159	305	355	42	k6	110	90	10	45.0	12	M16x36	132	273.0
		(180)	296	476	400	96	248	318	407	248	318	407	55	m6	110	90	10	59.0	16	M20x42	135	296.5
		(200)	296	476	400	108	248	293	352	248	318	407	55	m6	110	90	10	59.0	16	M20x42	135	296.5
		(225)	342	557	480	142	199	305	350	–	–	–	60	m6	140	110	15	64.0	18	M20x42	147	354.0
		(250)	396	557	480	161	254	305	350	–	–	–	65	m6	140	110	15	69.0	18	M20x42	147	353.5
		(280)	485	666	558	173	265	399	429	–	–	–	70	m6	140	110	15	74.5	20	M20x42	171	361.5

④ DIN 332

⑤ Feather key / keyway DIN 6885

Input unit P (continued)



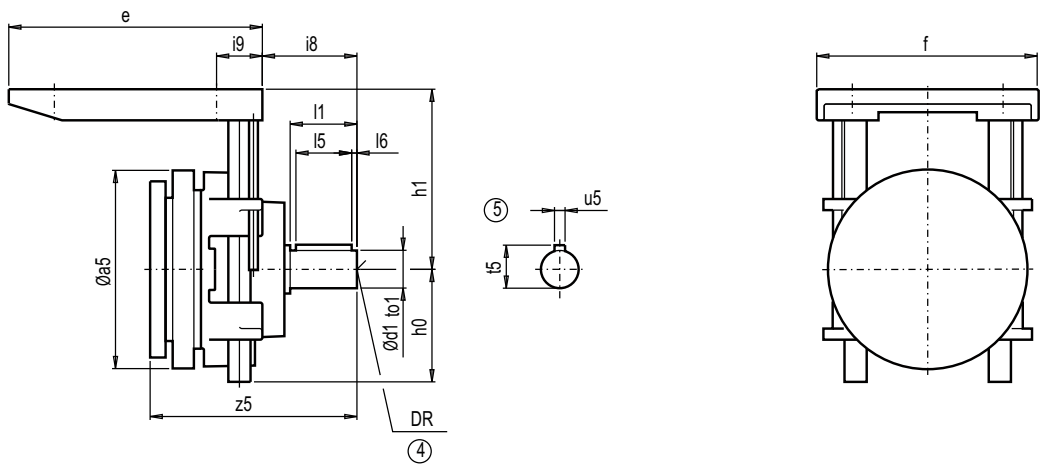
Gearbox			a5	e	f	i9	12h h0 Max.	12h h1 Min.	12h h1 Max.	3/9h h0 Max.	3/9h h1 Min.	3/9h h1 Max.	d1	to1	l1	l5	l6	t5	u5	DR	i8	z5
K.148	-P	(100)	174	250	232	60	88	245	320	88.0	280	320	28	k6	60	50	5	31.0	8	M10x22	73	161.5
		(112)	178	250	232	67	88	245	320	88.0	280	320	28	k6	60	50	5	31.0	8	M10x22	73	159.0
		(132)	214	374	300	84	139	255	305	134.0	280	330	38	k6	80	70	5	41.0	10	M12x28	85	242.5
		(160)	251	374	300	86	139	255	305	134.0	280	330	42	k6	110	90	10	45.0	12	M16x36	132	281.0
		(180)	296	476	400	96	193	293	352	233.0	253	352	55	m6	110	90	10	59.0	16	M20x42	135	304.5
		(200)	296	476	400	108	193	293	352	233.0	253	352	55	m6	110	90	10	59.0	16	M20x42	135	304.5
		(225)	342	557	480	142	199	345	390	–	–	–	60	m6	140	110	15	64.0	18	M20x42	147	362.0
F.148B	-P	(100)	174	250	232	60	88	255	320	88.0	255	320	28	k6	60	50	5	31.0	8	M10x22	73	161.5
		(112)	178	250	232	67	88	255	320	88.0	255	320	28	k6	60	50	5	31.0	8	M10x22	73	159.0
		(132)	214	374	300	84	170	290	365	175.0	285	365	38	k6	80	70	5	41.0	10	M12x28	85	242.5
		(160)	251	374	300	86	170	290	365	175.0	285	365	42	k6	110	90	10	45.0	12	M16x36	132	281.0
		(180)	296	476	400	96	192	293	358	198.0	287	357	55	m6	110	90	10	59.0	16	M20x42	135	304.5
		(200)	296	476	400	108	192	293	358	198.0	287	357	55	m6	110	90	10	59.0	16	M20x42	135	304.5
		(225)	342	557	480	142	244	323	353	187.5	393	423	60	m6	140	110	15	64.0	18	M20x42	147	362.0
D.168	-P	(132)	214	374	300	84	154	310	360	124.0	340	390	38	k6	80	70	5	41.0	10	M12x28	85	260.5
		(160)	251	374	300	86	154	310	360	124.0	340	390	42	k6	110	90	10	45.0	12	M16x36	132	299.5
		(180)	296	476	400	96	239	337	407	233.0	343	407	55	m6	110	90	10	59.0	16	M20x42	135	323.0
		(200)	296	476	400	108	239	337	407	233.0	343	407	55	m6	110	90	10	59.0	16	M20x42	135	323.0
		(225)	342	557	480	142	199	345	390	–	–	–	60	m6	140	110	15	64.0	18	M20x42	147	380.5
Z.168	-P	(132)	214	374	300	84	154	310	360	124.0	340	390	38	k6	80	70	5	41.0	10	M12x28	85	219.5
		(160)	251	374	300	86	154	310	360	124.0	340	390	42	k6	110	90	10	45.0	12	M16x36	132	258.5
		(180)	296	476	400	96	239	337	407	233.0	343	407	55	m6	110	90	10	59.0	16	M20x42	135	282.0
		(200)	296	476	400	108	239	337	407	233.0	343	407	55	m6	110	90	10	59.0	16	M20x42	135	282.0
		(225)	342	557	480	142	199	345	390	–	–	–	60	m6	140	110	15	64.0	18	M20x42	147	339.5
		(250)	396	557	480	161	194	345	390	–	–	–	65	m6	140	110	15	69.0	18	M20x42	147	339.0
		(280)	468	666	558	173	200	402	432	–	–	–	70	m6	140	110	15	74.5	20	M20x42	171	347.5
K.168	-P	(132)	214	374	300	84	184	280	330	159.0	305	355	38	k6	80	70	5	41.0	10	M12x28	85	234.5
		(160)	251	374	300	86	184	280	330	159.0	305	355	42	k6	110	90	10	45.0	12	M16x36	132	273.5
		(180)	296	476	400	96	239	337	407	209.0	277	352	55	m6	110	90	10	59.0	16	M20x42	135	297.0
		(200)	296	476	400	108	239	337	407	209.0	277	352	55	m6	110	90	10	59.0	16	M20x42	135	297.0
		(225)	342	557	480	142	199	390	435	–	–	–	60	m6	140	110	15	64.0	18	M20x42	147	354.5
		(250)	396	557	480	161	199	390	435	–	–	–	65	m6	140	110	15	69.0	18	M20x42	147	354.0
		(280)	485	666	558	173	180	472	502	–	–	–	70	m6	140	110	15	74.5	20	M20x42	171	361.5

④ DIN 332

⑤ Feather key / keyway DIN 6885

Dimensions

Input unit P (continued)

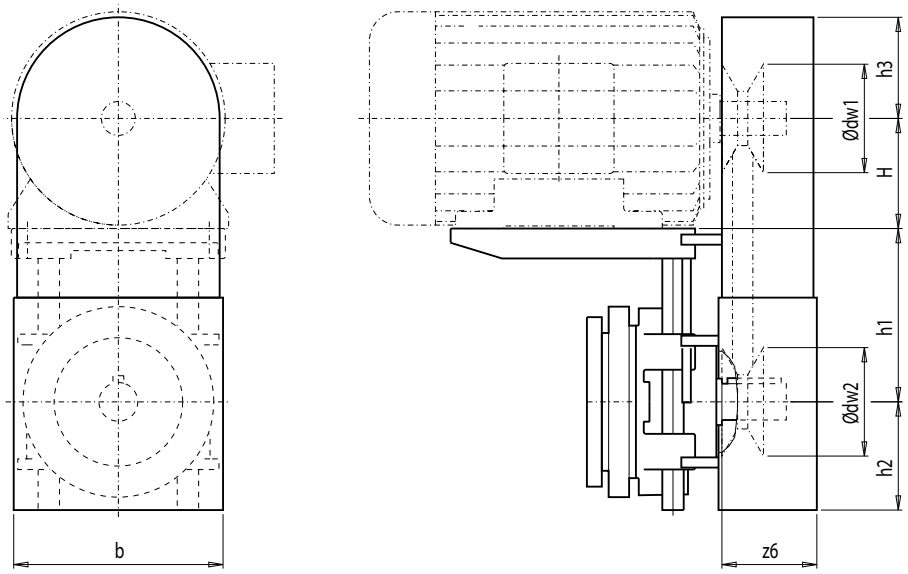


Gearbox			a5	e	f	i9	12h h0 Max.	12h h1 Min.	12h h1 Max.	3/9h h0 Max.	3/9h h1 Min.	3/9h h1 Max.	d1	to1	l1	l5	l6	t5	u5	DR	i8	z5
F.168B	-P	(132)	214	374	300	84	152.0	308	368	155.0	305	365	38	k6	80	70	5	41.0	10	M12x28	85	234.5
		(160)	251	374	300	86	152.0	308	368	155.0	305	365	42	k6	110	90	10	45.0	12	M16x36	132	273.5
		(180)	296	476	400	96	258.0	318	432	262.0	313	428	55	m6	110	90	10	59.0	16	M20x42	135	297.0
		(200)	296	476	400	108	258.0	318	432	262.0	313	428	55	m6	110	90	10	59.0	16	M20x42	135	297.0
		(225)	342	557	480	142	218.5	393	423	218.5	393	423	60	m6	140	110	15	64.0	18	M20x42	147	354.5
		(250)	396	557	480	161	255.5	356	386	187.5	424	454	65	m6	140	110	15	69.0	18	M20x42	147	354.0
		(280)	485	666	558	173	253.0	399	429	252.0	400	430	70	m6	140	110	15	74.5	20	M20x42	171	361.5
D.188	-P	(132)	214	374	300	84	120.0	340	380	125.0	372	412	38	k6	80	70	5	41.0	10	M12x28	85	219.5
		(160)	251	374	300	86	120.0	340	380	125.0	372	412	42	k6	110	90	10	45.0	12	M16x36	132	258.5
		(180)	296	476	400	96	207.0	368	433	193.0	382	432	55	m6	110	90	10	59.0	16	M20x42	135	282.0
		(200)	296	476	400	108	207.0	368	433	193.0	382	432	55	m6	110	90	10	59.0	16	M20x42	135	282.0
		(225)	342	557	480	142	193.5	393	423	–	–	–	60	m6	140	110	15	64.0	18	M20x42	147	339.5
		(250)	396	557	480	161	193.5	418	448	–	–	–	65	m6	140	110	15	69.0	18	M20x42	147	339.0
		(280)	485	666	558	173	201.0	399	424	–	–	–	70	m6	140	110	15	74.5	20	M20x42	171	347.0
Z.188	-P	(160)	251	374	300	86	120.0	340	380	125.0	372	412	42	k6	110	90	10	45.0	12	M16x36	132	259.0
		(180)	296	476	400	96	207.0	368	433	193.0	382	432	55	m6	110	90	10	59.0	16	M20x42	135	282.5
		(200)	296	476	400	108	207.0	368	433	193.0	382	432	55	m6	110	90	10	59.0	16	M20x42	135	282.5
		(225)	342	557	480	142	193.5	393	423	–	–	–	60	m6	140	110	15	64.0	18	M20x42	147	340.0
		(250)	396	557	480	161	193.5	418	448	–	–	–	65	m6	140	110	15	69.0	18	M20x42	147	339.5
		(280)	468	666	558	173	201.0	399	424	–	–	–	70	m6	140	110	15	74.5	20	M20x42	171	347.5
K.188	-P	(132)	214	374	300	84	140.0	360	410	160.0	300	370	38	k6	80	70	5	41.0	10	M12x28	85	220.0
		(160)	251	374	300	86	140.0	360	410	160.0	300	370	42	k6	110	90	10	45.0	12	M16x36	132	259.0
		(180)	296	476	400	96	197.0	378	433	183.0	302	357	55	m6	110	90	10	59.0	16	M20x42	135	282.5
		(200)	296	476	400	108	197.0	378	433	183.0	302	357	55	m6	110	90	10	59.0	16	M20x42	135	282.5
		(225)	342	557	480	142	223.5	463	493	–	–	–	60	m6	140	110	15	64.0	18	M20x42	147	340.0
		(250)	396	557	480	161	193.5	493	523	–	–	–	65	m6	140	110	15	69.0	18	M20x42	147	339.5
		(280)	485	666	558	173	180.0	472	502	–	–	–	70	m6	140	110	15	74.5	20	M20x42	171	347.0
F.188B	-P	(132)	214	374	300	84	125.0	335	375	125.0	335	375	38	k6	80	70	5	41.0	10	M12x28	85	220.0
		(160)	251	374	300	86	125.0	335	375	125.0	335	375	42	k6	110	90	10	45.0	12	M16x36	132	259.0
		(180)	296	476	400	96	228.0	347	432	232.0	343	428	55	m6	110	90	10	59.0	16	M20x42	135	282.5
		(200)	296	476	400	108	228.0	347	432	232.0	343	428	55	m6	110	90	10	59.0	16	M20x42	135	282.5
		(225)	342	557	480	142	196.5	390	420	223.5	463	493	60	m6	140	110	15	64.0	18	M20x42	147	340.0
		(250)	396	557	480	161	192.5	419	449	187.5	424	454	65	m6	140	110	15	69.0	18	M20x42	147	339.5
		(280)	468	666	558	173	186.5	463	493	181.0	471	501	70	m6	140	110	15	74.5	20	M20x42	171	347.5

④ DIN 332

⑤ Feather key / keyway DIN 6885

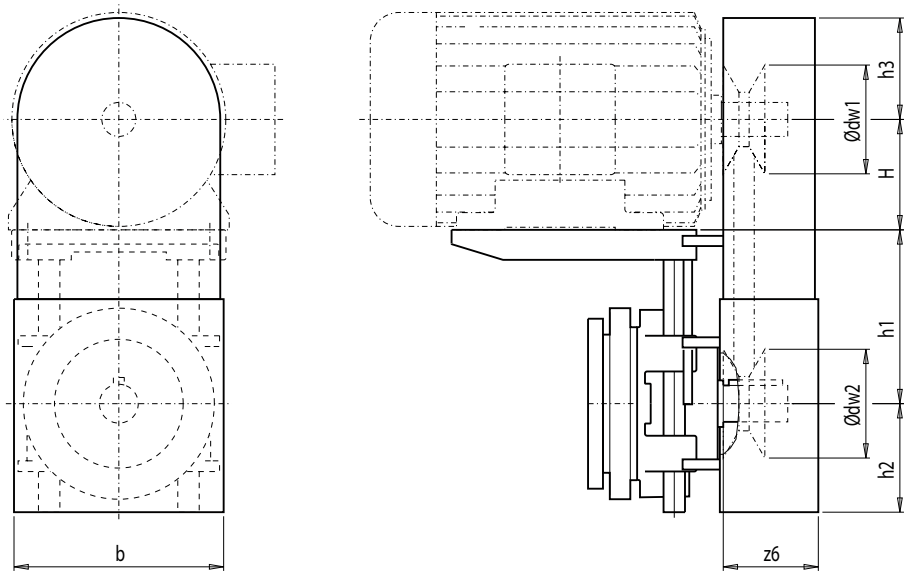
Protective belt cover for piggy back design PS



Gearbox					12h		3/9h						
			dw1	dw2	h1	h1	h1	h1	H	h2	h3	z6	b
			Max.	Max.	Min.	Max.	Min.	Max.					
B.38 F.38B/48B	-PS	(80)	150	140	130	225	130	225	80	88	97	71	190
		(90)	150	140	130	225	130	225	90	88	97	71	190
		(100)	210	140	145	240	145	240	100	88	132	83	248
E./Z.38 C.38/48 K.38/48	-PS	(80)	150	140	130	235	130	235	80	88	97	71	190
		(90)	150	140	130	235	130	235	90	88	97	71	190
		(100)	210	140	145	240	145	240	100	88	132	83	248
D.38	-PS	(80)	150	140	130	235	130	235	80	88	97	71	190
		(90)	150	140	130	235	130	235	90	88	97	71	190
E./Z.48	-PS	(80)	150	140	130	235	140	235	80	88	97	71	190
		(90)	150	140	130	235	140	235	90	88	97	71	190
		(100)	210	140	145	240	145	240	100	88	132	83	248
		(112)	210	140	145	240	145	240	112	88	120	83	248
D.48	-PS	(80)	150	140	130	235	140	235	80	88	97	71	190
		(90)	150	140	130	235	140	235	90	88	97	71	190
		100	210	140	145	240	145	240	100	88	132	83	248
E./Z.68 C.68 K.68	-PS	(80)	150	140	140	235	160	235	80	88	97	71	190
		(90)	150	140	140	235	160	235	90	88	97	71	190
		(100)	210	140	145	240	160	240	100	88	132	83	248
		(112)	210	140	145	240	160	240	112	88	120	83	248
		(132)	250	220	180	230	180	230	132	135	140	147	288
F.68B	-PS	(80)	150	140	140	225	140	225	80	88	97	71	190
		(90)	150	140	140	225	140	225	90	88	97	71	190
		(100)	210	140	145	240	148	238	100	88	132	83	248
		(112)	210	140	145	240	148	238	112	88	120	83	248
D.68	-PS	(80)	150	140	140	235	160	235	80	88	97	71	190
		(90)	150	140	140	235	160	235	90	88	97	71	190
		(100)	210	140	145	240	160	240	100	88	132	83	248
E./Z.88	-PS	(90)	150	140	160	235	190	235	90	88	97	71	190
		(100)	210	140	160	240	190	240	100	88	132	83	248
		(112)	210	140	160	240	190	240	112	88	120	83	248
		(132)	250	220	180	230	220	270	132	135	140	147	288
		(160)	250	220	180	230	220	270	160	135	140	135	288

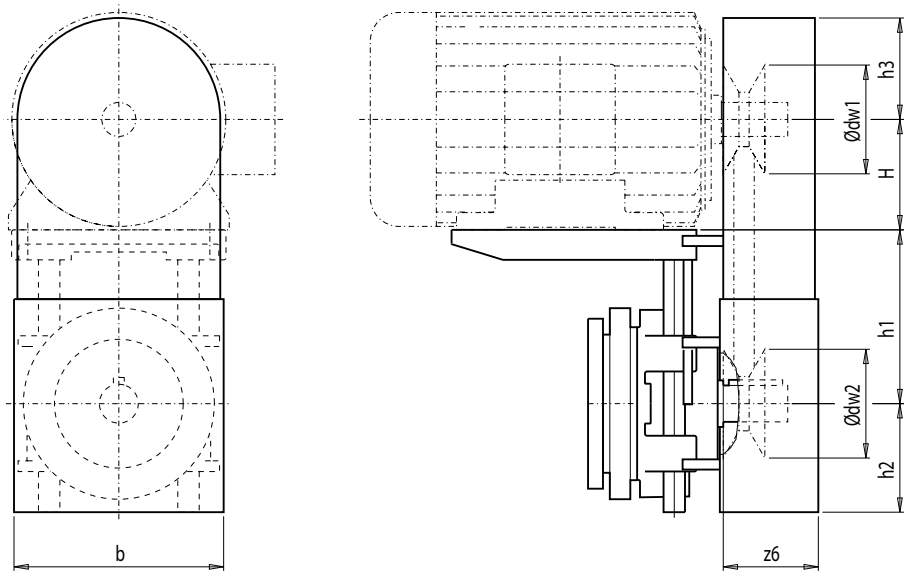
Dimensions

Protective belt cover for piggy back design PS (continued)



Gearbox			dw1	dw2	12h h1	h1	3/9h h1	h1	H	h2	h3	z6	b
			Max.	Max.	Min.	Max.	Min.	Max.					
F.88B	-PS	(80)	150	140	163	228	168	228	80	88	97	71	190
		(90)	150	140	163	228	168	228	90	88	97	71	190
		(100)	210	140	163	238	160	240	100	88	132	83	248
		(112)	210	140	163	238	160	240	112	88	120	83	248
		(132)	250	220	178	228	188	228	132	135	140	147	288
C.88	-PS	(80)	150	140	160	235	190	235	80	88	97	71	190
		(90)	150	140	160	235	190	235	90	88	97	71	190
		(100)	210	140	160	240	190	240	100	88	132	83	248
		(112)	210	140	160	240	190	240	112	88	120	83	248
		(132)	250	220	180	230	180	230	132	135	140	147	288
K.88	-PS	(80)	150	140	160	235	190	235	80	88	97	71	190
		(90)	150	140	160	235	190	235	90	88	97	71	190
		(100)	210	140	160	240	190	240	100	88	132	83	248
		(112)	210	140	160	240	190	240	112	88	120	83	248
		(132)	250	220	180	230	180	230	132	135	140	147	288
D.88	-PS	(80)	150	140	160	235	190	235	80	88	97	71	190
		(90)	150	140	160	235	190	235	90	88	97	71	190
		(100)	210	140	160	240	190	240	100	88	132	83	248
		(112)	210	140	160	240	190	240	112	88	120	83	248
		(132)	250	220	180	230	220	270	132	135	140	147	288
E./Z.108 K.108	-PS	(80)	150	140	190	300	230	300	80	88	97	71	190
		(90)	150	140	190	300	230	300	90	88	97	71	190
		(100)	210	140	220	320	230	320	100	88	132	83	248
		(112)	210	140	220	320	230	320	112	88	120	83	248
		(132)	250	220	220	270	255	305	132	135	140	147	288
		(160)	250	220	220	270	255	305	160	135	140	135	288
		(180)	330	310	268	352	268	352	180	205	182	134	372
		(200)	330	310	268	352	268	352	200	205	182	134	372

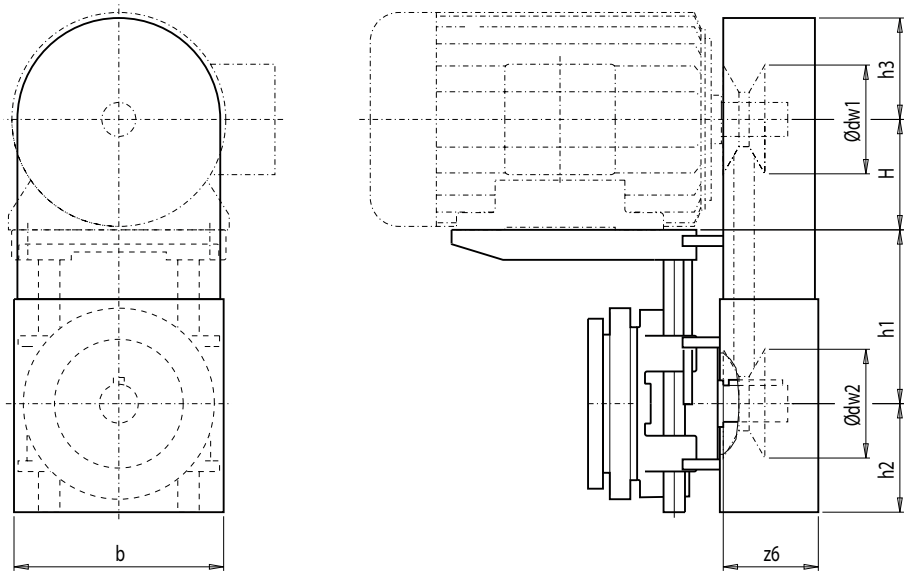
Protective belt cover for piggy back design PS (continued)



Gearbox			dw1	dw2	12h h1		3/9h h1		H	h2	h3	z6	b
			Max.	Max.	Min.	Max.	Min.	Max.					
F.108B	-PS	(80)	150	140	190	295	190	295	80	88	97.0	71	190
		(90)	150	140	190	295	190	295	90	88	97.0	71	190
		(100)	210	140	223	318	190	240	100	88	132.0	83	248
		(112)	210	140	223	318	190	240	112	88	120.0	83	248
		(132)	250	220	207	257	215	265	132	135	140.0	147	288
		(160)	250	220	207	257	215	265	160	135	140.0	135	288
D.108	-PS	(80)	150	140	190	300	23	300	80	88	97.0	71	190
		(90)	150	140	190	300	230	300	90	88	97.0	71	190
		(100)	210	140	220	320	230	320	100	88	132.0	83	248
		(112)	210	140	220	320	230	320	112	88	120.0	83	248
		(132)	250	220	220	270	255	305	132	135	140.0	147	288
		(160)	250	220	220	270	255	305	160	135	140.0	135	288
E./Z.128	-PS	(100)	210	140	220	320	255	320	100	88	132.0	83	248
		(112)	210	140	220	320	255	320	112	88	120.0	83	248
		(132)	250	220	255	305	280	330	132	135	140.0	147	288
		(160)	250	220	255	305	280	330	160	135	140.0	135	288
		(180)	330	310	253	352	293	352	180	205	182.0	134	372
		(200)	330	310	253	352	293	352	200	205	182.0	134	372
		(225)	390	390	295	340	–	–	225	215	232.5	174	428
F.128B	-PS	(90)	150	140	235	295	230	295	90	88	97.0	71	190
		(100)	210	140	250	320	235	320	100	88	132.0	83	248
		(112)	210	140	250	320	235	320	112	88	120.0	83	248
		(132)	250	220	265	365	285	365	132	135	140.0	147	288
		(160)	250	220	265	365	285	330	160	135	140.0	135	288
		(180)	330	310	268	358	268	358	180	205	182.0	134	372
		(200)	330	310	268	358	268	358	200	205	182.0	134	372
K.128	-PS	(90)	150	140	230	300	255	300	90	88	97.0	71	190
		(100)	210	140	220	320	255	320	100	88	132.0	83	248
		(112)	210	140	220	320	255	320	112	88	120.0	83	248
		(132)	250	220	220	270	255	305	132	135	140.0	147	288
		(160)	250	220	220	270	255	305	160	135	140.0	135	288
		(180)	330	310	243	352	243	352	180	205	182.0	134	372
		(200)	330	310	243	352	243	352	200	205	182.0	134	372

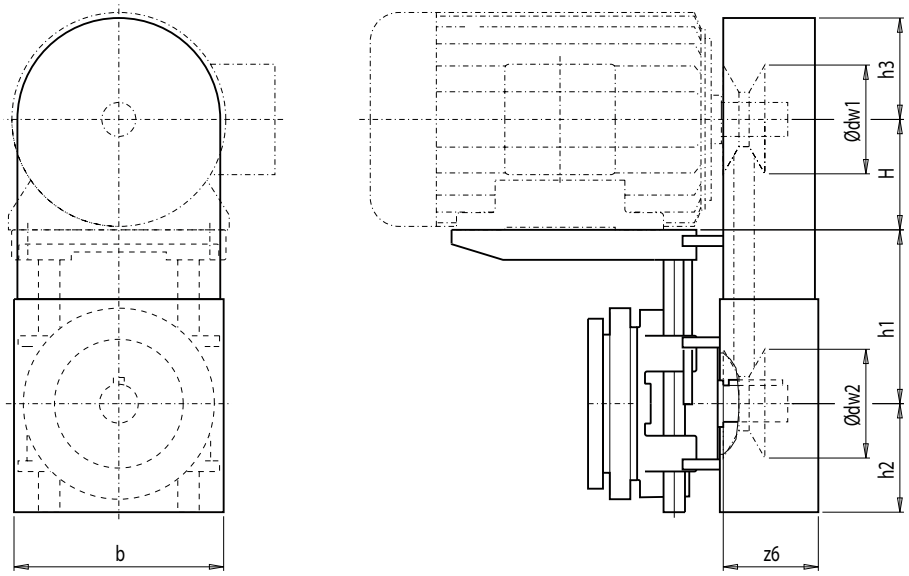
Dimensions

Protective belt cover for piggy back design PS (continued)



Gearbox			dw1	dw2	12h h1	h1	3/9h h1	h1	H	h2	h3	z6	b
			Max.	Max.	Min.	Max.	Min.	Max.					
D.128	-PS	(90)	150	140	230	300	255	300	90	88	97.0	71	190
		(100)	210	140	220	320	255	320	100	88	132.0	83	248
		(112)	210	140	220	320	255	320	112	88	120.0	83	248
		(132)	250	220	255	305	280	330	132	135	140.0	147	288
		(160)	250	220	255	305	280	330	160	135	140.0	135	288
		(180)	330	310	253	352	293	352	180	205	182.0	134	372
		(200)	330	310	253	352	293	352	200	205	182.0	134	372
E./Z.148	-PS	(132)	250	220	280	330	305	355	132	135	140.0	147	288
		(160)	250	220	280	330	305	355	160	135	140.0	135	288
		(180)	330	310	293	352	318	407	180	205	182.0	134	372
		(200)	330	310	293	352	318	407	200	205	182.0	134	372
		(225)	390	390	305	350	–	–	225	215	232.5	174	428
		(250)	390	350	305	350	–	–	250	215	210.0	174	428
		(280)	520	410	339	369	–	–	280	240	274.0	162	556
F.148B	-PS	(100)	210	140	255	320	255	320	100	88	132.0	83	248
		(112)	210	140	255	320	255	320	112	88	120.0	83	248
		(132)	250	220	290	365	285	365	132	135	140.0	147	288
		(160)	250	220	290	365	285	365	160	135	140.0	135	288
		(180)	330	310	293	358	287	357	180	205	182.0	134	372
		(200)	330	310	293	358	287	357	200	205	182.0	134	372
		(225)	390	390	323	353	393	423	225	215	232.5	174	428
K.148	-PS	(100)	210	140	245	320	280	320	100	88	132.0	83	248
		(112)	210	140	245	320	280	320	112	88	120.0	83	248
		(132)	250	220	255	305	280	330	132	135	140.0	147	288
		(160)	250	220	255	305	280	330	160	135	140.0	135	288
		(180)	330	310	293	352	253	352	180	205	182.0	134	372
		(200)	330	310	293	352	253	352	200	205	182.0	134	372
		(225)	390	390	345	390	–	–	225	215	232.5	174	428

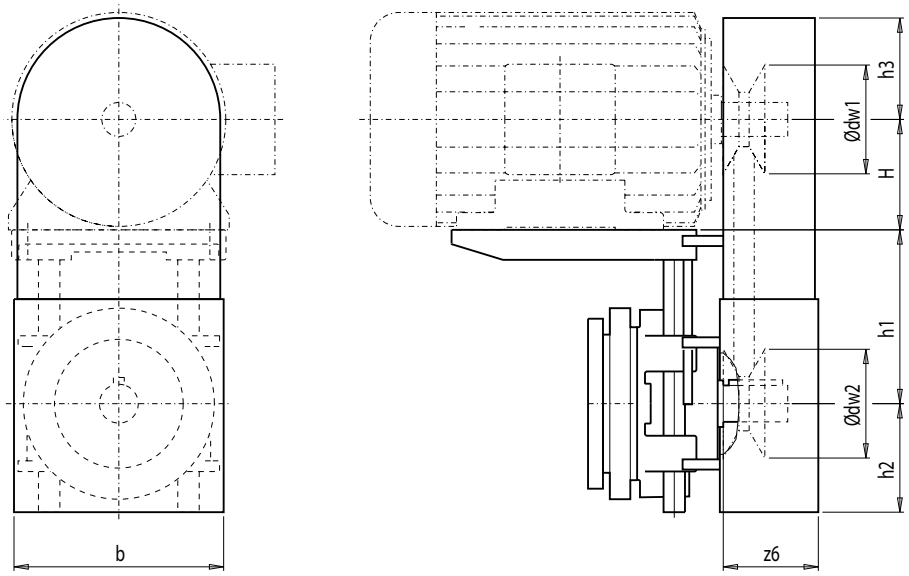
Protective belt cover for piggy back design PS (continued)



Gearbox			dw1	dw2	12h h1	h1	3/9h h1	h1	H	h2	h3	z6	b
			Max.	Max.	Min.	Max.	Min.	Max.					
D.148	-PS	(100)	210	140	245	320	280	320	100	88	132.0	83	248
		(112)	210	140	245	320	280	320	112	88	120.0	83	248
		(132)	250	220	280	330	305	355	132	135	140.0	147	288
		(160)	250	220	280	330	305	355	160	135	140.0	135	288
		(180)	330	310	293	352	318	407	180	205	182.0	134	372
		(200)	330	310	293	352	318	407	200	205	182.0	134	372
		(225)	390	390	305	350	–	–	225	215	232.5	174	428
Z.168	-PS	(132)	250	220	310	360	340	390	132	135	140.0	147	288
		(160)	250	220	310	360	340	390	160	135	140.0	135	288
		(180)	330	310	337	407	343	407	180	205	182.0	134	372
		(200)	330	310	337	407	343	407	200	205	182.0	134	372
		(225)	390	390	345	390	–	–	225	215	232.5	174	428
		(250)	390	350	345	390	–	–	250	215	210.0	174	428
		(280)	520	410	402	432	–	–	280	240	274.0	162	556
F.168B	-PS	(132)	250	220	308	368	305	365	132	135	140.0	147	288
		(160)	250	220	308	368	305	365	160	135	140.0	135	288
		(180)	330	310	318	432	313	428	180	205	182.0	134	372
		(200)	330	310	318	432	313	428	200	205	182.0	134	372
		(225)	390	390	393	423	393	423	225	215	232.5	174	428
		(250)	390	350	356	386	424	454	250	215	210.0	174	428
		(280)	520	410	399	429	400	430	280	240	274.0	162	556
K.168	-PS	(132)	250	220	280	330	305	355	132	135	140.0	147	288
		(160)	250	220	280	330	305	355	160	135	140.0	135	288
		(180)	330	310	337	407	277	352	180	205	182.0	134	372
		(200)	330	310	337	407	277	352	200	205	182.0	134	372
		(225)	390	390	390	435	–	–	225	215	232.5	174	428
		(250)	390	350	390	435	–	–	250	215	210.0	174	428
		(280)	520	410	472	502	–	–	280	240	274.0	162	556
D.168	-PS	(132)	250	220	310	360	340	390	132	135	140.0	147	288
		(160)	250	220	310	360	340	390	160	135	140.0	135	288
		(180)	330	310	337	407	343	407	180	205	182.0	134	372
		(200)	330	310	337	407	343	407	200	205	182.0	134	372
		(225)	390	390	345	390	–	–	225	215	232.5	174	428

Dimensions

Protective belt cover for piggy back design PS (continued)



Gearbox			dw1	dw2	12h h1	h1	3/9h h1	h1	H	h2	h3	z6	b
			Max.	Max.	Min.	Max.	Min.	Max.					
Z.188	-PS	(132)	250	220	340	380	372	412	132	135	140.0	147	288
		(160)	250	220	340	380	372	412	160	135	140.0	135	288
		(180)	330	310	368	433	382	432	180	205	182.0	134	372
		(200)	330	310	368	433	382	432	200	205	182.0	134	372
		(225)	390	390	393	423	–	–	225	215	232.5	174	428
		(250)	390	350	418	448	–	–	250	215	210.0	174	428
		(280)	520	410	399	424	–	–	280	240	274.0	177	556
K.188	-PS	(132)	250	220	360	410	300	370	132	135	140.0	147	288
		(160)	250	220	360	410	300	370	160	135	140.0	135	288
		(180)	330	310	378	433	302	357	180	205	182.0	134	372
		(200)	330	310	378	433	302	357	200	205	182.0	134	372
		(225)	390	390	463	493	–	–	225	215	232.5	174	428
		(250)	390	350	493	523	–	–	250	215	210.0	174	428
		(280)	520	410	472	502	–	–	280	240	274.0	177	556
F.188B	-PS	(132)	250	220	335	375	335	375	132	135	140.0	147	288
		(160)	250	220	335	375	335	375	160	135	140.0	135	288
		(180)	330	310	347	432	343	428	180	205	182.0	134	372
		(200)	330	310	347	432	343	428	200	205	182.0	134	372
		(225)	390	390	390	420	463	493	225	215	232.5	174	428
		(250)	390	350	419	449	424	454	250	215	210.0	174	428
		(280)	520	410	463	493	471	501	280	240	274.0	177	556
D.188	-PS	(132)	250	220	340	380	372	412	132	135	140.0	147	288
		(160)	250	220	340	380	372	412	160	135	140.0	135	288
		(180)	330	310	368	433	382	432	180	205	182.0	134	372
		(200)	330	310	368	433	382	432	200	205	182.0	134	372
		(225)	390	390	393	423	–	–	225	215	232.5	174	428
		(250)	390	350	418	448	–	–	250	215	210.0	174	428
		(280)	520	410	399	424	–	–	280	240	274.0	177	556

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