

MG STANDARD MOTORS

3 Phase 0,25 - 22 kW

IE3



GRUNDFOS MOTORS IN A CLASS OF THEIR OWN

Grundfos is one of the world's leading manufacturers of pumps and pumping equipment. Therefore, high-quality electrical motors are a natural priority for us. For decades, we have been manufacturing our own motors that match the very high standard of our pumps for application in building services, industry and water supply.

Grundfos manufactured motors are available in different sizes. Two-pole versions are available from 0.37 to 22 kW, and four-pole versions are available from 0.25 to 15 kW. Both two-pole and four-pole versions are available in a range of different voltages.



Environmentally friendly

Premium-efficiency motors are more energy friendly than high efficiency motors and far more energy friendly than conventional motors. This means reduced energy consumption and, thus, reduction of harmful emissions from the power sources. At Grundfos, the environmental issue is of great importance and, consequently, we supply only motors, which are in compliance with the Ecodesign Directive 2009/125/EC. Our range comprises IE3 designated models for every application.

Premium-efficiency motors mean reduced energy consumption and, consequently, reduced harmful influence on the environment. Obviously, reduced energy consumption also means reduced operating costs, which is a vital consideration for modern industry everywhere.

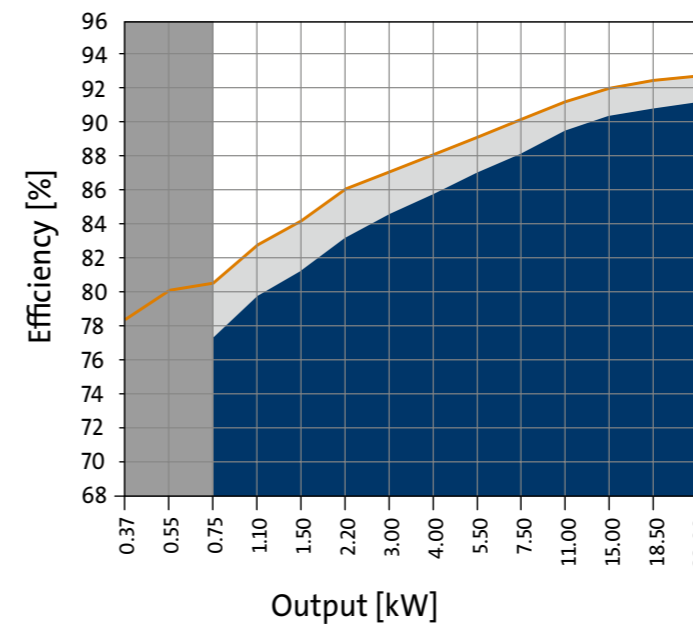
UNIQUE FEATURES

Grundfos motors distinguish themselves from standard motors in the market in several ways. Grundfos motors are equipped with a reinforced bearing system with locked bearings at the drive end. All models from 3 kW and up have a built in PTC sensor arrangement. Motors from 7.5kW 2 pole and 5.5 kW 4 pole and above are available as a FPV solution with a second PTC (this PTC will then serve as a warning PTC). The motors are so-called cold motors, which means class B temperature rise and insulation class F.

Grundfos CR pumps require motors with smooth shaft ends. Motors equipped with shafts with keyway and key are suitable for the Grundfos TP, NK and NB pump ranges and for Grundfos CR pumps as a FPV solution.

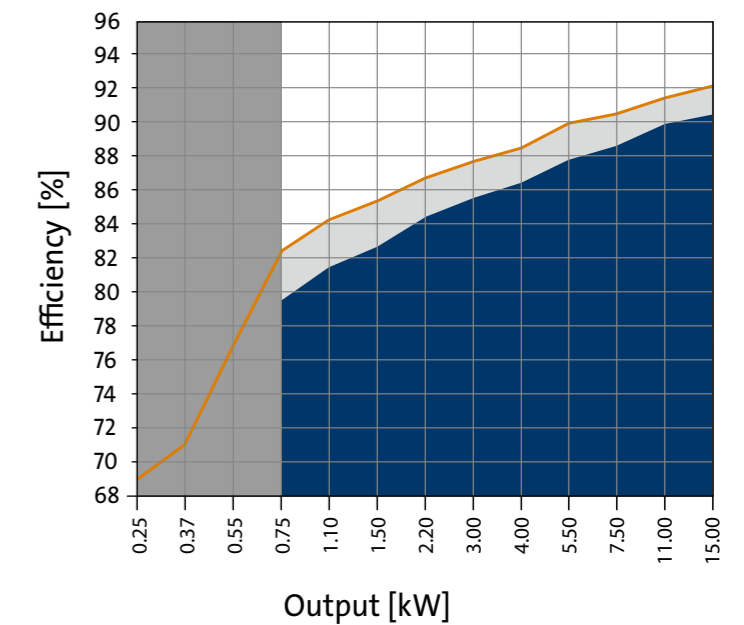
As a standard, all models are fitted with drain holes, closed at delivery and motors from frame size 160 can be relubricated. Motors from 11kW and above can on request be equipped with bearing temperature surveillance in both drive and non-drive end bearings. These features contribute to providing trouble-free operation and increase the operating lifetime of the motor.

Motor efficiency, 2 pole motor



IE3 2p
 IE2 2p
 IE1 2p
 MG Motors

Motor efficiency, 4 pole motor



IE3 4p
 IE2 4p
 IE1 4p
 MG Motors

Efficiency curves

The curves show efficiency of the Grundfos motors (50 Hz). Motors with efficiency on or above the line between the IE3 and IE2 bands are classified as IE3 motors. Motors with efficiency on or above the line between the IE2 and IE1 bands are classified as IE2 motors.

IE3 DESIGNATED MOTOR

Along with the international discussion on energy efficiency a worldwide harmonized energy efficiency classification system has been established for low-voltage three-phase asynchronous motors. The International Electro technical Commission IEC has developed and issued a new standard for the determination of motor efficiencies worldwide. The new standard IEC 60034-30 defines and harmonizes worldwide the efficiency classes IE1, IE2 and IE3 for low-voltage three-phase motors in the range from 0.75 to 375

kW. The IE3 (premium efficiency) have a higher efficiency level than IE2 (high efficiency) and IE1 (standard efficiency). Grundfos IE3 motors comply with the EISA2007 legislation for USA and are ahead of the EU requirements legislated by the EuP directive.

IE3

MG MOTOR RANGE

CUSTOMISED VERSIONS

The Grundfos manufactured motors have been designed specially for use with Grundfos pumps.

The motors meet international design standards, and within each motor type we offer a number of different variants. If you do not find the specific motor variant that you require among the ones listed in our product overview, customised motors are available upon request. Please contact your local Grundfos representative for further details.

VOLTAGE RANGE

Frequency	Voltage
50	220-240Δ/380-415Y
60	220-255Δ/380-440Y ¹
	220-277Δ/380-480Y ²
50	380-415Δ
60	380-440Δ ¹
	380-480Δ ²

¹ MG 71/80 ² MG 90 - 180

In general, “low voltage range” and “high voltage range” are used to describe the following:

Low voltage range	
220-240 Δ/380-415 Y, 50 Hz	220-277 Δ/380-480 Y, 60 Hz
High voltage range	
380-415 Δ, 50 Hz	380-480 Δ, 60 Hz

The technical data for the motors cover both 50 and 60 Hz versions. Contrary to most other motor makes, the Grundfos Standard motors offer the same power output in 50 and 60 Hz versions.

RANGE OVERVIEW FOR STANDARD MG MOTORS

Power	2-pole		4-pole	
	Type designation	IE efficiency class IE3, IE2, IE1	Type designation	IE efficiency class IE3, IE2, IE1
0.25	-	-	MG71B4-C	-
0.37	MG71A2-C	-	MG71B4-C	-
0.55	MG71B2-C	-	MG80A4-C	-
0.75	MG80A2-H3	IE3	MG90SC4-H3	IE3
1.10	MG80C2-H3	IE3	MG90SB4-H3	IE3
1.50	MG90SB2-H3	IE3	MG90LC4-H3	IE3
2.20	MG90LC2-H3	IE3	MG100LB4-H3	IE3
3.00	MG100LC2-H3	IE3	MG100LC4-H3	IE3
4.00	MG112MC2-H3	IE3	MG112MC4-H3	IE3
5.50	MG132SC2-H3	IE3	MG132SB4-H3	IE3
7.50	MG132SB2-H3	IE3	MG132MB4-H3	IE3
11.0	MG160MB2-H3	IE3	MG160MA4-H3	IE3
15.0	MG160MD2-H3	IE3	MG160LB4-H3	IE3
18.5	MG160LB2-H3	IE3	-	-
22.0	MG180MB2-H3	IE3	-	-

The efficiency class has to be seen together with the voltage range. The efficiency class is not necessarily the same in 50 Hz and 60 Hz. Because the MG motor has a wide voltage range the motor's efficiency depends on the supply voltage. This leaflet shows IE3 50 Hz@400 V motors, and IE3/IE2 60 Hz@440V motors.

STANDARDS

The Grundfos motors are designed, manufactured and tested according to the internationally recognised standards for electrical motors: IEC60034 and IEC60072-1/EN50347

Standard configuration of Grundfos motors

Mountings: V18/B14, V1/B5, B3, B34 and B35. IP55 with drain plugs closed.

Duty cycle: S1.

Insulation class F with class B temperature rise according to IEC 62114. PTC sensors according to DIN 44082 from 3.0 kW and up. Maximum ambient temperature for IE3 and IE2 motors = 60°C. IE1 motors = 40°C. Protection against thermal overloads with slow and rapid variation according to IEC 60034-11. All visible screws of stainless steel. Electro coating provides high corrosion resistance.

BEARINGS

The Grundfos MG motors are fitted with locked bearings at the drive end, either a deep-groove ball bearing or an angular-contact bearing depending on the motor use. At the non-drive end, the motors are fitted with bearings with axial clearance. Axial clearance is required in order to meet production tolerances while allowing for thermal expansion during motor operation. This ensures trouble-free operation and a long life.

On standard models, a wave spring washer at the non-drive end holds the motor bearings in place.

Grundfos uses only high-quality bearings from the world's leading manufacturers. These include:

- SKF AB (Sweden)
- NSK Corporation (Japan)
- FAG Kugelfischer AG & Co KG (Germany)
- INA Schäffler KG (Germany)

These manufacturers all comply with international standards, which means that replacement bearings are readily available throughout the world and the bearings are fully interchangeable regardless of make.

BEARING SIZE OVERVIEW

Frame size	2-pole	4-pole	Bearing sizes	
	Power	Power	Drive end	Non-drive end
71	0.37	0.25	6204.2Z.C3 ³⁾	6201.2Z.C3
	0.55	0.37		
80	0.75	0.55	6305.2Z.C4	6205.2Z.C3
	1.1	-		
90	1.5	0.75	6306.2Z.C3	6205.2Z.C3
	2.2	1.1		
	-	1.5		
100	3	2.2	6306.2Z.C3	6205.2Z.C3
	-	3		
112	4	4	6308.2Z.C3 ³⁾	6206.2Z.C3
	5.5	5.5		
132	7.5	7.5	6309.C4 ⁴⁾	6309.C4
	11	11		
	15	15		
160	18.5	-	6310.C4 ⁵⁾	6310.C4
	22	-		

³⁾ Motors for CR1s pumps: 6304.2Z.C3

²⁾ Motors for CR pumps: 7306BE.2CS

³⁾ Motors for CR pumps: 7308BE.2CS

⁴⁾ Motors for CR pumps: 7309BE

⁵⁾ Motors for CR pumps: 7310BE

NOISE

In electrical motors, the cooling fan is normally the main source of noise. With IE3 designated motors, because of the higher efficiency, less cooling air is needed to maintain the motor temperature. This allows for a smaller cooling fan, which in turn produces less noise.

Sound pressure levels

Grundfos complies with the following rules relating to sound pressure:

- The sound power is measured according to EN ISO 3743-2.
- The sound power is converted to a mean sound pressure at 1 m distance from the test object by means of EN ISO 11203 – method Q2.
- The values for both 50 and 60 Hz have a tolerance of 3 dB[A] according to EN ISO 4871, which is not added to the values in these tables.

Sound pressure MG model H				
Motors	Power kW	Type designation	50 Hz Sound pressure level dB(A)	60 Hz Sound pressure level dB(A)
2-pole	0.75	MG80A2-H3	48.8	53.7
	1.10	MG80C2-H3	48.6	53.5
	1.50	MG90SB2-H3	54.2	58.6
	2.20	MG90LC2-H3	55.5	59.8
	3.00	MG100LC2-H3	55.3	59.8
	4.00	MG112MC2-H3	58.7	63.6
	5.50	MG132SC2-H3	58.8	63.6
	7.50	MG132SB2-H3	60.3	65.1
	11.0	MG160MB2-H3	60.5	65.1
	15.0	MG160MD2-H3	60.6	65.2
	18.5	MG160LB2-H3	60.7	65.3
4-pole	0.75	MG90SC4-H3	43.6	46.6
	1.10	MG90SB4-H3	43.6	46.6
	1.50	MG90LC4-H3	43.2	48.6
	2.20	MG100LB4-H3	42.2	44.3
	3.00	MG100LC4-H3	50.2	50.2
	4.00	MG112MC4-H3	47.4	48.4
	5.50	MG132SB4-H3	49.8	54.5
	7.50	MG132MB4-H3	50.5	56.2
	11.0	MG160MA4-H3	53.0	58.0
	15.0	MG160LB4-H3	53.5	58.0

IE3

ELECTRICAL DATA 2-POLE

MG STANDARD · LOW VOLTAGE · 50/60 HZ

Short type designation	IE efficiency class marking	Shaft power P ₂ [kW]	Full load current I _N [A]	Power factor Cos φ at % load			Efficiency η at % load ¹⁾			Speed n [min ⁻¹]	Torque at 400 V M _N [Nm]	LRC I _L /I _N [%]	LRT M ₂ /M _N [%]	BT M _{BT} /M _N [%]
				50 %	75 %	100 %	50 %	75 %	100 %					
Low voltage · 2-pole motors 50 Hz 230/400														
MG71A2-C	-	0.37	1.75/1.00	0.51	0.64	0.74	73.2	77.6	78.5	2870	1.26	510	330	370
MG71B2-C	-	0.55	2.50/1.45	0.49	0.63	0.74	76.6	79.8	80.0	2840	1.86	500	360	390
MG80A2-H3	IE3	0.75	3.30/1.90	0.52	0.66	0.75	81.7	82.7	80.7	2860	2.5	600	360	410
MG80C2-H3	IE3	1.10	4.35/2.50	0.58	0.72	0.79	85.4	84.6	82.7	2860	3.64	480	330	380
MG90S82-H3	IE3	1.50	5.45/3.15	0.68	0.78	0.84	83.1	84.5	84.2	2900	5	900	360	410
MG90LC2-H3	IE3	2.20	7.70/4.45	0.76	0.84	0.88	86.0	86.8	85.9	2900	7.25	910	360	410
MG100LC2-H3	IE3	3.00	11.0/6.30	0.63	0.76	0.84	87.7	88.0	87.1	2910	9.9	890	360	440
MG112MC2-H3	IE3	4.00	13.6/7.90	0.77	0.85	0.87	85.2	88.6	88.1	2930	13	110	430	520
MG132SC2-H3	IE3	5.50	19.0/11.0	0.68	0.8	0.84	89.6	90.0	89.2	2930	17.8	150	420	510
MG132SB2-H3	IE3	7.50	24.5/14.2	0.7	0.79	0.85	90.8	90.8	90.1	2920	24.6	850	240	310
MG160MB2-H3	IE3	11.0	35.1/20.2	0.72	0.81	0.86	91.3	91.8	91.2	2950	36	730	260	320
MG160MD2-H3	IE3	15.0	46.5/26.9	0.76	0.85	0.88	92.4	92.4	91.9	2940	49	730	260	310
MG160LB2-H3	IE3	18.5	57.8/33.4	0.74	0.83	0.87	93.2	93.2	92.4	2950	60	920	230	400
MG180MB2-H3	IE3	22.0	68.5/39.5	0.8	0.86	0.9	94.4	93.7	92.7	2950	71.2	830	280	320
Low voltage · 2-pole motors 60 Hz 255/440														
MG71A2-C	-	0.37	1.45/0.85	0.55	0.67	0.76	75.0	79.0	80.0	3470	1.04	650	350	400
MG71B2-C	-	0.55	2.10/1.20	0.53	0.67	0.76	79.5	83.0	83.0	3460	1.54	600	390	430
MG80A2-H3	IE3	0.75	2.75/1.60	0.56	0.70	0.77	84.5	84.4	77.0	3470	2.10	740	380	440
MG80C2-H3	IE3	1.10	4.00/2.30	0.61	0.73	0.80	86.4	86.0	82.5	3470	3.05	500	310	380
MG90S82-H3	IE3	1.50	4.95/2.85	0.7	0.79	0.85	82.8	83.9	85.5	3510	4.1	940	370	450
MG90LC2-H3	IE3	2.20	6.90/4.00	0.77	0.84	0.87	85.7	86.3	86.5	3510	6	970	380	450
MG100LC2-H3	IE3	3.00	9.90/5.70	0.66	0.78	0.87	88.9	88.0	87.5	3510	8.16	1000	380	470
MG112MC2-H3	IE3	4.00	12.5/7.20	0.74	0.83	0.86	86.9	88.5	88.5	3530	10.8	1280	450	570
MG132SC2-H3	IE3	5.50	17.1/9.80	0.7	0.81	0.84	89.9	90.3	89.5	3530	15	1300	450	560
MG132SB2-H3	IE3	7.50	22.3/12.9	0.72	0.81	0.85	91.4	90.9	90.2	3510	20.6	900	270	320
MG160MB2-H3	IE3	11.0	32.4/18.6	0.72	0.82	0.85	91.2	91.4	91.0	3540	30	770	300	330
MG160MD2-H3	IE3	15.0	42.8/24.6	0.77	0.85	0.88	92.1	92.3	91.0	3540	40.5	770	280	310
MG160LB2-H3	IE3	18.5	52.9/30.6	0.75	0.83	0.86	92.4	93.1	91.7	3540	50	930	210	410
MG180MB2-H3	IE3	22.0	61.7/35.5	0.84	0.89	0.91	94.4	93.5	91.7	3540	59.5	880	290	330

The data shows the value for the nominal voltage.
¹⁾ η at 100 % is stated according to the IEC 60034-30. The measured value at 100 % lives up to this value as a minimum.
 η at 50 % and 75 % loads are stated as measured values.



MG STANDARD · HIGH VOLTAGE · 50/60 HZ

Short type designation	IE efficiency class marking	Shaft power P ₂ [kW]	Full load current I _N [A]	Power factor Cos φ at % load			Efficiency η at % load ¹⁾			Speed n [min ⁻¹]	Torque at 400 V M _N [Nm]	LRC I _L /I _N [%]	LRT M ₂ /M _N [%]	BT M _{BT} /M _N [%]
				50 %	75 %	100 %	50 %	75 %	100 %					
High voltage · 2-pole motors 50 Hz 400														
MG71A2-C	-	0.37	1.00	0.51	0.64	0.74	73.2	77.6	78.5	2870	1.26	510	330	370
MG71B2-C	-	0.55	1.45	0.49	0.63	0.74	76.6	79.8	80.0	2840	1.86	500	360	390
MG80A2-H3	IE3	0.75	1.90	0.52	0.66	0.75	81.7	82.7	80.7	2860	2.5	600	360	410
MG80C2-H3	IE3	1.10	2.50	0.58	0.72	0.79	85.4	84.6	82.7	2860	3.64	480	330	380
MG90S82-H3	IE3	1.50	3.15	0.68	0.78	0.84	83.1	84.5	84.2	2900	5	900	360	410
MG90LC2-H3	IE3	2.20	4.45	0.76	0.84	0.88	86.0	86.8	85.9	2900	7.25	910	360	410
MG100LC2-H3	IE3	3.00	6.30	0.63	0.76	0.84	87.7	88.0	87.1	2910	9.9	890	360	440
MG112MC2-H3	IE3	4.00	7.90	0.77	0.85	0.87	85.2	88.6	88.1	2930	13	110	430	520
MG132SC2-H3	IE3	5.50	11.0	0.68	0.8	0.84	89.6	90.0	89.2	2930	17.8	150	420	510
MG132SB2-H3	IE3	7.50	14.2	0.7	0.79	0.85	90.8	90.8	90.1	2920	24.6	850	240	310
MG160MB2-H3	IE3	11.0	20.2	0.72	0.81	0.86	91.3	91.8	91.2	2950	36	730	260	320
MG160MD2-H3	IE3	15.0	26.9	0.76	0.85	0.88	92.4	92.4	91.9	2940	49	730	260	310
MG160LB2-H3	IE3	18.5	33.4	0.74	0.83	0.87	93.2	93.2	92.4	2950	60	920	230	400
MG180MB2-H3	IE3	22.0	39.5	0.8	0.86	0.9	94.4	93.7	92.7	2950	71.2	830	280	320
High voltage · 2-pole motors 60 Hz 440														
MG71A2-C	-	0.37	0.85	0.55	0.67	0.76	75.0	79.0	80.0	3470	1.04	650	350	400
MG71B2-C	-	0.55	1.20	0.53	0.67	0.76	79.5	83.0	83.0	3460	1.54	600	390	430
MG80A2-H3	IE3	0.75	1.60	0.56	0.70	0.77	84.5	84.4	77.0	3470	2.10	740	380	440
MG80C2-H3	IE3	1.10	2.30	0.61	0.73	0.80	86.4	86.0	82.5	3470	3.05	500	310	380
MG90S82-H3	IE3	1.50	2.85	0.7	0.79	0.85	82.8	83.9	85.5	3510	4.1	940	370	450
MG90LC2-H3	IE3	2.20	4.00	0.77	0.84	0.87	85.7	86.3	86.5	3510	6	970	380	450
MG100LC2-H3	IE3	3.00	5.70	0.66	0.78	0.87	88.9	88.0	87.5	3510	8.16	1000	380	470
MG112MC2-H3	IE3	4.00	7.20	0.74	0.83	0.86	86.9	88.5	88.5	3530	10.8	1280	450	570
MG132SC2-H3	IE3	5.50	9.80	0.7	0.81	0.84	89.9	90.3	89.5	3530	15	1300	450	560
MG132SB2-H3	IE3	7.50	12.9	0.72	0.81	0.85	91.4	90.9	90.2	3510	20.6	900	270	320
MG160MB2-H3	IE3	11.0	18.6	0.72	0.82	0.85	91.2	91.4	91.0	3540	30	770	300	330
MG160MD2-H3	IE3	15.0	24.6	0.77	0.85	0.88	92.1	92.3	91.0	3540	40.5	770	280	310
MG160LB2-H3	IE3	18.5	30.6	0.75	0.83	0.86	92.4	93.1	91.7	3540	50	930	210	410
MG180MB2-H3	IE3	22.0	35.5	0.84	0.89	0.91	94.4	93.5	91.7	3540	59.5	880	290	330

The data shows the value for the nominal voltage.
¹⁾ η at 100 % is stated according to the IEC 60034-30. The measured value at 100 % lives up to this value as a minimum.
 η at 50 % and 75 % loads are stated as measured values.

IE3

ELECTRICAL DATA 4-POLE

MG STANDARD · LOW VOLTAGE · 50/60 HZ

Short type designation	IE efficiency class marking	Shaft power P ₂ [kW]	Full load current I _N [A]	Power factor Cos φ at % load			Efficiency η at % load ¹⁾			Speed n [min ⁻¹]	Torque at 400 V M _N [Nm]	LRC I _L /I _N [%]	LRT M ₂ /M _N [%]	BT M _{BT} /M _N [%]
				50 %	75 %	100 %	50 %	75 %	100 %					
				50 %	75 %	100 %	50 %	75 %	100 %					
Low voltage · 4-pole motors 50 Hz 230/400														
MG71A4-C	-	0.25	1.50/0.85	0.41	0.52	0.69	58.3	66.0	69.0	1410	1.70	420	190	260
MG71B4-C	-	0.37	1.90/1.10	0.42	0.55	0.71	61.9	68.8	71.0	1410	2.10	440	190	250
MG80A4-C	-	0.55	2.60/1.50	0.50	0.64	0.74	75.7	78.2	77.0	1400	3.75	450	220	260
MG90SC4-H3	IE3	0.75	3.30/1.90	0.52	0.66	0.73	81.4	83.1	82.5	1450	4.97	690	250	320
MG90SB4-H3	IE3	1.10	4.85/2.80	0.45	0.59	0.67	82.9	84.6	84.1	1460	7.17	870	300	400
MG90LC4-H3	IE3	1.50	6.25/3.60	0.49	0.62	0.71	84.2	85.8	85.3	1460	9.9	760	280	340
MG100LB4-H3	IE3	2.20	8.50/4.90	0.57	0.7	0.76	87.6	87.7	86.7	1450	14.5	630	280	330
MG100LC4-H3	IE3	3.00	11.0/6.30	0.55	0.66	0.79	84.5	86	87.7	1450	19.8	740	230	310
MG112MC4-H3	IE3	4.00	16.2/9.30	0.48	0.63	0.71	88.3	88.9	88.6	1460	26	840	320	390
MG132SB4-H3	IE3	5.50	19.0/11.0	0.67	0.78	0.83	90.4	90.3	89.6	1460	36.4	760	260	320
MG132MB4-H3	IE3	7.50	25.2/14.5	0.69	0.8	0.84	92.4	91.6	90.4	1460	49.5	740	260	320
MG160MA4-H3	IE3	11.0	35.9/20.7	0.66	0.77	0.83	91.6	92.1	91.4	1470	71.5	770	200	340
MG160LB4-H3	IE3	15.0	49.1/28.4	0.67	0.78	0.84	92.1	92.3	92.1	1470	98	820	230	340
Low voltage · 4-pole motors 60 Hz 255/440														
MG71A4-C	-	0.25	1.20/0.70	0.41	0.53	0.69	65.6	71.7	72.0	1720	1.42	470	220	280
MG71B4-C	-	0.37	1.70/1.00	0.45	0.58	0.72	67.5	72.4	74.0	1720	2.10	470	220	280
MG80A4-C	-	0.55	2.40/1.40	0.51	0.65	0.75	79.1	81.0	80.0	1710	3.10	470	230	260
MG90SC4-H3	IE3	0.75	3.00/1.75	0.52	0.65	0.72	82.9	84.1	85.5	1750	4.12	690	270	360
MG90SB4-H3	IE2	1.10	4.50/2.60	0.46	0.59	0.66	85.2	86.4	84.0	1760	5.96	830	340	430
MG90LC4-H3	IE3	1.50	5.75/3.30	0.51	0.62	0.7	86.0	86.8	86.5	1760	8.25	820	330	400
MG100LB4-H3	IE2	2.20	7.75/4.45	0.59	0.7	0.76	88.5	88.3	87.5	1750	11.9	690	310	340
MG100LC4-H3	IE3	3.00	10.0/5.75	0.62	0.73	0.78	89.7	89.4	89.5	1750	16.6	780	230	330
MG112MC4-H3	IE3	4.00	14.6/8.40	0.51	0.64	0.7	90.9	90.6	89.5	1760	21.6	850	400	340
MG132SB4-H3	IE2	5.50	17.3/10.0	0.69	0.78	0.83	91.2	90.9	89.5	1760	30.5	780	300	350
MG132MB4-H3	IE3	7.50	23.2/13.4	0.7	0.8	0.83	92.7	92.1	91.7	1760	40.7	770	260	340
MG160MA4-H3	IE2	11.0	33.0/19.0	0.68	0.78	0.85	91.3	91.2	91.0	1770	59.5	840	230	360
MG160LB4-H3	IE2	15.0	45.2/26.1	0.69	0.78	0.84	91.4	91.2	91.0	1770	81.5	850	240	360

The data shows the value for the nominal voltage.

1) η at 100 % is stated according to the IEC 60034-30. The measured value at 100 % lives up to this value as a minimum. η at 50 % and 75 % loads are stated as measured values.











MG STANDARD · HIGH VOLTAGE · 50/60 HZ

Short type designation	IE efficiency class marking	Shaft power P ₂ [kW]	Full load current I _N [A]	Power factor Cos φ at % load			Efficiency η at % load ¹⁾			Speed n [min ⁻¹]	Torque at 400 V M _N [Nm]	LRC I _L /I _N [%]	LRT M ₂ /M _N [%]	BT M _{BT} /M _N [%]
				50 %	75 %	100 %	50 %	75 %	100 %					
				50 %	75 %	100 %	50 %	75 %	100 %					
High voltage · 4-pole motors 50 Hz 400														
MG71A4-C	-	0.25	0.85	0.41	0.52	0.69	58.3	66.0	69.0	1410	1.70	420	190	260
MG71B4-C	-	0.37	1.10	0.42	0.55	0.71	61.9	68.8	71.0	1410	2.10	440	190	250
MG80A4-C	-	0.55	1.50	0.50	0.64	0.74	75.7	78.2	77.0	1400	3.75	450	220	260
MG90SC4-H3	IE3	0.75	1.90	0.52	0.66	0.73	81.4	83.1	82.5	1450	4.97	690	250	320
MG90SB4-H3	IE3	1.10	2.80	0.45	0.59	0.67	82.9	84.6	84.1	1460	7.17	870	300	400
MG90LC4-H3	IE3	1.50	3.60	0.49	0.62	0.71	84.2	85.8	85.3	1460	9.9	760	280	340
MG100LB4-H3	IE3	2.20	4.90	0.57	0.7	0.76	87.6	87.7	86.7	1450	14.5	630	280	330
MG100LC4-H3	IE3	3.00	6.30	0.55	0.66	0.79	84.5	86	87.7	1450	19.8	740	230	310
MG112MC4-H3	IE3	4.00	9.30	0.48	0.63	0.71	88.3	88.9	88.6	1460	26	840	320	390
MG132SB4-H3	IE3	5.50	11.0	0.67	0.78	0.83	90.4	90.3	89.6	1460	36.4	760	260	320
MG132MB4-H3	IE3	7.50	14.5	0.69	0.8	0.84	92.4	91.6	90.4	1460	49.5	740	260	320
MG160MA4-H3	IE3	11.0	20.7	0.66	0.77	0.83	91.6	92.1	91.4	1470	71.5	770	200	340
MG160LB4-H3	IE3	15.0	28.4	0.67	0.78	0.84	92.1	92.3	92.1	1470	98	820	230	340
High voltage · 4-pole motors 60 Hz 440														
MG71A4-C	-	0.25	0.70	0.41	0.53	0.69	65.6	71.7	72.0	1720	1.42	470	220	280
MG71B4-C	-	0.37	1.00	0.45	0.58	0.72	67.5	72.4	74.0	1720	2.10	470	220	280
MG80A4-C	-	0.55	1.40	0.51	0.65	0.75	79.1	81.0	80.0	1710	3.10	470	230	260
MG90SC4-H3	IE3	0.75	1.75	0.52	0.65	0.72	82.9	84.1	85.5	1750	4.12	690	270	360
MG90SB4-H3	IE2	1.10	2.60	0.46	0.59	0.66	85.2	86.4	84.0	1760	5.96	830	340	430
MG90LC4-H3	IE3	1.50	3.30	0.51	0.62	0.7	86.0	86.8	86.5	1760	8.25	820	330	400
MG100LB4-H3	IE2	2.20	4.45	0.59	0.7	0.76	88.5	88.3	87.5	1750	11.9	690	310	340
MG100LC4-H3	IE3	3.00	5.75	0.62	0.73	0.78	89.7	89.4	89.5	1750	16.6	780	230	330
MG112MC4-H3	IE3	4.00	8.40	0.51	0.64	0.7	90.9	90.6	89.5	1760	21.6	850	400	340
MG132SB4-H3	IE2	5.50	10.0	0.69	0.78	0.83	91.2	90.9	89.5	1760	30.5	780	300	350
MG132MB4-H3	IE3	7.50	13.4	0.7	0.8	0.83	92.7	92.1	91.7	1760	40.7	770	260	340
MG160MA4-H3	IE2	11.0	19.0	0.68	0.78	0.85	91.3	91.2	91.0	1770	59.5	840	230	360
MG160LB4-H3	IE2	15.0	26.1	0.69	0.78	0.84	91.4	91.2	91.0	1770	81.5	850	240	360

The data shows the value for the nominal voltage.

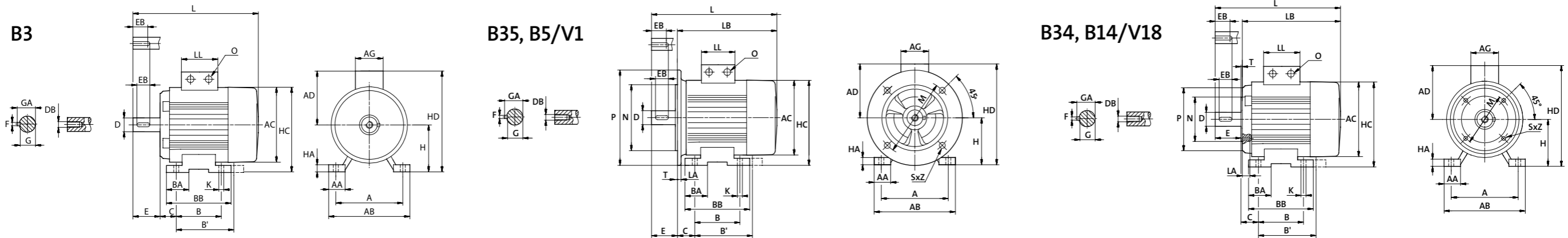
1) η at 100 % is stated according to the IEC 60034-30. The measured value at 100 % lives up to this value as a minimum. η at 50 % and 75 % loads are stated as measured values.

DIMENSIONS

Frame size	Pole	p2 [kW]	Short type designation	Stator housing						Shaft end						Feet										Flange B35, B5/V1					Flange B34, B14/V18					Cable entry	Image						
				AC	AD	AG	L	LB	LL	D	DB	E	EB	F	G	GA	A	AA	AB	B	B'	BA	BB	C	H	HA	HC	HD	K	LA	M	N	P	SxZ	T	LA		M	N	P	SxZ	T	O
MG 71	2	0.37	MG71A2-C	141	109	82	221	191	82	14 (j6)	M5	30	22	5	11.0	16.0	112	27	139	90	-	20	110	45	71	3	142	180	7 (M6)	10	130	110	160	D10 x 4 (M8)	3.5	12 ¹⁾	85	70	105	M6 x 4	2.5	2 x M20 x 1.5	
		0.55	MG71B2-C																																								
	4	0.25	MG71B4-C																																								
0.37		MG71B4-C																																									
MG 80	2	0.75	MG80A2-H3	141	109	82	271	231	19 (j6)	M6	40	32	6	15.5	21.5	125	37	159	100	-	25	125	50	80	3	151	189	10 (M8)	10	165	130	200	D12 x 4 (M10)	3.5	12 ¹⁾	100	80	120	M6 x 4	3.0	2 x M20 x 1.5		
		1.1	MG80C2-H3				291	251																																			
	4	0.55	MG80A4-C				271	231																																			
MG 90	2	1.5	MG90S2-H3	178	110	162	331	281	103	24(j6)	M8	50	40	8	20.0	27.0	140	-	178	100	125	-	155	56	90	3	179	200	10 (M8)	18	165	130	200	D12 x 4 (M10)	3.5	13 ¹⁾	115	95	135	M8 x 4	3.0	4 x M20 ²⁾	
		2.2	MG90LC2-H3				371	321	103	24 (j6)	M8	50	40	8	20.0	27.0	140	-	178	100	125	-	170	56	90	3	179	200	10 (M8)	18	165	130	200	D12 x 4 (M10)	3.5	13 ¹⁾	115	95	135	M8 x 4	3.0	4 x M20 ²⁾	
	4	0.75	MG90S4-H3				321	281	103	19 (j6)	M6	40	32	6	15.5	21.5	140	-	178	100	125	-	155	56	80	3	179	200	10 (M8)	18	165	130	200	D12 x 4 (M10)	3.5	13 ¹⁾	100	80	115	M6x4	3.0	4 x M20 ²⁾	
		1.1	MG90S4-H3				371	321	103	24 (j6)	M8	50	40	8	20.0	27.0	140	-	178	100	125	-	170	56	90	3	179	200	10 (M8)	18	165	130	200	D12 x 4 (M10)	3.5	13 ¹⁾	115	95	135	M8 x 4	3.0	4 x M20 ²⁾	
	4	1.5	MG90LC4-H3				178	110	162	331	281	103	24 (j6)	M8	50	40	8	20.0	27.0	140	-	178	100	125	-	155	56	90	3	179	200	10(M10)	18	165	130	200	D12 x 4 (M10)	3.5	13 ¹⁾	115	95	135	
MG 100	2	3.00	MG100LC2-H3	198	120	162	395	335	103	28 (j6)	M10	60	50	8	24.0	31.0	160	-	199	140	-	-	170	63	100	3	199	220	12 (M10)	10	215	180	250	D15 x 4 (M12)	4.0	14 ¹⁾	130	110	160	M8 x 4	3.5	4 x M20 ²⁾	
	4	2.2	MG100LB4-H3																																								
MG 112	2	4.00	MG112MC2-H3	220	134	202	432	372	103	28(j6)	M10	60	50	8	24.0	31.0	190	-	228	140	-	-	172	70	112	4	222	246	12 (M10)	10	215	180	250	D15 x 4 (M12)	4.0	14 ¹⁾	130	110	160	M8 x 4	3.5	4 x M25 ²⁾	
	4	4.00	MG112MC4-H3																																								
MG 132	2	5.5	MG132S2-H3	220	134	202	471	391	103	38 (k6)	M12	80	70	10	33.0	41.0	216	-	255	140	-	-	172	89	132	5	242	266	12 (M10)	12	265	230	300	D15 x 4 (M12)	4.0	28 ¹⁾	165	130	200	M10 x 4	3.5	4 x M25 ²⁾	
		7.5	MG132S2-H3																																								
	4	5.5	MG132S4-H3																																								
4	7.5	MG132MB4-H3	260	159	203	509	429	135	38 (k6)	M12	80	70	10	33.0	41.0	216	42	244	140	178	-	202	89	132	6	262	257	12 (M10)	12	265	230	300	D15 x 4 (M12)	4.0	-	-	-	-	-	-	4 x M25 ²⁾		
MG 160	2	11.00	MG160MB2-H3	314	204	243	581	471	213	42 (k6)	M16	110	82	12	37.0	45.0	254	49	287	210	-	-	239	108	160	8	317	320	15 (M12)	12	300	250	350	D19 x 4 (M16)	5.0	-	-	-	-	-	-	4 x M40/2 x M20 ²⁾	
		15.00	MG160MD2-H3																																								
	4	18.5	MG160LB2-H3																																								
4	11.00	MG160MA4-H3	314	204	243	655	545	213	42 (k6)	M16	110	82	12	37.0	45.0	254	49	287	254	-	-	283	108	160	8	317	320	15 (M12)	12	300	250	350	D19 x 4 (M16)	5.0	-	-	-	-	-	-			
	15.00	MG160LB4-H3	314	204	243	685	575	213	42 (k6)	M16	110	82	12	37.0	45.0	254	49	287	254	-	-	313	108	160	8	317	320	15 (M12)	12	300	250	350	D19 x 4 (M16)	5.0	-	-	-	-	-	-			
MG 180	2	22.00	MG180MB2-H3	314	204	243	651	541	213	48 (K6)	M16	110	100	14	43.0	51.5	279	61	312	241	279	-	308	121	180	8	337	340	15 (M12)	12	300	250	350	D19 x 4 (M16)	5.0	-	-	-	-	-	-	4 x M40/2 x M20 ²⁾	

¹⁾ When fitting a component on the motor flange, check that the through-going screws do not penetrate deeper into the flange than the dimension LA. If the screws are too long, they can be screwed into the stator windings.

²⁾ Knockouts



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Grundfos has been manufacturing high-quality electrical motors for more than 30 years, and as one of the world's leading pump manufacturers, we know better than anyone what is required of a reliable electrical motor.

Cost of Ownership is an important consideration when choosing a motor for a specific task. At Grundfos we define Cost of Ownership as the total sum of both the costs and benefits of having a business relationship with us. An important element of this is how Grundfos can assist in reducing operation costs through technical advice, customer training, service, and reliable logistics.



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