

## MG Model B single phase 0.18 - 2.2 kW

# 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 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. The range of MG-B single-phase motors is available from 0.18 to 2.2 kW, two and four pole 50 Hz and 60 Hz versions, and a number of different voltages.

## Permanent-split capacitor motors

The Grundfos MG single-phase motors are so-called permanent-split capacitor (PSC) motor, which makes them ideally suitable for applications with high cycle rates.

Permanent-split capacitor motors offer several benefits. For instance, their running performance and speed can be tailored to meet specific needs, and they can be designed for optimum efficiency and high power factor at rated load. As they need no starting mechanism, they can be reversed easily. These advantages are among the reasons why Grundfos uses PSC single-phase motors as standard for applications up to 2.2 kW two pole, and 1.5 kW four pole.



## Motor protection

Single-phase motors are supplied with built-in thermal protection according to IEC 60034-11: TP 211 (both steady overload and stalled condition). The thermal protection incorporates automatic reset. This means that the motor must be connected in a way, which ensures that the automatic reset cannot cause accidents.

## Efficiency class

Efficiency classes have not been defined for single-phase motors.

## Product range

The Grundfos MG-B single-phase motors are suitable for use with the Grundfos CR, TP, NB and NK pump ranges.

At right is an overview of the range of standard Grundfos MG-B motors. Customised versions are available upon request.



Model	Phases	Power	2-pole		4-pole	
			Type designation	Efficiency class 1-2-3	Type designation	Efficiency class 1-2-3
B	1	0.18	-	Not defined for single-phase	MG71A4-B	Not defined for single-phase
	1	0.25	MG71A2-B		MG71B4-B	
	1	0.37	MG71B2-B		MG80A4-B	
	1	0.55	MG80A2-B		MG80B4-B	
	1	0.75	MG80B2-B		MG90SA4-B	
	1	1.10	MG90SB2-B		MG90LB4-B	
	1	1.50	MG90LB2-B		-	
	1	2.20	MG90LC2-B		-	

# Bearings

The Grundfos MG-B motors are fitted with locked bearings at the drive end.

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

- SKF AB (Sweden)
- NSK Corporation (Japan)
- NTN Bearing 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	Phases	2-pole		4-pole		Bearing sizes	
		Power	Type designation	Power	Type designation	Drive end	Non-drive end
71	1	0.25	MG71A2-B	0.18	MG71A4-B	6204.2Z.C3	6201.2Z.C3
	1	0.37	MG71B2-B	0.25	MG71B4-B		
80	1	0.55	MG80A2-B	0.37	MG80A4-B	6305.2Z.C4	6205.2Z.C3
	1	0.75	MG80B2-B	0.55	MG80B4-B		
90	1	1.10	MG90SB2-B	0.75	MG90SA4-B	6305.2Z.C4	6205.2Z.C3
	1	1.50	MG90LB2-B	1.10	MG90LB4-B		
90	1	2.20	MG90LC2-B	-	-		

# Noise

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.

Phases	Power	Type designation	50 Hz	60 Hz
			Sound pressure level dB(A)	Sound pressure level dB(A)
<b>2-pole motors</b>				
1	0.25	MG71A2-B	53	59
	0.37	MG71B2-B	55	60
	0.55	MG80A2-B	54	60
	0.75	MG80B2-B	56	62
	1.10	MG90SB2-B	60	65
	1.50	MG90LB2-B	62	67
	2.20	MG90LC2-B	62	67
<b>4-pole motors</b>				
1	0.18	MG71A4-B	38	42
	0.25	MG71B4-B	38	42
	0.37	MG80A4-B	44	46
	0.55	MG80B4-B	46	50
	0.75	MG90SA4-B	54	57
	1.10	MG90LB4-B	60	64
	1.50	MG90LC4-B	62	66

# Electrical data



MG-B									
2-pole motors 50 Hz 1x220-230/240 V									
Shorttype designation	Shaft power $P_2$	Full load current $I_N$	Power factor $\cos \varphi$ at % load	Efficiency $\eta$ at % load	Speed $n$	Torque at 230 V $M_N$	LRC $I_s/I_N$	LRT $M_s/M_N$	BT $M_{B7}/M_N$
	[kW]	[A]	100 %	100 %	[min <sup>-1</sup> ]	[Nm]	[%]	[%]	[%]
MG71A2-B	0.25	2.05-2.05/2.00	0.99	58-56/55	2800	0.85	280	120	250
MG71B2-B	0.37	2.95-2.95/2.70	0.99	60-56/60	2770	1.28	280	110	220
MG80A2-B	0.55	4.00-4.00/3.65	0.99	66-64/66	2750	1.90	280	100	200
MG80B2-B	0.75	5.10-5.10/4.75	0.99	69-67/69	2780	2.60	300	80	200
MG90SB2-B	1.10	7.40-7.40/6.70	0.98/0.99	73-71/73	2770	3.80	390	90/100	230
MG90LB2-B	1.50	9.90-9.90/8.90	0.98/0.99	72-70/74	2750/2740	5.20	390	80	210
MG90LC2-B	2.20	14.0-13.6/12.6	1.00	75-75/75	2910	7.70	390	60	200
2-pole motors 50 Hz 1x110/220 V									
MG71A2-B	0.25	4.10/2.10	0.99	58	2790	0.85	300	110	240
MG71B2-B	0.37	5.80/3.00	0.97	61	2770	1.28	310	90	210
MG80A2-B	0.55	8.10/4.00	0.99	65	2770	1.90	310	80	200
MG80B2-B	0.75	10.5/5.25	0.99	68	2770	2.60	320	70	210
2-pole motors 60 Hz 1x110-127/220-240 V									
MG71A2-B	0.25	4.20-4.15/2.28-2.26	0.97	58-51/54-49	3370-3420/3370-3420	0.71	280-330/280-330	100-120/100-120	240-300/240-300
MG71B2-B	0.37	5.75-5.55/3.05-2.95	0.97	63-57/59-56	3360-3410/3330-3380	1.04	280-330/280-330	90-110/90-110	220-280/220-280
MG80A2-B	0.55	8.50-7.70/4.35-4.15	0.98	63-60/61-59	3330-3380/3330-3380	1.56	260-310/260-310	80-100/80-100	220-280/220-280
MG80B2-B	0.75	11.4-10.6/5.75-5.45	0.98	64-60/63-60	3350-3400/3350-3400	2.12	260-310/260-310	80-100/80-100	230-300/230-300
4-pole motors 50 Hz 1x220-230 V									
MG71A4-B	0.18	1.62	0.97	54-52	1350-1370	1.26	200	80	170
MG71B4-B	0.25	2.14	0.97	57-55	1350-1370	1.76	220	70	170
MG80A4-B	0.37	2.85	0.97	62-60	1350-1370	2.60	240	70	170
MG80B4-B	0.55	4.00	0.97	66-64	1350-1370	3.85	260	70	170
MG90SA4-B	0.75	5.45	0.96	71-70	1390-1410	5.15	320	55	190
MG90LB4-B	1.10	7.00	0.96	75-76	1420-1430	7.40	390	50	200
MG90LC4-B	1.50	9.90	0.97	54-52	1390-1400	10.4	400	55	200
4-pole motors 50 Hz 1x240 V									
MG71B4-B	0.25	1.90	0.99	57	1360	1.76	220	80	170
MG80A4-B	0.37	2.65	0.98	61	1370	2.60	240	70	170
MG80B4-B	0.55	3.60	1.00	66	1340	3.95	240	70	160
MG90SA4-B	0.75	4.60	0.97	75	1390	5.15	310	50	170
MG90LB4-B	1.10	6.55	0.97	75	1420	7.40	430	60	230

# Dimensions

Frame size	Short type designation	[kW]	Stator housing						Shaft end												
			IEC:	AC	AD	AG	L	LB	LL	D	DB	E	EB	F	G	GA	A	AA	AB	B	B'
71	A2-B	0.25		141	133	100	221	191	167	14 (j6)	M5	30	22	5	11.0	16.0	112	27	139	90	-
	B2-B	0.37																			
	A4-B	0.18																			
	B4-B	0.25																			
80	A2-B	0.55		141	133	100	271	231	167	19 (j6)	M6	40	32	6	15.5	21.5	125	37	159	100	-
	B2-B	0.75																			
	A4-B	0.37																			
	B4-B	0.55																			
90	SB2-B	1.10		178	139	162	331	281	135	24 (j6)	M8	50	40	8	20.0	27.0	140	-	178	100	125
	SA4-B	0.75																			
	LB2-B	1.50		178	139	162	371	321	135	24 (j6)	M8	50	40	8	20.0	27.0	140	-	178	100	125
	LC2-B	2.20																			
	LB4-B	1.10																			

MG 80

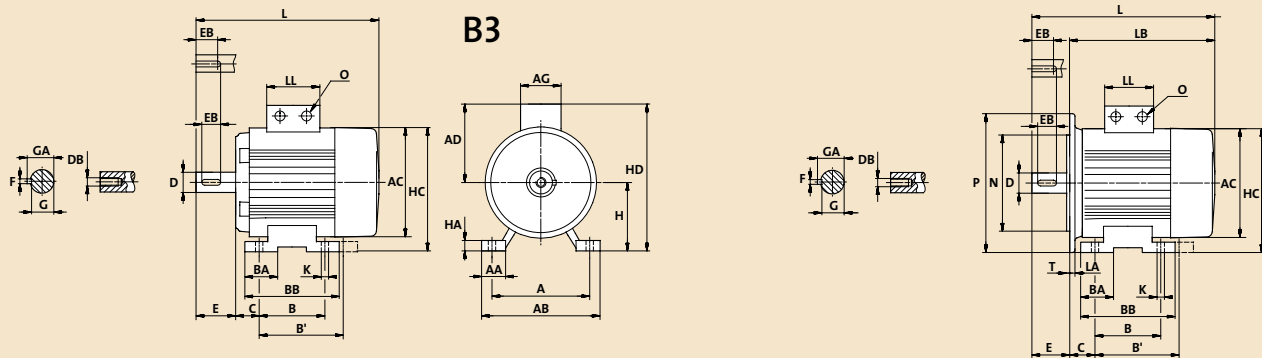


MG 90



MG 71

<sup>1)</sup> 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.





Feet								Flange B35 B5/V1						Flange B34, B14/V18						Cable entry
BA	BB	C	H	HA	HC	HD	K	LA	M	N	P	SxZ	T	LA	M	N	P	SxZ	T	O
20	110	45	71	3	142	204	7 (M6)	10	130	110	160	M8x4	3.50	12 <sup>1)</sup>	85	70	105	M6x4	2.50	2xM20x1.5
25	125	50	80	3	151	213	10 (M8)	10	165	130	200	M10x4	3.50	12 <sup>1)</sup>	100	80	120	M6x4	3.00	2xM20x1.5
-	155	56	90	3	179	229	10 (M8)	18	165	130	200	M10x4	3.50	13 <sup>1)</sup>	115	95	135	M8x4	3.00	4xM20
-	155	56	90	3	179	229	10 (M8)	18	165	130	200	M10x4	3.50	13 <sup>1)</sup>	115	95	135	M8x4	3.00	4xM20



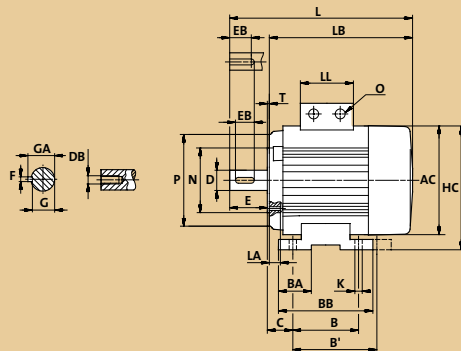
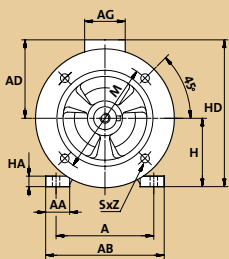
MG 80



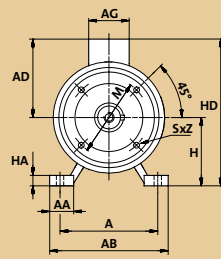
MG 90



B35, B5/V1



B34, B14/V18



### Doing business with Grundfos

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.