

## Electrical Features

### CE Motors acc. to EN 60034-1

Grade of protection	IP55
Type of insulation	F
Number of poles	2
Efficiencies	EN 60034-30, IE3 ≥ 1 HP (0.75 kW)

60 Hz	230 V $\Upsilon\Upsilon$ 460 V $\Upsilon$	460 V $\Upsilon$	460 V $\Delta$
up to 8.4 HP (6.3 kW)	Standard	●	●
9.2 – 20.1 HP (6.9 – 15 kW)	Standard	–	Standard
25 HP and higher (22 kW)	–	–	Standard

In accordance with DIN EN 60034-1, **Zone A**, and permanent operation, the voltage tolerance is  $\pm 5\%$  and the frequency tolerance is  $\pm 2\%$ .

Available as a special design, e.g.:

	200 V	200 V 220 V	200 V – 220 V 400 V	380 V	400 V	415 V	440 V	480 V	500 V	575 V	200 V $\Upsilon\Upsilon$ 400 V $\Upsilon$	230 V $\Upsilon\Upsilon$ 460 V $\Upsilon$
50 Hz	●	–	–	●	●	●	–	–	●	–	●	–
60 Hz	–	●	●	●	●	–	●	●	–	●	–	●

● available – not available

Other voltages upon request.

For special demands, versions for use with a standardized voltage 50 Hz and 60 Hz (Transformer usage) are possible after consulting with the company, For example: 3 x 400 V,  $\pm 5\%$ , 50 – 60 Hz.

### Motors 8 HP (6 kW) and larger

Motors wired for  $\Delta$  (Delta) connection.

The motor design allows  $\Upsilon/\Delta$ -starting, if required.

Screw-spindle pumps used for  $\Upsilon/\Delta$ -starting must be started without pressure.

Soft-starting devices can be used as an alternative to  $\Upsilon/\Delta$ -starting.

### Motor cycle time

Motors less 4 HP (3 kW) ►  
up to 200 times per hour.

Motors from 4 HP (3 kW) to 5.4 HP (4 kW) ►  
up to 40 times per hour.

Motors from 6.7 HP (5 kW) to 12.1 HP (9 kW) ►  
up to 20 times per hour.

Motors 14.7 HP (11 kW) and larger ►  
up to 15 times per hour.

Higher on/off cycling frequencies are available upon request.

## Electrical Features

### International Regulations, Brinkmann motors



Approved by UL with „UL Recognized Component Mark“ for USA acc. to UL 1004-1 and for Canada acc. to CSA C22.2 No. 100-14 (UL-File E233349)



Brinkmann Motors up to 20.1 HP (15 kW), 60 Hz, and up to max. 600 V are available with UL Recognized Component Mark approval as special designs.

Brinkmann motors ranging from 2.3 kW (3.1 HP) to 13 kW (17.4 HP), 50 Hz, are available with the China Energy Label GB18613-2012, Grade 2 upon request.



CC311B

Compliance Certification number CC311B according to 10 C.F.R. §431 (NEMA PREMIUM EFFICIENCY)

Brinkmann motors ranging from 1 HP (0.86 kW) to 20.1 HP (15 kW, 60 Hz), are available with NEMA PREMIUM MG 1 upon request.

Brinkmann Motors Options	50 Hz					60 Hz								
	200 V	380 V	400 V	415 V	500 V	200 V 220 V	380 V	400V	440 V	460 V	230 V 460 V	480 V	230 V 480 V	575 V 600 V
UL/CSA	-	-	-	-	-	●	●	●	●	●	●	●	●	●
CEL (Grade 2) ≥ 2.3 kW	●	●	●	●	●	-	-	-	-	-	-	-	-	-
NEMA PREMIUM MG 1 ≥ 1 HP (≥ 0.86 kW)	Y 1 – 8.4 HP (0.86 – 6.3 kW)	-	-	-	-	●	●	●	●	●	●	●	●	●
	Δ 4.6 – 20.1 HP (3.45 – 15 kW)	-	-	-	-	-	●	●	●	●	-	●	-	●
	YY/Y 1 – 20.1 HP (0.86 – 15 kW)	-	-	-	-	-	-	○	-	-	●	-	●	-

● available – not available ○ upon request Additional country-specific approvals upon request.

### International Regulations, Standard motors

Upon request. Depending on actual motor rating and sizing (Power / Motor efficiency class) deviations in pump and motor configurations are possible. An overview of pumps built with standard motors can be found on our website.

### Current / Rated current

The current ( $I_{\text{catalog}}$ ) stated at the name plates is used for the sizing of electronic components.

Motor < 0.75 kW:  $I_{\text{max}} = I_{\text{catalog}}$

Motor ≥ 0.75 kW:  $I_{\text{max}} = 1,05 \times I_{\text{catalog}}$

For extended voltage ranges we mention only the highest current value in our data sheets.

# Technical Information

## Electrical Features, NEMA MG1 12-12, Premium



NEMA-Premium

### Technical motor data NEMA Premium

Three-phase induction motor 2 pole, thermal protection class F, grade of protection IP 55

#### Brinkmann motors

	Power 60 Hz		Current 2 pole 60 Hz AMPS		Noise level max. dBA / 60 Hz
	kW	HP	Y 230 V	Y 460 V	
MG1 12-12	B 1.49	B 2.0	5.4	2.7	67
	B 1.75	B 2.3	6.2	3.1	67
	B 1.95	B 2.6	7.0	3.5	67
	B 2.18	B 2.9	7.8	3.9	67
	B 2.55	B 3.4	8.8	4.4	67
	B 2.94	B 3.9	10.2	5.1	67
	B 3.45	B 4.6	12.0	6.0	67
	B 3.8	B 5.1	12.8	6.4	75
	B 4.55	B 6.1	15.8	7.9	75
	B 5.75	B 7.7	19.0	9.5	75
	B 6.3	B 8.4	20.8	10.4	77
	B 6.9	B 9.2	21.2	10.6	77
	B 7.48	B 10.0	23.0	11.5	77
	B 8.6	B 11.5	27.8	13.9	77
	B 10.3	B 13.8	31.6	15.8	78
B 12.6	B 16.9	39.2	19.6	80	
B 15.0	B 20.1	48.2	24.1	80	

#### Standard Siemens motors

	Power 60 Hz		Current 2 pole 60 Hz AMPS	Noise level dBA / 60 Hz	Current 4 pole 60 Hz AMPS	Noise level dBA / 60 Hz
	kW	HP	Y 460 V		Y 460 V	
MG1 12-12	0.75	1	1.45	67	1.59	58
	1.1	1.5	1.98	67	2.15	61
	1.5	2	2.6	72	2.85	61
	2.2	3	3.65	72	3.8	65
	3	4	4.9	74	5.1	65
	3.7	5	6.0	76	6.5	65
	5.5	7.5	8.6	76	9.3	71
			Δ 460 V		Δ 460 V	
MG1 12-12	7.5	10	11.5	75	12.4	71
	11	15	17.2	80	18.0	72
	15	20	24.0	80	25.0	72
	18.5	25	28.0	80	30.5	71
	22	30	34.0	81	36.5	73
	30	40	47.0	81	48.0	71
	37	50	57.0	82	58.0	70
	45	60	69.0	>82	71.0	70
	55	75	83.0	>82	84.0	70
	75	100	112.0	>82	116.0	82
	90	125	132.0	>82	136.0	82
	110	150	160.0	>82	168.0	82

Noise level with +3 dBA tolerance for standard motors.

**Special voltages and cycles are available upon request.** Depending on actual motor rating and sizing (Power / Motor efficiency class) deviations in pump and motor configurations are possible. Motors from various suppliers will be used, depending on availability.

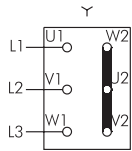
## Electrical Features

### Circuits

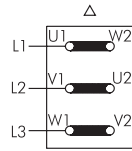
on request

Y (Star Connection)  
up to 8.4 HP  
(6.3 kW)

Δ (Delta Connection)  
10 HP (7.5 kW)  
and larger



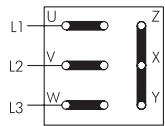
Y 440 V – 480 V  
60 Hz



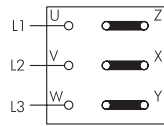
Δ 440 V – 480 V  
60 Hz

### Voltage changing 1 : 2 Y / Y

e. g. 208 – 230 V / 460 V, 60 Hz



Low Voltage



High Voltage

### Installation

#### Brinkmann Screw Pump with connector

Motors up to 7.4 HP (5.5 kW) are available with a HAN 10-pin connector, motors 8 HP (6 kW) to 17.4 HP (13 kW) are available with HAN modular plug connector.

### Set-up altitude and coolant temperature

The specified power ratings ( $P_N$ ) and operating values for the motors apply to operating mode S 1 according to EN 60034-1 (continuous operation) at a frequency of 60 Hz, rated voltage, a cooling air temperature (KT) of max. 104 °F (40 °C) and a set-up altitude of up to 3280 ft (1000 m) above sea level. The motors can also be used at a cooling air temperature above 104 °F (40 °C) up to max. 140 °F (60 °C) or set-up altitude above 3280 ft (1000 m) above sea level. In such cases the power rating must be reduced according to the diagrams, or an appropriately larger motor version or higher heat class has to be selected. However, a deviation from the specified data is necessary when the cooling air temperature is reduced according to table simultaneously at set-up altitudes higher than 3280 ft (1000 m) above sea level.

Set-up altitude feet	Maximum cooling air temperature for heat class F °F / °C
0 up to 3280	104 / 40
3280 up to 6560	86 / 30
6560 up to 9840	66 / 19
9540 up to 13120	48 / 9

