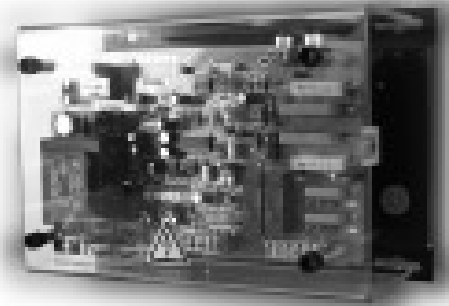


- ▶ Electronic motor brake
- ▶ Reduced mechanical stress on drives
- ▶ Frictionless braking
- ▶ Maintenance-free



▶ Technical data

▶ 1. Functions

Electronic DC motor brake limiting mechanical stress on drives
Frictionless braking, and temperature monitoring of the device

▶ 2. Time ranges

Braking time	Adjustment range
	0s 30s

▶ 3. Indicators

Green LED 1 ON:	indication of supply voltage
Red LED 2 ON/OFF:	indication of release brake contactor
Red LED 3 ON/OFF:	indication of braking current
Red LED 4 ON/OFF:	indication of release motor contactor

▶ 4. Mechanical design

Metal housing with plastic cover, IP rating IP00
Mounting on mounting plate
Distance to other devices: min. 100mm
Mounting position: cooling fins vertical
Terminal: depends on power class (cross-head or hexagon-head screw), IP rating IP00
Initial torque:
Terminal capacity: depends on terminal screw see table (page 2)

▶ 5. Input circuit

Supply voltage:	230V AC	terminals L1-N
Tolerance:	±15%	
Rated frequency:	48 to 63Hz	
Duration of operation:	100%	

▶ 6. Control contact 1-2

Function:	activation of brake
Loadable:	no
Line length:	max. 10m, twisted pair
Control pulse length:	min. 0.2s

▶ 7. Control contact 3-4

Function:	interruption of braking (time-independent)
Loadable:	no
Line length:	max. 10m, twisted pair
Control pulse length:	min. 0.2s

▶ 8. Control contact 5-6

Function:	feedback braking contactor
Loadable:	no
Line length:	max. 10m, twisted pair
Control pulse length:	min. 0.2s

▶ 9. Control contact 7-8

Function:	activation interlock
Loadable:	no
Line length:	max. 10m, twisted pair
Control pulse length:	min. 0.2s

▶ 10. Signaling contact 10-11-12

1 potential free change over contact	
Function:	indication release of braking contactor
Switching capacity:	1500VA (6A / 250V AC)
Fusing:	6A

▶ 11. Signaling contact 13-14-15

1 potential free change over contact	
Function:	indication release of motor contactor
Switching capacity:	1500VA (6A / 250V AC)
Fusing:	6A

▶ 12. Power circuit

Supply voltage:	220 to 400V AC	terminals L1-L2
Tolerance:	±15%	
Rated frequency:	48 to 63Hz	
Breaking current:	see table	
Duration of operation:	max. 50% at maximum load	

▶ 13. Power classes

See table (page 2)

▶ 14. Ambient conditions

Ambient temperature:	-25 to +55°C (according to IEC 68-1)
Storage temperature:	-25 to +70°C
Transport temperature:	-25 to +70°C
Relative humidity:	5% to 95% not condensing (according to IEC 721-3-3)
Pollution degree:	2 (according to IEC 664-1)

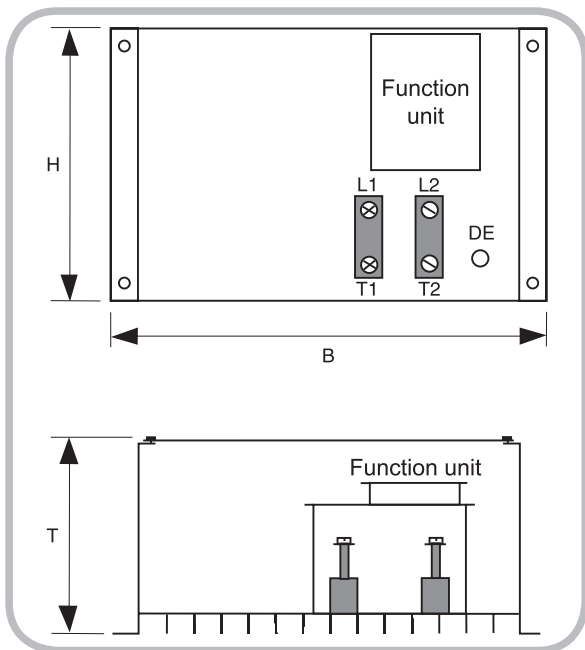
Power classes

Type	Max. motor output at 3x400V (kW) ¹⁾	Max. permissible breaking current (A)	Recommended semiconductor fuse (optional) (A)	Line fuse (A)	Recommended line cross section (mm²)	Weight (kg)	Size
BG 20	4.0	18	25	16	1.5	1.1	A
BG 35	7.5	32	40	25	2.5	1.2	A
BG 60	15.0	30	50	35	6	2.3	B
BG 100	22.0	100	80	50	10	2.5	B
BG 150	30.0	150	125	80	16	2.9	B
BG 220	55.0	220	160	100	35	3.4	B
BG 300	75.0	300	250	160	70	3.4	B
BG 400	100.0	400	400	250	120	6.9	C
BG 500	140.0	500	500	300	185	6.9	C
BG 750	200.0	750	630	400	2 x 120	7.4	C
BG 1000	250.0	1000	850	400	2 x 150	7.6	C
BG 1500	315.0	1450	1000	630	2 x 240	9.2	D
BG 2000	400.0	2000	1200	800	2 x 300	10.5	D

¹⁾ All values refer to standardized motors according to IEC 72 und UNE 20106

Dimensions

Size	Dimensions H x B x T (mm)
A	200 x 140 x 115
B	160 x 260 x 170
C	200 x 360 x 200
D	400 x 360 x 240



Functions

Electronic motor brake

In order to stop the motor, current is used that is rectified via a thyristor using phase angle control. The value of this current can be set using the I_b regulator.

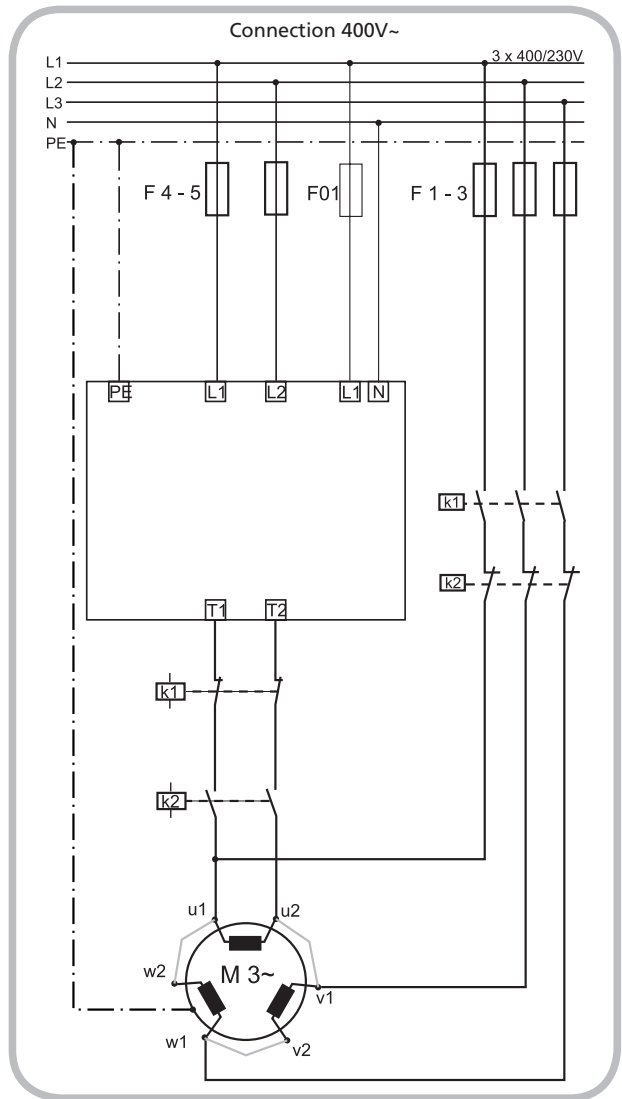
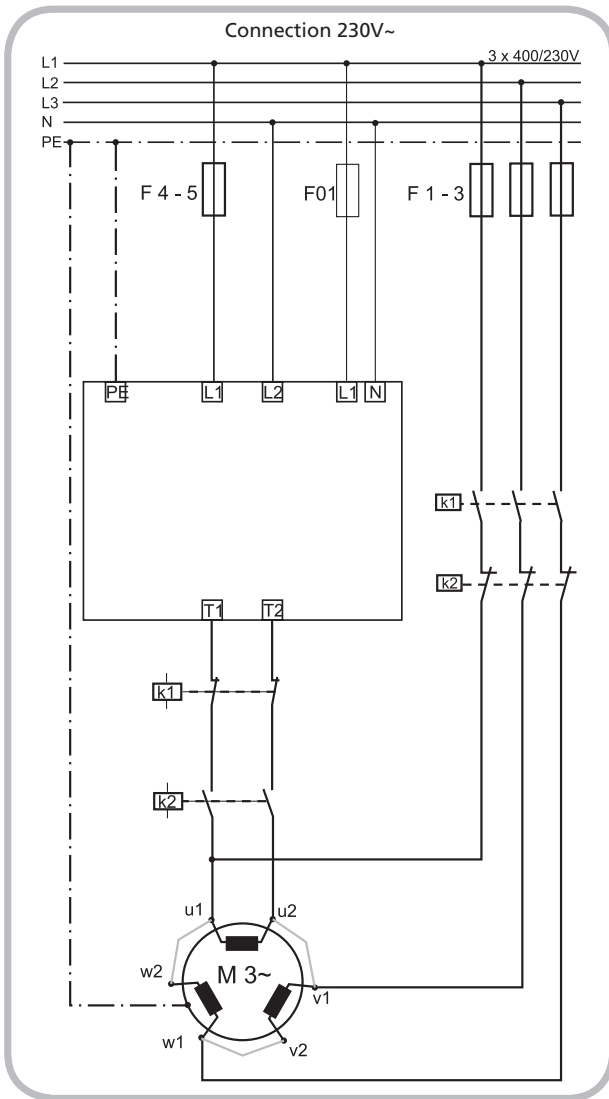
In connection with the regenerative diode and the motor inductance a pulsating direct current is created inside the motor coil. This current induces a magnetic field within the stator. The rotor attempts to follow this field and is thus slowed down by the speed-dependent braking torque created within the time set at the t_b regulator.

Experience has shown that the information necessary to exactly calculate the braking torque or braking current I_b and the braking time t_b is hardly known for all of the occurring moments of inertia and for the drive system. The necessary braking torque

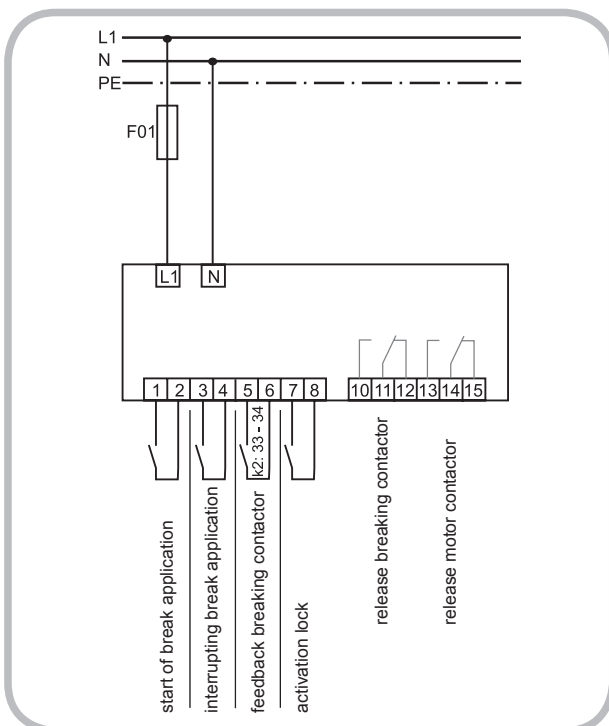
should therefore be recorded on-site during a test run. Please note that the coil resistance continuously changes until the operating temperature is reached. As one feature of this DC current braking no current is induced inside the rotor when the motor is stopped. The motor therefore has no holding torque when it is stopped.

Connections

Power circuit



Master control unit



 **Comments**