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Find the *Pilz PKB-M/30A/470-550V AC* at our website: *Click HERE*

Mini-compact brake
PKB-M



Electronically-controlled brake unit for three-phase synchronous motors; 0.2 up to 7.5 kW (at 400 V/3 AC).

Features

- Brake for preset time
- Automatic braking current control (effective value)
- Braking time and braking current can be set
- Adjustable safety times
- Monitoring heat sink temperature
- No-load switching of brake contactor

Approvals

	PKB-M
UL LISTED	●
c UL LISTED	●

Technical Details	PKB-M
Electrical data	
Supply voltage	AC: 200 ... 240, 350 ... 415, 390 ... 460, 470 ... 550, 510 ... 600 V
Tolerance	90 ... 110 %
Power consumption	Max. 14 W
Switching capability in accordance with EN 60947-4-1, 10/91	AC1: 250 V/0.1 ... 5 A/1250 VA DC1: 24 V/0.1 ... 5 A/120 W
Contact material	AgCdO
Contact fuse protection	6 A quick or 4 A slow
Fuse protection of main current circuit	25 A/680 A^2 s for 15 A version 50 A/700 A^2 s for 30 A version
Features	
Braking current	15 A (up to 415 V AC with internal brake contactor) 30 A
Setting ranges for braking current	0.2 ... 15 $A_{effective}$ or 0,5 ... 30 $A_{effective}$
Safety times adjustable	t_{V1} = 240 ms (200 ms to 5.1 s) t_{V2}, t_{V3}, t_{V4} = 140 ms (100 ms to 5.1 s)
Braking time (monitoring time)	up to 945 s, can be set to infinity
Remote control connection	470 kΩ potentiometer for ext. remote control set point 470 kΩ potentiometer for ext. braking time set value
Manually operated braking process	via start contact to terminals 6/7
Pulse duty cycle	15 A version: ≤ 1:7 at t_{brake} = 10 s 30 A version: ≤ 1:10 at t_{brake} = 10 s
Environmental data	
Ambient temperature	-10 ... +55 °C
Storage temperature	-40 ... +85 °C
Mechanical data	
Max. cable cross section of external conductor	2 x 1.5 mm^2 or 1 x 2.5 mm^2 Single-core or multi-core with crimp connector
Dimensions (H x W x D)	87 x 90 x 145 mm
Weight	900 g

Description

- Logic control with micro-controller
- Braking current power semi-conductor
- Integrated brake contactor for devices up to 15 A/415 V AC
- Settings via keyboard
- LCD display
- Remote control option for
  - braking time
  - braking current
  - manually operated braking
- Non-volatile parameter memory
- Evaluation option for motor temperature sensor (PTC resistor)
- 90 mm housing, DIN-rail mounting

Pulse duty cycle

The following are decisive factors when choosing the PKB-M

- Motor nominal current I_N (I_N x 2 = max. braking current I_B)

and

- pulse duty cycle T_V

$$T_V = \frac{t_B}{t_P} (T_B\ 25\ °C/100\ \%\ I_B)$$

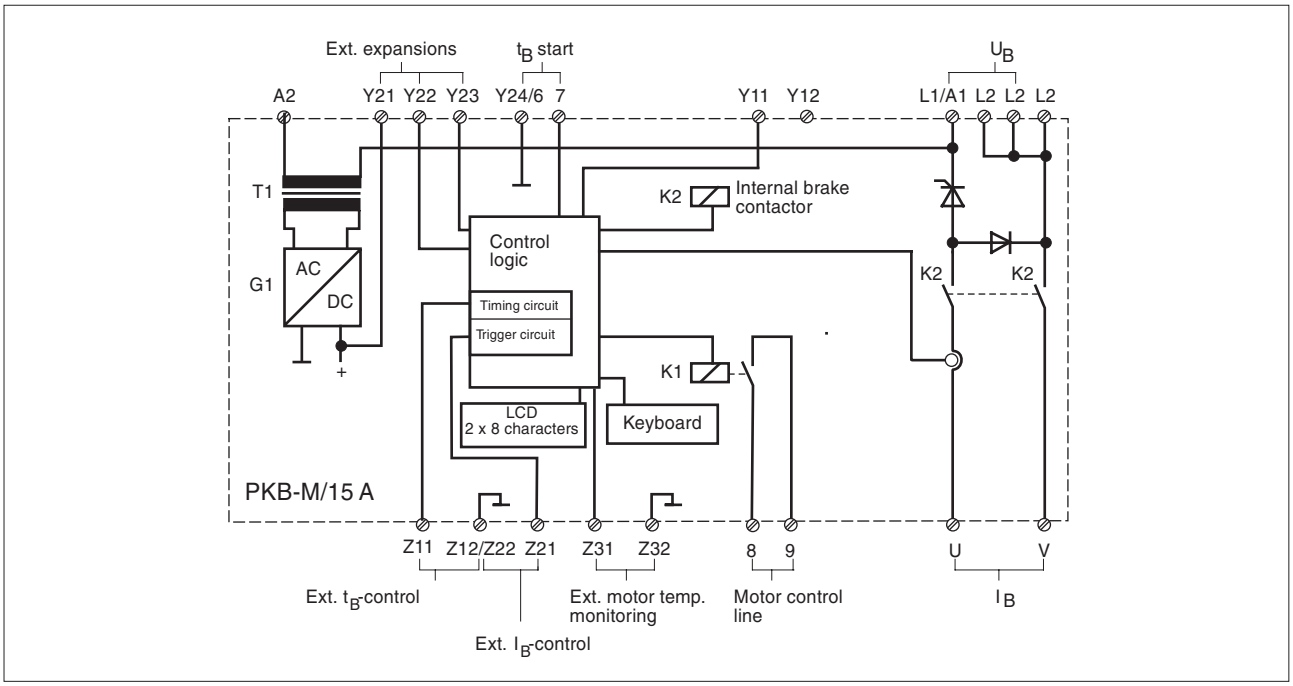
The 30 A version can be used to brake larger motors. The ratio of the motor nominal current to the braking current and can no longer be set to 1 : 2. This will result in a reduced braking effect. When setting the braking time (t_B) ensure that the pulse duty cycle for the unit is not exceeded.

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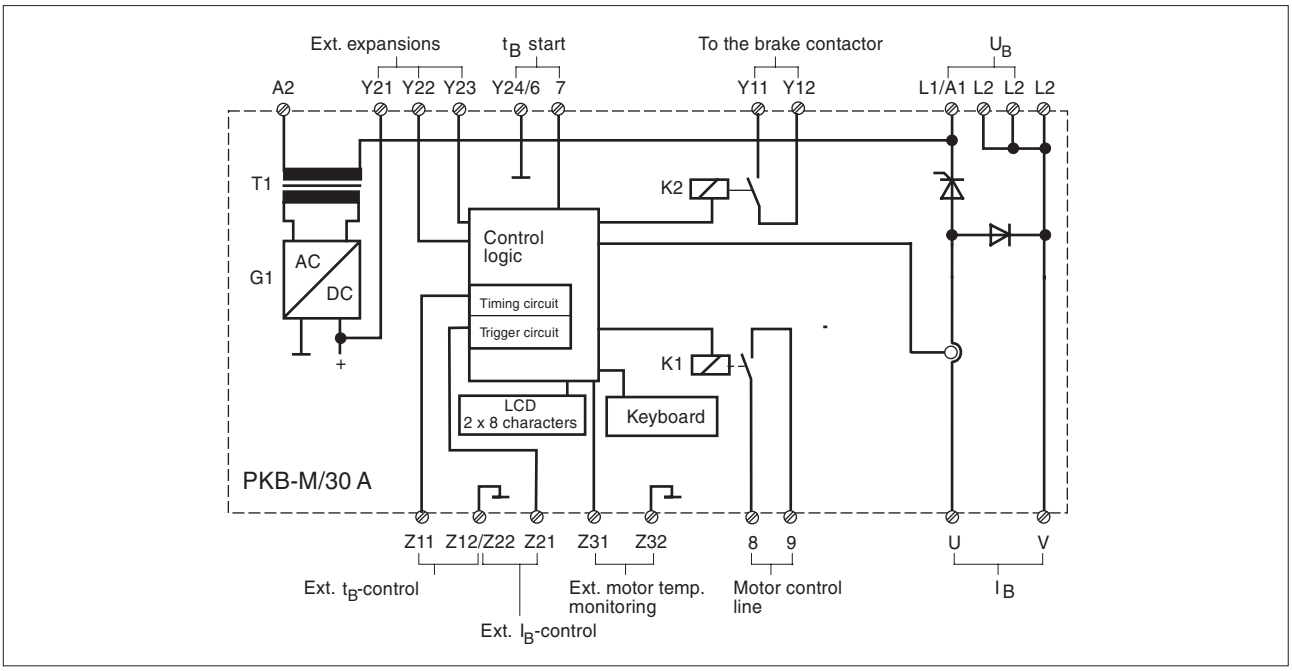
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Mini-compact brake
PKB-M

Internal wiring diagram PKB-M with internal brake contactor



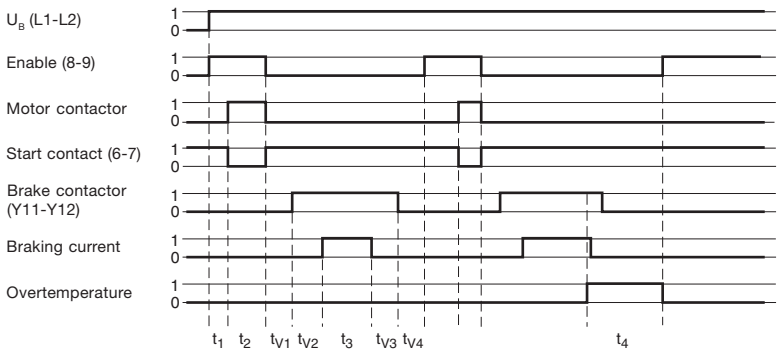
Internal wiring diagrams PKB-M with external brake contactor



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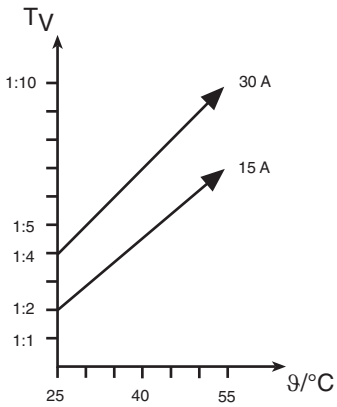
Mini-compact brake
PKB-M

Timing diagram for brake for preset time

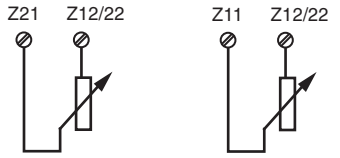


t_1 Enable to terminal 8-9
t_2 Motor on
t_3 Braking time
t_4 Overtemperature
t_{V1} ... t_{V4} Safety times

Pulse duty cycle



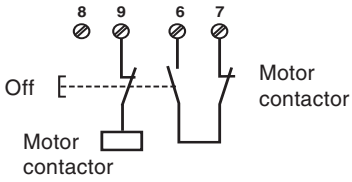
Braking current/time, remote controlled



Remote controlled braking current

Remote controlled braking time

Manually controlled braking process



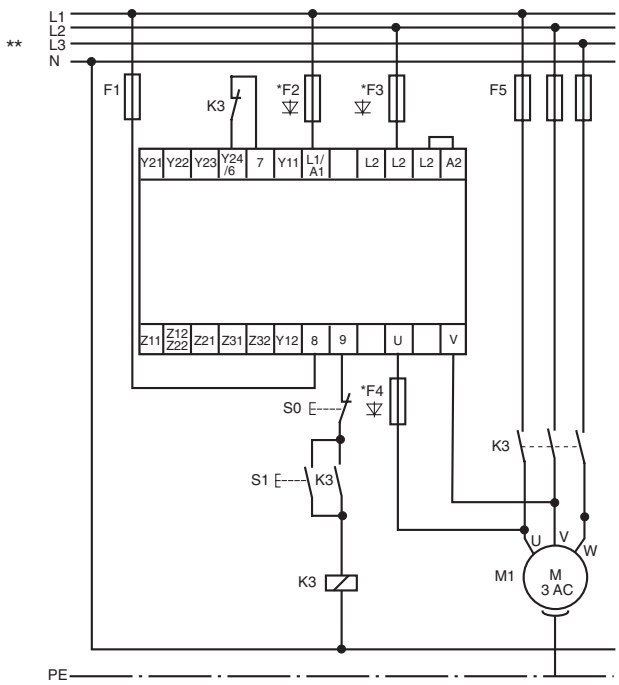
Terminal 8 must be connected to L1.

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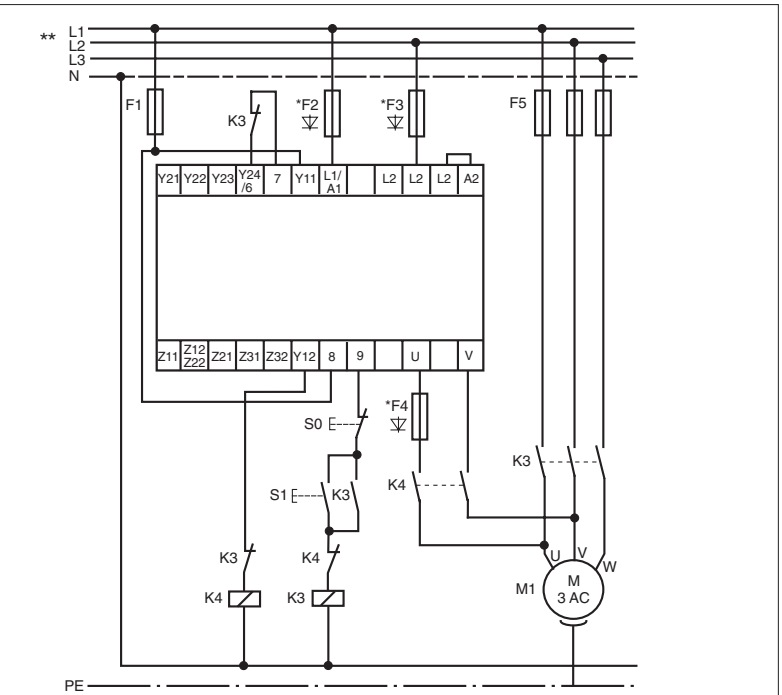
Mini-compact brake
PKB-M

PKB-M connection example with internal brake contactor (15 A/≤415 V AC)



* Super-fast semiconductor fuses
** unit's U_B = mains line-to-line voltage

PKB-M connection example with external brake contactor (15 A/≥440 V AC, 30 A)



* super-fast semiconductor fuses
** unit's U_B = mains line-to-line voltage

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Mini-compact brake
PKB-M

General technical details, unless stated otherwise in the technical details for the specific unit.	
Electrical data	
AC frequency range	50 ... 60 Hz
DC residual ripple	160 %
Contact material	$AgSnO_2$
Continuous duty	100 %
Environmental data	
EMC	EN 50081-1, 01/92; EN 50082-2, 03/95
Vibration in accordance with EN 60068-2-6, 04/95	Frequency: 10 ... 55 Hz Amplitude: 0.35 mm
Climatic suitability	IEC 68-2-3, 08/84
Airgap creepage	DIN VDE 0110-1, 04/97, 4 kV/3
Ambient temperature	-10 ... +55 °C
Storage temperature	-40 ... +85 °C
Mechanical data	
Housing material	Thermoplastic Noryl SE 100
Protection types	Mounting: IP 54 Housing: IP 40 Terminals: IP 20

Order references key
U_B Supply voltage
I_B Braking current
* Device with internal brake contactor

Order references

Type	I_B	U_B	Order no.
PKB-M*	15 A	200 ... 240 VAC	796 730
PKB-M*	15 A	350 ... 415 VAC	796 731
PKB-M	15 A	390 ... 460 VAC	796 732
PKB-M	15 A	470 ... 550 VAC	796 733
PKB-M	15 A	510 ... 600 VAC	796 734
PKB-M	30 A	200 ... 240 V AC	796 740
PKB-M	30 A	350 ... 415 V AC	796 741
PKB-M	30 A	390 ... 460 V AC	796 742
PKB-M	30 A	470 ... 550 V AC	796 743
PKB-M	30 A	510 ... 600 V AC	796 744

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