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

Mini-compact brake
PKB-MS



Electronically-controlled braking unit for three-phase asynchronous motors from 0.2 to 7.5 kW (with 400 V/3 AC).

Features

- Brake for preset time and brake until standstill
- Automatic braking current control (effective value)
- Braking time and braking current can be set
- Safety times can be set
- Monitors the heat sink temperature
- Brake contactors switch load-free

Approvals

	PKB-MS
UL LISTED	●
c UL LISTED	●

Technical Details	PKB-MS
Electrical data	
Supply voltage	AC: 200 ... 240, 350 ... 415, 390 ... 460, 470 ... 550, 510 ... 600 V
Tolerance	90 ... 110 %
Power consumption	Max. 14 VA
Switching capability to 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^2s for 15 A version 50 A/700 A^2s for 30 A version
Features	
Braking current	15 A (to 415 V AC with internal braking contactor) 30 A
Setting ranges of braking current	0.2 ... 15 A_{eff} or 0.5 ... 30 A_{eff}
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)	to 945 s, can also be set to infinity
Remote control connection	Potentiometer 470 kΩ for ext. braking current set value Potentiometer 470 kΩ for ext. braking time set value
Manually controlled braking process	Via start contact at terminals 6/7
Pulse duty cycle	15 A version: ≤ 1:7 with t_{Brake} = 10 s 30 A version: ≤ 1:10 with t_{Brake} = 10 s
Environmental data	
Ambient temperature	-10 ... +55 °C
Storage temperature	-40 ... +85 °C
Mechanical data	
Max. cross-section of the ext. 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

- Control logic with microcontroller
- Braking current power semiconductor
- Integrated brake contactor in units up to 15 A/415 V AC
- Setting via keypad
- LCD display
- Remote control option for
  - Braking time
  - Braking current
  - Manually controlled braking
- Non-volatile parameter memory
- Option for evaluating motor temperature sensor (PTC resistor)
- 90 mm housing, DIN-rail mounting

Pulse Duty Cycle

The following are the decisive factors in selecting the PKB-M

- Nominal current of motor I_N (I_N x 2 = Max. braking current I_B)

and

- Pulse duty cycle T_V

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

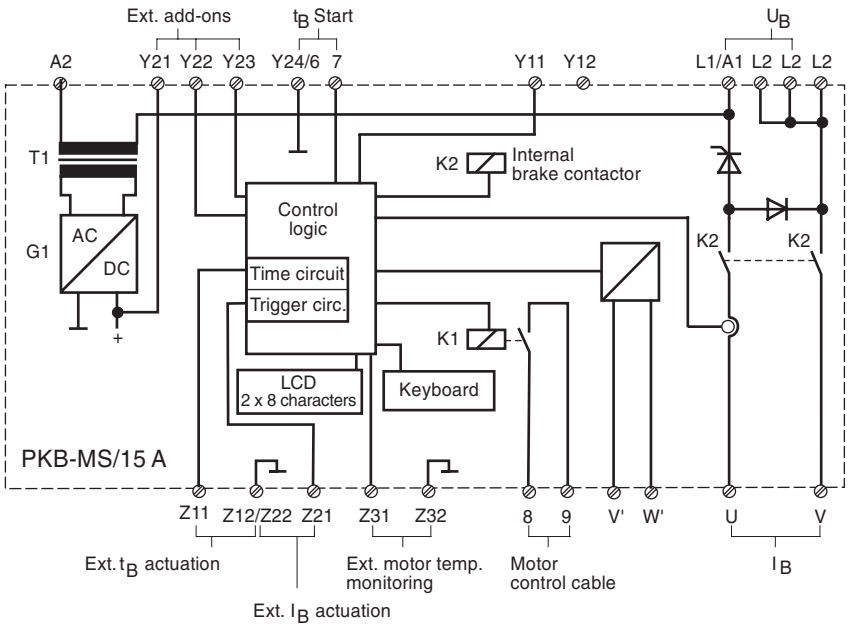
The 30 A unit can be used to brake large motors to standstill. The ratio of the nominal motor current and braking current can no longer be set at 1: 2. The braking effect is therefore reduced. When setting braking time (t_B), ensure that the pulse duty cycle set for the unit is not exceeded.

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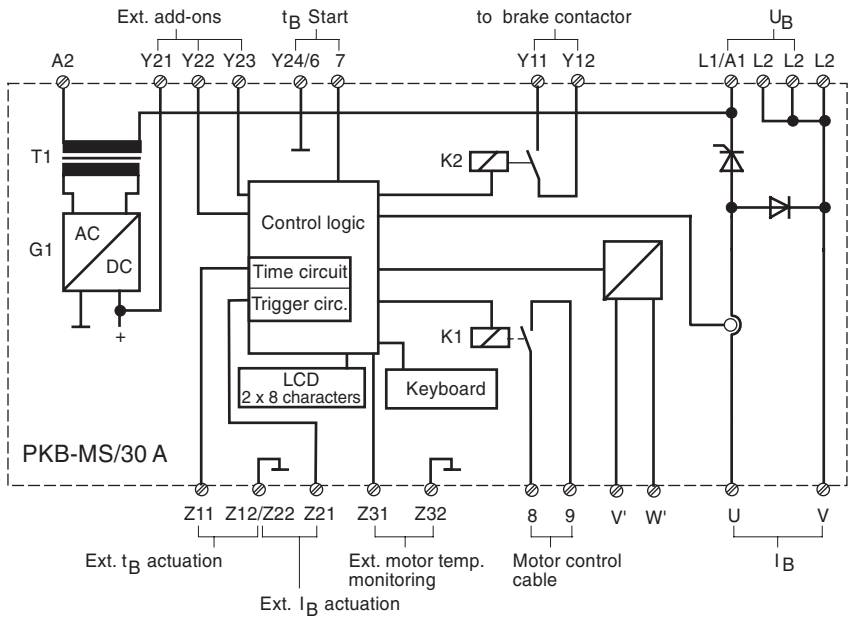
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Mini-compact brake
PKB-MS

Internal wiring diagram, PKB-MS with internal brake contactor



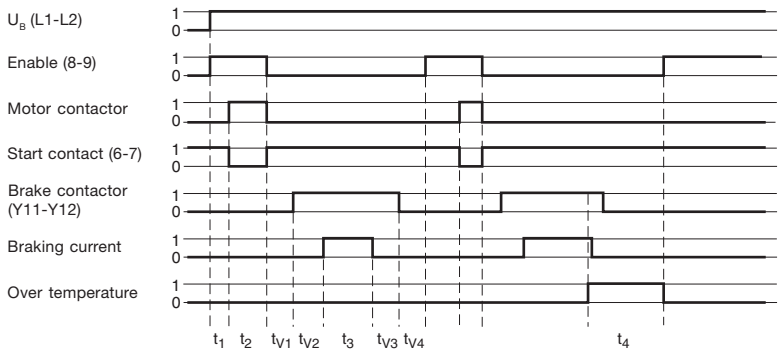
Internal wiring diagram, PKB-MS with external brake contactor



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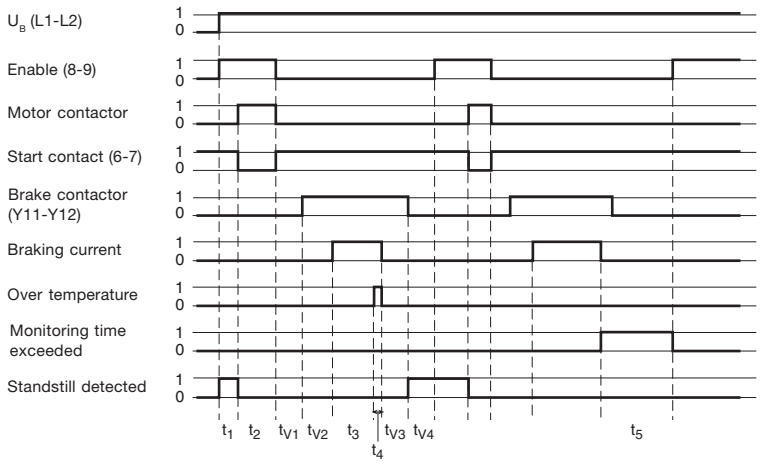
Mini-compact brake
PKB-MS

Timing diagram for brake for preset time



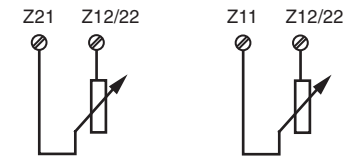
t_1 Enable at terminal 8-9
t_2 Motor on
t_3 Braking time
t_4 Over temperature
t_{V1} ... t_{V4} Safety times

Timing diagram for stationary-dependent braking



t_1 Enable at terminal 8-9
t_2 Motor on
t_3 Braking time
t_4 Braking current overrun
t_5 Monitoring time exceeded
t_{V1} ... t_{V4} Safety times

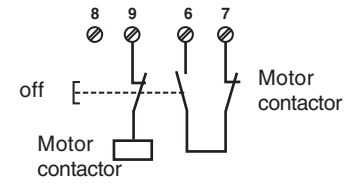
Braking current/time, remote controlled



Remote controlled braking current

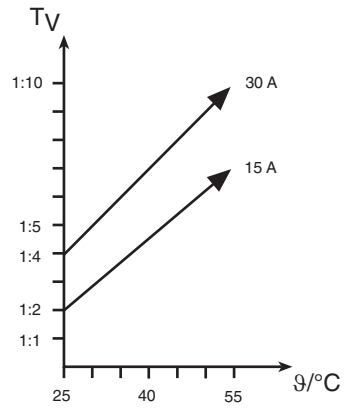
Remote controlled braking time

Manually controlled braking operation



Terminal 8 must be connected to L1.

Pulse Duty Cycle

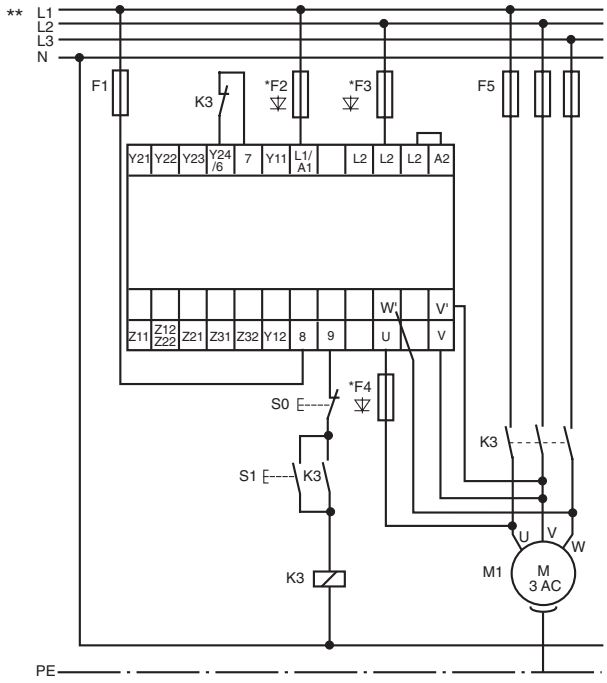


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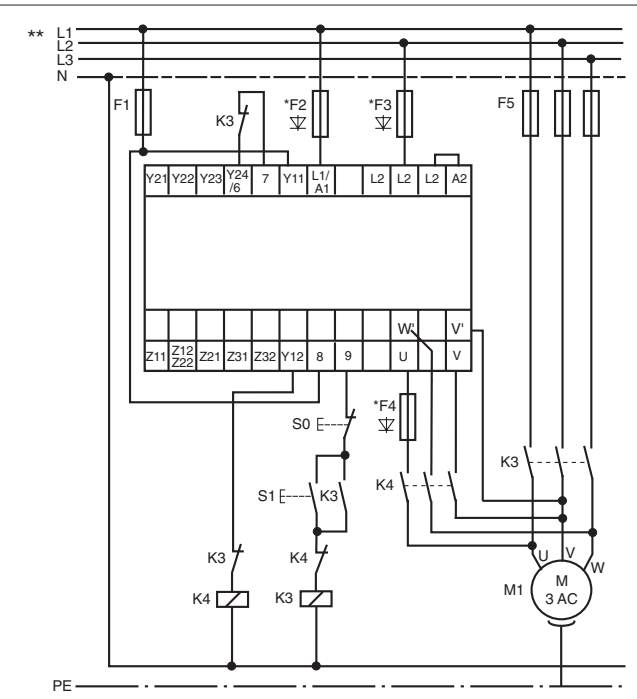
Mini-compact brake
PKB-MS

Connection example with internal brake contactor (15 A/≤415 V AC)



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

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-MS

General Details

Unless stated otherwise in the technical details for the specific unit.

Electrical data	
Frequency range AC	50 ... 60 Hz
Residual ripple DC	160 %
Contact material	$AgSnO_2$
Continuous duty	100 %
Environmental data	
EMC	EN 50081-1, 01/92; EN 50082-2, 03/95
Vibration to 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
* Unit with internal brake contactor

Order reference

Type	I_B	U_B	Order no.
PKB-MS*	15 A	200 ... 240 V AC	796 830
PKB-MS*	15 A	350 ... 415 V AC	796 831
PKB-MS	15 A	390 ... 460 V AC	796 832
PKB-MS	15 A	470 ... 550 V AC	796 833
PKB-MS	15 A	510 ... 600 V AC	796 834
PKB-MS	30 A	200 ... 240 V AC	796 840
PKB-MS	30 A	350 ... 415 V AC	796 841
PKB-MS	30 A	390 ... 460 V AC	796 842
PKB-MS	30 A	470 ... 550 V AC	796 843
PKB-MS	30 A	510 ... 600 V AC	796 844

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