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TECHNOLOGY GROUP

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Find the *Pilz PKB 110A 390-460VAC* at our website: *Click HERE*

Compact brake
PKB



Electronically-controlled compact braking system for three-phase asynchronous motors

Features

- Brake for preset time or brake until standstill
- Braking current can be set using the effective value
- Adjustable braking time
- 2 braking currents can be set
- Adjustable monitoring times
- Monitors the heatsink temperature
- Brake contactors can switch load-free
- Remote control facility for braking times and manually controlled brake to standstill.

Approvals

	PKB (UL version)
UL LISTED	●
c UL LISTED	●

Technical Details	PKB
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 in accordance with EN 60947-4-1, 10/91 Enable contact 8-9 und brake contact 1-2	AC1: 240 V/0,1 ... 8 A/1900 VA DC1: 24 V/0,1 ... 5 A/120 W
Signalling contacts 13-14, 13-24, 13-34	AC1: 240 V/0,1 ... 2A/480 VA DC1: 24 V/0,1 ... 2 A/48 W
Contact material	AgCdO
Contact fuse protection Contacts 8-9 and 1-2 Contacts 13-14, 13-24, 13-34	 10 A quick or 6 A slow 4 A quick or 2 A slow
Fuse protection of main current circuit	I^2t-value of semiconductor (see table)
Features	
Braking current	40, 65, 110, 220, 350, 500 A
Adjustment range of the braking current	10% to maximum
Adjustable safety times PKB 40 A, 65 A PKB 100 ... 500 A PKB	 t_{V1} = 390 ms t_{V1} = 3,1 s t_{V2}, $t_{V3,}$ t_{V4} = 195 ms
Braking time (monitoring time) for brake for preset time for brake until standstill	 0.5 ... 10 s, 2,0 ... 40 s, 16 ... 320 s, infinity 12.5 s, 25 s, 37.5 s, infinity
Voltage variation	Compensated
Remote control connection	Potentiometer 470 k Ω for ext. preset braking time value Potentiometer 470 k Ω for ext. preset braking time value
Pulse duty cycle	See diagrams
Environmental data	
Ambient temperature	-10 ... +55 °C
Storage temperature	-10 ... +55 °C
Mechanical data	
Max. cable cross section ext. conductor	2 x 1.5 mm² or 1 x 2.5 mm² Single-core or multi-core with crimp connector
Torque setting for terminals	0.6 Nm
Dimensions (H x W x D)	Standard version 185 x 165 x 158 mm UL-version 309 x 165 x 158 mm
Weight	Standard version max. 3.4 kg UL-version max. 4.9 kg

(Description see next page)

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Compact brake
PKB

Description

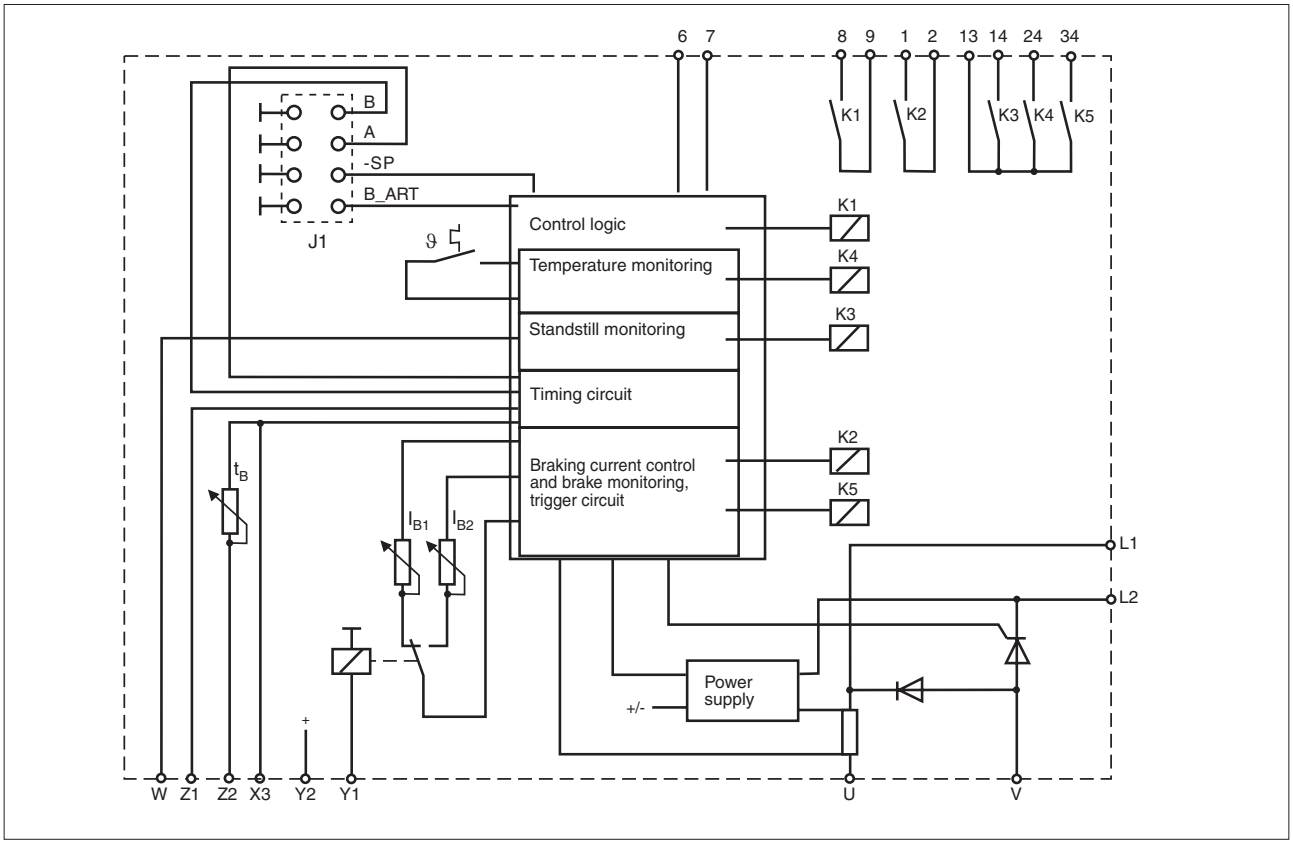
The control and power sections of the compact brake are located on a heatsink enclosed within a plastic housing. There are versions available for 5 AC voltage ranges, with each voltage range having the option of 6 braking currents.
Features:

- Gentle start to braking process
- Braking current monitoring
- Automatic reset or mains reset, set via jumpers
- LEDs

Brake for preset time: The motor comes to a standstill within a preset braking time or the braking process is stopped manually by switching off the supply voltage (braking time infinite).

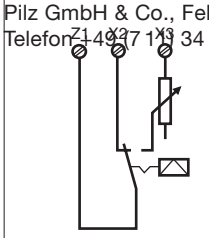
Brake until standstill: The braking process ends when the motor is at standstill. As the braking process begins, a monitoring time is started - set via a jumper - if this time is exceeding it will cause the braking process to be interrupted. The braking process can be monitored externally (monitoring time infinite).

Block diagram

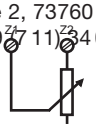


Braking time

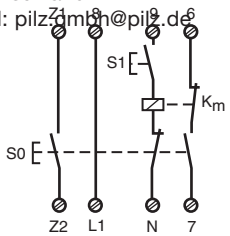
Pilz GmbH & Co., Felix-Wankel-Straße 2, 73760 Ostfildern, Deutschland
Telefon +49 7 11 34 09-0, Telefax +49 7 11 34 09-1 33, E-Mail: pilz.gmbh@pilz.de
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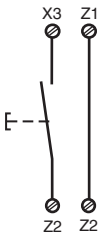
Second braking time



Remote-controlled braking time (470 k Ω)



Manually-controlled braking time

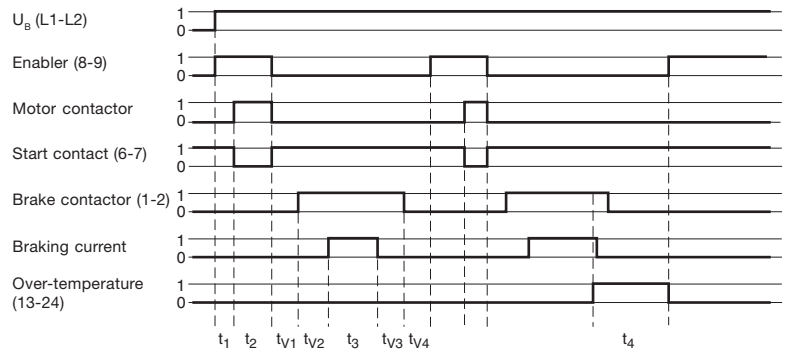


Manually-interrupted braking time

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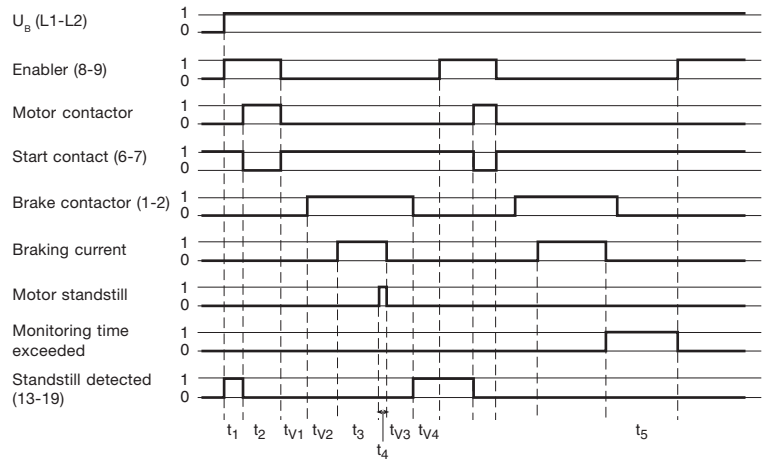
Compact brake
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Timing diagram for brake for preset time



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

Timing diagram for brake until standstill



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

Fuse protection for main current circuit via semiconductor fuses

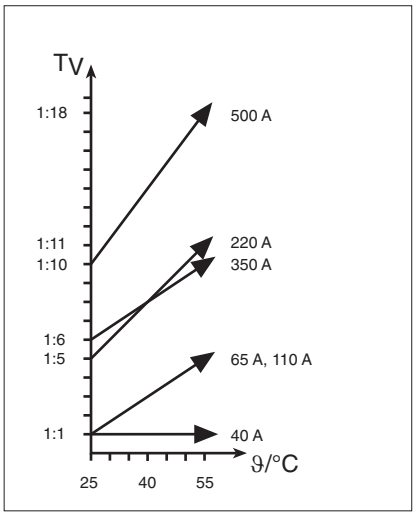
Max. fuse protection	Braking current	I^2t-value [A^2s]
50 A	40 A	1800
80 A	65 A	4000
125 A	110 A	11000
250 A	220 A	31000
400 A	350 A	90600
500 A	500 A	92000

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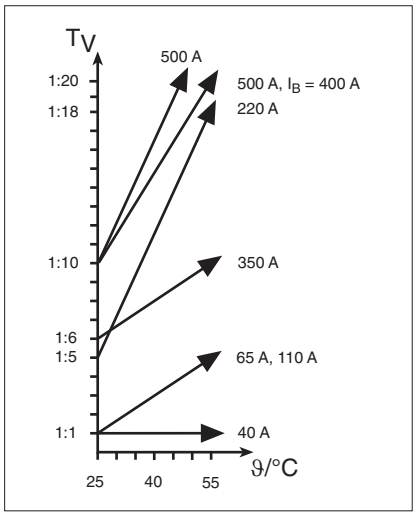
Compact brake
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Pulse duty cycle

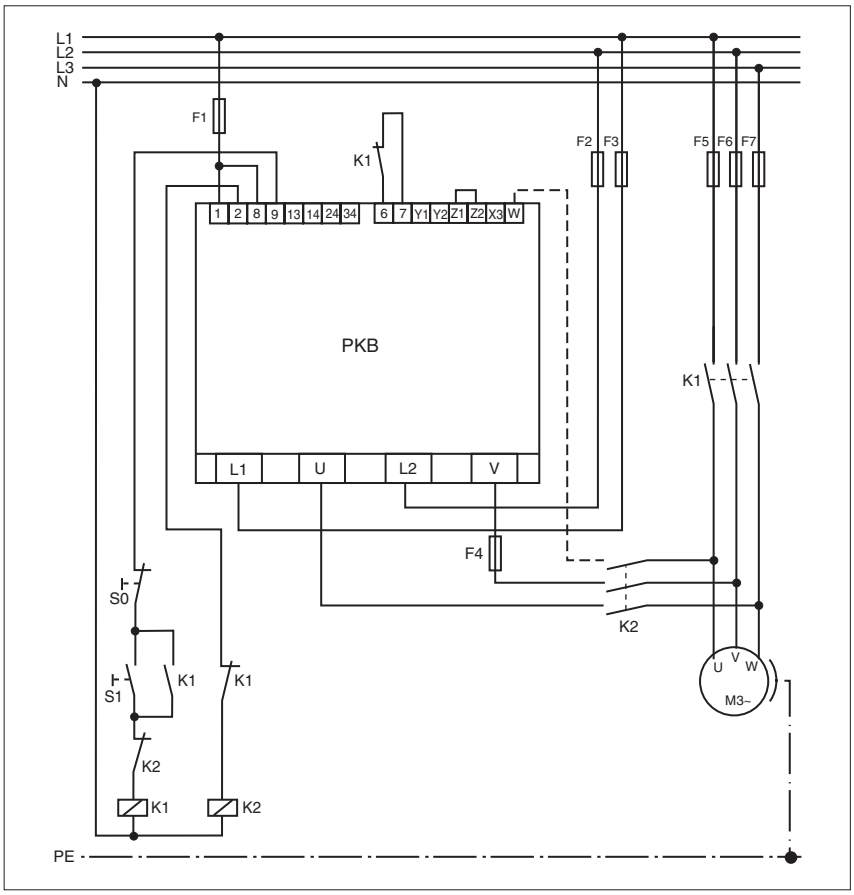
- Without heatsink cover



- With heatsink cover



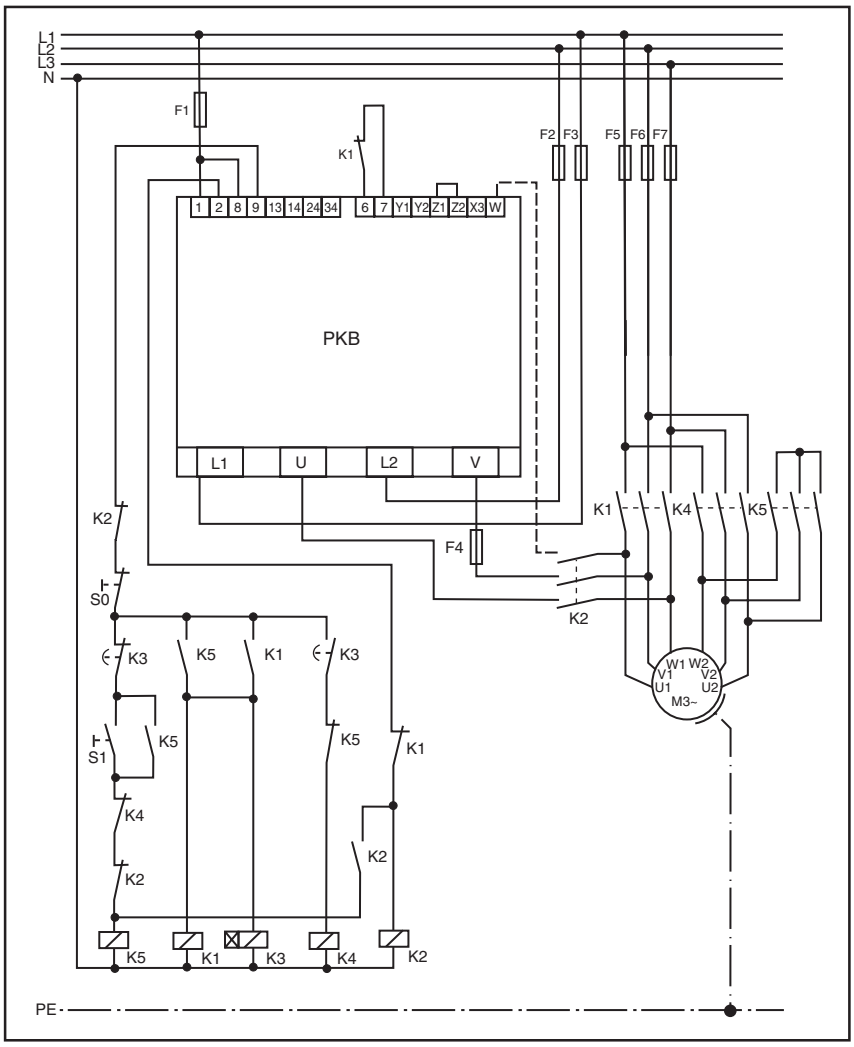
Connection example, 3-phase asynchronous motor with star-delta circuit



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Connection example, 3-phase asynchronous motor with star-delta circuit



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Compact brake
PKB

General 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 50 081-1, 01/92; EN 50.082-2, 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

Order references

Type	U_B	I_B	Order no.
PKB	200 ... 240 VAC	40 A	496 750
PKB	350 ... 415 VAC	40 A	496 751
PKB	390 ... 460 VAC	40 A	496 752
PKB	470 ... 550 VAC	40 A	496 753
PKB	510 ... 600 VAC	40 A	496 754
PKB	200 ... 240 VAC	65 A	496 760
PKB	350 ... 415 VAC	65 A	496 761
PKB	390 ... 460 VAC	65 A	496 762
PKB	470 ... 550 VAC	65 A	496 763
PKB	510 ... 600 VAC	65 A	496 764
PKB	200 ... 240 VAC	110 A	496 770
PKB	350 ... 415 VAC	110 A	496 771
PKB	390 ... 460 VAC	110 A	496 772
PKB	470 ... 550 VAC	110 A	496 773
PKB	510 ... 600 VAC	110 A	496 774
PKB	200 ... 240 VAC	220 A	496 780
PKB	350 ... 415 VAC	220 A	496 781
PKB	390 ... 460 VAC	220 A	496 782
PKB	470 ... 550 VAC	220 A	496 783
PKB	510 ... 600 VAC	220 A	496 784
PKB	200 ... 240 VAC	350 A	496 790
PKB	350 ... 415 VAC	350 A	496 791
PKB	390 ... 460 VAC	350 A	496 792
PKB	470 ... 550 VAC	350 A	496 793
PKB	510 ... 600 VAC	350 A	496 794
PKB	200 ... 240 VAC	500 A	496 795
PKB	350 ... 415 VAC	500 A	496 796
PKB	390 ... 460 VAC	500 A	496 797
PKB	470 ... 550 VAC	500 A	496 798
PKB	510 ... 600 VAC	500 A	496 799

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Compact brake
PKB

Order reference key
U_B Supply voltage
I_B Braking current

Order references

Type	U_B	I_B	Order no.
PKB	200 ... 240 VAC, UL-Version	40 A	496 850
PKB	350 ... 415 VAC, UL-Version	40 A	496 851
PKB	390 ... 460 VAC, UL-Version	40 A	496 852
PKB	470 ... 550 VAC, UL-Version	40 A	496 853
PKB	510 ... 600 VAC, UL-Version	40 A	496 854
PKB	200 ... 240 VAC, UL-Version	65 A	496 860
PKB	350 ... 415 VAC, UL-Version	65 A	496 861
PKB	390 ... 460 VAC, UL-Version	65 A	496 862
PKB	470 ... 550 VAC, UL-Version	65 A	496 863
PKB	510 ... 600 VAC, UL-Version	65 A	496 864
PKB	200 ... 240 VAC, UL-Version	110 A	496 870
PKB	350 ... 415 VAC, UL-Version	110 A	496 871
PKB	390 ... 460 VAC, UL-Version	110 A	496 872
PKB	470 ... 550 VAC, UL-Version	110 A	496 873
PKB	510 ... 600 VAC, UL-Version	110 A	496 874
PKB	200 ... 240 VAC, UL-Version	220 A	496 880
PKB	350 ... 415 VAC, UL-Version	220 A	496 881
PKB	390 ... 460 VAC, UL-Version	220 A	496 882
PKB	470 ... 550 VAC, UL-Version	220 A	496 883
PKB	510 ... 600 VAC, UL-Version	220 A	496 884

Additional versions available on request

Order references Accessories

Description	Order no.
PKB mounting bracket	496 759
Protective cover for PKB and P-93-housing	774 090

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