



PKZ and PKE motor-protective circuit-breakers

Machinery and installation downtimes should be kept as short as possible. The PKZ fuseless motor-protective circuit-breakers combine short-circuit and overload protection in one device, allowing fast restart readiness. PKZM01, PKZM0, PKZM4 and PKE have the same accessories. Combines easily with DILM contactors and DS7 soft starters. Connecting PKE to SmartWire-DT® facilitates high data transparency.



PKZM01 (up to 16 A) motor-protective circuit-breaker with pushbuttons

- Motor-protective circuit-breaker in housing for protection types IP40 and IP65.
- Integrated EMERGENCY STOP and EMERGENCY OFF pushbuttons reduce wiring.

PKZM0 (up to 32 A) and PKZM4 (up to 65 A) motor-protective circuit-breakers with rotary handle

- Short-circuit proof up to at least 50 kA for easy engineering
- Trip-indicating auxiliary contact enables remote diagnosis
- High safety through application as main switch or repair and maintenance switch
- ATEX approval for protection of EEx e motors up to 65 A



PKE (up to 65 A) motor-protective circuit-breakers with electronic wide-range overload protection

- High flexibility through plug-in trip block
- Wide current setting ranges enable only five trip blocks up to 65 A
- Precise and extremely long-term stable characteristic curves
- Individual supply through integrated current converter
- ATEX approval for protection of EEx e motors up to 65 A
- Adjustable tripping classes

DC string circuit-breakers PKZ-SOL and DC switch-disconnectors P-SOL (up to 63 A) for installations

- High string circuit-breaker flexibility due to wide current setting range
- Enclosed switch-disconnector for external mounting (IP65)
- Remote shutdown through optional secondary voltage and shunt trip
- Voltage up to 1000 V DC
- TÜV certified

**Motor-protective circuit-breaker
PKZM01, PKZM0, PKZM4, PKE**



**DC string circuit-breaker PKZ-SOL,
DC switch-disconnectors P-SOL, SOL**



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Dimensions

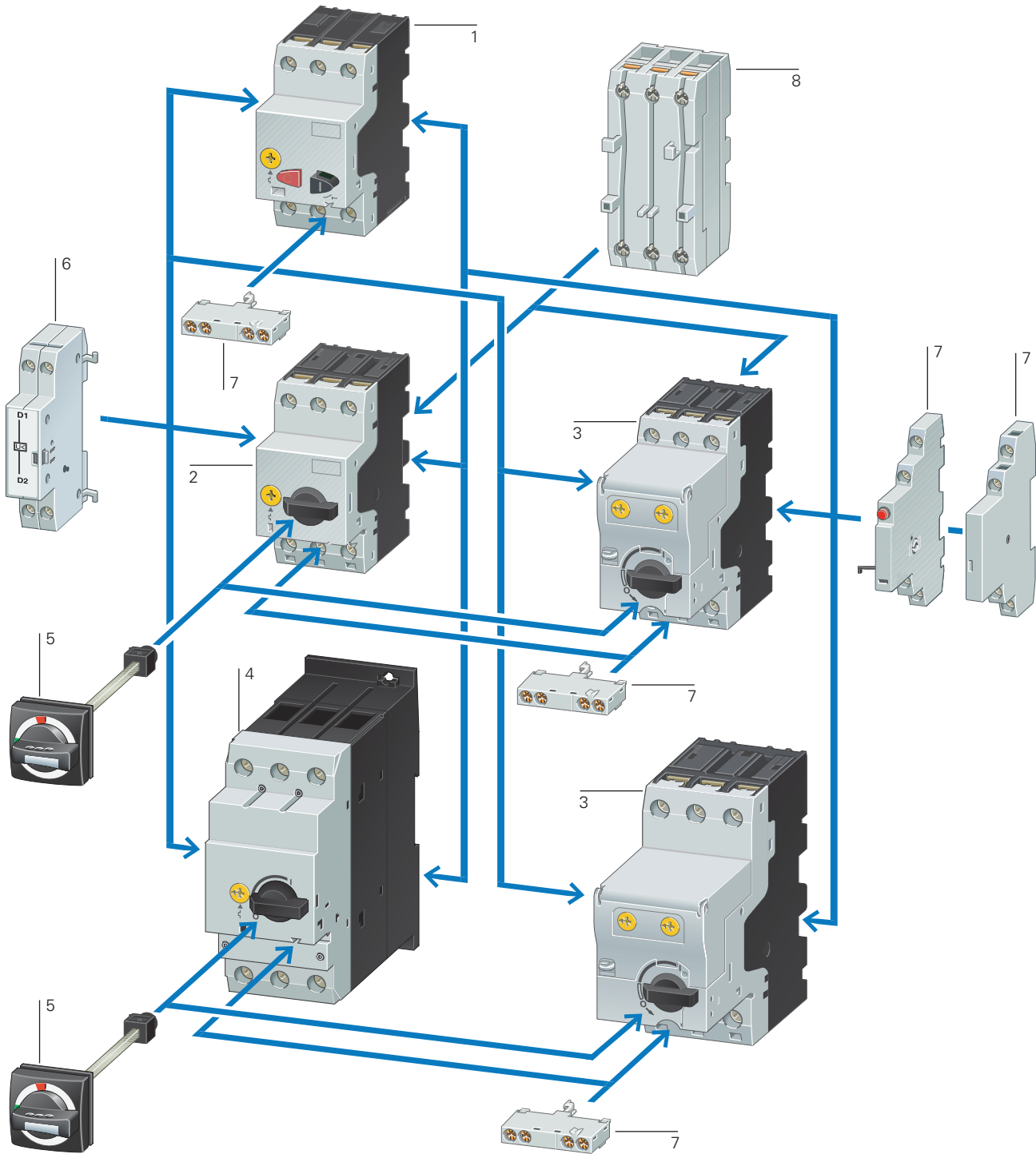
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Motor-protective circuit-breakers PKZM01, PKZM0, PKZM4, PKE

Motor-protective circuit-breaker

1 System overview



Basic devices

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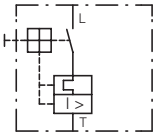
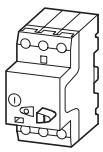
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Ordering



PKZM01

Max. motor rating
AC-3

220 V	380 V	440 V
230 V	400 V	
240 V	415 V	

Rated uninter-
rupted
current

Setting range

Overload
releases

Short-
circuit
releases

P	P	P	I_u	I_r	I_{rm}
kW	kW	kW	A	A	A

Screw terminals

Part no.
Article no.

Price
See price
list

Std. pack

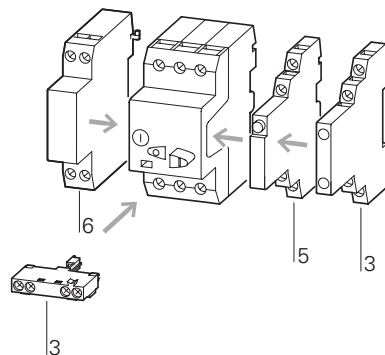
**Information relevant for export to
North America**



Motor-protective circuit-breakers, type "1"; and type "2" coordination

Max. motor rating (kW)	Max. motor rating (kW)	Max. motor rating (kW)	Rated uninter-rupted current (A)	Overload releases (A)	Short-circuit releases (A)	Part no. / Article no.	Std. pack	Information relevant for export to North America
-	-	-	0.16	0.1...0.16	2.2	PKZM01-0.16 278475	1 off	Product Standards UL 508; CSA-C22.2 No.14; IEC60947-4-1; CE marking
-	0.06	0.06	0.25	0.16...0.25	3.5	PKZM01-0.25 278476	1 off	UL File No. E36332 UL CCN NLRV CSA File No. 12528
0.06	0.09	0.12	0.4	0.25...0.4	5.6	PKZM01-0.4 278477	1 off	CSA Class No. 3211-05 NA Certification UL Listed, CSA certified
0.09	0.12	0.18	0.63	0.4...0.63	8.8	PKZM01-0.63 278478	1 off	UL Listed, CSA certified
0.12	0.25	0.25	1	0.63...1	14	PKZM01-1 278479	1 off	Suitable for Branch circuits, or suitable for group installations
0.25	0.55	0.55	1.6	1...1.6	22	PKZM01-1.6 278480	1 off	See also → Page 34
0.37	0.75	1.1	2.5	1.6...2.5	35	PKZM01-2.5 278481	1 off	
0.75	1.5	1.5	4	2.5...4	56	PKZM01-4 278482	1 off	
1.1	2.2	3	6.3	4...6.3	88	PKZM01-6.3 278483	1 off	
2.2	4	4	10	6.3...10	140	PKZM01-10 278484	1 off	
3	5.5	5.5	12	8...12	168	PKZM01-12 278485	1 off	
4	7.5	9	16	10...16	224	PKZM01-16 283390	1 off	
5.5	9	11	20	16...20	280	PKZM01-20 283383	1 off	Product Standards UL 508; CSA-C22.2 No.14; IEC/EN 60947-4-1; CE marking
5.5	12.5	12.5	25	20...25	350	PKZM01-25 288893	1 off	UL File No. E36332 UL CCN NLRV CSA File No. 12528 3211-05 UL Listed, CSA certified

Notes



Accessories

- 3 Standard auxiliary contacts
- 5 Trip-indicating auxiliary contact
- 6 Shunt release, undervoltage release

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Phase failure sensitivity to IEC/EN 60947-4-1, VDE 0660 Part 102.

Can be snap-fitted to IEC/EN 60715 top-hat rail with 7.5 or 15 mm height

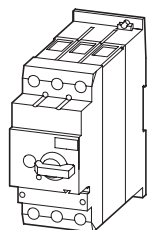
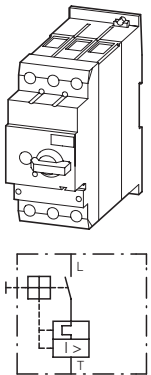
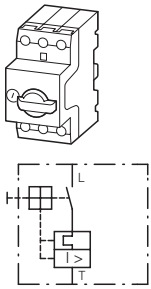
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Motor-protective circuit-breakers PKZM01, PKZM0, PKZM4, PKE

Motor-protective circuit-breaker

1

Circuit diagrams



PKZM0, PKZM4

Max. motor rating AC-3					Rated uninter-rupted current	Setting range		Part no. Article no.	Price See price list	Screw terminals on feed side, spring-loaded terminals on output side
220 V	380 V	440 V	500 V	660 V		Overload releases	Short-circuit releases			
230 V	400 V			690 V	I_u	I_r	Part no. Article no.	Price See price list	Screw terminals on feed side, spring-loaded terminals on output side	
240 V	415 V				A	A				
P kW	P kW	P kW	P kW	P kW						
Motor-protective circuit-breakers, type "1" and type "2" coordination¹⁾										
-	-	-	-	0.06	0.16	0.1...0.16	2.2	PKZM0-0.16 072730		PKZM0-0.16-SC 229828
-	0.06	0.06	0.06	0.12	0.25	0.16...0.25	3.5	PKZM0-0.25 072731		PKZM0-0.25-SC 229829
0.06	0.09	0.12	0.12	0.18	0.4	0.25...0.4	5.6	PKZM0-0.4 072732		PKZM0-0.4-SC 229830
0.09	0.12	0.18	0.25	0.25	0.63	0.4...0.63	8.8	PKZM0-0.63 072733		PKZM0-0.63-SC 229831
0.12	0.25	0.25	0.37	0.55	1	0.63...1	14	PKZM0-1 072734		PKZM0-1-SC 229832
0.25	0.55	0.55	0.75	1.1	1.6	1...1.6	22	PKZM0-1.6 072735		PKZM0-1.6-SC 229833
0.37	0.75	1.1	1.1	1.5	2.5	1.6...2.5	35	PKZM0-2.5 072736		PKZM0-2.5-SC 229834
0.75	1.5	1.5	2.2	3	4	2.5...4	56	PKZM0-4 072737		PKZM0-4-SC 229835
1.1	2.2	3	3	4	6.3	4...6.3	88	PKZM0-6.3 072738		PKZM0-6.3-SC 229836
2.2	4	4	4	7.5	10	6.3...10	140	PKZM0-10 072739		PKZM0-10-SC 229837
3	5.5	5.5	5.5	11	12	8...12	168	PKZM0-12 278486		PKZM0-12-SC 278487
4	7.5	9	9	12.5	16	10...16	224	PKZM0-16 046938		PKZM0-16-SC 229838
5.5	9	11	12.5	15	20	16...20	280	PKZM0-20 046988		
5.5	12.5	12.5	15	22	25	20...25	350	PKZM0-25 046989		
7.5	15	15	22	30	32	25...32	448	PKZM0-32 278489		
Motor-protective circuit-breakers, type "1" and type "2" coordination¹⁾										
4	7.5	9	9	12.5	16	10...16	224	PKZM4-16 222350		
5.5	12.5	12.5	15	22	25	16...25	350	PKZM4-25 222352		
7.5	15	17.5	22	22	32	25...32	448	PKZM4-32 222353		
11	20	22	24	30	40	32...40	560	PKZM4-40 222354		
14	25	30	30	45	50	40...50	700	PKZM4-50 222355		
17	30	37	37	55	58	50...58	812	PKZM4-58 222394		
18.5	34	37	45	55	65	55...65	882	PKZM4-63 222413		
Circuit-breakers²⁾										
For line and cable protection										
-	-	-	-	-	16	10...16	224	PKZM4-16-CB 132591		
-	-	-	-	-	25	16...25	350	PKZM4-25-CB 132592		
-	-	-	-	-	32	25...32	448	PKZM4-32-CB 132593		

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Motor-protective circuit-breakers PKZM01, PKZM0, PKZM4, PKE

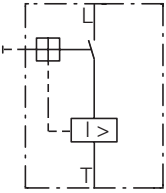
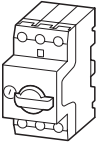
Motor-protective circuit-breaker for starter combinations and transformers

1

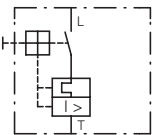
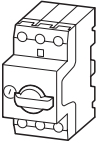
PKZM0

Max. motor rating AC-3					Rated uninterrupted current I_u	Setting range		Screw terminals Part no. Article no.	Price See price list	Std. pack
220 V 230 V 240 V	380 V 400 V 415 V	440 V	500 V	660 V 690 V		Overload releases I_r	Short-circuit releases I_m			
P kW	P kW	P kW	P kW	P kW	A	A	A			
–	–	–	–	0.06	0.16		2.2	PKM0-0,16 072720		1 off
–	0.06	0.06	0.06	0.12	0.25		3.5	PKM0-0,25 072721		1 off
0.06	0.09	0.12	0.12	0.18	0.4		5.6	PKM0-0,4 072722		1 off
0.09	0.12	0.18	0.25	0.25	0.63		8.8	PKM0-0,63 072723		1 off
0.12	0.25	0.25	0.38	0.55	1		14	PKM0-1 072724		1 off
0.25	0.37	0.55	0.75	1.1	1.6		22	PKM0-1,6 072725		1 off
0.37	0.75	1.1	1.1	1.5	2.5		35	PKM0-2,5 072726		1 off
0.75	1.5	1.5	2.2	3	4		56	PKM0-4 072727		1 off
1.1	2.2	3	3	4	6.3		88	PKM0-6,3 072728		1 off
2.2	4	4	4	7.5	10		140	PKM0-10 072729		1 off
3	5.5	5.5	5.5	11	12		168	PKM0-12 278490		1 off
4	7.5	9	9	12.5	16		224	PKM0-16 044502		1 off
5.5	9	11	12.5	15	20		280	PKM0-20 203594		1 off
5.5	12.5	12.5	15	22	25		350	PKM0-25 044503		1 off
7.5	15	15	22	30	32		448	PKM0-32 278491		1 off
–	–	–	–	–	0.16	0.1...0.16	2.4	PKZM0-0,16-T 088907		1 off
–	–	–	–	–	0.25	0.16...0.25	4.25	PKZM0-0,25-T 088908		1 off
–	–	–	–	–	0.4	0.25...0.4	6.8	PKZM0-0,4-T 088909		1 off
–	–	–	–	–	0.63	0.4...0.63	12	PKZM0-0,63-T 088910		1 off
–	–	–	–	–	1	0.63...1	20	PKZM0-1-T 088911		1 off
–	–	–	–	–	1.6	1...1.6	32	PKZM0-1,6-T 088912		1 off
–	–	–	–	–	2.5	1.6...2.5	50	PKZM0-2,5-T 088913		1 off
–	–	–	–	–	4	2.5...4	84	PKZM0-4-T 088914		1 off
–	–	–	–	–	6.3	4...6.3	141	PKZM0-6,3-T 088915		1 off
–	–	–	–	–	10	6.3...10	224	PKZM0-10-T 088916		1 off
–	–	–	–	–	12	8...12	224	PKZM0-12-T 278492		1 off
–	–	–	–	–	16	10...16	280	PKZM0-16-T 088917		1 off
–	–	–	–	–	20	16...20	350	PKZM0-20-T 088918		1 off
–	–	–	–	–	25	20...25	437	PKZM0-25-T 278493		1 off

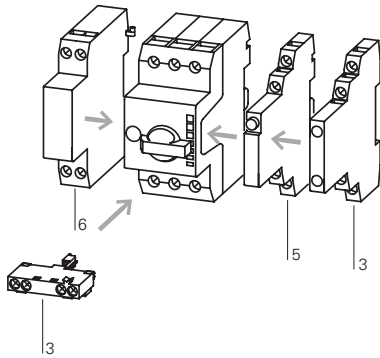
Motor-protective circuit-breakers for starter combinations
Short-circuit protective breakers without overload function



Transformer-protective circuit-breakers



Notes



When using the PKM0 as short-circuit protection for motors with heavy starting duty, a device must be selected whose rated operational current I_e is higher by the following factors:

- CLASS 5 = 1.0
- CLASS 10 = 1.0
- CLASS 15 = 1.22
- CLASS 20 = 1.41
- CLASS 25 = 1.58
- CLASS 30 = 1.73
- CLASS 35 = 1.89
- CLASS 40 = 2.0

Accessories

- 3 Standard auxiliary contacts
- 5 Trip-indicating auxiliary contact
- 6 Shunt release, undervoltage release
- Additional accessories

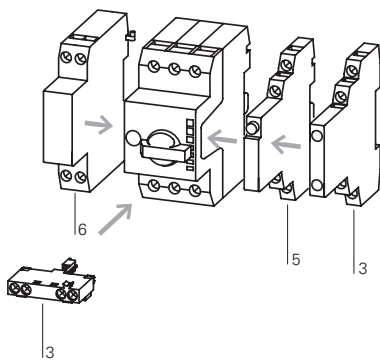
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Can be snap-fitted to IEC/EN 60715 top-hat rail with 7.5 or 15 mm height

Assignment of the short-circuit protective breakers and contactors in "Fuseless motor-starter combinations" section.

An appropriate overload relay must be fitted to protect motors against overload.



Accessories

- 3 Standard auxiliary contacts
- 5 Trip-indicating auxiliary contact
- 6 Shunt release, undervoltage release

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For the protection of transformers with a high inrush current

Can be snap-fitted to IEC/EN 60715 top-hat rail with 7.5 or 15 mm height

Phase failure sensitivity to IEC/EN 60947-4-1, VDE 0660 Part 102.

Trip module Standard				Trip module Expanded ¹⁾				Motor-protective circuit-breakers Standard Complete device			
usable for	Part no. Article no.	See price list	Std. pack	usable for	Part no. Article no.	See price list	Std. pack	Part no. Article no.	See price list	Std. pack	
	PKE12		1off 	PKE12	PKE-XTU-1,2 121723		1off 	PKE12/XTU-1,2 121731		1off 	
		Start of delivery 07/2010				Start of delivery 07/2010			Start of delivery 07/2010		
	PKE12		1off 	PKE12	PKE-XTU-4 121724		1off 	PKE12/XTU-4 121732		1off 	
						Start of delivery 05/2010					
	PKE12 PKE32		1off 	PKE12 PKE32	PKE-XTU-12 121725		1off 	PKE12/XTU-12 121733		1off 	
						Start of delivery 05/2010					
	PKE32		1off 	PKE32	PKE-XTU-32 121726		1off 	PKE32/XTU-32 121734		1off 	
						Start of delivery 05/2010					
	PKE65		1off 	PKE65	PKE-XTU-65 138259		1off 	PKE65/XTU-65 138516		1off	
		Start of delivery 10/2010				Start of delivery 10/2010			Start of delivery 10/2010		
	PKE65		1off 	PKE65	PKE-XTUW-32 138261		1off 	PKE65/XTUW-32 138517		1 off	
		Start of delivery 10/2010				Start of delivery 10/2010			Start of delivery 10/2010		

Information relevant for export to North America

Product Standards
NA Certification

UL 508; CSA-C22.2 No. 14; IEC60947-4-1; CE marking
Request filed for UL and CSA

1.3

Motor-protective circuit-breakers PKZM01, PKZM0, PKZM4, PKE Standard auxiliary contacts

1

NHI...-PKZ0... Standard auxiliary contacts

For motor-protective circuit-breakers

Contact configuration	Contact sequence	Circuit diagrams	Connection method	For use with	Part no. Article no.	Price See price list	Std. pack
1 N/O N/O=normally open contact	1 NC NC=normally closed contact		Screw terminals	PKZM01 PKZM0 PKZM4 PKZM0-T PKM0 PKE 1)	NHI11-PKZ0 072896		5 off
1 N/O	1 NC		Spring-loaded terminals	PKZM01 PKZM0 PKZM4 PKZM0-T PKM0 PKE 1)	NHI11-PKZ0-C 229680		5 off
1 N/O	2 NC		Screw terminals	PKZM01 PKZM0 PKZM4 PKZM0-T PKM0 PKE 1)	NHI12-PKZ0 072895		5 off
2 N/O	1 NC		Screw terminals	PKZM01 PKZM0 PKZM4 PKZM0-T PKM0 PKE 1)	NHI21-PKZ0 072894		5 off
1 N/O	1 NC		Screw terminals	PKZM01 PKZM0 PKZM4 PKZM0-T PKM0 PKE 1)	NHI-E-11-PKZ0 082882		5 off
1 N/O	-		Screw terminals	PKZM01 PKZM0 PKZM4 PKZM0-T PKM0 PKE 1)	NHI-E-10-PKZ0 082884		5 off
1 N/O	-		Spring-loaded terminals	PKZM01 PKZM0 PKZM4 PKZM0-T PKM0 PKE 1)	NHI-E-10-PKZ0-C 229681		5 off
-	1 NC		Spring-loaded terminals	PKZM01 PKZM0 PKZM4 PKZM0-T PKM0 PKE 1)	NHI-E-01-PKZ0-C 229682		5 off
1 N/O	1 NC		Screw terminals	PKZM01 PKZM0 PKZM4 PKZM0-T PKM0 PKE 1)	NHI-B-11-PKZ0 208277		5 off

Notes

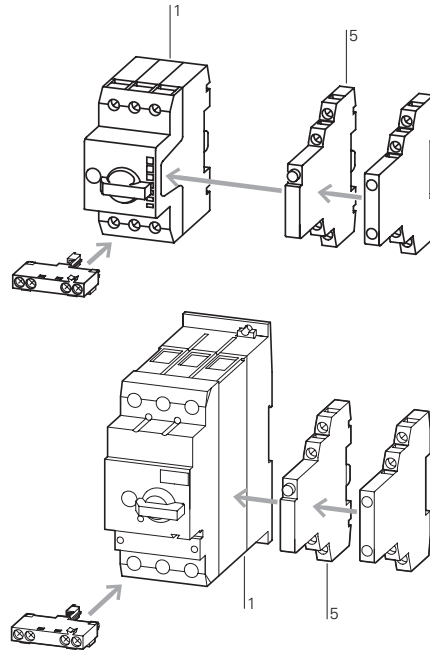
1) Only standard auxiliary contacts manufactured on or after CW 36/2009 are for use with PKE.

Notes

Can be fitted to the right side of: motor-protective circuit-breakers, transformer protective circuit breakers and motor-protective circuit-breakers for starter combinations

Can be combined with:
Trip-indicating auxiliary contact AGM, NHI-E...

Notes



Information relevant for export to North America



Product Standards	UL 508; CSA-C22.2No.14; IEC 60947-4-1; CE marking
UL File No.	E36332
UL CCN	NLRV
CSA File No.	12528
CSA Class No.	3211-05
NA Certification	UL Listed, CSA certified

Can be fitted to motor-protective circuit-breakers, transformer-protective circuit-breakers and motor-protective circuit-breakers for starter combinations from serial number 01. 45 mm (PKZM0 and PKZM01) or 55 mm (PKZM4) widths of the motor-protective circuit-breakers remain unchanged.
NHI-E...-PKZ0-C not for use with MSC...-type motor starter combinations.

Accessories

- 1 Motor-protective circuit-breakers → 4
- 5 Trip-indicating auxiliary contact → 12
- Additional accessories → 20

1.3

Motor-protective circuit-breakers PKZM01, PKZM0, PKZM4, PKE

Auxiliary contacts, undervoltage releases

1

AGM2...., VHI...

Contact configuration

N/O = normally open contact
NC = normally closed contact

Contact sequence

Circuit diagrams

For use with

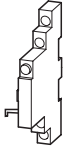
Part no.
Article no.

Price
See price list

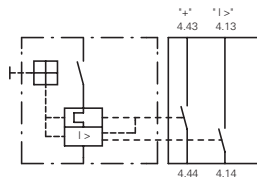
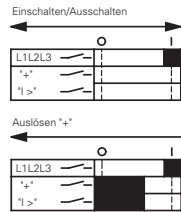
Std. pack

Trip indicators

For motor-protective circuit-breakers



2 x 1 N/O

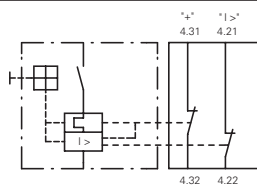
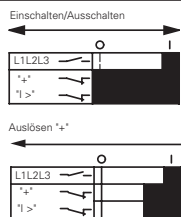


PKZM0
PKZM4
PKZM0-T
PKM0
PKZM01
PKE¹⁾

AGM2-10-PKZ0
072898

2 off

– 2 x 1 NC



PKZM0
PKZM4
PKZM0-T
PKM0
PKZM01
PKE¹⁾

AGM2-01-PKZ0
072899

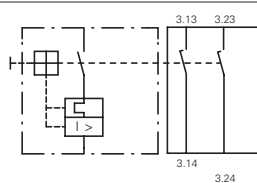
2 off

Early-make auxiliary contacts

For motor-protective circuit-breakers



2 N/O



PKZM0
PKZM0-T
PKM0
PKZM4

VHI20-PKZ0
203595

2 off

2 N/O

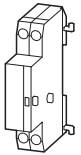


PKZM01

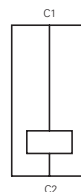
VHI20-PKZ01
278495

5 off

Shunt release (for power circuit-breakers)



–



PKZM0
PKZM4
PKZM0-T
PKM0
PKZM01
PKE²⁾

A-PKZ0(230V50Hz)
073187

2 off

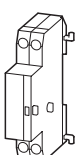
–

PKZM0
PKZM4
PKZM0-T
PKM0
PKZM01
PKE²⁾

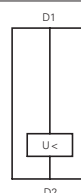
A-PKZ0(24VDC)
073200

2 off

Undervoltage release



–



PKZM0
PKZM4
PKZM0-T
PKM0
PKZM01
PKE²⁾

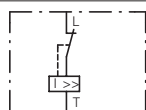
U-PKZ0(230V50Hz)
073135

2 off

Current limiters

For increasing switching capacity of motor-protective circuit-breakers without auto-protection

–



PKZM0
PKZM4
PKE

CL-PKZ0
082881

1 off

Notes

- ¹⁾ Only AGM2-...-PKZ0 manufactured on or after 06/2009 can be fitted.
- ²⁾ Only A(U)-PKZ0... with serial number 02 or higher can be fitted.

Notes

Can be fitted to the right side of motor-protective circuit-breakers

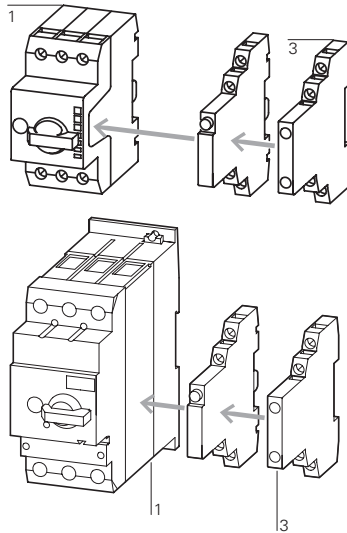
Can be combined with:
Standard auxiliary contacts
NHI11-PKZO
NHI12-PKZO
NHI21-PKZO
NHI-E-...

Separate indication of:
a) General trip indication (overload)
b) Short-circuit trip

Local short-circuit indication by red indicator, manually resettable.

Can be fitted to front of motor-protective circuit-breaker, 45 mm width of the motor-protective circuit-breaker remains unchanged.
For early energization of undervoltage release, e.g. in emergency switching off circuits to EN 60204.
VHI20-PKZO cannot be used in combination with PKZO-X(R).

Notes



Accessories

- 1 Motor-protective circuit-breakers
- 3 Standard auxiliary contacts

Page

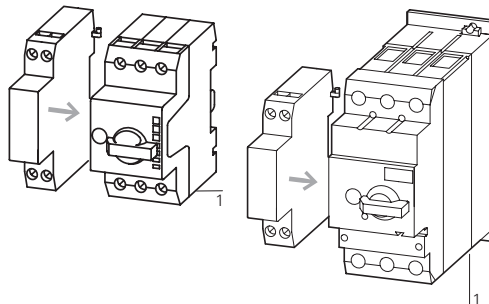
- 4
- 10

Information relevant for export to North America



Product Standards	UL 508; CSA-C22.2No.14; IEC60947-4-1; CE marking
UL File No.	E36332
UL CCN	NLRV
CSA File No.	12528
CSA Class No.	3211-05
NA Certification	UL Listed, CSA certified

Can be fitted to the left side of motor-protective circuit-breakers.
Cannot be combined with:
undervoltage release U-PKZO
DC: Intermittent operation 5 s



Accessories

- 1 Motor-protective circuit-breakers
- Further actuating voltages

Page

- 4
- 29

Can be fitted to the left side of motor-protective circuit-breakers.
Cannot be combined with:
A-PKZO shunt release
When combined with circuit-breaker, can be used as emergency switching off device to IEC/EN 60204.

Max. rated operating voltage $U_n = 690$ V, rated uninterrupted current $I_n = 63$ A
Can be used for individual and group protection.
For group protection and in combination with PKZM4, order additional BK25/3 incoming terminal if required.
Mounting next to or behind the motor-protective circuit-breaker.
PKZM4: 16 - 63 A: 100 kA/400 V
PKZM4: 16 - 63 A: 10 kA/690 V

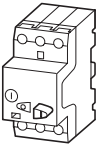


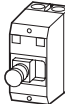

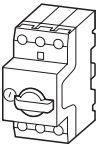
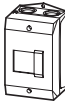

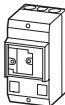


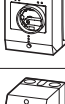
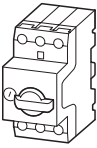




1.3

Motor-protective circuit-breakers PKZM01, PKZM0, PKZM4, PKE

Accessories for motor-protective circuit-breakers in enclosures

1 Engineering

PKZM01, PKZM

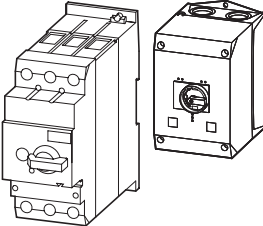
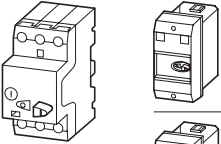



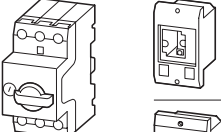

Part no.	Enclosure		Degree of protection	Handle color	Accessories							
	Part no.				NHI...PKZ0	AGM2...PKZ0	NHI-E...PKZ0	VHI...PKZ0	VHI...PKZ01	U-PKZ0 or A-PKZ0	L-PKZ0	
Surface mounting enclosure												
Motor-protective circuit-breaker PKZM01												
		CI-PKZ01	IP40	—	—	—	●	—	—	●	●	
					—	—	—	—	●	●	●	
					●	—	●	—	—	—	●	
					●	—	—	—	●	—	●	
		CI-PKZ01-G	IP65	—	—	—	●	—	—	●	●	
					—	—	—	—	●	●	●	
					●	—	●	—	—	—	●	
					●	—	—	—	●	—	●	
		CI-PKZ01-PVT CI-PKZ01-PVS	IP65	Red-yellow	—	—	●	—	—	●	●	
					—	—	—	—	●	●	●	
					—	—	—	—	●	●	●	
		CI-PKZ01-SVB CI-PKZ01-SVB-V	IP65	—	—	—	●	—	—	●	●	
					—	—	—	—	● ¹⁾	●	●	
					—	—	—	—	—	●	●	
Motor-protective circuit-breaker PKZM0												
		CI-K2-PKZ0	IP41	—	●	—	●	—	—	●	●	
					—	●	●	—	—	●	●	
					●	—	—	—	—	●	●	
					—	●	●	—	—	●	●	
		CI-K2-PKZ0-G	IP65	Black	●	—	●	—	—	●	●	
					—	●	●	—	—	●	●	
					●	—	●	—	—	●	●	
		CI-K2-PKZ0-GR	IP65	Red-yellow	●	—	●	—	—	●	●	
					—	●	●	—	—	●	●	
					—	—	●	—	—	●	●	
		CI-PKZ0-M	IP40	—	●	—	●	—	—	—	●	
					—	—	●	—	—	●	●	
					—	—	—	—	—	●	●	
		CI-PKZ0-GM	IP55	Black	●	—	●	—	—	—	●	
					—	—	●	—	—	●	●	
					—	—	—	—	—	●	●	
		CI-PKZ0-GRM	IP55	Red-yellow	●	—	●	—	—	—	●	
					—	—	●	—	—	—	●	
					—	—	—	—	—	●	●	
Motor-protective circuit-breaker PKZM0 + early-make auxiliary contact VHI-PKZ0												
		CI-K2-PKZ0-GV	IP65	Black	●	—	—	●	—	●	●	
					—	●	—	●	—	●	●	
					●	—	—	●	—	●	●	
					—	●	—	●	—	●	●	
		CI-K2-PKZ0-GRV	IP65	Red-yellow	●	—	—	●	—	●	●	
					—	●	—	●	—	●	●	
					—	—	—	●	—	●	●	
					—	—	—	●	—	●	●	
		CI-K2-PKZ0-GVM	IP55	Black	●	—	—	●	—	—	●	
					—	—	—	●	—	●	●	
					—	—	—	●	—	●	●	
					—	—	—	●	—	●	●	
		CI-K2-PKZ0-GRVM	IP55	Red-yellow	●	—	—	●	—	—	●	
					—	—	—	●	—	—	●	
					—	—	—	●	—	●	●	

Notes

The combination possibilities of circuit-breakers in an enclosure with accessory modules are identified by a ●

¹⁾ Always required

PKZM4, PKZM01, PKZM0

Enclosure		Accessories								
Part no.	Part no.	Degree of protection	Handle color	NHI...-PKZ0	AGM2...-PKZ0	NHI-E...-PKZ0	VHI...-PKZ0	VHI...-PKZ01	U-PKZ0 or A-PKZ0	L-PKZ0
Surface mounting enclosure										
Motor-protective circuit-breaker PKZM4										
	CI-K4-PKZ4-G	IP65	Black	●	●	●	-	-	●	●
	CI-K4-PKZ4-GR	IP65	Red-yellow	●	●	●	-	-	●	●
Installation enclosure										
Motor-protective circuit-breaker PKZM01										
	E-PKZ01	IP40	-	-	-	●	-	-	●	●
				●	-	●	-	●	●	●
	E-PKZ01-G	IP65	-	-	-	●	-	-	●	●
				●	-	●	-	●	●	●
	E-PKZ01-PVT E-PKZ01-PVS	IP65	Red-yellow	-	-	●	-	-	●	●
				-	-	-	-	●	●	●
	E-PKZ01-SVB	IP65	-	-	-	●	-	-	●	●
	E-PKZ01-SVB-V	IP65	-	-	-	-	-	● ¹⁾	●	●
Motor-protective circuit-breaker PKZM0										
	E-PKZ0	IP40	-	●	-	-	-	-	-	●
				-	-	-	-	-	●	●
	E-PKZ0-G	IP55	Black	●	-	●	-	-	-	●
				-	-	●	-	-	●	●
	E-PKZ1-GR	IP55	Red-yellow	●	-	●	-	-	-	●
				-	-	●	-	-	●	●

Notes




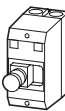
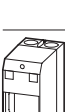












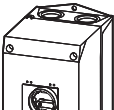
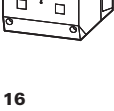
The combination possibilities of circuit-breakers in an enclosure with accessory modules are identified by a ●
¹⁾ Always required

1.3



















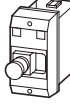



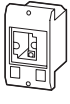







Motor-protective circuit-breakers PKZM01, PKZM0, PKZM4, PKE Insulated enclosure

1

PKZM01, PKZM0, PKZM4

	Degree of protection	For use with	Part no. Article no.	Price See price list	Std. pack	Notes
Insulated enclosures for surface mounting						
For Motor-protective circuit-breaker PKZM01						
		IP40	PKZM01 +NHI-E or VHI-PKZ01 +U or A or NHI +L (2 off)	CI-PKZ01 281403	1 off	Integrated terminal for PE(N) connection, two M25 cable entry knockouts at top and at bottom.
	With operating membrane	IP65		CI-PKZ01-G 281404	1 off	
	Lockable in Off position	IP65	PKZM01 +NHI-E or +U or A +L (2 off)	CI-PKZ01-SVB 281405	1 off	
	Lockable in Off position in combination with VHI-PKZ01	IP65		CI-PKZ01-SVB-V 281944	1 off	
	With emergency switching off mushroom button, maintained	IP65		CI-PKZ01-PVT 281406	1 off	
	With emergency switching off mushroom button, with key-release	IP65		CI-PKZ01-PVS 281407	1 off	
	For extension with inserts CI/E-PKZ01-X... unit	As insert	PKZM01	CI-PKZ01-X 289934	1 off	
For Motor-protective circuit-breakers PKZM0						
	Cover with aperture dimensioned to accommodate front of breaker. IP40, when mounted turned through 90° to left/right	IP41 with vertical mounting	PKZM0-... +NHI or AGM +U or A +NHI-E +L-PKZ0 (2 off)	CI-K2-PKZ0 219653	1 off	M25 metric cable entry knockout, top and bottom Cable push-through membrane top, bottom, in the back plate and as a control line entry. Insulated enclosure CI-K2 incl. N and PE terminal.
	With black-grey rotary knob	IP65		CI-K2-PKZ0-G 219654	1 off	
	With red-yellow rotary knob, for use as emergency switching off device to EN 60204	IP65		CI-K2-PKZ0-GR 219655	1 off	
	Cover with aperture dimensioned to accommodate front of breaker	IP40	PKZM0-... +NHI or U or A +L-PKZ0 (2 off)	CI-PKZ0-M 267083	1 off	Integrated terminal for PE(N) connection, two M25 cable entry knockouts at top and at bottom.
	With black-grey rotary knob	IP55	PKZM0-... +NHI-E	CI-PKZ0-GM 260089	1 off	
	With red-yellow rotary knob, for use as emergency switching off device to EN 60204	IP55	+NHI or U or A +L-PKZ0 (2 off)	CI-PKZ0-GRM 260104	1 off	
For Motor-protective circuit-breakers PKZM0 with early-make VHI auxiliary contacts						
	With black-grey rotary knob	IP65	PKZM0-... and VHI +NHI or AGM	CI-K2-PKZ0-GV 219657	1 off	M25 metric cable entry knockout, top and bottom Cable push-through membrane top, bottom, in the back plate and as a control line entry. Insulated enclosure CI-K2 incl. N and PE terminal.
	With red-yellow rotary knob, for use as emergency switching off device to EN 60204	IP65	+U or A +L (2 off)	CI-K2-PKZ0-GRV 219656	1 off	
	With black-grey rotary knob	IP55	PKZM0-... and VHI +U or A (undervoltage or shunt release)	CI-PKZ0-GVM 263526	1 off	Integrated terminal for PE(N) connection, two M25 cable entry knockouts at top and at bottom.
	With red-yellow rotary knob, for use as emergency switching off device to EN 60204	IP55	+L-PKZ0 (2 off)	CI-PKZ0-GRVM 263525	1 off	
For Motor-protective circuit-breakers PKZM4						
	With black-grey rotary knob	IP65	PKZM4-... +VHI or NHI-E	CI-K4-PKZ4-G 225524	1 off	Metric knockout: Top and bottom: M25/M32 In the back plate: M25/M32 Control cable entry: M20 CI-K4 insulated enclosure including insulated PE terminal
	With red-yellow rotary knob, for use as emergency switching off device to EN 60204	IP65	+NHI and AGM +U or A +L-PKZ0 (2 off)	CI-K4-PKZ4-GR 225525	1 off	

E-PKZ










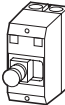

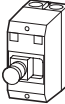









	Degree of protection	For use with	Part no. Article no.	Price See price list	Std. pack	Information relevant for export to North America	
						 	 
Insulated enclosures for flush mounting							
For Motor-protective circuit-breaker PKZM01							
Integrated terminal for PE(N) connection.							
		Front IP40	PKZM01 +NHI or U or A +NHI-E or VHI +L (2 off)	E-PKZ01 281633	1 off  	Product Standards	UL 508; CSA-C22.2 No.14; IEC60947-4-1; CE marking
	With operating membrane	Front IP65		E-PKZ01-G 281634	1 off  	UL File No. UL CCN CSA File No. CSA Class No. NA Certification	E36332 NLRV 12528 3211-05 UL Listed, CSA certified
	Lockable in Off position	Front IP65	PKZM01 +U or A +NHI-E	E-PKZ01-SVB 281635	1 off  		
	Lockable in Off position, in combination with VHI-PKZ01	Front IP65	PKZM01 +U or A +NHI-E or VHI	E-PKZ01-SVB-V 281943	1 off  		
	With emergency switching off mushroom button, maintained	Front IP65		E-PKZ01-PVT 281636	1 off  		
	With emergency switching off mushroom button, with key-release	Front IP65		E-PKZ01-PVS 281637	1 off  		
	For extension with inserts C/E-PKZ01-X... unit	As insert	PKZM01	E-PKZ01-X 289935	1 off		
For Motor-protective circuit-breakers PKZM0							
Integrated terminal for PE(N) connection.							
	Cover with aperture dimensioned to accommodate front of breaker	Front IP40	PKZM0-... +NHI or U or A +L-PKZ0 (2 parts)	E-PKZ0 072906	1 off  	Product Standards	UL 508; CSA-C22.2 No.14; IEC60947-4-1; CE marking
	With black-grey rotary knob	Front IP55	PKZM0-... +NHI or U or A +NHI-E +L-PKZ0 (2 parts)	E-PKZ0-G 072907	1 off  	UL File No. UL CCN CSA File No. CSA Class No. NA Certification	E36332 NLRV 12528 3211-05 UL Listed, CSA certified
	With red-yellow rotary knob, for use as emergency switching off device to EN 60204	Front IP55		E-PKZ0-GR 072908	1 off  	Degree of Protection	UL 508; CSA-C22.2 No.14; IEC60947-4-1; CE marking IEC: Front IP55, UL/CSA Type: 1,12, 3R

1.3













Motor-protective circuit-breakers PKZM01, PKZM0, PKZM4, PKE Insulated enclosure

1

CI-PKZ

	Degree of protection	For use with	Part no. Article no.	Price See price list	Std. pack	Information relevant for export to North America 
Insulated enclosures for surface mounting						
For Motor-protective circuit-breaker PKZM01s						
Integrated terminal for PE(N) connection.						
	IP41	PKZM01 +NHI-E or VHI-PKZ01 +U or A or NHI +L (2 off)	CI-PKZ01-NA 281408		1 off 	Product Standards UL 508; CSA-C22.2 No.14; IEC60947- 4-1; CE marking UL File No. UL CCN E36332 CSA File No. 12528 CSA Class No. 3211-05 NA Certification UL Listed, CSA certified
	With operating membrane IP65	PKZM01 +NHI-E or VHI-PKZ01 +U or A or NHI +L (2 off)	CI-PKZ01-NA-G 281409		1 off 	UL File No. UL CCN E36332 CSA File No. 12528 CSA Class No. 3211-05 NA Certification UL Listed, CSA certified Specially designed for NA ✓ Degree of Protection IEC: IP41, UL/CSA Type: -
	Lockable in Off position IP65	PKZM01 +NHI-E or VHI-PKZ01 +U or A +L (2 off)	CI-PKZ01-NA-SVB 281630		1 off 	
	Lockable in Off position, in combination with VHI-PKZ01 IP65	PKZM01 +NHI-E +U or A +L (2 off)	CI-PKZ01-NA-SVB-V 281945		1 off 	
	With emergency switching off mushroom button, maintained IP65		CI-PKZ01-NA-PVT 281631		1 off 	
	With emergency switching off mushroom button, with key-release IP65		CI-PKZ01-NA-PVS 281632		1 off 	
For Motor-protective circuit-breakers PKZM0						
Integrated N and PE terminals; lower section without knockouts						
	With black-grey rotary knob IP55	PKZM0-... +NHI or U or A +NHI-E +L-PKZ0 (2 parts)	CI-K2-PKZ0-NA-G 262680		1 off 	
	With red-yellow rotary knob, for use as emergency switching off device to EN 60204 IP55		CI-K2-PKZ0-NA-GR 262681		1 off 	
For Motor-protective circuit-breakers PKZM0 with early-make auxiliary contacts						
Integrated N and PE terminals; lower section without knockouts						
	With black-grey rotary knob IP55	PKZM0-... +VHI... + U... +L-PKZ0 (2 parts)	CI-K2-PKZ0-NA-GV 262682		1 off 	
	With red-yellow rotary knob, for use as emergency switching off device to EN 60204 IP55		CI-K2-PKZ0-NA-GRV 262683		1 off 	

SVB-PKZ, CL/EPKZ01

	Degree of protection	For use with	Part no. Article no.	Price See price list	Std. pack	Information relevant for export to North America 
Insulated enclosures, accessories						
Padlocking feature						
For up to 3 padlocks with 3 – 6 mm hasp thickness, for use as main switch to IEC/EN60204						
	Lockable in the 0-position of the PKZM0 or Motor-protective circuit-breaker PKZM4.	–	CI-K2-PKZ0-G(R)(V) CI-PKZ0-G(R)(V)M	SVB-PKZ0-CI 035129	3 off 	Product Standards UL 508; CSA-C22.2 No.14; IEC60947-4-1; CE marking
	–	–	E-PKZ0-G(R)	SVB-PKZ0-E 035127	3 off 	UL File No. UL CCN CSA File No. CSA Class No. NA Certification E36332 NLRV 12528 3211-05 UL Listed, CSA certified
	–	–	CI-K4-PKZ4-G(R)	SVB-PKZ4-CI 225526	1 off	
Neutral terminal						
For connection of a 5th conductor						
	Flexible, 1 - 4 mm ²	–	CI-K2-PKZ0-...	K-CI-K1/2 207451	20 off 	UL/CSA certification not required
	63 A, flexible, 6 - 16 mm ²	–	CI-K4-PKZ4-G(R)	K25/1 096200	10 off	
	–	–	E-PKZ0(-G)(-GR) E-PKZ01(-G)	N-PKZ0 082160	20 off	
	Units for insulated enclosures for PKZ01					
Combinable with CI-PKZ01-X and E-PKZ01-X.						
	With operating membrane	Front IP65	PKZM01 +NHI-E or VHI-PKZ01 +U or A or NHI +L (2 off)	CI/E-PKZ01-XG 289936	1 off	
	Lockable in Off position	Front IP65	PKZM01 +NHI-E +U or A +L (2 off)	CI/E-PKZ01-XSVB 289939	1 off	
	With emergency switching off mushroom button, maintained	Front IP65	PKZM01 +NHI-E or VHI-PKZ01 +U or A +L (2 off)	CI/E-PKZ01-XPVT 289937	1 off	
	With emergency switching off mushroom button, with key-release	Front IP65	PKZM01 +NHI-E or VHI-PKZ01 +U or A +L (2 off)	CI/E-PKZ01-XPVS 289938	1 off	
	Lockable in Off position, in combination with VHI-PKZ01	Front IP65	PKZM01 VHI-PKZ01 +U or A +L (2 off)	CI/E-PKZ01-XSVB-V 289980	1 off	

1.3

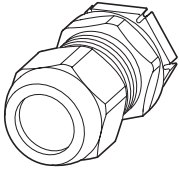
Motor-protective circuit-breakers PKZM01, PKZM0, PKZM4, PKE Accessories

1

Accessories

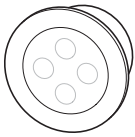
Metric cable glands to EN 50262

- With lock nut and built-in strain relief
- IP68 up to 5 bar, halogen free



Metric diaphragm grommets





















- IP66
- With integral push-through diaphragm



Cable entry	Drilling dimensions mm	External cable diameter mm	Part no. Article no.	Price See price list	Std. pack
M20	20.5	6 - 13	V-M20 206910		20 off
M25	25.5	9 - 17	V-M25 206911		20 off
M32	32.5	13 - 21	V-M32 206912		10 off
M32	32.5	18 - 25	V-M32G 226156		10 off
M20	20.5	1 - 13	KT-M20 207602		100 off
M25	25.5	1 - 18	KT-M25 207603		100 off
M32	32.5	1 - 25	KT-M32 207604		100 off

Door coupling handles
Degree of protection IP65, UL/CS Type 4X / Type12



	For use with	Color	Part no. Article no.	Price See price list	Std. pack	Notes
For use as main switch to IEC/EN 60204	PKZM0 PKZM4	Black	PKZ0-XH¹⁾ 106132		1 off  	Pluggable PKZ0-XAH extension shaft, can be cut to any required length for installation depths of 100...240 mm. Follower included in delivery. With ON/OFF switch position and "+" (tripped), lockable. With 3 padlocks, 4 – 8 mm hasp. Cannot be used in combination with VH20-PKZ0.
For use as a main switch with emergency switching off function to EN 60204	PKZM0 PKZM4	Red-yellow	PKZ0-XRH¹⁾ 106133		1 off  	
For use as a main switch to EN 60204 in MCC power distribution systems and with PKZM0 installed rotated by 90°	PKZM0 PKZM4	Black	PKZ0-XH-MCC¹⁾ 106136		1 off  	
For use as a main switch with emergency switching off function to EN 60204 in MCC power distribution systems and with PKZM0 installed rotated by 90°	PKZM0 PKZM4	Red-yellow	PKZ0-XRH-MCC¹⁾ 106137		1 off  	
For use as main switch to IEC/EN 60204	PKE	Black	PKE-XH¹⁾ 142416		1 off  	Pluggable PKZ0-XAH extension shaft, can be cut to any required length for installation depths of 100...240 mm. Follower included in delivery. With ON/OFF switch position and "+" (tripped), lockable. With 3 padlocks, 4 – 8 mm hasp.
For use as a main switch with emergency switching off function to EN 60204	PKE	Red-yellow	PKE-XRH¹⁾ 142417		1 off  	
For use as a main switch to EN 60204 in MCC power distribution systems and with PKE installed rotated by 90°	PKE	Black	PKE-XH-MCC¹⁾ 142418		1 off  	
For use as a main switch with emergency-switching off function to EN 60204 in MCC power distribution systems and with PKE installed rotated by 90°	PKE	Red-yellow	PKE-XRH-MCC¹⁾ 142419		1 off  	
For increasing the degree of protection of the PKZM4 to IP2X	PKZM4	–	HB-PKZ4²⁾ 256581		1 off  	Suitable for connecting cables with a max. external diameter of 9.5 mm
–	PKZM0 PKZM4	–	PKZ0-XAH¹⁾ 106134		1 off  	Follower not included

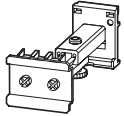
Information relevant for export to North America  

¹⁾ Product Standards	UL 508; CSA-C22.2 No.14; IEC60947-4-1; CE marking
UL File No.	E36332
UL CCN	NLRV
CSA File No.	12528
CSA Class No.	3211-05
NA Certification	UL Listed, CSA certified
Degree of Protection	IEC: IP65, UL/CSA Type: 4X, 12

²⁾ Product Standards	UL 508; CSA-C22.2 No.14; IEC60947-4-1; CE marking
UL File No.	E36332
UL CCN	NLRV
CSA File No.	12528
CSA Class No.	3211-05
NA Certification	UL Listed, CSA certified

Accessories

Telescopic adapters
With 45 mm top-hat rail to IEC/EN 60715 for compensation of the mounting depth of rear-mounted devices enclosures CI-K and cabinets



Notes	Part no. Article no.	Price See price list	Std. pack	Information relevant for export to North America
Telescopic clip Stepless adjustment via scale from 75 – 115 mm.	M22-TA 226161		1 off 	Product Standards IEC/EN60947-5; UL 508; CSA-C22.2 No.14-05; CSA-C22.2 No.94-91; CE marking E29184 UL File No. UL CCN CSA File No. 012528 CSA Class No. 3211-03 NA Certification UL Listed, CSA certified

Lockable rotary handle



For locking motor-protective circuit-breakers PKZM0, PKZM4 and PKE as a main switch in compliance with EN 60204. Can be padlocked in the "0" position. Hasp thickness: 3 – 6.35 mm	Can not be combined with VHI-PKZ0.	AK-PKZ0 030851	5 off 	Product Standards UL 508; CSA-C22.2 No.14; IEC/EN 60947-4-1; CE marking E36332 UL File No. NLRV UL CCN CSA File No. 12528 CSA Class No. 3211-05 NA Certification UL Listed, CSA certified
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Holding facility

To prevent tampering with the overload release and the test function, it can be sealed using industry standard sealing wire For use with motor-protective circuit-breakers PKZM0 and PKZM4	–	PL-PKZ0 203599	5 off	
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Mounting angle bracket



For screw fixing to mounting plate	–	PKE32-XMB 134837	20 off 	Product Standards UL 508; CSA-C22.2 No.14; IEC/EN 60947-4-1; CE marking NA Certification Request filed for UL and CSA
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Documentation

Motor-protective circuit-breakers PKZM0, overload monitoring of EEx e motors	German/English	AWB1210-1458D/GB 266164	1 off	
Motor-protective circuit-breakers PKZM4, overload monitoring of EEx e motors	German/English	AWB1210-1457D/GB 266165	1 off	
Motor-protective circuit-breakers PKE, EEx electric motor overload monitoring	German/English	AWB1210-1631DE/EN 134836	1 off	

Indicator lights with glow lamp



For use with Color Voltage	Color	Voltage U_s V	Part no. Article no.	Price See price list	Std. pack
CI-K2-PKZ0-..., CI-K4-PKZ4, CI-PKZ0(1), E-PKZ0(1)	White	110 - 230	L-PKZ0(230V) 082151		10 off
CI-K2-PKZ0-..., CI-K4-PKZ4, CI-PKZ0(1), E-PKZ0(1)	White	230 - 400	L-PKZ0(400V) 082152		10 off
CI-K2-PKZ0-..., CI-K4-PKZ4, CI-PKZ0(1), E-PKZ0(1)	White	415 - 500	L-PKZ0(500V) 082153		5 off
CI-K2-PKZ0-..., CI-K4-PKZ4, CI-PKZ0(1), E-PKZ0(1)	Green	110 - 230	L-PKZ0-GN(230V) 082154		10 off
CI-K2-PKZ0-..., CI-K4-PKZ4, CI-PKZ0(1), E-PKZ0(1)	Green	230 - 400	L-PKZ0-GN(400V) 082155		10 off
CI-K2-PKZ0-..., CI-K4-PKZ4, CI-PKZ0(1), E-PKZ0(1)	Green	415 - 500	L-PKZ0-GN(500V) 082156		5 off
CI-K2-PKZ0-..., CI-K4-PKZ4, CI-PKZ0(1), E-PKZ0(1)	Red	110 - 230	L-PKZ0-RT(230V) 082157		10 off
CI-K2-PKZ0-..., CI-K4-PKZ4, CI-PKZ0(1), E-PKZ0(1)	Red	230 - 400	L-PKZ0-RT(400V) 082158		10 off

1.3

Motor-protective circuit-breakers PKZM01, PKZM0, PKZM4, PKE

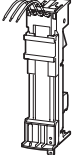


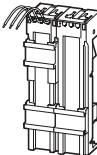


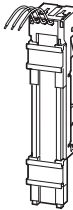


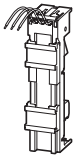


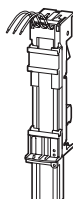
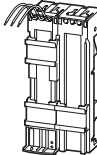


Busbar adapters

1

Busbar adapters for PKZ and PKE

Approved to UL508.

For fitting to flat copper busbars with 60mm between busbar centers, suitable for 5 mm and 10 mm busbar thickness.

Rated operational voltage U_e V	Conductor cross-section	Adapter width mm	Mounting rails Number	For use with	Part no. Article no.	Price See price list	Std. pack	Notes				
Rated operational current 16 A For starters with spring-loaded terminals 	690	AWG 14 (2.5 mm ²)	45	2	PKZM0-C + DILMC7 PKZM0-C + DILMC9 PKZM0-C + DILMC12	BBA0C-16 101455	4 off  	According to UL 508: $I_e = 12$ A				
	Rated operational current 25 A For reversing starters 	690	AWG 12 (4 mm ²)	90	1	PKZM0, PKE + 2 x DILM7-01 PKZM0, PKE + 2 x DILM9-01 PKZM0, PKE + 2 x DILM12-01 MSC-R-0,25-M7... - MSC-R-12-M12...	BBA0R-25 101453	2 off  	In combination with individual components PKZM0 and DILM, use reversing starter kit PKZM0-XRM12. Fully assembled and tested combination with MSC-R → Chapter 1.4 (Page 18) Only busbar adapters/wiring sets manufactured on or after CW35/2009 can be used for PKE.			
		Can be used universally 	690	AWG 12 (4 mm ²)	45	2	—	BBA0-25/2TS 101481	4 off  	Mounting rails can be moved within 1.25 mm grid.		
			For DOL starters 	690	AWG 12 (4 mm ²)	45	1	PKZM0, PKE + 2 x DILM17-01 PKZM0, PKE + 2 x DILM25-01 PKZM0, PKE + 2 x DILM25-01 PKZM0, PKE + 2 x DILM32-01 MSC-R-16-M17... MSC-R-32-M32...	BBA0-25 101451	4 off  	In combination with individual components PKZM0 and DILM, use DOL starter kit PKZM0-XRM12. Fully assembled and tested combination with MSC-D → Chapter 1.4 (Page 2) Only busbar adapters/wiring sets manufactured on or after CW35/2009 can be used for PKE.	
				For soft starters 	690	AWG 12 (4 mm ²)	45	1	PKZM0, PKE + DS7...004N... PKZM0, PKE + DS7...007N... PKZM0, PKE + DS7...009N... PKZM0, PKE + DS7...012N...	BBA0L-25 142526	1 off	—
					Rated operational current 32 A For reversing starters 	690	AWG 10 (6 mm ²)	90	3	PKZM0, PKE + 2 x DILM17-01 PKZM0, PKE + 2 x DILM25-01 PKZM0, PKE + 2 x DILM32-01 MSC-R-16-M17... - MSC-R-32-M32...	BBA0R-32 101454	2 off  

Information relevant for export to North America



Product Standards

UL File No.
UL CCN

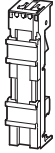

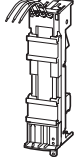

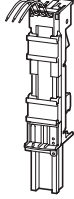

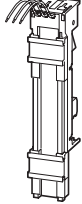

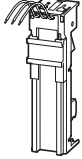

UL 508A; CSA-C22.2 No. 14;
IEC60439-1; CE marking
UL File No.E300273
NMTR, NMTRZ

CSA File No.

CSA Class No.
NA Certification
Max. Voltage Rating

232140

3211-37
UL Listed, CSA certified
600 V AC

	Rated operational voltage U_e V	Conductor cross-section	Adapter width mm	Mounting rails Number	For use with	Part no. Article no.	Price See price list	Std. pack	Notes
Rated operational current 32 A Can be used universally. 	690	–	45	2	PKZM0..., PKE + DILM...	BBA0-32/2TS-C²⁾ 116708		4 off 	Universal adapter 1-, 2- and 3-phase applications. Mounting rail can be moved within 1.25 mm grid. For conductor cross-sections, round conductors of up to 6 mm ² . Only busbaradapters/wiring sets manufactured on or after CW 35/2009 can be used for PKE.
For DOL starters. 	690	AWG 10 (6 mm ²)	45	2	PKZM0, PKE + DILM17 PKZM0, PKE + DILM25 PKZM0, PKE + DILM32 MSC-D-16-M17... - MSC-D-32-M32...	BBA0-32¹⁾ 101452		4 off 	In combination with individual components PKZM0 and DILM wiring kit PKZM0-XM32DE can be used. Fully assembled and tested combination with MSC-D → Chapter 1.4 (Page 2) Only busbar adapters/wiring sets manufactured on or after CW35/2009 can be used for PKE.
For soft starters 	690	AWG 10 (6 mm ²)	45	2	PKZM0, PKE + DS7...016N... PKZM0, PKE + DS7...024N... PKZM0, PKE + DS7...032N...	BBA0L-32 142527		1 off	–
For 160 mm adapter system with motor-protective circuit-breakers 	690	AWG 10 (6 mm ²)	45	1	PKZM0, PKE	BBA0K-32 142528		1 off	–
Rated operational current 63 A For DOL starters. 	690	AWG 8 (10 mm ²)	55	2	PKZM4 + DILM17 PKZM4 + DILM25 PKZM4 + DILM32 PKZM4 + DILM40 PKZM4 + DILM50 PKZM4 + DILM65	BBA4-63¹⁾ 101459		4 off 	The following can be used to establish an electrical connection: For PKZM4 + DILM17 to DILM32: MVS-LB0-0M-G For PKZM4 + DILM40 to DILM65: PKZM4-XM65DE.
For motor-protective circuit-breakers 	690	AWG 8 (10 mm ²)	54	1	PKZM4	BBA4-63¹⁾ 101457		4 off 	–

Information relevant for export to North America



1)
 Product Standards UL 508; CSA-C22.2 No.14; IEC60439-1; CE marking
 UL File No. E300273
 UL CCN NMTR, NMTR7
 CSA File No. 232140
 CSA Class No. 3211-37
 NA Certification UL Listed, CSA certified
 Max. Voltage Rating 600 V AC

2)
 Product Standards UL 508; CSA-C22.2 No.14; IEC60439-1; CE marking
 UL File No. E300273
 UL CCN NMTR, NMTR7
 NA Certification UL Listed, CSA certified
 Max. Voltage Rating 600 V AC

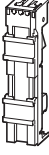










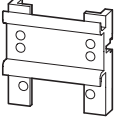


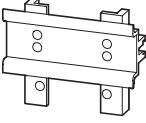






1.3

Motor-protective circuit-breakers PKZM01, PKZM0, PKZM4, PKE

Busbar adapters

1

BBA, PKZM0-XM

	Rated operational voltage U_e V	Conductor cross-section	Adapter width mm	Mounting rails Number	For use with	Part no. Article no.	Price See price list	Std. pack	Notes
Without electrical contacts Empty module. 	–	–	45	2	–	BBA0/ZTS-L¹⁾ 101482		4 off  	Mounting rails can be moved within a 1.25 mm grid. Can be used to mount reversing and star-delta starters.
	–	–	54	2	–	BBA4/ZTS-L¹⁾ 101483		4 off  	Mounting rails can be moved within a 1.25 mm grid. Can be used to mount reversing and star-delta starters.
Side-mounted module, can be attached on both sides. 	–	–	9	–	–	BBA-XSM¹⁾ 101484		10 off  	Can be grouped with busbar adapters in order to extend the mounting width.
Busbar adapters accessories Mounting rails 	–	–	45	–	BBA...	PKZM0-XMR²⁾ 239364		10 off  	–
Busbar adapters accessories Mounting rails 	–	–	54	–	BBA...	PKZM0-XMR54²⁾ 113911		10 off  	–
Busbar adapters accessories Mounting rails 	–	–	72	–	BBA...	PKZM0-XMR72²⁾ 113912		10 off  	–
Connecting cable –	–	–	–	–	BBA...	BBA-XLT-6-130³⁾ 116902		30 off  	–
	–	–	–	–	BBA...	BBA-XLT-16-142³⁾ 116903		30 off  	–

Information relevant for export to North America



1)

Product Standards	UL 508A; CSA-C22.2 No.14; IEC60439-1; CE marking
UL File No.	E300273
UL CCN	NMTR, NMTR7
CSA File No.	232140
CSA Class No.	3211-37
NA Certification	UL Listed, CSA certified
Max. Voltage Rating	600 V AC

2)

Product Standards	UL 508A; CSA-C22.2 No.14; IEC60947-4-1; CE marking
UL File No.	E300273
UL CCN	NMTR, NMTR7
CSA File No.	232140
CSA Class No.	3211-37
NA Certification	UL Listed, CSA certified

3)

Product Standards	UL 508A; CSA-C22.2 No.14; IEC60439-1; CE marking
UL File No.	On request
UL CCN	On request
CSA File No.	On request
CSA Class No.	On request
NA Certification	UL Recognized, CSA certified

Wiring set

For use with

Part no.
Article no.

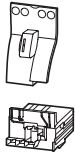
Price
See price list

Std. pack

Notes

1

DOL starter



PKZM0, PKE + DILM7
PKZM0, PKE + DILM9
PKZM0, PKE + DILM12
PKZM0, PKE + DILM15
DS7-34...SX004...
DS7-34...SX007...
DS7-34...SX009...
DS7-34...SX012...

PKZM0-XDM12
283149

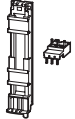
1 off

Consists of:

- Mechanical connection element for PKZM0 and contactor
- Main supply wiring between PKZM0 and contactor with tool-less plug connection
- Cable routing

As auxiliary contact, use DILA-XHIT... → Chapter 1.1 (Page 38)
Cannot be combined with NHI-E...PKZ0-C.
 $U_e \leq 415 \text{ V}^{1)}$

DOL starter



PKZM0, PKE + DILM17
PKZM0, PKE + DILM25
PKZM0, PKE + DILM32

PKZM0-XDM32
283153

1 off

Consists of:

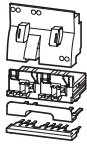
- Top-hat rail adapter plates
- Power supply wiring between PKZ and contactor¹⁾

PKZM4 + DILM40
PKZM4 + DILM50
PKZM4 + DILM65

PKZM4-XDM65
101053

1 off

Reversing starters



PKZM0, PKE + DILM7-01
PKZM0, PKE + DILM9-01
PKZM0, PKE + DILM12-01

PKZM0-XRM12
283185

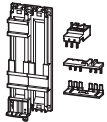
1 off

Consists of:

- Mechanical connection element for PKZM0 and contactor
- Reversing starters main supply wiring with tool-less plug connection
- Control cables for electrical interlocking in tool-less plug connection:
 - K1M: A1 -K2M: 21
 - K1M: 21 -K2M: A1
 - K1M: A2 -K2M: A2
- Cable routing

As auxiliary contact DILA-XHIT...use → Chapter 1.1 (Page 38)
Can not be combined with AGM PKZ0.
 $U_e \leq 415 \text{ V}^{1)}$

Reversing starters



PKZM0, PKE + DILM17
PKZM0, PKE + DILM25
PKZM0, PKE + DILM32

PKZM0-XRM32
283189

1 off

Consists of:

- Top-hat rail adapter plates
- Reversing starters supply wiring¹⁾

Wiring kit



PKZM0, PKE + DILM17
PKZM0, PKE + DILM25
PKZM0, PKE + DILM32
DS7-34...SX016...
DS7-34...SX024...
DS7-34...SX032...

PKZM0-XM32DE
239349

5 off

• Main supply wiring between PKZM0 and contactor
• Use only in combination with busbar adapter or mounting rail adapter plate

PKZM4 + DILM40
PKZM4 + DILM50
PKZM4 + DILM65

PKZM4-XM65DE
101056

5 off

• Main current supply between PKZM4 and contactor

Top-hat rail adapter plates



PKZM0-XDM12
PKZM0-XRM12

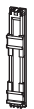
PKZM0-XC45
283132

4 off

Consists of:

- 45 mm wide adapter plate
- Connection element for side-by-side positioning of further plates¹⁾

Top-hat rail adapter plates



PKZM4 + DILM40
PKZM4 + DILM50
PKZM4 + DILM65

PKZM4-XC55/2
101054

4 off

Consists of:

- 55 mm wide adapter plate
- Connection cam for additional plates¹⁾
- For use with reversing and start-delta starters

Soft starters



PKZM0, PKE + DS7...004N...
PKZM0, PKE + DS7...007N...
PKZM0, PKE + DS7...009N...
PKZM0, PKE + DS7...012N...

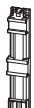
PKZM0-XC45L
142529

1 off

Consists of:

- 45 mm wide adapter plate

Soft starters



PKZM0, PKE + DS7...016N...
PKZM0, PKE + DS7...024N...
PKZM0, PKE + DS7...032N...

PKZM0-XC45L/2
142570

1 off

Consists of:

- 45 mm wide adapter plate

Notes

¹⁾ Use only busbar adapters/wiring sets manufactured on or after CW35/2009 for PKE.

Information relevant for export to North America

²⁾
Product Standards UL 508; CSA-C22.2 No.14; IEC60947-4-1;
CE marking
UL File No. E36332
UL CCN NLRV
CSA File No. 12528
CSA Class No. 3211-05
NA Certification UL Listed, CSA certified

³⁾
UL/CSA certification not required

⁴⁾
Product Standards UL 508; CSA-C22.2 No.14;
IEC60947-4-1; CE marking
UL File No. E300273
UL CCN NMTR, NMTR7
NA Certification UL Listed, CSA certified
Max. Voltage Rating 600 V AC

1.3

Motor-protective circuit-breakers PKZM01, PKZM0, PKZM4, PKE Motor feeder plugs, three-phase commoning links

1

Motor feeder plug

Description	For use with	Part no. Article no.	Price See price list	Std. pack	Notes	Information relevant for export to North America
PE module with contact plate						
DILM(C)7 DILM(C)9 DILM(C)12 DILM(C)15		DILM12-XMCE 121764		5 off 	35 x 7.5 (15) mm mounting rail (as per DIN EN 60715) with PE function required. For connection of: PE 0.75 – 4 mm ²	Product Standards UL 508; CSA-C22.2 No. 14; IEC60947-4-1; CE marking NA Certification Request filed for UL and CSA
Motor feeder plug with PE module and contact plate						
DILM(C)7 DILM(C)9 DILM(C)12 DILM(C)15		DILM12-XMCP/E 121769		1 off 	35 x 7.5 (15) mm mounting rail (as per DIN EN 60715) with PE function required. For connection of: L1, L2, L3, PE 0.75 – 2.5 mm ²	Product Standards IEC/EN 60947-4-1; UL 508; CSA-C22.2 No. 14-05; CE marking NA Certification Request filed for UL and CSA
Motor feeder plug with PE module without contact plate						
PKZM0/PKE + DILM(C)7 PKZM0/PKE + DILM(C)9 PKZM0/PKE + DILM(C)12 PKZM0/PKE + DILM(C)15 MSC-D(E)-...-M7... MSC-D(E)-...-M9... MSC-D(E)-...-M15...		DILM12-XMCP/T 121770		1 off 	For connection of: L1, L2, L3, PE 0.75 – 2.5 mm ²	Product Standards IEC/EN 60947-4-1; UL 508; CSA-C22.2 No. 14-05; CE marking NA Certification Request filed for UL and CSA

Three-phase commoning links, incoming unit via terminals 1, 3, and 5

Finger- and back-of-hand-proof, short-circuit proof, $U_e=690\text{ V}$, $I_n=63\text{ A}$
Can be extended through rotated installation

Circuit-breakers Number	Length mm	Unit width mm	Part no. Article no.	Price See price list	Std. pack	Notes
For PKZM0-... or PKE without side-mounted auxiliary contacts or voltage releases						
	2	90	45	B3.0/2-PKZ0¹⁾ 063961	10 off 	For parallel feeding of multiple motor-protective circuit-breakers on terminals 1, 3, and 5
	3	135	45	B3.0/3-PKZ0¹⁾ 232289	10 off 	
	4	180	45	B3.0/4-PKZ0¹⁾ 063960	10 off 	
	5	225	45	B3.0/5-PKZ0¹⁾ 232290	10 off 	
For motor-protective circuit-breakers with one auxiliary contact or trip-indicating auxiliary contact each fitted to right side						
	2	99	45 + 9	B3.1/2-PKZ0¹⁾ 044945	10 off 	For parallel feeding of multiple motor-protective circuit-breakers on terminals 1, 3, and 5
	3	153	45 + 9	B3.1/3-PKZ0¹⁾ 044946	10 off 	
	4	207	45 + 9	B3.1/4-PKZ0¹⁾ 044947	10 off 	
	5	261	45 + 9	B3.1/5-PKZ0¹⁾ 044948	10 off 	
For PKZM0-... or PKE with one auxiliary contact or trip-indicating auxiliary contact each fitted to right side, or one voltage release fitted on left side						
	2	108	45 + 18	B3.2/2-PKZ0¹⁾ 063963	10 off 	For parallel feeding of multiple motor-protective circuit-breakers on terminals 1, 3, and 5
	4	234	45 + 18	B3.2/4-PKZ0¹⁾ 063959	10 off 	

Information relevant for export to North America

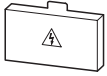


1)
Product Standards
UL File No.
UL CCN
CSA File No.
CSA Class No.
NA Certification
UL 508A; CSA-C22.2 No.14; IEC60947-4-1; CE marking
E36332
NLRV
98494
3211-06
UL Listed, CSA certified

HB3...PKZO, BK...I3-PKZ

Circuit-breakers	For use with	Unit width	Part no. Article no.	Price See price list	Std. pack	Notes
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Number mm



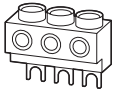
Shroud for unused terminals

Protection against direct contact.

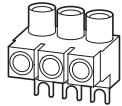
For covering unused terminals on three-phase commoning link B3...-PKZO

-	-	-	H-B3-PKZO¹⁾ 032721		20 off 	-
---	---	---	---	--	------------	---

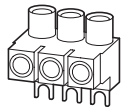
Incoming terminals



-	PKZM0 PKE	-	BK25/3-PKZO²⁾ 032720		5 off 	For three-phase commoning link, protected against accidental contact, $U_e = 690\text{ V}$, $I_u = 63\text{ A}$ For conductor cross-sections: 2.5 - 25 mm ² stranded 2.5 - 16 mm ² flexible with ferrule AWG 14 - 6, usable on terminals 1, 3, and 5
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-	PKZM0	-	BK25/3-PKZO-E³⁾ 262518		5 off 	For three-phase commoning link, protected against accidental contact, $U_e = 690\text{ V}$, $I_u = 60\text{ A}$ For conductor cross-sections: 2.5 - 25 mm ² stranded 2.5 - 16 mm ² flexible with ferrule AWG 14 - 6 For assembly of Type E starters.
---	-------	---	---	--	-----------	--



-	PKZM4	-	BK50/3-PKZ4-E⁴⁾ 272165		1 off 	Can be combined with three-phase commoning link B3...PKZ4. $I_u = 120\text{ A}$. For assembly of Type E starters.
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Information relevant for export to North America



1)

Product Standards	UL 508; CSA-C22.2 No.14; IEC60947-4-1; CE marking
UL File No.	E36332
UL CCN	NLRV
CSA File No.	98494
CSA Class No.	3211-06
NA Certification	UL Listed, CSA certified

2)

Product Standards	UL 508; CSA-C22.2 No.14; IEC60947-4-1; CE marking
UL File No.	E36332
UL CCN	NLRV
CSA File No.	12528
CSA Class No.	3211-05
NA Certification	UL Listed, CSA certified

3)

Product Standards	UL 508; CSA-C22.2 No.14; IEC60947-4-1; CE marking
UL File No.	E36332
UL CCN	NLRV
CSA File No.	98494
CSA Class No.	3211-06
NA Certification	UL Listed, CSA certified
Specially designed for NA Suitable for	✓ PKZM0/PKE, line terminal required for Type E/F applications

4)

Product Standards	UL 508; CSA-C22.2 No.14; IEC60947-4-1; CE marking
UL File No.	E36332
UL CCN	NLRV
CSA File No.	12528
CSA Class No.	3211-06
NA Certification	UL Listed, CSA certified
Specially designed for NA Suitable for	✓ PKZM4/PKE, line terminal required for Type E/F applications

1.3

Motor-protective circuit-breakers PKZM01, PKZM0, PKZM4, PKE Three-phase commoning links

1

Three-phase commoning links

Finger- and back-of-hand-proof, short-circuit proof $U_n=690\text{ V}$, $I_n=128\text{ A}$

Circuit-breakers	Length	Unit width	Part no.	Price	Std. pack
Number	mm	mm	Article no.	See price list	

Information relevant for export to North America



For PKZM4 without side-mounted auxiliary contacts or voltage releases

2	110	55	B3.0/2-PKZ4 220220	1 off	
3	165	55	B3.0/3-PKZ4 220221	1 off	
4	220	55	B3.0/4-PKZ4 220222	1 off	

Product Standards UL 508; CSA-C22.2 No.14; IEC60947-4-1; CE marking
UL File No. E36332
UL CCN NLRV
CSA File No. 12528
CSA Class No. 3211-06
NA Certification UL Listed, CSA certified

For PKZM4 with one auxiliary contact or trip-indicating auxiliary contact each fitted on the right side

2	119	55 + 9	B3.1/2-PKZ4 220223	1 off	
3	183	55 + 9	B3.1/3-PKZ4 220224	1 off	
4	247	55 + 9	B3.1/4-PKZ4 220225	1 off	

For PKZM4 with one auxiliary contact or trip-indicating auxiliary contact each fitted to right side, or one voltage release fitted to left side

2	128	55 + 18	B3.2/2-PKZ4 220226	1 off	
4	274	55 + 18	B3.2/4-PKZ4 220227	1 off	

Shroud for unused terminals

Protection against direct contact.
To cover unused terminals on three-phase commoning link

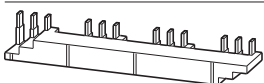
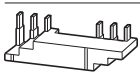
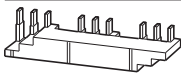
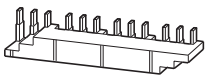
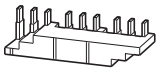
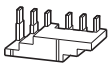
Circuit-breakers	Length	Unit width	Part no.	Price	Std. pack
Number	mm	mm	Article no.	See price list	

Information relevant for export to North America



























































–	–	–	H-B3-PKZ4 220228	10 off	
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Product Standards UL 508; CSA-C22.2 No.14; IEC60947-4-1; CE marking
UL File No. E36332
UL CCN NLRV
CSA File No. 12528
CSA Class No. 3211-06
NA Certification UL Listed, CSA certified



A-PKZO, U-PKZO

Actuating voltage	Part no. Article no.	Price See price list	Std. pack	Part no. Article no.	Price See price list	Std. pack	Notes
Shunt release, undervoltage release							
AC							
Standard voltage							
24 V 50 Hz	A-PKZO(24V50Hz)¹⁾ 073181		2 off  	U-PKZO(24V50Hz)¹⁾ 073129		2 off  	
110 V 50 Hz	A-PKZO(110V50Hz)¹⁾ 073184		2 off  	U-PKZO(110V50Hz)¹⁾ 073132		2 off  	
220 V 50 Hz	A-PKZO(220V50Hz)¹⁾ 073186		2 off  	U-PKZO(220V50Hz)¹⁾ 073134		2 off  	
230 V 50 Hz	A-PKZO(230V50Hz)¹⁾ 073187		2 off  	U-PKZO(230V50Hz)¹⁾ 073135		2 off  	Only A(U)-PKZO... with serial number 02 or higher can be fitted
240 V 50 Hz	A-PKZO(240V50Hz)¹⁾ 073188		2 off  	U-PKZO(240V50Hz)¹⁾ 073136		2 off  	
380 V 50 Hz	A-PKZO(380V50Hz)¹⁾ 073189		2 off  	U-PKZO(380V50Hz)¹⁾ 073137		2 off  	
400 V 50 Hz	A-PKZO(400V50Hz)¹⁾ 073190		2 off  	U-PKZO(400V50Hz)¹⁾ 073138		2 off  	
415 V 50 Hz	A-PKZO(415V50Hz)¹⁾ 073191		2 off  	U-PKZO(415V50Hz)¹⁾ 073139		2 off  	
120 V 60 Hz	A-PKZO(120V60Hz)¹⁾ 073195		2 off  	U-PKZO(120V60Hz)¹⁾ 073143		2 off  	
240 V 60 Hz	A-PKZO(240V60Hz)¹⁾ 073198		2 off  	U-PKZO(240V60Hz)¹⁾ 073146		2 off  	
440 V 60 Hz	A-PKZO(440V60Hz)¹⁾ 082164		2 off  	U-PKZO(440V60Hz)¹⁾ 082161		2 off  	
480 V 60 Hz	A-PKZO(480V60Hz)¹⁾ 073199		2 off  	U-PKZO(480V60Hz)¹⁾ 073147		2 off  	
Non-standard voltages not covered by above standard voltages							
...V 50 Hz (24 - 500 V)	A-PKZO(*V50Hz)¹⁾ 982165		2 off  	U-PKZO(*V50Hz) 982162			The part number for ordering consists of the basic part number and the actuating voltage. For non-standard voltages, specify the required actuating voltage within the indicated range (... - ... V). Minimum order quantity is 10 units
...V 60 Hz (24 - 600 V)	A-PKZO(*V60Hz)¹⁾ 982166		2 off  	U-PKZO(*V60Hz) 982163			
DC							
Standard voltage							
24 V DC	A-PKZO(24VDC)¹⁾ 073200		2 off  				PKE can be fitted only with A(U)-PKZO... with serial number 02 or higher.
110 V DC	A-PKZO(110VDC)¹⁾ 073203		2 off  				

Information relevant for export to North America



1)

Product Standards	UL 508; CSA-C22.2 No.14; IEC60947-4-1; CE marking
UL File No.	E36332
UL CCN	NLRV
CSA File No.	12528
CSA Class No.	3211-05
NA Certification	UL Listed, CSA certified

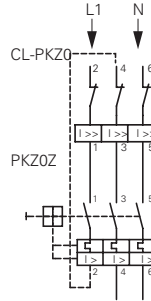
1.3 Motor-protective circuit-breakers PKZM01, PKZM0, PKZM4, PKE

1 Engineering

1- and 2-pole-connected PKZM0, PKZM4 with AC and DC



2-pole-connected PKZM0(1) and PKZM4 with CL-PKZ0

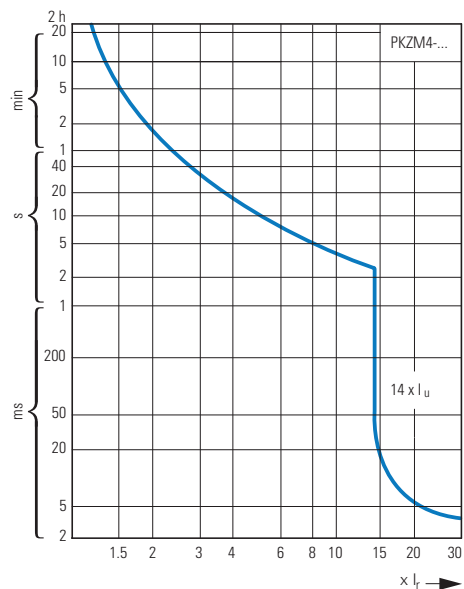
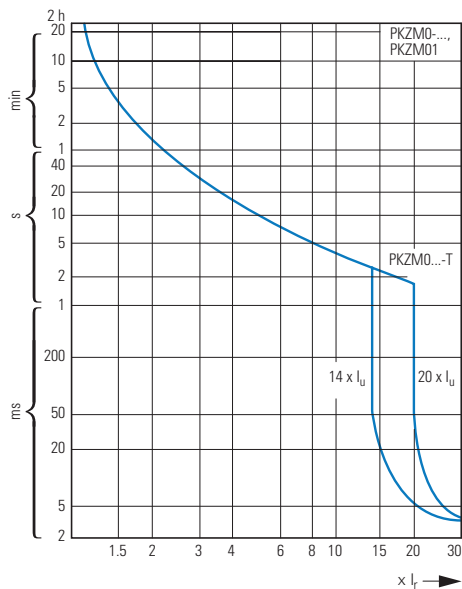


Protection of PVC-insulated cables against thermal overload on short-circuits

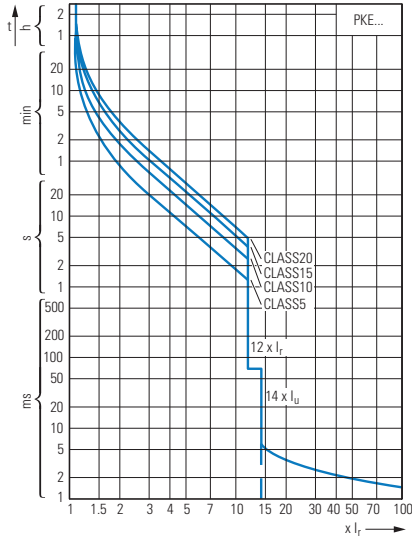
The table specifies which minimum conductor cross-sections are protected by motor-protective circuit-breaker PKZ(M) up to their rated conditional short-circuit current I_q .

Min. cross-section protected 380 – 415 V, 50 Hz, Cu mm ²	Device Part no.
4	PKZM0-0,16
2.5	PKZM0-6.3
1.5	PKZM0-10
1	PKZM0-12
0.75	PKZM0-16
	PKZM0-20
	PKZM0-25
	PKZM0-32
	PKZM4-16
	PKZM4-25
	PKZM4-32
	PKZM4-40
	PKZM4-50
	PKZM4-58
	PKZM4-63

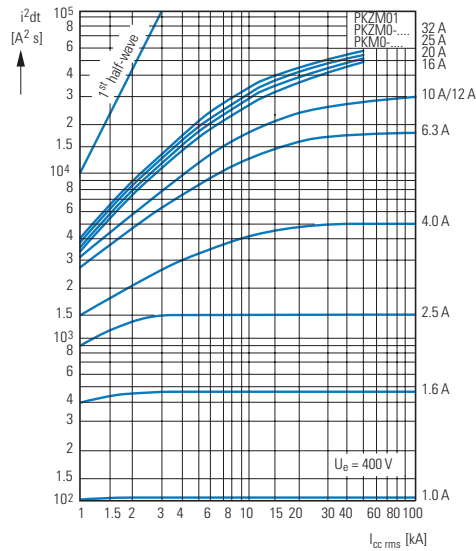
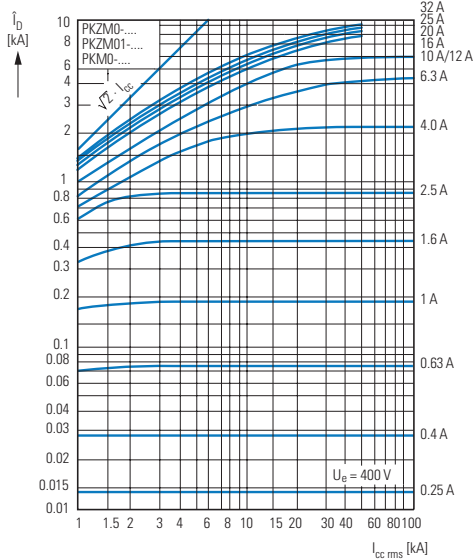
PKZM0-...T tripping characteristics (not for PKM0-...), PKZM01



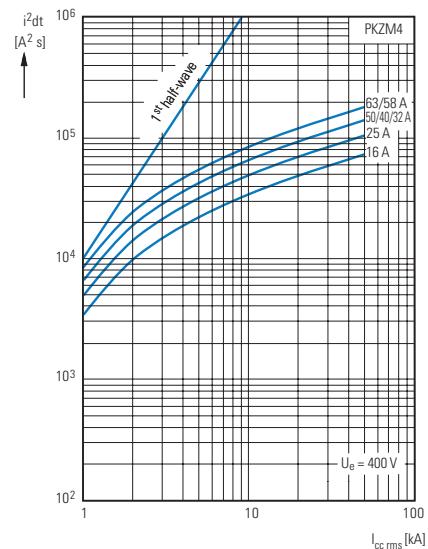
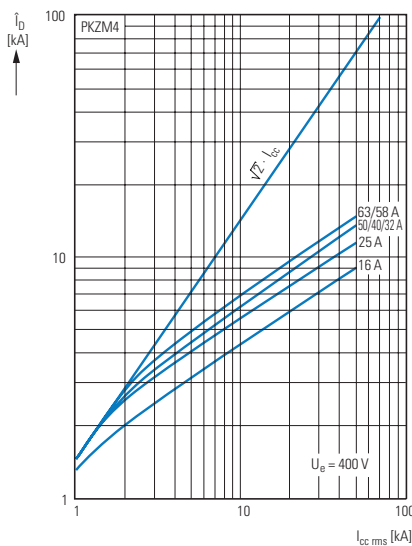
Tripping characteristic curves, wide-range circuit-breaker PKE



Let-through characteristics, motor-protective circuit-breaker, transformer-protective circuit-breakers, circuit-breaker for starter combinations



Motor-protective circuit-breaker let-through characteristics



1.3

Motor-protective circuit-breakers PKZM01, PKZM0, PKZM4, PKE

Switching capacity

Circuit-breaker switching capacity from serial no. 04

1

Rated uninterrupted current I_u

Rated conditional short-circuit current I_q IEC/EN 60947-4-1

Rated ultimate short-circuit breaking capacity I_{cu}
 Rated breaking capacity I_{cs} } IEC/EN 60947-2

	230 V				400 V				440 V				500 V				690 V			
I_u A	I_q kA	I_{cu} kA	I_{cs} kA	A ¹⁾	I_q kA	I_{cu} kA	I_{cs} kA	A ¹⁾	I_q kA	I_{cu} kA	I_{cs} kA	A ¹⁾	I_q kA	I_{cu} kA	I_{cs} kA	A ¹⁾	I_q kA	I_{cu} kA	I_{cs} kA	A ¹⁾

PKZM0, PKZM0...-T, PKM0 with type "1" and "2" coordination

0.16 – 1	150	150	150	N	150	150	150	N				N				N				N
1.6	150	150	150	N	150	150	150	N				N				N				N
2.5	150	150	150	N	150	150	150	N				N				N	5	5	5	50
4	150	150	150	N	150	150	150	N				N				N	3	3	3	50
6.3	150	150	150	N	150	150	150	N				N	42	42	11	50	3	3	2	50
10	150	150	150	N	150	150	150	N	42	42	12	50	42	42	11	50	3	3	2	50
12	50	50	13	50	50	50	13	50	15	15	12	50	15	15	8	50	3	3	2	50
16	50	50	13	50	50	50	13	50	15	15	12	50	15	15	8	50	3	3	2	50
20	50	50	13	50	50	50	13	50	10	10	13	50	6	6	3	50	3	3	1	50
25	50	50	13	50	50	50	13	50	10	10	13	50	6	6	3	50	3	3	1	50
32	50	50	13	50	50	50	13	50	10	10	13	50	6	6	3	50	3	3	1	50

PKZM0 (PKZM0...-T, PKM0) + CL-PKZ0

0.16 – 1				N				N				N				N				20	N
1.6				N				N				N				N				20	N
2.5				N				N				N				N	20	20	20	20	N
4				N				N				N				N	20	20	20	20	N
6.3				N				N				N			50	N	20	20	20	20	N
10				N				N				N			20	N	20	20	20	20	N
12				N				N				N			20	N	5	5	2.5	2.5	N
16				N				N				N			20	N	5	5	2.5	2.5	N
20				N				N				N	10	10	10	N	5	5	2.5	2.5	N
25				N				N				N	10	10	10	N	5	5	2.5	2.5	N
32				N				N				N	10	10	10	N	5	5	2.5	2.5	N

PKZM0 (PKZM0...-T, PKM0) + 2 CL-PKZ0

0.16 – 1				N				N				N				N				20	N
1.6				N				N				N				N				20	N
2.5				N				N				N				N	40	40	20	20	N
4				N				N				N				N	40	40	20	20	N
6.3				N				N				N			50	N	20	20	20	20	N
10				N				N				N			40	N	20	20	20	20	N
12				N				N				N			40	N	10	10	2.5	2.5	N
16				N				N				N			40	N	10	10	2.5	2.5	N
20				N				N				N	20	20	20	N	10	10	2.5	2.5	N
25				N				N				N	20	20	20	N	10	10	2.5	2.5	N
32				N				N				N	20	20	20	N	10	10	2.5	2.5	N

Notes No upstream protective device required, as it is the auto-protected range (100/150 kA)

¹⁾ Required back-up fuse if the short-circuit current exceeds the device's rated conditional short-circuit current ($I_{cc} > I_q$).

N Not necessary

Circuit-breaker switching capacity

Rated uninterrupted current I_u

Rated conditional short-circuit current I_q IEC/EN 60947-4-1

Rated maximum short-circuit breaking capacity I_{cu} } IEC/EN 60947-2

Rated breaking capacity I_{cs}

I_u A	230 V				400 V				440 V ²⁾				500 V ²⁾				690 V ²⁾			
	I_q kA	I_{cu} kA	I_{cs} kA	A ¹⁾	I_q kA	I_{cu} kA	I_{cs} kA	A ¹⁾	I_q kA	I_{cu} kA	I_{cs} kA	A ¹⁾	I_q kA	I_{cu} kA	I_{cs} kA	A ¹⁾	I_q kA	I_{cu} kA	I_{cs} kA	A ¹⁾
PKZM01 with type "1" and "2" coordination																				
0.16 – 1	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
1.6	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
2.5	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
4	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
6.3	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
10	50	50	50	50	50	50	50	50	42	42	10	50	50	50	50	50	50	50	50	50
12	50	50	10	50	50	50	10	50	15	15	10	50	50	50	50	50	50	50	50	50
16	50	50	10	50	50	50	10	50	15	15	10	50	50	50	50	50	50	50	50	50
20, 25	50	50	10	50	50	50	10	50	10	10	3	50	50	50	50	50	50	50	50	50
PKZM4 with type "1" and "2" coordination																				
16	150	150	25	N	150	150	25	N	45	45	25	100	15	15	100	8	8	2.5	100	
25	150	150	25	N	150	150	25	N	45	45	25	100	15	15	100	8	8	2.5	100	
32	50	50	25	100	50	50	25	100	45	45	25	100	15	15	100	5	5	2.5	100	
40	50	50	25	100	50	50	25	100	45	45	25	100	15	15	100	5	5	2.5	100	
50	50	50	25	100	50	50	25	100	45	45	25	100	15	15	100	5	5	2.5	100	
58	50	50	25	160	50	50	25	160	45	45	25	160	15	15	160	5	5	2.5	160	
63	50	50	25	160	50	50	25	160	45	45	25	160	15	15	160	5	5	2.5	160	
PKE12...²⁾ with type of coordination „1“ and																				
0.3 - 1.2	100		50	100			50	50			50	10			50	3			50	
1 - 4	100		50	100			50	50			50	10			50	3			50	
3 - 12	100		50	100			50	15			50	10			50	3			50	
PKE32...²⁾ with type of coordination „1“ and																				
3 - 12	100		50	100			50	15			50	6			50	3			50	
8 - 32	100		50	100			50	25			50	6			50	3			50	

Notes

- No upstream protective device required, as it is the auto-protected range (150 kA)
- N Not necessary

- Fuse (A gG/gL) for increasing the switching capacity of the motor-protective circuit-breaker to 100 kA
- Please enquire for additional information regarding voltages >400 V and device combinations with CL-PKZ0.

Motor-protective circuit-breaker internal resistances

	Impedance	Heat dissipation (3 pole at operating temperature)	Rated uninterrupted current I_u		Impedance	Heat dissipation (3 pole at operating temperature)	Rated uninterrupted current I_u
	Ω	W	A		Ω	W	A
PKZM0-0.16	78	6	0.16	PKZM4-16	0.029	22	16
PKZM0-0.25	32	6	0.25	PKZM4-25	0.012	22	25
PKZM0-0.4	13	6	0.4	PKZM4-32	0.007	22	32
PKZM0-0.63	5	6	0.63	PKZM4-40	0.005	22	40
PKZM0-1	2	6	1	PKZM4-50	0.003	22	50
PKZM0-1.6	0.8	6	1.6	PKZM4-58	0.002	22	58
PKZM0-2.5	0.32	6	2.5	PKZM4-63	0.002	22	65
PKZM0-4	0.13	6	4				
PKZM0-6.3	0.050	6	6.3				
PKZM0-10	0.020	6	10				
PKZM0-12	0.014	6	12				
PKZM0-16	0.008	6	16				
PKZM0-20	0.005	6	20				
PKZM0-25	0.003	6	25				
PKZM0-32	0.002	6	32				

1.3

Motor-protective circuit-breakers PKZM01, PKZM0, PKZM4, PKE

Motor-protective circuit-breakers PKZM

1 Approvals for world markets

PKZM01, PKZM0, PKZM4

Rating data for approved types¹⁾
UL 508/CSA C 22.2 No. 14

	Maximum motor rating				Setting ranges		Maximum protective device to UL/CSA					
	Three-phase current				Overload releases	Short-circuit releases	Group protection ²⁾					
	200 V	230 V	460 V	575 V			Up to max. short-circuit current	Maximum fuse rating		Maximum circuit breaker		
	HP	HP	HP	HP	A	A	600 V	with CL	with CL	with CL	with CL	
Motor-protective circuit-breakers PKZM01	"Manual Motor Starter with thermal and magnetic trip"											
PKZM01-0,16	3)				0.1 – 0.16	2.2	50	600		600		
PKZM01-0.25					0.16 – 0.25	3.4	50	600		600		
PKZM01-0.4					0.25 – 0.4	5.6	50	600		600		
PKZM01-0,63					0.4 – 0.63	8.8	50	600		600		
PKZM01-1					0.63 – 1	14	50	600		600		
PKZM01-1,6					1 – 1.6	22	50	600		600		
PKZM01-2.5	½	½	1	1½	1.6 – 2.5	35	50	600		600		
PKZM01-4	¾	¾	2	3	2.5 – 4	56	50	600		600		
PKZM01-6,3	1	1½	3	5	4 – 6.3	88	50	600		600		
PKZM01-10	3	3	7½	10	6.3 – 11	140	22	50	150	600	125	600
PKZM01-12	3	3	7½	10	9 – 12	168	18	50	150	600	125	600
PKZM01-16	3	5	10	10	10 – 16	224	10	50	150	600	125	600
PKZM01-20	5	-	-	15	16 – 20	280	10	18	150	600	125	600
PKZM01-25	-	7½	15	20	20 – 25	350	10	18	150	600	125	600
Motor-protective circuit-breakers PKZM01	"Manual Motor Starter with thermal and magnetic trip"											
PKZM0-0,16	3)				0.1 – 0.16	2.2	50	600		600		
PKZM0-0.25					0.16 – 0.25	3.4	50	600		600		
PKZM0-0.4					0.25 – 0.4	5.6	50	600		600		
PKZM0-0.63					0.4 – 0.63	8.8	50	600		600		
PKZM0-1					0.63 – 1	14	50	600		600		
PKZM0-1.6					1 – 1.6	22	50	600		600		
PKZM0-2.5	½	½	1	1½	1.6 – 2.5	35	50	600		600		
PKZM0-4	¾	¾	2	3	2.5 – 4	56	50	600		600		
PKZM0-6.3	1	1½	3	5	4 – 6.3	88	50	600		600		
PKZM0-10	3	3	7½	10	6.3 – 11	140	22	50	150	600	125	600
PKZM0-12	3	3	7½	10	9 – 12	168	18	50	150	600	125	600
PKZM0-16	3	5	10	10	10 – 16	224	10	50	150	600	125	600
PKZM0-20	5	-	-	15	16 – 20	280	10	18	150	600	125	600
PKZM0-25	-	7½	15	20	20 – 25	350	10	18	150	600	125	600
PKZM0-32	7½	10	20	25	24 – 32	448	10	18	150	600	125	600
Motor-protective circuit-breakers PKZM4												
PKZM4-16	3	5	10	15	10 – 16	224	50	600		600		
PKZM4-25	7½	7½	20	25	16 – 25	350	50	600		600		
PKZM4-32	10	10	25	30	25 – 34	448	50	600		600		
PKZM4-40	10	15	30	40	32 – 42	560	50	600		600		
PKZM4-50	10	15	30	40	40 – 52	700	10	600		600		
PKZM4-58	15	15	40	50	50 – 56	812	10	600		600		
PKZM4-63	15	15	40	50	52 – 58	882	10	600		600		

Notes

Service factor (SF)

Set value I_r on the current scale, depending on the load factor

$$SF = 1.15 \rightarrow I_r = 1 \times I_{n\text{ mot}}$$

$$SF = 1 \rightarrow I_r = 0.9 \times I_{n\text{ mot}}$$

¹⁾ Devices for world markets IEC Δ UL/CSA

²⁾ Caution: Changed requirements for group protection

³⁾ Calculate motor output in this range according to rated operational current. Specified values as per NEC Table 430 – 150

PKZM

Rating data for approved types¹⁾

UL 508/CSA C 22.2 No. 14

		For use with	Pilot Duty	General Use	
Accessories					
Standard auxiliary contacts	NHI11-PKZO	PKZM0(-T) PKZM4	A 600, Q 300	5 A – 600 V AC 1 A – 250 V DC	–
	NHI12-PKZO				
	NHI21-PKZO				
	NHI2-11S-PKZO				
	NHI-E-11-PKZO				
Early-make auxiliary contacts	NHI-E-10-PKZO		E150	0.5 A – 250 V AC	–
	VHI20-PKZO	PKZM0(-T)	E150	0.5 A – 250 V AC	–
Trip indicators	VHI20-PKZO1	PKZM01	E150	0.5 A – 250 V AC	–
	AGM2-10-PKZO	PKZM0(-T) PKZM4	A 600, Q 300	5 A – 600 V AC 1 A – 250 V DC	–
AGM2-01-PKZO					
Shunt release	A-PKZO(...)	PKZM0(-T) PKZM4	–	–	Actuating voltages and ordering information → Products for the German market
	U-PKZO(...)				
Auxiliary contact for contact module	HI11-S/EZ-PKZO	PKZM0	A 600, Q 300	5 A – 600 V AC 1 A – 250 V DC	–

Notes

¹⁾ Devices for world markets IEC Δ UL/CSA

PKZM

Motor-protective circuit-breakers PKZM0(4) used as "Manual self-protected Motor Starters" – UL 508 Type E

Maximum motor output AC				Setting ranges		Interrupting Capacity = Short Circuit Current (SCCR)			Components			
200 V	230 V	460 V	575 V	Overload releases	Short-circuit releases	240 V	480Y/ 277 V ²⁾	600Y/ 347 V ²⁾	Motor Protector	Accessories		
208 V	240 V	480 V	600 V			[kA]	[kA]	[kA]				
[HP]	[HP]	[HP]	[HP]	[A]	[A]	[kA]	[kA]	[kA]	Part no.	Part no.		
¹⁾				0.1 – 0.16	2.2	65	65	50	PKZM0-0.16	BK25/3-PKZO-E		
				0.16 – 0.25	3.4	65	65	50	PKZM0-0.25	BK25/3-PKZO-E		
				0.25 – 0.4	5.6	65	65	50	PKZM0-0.4	BK25/3-PKZO-E		
				0.4 – 0.63	8.8	65	65	50	PKZM0-0.63	BK25/3-PKZO-E		
				0.63 – 1	14	65	65	50	PKZM0-1	BK25/3-PKZO-E		
				¾	¾	1 – 1.6	22	65	65	50	PKZM0-1.6	BK25/3-PKZO-E
½	½	1	1½	1.6 – 2,5	35	65	65	50	PKZM0-2.5	BK25/3-PKZO-E		
¾	¾	2	3	2.5 – 4	56	65	65	50	PKZM0-4	BK25/3-PKZO-E		
1	1½	3	5	4 – 6.3	88	65	65	50	PKZM0-6.3	BK25/3-PKZO-E		
3	3	7½	10	6.3 – 11	140	65	65	50	PKZM0-10	BK25/3-PKZO-E		
3	3	7½	–	9 – 12	168	65	65	–	PKZM0-12	BK25/3-PKZO-E		
3	5	10	–	10 – 16	224	42	42	–	PKZM0-16	BK25/3-PKZO-E		
5	–	–	–	16 – 20	280	18	18	–	PKZM0-20	BK25/3-PKZO-E		
–	7½	15	–	20 – 25	350	18	18	–	PKZM0-25	BK25/3-PKZO-E		
7½	10	20	–	24 – 32	448	18	18	–	PKZM0-32	BK25/3-PKZO-E		
3	5	10	10	10 – 16	224	65	65	25	PKZM4-16	BK50/3-PKZ4-E		
5	7½	15	20	16 – 27	350	65	65	25	PKZM4-25	BK50/3-PKZ4-E		
7½	10	20	30	24 – 34	448	65	65	25	PKZM4-32	BK50/3-PKZ4-E		
10	–	30	30	32 – 40	560	65	65	25	PKZM4-40	BK50/3-PKZ4-E		
–	15	30	–	40 – 52	700	65	65	–	PKZM4-50	BK50/3-PKZ4-E		
–	–	40	–	50 – 56	812	65	65	–	PKZM4-58	BK50/3-PKZ4-E		
–	–	40	–	52 – 58	882	65	–	–	PKZM4-63	BK50/3-PKZ4-E		

Notes

¹⁾ Calculate motor power in this range according to the rated current. Stated values to NEC Table 430 -150

²⁾ Suitable for networks with grounded star-point

1.3

Motor-protective circuit-breakers PKZM01, PKZM0, PKZM4, PKE

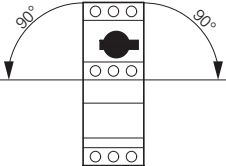
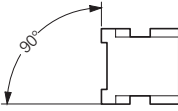
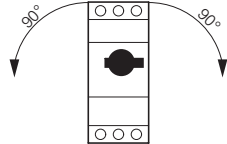
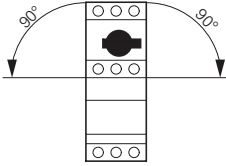
Motor-protective circuit-breaker

1 Technical data

PKZM, PKE

			PKZM01...	PKZM0-... ¹⁾
General				
Standards			IEC/EN 60947, VDE 0660, UL 508, CSA C 22.2 No. 14	
Climatic proofing			Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30	
Ambient temperature	Storage	°C	-25...80	-25...80
	Open	°C	-25...55	-25...55
	Encapsulated	°C	-25...40	-25...40
Built-in position				
Direction of incoming supply			Any	Any
Degree of protection	Device		IP20	IP20
	Terminals		IP00	IP00
Contact protection to EN 50274			Finger- and back-of-hand proof	
Shock resistance, half-sinusoidal shock, 10 ms to IEC 60068-2-27		g	25	25
Installation altitude		m	max. 2000	max. 2000
Terminal capacity, screw terminals	Solid	mm ²	1 x (1 - 6) 2 x (1 - 6)	1 x (1 - 6) 2 x (1 - 6)
		Flexible with ferrule to DIN 46228	mm ²	1 x (1 - 6) 2 x (1 - 6)
	Solid or stranded	AWG	18 - 10	18 - 10
Terminal capacity, spring-loaded terminals	Solid	mm ²	–	1 x (1...2.5) 2 x (1...2.5)
		Flexible with ferrule to DIN 46228	mm ²	–
	Solid or stranded	AWG	–	18...14
Terminal screw tightening torque	Main conductors	Nm	1.7	1.7
	Auxiliary conductors	Nm	1	1
Main contacts				
Rated impulse withstand voltage	U_{imp}	V AC	6000	6000
Overvoltage category/pollution degree			III/3	III/3
Rated operational voltage	U_e	V AC	690	690
Rated uninterrupted current = rated operational current	$I_u = I_e$	A	16 or current setting of the overcurrent release	32 or current setting of the overcurrent release
Rated frequency		Hz	40 - 60	40 - 60
Heat dissipation (3 pole at operating temperature)		W	6	6
Lifespan, mechanical	Operations	x 10 ⁶	0.05	0.1
Lifespan, electrical (AC-3 at 400 V)	Operations	x 10 ⁶	0.05	0.1
Maximum operating frequency	Operations/h	Ops/h	25	40
Short-circuit rating				
AC			→ Page 33	→ Page 32
DC		kA	60	60 (up to PKZM0-16) 40 (PKZM0-20 to PKZM0-32)
Motor switching capacity				
AC-3 up to 690 V	A		16	32
DC-5 (up to 250 V)	A		16 (3 contacts in series)	25 (3 contacts in series)
Trip blocks				
Temperature compensation				
To IEC/EN 60947, VDE 0660	°C		-5...40	-5...40
Operating range	°C		-25...55	-25...55
Temperature compensation residual error for T > 40 °C	%/K		≤ 0.25	≤ 0.25
Setting range of overload releases	x I_u		0.6 - 1	0.6 - 1
Short-circuit releases tolerance	%		± 20	± 20
Phase-failure sensitivity			IEC/EN 60947-4-1, VDE 0660 Part 102	IEC/EN 60947-4-1, VDE 0660 Part 102

Notes ¹⁾ Tested according to IEC/EN 60947-1 (isolating characteristics) and IEC/EN 60947-2

PKM0-...	PKZM0-...-T	PKZM4	PKE
IEC/EN 60947, VDE 0660, UL 508, CSA C 22.2 No. 14			
Damp heat, constant, to IEC 60068-2-78			
Damp heat, cyclic, to IEC 60068-2-30			
-25...80	-25...80	-25...70	-25...80
-25...55	-25...55	-25...55	-25...55
-25...40	-25...40	-25...40	-25...40
			
Any	Any	Any	Any
IP20	IP20	IP20	IP20
IP00	IP00	IP00	IP00
Finger- and back-of-hand proof			
25	25	15	25
max. 2000	max. 2000	max. 2000	max. 2000
1 x (1 - 6)	1 x (1 - 6)	1 x (1 - 50)	1 x (1 - 6)
2 x (1 - 6)	2 x (1 - 6)	2 x (1 - 35)	2 x (1 - 6)
1 x (1 - 6)	1 x (1 - 6)	1 x (1 - 35)	1 x (1 - 6)
2 x (1 - 6)	2 x (1 - 6)	2 x (1 - 35)	2 x (1 - 6)
18 - 10	18 - 10	14 - 2	18 - 10
1 x (1...2.5)	-	-	1 x (1...2.5)
2 x (1...2.5)	-	-	2 x (1...2.5)
1 x (1...2.5)	-	-	1 x (1...2.5)
2 x (1...2.5)	-	-	2 x (1...2.5)
18...14	-	-	18...14
1.7	1.7	3.3	1.7
1	1	1	1
6000	6000	6000	6000
III/3	III/3	III/3	III/3
690	690	690	690
32 or current setting of the overcurrent release	25 or current setting of the overcurrent release	65 Open 63 enclosed	32 A or set current of the overcurrent release
40 - 60	40 - 60	40 - 60	40 - 60
6	6	22	6
0.1	0.1	0.03	0.05
0.1	0.1	0.03	0.05
40	40	40	60
→ Page 32	→ Page 32	→ Page 33	→ Page 33
60 (up to PKM0-16) 40 (PKM0-20 to PKM0-32)	60 (up to PKZM0-16) 40 (PKZM0-20 to PKZM0-32)	60	-
32	25	65	32
25 (3 contacts in series)	25 (3 contacts in series)	63 (3 contacts in series)	-
-5...40	-5...40	-5...40	-5...40
-25...55	-25...55	-25...55	-25...55
≅ 0.25	≅ 0.25	≅ 0.25	0.25 - 1
± 20	± 20	± 20	± 20
-	IEC/EN 60947-1-1, VDE 0660 Part 102	IEC/EN 60947-4-1, VDE 0660 Part 102	Yes

1.3

Motor-protective circuit-breakers PKZM01, PKZM0, PKZM4, PKE Auxiliary contacts

1 NHI...PKZ, AGM, U-PKZ, A-PKZ

			NHI...PKZ0	NHI-E...PKZ0	VHI...PKZ0	AGM	
Auxiliary contacts							
Rated impulse withstand voltage	U_{imp}	V AC	6000	4000	4000	6000	
Overvoltage category/pollution degree			III/3	III/3	III/3	III/3	
Rated operating voltage							
	U_e	V AC	500	440	440	500	
	U_e	V DC	250	250	250	250	
Safe isolation according to EN 61140							
		V AC	690	690	690	690	
Rated operational current							
AC-15							
	220 - 240 V	I_e	A	3.5	1	1	3.5
	380 - 415 V	I_e	A	2	–	–	2
	440 - 500 V	I_e	A	1	–	–	1
DC-13 L/R \leq 100 ms							
	24 V	I_e	A	2	2	2	2
	60 V	I_e	A	1.5	–	–	1.5
	110 V	I_e	A	1	–	–	1
	220 V	I_e	A	0.25	–	–	0.25
Durability							
	Lifespan, mechanical	Operations	$\times 10^6$	> 0.1	> 0.1	> 0.1	> 0.01
	Lifespan, electrical	Operations	$\times 10^6$	> 0.05	> 0.1	> 0.1	> 0.05
Control circuit reliability (at $U_e = 24$ V DC, $U_{min} = 17$ V, $I_{min} = 5.4$ mA)		Fault probability	λ	< 10^{-8} < 1 failure in 1×10^8 operations			
Interlocked opposing contacts				Yes	–	–	–
Short-circuit rating without welding							
	Fuseless			FAZ-B4/1-HI	–	–	FAZ-B4/1-HI
	Fuse	A gG/gL	10	10	10	10	
Terminal capacity							
Solid or flexible conductor with ferrule			mm ²	0.75 - 2.5	0.75 - 1.5	0.75 - 1.5	0.75 - 2.5
Solid or stranded			AWG	18 - 14	18 - 16	18 - 16	18 - 14

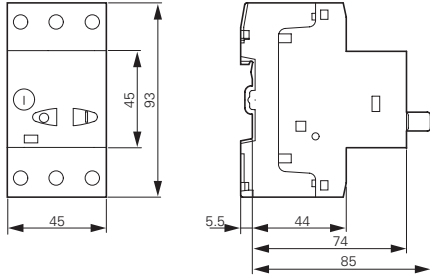
NHI...PKZ, AGM, U-PKZ, A-PKZ

			Undervoltage release U-PKZ...	Shunt release A-PKZ...
General				
Terminal capacity				
	Solid or flexible conductor with ferrule	mm ²	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)
	Solid or stranded	AWG	1 x (18 - 14) 2 x (18 - 14)	1 x (18 - 14) 2 x (18 - 14)
Main contacts				
Rated operating voltage	U_e	V AC	42 - 480	42 - 480
Rated operating voltage	U_e	V DC	24 - 250	24 - 250
Pick-up-/drop-out voltage				
Pick-up voltage	$x U_s$		0.85 - 1.1	
Drop-out voltage	$x U_s$		0.7 - 0.35	
Operating range				
AC voltage		$x U_s$		0.7...1.1
DC voltage (intermittent operation 5 s)		$x U_s$		0.7...1.1
Power consumption				
AC voltage				
	AC pick-up rating	Pick-up	VA	5
	AC consumption when closed	Holding	VA	3
DC voltage				
	DC pick-up rating	Pick-up	W	–
	DC consumption when closed	Holding	W	–

Dimensions

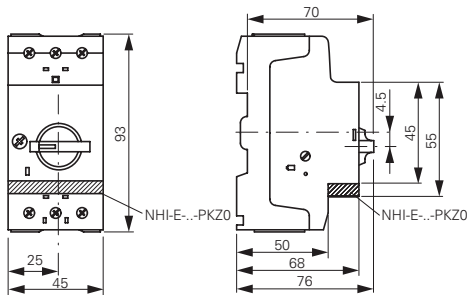
Motor-protective circuit-breaker

PKZM01 ...



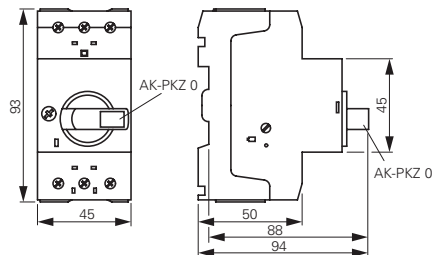
Motor-protective circuit-breaker Transformer-protective circuit-breakers Motor-protective circuit-breaker with standard auxiliary contacts

PKZM0...(+NHI-E...-PKZ0)
PKZM0...-T(+NHI-E...-PKZ0)
PKM0...(+NHI-E...-PKZ0)



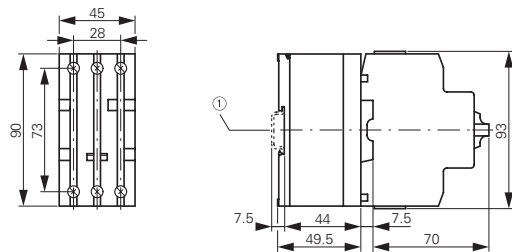
Motor-protective circuit-breakers with lockable rotary handles

PKZM0...+AK-PKZ0



Current limiters

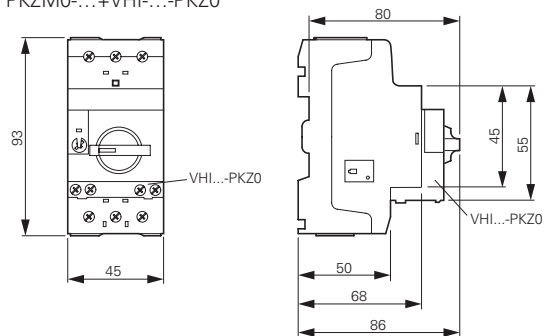
CL-PKZ...



① Top-hat rail IEC/EN 60715

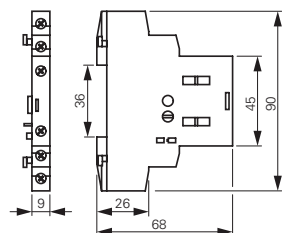
Motor-protective circuit-breakers with early-make auxiliary contacts

PKZM0...+VHI...-PKZ0



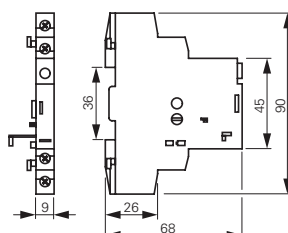
Standard auxiliary contacts

NHI...-PKZ0



Trip indicators

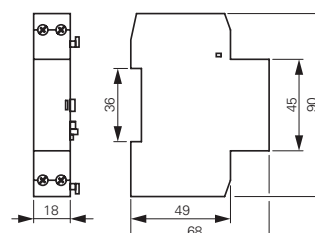
AGM2...-PKZ0



Shunt release Undervoltage release

A-PKZ0...

U-PKZ0...



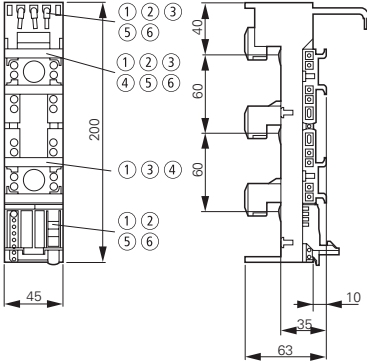
1.3

Motor-protective circuit-breakers PKZM01, PKZM0, PKZM4, PKE

Busbar adapters

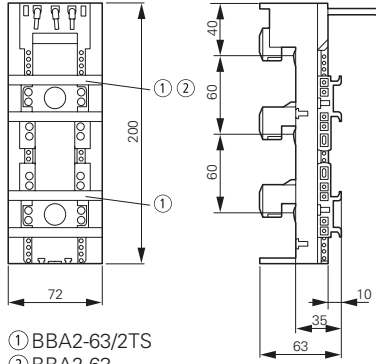
1

BBA0-25
BBA0-25/2TS
BBA0/2TS-L
BBA0-32
BBA0-32/2TS-C
BBA0C-16



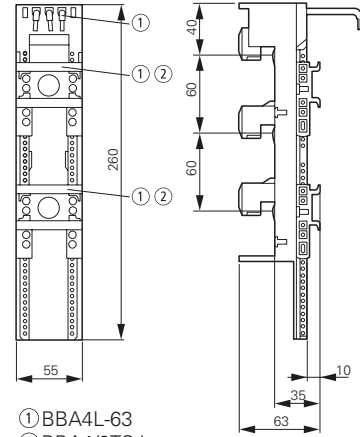
- ① BBA0-32/2TS-C
- ② BBA0-25/2TS
- ③ BBA0C-16
- ④ BBA0/2TS-L
- ⑤ BBA0-25
- ⑥ BBA0-32

BBA2-63
BBA2-63/2TS



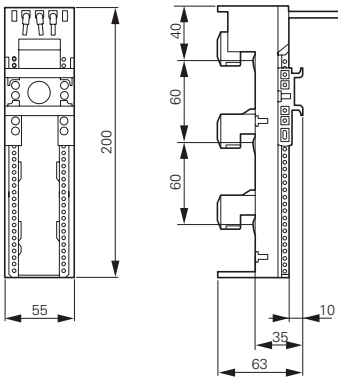
- ① BBA2-63/2TS
- ② BBA2-63

BBA4/2TS-L
BBA4L-63

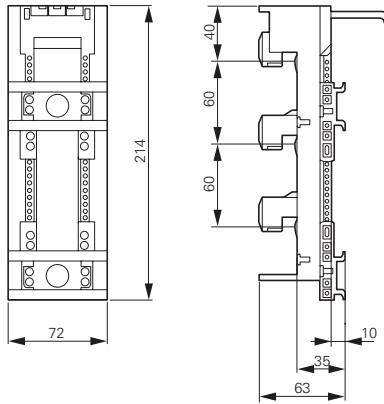


- ① BBA4L-63
- ② BBA4/2TS-L

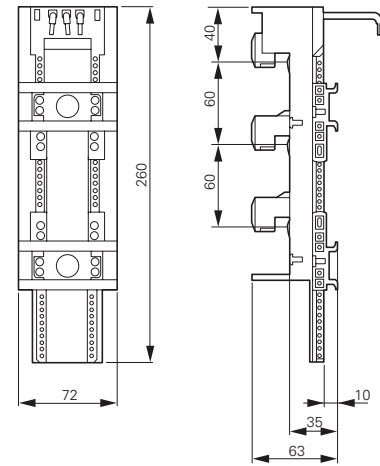
BBA4-63



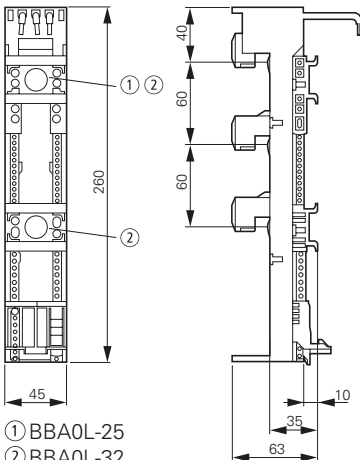
BBA2-80/2TS-S



BBA2L-63

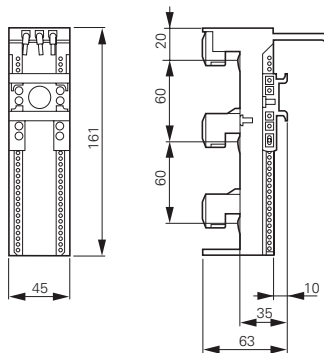


BBA0L-25
BBA0L-32

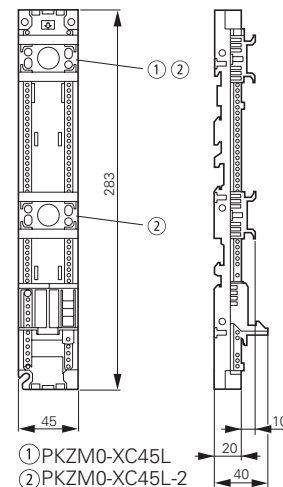


- ① BBA0L-25
- ② BBA0L-32

BBA0K-32



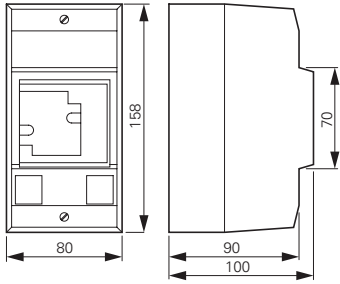
PKZM0-XC45L
PKZM0-XC45L-2



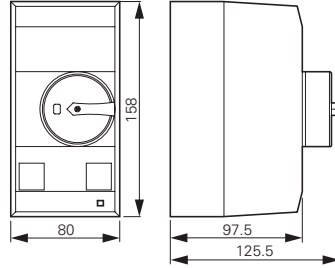
- ① PKZM0-XC45L
- ② PKZM0-XC45L-2

Insulated enclosures for surface mounting

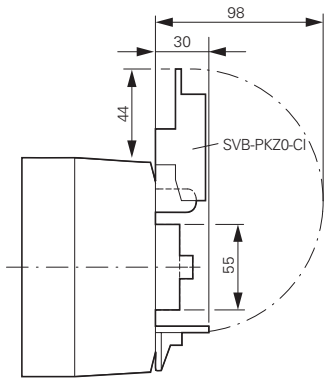
CI-PKZ0-M



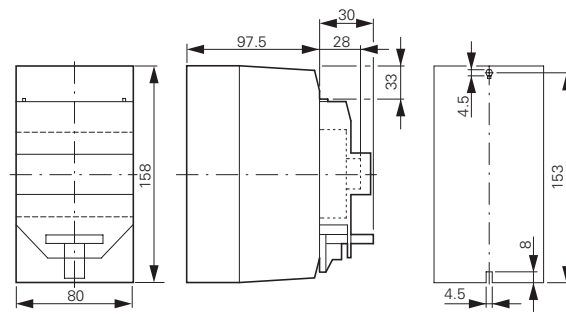
CI-PKZ10G...M



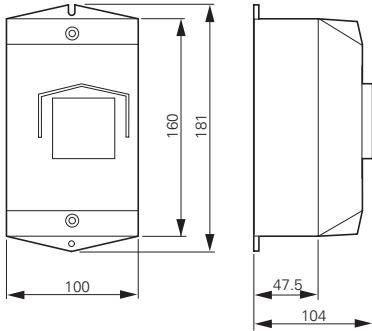
CI-PKZ0...M
+ SVB-PKZ0-CI



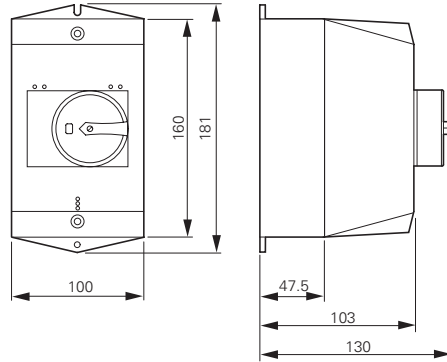
Drilling dimensions
CI-PKZ0...M



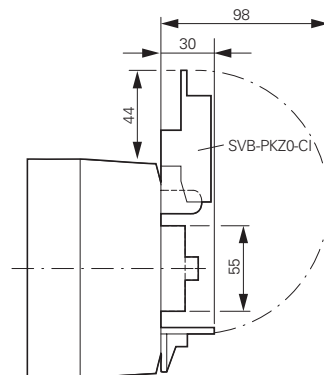
CI-K2-PKZ0



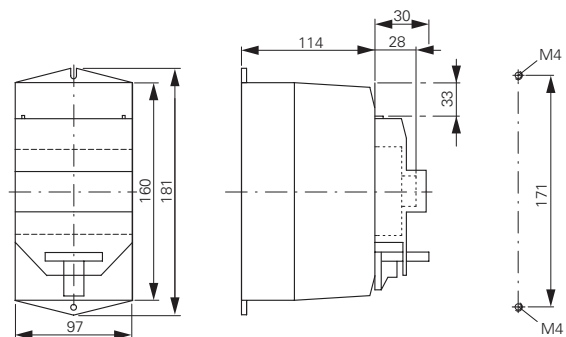
CI-K2-PKZ0G(R)(V)



CI-K2-PKZ0-G(R)(V)
+ SVB-PKZ0-CI



Drilling dimensions
CI-K2-PKZ0...

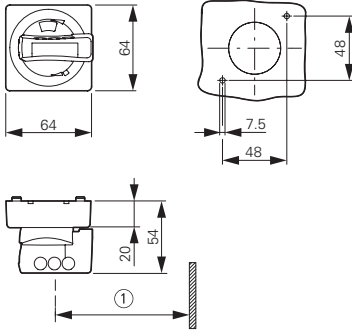


1.3

Motor-protective circuit-breakers PKZM01, PKZM0, PKZM4, PKE Accessories

Door coupling handles

PKZ0-X(R)H...

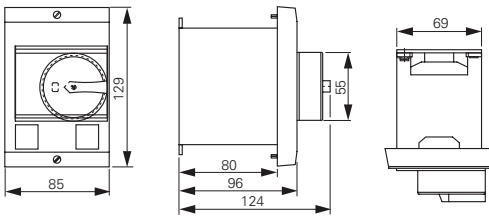


Mounting depth: 100 to 240 mm
from the top edge of the top-hat rail
to the front edge of the cabinet
door/cover
Distance between switch axis and
cover hinge: at least 100 mm

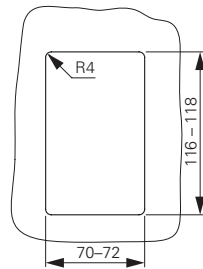
① At least 100 mm from cover hinge

Insulated enclosures for flush mounting

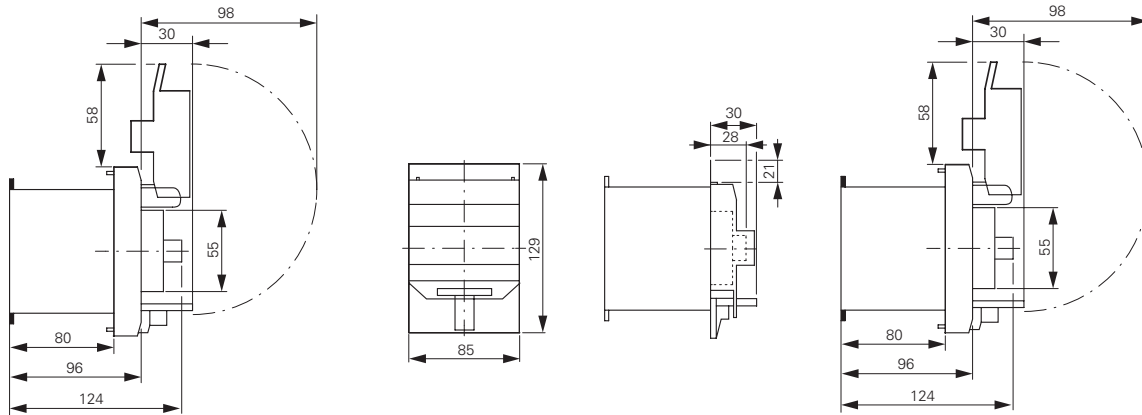
E-PKZ0 E-PKZ0-G...



Mounting aperture E-PKZ0...

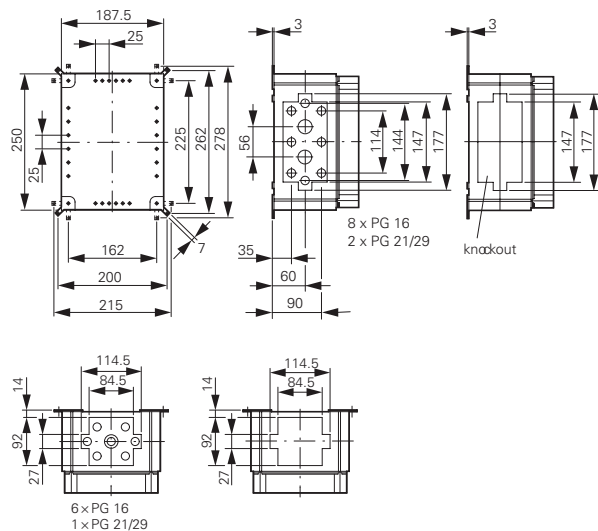


E-PKZ0-G... + SVB-PKZ0-E



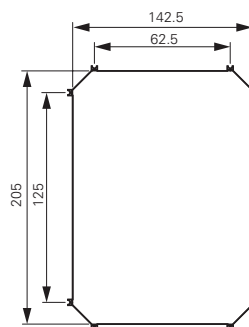
Insulated enclosures for surface mounting

CI23E...



Mounting plates

M3-CI23

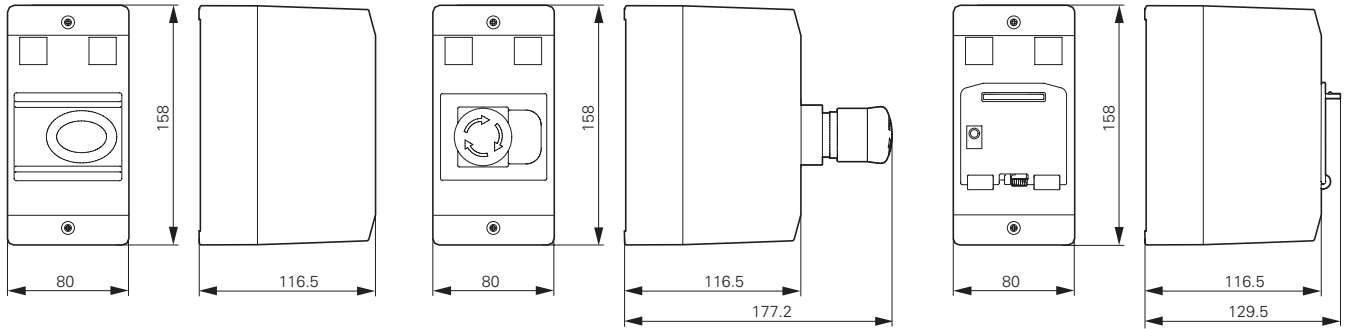


Insulated enclosures for surface mounting

CI-PKZ01
CI-PKZ01-G

CI-PKZ01-PVT
CI-PKZ01-PVS

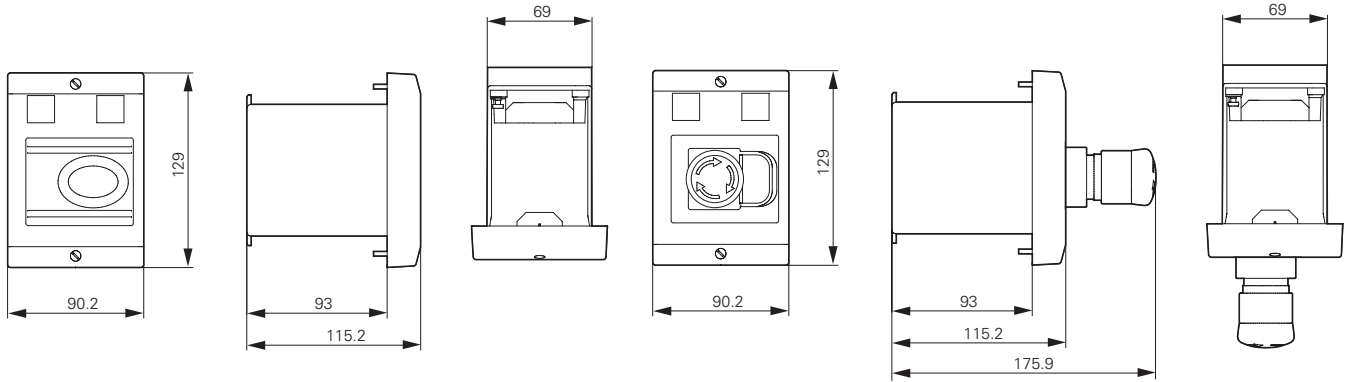
CI-PKZ01-SVB
CI-PKZ01-SVB-V



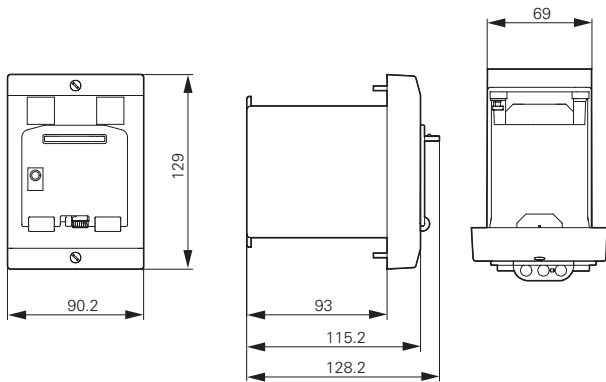
Insulated enclosures for flush mounting

E-PKZ01
E-PKZ01-G

E-PKZ01-PVT
E-PKZ01-PVS



E-PKZ01-SVB
E-PKZ01-SVB-V

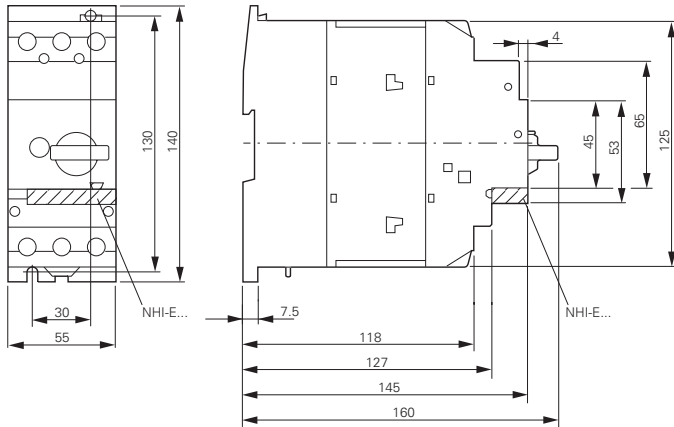


1.3

Motor-protective circuit-breakers PKZM01, PKZM0, PKZM4, PKE Accessories

Motor-protective circuit-breaker

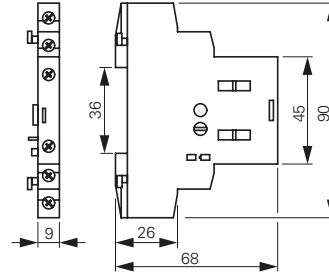
PKZM4-...



Standard auxiliary contacts

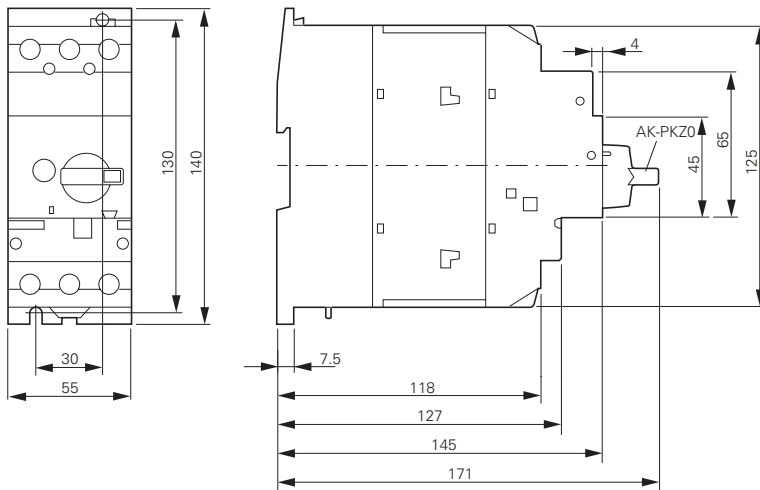
NHI...-PKZ...

NHI...-PKZ0



Motor-protective circuit-breakers with lockable cover

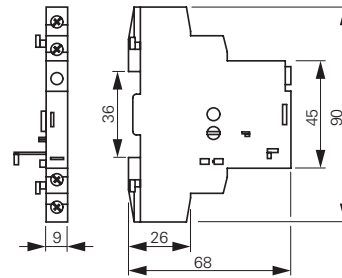
PKZM4-... +AK-PKZ0



Trip indicators

AGM2...-PKZ...

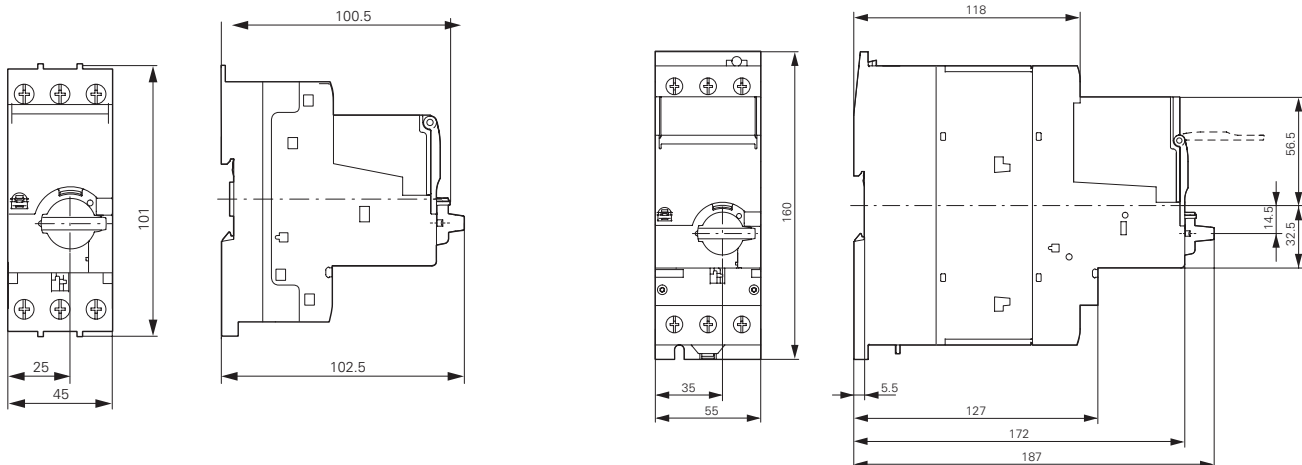
AGM2...-PKZ0



PKE Motor-protective circuit-breakers

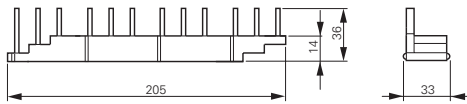
PKE12, PKE32

PKE65

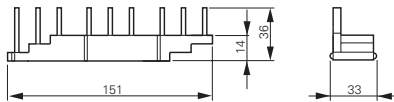


Three-phase commoning links

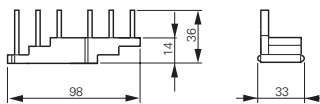
B3.0/4-PKZ4



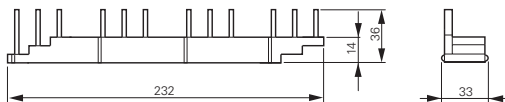
B3.0/3-PKZ4



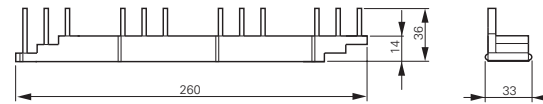
B3.0/2-PKZ4



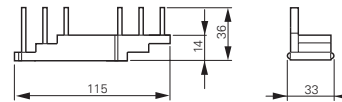
B3.1/4-PKZ4



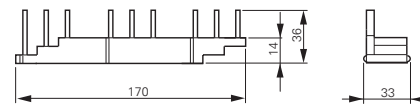
B3.2/4-PKZ4



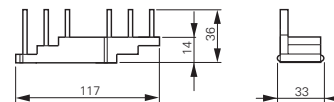
B3.2/2-PKZ4



B3.0/3-PKZ4



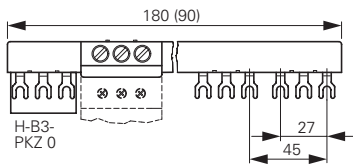
B3.1/2-PKZ4



Three-phase commoning links

B3.0/4-PKZ0

B3.0/2-PKZ0



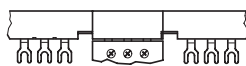
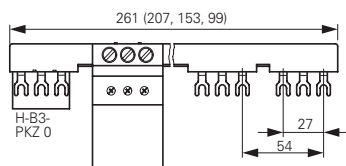
Three-phase commoning links

B3.1/5-PKZ0

B3.1/3-PKZ0

B3.1/4-PKZ0

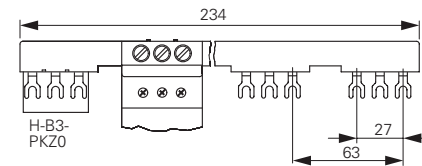
B3.1/2-PKZ0



Three-phase commoning links

B3.2/4-PKZ0

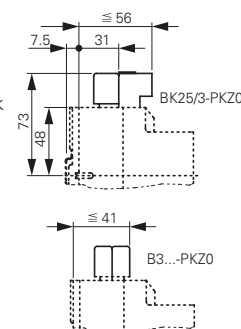
B3.2/2-PKZ0



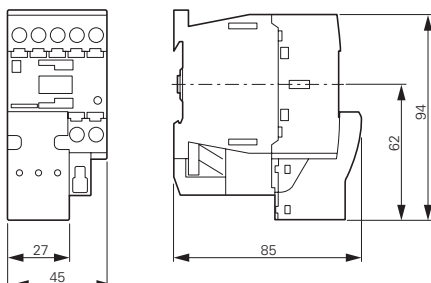
Incoming terminals

BK25/3-PKZ0

Overlapping mounting to extend the three-phase commoning link



Motor plug DILM12-XMCP/T



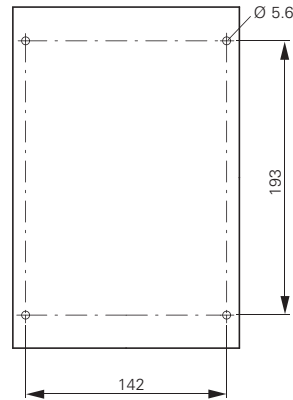
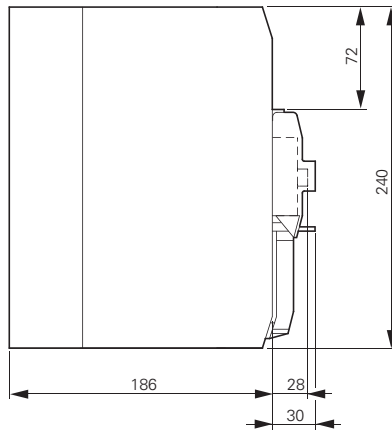
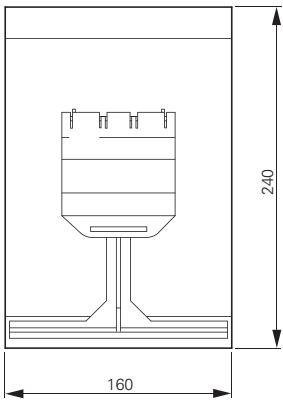
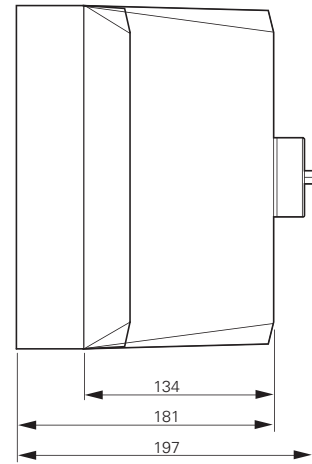
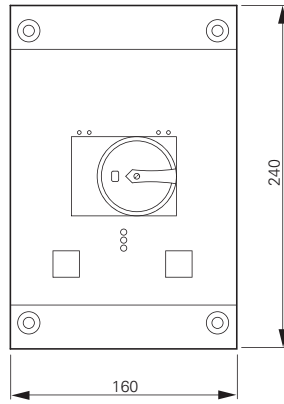
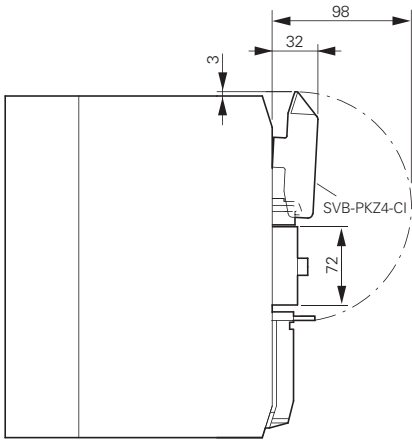
1.3

Motor-protective circuit-breakers PKZM01, PKZM0, PKZM4, PKE Accessories

1 Insulated enclosures for surface mounting

CI-K4-PKZ4-G(R)
+SVB-PKZ4-CI

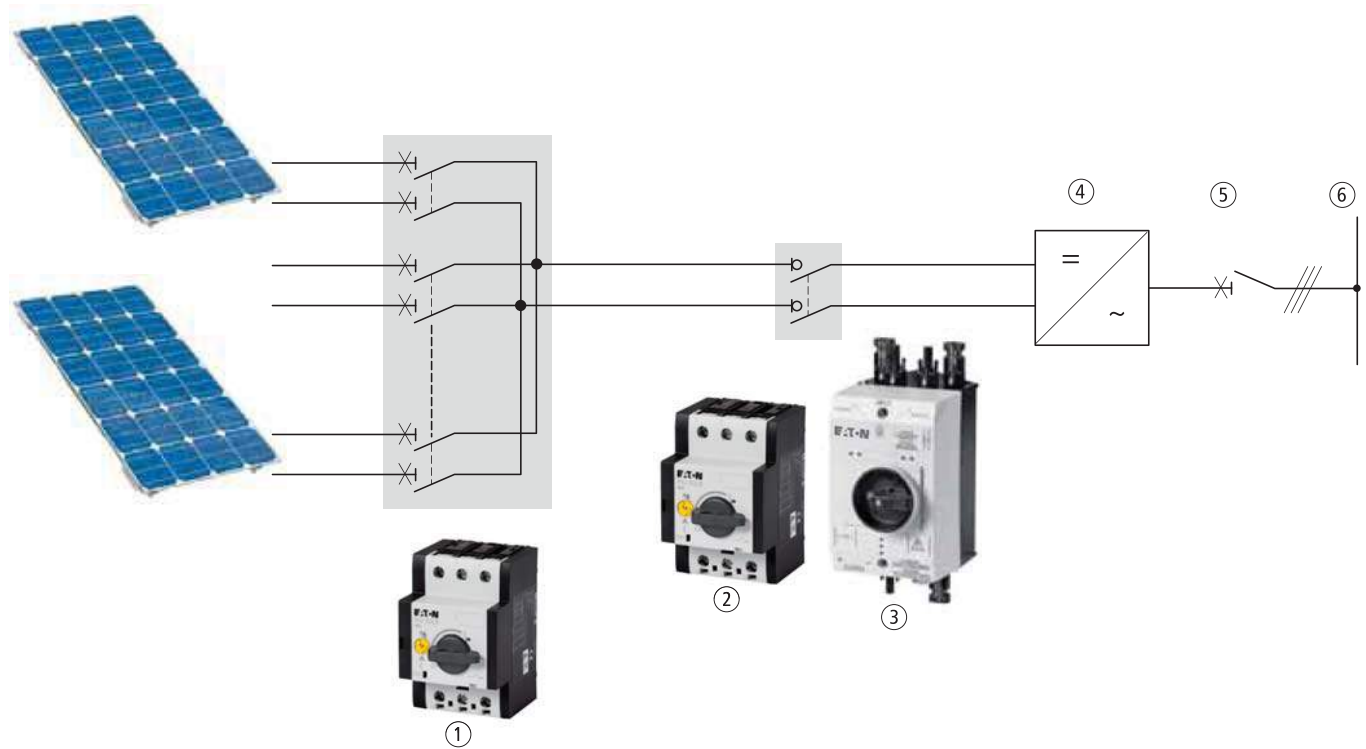
CI-K4-PKZ4-G



Drilling dimensions
CI-K4-PKZ4-G(R)

Description

P-SOL, PKZ-SOL, SOL



- ① DC string circuit-breaker PKZ-SOL
- ② DC switch-disconnector P-SOL
- ③ Ready-to-install DC switch-disconnector SOL
- ④ Inverter module
- ⑤ AC main switch
- ⑥ Network

Photovoltaics description

Photovoltaic systems convert sunlight directly into electrical energy using solar cells. Photovoltaics represent a renewable source of energy that can be used on private and public buildings, as well as in large-scale power stations. These systems can be independent from the power grid or can be connected to it. Photovoltaic systems that are connected to the grid feed the generated power directly into the mains network. This eliminates the need for temporary storage. These systems consist of solar cells, one or more inverters, and a protective device for automatic cutoff in the event of a grid fault. Because of this, photovoltaic systems that are connected to the grid require extremely reliable and safe individual components.

Features

DC string circuit-breakers

- Protect PV modules from fault currents, prevent (in larger systems, for instance) intact modules from feeding power back into a module with a short-circuit.
- Are ready for operation immediately after tripping and after the trip cause has been fixed.
- Open and for installation in customized generator terminal boxes.
- Tripping currents are adjustable within a wide range of limits.
- Optional shunt releases A-PKZO and undervoltage releases U-PKZO enable remote shutdown, e.g for the fire department. Optional auxiliary contact NHIE-PKZO signals switching state.
- When installed in an enclosure, suitable for voltages of up to 900 VDC.

DC switch-disconnectors

- Required, according to standard VDE 0100-712 (June 2006), between the PV module and inverter.
- Enclosed and open (for installation in enclosure) switch-disconnectors for voltages of up to 1,000 VDC.
- Usable as a separate switching point as required in VDI Guideline VDI 6012, e.g. by de-energizing an inverter in a completely safe manner.

- Two-pole switching, making it suitable for non-earthed systems as well.
- TÜV-certified.
- Open switch-disconnectors P-SOL are designed for installation in customer-specific enclosures or inverters.
- Mounting on 35 mm top-hat rails, their terminals enable a connection to all popular cable types.
- Separate rotary handles and shaft extensions allow for flexible installation.
- An auxiliary switching block can be mounted in order to provide switching state feedback.
- A shunt release or undervoltage release is available for remote tripping.
- Switch-disconnectors SOL with enclosure are ready for installation. Models for 2 and 4 or 4 and 8 strings and for the most popular connector types, such as MC3, MC4, and metric screw connectors, allow for easy integration into various system concepts.
- Enclosure provides degree of protection IP65, making outdoor mounting possible.
- Lockable mechanism provides safety when maintenance is required.
- Pressure-equalizing element prevents the formation of condensed water, preventing failures caused by voltage sparkovers
















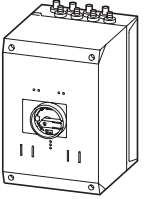











1.3

DC string circuit-breakers, DC switch-disconnectors

DC switch-disconnectors, ready to install

1 Ordering

DC switch-disconnector, ready-to-install

Inputs Number of strings	Connection type	Outputs		Max. rated operational current DC-21A I_e A	Part no. Article no.	Price See price list	Std. pack
		Number of strings	Connection type				
Rated operational voltage U_e 1000 V							
Degree of protection IP65							
Protection class 2							
2 pole							
	2	MC3	1	MC3	20	SOL20/2MC3 120913	1 off  
	4	MC3	1	MC3	20	SOL20/4MC3 120914	1 off  
	2	MC4	1	MC4	20	SOL20/2MC4 120915	1 off  
	4	MC4	1	MC4	20	SOL20/4MC4 120916	1 off  
	2	Screw connector M12	1	Screw connector M16	20	SOL20/2MV 120919	1 off  
	2	MC3	1	MC3	30	SOL30/2MC3 120920	1 off  
	4	MC3	1	MC3	30	SOL30/4MC3 120921	1 off  
	2	MC4	1	MC4	30	SOL30/2MC4 120922	1 off  
	4	MC4	1	MC4	30	SOL30/4MC4 120923	1 off  
	2	Screw connector M12	1	Screw connector M16	30	SOL30/2MV 120926	1 off  
	4	MC3	1	Screw connector M20	63	SOL60/4MC3 120927	1 off  
	8	MC3	1	Screw connector M20	63	SOL60/8MC3 120928	1 off  
	4	MC4	1	Screw connector M20	63	SOL60/4MC4 120929	1 off  
	8	MC4	1	Screw connector M20	63	SOL60/8MC4 120930	1 off  
	4	Screw connector M12	1	Screw connector M20	63	SOL60/4MV 120933	1 off  

Information relevant for export to North America



NA Certification Request filed for UL and CSA

P-SOL, PKZ-SOL

Max. rated operational current DC-21A

Permissible solar module short-circuit currents

Part no. Article no.

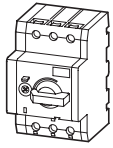
Price See price list

Std. pack

I_e
A



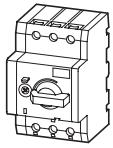
DC switch-disconnector, open
Rated operating voltage U_e 1000 V
Protection class II
2 pole



20

P-SOL20
120934

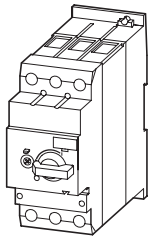
1 off



30

P-SOL30
120935

1 off

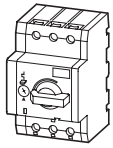


63

P-SOL60
120936

1 off

DC string circuit-breakers
Rated operating voltage U_e 900 V
Protection class II
2 pole



12

5 - 9

PKZ-SOL12
120937

1 off

20

9 - 15

PKZ-SOL20
120938

1 off

30

15 - 22

PKZ-SOL30
120939

1 off

40

22 - 30

PKZ-SOL40¹⁾
120940

1 off

50

29 - 38

PKZ-SOL50¹⁾
120941

1 off

60

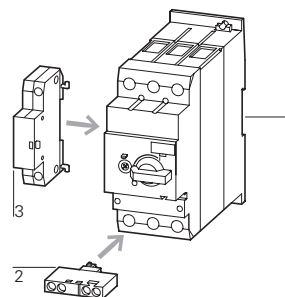
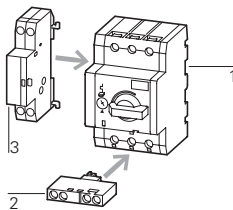
38 - 47

PKZ-SOL60¹⁾
120942

1 off

Notes

¹⁾ Availability from November 2010



Accessories

- 2 Auxiliary contacts NHI-E → 10
- 3 Shunt releases A-PKZ0 → 29
- 3 Undervoltage releases U-PKZ0 → 29

Information relevant for export to North America



NA Certification Request filed for UL and CSA

1.3

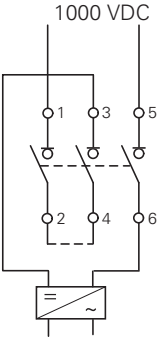
DC string circuit-breakers, DC switch-disconnectors

1 Engineering

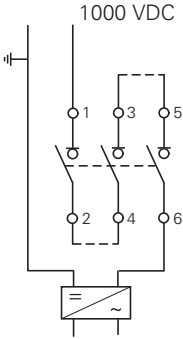
P-SOL and PKZ-SOL wiring

Switch-disconnector P-SOL

Non-earthed grid

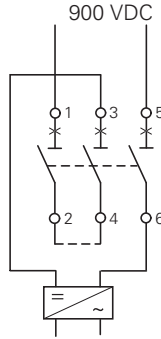


Earthed grid

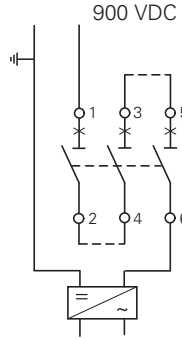


String circuit-breaker PKZ-SOL

Non-earthed grid

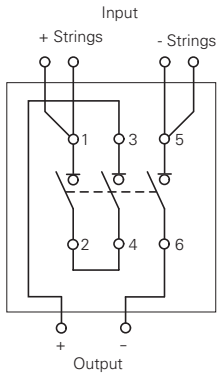


Earthed grid

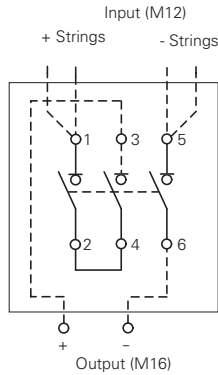


SOL internal circuit

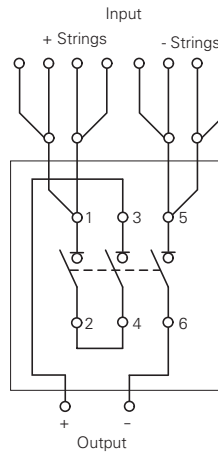
SOL20/2MC3
SOL20/2MC4
SOL30/2MC3
SOL30/2MC4



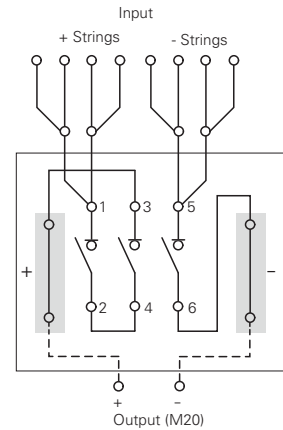
SOL20/2MV
SOL30/2MV



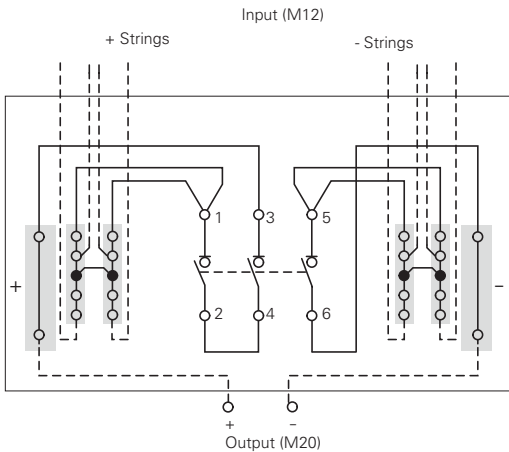
SOL20/4MC3
SOL20/4MC4
SOL30/4MC3
SOL30/4MC4



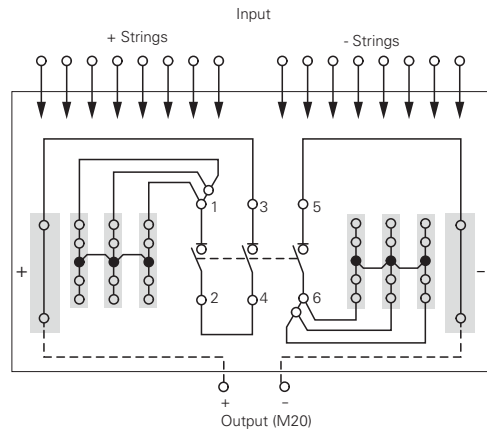
SOL60/4MC3
SOL60/4MC4



SOL60/4MV

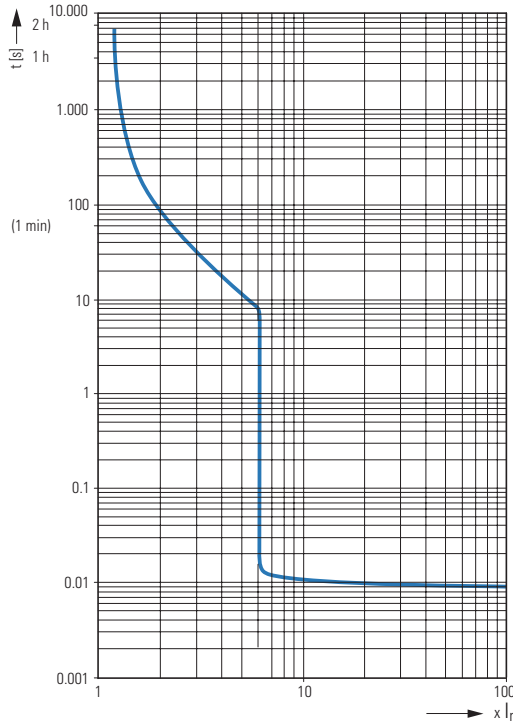


SOL60/8MC3
SOL60/8MC4



Tripping characteristics

Tripping characteristics
DC string circuit-breaker PKZ-SOL



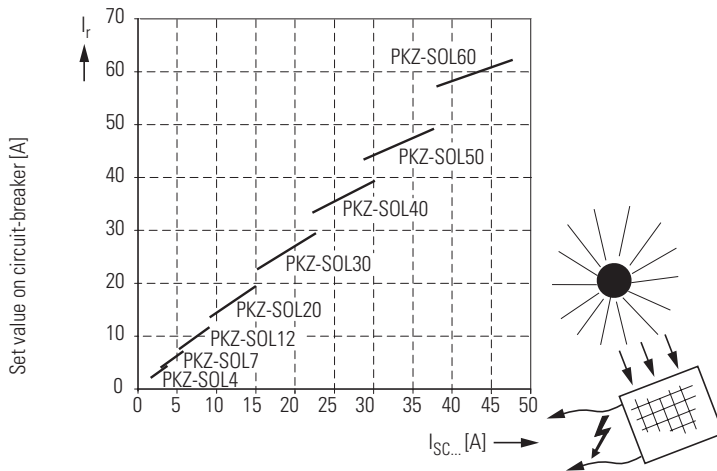
Characteristic curve set value - short-circuit current

As specified in the IEC 62548-1 draft for the protection of photovoltaic modules, the tripping current of the circuit-

breaker must lie between 1.4 and 2 times the value of the photovoltaic module's short-circuit current. Since only the current values of the installed overload release can be plotted on the setting scale for the

circuit-breaker¹⁾, the correlation between the protective device's tripping current and the photovoltaic module's short-circuit current must be specified for each point of the scale in a suitable form.

Setting aid for string circuit-breaker PKZ-SOL



Short-circuit current in solar module [A]

¹⁾ Standard IEC/EN 60947-2 (Section 4.7.3) prohibits directly specifying the photovoltaic short-circuit current on the circuit-breaker's setting scale, meaning that only the current set value of the operating current can be plotted there.

1.3

DC string circuit-breakers, DC switch-disconnectors

DC switch-disconnectors

Technical data

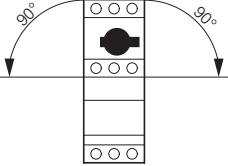
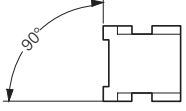
1 P-SOL, SOL

		SOL20		SOL30		SOL60	
Rated operational current I_e at DC-21A	A	20	30	63			
Number of poles		2	2	2			
Rated operational voltage U_e	V DC	1000	1000	1000			
Isolating characteristics		Yes	Yes	Yes			
Standards		IEC/EN 60 947-3 UL 508, TÜV certificate					
Lifespan mechanical	Operations	100,000	100,000	100,000			30,000
Lifespan electrical	Operations	100,000	100,000	100,000			30,000
Max. operating frequency, mechanical	Ops/h	120	120	120			120
Climatic proofing		Damp heat, constant, to IEC 60 068-2-78 Damp heat, cyclic, to IEC 60 068-2-30					
Ambient temperature	min./max. °C	-25 ... +60	-25 ... +60	-25 ... +60			-25 ... +60
Mounting position		Any	Any	Any			Any
Degree of protection	IP	65	65	65			65
Dimensions							
Width	mm	100	100	160			
Height	mm	215	215	305			
Depth	mm	130	130	210			
Weight	kg	0.42	0.42	2.2			
Lockable in OFF position		Yes	Yes	Yes			
Rated short-time withstand current I_{cw} , 1 s to EN 60947-3	kA	0.24	0.36	0.72			
Rated short-circuit making capacity to EN 60947-3	I_{cm} kA	0.32	0.32	0.6			
Internal resistance	mΩ	8	7	4			

P-SOL, SOL

		P-SOL20		P-SOL30		P-SOL60	
Rated operational current at DC-21A	I_e A	20	30	63			
Number of poles		2	2	2			
Rated operational voltage	U_e V DC	1000	1000	1000			
Isolating characteristics		Yes	Yes	Yes			
Standards		IEC/EN 60 947-3 UL 508, TÜV certificate					
Lifespan mechanical	Operations	100,000	100,000	100,000			30,000
Lifespan electrical	Operations	100,000	100,000	100,000			30,000
Max. operating frequency, mechanical	Ops/h	120	120	120			120
Climatic proofing		Damp heat, constant, to IEC 60 068-2-78 Damp heat, cyclic, to IEC 60 068-2-30					
Ambient temperature							
Open	min./max. °C	-25 ... +60	-25 ... +60	-25 ... +60			-25 ... +60
Mounting position		Any	Any	Any			Any
Dimensions							
Width	mm	58	58	55			
Height	mm	93	93	140			
Depth	mm	76	76	160			
Mounting							
Top-hat rail		35 mm	35 mm	35 mm			
Screw mounting		–	–	2 x M4 x 18 30 x 130			
Weight	kg	0.32	0.32	1.25			
Terminals							
Flexible with ferrule	mm ²	1 x (1-6)	1 x (1-6)	1 x (1-35)			
	mm ²	2 x (1-6)	2 x (1-6)	2 x (1-35)			
solid/stranded	AWG	18 - 14	18 - 14	14 - 2			
Rated short-time withstand current I_{cw} , 1 s to EN 60947-3	kA	0.24	0.36	0.72			
Rated short-circuit making capacity to EN 60947-3	I_{cm} kA	0.32	0.32	0.6			
Internal resistance	mΩ	6	5	3			

PKZ-SOL

			PKZ-SOL12	PKZ-SOL20	PKZ-SOL30	PKZ-SOL40	PKZ-SOL50	PKZ-SOL60
Rated operational current at DC-21A/750VDC	I_e	A	12	20	30	40	50	63
Number of poles			2	2	2	2	2	2
Rated operational voltage	U_e	V DC	900	900	900	900	900	900
Thermal tripping			1.05 ... 1.3 x I_e					
Electromagnetic tripping			6 x I_e					
Standards			IEC/EN 60 947-2 UL 508, TÜV certificate					
Climatic proofing			Damp heat, constant, to IEC 60 068-2-78 Damp heat, cyclic, to IEC 60 068-2-30					
Ambient temperature								
Open	min./max.	°C	-25 ... +60	-25 ... +60	-25 ... +60	-25 ... +60	-25 ... +60	-25 ... +60
Mounting position								
			PKZ-SOL12 to PKZ-SOL60			PKZ-SOL12 to PKZ-SOL30		
Dimensions								
Width	mm		58	58	58	55	55	55
Height	mm		93	93	93	140	140	140
Depth	mm		76	76	76	160	160	160
Mounting								
Top-hat rail			35 mm	35 mm	35 mm	35 mm	35 mm	35 mm
Screw mounting			–	–	–	2 x M4 x 18 30 x 130	2 x M4 x 18 30 x 130	2 x M4 x 18 30 x 130
Weight	kg		0.32	0.32	0.32	1.25	1.25	1.25
Terminals								
flexible with ferrule	mm ²		1 x (1-6)	1 x (1-6)	1 x (1-6)	1 x (1-35)	1 x (1-35)	1 x (1-35)
	mm ²		2 x (1-6)	2 x (1-6)	2 x (1-6)	2 x (1-35)	2 x (1-35)	2 x (1-35)
solid/stranded	AWG		18 - 14	18 - 14	18 - 14	14 - 2	14 - 2	14 - 2
Internal resistance	mΩ		31	12	7	–	–	–

1

