DATASHEET - PKZM01-12



Motor-protective circuit-breaker, 3p, Ir=8-12A

Part no. PKZM01-12
Catalog No. 278485
Eaton Catalog No. XTPB012BC1
EL-Nummer 4365020
(Norway)



Delivery program

Delivery program			
Product range			PKZM01 motor protective circuit-breakers up to 16 A with pushbutton actuation
Basic function			Motor protection
			IE3 ✓
Notes			Also suitable for motors with efficiency class IE3. IE3-ready devices are identified by the logo on their packaging.
Connection technique			Screw terminals
Contact sequence			F+
Max. motor rating			
AC-3			
220 V 230 V 240 V	Р	kW	3
380 V 400 V 415 V	P	kW	5.5
440 V	Р	kW	5.5
500 V	Р	kW	5.5
660 V 690 V	Р	kW	11
Rated uninterrupted current	I _u	Α	12
Setting range			
Overload releases	I _r	A	8 - 12
short-circuit release			
max.	I _{rm}	Α	186
			IEC/EN 60947-4-1, VDE 0660 Part 102

Technical data

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G	en	eı	'al

Standards IEC/EN 60947, VDE 0660,UL, CSA Climatic proofing Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30 Ambient temperature	
Damp heat, cyclic, to IEC 60068-2-30	
Ambient temperature	
Storage °C - 40 - 80	
Open °C -25 - +55	
Enclosed °C - 25 - 40	
Mounting position	
Direction of incoming supply as required	

Device 1970	Degree of protection			
The minimistries The minimis	Degree of protection			IP20
Protection against direct catalact when attended from town (CH 82214) 1				
Manufacial affects resistance haft-airusuodei injuncti 10 mile 10 til 10 mile 10 mil				
Mac 2000				
Terminal capacity main cable				
Second servationals			m	Max. 2000
Solid and stranded	· ,			
Blackle with femule in DIN 46226				
Pacial or with furnish to DIN 4229	Solid		mm ²	
Specified following torque for terminal screws Main cauble Main cable Main	Flexible with ferrule to DIN 46228		mm ²	1 x (1 - 6)
Specified tightening torque for terminal acrews	Solid or stranded		AWG	18 - 10
Main cable Name 7. Waln conducting paths VAC 8000 Placed comparing withstand voltage Ump VAC 8000 Descriptions of category/golludon degree Ump VAC 8000 Related comparing ordinated current Up VAC 800 Related comparing ordinated current Up VAC 800 Durrent healt outs Explose at operating temperature! Ump 40 + 00 Lifespar, electrical Operations x 10° 05 Lifespar, electrical IAC-3 at 480 V/y Operations x 10° 05 Most controlled falled classed catalogue! Vmm Schalburrentingen DC Vmm Vmm Vmm Vmm Short-circuit rating Vmm Vmm Vmm Vmm Vmm Most ses Notes Vmm	Stripping length		mm	10
Main conducting paths Ump VAC 6000 Nated imputes withstead voltage Ump VAC 6000 Read operational voltage U _w VAC 69 Read operational voltage U _w 4.0 10 Current hear lines (3 pole at operating temperature) U _w 6.8 4.0 Luffespan, selectical AC-3 460 V1 U _w 0.5 4.0 10 <th< td=""><td>Specified tightening torque for terminal screws</td><td></td><td></td><td></td></th<>	Specified tightening torque for terminal screws			
Part	Main cable		Nm	1.7
December Content Con	Main conducting paths			
Rated operational voltage	Rated impulse withstand voltage	U_{imp}	V AC	6000
Rated traquency	Overvoltage category/pollution degree			III/3
Ratual frequency	Rated operational voltage	U _e	V AC	690
Current heat loss (3 pole at operating temperature)	Rated uninterrupted current = rated operational current	$I_u = I_e$	Α	12
	Rated frequency	f	Hz	40 - 60
	Current heat loss (3 pole at operating temperature)		W	6.64
	Lifespan, mechanical	Operations	x 10 ⁶	0.05
	Lifespan, electrical (AC-3 at 400 V)		· ·	
Accord Company Compa		Onerations	406	0.05
Short-circuit rating		оролино		
AC			Ups/n	25
Other technical data (sheet catalogue) C Short-circuit rating KA 60 Notes V U U to 250 V Notes V U to 250 V Note V U to 250 V				
Notes				Cabaltanamäana
Short-circuit rating				Schaliverniogen
Notes			kΛ	60
AC-3 (up to 890V) A 12 DC-5 (up to 250V) V 12 (3 contacts in series) Frip blocks Temperature compensation to IEC/EN 89947, VDE 0860 °C -5 40 Operating range °C -25 55 Temperature compensation residual error for T > 40 °C x lu 0.6 - 1 Setting range of overload releases x lu 0.6 - 1 short-circuit release short-circuit release stolerance ± 20% 4.0 - 4 Phase-failure sensitivity 1EC/EN 60947-4-1, VDE 0660 Part 102 Rating data for approved types Switching capacity HP 3 Maximum motor rating HP 3 200 V 200 V HP 3 200 V 480 V HP 7.5 480 V 480 V HP 10			NA.	
AC-3 (up to 890V) DC-5 (up to 250V) V 12 (3 contacts in series) Firip blocks Temperature compensation to IEC/EN 60947, VDE 0660 Cperating range Temperature compensation cestidual error for T > 40 °C Setting range of overload releases Setting range of overload releases Short-circuit release tolerance Phase-failure sensitivity Maximum motor rating Three-phase 200 V 200 V 200 V 200 V 240 V 480 V 480 V 480 V 600 Y 12 (3 contacts in series) 12 (4) Contacts in series) 12 (4) Contacts in series) 12 (5) Contacts in series) 13 (4) Contacts in series) 14 (4) Contacts in series) 15 (4) Contacts in series) 16 (5) Contacts in series) 16 (5) Contacts in series) 17 (4) Contacts in series) 18 (5) Contacts in series) 18 (6) Contacts in series 19 (6) Contacts in series 19 (6) Contacts in series 20 (7) Conta				up to 230 V
DC-5 (up to 250V) V 12 (3 contacts in series)			۸	12
Fire blocks Temperature compensation to IEC/EN 60947, VDE 0660 °C - 5 40 Operating range °C - 25 55 Temperature compensation residual error for T > 40 °C ≤ 0.25 %/K Setting range of overload releases x lu 0.6 - 1 Short-circuit release Basic device, fixed: 15.5 x lu Short-circuit release tolerance ± 20% Phase-failure sensitivity 1EC/EN 60947-4-1, VDE 0660 Part 102 Rating data for approved types Switching capacity HP Maximum motor rating HP 200 V 200 V 200 V HP 460 V 480 V 480 V HP 575 V 600 V				
Temperature compensation to IEC/EN 60947, VDE 0660 Operating range Operating range Operating range Temperature compensation residual error for T > 40 °C Setting range of overload releases Short-circuit release Short-circuit release tolerance Phase-failure sensitivity Rating data for approved types Switching capacity Maximum motor rating Three-phase 200 V 208 V 460 V 460 V 480 V 480 V 600 V HP 10 10 10 10 10 10 10 10 10 1			V	12 (0 contacts in series)
Operating range CC - 2555 Temperature compensation residual error for T > 40 °C Setting range of overload releases X I _u 0.6 - 1 Basic device, fixed: 15.5 x I _u Short-circuit release tolerance ± 20% Phase-failure sensitivity Rating data for approved types Switching capacity Maximum motor rating Three-phase 200 V 208 V 208 V 208 V 480 V 480 V 480 V 600 V HP 100 100 100 100 100 100 100	Temperature compensation			
Temperature compensation residual error for T > 40 °C Setting range of overload releases x I U 0.6 - 1 Basic device, fixed: 15.5 x I U Short-circuit release tolerance ± 20% Phase-failure sensitivity Rating data for approved types Switching capacity Maximum motor rating Three-phase 200 V 208 V 240 V 480 V 480 V 480 V 480 V 600 V	to IEC/EN 60947, VDE 0660		°C	- 5 40
Temperature compensation residual error for T > 40 °C Setting range of overload releases **Nu*** U** 0.6 - 1 **Short-circuit release** Basic device, fixed: 15.5 x Iu **Short-circuit release** tolerance **20%** IEC/EN 60947-4-1, VDE 0660 Part 102** IEC/EN			°C	- 25 55
Setting range of overload releases short-circuit release short-circuit release tolerance Short-circuit release tolerance # 20% IEC/EN 60947-4-1, VDE 0660 Part 102 ***Bating data for approved types Switching capacity Maximum motor rating Three-phase 200 V 208 V ## 3 230 V 240 V ## 3 ## 3 ## 460 V 480 V 480 V ## 600 V ## 10 ## 10 ## 10 ## 10 ## 10 ## 10 ## 10	Temperature compensation residual error for T > 40 °C			
Short-circuit release Short-circuit release tolerance Short-circuit release tolerance Short-circuit release tolerance Short-circuit release tolerance ± 20% IEC/EN 60947-4-1, VDE 0660 Part 102 Rating data for approved types Switching capacity Maximum motor rating Three-phase 200 V 208 V 8	Setting range of overload releases		x I _{II}	
Short-circuit release tolerance ± 20% Phase-failure sensitivity IEC/EN 60947-4-1, VDE 0660 Part 102 Rating data for approved types Switching capacity Maximum motor rating Three-phase 200 V 208 V 208 V 460 V 460 V 480 V 600 V HP 10 10 10 10 10 10 10 10 10 10	short-circuit release			
Phase-failure sensitivity Rating data for approved types Switching capacity Maximum motor rating Three-phase 200 V 208 V 230 V 240 V 460 V 480 V 575 V 600 V				
Rating data for approved types Switching capacity Maximum motor rating Three-phase 200 V 208 V 230 V 240 V HP 3 460 V 480 V For V 600 V And				
Switching capacity Maximum motor rating Maximum mot				
Maximum motor rating HP 3 200 V 208 V HP 3 230 V 240 V HP 3 460 V 480 V HP 7.5 575 V 600 V HP 10	Switching capacity			
Three-phase				
200 V 208 V	-			
240 V 460 V 480 V 575 V 600 V HP 10			НР	3
480 V 575 V 600 V HP 10			НР	3
600 V			НР	7.5
Single-phase			НР	10
	Single-phase			

115 V 120 V	НР	0.5
230 V 240 V	НР	2
Short Circuit Current Rating, group protection	SCCR	
600 V High Fault		
SCCR (fuse)	kA	18
max. Fuse	Α	600
SCCR (CB)	kA	18
max. CB	А	600

Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	In	Α	12
Heat dissipation per pole, current-dependent	P _{vid}	W	0
Equipment heat dissipation, current-dependent	P _{vid}	W	6.64
Static heat dissipation, non-current-dependent	P _{vs}	W	0
Heat dissipation capacity	P _{diss}	W	0
Operating ambient temperature max.		°C	-25
Operating ambient temperature max.		°C	55
IEC/EN 61439 design verification			
10.2 Strength of materials and parts			
10.2.2 Corrosion resistance			Meets the product standard's requirements.
10.2.3.1 Verification of thermal stability of enclosures			Meets the product standard's requirements.
10.2.3.2 Verification of resistance of insulating materials to normal heat			Meets the product standard's requirements.
10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects			Meets the product standard's requirements.
10.2.4 Resistance to ultra-violet (UV) radiation			Meets the product standard's requirements.
10.2.5 Lifting			Does not apply, since the entire switchgear needs to be evaluated.
10.2.6 Mechanical impact			Does not apply, since the entire switchgear needs to be evaluated.
10.2.7 Inscriptions			Meets the product standard's requirements.
10.3 Degree of protection of ASSEMBLIES			Does not apply, since the entire switchgear needs to be evaluated.
10.4 Clearances and creepage distances			Meets the product standard's requirements.
10.5 Protection against electric shock			Does not apply, since the entire switchgear needs to be evaluated.
10.6 Incorporation of switching devices and components			Does not apply, since the entire switchgear needs to be evaluated.
10.7 Internal electrical circuits and connections			Is the panel builder's responsibility.
10.8 Connections for external conductors			Is the panel builder's responsibility.
10.9 Insulation properties			
10.9.2 Power-frequency electric strength			Is the panel builder's responsibility.
10.9.3 Impulse withstand voltage			Is the panel builder's responsibility.
10.9.4 Testing of enclosures made of insulating material			Is the panel builder's responsibility.
10.10 Temperature rise			The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.
10.11 Short-circuit rating			Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.12 Electromagnetic compatibility			Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.13 Mechanical function			The device meets the requirements, provided the information in the instruction leaflet (IL) is observed. $\label{eq:continuous}$

Technical data ETIM 6.0

Low-voltage industrial components (EG000017) / Motor protection circuit-breaker (EC000074)

Electric engineering, automation, process control engineering / Low-voltage switch technology / Circuit breaker (LV < 1 kV) / Motor protection circuit-breaker (ecl@ss8.1-27-37-04-01 [AGZ529013])

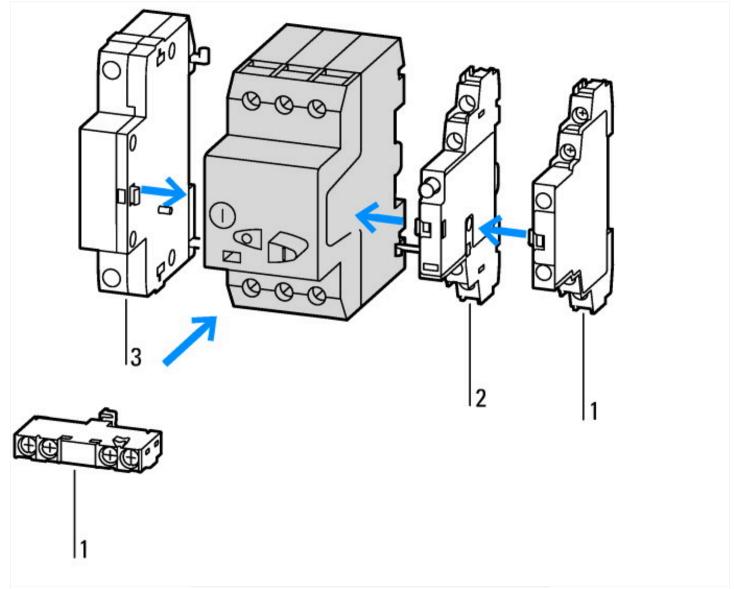
[AGZ529013])		
Overload release current setting	A	8 - 12
Adjustment range undelayed short-circuit release	Α	186 - 186
Thermal protection		No
Phase failure sensitive		Yes

Switch off technique		Thermomagnetic
Rated operating voltage	V	690 - 690
Rated permanent current lu	Α	12
Rated operation power at AC-3, 230 V	kW	3
Rated operation power at AC-3, 400 V	kW	5.5
Type of electrical connection of main circuit		Screw connection
Type of control element		Push button
Device construction		Built-in device fixed built-in technique
With integrated auxiliary switch		No
With integrated under voltage release		No
Number of poles		3
Rated short-circuit breaking capacity Icu at 400 V, AC	kA	50
Degree of protection (IP)		IP20
Height	mm	93
Width	mm	45
Depth	mm	90.5

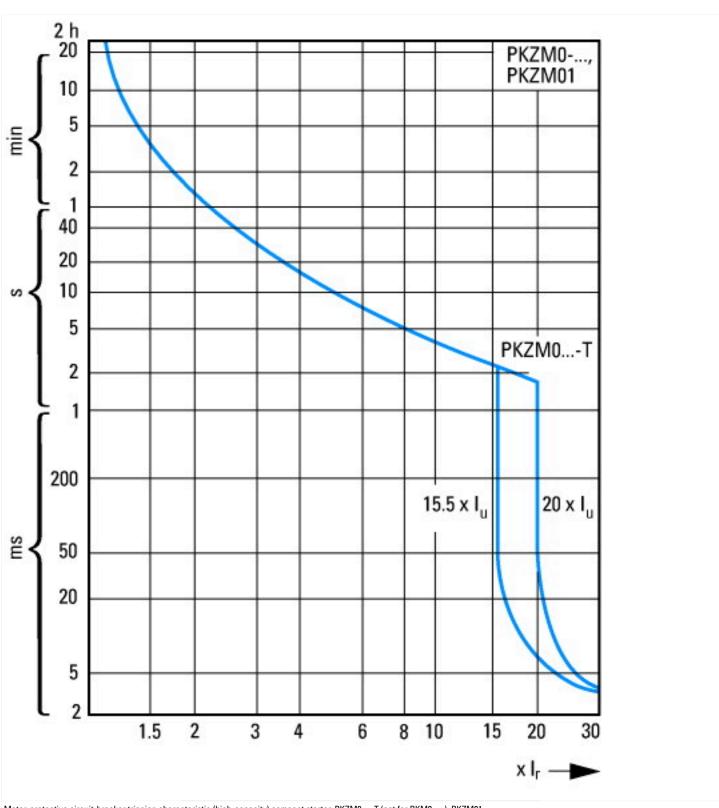
Approvals

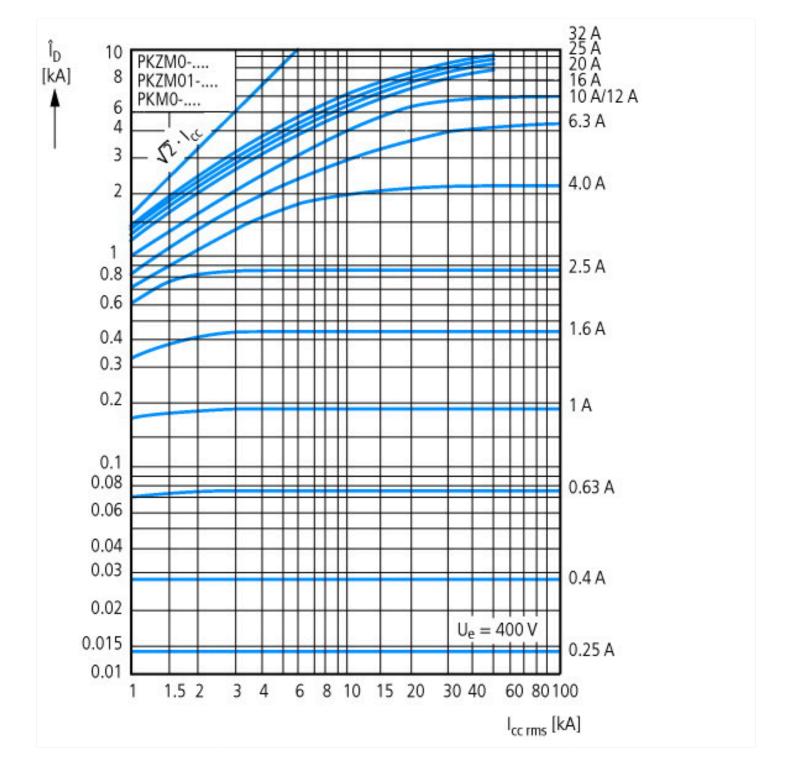
Product Standards	IEC/EN 60947-4-1; UL 60947-4-1; CSA - C22.2 No. 60947-4-1-14; CE marking
UL File No.	E36332
UL Category Control No.	NLRV
CSA File No.	165628
CSA Class No.	3211-05
North America Certification	UL listed, CSA certified
Specially designed for North America	No
Suitable for	Branch circuit: Manual type E if used with terminal, or suitable for group installations

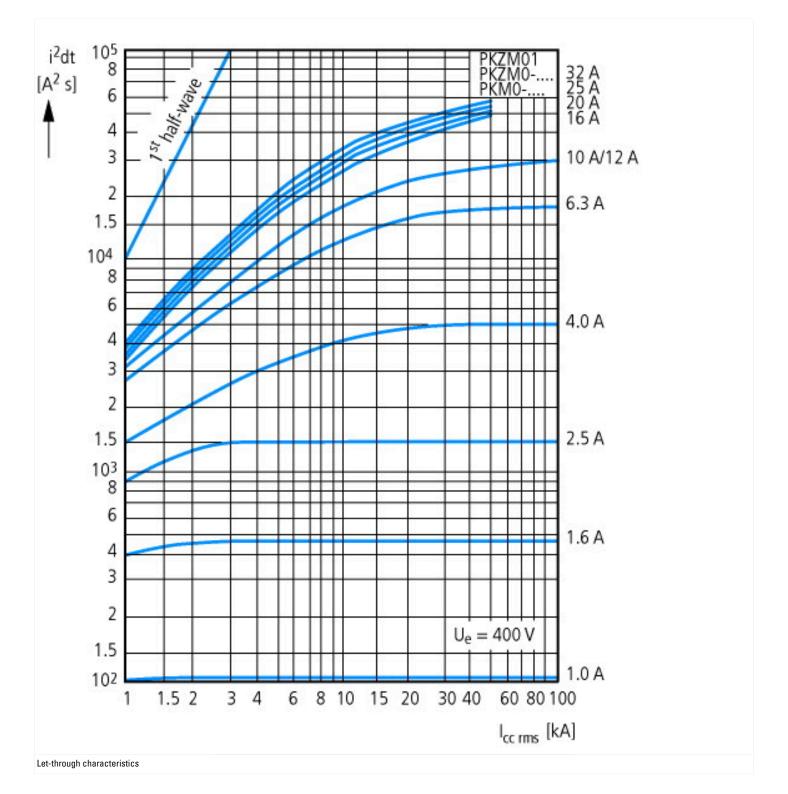
Characteristics



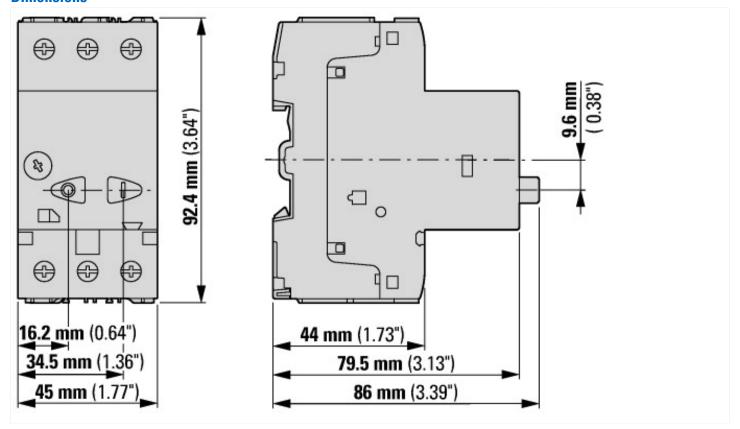
- 1: Standard auxiliary contact
 2: Trip-indicating auxiliary contact
 3: Shunt releases, undervoltage releases







Dimensions



Additional product information (links)

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IL03407010Z (AWA1210-2138) Motor-protective	circuit-breaker
IL03407010Z (AWA1210-2138) Motor-protective circuit-breaker	ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03407010Z2017_07.pdf
Schaltvermögen	https://de.ecat.eaton.com/flip-cat/?edition=MOTCONT1_DE#page_3/45
Motor starters and "Special Purpose Ratings" for the North American market	http://www.moeller.net/binary/ver_techpapers/ver953en.pdf
Busbar Component Adapters for modern Industrial control panels	http://www.moeller.net/binary/ver_techpapers/ver960en.pdf