

Short-circuit protective breaker, I_u 12 A, I_{rm} 186 A, Screw terminals, Also suitable for motors with efficiency class IE3.



Powering Business Worldwide™

Part no. PKM0-12
Catalog No. 278490
Alternate Catalog No. XTPM012BNL

Delivery program

Product range	PKM0 motor protective circuit-breakers up to 32 A		
Basic function	Short-circuit protective device only		
Notes	Also suitable for motors with efficiency class IE3.		
Connection technique	Screw terminals		
Max. motor rating			
AC-3			
220 V 230 V 240 V	P	kW	3
380 V 400 V 415 V	P	kW	5.5
440 V	P	kW	5.5
500 V	P	kW	5.5
660 V 690 V	P	kW	11
Rated uninterrupted current	I_u	A	12
Setting range			
short-circuit release			
			
max.	I_{rm}	A	186

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

Can be snapped on to IEC/EN 60715 top-hat rail with 7.5 or 15 mm height.

Refer to catalog CA034001DE for the allocation of short circuit protection and contactor

When using the PKM0 as short-circuit protection for motors with heavy starting duty, the rated operational current I_e must be over-dimensioned during engineering with 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

Technical data

General

Standards	IEC/EN 60947, VDE 0660				
Climatic proofing	Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30				
Ambient temperature					
Storage	°C	- 40 - 80			
Open	°C	-25 - +55			
Enclosed	°C	- 25 - 40			
Direction of incoming supply	as required				
Degree of protection					
Device	IP20				
Terminations	IP00				
Protection against direct contact when actuated from front (EN 50274)	Finger and back-of-hand proof				
Mechanical shock resistance half-sinusoidal shock 10 ms to IEC 60068-2-27	g	25			
Altitude	m	Max. 2000			
Terminal capacity main cable					
Screw terminals					
Solid	mm ²	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
Stripping length	mm	10
Specified tightening torque for terminal screws		
Main cable	Nm	1.7
Control circuit cables	Nm	1

Main conducting paths

Rated impulse withstand voltage	U _{imp}	V AC	6000
Oversupply category/pollution degree			III/3
Rated operational voltage	U _e	V AC	690
Rated uninterrupted current = rated operational current	I _u = I _e	A	12
Rated frequency	f	Hz	50/60
Current heat loss (3 pole at operating temperature)		W	6.64
Impedance per pole		mΩ	15
Lifespan, mechanical	Operations	x 10 ⁶	0.1
Lifespan, electrical (AC-3 at 400 V)			
Lifespan, electrical	Operations	x 10 ⁶	0.1
Max. operating frequency		Ops/h	40
Motor switching capacity			
AC-3 (up to 690V)		A	12
DC-5 (up to 250V)		A	12 (3 contacts in series)

Trip 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	
short-circuit release		Basic device, fixed: 15.5 x I _u	
Short-circuit release tolerance		± 20%	

Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	I _n	A	12
Heat dissipation per pole, current-dependent	P _{vid}	W	2.21
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 min.		°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	Is the panel builder's responsibility.	
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.	

Technical data ETIM 8.0

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@ss10.0.1-27-37-04-01 [AGZ529016])

Overload release current setting	A	0 - 0
Adjustment range undelayed short-circuit release	A	186 - 186
With thermal protection		No
Phase failure sensitive		No
Switch off technique		Magnetic
Rated operating voltage	V	690 - 690
Rated permanent current I_{p}	A	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		Turn 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 I_{cu} at 400 V, AC	kA	50
Degree of protection (IP)		IP20
Height	mm	93
Width	mm	45
Depth	mm	76