

**Motor-protective circuit-breaker, 660 V 690 V: 0.06 kW, Ir= 0.1 - 0.16 A, IP20**

**EATON**  
Powering Business Worldwide™

**Part no.** PKZM01-0,16-EA  
**Catalog No.** 189880

## Delivery program

Product range		PKZM01 motor protective circuit-breakers up to 25 A with pushbutton actuation	
Basic function		Motor protection	
Notes		Also suitable for motors with efficiency class IE3.	
Connection technique		Screw terminals	
<b>Max. motor rating</b>			
AC-3			
660 V 690 V	P	kW	0.06
Rated uninterrupted current	I <sub>u</sub>	A	0.16
<b>Setting range</b>			
Overload releases	I <sub>r</sub>	A	0.1 - 0.16
			
short-circuit release			
			
max.	I <sub>rm</sub>	A	2.5
Phase-failure sensitivity		IEC/EN 60947-4-1, VDE 0660 Part 102	
<b>Notes</b>	Overload trigger: tripping class 10 A Can be snapped on to IEC/EN 60715 top-hat rail with 7.5 or 15 mm height.		

## Technical data

<b>General</b>			
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			
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 <sup>2</sup>	1 x (1 - 6) 2 x (1 - 6)	
Flexible with ferrule to DIN 46228	mm <sup>2</sup>	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	
<b>Main conducting paths</b>			
Rated impulse withstand voltage	U <sub>imp</sub>	V AC	6000

Overtoltage category/pollution degree			III/3
Rated operational voltage	$U_e$	V AC	690
Rated uninterrupted current = rated operational current	$I_u = I_e$	A	0.16
Rated frequency	f	Hz	50/60
Current heat loss (3 pole at operating temperature)		W	5.39
Impedance per pole		$m\Omega$	68000
Lifespan, mechanical	Operations	$\times 10^6$	0.05
Lifespan, electrical (AC-3 at 400 V)	Operations	$\times 10^6$	0.05
Lifespan, electrical	Operations	$\times 10^6$	0.05
Max. operating frequency		Ops/h	25
Short-circuit rating			
DC			
Short-circuit rating		kA	60
Notes			up to 250 V
Motor switching capacity			
AC-3 (up to 690V)		A	0.16
DC-5 (up to 250V)		A	0.16 (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 $T > 40^\circ\text{C}$			$\leq 0.25\%/\text{K}$
Setting range of overload releases		$\times I_u$	0.6 - 1
short-circuit release			Basic device, fixed: $15.5 \times I_u$
Short-circuit release tolerance			$\pm 20\%$
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	HP		Hinweis: Motorleistung in diesem Bereich nach Bemessungsstrom berechnen. Angegebene Werte nach NEC Table 430-150
208 V			
230 V	HP		Hinweis: Motorleistung in diesem Bereich nach Bemessungsstrom berechnen. Angegebene Werte nach NEC Table 430-150
240 V			
460 V	HP		Hinweis: Motorleistung in diesem Bereich nach Bemessungsstrom berechnen. Angegebene Werte nach NEC Table 430-150
480 V			
575 V	HP		Hinweis: Motorleistung in diesem Bereich nach Bemessungsstrom berechnen. Angegebene Werte nach NEC Table 430-150
600 V			
Short Circuit Current Rating, group protection	SCCR		
600 V High Fault			
SCCR (fuse)	kA	50	
max. Fuse	A	600	
SCCR (CB)	kA	50	
max. CB	A	600	

### Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	$I_n$	A	0.16
Heat dissipation per pole, current-dependent	$P_{vid}$	W	0
Equipment heat dissipation, current-dependent	$P_{vid}$	W	5.39
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		
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	0.1 - 0.16
Adjustment range undelayed short-circuit release	A	2.5 - 2.5
With thermal protection		No
Phase failure sensitive		Yes
Switch off technique		Thermomagnetic
Rated operating voltage	V	690 - 690
Rated permanent current $I_{\text{u}}$	A	0.16
Rated operation power at AC-3, 230 V	kW	0
Rated operation power at AC-3, 400 V	kW	0
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 $I_{\text{cu}}$ at 400 V, AC	kA	50
Degree of protection (IP)		IP20
Height	mm	90
Width	mm	45
Depth	mm	93