Powering Business Worldwide

PKZM0-12 - Motor-protective circuit-breaker, 3p, Ir=8-12A

278486 PKZM0-12

Overview Specifications Resources

278486 PKZM0-12

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

Alternate Catalog No.	XTPR012BC1NL
EL-Nummer (Norway)	4365083

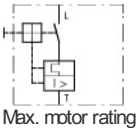
Motor-protective circuit-breaker according to IEC/EN60947, 3 pole size PKZM0, with adjustable overload and non-delayed short-circuit release, phase failure sensitive, screw and snap fitting, with screw terminal, cap installation dimension 45mm, rated operating voltage Ue 690V, degree of protection IP20, finger proof according to VDE 0106 T. 100, accessories: auxiliary contact, voltage release, contact module, clip plate

Delivery program

Product range
PKZM0 motor protective circuit-breakers up to 32 A
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



Max. motor rating
AC-3220 V 230 V 240 V [P]
3 kW
AC-3380 V 400 V 415 V [P]
5.5 kW
AC-3440 V [P]
5.5 kW
AC-3500 V [P]
5.5 kW
AC-3660 V 690 V [P]
11 kW
Rated uninterrupted current [I_u]
12 A
Setting range
Overload releases [I_r]
8 - 12 A
short-circuit release [I_{rm}] max. [I_{rm}]
186 A
Phase-failure sensitivity
IEC/EN 60947-4-1, VDE 0660 Part 102
Explosion protection (according to ATEX 94/9/EC)
PTB 10, ATEX 3013, Ex II(2) GD
Observe manual MN03402003Z-DE/EN.
Notes

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

General
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 temperatureStorage
- 40 - 80 °C
Ambient temperatureOpen
-25 - +55 °C
Ambient temperatureEnclosed
- 25 - 40 °C
Mounting position

Direction of incoming supply
as required
Degree of protectionDevice
IP20
Degree of protectionTerminations
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
25 g
Altitude
Max. 2000 m
Terminal capacity main cableScrew terminalsSolid
1 x (1 - 6)
2 x (1 - 6) mm^2
Terminal capacity main cableScrew terminalsFlexible with ferrule to DIN 46228
1 x (1 - 6)
2 x (1 - 6) mm^2
Terminal capacity main cableScrew terminalsSolid or stranded
18 - 10 AWG
Terminal capacity main cableScrew terminalsStripping length
10 mm
Specified tightening torque for terminal screwsMain cable
1.7 Nm
Specified tightening torque for terminal screwsControl circuit cables
1 Nm
Main conducting paths
Rated impulse withstand voltage [U_{imp}]
6000 V AC
Overvoltage category/pollution degree
III/3
Rated operational voltage [U_e]
690 V AC
Rated uninterrupted current = rated operational current [$I_u = I_e$]
12 A
Rated frequency [f]
40 - 60 Hz
Current heat loss (3 pole at operating temperature)
6.64 W
Impedance per pole
15 mΩ
Lifespan, mechanical [Operations]
0.1×10^6
Lifespan, electrical (AC-3 at 400 V)Lifespan, electrical [Operations]
0.1×10^6
Max. operating frequency
40 Ops/h
Short-circuit ratingDCShort-circuit rating
60 kA
Short-circuit ratingDCNotes
up to 250 V
Motor switching capacityAC-3 (up to 690V)
12 A
Motor switching capacityDC-5 (up to 250V)
12 (3 contacts in series) A
Trip blocks
Temperature compensationto IEC/EN 60947, VDE 0660
- 5…40 °C
Temperature compensationOperating range
- 25…55 °C
Temperature compensation residual error for T > 40 °C
□ 0.25 %/K
Setting range of overload releases
0.6 - 1 x I_u
short-circuit release
Basic device, fixed: 15.5 x I_u
Short-circuit release tolerance
± 20%

Phase-failure sensitivity
IEC/EN 60947-4-1, VDE 0660 Part 102
Rating data for approved types
Switching capacityMaximum motor ratingThree-phase200 V
208 V
3 HP
Switching capacityMaximum motor ratingThree-phase230 V
240 V
3 HP
Switching capacityMaximum motor ratingThree-phase460 V
480 V
7.5 HP
Switching capacityMaximum motor ratingThree-phase575 V
600 V
10 HP
Switching capacityMaximum motor ratingSingle-phase115 V
120 V
0.5 HP
Switching capacityMaximum motor ratingSingle-phase230 V
240 V
2 HP
Short Circuit Current Rating, type E240 V
65 kA
Short Circuit Current Rating, type E480 Y / 277 V
65 kA
Short Circuit Current Rating, type E600 Y / 347 V
18 kA
Short Circuit Current Rating, type EAccessories required
BK25/3-PKZ0-E
Short Circuit Current Rating, group protection600 V High FaultSCCR (fuse)
18 kA
Short Circuit Current Rating, group protection600 V High Faultmax. Fuse
600 A
Short Circuit Current Rating, group protection600 V High FaultSCCR (CB)
18 kA
Short Circuit Current Rating, group protection600 V High Faultmax. CB
600 A

Design verification as per IEC/EN 61439

Technical data for design verification
Rated operational current for specified heat dissipation [I_n]
12 A
Heat dissipation per pole, current-dependent [P_{vid}]
2.21 W
Equipment heat dissipation, current-dependent [P_{vid}]
6.64 W
Static heat dissipation, non-current-dependent [P_{vs}]
0 W
Heat dissipation capacity [P_{diss}]
0 W
Operating ambient temperature min.
-25 °C
Operating ambient temperature max.
+55 °C
IEC/EN 61439 design verification
10.2 Strength of materials and parts10.2.2 Corrosion resistance
Meets the product standard's requirements.
10.2 Strength of materials and parts10.2.3.1 Verification of thermal stability of enclosures
Meets the product standard's requirements.
10.2 Strength of materials and parts10.2.3.2 Verification of resistance of insulating materials to normal heat
Meets the product standard's requirements.
10.2 Strength of materials and parts10.2.3.3 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric effects
Meets the product standard's requirements.
10.2 Strength of materials and parts10.2.4 Resistance to ultra-violet (UV) radiation
Meets the product standard's requirements.
10.2 Strength of materials and parts10.2.5 Lifting
Does not apply, since the entire switchgear needs to be evaluated.
10.2 Strength of materials and parts10.2.6 Mechanical impact
Does not apply, since the entire switchgear needs to be evaluated.
10.2 Strength of materials and parts10.2.7 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 properties10.9.2 Power-frequency electric strength
Is the panel builder's responsibility.
10.9 Insulation properties10.9.3 Impulse withstand voltage

Is the panel builder's responsibility.
10.9 Insulation properties10.9.4 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 7.0

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
8 - 12 A
Adjustment range undelayed short-circuit release
186 - 186 A
With thermal protection
Yes
Phase failure sensitive
Yes
Switch off technique
Thermomagnetic
Rated operating voltage
690 - 690 V
Rated permanent current Iu
12 A
Rated operation power at AC-3, 230 V
3 kW
Rated operation power at AC-3, 400 V
5.5 kW
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 Icu at 400 V, AC
50 kA
Degree of protection (IP)
IP20
Height
93 mm
Width
45 mm
Depth
76 mm

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

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

Tripping characteristics motor circuit breaker PKZM0-..., PKZM01

1: Minimum level, 3-phase
2: Maximum level, 3-phase
3: Minimum marker, 2-phase
4: Highest marker, 2-phase
Characteristic curve

Let-through current
Characteristic curve

1 half-cycle
Let-through energy

Dimensions

Motor-protective circuit-breaker with standard auxiliary contact
PKZM0-…(+NHI-E-…-PKZ0)
PKZM0-…-T(+NHI-E-…-PKZ0)
PKM0-…(+NHI-E-…-PKZ0)

Motor-protective circuit-breakers with lockable rotary handles
PKZM0-…+AK-PKZ0

Motor-protective circuit-breakers with early-make auxiliary contacts
PKZM0-…+VHI-…-PKZ0

CAD data

- Product-specific CAD data
  (Web)
- 3D Preview
  (Web)

Additional product information

- EC prototype test certification PTB (German National Institute of Natural and Engineering Sciences) 10 ATEX 3013
  (PDF)
- Schaltvermögen
  (Web)
- Motor starters and "Special Purpose Ratings" for the North American market
  (PDF)
- Busbar Component Adapters for modern Industrial control panels
  (PDF)

Declaration of Conformity

- DA-DC-00003248
  Declaration of Conformity
  (PDF)

Instruction Leaflet

- Motor-protective circuit-breaker, Starter (IL03402034Z2018_06)
  Instruction Leaflet
  (PDF, International)
- Motor-protective circuit-breaker (IL03407011Z2018_04)
  Instruction Leaflet
  (PDF, International)

Manual

- MN03402003Z_DE_EN
  Manual
  (PDF, German)

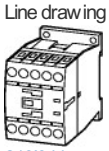
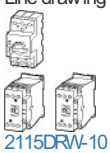
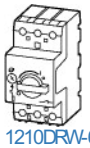
Dimensions single product

- 121X002
  PKZM0 with lockable rotary handles
  Dimensions single product
  Line drawing
- 121X042
  PKZM0 with early-make auxiliary contacts
  Dimensions single product
  Line drawing
- 1210DIM-106
  Dimensions single product
  Line drawing

Characteristic curve

- Characteristic curve
  Let-through characteristics
  Characteristic curve
  Coordinate visualization
- Characteristic curve
  Let-through characteristics
  Characteristic curve
  Coordinate visualization
- Characteristic curve
  Tripping characteristic
  Characteristic curve
  Coordinate visualization

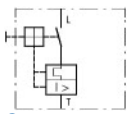
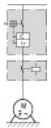
3D drawing

- Mounting position
  Mounting position
  3D drawing
  Line drawing
- 
  2101044
  Mini contactor relay basic unit screw terminal
  3D drawing
  Line drawing
- 
  2115DRW-10
  Reversing starters, modules
  3D drawing
  Line drawing
- 1210CON-20
  3D drawing
  Line drawing
- 
  1210DRW-606
  3D drawing
  Line drawing

Product photo

- 
  Photo
  PKZM0 motor protective circuit-breakers
  Product photo
  Photo

Wiring diagram

- 
  Contact sequence
  Transformer-protective circuit-breakers
  Wiring diagram
  Line drawing
- 
  Contact sequence
  DOL starters
  Wiring diagram
  Line drawing

Standards

- 
  0000SPC-571
  IE3-ready logo 4c
  Standards
  Logo
- 
  000Z153
  xStart logo
  Standards
  Logo

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