088912
PKZM0-1,6-T

DELIVERY PROGRAM

Delivery program

Technical data

Product range
PKZM0...T transformer-protective circuit-breakers
up to 25 A

Design verification as per IEC/EN 61439

Basic function
Transformer protection

Technical data ETIM 7.0

Approvals

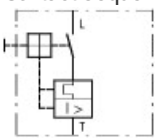
Notes
Also suitable for motors with efficiency class IE3.

Characteristics

Connection technique
Screw terminals

Dimensions

Contact sequence



Rated uninterrupted current [I_u]
1.6 A

Setting range

Overload releases [I_r]
1 - 1.6 A

short-circuit release [I_{rm}]
max. [I_{rm}]
32 A

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

Notes
For the protection of transformers with a high inrush current.
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

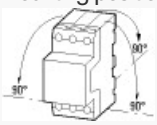
Climatic proofing
Damp heat, constant, to IEC 60068-2-78
Damp heat, cyclic, to IEC 60068-2-30

Ambient temperature
Storage
- 40 - 80 °C

Ambient temperature
Open
-25 - +55 °C

Ambient temperature
Enclosed
- 25 - 40 °C

Mounting position



Direction of incoming supply
as required

Degree of protection
Device
IP20

Degree of protection
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
25 g

Altitude
Max. 2000 m

Terminal capacity main cable
Screw terminals
Solid
1 x (1 - 6)
2 x (1 - 6) mm^2

Terminal capacity main cable
Screw terminals
Flexible with ferrule to DIN 46228
1 x (1 - 6)
2 x (1 - 6) mm^2

Terminal capacity main cable
Screw terminals
Solid or stranded
18 - 10 AWG

Terminal capacity main cable
Screw terminals
Stripping length
10 mm

Specified tightening torque for terminal screws
Main cable
1.7 Nm

Specified tightening torque for terminal screws
Control 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 [$I_u = I_e$]
1.6 A

Rated frequency [f]
40 - 60 Hz

Current heat loss (3 pole at operating temperature)
4.92 W

Lifespan, mechanical [Operations]
0.1 x 10^6

Lifespan, electrical (AC-3 at 400 V)
Lifespan, electrical [Operations]
0.1 x 10^6

Max. operating frequency
40 Ops/h

Short-circuit rating
DC
Short-circuit rating
60 kA

Motor switching capacity
AC-3 (up to 690V)
1.6 A

Motor switching capacity
DC-5 (up to 250V)
1.6 (3 contacts in series) A

Trip blocks

Temperature compensation
to IEC/EN 60947, VDE 0660
- 5…40 °C

Temperature compensation
Operating 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: 20 x I_u

Short-circuit release tolerance
± 20%

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

DESIGN VERIFICATION AS PER IEC/EN 61439

Technical data for design verification

Rated operational current for specified heat
dissipation [I_n]
1.6 A

Heat dissipation per pole, current-dependent [P_{vid}]

1.64 W

Equipment heat dissipation, current-dependent [P_{vid}]
4.92 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 parts
10.2.2 Corrosion resistance
Meets the product standard's requirements.

10.2 Strength of materials and parts
10.2.3.1 Verification of thermal stability of enclosures
Meets the product standard's requirements.

10.2 Strength of materials and parts
10.2.3.2 Verification of resistance of insulating materials to normal heat
Meets the product standard's requirements.

10.2 Strength of materials and parts
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 Strength of materials and parts
10.2.4 Resistance to ultra-violet (UV) radiation
Meets the product standard's requirements.

10.2 Strength of materials and parts
10.2.5 Lifting
Does not apply, since the entire switchgear needs

to be evaluated.

10.2 Strength of materials and parts
10.2.6 Mechanical impact
Does not apply, since the entire switchgear needs to be evaluated.

10.2 Strength of materials and parts
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 Insulation properties
10.9.3 Impulse withstand voltage
Is the panel builder's responsibility.

10.9 Insulation properties
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 7.0

Low-voltage industrial components (EG000017) / Power circuit-breaker for trafo/generator/installation protection (EC000228)

Electric engineering, automation, process control engineering / Low-voltage switch technology / Circuit breaker (LV < 1 kV) / Circuit breaker for power transformer, generator and system protection (ecl@ss10.0.1-27-37-04-09 [AJZ716013])

Rated permanent current Iu
1.6 A

Rated voltage
690 - 690 V

Rated short-circuit breaking capacity Icu at 400 V, 50 Hz
150 kA

Overload release current setting
1.6 - 1.6 A

Adjustment range short-term delayed short-circuit release
0 - 0 A

Adjustment range undelayed short-circuit release
32 - 32 A

Integrated earth fault protection
No

Type of electrical connection of main circuit
Screw connection

Device construction
Other

Suitable for DIN rail (top hat rail) mounting
Yes

DIN rail (top hat rail) mounting optional
Yes

Number of auxiliary contacts as normally closed contact
0

Number of auxiliary contacts as normally open contact
0

Number of auxiliary contacts as change-over contact
0

With switched-off indicator
Yes

With under voltage release
No

Number of poles
3

Position of connection for main current circuit
Other

Type of control element
Turn button

Complete device with protection unit
Yes

Motor drive integrated
No

Motor drive optional
No

Degree of protection (IP)
IP20

APPROVALS

Specially designed for North America
No

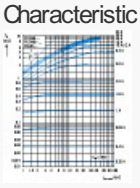
CHARACTERISTICS

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

Characteristic curve

Tripping characteristics motor-protector circuit breaker PKZM0, PKZM0-...T (not for PKM0-...), PKZM01

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