

Specifications



Eaton 199170

Eaton Moeller® series PKZM0 Transformer-protective circuit-breaker, 2.5 - 4 A, Push in terminals

General specifications

PRODUCT NAME	Eaton Moeller® series PKZM0 Transformer-protective circuit-breaker
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CATALOG NUMBER	199170
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MODEL CODE	PKZM0-4-T-PI
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EAN	4015081972548
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PRODUCT LENGTH/DEPTH	75 mm
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PRODUCT HEIGHT	109 mm
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PRODUCT WIDTH	45 mm
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PRODUCT WEIGHT	0.337 kg
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CERTIFICATIONS	IEC/EN 60947 VDE 0660 CE UL CSA IEC/EN 60947-4-1 CSA Class No.: 3211-05 CSA File No.: 165628 CSA-C22.2 No. 60947-4-1-14 UL 60947-4-1 UL Category Control No.: NLRV UL File No.: E36332
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Climatic environmental conditions

ALTITUDE	Max. 2000 m
AMBIENT OPERATING TEMPERATURE - MAX	55 °C
AMBIENT STORAGE TEMPERATURE - MAX	80 °C
AMBIENT OPERATING TEMPERATURE - MIN	-25 °C
AMBIENT OPERATING TEMPERATURE (ENCLOSED) - MAX	40 °C
AMBIENT OPERATING TEMPERATURE (ENCLOSED) - MIN	-25 °C
AMBIENT STORAGE TEMPERATURE - MIN	-40 °C
CLIMATIC PROOFING	Damp heat, cyclic, to IEC 60068-2-30 Damp heat, constant, to IEC 60068-2-78

Contacts

NUMBER OF AUXILIARY CONTACTS (CHANGE-OVER CONTACTS)	0
NUMBER OF AUXILIARY CONTACTS (NORMALLY CLOSED CONTACTS)	0
NUMBER OF AUXILIARY CONTACTS (NORMALLY OPEN CONTACTS)	0

Design verification

**RATED OPERATIONAL
CURRENT FOR SPECIFIED
HEAT DISSIPATION (IN)** 4 A

**STATIC HEAT
DISSIPATION, NON-
CURRENT-DEPENDENT
PVS** 0 W

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.

**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 RESIST. OF
INSUL. MAT. TO
ABNORMAL HEAT/FIRE
BY INTERNAL ELECT.
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

Electrical rating

**RATED FREQUENCY -
MAX** 60 Hz

RATED FREQUENCY - MIN 50 Hz

**RATED OPERATIONAL
CURRENT (IE)** 4 A

**RATED OPERATIONAL
POWER AT AC-3E,
220/230 V, 50 HZ** 0.75 kW

**RATED OPERATIONAL
POWER AT AC-3E,
380/400 V, 50 HZ** 1.5 kW

**RATED OPERATIONAL
POWER AT AC-3E, 440 V,
50 HZ** 1.5 kW

**RATED OPERATIONAL
POWER AT AC-3E, 500 V,
50 HZ** 2.2 kW

**RATED OPERATIONAL
POWER AT AC-3E, 690 V,
50 HZ** 3 kW

**RATED OPERATIONAL
VOLTAGE (UE) - MAX** 690 V

**RATED OPERATIONAL
VOLTAGE (UE) - MIN** 690 V

**RATED UNINTERRUPTED
CURRENT (IU)** 4 A

	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.
10.9.2 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.
EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT PVID	5.33 W
HEAT DISSIPATION CAPACITY PDISS	0 W
HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID	1.8 W

Features & functions	
ACTUATOR TYPE	Turn button
FEATURES	Phase-failure sensitivity (according to IEC/EN 60947-4-1, VDE 0660 Part 102)
FUNCTIONS	For the protection of transformers with a high inrush current Transformer protection
NUMBER OF POLES	Three-pole

General information	
CONNECTION	Push in terminals
DEGREE OF PROTECTION	IP20
LIFESPAN, ELECTRICAL	100,000 operations
LIFESPAN, MECHANICAL	100,000 Operations
MOUNTING METHOD	DIN rail (top hat rail) mounting optional
MOUNTING POSITION	Can be snapped on to IEC/EN 60715 top-hat rail with 7.5 or 15 mm height.
OPERATING FREQUENCY	40 Operations/h
OVERVOLTAGE CATEGORY	III
POLLUTION DEGREE	3
PRODUCT CATEGORY	Transformer protective

	circuit breaker
PROTECTION	Finger and back-of-hand proof, Protection against direct contact when actuated from front (EN 50274)
RATED IMPULSE WITHSTAND VOLTAGE (UIMP)	6000 V AC
SHOCK RESISTANCE	25 g, Mechanical, according to IEC/EN 60068-2-27, Half-sinusoidal shock 10 ms
SUITABLE FOR	Also motors with efficiency class IE3
TEMPERATURE COMPENSATION	≤ 0.25 %/K, residual error for T > 40° -5 - 40 °C to IEC/EN 60947, VDE 0660 -25 - 55 °C, Operating range

Motor rating

ASSIGNED MOTOR POWER AT 115/120 V, 60 HZ, 1-PHASE 0.125 HP

ASSIGNED MOTOR POWER AT 200/208 V, 60 HZ, 3-PHASE 0.75 HP

ASSIGNED MOTOR POWER AT 230/240 V, 60 HZ, 1-PHASE 0.33 HP

ASSIGNED MOTOR POWER AT 230/240 V, 60 HZ, 3-PHASE 0.75 HP

ASSIGNED MOTOR POWER AT 460/480 V, 60 HZ, 3-PHASE 2 HP

ASSIGNED MOTOR POWER AT 575/600 V, 60 HZ, 3-PHASE 3 HP

Short-circuit rating

RATED SHORT-CIRCUIT BREAKING CAPACITY ICS AT 400 V AC 150 kA

RATED SHORT-CIRCUIT BREAKING CAPACITY ICS AT 440 V AC 150 kA

RATED SHORT-CIRCUIT BREAKING CAPACITY ICS AT 500 V AC 150 kA

RATED SHORT-CIRCUIT BREAKING CAPACITY ICS AT 690 V AC 3 kA

RATED SHORT-CIRCUIT BREAKING CAPACITY ICU AT 400 V AC 150 kA

RATED SHORT-CIRCUIT BREAKING CAPACITY ICU AT 440 V AC 150 kA

RATED SHORT-CIRCUIT BREAKING CAPACITY ICU AT 500 V AC 150 kA

RATED SHORT-CIRCUIT BREAKING CAPACITY ICU AT 690 V AC 3 kA

SHORT-CIRCUIT CURRENT RATING (GROUP PROTECTION) 50 kA, 600 V High Fault, Fuse, SCCR (UL/CSA) with 600 A, 600 V High Fault, Fuse, SCCR (UL/CSA) 50 kA, 600 V High Fault,

Switching capacity

SWITCHING CAPACITY	4 A, AC-3 up to 690 V
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Trip blocks

OVERLOAD RELEASE CURRENT SETTING - MAX	4 A
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OVERLOAD RELEASE CURRENT SETTING - MIN	2.5 A
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TRIPPING CHARACTERISTIC	Overload trigger: tripping class 10 A
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CB, SCCR (UL/CSA) with
600 A, 600 V High Fault,
CB, SCCR (UL/CSA)

SHORT-CIRCUIT RELEASE

Basic device, fixed 20 x I_n
± 20% tolerance
84 A, I_{rm}

Terminal capacities

STRIPPING LENGTH (MAIN CABLE)	12 mm
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TERMINAL CAPACITY (FLEXIBLE WITH UNISOLATED FERRULE)	1 x (1 - 6) mm ² 2 x (1 - 6) mm ²
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TERMINAL CAPACITY (FLEXIBLE WITH FERRULE)	1 x (1 - 6) mm ² , Push-in terminals, ferrule to DIN 46228-1 2 x (1 - 6) mm ² , Push-in terminals, ferrule to DIN 46228-1 1 x (1 - 6) mm ² , Push-in terminals, ferrule to DIN 46228-4 2 x (1 - 4) mm ² , Push-in terminals, ferrule to DIN 46228-4
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TERMINAL CAPACITY (FLEXIBLE)	1 x (1 - 6) mm ² 2 x (1 - 6) mm ² 1 x (1 - 6) mm ² , Push-in terminals 2 x (1 - 6) mm ² , Push-in terminals
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TERMINAL CAPACITY (FLEXIBLE WITH ULTRASONIC WELDED CABLE END)	1 x (1 - 10) mm ² 2 x (1 - 6) mm ²
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TERMINAL CAPACITY (SOLID)	1 x (1 - 6) mm ² , Push-in terminals 2 x (1 - 6) mm ² , Push-in terminals 1 x (1 - 6) mm ² 2 x (1 - 6) mm ²
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TERMINAL CAPACITY (SOLID/STRANDED AWG)	18 - 8
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Resources

[eaton-motor-starters-
system-xstart-brochure-
br03407001en-en-us.pdf](#)

BROCHURES [eaton-push-in-technology-
product-overview-
brochure-br034012-en-
us.pdf](#)

CATALOGUES	eaton-product-overview-for-machinery-catalogue-ca08103003zen-en-us.pdf
DECLARATIONS OF CONFORMITY	eaton-transformer-protective-circuit-breaker-declaration-of-conformity-eu250689en.pdf eaton-transformer-protective-circuit-breaker-declaration-of-conformity-uk251172en.pdf
DRAWINGS	eaton-manual-motor-starters-pkzm-pkzm0-dimensions.eps
ECAD MODEL	ETN.199170.edz
INSTALLATION INSTRUCTIONS	IL122024ZU
INSTALLATION VIDEOS	WIN-WIN with push-in technology
MCAD MODEL	eaton-motor-protective-circuit-breakers-mcad-3d-models-pkzm0-pi.stp eaton-breakers-mcad-drawings-schutzschalter-bis-32a-pi.dwg
SALES NOTES	eaton-link-module-for-motor-starters-pkz-flyer-fl034003en-en-us.pdf

PROJECT NAME:

PROJECT NUMBER:

PREPARED BY:

DATE:



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