

Eaton 174415

Catalog Number: 174415

Eaton Moeller series Power Defense - Molded Case Circuit Breaker. Circuit-breaker LZM, 3 p, 25A, N1-A25-I

General specifications

Product Name	Catalog Number
Eaton Moeller series Power Defense molded case circuit-breaker	174415
	Model Code
	LZMN1-A25-I
EAN	Product Length/Depth
4015081708772	88 mm
Product Height	Product Width
145 mm	90 mm
Product Weight	Compliances
1.028 kg	RoHS conform
Certifications	
VDE 0660	
IEC	
IEC/EN 60947	



Product specifications

Rated operational current for specified heat dissipation (In)

25 A

10.11 Short-circuit rating

Is the panel builder's responsibility. The specifications for the switchgear must be observed.

10.4 Clearances and creepage distances

Meets the product standard's requirements.

10.12 Electromagnetic compatibility

Is the panel builder's responsibility. The specifications for the switchgear must be observed.

Mounting Method

DIN rail (top hat rail) mounting optional

Fixed

Built-in device fixed built-in technique

Amperage Rating

25 A

10.2.5 Lifting

Does not apply, since the entire switchgear needs to be evaluated.

Terminal capacity (copper strip)

Min. 2 segments of 9 mm x 0.8 mm at box terminal

Max. 9 segments of 9 mm x 0.8 mm at box terminal

Handle type

Rocker lever

10.2.3.1 Verification of thermal stability of enclosures

Meets the product standard's requirements.

Protection against direct contact

Finger and back-of-hand proof to DIN EN 50274/VDE 0106 part

110

Terminal capacity (copper busbar)

Max. 16 mm x 5 mm direct at switch rear-side connection

Min. 12 mm x 5 mm direct at switch rear-side connection

M8 at rear-side screw connection

10.8 Connections for external conductors

Is the panel builder's responsibility.

Special features

Maximum back-up fuse, if the expected short-circuit currents at the installation location exceed the switching capacity of the

Resources

Certification reports

DA-DC-03_N1

Characteristic curve

1230DIA-13

1230DIA-3

123U177

eaton-circuit-breaker-let-through-current-nzm-mccb-characteristic-curve-002.eps

eaton-circuit-breaker-nzm-mccb-characteristic-curve.eps

eaton-circuit-breaker-nzm-mccb-characteristic-curve-051.eps

Drawings

123X506

eaton-circuit-breaker-nzm-mccb-dimensions-017.eps

123X039

eaton-circuit-breaker-switch-nzm-mccb-dimensions-014.eps

Installation instructions

il01203007z2017_05.pdf

circuit breaker (Rated short-circuit breaking capacity I_{cn}) Rated current = rated uninterrupted current: 25 A

Position of connection for main current circuit

Front side

Rated insulation voltage (U_i)

690 V AC

Climatic proofing

Damp heat, constant, to IEC 60068-2-78

Damp heat, cyclic, to IEC 60068-2-30

Terminal capacity (copper stranded conductor/cable)

25 mm² (2x) direct at switch rear-side connection

25 mm² - 70 mm² (1x) at box terminal

25 mm² - 95 mm² (1x) at tunnel terminal

25 mm² - 70 mm² (1x) direct at switch rear-side connection

25 mm² (2x) at box terminal

Features

Protection unit

Lifespan, electrical

5000 operations at 500 V DC-3

5000 operations at 690 V AC-3

7500 operations at 415 V AC-3

7500 operations at 400 V AC-3

7500 operations at 690 V AC-1

10000 operations at 400 V AC-1

10000 operations at 415 V AC-1

10000 operations at 500 V DC-1

Electrical connection type of main circuit

Frame clamp

Short-circuit total breaktime

< 10 ms

Rated impulse withstand voltage (U_{imp}) at main contacts

6000 V

Rated short-circuit breaking capacity I_{cs} (IEC/EN 60947) at 400/415 V, 50/60 Hz

50 kA

10.9.3 Impulse withstand voltage

Is the panel builder's responsibility.

Utilization category

A (IEC/EN 60947-2)

Number of poles

Three-pole

10.6 Incorporation of switching devices and components

Does not apply, since the entire switchgear needs to be evaluated.

10.5 Protection against electric shock

Does not apply, since the entire switchgear needs to be evaluated.

Terminal capacity (control cable)

0.75 mm² - 1.5 mm² (2x)

0.75 mm² - 2.5 mm² (1x)

Equipment heat dissipation, current-dependent

8.78 W

Instantaneous current setting (Ii) - min

350 A

10.13 Mechanical function

The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

10.2.6 Mechanical impact

Does not apply, since the entire switchgear needs to be evaluated.

10.9.4 Testing of enclosures made of insulating material

Is the panel builder's responsibility.

Rated operational current

125 A (500 V DC-3, making and breaking capacity)

25 A (660-690 V AC-3, making and breaking capacity)

160 A (380/400 V AC-1, making and breaking capacity)

125 A (500 V DC-1, making and breaking capacity)

160 A (690 V AC-1, making and breaking capacity)

125 A (415 V AC-1, making and breaking capacity)

25 A (415 V AC-3, making and breaking capacity)

Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 230 V, 50/60 Hz

85 kA

Application

Use in unearthed supply systems at 690 V

10.3 Degree of protection of assemblies

Does not apply, since the entire switchgear needs to be evaluated.

Rated short-circuit making capacity Icm at 240 V, 50/60 Hz

187 kA

Rated short-circuit breaking capacity Ics (IEC/EN 60947) at 440 V, 50/60 Hz

35 kA

Degree of protection (IP), front side

IP40 (with insulating surround)

IP66 (with door coupling rotary handle)

Rated short-circuit making capacity I_{cm} at 525 V, 50/60 Hz

40 kA

Rated short-circuit making capacity I_{cm} at 690 V, 50/60 Hz

17 kA

Instantaneous current setting (I_i) - max

350 A

Overload current setting (I_r) - min

20 A

Short delay current setting (I_{sd}) - min

0 A

Number of auxiliary contacts (normally closed contacts)

0

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.

Lifespan, mechanical

20000 operations

Overload current setting (I_r) - max

25 A

Voltage rating

690 V - 690 V

Terminal capacity (copper solid conductor/cable)

16 mm² - 95 mm² (1x) at tunnel terminal

10 mm² - 16 mm² (1x) at box terminal

6 mm² - 16 mm² (2x) direct at switch rear-side connection

10 mm² - 16 mm² (1x) direct at switch rear-side connection

6 mm² - 16 mm² (2x) at box terminal

Degree of protection (terminations)

IP10 (tunnel terminal)

IP00 (terminations, phase isolator and band terminal)

Terminal capacity (aluminum stranded conductor/cable)

25 mm² - 95 mm² (1x) at tunnel terminal

10.9.2 Power-frequency electric strength

Is the panel builder's responsibility.

Short-circuit release non-delayed setting - min

350 A

Degree of protection

In the area of the HMI devices: IP20 (basic protection type)

IP20

Overvoltage category

III

Short delay current setting (I_{sd}) - max

0 A

Rated impulse withstand voltage (U_{imp}) at auxiliary contacts

6000 V

Number of auxiliary contacts (change-over contacts)

0

Release system

Thermomagnetic release

Rated short-circuit breaking capacity I_{cs} (IEC/EN 60947) at 525 V, 50/60 Hz

10 kA

Pollution degree

3

10.7 Internal electrical circuits and connections

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.

Functions

Photovoltaic applications

System and cable protection

Short-circuit release non-delayed setting - max

350 A

Rated short-circuit making capacity I_{cm} at 400/415 V, 50/60 Hz

105 kA

Standard terminals

Box terminal

Type

Circuit breaker

10.2.2 Corrosion resistance

Meets the product standard's requirements.

10.2.4 Resistance to ultra-violet (UV) radiation

Meets the product standard's requirements.

10.2.7 Inscriptions

Meets the product standard's requirements.

Rated short-circuit making capacity Icm at 440 V, 50/60 Hz

74 kA

Voltage rating (DC)

500 VDC

Number of auxiliary contacts (normally open contacts)

0

Isolation

500 V AC (between auxiliary contacts and main contacts)

300 V AC (between the auxiliary contacts)

Number of operations per hour - max

120

Circuit breaker frame type

LZM1

Direction of incoming supply

As required

Shock resistance

20 g (half-sinusoidal shock 20 ms)

Terminal capacity (aluminum solid conductor/cable)

16 mm² (1x) at tunnel terminal