Specifications

Eaton 187409

Catalog Number: 187409

Eaton Moeller series xEffect - FRCmM Type F RCCB. Residual current circuit breaker (RCCB), 40A, 4p, 30mA, type G/F



General specifications

Product Name
Eaton Moeller series xEffect - FRCmM Type F RCCB

Catalog Number
187409

EAN
4015081824670

Product Length/Depth
80 mm

Product Height
76 mm

Product Width
70 mm

Product Weight
0.373 kg

Compliances
RoHS conform

Certifications
IEC/EN 62423
EN45545-2
IEC 61373
IEC/EN 61008

Powering Business Worldwide

Delivery program

Application

Switchgear for industrial and advanced commercial applications
xEffect - Switchgear for industrial and advanced commercial applications

Number of poles

Four-pole

Tripping time

10 ms delayed

Amperage Rating

40 A

Rated short-circuit strength

10 kA with back-up fuse

Fault current rating

30 mA

Sensitivity type

Pulse-current sensitive

Impulse withstand current

3 kA (8/20 µs) surge-proof

Type

Current test marks as per inscription
Maximum operating temperature is 75 °C: Starting at 40 °C, the max. permissible continuous current decreases by 2.5% for every 1 °C

Technical data - electrical

Voltage rating (IEC/EN 60947-2)

240 V AC / 415 V AC

Rated operational voltage (Ue) - max

240 V

Rated insulation voltage (Ui)

440 V

Rated impulse withstand voltage (Uimp)

4 kV

Rated fault current - min

0.03 A

Rated fault current - max

0.03 A

Frequency rating

50 Hz / 60 Hz

Short-circuit rating

63 A (max. admissible back-up fuse)

Leakage current type

Other

Rated residual making and breaking capacity

500 A

Admissible back-up fuse overload - max

40 A gG/gL

Rated short-time withstand current (Icw)

10 kA

Surge current capacity

3 kA

Test circuit range

184 V AC - 440 V AC

Pollution degree

2

Radiation resistance

Frequency mix (10 Hz, 50 Hz, 1000 Hz) enhanced sensitivity

Lifespan, electrical

4000 operations

Technical data - mechanical

Frame

45 mm

Width in number of modular spacings

4

Built-in width (number of units)

70 mm (4 SU)

Built-in depth

70.5 mm

Mounting Method

DIN rail

Quick attachment with 2 latch positions for DIN-rail IEC/EN 60715

Mounting position

As required

Degree of protection

IP20

IP20, IP40 with suitable enclosure

Status indication

White / blue

Terminals (top and bottom)

Twin-purpose terminals

Terminal capacity (solid wire)

1.5 mm² - 35 mm²

Connectable conductor cross section (solid-core) - min

1.5 mm²

Connectable conductor cross section (solid-core) - max

35 mm²

Terminal capacity (stranded cable)

16 mm² (2x)

Connectable conductor cross section (multi-wired) - min

1.5 mm²

Connectable conductor cross section (multi-wired) - max

16 mm²

Terminal capacity (cable)

M5 (with cross-recessed screw as defined in EN ISO 4757-Z2, PZ2)

Design verification as per IEC/EN 61439 - technical data

Rated operational current for specified heat dissipation (In)

40 A

Heat dissipation per pole, current-dependent

3.275 W

Equipment heat dissipation, current-dependent

13.1 W

Static heat dissipation, non-current-dependent

0 W

Heat dissipation capacity

0 W

Ambient operating temperature - min

-25 °C

Ambient operating temperature - max

40 °C

Design verification as per IEC/EN 61439

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

Terminal protection

Finger and hand touch safe, DGUV VS3, EN 50274

Tightening torque

2 Nm - 2.4 Nm

Contact position indicator color

Red / green

Busbar material thickness

0.8 mm - 2 mm

Lifespan, mechanical

20000 operations

Permitted storage and transport temperature - min

-35 °C

Permitted storage and transport temperature - max

60 °C

Climatic proofing

25-55 °C / 90-95% relative humidity according to IEC 60068-2

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.

10.9.2 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.

Additional information

Features

Resources

Application notes

Additional equipment possible

Residual current circuit breaker

Fitted with:

Interlocking device

Functions

Short-time delayed tripping

Special features

FRCmM

Residual current circuit breakers

Type G/F (ÖVE E 8601)

Used with

FRCmM

Residual current circuit breakers

Type G/F (VE E 8601)

eaton-rcd-application-guide-br019003en-en-us.pdf

Brochures

eaton-pdd-railrolling-stock-brochure-br011002en-en-us.pdf

Catalogs

eaton-xeffect-frcmm-rccb-catalog-ca003018en-en-us.pdf

Declarations of conformity

DA-DC-03_FRCm

Drawings

eaton-circuit-breaker-xeffect-frcmm-na-rccb-dimensions.eps

eCAD model

DA-CE-ETN.FRCMM-40_4_003-G_F

mCAD model

eaton-187407-drawing.dwg

eaton-frcmm_rccb_4p-3-d-model.stp

eaton-frcmm_rccb_4p-drawing.dwg

eaton-187407-3d-model.stp

Wiring diagrams

eaton-xeffect-frcmm-rccb-wiring-diagram-002.jpg

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