Specifications

Eaton 306418

Catalog Number: 306418

Eaton Moeller series xEffect - FRCdM Type B, B+, Bfq RCCB, 40A, 4p, 30mA, Type Bfq 400V 3P



General specifications

Product Name
Eaton Moeller series xEffect - FRCdM Type B, B+, Bfq RCCB

Catalog Number
306418

EAN
9010238990050

Product Length/Depth
80 mm

Product Height
71 mm

Product Width
70 mm

Product Weight
0.32 kg

Certifications
IEC/EN 62423
IEC/EN 61008
ÖVE E 8601

Powering Business Worldwide

Delivery program

Application

xEffect - Switchgear for industrial and advanced commercial applications

Number of poles

Four-pole

Tripping time

Short time-delayed

10 ms delayed

Amperage Rating

40 A

Rated short-circuit strength

10 kA

Fault current rating

30 mA

Sensitivity type

All current sensitive

Impulse withstand current

3 kA (8/20 µs) surge-proof

Type

FRCdM

Residual current circuit-breakers, digital

Type G/Bfq (ÖVE E 8601)

Technical data - electrical

Voltage rating (IEC/EN 60947-2)

240 V AC / 415 V AC

Voltage rating - min

50 VAC

Voltage rating - max

456 VAC

Rated operational voltage (Ue) - max

415 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

Short-circuit rating

63 A (max. admissible back-up fuse)

Leakage current type

B

Rated residual making and breaking capacity

500 A

Admissible back-up fuse

63 A gG/gL

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

353 V AC - 456 V AC

Pollution degree

2

Lifespan, electrical

4000 operations

Technical data - electrical - dry auxiliary contact

Rated switching capacity (resistive load) of auxiliary contact at 30 V DC

2 A

Rated switching capacity (resistive load) of auxiliary contact at 240 V AC

0.25 A

Switching duty with resistive load of auxiliary contact - max

60 W

Switching voltage at AC of auxiliary contact - max

240 V

Switching voltage at DC of auxiliary contact - max

220 V

Switching current of auxiliary contact - max

2 A

Switching capacity of auxiliary contact - min

10 µA, 10 mV DC

Terminal capacity of auxiliary contact

0.25 mm² - 1.5 mm²

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

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

DIN rail

Mounting position

As required

Degree of protection

IP20

Design verification as per IEC/EN 61439 - technical data

Rated operational current for specified heat dissipation (In)

40 A

Equipment heat dissipation, current-dependent

4.1 W

Heat dissipation capacity

6.2 W

Ambient operating temperature - min

-25 °C

Ambient operating temperature - max

60 °C

Design verification as per IEC/EN 61439

10.2.2 Corrosion resistance

Meets the product standard's requirements.

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)

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

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 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

Residual current circuit-breakers, digital
Additional equipment possible
Selective protection

Fitted with:

Interlocking device

Functions

Short-time delayed tripping

Special features

As per inscription
Dry auxiliary contact: > 100,000 electrical switching operations per minute at 2 A 30 VDC resistive load
Dry auxiliary contact: > 5 x 100,000 electrical switching operations per minute at 1 A 30 VDC resistive load
Maximum operating temperature is 60 °C in accordance with the de-rating table

Resources

Application notes

eaton-quality-standards-for-railway-applications-application-paper-ap003005en-en-us.pdf

Brochures

eaton-xeffect-digital-switchgear-brochure-br003004en-en-us.pdf

Catalogs

eaton-xeffect-frcdm-rccb-catalog-ca003017en-en-us.pdf

Characteristic curve

eaton-xeffect-frcdm-rccb-characteristic-curve.jpg

Declarations of conformity

DA-DC-03_FRCdM

DA-DC-03_FRCdM-Bfq

Drawings

eaton-current-xeffect-frcdm-rccb-dimensions.jpg

Installation instructions

eaton-residual-current-circuit-breakers-frcdm-instruction-leaflet-il019013zu.pdf

Installation videos

xEffect Digital Switchgear

Wiring diagrams

eaton-circuit-breaker-xeffect-frcdm-rccb-wiring-diagram.eps

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