

# Eaton 187809

Catalog Number: 187809

Eaton Moeller series xEffect - FRCmM-125 Type B, Bfq and B+ RCCB. Residual current circuit-breaker, all-current sensitive, 80 A, 4p, 300 mA, type S/B



### General specifications

Product Name	Catalog Number
Eaton Moeller series xEffect - FRCmM-125 Type B, Bfq and B+ RCCB	187809
	EAN
	4015081854936
Product Length/Depth	Product Height
90 mm	80 mm
Product Width	Product Weight
75 mm	0.48 kg
Compliances	Certifications
RoHS conform	IEC/EN 61008
	IEC/EN 62423

## 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

40 ms delayed - selective switch off  
Selective switch off

### Amperage Rating

80 A

### Rated short-circuit strength

10 kA with back-up fuse

### Fault current rating

300 mA

### Sensitivity type

All current sensitive

### Impulse withstand current

5 kA (8/20  $\mu$ s) surge-proof

### Type

FRCmM  
Residual current circuit breakers  
Type S/B

## 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

0.3 A

### Rated fault current - max

0.3 A

### Frequency rating

50 Hz

### Short-circuit rating

100 A (max. admissible back-up fuse)

### Leakage current type

B

### Rated residual making and breaking capacity

800 A

### Admissible back-up fuse overload - max

80 A gG/gL

### Rated short-time withstand current (Icw)

10 kA

### Surge current capacity

5 kA

### Test circuit range

184 V AC - 440 V AC

### Pollution degree

2

### Lifespan, electrical

4000 operations

## Technical data - mechanical

## Design verification as per IEC/EN 61439 - technical data

#### Frame

45 mm

#### Width in number of modular spacings

4

#### Built-in width (number of units)

70 mm (4 SU)

#### Built-in depth

77.5 mm

#### Mounting Method

Quick attachment for top-hat rail IEC/EN 60715

DIN rail

#### Mounting position

As required

#### Degree of protection

IP20

IP20, IP40 with suitable enclosure

#### Status indication

Toggle-center position

#### Terminals (top and bottom)

Twin-purpose terminals

#### Terminal capacity (solid wire)

1.5 mm<sup>2</sup> - 50 mm<sup>2</sup>

1.5 mm<sup>2</sup> - 16 mm<sup>2</sup> (2x)

#### Connectable conductor cross section (solid-core) - min

1.5 mm<sup>2</sup>

#### Connectable conductor cross section (solid-core) - max

50 mm<sup>2</sup>

#### Terminal capacity (stranded cable)

1.5 mm<sup>2</sup> - 16 mm<sup>2</sup> (2x)

1.5 mm<sup>2</sup> - 5 mm<sup>2</sup>

#### Connectable conductor cross section (multi-wired) - min

1.5 mm<sup>2</sup>

#### Connectable conductor cross section (multi-wired) - max

16 mm<sup>2</sup>

#### Terminal protection

Finger and hand touch safe, DGUV VS3, EN 50274

#### Contact position indicator color

Red / green

#### Rated operational current for specified heat dissipation (In)

80 A

#### Heat dissipation per pole, current-dependent

0 W

#### Equipment heat dissipation, current-dependent

22.5 W

#### Static heat dissipation, non-current-dependent

0 W

#### Heat dissipation capacity

0 W

#### Ambient operating temperature - min

-25 °C

#### Ambient operating temperature - max

75 °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

Meets the product standard's requirements.

#### 10.3 Degree of protection of assemblies

Does not apply, since the entire switchgear needs to be

#### Busbar material thickness

0.8 mm - 2 mm

#### Lifespan, mechanical

20000 operations

#### Climatic proofing

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

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

Selective protection

Residual current circuit breaker

Additional equipment possible

### Resources

#### Application notes

[eaton-rcc-application-guide-br019003en-en-us.pdf](#)

#### Catalogs

[eaton-xeffect-frcmm-125-rccb-catalog-ca003020en-en-us.pdf](#)

#### Fitted with:

Interlocking device

#### Special features

Current test marks as per inscription  
Maximum operating temperature is 75 °C:  
Starting at 40 °C, the max. permissible continuous current decreases by 1.2% for every 1 °C

#### Used with

Residual current circuit breakers  
FRCmM  
Type S/B

[eaton-xeffect-frcmm40-80-type-b-rccb-catalog-ca003021en-en-us.pdf](#)

#### Declarations of conformity

[DA-DC-03\\_FRCm](#)

#### Drawings

[eaton-frcm-dimensions.jpg](#)

[eaton-circuit-breaker-xeffect-frcmm-125-rccb-dimensions.jpg](#)

#### mCAD model

[dfs\\_4.stp](#)

[dfs\\_4.dwg](#)

#### Wiring diagrams

[eaton-xeffect-frcmm-125-rccb-wiring-diagram.jpg](#)

[eaton-xeffect-frcmm-125-rccb-wiring-diagram-003.jpg](#)



Eaton Corporation plc  
Eaton House  
30 Pembroke Road  
Dublin 4, Ireland  
Eaton.com

© 2024 Eaton. All Rights Reserved.

Eaton is a registered trademark.

All other trademarks are property of their respective owners.



[Eaton.com/socialmedia](https://www.eaton.com/socialmedia)