

# Eaton 139575

Catalog Number: 139575

Eaton Moeller® series Z5 Overload relay, Ir= 120 - 160 A, 1 N/O, 1 N/C, For use with: DILM185A, DILM225A



## General specifications

### Product Name

Eaton Moeller® series Z5 Thermal overload relay

### Catalog Number

139575

### Model Code

Z5-160/FF225A

### EAN

4015081363537

### Product Length/Depth

146 mm

### Product Height

164 mm

### Product Width

128 mm

### Product Weight

1.47 kg

### Certifications

CSA File No.: 012528

CSA Class No.: 3211-03

CSA-C22.2 No. 60947-4-1-14

IEC/EN 60947-4-1

CSA

CE

UL File No.: E29184

VDE 0660

IEC/EN 60947

UL

UL 60947-4-1

UL Category Control No.: NKCR

## Features

Test/off button

Reset pushbutton manual/auto

Phase-failure sensitivity (according to IEC/EN 60947, VDE 0660 Part 102)

Trip-free release

### 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 standard's requirements.

## Catalogs

[eaton-product-overview-for-machinery-catalogue-ca08103003zen-en-us.pdf](#)

[Product Range Catalog Switching and protecting motors](#)

## Characteristic curve

[eaton-tripping-z5-overload-relay-characteristic-curve.eps](#)

[eaton-tripping-z5-overload-relay-characteristic-curve-005.eps](#)

## Declarations of conformity

[DA-DC-00004856.pdf](#)

[DA-DC-00004846.pdf](#)

## Drawings

[eaton-tripping-devices-overload-relay-z5-overload-relay-dimensions.eps](#)

[eaton-tripping-devices-z5-overload-relay-3d-drawing.eps](#)

## eCAD model

[ETN.139575.edz](#)

## Installation instructions

[eaton-overload-relays-z5-zb150-il03407006z.pdf](#)

[IL03407141Z2010\\_10](#)

## mCAD model

[z5\\_100\\_ff225a.stp](#)

[z5\\_100\\_ff225a.dwg](#)

## Specifications and datasheets

[Eaton Specification Sheet - 139575](#)

## System overview

[eaton-contactors-system55-dilm-explosion-drawing.eps](#)

## Wiring diagrams

[eaton-general-release-zeb-overload-relay-wiring-diagram.eps](#)

[eaton-tripping-devices-overload-relay-zeb-overload-relay-wiring-diagram.eps](#)

### 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.

### Pollution degree

3

### Class

CLASS 10 A

### Climatic proofing

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

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

### Rated impulse withstand voltage (U<sub>imp</sub>)

4000 V (auxiliary and control circuits)

8000 V AC

### Rated operational current (I<sub>e</sub>) at AC-15, 220 V, 230 V, 240 V

1.5 A

### Rated operational current (I<sub>e</sub>) at AC-15, 380 V, 400 V, 415 V

0.9 A

### Rated operational current (I<sub>e</sub>) at DC-13, 110 V

0.4 A

### Rated operational current (I<sub>e</sub>) at DC-13, 220 V, 230 V

0.2 A

Rated operational current (I<sub>e</sub>) at DC-13, 24 V

0.9 A

Rated operational current (I<sub>e</sub>) at DC-13, 60 V

0.75 A

Rated operational current for specified heat dissipation (I<sub>n</sub>)

160 A

Static heat dissipation, non-current-dependent P<sub>vs</sub>

0 W

Stripping length (control circuit cable)

8 mm

Voltage rating - max

600 VAC

Product category

Overload relay Z5

Protection

With terminal cover, Protection against direct contact when actuated from front (EN 50274)

Adjustable current range - max

160 A

Adjustable current range - min

120 A

Ambient operating temperature - max

60 °C

Ambient operating temperature - min

-25 °C

Ambient operating temperature (enclosed) - max

40 °C

Ambient operating temperature (enclosed) - min

25 °C

Conventional thermal current I<sub>th</sub> of auxiliary contacts (1-pole, open)

6 A

Equipment heat dissipation, current-dependent P<sub>vid</sub>

24 W

Heat dissipation capacity P<sub>diss</sub>

0 W

Heat dissipation per pole, current-dependent P<sub>vid</sub>

8 W

Number of auxiliary contacts (change-over contacts)

0

Number of auxiliary contacts (normally closed contacts)

1

Number of auxiliary contacts (normally open contacts)

1

Number of contacts (normally closed contacts)

1

Number of contacts (normally open contacts)

1

Overload release current setting - max

160 A

Overload release current setting - min

120 A

Rated operational voltage (U<sub>e</sub>) - max

1000 V

Rated operational current (I<sub>e</sub>) at AC-15, 120 V

1.5 A

Electrical connection type of main circuit

Screw connection

Reset function

Push-button

Automatic

Screwdriver size

2, Terminal screw, Control circuit cables, Pozidriv screwdriver

1 x 6 mm, Terminal screw, Control circuit cables, Standard screwdriver

Mounting method

Direct attachment

Separate mounting

Direct mounting

Degree of protection

IP00

Overvoltage category

III

Safe isolation

240 V AC, Between auxiliary contacts, According to EN 61140  
500 V AC, Between main circuits, According to EN 61140  
440 V, Between auxiliary contacts and main contacts, According to EN 61140

#### Screw size

M10 x 35, Terminal screw, Main connections  
M3.5, Terminal screw, Control circuit cables

#### Shock resistance

10 g, Mechanical, Sinusoidal, Shock duration 10 ms

#### Short-circuit current rating (basic rating)

600 A, max. CB, SCCR (UL/CSA)  
10 kA, SCCR (UL/CSA)  
600 A Class J, max. Fuse, SCCR (UL/CSA)

#### Switching capacity (auxiliary contacts, pilot duty)

B300 at opposite polarity, AC operated (UL/CSA)  
B600 at opposite polarity, AC operated (UL/CSA)  
R300, DC operated (UL/CSA)

#### Short-circuit protection rating

Max. 6 A gG/gL, fuse, Without welding, Auxiliary and control circuits  
400 A gG/gL, Fuse, Type "1" coordination  
250 A gG/gL, Fuse, Type "2" coordination

#### Suitable for

Branch circuits, (UL/CSA)

#### Temperature compensation

Continuous  
 $\leq 0.25 \% / K$ , residual error for  $T > 40^{\circ}$

#### Terminal capacity (busbar)

25 mm width, Main connection

#### Terminal capacity (flexible with cable lug)

185 mm<sup>2</sup>

#### Terminal capacity (flexible with ferrule)

2 x (0.75 - 2.5) mm<sup>2</sup>, Control circuit cables  
1 x (0.75 - 2.5) mm<sup>2</sup>, Control circuit cables

#### Terminal capacity (solid)

2 x (0.75 - 4) mm<sup>2</sup>, Control circuit cables  
1 x (0.75 - 4) mm<sup>2</sup>, Control circuit cables

#### Terminal capacity (solid/stranded AWG)

2 x (18 - 14), Control circuit cables  
2/0 - 500 MCM, Main cables

Terminal capacity (stranded with cable lug)

185 mm<sup>2</sup>

Tightening torque

18 Nm, Main cable connection screw/bolt

1.2 Nm, Screw terminals, Control circuit cables

Width across flats

16 mm (Hexagon head spanner SW)



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