

# Eaton 088685

Catalog Number: 088685

Eaton Moeller® series T0 Step switches, T0, 20 A, flush mounting, 2 contact unit(s), Contacts: 3, 45 °, maintained, Without 0 (Off) position, 1-3, Design number 8230



Photo is representative

## General specifications

|                                      |   |
|--------------------------------------|---|
| <b>Product Name</b>                  | <b>Catalog Number</b>                     |
| Eaton Moeller® series T0 Step switch | 088685                                    |
| <b>Product Length/Depth</b>          | <b>Product Height</b>                     |
| 86 mm                                | 48 mm                                     |
| <b>Product Width</b>                 | <b>Product Weight</b>                     |
| 48 mm                                | 0.108 kg                                  |
| <b>Certifications</b>                | <b>Catalog Notes</b>                      |
| UL Category Control No.: NLRV        | Rated Short-time Withstand Current        |
| IEC/EN 60947-3                       | (I <sub>cw</sub> ) for a time of 1 second |
| IEC/EN 60204                         |   |
| UL File No.: E36332                  | <b>EAN</b>                                |
| CSA Class No.: 3211-05               | 4015080886853                             |
| CSA-C22.2 No. 94                     | <b>Model Code</b>                         |
| UL 60947-4-1                         | T0-2-8230/E                               |
| CSA-C22.2 No. 60947-4-1-14           |   |
| CE                                   |   |
| IEC/EN 60947                         |   |
| VDE 0660                             |   |
| UL                                   |   |
| CSA File No.: 012528                 |   |
| CSA                                  |   |

## Type

Step switch

## Actuator function

Maintained

Without 0 (Off) position

### 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

UV resistance only in connection with protective shield.

#### 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.

## Brochures

Brochure - T Rotary Cam switch and P Switch-disconnector

## Catalogues

P Switch-disconnectors and T Rotary cam switches catalogue  
CA042001EN

## Declarations of conformity

DA-DC-00004927.pdf

DA-DC-00004895.pdf

## Drawings

eaton-rotary-switches-mounting-t0-step-switch-dimensions-025.eps

eaton-rotary-switches-mounting-t0-changeover-switch-3d-drawing-002.eps

eaton-rotary-switches-front-plate-t0-step-switch-symbol-013.eps

eaton-general-rotary-switch-t0-step-switch-symbol-002.eps

## eCAD model

DA-CE-ETN.T0-2-8230\_E

## Installation instructions

IL03801020Z

## Installation videos

Eaton's P Switch-disconnectors used in a factory

## mCAD model

DA-CD-t0\_2\_e

DA-CS-t0\_2\_e

## Wiring diagrams

eaton-rotary-switches-switch-t0-step-switch-wiring-diagram-007.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.

### Fitted with:

Black thumb grip and front plate

### Operating frequency

1200 Operations/h

### Pollution degree

3

### 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>)

6000 V AC

### Rated uninterrupted current (I<sub>u</sub>)

20 A

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

0 W

### Switching angle

45 °

Voltage per contact pair in series

60 V

Width in number of modular spacings

0

Product category

Control switches

Number of poles

Single-pole

Rated operational power at AC-3, 500 V, 50 Hz

5.5 kW

Device construction

Built-in device

Switch type

Level switch

Rated short-time withstand current (Icw)

320 A, Contacts, 1 second

Actuator type

Toggle

Ambient operating temperature - max

50 °C

Ambient operating temperature - min

-25 °C

Ambient operating temperature (enclosed) - max

40 °C

Ambient operating temperature (enclosed) - min

-25 °C

Assigned motor power at 115/120 V, 60 Hz, 1-phase

0.5 HP

Assigned motor power at 200/208 V, 60 Hz, 1-phase

1 HP

Assigned motor power at 200/208 V, 60 Hz, 3-phase

3 HP

Assigned motor power at 230/240 V, 60 Hz, 1-phase

1.5 HP

Assigned motor power at 230/240 V, 60 Hz, 3-phase

3 HP

Assigned motor power at 460/480 V, 60 Hz, 3-phase

7.5 HP

Assigned motor power at 575/600 V, 60 Hz, 3-phase

7.5 HP

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

0 W

Mounting position

As required

Mounting method

Flush mounting

Rated conditional short-circuit current (I<sub>q</sub>)

6 kA

Degree of protection

NEMA 12

IP65

NEMA 1

Overvoltage category

III

Control circuit reliability

1 failure per 100,000 switching operations statistically determined, at 24 V DC, 10 mA)

Degree of protection (front side)

IP65

NEMA 12

Number of contacts

3

Suitable for

Branch circuits, suitable as motor disconnect, (UL/CSA)

Front mounting

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

0 W

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

0.6 W

Number of contact units

2

Number of contacts in series at DC-21A, 240 V

1

Number of contacts in series at DC-23A, 120 V

3

Number of contacts in series at DC-23A, 24 V

1

Number of contacts in series at DC-23A, 240 V

5

Front shield size

48x48 mm

Safe isolation

440 V AC, Between the contacts, According to EN 61140

Screw size

M3.5, Terminal screw

Inscription

1-3

Number of steps

3 (45°)

Shock resistance

15 g, Mechanical, According to IEC/EN 60068-2-27, Half-sinusoidal shock 20 ms

Lifespan, mechanical

400,000 Operations

Number of switch positions

3

Load rating

1.3 x I<sub>e</sub> (with intermittent operation class 12, 60 % duty factor)

2 x I<sub>e</sub> (with intermittent operation class 12, 25 % duty factor)

1.6 x I<sub>e</sub> (with intermittent operation class 12, 40 % duty factor)

Switching capacity (auxiliary contacts, general use)

10A, IU, (UL/CSA)

Switching capacity (auxiliary contacts, pilot duty)

A600 (UL/CSA)

P300 (UL/CSA)

Number of contacts in series at DC-23A, 48 V

2

Number of contacts in series at DC-23A, 60 V

3

Rated breaking capacity at 220/230 V (cos phi to IEC 60947-3)

100 A

Rated breaking capacity at 400/415 V (cos phi to IEC 60947-3)

110 A

Rated breaking capacity at 500 V (cos phi to IEC 60947-3)

80 A

Rated breaking capacity at 660/690 V (cos phi to IEC 60947-3)

60 A

Rated making capacity up to 690 V (cos phi to IEC/EN 60947-3)

130 A

Rated operating voltage (Ue) at AC - max

690 V

Rated operational current (Ie) at AC-21, 440 V

20 A

Rated operational current (Ie) at AC-23A, 230 V

13.3 A

Rated operational current (Ie) at AC-23A, 400 V, 415 V

13.3 A

Rated operational current (Ie) at AC-23A, 500 V

13.3 A

Rated operational current (Ie) at AC-23A, 690 V

7.6 A

Rated operational current (Ie) at AC-3, 220 V, 230 V, 240 V

11.5 A

Rated operational current (Ie) at AC-3, 380 V, 400 V, 415 V

11.5 A

Rated operational current (Ie) at AC-3, 500 V

9 A

Rated operational current (Ie) at AC-3, 660 V, 690 V

4.9 A

Rated operational current (Ie) at DC-1, load-break switches  $l/r = 1$   
ms

10 A

Rated operational current (Ie) at DC-13, control switches  $L/R =$   
50 ms

10 A

Rated operational current (Ie) at DC-21, 240 V

1 A

Switching capacity (main contacts, general use)

16 A, Rated uninterrupted current max. (UL/CSA)

Safety parameter (EN ISO 13849-1)

B10d values as per EN ISO 13849-1, table C.1

Rated operational current (I<sub>e</sub>) at DC-23A, 120 V

5 A

Rated operational current (I<sub>e</sub>) at DC-23A, 24 V

10 A

Rated operational current (I<sub>e</sub>) at DC-23A, 240 V

5 A

Rated operational current (I<sub>e</sub>) at DC-23A, 48 V

10 A

Rated operational current (I<sub>e</sub>) at DC-23A, 60 V

10 A

Rated operational current (I<sub>e</sub>) star-delta at AC-3, 230 V

20 A

Rated operational current (I<sub>e</sub>) star-delta at AC-3, 400 V

20 A

Rated operational current (I<sub>e</sub>) star-delta at AC-3, 500 V

15.6 A

Rated operational current (I<sub>e</sub>) star-delta at AC-3, 690 V

8.5 A

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

20 A

Rated operational power at AC-23A, 220/230 V, 50 Hz

3 kW

Rated operational power at AC-23A, 400 V, 50 Hz

5.5 kW

Rated operational power at AC-23A, 500 V, 50 Hz

7.5 kW

Rated operational power at AC-23A, 690 V, 50 Hz

5.5 kW

Rated operational power at AC-3, 415 V, 50 Hz

5.5 kW

Rated operational power at AC-3, 690 V, 50 Hz

4 kW

Rated operational power star-delta at 220/230 V, 50 Hz

5.5 kW

Rated operational power star-delta at 380/400 V, 50 Hz



7.5 kW

Rated operational power star-delta at 500 V, 50 Hz

7.5 kW

Rated operational power star-delta at 690 V, 50 Hz

5.5 kW

Terminal capacity (flexible with ferrule)

2 x (0.75 - 2.5) mm<sup>2</sup>, ferrules to DIN 46228

1 x (0.75 - 2.5) mm<sup>2</sup>, ferrules to DIN 46228

Short-circuit current rating (basic rating)

5 kA, SCCR (UL/CSA)

50A, max. Fuse, SCCR (UL/CSA)

Short-circuit current rating (high fault)

10 kA, SCCR (UL/CSA)

20 A, Class J, max. Fuse, SCCR (UL/CSA)

Short-circuit protection rating

20 A gG/gL, Fuse, Contacts

Terminal capacity (solid/flexible with ferrule AWG)

18 - 14

Terminal capacity (solid/stranded)

2 x (1 - 2.5) mm<sup>2</sup>

1 x (1 - 2.5) mm<sup>2</sup>

Tightening torque

8.8 lb-in, Screw terminals

1 Nm, Screw terminals

Uninterrupted current

Rated uninterrupted current I<sub>u</sub> is specified for max. cross-section.

Design

8230



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