

Eaton 050717

Catalog Number: 050717

Eaton Moeller® series T0 Step switches, T0, 20 A, centre mounting, 5 contact unit(s), Contacts: 9, 45 °, maintained, With 0 (Off) position, 0-3, Design number 8281

General specifications



Product Name

Eaton Moeller® series T0 Step switch

Catalog Number

050717

Model Code

T0-5-8281/EZ

EAN

4015080507178

Product Length/Depth

134 mm

Product Height

48 mm

Product Width

48 mm

Product Weight

0.201 kg

Certifications

CSA File No.: 012528

CSA

CSA Class No.: 3211-05

CSA-C22.2 No. 94

IEC/EN 60947-3

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

UL

UL File No.: E36332

UL Category Control No.: NLRV

VDE 0660

IEC/EN 60947

CE

IEC/EN 60204

UL 60947-4-1

Catalog Notes

Rated Short-time Withstand Current
(Icw) for a time of 1 second

Features & Functions

Fitted with:

Black thumb grip and front plate
0 (off) position

Inscription

0-3

Number of poles

Three-pole

General

Degree of protection

IP65
NEMA 1
NEMA 12

Degree of protection (front side)

IP65
NEMA 12

Lifespan, mechanical

400,000 Operations

Mounting method

Center mounting

Number of contact units

5

Operating frequency

1200 Operations/h

Overvoltage category

III

Pollution degree

3

Product category

Control switches

Rated impulse withstand voltage (Uimp)

6000 V AC

Safe isolation

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

Safety parameter (EN ISO 13849-1)

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

Shock resistance

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

Suitable for

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

Switching angle

45 °

Type

Step switch

Climatic environmental conditions

Ambient operating temperature - min

-25 °C

Ambient operating temperature - max

50 °C

Ambient operating temperature (enclosed) - min

-25 °C

Ambient operating temperature (enclosed) - max

40 °C

Climatic proofing

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

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

Terminal capacities

Terminal capacity (flexible with ferrule)

1 x (0.75 - 2.5) mm², ferrules to DIN 46228

2 x (0.75 - 2.5) mm², ferrules to DIN 46228

Terminal capacity (solid/flexible with ferrule AWG)

18 - 14

Terminal capacity (solid/stranded)

2 x (1 - 2.5) mm²

1 x (1 - 2.5) mm²

Screw size

M3.5, Terminal screw

Tightening torque

8.8 lb-in, Screw terminals

1 Nm, Screw terminals

Electrical rating

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 operating voltage (Ue) at AC - max

690 V

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 AC-21, 440 V

20 A

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

13.3 A

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

13.3 A

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

13.3 A

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

7.6 A

Rated operational current (I_e) at DC-1, load-break switches I/r = 1 ms

10 A

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

10 A

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

1 A

Rated operational current (I_e) at DC-23A, 120 V

5 A

Rated operational current (I_e) at DC-23A, 24 V

10 A

Rated operational current (I_e) at DC-23A, 240 V

5 A

Rated operational current (I_e) at DC-23A, 48 V

10 A

Rated operational current (I_e) at DC-23A, 60 V

10 A

Rated operational current (I_e) star-delta at AC-3, 230 V

20 A

Rated operational current (I_e) star-delta at AC-3, 400 V

20 A

Rated operational current (I_e) star-delta at AC-3, 500 V

15.6 A

Rated operational current (I_e) star-delta at AC-3, 690 V

8.5 A

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

3 kW

Short-circuit rating

Rated conditional short-circuit current (I_q)

6 kA

Rated short-time withstand current (I_{cw})

320 A, Contacts, 1 second

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

Switching capacity

Load rating

1.6 x I_e (with intermittent operation class 12, 40 % duty factor)

1.3 x I_e (with intermittent operation class 12, 60 % duty factor)

2 x I_e (with intermittent operation class 12, 25 % duty factor)

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

1

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

1

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

2

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

3

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

3

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

5

Switching capacity (main contacts, general use)

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

Switching capacity (auxiliary contacts, general use)

10A, IU, (UL/CSA)

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 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

Rated uninterrupted current (I_u)
20 A

Uninterrupted current
Rated uninterrupted current I_u is specified for max. cross-section.

Contacts

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

Number of contacts
9

Switching capacity (auxiliary contacts, pilot duty)
P300 (UL/CSA)
A600 (UL/CSA)

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

Voltage per contact pair in series
60 V

Motor rating

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

Actuator

Actuator function
With 0 (Off) position
Maintained

Actuator type
Toggle

Number of steps
3 (45°)

Number of switch positions
4

Design verification

Equipment heat dissipation, current-dependent P_{vid}

0 W

Heat dissipation capacity P_{diss}

0 W

Heat dissipation per pole, current-dependent P_{vid}

0.6 W

Rated operational current for specified heat dissipation (I_n)

20 A

Static heat dissipation, non-current-dependent P_{vs}

0 W

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.

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

Resources

Brochures

Brochure - T Rotary Cam switch and P Switch-disconnector

Catalogues

P Switch-disconnectors and T Rotary cam switches catalogue
CA042001EN

Drawings

[eaton-rotary-switches-mounting-t0-step-switch-dimensions-013.eps](#)

[eaton-general-rotary-switch-t0-step-switch-symbol-004.eps](#)

[eaton-rotary-switches-mounting-t0-changeover-switch-3d-drawing-003.eps](#)

[eaton-rotary-switches-front-plate-t0-step-switch-symbol-009.eps](#)

eCAD model

[DA-CE-ETN.T0-5-8281_EZ](#)

Installation instructions

[IL03801020Z](#)

Installation videos

[Eaton's P Switch-disconnectors used in a factory](#)

mCAD model

[DA-CD-t0_5_ez](#)

[DA-CS-t0_5_ez](#)

Wiring diagrams

[eaton-rotary-switches-changeover-switch-t0-step-switch-wiring-diagram-005.eps](#)

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.