

Specifications

Photo is representative

Eaton 011517

Eaton Moeller® series T0 Step switches, T0, 20 A, centre mounting, 2 contact unit(s), Contacts: 3, 45 °, maintained, Without 0 (Off) position, 1-3, Design number 177

General specifications

PRODUCT NAME	Eaton Moeller® series T0 Step switch
CATALOG NUMBER	011517
EAN	4015080115175
PRODUCT LENGTH/DEPTH	106 mm
PRODUCT HEIGHT	48 mm
PRODUCT WIDTH	48 mm
PRODUCT WEIGHT	0.124 kg
CERTIFICATIONS	IEC/EN 60947-3 CSA-C22.2 No. 94 UL VDE 0660 UL 60947-4-1 CSA Class No.: 3211-05 IEC/EN 60947 IEC/EN 60204 CSA UL File No.: E36332 CE CSA File No.: 012528 CSA-C22.2 No. 60947-4-1-14 UL Category Control No.: NLRV
CATALOG NOTES	Rated Short-time Withstand Current (I _{cw}) for a time of 1 second
MODEL CODE	T0-2-177/EZ

Features & Functions

FITTED WITH:	Black thumb grip and front plate
INSCRIPTION	1-3
NUMBER OF POLES	Single-pole

General

DEGREE OF PROTECTION	NEMA 12 IP65 NEMA 1
DEGREE OF PROTECTION (FRONT SIDE)	IP65 NEMA 12
LIFESPAN, MECHANICAL	400,000 Operations
MOUNTING METHOD	Center mounting
MOUNTING POSITION	As required
NUMBER OF CONTACT UNITS	2
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
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AMBIENT OPERATING TEMPERATURE - MAX	50 °C
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AMBIENT OPERATING TEMPERATURE (ENCLOSED) - MIN	-25 °C
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AMBIENT OPERATING TEMPERATURE (ENCLOSED) - MAX	40 °C
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CLIMATIC PROOFING	Damp heat, cyclic, to IEC 60068-2-30 Damp heat, constant, to IEC 60068-2-78
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Terminal capacities

TERMINAL CAPACITY (FLEXIBLE WITH FERRULE)	2 x (0.75 - 2.5) mm ² , ferrules to DIN 46228 1 x (0.75 - 2.5) mm ² , ferrules to DIN 46228
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TERMINAL CAPACITY (SOLID/FLEXIBLE WITH FERRULE AWG)	18 - 14
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TERMINAL CAPACITY (SOLID/STRANDED)	1 x (1 - 2.5) mm ² 2 x (1 - 2.5) mm ²
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SCREW SIZE	M3.5, Terminal screw
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TIGHTENING TORQUE	1 Nm, Screw terminals 8.8 lb-in, Screw terminals
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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 (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 DC-1,
LOAD-BREAK SWITCHES
L/R = 1 MS** 10 A

**RATED OPERATIONAL
CURRENT (IE) AT DC-13,
CONTROL SWITCHES L/R** 10 A

Short-circuit rating

**RATED CONDITIONAL
SHORT-CIRCUIT CURRENT
(IQ)** 6 kA

**RATED SHORT-TIME
WITHSTAND CURRENT
(ICW)** 320 A, Contacts, 1 second

**SHORT-CIRCUIT CURRENT
RATING (BASIC RATING)** 50A, max. Fuse, SCCR
(UL/CSA)
5 kA, 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

= 50 MS	
RATED OPERATIONAL CURRENT (IE) AT DC-21, 240 V	1 A
RATED OPERATIONAL CURRENT (IE) AT DC-23A, 24 V	10 A
RATED OPERATIONAL CURRENT (IE) AT DC-23A, 48 V	10 A
RATED OPERATIONAL CURRENT (IE) AT DC-23A, 60 V	10 A
RATED OPERATIONAL CURRENT (IE) AT DC-23A, 120 V	5 A
RATED OPERATIONAL CURRENT (IE) AT DC-23A, 240 V	5 A
RATED OPERATIONAL CURRENT (IE) STAR- DELTA AT AC-3, 230 V	20 A
RATED OPERATIONAL CURRENT (IE) STAR- DELTA AT AC-3, 400 V	20 A
RATED OPERATIONAL CURRENT (IE) STAR- DELTA AT AC-3, 500 V	15.6 A
RATED OPERATIONAL CURRENT (IE) 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
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	5.5 kW

POWER STAR-DELTA AT 220/230 V, 50 HZ	
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 (IU)	20 A
UNINTERRUPTED CURRENT	Rated uninterrupted current I _u is specified for max. cross-section.

Switching capacity

LOAD RATING	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)
	1.6 x I _e (with intermittent operation class 12, 40 % 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)

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

Contacts

CONTROL CIRCUIT RELIABILITY	1 failure per 100,000 switching operations statistically determined, at 24 V DC, 10 mA)
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NUMBER OF CONTACTS

3

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 Without 0 (Off) position Maintained

ACTUATOR TYPE

Toggle

NUMBER OF SWITCH POSITIONS

3

Design verification

EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT PVID	0 W
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HEAT DISSIPATION CAPACITY PDISS	0 W
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HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID	0.6 W
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RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	20 A
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STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS	0 W
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10.2.2 CORROSION RESISTANCE	Meets the product standard's requirements.
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10.2.3.1 VERIFICATION OF THERMAL STABILITY OF ENCLOSURES	Meets the product standard's requirements.
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10.2.3.2 VERIFICATION OF RESISTANCE OF INSULATING MATERIALS TO NORMAL HEAT	Meets the product standard's requirements.
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10.2.3.3 RESIST. OF INSUL. MAT. TO ABNORMAL HEAT/FIRE BY INTERNAL ELECT. EFFECTS	Meets the product standard's requirements.
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10.2.4 RESISTANCE TO ULTRA-VIOLET (UV) RADIATION	UV resistance only in connection with protective shield.
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10.2.5 LIFTING	Does not apply, since the entire switchgear needs to be evaluated.
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10.2.6 MECHANICAL IMPACT	Does not apply, since the entire switchgear needs to be evaluated.
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10.2.7 INSCRIPTIONS	Meets the product standard's requirements.
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10.3 DEGREE OF PROTECTION OF ASSEMBLIES	Does not apply, since the entire switchgear needs to be evaluated.
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10.4 CLEARANCES AND CREEPAGE DISTANCES	Meets the product standard's requirements.
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10.5 PROTECTION AGAINST ELECTRIC SHOCK	Does not apply, since the entire switchgear needs to be evaluated.
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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.

Resources

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-00004895.pdf](#) [DA-DC-00004927.pdf](#)

DRAWINGS

[eaton-rotary-switches-mounting-t0-step-switch-dimensions-010.eps](#)

	eaton-general-rotary-switch-t0-step-switch-symbol-004.eps eaton-rotary-switches-front-plate-t0-step-switch-symbol-013.eps
ECAD MODEL	eaton-t0-step-switch-eplan-011517.edz
INSTALLATION INSTRUCTIONS	IL03801020Z
INSTALLATION VIDEOS	Eaton's P Switch-disconnectors used in a factory
MCAD MODEL	DA-CD-t0 2 ez DA-CS-t0 2 ez
PRODUCT NOTIFICATIONS	MZ008005ZU Orderform Customized Switch.pdf MZ008006ZU Orderform Customized Switch.pdf
WIRING DIAGRAMS	eaton-rotary-switches-t0-step-switch-wiring-diagram-191.eps eaton-rotary-switches-t0-step-switch-wiring-diagram-192.eps

PROJECT NAME:
PROJECT NUMBER:
PREPARED BY:
DATE:



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