

Specifications

Photo is representative

Eaton 013706

Eaton Moeller® series T0 Step switches, T0, 20 A, flush mounting, 4 contact unit(s), Contacts: 8, 45 °, maintained, Without 0 (Off) position, 1-8, Design number 153

General specifications

PRODUCT NAME	Eaton Moeller® series T0 Step switch
CATALOG NUMBER	013706
EAN	4015080137061
PRODUCT LENGTH/DEPTH	105 mm
PRODUCT HEIGHT	48 mm
PRODUCT WIDTH	48 mm
PRODUCT WEIGHT	0.156 kg
CERTIFICATIONS	CSA File No.: 012528 IEC/EN 60947-3 CSA Class No.: 3211-05 CSA-C22.2 No. 60947-4-1-14 CSA IEC/EN 60204 UL File No.: E36332 CE CSA-C22.2 No. 94 UL Category Control No.: NLRV IEC/EN 60947 UL UL 60947-4-1 VDE 0660
CATALOG NOTES	Rated Short-time Withstand Current (Icw) for a time of 1 second
MODEL CODE	T0-4-153/E

Features & Functions

FITTED WITH:	Black thumb grip and front plate
INSCRIPTION	1-8
NUMBER OF POLES	Single-pole

General

DEGREE OF PROTECTION	IP65 NEMA 12 NEMA 1
DEGREE OF PROTECTION (FRONT SIDE)	IP65 NEMA 12
LIFESPAN, MECHANICAL	400,000 Operations
MOUNTING METHOD	Flush mounting
MOUNTING POSITION	As required
NUMBER OF CONTACT UNITS	4
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)	2 x (0.75 - 2.5) mm ² , ferrules to DIN 46228 1 x (0.75 - 2.5) mm ² , ferrules to DIN 46228
TERMINAL CAPACITY (SOLID/FLEXIBLE WITH FERRULE AWG)	18 - 14
TERMINAL CAPACITY (SOLID/STRANDED)	2 x (1 - 2.5) mm ² 1 x (1 - 2.5) mm ²
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 100 A
(COS PHI TO IEC 60947-3)

RATED BREAKING

CAPACITY AT 400/415 V 110 A
(COS PHI TO IEC 60947-3)

RATED BREAKING

CAPACITY AT 500 V (COS PHI TO IEC 60947-3) 80 A

RATED BREAKING

CAPACITY AT 660/690 V 60 A
(COS PHI TO IEC 60947-3)

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

SHORT-CIRCUIT PROTECTION RATING 20 A gG/gL, Fuse, Contacts

= 50 MS

RATED OPERATIONAL

**CURRENT (IE) AT DC-21, 1 A
240 V**

RATED OPERATIONAL

**CURRENT (IE) AT DC-23A, 10 A
24 V**

RATED OPERATIONAL

**CURRENT (IE) AT DC-23A, 10 A
48 V**

RATED OPERATIONAL

**CURRENT (IE) AT DC-23A, 10 A
60 V**

RATED OPERATIONAL

**CURRENT (IE) AT DC-23A, 5 A
120 V**

RATED OPERATIONAL

**CURRENT (IE) AT DC-23A, 5 A
240 V**

RATED OPERATIONAL

**CURRENT (IE) STAR-
DELTA AT AC-3, 230 V**

RATED OPERATIONAL

**CURRENT (IE) STAR-
DELTA AT AC-3, 400 V**

RATED OPERATIONAL

**CURRENT (IE) STAR-
DELTA AT AC-3, 500 V**

RATED OPERATIONAL

**CURRENT (IE) STAR-
DELTA AT AC-3, 690 V**

RATED OPERATIONAL

**POWER AT AC-3, 415 V, 50
HZ**

RATED OPERATIONAL

**POWER AT AC-3, 690 V, 50
HZ**

RATED OPERATIONAL

**POWER AT AC-23A,
220/230 V, 50 HZ**

RATED OPERATIONAL

**POWER AT AC-23A, 400 V, 5.5 kW
50 HZ**

RATED OPERATIONAL

**POWER AT AC-23A, 500 V, 7.5 kW
50 HZ**

RATED OPERATIONAL

**POWER AT AC-23A, 690 V, 5.5 kW
50 HZ**

RATED OPERATIONAL

5.5 kW

POWER STAR-DELTA AT

220/230 V, 50 HZ

RATED OPERATIONAL

POWER STAR-DELTA AT 7.5 kW
380/400 V, 50 HZ

RATED OPERATIONAL

POWER STAR-DELTA AT 7.5 kW
500 V, 50 HZ

RATED OPERATIONAL

POWER STAR-DELTA AT 5.5 kW
690 V, 50 HZ

RATED UNINTERRUPTED

CURRENT (IU) 20 A

UNINTERRUPTED
CURRENT

Rated uninterrupted
current lu is specified for
max. cross-section.

Switching capacity

LOAD RATING	2 x I_e (with intermittent operation class 12, 25 % duty factor) 1.3 x I_e (with intermittent operation class 12, 60 % 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)	A600 (UL/CSA) P300 (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)
NUMBER OF CONTACTS	8

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	8

Design verification

EQUIPMENT HEAT

DISSIPATION, CURRENT- 0 W

DEPENDENT PVID

HEAT DISSIPATION 0 W
CAPACITY PDISS

HEAT DISSIPATION PER
POLE, CURRENT- 0.6 W
DEPENDENT PVID

RATED OPERATIONAL
CURRENT FOR SPECIFIED 20 A
HEAT DISSIPATION (IN)

STATIC HEAT
DISSIPATION, NON- 0 W
CURRENT-DEPENDENT
PVS

**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 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.

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

DRAWINGS [eaton-rotary-switches-mounting-t0-step-switch-dimensions-027.eps](#)

	eaton-general-rotary-switch-t0-step-switch-symbol-002.eps
	eaton-rotary-switches-front-plate-t0-step-switch-symbol-027.eps
ECAD MODEL	eaton-t0-step-switch-eplan-013706.edz
INSTALLATION INSTRUCTIONS	IL03801020Z
INSTALLATION VIDEOS	Eaton's P Switch-disconnectors used in a factory
MCAD MODEL	DA-CS-t0_4_e DA-CD-t0_4_e
PRODUCT NOTIFICATIONS	MZ008005ZU_Orderform_Customized_Switch.pdf
WIRING DIAGRAMS	MZ008006ZU_Orderform_Customized_Switch.pdf eaton-rotary-switches-t0-step-switch-wiring-diagram-054.eps eaton-rotary-switches-t0-step-switch-wiring-diagram-053.eps

PROJECT NAME:

PROJECT NUMBER:

PREPARED BY:

DATE:



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