

Specifications

Photo is representative

Eaton 222616

Eaton Moeller® series T0 Multi-speed switches, T0, 20 A, surface mounting, 2 contact unit(s), Contacts: 4, 90 °, maintained, Without 0 (Off) position, 1-2, Design number 39

General specifications

PRODUCT NAME	Eaton Moeller® series T0 Multi-speed switch
CATALOG NUMBER	222616
EAN	4015082226169
PRODUCT LENGTH/DEPTH	137 mm
PRODUCT HEIGHT	102 mm
PRODUCT WIDTH	80 mm
PRODUCT WEIGHT	0.264 kg
CERTIFICATIONS	EN 60204 EN 60947 IEC 60947 VDE IEC/EN 60947 VDE 0660 IEC/EN 60947-3 IEC/EN 60204
CATALOG NOTES	Rated Short-time Withstand Current (Icw) for a time of 1 second
MODEL CODE	T0-2-39/11

Features & Functions	
ENCLOSURE MATERIAL	Plastic
FEATURES	Complete device in housing
FITTED WITH:	Black thumb grip and front plate
INSCRIPTION	1-2
NUMBER OF POLES	2
SWITCH FUNCTION TYPE	2 speeds, 2 separate windings

General	
ACCESSORIES	Black thumb grip and front plate
DEGREE OF PROTECTION	IP65
DEGREE OF PROTECTION (FRONT SIDE)	IP65 NEMA 12
LIFESPAN, MECHANICAL	400,000 Operations
MODEL	Pole switch
MOUNTING METHOD	Surface Surface 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	Ground mounting
SWITCHING ANGLE	90 °
TYPE	Multi-speed switch

Climatic environmental conditions

AMBIENT OPERATING TEMPERATURE - MIN	-25 °C
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AMBIENT OPERATING TEMPERATURE - MAX	40 °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, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30
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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/STRANDED)	2 x (1 - 2.5) mm ² 1 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
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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 OPERATIONAL
CURRENT (IE)** 15.6 A at AC-3, 500 V star-
delta
8.5 A at AC-3, 690 V star-
delta
20 A at AC-3, 230 V star-
delta
20 A at AC-3, 400 V star-
delta

**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,** 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
PROTECTION RATING** 20 A gG/gL, Fuse, Contacts

LOAD-BREAK SWITCHES**L/R = 1 MS**

RATED OPERATIONAL CURRENT (IE) AT DC-13, CONTROL SWITCHES L/R = 50 MS	10 A
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RATED OPERATIONAL CURRENT (IE) AT DC-21, 240 V	1 A
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RATED OPERATIONAL CURRENT (IE) AT DC-23A, 24 V	10 A
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RATED OPERATIONAL CURRENT (IE) AT DC-23A, 48 V	10 A
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RATED OPERATIONAL CURRENT (IE) AT DC-23A, 60 V	10 A
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RATED OPERATIONAL CURRENT (IE) AT DC-23A, 120 V	5 A
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RATED OPERATIONAL CURRENT (IE) AT DC-23A, 240 V	5 A
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RATED OPERATIONAL POWER AT AC-3, 380/400 V, 50 HZ	4 kW
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RATED OPERATIONAL POWER AT AC-3, 415 V, 50 HZ	5.5 kW
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RATED OPERATIONAL POWER AT AC-3, 690 V, 50 HZ	4 kW
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RATED OPERATIONAL POWER AT AC-23A, 220/230 V, 50 HZ	3 kW
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RATED OPERATIONAL POWER AT AC-23A, 400 V, 50 HZ	5.5 kW
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RATED OPERATIONAL POWER AT AC-23A, 500 V, 50 HZ	7.5 kW
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RATED OPERATIONAL POWER AT AC-23A, 690 V, 50 HZ	5.5 kW
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RATED OPERATIONAL POWER STAR-DELTA AT 220/230 V, 50 HZ	5.5 kW
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RATED OPERATIONAL POWER STAR-DELTA AT	7.5 kW
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380/400 V, 50 HZ	
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 OPERATIONAL VOLTAGE (UE) AT AC - MAX	690 V
RATED UNINTERRUPTED CURRENT (IU)	20 A
UNINTERRUPTED CURRENT	Rated uninterrupted current I _u is specified for max. cross-section.
VOLTAGE RATING	690 V

Switching capacity

LOAD RATING	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)
	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
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 AUXILIARY CONTACTS (CHANGE-OVER CONTACTS)	0
NUMBER OF AUXILIARY CONTACTS (NORMALLY CLOSED CONTACTS)	0
NUMBER OF AUXILIARY CONTACTS (NORMALLY OPEN CONTACTS)	0
NUMBER OF CONTACTS	4

Actuator

ACTUATOR FUNCTION	Maintained Without 0 (Off) position
ACTUATOR TYPE	Short thumb-grip

Design verification

EQUIPMENT HEAT DISSIPATION, CURRENT-DEPENDENT PVID	0 W
HEAT DISSIPATION CAPACITY PDISS	0 W
HEAT DISSIPATION PER POLE, CURRENT-DEPENDENT PVID	0.6 W
RATED OPERATIONAL CURRENT FOR SPECIFIED HEAT DISSIPATION (IN)	20 A
STATIC HEAT DISSIPATION, NON-CURRENT-DEPENDENT PVS	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 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-t0-changeover-switch-dimensions.eps](#)
[eaton-rotary-switches-dimensions-t0-step-switch-dimensions.eps](#)
[eaton-general-rotary-switch-t0-step-switch-symbol.eps](#)
[eaton-general-totally-insulated-t0-main-switch-symbol.eps](#)
[eaton-rotary-switches-front-plate-t0-changeover-switch-symbol-014.eps](#)

ECAD MODEL [DA-CE-ETN.T0-2-39 I1](#)

INSTALLATION INSTRUCTIONS [IL03801007Z2021_06.pdf](#)

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

MCAD MODEL [DA-CS-bauform2](#) [DA-CD-bauform2](#)

PRODUCT NOTIFICATIONS [MZ008005ZU Orderform Customized Switch.pdf](#)
[MZ008006ZU Orderform Customized Switch.pdf](#)

WIRING DIAGRAMS [eaton-rotary-switches-t0-multi-speed-switch-wiring-diagram-035.eps](#)
[eaton-rotary-switches-t0-multi-speed-switch-wiring-diagram-036.eps](#)

PROJECT NAME:

PROJECT NUMBER:

PREPARED BY:

DATE:



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