

Specifications



Photo is representative



Eaton 222470

Eaton Moeller series T0 Step switch for heating, 20 A, Surface mounting, 2 contact unit(s), Contacts: 4, Maintained, 0-3, Design: 95

General specifications

PRODUCT NAME	Eaton Moeller® series T0 Step switch
CATALOG NUMBER	222470
MODEL CODE	T0-2-95/11
EAN	4015082224707
PRODUCT LENGTH/DEPTH	98 mm
PRODUCT HEIGHT	100 mm
PRODUCT WIDTH	80 mm
PRODUCT WEIGHT	0.264 kg
CERTIFICATIONS	VDE 0660 IEC/EN 60947 IEC/EN 60947-3 IEC/EN 60204
CATALOG NOTES	Rated Short-time Withstand Current (Icw) for a time of 1 second

Actuator

ACTUATOR FUNCTION	Maintained With 0 (Off) position
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ACTUATOR TYPE	Toggle
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NUMBER OF SWITCH POSITIONS	4
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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	4
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Climatic environmental conditions

AMBIENT OPERATING TEMPERATURE - MAX	40 °C
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AMBIENT OPERATING TEMPERATURE - MIN	-25 °C
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AMBIENT OPERATING TEMPERATURE (ENCLOSED) - MAX	40 °C
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AMBIENT OPERATING TEMPERATURE (ENCLOSED) - MIN	-25 °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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Design verification

10.10 TEMPERATURE RISE	The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.
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10.11 SHORT-CIRCUIT RATING	Is the panel builder's responsibility. The specifications for the switchgear must be observed.
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10.12 ELECTROMAGNETIC COMPATIBILITY	Is the panel builder's responsibility. The specifications for the switchgear must be observed.
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10.13 MECHANICAL FUNCTION	The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.
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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.
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.
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

Electrical rating

RATED BREAKING CAPACITY AT 220/230 V (COS PHI TO IEC 60947-3)	100 A
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RATED BREAKING CAPACITY AT 400/415 V (COS PHI TO IEC 60947-3)	110 A
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RATED BREAKING CAPACITY AT 500 V (COS PHI TO IEC 60947-3)	80 A
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RATED BREAKING CAPACITY AT 660/690 V (COS PHI TO IEC 60947-3)	60 A
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RATED OPERATING VOLTAGE (UE) AT AC - MAX	690 V
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RATED OPERATIONAL CURRENT (IE) AT AC-21, 440 V	20 A
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RATED OPERATIONAL CURRENT (IE) AT AC-23A, 230 V	13.3 A
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RATED OPERATIONAL CURRENT (IE) AT AC-23A, 400 V, 415 V	13.3 A
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RATED OPERATIONAL CURRENT (IE) AT AC-23A, 500 V	13.3 A
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RATED OPERATIONAL CURRENT (IE) AT AC-23A, 690 V	7.6 A
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RATED OPERATIONAL CURRENT (IE) AT AC-3, 220 V, 230 V, 240 V	11.5 A
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RATED OPERATIONAL CURRENT (IE) AT AC-3, 380 V, 400 V, 415 V	11.5 A
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RATED OPERATIONAL CURRENT (IE) AT AC-3, 500 V	9 A
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RATED OPERATIONAL CURRENT (IE) AT AC-3, 660 V, 690 V	4.9 A
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RATED OPERATIONAL CURRENT (IE) AT DC-1, LOAD-BREAK SWITCHES L/R = 1 MS	10 A
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RATED OPERATIONAL CURRENT (IE) AT DC-13, CONTROL SWITCHES L/R = 50 MS	10 A
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RATED OPERATIONAL	1 A
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Features & functions

FEATURES	Complete device in housing
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FITTED WITH:	Black thumb grip and front plate 0 (off) position
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INSCRIPTION	0-3
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NUMBER OF POLES	Single-pole
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CURRENT (IE) AT DC-21, 240 V	
RATED OPERATIONAL CURRENT (IE) AT DC-23A, 120 V	5 A
RATED OPERATIONAL CURRENT (IE) AT DC-23A, 24 V	10 A
RATED OPERATIONAL CURRENT (IE) AT DC-23A, 240 V	5 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) 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-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, 500 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
RATED UNINTERRUPTED CURRENT (IU)	20 A
UNINTERRUPTED CURRENT	Rated uninterrupted current I _u is specified for max. cross-section.

General information	
DEGREE OF PROTECTION	IP65
DEGREE OF PROTECTION (FRONT SIDE)	IP65 NEMA 12
LIFESPAN, MECHANICAL	400,000 Operations
MOUNTING METHOD	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 Front mounting
SWITCHING ANGLE	60 °
TYPE	Step switch for heating

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

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, 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

NUMBER OF CONTACTS IN SERIES AT DC-23A, 48 V

2

NUMBER OF CONTACTS IN SERIES AT DC-23A, 60 V

3

RATED MAKING CAPACITY UP TO 690 V (COS PHI TO IEC/EN 60947-3)

130 A

VOLTAGE PER CONTACT PAIR IN SERIES

60 V

Terminal capacities

SCREW SIZE

M3.5, Terminal screw

TERMINAL CAPACITY (FLEXIBLE WITH FERRULE)

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

TERMINAL CAPACITY (SOLID/STRANDED)

1 x (1 - 2.5) mm²
2 x (1 - 2.5) mm²

TIGHTENING TORQUE

1 Nm, Screw terminals

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	eaton-step-switch-declaration-of-conformity-uk251327en.pdf eaton-step-switch-declaration-of-conformity-eu250844en.pdf
DRAWINGS	eaton-rotary-switches-dimensions-t0-step-switch-dimensions.eps eaton-rotary-switches-t0-changeover-switch-dimensions.eps eaton-rotary-switches-front-plate-t0-step-switch-symbol-022.eps eaton-general-rotary-switch-t0-step-switch-symbol.eps eaton-general-totally-insulated-t0-main-switch-symbol.eps
ECAD MODEL	DA-CE-ETN.T0-2-95_I1
INSTALLATION INSTRUCTIONS	IL03801007Z2021_06.pdf
INSTALLATION VIDEOS	Eaton's P Switch-disconnectors used in a factory
MCAD MODEL	eaton-molded-case-switches-mcad-drawings-bauform2.dwg DA-CS-bauform2
PRODUCT NOTIFICATIONS	MZ008005ZU_Orderform_Customized_Switch.pdf MZ008006ZU_Orderform_Customized_Switch.pdf
WIRING DIAGRAMS	eaton-rotary-switches-t0-step-switch-wiring-diagram-003.eps eaton-rotary-switches-t0-step-switch-wiring-diagram-004.eps

PROJECT NAME:
PROJECT NUMBER:
PREPARED BY:
DATE:



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