



Spring-return switch, T0, 20 A, flush mounting, 2 contact unit(s), Contacts: 4, Spring-return in START position, 45 °, momentary/maintained, START>1-0-2<START, Design number 8177

Part no. T0-2-8177/E

015130

EL Number 1456266
(Norway)

General specifications		
Product name		Eaton Moeller® series T0 Spring-return switch
Part no.		T0-2-8177/E
EAN		4015080151302
Product Length/Depth		86 millimetre
Product height		48 millimetre
Product width		48 millimetre
Product weight		0.108 kilogram
Certifications		IEC/EN 60947 CSA File No.: 012528 IEC/EN 60204 UL Category Control No.: NLRV UL 60947-4-1 UL VDE 0660 CSA-C22.2 No. 60947-4-1-14 CSA Class No.: 3211-05 UL File No.: E36332 CSA CE CSA-C22.2 No. 94 IEC/EN 60947-3
Product Tradename		T0
Product Type		Spring-return switch
Product Sub Type		None
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		" START>1-0-2<START "
Number of poles		Two-pole
General information		
Degree of protection		IP65 NEMA 1 NEMA 12
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		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		Spring-return 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, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30
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 (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 I/r = 1 ms			10 A
Rated operational current (Ie) at DC-13, control switches L/R = 50 ms			10 A
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, 500 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 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 Iu is specified for max. cross-section.

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
Switching capacity		
Load rating		1.6 x I# (with intermittent operation class 12, 40 % duty factor) 2 x I# (with intermittent operation class 12, 25 % duty factor) 1.3 x I# (with intermittent operation class 12, 60 % 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
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
Contacts		
Control circuit reliability		1 failure per 100,000 switching operations statistically determined, at 24 V DC, 10 mA)
Number of contacts		4
Actuator		
Actuator function		Spring-return in START position Maintained/momentary With 0 (Off) position Spring-return from both directions
Actuator type		Toggle
Number of switch positions		5
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.

Technical data ETIM 9.0

Low-voltage industrial components (EG000017) / Control switch (EC002611)		
Electric engineering, automation, process control engineering / Low-voltage switch technology / Off-load switch, circuit breaker, control switch / Control switch (ecl@ss13-27-37-14-14 [ACN998016])		
Type of switch		On/Off switch
Number of poles		2
Max. rated operation voltage Ue AC	V	690
Rated permanent current Iu	A	20
Number of switch positions		5
With zero (off) position		Yes
With retraction in 0-position		No
Device construction		Built-in device
Width in number of modular spacings		0
Suitable for floor mounting		No
Suitable for front mounting		Yes
Suitable for distribution board installation		No
Suitable for intermediate mounting		No
Complete device in housing		No
Type of control element		Toggle
Front shield size		48x48 mm
Degree of protection (IP), front side		IP65
Degree of protection (NEMA), front side		12