

Spring-return switch, T0, 20 A, surface mounting, 2 contact unit(s),
 Contacts: 4, Spring-return in START position, 45 °, momentary/maintained,
 START>1-0-2<START, design no. 8177



Part no. T0-2-8177/I1
Catalog No. 207101

EL-Nummer (Norway) 1456267

Similar to illustration

Delivery program

Product range			Control switches
Part group reference			T0
Basic function			Spring-return switch with black thumb grip and front plate
Contacts			4
Spring-return			Spring-return in START position
Degree of Protection			IP65
Design			surface mounting
Switching angle		°	45
Switching performance			momentary/maintained With 0 (Off) position with spring-return from both directions
Design number			8177
front plate			START>1-0-2<START
Motor rating AC-23A, 50 - 60 Hz			
400 V	P	kW	5.5
Rated uninterrupted current	I _u	A	20
Note on rated uninterrupted current I _u			Rated uninterrupted current I _u is specified for max. cross-section.
Number of contact units		contact unit(s)	2

Technical data

General

Standards			IEC/EN 60947, VDE 0660, IEC/EN 60204 Switch-disconnector according to IEC/EN 60947-3
Climatic proofing			Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30
Ambient temperature			
Enclosed		°C	-25 - +40
Overvoltage category/pollution degree			III/3
Rated impulse withstand voltage	U _{imp}	V AC	6000
Mechanical shock resistance		g	15
Mounting position			As required

Contacts

Electrical characteristics			
Rated operational voltage	U _e	V AC	690
Rated uninterrupted current	I _u	A	20
Note on rated uninterrupted current I _u			Rated uninterrupted current I _u is specified for max. cross-section.
Load rating with intermittent operation, class 12			
AB 25 % DF		x I _e	2
AB 40 % DF		x I _e	1.6
AB 60 % DF		x I _e	1.3
Short-circuit rating			
Fuse		A gG/gL	20

Rated short-time withstand current (1 s current)	I_{cw}	A_{rms}	320
Note on rated short-time withstand current I_{cw}			Current for a time of 1 second
Rated conditional short-circuit current	I_q	kA	6

Switching capacity

cos ϕ rated making capacity as per IEC 60947-3		A	130
Rated breaking capacity cos ϕ to IEC 60947-3		A	
230 V		A	100
400/415 V		A	110
500 V		A	80
690 V		A	60
Safe isolation to EN 61140			
between the contacts		V AC	440
Current heat loss per contact at I_e		W	0.6
Current heat loss per auxiliary circuit at I_e (AC-15/230 V)		CO	0.6
Lifespan, mechanical	Operations	$\times 10^6$	> 0.4
Maximum operating frequency	Operations/h		1200
AC			
AC-3			
Rating, motor load switch	P	kW	
220 V 230 V	P	kW	3
230 V Star-delta	P	kW	5.5
400 V 415 V	P	kW	5.5
400 V Star-delta	P	kW	7.5
500 V	P	kW	5.5
500 V Star-delta	P	kW	7.5
690 V	P	kW	4
690 V Star-delta	P	kW	5.5
Rated operational current motor load switch			
230 V	I_e	A	11.5
230 V star-delta	I_e	A	20
400V 415 V	I_e	A	11.5
400 V star-delta	I_e	A	20
500 V	I_e	A	9
500 V star-delta	I_e	A	15.6
690 V	I_e	A	4.9
690 V star-delta	I_e	A	8.5
AC-23A			
Motor rating AC-23A, 50 - 60 Hz	P	kW	
230 V	P	kW	3
400 V 415 V	P	kW	5.5
500 V	P	kW	7.5
690 V	P	kW	5.5
Rated operational current motor load switch			
230 V	I_e	A	13.3
400 V 415 V	I_e	A	13.3
500 V	I_e	A	13.3
690 V	I_e	A	7.6
DC			
DC-1, Load-break switches L/R = 1 ms			
Rated operational current	I_e	A	10
Voltage per contact pair in series		V	60
DC-21A	I_e	A	
Rated operational current	I_e	A	1
Contacts		Quantity	1

DC-23A, motor load switch L/R = 15 ms			
24 V			
Rated operational current	I_e	A	10
Contacts		Quantity	1
48 V			
Rated operational current	I_e	A	10
Contacts		Quantity	2
60 V			
Rated operational current	I_e	A	10
Contacts		Quantity	3
120 V			
Rated operational current	I_e	A	5
Contacts		Quantity	3
240 V			
Rated operational current	I_e	A	5
Contacts		Quantity	5
DC-13, Control switches L/R = 50 ms			
Rated operational current	I_e	A	10
Voltage per contact pair in series		V	32
Control circuit reliability at 24 V DC, 10 mA	Fault probability	H_F	$< 10^{-5}$, < 1 failure in 100,000 switching operations

Terminal capacities

Solid or stranded		mm ²	1 x (1 - 2,5) 2 x (1 - 2,5)
Flexible with ferrules to DIN 46228		mm ²	1 x (0.75 - 2.5) 2 x (0.75 - 2.5)
Terminal screw			M3.5
Tightening torque for terminal screw		Nm	1

Technical safety parameters:

Notes			B10 _d values as per EN ISO 13849-1, table C1
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Rating data for approved types

Terminal capacity			
Terminal screw			M3.5
Tightening torque		lb-in	8.83

Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	I_n	A	20
Heat dissipation per pole, current-dependent	P_{vid}	W	0.6
Equipment heat dissipation, current-dependent	P_{vid}	W	0
Static heat dissipation, non-current-dependent	P_{vs}	W	0
Heat dissipation capacity	P_{diss}	W	0
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	40
IEC/EN 61439 design verification			
10.2 Strength of materials and parts			
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 Verification of resistance of insulating materials to abnormal heat and fire due to internal electric 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 Insulation properties		
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 8.0

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@ss10.0.1-27-37-14-14 [ACN998011])

Type of switch		On/Off switch
Number of poles		2
Max. rated operation voltage U _e AC	V	690
Rated permanent current I _u	A	20
Number of switch positions		5
With zero (off) position		Yes
With retraction in 0-position		No
Device construction		Surface mounted device
Width in number of modular spacings		0
Suitable for floor mounting		Yes
Suitable for front mounting		No
Suitable for distribution board installation		No
Suitable for intermediate mounting		No
Complete device in housing		Yes
Type of control element		Toggle
Front shield size		48x48 mm
Degree of protection (IP), front side		IP65
Degree of protection (NEMA), front side		12