



Step switches, Contacts: 2, 20 A, front plate: 0-2, 45 °, maintained, centre mounting

Part no.
Article no.

T0-1-170/EZ
009349



Similar to illustration

Delivery program

Product range			Control switches
Part group reference			T0
Basic function			Step switches
			with black thumb grip and front plate
Contacts			2
Degree of Protection			Front IP65
Design			centre mounting
Contact sequence			
Switching angle		°	45
Switching performance			maintained With 0 (Off) position
Front plate no.			 FS 418
front plate			0-2
Motor rating AC-23A, 50 - 60 Hz			
400 V	P	kW	5.5
Rated uninterrupted current	I _u	A	20
Number of contact units		contact unit(s)	1

Technical data

General			
Standards			IEC/EN 60947, VDE 0660, IEC/EN 60204, CSA, UL 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			
Open		°C	-25 - +50
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

Protection against direct contact when actuated from front (EN 50274)			Finger and back-of-hand proof
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	x 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-21A			
Rated operational current switch			
440 V	I _e	A	20
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			
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 fault in 100000 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
Max. tightening torque		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

Contacts			
Rated operational voltage	U _e	V AC	600
Rated uninterrupted current max.			
Main conducting paths			
General use	I _U	A	16
Auxiliary contacts			
General Use	I _U	A	10
Pilot Duty			A 600 P 600
Switching capacity			

Maximum motor rating			
Single-phase			
120 V AC	HP	0.5	
200 V AC	HP	1	
240 V AC	HP	1.5	
Three-phase			
200 V AC	HP	3	
240 V AC	HP	3	
480 V AC	HP	7.5	
600 V AC	HP	7.5	
Short Circuit Current Rating	SCCR		
Basic Rating	kA	5	
max. Fuse	A	50	
High fault rating	kA	10	
max. Fuse	A	20, Class J	
Terminal capacity			
Solid or flexible conductor with ferrule	AWG	18 - 14	
Terminal screw		M3.5	
Tightening torque	lb-in	8.8	

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	50
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			Please enquire
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.
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Technical data ETIM 6.0

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@ss8.1-27-37-14-14 [ACN998008])		
Type of switch		Level switch
Number of poles		1
Max. rated operation voltage Ue AC	V	690
Rated permanent current Iu	A	20
Number of switch positions		3
With 0 (off) position		Yes
With retraction in 0-position		No
Device construction		Built-in device
Width in number of modular spacings		0
Suitable for ground mounting		No
Suitable for front mounting 4-hole		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		IP30

Approvals

Product Standards		UL 508; CSA-C22.2 No. 14-05; CSA-C22.2 No. 94; IEC/EN 60947-3; CE marking
UL File No.		E36332
UL Category Control No.		NLRV
CSA File No.		12528
CSA Class No.		3211-05
North America Certification		UL listed, CSA certified
Suitable for		Branch circuits, suitable as motor disconnect
Degree of Protection		IEC: IP65; UL/CSA Type 1, 12

Dimensions

Technical drawings of the ETIM 6.0 control switch showing front, side, and detail views with dimensions in mm.

- Front view: 48x48 mm square body, 17 mm top flange, 48 mm bottom flange, 48 mm width.
- Side view: 61 mm total length, 35 mm mounting flange, 1.5 - 5 mm mounting hole spacing.
- Detail view: 48 mm width, 45 mm height, 48 mm depth.
- Top view: 24.1 mm diameter, 22.3 mm diameter, 3.2 mm mounting hole spacing, 24.1 mm diameter.
- Bottom view: 35 mm mounting flange, 35 mm depth.

② ZFS-... Label mount not included as standard

Additional product information (links)

IL03801020Z (AWA1150-0586) Cam switches: flush mounting

IL03801020Z (AWA1150-0586) Cam switches: flush mounting	ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03801020Z2016_07.pdf
Display flip catalog page.	http://ecat.moeller.net/flip-cat/?edition=K115A&startpage=90
Technical overview cam switch, switch-disconnector	http://de.ecat.moeller.net/flip-cat/?edition=HPLTEv1&startpage=4.2
System overview cam switch T	http://de.ecat.moeller.net/flip-cat/?edition=HPLTEv1&startpage=4.4
System overview switch-disconnector P	http://de.ecat.moeller.net/flip-cat/?edition=HPLTEv1&startpage=4.6
Key to part numbers Cam switch	http://de.ecat.moeller.net/flip-cat/?edition=HPLTEv1&startpage=4.8
Key to part numbers Switch-disconnector	http://de.ecat.moeller.net/flip-cat/?edition=HPLTEv1&startpage=4.8
Switches for ATEX	http://www.coopercrouse-hinds.eu/en/products/25-ex-safety-and-main-current-switches.html