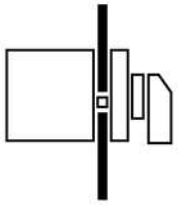
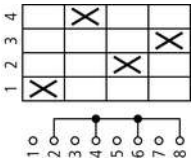




Step switch, 1p, Ie=12A, FS 1-4, 45°, maintained, 48x48 mm, flush mounting

Part no. T0-2-8231/E
Article no. 012750
Catalog No. CT02-8231-DOKBQ

Delivery programme

Product range			Control switches
Part group reference			T0
Basic function			Step switches
			with black thumb grip and front plate Without 0 (Off) position
Main circuits Poles			1
Number of steps			4 steps, 45°
Degree of Protection			Front IP65
Design			flush mounting
			
Contact sequence			
Motor rating AC-23A, 50 - 60 Hz			
400 V	P	kW	6.5
Rated uninterrupted current	I_u	A	20

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
Specially designed for North America	Yes, in combination with "+NA" (105864)
Degree of Protection	IEC: IP65; UL/CSA Type 1, 3R, 12

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		°C	
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

Mechanical variables			
Main circuits Poles			1
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 Iu 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 Icw			Current for a time of 1 second

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	4
400 V 415 V	P	kW	4
400 V Star-delta	P	kW	5.5
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	14.8

400V 415 V	I_e	A	11.5
400 V star-delta	I_e	A	11.3
500 V	I_e	A	9
500 V star-delta	I_e	A	12.1
690 V	I_e	A	4.9
690 V star-delta	I_e	A	6.5
AC-15			
Rated operational current control switch			
230 V	I_e	A	6
400 V 415 V	I_e	A	4
500 V	I_e	A	2
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	3.5
400 V 415 V	P	kW	6.5
500 V	P	kW	7.5
690 V	P	kW	6.5
Rated operational current motor load switch			
230 V	I_e	A	13.3
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 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

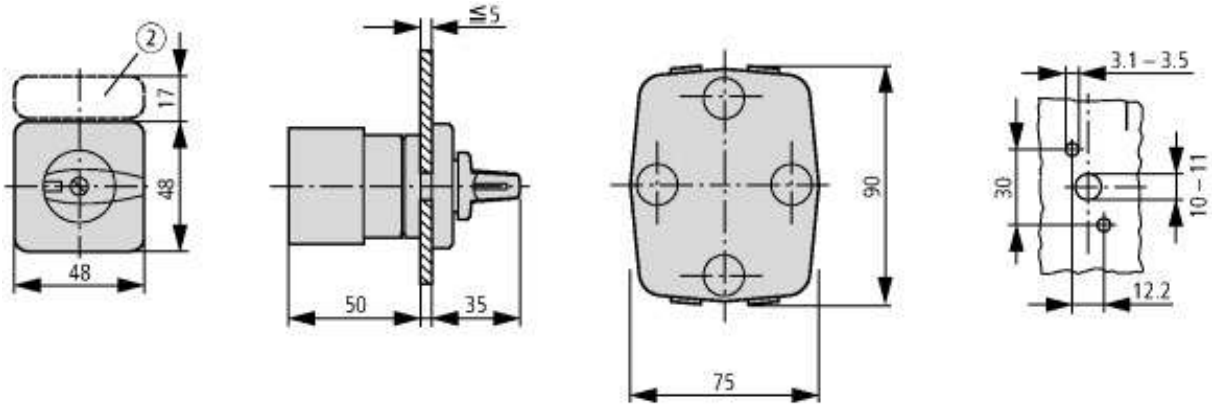
Technical data ETIM 5.0

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@ss8-27-37-14-14 [ACN998007])

Switch function			Level switch
Number of poles			1
Max. rated operation voltage Ue AC		V	690
Rated permanent current Iu		A	20
Number of switch positions			4
With 0 (off) position			No
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			IP65

Dimensions



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

Additional product information (links)

IL03801020Z (AWA1150-0586) Cam switch: Mounting

IL03801020Z (AWA1150-0586) Cam switch: Mounting	ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03801020Z2013_02.pdf
Form for ordering non-standard front plates	http://ecat.moeller.net/flip-cat/?edition=HPLEN&startpage=4.87
Display flip catalog page.	http://ecat.moeller.net/flip-cat/?edition=K115A&startpage=75
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
UL/CSA: Rating data for approved types	http://ecat.moeller.net/flip-cat/?edition=HPLTF&startpage=4.98

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