



Changeoverswitches, Contacts: 16, 20 A, front plate: 1-0-2, 60 °, maintained, rear mounting

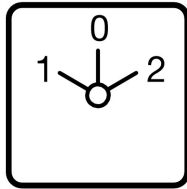
Part no. T0-8-8364/Z
Article no. 016145



Similar to illustration

Delivery program

Product range		Control switches																																																																																																																																				
Part group reference		T0																																																																																																																																				
Basic function		Changeoverswitches with black thumb grip and front plate																																																																																																																																				
Contacts		16																																																																																																																																				
Degree of Protection		Front IP65																																																																																																																																				
Design		rear mounting 																																																																																																																																				
Contact sequence		<table border="1"> <thead> <tr> <th></th> <th>1</th> <th>0</th> <th>2</th> </tr> </thead> <tbody> <tr><td>1</td><td>o</td><td>X</td><td></td></tr> <tr><td>2</td><td>o</td><td></td><td>X</td></tr> <tr><td>3</td><td>o</td><td></td><td></td></tr> <tr><td>4</td><td>o</td><td></td><td>X</td></tr> <tr><td>5</td><td>o</td><td>X</td><td></td></tr> <tr><td>6</td><td>o</td><td></td><td></td></tr> <tr><td>7</td><td>o</td><td></td><td>X</td></tr> <tr><td>8</td><td>o</td><td>X</td><td></td></tr> <tr><td>9</td><td>o</td><td></td><td></td></tr> <tr><td>10</td><td>o</td><td>X</td><td></td></tr> <tr><td>11</td><td>o</td><td></td><td>X</td></tr> <tr><td>12</td><td>o</td><td></td><td></td></tr> <tr><td>13</td><td>o</td><td>X</td><td></td></tr> <tr><td>14</td><td>o</td><td></td><td></td></tr> <tr><td>15</td><td>o</td><td></td><td>X</td></tr> <tr><td>16</td><td>o</td><td></td><td></td></tr> <tr><td>17</td><td>o</td><td>X</td><td></td></tr> <tr><td>18</td><td>o</td><td></td><td></td></tr> <tr><td>19</td><td>o</td><td></td><td>X</td></tr> <tr><td>20</td><td>o</td><td></td><td></td></tr> <tr><td>21</td><td>o</td><td>X</td><td></td></tr> <tr><td>22</td><td>o</td><td></td><td></td></tr> <tr><td>23</td><td>o</td><td></td><td>X</td></tr> <tr><td>24</td><td>o</td><td></td><td></td></tr> <tr><td>25</td><td>o</td><td>X</td><td></td></tr> <tr><td>26</td><td>o</td><td></td><td></td></tr> <tr><td>27</td><td>o</td><td></td><td>X</td></tr> <tr><td>28</td><td>o</td><td></td><td></td></tr> <tr><td>29</td><td>o</td><td>X</td><td></td></tr> <tr><td>30</td><td>o</td><td></td><td></td></tr> <tr><td>31</td><td>o</td><td></td><td>X</td></tr> <tr><td>32</td><td>o</td><td></td><td></td></tr> </tbody> </table>		1	0	2	1	o	X		2	o		X	3	o			4	o		X	5	o	X		6	o			7	o		X	8	o	X		9	o			10	o	X		11	o		X	12	o			13	o	X		14	o			15	o		X	16	o			17	o	X		18	o			19	o		X	20	o			21	o	X		22	o			23	o		X	24	o			25	o	X		26	o			27	o		X	28	o			29	o	X		30	o			31	o		X	32	o		
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Switching angle		60																																																																																																																																				
Switching performance		maintained With 0 (Off) position																																																																																																																																				

Front plate no.				
				FS 684
front plate				1-0-2
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)		8

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

$\cos \varphi$ rated making capacity as per IEC 60947-3		A		130
Rated breaking capacity $\cos \varphi$ 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			
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.

Technical data ETIM 6.0

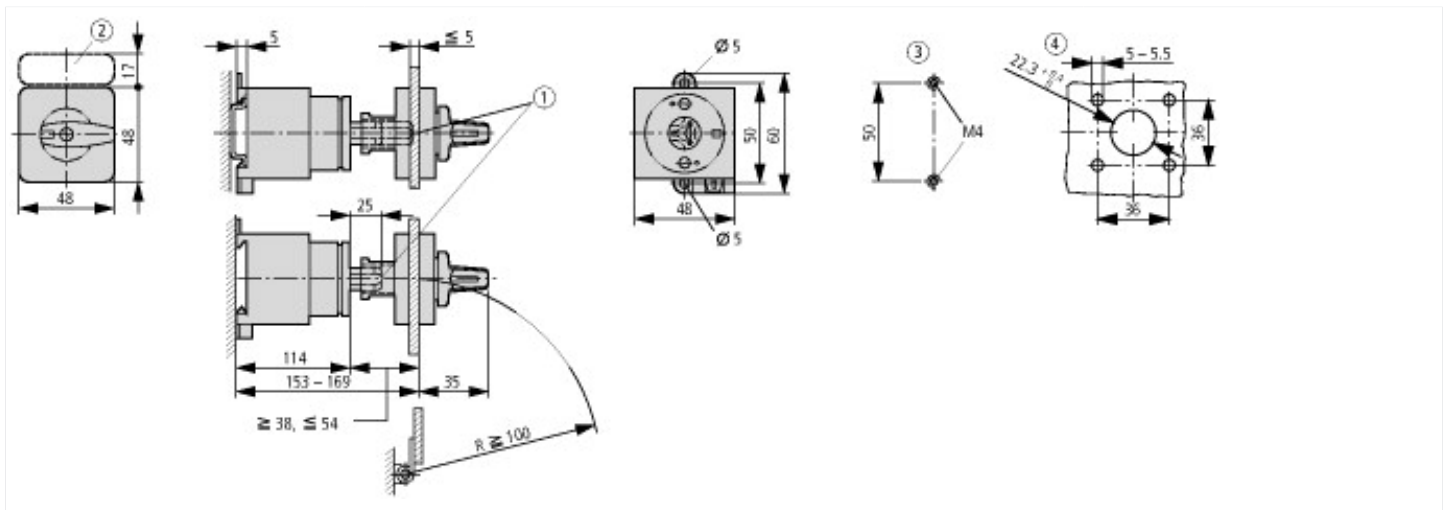
Low-voltage industrial components (EG000017) / Off-load switch (EC001105)		
Electric engineering, automation, process control engineering / Low-voltage switch technology / Off-load switch, circuit breaker, control switch / Changeover switch (ecl@ss8.1-27-37-14-05 [AKF062010])		
Model		Reverser
Number of poles		8
With 0 (off) position		Yes
With retraction in 0-position		No
Rated permanent current I _u	A	20
Rated operation current I _e at AC-3, 400 V	A	11.5
Rated operation power at AC-3, 400 V	kW	4
Degree of protection (IP), front side		IP65
Number of auxiliary contacts as normally closed contact		0
Number of auxiliary contacts as normally open contact		0
Number of auxiliary contacts as change-over contact		0
Suitable for ground mounting		Yes
Suitable for front mounting 4-hole		No
Suitable for distribution board installation		No
Suitable for intermediate mounting		Yes
Complete device in housing		No
Type of control element		Toggle
Type of electrical connection of main circuit		Screw connection

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, with an alternative front plate and/or terminal markings to those of the IEC type in combination with "+NA" (105864)
Suitable for		Branch circuits, suitable as motor disconnect
Degree of Protection		IEC: IP65; UL/CSA Type 1, 12

Dimensions



- ① Shaft extension with ZAV-T0 possible, max. 4 x 25 = 100 mm
- ② ZFS-... Label mount not included as standard
- ③ Drilling dimensions base
- ④ Drilling dimensions door

Additional product information (links)

IL03801021Z (AWA1150-0587) Cam switches: rear mounting

IL03801021Z (AWA1150-0587) Cam switches: rear mounting	ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03801021Z2016_07.pdf
Display flip catalog page.	http://ecat.moeller.net/flip-cat/?edition=K115A&startpage=44
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