### **DATASHEET - T0-8-8364/E**



Changeoverswitches, T0, 20 A, flush mounting, 8 contact unit(s), Contacts: 16, 60  $^{\circ}$ , maintained, With 0 (Off) position, 1-0-2, design no. 8364



Part no. T0-8-8364/E Catalog No. 016141

Similar to illustration

Delivery program		
Product range		Control switches
Part group reference		ТО
Basic function		Changeoverswitches
		with black thumb grip and front plate
Contacts		16
Degree of Protection		Front IP65
Design		flush mounting
Contact sequence		1 0 2 1 0 2 3 0
Switching angle	۰	60
Switching performance		maintained With 0 (Off) position
Design number		8364

Front plate no.			FS 684
			13 004
front plate			1-0-2
Motor rating AC-23A, 50 - 60 Hz			
400 V	P	kW	5.5
Rated uninterrupted current	I <sub>u</sub>	Α	20
Note on rated uninterrupted current !u			Rated uninterrupted current $\mathbf{I}_{\mathbf{u}}$ is specified for max. cross-section.
Number of contact units		contact unit(s)	8

## **Technical data**

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	$U_{\text{imp}}$	V AC	6000
Mechanical shock resistance		g	15
Mounting position			As required

### Contacts

Electrical characteristics			
Rated operational voltage	U <sub>e</sub>	V AC	690
Rated uninterrupted current	I <sub>u</sub>	Α	20
Note on rated uninterrupted current $\mathbf{I}_{\mathbf{u}}$			Rated uninterrupted current $\mathbf{I}_{\mathbf{u}}$ is specified for max. cross-section.
Load rating with intermittent operation, class 12			
AB 25 % DF		x I <sub>e</sub>	2
AB 40 % DF		x I <sub>e</sub>	1.6
AB 60 % DF		x I <sub>e</sub>	1.3
Short-circuit rating			
Fuse		A gG/gL	20
Rated short-time withstand current (1 s current)	I <sub>cw</sub>	$A_{rms}$	320
Note on rated short-time withstand current lcw			Current for a time of 1 second
Rated conditional short-circuit current	Iq	kA	6
Switching canacity			

### **Switching capacity**

$\cos\phi$ rated making capacity as per IEC 60947-3		Α	130
Rated breaking capacity $\cos\phi$ to IEC 60947-3		Α	
230 V		Α	100
400/415 V		Α	110
500 V		Α	80
690 V		Α	60
Safe isolation to EN 61140			
between the contacts		V AC	440
Current heat loss per contact at I <sub>e</sub>		W	0.6
Current heat loss per auxiliary circuit at I <sub>e</sub> (AC-15/230 V)		CO	0.6
Lifespan, mechanical	Operations	x 10 <sup>6</sup>	> 0.4
Maximum operating frequency	Operations/h		1200

AC			
AC-3			
Rating, motor load switch	Р	kW	
220 V 230 V	Р	kW	3
230 V Star-delta	P	kW	5.5
400 V 415 V	Р	kW	5.5
400 V Star-delta	Р	kW	7.5
500 V	Р	kW	5.5
500 V Star-delta	Р	kW	7.5
690 V	Р	kW	4
690 V Star-delta	Р	kW	5.5
Rated operational current motor load switch			
230 V	le	Α	11.5
230 V star-delta	I <sub>e</sub>	Α	20
400V 415 V	l <sub>e</sub>	Α	11.5
400 V star-delta	l <sub>e</sub>	Α	20
500 V	I <sub>e</sub>	Α	9
500 V star-delta	I <sub>e</sub>	Α	15.6
690 V	I <sub>e</sub>	Α	4.9
690 V star-delta	I <sub>e</sub>	Α	8.5
AC-23A			
Motor rating AC-23A, 50 - 60 Hz	P	kW	
230 V	P	kW	3
400 V 415 V	Р	kW	5.5
500 V	Р	kW	7.5
690 V	P	kW	5.5
Rated operational current motor load switch			
230 V	l <sub>e</sub>	Α	13.3
400 V 415 V	l <sub>e</sub>	Α	13.3
500 V	l <sub>e</sub>	Α	13.3
690 V	l <sub>e</sub>	Α	7.6
DC			
DC-1, Load-break switches L/R = 1 ms			
Rated operational current	le	Α	10
Voltage per contact pair in series		V	60
DC-21A	l <sub>e</sub>	Α	
Rated operational current	l <sub>e</sub>	Α	1
Contacts		Quantity	1
DC-23A, motor load switch L/R = 15 ms			
24 V			
Rated operational current	l <sub>e</sub>	Α	10
Contacts		Quantity	1
48 V		۸	10
Rated operational current	l <sub>e</sub>	A	10
Contacts		Quantity	2
60 V  Rated operational current		A	10
Contacts	l <sub>e</sub>	Quantity	
Lontacts 120 V		quantity	J
Rated operational current	I <sub>e</sub>	Α	5
Contacts	e	Quantity	
240 V		Lauritty	-
Rated operational current	I <sub>e</sub>	Α	5
Contacts	•	Quantity	
		,	

DC-13, Control switches L/R = 50 ms			
Rated operational current	I <sub>e</sub>	Α	10
Voltage per contact pair in series		V	32
Control circuit reliability at 24 V DC, 10 mA	Fault probability	H <sub>F</sub>	< 10 <sup>-5</sup> ,< 1 failure in 100,000 switching operations
Terminal capacities	, ,		
Solid or stranded		mm <sup>2</sup>	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 <sub>d</sub> values as per EN ISO 13849-1, table C1
Rating data for approved types			
Contacts			
Rated operational voltage	U <sub>e</sub>	V AC	600
Rated uninterrupted current max.			
Main conducting paths			
General use		Α	16
Auxiliary contacts			
General Use	I <sub>U</sub>	Α	10
Pilot Duty			A 600 P 300
Switching capacity			
Maximum motor rating			
Single-phase			
120 V AC		НР	0.5
200 V AC		НР	1
240 V AC		НР	1.5
Three-phase			
200 V AC		НР	3
240 V AC		НР	3
480 V AC		НР	7.5
600 V AC		НР	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		^	20, 01000 0
Solid or flexible conductor with ferrule		AWG	18 - 14
		AVVG	
Terminal screw			M3.5

# Design verification as per IEC/EN 61439

Tightening torque

Technical data for design verification  Rated operational current for specified heat dissipation  Heat dissipation per pole, current-dependent  Equipment heat dissipation, current-dependent  Pvid  V  0.6  Equipment heat dissipation, current-dependent  Pvid  V  0  Static heat dissipation, non-current-dependent  Pvs  V  0  Heat dissipation capacity  Poiss  V  0  Operating ambient temperature min.  Operating ambient temperature max.  C  C  50  IEC/EN 61439 design verification  10.2 Strength of materials and parts  Neets the product standard's requirements.				
Heat dissipation per pole, current-dependent  P <sub>vid</sub> W  0.6  Equipment heat dissipation, current-dependent  P <sub>vid</sub> W  0  Static heat dissipation, non-current-dependent  P <sub>vs</sub> W  0  Heat dissipation capacity  P <sub>diss</sub> 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	Technical data for design verification			
Equipment heat dissipation, current-dependent  Poid  P	Rated operational current for specified heat dissipation	In	Α	20
Static heat dissipation, non-current-dependent  Possible W  O  Operating ambient temperature min.  Operating ambient temperature max.  Operating ambient temperature max.  C  Operating ambient temperature max.  Operating ambient temperature max.  C  SO  IEC/EN 61439 design verification  10.2 Strength of materials and parts	Heat dissipation per pole, current-dependent	P <sub>vid</sub>	W	0.6
Heat dissipation capacity  Pdiss 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	Equipment heat dissipation, current-dependent	P <sub>vid</sub>	W	0
Operating ambient temperature min.  Operating ambient temperature max.  CC -25  Operating ambient temperature max.  CC 50  IEC/EN 61439 design verification  10.2 Strength of materials and parts	Static heat dissipation, non-current-dependent	$P_{vs}$	W	0
Operating ambient temperature max.  °C 50  IEC/EN 61439 design verification  10.2 Strength of materials and parts	Heat dissipation capacity	P <sub>diss</sub>	W	0
IEC/EN 61439 design verification  10.2 Strength of materials and parts	Operating ambient temperature min.		°C	-25
10.2 Strength of materials and parts	Operating ambient temperature max.		°C	50
	IEC/EN 61439 design verification			
10.2.2 Corrosion resistance Meets the product standard's requirements.	10.2 Strength of materials and parts			
	10.2.2 Corrosion resistance			Meets the product standard's requirements.

lb-in

8.8

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 7.0**

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@ss10.0.1-27-37-14-05 [AKF062013])

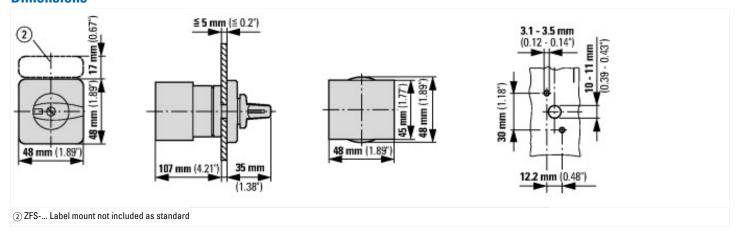
With 0 (off) position  With retraction in 0-position  Rated permanent current lu  Rated peration current le at AC-3, 400 V  Rated operation power at AC-3, 400 V  Degree of protection (IP), front side  Degree of protection (NEMA), front side  Degree of protection (NEMA), front side  Number of auxiliary contacts as normally closed contact  Number of auxiliary contacts as normally open contact  O  Suitable for ground mounting  Suitable for front mounting 4-hole  Suitable for distribution board installation  Suitable for intermediate mounting  Complete device in housing  Material housing  Type of control element  Yes  Toggle	Model		Reverser
With retraction in 0-position Rated permanent current lu Rated permanent current le at AC-3, 400 V Rated operation power at AC-3, 400 V Reted operation power at AC-3, 400 V Reted operation (IPD, front side Degree of protection (IPD, front side Degree of protection (NEMA), front side Degree of protection (NEMA), front side Number of auxiliary contacts as normally closed contact Number of auxiliary contacts as normally open contact Number of auxiliary contacts as change-over contact Suitable for ground mounting Suitable for front mounting 4-hole Suitable for intermediate mounting Suitable for intermediate mounting Complete device in housing Material housing Type of control element  No Do  No Do  No Do  No Do  Plastic Tyge of control element	Number of poles		8
Rated permanent current lu  Rated operation current le at AC-3, 400 V  Rated operation power at AC-3, 400 V  Rated operation power at AC-3, 400 V  Regree of protection (IP), front side  Degree of protection (NEMA), front side  Number of auxiliary contacts as normally closed contact  Number of auxiliary contacts as normally open contact  Number of auxiliary contacts as change-over contact  Number of auxiliary contacts as change-over contact  Number of auxiliary contacts as change-over contact  Suitable for ground mounting  Suitable for front mounting 4-hole  Suitable for intermediate mounting  Suitable for intermediate mounting  Complete device in housing  Material housing  Type of control element  A 20  11.5  A 11.5  A 11.5  A 11.5  A 11.5  A 12  O 0  O 0  O 0  No  No  Plastic  Toggle	With 0 (off) position		Yes
Rated operation current le at AC-3, 400 V  Rated operation power at AC-3, 400 V  Degree of protection (IP), front side  Degree of protection (NEMA), front side  Degree of protection (NEMA), front side  Number of auxiliary contacts as normally closed contact  Number of auxiliary contacts as normally open contact  Number of auxiliary contacts as change-over contact  No  Suitable for ground mounting  Suitable for intermediate mounting  Suitable for intermediate mounting  Complete device in housing  Material housing  Type of control element  Type of control element	With retraction in 0-position		No
Rated operation power at AC-3, 400 V  Degree of protection (IP), front side  Degree of protection (NEMA), front side  12  Number of auxiliary contacts as normally closed contact  Number of auxiliary contacts as normally open contact  Number of auxiliary contacts as change-over contact  Number of auxiliary contacts as change-over contact  Suitable for ground mounting  Suitable for front mounting 4-hole  Suitable for distribution board installation  Suitable for intermediate mounting  Complete device in housing  Material housing  Material housing  Type of control element  KW  4  4  12  0  No  No  No  No  Plastic  Tygele	Rated permanent current lu	Α	20
Degree of protection (IP), front side Degree of protection (NEMA), front side 12 Number of auxiliary contacts as normally closed contact 0 Number of auxiliary contacts as normally open contact 0 Number of auxiliary contacts as normally open contact 0 Number of auxiliary contacts as change-over contact 0 Suitable for ground mounting No Suitable for ground mounting Ves Suitable for distribution board installation No Suitable for intermediate mounting No Complete device in housing Material housing Type of control element Toggle	Rated operation current le at AC-3, 400 V	Α	11.5
Degree of protection (NEMA), front side  Number of auxiliary contacts as normally closed contact  Number of auxiliary contacts as normally open contact  Number of auxiliary contacts as change-over contact  Number of auxiliary contacts as change-over contact  Number of auxiliary contacts as change-over contact  No  Suitable for ground mounting  No  Suitable for front mounting 4-hole  Yes  Suitable for distribution board installation  No  Complete device in housing  No  Material housing  Plastic  Type of control element  Toggle	Rated operation power at AC-3, 400 V	kW	4
Number of auxiliary contacts as normally closed contact  Number of auxiliary contacts as normally open contact  Number of auxiliary contacts as change-over contact  Number of auxiliary contacts as change-over contact  No 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 Material housing  Plastic Type of control element  Toggle	Degree of protection (IP), front side		IP65
Number of auxiliary contacts as normally open contact  Number of auxiliary contacts as change-over contact  Suitable for ground mounting  No  Suitable for front mounting 4-hole  Suitable for distribution board installation  No  Suitable for intermediate mounting  No  Complete device in housing  Material housing  Type of control element  O  O  O  D  D  D  D  D  D  D  D  D  D	Degree of protection (NEMA), front side		12
Number of auxiliary contacts as change-over contact  Suitable for ground mounting  No  Suitable for front mounting 4-hole  Suitable for distribution board installation  No  Suitable for intermediate mounting  Complete device in housing  Mo  Material housing  Type of control element  O  O  O  O  O  O  O  O  O  O  O  O  O	Number of auxiliary contacts as normally closed contact		0
Suitable for ground mounting  Suitable for front mounting 4-hole  Suitable for distribution board installation  Suitable for intermediate mounting  Complete device in housing  Mo  Material housing  Type of control element  No  Toggle	Number of auxiliary contacts as normally open contact		0
Suitable for front mounting 4-hole  Suitable for distribution board installation  No  Suitable for intermediate mounting  No  Complete device in housing  Material housing  Type of control element  Yes  No  No  Toggle	Number of auxiliary contacts as change-over contact		0
Suitable for distribution board installation  Suitable for intermediate mounting  No  Complete device in housing  No  Material housing  Type of control element  No  Toggle	Suitable for ground mounting		No
Suitable for intermediate mounting  Complete device in housing  Material housing  Type of control element  No  Plastic  Toggle	Suitable for front mounting 4-hole		Yes
Complete device in housing  No Material housing  Plastic  Type of control element  Toggle	Suitable for distribution board installation		No
Material housing Plastic  Type of control element Toggle	Suitable for intermediate mounting		No
Type of control element Toggle	Complete device in housing		No
	Material housing		Plastic
Type of electrical connection of main circuit Screw connection	Type of control element		Toggle
	Type of electrical connection of main circuit		Screw connection

# **Approvals**

Product Standards	UL 60947-4-1;CSA - C22.2 No. 60947-4-1-14; 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**



## **Additional product information (links)**

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