### **DATASHEET - T0-2-15907/E**



Changeoverswitches, T0, 20 A, flush mounting, 2 contact unit(s), Contacts: 4, With spring-return from START, 45  $^{\circ}$ , momentary/maintained, AUTO-0-HAND<br/>START, design no. 15907



Part no. T0-2-15907/E Catalog No. 066931

Delivery program			
Product range			Control switches
Part group reference			ТО
Basic function			Changeoverswitches
			with black thumb grip and front plate
Contacts			4
Spring-return			With spring-return from START
Degree of Protection			Front IP65
Design			flush mounting
Contact sequence			START HAND O AUTO O O O O O O O O O
Switching angle		0	45
Switching performance			momentary/maintained With 0 (Off) position With spring-return to MANUAL
Design number			15907
Front plate no.			AUTO HAND START FS 1413890
front plate			AUTO-0-HAND <start< td=""></start<>
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)	2

#### 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	r	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 !u			Rated uninterrupted current $I_u$ is specified for max. cross-section.
Load rating with intermittent operation, class 12			
AB 25 % DF		x l <sub>e</sub>	2
AB 40 % DF		x l <sub>e</sub>	1.6
AB 60 % DF		x I <sub>e</sub>	1.3
Short-circuit rating		e	
Fuse		A gG/gL	20
Rated short-time withstand current (1 s current)	I <sub>cw</sub>	A <sub>rms</sub>	320
Note on rated short-time withstand current lcw	'cw	rms	Current for a time of 1 second
Rated conditional short-circuit current		ĿΛ	
Switching capacity	Iq	kA	6
cos φ rated making capacity as per IEC 60947-3		Α	130
Rated breaking capacity cos $\phi$ 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 l <sub>e</sub>		W	0.6
Current heat loss per auxiliary circuit at I <sub>e</sub> (AC-15/230 V)		CO	0.6
	0		
Lifespan, mechanical	Operations	x 10 <sup>6</sup>	> 0.4
Maximum operating frequency	Operations/h		1200
AC			
AC-3			
Rating, motor load switch	P	kW	
220 V 230 V	Р	kW	3
230 V Star-delta	Р	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	l <sub>e</sub>	Α	11.5
230 V star-delta	l <sub>e</sub>	Α	20
400V 415 V	le	Α	11.5
400 V star-delta	l <sub>e</sub>	Α	20
500 V	l <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	Ü		
Motor rating AC-23A, 50 - 60 Hz	Р	kW	
230 V	P	kW	3
400 V 415 V	P	kW	5.5

Read operational current notal lead avoided		_		
Related operational carrent motor lead savieth         I         A         33           250 V         I         A         132           600 V 45 V         I         A         132           600 V         I         A         132           COLUMAN SAVIETA LINE         I         A         132           BOL Load break saviethes LIR-1 ns         V         I         C           Third dependent carrier         I         A         I           Cottacts         I         A         I <td>500 V</td> <td>Р</td> <td>kW</td> <td>7.5</td>	500 V	Р	kW	7.5
2019		Р	kW	5.5
400 V415 V				
SOL	230 V	l <sub>e</sub>	Α	13.3
	400 V 415 V	l <sub>e</sub>	Α	13.3
DC-1, Load-branks whiches L/Π - 1 mm	500 V	le	Α	13.3
DOI: 1, Load broak sorkchels UR = 1 ms	690 V	l <sub>e</sub>	Α	7.6
Reted operational current         I, will be a processed pair in saries         V. Weet a per centred pair in sarie	DC			
Voltage per contact pair in seriese   V   E	DC-1, Load-break switches L/R = 1 ms			
DC-21A   Rund operational current   I	Rated operational current	l <sub>e</sub>	Α	10
Rated operational current   Part   Part   Rated operational current   Part	Voltage per contact pair in series		٧	60
Contacts	DC-21A	I <sub>e</sub>	Α	
DC-22A, motor load switch L/R = 15 ms   24 V	Rated operational current	le	Α	1
### Aband operational current   A	Contacts		Quantity	1
Rated operational current	DC-23A, motor load switch L/R = 15 ms			
Contacts	24 V			
Contacts   ABV	Rated operational current	I <sub>e</sub>	Α	10
AB Note of perational current	Contacts		Quantity	1
Contacts	48 V			
Rotro operational current	Rated operational current	l <sub>e</sub>	Α	10
Rotro operational current			Quantity	2
Contactes	60 V			
Contactes	Rated operational current	I <sub>e</sub>	Α	10
120 V   Rated operational current			Quantity	3
Contacts  Rated operational current Contacts  DC-13, Control switches L/R = 50 ms  Rated operational current Rated operational voltage Rated operati	120 V		, , ,	
Contacts Atted operational current Atted operational current Contacts DC-13, Control switches L/R = 50 ms  Rated operational current Atted		ام	A	5
A Rated operational current Contacts  DC-13, Control switches L/R = 50 ms  Rated operational current I lead of current I lead operational current I lead of current I lead operational current I lead operational	Contacts	-	Quantity	3
Rated operational current Contacts  DC-13, Control switches L/R = 50 ms Rated operational current Voltage per contact pair in series Control circuit reliability at 24 V DC, 10 mA Pault probability  Terminal capacities  Fiexible with ferrules to DIN 46228  Terminal screw Tightening torque for terminal screw Tightening torque for terminal screw  Note Rated operational voltage Rated uninterrupted current max.  Main conducting paths General Use Auxiliary contacts  General Use Pilot Duty  Switching capacity  I v A 600 P 5000  A 6000 P 5000 P				
Contacts  DC-13, Control switches L/R = 50 ms  Rated operational current  Voltage per contact pair in series  Control circuit reliability at 24 V DC, 10 mA  Pault probability  Terminal capacities  Flexible with ferrules to DIN 46228  Terminal screw  Total terminal screw  Total terminal screw  Terminal		ام	Α	5
DC-13, Control switches L/R = 50 ms  Rated operational current Voltage per contact pair in series  Control circuit reliability at 24 V DC, 10 mA  Pault probability  Feminal capacities  Flexible with ferrules to DIN 46228  Flexible wi	·	· ·	Quantity	
Rated operational current Voltage per contact pair in series  Control circuit reliability at 24 V DC, 10 mA  Fault probability by the probability			,	
Voltage per contact pair in series  Control circuit reliability at 24 V DC, 10 mA  Fault probability  Fault		ام	A	10
Control circuit reliability at 24 V DC, 10 mA  Feurli probability  Ferminal capacities  Solid or stranded  S		· ·	V	32
Terminal capacities  Solid or stranded   mm²   1 x (1 - 2,5)		Fault		
Solid or stranded mm² 1x (1 - 2,5) 2x (1 - 2			'	< 10 ,< 1 failure in 100,000 switching operations
Flexible with ferrules to DIN 46228				. (4.07)
Terminal screw	Solid or stranded		mm <sup>2</sup>	1 x (1 - 2,5) 2 x (1 - 2,5)
Terminal screw Tightening torque for terminal screw Technical safety parameters:  Notes Rating data for approved types Contacts Rated operational voltage Rated uninterrupted current max.  Main conducting paths General use Auxiliary contacts  General Use Pilot Duty  Switching capacity  Ma.5  Ma.5  Ma.5  Ma.5  Ma.5  Ma.0  4.0  Mo.0  Mo.	Flexible with ferrules to DIN 46228		mm <sup>2</sup>	1 x (0.75 - 2.5)
Tightening torque for terminal screw  Technical safety parameters:  Notes B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  Rating data for approved types  Contacts Bated operational voltage U <sub>e</sub> V AC General use General use Auxiliary contacts  General Use Iu Auxiliary contacts  General Use Iu Auxiliary contacts  Switching capacity  Nm 1  About 10				
Notes B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  Rating data for approved types  Contacts Rated operational voltage Rated uninterrupted current max.  Main conducting paths General use Auxiliary contacts  General Use Pilot Duty  Switching capacity  B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  B10 <sub>d</sub> v	Terminal screw			
Notes B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  Rating data for approved types  Contacts Rated operational voltage Rated uninterrupted current max.  Main conducting paths General use Auxiliary contacts General Use Pilot Duty  Switching capacity  B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  B10 <sub>d</sub> values as per EN ISO 13849-1, table C1  A 600 P 300  Switching capacity			Nm	1
Rating data for approved types  Contacts  Rated operational voltage  Rated uninterrupted current max.  Main conducting paths  General use  Auxiliary contacts  General Use  Pilot Duty  Switching capacity  A 600  A 600  A 600  A 600  A 600  A 600  A 9 300  Switching capacity				R10a values as ner EN ISO 13849-1 table C1
Contacts Rated operational voltage Rated uninterrupted current max.  Main conducting paths General use Auxiliary contacts General Use Pilot Duty  Switching capacity  V AC  600  600  600  600  600  600  600  6				2.5g .3dd0 d0 p0. E11300 10070 1, table 01
Rated operational voltage  Rated uninterrupted current max.  Main conducting paths  General use Auxiliary contacts  General Use Pilot Duty  Switching capacity  V AC 600  1	Contacts			
Rated uninterrupted current max.  Main conducting paths  General use Auxiliary contacts  General Use Pilot Duty  Switching capacity  A  A  B  A  B  A  B  A  B  A  B  A  B  A  B  A  B  A  B  A  B  A  B  B		U <sub>e</sub>	V AC	600
Main conducting paths General use Auxiliary contacts General Use Pilot Duty Switching capacity  A 16  A 10  A 600  P 300  A 600  P 300				
General use Auxiliary contacts General Use Pilot Duty Switching capacity  A 16  A 10  A 600  P 300  P 300  A 600  P 300				
General Use Pilot Duty Switching capacity  A 600 P 300			Α	16
General Use Pilot Duty Switching capacity  A 600 P 300	Auxiliary contacts			
Pilot Duty A 600 P 300  Switching capacity		I <sub>U</sub>	Α	10
Switching capacity P 300	Pilot Duty			A 600
Maximum motor rating	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	А	50
High fault rating	kA	10
max. Fuse	А	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**

Design verification as per IEC/EN 61439			
Technical data for design verification			
Rated operational current for specified heat dissipation	In	Α	20
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
EC/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 observed.
10.12 Electromagnetic compatibility			Is the panel builder's responsibility. The specifications for the switchgear must 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) / 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 [ACN988011])

Type of switch		Reverser
Number of poles		2
Max. rated operation voltage Ue AC	V	690
Rated permanent current lu	Α	20
Number of switch positions		4
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		IP65
Degree of protection (NEMA), front side		12

# **Approvals**

7.66.0.0.0	
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**

