## DATASHEET - T0-3-15027/EZ



Step switches, T0, 20 A, centre mounting, 3 contact unit(s), Contacts: 6, 45 °, maintained, With 0 (Off) position, 0-6, design no. 15027



Part no. Catalog No. T0-3-15027/EZ 012634

#### Similar to illustration

### **Delivery program**

Delivery program			
Product range			Control switches
Part group reference			ТО
Basic function			Step switches
			with black thumb grip and front plate
Contacts			6
Contact behavior			Uninterruptible
Degree of Protection			Front IP65
Design			centre mounting
Contact sequence			
witching angle		0	45
Switching performance			maintained With 0 (Off) position
Design number			15027
Front plate no.			$ \begin{bmatrix} 1 & 2 & 3 \\ 0 & - & 4 \\ 6 & 5 \end{bmatrix} $ FS 426
ront plate			0-6
Motor rating AC-23A, 50 - 60 Hz			
400 V	Р	kW	5.5
lated uninterrupted current	lu	A	20
lote on rated uninterrupted current !u			Rated uninterrupted current ${\rm I}_{\rm u}$ is specified for max. cross-section.

## **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 <sub>imp</sub>	V AC	6000
Mechanical shock resistance	Cimp		15
Mounting position		g	As required
Contacts			As required
Electrical characteristics			
Rated operational voltage	Ue	V AC	690
Rated uninterrupted current	l <sub>u</sub>	A	20
Note on rated uninterrupted current !u	·u		Rated uninterrupted current I <sub>u</sub> 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			
Fuse		A gG/gL	
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			Current for a time of 1 second
Rated conditional short-circuit current	Ι <sub>q</sub>	kA	6
Switching capacity			
$\cos \phi$ rated making capacity as per IEC 60947-3		A	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 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	Р	kW	5.5
400 V 415 V	Р	kW	5.5
400 V Star-delta	Р	kW	7.5
500 V	Ρ	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	A	11.5
230 V star-delta	le	A	20
400V 415 V	l <sub>e</sub>	A	11.5
400 V star-delta	l <sub>e</sub>	A	20
500 V		A	9
	l <sub>e</sub>		
500 V star-delta	l <sub>e</sub>	A	15.6
690 V	le	A	4.9
690 V star-delta	l <sub>e</sub>	А	8.5
AC-23A			

22VPWS00V 15VPV300V 15VPV395VPV395VPV395VVN395VVN395VVN395VVN395VVN395VVN395VVN395VVN395VVN395VVN395VVN395VVN395VVN395VVN395VNN3	Motor rating AC-23A, 50 - 60 Hz	Р	kW	
Add variablePNMNBV 435NASBV 435NANABV				3
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DC 2AIARed dependence functional server functional	Rated operational current	le	A	10
Rated operational current     I     Au     I       DC 23A motor load switch L/R = 15 ms     I     I     I       3A V     I     I     I       A Reid operational current     I     I     I       Rated operational current     I     I     I       A Reid operational current     I     I     I       Rated operational current     I     I<	Voltage per contact pair in series		V	60
Centeds     Centers	DC-21A	۱ <sub>e</sub>	A	
DC23A, moories awith L/R = 15 ms     Image generational curvant     Image generational curv	Rated operational current	۱ <sub>e</sub>	А	1
24VAed garational currentAeg Aed garational currentAeg Aeg Aeg Aeg Aeg Aeg Aeg Aeg Aeg Aeg	Contacts		Quantity	1
i ated operational currenti, iAi Cancelonational currenti Reid operational currentiiii Rei	DC-23A, motor load switch $L/R = 15 \text{ ms}$			
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f BVImage: persional currentImage: persional currentImag	Rated operational current	le	А	10
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bVImage: bot of the section of the secti	Rated operational current	l <sub>e</sub>	A	10
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20V         A         A           Rated operational current         Quanti         S           Contacts         Quanti         S           DC-13, Control switches L/R = 50 ms         A         S           Rated operational current         A         D           Voltage per contact pair in series         A         S           Control circuit reliability at 24 VDC, 10 mA         A         D           Forbial contact series         V         S           Terminal capacities         N         S		C		
Rated operational current         Image: space			addinary	
Contacts         Manual Mathematical M		la	Δ	5
Dc-13, Control switches L/R = 50 ms         Image: Mathematical Science of Sci		·e		
Rated operational currentI eAIVottage per contact pair in seriesFault probabilityV3Control circuit reliability at 24 V DC, 10 mAFault probabilityHe probability10 \$^{5}\$ 1 failure in 100,000 switching operationsTerminal capacitiesI probabilityI (1 2.5) 2.x (1 - 2.5) 2.x (1 - 2.5)Fexible with ferrules to DIN 46228mar probability1x (0.75 - 2.5) 2.x (0.75 - 2.5)Terminal capacitiesMar probability1x (0.75 - 2.5) 2.x (0.75 - 2.5)Terminal screwMar probabilityMar probabilityTeghtania proved for perminal screwMar probabilityMar probabilityTechnical safety parameters:Mar probabilityMar probabilityContactsMar per streinMar per streinRated operational voltageMar per streinMar per streinMain conducting pathsMar per streinMar per strein			Quantity	
Votage per contact pair in series         V         2           Control circuit reliability at 24 V DC, 10 mA         Fault probability         Fault probability         Fault probability         V         a           Terminal capacities         E         I         1/1 - 2,5         x			٨	10
Control circuit reliability at 24 VDC, 10 mA     Fault probability     Hr     clo <sup>5</sup> , 1 failure in 100,000 switching operations       Terminal capacities     Terminal capacities     Terminal capacities       Solid or stranded     Image: Provide Capacity Provide Cap		'e		
Terminal capacities         Solid or stranded       I × (1 - 2,5) × (1 - 2,5) × (1 - 2,5)         Flexible with ferrules to DIN 46228       I × (0,75 - 2,5) × (0,75 - 2,5)         Terminal screw       I × (0,75 - 2,5)         Terminal screw       Mm <sup>2</sup> I × (0,75 - 2,5)         Tightening torpute for terminal screw       Mm <sup>2</sup> Mu         Tightening torpute for terminal screw       Mm <sup>2</sup> Mu         Tightening torpute for terminal screw       Mu       Mu         Tightening torpute for terminal screw       Mu       Mu         Terminal screw       Mu       Mu       Mu         Terminal screw       Mu       Mu       Mu       Mu         Terminal screw       Mu		<b>F b</b>		
Solid or stranded     mm²     1× (1 - 2.5)       Flexible with ferrules to DIN 46228     mm²     1× (0.75 - 2.5)       Terninal screw     Mm²     1× (0.75 - 2.5)       Togthening torque for terminal screw     Mm²     Ma5       Togthening torque for terminal screw     Mm²     Ma5       Technical safety parameters:     Mm²     Ma5       Technical safety parameters:     Mm²     Ma1       Technical safety parameters:     Mm²     Ma1 values as per EN ISO 13849-1, table C1       Rating data for approved types     Ma1     Ma1       Contacts     Ma1     Ma1       Rated operational voltage     Mu     Ma1       Main conducting paths     Mu     Ma1       Main conducting paths     Ma1     Ma1       Auxiliary contacts     Mu     Ma1       General Use     Mu     Ma1	Control circuit reliability at 24 V DC, 10 mA		HF	< 10 <sup>-5</sup> ,< 1 failure in 100,000 switching operations
Flexible with ferrules to DIN 46228     mm     2 x (1 - 2,5)       Terminal screw     mm²     1 x (0.75 - 2.5)       Terminal screw     M3.5       Tightening torque for terminal screw     Mm     1       Technical safety parameters:     Mm     10       Technical safety parameters:     Mm     10       Rated operational voltage     Main     Main       Rated operational voltage     Main     Main       Main conducting paths     Main     Main       General use     Main     Main       Auxiliary contacts     Main     Main       Jeneral Use     June     Main	Terminal capacities			
Flexible with ferrules to DIN 46228     ann <sup>2</sup> ix (0.75 - 2.5)       Terminal screw     M3.5       Tightening torque for terminal screw     Nm     i Actional screw       Technical safety parameters:     Nm     i Actional screw       Totacia     Screw     Screw       Notes     Screw     Screw       Rated operational voltage     Main conducting paths     Screw       Main conducting paths     Yace     Screw       General use     Yace     Screw       General use     Yace     Screw       Senderal use     Yace     Screw       General Use     Yace     Screw       Senderal Use     Yace     Screw	Solid or stranded		mm <sup>2</sup>	
Terminal screw     2x (0.75 - 2.5)       Terminal screw     M3.5       Tightening torque for terminal screw     Nm     1       Technical safety parameters:     Nm     1       Technical safety parameters:     Nm     10d values as per EN ISO 13849-1, table C1       Rating data for approved types     Song     Song       Contacts     Image: Song     Song       Rated operational voltage     Veg     Main conducting paths       Main conducting paths     Image: Song     Song       General use     Image: Song     Nm       Auxiliary contacts     Image: Song     Song       Image: Song     Image: Song     Song       Image: Song     Image: Song     Song	Flouible with formulae to DIN 4000		2	
Tightening torque for terminal screw     Nm     1       Tightening torque for terminal screw     Nm     1       Technical safety parameters:     Nm     Nm       Notes     Image: Streme Screw     Nm       Rating data for approved types     Image: Streme Screw     Nm       Contacts     Image: Streme Screw     Nm       Rated operational voltage     Image: Streme Screw     Nm       Rated uninterrupted current max.     Image: Streme Screw     Nm       Main conducting paths     Image: Streme Screw     Image: Streme Screw       General use     Image: Streme Screw     Image: Streme Screw       Main general Use     Image: Streme Screw     Image: Streme Screw       Image: Streme Screw     Image: Streme Screw     Image: Streme Screw       Image: Streme Screw     Image: Streme Screw     Image: Streme Screw       Image: Streme Screw     Image: Streme Screw     Image: Streme Screw       Image: Streme Screw     Image: Streme Screw     Image: Streme Screw       Image: Streme Screw     Image: Streme Screw     Image: Streme Screw       Image: Streme Screw     Image: Streme Screw     Image: Streme Screw       Image: Streme Screw     Image: Streme Screw     Image: Streme Screw       Image: Streme Screw     Image: Streme Screw     Image: Streme Screw       Image: Streme	ו ופאושופ איננו ופורטופא נט טווא 40220		mm²	
Technical safety parameters:         Notes       Image: Section of the section	Terminal screw			M3.5
Technical safety parameters:         Notes       Image: Section of the section	Tightening torque for terminal screw		Nm	1
Rating data for approved types       Contacts     Image: Contact sector s	Technical safety parameters:			
Contacts     Image: Contact set of the s				B10 <sub>d</sub> values as per EN ISO 13849-1, table C1
Rated operational voltage     Ue     V AC     600       Rated uninterrupted current max.     Main conducting paths     Main conducting paths     Main conducting paths       General use     Auxiliary contacts     A     A       General Use     Iu     A     Iu	Rating data for approved types			
Rated uninterrupted current max.     Part Part Part Part Part Part Part Part				
Main conducting paths     Image: Constraint of the second of	Rated operational voltage	U <sub>e</sub>	V AC	600
General use     A     A       Auxiliary contacts     I     I       General Use     Iu     A	Rated uninterrupted current max.			
Auxiliary contacts     Image: Contact set of the se	Main conducting paths			
General Use IU A 10	General use		А	16
	Auxiliary contacts			
Pilot Duty A 600	General Use	lu	А	10
	Pilot Duty			A 600

		P 300
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

Technical data for design verification			
Rated operational current for specified heat dissipation	I <sub>n</sub>	А	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
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			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.

Is the panel builder's responsibility. The specifications for the switchgear must be observed.

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	
[ACN998011])	

Type of switch		Level switch
Number of poles		1
Max. rated operation voltage Ue AC	V	690
Rated permanent current lu	А	20
Number of switch positions		7
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**

IndexmarkingUL File No.E36332UL Category Control No.NLRVCSA File No.12528CSA File No.SaleUL Category Control No.UL Intercent of the second of the seco		
UL Category Control No.     NLRV       CSA File No.     12528       CSA Class No.     3211-05       North America Certification     IL listed, CSA certified       Suitable for     Branch circuits, suitable as motor disconnect	Product Standards	
CSA File No.     12528       CSA Class No.     3211-05       North America Certification     UL listed, CSA certified       Suitable for     Branch circuits, suitable as motor disconnect	UL File No.	E36332
CSA Class No.     3211-05       North America Certification     UL listed, CSA certified       Suitable for     Branch circuits, suitable as motor disconnect	UL Category Control No.	NLRV
North America Certification     UL listed, CSA certified       Suitable for     Branch circuits, suitable as motor disconnect	CSA File No.	12528
Suitable for Branch circuits, suitable as motor disconnect	CSA Class No.	3211-05
	North America Certification	UL listed, CSA certified
Degree of Protection IEC: IP65; UL/CSA Type 1, 12	Suitable for	Branch circuits, suitable as motor disconnect
	Degree of Protection	IEC: IP65; UL/CSA Type 1, 12

## **Dimensions**

