### **DATASHEET - T0-3-15131/I1**



Step switches, T0, 20 A, surface mounting, 3 contact unit(s), Contacts: 6, 45  $^{\circ}$ , maintained, With 0 (Off) position, 0-3, design no. 15131



Part no. T0-3-15131/l1 Catalog No. 222481



Similar to illustration

Product range Per grang perference Passis function Personal passis func	Sililia to liusu augii			
Part group reference Basic function  Step switches with black thumb grip and front plate 6  Degree of Protection  Design  Contact sequence  As a contact sequence  Contact sequence  Contact sequence  As a contact sequence  Contac	Delivery program			
Step switches  with black thumb grip and front plate  5 to 10 totally insulated  Service mounting  Switching angle Switching a	Product range			Control switches
Design  Design mumber  Design number  Design nu	Part group reference			то
Corracts Degree of Protection  Design  Corract sequence  The surface mounting  As a surface mounting  FS 420  FS 420  FS 420  Motor rating AC-23A, 50 - 60 Hz  As a surface mounting  As a sur	Basic function			Step switches
Degree of Protection  Design  Contact sequence  Contact sequence  Switching angle  Switching performance  Design number  Front plate no.  FS 420  FS 420  FS 420  Motor rating AC-23A, 50 - 60 Hz  400 V  AND THE PROTECTION A				with black thumb grip and front plate
Design  Contact sequence  Contact sequence  Switching angle Switching angle Switching angle Switching angle Switching performance  Design number Front plate no.  Front plate  Motor rating AC-23A, 50 - 60 Hz  400  P Rated uninterrupted current 1,  Number of contact unints  Contact  Salted uninterrupted current 1,  Salted uninterr	Contacts			6
Design  Contact sequence  Switching angle Switching performance  Design number Front plate no.  Front plate no.  Front plate  Motor rating AC-23A, 50 - 60 Hz  400 V  Rated uninterrupted current I <sub>u</sub> Number of contact units  Switching performance  P	Degree of Protection			IP65
Contact sequence  Switching angle Switching performance  Design number Front plate no.  FS 420  FS 420  O-3  FS 420  With 00 V P KW 5.5  Red uninterrupted current I <sub>u</sub> is specified for mex. cross-section.  Number of contact units  Number of contact units  Switching angle  * 45  ***maintained With 0(0ff) position  15131  FS 420  O-3  ***FS 420  O-3  ***Reted uninterrupted current I <sub>u</sub> is specified for mex. cross-section.				totally insulated
Switching angle  Switching performance  *** 45 maintained With 0 (0ff) position  15131  Front plate no.  *** FS 420  FS 420  *** FS 420  *	Design			surface mounting
Switching angle  Switching performance  *** 45 maintained With 0 (0ff) position  15131  Front plate no.  *** FS 420  FS 420  *** FS 420  *				
Switching performance  Design number  Front plate no.  Front plate no.  Front plate no.  Front plate no.  P kW 5.5  Rated uninterrupted current I <sub>u</sub> Number of contact units  maintained With 0 (Off) position  15131  FS 420  FS 420  0-3  Rated uninterrupted current I <sub>u</sub> is specified for max. cross-section.	Contact sequence			11 0 0 1 2 3 1 1 0 0 1 2 3 1 1 0 0 1 2 3 1 1 0 0 1 2 3 1 1 0 0 1 1 0 1 0 1 0 1 0 1 0 1 0 1 0
With 0 (Off) position  Design number  Front plate no.  P kW 5.5  Rated uninterrupted current I <sub>u</sub> is specified for max. cross-section.  Number of contact units  With 0 (Off) position  With 0 (Off) position  15131  FS 420  FS 420  0-3  Rated uninterrupted current I <sub>u</sub> is specified for max. cross-section.	Switching angle		0	45
Front plate no.  Front plate no.  FS 420  FS 420  Motor rating AC-23A, 50 - 60 Hz  400 V  P  kW  5.5  Rated uninterrupted current  lu  A  20  Rated uninterrupted current lu  Number of contact units  Number of contact units	Switching performance			
FS 420  Front plate  0-3  Motor rating AC-23A, 50 - 60 Hz  400 V  P  kW  5.5  Rated uninterrupted current  Iu  A  20  Note on rated uninterrupted current Iu  Number of contact units  contact  3	Design number			15131
Motor rating AC-23A, 50 - 60 Hz  400 V P kW 5.5  Rated uninterrupted current I <sub>u</sub> A 20  Note on rated uninterrupted current I <sub>u</sub> is specified for max. cross-section.  Number of contact units contact  The section of t	Front plate no.			
400 V P kW 5.5  Rated uninterrupted current I <sub>u</sub> A 20  Note on rated uninterrupted current I <sub>u</sub> is specified for max. cross-section.  Number of contact units contact  3	front plate			0-3
Rated uninterrupted current  I <sub>u</sub> A  20  Note on rated uninterrupted current I <sub>u</sub> is specified for max. cross-section.  Number of contact units  contact  3	Motor rating AC-23A, 50 - 60 Hz			
Note on rated uninterrupted current l <sub>u</sub> is specified for max. cross-section.  Number of contact units contact  3	400 V	P	kW	5.5
Number of contact units contact 3	Rated uninterrupted current	I <sub>u</sub>	Α	20
Number of contact units contact unit(s) 3 unit(s)	Note on rated uninterrupted current !u			Rated uninterrupted current $I_u$ is specified for max. cross-section.
	Number of contact units			3

# Technical data

Ge	n	er	a
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Standards	IEC/EN 60947, VDE 0660, IEC/EN 60204 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			
Enclosed		°C	-25 - +40
Overvoltage category/pollution degree			III/3
Rated impulse withstand voltage	U <sub>imp</sub>	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 !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	$I_q$	kA	6
Switching capacity			
cos φ rated making capacity as per IEC 60947-3		Α	130
Rated breaking capacity cos φ to IEC 60947-3		Α	
230 V		Α	100
400/415 V		Α	110
500 V		A	80
690 V		Α	60
Safe isolation to EN 61140 between the contacts		V AC	440
			440
Current heat loss per contact at I <sub>e</sub> Current heat loss per auxiliary circuit at I <sub>e</sub> (AC-15/230 V)		W CO	0.6 0.6
	Onevetiene		
Lifespan, mechanical	Operations	x 10 <sup>6</sup>	> 0.4
Maximum operating frequency	Operations/h		1200
AC			
AC-3	D	LAAZ	
Rating, motor load switch	P	kW	2
220 V 230 V 230 V Star-delta	P P	kW	3 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 <sub>e</sub>	Α	11.5
230 V star-delta	I <sub>e</sub>	Α	20
400V 415 V	I <sub>e</sub>	Α	11.5
400 V star-delta	I <sub>e</sub>	Α	20
500 V	I <sub>e</sub>	Α	9
500 V star-delta	I <sub>e</sub>	A	15.6
690 V	I <sub>e</sub>	A	4.9
690 V star-delta		A	8.5
ooo + otal doitu	l <sub>e</sub>	′`	

AC-23A			
Motor rating AC-23A, 50 - 60 Hz	Р	kW	
230 V	Р	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		KVV	J.0
230 V	l <sub>e</sub>	Α	13.3
400 V 415 V		A	13.3
	l <sub>e</sub>		
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	l <sub>e</sub>	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			
Rated operational current	l <sub>e</sub>	Α	10
Contacts		Quantity	2
60 V			
Rated operational current	le	Α	10
Contacts		Quantity	3
120 V			
Rated operational current	I <sub>e</sub>	Α	5
Contacts		Quantity	3
240 V		,	
Rated operational current	I <sub>e</sub>	A	5
Contacts	C	Quantity	
DC-13, Control switches L/R = 50 ms			-
Rated operational current	l <sub>e</sub>	Α	10
Voltage per contact pair in series	C	V	32
Control circuit reliability at 24 V DC, 10 mA	Fault	H <sub>F</sub>	
	probability		< 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 <sup>2</sup>	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			$\mathrm{B10_{d}}$ values as per EN ISO 13849-1, table C1
Rating data for approved types			
Terminal capacity			
Terminal screw			M3.5

## 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	$P_{vs}$	W	0
Heat dissipation capacity	P <sub>diss</sub>	W	0
Operating ambient temperature min.		°C	-25
Operating ambient temperature max.		°C	40
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 switch gear must be observed. $\label{eq:continuous}$
10.12 Electromagnetic compatibility			Is the panel builder's responsibility. The specifications for the switch gear must be observed. $\label{eq:constraint}$
10.13 Mechanical function			The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

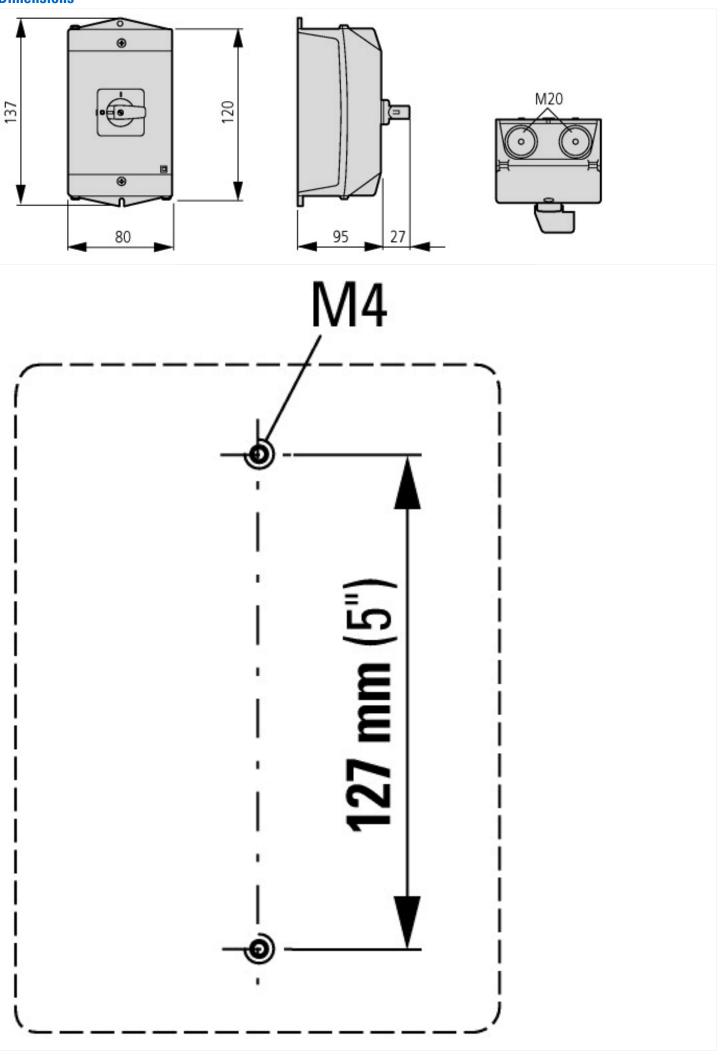
### **Technical data ETIM 7.0**

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 [ACN998011])

Number of poles  Max. rated operation voltage Ue AC  Rated permanent current lu  Number of switch positions  With 0 (off) position  With retraction in 0-position  With retraction in 0-position  Device construction  With in number of modular spacings  Suiface mounted device  With in number of modular spacings  Suifable for ground mounting  Suitable for front mounting 4-hole  Suitable for intermediate mounting  Suitable for intermediate mounting  Complete device in housing  Type of control element  Front shield size  Degree of protection (IP), front side	[ACN998011])		
Max. rated operation voltage Ue AC  Rated permanent current lu  Number of switch positions  With 0 (off) position  With o (off) position  With retraction in 0-position  Device construction  Width in number of modular spacings  Suitable for ground mounting  Suitable for front mounting 4-hole  Suitable for distribution board installation  Suitable for intermediate mounting  Suitable for intermediate mounting  Complete device in housing  Complete device in housing  Type of control element  Front shield size  Degree of protection (IP), front side	Type of switch		Level switch
Rated permanent current lu  Number of switch positions  With 0 (off) position  With retraction in 0-position  Device construction  Width in number of modular spacings  Suitable for ground mounting  Suitable for front mounting 4-hole Suitable for distribution board installation  Suitable for intermediate mounting  Complete device in housing  Type of control element  Front shield size  Degree of protection (IP), front side  A  20  4  4  4  4  A  20  A  4  A  20  A  A  20  A  A  A  20  A  A  A  A  A  A  A  A  A  A  A  A  A	Number of poles		2
Number of switch positions  With 0 (off) position  With retraction in 0-position  No  Device construction  Width in number of modular spacings  Suitable for ground mounting  Suitable for front mounting 4-hole Suitable for distribution board installation  Suitable for intermediate mounting  Complete device in housing  Type of control element  Front shield size  Degree of protection (IP), front side  Yes  4  No  Au  Au  Au  Au  Au  Au  Au  Au  Au  A	Max. rated operation voltage Ue AC	V	690
With 0 (off) position  With retraction in 0-position  Device construction  Width in number of modular spacings  Width for ground mounting  Suitable for ground mounting  Suitable for front mounting 4-hole  Suitable for distribution board installation  Suitable for intermediate mounting  Complete device in housing  Type of control element  Front shield size  Degree of protection (IP), front side  Yes  Yes  Yes  Type of control side  Yes  Type of control (IP), front side  Yes  Yes  Type of control (IP), front side	Rated permanent current lu	Α	20
With retraction in 0-position  Device construction  Width in number of modular spacings  O  Suitable for ground mounting Suitable for front mounting 4-hole Suitable for distribution board installation  Suitable for intermediate mounting  Complete device in housing  Type of control element  Front shield size  Degree of protection (IP), front side  No  Suitable for interaction in 0-position  No  Surface mounted device  O  Surface mounted device  No  Yes  Yes  Types  Types  A8x48 mm  IP65	Number of switch positions		4
Device construction  Surface mounted device  O  Suitable for ground mounting  Suitable for front mounting 4-hole  Suitable for distribution board installation  Suitable for intermediate mounting  Complete device in housing  Type of control element  Toggle  Front shield size  Degree of protection (IP), front side  Surface mounted device  O  Surface mounted device  Yes  Yes  No  No  Suitable for distribution board installation  No  Toggle  48x48 mm  Degree of protection (IP), front side	With 0 (off) position		Yes
Width in number of modular spacings  Suitable for ground mounting  Suitable for front mounting 4-hole  Suitable for distribution board installation  Suitable for intermediate mounting  Complete device in housing  Type of control element  Front shield size  Degree of protection (IP), front side  O  Yes  O  O  O  O  O  O  O  O  O  O  O  O  O	With retraction in 0-position		No
Suitable for ground mounting Suitable for front mounting 4-hole Suitable for distribution board installation Suitable for intermediate mounting Complete device in housing Type of control element Front shield size Degree of protection (IP), front side  Yes  Yes  Toggle  48x48 mm  IP65	Device construction		Surface mounted device
Suitable for front mounting 4-hole Suitable for distribution board installation No Suitable for intermediate mounting No Complete device in housing Yes Type of control element Front shield size Degree of protection (IP), front side No INO IND	Width in number of modular spacings		0
Suitable for distribution board installation  Suitable for intermediate mounting  No  Complete device in housing  Type of control element  Front shield size  Degree of protection (IP), front side  No  Yes  Toggle  48x48 mm  IP65	Suitable for ground mounting		Yes
Suitable for intermediate mounting  Complete device in housing  Type of control element  Front shield size  Degree of protection (IP), front side  No  Toggle  48x48 mm  IP65	Suitable for front mounting 4-hole		No
Complete device in housing Yes Type of control element Toggle Front shield size Degree of protection (IP), front side  Yes Toggle 48x48 mm IP65	Suitable for distribution board installation		No
Type of control element Toggle Front shield size 48x48 mm Degree of protection (IP), front side IP65	Suitable for intermediate mounting		No
Front shield size 48x48 mm  Degree of protection (IP), front side IP65	Complete device in housing		Yes
Degree of protection (IP), front side	Type of control element		Toggle
	Front shield size		48x48 mm
Degree of protection (NEMA), front side Other	Degree of protection (IP), front side		IP65
	Degree of protection (NEMA), front side		Other

### **Dimensions**



Drilling dimensions base