#### **DATASHEET - T0-2-8242/E**



Step switches, Contacts: 4, 20 A, front plate: 0-4, 45 °, 4 steps, 45°, maintained, flush mounting

T0-2-8242/E

0001456318

067327



EL-Nummer (Norway)

Part no.

Catalog No.

Similar to illustration

#### **Delivery program**

Product range			Control switches
Part group reference			TO
Basic function			Step switches
			with black thumb grip and front plate
Contacts			4
Number of steps			4 steps, 45° Front IP65
Degree of Protection			
Design			flush mounting
Contact sequence			
Switching angle		0	45
Switching performance			maintained With 0 (Off) position
Design number			8242
Front plate no.			$\begin{bmatrix} 1 & 2 \\ 0 & -4 \end{bmatrix}$
front plate			FS 422
Motor rating AC-23A, 50 - 60 Hz			
400 V	Р	kW	5.5
400 V Rated uninterrupted current		A	20
	I <sub>u</sub>	A	
Note on rated uninterrupted current !u			Rated uninterrupted current $I_{\mu}$ is specified for max. cross-section.
Number of contact units		contact unit(s)	2

#### **Technical data**

General

Standards

Climatic proofing

IEC/EN 60947, VDE 0660, IEC/EN 60204, CSA, UL Switch-disconnector according to IEC/EN 60947-3

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		U	III/3
Rated impulse withstand voltage	U <sub>imp</sub>	V AC	6000
Mechanical shock resistance	Cimp		
		g	15 As required
Mounting position Contacts			Astequireu
Electrical characteristics			
Rated operational voltage	Ue	V AC	690
Rated uninterrupted current	l <sub>u</sub>	A	20
Note on rated uninterrupted current !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			1.3
		x l <sub>e</sub>	1.0
Short-circuit rating		A aC/al	20
Fuse		A gG/gL	
Rated short-time withstand current (1 s current)	I <sub>cw</sub>	A <sub>rms</sub>	320 Current for a time of 1 accord
Note on rated short-time withstand current lcw			Current for a time of 1 second
Rated conditional short-circuit current	Iq	kA	6
Switching capacity cos φ rated making capacity as per IEC 60947-3		A	130
Rated breaking capacity cos φ 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 Ie (AC-15/230 V)		CO	0.6
Lifespan, mechanical	Operations	x 10 <sup>6</sup>	> 0.4
Maximum operating frequency	Operations/h	X IU	1200
AC	operations,		
AC-3			
Rating, motor load switch	Р	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	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	A	11.5
230 V star-delta	l <sub>e</sub>	A	20
400V 415 V	l <sub>e</sub>	A	11.5
400 V star-delta	l <sub>e</sub>	A	20
500 V	le	A	9
500 V star-delta	l <sub>e</sub>	A	15.6
690 V	l <sub>e</sub>	A	4.9
690 V star-delta	l <sub>e</sub>	A	8.5

AC 21A			
AC-21A			
Rated operational current switch		•	20
440 V	I <sub>e</sub>	A	20
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	Р	kW	5.5
Rated operational current motor load switch			
230 V	le	A	13.3
400 V 415 V	le	A	13.3
500 V	le	А	13.3
690 V	le	А	7.6
DC			
DC-1, Load-break switches L/R = 1 ms			
Rated operational current	I <sub>e</sub>	А	10
Voltage per contact pair in series		V	60
DC-21A	I <sub>e</sub>	А	
Rated operational current	le	A	1
Contacts		Quantity	1
DC-23A, motor load switch L/R = 15 ms			
24 V			
Rated operational current	I <sub>e</sub>	A	10
Contacts		Quantity	1
48 V			
Rated operational current	le	A	10
Contacts		Quantity	2
60 V			
Rated operational current	Ie	A	10
Contacts		Quantity	3
120 V			
Rated operational current	I <sub>e</sub>	А	5
Contacts		Quantity	3
240 V			
Rated operational current	le	A	5
Contacts		Quantity	5
DC-13, Control switches L/R = 50 ms			
Rated operational current	l <sub>e</sub>	A	10
Voltage per contact pair in series		V	32
Control circuit reliability at 24 V DC, 10 mA	Fault	H <sub>F</sub>	< 10 <sup>-5</sup> , < 1 fault in 100000 operations
	probability		
Terminal capacities		•	4 (4 07)
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			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		А	16
Auxiliary contacts			
General Use	lu	A	10
	U	~	
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		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

Rated operational current for specified heat dissipationInA20Heat dissipation per pole, current-dependentPvidWa0.6Equipment heat dissipation, current-dependentPvidWa0.6Static heat dissipation, non-current-dependentPvsWa0.6Heat dissipation capacityPdissWa0.6Operating ambient temperature min.PdissWa0.6Operating ambient temperature max.InInIn				
Heat dissipation per pole, current-dependent         Ped         Weight           Equipment heat dissipation, current-dependent         Ped         Weight         0           Static heat dissipation, current-dependent         Ped         Weight         0           Gerating ambient temperature min.         Pelas         Weight         25           Operating ambient temperature max.         Pelas         Veight         50           102.2 Krength of materials and parts         Veight         Meets the product standard's requirements.           102.2 Corrosion resistance         Insulating materials to aboremal heat and fire due to internal electric directs         Meets the product standard's requirements.           102.3 Verification of resistance of insulating materials to aboremal heat and fire due to internal electric directs         Meets the product standard's requirements.           102.3 Lifting         UV resistance only in connection with protective shield.         Dees not apply, since the entire switchgear needs to be evaluated.           102.5 Lifting         Dees not apply, since the entire switchgear needs to be evaluated.         Dees not apply, since the entire switchgear needs to be evaluated.           103.2 Great of protection of ASSEMBLIES         Dees not apply, since the entire switchgear needs to be evaluated.           103.5 Great of protection of assisted components         Dees not apply, since the entrie switchgear needs to be evaluated.	Technical data for design verification			
Equipment heat dissipation, current-dependent         Price         Weat         Price         Weat           Static heat dissipation, non-current-dependent         Price         Weat         0         0           Operating ambient temperature min.         Price         VC         25         0           Operating ambient temperature max.         ************************************	Rated operational current for specified heat dissipation	I <sub>n</sub>	А	20
Batic heat dissipation, non-current-dependent         Pvs         Weil         Person         <	Heat dissipation per pole, current-dependent	P <sub>vid</sub>	W	0.6
Head dissipation capacity         Properties         Properis	Equipment heat dissipation, current-dependent	P <sub>vid</sub>	W	0
Operating ambient temperature min.         C         25           Operating ambient temperature max.         °C         5           EUCKN 61439 design verification         °C         5           102.2 Strength of materials and parts         Mets the product standard's requirements.         6           102.2 Strength of materials and parts         Mets the product standard's requirements.         6           102.2.3 Verification of thermal stability of enclosures         Mets the product standard's requirements.         6           102.3.2 Verification of resistance of insulating materials to abnormal heat fire due to internal electric effects         Mets the product standard's requirements.           10.2.3.2 Verification of resistance of insulating materials to abnormal heat fire due to internal electric effects         Mets the product standard's requirements.           10.2.3.1 Verification of resistance of insulating materials to abnormal heat fire due to internal electric effects         Does not apply, since the entire switchgear needs to be evaluated.           10.2.5 Lifting         Does not apply, since the entire switchgear needs to be evaluated.         Does not apply, since the entire switchgear needs to be evaluated.           10.2.5 Inscriptions         Does not apply, since the entire switchgear needs to be evaluated.         Does not apply, since the entire switchgear needs to be evaluated.           10.3.5 Ortection against electric shock         Does not apply, since the entire switchgear needs to be evaluated. </td <td>Static heat dissipation, non-current-dependent</td> <td>P<sub>vs</sub></td> <td>W</td> <td>0</td>	Static heat dissipation, non-current-dependent	P <sub>vs</sub>	W	0
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10.9.3 Impulse withstand voltage	10.9 Insulation properties			
	10.9.2 Power-frequency electric strength			Is the panel builder's responsibility.
10.9.4 Testing of enclosures made of insulating material 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) / Control switch (EC002611)

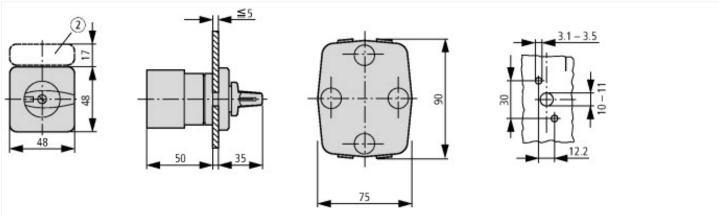
Electric engineering, automation, process control engineering / Low-voltage switch technology / Off-load switch, circuit breaker, control switch / Control switch (ecl@ss10.0.1-27-37-14-14 [ACN998011])

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		5
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**

UL 60947-4-1;CSA - C22.2 No. 60947-4-1-14; CSA-C22.2 No. 94; IEC/EN 60947-3; CE marking
E36332
NLRV
12528
3211-05
UL listed, CSA certified
Branch circuits, suitable as motor disconnect
IEC: IP65; UL/CSA Type 1, 12

### **Dimensions**



2 ZFS-... Label mount not included as standard

## Assets (links)

Declaration of CE Conformity 00003075 Instruction Leaflets IL03801020Z2018\_05