

Step switches, TM, 10 A, centre mounting, 5 contact unit(s), Contacts: 10, 30 °, maintained, Without 0 (Off) position, 1-10, design no. 8237



Part no. **TM-5-8237/EZ**
Catalog No. **015661**

Delivery program

Product range		Control switches	
Part group reference		TM	
Basic function		Step switches	
		with black thumb grip and front plate	
Contacts		10	
Number of steps		10 steps, 30°	
Degree of Protection		Front IP65	
Design		centre mounting	
Switching angle	°	30	
Switching performance		maintained Without 0 (Off) position	
Design number		8237	
front plate		1-10	
Motor rating AC-23A, 50 - 60 Hz			
400 V	P	kW	3
Rated uninterrupted current	I _u	A	10
Note on rated uninterrupted current I _u			Rated uninterrupted current I _u is specified for max. cross-section.
Number of contact units		contact unit(s)	5

Technical data

General			
Standards			IEC/EN 60947, VDE 0660, CSA, UL Control switch as per IEC/EN 60947-5-1 Auxiliary switch as per IEC/EN 60947-5-1
Climatic proofing			Damp heat, constant, to IEC 60068-2-78 Damp heat, cyclic, to IEC 60068-2-30
Ambient temperature		°C	-25 - +50
Open			III/3
Overtoltage category/pollution degree			
Rated impulse withstand voltage	U _{imp}	V AC	4000
Mounting position			As required

Contacts

Electrical characteristics			
Rated operational voltage	U _e	V AC	500
Rated uninterrupted current	I _u	A	10
Note on rated uninterrupted current I _u			Rated uninterrupted current I _u is specified for max. cross-section.
Short-circuit rating			
Fuse		A gG/gL	10

Switching capacity

Safe isolation to EN 61140			
Current heat loss per contact at I _e		W	0.15
Current heat loss per auxiliary circuit at I _e (AC-15/230 V)		CO	0.15
Lifespan, mechanical	Operations	x 10 ⁶	> 1
Maximum operating frequency		Operations/h	1200
AC			
AC-21A			
Rated operational current switch			

400 V 415 V	I_e	A	10
AC-23A			
Motor rating AC-23A, 50 - 60 Hz	P	kW	
400 V 415 V	P	kW	3

Control circuit reliability at 24 V DC, 10 mA Fault probability H_F $< 10^{-5}$, < 1 failure in 100,000 switching operations

Terminal capacities

Solid or stranded		mm ²	1 x 1,5 2 x 1,5
Flexible with ferrules to DIN 46228		mm ²	1 x 1,0 2 x 1,0
Flexible		mm ²	1 x 1,5 2 x 1,5
Terminal screw			M2.5
Tightening torque for terminal screw		Nm	0.4

Rating data for approved types

Contacts			
Rated operational voltage	U_e	V AC	300
Rated uninterrupted current max.			
Main conducting paths		A	10
General use			
Auxiliary contacts			
General Use	I_u	A	10
Pilot Duty			A 300
Switching capacity			
Maximum motor rating			
Single-phase			
120 V AC		HP	0.33
240 V AC		HP	0.75
277 V AC		HP	0.75
Three-phase			
120 V AC		HP	0.75
240 V AC		HP	1
Terminal capacity			
Solid or flexible conductor with ferrule		AWG	14
Terminal screw			M2.5
Tightening torque		lb-in	3.5

Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	I_n	A	10
Heat dissipation per pole, current-dependent	P_{vid}	W	0.15
Equipment heat dissipation, current-dependent	P_{vid}	W	0
Static heat dissipation, non-current-dependent	P_{vs}	W	0
Heat dissipation capacity	P_{diss}	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.
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 8.0

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	500
Rated permanent current Iu	A	10
Number of switch positions	10	
With zero (off) position	No	
With retraction in 0-position	No	
Device construction	Built-in device	
Width in number of modular spacings	0	
Suitable for floor mounting	No	
Suitable for front mounting	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	30x30 mm	
Degree of protection (IP), front side	IP65	
Degree of protection (NEMA), front side	12	