

**ON-OFF switches, TM, 10 A, flush mounting, 1 contact unit(s), Contacts: 1, 90 °, maintained, With 0 (Off) position, 0-1, design no. 8290**



**Part no.** **TM-1-8290/E**  
**Catalog No.** **070131**

## Delivery program

Product range		Control switches	
Part group reference		TM	
Basic function		ON-OFF switches	
		with black thumb grip and front plate	
Contacts		1	
Degree of Protection		Front IP65	
Design		flush mounting	
Switching angle	°	90	
Switching performance		maintained With 0 (Off) position	
Design number		8290	
front plate		0-1	
<b>Motor rating AC-23A, 50 - 60 Hz</b>			
400 V	P	kW	3
Rated uninterrupted current	I <sub>u</sub>	A	10
Note on rated uninterrupted current I <sub>u</sub>			Rated uninterrupted current I <sub>u</sub> is specified for max. cross-section.
Number of contact units		contact unit(s)	1

## 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
Overvoltage category/pollution degree			
Rated impulse withstand voltage	U <sub>imp</sub>	V AC	4000
Mounting position			As required

## Contacts

Electrical characteristics			
Rated operational voltage	U <sub>e</sub>	V AC	500
Rated uninterrupted current	I <sub>u</sub>	A	10
Note on rated uninterrupted current I <sub>u</sub>			Rated uninterrupted current I <sub>u</sub> 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 <sub>e</sub>		W	0.15
Current heat loss per auxiliary circuit at I <sub>e</sub> (AC-15/230 V)		CO	0.15
Lifespan, mechanical	Operations	x 10 <sup>6</sup>	> 1
Maximum operating frequency		Operations/h	1200
AC			
AC-21A			
Rated operational current switch			
400 V 415 V	I <sub>e</sub>	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 <sub>F</sub>	< 10 <sup>-5</sup> , < 1 failure in 100,000 switching operations

### Terminal capacities

Solid or stranded	mm <sup>2</sup>	1 x 1,5 2 x 1,5
Flexible with ferrules to DIN 46228	mm <sup>2</sup>	1 x 1,0 2 x 1,0
Flexible	mm <sup>2</sup>	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 <sub>e</sub>	V AC	300
Rated uninterrupted current max.			
Main conducting paths			
General use	A	A	10
Auxiliary contacts			
General Use	I <sub>U</sub>	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 <sub>n</sub>	A	10
Heat dissipation per pole, current-dependent	P <sub>vid</sub>	W	0.15
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.
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) / Switch disconnector (EC000216)

Electric engineering, automation, process control engineering / Low-voltage switch technology / Off-load switch, circuit breaker, control switch / Switch disconnector (ecl@ss10.0.1-27-37-14-03 [AKF060013])

Version as main switch		No
Version as maintenance-/service switch		No
Version as safety switch		No
Version as emergency stop installation		No
Version as reversing switch		No
Number of switches		1
Max. rated operation voltage Ue AC	V	500
Rated operating voltage	V	500 - 500
Rated permanent current Iu	A	10
Rated permanent current at AC-23, 400 V	A	
Rated permanent current at AC-21, 400 V	A	0
Rated operation power at AC-3, 400 V	kW	0
Rated short-time withstand current Icw	kA	0
Rated operation power at AC-23, 400 V	kW	3
Switching power at 400 V	kW	0
Conditioned rated short-circuit current Iq	kA	0
Number of poles		1
Number of auxiliary contacts as normally closed contact		0
Number of auxiliary contacts as normally open contact		0
Number of auxiliary contacts as change-over contact		0
Motor drive optional		No
Motor drive integrated		No
Voltage release optional		No
Device construction		Built-in device fixed built-in technique
Suitable for floor mounting		No
Suitable for front mounting 4-hole		Yes
Suitable for front mounting centre		No
Suitable for distribution board installation		No
Suitable for intermediate mounting		No
Colour control element		Black
Type of control element		Short thumb-grip
Interlockable		No
Type of electrical connection of main circuit		Screw connection
Degree of protection (IP), front side		IP65

