



On-Off switch, P5, 250 A, rear mounting, 3 pole, with black thumb grip and front plate

Part no. P5-250/Z
Catalog No. 280948

Delivery program

Product range			On-Off switch
Part group reference			P5 with black thumb grip and front plate
Information about equipment supplied			Auxiliary contact or neutral conductor fitted by user.
Number of poles			3 pole
Auxiliary contacts			
		N/O	0
		N/C	0
Degree of Protection			Front IP65
Design			rear mounting
Contact sequence			
Front plate no.			 FS 908
Motor rating AC-23A, 50 - 60 Hz			
400 V	P	kW	90
Rated uninterrupted current	I_u	A	250
Note on rated uninterrupted current I_u			Rated uninterrupted current I_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_{imp}	V AC	8000

Mounting position			As required
Contacts			
Mechanical variables			
Number of poles			3 pole
Auxiliary contacts			
		N/O	0
		N/C	0
Electrical characteristics			
Rated operational voltage	U_e	V AC	690
Rated uninterrupted current	I_u	A	250
Note on rated uninterrupted current I_u			Rated uninterrupted current I_u is specified for max. cross-section.
Load rating with intermittent operation, class 12			
AB 25 % DF		$\times I_e$	2
AB 40 % DF		$\times I_e$	1.6
AB 60 % DF		$\times I_e$	1.3
Short-circuit rating			
Fuse		A gG/gL	250
Rated short-time withstand current (1 s current)	I_{cw}	A_{rms}	4600
Note on rated short-time withstand current I_{cw}			Current for a time of 1 second
Rated conditional short-circuit current	I_q	kA	30

Switching capacity

cos φ rated making capacity as per IEC 60947-3		A	1700
Rated breaking capacity cos φ to IEC 60947-3		A	
230 V		A	1600
400/415 V		A	1380
500 V		A	1250
690 V		A	400
Safe isolation to EN 61140			
between the contacts		V AC	440
Current heat loss per contact at I_e		W	13
Lifespan, mechanical	Operations	$\times 10^6$	> 0.08
Maximum operating frequency	Operations/h		50
AC			
AC-3			
Rating, motor load switch	P	kW	
220 V 230 V	P	kW	37
400 V 415 V	P	kW	55
500 V	P	kW	75
690 V	P	kW	40
Rated operational current motor load switch			
230 V	I_e	A	126
400V 415 V	I_e	A	105
500 V	I_e	A	118
690 V	I_e	A	45
AC-23A			
Motor rating AC-23A, 50 - 60 Hz	P	kW	
230 V	P	kW	37
400 V 415 V	P	kW	90
500 V	P	kW	110
690 V	P	kW	45
Rated operational current motor load switch			
230 V	I_e	A	126
400 V 415 V	I_e	A	170
500 V	I_e	A	156

690 V	I_e	A	50
DC			
DC-1, Load-break switches L/R = 1 ms			
Rated operational current	I_e	A	250
Voltage per contact pair in series		V	42
DC-23A, motor load switch L/R = 15 ms			
24 V			
Rated operational current	I_e	A	250
Contacts		Quantity	3
48 V			
Rated operational current	I_e	A	250
Contacts		Quantity	3
60 V			
Rated operational current	I_e	A	250
Contacts		Quantity	3
120 V			
Rated operational current	I_e	A	80
Contacts		Quantity	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 185 2 x 70
Flexible with ferrules to DIN 46228		mm ²	1 x 120 2 x 50
Copper strip	Number of segments x width x thickness	mm	1 x 20 x 5 2 x 20 x 3
Terminal screw			Allen screw 6
Tightening torque for terminal screw		Nm	16

Technical safety parameters:

Notes			B10 _d values as per EN ISO 13849-1, table C1
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Rating data for approved types

Contacts			
Rated operational voltage	U_e	V AC	600
Rated uninterrupted current max.			
Main conducting paths			
General use		A	250
Auxiliary contacts			
General Use	I_U	A	10
Pilot Duty			A 600
Switching capacity			
Maximum motor rating			
Single-phase			
120 V AC		HP	15
240 V AC		HP	30
277 V AC		HP	30
Three-phase			
120 V AC		HP	30
240 V AC		HP	60
480 V AC		HP	75
600 V AC		HP	75
Short Circuit Current Rating			
Basic Rating			
		kA	10
max. Fuse		A	600 Class RK1
High fault rating			
		kA	65
max. Fuse		A	400, Class J

Terminal capacity			
Solid or flexible conductor with ferrule		AWG	350 MCM
Flexible		AWG	300 MCM
Terminal screw			Allen screw 6
Tightening torque		lb-in	140

Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	I_n	A	250
Heat dissipation per pole, current-dependent	P_{vid}	W	8
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 7.0

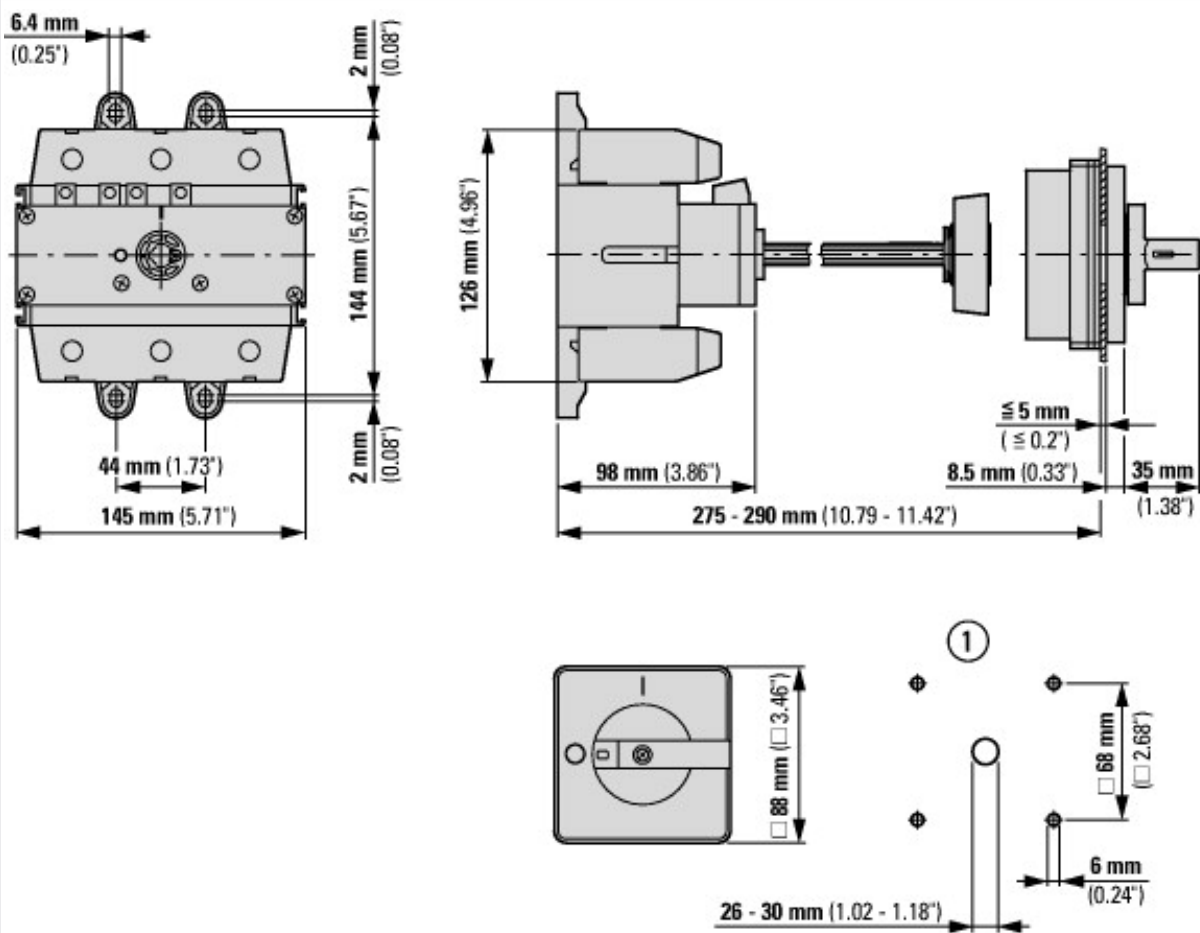
Low-voltage industrial components (EG000017) / Switch disconnecter (EC000216)			
Electric engineering, automation, process control engineering / Low-voltage switch technology / Off-load switch, circuit breaker, control switch / Switch disconnecter (ecl@ss10.0.1-27-37-14-03 [AKF060013])			
Version as 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 U_e AC		V	690
Rated operating voltage		V	690 - 690

Rated permanent current I _u	A	250
Rated permanent current at AC-23, 400 V	A	170
Rated permanent current at AC-21, 400 V	A	250
Rated operation power at AC-3, 400 V	kW	55
Rated short-time withstand current I _{cw}	kA	4.6
Rated operation power at AC-23, 400 V	kW	90
Switching power at 400 V	kW	90
Conditioned rated short-circuit current I _q	kA	30
Number of poles		3
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 ground mounting		No
Suitable for front mounting 4-hole		No
Suitable for front mounting centre		No
Suitable for distribution board installation		No
Suitable for intermediate mounting		Yes
Colour control element		Black
Type of control element		Toggle
Interlockable		No
Type of electrical connection of main circuit		Frame clamp
Degree of protection (IP), front side		IP65
Degree of protection (NEMA)		12

Approvals

Product Standards		UL 508; CSA-C22.2 No. 14-05; CSA-C22.2 No. 94; IEC/EN 60947-3; CE marking
UL File No.		E36332
UL Category Control No.		NLRV
CSA File No.		223805
CSA Class No.		3211-05
North America Certification		UL listed, CSA certified
Suitable for		Branch circuits, suitable as motor disconnect
Degree of Protection		IEC: IP65; UL/CSA Type 1, 12

Dimensions



① Drilling dimensions door

Additional product information (links)

Technical overview cam switch, switch-disconnector	http://de.ecat.moeller.net/flip-cat/?edition=HPLTEv1&startpage=4.2
System overview cam switch T	http://de.ecat.moeller.net/flip-cat/?edition=HPLTEv1&startpage=4.4
System overview switch-disconnector P	http://de.ecat.moeller.net/flip-cat/?edition=HPLTEv1&startpage=4.6
Key to part numbers Cam switch	http://de.ecat.moeller.net/flip-cat/?edition=HPLTEv1&startpage=4.8
Key to part numbers Switch-disconnector	http://de.ecat.moeller.net/flip-cat/?edition=HPLTEv1&startpage=4.8
Switches for ATEX	http://www.coopercrouse-hinds.eu/en/products/25-ex-safety-and-main-current-switches.html