

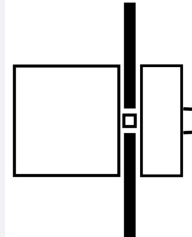
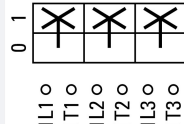
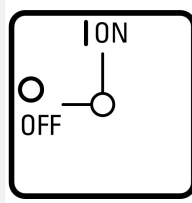




**Main switch, 3 pole, 160 A, Emergency-Stop function, Lockable in the 0 (Off) position, flush mounting**

**Part no.** P5-160/EA/SVB  
**Article no.** 280922

**Delivery programme**

Product range			Main switch maintenance switch Repair switch
Part group reference			P5
Emergency STOP			Emergency switching off function With red rotary handle and yellow locking ring
Information about equipment supplied			Auxiliary contact or neutral conductor fitted by user.
Number of poles			3 pole
<b>Auxiliary contacts</b>			
		N/O	0
		N/C	0
Locking facility			Lockable in the 0 (Off) position
Degree of Protection			Front IP65
Design			flush mounting 
Contact sequence			 1 1 1 0 0 0 1L1 1T1 1L2 1T2 1L3 1T3
Function			
<b>Motor rating AC-23A, 50 - 60 Hz</b>			
400 V	P	kW	55
Rated uninterrupted current	I <sub>u</sub>	A	160

**Technical data**

<b>General</b>			
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 <sub>imp</sub>	V AC	8000

Mounting position			As required
Protection against direct contact when actuated from front (EN 50274)			Finger and back-of-hand proof
<b>Contacts</b>			
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	160
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	160
Rated short-time withstand current (1 s current)	$I_{cw}$	$A_{rms}$	3000
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
<b>Switching capacity</b>			
$\cos \varphi$ rated making capacity as per IEC 60947-3		A	1050
Rated breaking capacity $\cos \varphi$ to IEC 60947-3		A	
230 V		A	900
400/415 V		A	850
500 V		A	850
690 V		A	340
Safe isolation to EN 61140			
between the contacts		V AC	440
Current heat loss per contact at $I_e$		W	10
Lifespan, mechanical	Operations	$\times 10^6$	> 0.1
Maximum operating frequency	Operations/h		50
AC			
AC-3			
Rating, motor load switch	P	kW	
220 V 230 V	P	kW	30
400 V 415 V	P	kW	45
500 V	P	kW	55
690 V	P	kW	37
Rated operational current motor load switch			
230 V	$I_e$	A	103
400V 415 V	$I_e$	A	85
690 V	$I_e$	A	42
AC-21A			
Rated operational current switch			
440 V	$I_e$	A	160
AC-23A			
Motor rating AC-23A, 50 - 60 Hz	P	kW	
230 V	P	kW	30
400 V 415 V	P	kW	55
500 V	P	kW	75
690 V	P	kW	37
Rated operational current motor load switch			

230 V	$I_e$	A	103
400 V 415 V	$I_e$	A	105
690 V	$I_e$	A	42
<b>DC</b>			
DC-1, Load-break switches L/R = 1 ms			
Rated operational current	$I_e$	A	160
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	160
Contacts		Quantity	3
48 V			
Rated operational current	$I_e$	A	160
Contacts		Quantity	3
60 V			
Rated operational current	$I_e$	A	160
Contacts		Quantity	3
120 V			
Rated operational current	$I_e$	A	50
Contacts		Quantity	3
Control circuit reliability at 24 V DC, 10 mA	Fault probability	$H_F$	$< 10^{-5}$ , < 1 fault in 100000 operations

### Terminal capacities

Solid or stranded		mm <sup>2</sup>	1 x (10 - 95) 2 x (10 - 35)
Flexible with ferrules to DIN 46228		mm <sup>2</sup>	1 x (16 - 70) 2 x (16 - 25)
Copper strip	Number of segments x width x thickness	mm	6 x 9 x 0.8 (2 flat conductors)
Terminal screw			Allen screw 5
Max. tightening torque		Nm	14

### Technical safety parameters:

<b>Notes</b>			B10 <sub>q</sub> values as per EN ISO 13849-1, table C1
--------------	--	--	---

## Design verification as per IEC/EN 61439

Technical data for design verification			
Rated operational current for specified heat dissipation	$I_n$	A	160
Heat dissipation per pole, current-dependent	$P_{vid}$	W	10
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			Please enquire
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 6.0

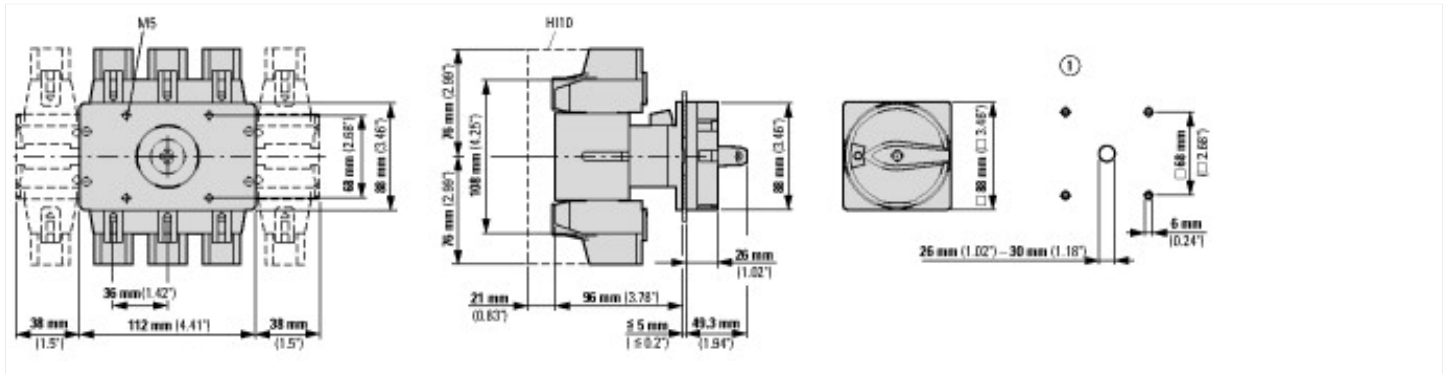
Low-voltage industrial components (EG000017) / Switch disconnecter (EC000216)			
Electric engineering, automation, process control engineering / Low-voltage switch technology / Off-load switch, circuit breaker, control switch / Switch disconnecter (ecI@ss8.1-27-37-14-03 [AKF060010])			
Version as main switch			Yes
Version as maintenance-/service switch			Yes
Version as safety switch			No
Version as emergency stop installation			Yes
Version as reversing switch			No
Max. rated operation voltage Ue AC	V		690
Rated operating voltage	V		690 - 690
Rated permanent current Iu	A		160
Rated permanent current at AC-21, 400 V	A		160
Rated operation power at AC-3, 400 V	kW		45
Rated short-time withstand current Icw	kA		3
Rated operation power at AC-23, 400 V	kW		55
Switching power at 400 V	kW		55
Conditioned rated short-circuit current Iq	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			Yes
Suitable for front mounting center			No
Suitable for distribution board installation			No
Suitable for intermediate mounting			No
Colour control element			Red
Type of control element			Door coupling rotary drive
Interlockable			Yes
Type of electrical connection of main circuit			Frame clamp
Degree of protection (IP), front side			IP65

## Approvals

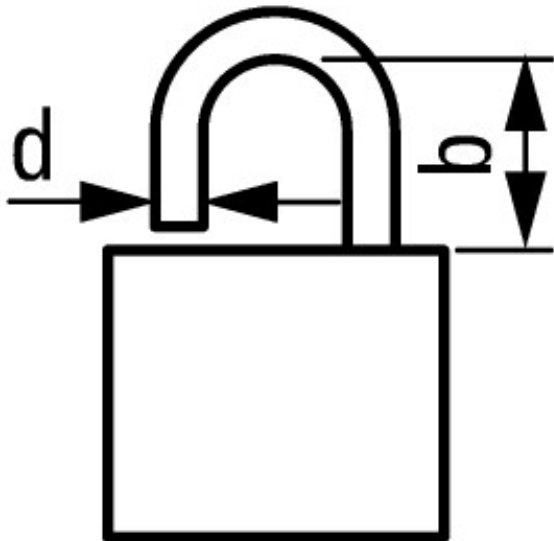
Product Standards		UL 508; CSA-C22.2 No. 14-05; CSA-C22.2 No. 94; IEC/EN 60947-3; CE marking
-------------------	--	---

UL File No.		E36332
UL Category Control No.		NLRV, NLRV7
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



$$d = 4 - 8 \text{ mm}$$

$$b + d \leq 47 \text{ mm}$$

$$d = 0.16 - 0.31''$$

$$b + d \leq 1.85''$$

3 padlocks

## Additional product information (links)

### IL03802010Z Cam Switch: Main switch, On-Off-switch

IL03802010Z Cam Switch: Main switch, On-Off-switch	<a href="ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03802010Z2015_07.pdf">ftp://ftp.moeller.net/DOCUMENTATION/AWA_INSTRUCTIONS/IL03802010Z2015_07.pdf</a>
Technical overview cam switch, switch-disconnector	<a href="http://de.ecat.moeller.net/flip-cat/?edition=HPLTEv1&amp;startpage=4.2">http://de.ecat.moeller.net/flip-cat/?edition=HPLTEv1&amp;startpage=4.2</a>
System overview cam switch T	<a href="http://de.ecat.moeller.net/flip-cat/?edition=HPLTEv1&amp;startpage=4.4">http://de.ecat.moeller.net/flip-cat/?edition=HPLTEv1&amp;startpage=4.4</a>
System overview switch-disconnector P	<a href="http://de.ecat.moeller.net/flip-cat/?edition=HPLTEv1&amp;startpage=4.6">http://de.ecat.moeller.net/flip-cat/?edition=HPLTEv1&amp;startpage=4.6</a>
Key to part numbers Cam switch	<a href="http://de.ecat.moeller.net/flip-cat/?edition=HPLTEv1&amp;startpage=4.8">http://de.ecat.moeller.net/flip-cat/?edition=HPLTEv1&amp;startpage=4.8</a>
Key to part numbers Switch-disconnector	<a href="http://de.ecat.moeller.net/flip-cat/?edition=HPLTEv1&amp;startpage=4.8">http://de.ecat.moeller.net/flip-cat/?edition=HPLTEv1&amp;startpage=4.8</a>
Switches for ATEX	<a href="http://www.coopercrouse-hinds.eu/en/products/25-ex-safety-and-main-current-switches.html">http://www.coopercrouse-hinds.eu/en/products/25-ex-safety-and-main-current-switches.html</a>