Brief Instructions

ENG

Switch Disconnectors DIS.*
Safety Switches SAF.*

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Validity

Specific processes and instructions in this instruction manual require special provisions to guarantee the safety of the operating personnel.

Target Group, Personnel

Responsibility for planning, assembly, commissioning, operation, maintenance, and dismounting lies with the plant operator.

The personnel must be appropriately trained and qualified in order to carry out mounting, installation, commissioning, operation, maintenance, and dismounting of the device. The trained and qualified personnel must have read and understood the instruction manual.

Reference to Further Documentation

Observe laws, standards, and directives applicable to the intended use and the operating location. Observe Directive 1999/92/EC in relation to hazardous areas.

The corresponding datasheets, manuals, declarations of conformity, EC-type-examination certificates, certificates, and control drawings if applicable (see datasheet) are an integral part of this document. You can find this information under www.pepperl-fuchs.com.

Intended Use

DIS* switch disconnectors and SAF* safety switches guarantee safe disconnection of machines from the mains power supply during cleaning, maintenance and repair. They can be utilized in hazardous areas up to zone 1 / 21. Various main and auxiliary contact configurations cover many switching requirements.

Enclosure variants are available in high-quality stainless steel and rugged GRP material.

According to IEC 62626-1 the enclosure cover of SAF* versions can only be opened when the switch is in ON position.

All switches fulfill the isolating properties according to IEC/EN 60947-3.

Mounting and Installation

Observe the installation instructions according to IEC/EN 60079-14.

If you intend to install the device or enclosure in areas that may be exposed to aggressive substances, ensure that the stated surface materials are compatible with these substances. If required, contact Pepperl+Fuchs for further information.

Before opening the enclosure make sure that the built-in components are de-energized.

With safety switches SAF.* move the rotary actuator to the 'ON' position before opening the enclosure cover. DIS.* can be opened in any switch position.

The device is designed for wall mounting.

The device is designed for mounting to a steel framework.

If mounting the enclosure on concrete use expansion anchors. When mounting the enclosure to a steel framework use vibration resistant mounting material.

Metal enclosures are equipped with mounting brackets.

Plastik enclosures are equipped with thru-holes for mounting.

Use the thru-holes for the enclosure mounting. These thru-holes must be accessible when the cover is removed.

Select suitable conductors in order to ensure that the maximum permitted temperature of the conductors fit to the maximum permitted ambient temperature of the device.

The terminals are designed for the direct connection of unprepared solid, stranded or fine-stranded conductors as well as for conductors with cable lugs.

When installing the conductors the insulation must reach up to the terminal.

Observe the tightening torque of the terminal screws.

If the enclosure has an external ground connection, connect an equipotential bonding conductor with a minimum cross section of 4 mm^2 to this ground connection.

To ensure the degree of protection, consider the following points:

Ensure that the enclosure is not damaged, distorted, or corroded.

Ensure that all seals are clean, undamaged, and correctly fitted.

Tighten all screws of the enclosure/enclosure cover with the appropriate torque.

For cable glands only use incoming cable diameters of the appropriate size.

Tighten all cable glands with the appropriate torque.

Close all unused cable glands with the appropriate sealing plugs.

Protect the device by means of the specified back-up fuse.

Operation, Maintenance, Repair

Observe IEC/EN 60079-14 during operation.

Observe IEC/EN 60079-17 for maintenance and inspection.

Observe IEC/EN 60079-19 for repair and overhaul.

The device must be disconnected from the power supply prior to installation and maintenance. The power supply may be activated only after all the circuits required for operation have been fully assembled and connected.

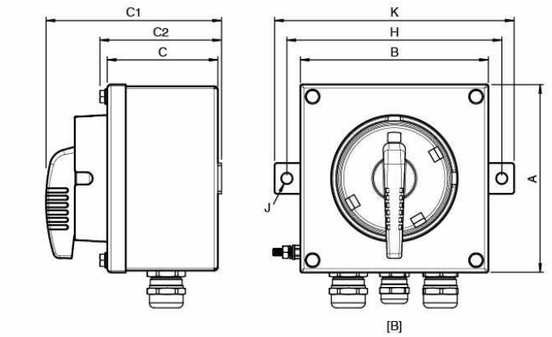
Safety-relevant markings are found on the nameplate supplied. Ensure that the nameplate is present and legible. Take the ambient conditions into account.

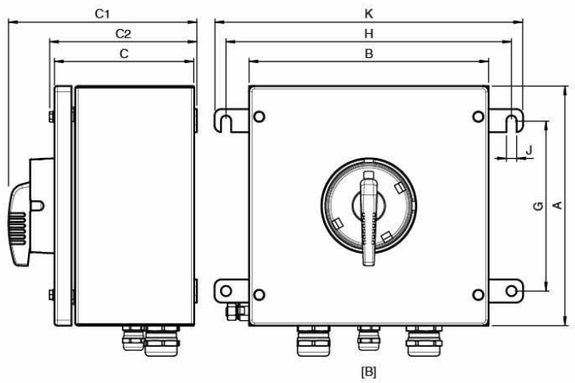
Replace the inner switching component after each short-circuit in the main circuit. The components are hermetically sealed so the contacts cannot be checked for damage.

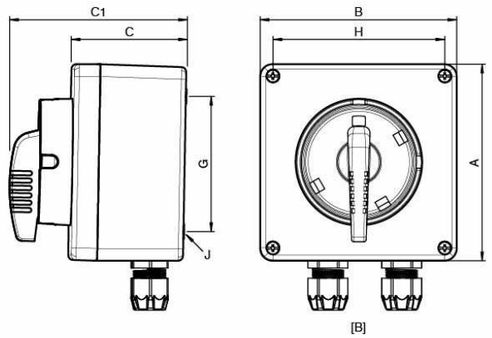
Delivery, Transport, Disposal

Disposing of device and packaging must be in compliance with the applicable laws and guidelines of the respective country.

Dimensions







Legend	
A	Height
B	Width
C	Depth
C1	Depth with operator
C2	Depth with screws
G	Mounting holes center, vertical
H	Mounting holes center, horizontal
J	Mounting holes diameter
K	Maximum external dimension with mounting bracket
[B]	Entry face
top	Enclosure series SL
midst	Enclosure series XL
bottom	Enclosure series GL

Measures see data tables and individual datasheets

Technical Specifications

Gerenal	
Types and variants	DIS.*, see type code table SAF.*, see type code table
Data for application in hazardous areas	
EC-Type Examination Certificate	CML 16ATEX3009X
Marking	Ex II 2 GD Ex db eb IIC T* Gb Ex tb IIIC T** °C Db T4/T130 °C @ Ta +55 °C
Hazardous Area: Zones of Installation	1, 21 (Gas), 2, 22 (Dust)
CE Number	0102 (only for ATEX, see also type label)
International approvals	
IECEx approval	IECEx CML 16.0008X
Ambient conditions	
Ambient temperature	-40 ... 55 °C (-40 ... 131 °F) @ T4
Degree of Protection according to IEC/EN 60529	IP65
Electrical specifications	
Operating voltage	690 V max.
Operating current	40 A max., see data tables
Rated insulation voltage	800 V
Rated impulse withstand voltage	6 kV
Rated frequency	50/60 Hz
Short-circuit current limitation	25 A version 35 A, gG 40 A version 63 A, gG
Rated short-time withstand currency	3 kA
Rated short circuit making current	4 kA
Rated service short-circuit current	10 kA
Contact configuration	NO
Switching configuration	2 position changeover with left OFF
Auxiliary contacts	see data tables
Usage category according to IEC 60947-3	see data tables
Lockable	in 'OFF' position, threefold padlock postion
Labeling	0 - I
Mechanical specifications	
General	
Dimensions	see data tables
Enclosure cover	fully detachable SAF.*: detachable when rotary actuator in 'ON' position
Mass	see data tables
Mechanical lifetime	10,000 times
Cable connection	
Terminal capacity	see data tables
Terminal torque	see data tables
Cable type	see data tables
Clamping range	see data tables
Cable entry	see data tables
Tightening torque	see data tables
Material	
Type DIS.S.* / SAF.S.*	
Enclosure	1.5 mm AISI 316L (1.4404) stainless steel
Finish	electropolished
Seal	one piece closed cell neoprene
Type DIS.P.* / SAF.P.*	
Enclosure	carbon loaded, glass fiber reinforced polyester (GRP)
Finish	inherent color black
Seal	silicone

Standards	
Conformity	IEC/EN 60079-0: 2012+A11:2013 IEC/EN 60079-1: 2014 IEC/EN 60079-7: 2015 IEC/EN 60079-31: 2014 IEC/EN 60947-3: 2009

Type Code

Series					
DIS	switch disconnector				
SAF	safety switch				
	Enclosure material				
	P	glass fiber reinforced polyester			
	S	stainless steel			
		Amperage			
		25	25 A		
		40	40 A		
			Main contact poles		
			3P	3 pole	
			3PN	3 pole + N	
			6P	6 pole	
				Auxiliary contacts	
					none
				1NO	1x NO
				1NO.1NC	1x NO / 1x NC
DIS	.S	.025	.3P	1NO	

Example: Switch disconnector, stainless steel enclosure, 25 A, 3 pole, auxiliary contact 1x NO

Technical Data Legend

(I) = Type, details see type code table
(II) = Usage category AC23 [A], according to IEC 60947-3
(III) = Usage category AC3 [A], according to IEC 60947-3
(IV) = Poles quantity
(V) = Auxiliaty contacts configuration
NO = normally open NC = normally closed
(VI) = Auxiliaty contacts, usage category AC11 [A],
according to IEC 60947-3, NO = delayed / advanced opening
(VII) = Switching diagram

(VIII) = Enclosure series, see dimensions drawings
(IX) = Dimensions [mm], see drawings and legend
(X) = Mass [kg]
(XI) = Operator color (B) = black (R) = red-yellow
(XII) = Terminals (c) = capacity [mm2] (t) = torque [Nm]

(XIII) = Cable glands type (M) = metal (P) = polyamide
(XIV) = Cable glands, note seal combinations in individual datasheets
(r) = clamping range [mm] (t) = torque [Nm]

For further information please see individual datasheets
or contact Pepperl+Fuchs

Technical Data

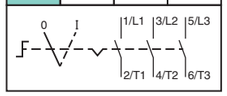
(I)	(II)			(III)			(IV)	(V)	(VI)	(VII)
	690 V	500 V	400 V	690 V	500 V	400 V			500 V	
DIS.S.025.3P	16	20	25	16	20	25	3	-	N/A	D01
DIS.S.025.3P.1NO	16	20	25	16	20	25	3	1x NO	20	D02
DIS.S.025.3PN	16	20	25	16	20	25	3+N	-	N/A	D03
DIS.S.025.6P.1NO.1NC	16	20	25	16	20	25	6	1x NO / 1x NC	20	D03
DIS.S.040.3P	32	40	40	32	40	40	3	-	N/A	D01
DIS.S.040.3P.1NO	32	40	40	32	40	40	3	1x NO	20	D02
DIS.S.040.3PN	32	40	40	32	40	40	3+N	-	N/A	D03
DIS.S.040.6P.1NO.1NC	32	40	40	32	40	40	6	1x NO / 1x NC	20	D04
DIS.P.025.3P	16	20	25	16	20	25	3	-	N/A	D01
DIS.P.025.3P.1NO	16	20	25	16	20	25	3	1x NO	20	D02
DIS.P.025.3PN	16	20	25	16	20	25	3+N	-	N/A	D03
DIS.P.025.6P.1NO.1NC	16	20	25	16	20	25	6	1x NO / 1x NC	20	D04
DIS.P.040.3P	32	40	40	32	40	40	3	-	N/A	D01
DIS.P.040.3P.1NO	32	40	40	32	40	40	3	1x NO	20	D02
DIS.P.040.3PN	32	40	40	32	40	40	3+N	-	N/A	D03
DIS.P.040.6P.1NO.1NC	32	40	40	32	40	40	6	1x NO / 1x NC	20	D04
SAF.S.025.3P.1NO	16	20	25	16	20	25	3	1x NO	20	D02
SAF.S.040.3P.1NO	32	40	40	32	40	40	3	1x NO	20	D02
SAF.P.025.3P.1NO	16	20	25	16	20	25	3	1x NO	20	D02
SAF.P.040.3P.1NO	32	40	40	32	40	40	3	1x NO	20	D02

(I)	(VIII)	(IX)									(X)	(XI)	(XII)	
		A	B	C	C1	C2	K	G	H	J			(c)	(t)
DIS.S.025.3P	SL	150	150	90	143	99	195	-	175	10.3	2.45	(B)	2x 1.5 ... 4	2
DIS.S.025.3P.1NO	SL	150	150	90	143	99	195	-	175	10.3	2.45	(B)	2x 1.5 ... 4	2
DIS.S.025.3PN	SL	150	150	90	143	99	195	-	175	10.3	2.45	(B)	2x 1.5 ... 4	2
DIS.S.025.6P.1NO.1NC	XL	260	260	150	205	160	335	185	310	11	4.9	(B)	2x 1.5 ... 4	2
DIS.S.040.3P	XL	260	260	150	205	160	335	185	310	11	5.25	(B)	2x 6 ... 10	3.5
DIS.S.040.3P.1NO	XL	260	260	150	205	160	335	185	310	11	5.25	(B)	2x 6 ... 10	3.5
DIS.S.040.3PN	XL	260	260	150	205	160	335	185	310	11	5.25	(B)	2x 6 ... 10	3.5
DIS.S.040.6P.1NO.1NC	XL	260	260	200	255	210	335	185	310	11	6.45	(B)	2x 6 ... 10	3.5
DIS.P.025.3P	GL	160	160	91	141	-	-	110	140	6.5	1.75	(B)	2x 1.5 ... 4	2
DIS.P.025.3P.1NO	GL	160	160	91	141	-	-	110	140	6.5	1.75	(B)	2x 1.5 ... 4	2
DIS.P.025.3PN	GL	160	160	91	141	-	-	110	140	6.5	1.75	(B)	2x 1.5 ... 4	2
DIS.P.025.6P.1NO.1NC	GL	250	255	165	215	-	-	200	235	6.5	4.4	(B)	2x 1.5 ... 4	2
DIS.P.040.3P	GL	250	255	165	215	-	-	200	235	6.5	4.65	(B)	2x 6 ... 10	3.5
DIS.P.040.3P.1NO	GL	250	255	165	215	-	-	200	235	6.5	4.65	(B)	2x 6 ... 10	3.5
DIS.P.040.3PN	GL	250	255	165	215	-	-	200	235	6.5	4.65	(B)	2x 6 ... 10	3.5
DIS.P.040.6P.1NO.1NC	GL	405	400	200	250	-	-	355	380	6.5	8.7	(B)	2x 6 ... 10	3.5
SAF.S.025.3P.1NO	SL	150	150	90	143	99	195	-	175	10.3	2.45	(R)	2x 1.5 ... 4	2
SAF.S.040.3P.1NO	XL	260	260	150	205	160	335	185	310	11	5.25	(R)	2x 6 ... 10	3.5
SAF.P.025.3P.1NO	GL	160	160	91	141	-	-	110	140	6.5	1.75	(R)	2x 1.5 ... 4	2
SAF.P.040.3P.1NO	GL	250	255	165	215	-	-	200	235	6.5	4.65	(R)	2x 6 ... 10	3.5

(I)	(XIII)	(XIV)					
		M32 (r)	M32 (t)	M25 (r)	M25 (t)	M20 (r)	M20 (t)
DIS.S.025.3P	(M) 2 x M25	-	-	10 ... 18	25	-	-
DIS.S.025.3P.1NO	(M) 2 x M25 1 x M20	-	-	10 ... 18	25	4 ... 12	20
DIS.S.025.3PN	(M) 2 x M25 1 x M20	-	-	10 ... 18	25	4 ... 12	20
DIS.S.025.6P.1NO.1NC	(M) 4 x M25 1 x M20	-	-	10 ... 18	25	4 ... 12	20
DIS.S.040.3P	(M) 2 x M32	14 ... 24	28	-	-	-	-
DIS.S.040.3P.1NO	(M) 2 x M32 1 x M20	14 ... 24	28	-	-	4 ... 12	20
DIS.S.040.3PN	(M) 2 x M32 1 x M20	14 ... 24	28	-	-	4 ... 12	20
DIS.S.040.6P.1NO.1NC	(M) 4 x M32 1 x M20	14 ... 24	28	-	-	4 ... 12	20
DIS.P.025.3P	(P) 2 x M25	-	-	9 ... 17	5	-	-
DIS.P.025.3P.1NO	(P) 2 x M25 1 x M20	-	-	9 ... 17	5	6 ... 12	5
DIS.P.025.3PN	(P) 2 x M25 1 x M20	-	-	9 ... 17	5	6 ... 12	5
DIS.P.025.6P.1NO.1NC	(P) 4 x M25 1 x M20	-	-	9 ... 17	5	6 ... 12	5
DIS.P.040.3P	(P) 2 x M32	14 ... 24	28	-	-	-	-
DIS.P.040.3P.1NO	(P) 2 x M32 1 x M20	14 ... 24	28	-	-	6 ... 12	5
DIS.P.040.3PN	(P) 2 x M32 1 x M20	14 ... 24	28	-	-	6 ... 12	5
DIS.P.040.6P.1NO.1NC	(P) 4 x M32 1 x M20	14 ... 24	28	-	-	6 ... 12	5
SAF.S.025.3P.1NO	(M) 2 x M25 1 x M20	-	-	10 ... 18	25	4 ... 12	20
SAF.S.040.3P.1NO	(M) 2 x M32 1 x M20	14 ... 24	28	-	-	4 ... 12	20
SAF.P.025.3P.1NO	(P) 2 x M25 1 x M20	-	-	9 ... 17	5	6 ... 12	5
SAF.P.040.3P.1NO	(P) 2 x M32 1 x M20	14 ... 24	28	-	-	6 ... 12	5

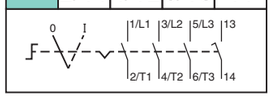
Switching Diagrams

	1/L1	3/L2	5/L3
⊖			
⊕	X	X	X
	2/T1	4/T2	6/T3



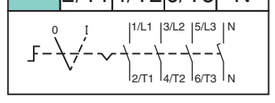
D01

	1/L1	3/L2	5/L3	13
⊖				
⊕	X	X	X	X
	2/T1	4/T2	6/T3	14



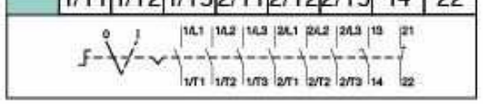
D02

	1/L1	3/L2	5/L3	N
⊖				
⊕	X	X	X	X
	2/T1	4/T2	6/T3	N



D03

	1/L1	1/L2	1/L3	2/L1	2/L2	2/L3	13	21
⊖								
⊕	X	X	X	X	X	X	X	X
	1/T1	1/T2	1/T3	2/T1	2/T2	2/T3	14	22



D04