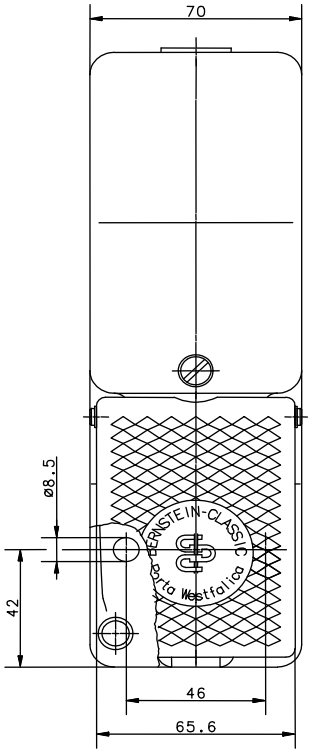
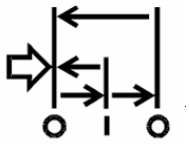
Technical Data
Foot-switch

Series F1

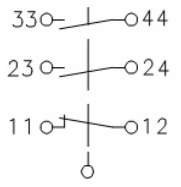
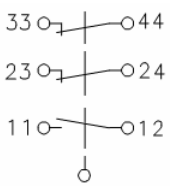
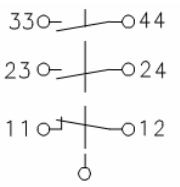
Description **F1-ZSP1D**

Article number **6061500569**



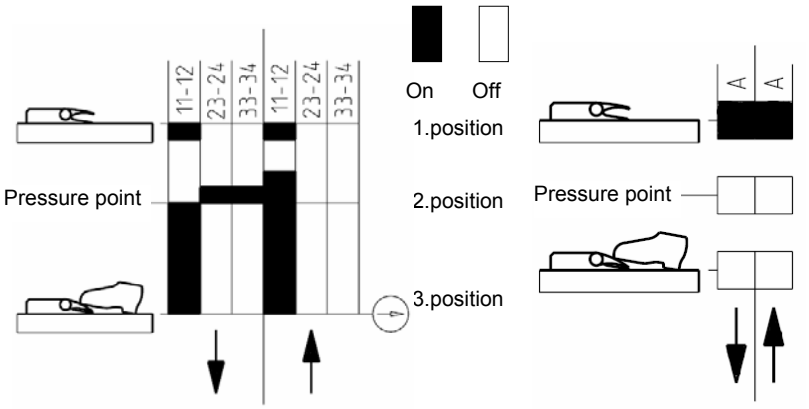


Switching symbol
(Three-Step-Safety Switch)

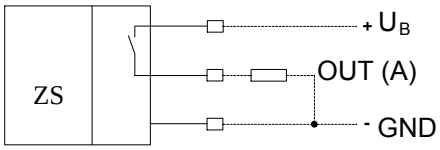
1. position Off-position	2. position On-position	3. position Off-position with positive opening
		

To reach the 3rd position, the tactile touch has to be surmounted.

Operating diagramme



Wiring diagram PNP additional board



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Electrical data PNP additional board		
Switching element function		PNP, N.O.
Operational voltage range	U_B	10 - 39 V DC
Switching current		400 mA
Operational current		< 20 mA
Voltage drop	U_d	≤ 1,5 V
Short–circuit protection		pulsed
False polarity protection		yes

Electromagnetic compatibility (EMC) PNP additional board	
Electromagnetic field test	IEC 61000-4-3
Electrostatic discharge test	IEC 61000-4-2
Electrical fast transient immunity test	IEC 61000-4-4
Radiated disturbance field strength	EN 55011

Electrical data safety switch		
Rated insulation voltage	U_i	250 V
Conv. thermal current	I_{the}	5 A
Rated impulse withstand voltage	Uimp	2,5 KV
Rated operational voltage	U_e	240 V AC and 24 V DC
Utilization category		AC-15, U_e /I_e 240 V AC / 1,5 A 50-60 Hz DC-13, U_e /I_e 24 V DC/ 1,0 A
Direct opening action	⊖	acc. to IEC/EN 60947-5-1, Annex K
Short-circuit protective device		D-Fuse 4 A gG
Protection class		I

Mechanical data		
Enclosure		AL, die-cast
Cover		AL, die-cast
Actuator		Foot lever (PA)
Ambient air temperature		Operating temperature range: -10 °C to +50 °C Storage temperature range: -25 °C to +70 °C
Contact type		1 NC, 2 NO. (Zb)
Operating force (pedal centre)	1. position	10 N
	2. position	25 N
Pressure point		≈ 200 N
Mechanical life		
Sequence of the switching position:	1 – 2 – 1	10 x 10^6 operating cycles
or:	1 – 2 – 3 – 1	1 x 10^6 operating cycles
Switching frequency		max. 30/min
Assembly		2 x M8
Connection		6 screw connections (M3,5) with square clamps
Protection ground		2 x M4
Conductor cross-sections		Solid: 0.5 ... 1.5 mm²
		Litz wire with ferrules: 0.5 ... 1.5 mm²
Cable entrance		1 x M20 x 1,5
Weight		Approx. 1,6 kg
Protection type		IP67 in accordance with IEC/EN 60529

ID for safety engineering	
B10d - value	1 x 10^5

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Regulations	
	VDE 0660 T100, DIN EN 60947-1, IEC 60947-1
	VDE 0660 T200, DIN EN 60947-5-1, IEC 60947-5-1
	DIN EN 61326-3-1
	EN 13849
EU Conformity	acc. to directive 2006/95/EG
Approvals	$_{c}UL_{us}$

Safety function

Normally open contacts: 23 – 24, 33 – 44; Signalling contact: 11 – 12

- Position 1: OFF position of the operating contacts (the pedal is not actuated)
- Position 2: ON position of the operating contacts (the pedal is actuated to as far as the pressure point)
- Position 3: OFF position of the operating contacts (the pedal is fully actuated)

If the three-stage enable switch is actuated in position 2, it returns to position 1 when it is released. The three-stage enable switch changes from position 2 to position 3, if it gets further pressed unter after the resistance of the pressure point.
The actuation of the operating contacts is made by a positive opening.
Once the pedal is not pressed, the three-stage enable switch returns to position 1.
The operating contacts are opened in the return stroke.

Notes

The specified protection classification (IP code) applies only when the cover is closed and the appropriate cable is used, in accordance with the clamping range of the above mentioned cable gland.

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