

Foot-switch Series F1

Description **F1-ZSP3D**

Article number **6161500772**

Switching symbol (Three-Step-Safety Switch)

<p>1. position Off-position</p>	<p>2. position On-position</p>
-------------------------------------	------------------------------------

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

<p>3. position Off-position with positive opening</p>	<p>Wiring diagram PNP additional board</p>
---	--

Operating diagramme

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	< 3 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		
Rated insulation voltage	U_i	250 V
Conv. thermal current	I_{the}	5 A
Rated impulse withstand voltage	U_{imp}	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 (pedal stop)
Short-circuit protective device		D-Fuse 4 A gG
Protection class		I

Mechanical data		
Enclosure		AL, die-cast
Cover		AL, die-cast (RAL 9003 - signal white)
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 2. position	10 N 25 N
Pressure point		≈ 200 N
Mechanical life		
Sequence of the switching position:	1 - 2 - 1 or: 1 - 2 - 3 - 1	10 x 10 ⁶ operating cycles 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 mm ² Litz wire with ferrules: 0,5 ... 1 mm ²
Cable entrance		1 x M20 x 1,5
Weight		≈ 1,6 kg
Protection type		IP67 in accordance with IEC/EN 60529

ID for safety engineering	
B10d	Sequence of the switching position: 1 – 2 – 1 10 x 10 ⁶ cycles or: 1– 2 – 3 – 1 1 x 10 ⁶ cycles
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
	DIN EN ISO 13849-1
	DIN EN 60947-5-8
Test principles	
	GS-ET-22
EU Conformity	
	acc. to directive 2006/42/EG
Approvals	
	DGUV
	cUL _{US}
Function	
<p>Normally open contacts: 23 – 24, 33 – 44; Signalling contact: 11 – 12</p> <ul style="list-style-type: none"> • 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) <p>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.</p>	
Notes	
The degree of protection specified (IP code) applies only to a properly closed cover and the use of an equivalent cable gland with adequate cable.	