



## Foot switches

### General

Foot switches, for intensive services suitable for controlling and monitoring of low voltage AC and DC electrical circuits.

### Climatic protections

The standard versions are suitable for use in the following climates:

- Temperate climate cat. 23/50 (DIN 50014)
- Wet climate cat. 23/83 (DIN 50015)
- Hot wet climate cat. 40/92 (DIN 50015)
- Variable wet climate cat. FW 24 (DIN 50016)

### Standards

IEC 947-5-1, CEI EN 60947.5.1  
VDE 0660

### Approvals

CSA, UL

### Specifications

Temperature ranges	Operation	from -30°C up to +80°C						
	Storage	from -30°C up to +80°C						
Degree of protection (according to IEC 529)		IP 65						
Vibration resistance		20g (10 up to 55Hz)						
Mechanical endurance		2 x 10 <sup>7</sup> for all the types						
<b>Electrical</b>								
Rated insulation voltage according to EN 60947.1		500V						
Insulation class according to VDE 0110		Group C						
Electric shock protection according to IEC 536		Class I						
Short-circuit prot. according to IEC 269.1 and 269.3		10A gL fuses						
<b>Electrical performances of the contact blocks</b>								
Rated thermal current (I <sub>th</sub> )		10A						
Performances according to EN 60947.5.1								
Slow motion contacts Category AC 15	Voltage	Ue (V)	24	48	110	220	380	
	Current	Ie (A)	6	6	6	6	4	
Snap action contacts Category AC 15	Voltage	Ue (V)	24	48	110	220	380	
	Current	Ie (A)	6	6	6	5	4	
Category DC 13	Voltage	Ue (V)	24	48	110	220		
	Current	Ie (A)	1	0,8	0,7	0,3		
Connection		Same polarity for both slow motion and snap action contacts						
Cables entries	IPA1, IPA2, IPB1, IPB2	1 x M20						
	IPA1-P	2 x M20						

Order codes ● pg. E.67  
Dimensional drawings ● pg. E.73

**Foot switches - Contact combinations (per pedal)**

		Slow break				Snap action					
		Function (1)	Cat. no	Ref. no.	Cat. no	Ref. no.	Cat. no	Ref. no.	Cat. no	Ref. no.	Pack
	<b>ONE pedal Without guard</b>	N	IPA1-N211B	132170			IPA1-N411B	132198	IPA1-N422B	132213	1
		P(2)	IPA1-P211B	132171			-		-		1
		D	-						IPA1-D422B	132214	1
	<b>ONE pedal With guard</b>	N	IPB1-N211B	132172	IPB1-N222B	132186	IPB1-N411B	132201	IPB1-N422B	132215	1
		P(2)	IPB1-P211B	132173	-		-		-		1
		D	-				-		IPB1-D422B	132216	1
		R	-				IPB1-R411B	132203	-		1
	<b>ONE pedal With guard Heavy duty</b>	N	IPA2-N211B	132182							1
<b>Spare microswitches</b>			N211B	116113	N222B	116664	N411B	116663	N422B	116665	1

- (1) **Function N**  
Normal operation. When the pedal is pressed the contacts change position. When released they return to their position.
- Function P**  
Press-on press-off operation. The position of the contacts changes each time the pedal is pressed.
- Function D**  
Two-stage operation. Used with two contacts blocks. When the pedal is pressed to the first point, the contacts of the first block switch; when pressed as far as the second point the contacts of the second block switch and the first block stays in the same position.
- Function R**  
Normal operation with potentiometer. When the pedal is pressed, the contacts change position at the same time as the potentiometer is operated. When released, the contacts and potentiometer return to their initial position.

Positive opening.

- (2) Version with function P do not correspond to the concept of positive opening.



Approvals



Features

Enclosed in metal with aluminium protection cover, safety latch function "OFF-ON-OFF" with manual reset.

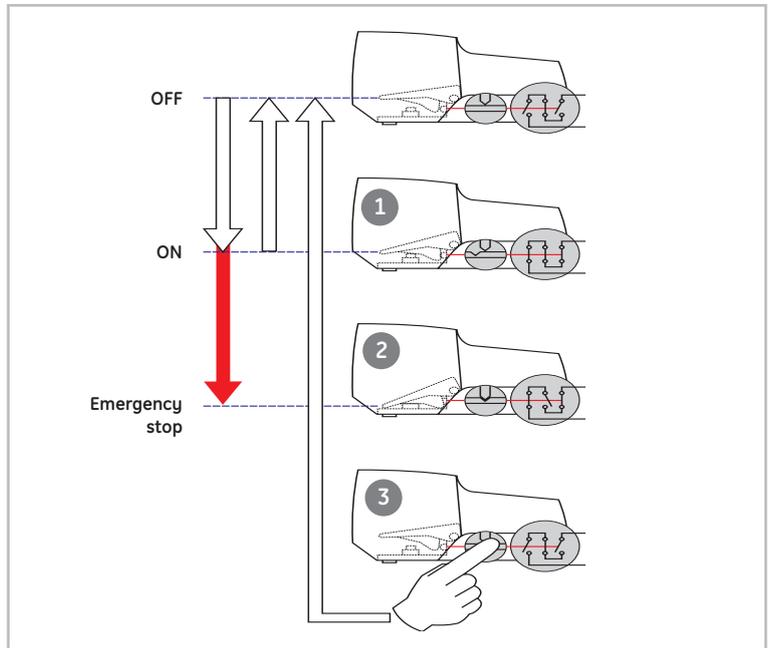
Technical data

Switching diagram	
1) Trigger point	
2) Latched position	
Rated insulation voltage $U_i$	max. 400VAC
Thermal continuous current $I_{the}$	max. 10A
Switching frequency	max. 50/min.
Mechanical operational life number of switching cycles	$10 \times 10^6$
Ambient temperature	-30°C to +80°C
Cable conduits	(3x) M20x1.5
Protection degree	IP65
Actuating force (approx.)	10N
Trigger point	200N
Weight	1.5 kg

Safety foot switches

Operation

- 1 Pedal operation up to the trigger point**  
The operating contact is closed, the operating process is started
- 2 Operation past the trigger point in emergency cases**  
The operating contact is opened and latched and the process is stopped. Also if the device is unused, the latch remains in the off-position in this phase. Uncontrolled restart is prevented
- 3 Reset function**  
Only after the danger has passed can the contacts be manually unlatched (push-button on the side). The operating process can now be restarted by pushing the pedal up to the triggering point.



Order codes

	Cat. no.	Ref. no.	Pack
- According to standards: EN 60947-1 / IEC 60947-5-1	IPSF1	223000	1
- Slow-action contact - Snap-action contact - Trigger point - Latch function - Making current according to EN/IEC 60947-5-1 AC15/240V/3A			

Dimensions ● pg. E.73

