

General Information



BERNSTEIN – For over 50 years we have developed and produced foot switches

Tailored to your applications –
the modular foot switch concept from BERNSTEIN.

BERNSTEIN, a leader in the field of industrial foot switches, incorporates more than 50 years of experience into the development and production of its products. The wide range of models reflects the expertise of the company offering foot switch solutions for many different applications.

- Uncovered
- Covered
- Standard
- Slow or Snap Action
- Two Stage Operation
- Latching Function
- Analog Output
- Anti-Trip
- Protective Covers
- Enabling Function
- Latching Safety
- Build in E-Stop
- Internal Contactor
- Build in Foot Rest
- ASi Interface
- ATEX Rated
- Mini Pedal
- Medical

Overview



Technical data

Electrical data		
Rated insulation voltage	U_i	400 V AC
		250 V AC (in type designation "ZS", "EX")
Rated impulse strength	U_{imp}	4 kV *
		2,5 kV (in type designation "C", "ZS", "EX") *
Conventional thermal current	I_{the}	10 A
		5 A (in type designation "ZS", "EX")
Utilization category		AC-15, U_e / I_e 240 V / 3 A
		AC-15, U_e / I_e 240 V / 1,5 A (in type designation "ZS")
Positive opening		according to IEC/EN 60947-5-1, Addendum K (when reaching the pedal stop)
Over-voltage category (switch-in contact with enabling function)		III (according to IEC 60664-1)
Protection class		I

* does not apply to "MI" and "MI RG" in article designation

Mechanical data	
Enclosure	Cast aluminum (powder-coated)
Cover, Protective shroud UN	Cast aluminum (powder-coated)
Foot pedal	Thermoplastic
Ambient temperature (with no icing / no condensation)	-30°C to +80°C (-20°C to +65°C in type designation "EX")
Storage temperature	-30°C bis +80°C (-20°C to +65°C in type designation "EX")
Mechanical service life	> 1 x 10 ⁶ switching cycles when using switches with potentiometer 5 x 10 ⁴
Switching frequency	50 min ⁻¹ when using switches with potentiometer 20 min ⁻¹
Type of connection	Screw connections (M3,5)
Conductor cross sections	Single-wire 0,5 – 1,5 mm ² or stranded wire with ferrule 0,5 – 1,5 mm ²
Cable entry	M20 x 1,5
Weight with cover	F1 ≈ 0,6 kg, F2 ≈ 1,7 kg, F3 ≈ 3,0 kg
Weight with protective shroud UN	F1 ≈ 1,5 kg, F2 ≈ 2,6 kg, F3 ≈ 5,4 kg
Protection class	Protection class depends on type. Standard is IP 65.

Standard values for safety technology

B10d	20 x 10 ⁶
	6 x 10 ⁶ Restrictions in article designation "C" *
	2 x 10 ⁶ Restrictions in article designation "D" *
	4 x 10 ⁶ Restrictions in article designation "EX" *
	1 x 10 ⁵ Restrictions in article designation "ZS" *

* Once a restriction exists, the lowest value needs to be applied.

This technical data is generic to our standard foot switch range, please refer to individual technical data sheets for exact product information as the technical data above may vary.

Standards

VDE 0660 T100, DIN EN 60947-1, IEC 60947-1
 VDE 0660 T200, DIN EN 60947-5-1, IEC 60947-5-1

Approvals*

CCSAUS A300, Q300 (same polarity)
 cUL_{US} B300 (in type designation "ZS")
 DGUV (Only switches that have an appropriate label.)

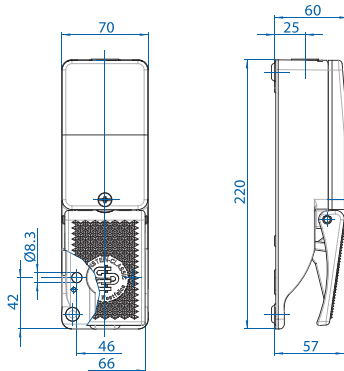
* Approvals depend on type.
 More information can be found in the data sheet.

Single Pedal Without Cover

STANDARD



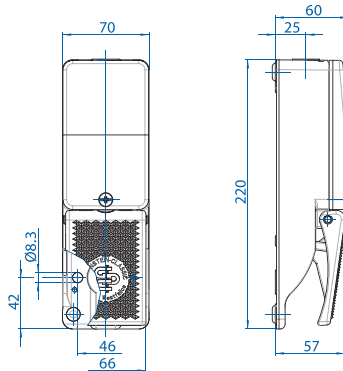
Standard OFF-ON Operation - Push pedal to change contact state. Release pedal to return to original state.



STANDARD with IP67 & IP68 PROTECTION



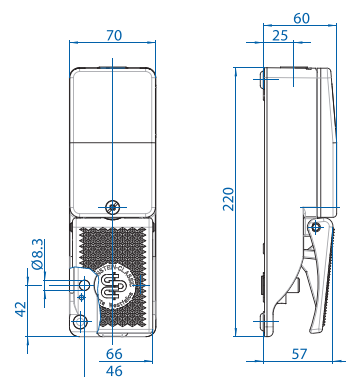
Standard OFF-ON Operation - Push pedal to change contact state. Release pedal to return to original state. With IP67 & IP68 Protection Rating (Temporary Submersion).



TWO STAGE OPERATION



Two Stage Operation- Press Pedal to change the state of the first set of contacts. Continue to press further to change the second set of contacts.



Single pedal foot switch F1		
Article number	Designation	Switching contacts
Snap-action contact:		
		Pedal 1
606.1300.011	F1-SU1Z	1NC / 1NO
606.1400.061	F1-SU2Z	2NC / 2NO
Slow-action contact:		
		Pedal 1
616.1100.005	F1-U1Z	1NC / 1NO
606.1200.003	F1-U2Z	2NC / 2NO

Single pedal foot switch F1			
Article number	Cable Entry	Designation	Switching contacts
Slow-action contact (IP 67):			
			Pedal 1
616.1100.469	1 x M20	F1-U1Z	1NC / 1NO
616.1100.469	3 x M20	F1-U1Z	1NC / 1NO
Slow-action contact (IP 68):			
			Pedal 1
616.1100.251	1 x M20	F1-U1Z	1NC / 1NO

Single pedal foot switch F1			
Article number	Designation	Switching contacts	Pressure point
Slow-action contact:			
			Pedal 1
606.1200.007	F1-U2ZD	2NC / 2NO	200 N

Single Pedal Without Cover

LATCHING



Latching Operation - Push pedal to change contact state. When you release the pedal, the contacts remain in that state. Push again to return to original state.

ANALOG OUTPUT



Analog Output Operation - As the pedal is depress, voltage or amperage (depending on model) is increase. Features an additional programmable NP NO signaling contact that activates at a preset level.



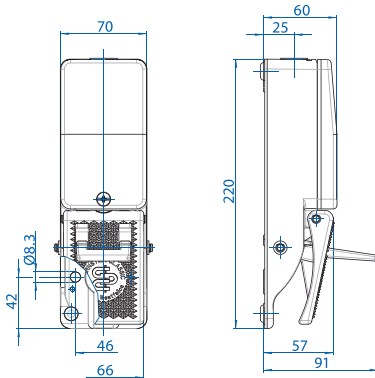
Single pedal foot switch F1			Single pedal foot switch F1		
Article number	Designation	Switching contacts	Article number	Designation	Output Range
		Pedal 1	616.1500.723	F1-AU0-5	0 - 5 V
616.1000.676	F1-A2Y	2NC	616.1500.724	F1-AU0-10	0 - 5 V
606.1100.001	F1-U1Y	1NC / 1NO	616.1500.725	F1-AI0-20	0 - 20 mA
			616.1500.726	F1-AI4-20	4 - 20 mA

Single Pedal With Kick Protection

STANDARD with Anti Trip



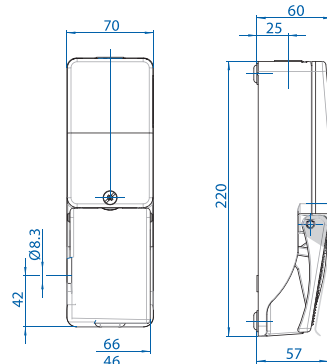
Standard OFF-ON Operation - Push forward in the Anti Trip Pedal Lock to release. Push down pedal to change contact state. Release pedal to return to original state.



STANDARD with Protective Hinged Cover



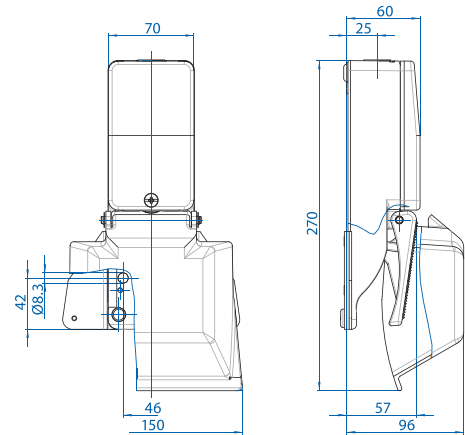
Standard OFF-ON Operation - Lift protective hinged cover up to activate pedal. Push pedal down to change contact state. Release pedal to return to original state. With IP67 Protection Rating (Temporary Submersion).



STANDARD with Protective Shroud



Standard OFF-ON Operation - Lift protective hinged Shroud up to activate pedal. Push pedal down to change contact state. Release pedal to return to original state.



Single pedal foot switch F1		
Article number	Designation	Switching contacts
616.1100.554	F1-U1Z AT	1NC / 1NO

Single pedal foot switch F1		
Article number	Designation	Switching contacts
606.1400.572	F1-SU2Z PS	2NC / 2NO

Single pedal foot switch F1		
Article number	Designation	Switching contacts
616.1600.071	F1-U1Z UK	1NC / 1NO

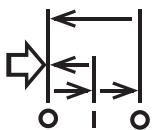
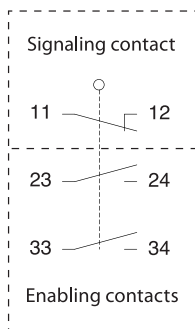
Enabling Foot Switch without Cover

The enable foot switch provides two enabling contacts and one signaling contact and is available with or without latch. If the pedal is pressed up to pressure point, the two enable contacts are closed. If the pedal is released, the enable contacts are open again. If the pedal is pressed past the pressure point, to the bottom position, the positive opening action enabling contacts are opened. When the pedal is released from the bottom position, the enabling contacts remain open through the center position to the top. For the application of an enable device, the rules for DIN EN ISO 12100 and DIN EN 60204-1 apply.

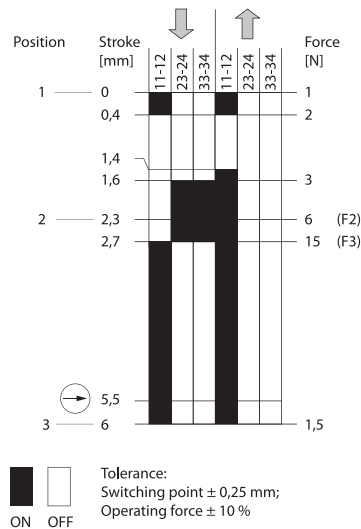
The programmable signaling contact can be used to indicate a fixed position, with a PNP output. By combining both outputs you can determine if the actuation position was made with the top position- the OFF position of the enable contacts (the actuator is not pressed) - or the bottom position - the OFF position of the operating contacts (the actuator is fully pressed).



Circuit symbol

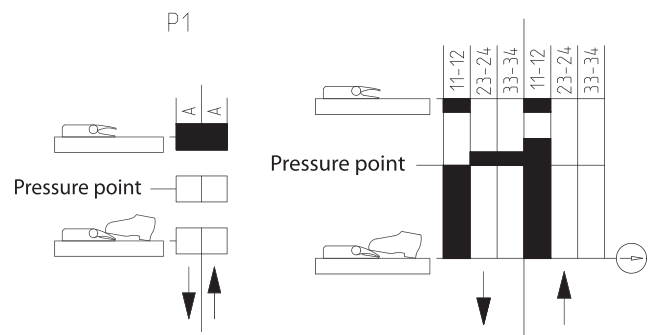


Switching diagram



The indicated travels and forces refer to the switch-in contact of the foot switch with latching function.

Switching diagram with PNP sensor



Example of a switching diagrams with static position monitoring in position 1

Single pedal enable foot switch F1

Article number	Designation	Switching contacts	Pressure point	Special feature
606.1500.559	F1-ZSD	1NC / 2NO	200 N	Pressure point D
606.1500.567	F1-ZSDR	1NC / 2NO	200 N	Pressure point D, Latching R
606.1500.569	F1-ZSP1D	1NC / 2NO	200 N	Additional board 1*, Pressure point D
606.1500.570	F1-ZSP3D	1NC / 2NO	200 N	Additional board 3**, Pressure point D

* Additional board PNP for determination of switching position 1
 ** Additional board PNP for determination of switching position 3

Single Pedal With Cover

STANDARD



Standard OFF-ON Operation - Push pedal to change contact state. Release pedal to return to original state.

TWO STAGE OPERATION

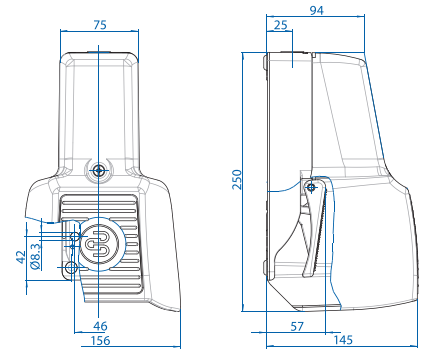
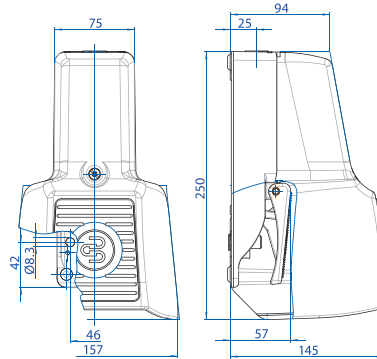
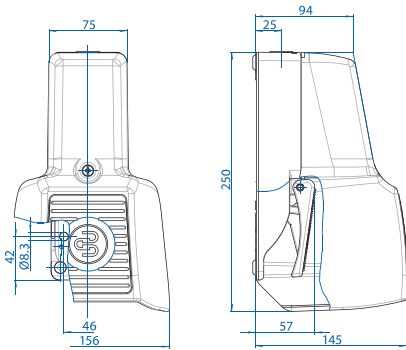


Two Stage Operation- Press Pedal to change the state of the first set of contacts. Continue to press further to change the second set of contacts.

LATCHING



Latching Operation - Push pedal to change contact state. When you release the pedal, the contacts remain in that state. Push again to return to original state.



Single pedal foot switch F1

Article number	Cable entry	Designation	Switching contacts
----------------	-------------	-------------	--------------------

Snap-action contact:

			Pedal 1
606.1800.012	1 x M20	F1-SU1Z UN	1NC / 1NO
606.1900.062	1 x M20	F1-SU2Z UN	2NC / 2NO

Slow-action contact (IP65 Protection Rating):

			Pedal 1
606.1600.006	1 x M20	F1-U1Z UN	1NC / 1NO
606.1700.004	1 x M20	F1-U2Z UN	2NC / 2NO

Slow-action contact (IP67 Protection Rating):

			Pedal 1
606.1600.538	1 x M20	F1-U1Z UN	1NC / 1NO
606.1600.345	3 x M20	F1-U1Z UN	1NC / 1NO

Single pedal foot switch F1

Article number	Designation	Switching contacts	Pressure point
----------------	-------------	--------------------	----------------

Snap-action contact:

		Pedal 1	Pedal 1
616.1800.073	F1-SU1ZD UN	1NC / 1NO	200 N
606.1900.433	F1-SU2ZD UN	2NC / 2NO	200 N

Slow-action contact:

		Pedal 1
606.1600.010	F1-U1ZD UN	1NC / 1NO 200 N
606.1700.008	F1-U2ZD UN	2NC / 2NO 200 N

Single pedal foot switch F1

Article number	Designation	Switching contacts
----------------	-------------	--------------------

Snap-action contact: Pedal 1
616.1800.247 F1-SU1Y UN 1NC / 1NO

Slow-action contact:
616.1600.295 F1-U1Y UN 1NC / 1NO

Single Pedal With Cover

WITH E-STOP BUTTON



Standard OFF-ON Operation - Push pedal to change contact state. Release pedal to return to original state. With 2NC contact Emergency Stop

INTERNAL CONTACTOR

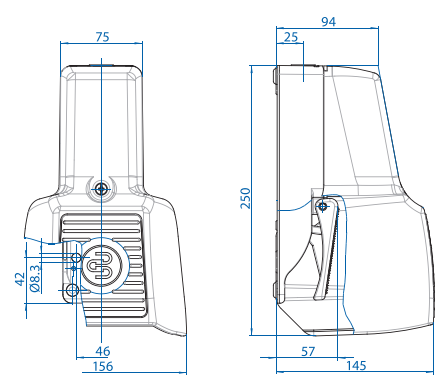
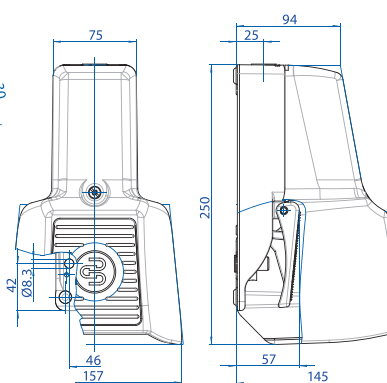


Standard and Latching style with built in contactor can switch up to 16AMPS@400VAC for AC1 applications, with additional 3NO/1NC Contacts

ANALOG OUTPUT



Analog Output Operation - As the pedal is depress, voltage or amperage (depending on model) is increase. Features an additional programmable PNP NO signaling contact that activates at a preset level.



Single pedal foot switch F1

Article number	Designation	Switching contacts
606.1600.435	F1-U1Z NA2 UN	1NC / 1NO

Single pedal foot switch F1

Article number	Designation	Switching contacts
Standard		
606.1800.436	F1-SU1Z LS22 UN	1NC / 1NO
Latching		
606.1800.439	F1-SU1Y LS22 UN	1NC / 1NO

Single pedal foot switch F1

Article number	Designation	Output Range
616.1000.727	F1-AU0-5	0 - 5 V
616.1000.728	F1-AU0-10	0 - 5 V
616.1000.729	F1-AI0-20	0 - 20 mA
616.1000.730	F1-AI4-20	4 - 20 mA

Single Pedal With Cover

STANDARD with Anti Trip



Standard OFF-ON Operation - Push forward in the Anti Trip Pedal Lock to release. Push down pedal to change contact state. Release pedal to return to original state.

STANDARD with FST Footrest

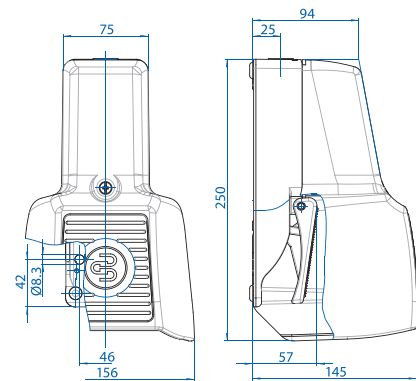
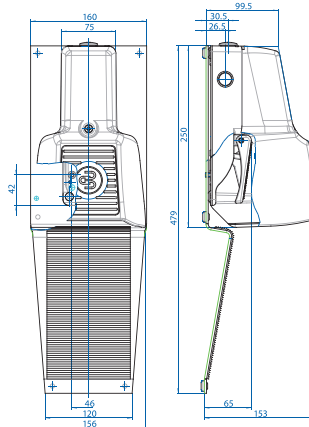
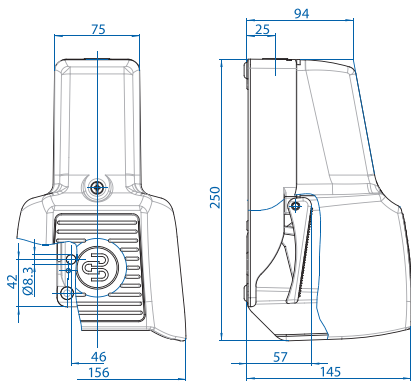


Standard OFF-ON Operation - Push pedal to change contact state. Release pedal to return to original state. With anti-fatigue footrest.

ASI Interface



Foot Switches with built in ASI Bus System interface via an M12 plug connection. Available in Standard or Enabling Switch versions



Single pedal foot switch F1		
Article number	Designation	Switching contacts
616.1800.482	F1-SU1Z AT UN	1NC / 1NO
616.1600.400	F1-U1Z AT UN	1NC / 1NO
616.1700.483	F1-U2Z AT UN	2NC / 2NO
616.1700.660	F1-U2ZD AT UN	2NC / 2NO

Single pedal foot switch F1		
Article number	Designation	Switching contacts
616.1700.091	F1-U2Z UN FST	2NC / 2NO

Standard with ASI Interface	
Article number	Designation
607.3700.076	ASI F1 UN

Enabling Switch with ASI Interface	
Article number	Designation
607.3700.085	F1-ASI-ZSD UN
607.3700.086	F1-ASI-ZSDR UN (Latching)

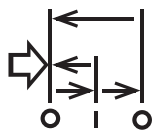
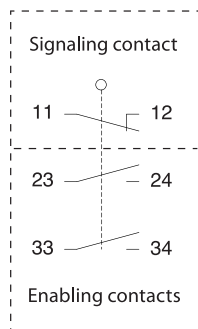
Enabling Foot Switch with Cover

The enable foot switch provides two enabling contacts and one signaling contact and is available with or without latch. If the pedal is pressed up to pressure point, the two enable contacts are closed. If the pedal is released, the enable contacts are open again. If the pedal is pressed past the pressure point, to the bottom position, the positive opening action enabling contacts are opened. When the pedal is released from the bottom position, the enabling contacts remain open through the center position to the top. For the application of an enable device, the rules for DIN EN ISO 12100 and DIN EN 60204-1 apply.

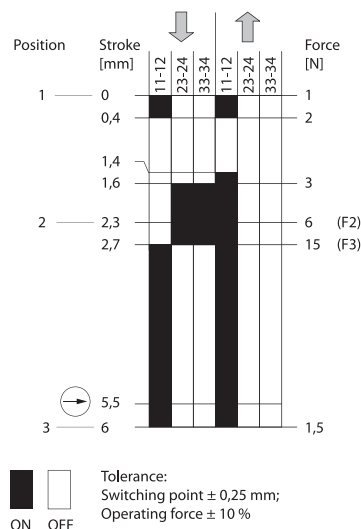
The programmable signaling contact can be used to indicate a fixed position, with a PNP output. By combining both outputs you can determine if the actuation position was made with the top position- the OFF position of the enable contacts (the actuator is not pressed) - or the bottom position - the OFF position of the operating contacts (the actuator is fully pressed).



Circuit symbol

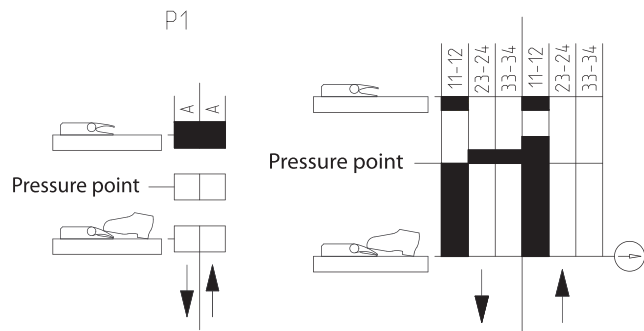


Switching diagram



The indicated travels and forces refer to the switch-in contact of the foot switch with latching function.

Switching diagram with PNP sensor



Example of a switching diagrams with static position monitoring in position 1

Single pedal foot switch with enabling function F1

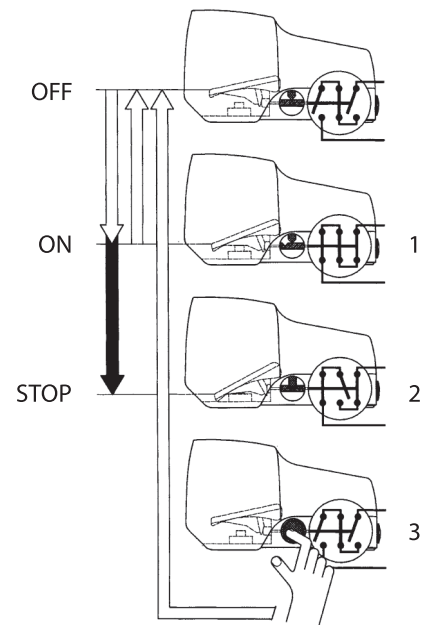
Article number	Designation	Switching contacts	Pressure point	Special feature
606.1000.558	F1-ZSD UN	1NC / 2NO	200 N	Pressure point D, Prot. shroud UN
606.1000.560	F1-ZSDR UN	1NC / 2NO	200 N	Pressure point D, Latching R, Prot. shroud UN
606.1000.564	F1-ZSP1D UN	1NC / 2NO	200 N	Additional board 1*, Pressure point D, Prot. shroud UN
607.3700.085	F1-ASI-ZSD UN	200 N	200 N	ASI-ZS, Pressure point D, Prot. shroud UN
607.3700.086	F1-ASI-ZSDR UN	200 N	200 N	ASI-ZS, Pressure point D, Latching R, Prot. shroud UN

* Additional board PNP for determination of switching position 1

Foot Switches with Safety Lock Plus Manual Release



- **Pedal pressed up to pressure point:**
The make contact is closed and the work process is started.
- **Pedal pressed beyond resistance of the pressure point in an emergency situation:**
The make contact is interrupted and locked, the work process is interrupted. In this phase the lock remains in the Off position even when the pedal is not pressed. This reliably prevents uncontrolled restart of the machine or moving parts.
- **Release:**
Only after the hazardous situation has been remedied does manual release (pushbutton on the side of the enclosure) release the contacts again and the work process can be restarted by pressing the pedal as far as the pressure point.



Safety function on foot switches with mechanical lock (SiPf)

Single pedal foot switch F1

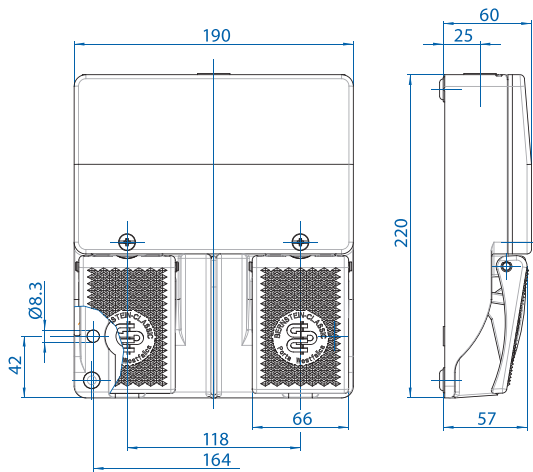
Article number	Designation	Switching contacts	Pressure point	Special feature
616.1000.560	F1-SU1ZUV1ZDR UN	2NC / 2NO	200 N	Pressure point D, Latching, Prot. shroud UN
616.1000.203	F1-SU1Z/UV1ZD UN	1NC / 2NO	200 N	Pressure point D, Latching, Prot. shroud UN
616.1000.626	F1-SU1ZCA2ZDR UN	3NC / 1NO	200 N	Pressure point D, Latching, Prot. shroud UN
616.1000.443	F1-UV1Z/UV1ZD	2NC / 2NO	200 N	Pressure point D, Latching
616.1000.532	F1-UV1Z/UV1ZD UN	2NC / 2NO	200 N	Pressure point D, Latching, Protective unlatch button, Prot. shroud UN

Double Pedal without Cover

STANDARD



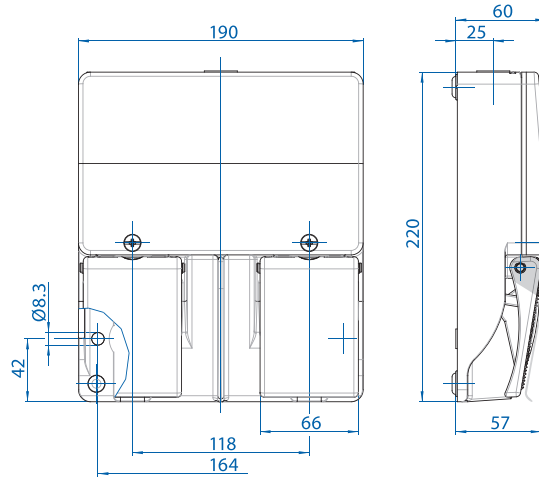
Standard OFF-ON Operation-
Push pedal to change contact state. Release pedal to return to original state.



STANDARD with Protective Hinged Cover



Standard OFF-ON Operation-
Lift protective hinged cover up to activate pedal.
Push pedal down to change contact state. Release pedal to return to original state. With IP67 Protection Rating (Temporary Submersion).



Two pedal foot switch F2

Article number	Designation	Switching contacts	
Snap-action contact:			
		Pedal 1 (left)	Pedal 2 (right)
606.2330.021	F2-SU1Z/SU1Z	1NC / 1NO	1NC / 1NO
606.2440.065	F2-SU2Z/SU2Z	2NC / 2NO	2NC / 2NO
Slow-action contact:			
		Pedal 1 (left)	Pedal 2 (right)
606.2110.013	F2-U1Z/U1Z	1NC / 1NO	1NC / 1NO
606.2220.015	F2-U2Z/U2Z	2NC / 2NO	2NC / 2NO

Two pedal foot switch F2

Article number	Designation	Switching contacts	
		Pedal 1 (left)	Pedal 2 (right)
606.2440.573	F2-SU2ZPS/SU2ZPS	2NC / 2NO	2NC / 2NO

Double Pedal with Cover

STANDARD



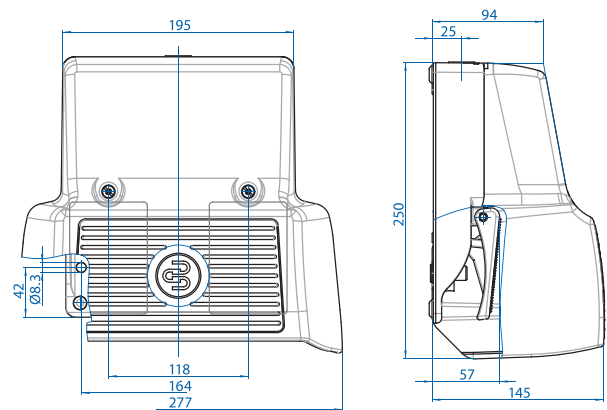
Standard OFF-ON Operation-
Push pedal to change contact state. Release pedal to return to original state.



TWO STAGE OPERATION



Two Stage Operation-
Press Pedal to change the state of the first set of contacts. Continue to press further to change the second set of contacts.



Two pedal foot switch F2

Article number	Designation	Switching contacts	Special feature
Snap-action contact:			
		Pedal 1 (left) Pedal 2 (right)	
606.2830.022	F2-SU1Z/SU1Z UN	1NC / 1NO	1NC / 1NO Prot. shroud UN
606.2940.066	F2-SU2Z/SU2Z UN	2NC / 2NO	2NC / 2NO Prot. shroud UN
Slow-action contact:			
		Pedal 1 (left) Pedal 2 (right)	
606.2610.014	F2-U1Z/U1Z UN	1NC / 1NO	1NC / 1NO Prot. shroud UN
606.2720.016	F2-U2Z/U2Z UN	2NC / 2NO	2NC / 2NO Prot. shroud UN

Two pedal foot switch F2

Article number	Designation	Switching contacts	Two Stage Operation
Snap-action contact:			
		Pedal 1 (left) Pedal 2 (right)	
616.2000.418	F2-SU1Z/SU2ZD UN	1NC / 1NO 2NC / 2NO	(Pedal 2)
606.2830.417	F2-SU1ZD/SU1ZD UN	1NC / 1NO 1NC / 1NO	(Pedal1+Pedal 2)
616.2000.503	F2-SU4ZD/SU4ZD UN	4NC / 4NO 4NC / 4NO	(Pedal 1+Pedal 2)
Slow-action contact:			
616.2610.253	F2-U1ZD/U1Z UN	1NC / 1NO 1NC / 1NO	(Pedal 1)
606.2620.086	F2-U1Z/U2ZD UN	1NC / 1NO 2NC / 2NO	(Pedal 2)
606.2720.020	F2-U2ZD/U2ZD UN	2NC / 2NO 2NC / 2NO	(Pedal 1+Pedal 2)
606.2710.376	F2-U2ZD/U1Z UN	2NC / 2NO 1NC / 1NO	(Pedal 1)

Drawing dimensions in mm

LATCHING

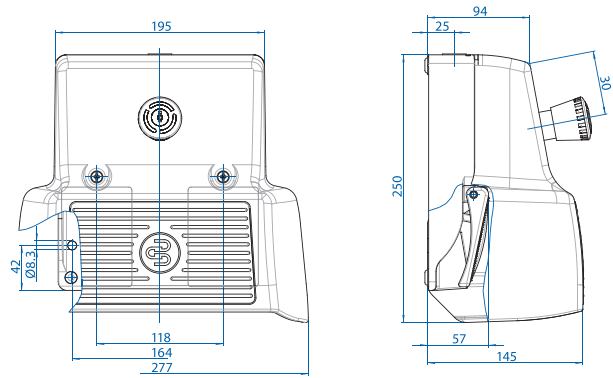
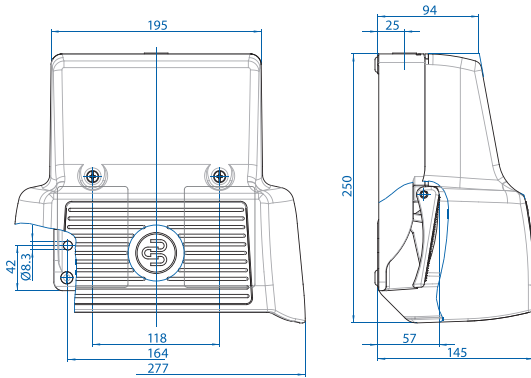


Latching Operation - Push pedal to change contact state. When you release the pedal, the contacts remain in that state. Push again to return to original state.

WITH E-STOP BUTTON



Standard OFF-ON Operation - Push pedal to change contact state. Release pedal to return to original state. With 2NC contact Emergency Stop



Two pedal foot switch F2

Article number	Designation	Switching contacts		Latching
		Pedal 1 (left)	Pedal 2 (right)	
616.2840.655	F2-SU1Y/SU2Z UN	1NC / 1NO	2NC / 2NO	(Pedal 1)
606.2610.018	F2-U1Y/U1Y UN	1NC / 1NO	1NC / 1NO	(Pedal 1+Pedal 2)
606.2610.047	F2-U1Y/U1Z UN	1NC / 1NO	1NC / 1NO	(Pedal 1)

Two pedal foot switch F2

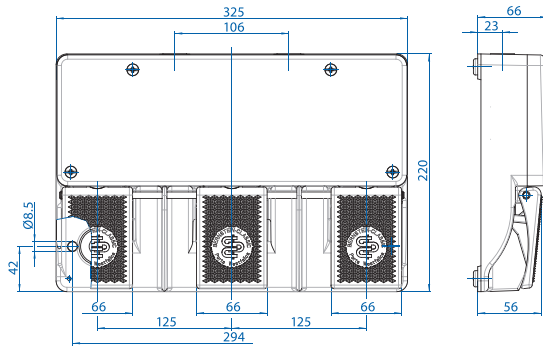
Article number	Designation	Switching contacts	
		Pedal 1 (left)	Pedal 2 (right)
616.2720.700	F2-U2Z/U2Z NA2 UN	2NC / 2NO	2NC / 2NO

Triple Pedal

STANDARD WITHOUT COVER



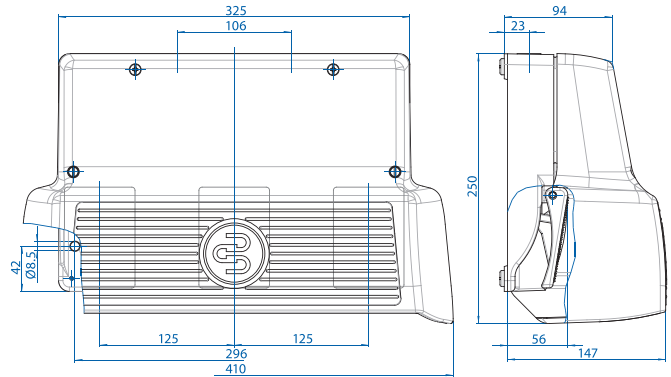
Standard OFF-ON Operation-
Push pedal to change contact state. Release pedal to return to original state.



STANDARD WITH COVER



Standard OFF-ON Operation-
Push pedal to change contact state. Release pedal to return to original state.



Three pedal foot switch F3

Article number	Designation	Switching contacts
Snap-action contact:		
		Pedal 1 (left) Pedal 2 (middle) Pedal 3 (right)
616.3444.577	F3-SU2Z/SU2Z/SU2Z	2NC / 2NO 2NC / 2NO 2NC / 2NO
Slow-action contact:		
		Pedal 1 (left) Pedal 2 (middle) Pedal 3 (right)
606.3111.025	F3-U1Z/U1Z/U1Z	1NC / 1NO 1NC / 1NO 1NC / 1NO

Three pedal foot switch F3

Article number	Designation	Switching contacts
Snap-action contact:		
		Pedal 1 (left) Pedal 2 (middle) Pedal 3 (right)
606.3833.045	F3-SU1Z/SU1Z/SU1Z UN	1NC / 1NO 1NC / 1NO 1NC / 1NO
Slow-action contact:		
		Pedal 1 (left) Pedal 2 (middle) Pedal 3 (right)
606.3611.026	F3-U1Z/U1Z/U1Z UN	1NC / 1NO 1NC / 1NO 1NC / 1NO

Foot switches for potentially explosive atmospheres

BERNSTEIN offers you a wide range of single and double pedal foot switches designed to meet the exacting requirements of zone 1 and 2 potentially explosive atmospheres (other approvals on demand). The foot switches have factory fitted connection cables which are available in different lengths.



Ordering Instructions for foot switches in potentially explosive atmospheres:

Foot switches for potentially explosive atmospheres have "EX" in the article designation and can be delivered in one and two pedal versions.

Single pedal foot switch F1

Article number	Designation	Switching contacts	Special feature
609.6198.014	F1-SU1Z EX 5M	1NC / 1NO	5 m Connection cable
609.6198.015	F1-SU1Z EX 9M	1NC / 1NO	9 m Connection cable
609.6197.017	F1-SU1Z EX UN -2M-	1NC / 1NO	2 m Connection cable, Prot. shroud UN
609.6197.019	F1-SU1Z EX UN -5M-	1NC / 1NO	5 m Connection cable, Prot. shroud UN
609.6197.020	F1-SU1Z EX UN -9M-	1NC / 1NO	9 m Connection cable, Prot. shroud UN

Two pedal foot switch F2

Article number	Designation	Switching contacts		Special feature
		Pedal 1(left)	Pedal 2(right)	
609.6198.022	F2-SU1Z/SU1Z EX -2M-	1NC / 1NO	1NC / 1NO	2 m Connection cable
609.6198.024	F2-SU1Z/SU1Z EX -5M-	1NC / 1NO	1NC / 1NO	5 m Connection cable
609.6197.029	F2-SU1Z/SU1Z EX UN -5M-	1NC / 1NO	1NC / 1NO	5 m Connect. cable, Prot. shroud UN
609.6197.030	F2-SU1Z/SU1Z EX UN -9M-	1NC / 1NO	1NC / 1NO	9 m Connect. cable, Prot. shroud UN

Mobility Handles



The mobility handle option is a complementary accessory for the one (F1) and two (F2) pedal versions. Modification to the foot switch is not required and has retro fitting possibility.

Mobility handling for foot switches:

Article number	Designation
399.6000.229	F1-TV
399.6000.230	F2-TV

Medical Foot Switches

FBT Series



- Modular pedal or joy-pad attachments
- Bar as footrest or for changing position
- Adjustable foot heights ensure the ideal ergonomic position
- High mechanical durability
- 2-level switching possible
- Analogue or digital output signals

MF Series



- Ergonomically optimized, elegant design
- Easy to clean
- Radial cable entry for effective cable protection
- Analogue or digital output signals
- Protected, internal cover seal
- Customized modular design