



Electrical Components

Foot Switches and Accessories

- Single and Multi-Pedal Foot Switches
- Metal and Plastic ▪ Simple Action
 - Bi-stable / Two Stage / Safety
- Miniature Foot Switches ▪ Accessories



F series Foot Switches

ITC presents a complete line of foot switches from Bernstein, designed to respond to the most stringent requirements for machine control and safety applications.

The F series includes simple action switches, models with a safety blocking device, bi-stable (push-push), two-stage, analog output, in 1, 2 or 3 pedal configuration.

F series foot switches can be optioned with a fixed or hinged guard, and E-stops for manual reset. Special models include Hazardous Locations rated switches etc....

Features and specifications:

- **Materials - Body and Guard:** heavy duty die-cast aluminum
- **Materials - Pedal:** Polyamide
- **Guard:** protection from falling objects - 20kg from a height of 1m - top and sides
- **Colour:** Standard colour is red/black. Other colours are available upon request.
- **Approvals:** CSA, cCSAus



F Foot Switches - Technical Information

Mechanical Characteristics	
Ambient temperature	-30 to 80°C
Storage temperature	-30 to 80°C
Mechanical life (number of operations)	>1 x 10 ⁶
Switching frequency	50/minute
Connection type	Screw connection Ø 3.5mm
Conductor size (solid wire)	0.5-1.5 mm ² * (20-16AWG)
Cable entry gland	M20x1.5
Ingress protection	Standard is IP65. IP67 protection is available on most single and two pedal versions.
Weight without guard	1 sw-0.6 kg / 2sw-1.7kg / 3sw-3.0 kg
Weight with guard	1 sw-1.5 kg / 2sw-2.6kg / 3sw-5.4 kg
Material - enclosure and guard	Die-cast aluminum, powder-coated
Material - pedal	Thermoplastic

* For stranded wire, use of a ferrule is recommended
Information subject to change without notice

Electrical Characteristics	
Rated voltage/current (CSA)	300VAC 25A - 2HP or 250VAC 20A - 1HP (as indicated in tables)
Rated impulse withstand	4 kV
Rated thermal current (IEC)	10A
Class of utilization	AC-15 (240V / 3A)
Contact type	Positive opening (IEC 60947-5-1)
Protection class	I
Certification	CSA 018950

Note: The information above is generic to the standard foot switch line
Please refer to individual technical data sheets for exact product information
Information subject to change without notice



Simple Action Foot Switches

Simple action foot switches feature spring return operation.

- Single, double or triple-switch versions available
- Slow-action or snap-action contacts available
- **Contacts:** 1NO+1NC or 2NO+2NC per pedal

Simple-Action Foot Switches (Order by Part No.)

Part No.	Article No.	Description	Guard	Contacts (each pedal)
F1-SU1Z	BE606.1300.011	Single switch, spring return	No	1NO+1NC snap
F1-SU2Z	BE606.1400.061	Single switch, spring return	No	2NO+2NC snap
F1-U1Z	BE606.1100.005	Single switch, spring return	No	1NO+1NC slow
F1-U1Z-IP67	BE616.1100.251	Single switch, spring return (IP67)	No	1NO+1NC slow
F1-U2Z	BE606.1200.003	Single switch, spring return	No	2NO+2NC slow
F2-SU1Z/SU1Z	BE606.2330.021	Double switch, spring return	No	1NO+1NC snap
F2-SU2Z/SU2Z	BE606.2440.065	Double switch, spring return	No	2NO+2NC snap
F2-U1Z/U1Z	BE606.2110.013	Double switch, spring return	No	1NO+1NC slow
F2-U2Z/U2Z	BE606.2220.015	Double switch, spring return	No	2NO+2NC slow
F3-SU2Z/SU2Z/SU2Z	BE613.3444.577	Triple switch, spring return	No	2NO+2NC snap
F3-U1Z/U1Z/U1Z	BE606.3111.025	Triple switch, spring return	No	1NO+1NC slow
F1-SU1Z UN	BE606.1800.012	Single switch, spring return with guard	Yes	1NO+1NC snap
F1-SU2Z UN	BE606.1900.062	Single switch, spring return with guard	Yes	2NO+2NC snap
F1-U1Z UN	BE606.1600.006	Single switch, spring return with guard	Yes	1NO+1NC slow
F1-U2Z UN	BE606.1700.004	Single switch, spring return with guard	Yes	2NO+2NC slow
F2-SU1Z/SU1Z UN	BE606.2830.022	Double switch, spring return with guard	Yes	1NO+1NC snap
F2-SU2Z/SU2Z UN	BE606.2940.066	Double switch, spring return with guard	Yes	2NO+2NC snap
F2-U1Z/U1Z UN	BE606.2610.014	Double switch, spring return with guard	Yes	1NO+1NC slow
F2-U2Z/U2Z UN	BE606.2720.016	Double switch, spring return with guard	Yes	2NO+2NC slow
F3-SU2Z/SU2Z/SU2Z UN	BE616.3444.577	Triple switch, spring return with guard	Yes	2NO+2NC snap
F3-U1Z/U1Z/U1Z UN	BE606.3611.026	Triple switch, spring return with guard	Yes	1NO+1NC slow

Information subject to change without notice

Analog Output Foot Switches

Analog foot switches have a variable controlled current and voltage output that is directly proportional to the pedal position. A programmable signaling output is additionally activated when a predetermined pedal position is reached.

- The analog output can be delivered in a 0-5V, 0-10V, 0-20mA or 4-20mA
- These foot switches are available in single pedal versions; 2 and 3 pedal versions are also available on request
- The Analog Output switches **do not have CSA approval**

Foot Switches with Analog Output (Order by Part No.)

Part No.	Article No.	Description	Guard	Output
F1-AU0-5	BE616.1500.723	Single foot switch, 0-5 V DC analog output	No	0-5 V DC
F1-AU0-10	BE616.1500.724	Single foot switch, 0-10 V DC analog output	No	0-10 V DC
F1-AI0-20	BE616.1500.725	Single foot switch, 0-20 mA analog output	No	0-20 mA
F1-AI4-20	BE616.1500.726	Single foot switch, 4-20 mA analog output	No	4-20 mA
F1-AU0-5 UN	BE616.1000.727	Single foot switch, 0-5 V DC analog output	Yes	0-5 V DC
F1-AU0-10 UN	BE616.1000.728	Single foot switch, 0-10 V DC analog output	Yes	0-10 V DC
F1-AI0-20 UN	BE616.1000.729	Single foot switch, 0-20 mA analog output	Yes	0-20 mA
F1-AI4-20 UN	BE616.1000.730	Single foot switch, 4-20 mA analog output	Yes	4-20 mA

Information subject to change without notice

Bi-stable (push-push) Foot Switches

When the pedal is operated, the contacts are actuated and maintained until the pedal is pressed a second time.

- Single or double-switch versions available
- Slow-action or snap-action contacts available
- Contacts: 1NO+1NC or 2NO+2NC per foot switch
- Bi-stable switches are identified by the letter “Y” (see table below)



Bi-stable Foot Switches (Order by Part No.)

Part No.	Article No.	Description	Guard	Contact Configuration (each pedal)
F1-SU1Y UN	BE616.1800.247	Bi-stable (push-push) switch, with guard	Yes	1NO+1NC snap
F1-A2Y	BE616.1000.676	Bi-stable (push-push) switch	No	2NC slow
F1-U1Y	BE606.1100.001	Bi-stable (push-push) switch	No	1NO+1NC slow
F1-U1Y UN	BE616.1600.295	Bi-stable (push-push) switch, with guard	Yes	1NO+1NC slow
F2-SU1Y/SU2Z UN	BE616.2840.655	Double switch, bi-stable / spring	Yes	L:1NO+1NC snap bi-stable / R:2NO+2NC snap spring
F2-U1Y/U1Y UN	BE606.2610.018	Double bi-stable switch	Yes	L and R: 1NO+1NC slow each
F2-U1Y/U1Z UN	BE606.2610.047	Double switch bi-stable / spring	No	L:1NO+1NC slow bi-stable / R:1NO+1NC slow spring

Information subject to change without notice; L=left pedal / R: right pedal

Two-stage Foot Switches

Two-stage foot switches are designed so that the first part of the pedal travel actuates the first contact. The pedal then reaches a point where further pressure is required in order to activate the second contact. The force of the pressure point can be adjusted upon request.

- Single, double or triple-switch versions available
- Slow-action or snap-action contacts available
- Two-stage foot switches are identified by the letter “D” (see table below)
- Pressure Point setting: 200N (Newtons)**



Two-stage Foot Switches (Order by Part No.)

Part No.	Article No.	Description	Guard	Contact Configuration (each pedal)
F1-U2ZD	BE606.1200.007	Single two stage switch	No	2NO+2NC slow 2-stage
F1-U2ZD UN	BE606.1700.008	Single two stage switch	Yes	2NO+2NC slow 2-stage
F2-U1Z/U2ZD UN	BE606.2620.086	Double switch spring return / two stage	Yes	L:1NO+1NC slow spring / R:2NO+2NC slow 2-stage
F2-SU1Z/SU2ZD UN	BE616.2000.418	Double switch spring return / two stage	Yes	L:1NO+1NC snap spring / R:2NO+2NC snap 2-stage
F2-U2ZD/U2ZD	BE606.2220.019	Double 2-stage switch	No	L & R: 2NO+2NC slow 2-stage
F2-U2ZD/U2ZD UN	BE606.2720.020	Double 2-stage switch	Yes	L & R: 2NO+2NC slow 2-stage
F3-U1Z/U1Z/U2ZD UN	BE606.3612.423	Triple switch spring/spring/2-stage	Yes	L:1NO+1NC slow spring/ C: 1NO+1NC slow spring/ R:2NO+2NC snap 2-stage

Information subject to change without notice; L=left pedal / C=centre pedal / R: right pedal

Enable three position Foot Switches (operator presence detection)

Enable 3 position foot switches are often used as so-called 'hold-to-run control device' to bring a machine into operation. These are referred to as 'Dead-man's switches'.

For this purpose, the enable foot switches equipped with an intermediate pressure point. When operated to the "pressure point", the 2 "enable" contacts are closed. If the pedal is released, the same contacts are opened. If the pedal is pressed beyond the "pressure point", the same contacts are also opened. An additional alarm contact is closed when the pedal returns to the "zero" position. The optional reset button requires the operator to perform a positive action once the protection device has taken effect.



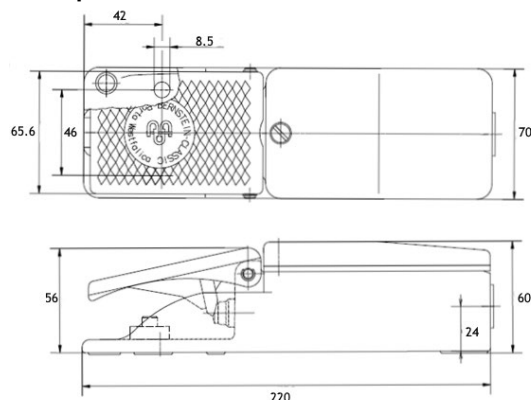
- Single or double switch; available with reset button and guard
- Enable foot switches are identified by the letters "ZSD" (see table below)
- **Pressure Point:** 200N
- **Rated Current:** 5A
- **IP Rating:** IP67
- **Approvals:** cULus; DGUV

Hold-to-Run Foot Switches (Order by Part No.)

Part No.	Article No.	Description	Guard	Contact Config. (each pedal)
F1-ZSD	BE606.1500.559	Pressure Point D	-	1NC+2NO
F1-ZSD UN	BE606.1000.558	Pressure Point D	Yes	1NC+2NO
F1-ZSDR	BE606.1500.567	Pressure Point D, Reset	-	1NC+2NO
F1-ZSDR UN	BE606.1000.560	Pressure Point D, Reset	Yes	1NC+2NO
F2-U1Z/ZSD	BE606.2500.561	Double switch; Pressure Point D	-	L: 1NC+2NO R: 1NC+2NO "D"
F2-U1Z/ZSD UN	BE606.2000.563	Double switch; Pressure Point D	Yes	L: 1NC+2NO R: 1NC+2NO "D"
F2-ZSDR/ZSDR	BE606.2500.567	Double switch; Pressure Point D; Reset	-	L & R: 1NC+2NO "D"

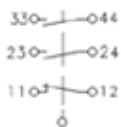
Information subject to change without notice; L=left pedal / R: right pedal

Example: F1-ZSD

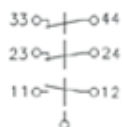


Switching symbol (Three-Step-Safety Switch)

1. position
Off-position

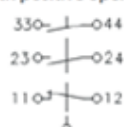


2. position
On-position

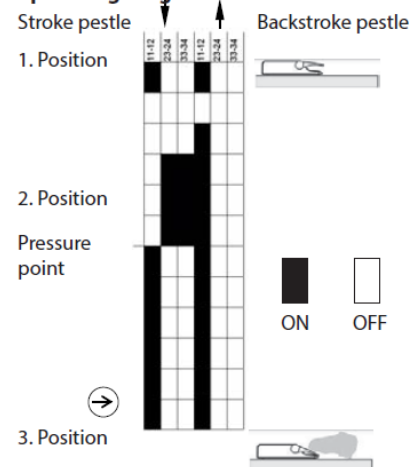


The pressure point must be surpassed for the 3rd position

3. position
Off-position
with positive opening



Operating diagramme



Accessories for F Series Foot Switches (Order by Part No.)

Part No.	Article No.	Description	Details
F1-UN	BE390.6010.719	Replacement guard for single F1 foot switches	die-cast aluminum - red
F2-UN	BE390.6020.720	Replacement guard for double F2 foot switches	die-cast aluminum - red
F3-UN	BE390.6030.721	Replacement guard for triple F3 foot switches	die-cast aluminum - red
F1-TV	BE399.6000.229	Plate with 642mm handle for single F1 foot switches	Base + 642mm rod
F2-TV	BE399.6000.230	Plate with 615mm handle for double F2 foot switches	Base + 615mm rod
F-ST-EINS. 25N	BE391.6001.320	Replacement plunger for F foot switches	
BE391.6001.254		Replacement pressure point for F foot switches	Force: 200N
FS-101	BE600.6101.036	Replacement contact for F foot switches	1NO+1NC slow
FS-101B-S	BE600.6101.060	Replacement contact for F foot switches	1NO+1NC slow; bistable
FS-101SN	BE600.6351.039	Replacement contact for F foot switches	1NO+1NC snap
FS-202	BE600.6101.044	Replacement contact for F foot switches	2NO+2NC slow
FS-202SN	BE600.6451.040	Replacement contact for F foot switches	2NO+2NC snap

Information subject to change without notice

Other F series Foot Switches available

Other models of F series Foot Switches available at ITC include:

- Foot Switches with Footrest 'FS'
- Foot Switches with Pedal lock 'AT'
- Foot Switches with hinged pedal protection 'PS'
- Foot Switches with Emergency Stop button 'NA2'
- Foot Switches with safety lock and reset 'UV'
- Foot Switches with power control 'LS'
- Foot Switches for clean environments 'MF'

Please inquire with ITC.



Foot switches with TV handles



Pedal Lock 'AT'



Emergency Stop 'NA2'



Footrest 'FS'



Clean Environments 'MF'



Hinged Pedal Protection 'PS'

Pneumatic Foot Switches

ITC also offers two models of pneumatic foot switches, for use in several applications such as control of bench-mount wire processing units, crimp tools, presses and test systems. No lubrication required. Use of an air filter is recommended.

Pneumatic Foot Switch E25

This heavy-duty pneumatic foot valve features a die-cast aluminum valve/lever and a pedal made of nylon with reinforcing steel plate. The guard is made of impact-resistant plastic; body in aluminum alloy.

Pneumatic Foot Switch 4F

A compact, economical foot valve equipped with a robust, shock-resistant plastic guard. Body in aluminum alloy.

Pneumatic Foot Switches - Technical Information

Mechanical Characteristics	E25	4F
Ambient temperature	-10 to 70 °C	-20 to 70 °C
Fluid temperature (air)	-10 to 50 °C	5 to 60 °C
Type of function (positions)	3/2 NC, spring return	5/2, spring return
Operating pressure	50-100 PSI; Max 145 PSI / 10 bar	72-100 PSI; Max: 145 PSI
Connection type	G1/4	G1/4
Nominal connector diameter Φ	8mm	8mm

Information subject to change without notice

Pneumatic Foot Switches and Accessories (Order by Part No.)

Part No.	Description	Valve Body	Valve/Lever	Guard
500.905	E25 pneumatic foot switch 3/2NC - without hose	Aluminum alloy	Die-cast aluminum	Plastic - orange
500.909	E25 pneumatic foot switch 3/2NC - with coiled hose	Aluminum alloy	Die-cast aluminum	Plastic - orange
500.931	4F pneumatic foot switch - without hose	Aluminum alloy	Aluminum alloy	Plastic - yellow
500.906	Silencer for pneumatic switch; G1/4 connection	-	-	-
500.934	Coiled hose 8mm	-	-	-
500.935	Quick-connector 1/4G to 8mm hose	-	-	-

Information subject to change without notice



E25 - 500.905



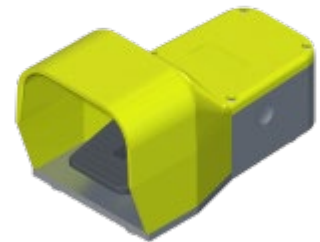
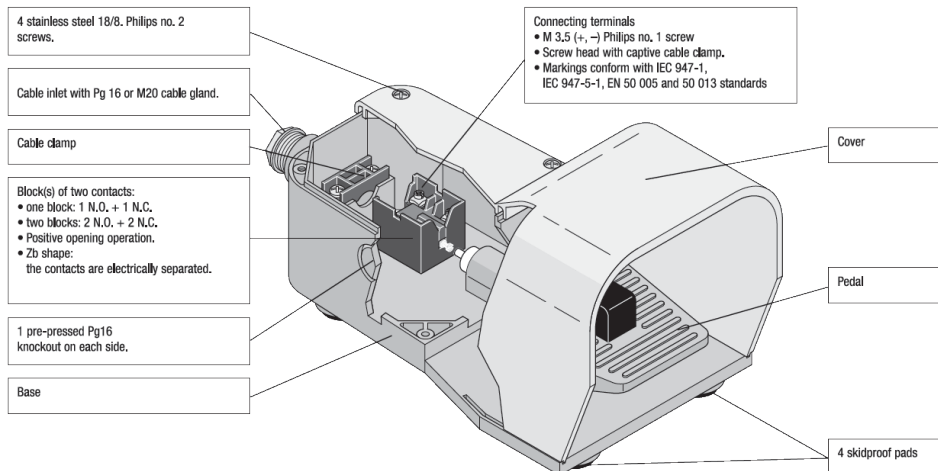
4F - 500.931

Insulated-Base PS Series

This series features a light-weight, shock-resistant insulated ABS base (UL94 V0), with optional ABS or die-cast aluminium guard.

Features and specifications:

- Single or double-switch versions available
- Contacts: 1NO+1NC or 2NO+2NC per foot switch
- Spring return operation, spring return with anti-trip safety latch, and push/push operation available
- Mounting kits for 2, 3 4 or 5 foot switches available
- Approvals:** CSA, UL



Insulated-base PS/PD Foot Switches - Technical Information

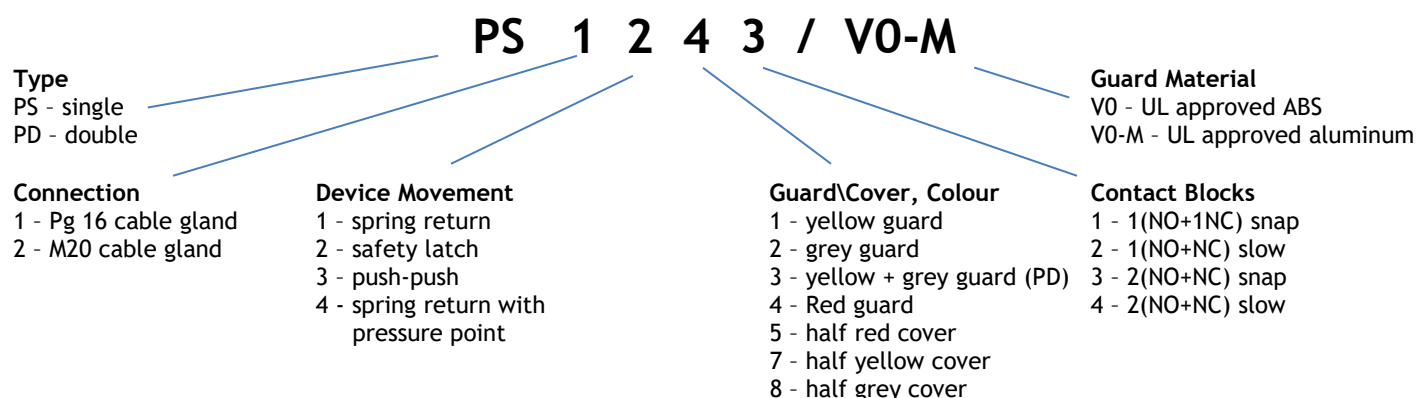
Mechanical Characteristics	
Ambient temperature	-10 to 70° C
Storage temperature	-30 to 80° C
Mechanical life (number of operations)	30x10 ⁶
Connection type	Screw conn. Φ 3.5mm - captive wire clamp
Conductor size (solid wire)	0.75-2.5 mm ² (18-14AWG)*
Cable entry gland	Pg16 - Internal strain relief provided
Ingress protection	IP65
Material - base	ABS UL94V0

* For stranded wire, use of a ferrule is recommended;
 Information subject to change without notice

Electrical Characteristics	
Rated voltage /current (CSA)	300VAC 25A
Rated impulse withstand	6 kV
Class of utilization	AC-15 (240V / 3A) - DC-13
Contact type	Positive opening (IEC 60947-5-1)
Certification	CSA 066746 - UL E189258

Note: The information above is generic to the standard foot switch line
 Please refer to individual technical data sheets for exact product information
 Information subject to change without notice

Naming Convention for Cometpi Foot Switches



Any combination of the above can be ordered; half covers (5, 7 & 8) cannot have guards.

Part Numbers of Some of Our More Popular PS/PD Foot Switches (Order by Part No.)

Part No.	Description	Guard\Cover Colour	Contact (each pedal)
PS1111/V0	Insulated base single switch, spring return	Yellow	1NO+1NC snap
PS1111/V0-M	Insulated base single switch, spring return	Yellow (Aluminium)	1NO+1NC snap
PS1112/V0	Insulated base single switch, spring return	Yellow	1NO+1NC slow
PS1113/V0	Insulated base single switch, spring return	Yellow	2NO+2NC snap
PS1113/V0-M	Insulated base single switch, spring return	Yellow (Aluminium)	2NO+2NC snap
PS1114/V0	Insulated base single switch, spring return	Yellow	2NO+2NC slow
PS1143/V0	Insulated base single switch, spring return	Red	2NO+2NC snap
PS1144/V0	Insulated base single switch, spring return	Red	2NO+2NC slow
PS1151/V0	Insulated base single switch, spring return	Red (half cover)	1NO+1NC snap
PS1152/V0	Insulated base single switch, spring return	Red (half cover)	1NO+1NC slow
PS1153/V0	Insulated base single switch, spring return	Red (half cover)	2NO+2NC snap
PS1154/V0	Insulated base single switch, spring return (no guard)	Red (half cover)	2NO+2NC slow
PS1211/V0	Insulated base single switch, safety latch	Yellow	1NO+1NC snap
PS1212/V0	Insulated base single switch, safety latch	Yellow	1NO+1NC slow
PS1213/V0	Insulated base single switch, safety latch	Yellow	2NO+2NC snap
PS1214/V0	Insulated base single switch, safety latch	Yellow	2NO+2NC slow
PS1214/V0-M	Insulated base single switch, safety latch	Yellow (Aluminium)	2NO+2NC slow
PS1311/V0	Insulated base single switch, push-push	Yellow	1NO+1NC snap
PS1313/V0	Insulated base single switch, push-push	Yellow	2NO+2NC snap
PS1313/V0-M	Insulated base single switch, push-push	Yellow (Aluminium)	2NO+2NC snap
PD1131/V0	Insulated base double foot switch, spring return x2	Yellow	1NO+1NC snap
PD1132/V0	Insulated base double foot switch, spring return x2	Yellow	1NO+1NC slow
PD1133/V0	Insulated base double foot switch, spring return x2	Yellow	2NO+2NC snap
PD1134/V0	Insulated base double foot switch, spring return x2	Yellow	2NO+2NC slow
PD1313/V0	Insulated base double switch, spring return x2	Yellow	2NO+2NC snap

Information subject to change without notice

Accessories for PS/PD Foot Switches (Order by Part No.)

Part No.	Description	Details
PS1-PY	Replacement plastic (ABS) guard	Yellow
PS1-M	Replacement aluminum guard	Yellow
PS4-M	Replacement aluminum guard	Red
PS4-MG	Replacement aluminum guard	Grey
PS4-PY	Replacement plastic (ABS) guard	Red
R11	Replacement contact for PS foot switches	1NO+1NC snap
S11	Replacement contact for PS foot switches	1NO+1NC slow
PD1000	Assembly kit for 2 foot switches	Base + rod
PD1001	Assembly kit for 3 foot switches	Base + rod
PD1002	Assembly kit for 4 foot switches	Base + rod
PD1003	Assembly kit for 5 foot switches	Base + rod

Information subject to change without notice

Sub-compact Type “PCFS” Foot Switches

These extremely compact PCFS miniature foot switches are certified by cULus for operation at 125-250VAC. Operation is momentary (spring return).

Features and specifications:

- **Materials:** Solid steel construction, with full guard and base pads
- **Dimensions** (without guard): 90x70x27mm; 3.5x2.75x1.1”
- **Contacts:** 1NO; snap-action
- **Grounding:** #8 grounding screw (provided)
- **Approvals:** cULus
- Redundant corrosion-resistant spring system
- Optional guards, oversize guards and stainless-steel guards available



Insulated-base PS/PD Foot Switches - Technical Information

General Characteristics	
Connection type	Quick-connect terminals
Cable size	18-14AWG
Cable entry	Internal cable clamp
Ingress protection	NEMA Type 1
Material	Steel

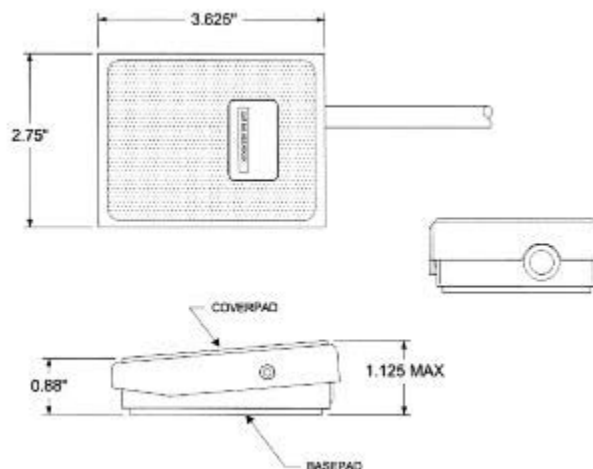
Information subject to change without notice



Type “PCFS” Sub-compact Foot Switches (Order by Part No.)

Part No.	Description	Rated Current	Rated HP	Rated Voltage	Contact
PCFS-3M	Sub-compact metal foot switch, momentary, 1NO	15A	1/2	125-250VAC	1NO snap
PCFS-3MC	Sub-compact metal foot switch, momentary, 1NO w/6' 18/3 cable	10A	1/3	125-250VAC	1NO snap
PCFS-3MG	Sub-compact metal foot switch, momentary, 1NO w/steel guard	15A	1/2	125-250VAC	1NO snap
PCFS-3-BG	Black metal guard for Sub-compact metal foot switch PCFS-3M	-	-	-	-
PCFS-3-YG-O	Metal guard; for 1 or 2 PCFS-3 series sub-compact foot switches	-	-	-	-

Information subject to change without notice



Two-Hand Safety Control Stations

The two-hand control stand is designed with safety in mind. Its special configuration prevents operating the controlled equipment unless the operator uses both hands. Supplementary controls can be added (up to three 22.5 pushbuttons at the centre and 2 foot switches).

This device is composed of 3 different parts, to be ordered separately (Note: pushbuttons/switches/foot switches are not included):

- Stand (steel plate and tube, painted bright orange), adjustable height 700 to 1150mm. 4 holes for mounting on floor [PB-2029]
- Pushbutton panel, aluminum painted bright orange, with 2 + 3 22.5mm holes [PB-2031]
- Protection ring, steel, bright orange [PB-2003]

A standalone panel or wall mounted version is also available [PB-2030]

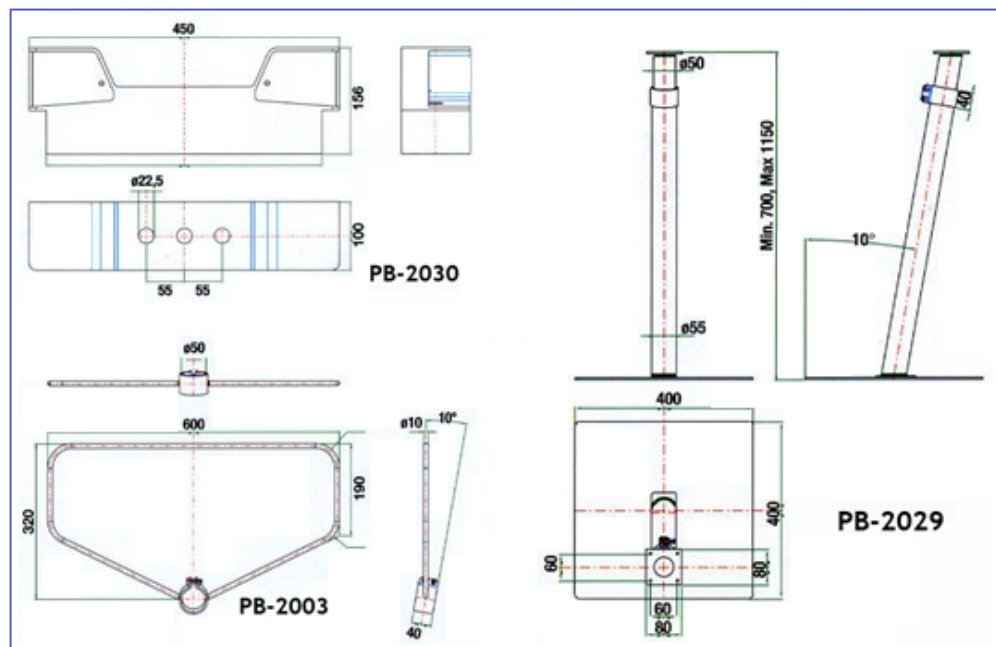
Two-Hand Safety Control Station (Order by Part No.)

Part No.	Description	Dimensions (mm)
PB-2031	Pushbutton panel stand mounting	450 x 100 x 156
PB-2030	Pushbutton panel panel mounting	450 x 100 x 156
PB-2029	Stand	H = 700 to 1150- Base 400x400
PB-2003	Protection ring	600 x 320

Information subject to change without notice

Please refer to ITC's 22.5mm Control Devices catalog for pushbuttons.

Dimensions



PB-2031/2030



PB-2003



PB-2029

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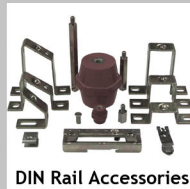
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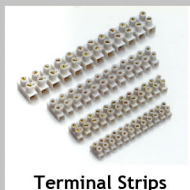
Hinged Enclosures



Thermal Management



Multipole Connectors



Terminal Strips



Compact IP68 Connectors



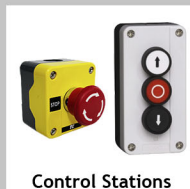
Terminal Blocks



22.5mm Pushbuttons



LED Indicators



Control Stations



Limit Switches



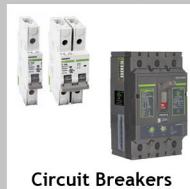
Micro Limit Switches



Safety Switches



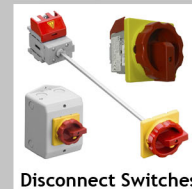
Foot Switches



Circuit Breakers



IEC Contactors



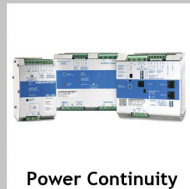
Disconnect Switches



Midget and CC Fuse Holders



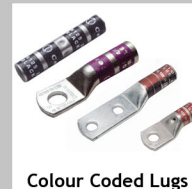
Tower Lights



Power Continuity



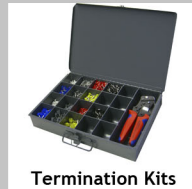
Ferrules



Colour Coded Lugs



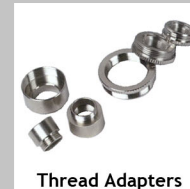
Crimp Terminals



Termination Kits



Cable Glands



Thread Adapters



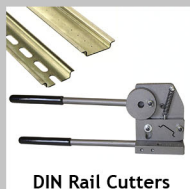
Cable Entry Systems



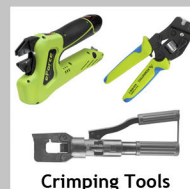
Wire Management



Assembly Tables



DIN Rail Cutters



Crimping Tools



Hole Cutting & Punching Tools



Cutting & Stripping Tools - Wire & Cable