The logo for the FL Series features a stylized graphic of a foot switch with a black top and a grey bottom, positioned above the text "FL SERIES" in a bold, sans-serif font. The text is white on a grey background, which is itself on a red background.

FL SERIES

*Heavy Duty;
with polyamide cover*



The FL series foot switches are appropriate for heavy duty applications in hazardous and demanding environments. The foot switch with the Polyamide 6.6 housing shows the same sturdy body as the FS series, but with the advantage of resistance against water, oil, and certain acids and chemicals, which enables a longer life expectancy. The foot guard consists of die cast aluminum, to sustain all safety requirements.

The FL series offers considerable flexibility with the combination of slow make-break and snap action switch inserts, with the contact types momentary, maintained and two stage momentary and the choice of different potentiometer values. Human safety and machine protection can be provided by adding of Anti-Trip lever and foot guard. These items prevent the foot switch from accidentally actuating the machine function. Different strain reliefs, cables, connectors and custom colors are also available.

The main applications of this non-corrosive foot switch are “wet” industrial environments, drilling processes, and in the food industry, where the environment has to be cleaned regularly with cleaning detergent.



 **Warning**

Please see page 25 in reference to the warning that applies to every application.

FL1

Light medium size,
one pedal foot switch

Standard Features

- Housing: Polyamide 6.6 body, cover and pedal
Colors: Gray body, red cover and black pedal
Anti-Trip: Die cast aluminum pedal and lever in gray (available on some models)
- Protection Level: IP 65
- Switch Insert: Snap action or slow make-break
Silver alloy contact material
Electrical Rating: 10A/400V AC (If used with appropriate cable, see cable chart on page 29)
Contact Types: Momentary, maintained, or two stage momentary
Circuit: SPDT-SB; DPDT-DB; 10k Ohm, 2.0W
Potentiometer with SPDT-SB microswitch
- Cable Entry: Threaded hole (M20)
- Temperature Range: -30°C up to +80°C (-22°F up to +176°F)



Ordering Information

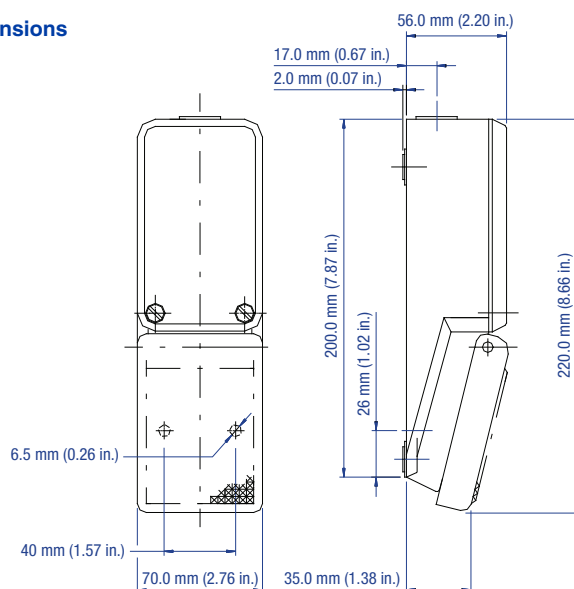
Type	Catalog No.	Circuit Function	Electrical Ratings	Switch/Contact Type	Anti-Trip	Cable Screw Terminals	Protection Level
FL1							
FL1 U1	51.401	SPDT-DB	10A/500V AC	Slow make-break, Momentary		X	IP 65
FL1 U1R	51.402	SPDT-DB	10A/500V AC	Slow make-break, Maintained		X	IP 65
FL1 U1S	51.403	SPDT-DB	10A/500V AC	Slow make-break, Momentary	X	X	IP 65
FL1 U1RS	51.404	SPDT-DB	10A/500V AC	Slow make-break, Maintained	X	X	IP 65
FL1 SU1	51.405	SPDT-DB	10A/500V AC	Snap Action, Momentary		X	IP 65
FL1 SU1R	51.406	SPDT-DB	10A/500V AC	Snap Action, Maintained		X	IP 65
FL1 SU1S	51.407	SPDT-DB	10A/500V AC	Snap Action, Momentary	X	X	IP 65
FL1 SU1RS	51.408	SPDT-DB	10A/500V AC	Snap Action, Maintained	X	X	IP 65
FL1 U2	51.409	DPDT-DB	10A/500V AC	Slow make-break, Momentary*		X	IP 65
FL1 U1DU1	51.410	2x SPDT-DB	10A/500V AC	Slow make-break, Two Stage Momentary		X	IP 65
FL1 U2S	51.411	DPDT-DB	10A/500V AC	Slow make-break, Momentary*	X	X	IP 65
FL1 U1DU1S	51.412	2x SPDT-DB	10A/500V AC	Slow make-break, Two Stage Momentary	X	X	IP 65
FL1 SU2	51.413	DPDT-DB	10A/500V AC	Snap Action, Momentary*		X	IP 65
FL1 SU1DSU1	51.414	2x SPDT-DB	10A/500V AC	Snap Action, Two Stage Momentary		X	IP 65
FL1 SU2S	51.415	DPDT-DB	10A/500V AC	Snap Action, Momentary*	X	X	IP 65
FL1 SU1DSU1S	51.416	2x SPDT-DB	10A/500V AC	Snap Action, Two Stage Momentary	X	X	IP 65
FL1 SU1P10 L	51.417	10k Ohm, 2.0W Potentiometer with SPDT-SB Microswitch (5A/250V AC)				Solder Tabs	IP 65

Gray body, red cover and black (Anti-Trip: gray) pedal

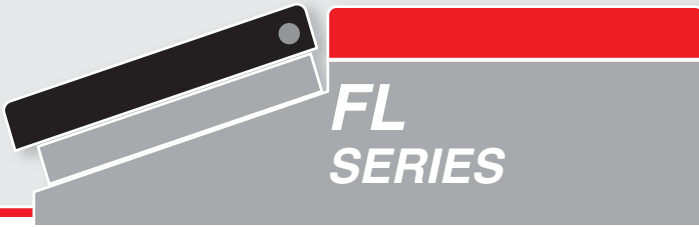
Options

- Switch Insert: - Gold plated contacts for low current applications
Electrical Rating: Max. Power Consumption: 12.5mW at max. 25mA or max. 25V DC
- Strain Relief: - Standard straight-through (IP 68)
- Bend protection (IP 68)
- Trumpet Pull/Bend protection (IP 68)
- Cable: - Multi conductor, PVC, SJT
- Multi conductor, PVC, SJT, shielded
- Per customer specifications
- Connectors: - Per customer specifications
- IEC 601-1 certified
- Other potentiometer values available upon request
- Custom colors available upon request
- Foot rest also available

Dimensions



* Maintained contacts available upon request



FL1

Light medium size,
one pedal foot switch

Standard Features

- Housing: Polyamide 6.6 body and pedal
- Guard: Die cast aluminum
 - Colors: Gray body, red guard and black pedal
 - Anti-Trip: Die cast aluminum pedal and lever in gray (available on some models)
- Protection Level: IP 65
- Switch Insert: Snap action or slow make-break
 - Silver alloy contact material
 - Electrical Rating: 10A/400V AC (If used with appropriate cable, see cable chart on page 29)
 - Contact Types: Momentary, maintained, or two stage momentary
 - Circuit: SPDT-DB; DPDT-DB; 10k Ohm, 2.0W Potentiometer with SPDT-SB microswitch
- Cable Entry: Threaded hole (M20)
- Temperature Range: -30°C up to +80°C (-22°F up to +176°F)



Ordering Information

Type	Catalog No.	Circuit Function	Electrical Ratings	Switch/Contact Type	Anti-Trip	Cable Screw Terminals	Protection Level
FL1 ... U - with Foot Guard							
FL1 U1 U	51.451	SPDT-DB	10A/500V AC	Slow make-break, Momentary		X	IP 65
FL1 U1R U	51.452	SPDT-DB	10A/500V AC	Slow make-break, Maintained		X	IP 65
FL1 U1S U	51.453	SPDT-DB	10A/500V AC	Slow make-break, Momentary	X	X	IP 65
FL1 U1RS U	51.454	SPDT-DB	10A/500V AC	Slow make-break, Maintained	X	X	IP 65
FL1 SU1 U	51.455	SPDT-DB	10A/500V AC	Snap Action, Momentary		X	IP 65
FL1 SU1R U	51.456	SPDT-DB	10A/500V AC	Snap Action, Maintained		X	IP 65
FL1 SU1S U	51.457	SPDT-DB	10A/500V AC	Snap Action, Momentary	X	X	IP 65
FL1 SU1RS U	51.458	SPDT-DB	10A/500V AC	Snap Action, Maintained	X	X	IP 65
FL1 U2 U	51.459	DPDT-DB	10A/500V AC	Slow make-break, Momentary*		X	IP 65
FL1 U1DU1 U	51.460	2x SPDT-DB	10A/500V AC	Slow make-break, Two Stage Momentary		X	IP 65
FL1 U2S U	51.461	DPDT-DB	10A/500V AC	Slow make-break, Momentary*	X	X	IP 65
FL1 U1DU1S U	51.462	2x SPDT-DB	10A/500V AC	Slow make-break, Two Stage Momentary	X	X	IP 65
FL1 SU2 U	51.463	DPDT-DB	10A/500V AC	Snap Action, Momentary*		X	IP 65
FL1 SU1DSU1 U	51.464	2x SPDT-DB	10A/500V AC	Snap Action, Two Stage Momentary		X	IP 65
FL1 SU2S U	51.465	DPDT-DB	10A/500V AC	Snap Action, Momentary*	X	X	IP 65
FL1 SU1DSU1S U	51.466	2x SPDT-DB	10A/500V AC	Snap Action, Two Stage Momentary	X	X	IP 65
FL1 SU1P10 L U	51.467	10k Ohm, 2.0W Potentiometer with SPDT-SB Microswitch (5A/250V AC)				Solder Tabs	IP 65

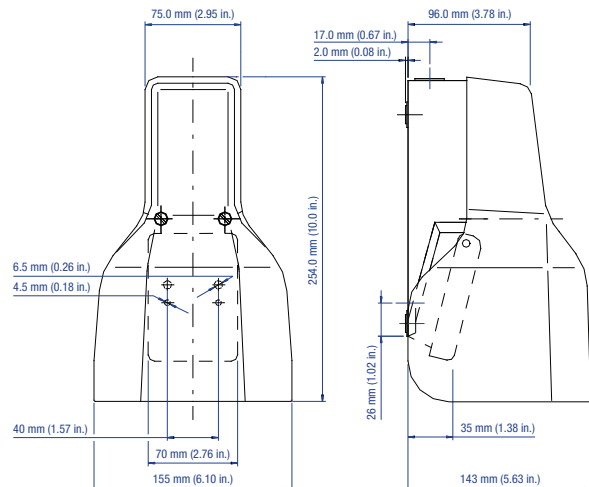
Gray body, red cover and black (Anti-Trip: gray) pedal

Options

- Switch Insert:
 - Gold plated contacts for low current applications
 - Electrical Rating: Max. Power Consumption: 12.5mW at max. 25mA or max. 25V DC
- Strain Relief:
 - Standard straight-through (IP 68)
 - Bend protection (IP 68)
 - Trumpet Pull/Bend protection (IP 68)
- Cable:
 - Multi conductor, PVC, SJT
 - Multi conductor, PVC, SJT, shielded
 - Per customer specifications
- Connectors:
 - Per customer specifications
- IEC 601-1 certified
- Other potentiometer values available upon request
- Custom colors available upon request
- Foot rest also available

* Maintained contacts available upon request

Dimensions



Customization, New Features, and New Products

We can customize your foot switch...

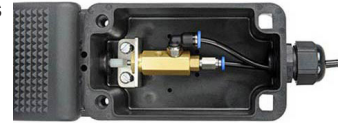
Depending on the type of foot switch you need we offer custom:

- Cable Length, Type, Connector and Strain Relief
- Contact Plating • Protection Rating
- Pedal and Housing Color • Labeling and Graphics
- IEC 60601-1 and UL 60601-1 Certification



Pneumatic Foot Switch

We now offer a foot switch that allows for the direct control of air pressure activation for pneumatic applications. This foot switch offers a high quality pneumatic control with easy to use plug in hose connections.



FM Foot Switch with Multi-Colored Pedals

New colored pedals for the FM series foot switches are readily available. Custom screen printed graphics are also offered.



Foot Switches with Latching Safety Guard

We now offer a latching safety guard for the FM series foot switches which is designed to prevent unintentional operation. The guard prevents activation of the foot switch when closed. The guard can be opened and closed, hands free, by lightly tapping on the top. Designed with minimum dimension, these foot switches can fit into many applications and offers a powder-coated sheet steel construction with smooth surfaces which are easy to clean.



New Two Pedal Covered FM Switch

The two pedal FM series foot switches are now available in a covered version. Standard colors are black and red, but custom colors are also available.



Two Pedal Medical Foot Switch with Lockable Carrying Handle

Carrying handles are typically used for applications that require a foot switch to be frequently repositioned during operation. Our new two pedal foot switch offers a lockable carrying handle featuring a five position detent, which allows easy access for mobility and storage. They featuring stainless steel construction and easy to clean smooth surfaces.



Multiple Pedal Foot Switches

Our new modular construction allows us to create foot switches with multiple pedals and pedal functions. These switches can be custom designed with your choice of pedal colors, contact arrangements, functions, cable types, cable lengths, strain reliefs and connectors.



Foot Switches with USB Interface

We now offer foot switches that can directly connect one, two or three pedal units to a PC or Apple computer via a USB interface. This allows hands free activation of any shortcut key with a foot switch pedal. One or two pedal foot switches can be programmed in the field with software which we provide for free. Three pedal versions must be programmed by us. After the initial programming the information is saved internally in the foot switch and can be used as a plug and play system with an computer without additional drivers or software.