

SUNS[®] International, LLC

• Innovation • Quality • Service



**MEDICAL
INDUSTRIAL**

FOOT SWITCHES

<http://www.suns-usa.com>

2011-2012

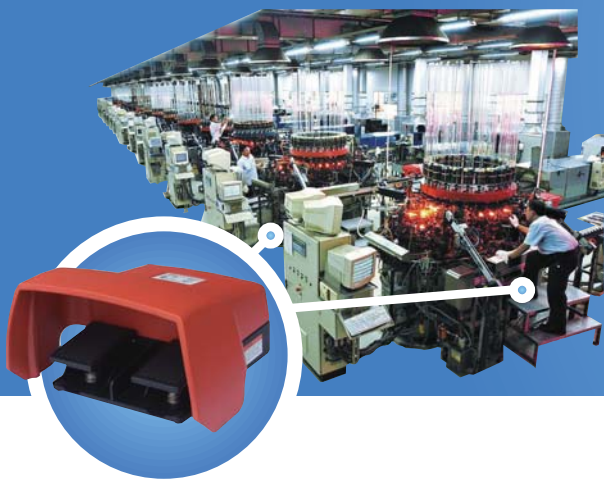
SUNS[®] International, LLC



• Innovation • Quality • Service



SUNS International, a leading manufacturer of high quality medical and industrial control products, designs, manufactures and markets complete range of medical foot switches, industrial foot switches, limit switches, safety switches, micro switches and proximity switches. Manufactured in ISO9001:2008 certified facilities and certified by UL, CSA, CE and CCC, SUNS products are reliable, competitive and are widely used in:



Surgical & Dental Applications
Hospital Bed Control
X-ray Machine
Robotics
Materials Handling
Metal Forming Machine
Packaging Machinery
Aerial Lift Equipments

SUNS is the right choice for your applications.

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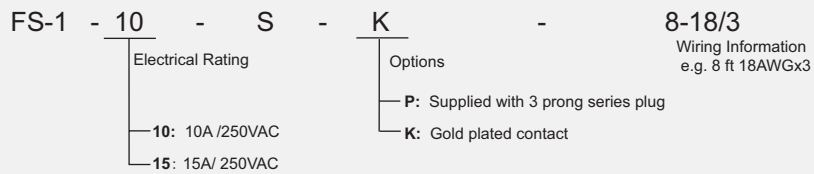


FS-1-S Stainless Steel Medical Footswitches (IP68)

Features

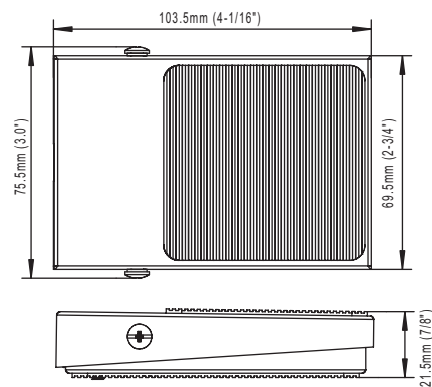
- Robust all stainless steel construction for corrosion resistance
- With nonskid base pad and foot treadle pad
- Switch rating: 10A/15A (1/2HP) 125/250V AC
- Operating temperature range: -30°C to +80°C (-22°F to + 176°F)
- UL/cUL approved (E321073)
- Stainless steel guard also available (P/N: FS-1GSS)

Selection Guide:

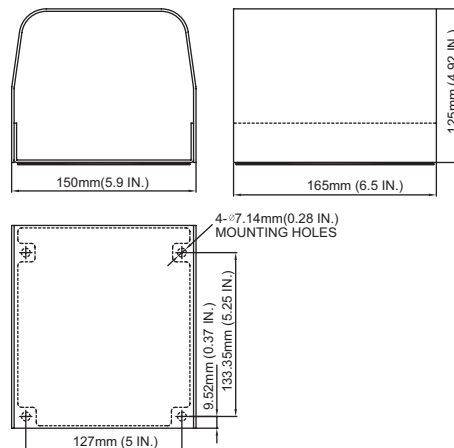


Dimensions:

FS-1-10-S



FS-1G-W



FS-81-SP Series Medical Footswitches(IPx8)

Features

- Robust Glass Fiber Reinforced Plastics or zinc die cast body
- Galvanically separated contacts
- Positive Opening of NC contacts
- UL/cUL approved (E216958)
- IEC60601 certification issued by TÜV for medical applications

Specifications

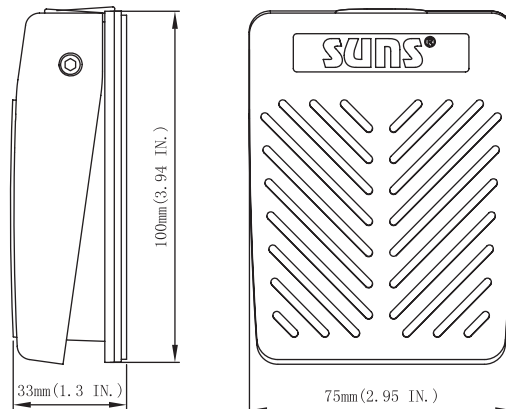
Operating Frequency	60 ops/min
Insulation Resistance	>100MΩ@500V DC
Contact Resistance	<25mΩ
Rated Current/Voltage	Ith: 10A Ui: 300V AC
Inrush Current	Complies with IEC947-5-1: AC15/DC13
Dielectric Strength	1000VAC for 1 min between current carrying parts 2500VAC for 1 min between non-current carrying parts
Service Life	Mechanically 1 x 10 ⁷ (operations) Electrically 5 x 10 ⁵ (operations)
Operating Temperature	-30~+80°C (-22~176°F)
Degree of Protection	IPX8

Selection Guide:

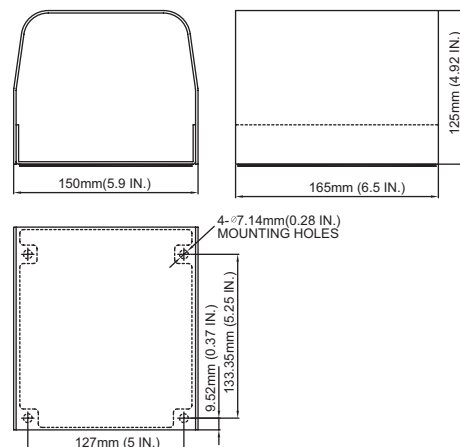
FS81-SP - M	-	T	P	-	Twin	-	8-18/3
Enclosure Type		Contact type		Options		Option #1	
Blank: Fiber reinforced Plastic		Blank: SPDT		P: Supplied with 3 prong series plug		Twin: 2-pedal	
M: Die cast zinc		T: DPDT (2NO/2NC)		K: Gold plated contact		n-pedal (n = 2...6)	
		S: DPDT (2-stage)		G: with protection guard		Wiring Information e.g. 8 ft 18AWGx3	

Dimensions:

FS-81-SP

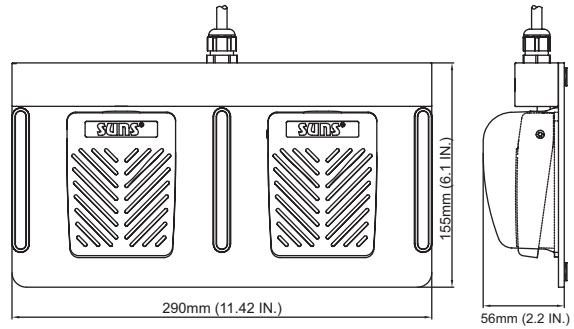


FS-81G-SP

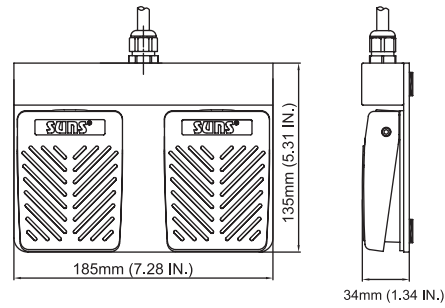


FS-81-SP Series Medical Footswitches(IPx8)

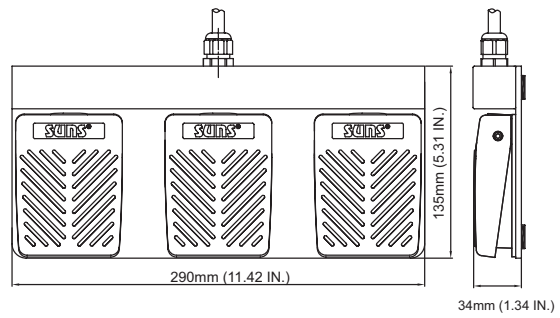
FS-81-SP-W(Twin)



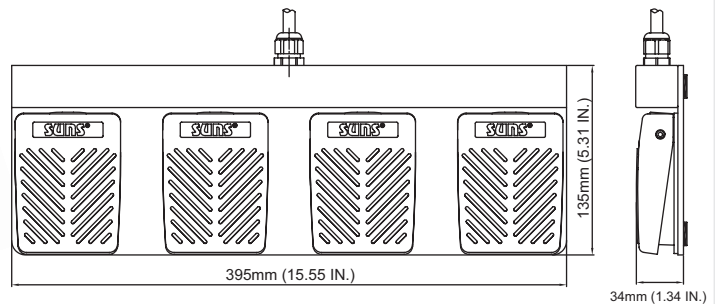
FS-81-SP(Twin)



FS-81-SP(3-Pedal)



FS-81-SP(4-Pedal)



FS-82 Series Medical Footswitches

Features

- Robust Glass Fiber Reinforced Plastics or aluminum die cast body
- Galvanically separated contacts
- Positive Opening of NC contacts
- UL/cUL approved (E216958)
- IEC60601 certification issued by TÜV for medical applications

Specifications

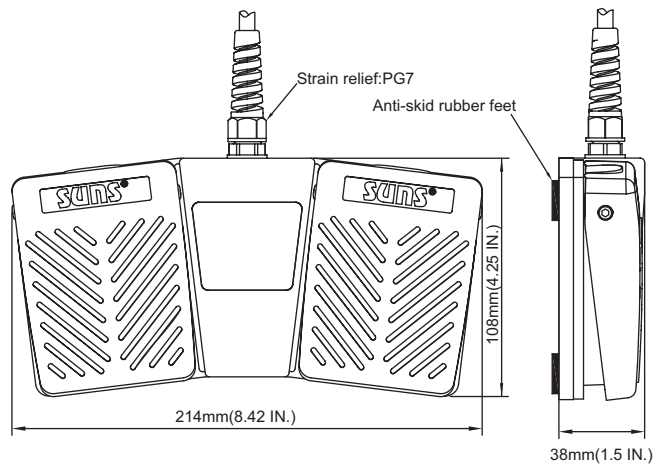
Operating Frequency	60 ops/min
Insulation Resistance	>100MΩ@500V DC
Contact Resistance	<25mΩ
Rated Current/Voltage	Ith: 10A Ui: 300V AC
Inrush Current	Complies with IEC947-5-1: AC15/DC13
Dielectric Strength	1000VAC for 1 min between current carrying parts 2500VAC for 1 min between non-current carrying parts
Service Life	Mechanically 1 x 10 ⁷ (operations) Electrically 5 x 10 ⁵ (operations)
Operating Temperature	-30~+80°C (-22~176°F)
Degree of Protection	IPX8

Selection Guide:

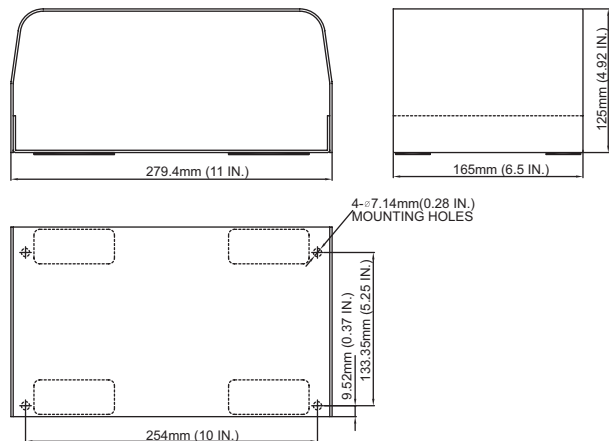
FS82	-	SP	-	M	-	T	-	P	-	8-18/3
		Micro switches		Enclosure Type		Contact type		Options		Wiring Information e.g. 8 ft 18AWGx3
		— 10: 10A/250VAC (IP20)		— Blank: Fiber reinforced Plastic		— Blank : SPDT		— P: Supplied with 3 prong series plug		
		— 15: 15A/250VAC (IP20)		— M: Die cast Aluminum		— T: DPDT (2NO/2NC)		— K: Gold plated contact		
		— SP: 10A/300VAC (IPx8)				— S: DPDT (2-stage)		— G: with protection guard		

Dimensions:

FS82-SP



FS-TG-W



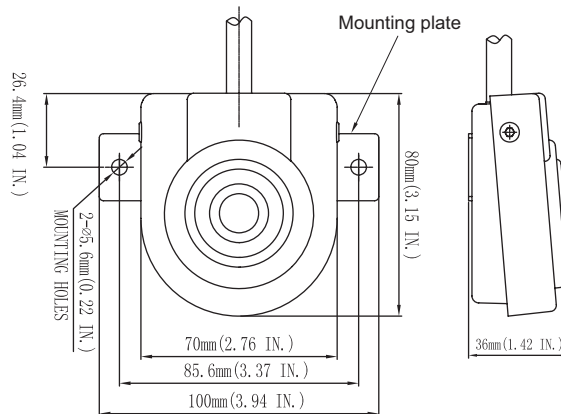
FS-9X-W Series Medical Footswitches (IP68)

Specifications

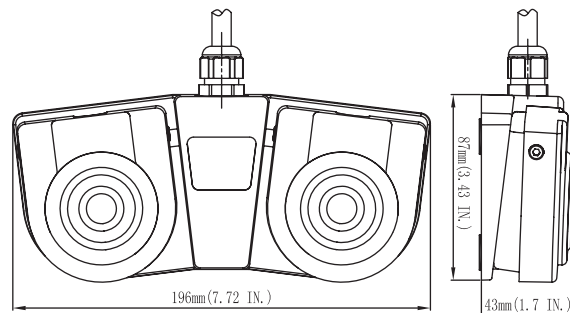
Operating Frequency	60 ops/min
Insulation Resistance	>100MΩ@500V DC
Contact Resistance	<25mΩ
Rated Current/Voltage	10A/15A 1/2HP 250VAC (UL file E321073)
Dielectric Strength	1000VAC for 1 min between current carrying parts 2500VAC for 1 min between non-current carrying parts
Service Life	Mechanically 1 x 10 ⁷ (operations) Electrically 5 x 10 ⁵ (operations)
Operating Temperature	-30~+80°C (-22~176°F)
Degree of Protection	IP20 / IP68 (add -w suffix)
Enclosure Materials	Robust Glass Fiber Reinforced Plastics or zinc die cast body

Dimensions:

FS-91-10-W



FS-92-10-W



FS-6X-SP Series Medical Footswitches

Features

- Robust aluminum alloy die cast body
- Water-proof to IP65 (IP68 available on special request)
- Galvanically separated contacts
- Screw terminals with self-lifting clamps for easy wiring
- Positive Opening of NC contacts
- UL/cUL approval(E216958)
- Threaded Hole available in: PG13.5, M20x1.5 and 1/2NPT

Specifications

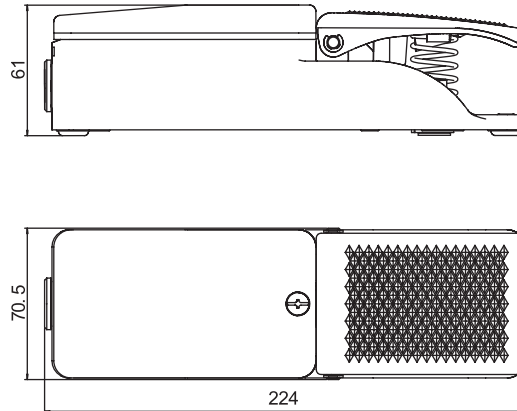
Operating Frequency	60 ops/min
Insulation Resistance	>100MΩ@500V DC
Contact Resistance	<25mΩ
Rated Current/Voltage	10A/600V AC A600/AC15 Q300/DC13
Inrush Current	Complies with IEC947-5-1: AC15/DC13
Dielectric Strength	1000VAC for 1 min between current carrying parts 2500VAC for 1 min between non-current carrying parts
Service Life	Mechanically 1 x 10 ⁶ (operations) Electrically 5 x 10 ⁵ (operations)
Operating Temperature	-30~+80°C (-22~176°F)
Degree of Protection	IP65 (IP68 available on request)

Selection Guide:

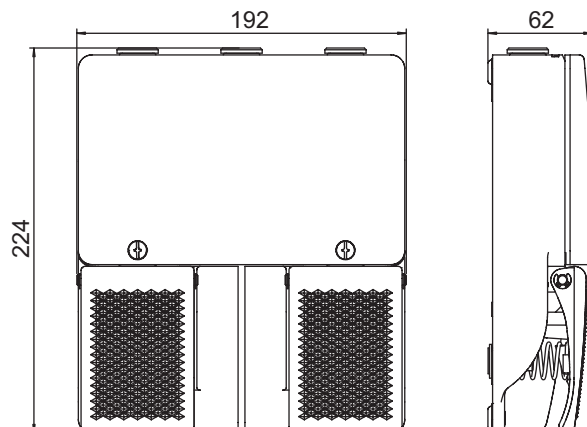
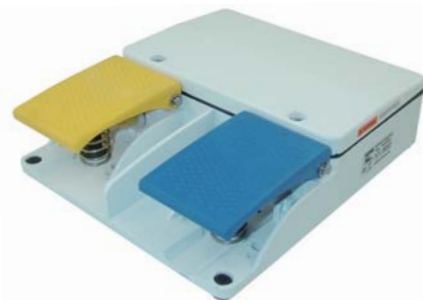
FS-61	-	G	-	SP	-	C	-	-	-	
Number of pedals		Guarding Options		Switch Types		Conduit Type		Switch configuration		Other Options
61: single pedal 62: two pedal		Blank: No Guard G: Fully Guarded		SP: 10A/600VAC 1K: 1K potentiometer 5K: 5 K potentiometer 10K: 10K potentiometer		A: 1/2NPT B: PG13.5 C: M20 x1.5		Blank: SPDT T: DPDT S: 2 stages		K: Gold Plated Contacts

Dimensions:

FS61-SP



FS62-SP



FS-71 Series Medical Footswitches

Features

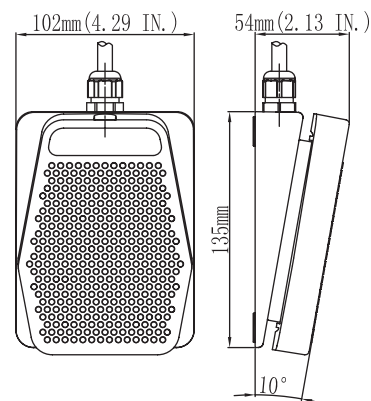
- Robust glass fiber reinforced plastics housing
- Each pedal rock left and right (Operates on the teeter-totter principle)
Pressure on one side opens or closes line, release of pressure returns switch to normal off Position (two sides are independent)
- Available in IP20 and IPX8 version

Specifications

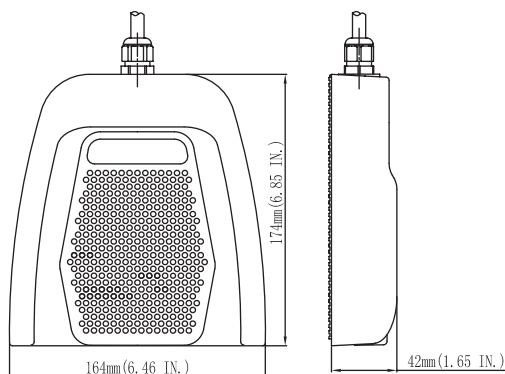
Operating Frequency	60 ops/min
Insulation Resistance	>100MΩ@500V DC
Contact Resistance	<25mΩ
Rated Current/Voltage	10A/15A 1/2HP 250VAC (UL file E321073)
Dielectric Strength	1000VAC for 1 min between current carrying parts 2500VAC for 1 min between non-current carrying parts
Service Life	Mechanically 1 x 10 ⁷ (operations) Electrically 5 x 10 ⁵ (operations)
Operating Temperature	-30~+80°C (-22~176°F)
Degree of Protection	IP20 / IP68 (add -w suffix)
Enclosure Materials	Robust Glass Fiber Reinforced Plastics

Dimensions:

FS-71-10-W



FS-71-10N-W



FS-72 Series Medical Footswitches

Features

- Robust glass fiber reinforced plastics housing
- Each pedal rock left and right (Operates on the teeter-totter principle) Pressure on one side opens or closes line, release of pressure returns switch to normal off Position(two sides are independent)
- Available in IP20 an IPX8 version
- Designed for medical and industrial applications

Specifications

Operating Frequency	60 ops/min
Insulation Resistance	>100MΩ@500V DC
Contact Resistance	<25mΩ
Rated Current/Voltage	10A/15A 1/2HP 250VAC
Dielectric Strength	1000VAC for 1 min between current carrying parts 2500VAC for 1 min between non-current carrying parts
Service Life	Mechanically 1 x10 ⁶ (operations) Electrically 5 x10 ⁵ (operations)
Operating Temperature	-30~+80°C (-22~176°F)
Degree of Protection	IP20 and IPX8 (add -w)

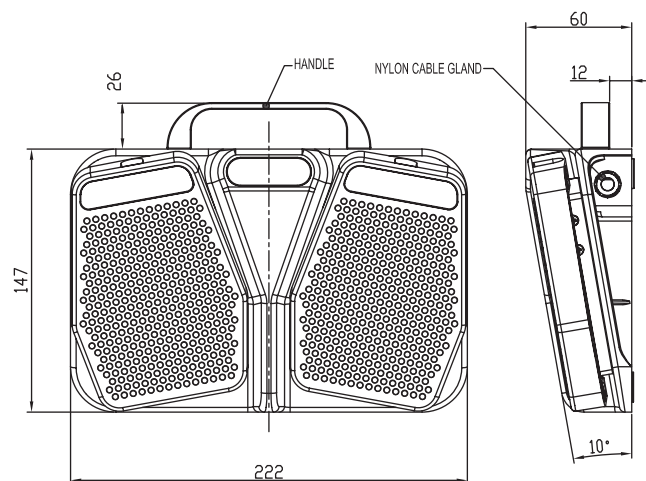
Selection Guide:

FS-72	-	10	-	W	-	BH
		Electrical Rating		IP Rating		Other Options
		10: 10A/250VAC		Blank: IP20		B: with pushbutton
		15: 15A/250VAC		W: waterproof (IP68)		H: with handler
						K: gold plated contact

* Offer custom cable and connecto according to customer requirements.

Dimensions:

FS-72



FS-1 Series Light Duty Footswitches

Features

- Low cost foot switch for light to medium duty application
- Available in standard model and ergonomic (front hinged) model
- Black painted steel housing with nonskid base pad and foot treadle pad
- Switch rating: 10A/15A (1/2HP) 125/250V AC
- Operating temperature range: -20°C to +80°C (-4°F to + 176°F)
- UL/cUL approved (E321073)
- IP20 for standard version

Selection Guide:

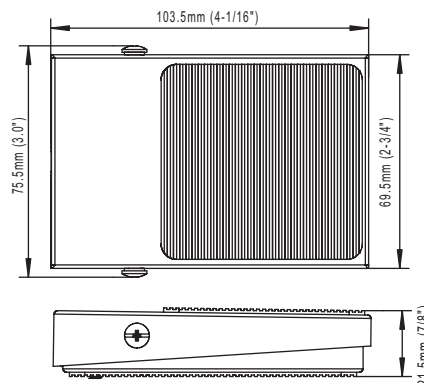
FS-1	-	10	-	D	-	-	P	-	Twin	-	8-18/3
		Electrical Rating		Option #1		Option #2	Option #3		number of pedal		Wiring Information e.g. 8 ft 18AWGx3
		10: 10A/250VAC		Blank: Momentary		Blank: Standard	P: Supplied with 3 prong series plug		Blank: Single pedal		
		15: 15A/250VAC		D: Maintained		H: Front Hinged	G: with Protective Guard		Twin: Dual Pedal		
							K: Gold plated contact		n-pedal		

Dimensions:

FS-1-10



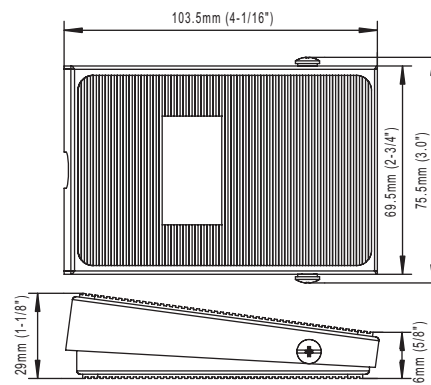
Standard model



FS-1-10-H



Front hinged (suffix add -H)

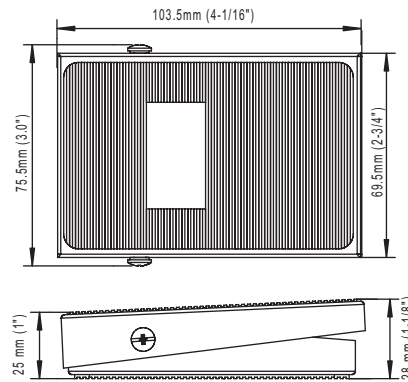


FS-1 Series Light Duty Footswitches

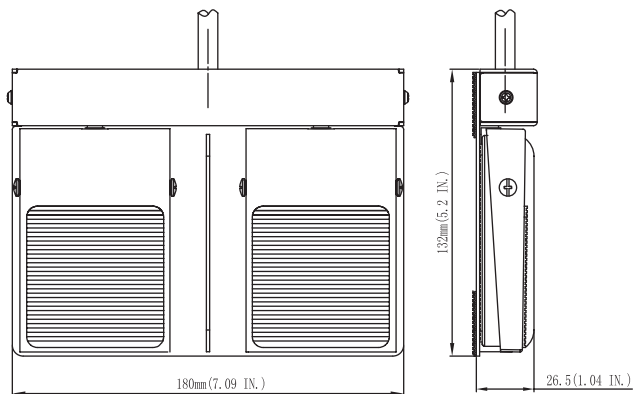
FS-1-10-D



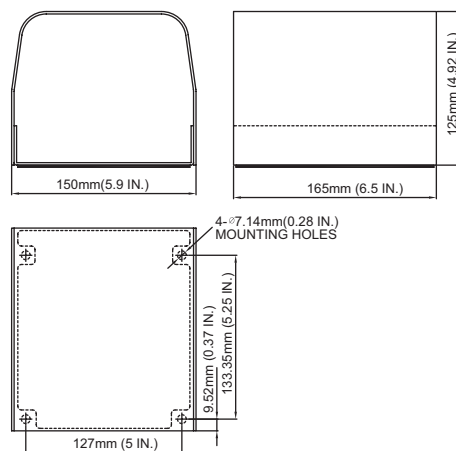
Maintained



FS-1-10(Twin)

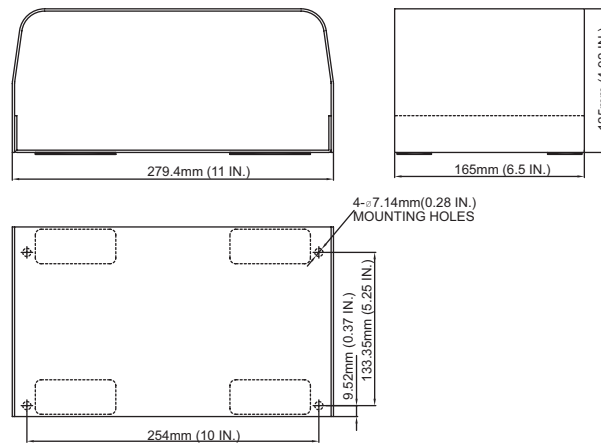


FS-1G-10

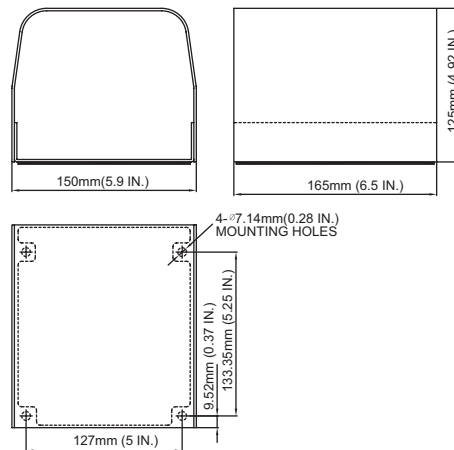


FS-1 Series Light Duty Footswitches

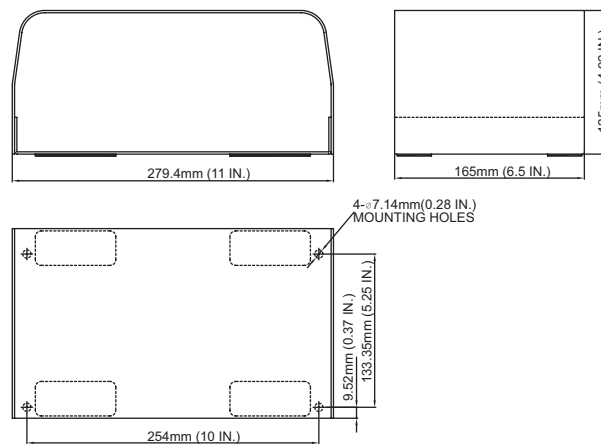
FS-1G-10 (Twin)



FS-1G



FS-1G



FS-81 Series Footswitches

Specifications

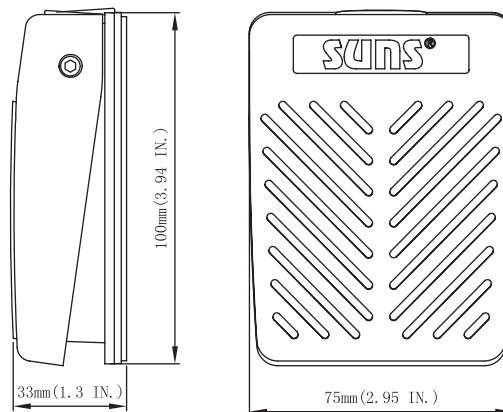
Enclosure Material	Robust Glass Fiber Reinforced Plastics or zinc die cast body
Operating Frequency	60 ops/min
Insulation Resistance	>100MW@500V DC
Contact Resistance	<25mW
Rated Current/Voltage	UL (E321073) rating: 15A, 1/2HP,125/250VAC
Dielectric Strength	1000VAC for 1 min between current carrying parts 2500VAC for 1 min between non-current carrying parts
Service Life	Mechanically 1 x 10 ⁷ (operations) Electrically 5 x 10 ⁵ (operations)
Operating Temperature	-20~+80°C (-4~176°F)
Degree of Protection	IP20

Selection Guide:

FS-81-	10	-	D	-	-	T	-	P	-	Twin	-	8-18/3
	Electrical Rating		Option #1		Enclosure Material	Contact type		Option #3		number of pedal		Wiring Information e.g. 8 ft 18AWGx3
	10: 10A /250VAC 15: 15A/ 250VAC		Blank: Momentary D: Maintained		Blank: plastic M: Metal die cast	Blank: SPDT T: DPDT (2NO/2NC) S: DPDT (2-stage)		P: Supplied with 3 prong series plug G: with Protective Guard K: Gold plated contact		Blank: Single pedal Twin: Dual Pedal n-pedal		

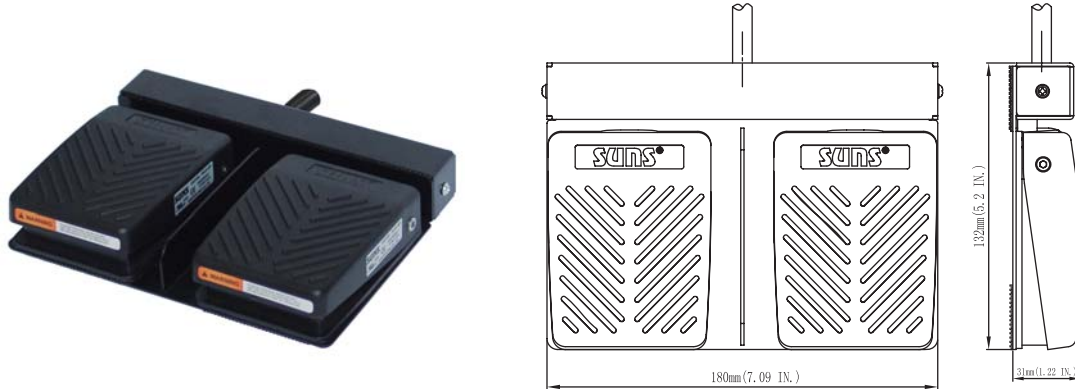
Dimensions:

FS-81-10

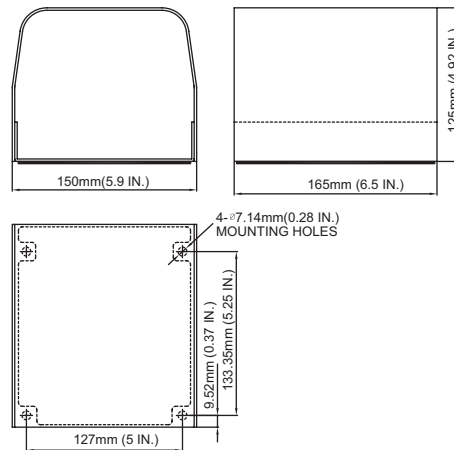


FS-81 Series Footswitches

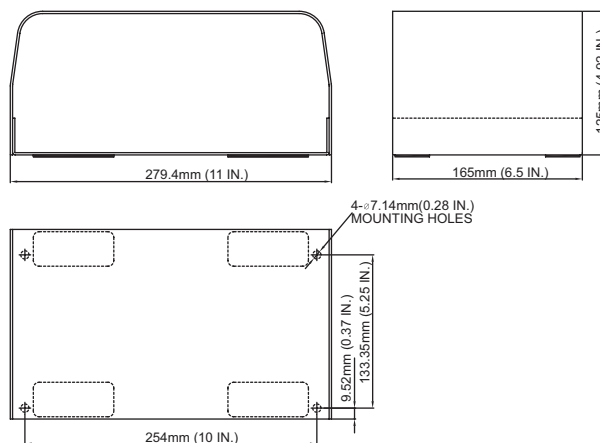
FS-81-10 (Twin)



FS-81G-10



FS-81G-10 (Twin)



FS-9 Series Compact Footswitches

Features

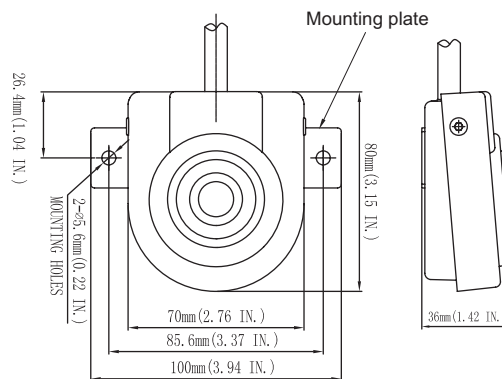
- Robust zinc die cast body or fiber reinforced plastic
- Four Switch ratings available:
 - 10A (1/2HP) 125/250V AC
 - 15A 125/250/480V AC
 - 20A, 1HP/125VAC, 2HP/250VAC
 - 25A, 1HP/125VAC, 2HP/250VAC
- Operating temperature range: -20°C to +80°C (-4°F to + 176°F)
- UL/cUL approved (E321073)

Selection Guide:

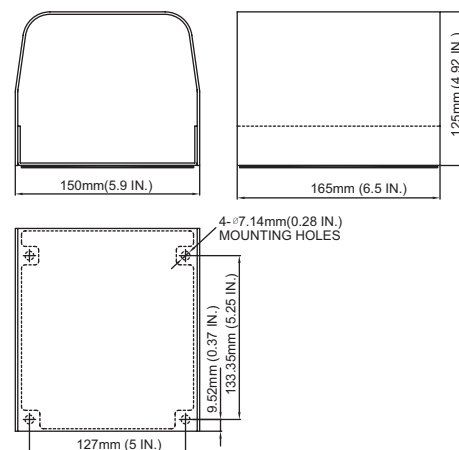
FS91	-	10	-	M	-	P	-	8-18/3
		Micro switches		Enclosure Type		Option #1		Wiring Information e.g. 8 ft 18AWGx3
		10: 10A		Blank: Fiber reinforced Plastic		P: Supplied with 3 prong series plug		
		15: 15A		M: Zinc die cast		G: with Protective Guard		
		20: 20A				K: Gold plated contact		

Dimensions:

FS91-20



FS91G-20

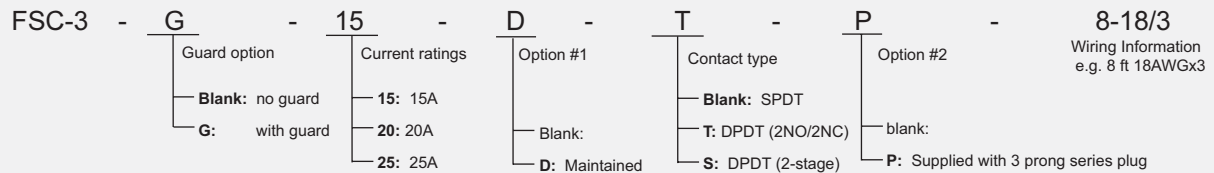


FSC-3 Series Medium Duty Footswitches

Features

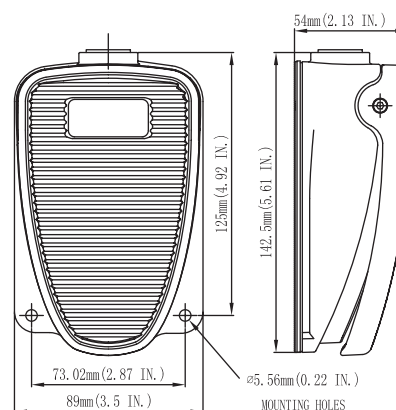
- Robust zinc metal die cast body
- Four Switch ratings available:
 - 10A (1/2HP) 125/250V AC
 - 15A 125/250/480V AC, 3/4HP 125VAC, 1.5HP 250VAC
 - 20A, 1.5HP/125VAC, 2HP/250VAC
 - 25A, 1.5HP/125VAC, 2HP/250VAC
- Operating temperature range: -30°C to +80°C (-22°F to + 176°F)
- UL/cUL approved (E321073)
- EN60529 IP65 rated (NEMA type 2, 4, 13)

Selection Guide:



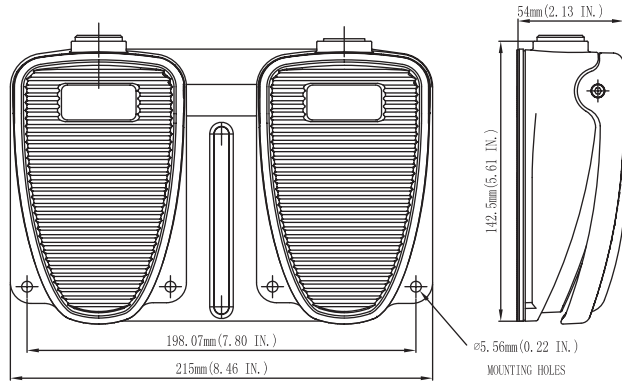
Dimensions:

FSC-3-20

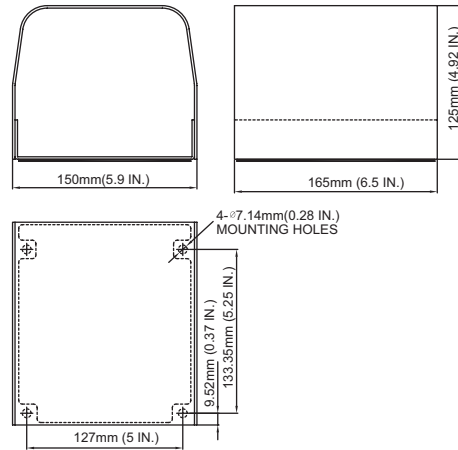


FSC-3 Series Medium Duty Footswitches

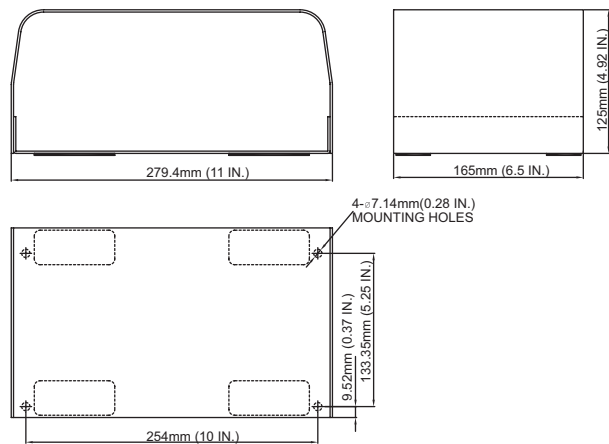
FSC-3-20 (Twin)



FSC-3G-20



FSC-3G-20 (Twin)



FS-5 Series Heavy Duty Footswitches

Features

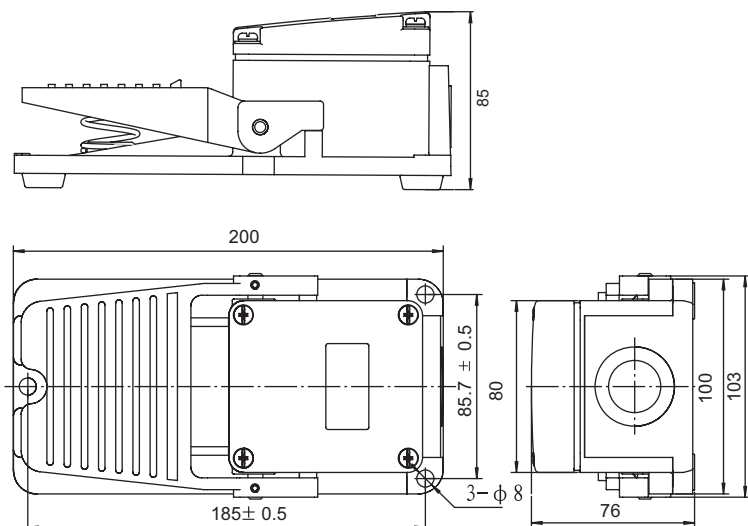
- Treadle and housing constructed from cast iron for strength and durability
- Strong cast aluminum guard construction
- Operating temperature range: -30°C to +80°C (-22°F to + 176°F)
- UL/cUL approved (E321073)
- EN60529 IP65 Rated (NEMA Type 2, 4, 13)
- Conduit available in: 3/4NPT, 1/2NPT, M20 (single or double)
- Features an anti-trip treadle mechanism that helps prevent accidental actuation through unintentional stepping on foot treadle
- Anti-skid rubber feet and 3 holes for rigid mounting to floor or equipment

Selection Guide:

FS-5	-	G	-	20	-	A	-	AG	-	S	
		Guarding Options				Current Ratings				Conduit Type	
		Blank: No Guard				15: 15A				A: 3/4NPT	
		G: Fully Guarded				20: 20A				A2: Two 1/2NPT	
						25: 25A				C: M20 x1.5	
										C2: Two M20 x1.5	
										Other Features	
										D: Maintained	
										A: Anti-Trip	
										AG: Anti-Trip with Gate	
										Switch configuration	
										Blank: SPDT (1NO/1NC)	
										T: DPDT (2NO/2NC)	
										S: DPDT (2 stages)	

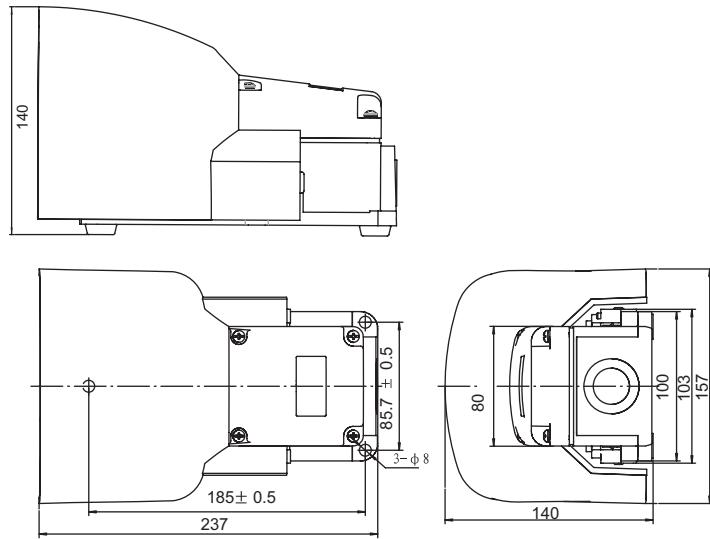
Dimensions:

FS-5-20

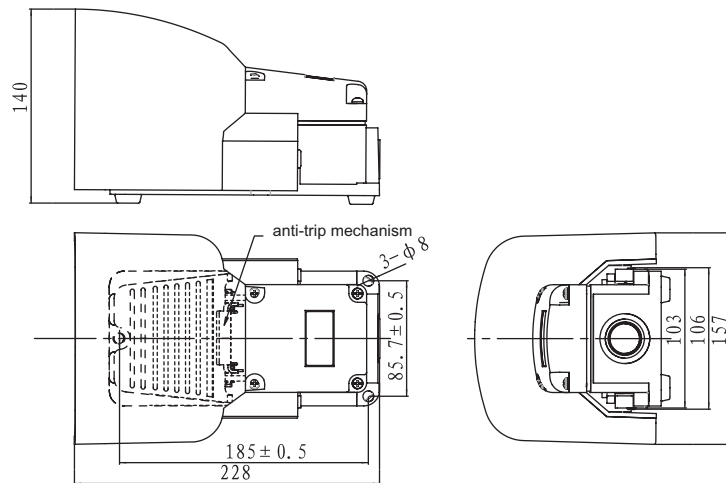


FS-5 Series Heavy Duty Footswitches

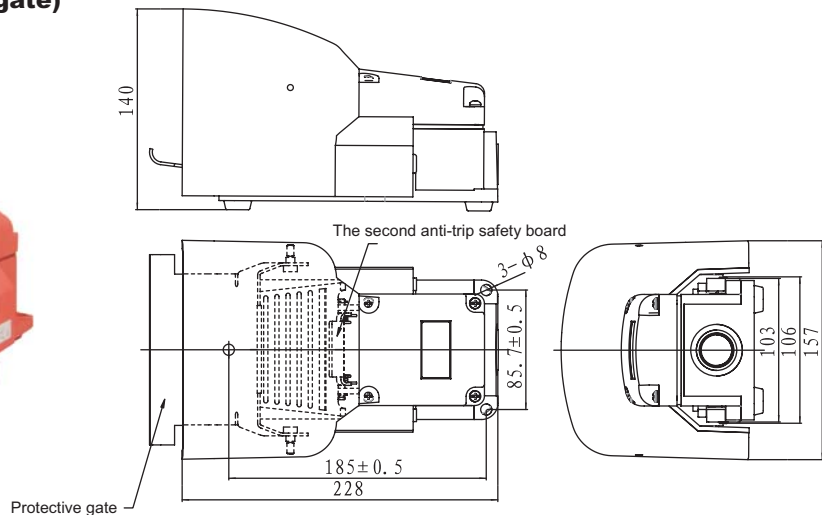
FS-5G-20



FS-5G-20D(Maintained)



FS-5G-20A-AG(Anti-trip with gate)



FS-61 Series Footswitches

Features

- Robust aluminum alloy die cast body
- Choice of different type of contact blocks
- Water-proof to IP65 (IP68 available on special request)
- Galvanically separated contacts
- Screw terminals with self-lifting clamps for easy wiring
- Positive Opening of NC contacts
- Safety reset option available
- UL/cUL approval(E216958)
- Threaded Hole available in:

Specifications

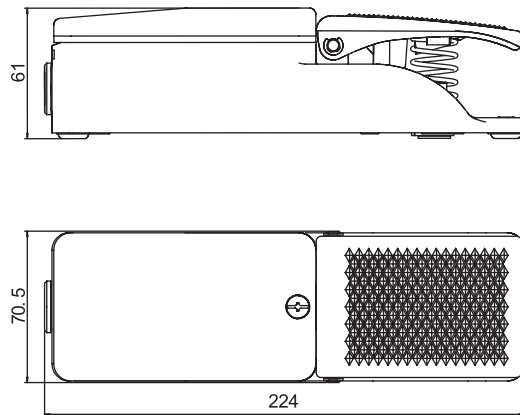
Operating Frequency	60 ops/min
Insulation Resistance	>100MΩ@500V DC
Contact Resistance	<25mΩ
Rated Current/Voltage	10A/600V AC A600/AC15 Q300/DC13
Inrush Current	Complies with IEC947-5-1: AC15/DC13
Dielectric Strength	1000VAC for 1 min between current carrying parts 2500VAC for 1 min between non-current carrying parts
Service Life	Mechanically 1 x 10 ⁷ (operations) Electrically 5 x 10 ⁵ (operations)
Operating Temperature	-30~+80°C (-22~176°F)
Degree of Protection	IP65 (IP68 available on request)

Selection Guide:

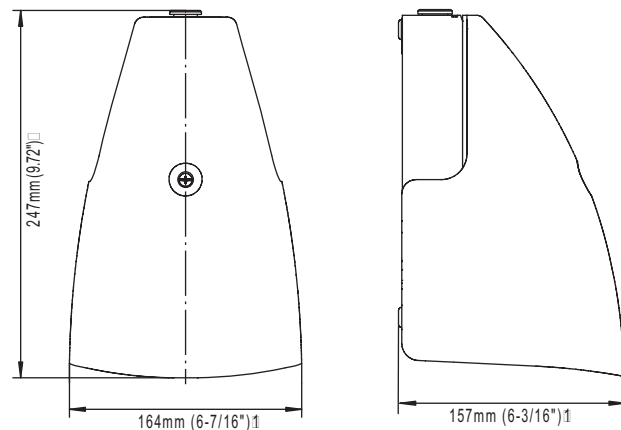
FS-61 - G	SP	C	-	-	-
Guarding Options	Switch Types	Conduit Type	Special features	Switch Configuration	Other options
Blank: No Guard	SP: 10A/600VAC	A: 1/2NPT	Blank:	Blank: SPDT	
G: Fully Guarded	15: 15A/250VAC	B: PG13.5	D: Maintained	T: DPDT	
	20: 20A 125/250/480V	C: M20 x1.5	A: Anti-Tripped	S: 2 stages	K: Gold Plated Contacts
	25: 25A 125/250/480V				
	10V: 10A 125V, 6A/250V Variable speed control				

Dimensions:

FS-61



FS-61G



FS-62 Series Footswitches

Features

- Robust aluminum alloy die cast body
- Choice of different type of contact blocks
- Water-proof to IP65
(IP68 available on special request)
- Galvanically separated contacts
- Screw terminals with self-lifting clamps for easy wiring
- Positive Opening of NC contacts
- Safety reset option available
- Threaded Hole available in:
PG13.5, M20x1.5 and 1/2NPT

Specifications

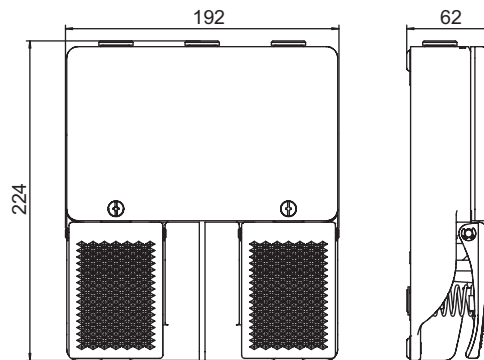
Operating Frequency	60 ops/min
Insulation Resistance	>100MΩ@500V DC
Contact Resistance	<25mΩ
Rated Current/Voltage	10A/600V AC A600/AC15 Q300/DC13
Inrush Current	Complies with IEC947-5-1: AC15/DC13
Dielectric Strength	1000VAC for 1 min between current carrying parts 2500VAC for 1 min between non-current carrying parts
Service Life	Mechanically 1 x 10 ⁷ (operations) Electrically 5 x 10 ⁵ (operations)
Operating Temperature	-30~+80°C (-22~176°F)
Degree of Protection	IP65 (IP68 available on request)

Selection Guide:

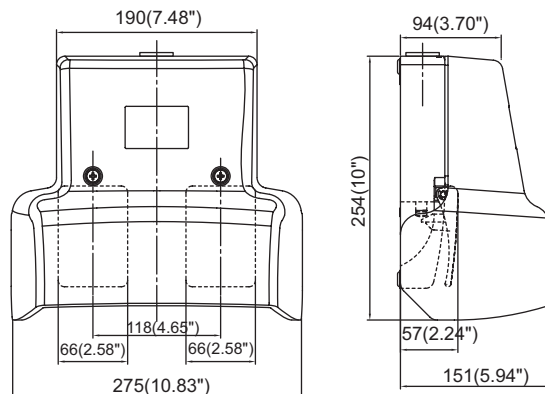
FS-62 - G	SP	C	-	-	-
Guarding Options	Switch Types	Conduit Type	Special features	Switch Configuration	Other options
Blank: No Guard	SP: 10A/600VAC	A: 1/2NPT	Blank:	Blank: SPDT	
G: Fully Guarded	15: 15A/250VAC	B: PG13.5	D: Maintained	T: DPDT	
	20: 20A 125/250/480V	C: M20 x1.5	A: Anti-Tripped	S: 2 stages	K: Gold Plated Contacts
	25: 25A 125/250/480V				
	10V: 10A 125V, 6A/250V Variable speed control				

Dimensions:

FS-62



FS-62G

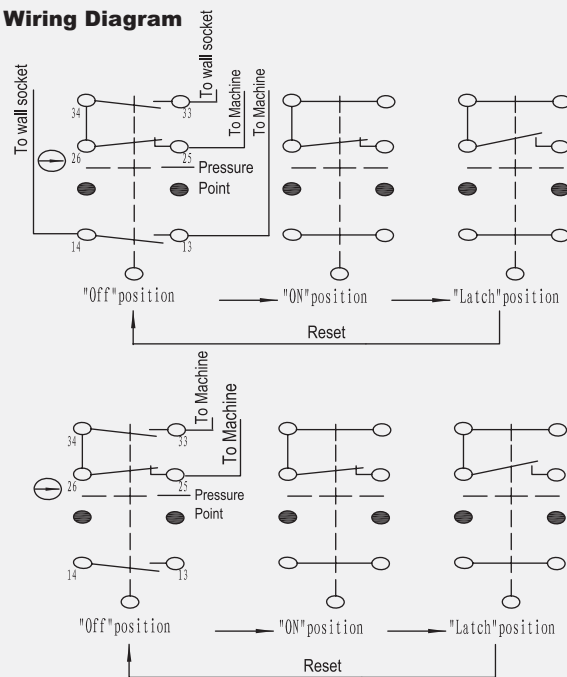


Safety Footswitches FS-61-R Series

Features

This is a special design foot switch with two stage momentary contacts. There are noticeable resistance between stage one and stage two. When pressing the pedal without reaching the pressure point, the foot switch operates in the normal model. In case of emergency, the user depresses the foot pedal even harder instead of releasing the pedal. This special safety foot switch will break electrical contact and locked. The manual reset button need to be pushed before it can operate in normal model. This can quickly prevent damage to the machine or injury to human life.

Wiring Diagram

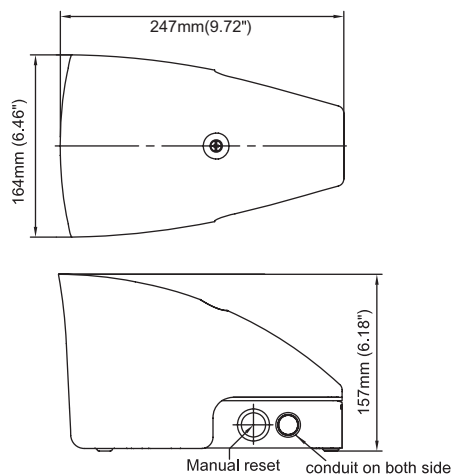


Operating Sequence:

- "OFF"** **Step 1:** The pedal is not depressed. The contacts are open. The machine is turned off.
- "ON"** **Step 2:** To start the machine, the pedal must be depressed until the "pressure point", where resistance is noticeable.
- "EMERGENCY - OFF"** **Step 3:** In an emergency, if the pedal is depressed beyond the pressure point, the machine will stop. Beyond the pressure point, the contacts are locked in the "OFF" - Position. The machine cannot operate at this time. Note: The machine can also be stopped, by releasing the pedal instead of depressing harder. (Back to Step 1)
- "RESET"** **Step 4:** The push button on the side of the foot switch must be pushed by hand to enable the foot switch to start the machine function again.
- "ON"** **Step 5:** Return to condition described in Step 2.

Dimensions:

FS-61G-SP_R



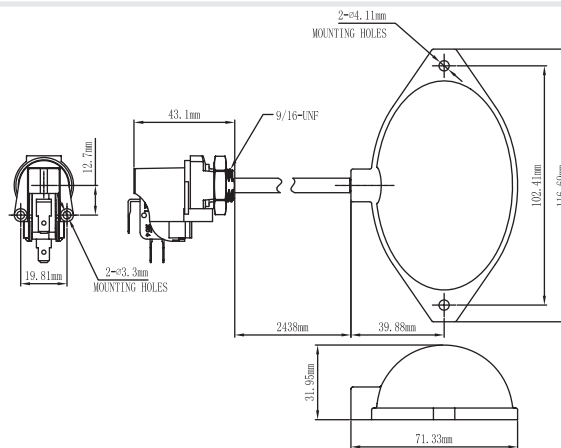
FAS Series FootActuate Air Switches

Features

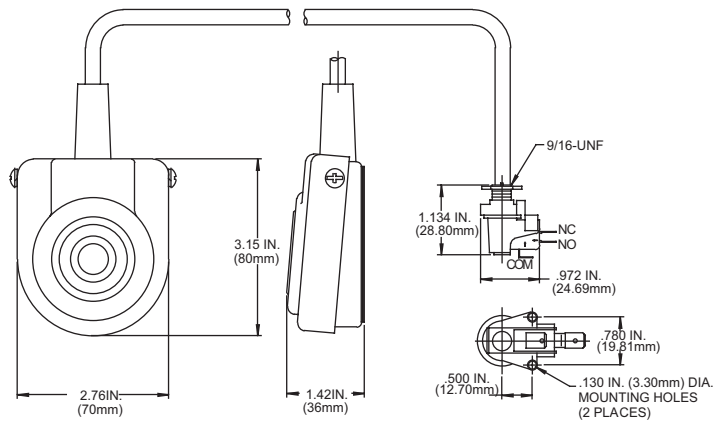
- Long Life Air bulb actuator
- Remotely located air operated Electric Snap Switch
- Supplied with a 10 foot 1/8" ID PVC tubing connecting the foot pedal to the remote airswitch
- Remote switch equipped with a 9/16" U.N.F. bulkhead mount
- Isolating the electrically live snap switch from the floor
- Offers environmental protection from short or shock
- Ratings: 15A 1/2HP 125/250VAC or 20A 1HP/125VAC 2HP/250VAC

Dimensions:

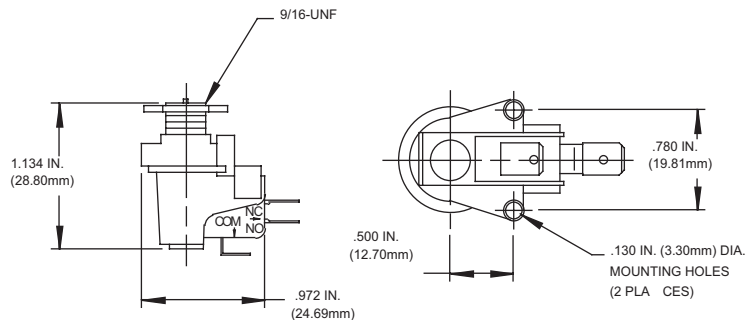
FAS-1-15(15A) FAS-1-20(20A)



FAS-9-15(15A) FAS-9-20(20A)



AS-15(15A) AS-20(20A)



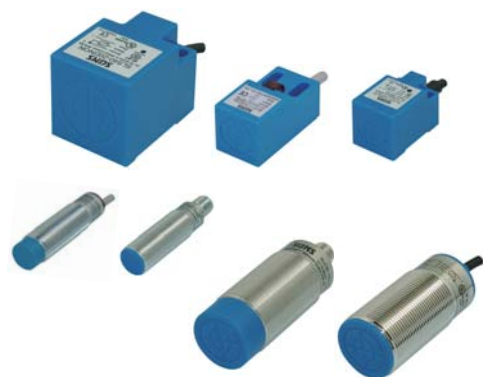
Other Products by SUNS



Limit Switches / Safety Switches



Proximity Switches



Micro Switches



The logo for SUNS, featuring the word "SUNS" in a bold, white, sans-serif font with a registered trademark symbol (®) to the upper right.

The Right Switch For Your Applications

