Ø22/25 mm Round Mount Emergency Stop Switches

SF2ER Series

For your safety, read and follow the considerations written in the instruction manual, other manuals and Autonics website.
The specifications, dimensions, etc. are subject to change without notice for product improvement. Some models may be discontinued without notice.

Main Features

- Easy mounting and removing of Contact Units using a lever
- Adoptable maximum three contact units in series to improve wiring efficiency
- Available to install using either round or forked crimp terminals
- Oil resistant to IP65 protection structure
- Circuit interruption function with a direct opening mechanism for the occurrence of error such as contact weld
- Supplying a various kind of accessories for improving usability
  : Protection guard ring for preventing malfunction from crash by a user (responding to SEMI-S2)
  : Name plate Ø60/Ø90
  : Radial support

Cautions during Use

- Follow instructions in 'Cautions during Use'. Otherwise, it may cause unexpected accidents.
- WARNING - Normally Open (NO) Contacts cannot be used for emergency stop control circuits.
- Emergency stop pushbuttons are UL NISD Listed when mounted in a sealed, non-ventilated enclosure only.
- When installing the product, keep the minimum installation space between units.
- While wiring or after wiring the contact block, do not pull the cable.
- Do not hit or flip the button, and use hand not any tool to push the button
- To unlock the switch, turn the button approximately 45°clockwise, and do not turn the button with excessive force.
- This unit may be used in the following environments.
  - Indoors (in the environment condition rated in 'Specifications')
  - Altitude max. 2,000m
  - Pollution degree 3
  - Installation category III

Ordering Information

This is only for reference.
For selecting the specific model, follow the Autonics web site.

SF2ER - E ❶ R ❷ - ❸

❶ Button
1: D30 (short head, non-illuminated)
2: D40 (short head, non-illuminated)

❷ Contact block
B: B contact: 1
AB: A contact: 1, B contact: 1
2B: B contact: 2
A2B: A contact: 1, B contact: 2
3B: B contact: 3

❸ Mark
No-mark: No-mark
A: EMO
S: EMS

Specifications

Model	SF2ER-□□□□-□
Rated voltage/current	IEC: AC-15 (220 VAC~, 3 A), DC-13 (220 VDC⎓, 0.2 A) UL: A300, Q300
Contact operating power	3.0 to 8.0 N/ 1 contact
Operation distance	5.0 mm (0/-0.5)
Rotation angle	CW (clock wise) 52 °
Allowable operation frequency 01)	Mechanical: 20 times/minute Electrical: 20 times/minute
Life cycle	Mechanical: Min. 250,000 times Electrical: Min. 100,000 times
Applicable wire	AWG 18 (0.823 mm²)
Insulation resistance	≥ 100 MΩ (500 VDC⎓ megger)
Dielectric strength	2,500 VAC~ 50/60 Hz for 1 minute
Vibration	1.5 mm double amplitude at frequency of 10 to 55 Hz (for 1 min) in each X, Y, Z direction for 2 hours
Vibration (malfunction)	1.5 mm double amplitude at frequency of 10 to 55 Hz (for 1 min) in each X, Y, Z direction for 10 minutes
Shock	1,000 m/s² (≈ 100 g) in each X, Y, Z direction for 3 times
Shock (malfunction)	250 m/s² (≈ 25 g) in each X, Y, Z direction for 3 times
Ambient temperature	-20 to 65°C 02), storage : -40 to 70 °C (at no freezing or condensation)
Ambient humidity	35 to 85 %RH , storage : 35 to 85 %RH (at no freezing or condensation)
Protection structure	IP65 03) (oil resistant, IEC standards)
Material	Button: PC, BODY: PA6, lever in fixing unit: PA6
Approval	CE cULus LISTED TÜVNORD S
Weight 04)	≈ 66g

01) Setting and resetting once is counted as one operation.
02) UL approved ambient temperature: 55 °C
03) It is only for part from front of the panel. Protection structure is guaranteed only when the switch is installed on flat and smooth surface with mounting holes Ø22mm.
04) It is switch with three contact blocks.

CE cULus LISTED TÜVNORD S

■ Contact capacity

• IEC (EN60947-5-1)

Rated current		10 A			
Rated voltage		24 V	110 V	220 V	380 V
AC	Resistive load (AC-12)	10 A	10 A	6 A	3 A
	Inductive load (AC-15)	10 A	5 A	3 A	2 A
DC	Resistive load (DC-12)	10 A	2 A	0.6 A	0.2 A
	Inductive load (DC-13)	1.5 A	0.5 A	0.2 A	0.1 A

• UL / CSA (UL508, CSA C22.2 No. 14)

A300

Rated voltage	Through current	Current (A)		Volt ampere (VA)	
		Making	Breaking	Making	Breaking
AC120 V	10 A	60	6	7,200	720
AC240 V		30	3		

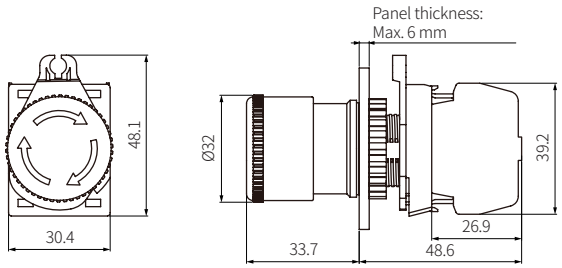
Q300

Rated voltage	Through current	Current (A)		Volt ampere (VA)	
		Making	Breaking	Making	Breaking
DC125 V	2.5 A	0.55	0.55	69	69
DC250 V		0.27	0.27		

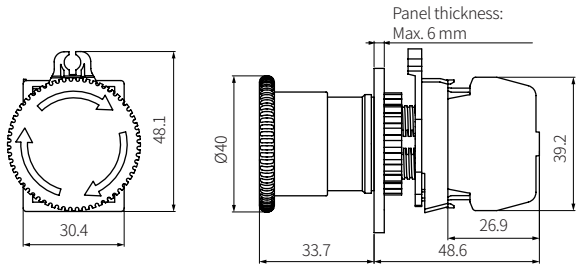
Dimensions

• Unit: mm, For the detailed drawings, follow the Autonics web site.
• Drawings show the no-mark model.

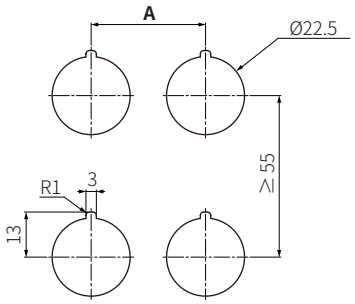
■ D30 (short head, non-illuminated)



■ D40 (short head, non-illuminated)

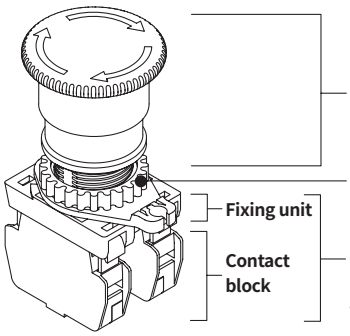


■ Panel cut-out



	A
D30	≥ 33 mm
D40	≥ 55 mm

Parts Descriptions



Button unit
It operates contact when user pushes it.

Fixing nut
It fixes the switch onto the panel.

Fixing unit

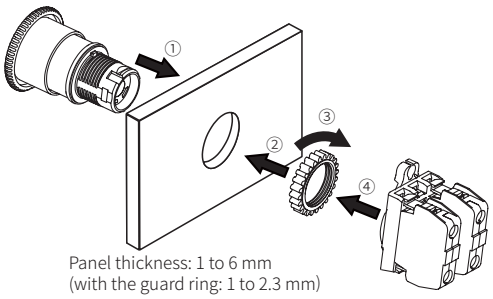
Contact block

Operation unit
It consists of mounting unit, which fixes the switch and contact block, and contact block.

Installation and Remove

■ Installing

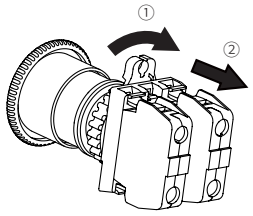
1. Insert the button unit from the front side of panel in the ① direction.
2. Insert the fixing nut from the rare side of panel in the ② direction.
3. Turn the fixing nut in the ③ direction to tighten.
   Before tightening the fixing nut, be sure that there is rubber washer between the switch and panel.
4. Put the operation unit to the button unit in the ④ direction.



Panel thickness: 1 to 6 mm
(with the guard ring: 1 to 2.3 mm)

■ Removing

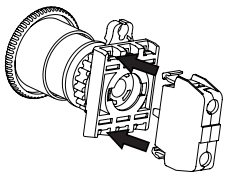
1. Turn the lever in the ① direction using the screwdriver.
2. Pull the operation unit in the ② direction to disassemble it.
3. Release the fixing nut in the ① direction to disassemble it.



Contact block

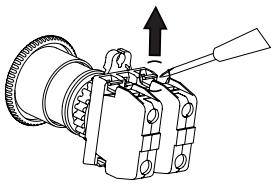
■ Assembling contact block

Insert the contact block in the arrow direction.



■ Disassembling contact block

Lift up the lever in the arrow direction with the screwdriver and to disassemble the contact block.

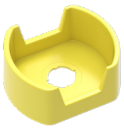
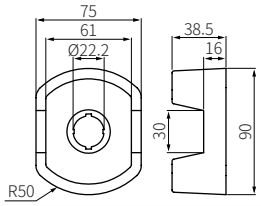
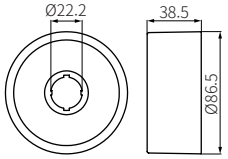
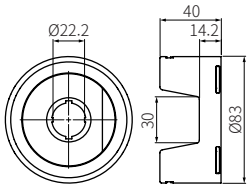
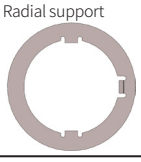


■ Wiring

• When wiring contact block, use phillips or slotted M3.5 screws with square washer.
• Applicable wire: AWG 18 (0.823 mm²)
• Tightening torque: 0.6 to 0.8 N·m
• Please use UL certified terminals.

Non-insulated terminal		Insulated terminal	
≤ 16.0 / ≤ 7 Spade terminal	≤ 16.0 / ≤Ø 7 Ring terminal	≤ 20.2 / ≤ 7 Spade terminal	≤ 20.2 / ≤Ø 7 Ring terminal

Sold Separately

Item		Appearance	Model
Protection guard ring	Standard type 		GUARD-SF2ER
	Circle type 		GUARD2-SF2ER
	Lock type 		GUARD3-SF2ER
Name plate	Ø 90, STOP 	Size: D90×d25	SF2ER-B
	Ø 90, OFF 	Size: D90×d25	SF2ER-B2
	Ø 60, STOP 	Size: D60×d25	SF2ER-B3
	Ø 60, OFF 	Size: D60×d25	SF2ER-B4
Protection guard ring + Name plate	Standard type + Ø 60, STOP		GUARD-SF2ER-S
	Standard type + Ø 60, OFF		GUARD-SF2ER-A
	Circle type + Ø 60, STOP		GUARD2-SF2ER-S
	Circle type + Ø 60, OFF		GUARD2-SF2ER-A
	Lock type + Ø 60, STOP		GUARD3-SF2ER-S
	Lock type + Ø 60, OFF		GUARD3-SF2ER-A
Radial support	Rubber packing 	Size: Ø25	BK-SF2ER-RP
	Radial support 	Size: Ø22	BK-SF2ER-P

Item		Type	Model
Contact block	A contact 	A contact (Normally Open)	SFEA-CA
	B contact 	B contact (Normally Closed)	SFEA-CB