



Ø16/22 · 25/30 mm E-Stop Push Button Switches

SF16ER/SF2ER/SF3ER Series PRODUCT MANUAL

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.

Safety Considerations

- Observe all 'Safety Considerations' for safe and proper operation to avoid hazards.
- ⚠ symbol indicates caution due to special circumstances in which hazards may occur.

⚠ Warning Failure to follow instructions may result in serious injury or death.

- 01. Fail-safe device must be installed when using the unit with machinery that may cause serious injury or substantial economic loss. (e.g. nuclear power control, medical equipment, ships, vehicles, railways, aircraft, combustion apparatus, safety equipment, crime/disaster prevention devices, etc.)**
Failure to follow this instruction may result in personal injury, economic loss or fire.
- 02. System manager means followings;**
 - a personnel who is fully aware of installation, setting, operation, and maintenance of the product
 - a personnel who well observes standard/regulation/statute on the product by type of machine the product installed in and nation/region the product used in Machine user means a personnel who is appropriately trained about using machine by the system manager, so that machine user can operate the machine correctly. System manager has duty to train the machine user about operation of the product. Machine user has to report directly to the system manager when unusual status has been found while system is operating.
- 03. The product has to be installed, set, and combined with machine control system by the qualified system manager.**
Failure to follow this instruction may result in personal injury due to unintended operation and unstable detection.
- 04. Before using the product, check that function of the product operates as intended while machine is turned off after installation.**
Failure to follow this instruction may result in personal injury due to unintended operation and unstable detection.
- 05. Do not use or store the unit in the place where flammable/explosive/corrosive gas, high humidity, direct sunlight, radiant heat, vibration, impact, salinity, moisture, steam or dust may be present.**
Failure to follow this instruction may result in explosion or fire.
- 06. Do not disassemble or modify the unit.**
Failure to follow this instruction may result in personal injury or fire due to loss of safety function.
- 07. Do not defeat, tamper, or modify the switch.**
Failure to follow this instruction may result in personal injury.
- 08. Check the installed status of the switch, operating status of the switch, and signs of damage, modification, tampering of the switch at the following situation and on a weekly basis.**
 - when operating the safety system at first
 - when replacing component of the system
 - when the system has not been operated for a long time
- 09. Do not connect, repair, inspect, or replace the unit while connected to a power source.**
Failure to follow this instruction may result in fire.
- 10. Check 'Connections' before wiring.**
Failure to follow this instruction may result in fire.
- 11. Normally Open (NO) Contacts cannot be used for emergency stop control circuits.**
- 12. Keep away from high voltage lines or power lines to prevent surge and inductive noise, and make cable as short as possible.**
Do not use near the equipment which generates strong magnetic force or high frequency noise (such as transceivers).
When using near devices that generate strong surges (motors, welding machines, etc.), use diodes or varistors to eliminate the surge.
Failure to follow this instruction may result in personal injury due to malfunction of the product and safety function.

⚠ Caution Failure to follow instructions may result in injury or product damage.

- 01. Use the unit within the rated specifications.**
Failure to follow this instruction may result in fire or product damage.
- 02. Use a dry cloth to clean the unit, and do not use water or organic solvent.**
Failure to follow this instruction may result in fire.
- 03. Keep the product away from metal chip, dust, and wire residue which flow into the unit.**
Failure to follow this instruction may result in fire, product damage or malfunction.

Cautions during Use

- Follow instructions in 'Cautions during Use'. Otherwise, it may cause unexpected accidents.
- Emergency stop push button switches are UL Listed when mounted in a sealed, non-ventilated enclosure only.
- When installing the product, keep the minimum installation space between units.
- The switch must be properly assembled.
- 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 turn-reset type switch, turn the button approximately 44°clockwise, and do not turn the button with excessive force.
- To unlock the pull-reset type switch, do not pull or turn the button with excessive force. This may damage the product.
- This unit may be used in the following environments.
 - Indoors (UL Type 1 Enclosure)
 - Altitude max. 2,000m
 - Pollution degree 3
 - Installation category III

Ordering Information

This is only for reference, the actual product does not support all combinations.
For selecting the specified model, follow the Autonics website.

SF ① ER	-	②	③	④	⑤	⑥	⑦	-	⑧
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① Panel cut-out size

16: Ø16 mm
2: Ø22/25 mm
3: Ø30 mm

② Contact type

No mark: Modular
C: Integrated

③ Operation

E: Push-lock, turn-reset
P: Push-lock, pull-reset

④ Button

Non-illuminated	Illuminated	Type
1	1L	D30, short head
2	2L	D40, short head
3	3L	D60, short head
4	4L	D44, short head

⑤ Color

R: Red

01) For the modular type model, it consists of 1-level or 2-level contact blocks. Non-illuminated type 4-contact or more models and illuminated type 3-contact or more models include 2-level contact blocks.

⑥ Contact block⁰¹⁾

Contact block	Contact	Contact block	Contact
B	1b	A4B	1a4b
AB	1a1b	2A3B	2a3b
2B	2b	5B	5b
A2B	1a2b	A5B	1a5b
3B	3b	2A4B	2a4b
A3B	1a3b	3A3B	3a3b
2A2B	2a2b	6B	6b
4B	4b		

⑦ Characteristic

No mark: General

P: Padlock

C: IP69K

⑧ Mark

No mark: No mark

A: EMO

S: EMS

Specifications

■ Control unit

Series	SF16ER	SF2ER	SF3ER	
Characteristic	General	General	IP69K	Padlock ⁰¹⁾
1 Contact operating power	10 to 15 N	20 to 30 N	30 to 40 N	30 to 40 N
Operation distance	4.0 mm ± 0.5	4.7 mm ± 0.5	4.7 mm ± 0.5	6.0 mm ± 0.5
Contact operating angle	CW (clock wise) 33 to 37°	CW (clock wise) 33 to 37°	PULL RESET	CW (clock wise) 29 to 30°
Rotation torque	0.04 to 0.05 N m	0.04 to 0.05 N m	PULL RESET	0.06 to 0.07 N m
Material	Button: PC, Body: PA6	Button: PC, Body: PA6	Button: PA6, Body: PA6	Button: PC, Body: PA6
Protection structure ⁰²⁾	IP65 (IEC standards)	IP65 (IEC standards)	IP69K (ISO standards)	IP65 (IEC standards)

01) Refer to the 'Specifications of Padlock' in the product manual.

02) 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.

■ Operation unit

Series	SF16ER	SF2ER/SF3ER	
Contact type	Modular	Modular	Integrated
Rated voltage/ current	250 VAC~, 3 A (Resistive load)	AC-15 (220 VAC~, 3 A)	AC-15 (250 VAC~, 1.5 A)
	30 VDC=, 3 A (Resistive load)	DC-13 (220 VDC=, 0.2 A)	DC-13 (220 VDC=, 1A)
Applicable wire	AWG 18 (0.823 mm ²)		
Insulation resistance	≥ 100 MΩ (500 VDC= megger)		
Dielectric strength	2,500 VAC~ 50/60 Hz for 1 minute		
Material	Lever in fixing unit: PA6, Contact block: PA6		Lever in fixing unit: PA6, Contact block: PC

■ Assembled

Series	SF16ER	SF2ER/SF3ER	
Contact type	Modular	Modular	Integrated
Allowable operation frequency ⁰¹⁾	Electrical: 20 operations/min, mechanical: 20 operations/min		
Life cycle	Electrical: ≥ 100,000 operations, mechanical: ≥ 250,000 operations		
Vibration	1.5 mm double amplitude at frequency of 10 to 55 Hz in each X, Y, Z direction for 2 hours		
Vibration (malfunction)	1.5 mm double amplitude at frequency of 10 to 55 Hz in each X, Y, Z direction for 10 minutes		
Shock	1,000 m/s ² (≈ 100 g) in each X, Y, Z direction for 3 times ⁰²⁾		
Shock (malfunction)	250 m/s ² (≈ 25 g) in each X, Y, Z direction for 3 times		
Ambient temperature	-20 to 65 °C ⁰³⁾ , 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)		
Certification	CE UK  S 		
Weight ⁰⁴⁾	≈ 18 g	1-level contact: ≈ 65.2g	≈ 66.4 g
		2-level contact: ≈ 98.2 g	

01) Setting and resetting once is counted as one operation.

02) [Modular 2-level contact] 500 m/s² (≈ 50 g) in each X, Y, Z direction for 3 times

03) UL approved ambient temperature: 55 °C

04) Based on the maximum contact block of the D40 button type.

■ [SF2ER/SF3ER]Contact capacity

- IEC (EN60947-5-1)

Contact type		Modular				Integrated		
Rated current		10 A				5 A		
Rated voltage		24 V	110 V	220 V	380 V	30 V	125 V	250 V
AC	Resistive load (AC-12)	10 A	10 A	6 A	3 A	-	5 A	3 A
	Inductive load (AC-15)	10 A	5 A	3 A	2 A	-	3 A	1.5 A
DC	Resistive load (DC-12)	10 A	2 A	0.6 A	0.2 A	2 A	0.4 A	0.2 A
	Inductive load (DC-13)	1.5 A	0.5 A	0.2 A	0.1 A	1 A	0.22 A	0.1 A

- UL / CSA (UL508, CSA C22.2 No. 14)

[Modular] 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		

[Integrated] B300

Rated voltage	Through current	Current (A)		Volt ampere (VA)	
		Making	Breaking	Making	Breaking
AC120 V	5 A	30	3	3,600	360
AC240 V		15	1.5		

[Modular / Integrated] 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		

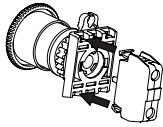
■ [Illuminated] LED Specifications

LED	Modular LED block	Integrated LED lamp
Rated current	20 mA	12 mA
Rated voltage	12 to 24 VDC= / VAC~	12 to 24 VDC= / VAC~

[Modular type] Contact block Assembling / Disassembling

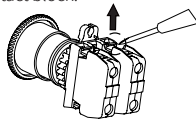
■ Assembling

Insert the contact block in the arrow direction.



■ Disassembling

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



Wiring

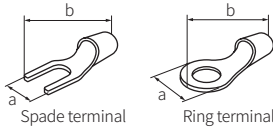
■ SF16ER

- Soldering time: 350 °C (soldering iron tips) ≤ 3 seconds (30 W soldering iron)
- Do not apply external force for 1 minute after soldering.
- After completing the switch wiring, ensure adequate insulation distance.

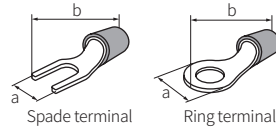
■ SF2ER/SF3ER

- Unit: mm, Please use UL certified terminals.

Non-insulated terminal



Insulated terminal



[Modular]

When wiring contact block, use phillips or slotted M3.5 screws with square washers.
(Tightening torque: 0.6 to 0.8 N m)

Terminal	Non-insulated		Insulated	
	Spade	Ring	Spade	Ring
a	≤ 7	≤ Ø7	≤ 7	≤ Ø7
b	≤ 16.0		≤ 20.2	

[Integrated]

When wiring contact block, use phillips or slotted M3 screws with square washers.
(Tightening torque: 0.8 to 1.0 N m)

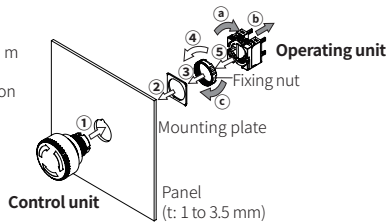
Terminal	Non-insulated		Insulated	
	Spade	Ring	Spade	Ring
a	≤ 6.2	≤ Ø6.2	≤ 6.2	≤ Ø6.2
b	≤ 14.0		≤ 16.3	

Installation and Remove

- Before tightening the fixing nut, be sure that there is rubber washer between the switch and panel.
- Tighten the fixing nut using the switch nut fixing handle (sold separately: SA-□LH)
- Use the head that matches the integrated contact or the modular contact. An improper combination may cause product malfunction and lead to safety hazards.

■ SF16ER

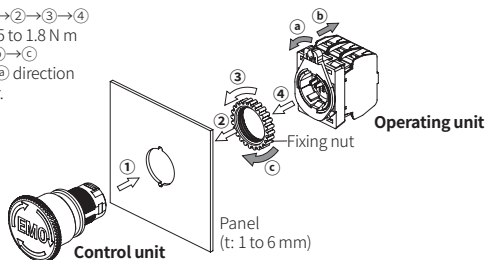
- Installation order:
①→②→③→④→⑤
- Tightening torque: 0.4 to 0.5 N m
- Remove order: ⑤→④→③→②→①
- Turn the lever in the ⑤ direction using the screwdriver.



■ SF2ER/SF3ER

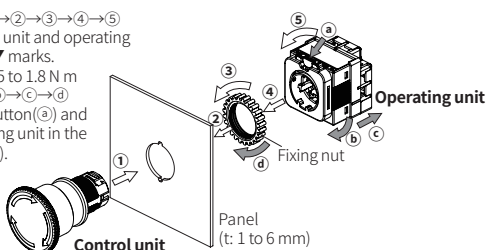
[Modular]

- Installation order: ①→②→③→④
- Tightening torque: 1.5 to 1.8 N m
- Remove order: ④→③→②→①
- Turn the lever in the ④ direction using the screwdriver.



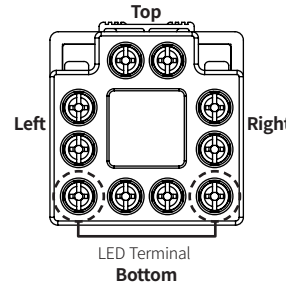
[Integrated]

- Installation order: ①→②→③→④→⑤
- Assemble the control unit and operating unit by aligning the ▼ marks.
- Tightening torque: 1.5 to 1.8 N m
- Remove order: ⑤→④→③→②→①
- Press the RELEASE button(⑤) and then turn the operating unit in the UNLOCK direction(⑥).



[Integrated type] Contact Layout Diagram

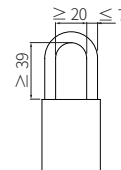
- LED terminals(non-polarized) are provided on illuminated models only.



Contact block	Top	Bottom	Left	Right
B	-	B	-	-
2B	B	B	-	-
3B	-	B	B	B
4B	B	B	B	B
AB	B	A	-	-
A2B	-	A	B	B
A3B	B	A	B	B
2A2B	A	A	B	B

[SF3ER] Specifications of Padlock

- Install a padlock(purchased separately) to the Control unit to prevent unauthorized unlocking.
- Ensure that the total weight of padlock and the group locking device (sold separately, weight: ≈ 46 g) does not exceed 1000 g. Otherwise, the emergency stop switch may be damaged.
- Install the padlock so that locking and unlocking does not affect other devices.
- Unit: mm, Use a padlock that meets the specifications below.

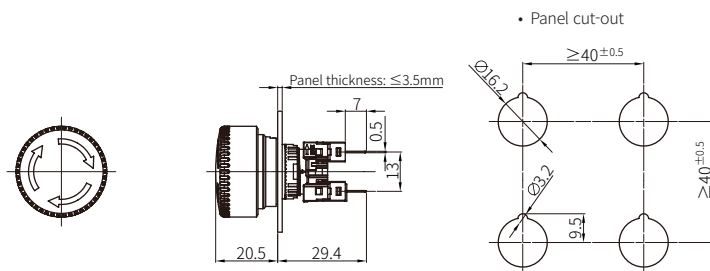


[SF16ER] Dimensions

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

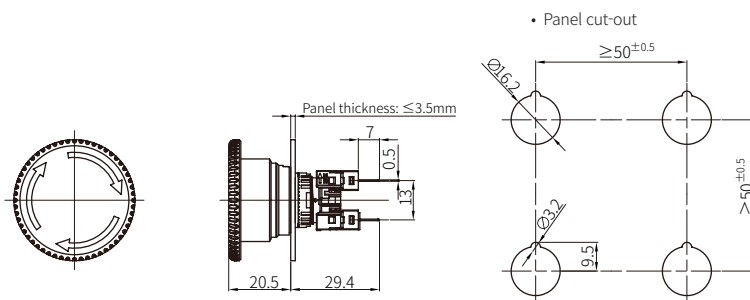
■ Modular, D30, General

- SF16ER-E1RB
- SF16ER-E1RAB
- SF16ER-E1R2B



■ Modular, D40, General

- SF16ER-E2RB
- SF16ER-E2RAB
- SF16ER-E2R2B

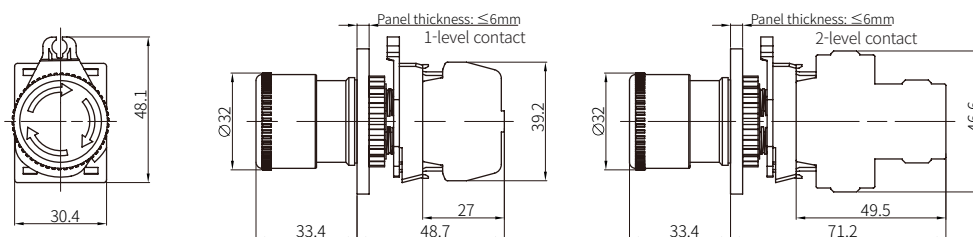


[SF2ER] Dimensions

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

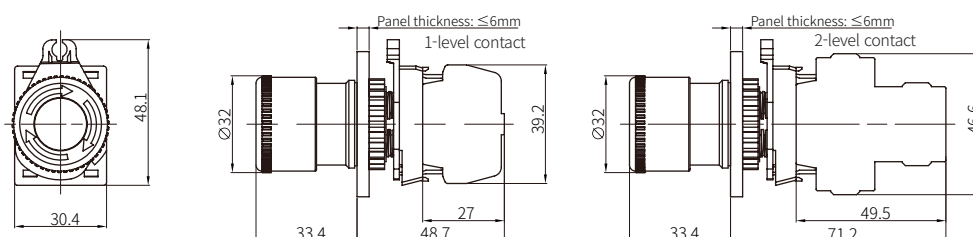
■ Modular, D30, Non-illuminated, General

- SF2ER-E1RB
- SF2ER-E1RAB
- SF2ER-E1R2B
- SF2ER-E1RA2B
- SF2ER-E1R3B
- SF2ER-E1RA3B
- SF2ER-E1R2A2B
- SF2ER-E1R4B
- SF2ER-E1RA4B
- SF2ER-E1R2A3B
- SF2ER-E1R5B
- SF2ER-E1RA5B
- SF2ER-E1R2A4B
- SF2ER-E1R3A3B
- SF2ER-E1R6B



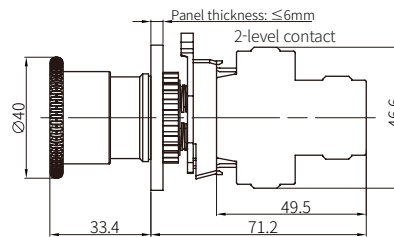
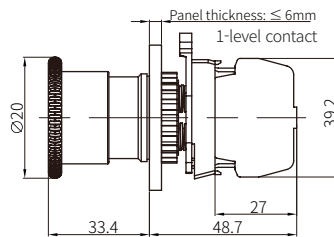
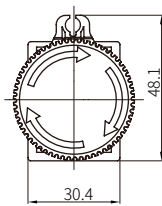
■ Modular, D30, Illuminated, General

- SF2ER-E1LRB
- SF2ER-E1LRAB
- SF2ER-E1LR2B
- SF2ER-E1LRA2B
- SF2ER-E1LR3B
- SF2ER-E1LRA3B
- SF2ER-E1LR2A2B
- SF2ER-E1LR4B



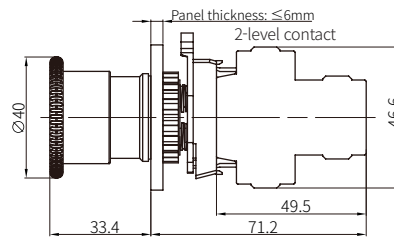
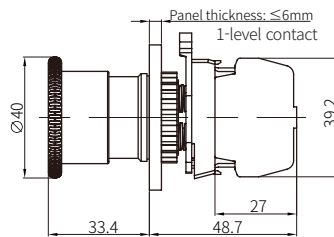
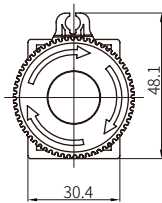
■ Modular, D40, Non-illuminated, General

- SF2ER-E2RB
- SF2ER-E2RAB
- SF2ER-E2R2B
- SF2ER-E2RA2B
- SF2ER-E2R3B
- SF2ER-E2RA3B
- SF2ER-E2R2A2B
- SF2ER-E2R4B
- SF2ER-E2RA4B
- SF2ER-E2R2A3B
- SF2ER-E2R5B
- SF2ER-E2RA5B
- SF2ER-E2R2A4B
- SF2ER-E2R3A3B
- SF2ER-E2R6B
- SF2ER-E2RB-A
- SF2ER-E2RAB-A
- SF2ER-E2R2B-A
- SF2ER-E2RA2B-A
- SF2ER-E2R3B-A
- SF2ER-E2RA3B-A
- SF2ER-E2R2A2B-A
- SF2ER-E2R4B-A
- SF2ER-E2RB-S
- SF2ER-E2RAB-S
- SF2ER-E2R2B-S
- SF2ER-E2RA2B-S
- SF2ER-E2R3B-S
- SF2ER-E2RA3B-S
- SF2ER-E2R2A2B-S
- SF2ER-E2R4B-S
- SF2ER-E2RA4B-S
- SF2ER-E2R2A3B-S
- SF2ER-E2R5B-S
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- SF2ER-E2R3A3B-S
- SF2ER-E2R6B-S



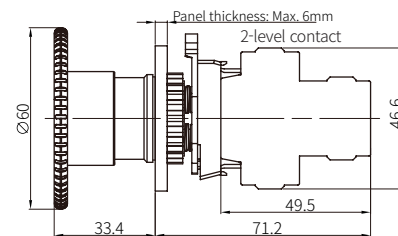
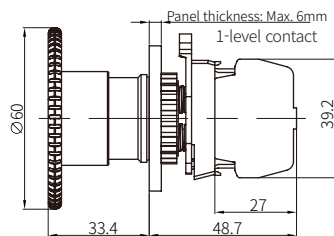
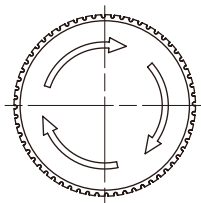
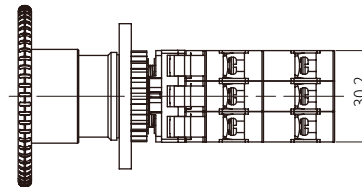
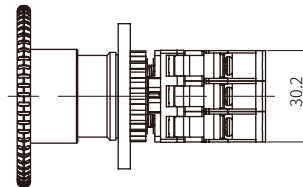
■ Modular, D40, Illuminated, General

- SF2ER-E2LRB
- SF2ER-E2LRAB
- SF2ER-E2LR2B
- SF2ER-E2LRA2B
- SF2ER-E2LR3B
- SF2ER-E2LRA3B
- SF2ER-E2LR2A2B
- SF2ER-E2LR4B



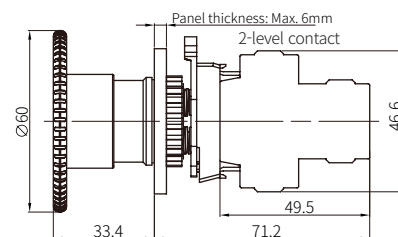
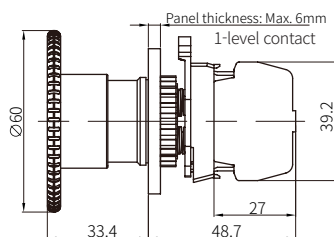
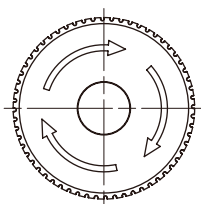
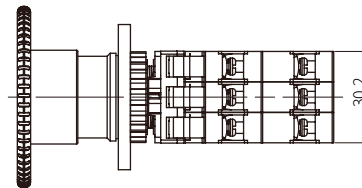
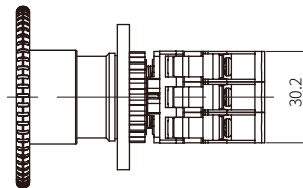
■ Modular, D60, Non-illuminated, General

- SF2ER-E3RB
- SF2ER-E3RAB
- SF2ER-E3R2B
- SF2ER-E3RA2B
- SF2ER-E3R3B
- SF2ER-E3RA3B
- SF2ER-E3R2A2B
- SF2ER-E3LR4B
- SF2ER-E3RA4B
- SF2ER-E3R2A3B
- SF2ER-E3R5B
- SF2ER-E3RA5B
- SF2ER-E3R2A4B
- SF2ER-E3R3A3B
- SF2ER-E3R6B



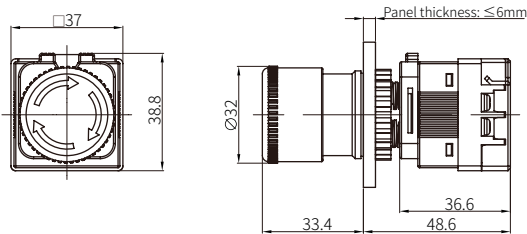
■ Modular, D60, Illuminated, General

- SF2ER-E3LRB
- SF2ER-E3LRAB
- SF2ER-E3LR2B
- SF2ER-E3LRA2B
- SF2ER-E3LR3B
- SF2ER-E3LRA3B
- SF2ER-E3LR2A2B
- SF2ER-E3LR4B



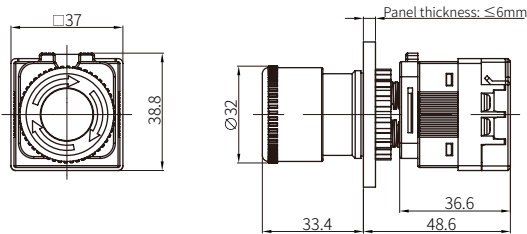
■ Integrated, D30, Non-illuminated, General

- SF2ER-CE1RB
- SF2ER-CE1RAB
- SF2ER-CE1R2B
- SF2ER-CE1RA2B
- SF2ER-CE1R3B
- SF2ER-CE1RA3B
- SF2ER-CE1R2A2B
- SF2ER-CE1R4B



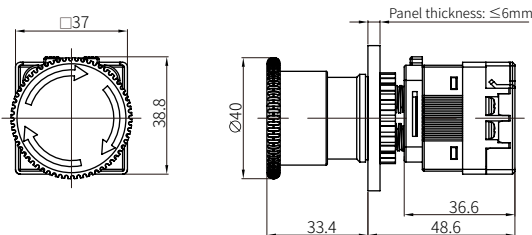
■ Integrated, D30, Illuminated, General

- SF2ER-CE1LRB
- SF2ER-CE1LRAB
- SF2ER-CE1LR2B
- SF2ER-CE1LRA2B
- SF2ER-CE1LR3B
- SF2ER-CE1LRA3B
- SF2ER-CE1LR2A2B
- SF2ER-CE1LR4B



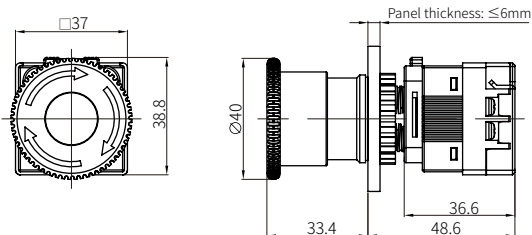
■ Integrated, D40, Non-illuminated, General

- | | | |
|------------------|--------------------|--------------------|
| • SF2ER-CE2RB | • SF2ER-CE2RB-A | • SF2ER-CE2RB-S |
| • SF2ER-CE2RAB | • SF2ER-CE2RAB-A | • SF2ER-CE2RAB-S |
| • SF2ER-CE2R2B | • SF2ER-CE2R2B-A | • SF2ER-CE2R2B-S |
| • SF2ER-CE2RA2B | • SF2ER-CE2RA2B-A | • SF2ER-CE2RA2B-S |
| • SF2ER-CE2R3B | • SF2ER-CE2R3B-A | • SF2ER-CE2R3B-S |
| • SF2ER-CE2RA3B | • SF2ER-CE2RA3B-A | • SF2ER-CE2RA3B-S |
| • SF2ER-CE2R2A2B | • SF2ER-CE2R2A2B-A | • SF2ER-CE2R2A2B-S |
| • SF2ER-CE2R4B | • SF2ER-CE2R4B-A | • SF2ER-CE2R4B-S |



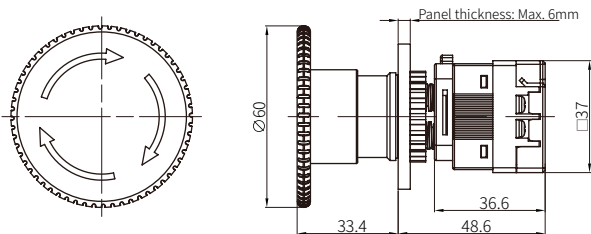
■ Integrated, D40, Illuminated, General

- SF2ER-CE2LRB
- SF2ER-CE2LRAB
- SF2ER-CE2LR2B
- SF2ER-CE2LRA2B
- SF2ER-CE2LR3B
- SF2ER-CE2LRA3B
- SF2ER-CE2LR2A2B
- SF2ER-CE2LR4B



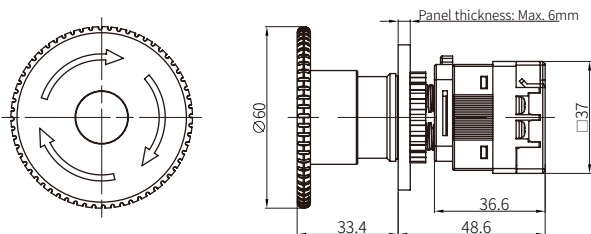
■ Integrated, D60, Non-illuminated, General

- SF2ER-CE3RB
- SF2ER-CE3RAB
- SF2ER-CE3R2B
- SF2ER-CE3RA2B
- SF2ER-CE3R3B
- SF2ER-CE3RA3B
- SF2ER-CE3R2A2B
- SF2ER-CE3R4B



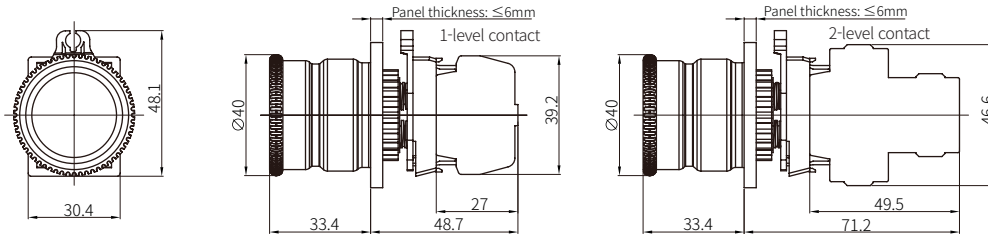
■ Integrated, D60, Illuminated, General

- SF2ER-CE3LRB
- SF2ER-CE3LRAB
- SF2ER-CE3LR2B
- SF2ER-CE3LRA2B
- SF2ER-CE3LR3B
- SF2ER-CE3LRA3B
- SF2ER-CE3LR2A2B
- SF2ER-CE3LR4B



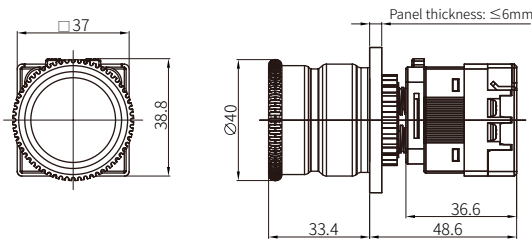
■ Modular, D40, Non-illuminated, IP69K

- SF2ER-P2RBC
- SF2ER-P2RABC
- SF2ER-P2R2BC
- SF2ER-P2RA2BC
- SF2ER-P2R3BC
- SF2ER-P2RA3BC
- SF2ER-P2R2A2BC
- SF2ER-P2R4BC
- SF2ER-P2RA4BC
- SF2ER-P2R2A3BC
- SF2ER-P2R5BC
- SF2ER-P2RA5BC
- SF2ER-P2R2A4BC
- SF2ER-P2R3A3BC
- SF2ER-P2R6BC
- SF2ER-P2RBC-A
- SF2ER-P2RABC-A
- SF2ER-P2R2BC-A
- SF2ER-P2RA2BC-A
- SF2ER-P2R3BC-A
- SF2ER-P2RA3BC-A
- SF2ER-P2R2A2BC-A
- SF2ER-P2R4BC-A
- SF2ER-P2RA4BC-A
- SF2ER-P2R2A3BC-A
- SF2ER-P2R5BC-A
- SF2ER-P2RA5BC-A
- SF2ER-P2R2A4BC-A
- SF2ER-P2R3A3BC-A
- SF2ER-P2R6BC-A
- SF2ER-P2RBC-S
- SF2ER-P2RABC-S
- SF2ER-P2R2BC-S
- SF2ER-P2RA2BC-S
- SF2ER-P2R3BC-S
- SF2ER-P2RA3BC-S
- SF2ER-P2R2A2BC-S
- SF2ER-P2R4BC-S
- SF2ER-P2RA4BC-S
- SF2ER-P2R2A3BC-S
- SF2ER-P2R5BC-S
- SF2ER-P2RA5BC-S
- SF2ER-P2R2A4BC-S
- SF2ER-P2R3A3BC-S
- SF2ER-P2R6BC-S



■ Integrated, D40, Non-illuminated, IP69K

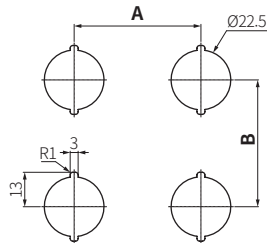
- SF2ER-CP2RBC
- SF2ER-CP2RABC
- SF2ER-CP2R2BC
- SF2ER-CP2RA2BC
- SF2ER-CP2R3BC
- SF2ER-CP2RA3BC
- SF2ER-CP2R2A2BC
- SF2ER-CP2R4BC
- SF2ER-CP2RBC-A
- SF2ER-CP2RABC-A
- SF2ER-CP2R2BC-A
- SF2ER-CP2RA2BC-A
- SF2ER-CP2R3BC-A
- SF2ER-CP2RA3BC-A
- SF2ER-CP2R2A2BC-A
- SF2ER-CP2R4BC-A
- SF2ER-CP2RBC-S
- SF2ER-CP2RABC-S
- SF2ER-CP2R2BC-S
- SF2ER-CP2RA2BC-S
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- SF2ER-CP2R2A2BC-S
- SF2ER-CP2R4BC-S



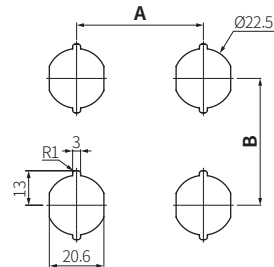
■ Panel cut-out

- Prepare the panel taking into account the accessory mounting dimensions

For standard installation



For anti-rotation



Contact block	Button	A	B
1-level contact	D30	≥ 33	≥ 55
	D40	≥ 55	≥ 55
	D60	≥ 70	≥ 70
2-level contact / Integrated contact		≥ 70	≥ 70

- Panel thickness may vary depending on the use of accessories sold separately.

	General	With guard ring ⁰¹⁾	With radial support
Panel thickness	1 to 6 mm	1 to 2.3 mm	1.5 to 6 mm

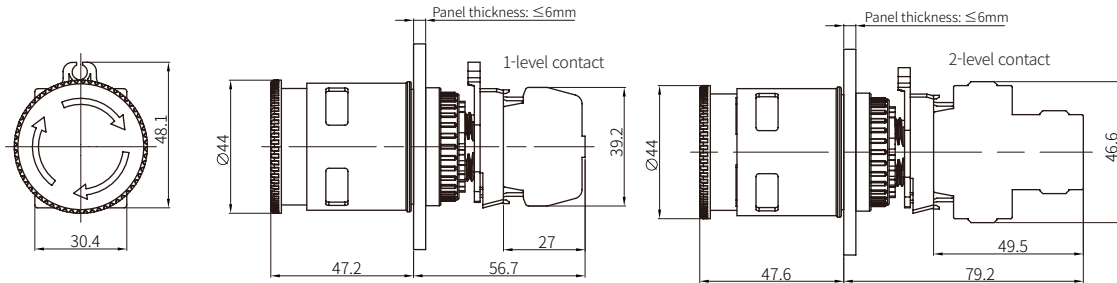
01) For the panel thickness when using embedded-type guard rings, refer to the product manual.

[SF3ER] Dimensions

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

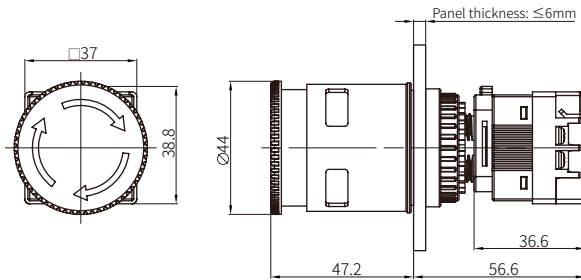
■ Modular, D44, Padlock

- | | | | | | | |
|-------------------|------------------|------------------|--------------------|--------------------|--------------------|--------------------|
| • SF3ER-E4LRBP | • SF3ER-E4RBP | • SF3ER-E4RA4BP | • SF3ER-E4RBP-A | • SF3ER-E4RA4BP-A | • SF3ER-E4RBP-S | • SF3ER-E4RA4BP-S |
| • SF3ER-E4LRABP | • SF3ER-E4RABP | • SF3ER-E4R2A3BP | • SF3ER-E4RABP-A | • SF3ER-E4R2A3BP-A | • SF3ER-E4RABP-S | • SF3ER-E4R2A3BP-S |
| • SF3ER-E4LR2BP | • SF3ER-E4R2BP | • SF3ER-E4R5BP | • SF3ER-E4R2BP-A | • SF3ER-E4R5BP-A | • SF3ER-E4R2BP-S | • SF3ER-E4R5BP-S |
| • SF3ER-E4LR2ABP | • SF3ER-E4R2ABP | • SF3ER-E4RA5BP | • SF3ER-E4RA2BP-A | • SF3ER-E4RA5BP-A | • SF3ER-E4RA2BP-S | • SF3ER-E4RA5BP-S |
| • SF3ER-E4LR3BP | • SF3ER-E4R3BP | • SF3ER-E4R2A4BP | • SF3ER-E4R3BP-A | • SF3ER-E4R2A4BP-A | • SF3ER-E4R3BP-S | • SF3ER-E4R2A4BP-S |
| • SF3ER-E4LR3ABP | • SF3ER-E4R3ABP | • SF3ER-E4R3A3BP | • SF3ER-E4R3A3BP-A | • SF3ER-E4R3A3BP-A | • SF3ER-E4R3A3BP-S | • SF3ER-E4R3A3BP-S |
| • SF3ER-E4LR2A2BP | • SF3ER-E4R2A2BP | • SF3ER-E4R6BP | • SF3ER-E4R2A2BP-A | • SF3ER-E4R6BP-A | • SF3ER-E4R2A2BP-S | • SF3ER-E4R6BP-S |
| • SF3ER-E4LR4BP | • SF3ER-E4R4BP | | • SF3ER-E4R4BP-A | | • SF3ER-E4R4BP-S | |



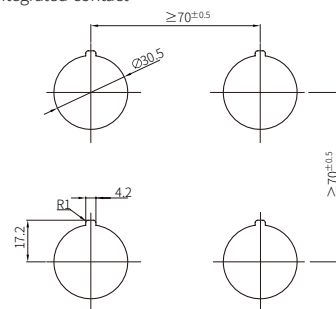
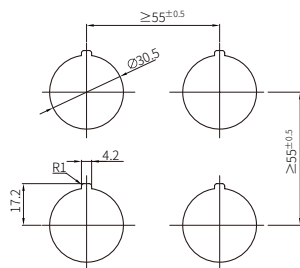
■ Integrated, D44, Padlock

- | | | | |
|--------------------|-------------------|---------------------|---------------------|
| • SF3ER-CE4LRBP | • SF3ER-CE4RBP | • SF3ER-CE4RBP-A | • SF3ER-CE4RBP-S |
| • SF3ER-CE4LRABP | • SF3ER-CE4RABP | • SF3ER-CE4RABP-A | • SF3ER-CE4RABP-S |
| • SF3ER-CE4LR2BP | • SF3ER-CE4R2BP | • SF3ER-CE4R2BP-A | • SF3ER-CE4R2BP-S |
| • SF3ER-CE4LR2ABP | • SF3ER-CE4R2ABP | • SF3ER-CE4R2ABP-A | • SF3ER-CE4R2ABP-S |
| • SF3ER-CE4LR3BP | • SF3ER-CE4R3BP | • SF3ER-CE4R3BP-A | • SF3ER-CE4R3BP-S |
| • SF3ER-CE4LR3ABP | • SF3ER-CE4R3ABP | • SF3ER-CE4R3ABP-A | • SF3ER-CE4R3ABP-S |
| • SF3ER-CE4LR2A2BP | • SF3ER-CE4R2A2BP | • SF3ER-CE4R2A2BP-A | • SF3ER-CE4R2A2BP-S |
| • SF3ER-CE4LR4BP | • SF3ER-CE4R4BP | • SF3ER-CE4R4BP-A | • SF3ER-CE4R4BP-S |



■ Panel cut-out

- Prepare the panel considering the size and number of Padlocks (purchased separately) and Group locking device (sold separately).
- 1-level contact
- 2-level contact / Integrated contact

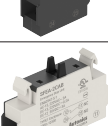
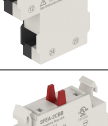


Sold Separately: Locking handle

- For locking switch nuts behind the panels.

Item	Appearance	Applied series	Model
Locking handle		SF2ER, SF3ER	SA-LH
		SF16ER	SA16-LH

Sold Separately: Contact blocks

Item	Appearance	Contact	Certification	Model
A Contact (Normally Open)		NO 		SFEA16-CA
B Contact (Normally Closed)		NC 	  	SA16-CB
A Contact (Normally Open)		NO 		SFEA-CA
B Contact (Normally Closed)		NC 		SFEA-CB
AA Contact (Normally Open)				SFEA-2CAA
AB Contact (A: Normally Open B: Normally Closed)				SFEA-2CAB
BB Contact (Normally Closed)				SFEA-2CBB

Series	SFEA16-C□	SFEA-C□	SFEA-2C□
Rated voltage/ current	250 VAC~, 3 A (Resistive load)	AC-15 (220 VAC~, 3 A)	
	30 VDC≡, 3 A (Resistive load)	DC-13 (220 VDC≡, 0.2 A)	
Dielectric strength	2,500 VAC~ 50/60 Hz for 1 minute		
Insulation resistance	≥ 100 MΩ (500 VDC≡ megger)		
Electrical life cycle	≥ 100,000 times (20 operations/min)		
Weight	≈ 1.5 g	≈ 10.5 g	≈ 22 g

Sold Separately: LED block

Item	Appearance	Certification	Model
LED block		  	SA-LDR

Rated voltage/ current	AC/DC voltage type: 12-24 VAC~ 50/60 Hz, 12-24 VDC=
Current consumption	≤ 20 mA
Color	Red
Weight	≈ 11 g

Sold Separately: [Integrated] LED lamp

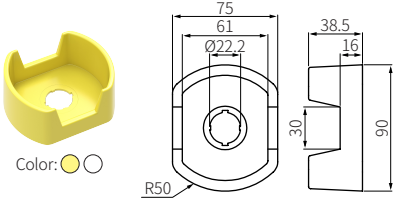
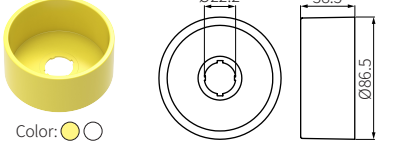
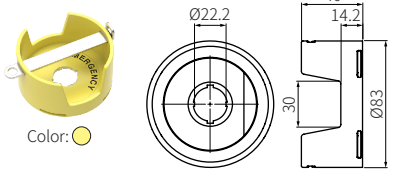
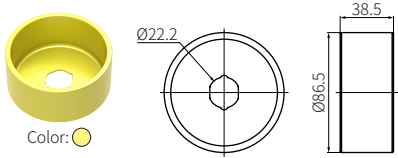
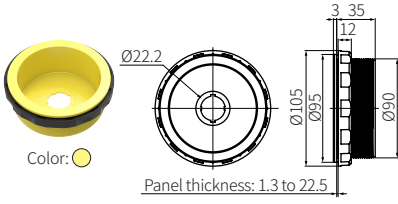
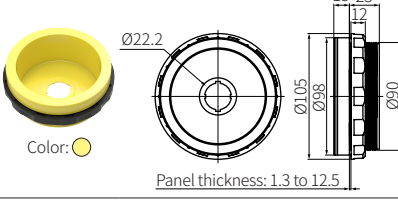
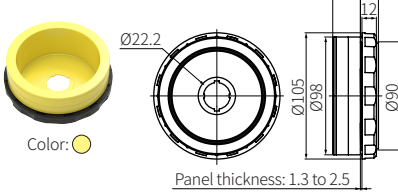
- Assembling: Insert the LED lamp into the integrated contact with the illuminated part upward. Press down and rotate counterclockwise to lock.
- Disassembling: To remove the LED lamp, press it down and turn it clockwise to detach it.
- Color: Red

Item	Appearance	Model
LED lamp		LDR-SF2ER

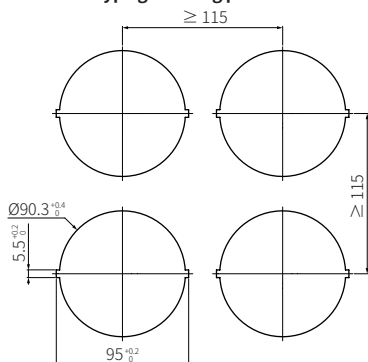
Sold Separately: Exclusive for SF2ER

Guard ring

- Unit: mm, For the detailed drawings, follow the Autonics website.
- When installing, prepare the panel according to the cutout dimensions and accessory mounting size of switch.

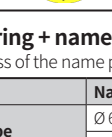
Item	Appearance	Model
Standard type		● GUARD-SF2ER ○ GUARD-SF2ER-W
Circle type		● GUARD2-SF2ER ○ GUARD2-SF2ER-W
Lock type		This guard ring is sold only as protection guard ring + name plate set. (single metal latch sold separately: GUARD3-SF2ER-L)
Metal type		GUARD2-SF2ER-M
Embedded type (no spacer)		GUARD4-SF2ER
Embedded type (spacer × 1)		GUARD41-SF2ER
Embedded type (spacer × 2)		GUARD42-SF2ER

Embedded type guard ring panel cut-out



Name plate

- Unit: mm, For the detailed drawings, follow the Autonics website.

Item	Appearance	Applied model	Model
Ø 90, STOP		Button type D30, D40, D60 model	SF2ER-B
Ø 90, OFF			SF2ER-B2
Ø 60, STOP		Button type D30, D40 model	SF2ER-B3
Ø 60, OFF			SF2ER-B4

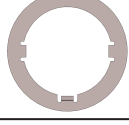
Guard ring + name plate set

- The thickness of the name plate included in the guard ring + name plate set is 0.5 mm.

Guard ring	Name plate	Model
Standard type	Ø 60, STOP	GUARD-SF2ER-S
	Ø 60, OFF	GUARD-SF2ER-A
Standard type white	Ø 60, STOP	GUARD-SF2ER-S-W
Circle type	Ø 60, STOP	GUARD2-SF2ER-S
	Ø 60, OFF	GUARD2-SF2ER-A
Circle type white	Ø 60, STOP	GUARD2-SF2ER-S-W
Lock type	Ø 60, STOP	GUARD3-SF2ER-S
	Ø 60, OFF	GUARD3-SF2ER-A
Metal type	Ø 60, STOP	GUARD2-SF2ER-S-M
	Ø 60, OFF	GUARD2-SF2ER-A-M

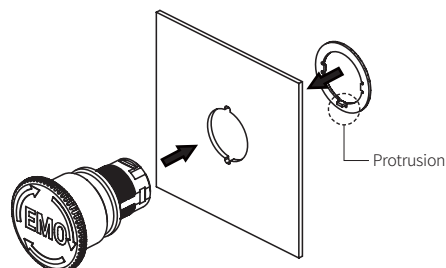
Radial support

- Unit: mm, For the detailed drawings, follow the Autonics website.

Item	Appearance	Model
Rubber packing		BK-SF2ER-RP
Radial support		BK-SF2ER-P

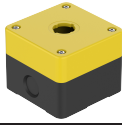
Caution for installation

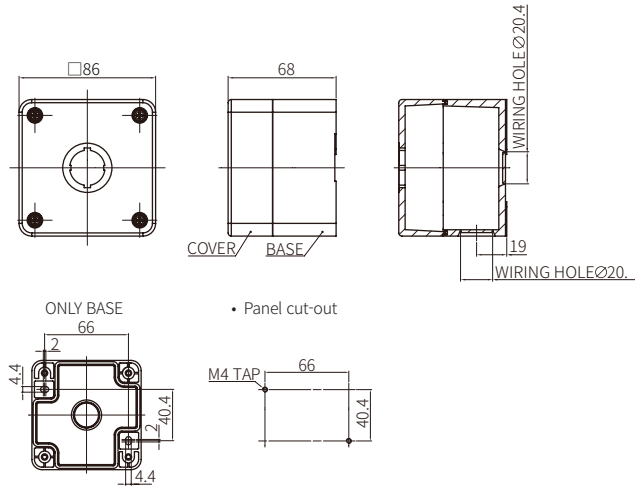
- Place the protrusion of the radial support down and put it in the general panel hole.



■ Control box

• Unit: mm, For the detailed drawings, follow the Autonics website.

Item	Appearance	Applied model	Model
Control box		Modular 1-level contact / Integrated contact model When using a name plate, Ø 60 applicable model	SCB-SF2ER



• Caution for installation

- Remove the cover before installing the panel.
- For the wiring outlet, use a tool such as the back of a screwdriver to drill a wiring hole in the desired direction before use. Do not apply excessive force when drilling the wiring holes. This may damage the product.
- Use cable glands (PG-13.5) to ensure wiring protection and satisfy the product protection structure (IP65).

Sold Separately: Exclusive for SF3ER

■ Group locking device(HASP): SF-LT

- Install the group locking device to the control unit to prevent unauthorized unlocking.
- Please use a padlock(purchased separately) to lock the group locking device.
- Ensure that the total weight of the group locking device (weight: ≈ 46 g) and padlock does not exceed 1000 g. Otherwise, the emergency stop switch may be damaged.
- Unit: mm, Install the padlock and group locking device so that locking and unlocking does not affect other devices.

