Opening a New Era of Safety

Safety Door Switches

SFD Series

The SFD series safety door switches can detect opening and closing of doors in machines. The head can be rotated to change the insert direction of the operation key from 5 directions, with 6 available operation key types. Also, the door switches are available in terminal type and connector type models, making it easier for installation in diverse application settings.

Safety Standards

IEC/EN 60947-5-1
EN ISO 14119
GB/T 14048.5

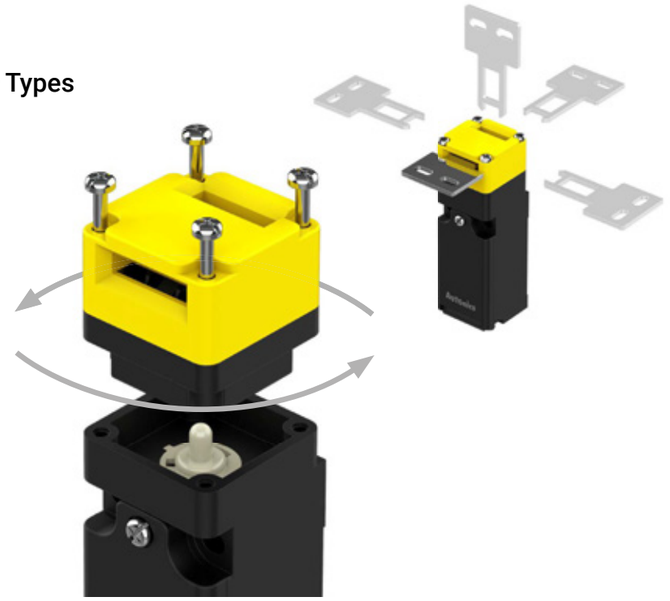
Certifications

Various Models Available for Flexible Installation

The SFD series door switches are available in terminal type and connector types for easy application and installation in diverse environments.

1. Head Rotation & 6 Operation Key Types

The SFD series offers diverse installation methods for flexible installation. The head can be rotated to change the insert direction of operation keys.



6 Operation Key Types

2. Two Model Types

Connector type and terminal type models are available for application in various environments. Both types can be detached easily from the body, for easier installation and maintenance.

Connector Type

Terminal Type

Slim and Compact Size

The door switches are slim and compact in size (H 92 x D 30 mm), allowing installation in tight or limited spaces.

Switches with up to 3 Contacts

2-contact or 3-contact switches are built in, with 4 types of contact configurations for easier application in any environment.

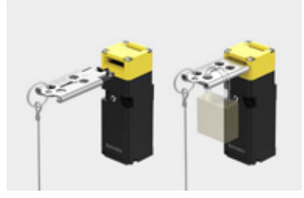
Model	Contact	Contact composition	Contact operation
			Operation key complete insertion / Operation key extraction
SFD-□AB-□□	1 N.C., 1 N.O	11–12; 33–34	11-12; 33-34
SFD-□2B-□□	2 N.C	11–12; 31–32	11-12; 31-32
SFD-□A2B-□□	2 N.C., 1 N.O.	11–12; 21–22; 33–34	11-12; 21-22; 33-34
SFD-□3B-□□	N.C. 3	11–12; 21–22; 31–32	11-12; 21-22; 31-32

※ Contact composition represents the locked status with the operation key inserted. (: ON, : OFF)

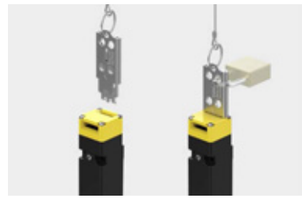
※ Sold separately :

Group lock device, connecting cable

Group lock device is an accessory for safety door and door lock switches, to prevent actuator operation from unauthorized access by physically blocking switch insertion area.



Side type (SFD-LT)



Upper type (SFD-LT2)

Door Switches
SFD Series
Technical Overview

Ordering Information

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

SFD - ❶ ❷ - ❸ ❹

❶ Head materials
No mark: Plastic
M: Metallic

❷ Contact composition
AB: 1 N.O., 1 N.C.
2B: 2 N.C.
A2B: 1 N.O., 2 N.C.
3B: 3 N.C.

❸ Connection outlet
No mark: 1
2: 2

❹ Connection outlet specification
M20: M20 thread
G1/2: G1/2 thread
C: M12 connecter

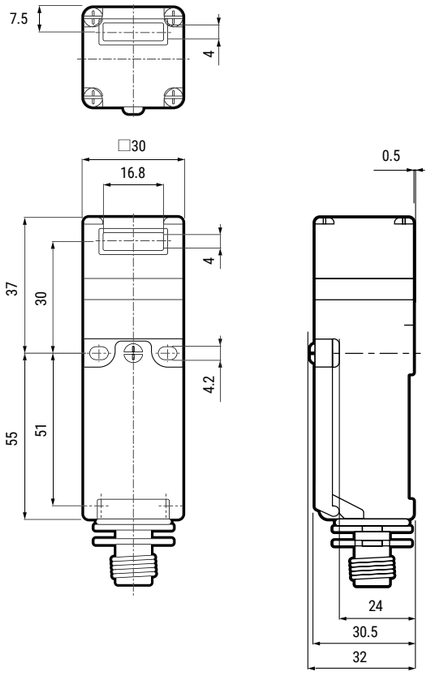
※ Sold Separately

- Operation key: SFD-K□
- M12 Connector cable: C□DH4-□-□
- Group lock device: SFD-LT□ / connecting cable: SFD-LT-C□

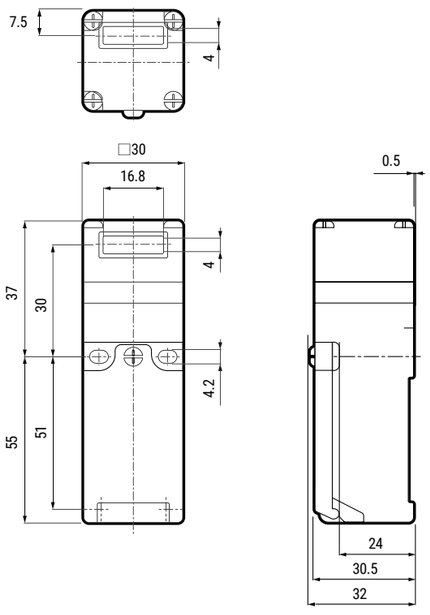
Dimensions

Unit: mm, For the detailed dimensions of the product, follow the Autonics web site.

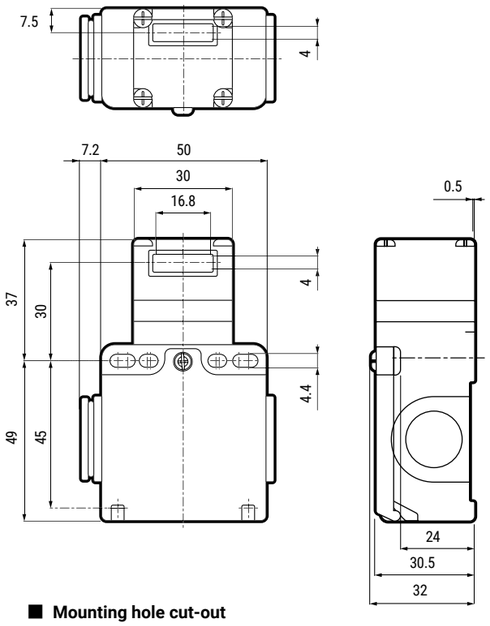
■ Connector type



■ 1 connection outlet terminal type

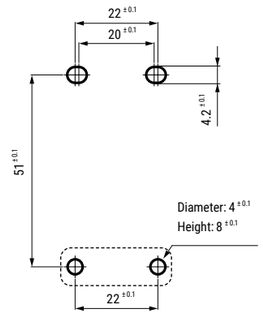


■ 2 connection outlet terminal type

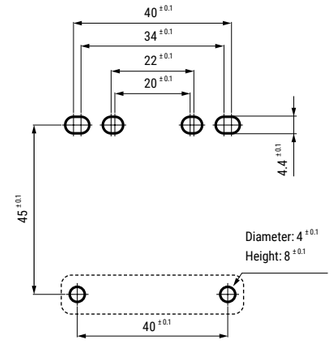


■ Mounting hole cut-out

• 1 connection outlet



• 2 connection outlet



: is installing spot of protrusion for fixing the switch firmly.

Specifications

Model	SFD-□□-□M20	SFD-□□-□G1/2	SFD-□□-C
Rated voltage/ current for load	Resistive load: 6 A/250 VAC ∼, 0.6 A/250 VDC ⎓ Inductive load (IEC): AC-15 3 A/240 VAC ∼, DC-13 0.27 A/250 VDC ⎓ Inductive load (UL): A300, Q300		
Directing opening force	≥ 80 N		
Directing opening distance	≥ 10 mm		
Operating speed	0.05 to 1 m/s		
Operating frequency	≤ 20/min		
Insulation resistance	≥ 100 MΩ (500 VDC⎓ megger)		
Contact resistance	≤ 50 mΩ (initial value)		
Impulse dielectric strength	Between the terminals: 2 kV (IEC 60947-5-1) Between each terminal and non-live part: 5 kV (IEC 60947-5-1)		
Conditional short circuit current	100 A		
Life cycle	Electrical: ≥ 100,000 operations (240 VAC∼ 6 A) Mechanical: ≥ 1,000,000 operations		
Vibration (malfunction)	0.75 mm amplitude at frequency of 10 to 55 Hz in each X, Y, Z direction for 10 min		
Shock	1,000 m/s² (≈ 100 G) in each X, Y, Z direction for 3 times		
Shock (malfunction)	300 m/s² (≈ 30 G) in each X, Y, Z direction for 3 times		
Ambient temperature	-30 to 70°C, storage: -40 to 70 °C 01) (no freezing or condensation)		
Ambient humidity	35 to 90 %RH , storage: 35 to 90 %RH (no freezing or condensation)		
Protection structure	IP67 02) (IEC standard, except for head)		
Material	Plastic head - polyamide 6, metallic head - zinc case: polyamide 6, operation key: stainless steel 304		
Approval	CE (TUV NORD) KC cULus EAC		
Connection type	M20 connector cable	G1/2 connector cable	M12 plug connector
Unit weight (packaged)	• 1 connection outlet plastic: ≈ 80 g (≈ 120 g) metallic: ≈ 110 g (≈ 150 g) • 2 connection outlet plastic: ≈ 110 g (≈ 140 g) metallic: ≈ 130 g (≈ 170 g)		plastic: ≈ 85 g (≈ 130 g) metallic: ≈ 115 g (≈ 160 g)

01) UL approved ambient temperature: 65°C
02) Rated protection structure is for the switch body. Be cautious about preventing the head part from entering the foreign materials such as dust and water.