

SSR22 Series

High Performance Contactless Safety Door Switch



Product Introduction

Safety door switch is a kind of safety device, specialized for monitoring open/ close of protective mechanism (like safety fence door, protective cover). SSR22 series safety door switch with RFID technology to ensure high safety and confidentiality. There are optional universal coding and unique coding between the sensor and the tag.

Product Feature

- Self-diagnose and cross-diagnose design: Periodic mutual diagnose improves the safety level.
- Independent and redundant output: In case of any risk caused by single loop failure.
- Magnetic holding force can reach 15N, which can replace the door magnet.
- High safety level, with safety level PL e.

Product Parameter

Standard	EN ISO 13849-1 (PL e) ; IEC/EN60947-5-1 ; IEC/EN60947-5-3
Power Supply	DC24V±15%
Capacity	<1W
Risk Time	50ms
Response Time	50ms
Magnetic Holding Force	15N
Operating Frequency	1Hz
OSSD Output	PNP or NPN signal. Load below 200mA, residual voltage below 1V (except voltage caused by cable extension), leakage current below 1mA.
Protective Circuit	Overvoltage protection, power supply reverse polarity protection and overcurrent protection.
Coding Mode	Universal coding, unique coding.
Operating distance	Horizontal: 0~5mm when power on.
	Vertical: 0~5mm when power on.
Enclosure Rating	IP65
Hosing Sectional Size	Sensor 48.3*30.1*12.2mm, Adaptor 48.3*12.8*12.2mm.
Vibration Resistance	Frequency 10Hz-55Hz, amplitude 0.35±0.05mm, 20 times each at X, Y and Z directions.
Working Temperature	-10°C~+55°C (No freezing)
Storage Temperature	-30°C~+70°C (No freezing)
Ambient Operating Humidity	When temperature 20°C, humidity max 85%.

Model Selection (e.g.: SSR22-00NC-3)

Product Series	Configuration	Coding Method	Output	Lead Mode	Cable Length
SSR22	— 				— 
	0: Basic mode 1: Standard mode 2: Advanced mode	0: Universal coding 1: Unique coding	N: NPN P: PNP	C: M12 connector No mark: leading wire	1: 1m 3: 3m 5: 5m 10: 10m

Note: If a larger operating distance is required, a version without magnetic retention is available. Please contact sales for details.

SSR22 Contactless Safety Door Switch

Function of configuration					
	Safety output	Cascade	EDM function	Reset	AUX output
Basic mode	●	—	—	—	—
Standard mode	●	●	—	—	●
Advanced mode	●	●	●	●	●

AUX Function Description

Standard AUX output is monitored by door opening and closing (reverse)

Door status	AUX
Open	ON
Close	OFF

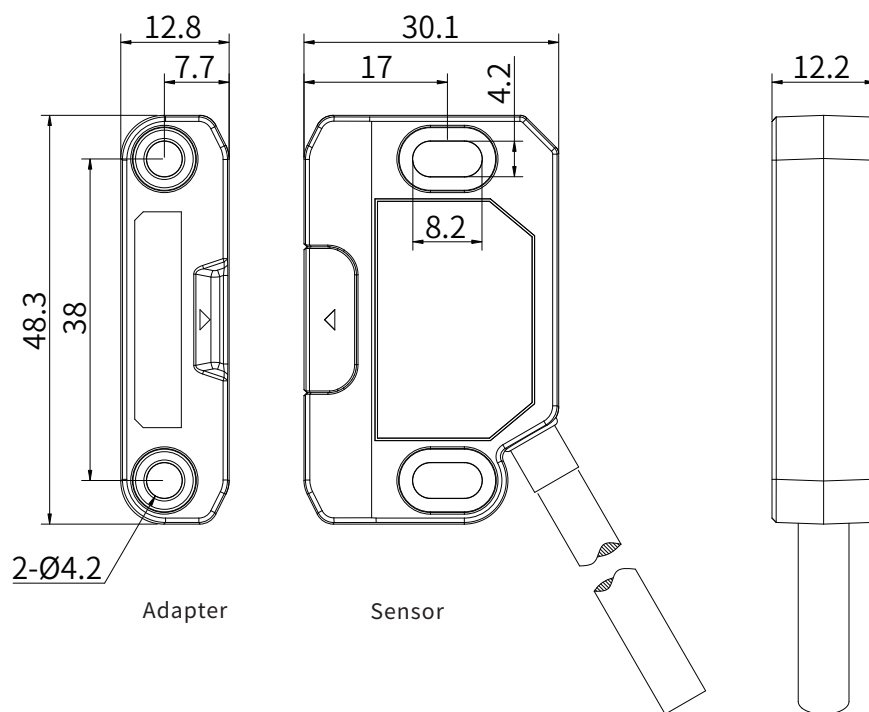
High performance AUX output is monitored by OSSD (reverse)

OSSD	AUX
OFF	ON
ON	OFF

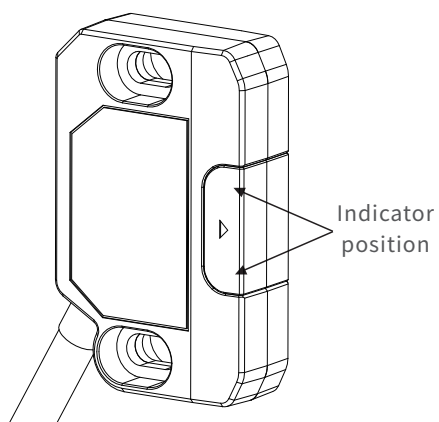
Selection Table

Mode	Output	Coding Mode	Model
Basic mode	NPN	Universal coding	SSR22-00N
		Unique coding	SSR22-01N
	PNP	Universal coding	SSR22-00P
		Unique coding	SSR22-01P
Standard mode	NPN	Universal coding	SSR22-10N
		Unique coding	SSR22-11N
	PNP	Universal coding	SSR22-10P
		Unique coding	SSR22-11P
Advanced mode	NPN	Universal coding	SSR22-20N
		Unique coding	SSR22-21N
	PNP	Universal coding	SSR22-20P
		Unique coding	SSR22-21P

Product Size



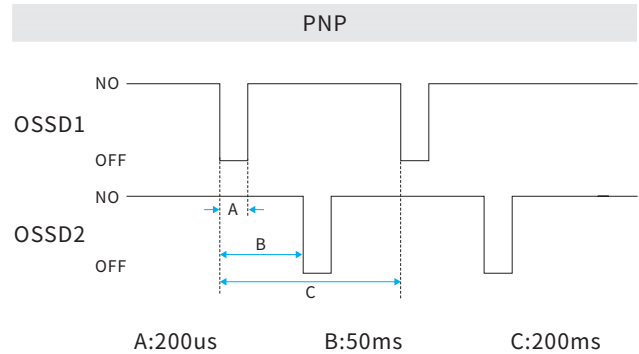
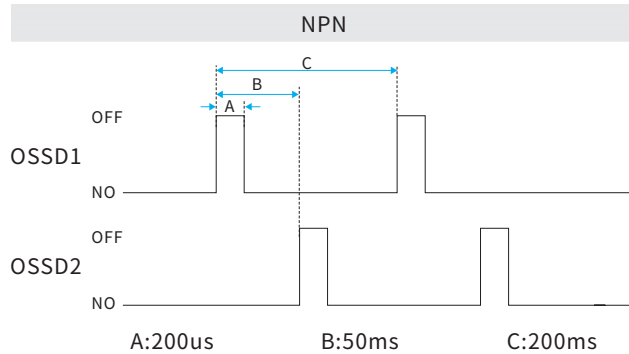
Indicator Status



Indicator Status	Indicator
EEPROM error/SPI error	Red 4Hz blink
Output error/ EDM error	Red 1Hz blink
Voltage error	Red double blink
Unique coding unmatched	Red & green blink alternately at 4Hz
No error, No RFID, no output	Red ON
No error, RFID, cascade, waiting for reset signal	Green 4Hz blink
No error, RFID, No cascade	Green 1Hz blink
No error, all condition okay, with output	Green ON

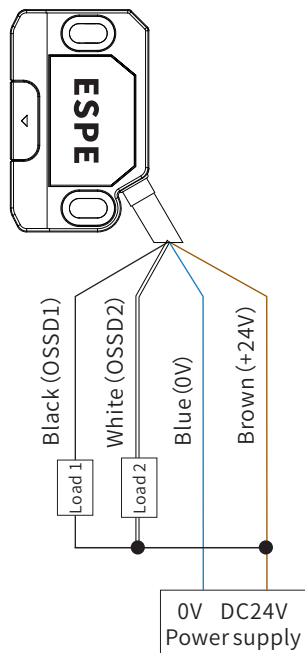
SSR22 Contactless Safety Door Switch

Sequence Chart

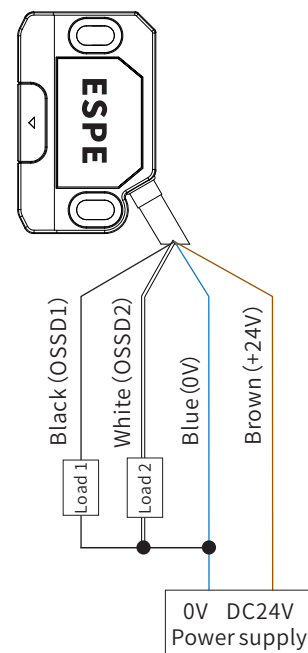


Wiring Diagram

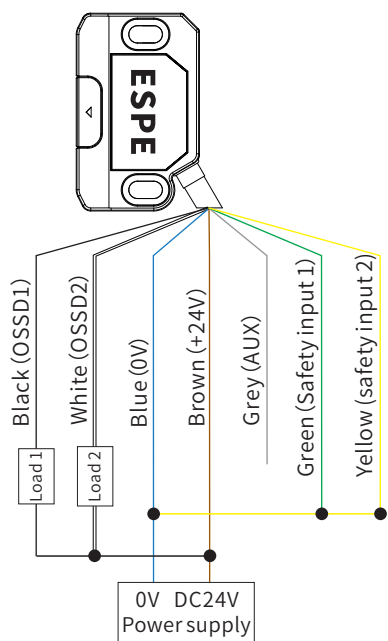
SSR22 Basic Mode (NPN)



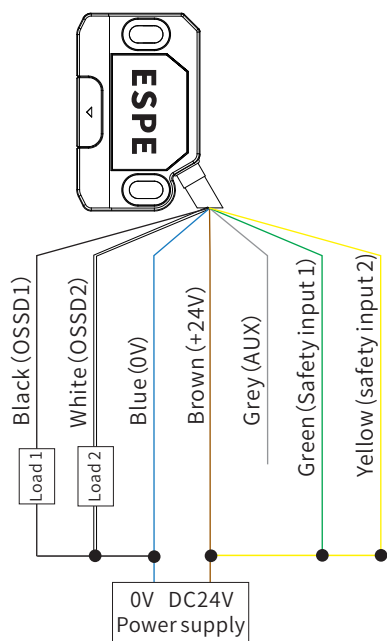
SSR22 Basic Mode (PNP)



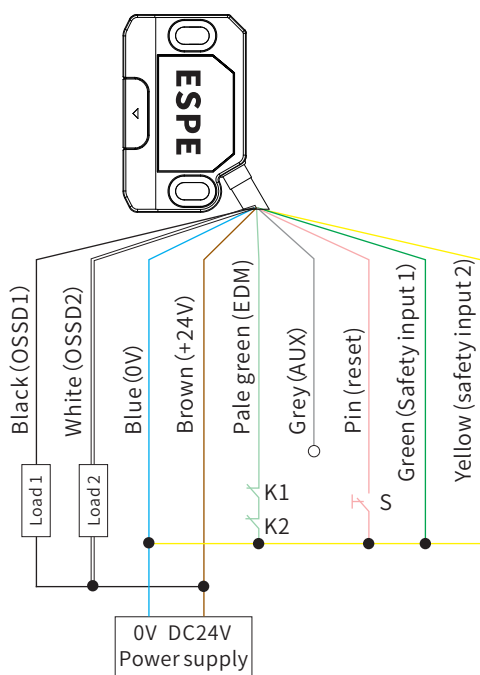
SSR22 Standard Mode (NPN)



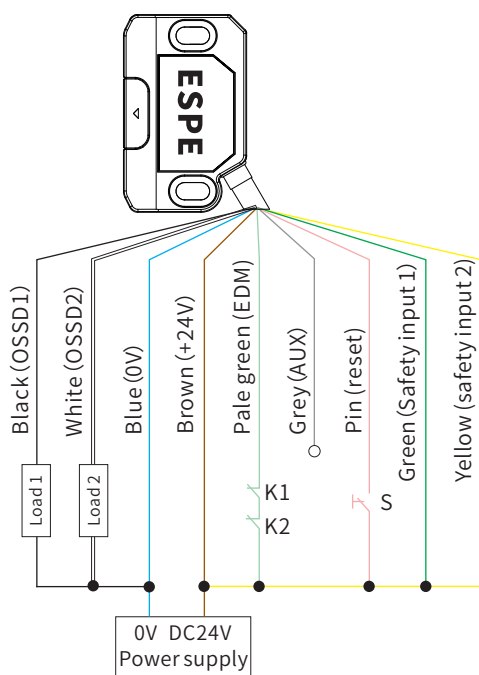
SSR22 Standard Mode (PNP)



SSR22 Advanced Mode (NPN)



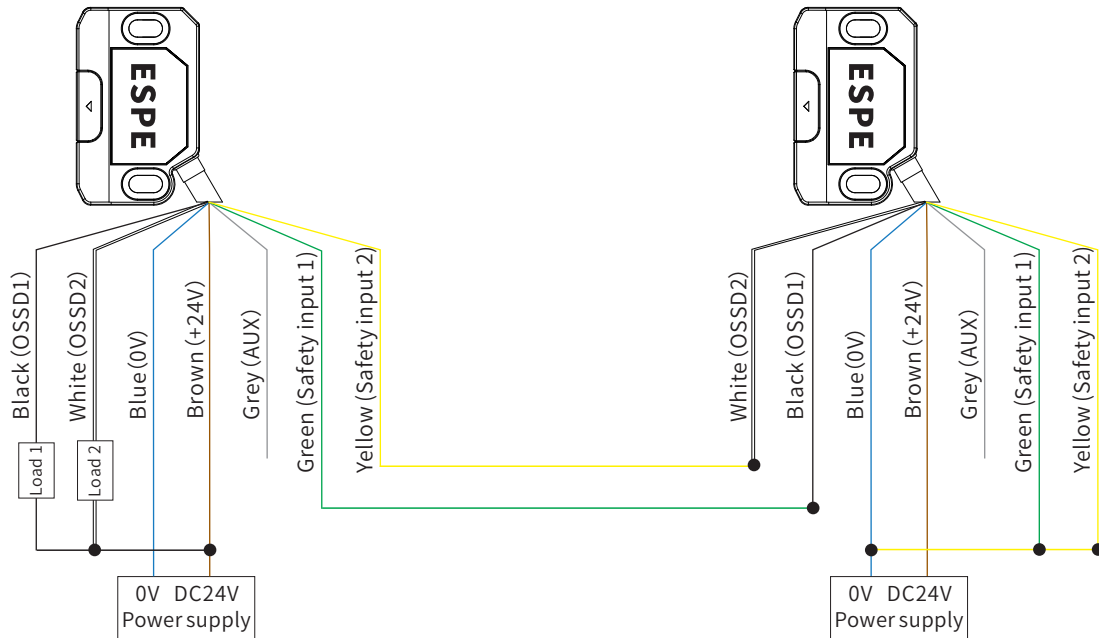
SSR22 Advanced Mode (PNP)



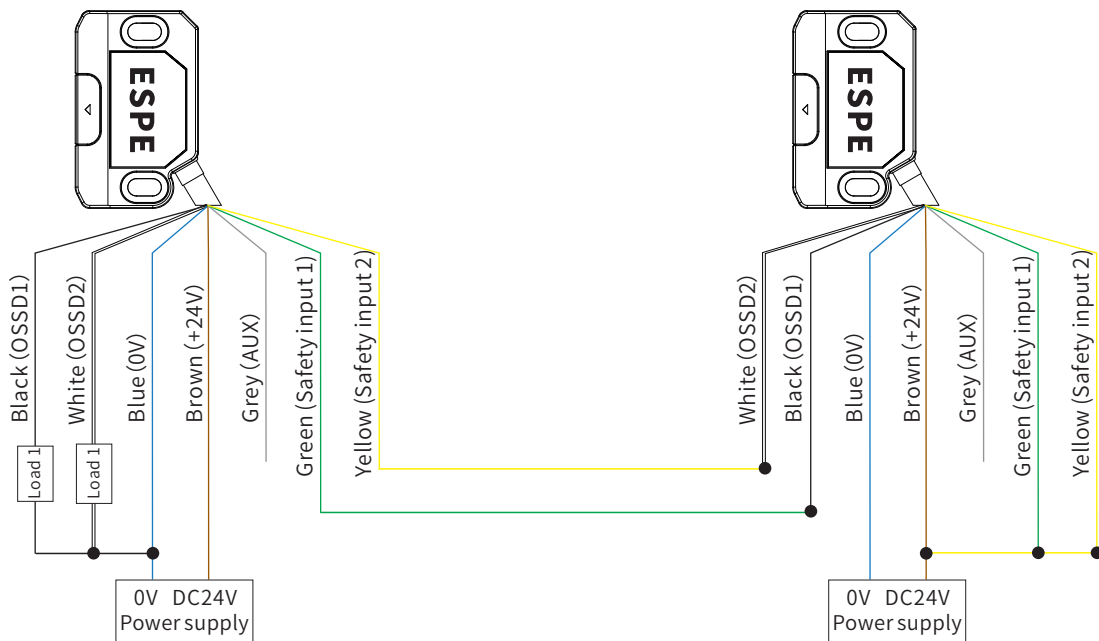
K1,K2: external device (forced guidance relays, electromagnetic contactors etc.)

SSR22 Contactless Safety Door Switch

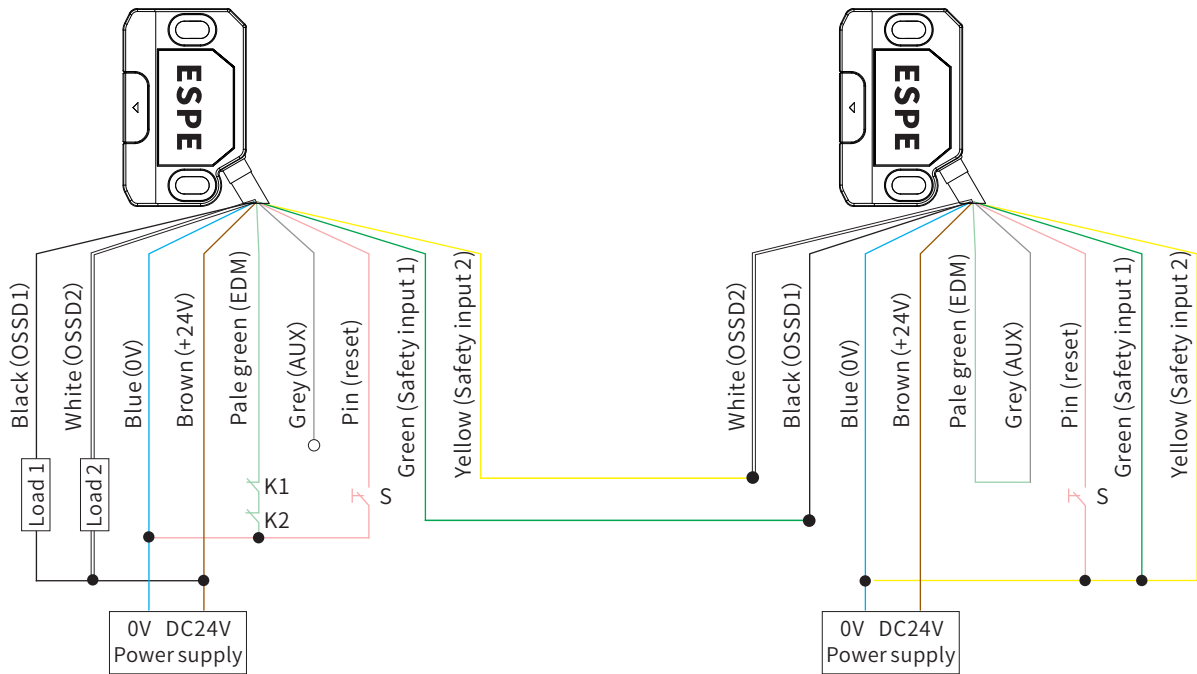
SSR22 Standard Mode(NPN)



SSR22 Standard Mode (PNP)

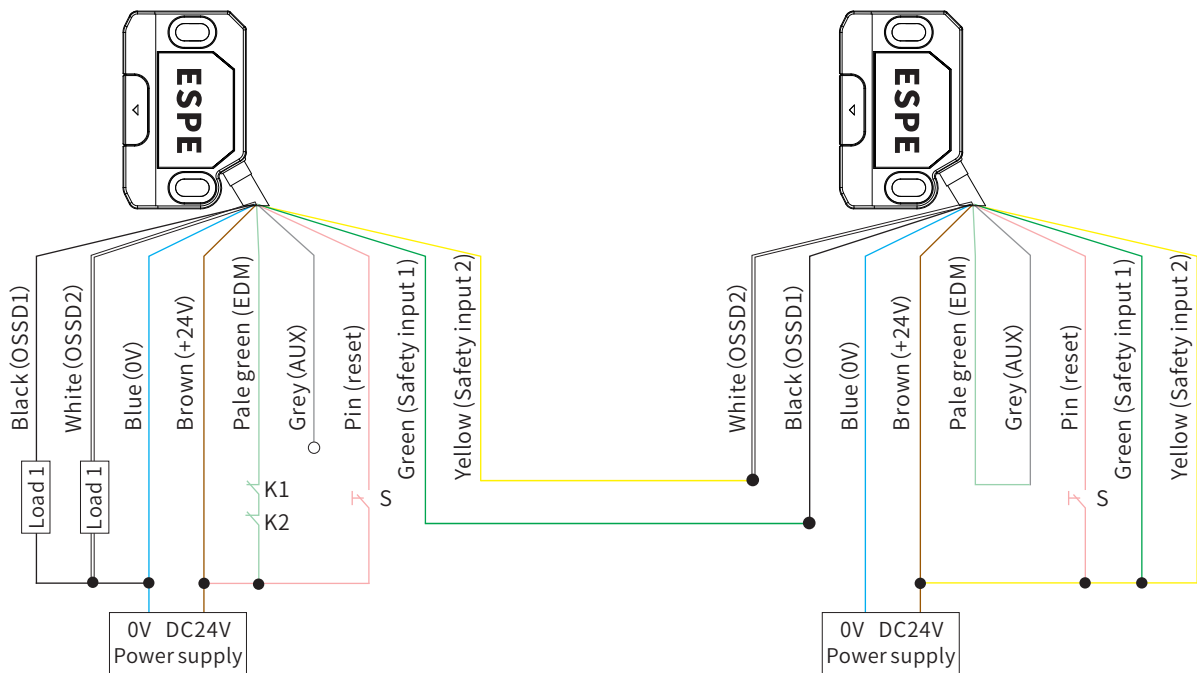


SSR22 Advanced Mode(NPN)



K1, K2: external device (forced guide relays,electromagnetic contactors etc)

SSR22 Advanced Mode (PNP)



K1, K2: external device (forced guide relays,electromagnetic contactors etc)

SSR22 Contactless Safety Door Switch

Wire Details

Basic Wire Markings Instruction

Color	Function	Wiring instruction
Brown	Power supply positive	Connect to 24V DC power supply Positive
Blue	Power supply negative	Connect to 0V DC power supply Negative
Black	Safety input 1	Connect to a safety PLC or other safety input control interface
White	Safety input 2	

Standard Wire Markings Instruction

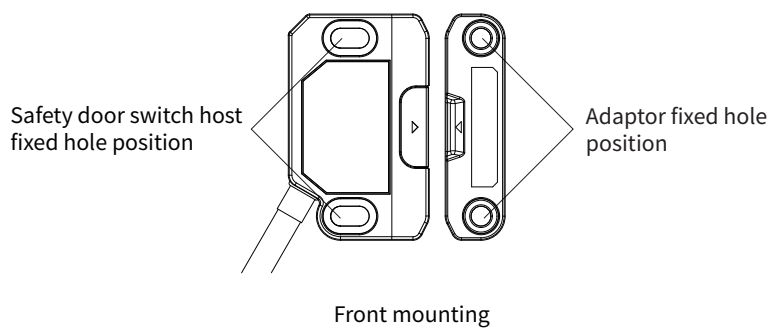
Color	Function	Wiring instruction
Brown	Power supply positive	Connect to 24V DC power supply Positive
Blue	Power supply negative	Connect to 0V DC power supply Negative
Black	Safety input 1	Connect to a safety PLC or other safety input control interface
White	Safety input 2	
Green	Safety input 1	No cascade connection: Connect to +24V power supply. Cascade connection: Connect to switch safety input signals (OSSD 1 and OSSD 2).
Yellow	Safety input 2	
Grey	Auxiliary Output	Connect to a standard PLC

Advanced Wire Markings Instruction

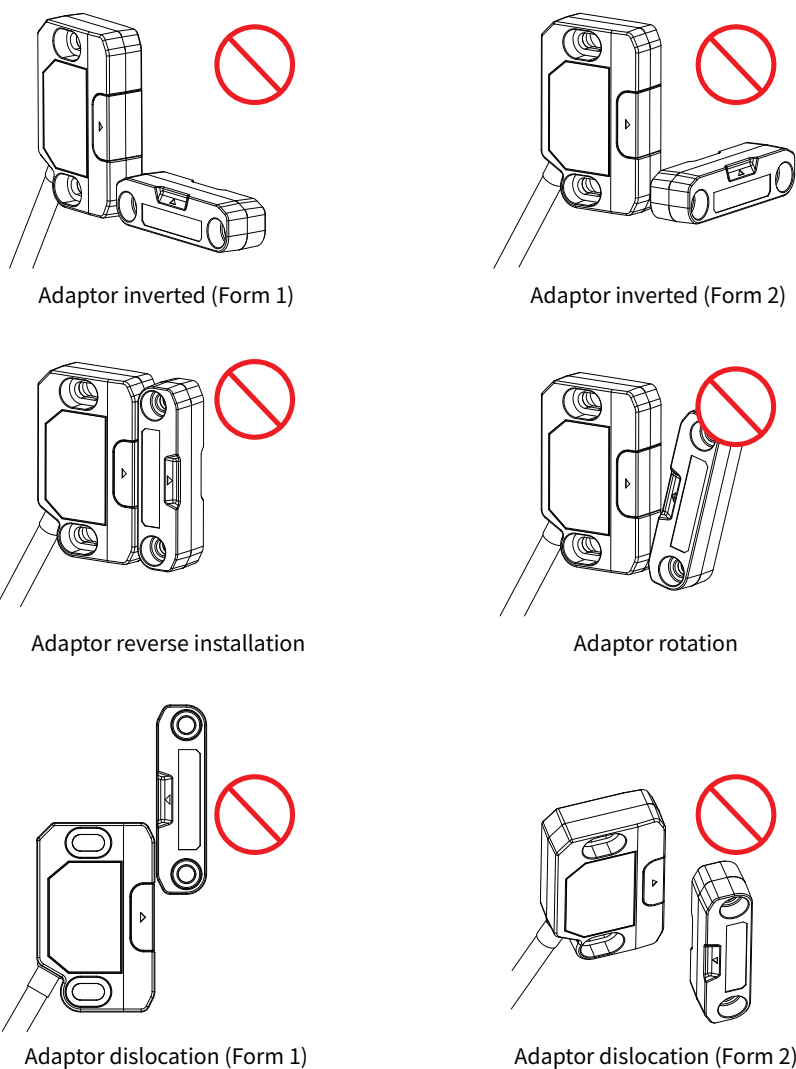
Color	Function	Wiring instruction
Brown	Power supply positive	Connect to power supply 24V.
Blue	Power supply negative	Connector to power supply 0V.
Black	Safety output 1	Connect safety PLC or interface of other safety input.
White	Safety output 2	
Green	Safety input 1	No cascade connection: Connect to +24V power supply. Cascade: connect to safety input of switch.
Yellow	Safety input 2	
Pale green	EDM	External relay or solenoid valve monitoring device.
Pin	Reset	Connect to reset button.
Grey	AUX	Connect to a standard PLC.

Installation

Correct Installation Direction

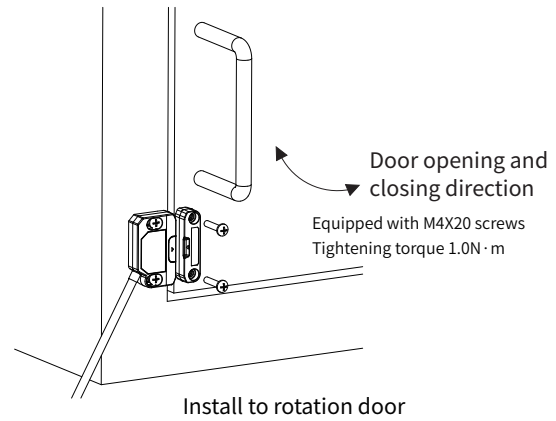
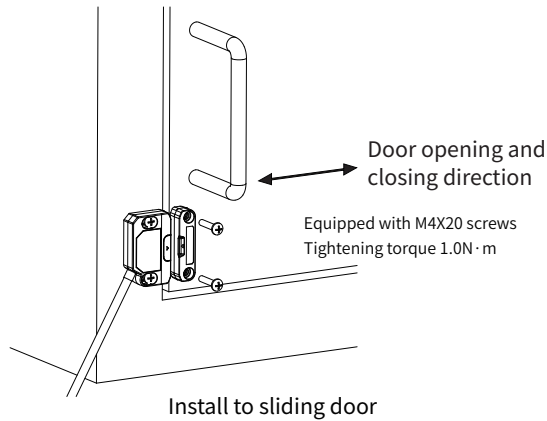


Incorrect Installation Direction



SSR22 Contactless Safety Door Switch

✂ Method of Installation

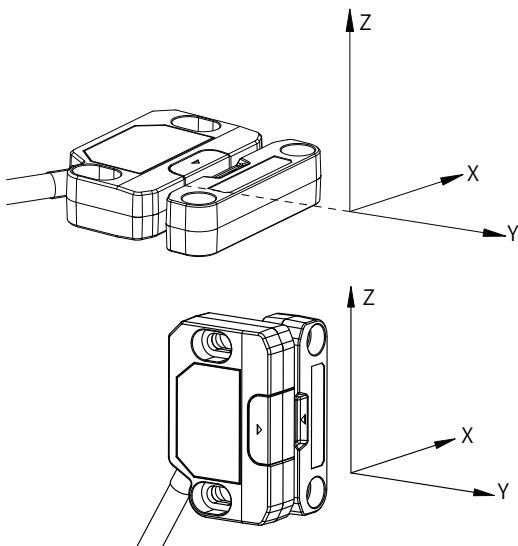


! Please install the safety switch in an inaccessible and safe place and fix it (use thread locking agent if necessary), and please check whether the detected structure will be involved or hit when it moves, which will affect the normal detection of the safety switch. The main body and its adaptor can make M4 screws or M3 combined screws with flat pads of other degrees or extend the mounting frame according to the actual situation, but please also fix them according to the recommended tightening torque.

Disassembly method

Please disconnect the power supply before disassembly, and pay attention to prevent the safety switch main body, adaptor and screws from falling to avoid damage.

📏 Sensing distance



One direction	With magnet (mm)	Without magnet (mm)
X	<1	<3
Y	<5	<8
Z	<5	<7

● Front mounting

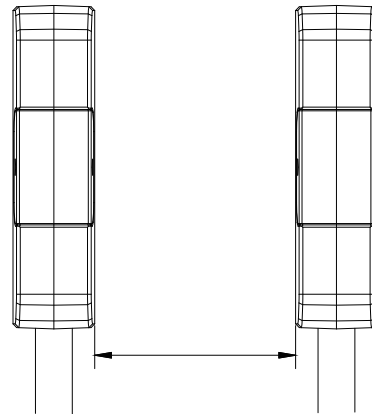
One direction	With magnet (mm)	Without magnet (mm)
X	<3	<4
Y	<5	<8
Z	<1	<3

● Side mounting

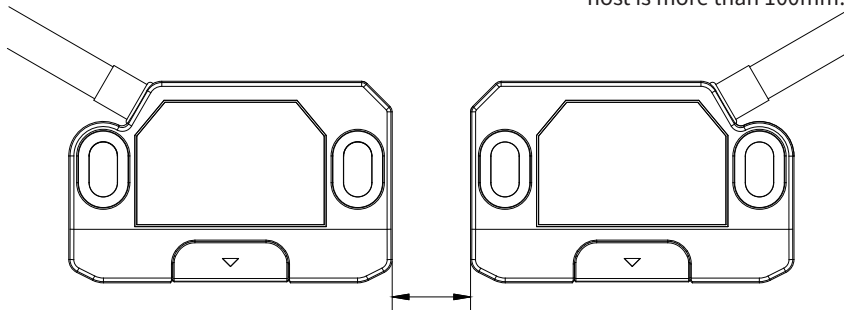
! The above safety values are recommended distances, please confirm whether there is no problem in the actual installation environment.

Recommended Installation Distance

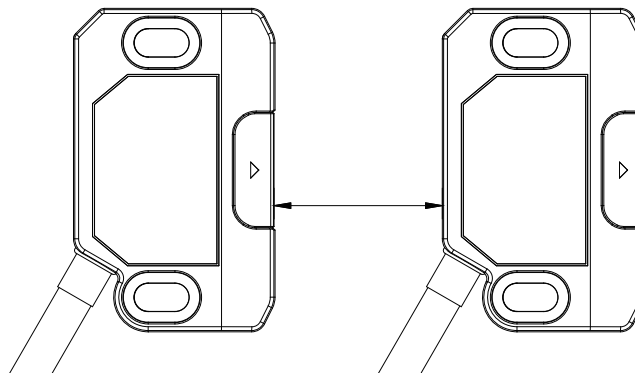
Multiple installed safety switches may cause mutual interference and false sensing. To avoid it, please keep over 10mm installation distance.



The distance between door switch host is more than 100mm.



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The distance between door switch host is more than 100mm.

 Above is recommended safety values, please adjust according to real installation.

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Cable option

Standard Cable	Type	Length	Model
	Basic type (4-pin, 4-wire)	1m	M12P4S1
		3m	M12P4S3
		5m	M12P4S5
		10m	M12P4S10
	Standard type (8-pin, 7-wire)	1m	M12P8S1
		3m	M12P8S3
		5m	M12P8S5
		10m	M12P8S10
	Advanced type (12-pin, 10-wire)	1m	M12P10S1
		3m	M12P10S3
		5m	M12P10S5
		10m	M12P10S10