

SLR11 Series

High Performance Safety Interlock Switch



Product Introduction

Safety interlock switch is a safety device used to lock and monitor the movable mechanisms such as safety fence doors, and protective covers. The strong structural design of SLR11 series make it withstand higher tension. The RFID technology has higher security and confidentiality. Sensor & actuator support universal and unique coding. Small size for easy installation.

Product Feature

- With locking & monitoring function.
- Optional coding modes: Universal coding & unique coding.
- Self-diagnose & cross-diagnose: Periodic double cross-diagnose improves security.
- Independent redundant dual signal: In case of hazard caused by signal loop failure.
- Small size: 29.7mm* 29.7 mm section size.
- Flexible installation: Directly installed on aluminum frame less than 30mm, brackets is no need.

Product Parameter

Standard		EN ISO 13849-1 (Category 4/PL e); EN ISO 14119; EN IEC 60947-5-2; EN IEC 60947-5-3
Certificate		CE
Locking Mode		Power to lock/ power to release
Response Time	Locking→Unlocking	<250ms
	Unlocking→Locking	<300ms
Locking	Lock Holding Force Fzh	≥ 2000N
	Lock Bolt Insertion Deviation	≤ 2mm
	Mechanical Endurance	>1million times (Door operating speed 1m/s)
	Operating Frequency	1Hz
	Minimum Radius Of the Revolving Door	≥ 250mm
	Manual Unlocking	Front, Rear
Safety Output (OSSD Output)	Output Type	NPN*2/PNP*2
	Maximum Load Current	<200mA
	Residual Voltage (When it' s ON)	<2.5V (Cable 5m)
	Voltage When it' s OFF	<2V (Cable 5m)
	Leakage Current	<0.5mA
	Maximum Load Capacity	2uF
	Load Connection Resistance	≤ 2.5Ω
Auxiliary Output (AUX Output)	Output Type	NPN*1/PNP*1
	Maximum Load current	50mA
	Residual Voltage (When it's ON)	≤ 2.5V@50mA
External Input (Breaking Current)	Safety Input	5mA*2
	Reset/EDM Input	About 10mA*1
	Locking Control Input	About 10mA*1
Power Supply	Working Voltage	DC24V±15%
	Power consumption	3.6W*1
Protection		Power supply reverse polarity protection, output short circuit protection, output reverse polarity protection
Environment	Housing Protection Level	IP65
	Operating Ambient Temperature	-20°C~55°C(No freezing)
	Storage Temperature	-25°C~70°C(No freezing)
	Operating Ambient Humidity	5%~95%RH
	Ambient Storage Humidity	5%~95%RH
	Vibration Resistance	10Hz-55Hz,double amplitude 2.0mm,5 minutes each in X,Y and Z directions
	Shock Resistance	30g, 6 times each in X,Y and Z direction(IEC60947-5-3)
Cascade connection		Up to 20 units
Restart Time		1.5s
Material		Nylon/Zinc alloy/Stainless steel

*1: Power consumption and load current is excluded. The moment the lock control input is activated, the power consumption will temporarily increase (up to 15W, approximately 50ms).

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Model Selection (e.g.: SLR11-□□□□□-□)

Product Series	Locking Mode	Configuration Type	Coding Mode	Output Type	Wire Connection	Cable Length	AUX Selection
SLR11	— ☐	☐	☐	☐	— ☐	☐	☐
	0: Power to lock 1: Power to release	0: Standard mode 1: Advanced mode	0: Universal coding 1: Unique coding	N: NPN P: PNP	No mark: Leading wire C: M12 connector	3:3m 5:5m 10:10m 20:20m	No mark: Output monitored by door lock (reverse) A: Output is monitored by key (reverse) B: Output is monitored by key (front) D: Output is monitored by door lock (front)

Function of Standard Mode & Advanced Mode

	Safety output	AUX output	Safety input	Lock input	EDM	Reset
Standard mode	●	●	●	●	—	—
Advanced mode	●	●	●	●	●	●

AUX Function Selection

No Mark: AUX output is monitored by door lock (reverse)

Door Status	Lock Status	OSSD Output	AUX Output
Open	Releasing	OFF	ON
Close	Releasing	OFF	ON
Close	Locking	ON	OFF

A: AUX Output is monitored by key (reverse)

Door Status	Lock Status	OSSD Output	AUX Output
Open	Releasing	OFF	ON
Close	Releasing	OFF	OFF
Close	Locking	ON	OFF

B: AUX Output is monitored by key (front)

Door Status	Lock Status	OSSD Output	AUX Output
Open	Releasing	OFF	OFF
Close	Releasing	OFF	ON
Close	Locking	ON	ON

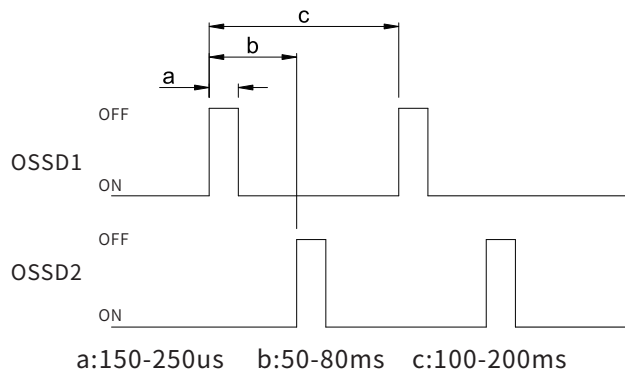
D: AUX Output is monitored by door lock (front)

Door Status	Lock Status	OSSD Output	AUX Output
Open	Releasing	OFF	OFF
Close	Releasing	OFF	OFF
Close	Locking	ON	ON

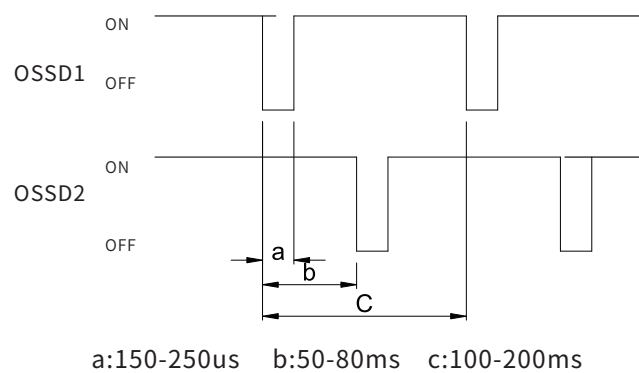
Model Selection Table

Locking mode	Configuration	Output Mode	Coding Mode	Model
Power to lock	Standard mode	NPN	Universal coding	SLR11-000N
		NPN	Unique coding	SLR11-001N
		PNP	Universal coding	SLR11-000P
		PNP	Unique coding	SLR11-001P
	Advanced mode	NPN	Universal coding	SLR11-010N
		NPN	Unique coding	SLR11-011N
		PNP	Universal coding	SLR11-010P
		PNP	Unique coding	SLR11-011P
Power to release	Standard mode	NPN	Universal coding	SLR11-100N
		NPN	Unique coding	SLR11-101N
		PNP	Universal coding	SLR11-100P
		PNP	Unique coding	SLR11-101P
	Advanced mode	NPN	Universal coding	SLR11-110N
		NPN	Unique coding	SLR11-111N
		PNP	Universal coding	SLR11-110P
		PNP	Unique coding	SLR11-111P

Sequence Diagram



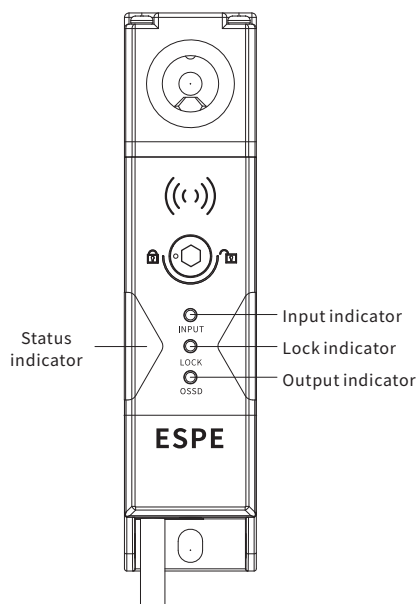
NPN output diagnostic sequence



PNP output diagnostic sequence

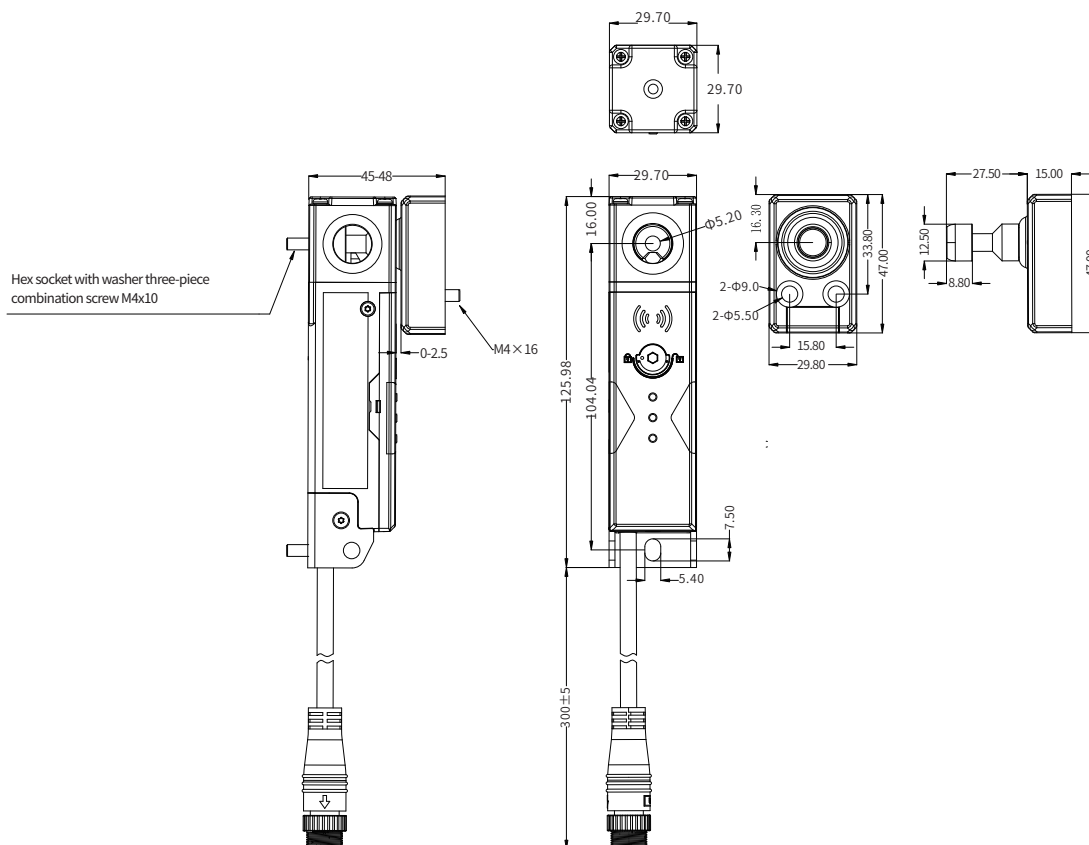
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Light Indicator

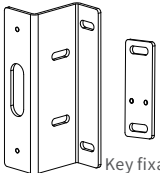
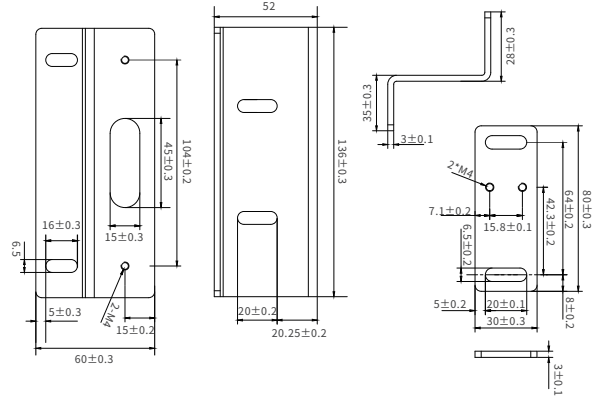
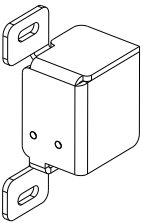
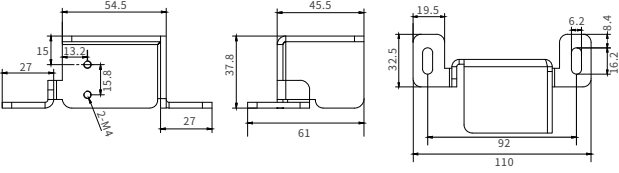
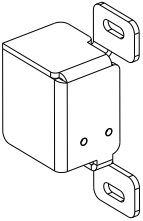
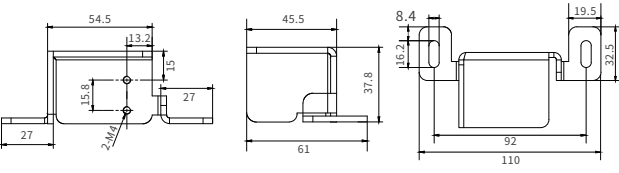
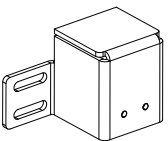
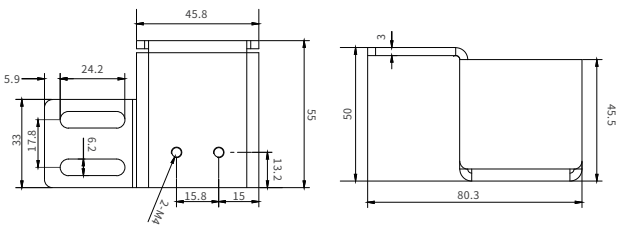
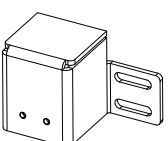
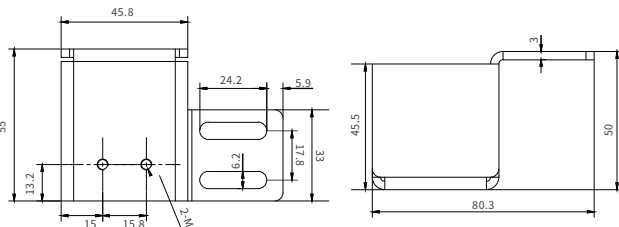


Indicator	Color	Details
Output indicator	Red, green	OSSD output: green. OSSD close: red. OSSD error: red 2Hz blink. EDM error: red 1Hz blink.
Locking indicator	Green	Locking: steady ON. Lock error: 2Hz blink (solenoid error, optocoupler error, RFID lost) NO RFID: 1Hz blink. Attempt to lock: ON after double blinking. Attempt to release: OFF after double blinking Releasing: OFF.
Input indicator	Orange	Normal input: light on. No input (Wait for input) : OFF. Wait for reset: 1Hz blink. Safety input error: 2Hz blink.
Working status indicator	Green, Red, Orange	OSSD with output: green light is steady on. OSSD without output : red light is steady on. Voltage error: orange light 1Hz blink. Unique code not matched: red, green, and orange light blink.

Product Size



Brackets

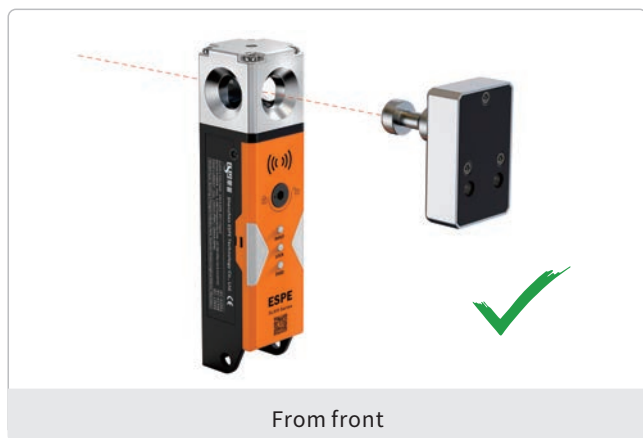
Picture	Bracket	Model	Size
 Lock body fixation Key fixation	Inner mounting bracket (Inner side is equipped with fixing device)	SLR11-B01	
	Left-opening sliding mounting bracket (Push-pull key fixation)	SLR11-BL01	
	Right-opening sliding mounting bracket (Push-pull key fixation)	SLR11-BR01	
	Left-opening rotary mounting bracket (Hinge key fixed)	SLR11-BL02	
	Right-opening rotary mounting bracket (Hinge key fixed)	SLR11-BR02	

SLR11 Series Safety Interlock Switch

✂ Installation

Direction of lock body and key

Correct Installation



Incorrect Installation

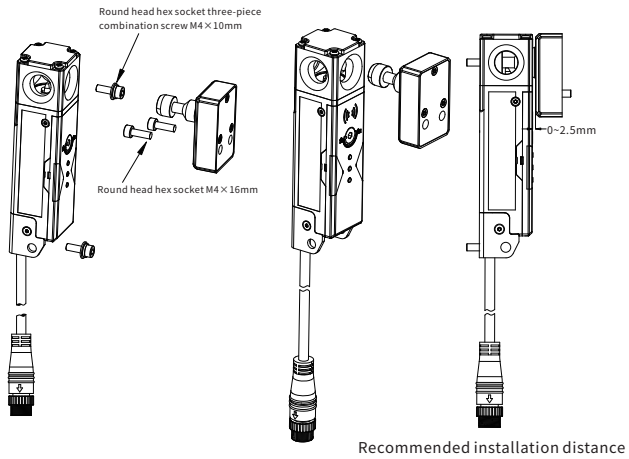


Mutual Interference

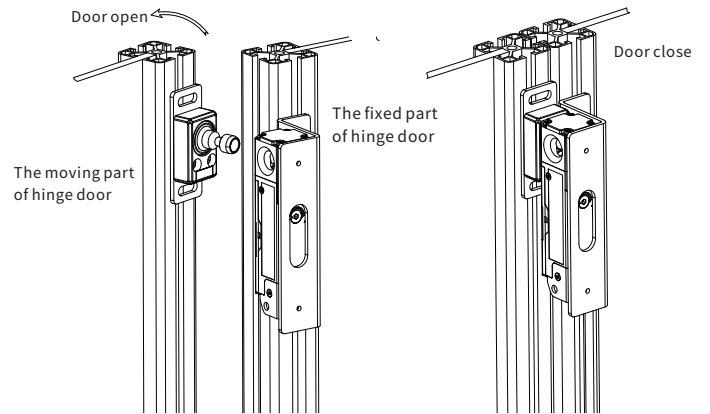
When multiple SLR11 used closely, they may malfunction due to mutual interference. In order to avoid mutual interference, please install interlock as below.



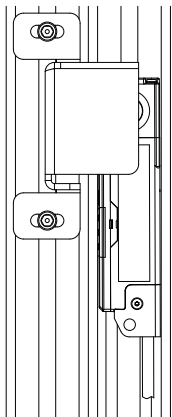
Installation without bracket



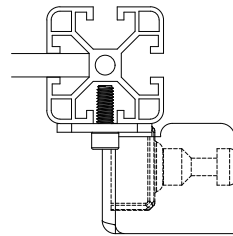
Installation with inside bracket



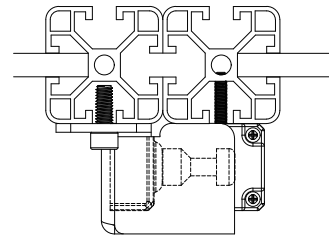
Installation with Left-opening Slide Bracket



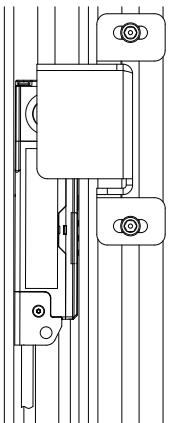
The moving part of Push-pull door



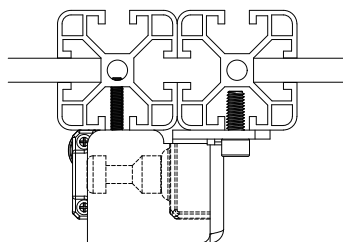
The fixed part of Push-pull door



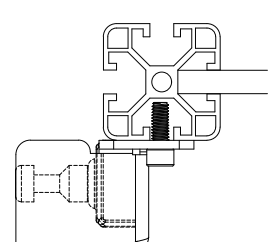
Installation with Right-opening Slide Bracket



The fixed part of Push-pull door

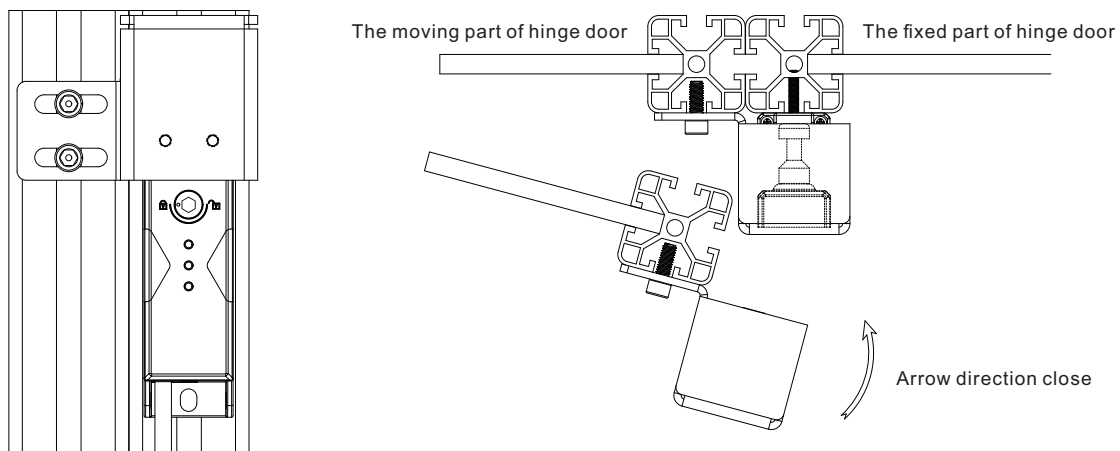


The moving part of Push-pull door

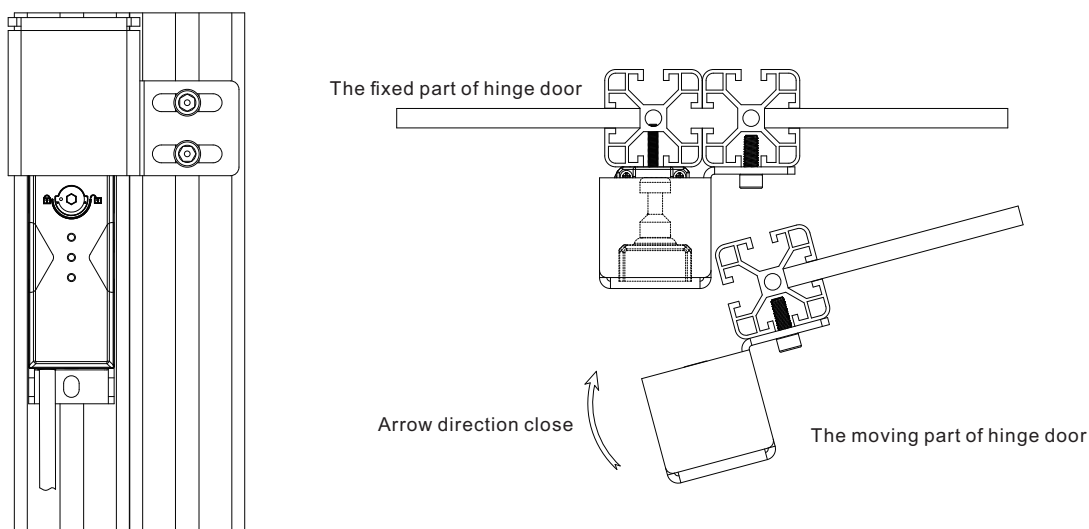


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Installation with Left-opening rotating Bracket

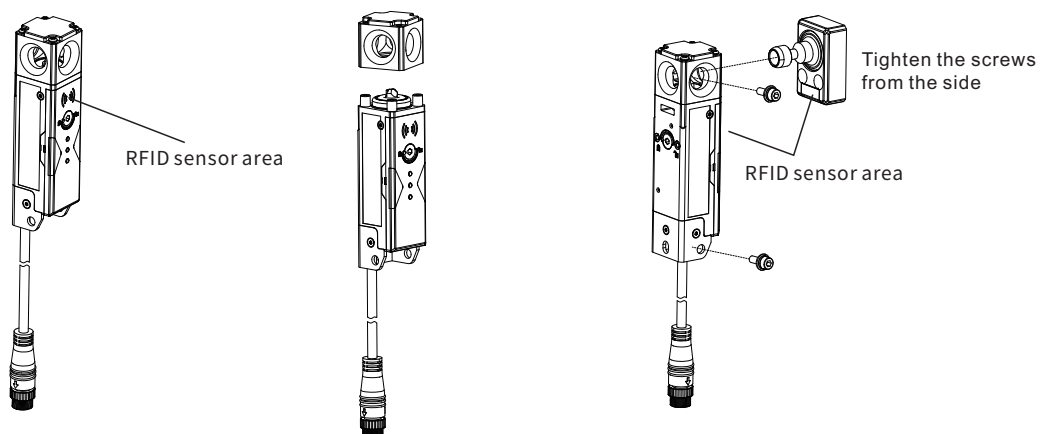


Installation with Right-opening rotating Bracket



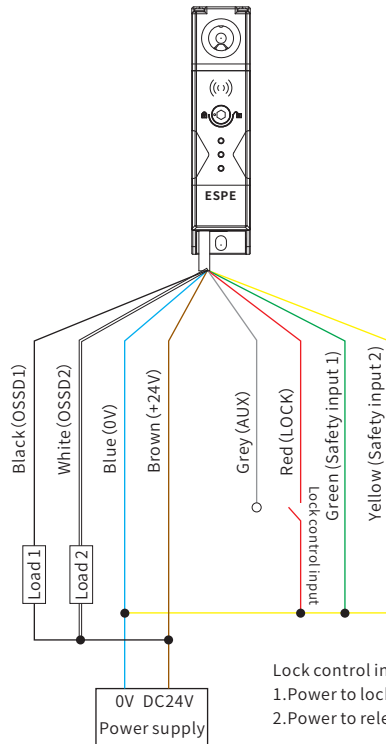
Lock Adjustment

Loosen the four screws on the top of the lock, and refer to the diagram below and rotate the lock until the RFID sensor area on the main unit faces the key. Finally, tighten the four screws on the top of the lock

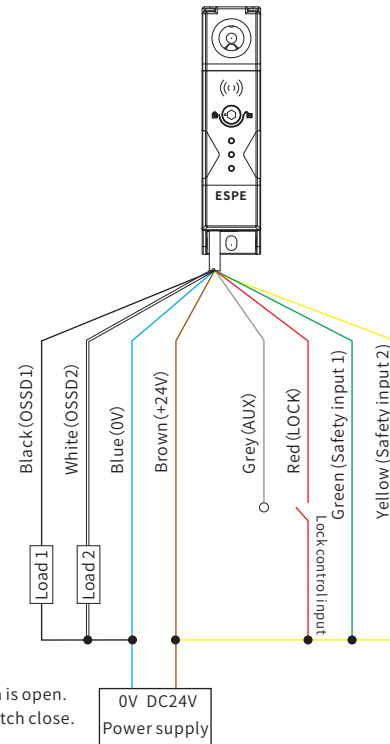


Wire Diagram

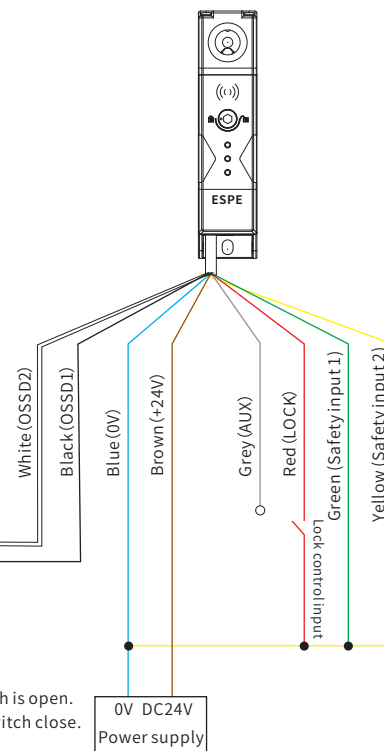
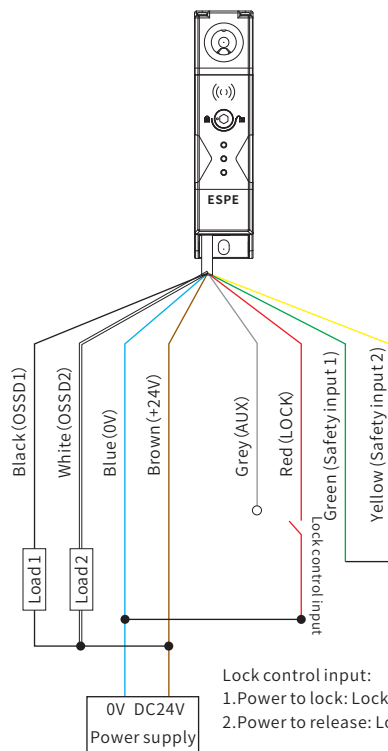
SLR11 Standard Mode (NPN, No Cascade)



SLR11 Standard Mode (PNP, No Cascade)

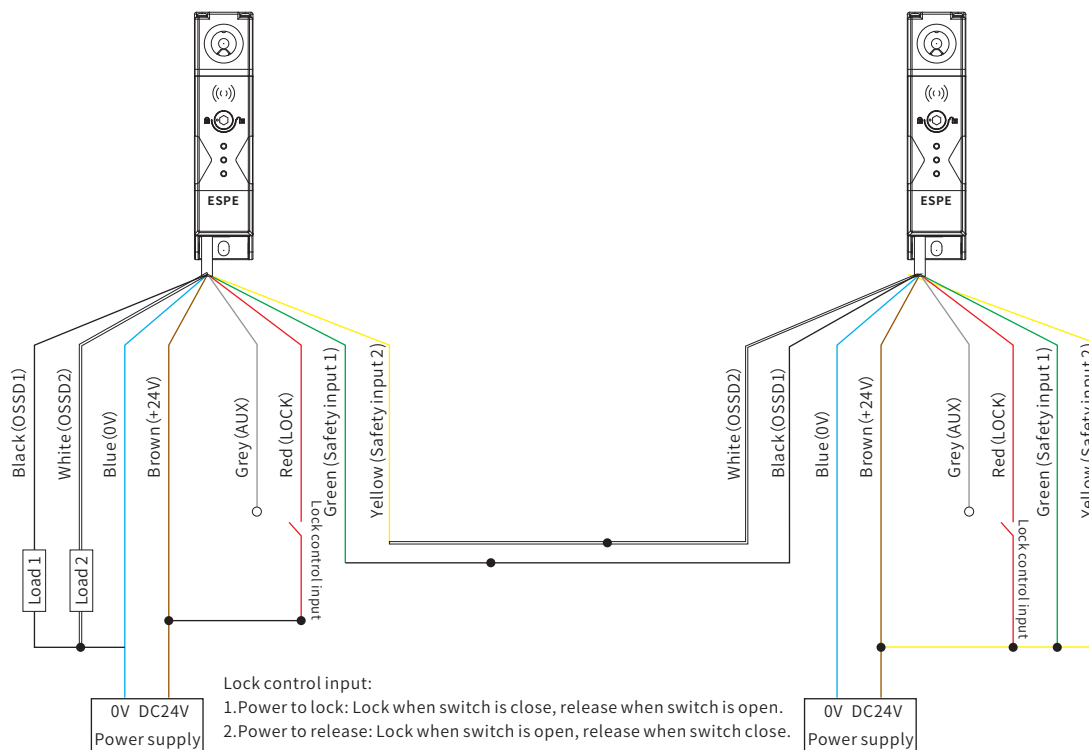


SLR11 Standard Mode (NPN, Cascade)

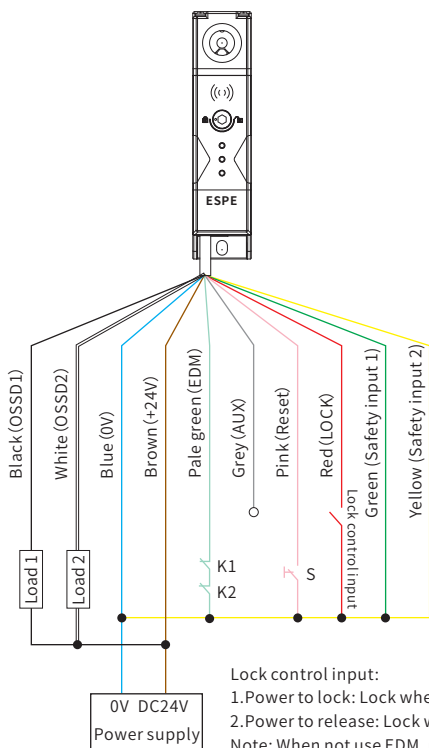


SLR11 Series Safety Interlock Switch

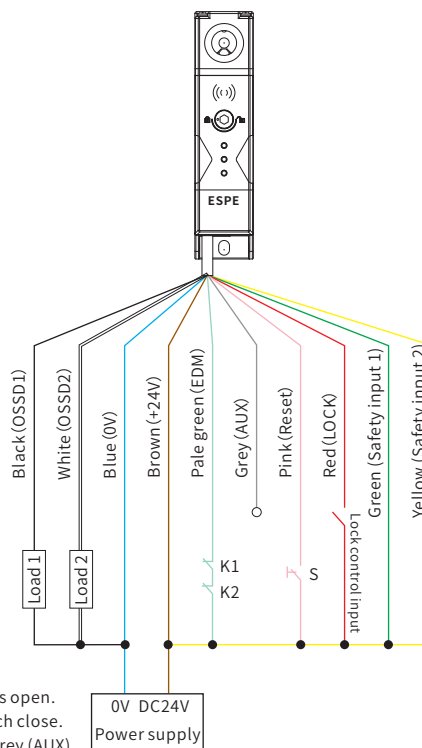
SLR11 Standard Mode (PNP, Cascade)



SLR11 Advanced Mode (NPN, NO Cascade)

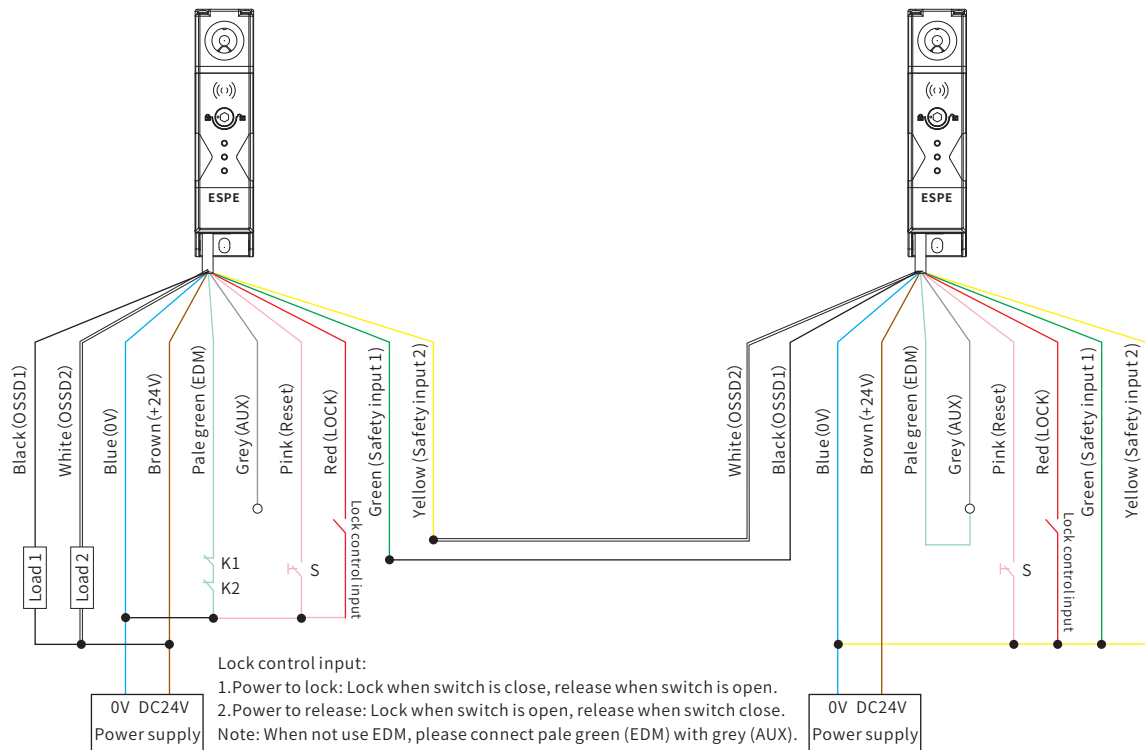


SLR11 Advanced Mode (PNP, NO Cascade)

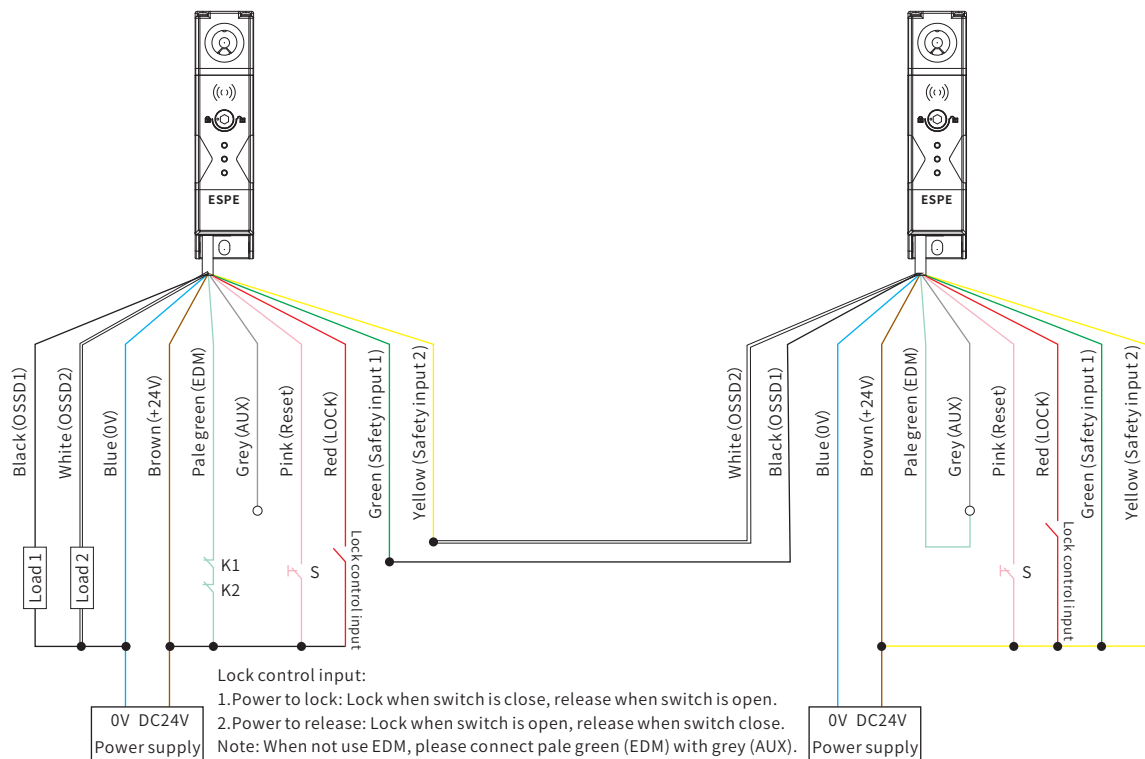


Wire Diagram

SLR11 Advanced Mode (NPN, Cascade)



SLR11 Advanced Mode (PNP, Cascade)



SLR11 Series Safety Interlock Switch

Cable Option

Product Series

SLR11 — M12P

Wire NO.

☐
8:8 wire
10:10 wire

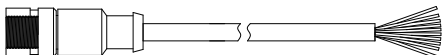
Cable Option

☐
S: one side for wire, one side with
straight female aviation connector

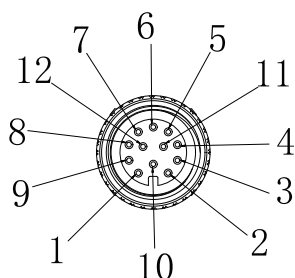
Length

☐
3:3m
5:5m
10:10m
20:20m

Cable Selection Table

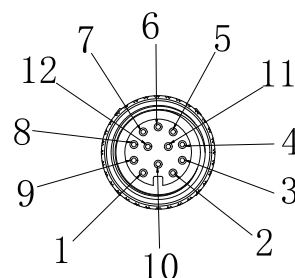
Standard Cable	Type	Length	Model
	Standard Mode	3m	SLR11-M12P8S3
		5m	SLR11-M12P8S5
		10m	SLR11-M12P8S10
	Advanced Mode	3m	SLR11-M12P10S3
		5m	SLR11-M12P10S5
		10m	SLR11-M12P10S10

Remark: If leading wire type, you have no need to refer below cable selection table.



Standard Model Pin (M12 Connector)

1. Brown -VCC;
2. Blue -GND;
3. Grey-AUX;
4. Black-OSSD1;
5. White-OSSD2;
6. Green-Safety input1;
7. Yellow-Safety input2;
8. Red-LOCK;
9. No mark;
10. No mark;
11. No mark;
12. No mark;



Advanced Mode Pin (M12 Connector)

1. Brown - Positive VCC;
2. Blue -negative GND;
3. Grey-AUX;
4. Black-OSSD1;
5. White-OSSD2;
6. Green-Safety input1;
7. Yellow-Safety input2;
8. Red-LOCK;
9. Pale green -EDM;
10. Pink-Reset;
11. No mark;
12. No mark;