

TECHNICAL DATA SHEET

SAFETY LOCKING DEVICE OX-W3 series



For illustration purposes only

Contents

- Product features
- Technical data
- Electrical wiring
- Accessories
- Installation diagram
- Back unlocking
- Safety door bolt



Product Features

- The safety door switch with locking function can ensure that the safety protection device door and other protective covers remain in a safe state even if the dangerous state is not eliminated.

OX-W3 series

metal head

2 sets of gold-plated contacts

6 contact combinations

Locking force 1300N

Indicator light + emergency unlock

Adapt to 7 kinds of operation keys

Compact design saves space



Suitable for monitoring safety doors and windows

High strength wear-resistant engineering plastic with built-in 304 stainless steel components

Forced mechanical interlocking self detection structure with extremely high reliability

Product application

Used for monitoring places such as safety doors and windows, in accordance with EN14119 and GB/T18831.

- Automated production line
- Robot production line
- Hazard testing area
- Isolation places, etc



Technical data

Electrical parameters		
Rated voltage	24VDC	
Rated current	1mA	
Light source color	green	
Rated working voltage	DC24V±10%	
Rated current	200mA (initial value)	
Rated power	4.8W	
Rated insulation voltage (U _i)	300V	
Rated impulse withstand voltage (U _{imp})	2.5kV	
Rated open thermal current (I _{th})	10A	
Rated limited short-circuit current	1000A	
Use category	AC-15	DC-13
Rated working voltage (U _e)	240V	30V
Rated operating current (I _e)	3A	2.3A

Mechanical parameters	
Dimensions (w*h*l)	39*39.4*183mm
Insulation class	Class B (130°C)
Shell material	PA66 flame retardant
Contact material	Gold Plated Silver Alloy
Protection level	IP67 (EN60947-5-1, except key operation hole)
Service life	Mechanical more than 1 million times
	Electric appliances more than 150,000 times
Tensile strength when locked	1300N
Forced disengagement force	≥60N
Forced breakaway distance	≥10mm
Allowable operating speed	0.05-0.5m/s
Allowable operating frequency	Up to 20 operations/min

Environmental data	
Ambient temperature	-20 °C~60 °C, without freezing
Environment humidity	Below 85% RH

Electrical wiring

1.Function and purpose

The use of safety door locks to monitor the status of safety doors can ensure reliable shutdown of equipment.

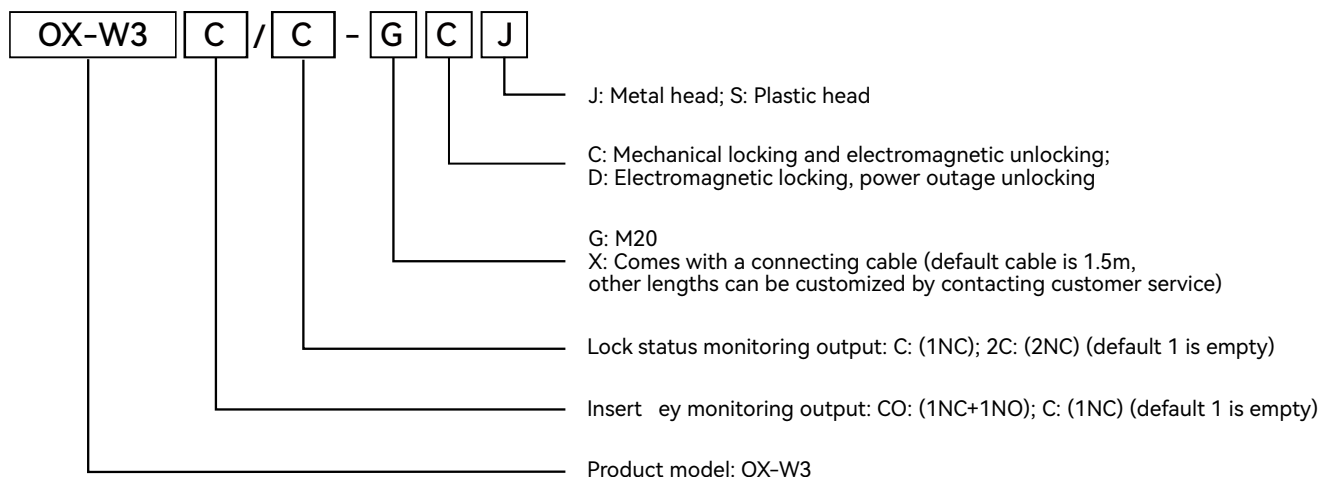


2.Connection example

The safety door lock can be connected to the safety relay to form a high-level safety circuit. Used to control reliable stopping and starting of equipment.

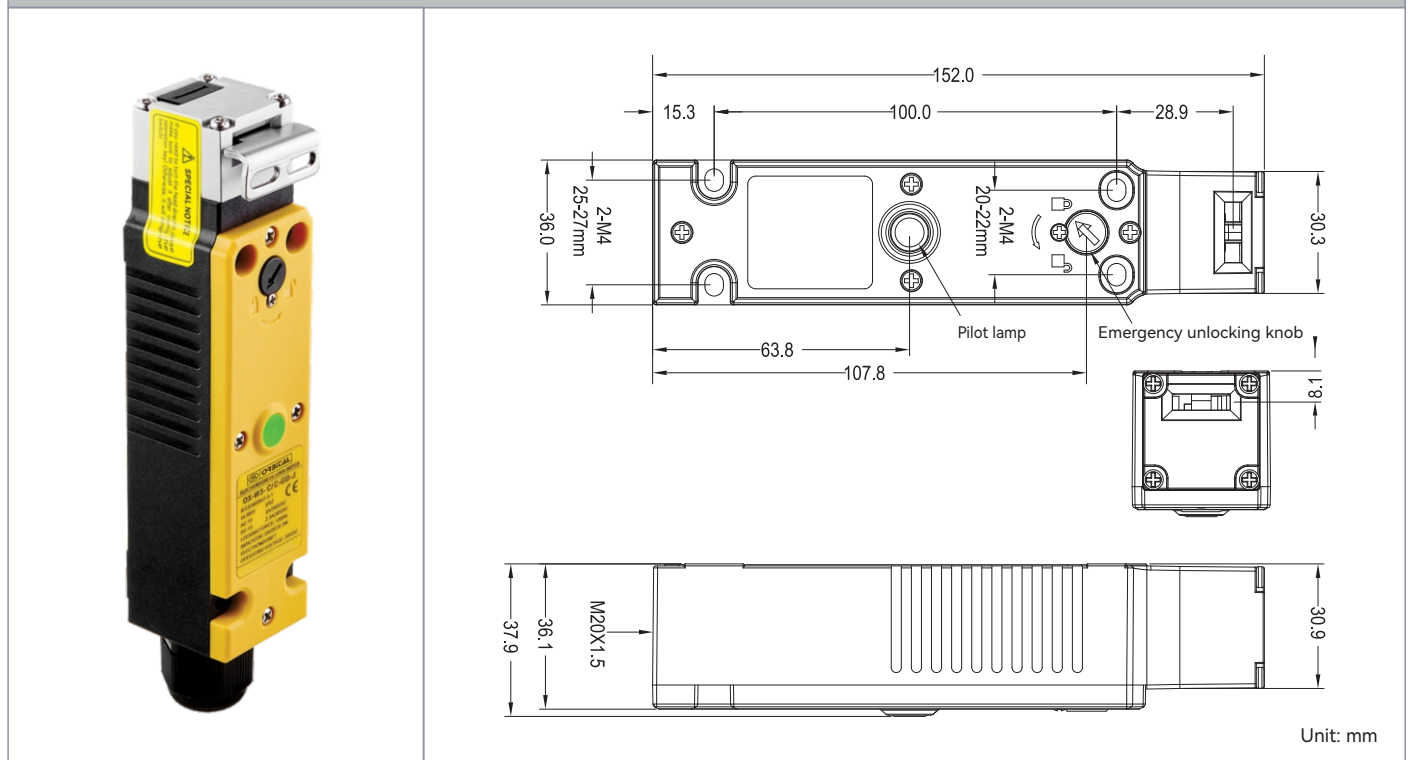


Model Selection

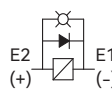
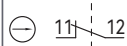
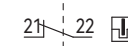
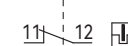
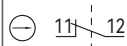
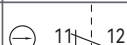
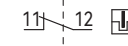
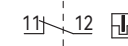


● Overall dimensions

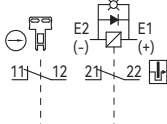
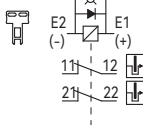
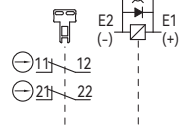
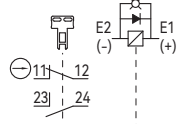
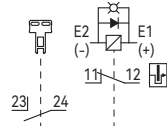
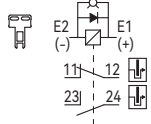
OX-W3 Series Lock Body Dimensional Drawing



● The following wiring diagram shows inserting the operation key and being in the lock state

Model	Contact type		Wiring diagram		Contact action
	Door monitoring+lock monitoring		Door monitoring	Lock monitoring	
					: ON : OFF
					Operating the key Fully inserted Operating the key Pulling out
OX-W3-C/C-GD-J OX-W3-C/C-GC-J	1NC	1NC			Locked position 11--12 21--22
OX-W3/2C-GD-J OX-W3/2C-GC-J	-	2NC			Locked position 11--12 21--22
OX-W3-2C-GD-J OX-W3-2C-GC-J	2NC	-			Locked position 11--12 21--22
OX-W3-CO-GD-J OX-W3-CO-GC-J	1NC+1NO	-			Locked position 11--12 23--24
OX-W3-O/C-GD-J OX-W3-O/C-GC-J	1NC	1NO			Locked position 11--12 23--24
OX-W3/CO-GD-J OX-W3/CO-GC-J	-	1NC+1NO			Locked position 11--12 23--24

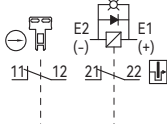
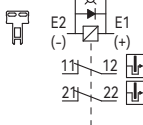
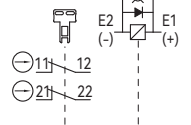
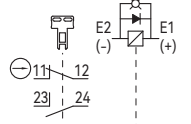
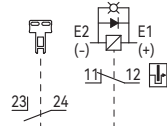
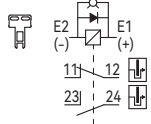
● Electromagnetic locking type

Safety door action status	State 1	State 2	State 3	State 4	When manually unlocking	
	OFF	OFF	ON	ON	OFF	ON
Electromagnet power supply	ON	OFF	ON	OFF		
OX-W3-C/C-GD-J 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 
OX-W3/2C-GD-J 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 
OX-W3-2C-GD-J 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 
OX-W3-CO-GD-J 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 
OX-W3-O/C-GD-J 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 
OX-W3/CO-GD-J 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 

Note:

After manually unlocking, the safety door is in an open state, please do not apply voltage to the electromagnet for a long time.
In the event of an emergency such as the operation state of the door before wiring and power-on, or a power failure, the lock of the operation key can be manually released.

● Mechanical locking type

Safety door action status	State 1	State 2	State 3	State 4	When manually unlocking	
	OFF	OFF	ON	ON	OFF	ON
Electromagnet power supply	ON	OFF	ON	OFF		
OX-W3-C/C-GD-J 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 
OX-W3/2C-GD-J 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 
OX-W3-2C-GD-J 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 
OX-W3-CO-GD-J 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 
OX-W3-O/C-GD-J 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 
OX-W3/CO-GD-J 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 	CIRCUIT DIAGRAM 

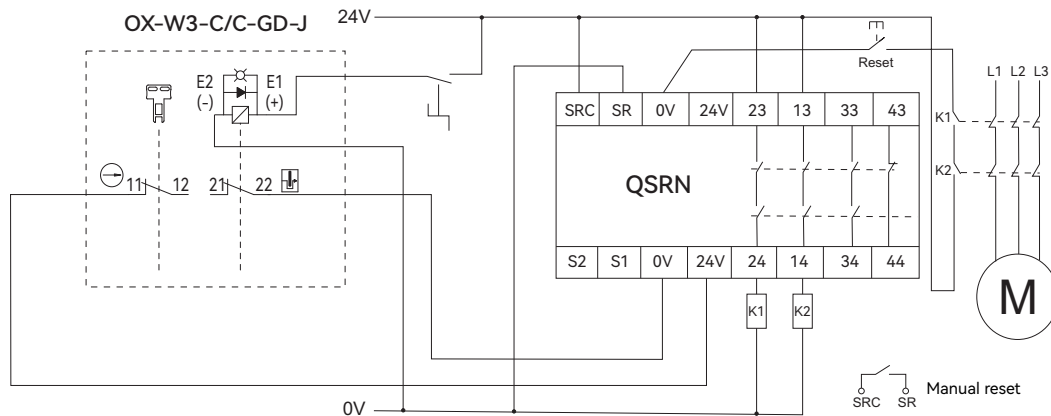
Note:

After manually unlocking, the safety door is in an open state, please do not apply voltage to the electromagnet for a long time.
In the event of an emergency such as the operation state of the door before wiring and power-on, or a power failure, the lock of the operation key can be manually released.

● Selection of safety locking device connected to safety relay

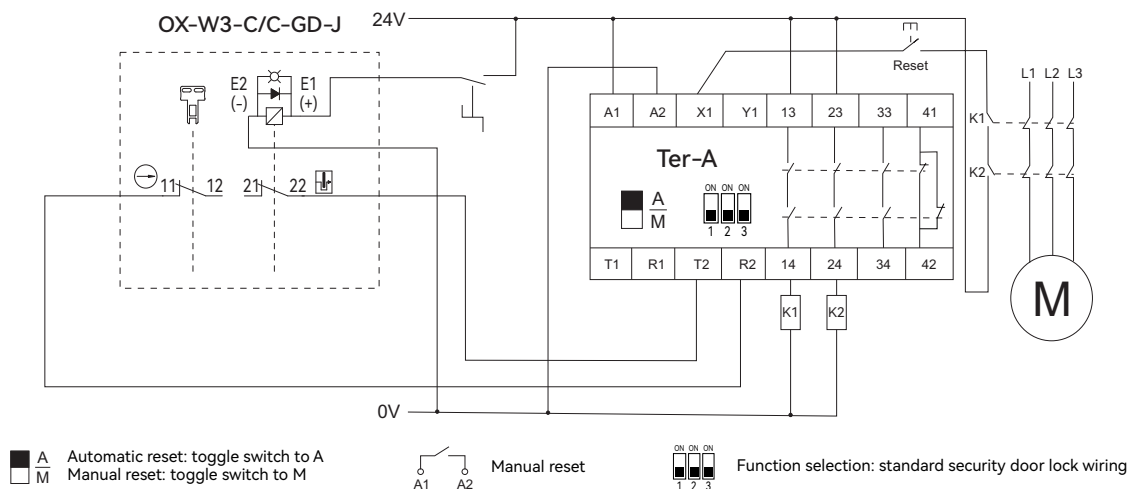
Name	Order separately	Model	Descriptions
Safety relay		QSRN	QSRN safety relays have three groups of NO and one group of NC, with strong control capabilities. They are suitable for various signal monitoring in industrial places with high safety requirements, including emergency stop signals, safety door opening and closing signals, safety light curtain signals, and two-handed button signals.
Safety relay	  Multifunction switching switch	Ter-A	Equipped with a mode switch, it can be used for most safety components, such as light curtains, safety switches, carpet contacts, two handed switches, etc. Automatic/manual reset paddles for quick configuration. Dual channel monitoring circuit, safe and reliable.

1. An example of the wiring diagram between the safety door lock and QSRN is as follows:



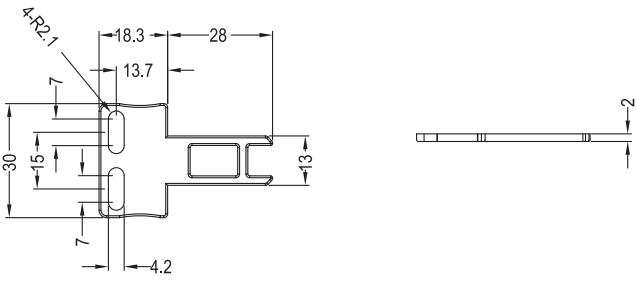
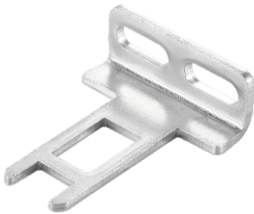
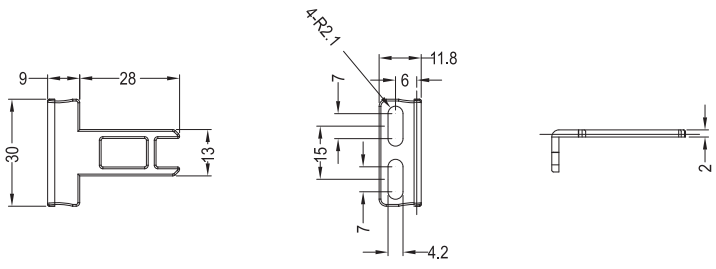
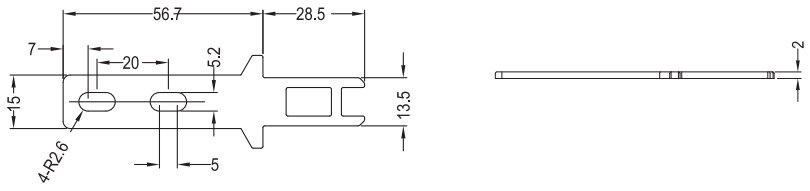
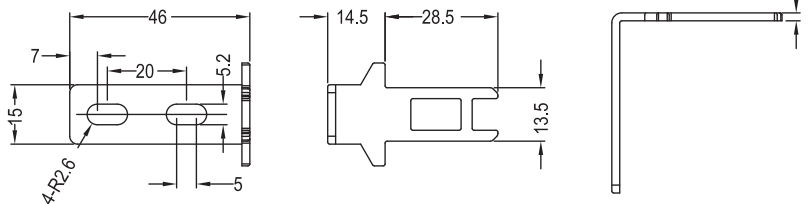
This is an example wiring diagram of OX-W3-C/C-GD-J.

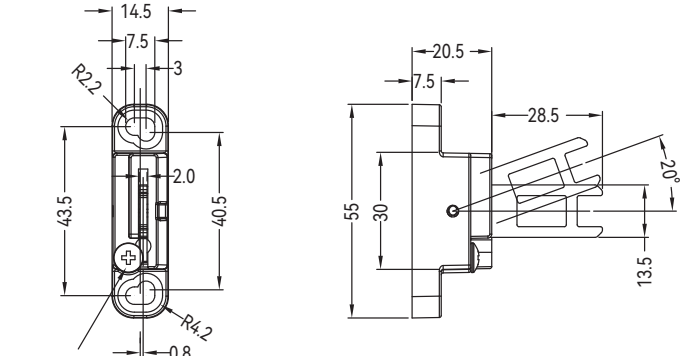
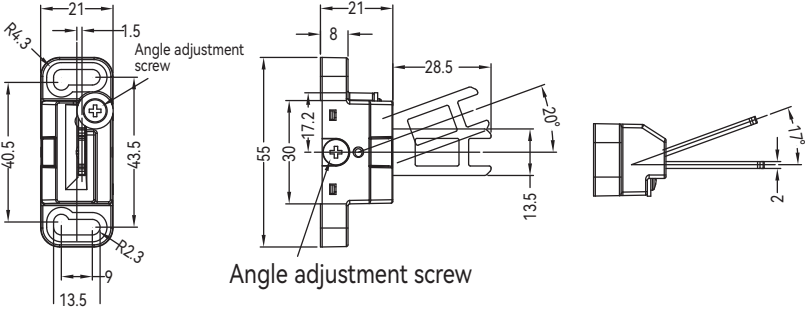
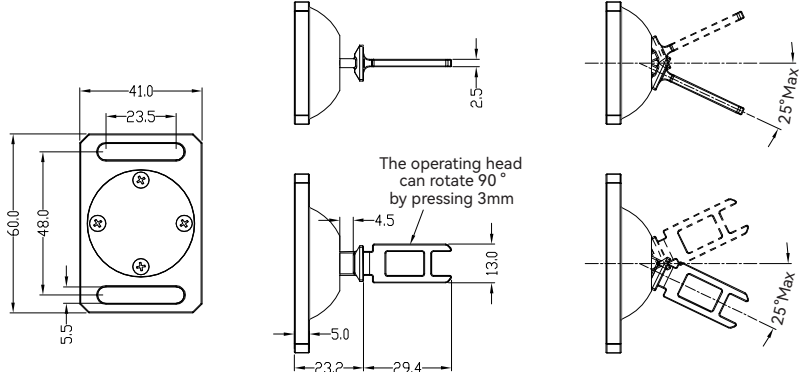
2. An example of the wiring diagram between the safety door lock and Ter-A is as follows:



This is an example wiring diagram of OX-W3-C/C-GD-J.

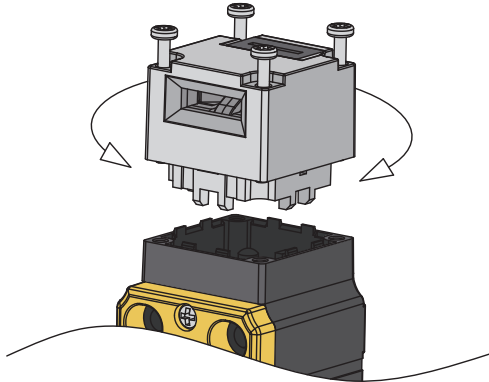
Accessories

T-shaped operation key	OX-K1 operating key size diagram
 (Original accessories)	 Unit: mm
L-shaped operation key	OX-K2 operating key size diagram
 (Original accessories)	 Unit: mm
Long T-shaped operating key	OX-K3 operating key size diagram
 (Optional accessories)	 Unit: mm
Long L-shaped operating key	OX-K4 operating key size diagram
 (Optional accessories)	 Unit: mm

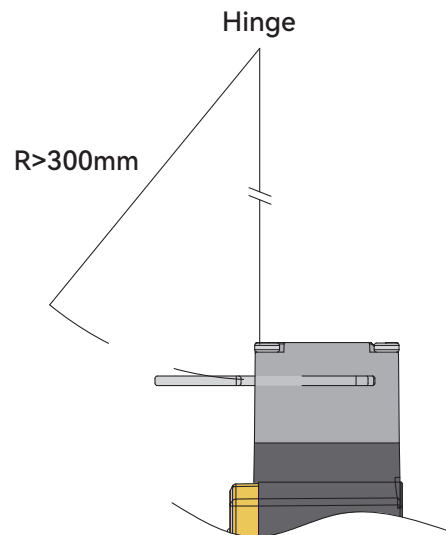
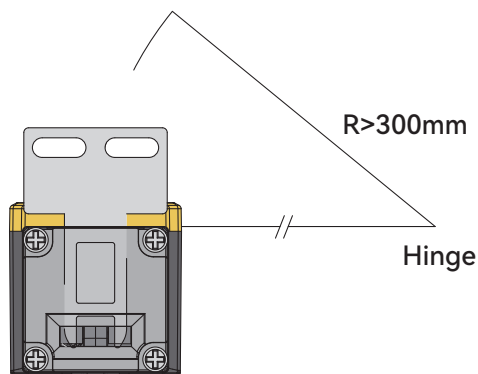
Horizontal adjustable operating key	OX-K5 operating key size diagram
 (Optional accessories)	 Angle adjustment screw Unit: mm
Horizontal/vertical adjustable operation key	OX-K6 operating key size diagram
 (Optional accessories)	 Angle adjustment screw Unit: mm
Horizontal/vertical adjustable operation key	OX-K7 operating key size diagram
 (Optional accessories)	 The operating head can rotate 90° by pressing 3mm Unit: mm

Installation diagram of OX-W3 operation key

- Loosen the four screws at the top of the head, rotate the head direction to select the appropriate operating keyhole position, and then proceed with installation.

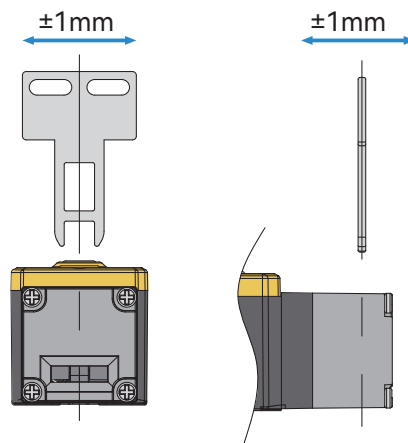
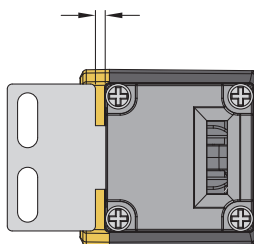


- When installed on a side hung door, it must be greater than the minimum radius.



- Please install switches and operating keys within the prepared position range (1-3.5mm).
- The allowable error for the installation of the operating key is within $\pm 1\text{mm}$ of the center of the operating key insertion hole.

Ready position: 1.0~3.5mm



● Emergency unlocking

Unlock screw type	Normal	Manual unlocking
Straight+Hexagram or cross		

- When dealing with power outages or emergencies, the emergency unlocking button can be manually operated.
- Before operating the emergency unlocking key, first raise the inner Hexagram screw, otherwise the emergency unlocking key cannot be unlocked normally and will be damaged.
- When rotating the emergency unlocking button, it is necessary to rotate it to the bottom, otherwise there is a risk of damaging the switch or not being able to operate normally.
- Please control the torque of the emergency unlocking key to below 0.2N. m, otherwise there is a risk of damage.
- After each use of the emergency unlocking button to unlock and handle an emergency situation, reset the emergency unlocking button. Otherwise, it may affect the normal locking function of the switch and potentially cause personal injury or safety accidents.
- Only device administrators can operate the emergency unlock button.

● Usage environment

1. Do not immerse the switch in oil or water, or use the switch in a position where it is continuously splashed with oil or water.
2. Otherwise, it may cause oil or water to enter the interior of the switch.
3. The IP67 protection level of the switch specifies the water in now after the switch is immersed in water for a certain period of time.

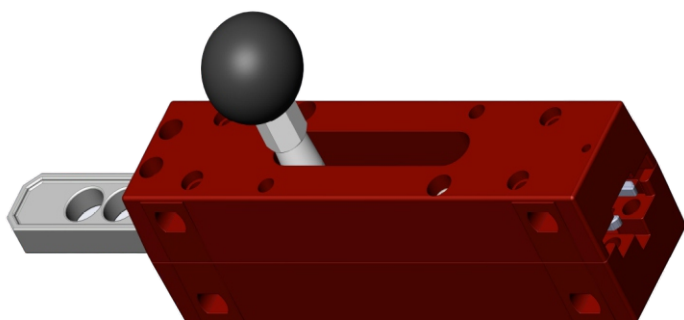
Safety door handles

Performance data

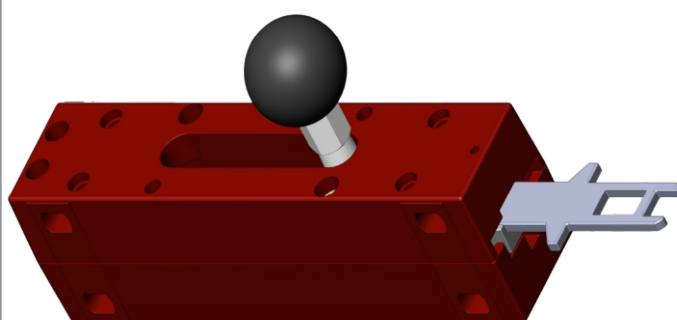
Model	OXSL-A-1	OXSL-A-2	OXSL-B-1	OXSL-B-2
Mechanical life	1 x 10 ⁶ times		1 x 10 ⁶ times	
Installation location	Doors or fences		Doors or fences	
Installation mode	Left or right		Left or right	
Base material	Zinc alloy		Aluminium alloy	
Slider material	Zinc alloy		Aluminium alloy	
Handle material	Stainless steel		Stainless steel	
Ball head material	Plastic		Plastic	
Weight	0.6kg		0.95kg	1.05kg

• Appearance diagram

OXSL-A-1

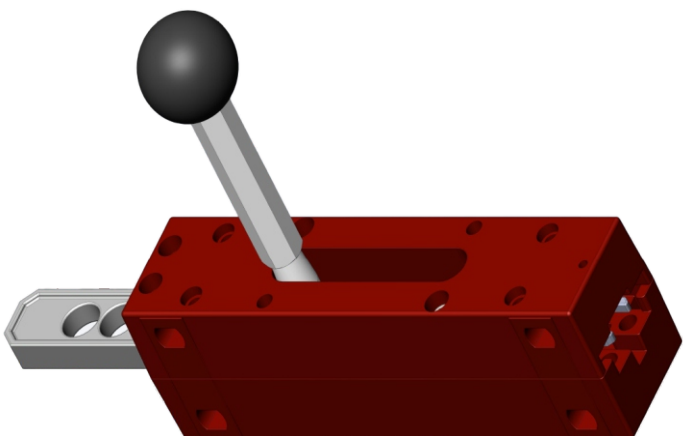


(Order separately)

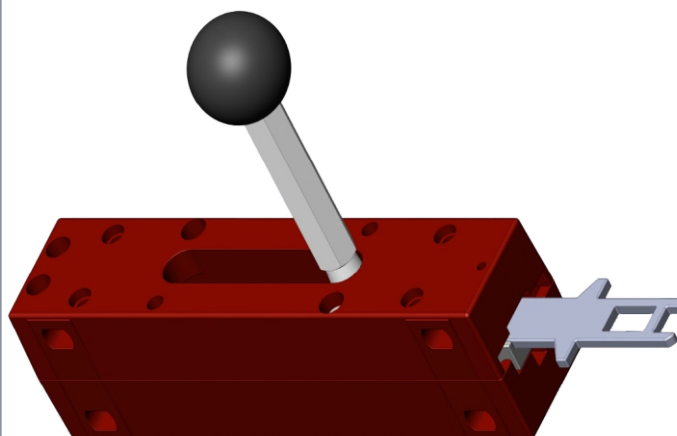


(Order separately)

OXSL-A-2

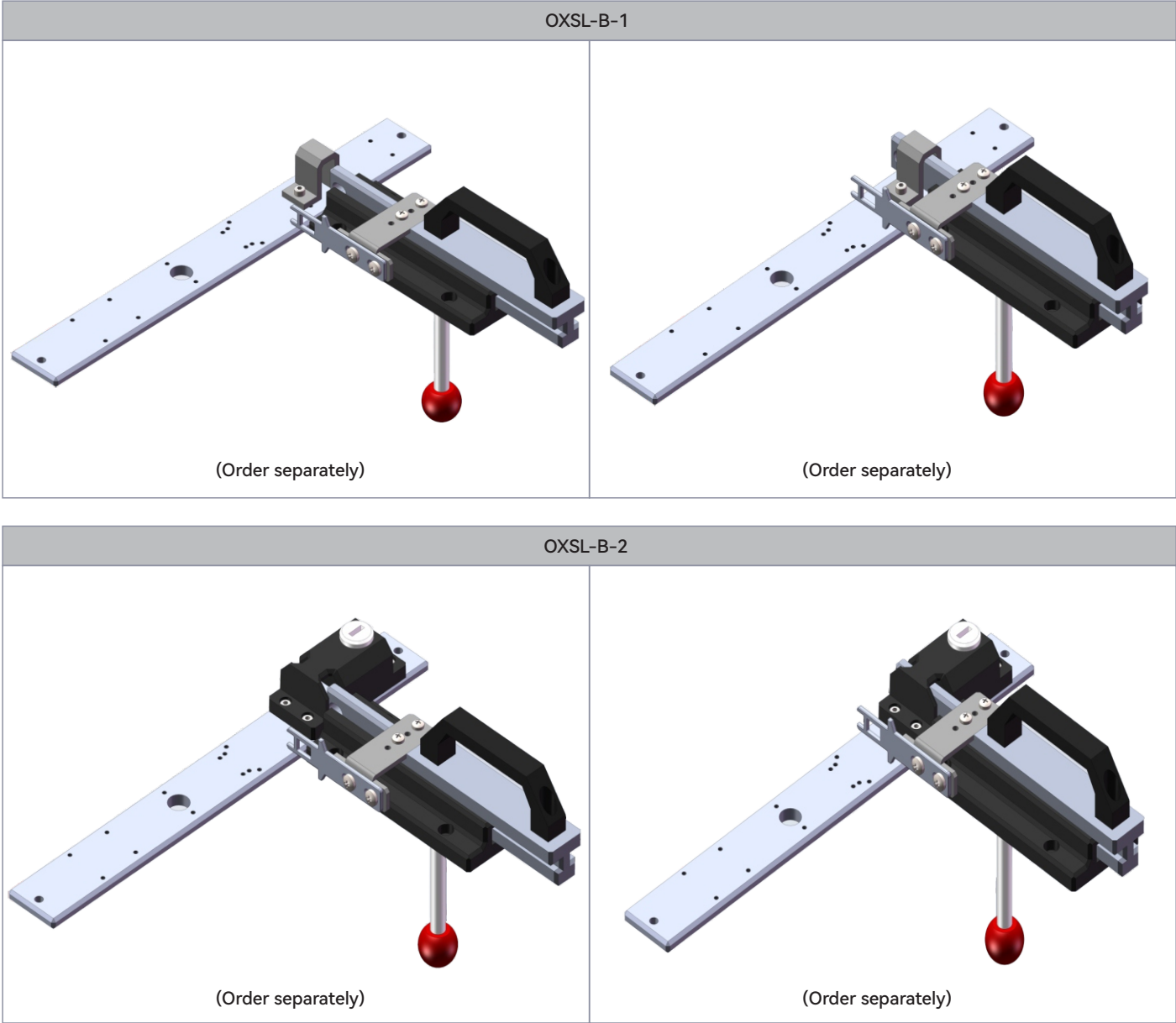


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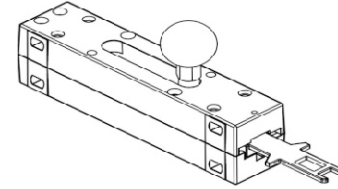
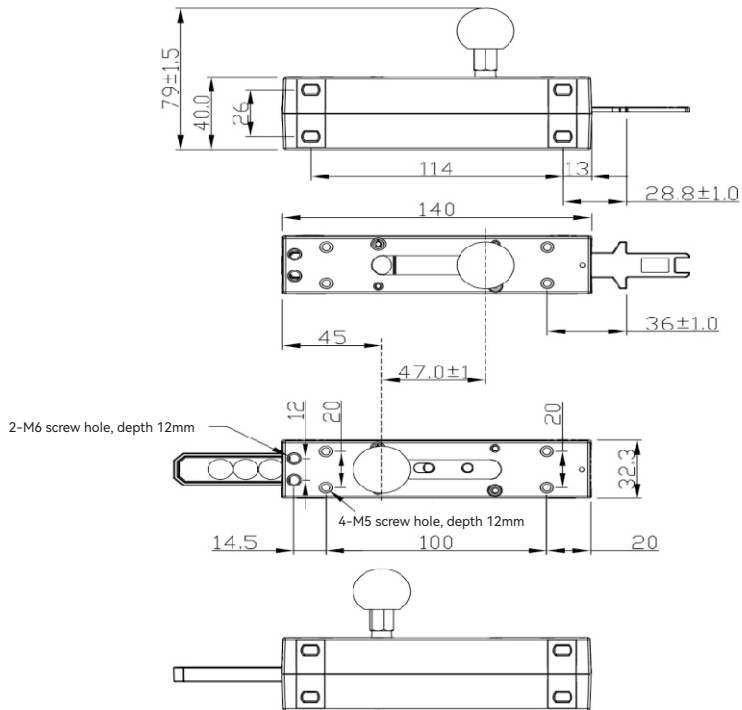
(Order separately)

● Appearance diagram

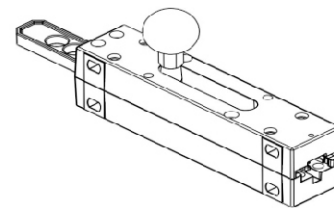


• Installation dimensions of safety door bolts

OXSL-A-1 installation dimensions



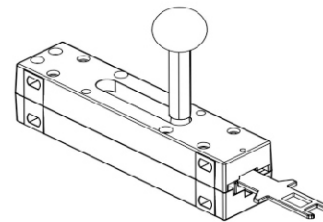
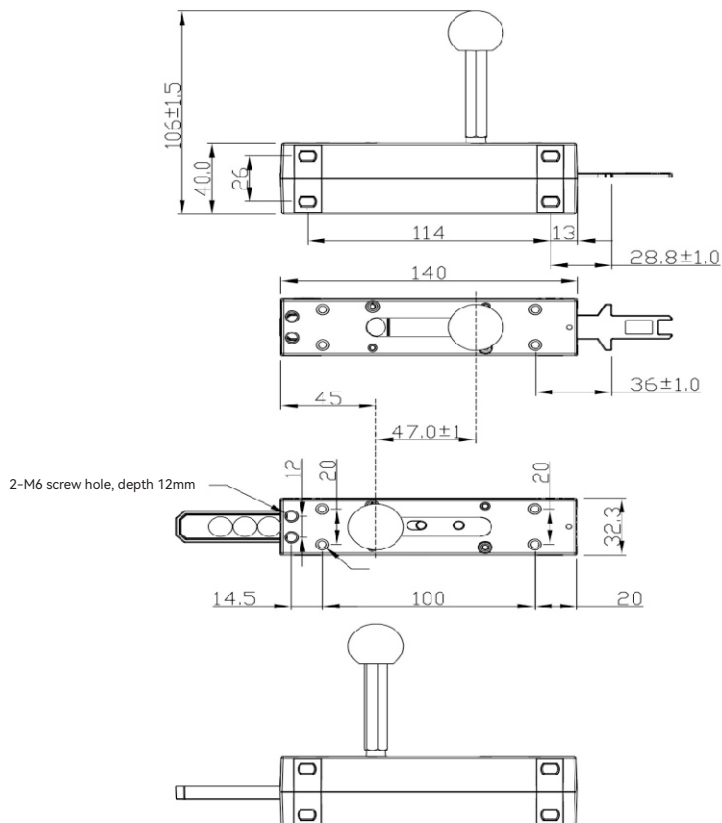
Pushing out the key



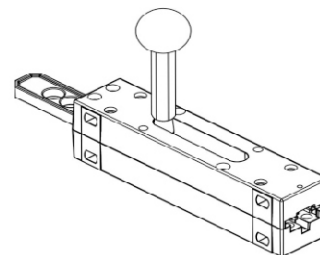
Retract key

Unit: mm

OXSL-A-2 installation dimensions



Pushing out the key

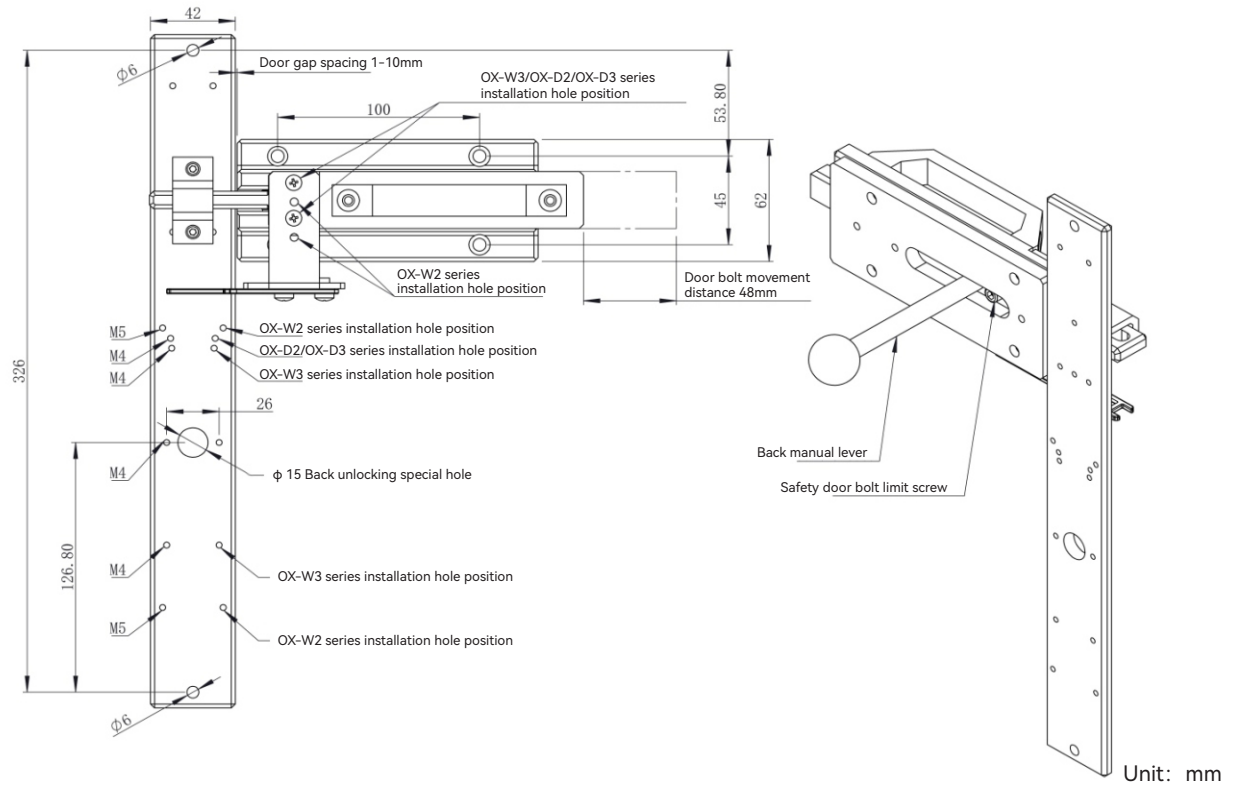


Retract key

Unit: mm

● Installation dimensions of safety door bolts

OXSL-B-1 installation dimensions



OXSL-B-2 installation dimensions

