

TECHNICAL DATA SHEET

SWITCHES FOR SAFETY GATE MONITORING DX-D2 & DX-D3 series



For illustration purposes only

Contents

- Product features
- Technical data
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- Installation diagram
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- Safety door bolt



Product Features

- The Safety Switches 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.

DX-D2 & D3 series

Full range of gold-plated contacts

Configure 5 contact structures

Suitable for standard and small loads

Adjust up to 8 directional key operation holes

Adapted to 11 operating keys

IEC/EN60947-5-1

GB14048.5-2017



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.

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



Technical data

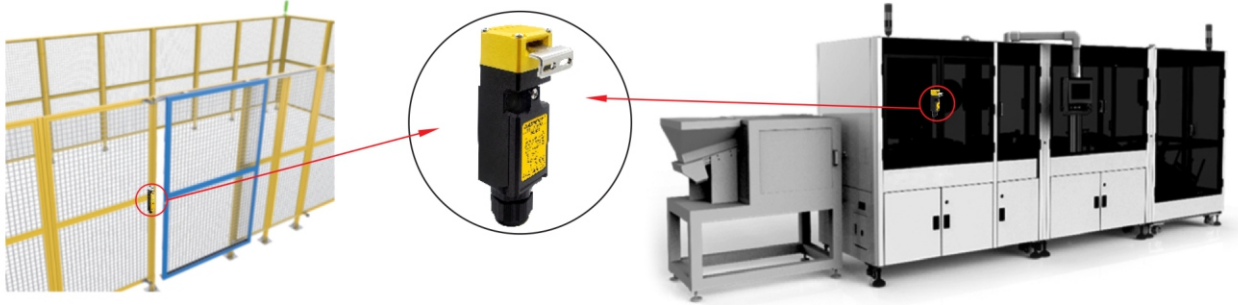
Performance Specifications	
Applicable standard	IEC/EN60947-5-1/GB14048.5-2017
Protection level*1	IP65/IP67 (EN60947-5-1 key operation hole)
Service life*2	More than 1 million machinery/more than 300,000 times of electricity
Rated insulation voltage (Ui)	400V
Rated impulse withstand voltage (Uimp)	4KV
Rated open thermal current (Ith)	8A
use category	AC-15
Rated working voltage (Ue)	AC400V
Rated operating current (Ie)	2A
Rated limited short-circuit current	1000A
forced disengagement force	≥60N
Forced breakaway distance	≥10mm
Operating frequency	≤ 20 times/minute
Ambient temperature	-20°C~60°C (not freezing)
Environment humidity	Below85%RH

1. The above values are initial values.
2. The contacts of the switch are shared by standard and small loads, but the contacts that operate on a certain load cannot be connected to a load with a smaller capacity for use. Failure to do so may result in damage to the contact surface and reduced contact reliability.
3. Although the switch housing can prevent dust or water from entering, do not use the switch where foreign matter such as powder, water or medicine may enter the keyhole of the switch head, otherwise wear, damage or malfunction of the switch may occur.
4. The conditions for durability are an ambient temperature of 5°C to 35°C and an ambient humidity of 40% to 70%.

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.

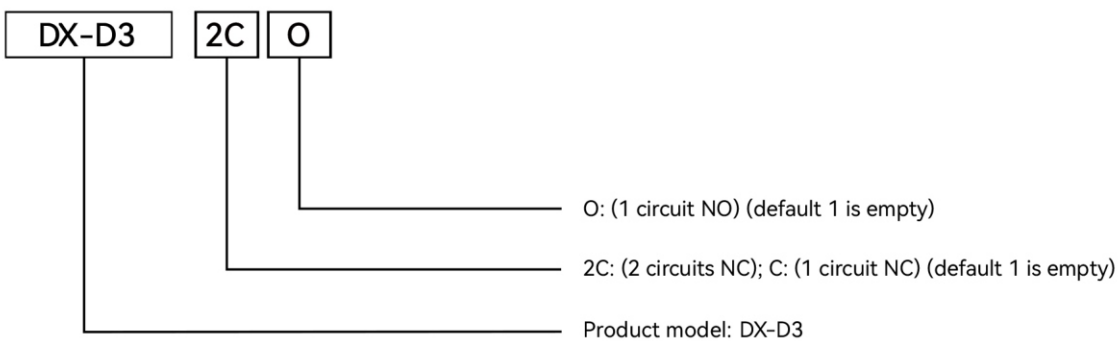


2.Connection example

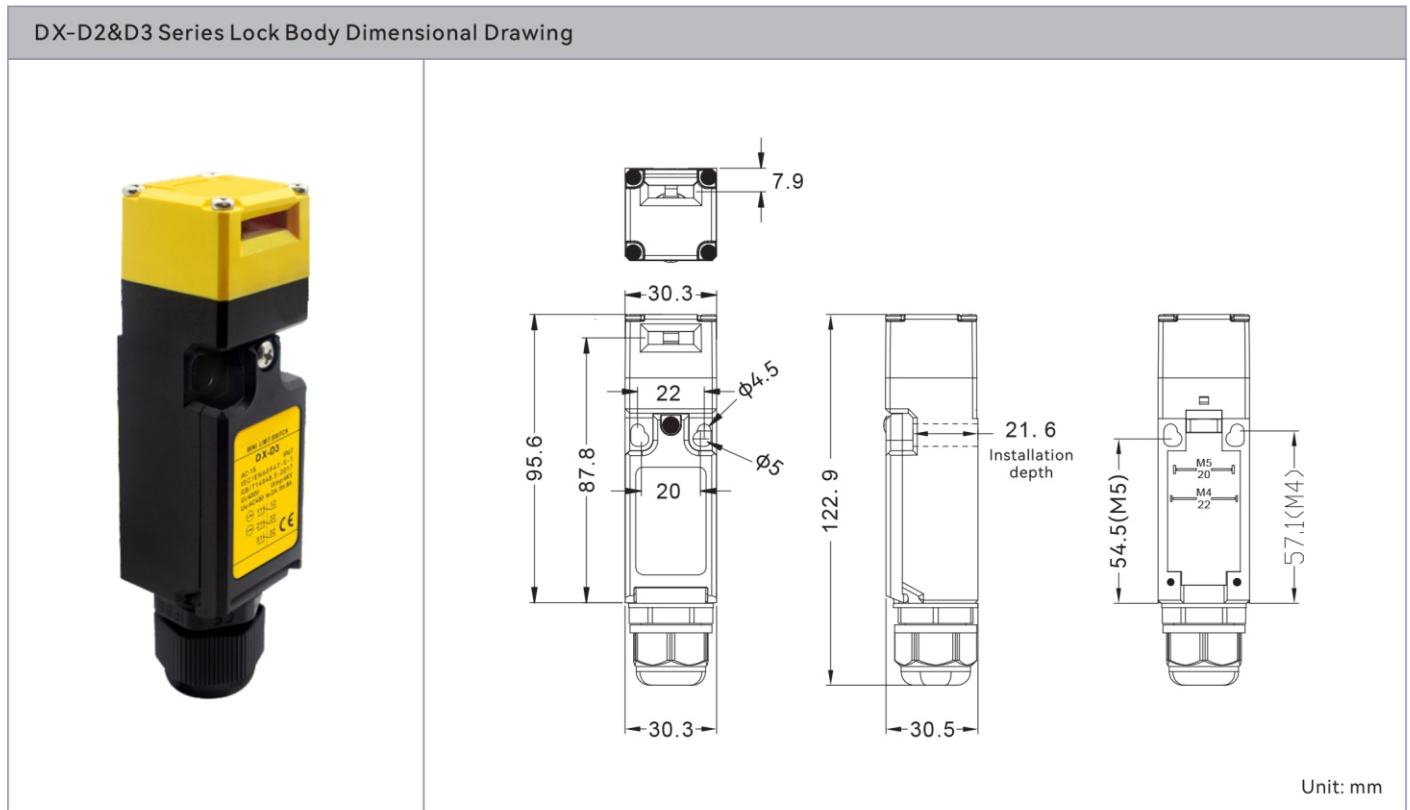
The safety door lock can be connected to the safety relay to form a high-level safety circuit. Used to control reliable stopping and starting of equipment.



Model Selection






● Overall dimensions



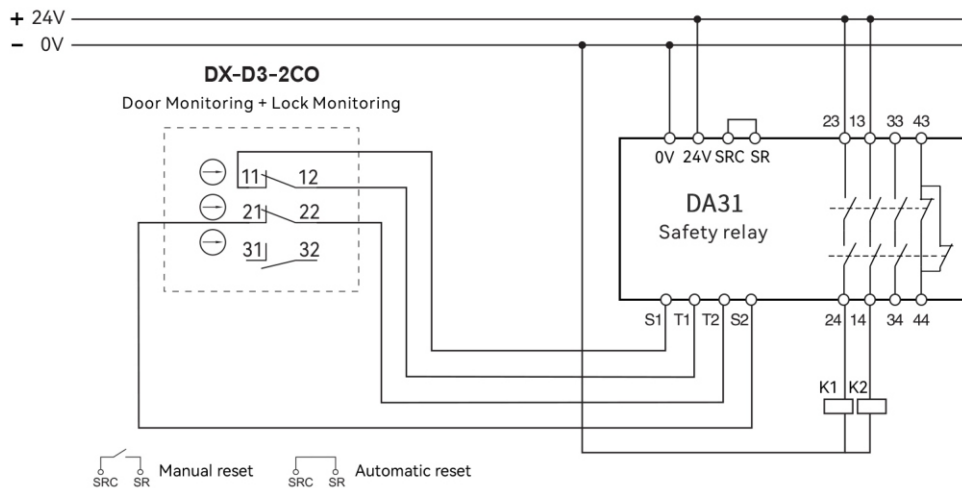
● The following wiring diagram shows inserting the operation key and being in the lock state

Model	Contact type	Wiring diagram	Contact action	
			Operating the key Fully inserted	Operating the key Pulling out
DX-D2-CO	1NC+1NO	\ominus 11 12 \ominus 23 24	11--12 23--24	
DX-D2-2C	2NC	\ominus 11 12 \ominus 21 22	11--12 21--22	
DX-D3-2CO	2NC+1NO	\ominus 11 12 \ominus 21 22 \ominus 33 34	11--12 21--22 33--34	
DX-D3-3C	3NC	\ominus 11 12 \ominus 21 22 \ominus 31 32	11--12 21--22 31--32	

● Selection of safety locking device connected to safety relay

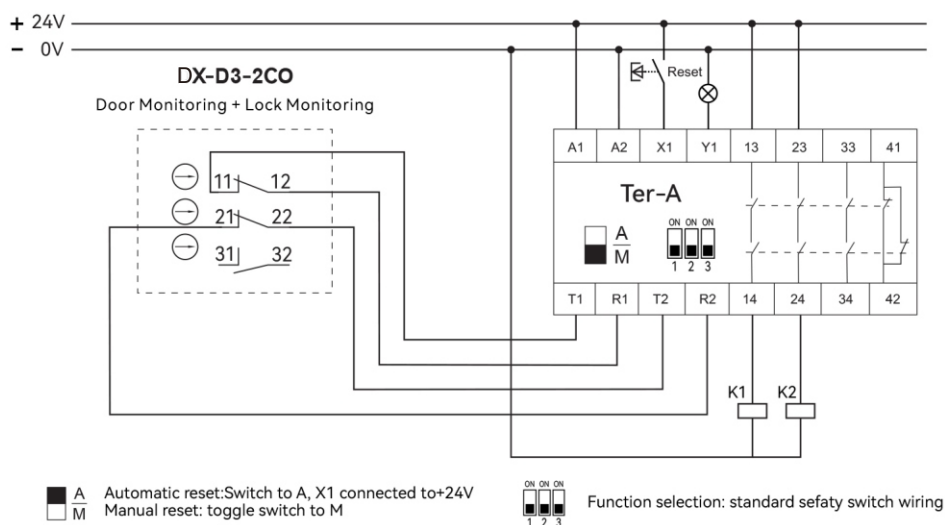
Name	Order separately	Model	Descriptions
Safety relay		DA31	DA31 safety relays have three groups of NO and one group of NC, with strong control capabilities. They are suitable for various signal monitoring in industrial places with high safety requirements, including emergency stop signals, safety door opening and closing signals, safety light curtain signals, and two-handed button signals.
Safety relay	  Multifunctional 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 switch and DA31 is as follows:




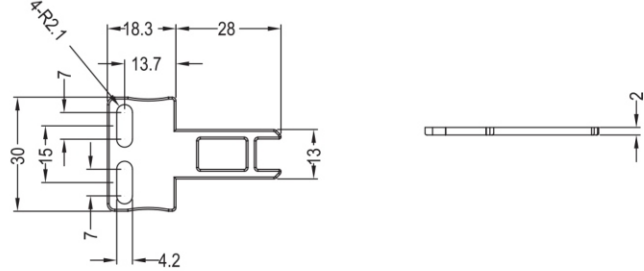
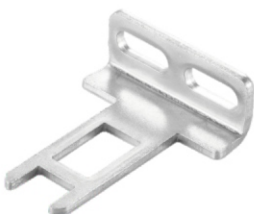
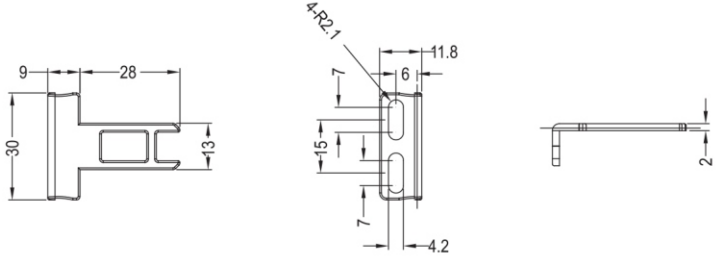

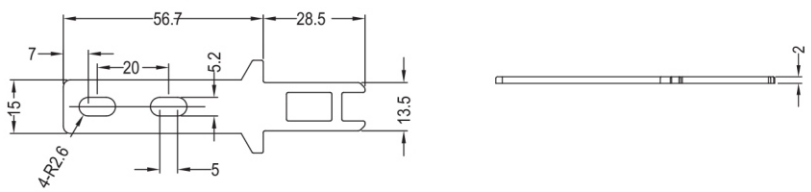

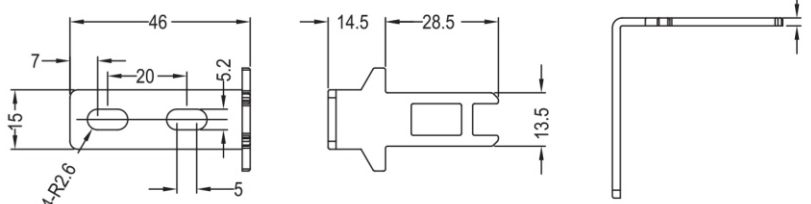
This is an example wiring diagram of DX-D3-2CO.


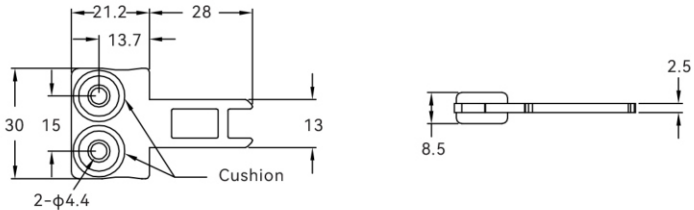
2. An example of the wiring diagram between the safety switch and Ter-A is as follows:


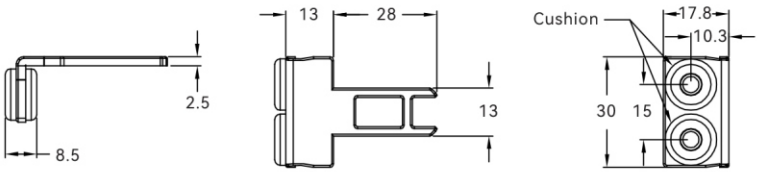



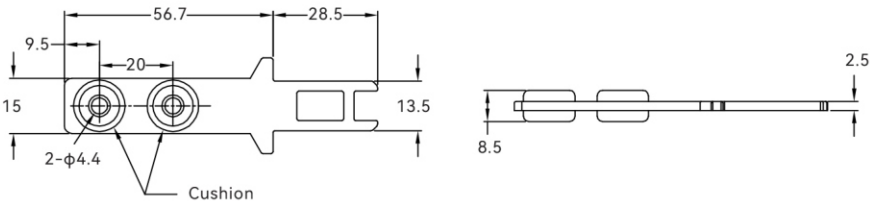
This is an example wiring diagram of DX-D3-2CO with manual reset.


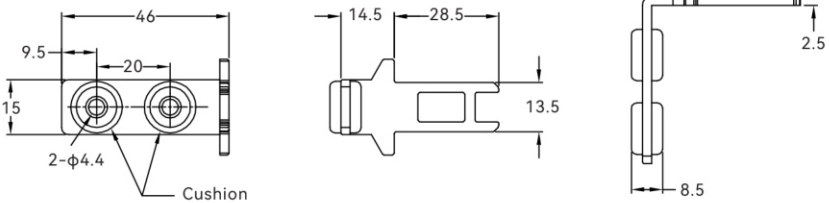
Accessories


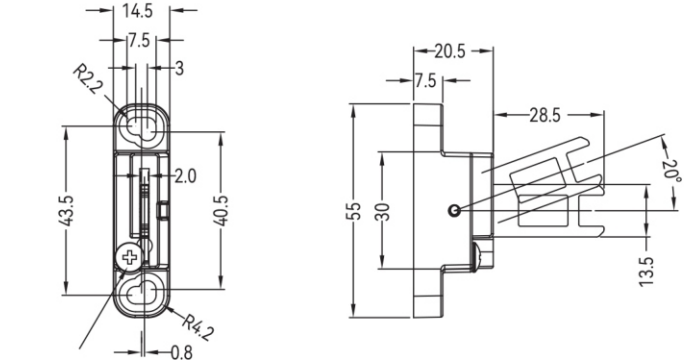
<p>T-shaped operation key</p>	<p>DX-K1 operating key size diagram</p>
 <p>(Optional accessories)</p>	 <p>Unit: mm</p>
<p>L-shaped operation key</p>	<p>DX-K2 operating key size diagram</p>
 <p>(Optional accessories)</p>	 <p>Unit: mm</p>
<p>Long T-shaped operating key</p>	<p>DX-K3 operating key size diagram</p>
 <p>(Optional accessories)</p>	 <p>Unit: mm</p>
<p>Long L-shaped operating key</p>	<p>DX-K4 operating key size diagram</p>
 <p>(Optional accessories)</p>	 <p>Unit: mm</p>


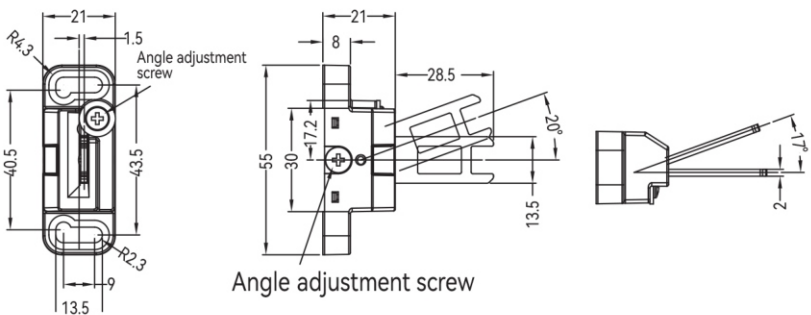
T-shaped operation key	DX-K1D operating key size diagram
 <p data-bbox="181 577 418 604">(Optional accessories)</p>	 <p data-bbox="1391 591 1474 613">Unit: mm</p>


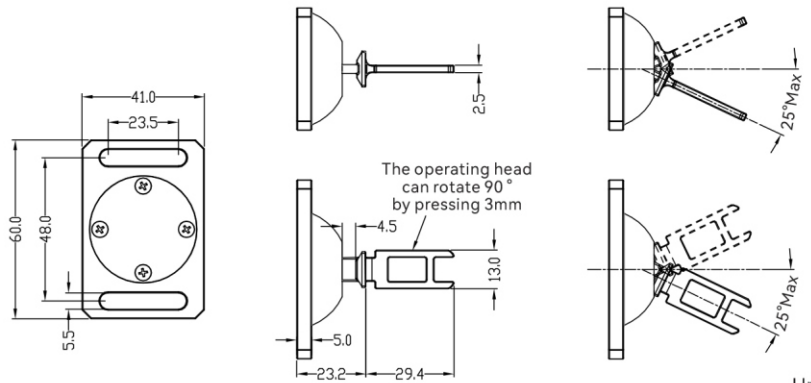
L-shaped operation key	DX-K2D operating key size diagram
 <p data-bbox="181 1048 418 1075">(Optional accessories)</p>	 <p data-bbox="1391 1061 1474 1084">Unit: mm</p>

Long T-shaped operating key	DX-K3D operating key size diagram
 <p data-bbox="181 1509 418 1536">(Optional accessories)</p>	 <p data-bbox="1391 1527 1474 1550">Unit: mm</p>

Long L-shaped operating key	DX-K4D operating key size diagram
 <p data-bbox="181 1989 418 2016">(Optional accessories)</p>	 <p data-bbox="1391 1989 1474 2011">Unit: mm</p>

Horizontal adjustable operating key	DX-K5 operating key size diagram
 <p data-bbox="183 649 430 683">(Optional accessories)</p>	 <p data-bbox="662 638 909 672">Angle adjustment screw</p> <p data-bbox="1388 649 1476 683">Unit: mm</p>

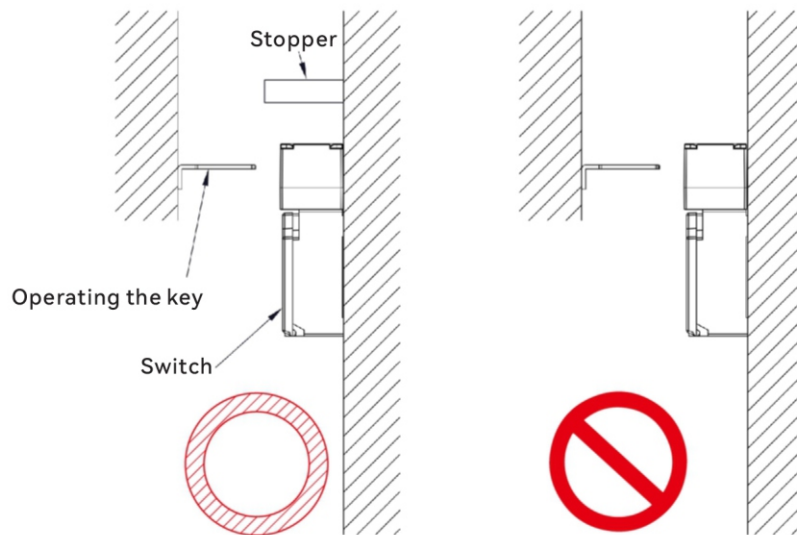
Horizontal/vertical adjustable operation key	DX-K6 operating key size diagram
 <p data-bbox="183 1187 422 1220">(Optional accessories)</p>	 <p data-bbox="821 1108 1069 1142">Angle adjustment screw</p> <p data-bbox="1388 1187 1476 1220">Unit: mm</p>

Horizontal/vertical adjustable operation key	DX-K8 operating key size diagram
 <p data-bbox="175 1713 422 1747">(Optional accessories)</p>	 <p data-bbox="973 1512 1133 1579">The operating head can rotate 90° by pressing 3mm</p> <p data-bbox="1388 1713 1476 1747">Unit: mm</p>

Installation diagram of DX-D2&D3 operation key

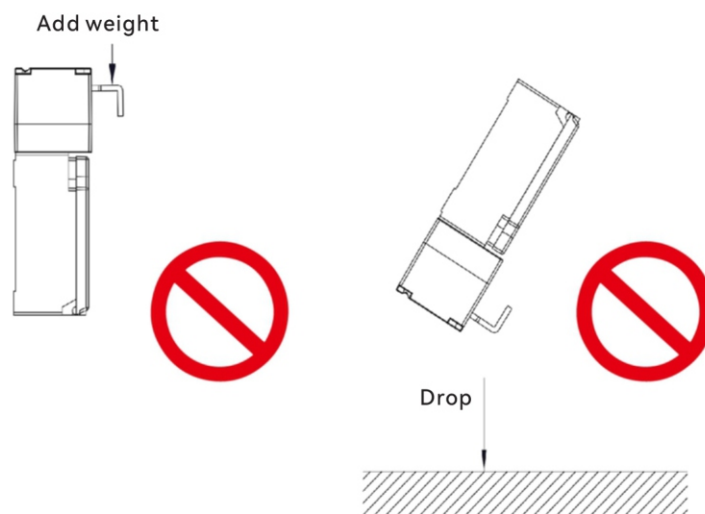
● Safety points

1. The operation key should be installed where the door will not touch the human body when the door is opened, otherwise it may cause personal injury.
- 2 Do not use the switch body as a stop element. Be sure to set the stop element as shown in the picture so that the edge of the operating key does not hit the switch head.

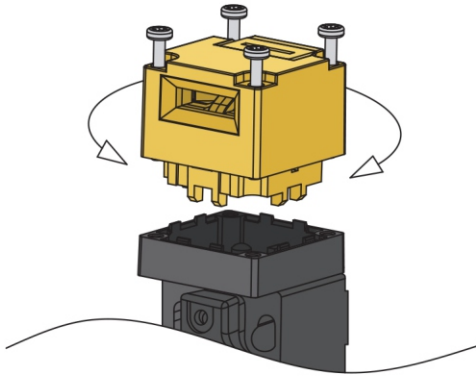


● Precautions for use

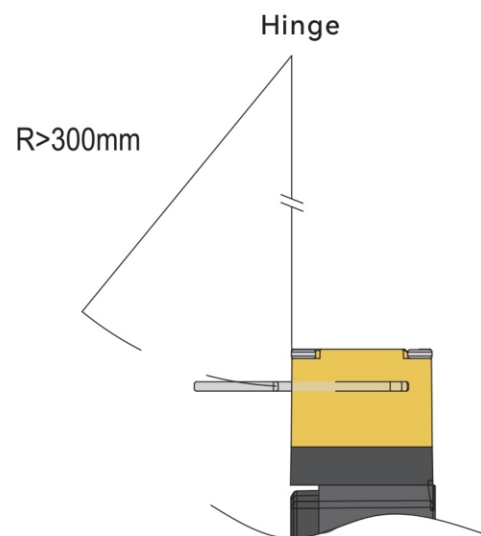
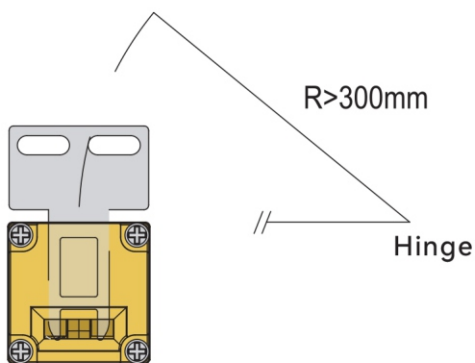
1. The safety door switch must be operated with the original special operation key. To ensure the safety of the equipment, please do not use tools other than the original operation key to operate the switch.
2. When the operation key is installed on the switch body, do not place gravity on the front end of the operation key or drop it, otherwise the switch may be deformed or damaged and directly affect the safety of use.



- 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.

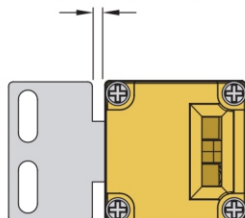


- When installed on a side hung door, it must be greater than the minimum radius.

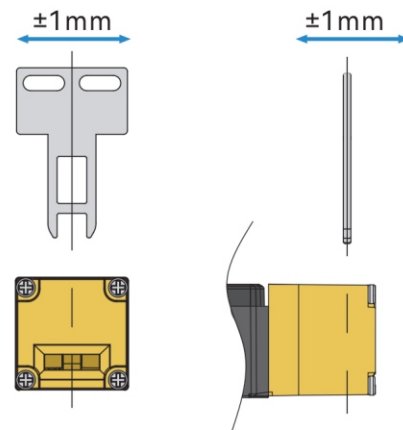


- Please install switches and operating keys within the prepared position range (1-3.5mm).

Ready position: 1.0~3.5mm

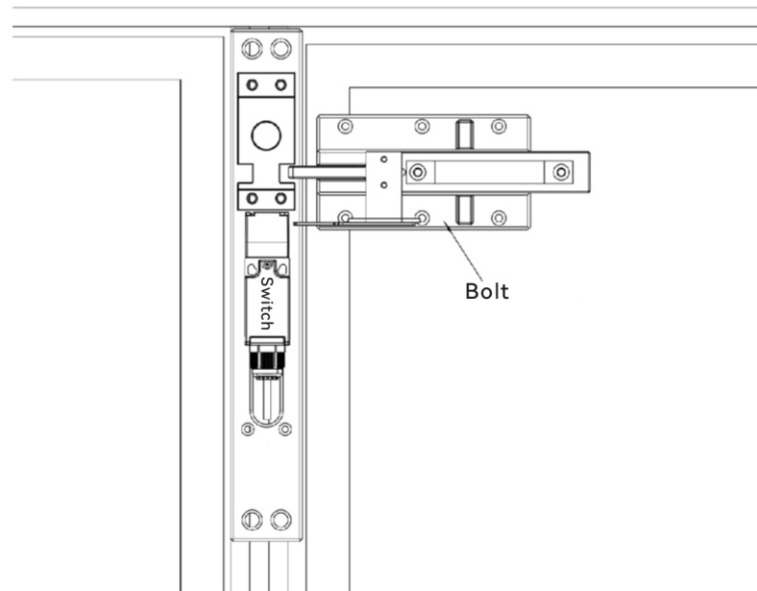


- The allowable error for the installation of the operating key is within ± 1 mm of the center of the operating key insertion hole.



● Safety points

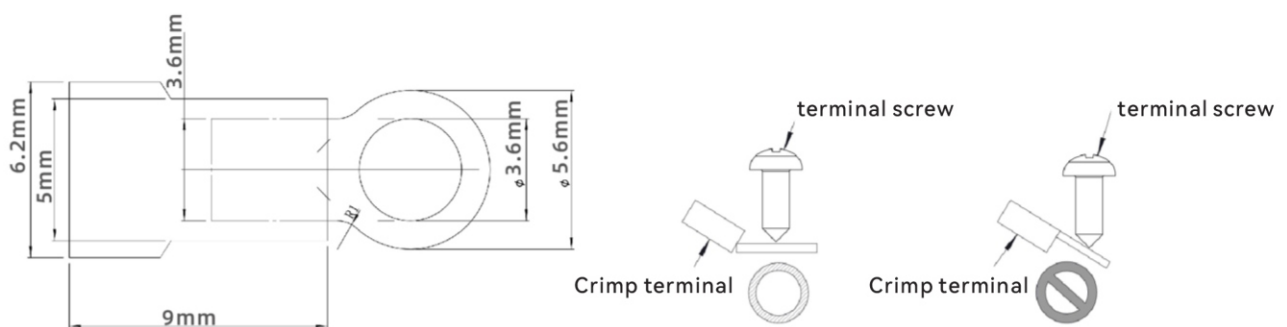
1. The operation key should be installed where the door will not touch the human body when the door is opened, otherwise it may cause personal injury.
- 2 Do not use the switch body as a stop element. Be sure to set the stop element as shown in the picture so that the edge of the operating key does not hit the switch head.



● With cable

1. About wiring

- ① When using the cable fixing head to connect to the terminal with M3.5 crimping terminal, the wiring should not exceed the shell and the protective cover.
- ② Applicable wire specification is (5~10mm outer diameter).
- ③ Excess wires touching the protective cover may cause the protective cover to float.
- ④ Do not insert crimp terminals, etc. into the gaps in the case, otherwise the case may be damaged or deformed.
- ⑤ Please use crimp terminals with a thickness of less than 0.8mm to prevent interference to the inside of the housing.



2. Treatment of outlet holes

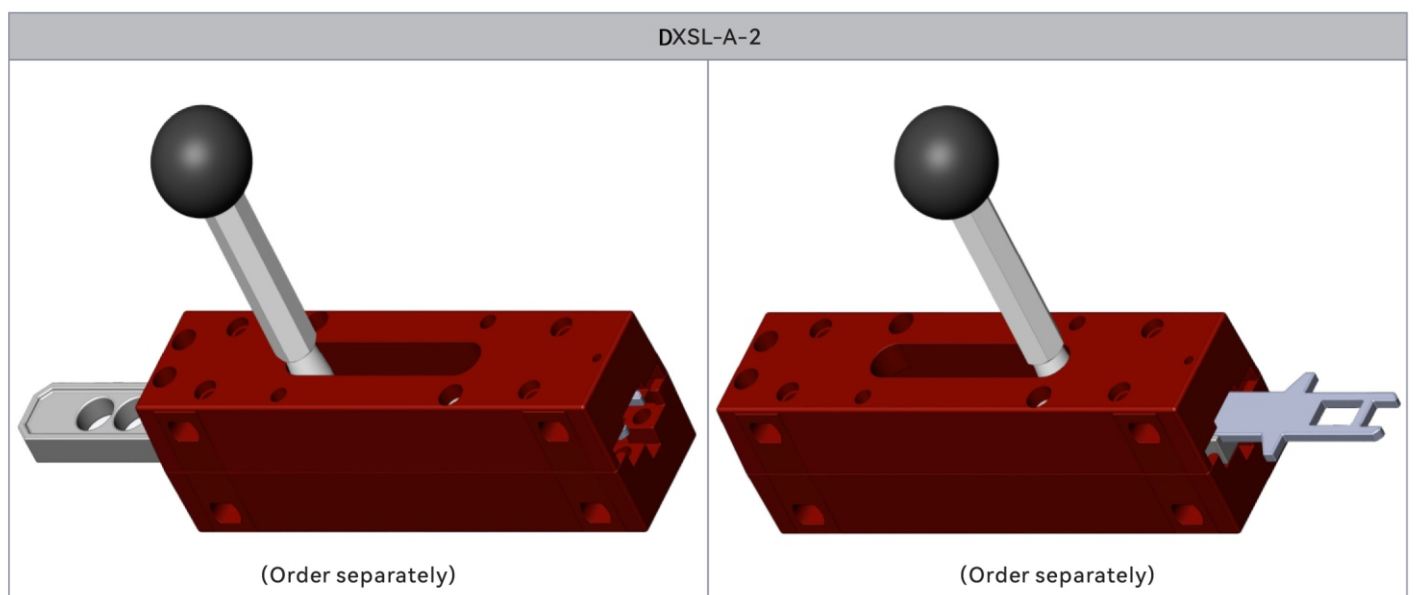
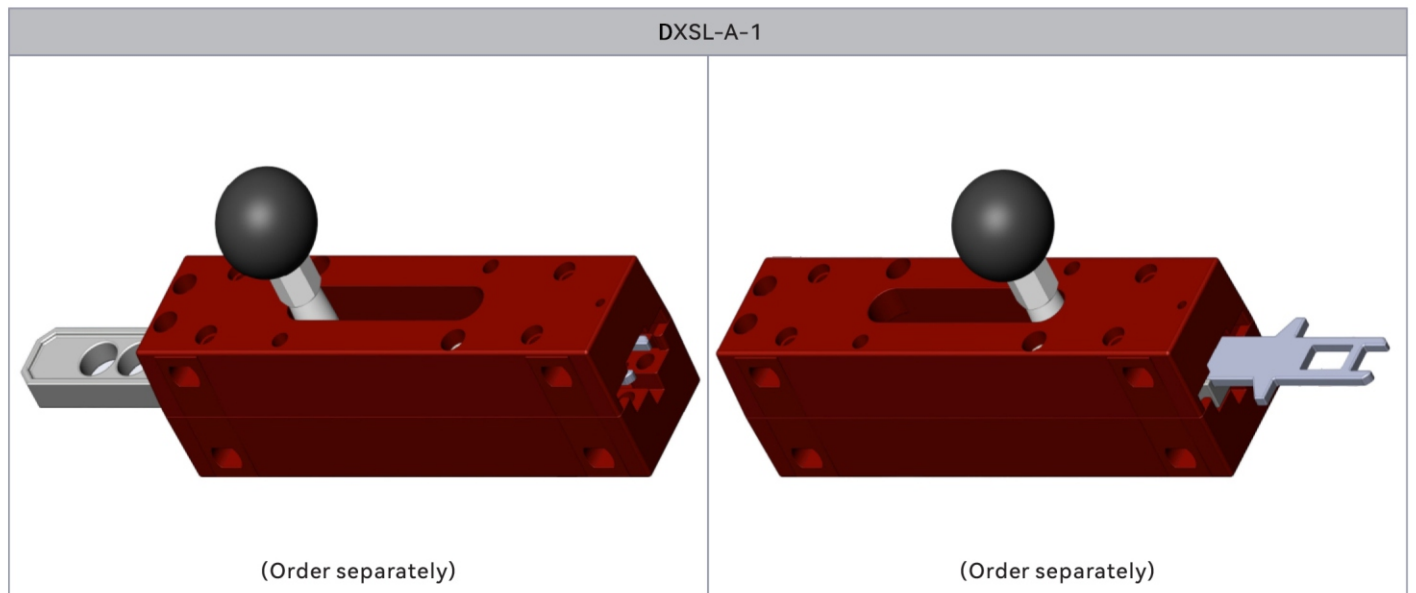
- ① In order to ensure IP65 or IP67 protection performance, first loosen the plastic screw cap of the cable fixing head, and then tighten the screw cap until there is no gap after the wiring passes. Otherwise it will affect the sealing effect.
- ② Please select the wire material suitable for the inner diameter of the cable gland.

Safety door handles

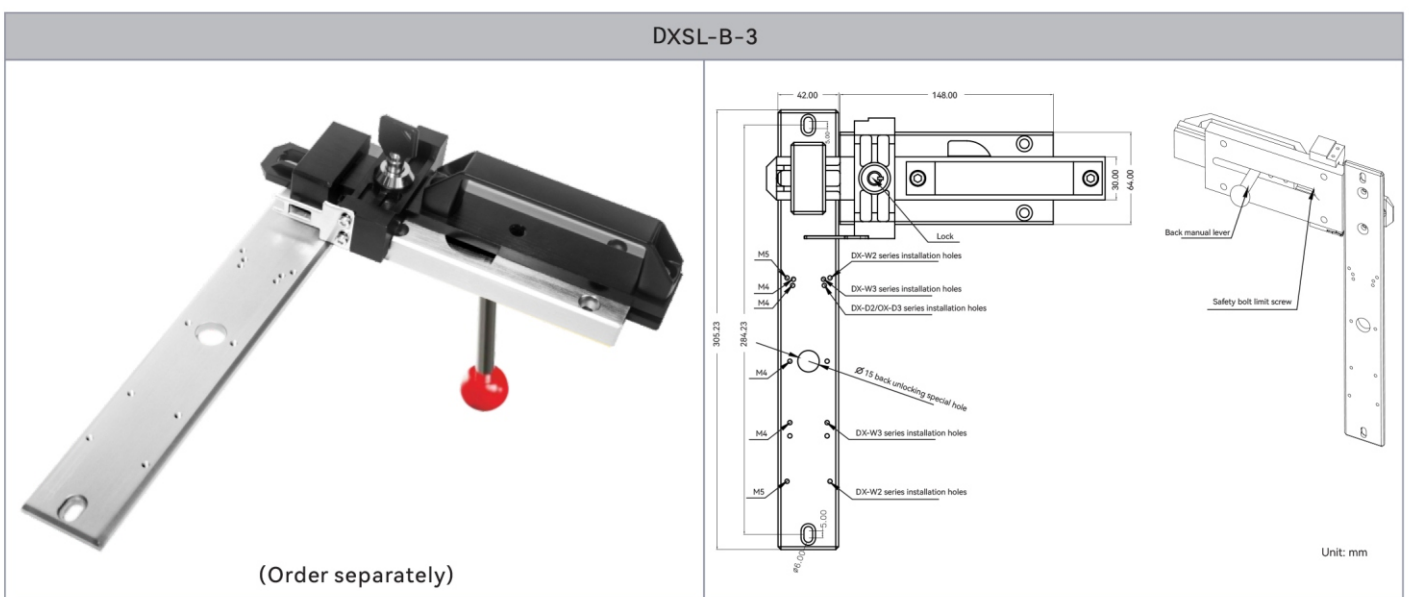
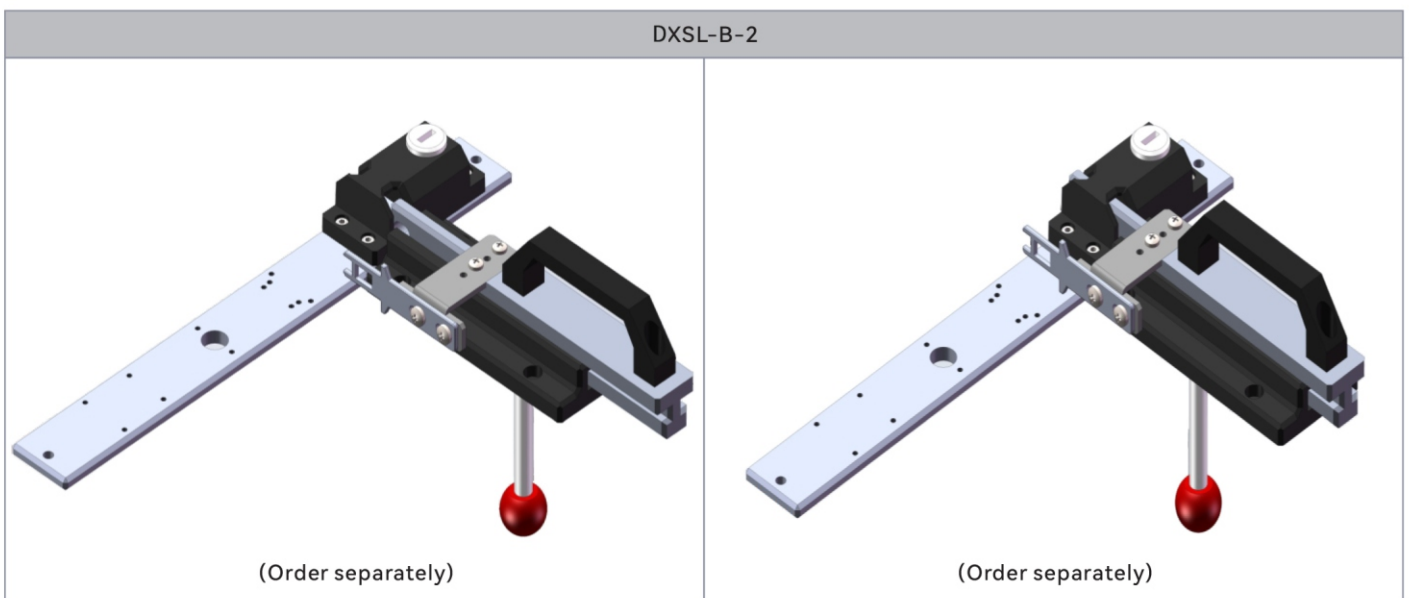
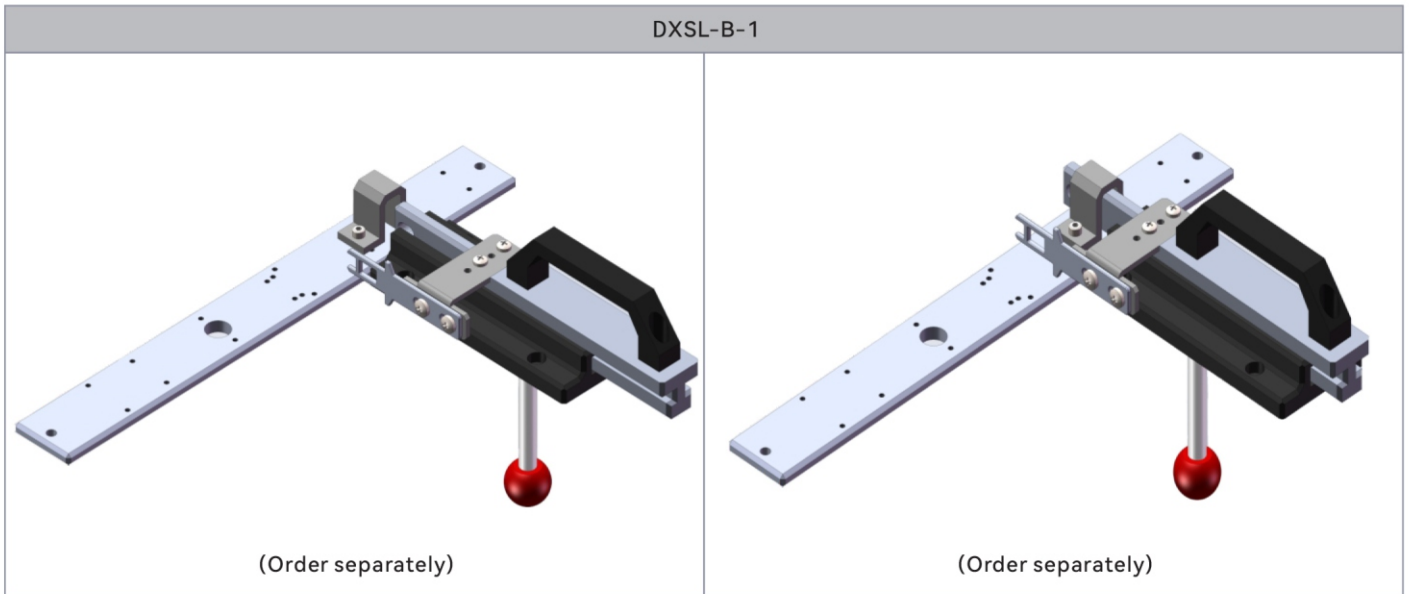
Performance data

Model	DXSL-A-1	DXSL-A-2	DXSL-B-1	DXSL-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

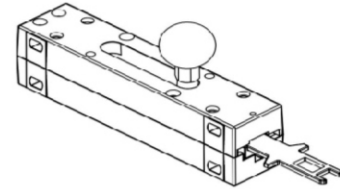
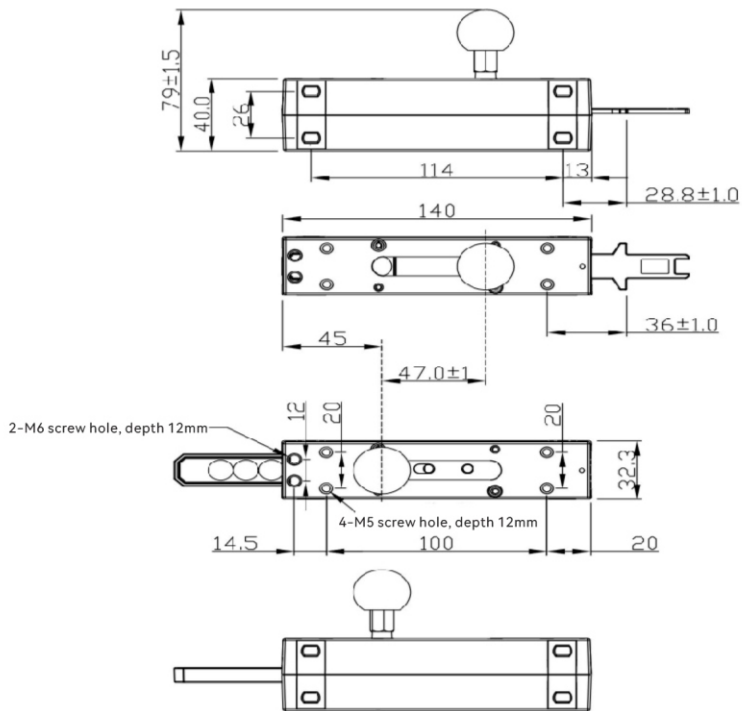


• Appearance diagram

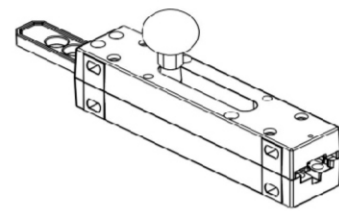


- Installation dimensions of safety door bolts

DXSL-A-1 installation dimensions



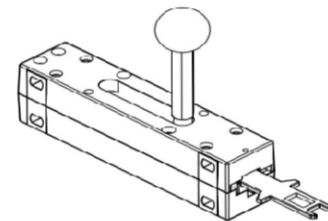
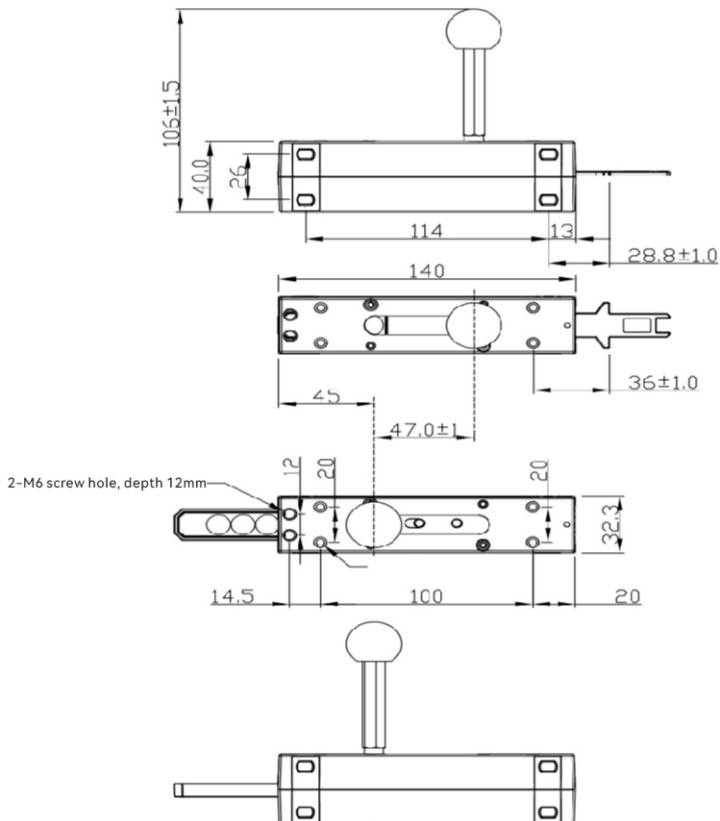
Pushing out the key



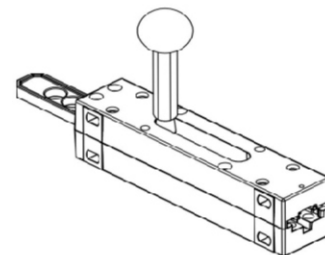
Retract key

Unit: mm

DXSL-A-2 installation dimensions



Pushing out the key

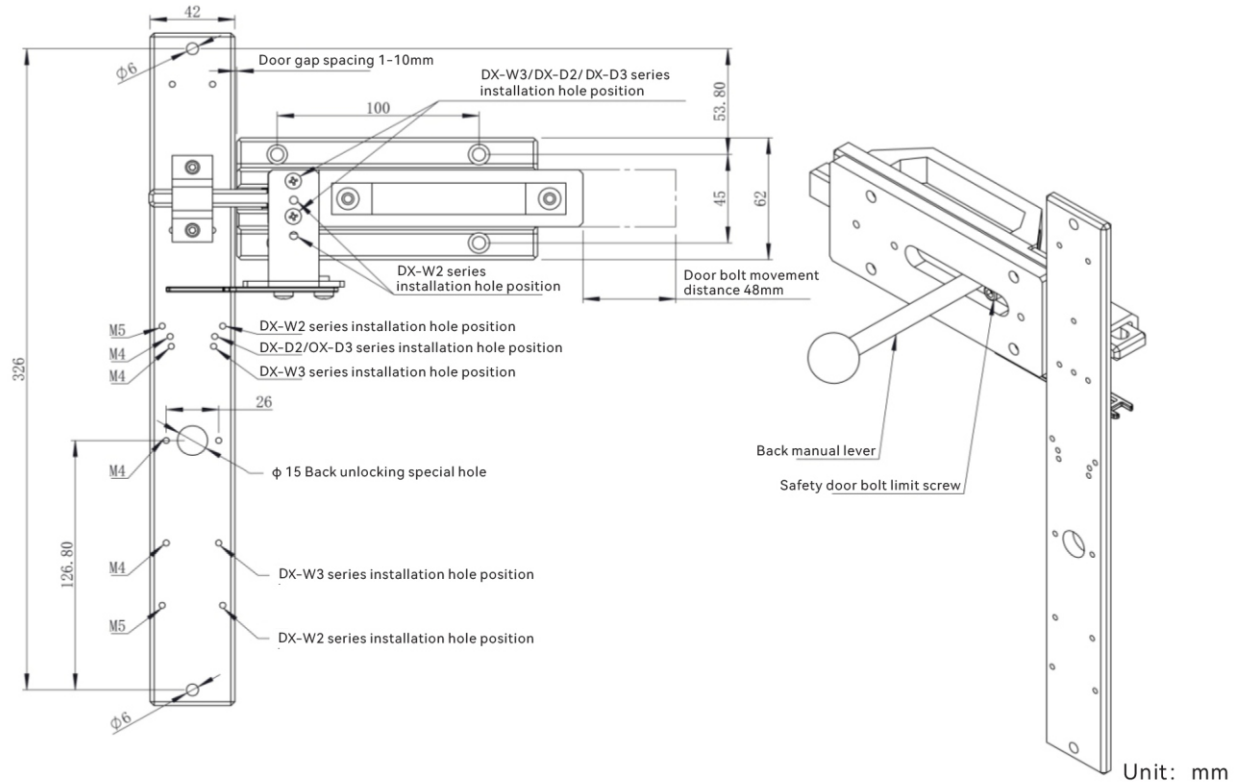


Retract key

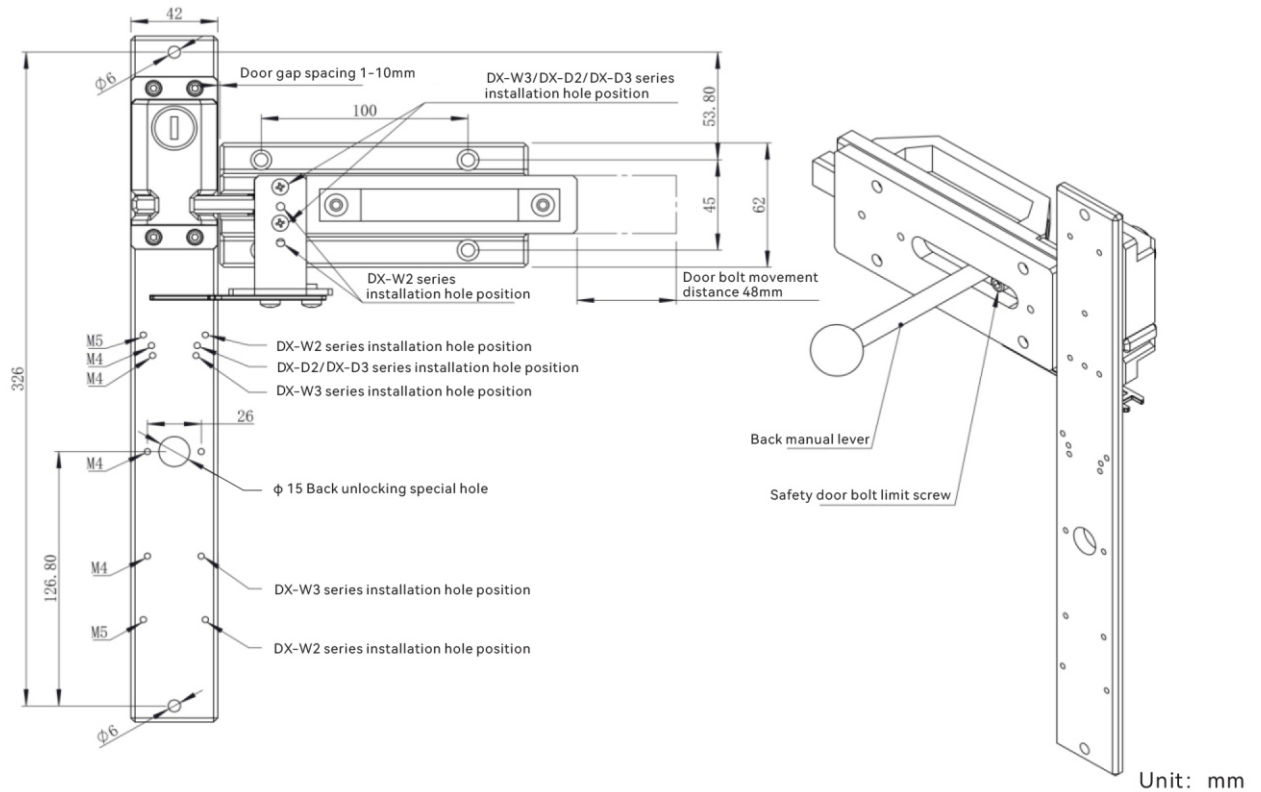
Unit: mm

● Installation dimensions of safety door bolts

DXSL-B-1 installation dimensions



DXSL-B-2 installation dimensions



DAIDISIKE is honored to provide you with safety protection.




Please be sure to thoroughly understand the content of the user manual before using our company's products.

For your safety, please be sure to follow the precautions in the user manual.

The specifications and accessories recorded in this manual may be changed when necessary, during improvements, or for other reasons. Please consult our sales personnel to confirm the actual specifications of our products.

SAFETY PRECAUTIONS

⚠ Warning (Violation of this item may result in death or serious injury)

01. In order to protect personal safety and prevent safety accidents, please install multiple safety protection devices when using this product. Otherwise, it may cause personal injury or safety accidents.
02. Please configure a device administrator during the use of this product. The administrator's requirements are as follows:
 - Operators familiar with the installation, setup, use, and maintenance of this product
 - Personnel who are familiar with and comply with the regulations/systems/regulations of the country or region corresponding to the type of equipment used in this product
 Except for equipment managers, personnel unfamiliar with this product who operate the equipment may pose a risk of personal injury or safety accidents.
03. After installing the product, please conduct debugging before the equipment is officially running and ensure that the product's functionality meets the expected protection requirements. When the product is not set according to the expected action, it may cause personal injury or safety hazards.
04. It is prohibited to operate in places containing explosive, flammable, corrosive gases, with intense temperature changes, high humidity, and the possibility of condensation
Places, places with intense vibration, places with diluents, detergents, and other solvents for use.
Otherwise, there is a risk of explosion or fire, which may lead to a decrease in product performance.
05. The product has multiple modular coding functions. Please confirm the usage requirements before leaving the factory and select the appropriate model according to the usage requirements. Please do not allow any Intentionally transforming products.
Otherwise, there is a possibility of reducing product performance and causing damage to the switch.
06. Do not use the safety switch as a stop element for the door. Please be sure to set a mechanical stop element to limit the position of the door.
Do not use the safety switch as a stop element
As the full switch is used as the door lock device, please add mechanical door bolts or other methods to set the door lock.
Otherwise, due to vibration or the door itself, the safety switch operation key may deviate and cannot be accurately inserted into the switch actuator, or even
There is a possibility of damaging the switch.
07. The safety switch of the power-on locking type remains locked when powered on, and unlocked when powered off. In case of emergency power outage or other accidents
In this case, the switch solenoid may be unlocked due to power outage, and the internal device may not be completely stopped due to inertia or other reasons. Please be sure to
It is necessary to confirm that the machine has completely stopped.
Otherwise, there may be a risk of personal injury.
08. When the safety switch is continuously energized by the solenoid, the maximum temperature of the switch panel is about 25 °C higher than the ambient temperature.
09. If the device is used while the emergency unlocking knob is in position , electromagnetic locking may not work, resulting in some devices stopping when they should be Still in operation at the end.
Before using the device, make sure to place the emergency unlocking knob in position . In addition, please check the status of the locking and safety circuits.
10. Before changing the head direction,  please make sure to set the emergency unlocking knob to the position or install the operation key. Otherwise, it may cause damage to the switch, resulting in some devices still operating when they should be stopped.

⚠ Attention (Violation of this item may result in personal injury or product damage)

01. Before installation, confirm the wiring diagram before proceeding with the wiring.
02. Please use within the rated specification range.
03. Please correctly distinguish the polarity of the solenoid before wiring. Do not reverse the connection and do not apply voltage outside the rated voltage range.
04. When replacing the head, please prevent foreign objects from entering the interior of the switch and lock the fastening screws tightly.
05. When opening the protective cover, it is necessary to prevent debris, liquid, cable residue, and other foreign objects from entering the interior of the switch.
06. Please use reliable fixation methods such as welding and screws to secure the operating keys in a reasonable position to prevent detachment or displacement.
07. Do not perform unlocking operations when applying external forces such as pushing or pulling on the operating key (safety door).
08. When the door is open, please do not insert the operation key. Otherwise, the machine may move and cause injury.
09. Please use the dedicated operation key configured by our company's safety switch, and be careful to keep the backup operation key.
10. Do not use metal cable waterproof joints or metal conduits.