

HS1 HS5 HS6 Series



Wide variety of actuators support flexible installation of interlock switches

Door Handle Actuator

A door can be locked with an actuator by pushing and turning the handle.



Slide Handle Actuator

Shock-resistant metal slide handle actuators ensure safety.



Easy and secure pushbutton Operation



Pressing a red mushroom pushbutton in an emergency situation—the established safety measure.



Simply press the red mushroom pushbutton.

Imagine you are in an emergency situation and you need to escape from a hazardous area immediately. If getting out requires multiple actions, it is likely you will be trapped within the hazardous area! A system should require only simple measures which can be performed without much thinking—such as pressing a pushbutton!

Spring loaded actuator

When the actuator is fully inserted (door closed completely), the door can tolerate a space of up to 16mm.



HS1/HS5/HS6 Series Actuators

Actuators for HS5 Series

Actuators

See interlock switch pages or instruction manuals for selection and installation of actuators.

Package Quantity: 1

Actuator	Part No. (Ordering Part No.)	Applicable Model	Application	Remarks	
Straight 	HS9Z-A51	HS5D Interlock switches HS5L Interlock switches with solenoid HS5E Interlock switches with solenoid HS5E-K Key interlock switches	For sliding doors • Normal type	• When HS5D / HS5L / HS5E / HS5E-K is used: Actuator retention force Fzh=1400Nmin.	
Straight with rubber bushings 	HS9Z-A51A		For sliding doors		
Right-angle 	HS9Z-A52		For hinged doors • Normal Type		
Right-angle with rubber bushings 	HS9Z-A52A		For hinged doors • For rattling doors		
Angle adjustable (vertical) 	HS9Z-A53		Diecast For hinged doors Angle adjustable (vertical)		
Angle adjustable (vertical/horizontal) 	HS9Z-A55		Plastic • Angle adjustable (vertical/horizontal)		• When HS5E / HS5E-K is used: Actuator retention force Fzh=500N. When a retention force of 500N or more is required, useHS9Z-A53. • When HS5L is used: Actuator retention force Fzh=500N. When a retention force of 500N or more is required, useHS9Z-A55.
Angle adjustable (vertical/horizontal) with plate 	HS9Z-A55S		HS5L Interlock switches with solenoid		Angle adjustable (vertical/horizontal) actuator with high retention force
Spring loaded actuator 	HS9Z-BA5	For sliding doors Locks the door safely when the door bounces		• Actuator for HS5L only. Cannot be used on hinged doors.	

APEM

Switches & Pilot Lights

Control Boxes

Emergency Stop Switches

Enabling Switches

Safety Products

Explosion Proof

Terminal Blocks

Relays & Sockets

Circuit Protectors

Power Supplies

LED Illumination

Controllers

Operator Interfaces

Sensors

AUTO-ID

Interlock Switches

Non-contact Interlock Switches

Safety Laser Scanners

Safety Light Curtains

Safety Modules

HS6B

HS6E

HS5D

HS5L

HS1L

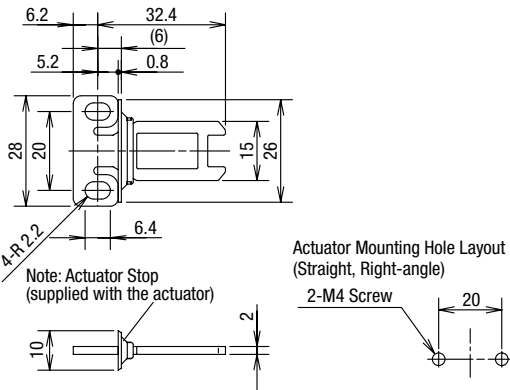
Actuators for HS1/HS5/HS6

Actuators/ Padlock Hasp

Dimensions (HS5 Series)

All dimensions in mm.

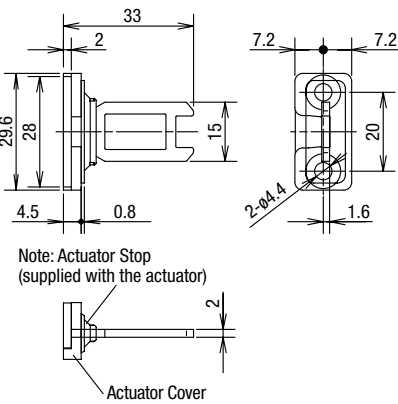
Straight (HS9Z-A51)



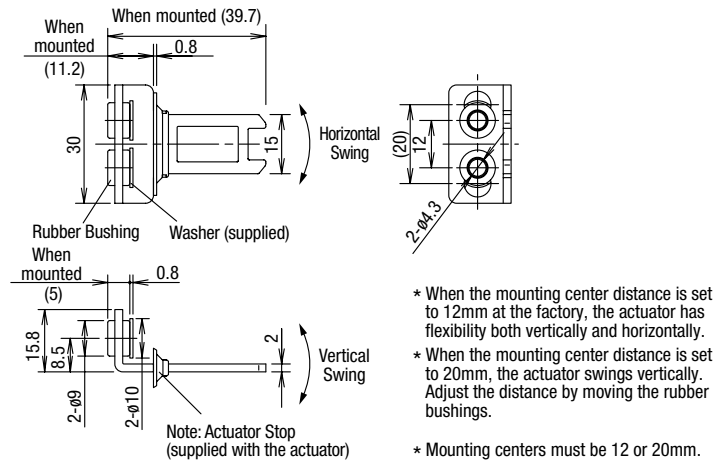
Straight with Rubber Bushings (HS9Z-A51A)



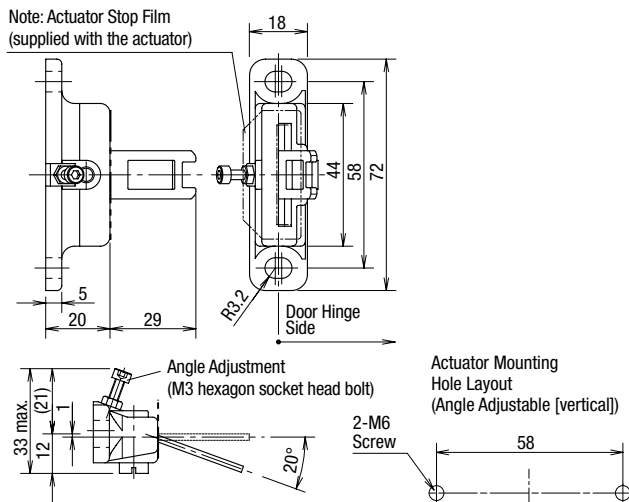
Right-angle (HS9Z-A52)



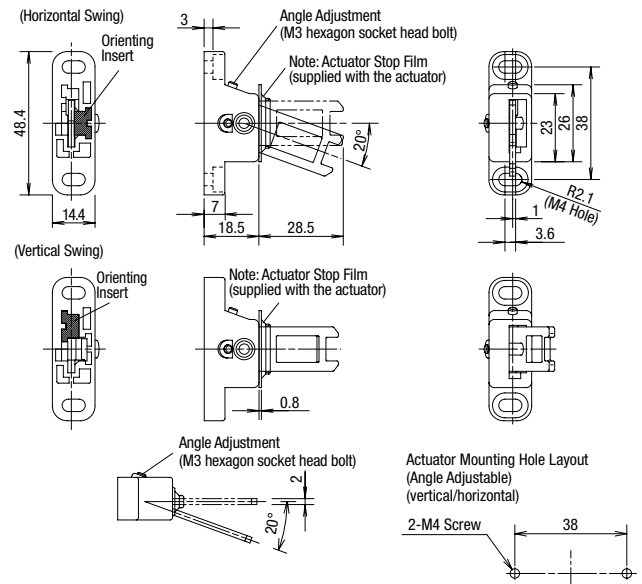
Right-angle with Rubber Bushings (HS9Z-A52A)



Angle Adjustable (vertical) (HS9Z-A53)



Angle Adjustable (vertical/horizontal) (HS9Z-A55)



Note: The actuator stop film and actuator stop are supplied with the actuator and used when adjusting the actuator position. Remove after the actuator position is determined.

- APEM
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- Power Supplies
- LED Illumination
- Controllers
- Operator Interfaces
- Sensors
- AUTO-ID

- Interlock Switches
- Non-contact Interlock Switches
- Safety Laser Scanners
- Safety Light Curtains
- Safety Modules

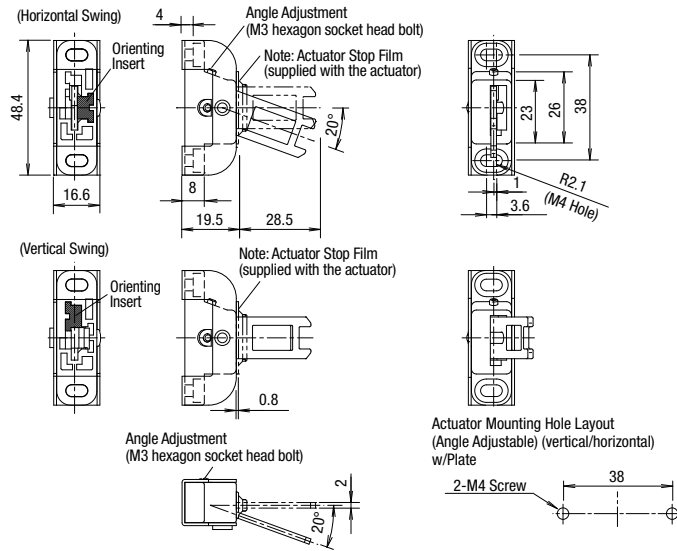
- HS6B
- HS6E
- HS5D
- HS5L

- HS1L
- Actuators for HS1/HS5/HS6
- Actuators/ Padlock Hasp

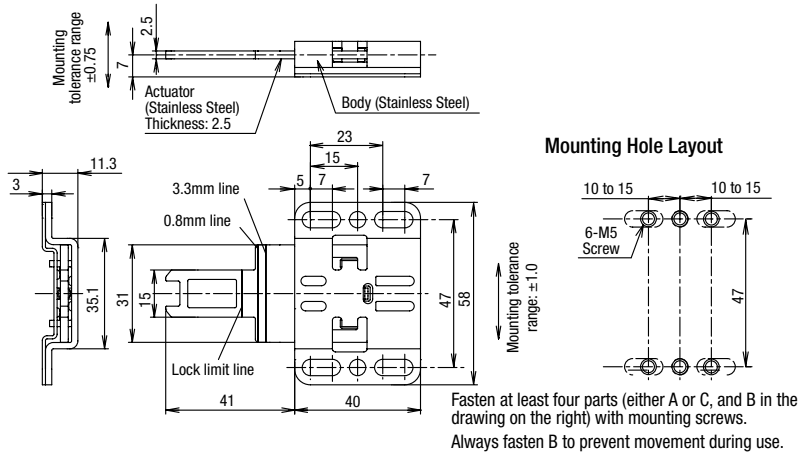
Dimensions (HS5 Series)

All dimensions in mm.

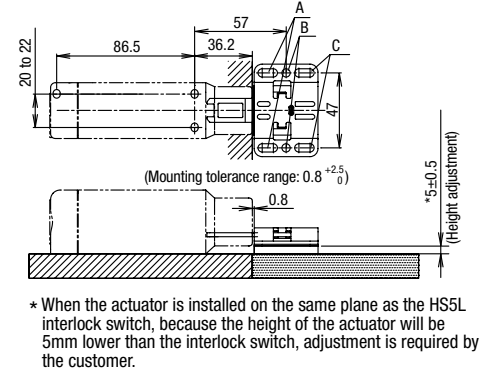
Angle Adjustable (vertical/horizontal) (HS9Z-A55S)



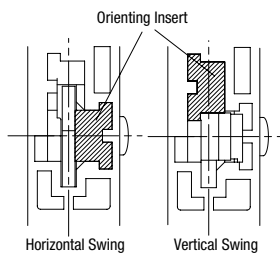
Spring Loaded Actuator (HS9Z-BA5)



HS5L Interlock Switch with Actuator

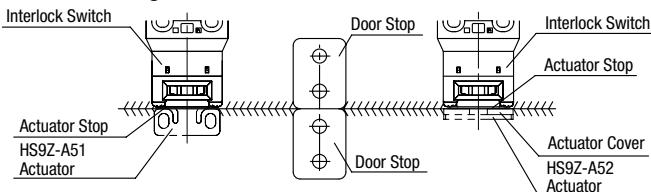


Horizontal/Vertical Actuator Orientation



The orientation of actuator swing (horizontal/vertical) can be changed using the orienting insert (white plastic) installed on the back of the actuator. Attach the orienting insert if necessary. (See left diagram) Do not lose the orienting insert, otherwise the actuator will not operate properly.

Actuator Mounting Reference Position



As shown in the figure on the right, the mounting reference position of the actuator when inserted in the interlock switch is the position where the actuator stop placed on the actuator lightly touches the side surface of the interlock switch.

Note: After mounting the actuator, remove the actuator stop from the actuator.

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- Control Boxes
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- Circuit Protectors
- Power Supplies
- LED Illumination
- Controllers
- Operator Interfaces
- Sensors
- AUTO-ID
- Interlock Switches
- Non-contact Interlock Switches
- Safety Laser Scanners
- Safety Light Curtains
- Safety Modules

HS6B

HS6E

HS5D

HS5L

HS1L

Actuators for HS1/HS5/HS6




Actuators/ Padlock Hasp

For HS1 Series

Actuators

See interlock switch pages or instruction manuals for selection and installation of actuators.

Package Quantity: 1

Actuator	Part No. (Ordering Part No.)	Applicable Model	Remarks
Straight Actuator 	HS9Z-A1S	HS1L Interlock Switches with Solenoid	<ul style="list-style-type: none"> When used on HS1L: Actuator Retention Force is Fzh=3000N minimum
Right-angle Actuator 	HS9Z-A2S		
Angle Adjustable (vertical) Actuator 	HS9Z-A3S		

APEM

Switches &
Pilot Lights

Control Boxes

Emergency
Stop SwitchesEnabling
Switches

Safety Products

Explosion Proof

Terminal Blocks

Relays & Sockets

Circuit
Protectors

Power Supplies

LED Illumination

Controllers

Operator
Interfaces

Sensors

AUTO-ID

Interlock
SwitchesNon-contact
Interlock SwitchesSafety Laser
ScannersSafety Light
Curtains

Safety Modules

HS6B

HS6E

HS5D

HS5L

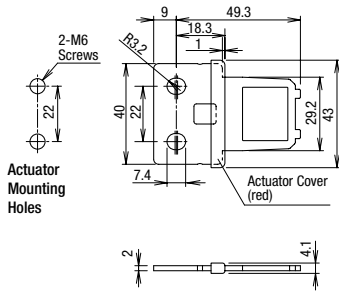
HS1L

Actuators for
HS1/HS5/HS6Actuators/
Padlock Hasp

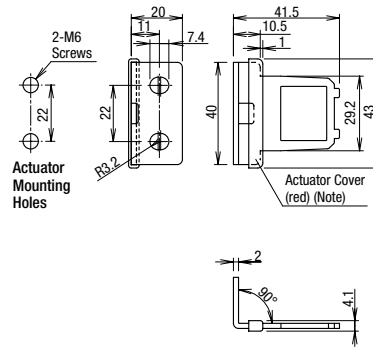
Dimensions (HS5 Series)

All dimensions in mm.

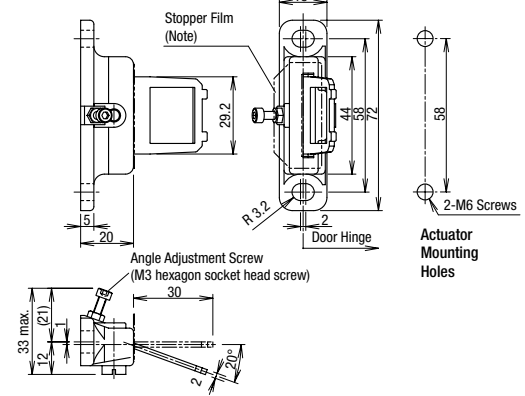
Straight Actuator (HS9Z-A1)



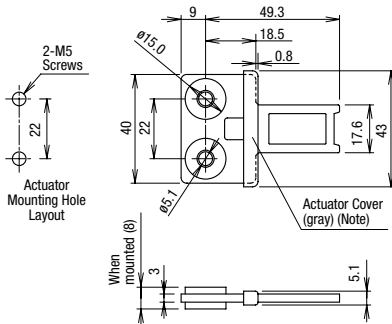
Right Angle Actuator (HS9Z-A2)



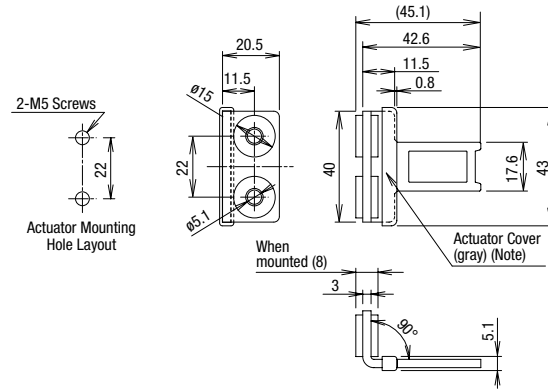
Angle Adjustable (vertical) Actuator (HS9Z-A3)



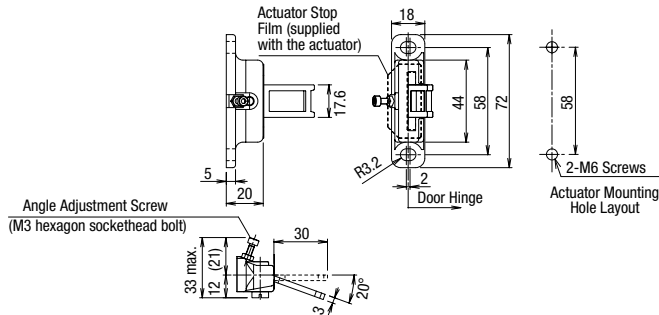
Straight Actuator (HS9Z-A1S)



L-shaped Actuator (HS9Z-A2S)



Angle Adjustable (vertical) Actuator (HS9Z-A3S)



Note: The actuator cover and the actuator stop film are supplied with the actuator and used when adjusting the actuator position. Remove them after the actuator position is determined.

- APEM
- Switches & Pilot Lights
- Control Boxes
- Emergency Stop Switches
- Enabling Switches
- Safety Products
- Explosion Proof
- Terminal Blocks
- Relays & Sockets
- Circuit Protectors
- Power Supplies
- LED Illumination
- Controllers
- Operator Interfaces
- Sensors
- AUTO-ID

- Interlock Switches
- Non-contact Interlock Switches
- Safety Laser Scanners
- Safety Light Curtains
- Safety Modules

- HS6B
- HS6E
- HS5D
- HS5L







- HS1L
- Actuators for HS1/HS5/HS6
- Actuators/ Padlock Hasp

For HS6 Series

Actuator

See interlock switch pages or instruction manuals for selection and installation of actuators.

Package Quantity: 1

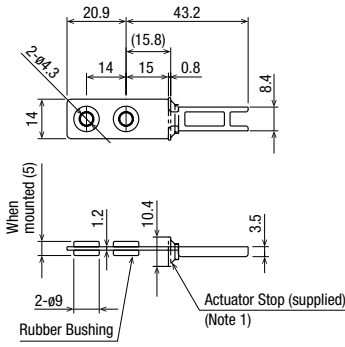
Actuator	Part No. (Ordering Part No.)	Applicable Model	Remarks
	HS9Z-A61	HS6B Interlock Switches HS6E Interlock Switches with Solenoid	<ul style="list-style-type: none"> When used on HS6E: Actuator retention force is Fzh=500N
	HS9Z-A62		<ul style="list-style-type: none"> When used on HS6E: Actuator retention force is 100N. Do not apply excessive load, otherwise the actuator may fall off the door. When retention force of 100N or more is required, use the HS9Z-A62S actuator.
	HS9Z-A62S	HS6E Interlock Switches with Solenoid	<ul style="list-style-type: none"> When used on HS6E: Actuator retention force is Fzh=500N
	HS9Z-A65	HS6B Interlock Switches HS6E Interlock Switches with Solenoid	<ul style="list-style-type: none"> When used on HS6E: Actuator retention force is Fzh=500N
 	HS9Z-A66		<ul style="list-style-type: none"> When used on HS6E: Actuator retention force is Fzh=500N HS9Z-A65 and HS9Z-A66 have the metal key installed in opposite directions.

*1) Select actuator by determining the required moving direction in consideration of the door and interlock switch.

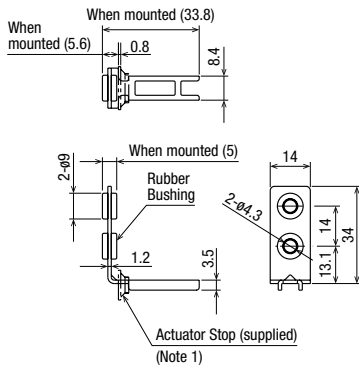
Dimensions (HS6 Series)

All dimensions in mm.

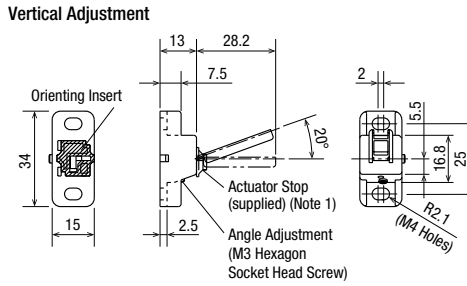
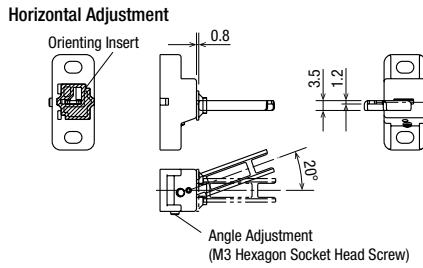
Straight Actuator (HS9Z-A61)



Right-angle Actuator (HS9Z-A62)



Angle Adjustable Actuator (HS9Z-A65)

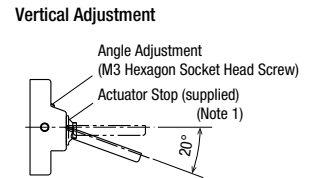
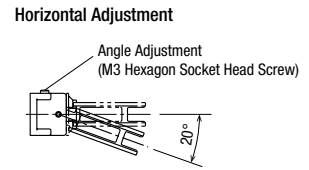


The base is made of glass-reinforced PA66 (66 nylon). Angle adjustment screws are stainless steel. When using adhesive on screws, take material compatibility into consideration.

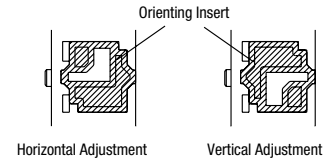
Note 1: After mounting the actuator, remove the actuator stop from the interlock switch.

Angle Adjustable Actuator (HS9Z-A66)

The HS9Z-A65 and HS9Z-A66 have the metal key inserted in opposite directions.

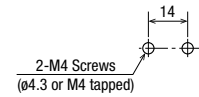


The orientation of actuator adjustment (horizontal/vertical) can be changed using the orienting insert (white plastic) installed on the back of the actuator.

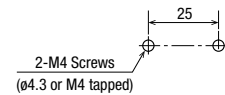


Actuator Mounting Hole Layout

Straight/Right-angle Actuator



Angle Adjustable Actuator



- APEM
- Switches & Pilot Lights
- Control Boxes
- Emergency Stop Switches
- Enabling Switches
- Safety Products
- Explosion Proof
- Terminal Blocks
- Relays & Sockets
- Circuit Protectors
- Power Supplies
- LED Illumination
- Controllers
- Operator Interfaces
- Sensors
- AUTO-ID
- Interlock Switches
- Non-contact Interlock Switches
- Safety Laser Scanners
- Safety Light Curtains
- Safety Modules

HS6B

HS6E

HS5D

HS5L

HS1L

Actuators for HS1/HS5/HS6

Actuators/ Padlock Hasp

HS5 Series Door Handle Actuator

Easy and secure operation.

- Rattling doors can be locked smoothly and securely.
- A door can be locked with an actuator by pushing and turning the handle.
- Padlock tab is provided to ensure operator safety.
- Interlock switch with or without solenoid lock can be installed.
- LED shows solenoid status (when using HS5E-□L/HS5L-□L).

Specifications

Applicable Interlock Switch (*1)	Without lock <ul style="list-style-type: none"> • HS5D Interlock Switch With lock <ul style="list-style-type: none"> • HS5L Interlock Switch with Solenoid • HS5E-K Interlock Switch with Key • HS5E Interlock Switch with Solenoid
Operating Temperature	-25 to +70°C (no freezing)
Mechanical Durability	100,000 operations minimum
Applicable Shackle Diameter of Padlock	ø6 to 7.5 mm
Withstand Load of Padlock Tab	30N maximum
Handle Operation Angle	77° (removed position ↔ inserted position)
Weight	HS9Z-DH5LH/RH: 1000g HS9Z-DH5C: 900g HS9Z-DH5B: 30g

*1) Use rear unlocking model for HS5L/HS5E-K/HS5E.

- Interlock switch is not supplied with the actuator and must be ordered separately.
- See website for HS5D/HS5E/HS5L specifications.



Description	Part No.	Remarks	
Handle Unit	For right-hand door	HS9Z-DH5RH	Choose according to the required opening side.
	For left-hand door	HS9Z-DH5LH	
Switch Cover Unit	HS9Z-DH5C	Used for installing the interlock switch inside.	
HS5D Installation Kit	HS9Z-DH5B	Contains a mounting plate and two spacers.	
Rear Unlocking Button Kit (*2)	HS9Z-FL53	Contains a button with base plate and a connecting rod	Mounting panel thickness (X): 20 ≤ X ≤ 30 mm (Note 2)
	HS9Z-FL54		Mounting panel thickness (X): 30 < X ≤ 40 mm (Note 2)
	HS9Z-FL55		Mounting panel thickness (X): 40 < X ≤ 50 mm (Note 2)

*2) Use the kit in combination with HS5E-□L rear unlocking button type (sold separately) or HS5L-□L rear locking button type (sold separately).

- Mounting panel is a frame or a panel.

Parts Description

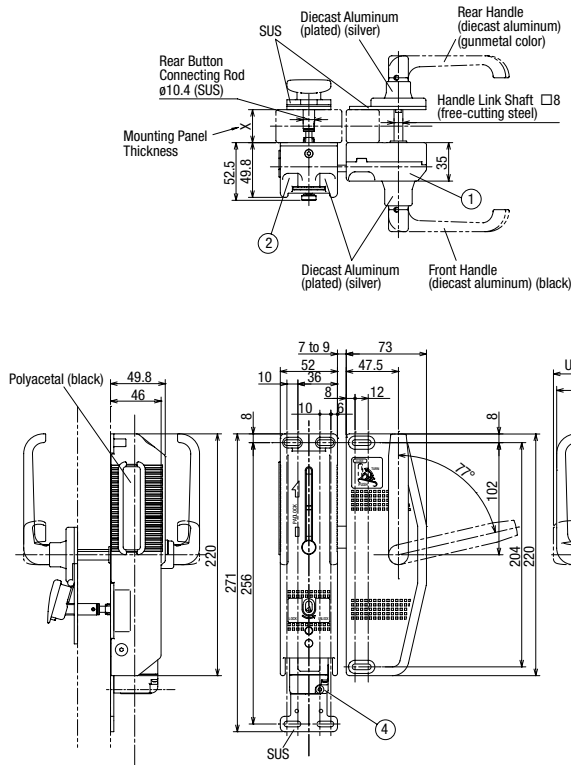


Front View

Rear View

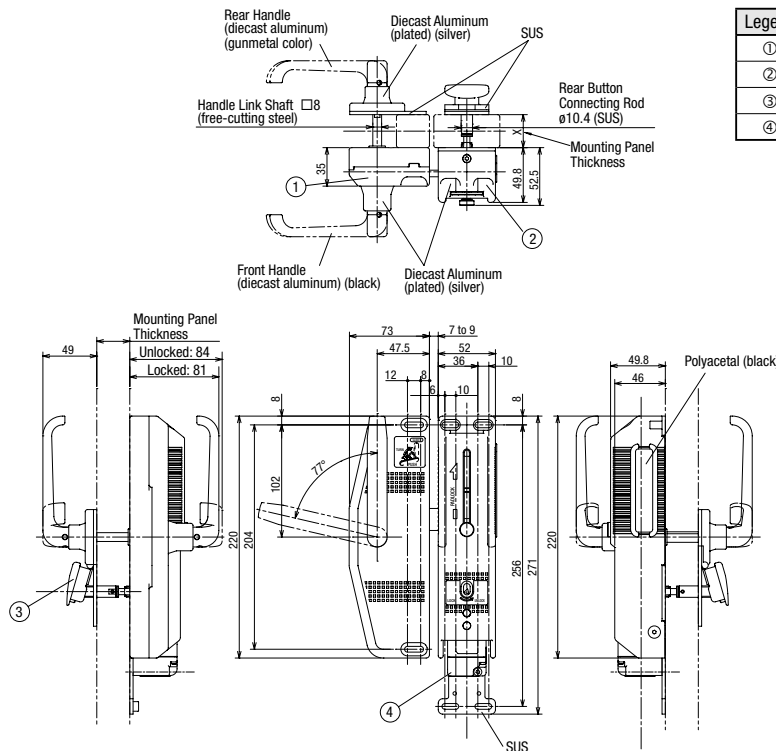
Dimensions

HS9Z-DH5RH (right-hand door) and HS5L-□L Interlock Switch with Solenoid



Legend	Description
①	Right-hand Door Handle Unit HS9Z-DH5RH
②	Switch Cover Unit HS9Z-DH5C
③	Rear Unlocking Button Kit for Frame HS9Z-FL5□
④	HS5L Interlock Switch Rear Unlocking Button Model HS5L-□L

HS9Z-DH5LH (left-hand door) and HS5L-□L Interlock Switch



Legend	Description
①	Left-hand Door Handle Unit HS9Z-DH5LH
②	Switch Cover Unit HS9Z-DH5C
③	Rear Unlocking Button Kit for Frame HS9Z-FL5□
④	HS5L Interlock Switch Rear Unlocking Button Model HS5L-□L

All dimensions in mm.

APEM

Switches & Pilot Lights

Control Boxes

Emergency Stop Switches

Enabling Switches

Safety Products

Explosion Proof

Terminal Blocks

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Safety Laser Scanners

Safety Light Curtains

Safety Modules

HS6B

HS6E

HS5D

HS5L

HS1L

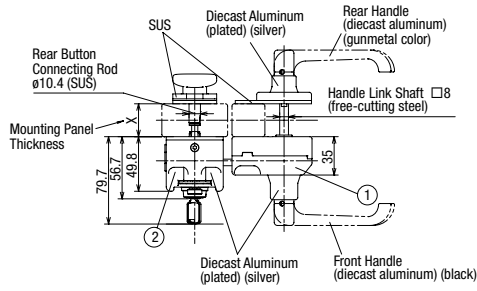
Actuators for HS1/HS5/HS6

Actuators/ Padlock Hasp

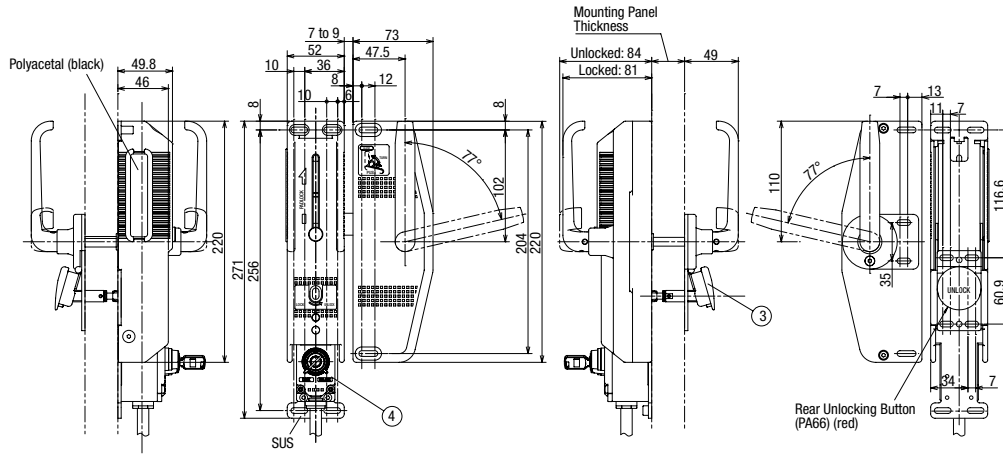
HS5 Series Door Handle Actuator

Dimensions

HS9Z-DH5RH (right-hand door) and HS5E-K Interlock Switch with Key



Legend	Description
①	Right-hand Door Handle Unit HS9Z-DH5RH
②	Switch Cover Unit HS9Z-DH5C
③	Rear Unlocking Button Kit for Frame HS9Z-FL5□
④	HS5E-K Interlock Switch with Key



All dimensions in mm.

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- Emergency Stop Switches
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- LED Illumination
- Controllers
- Operator Interfaces
- Sensors
- AUTO-ID

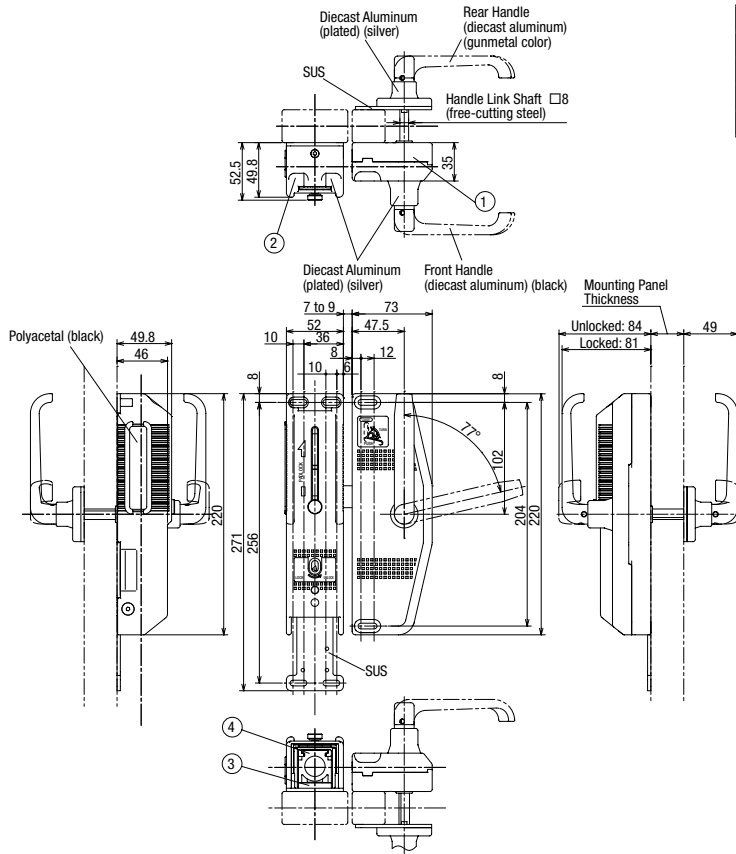
- Interlock Switches
- Non-contact Interlock Switches
- Safety Laser Scanners
- Safety Light Curtains
- Safety Modules

- HS6B
- HS6E
- HS5D
- HS5L
- HS1L

- Actuators for HS1/HS5/HS6
- Actuators/Padlock Hasp

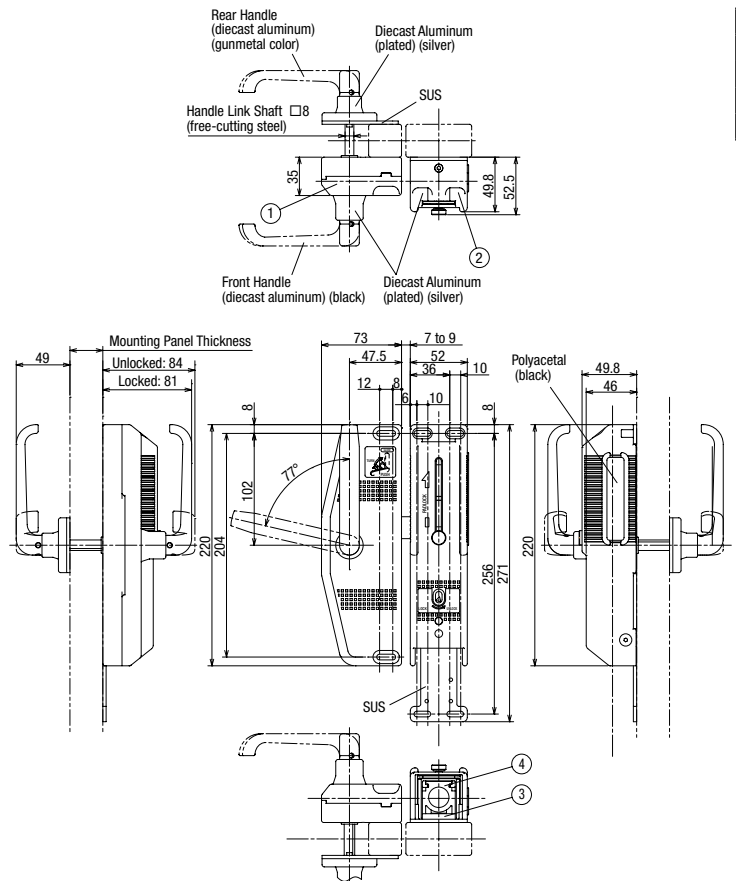
Dimensions

HS9Z-DH5RH (right-hand door) and HS5D-□Z Interlock Switch



Legend	Description
①	Left-hand Door Handle Unit HS9Z-DH5LH
②	Switch Cover Unit HS9Z-DH5C
③	HS5D Installation Kit HS9Z-DH5B
④	Interlock Switch HS5D-□Z

HS9Z-DH5LH (left-hand door) and HS5D-□Z Interlock Switch



Legend	Description
①	Left-hand Door Handle Unit HS9Z-DH5LH
②	Switch Cover Unit HS9Z-DH5C
③	HS5D Installation Kit HS9Z-DH5B
④	Interlock Switch HS5D-□Z

APEM

Switches & Pilot Lights

Control Boxes

Emergency Stop Switches

Enabling Switches

Safety Products

Explosion Proof

Terminal Blocks

Relays & Sockets

Circuit Protectors

Power Supplies

LED Illumination

Controllers

Operator Interfaces

Sensors

AUTO-ID

Interlock Switches

Non-contact Interlock Switches

Safety Laser Scanners

Safety Light Curtains

Safety Modules

HS6B

HS6E

HS5D

HS5L

HS1L

Actuators for HS1/HS5/HS6

Actuators/ Padlock Hasp

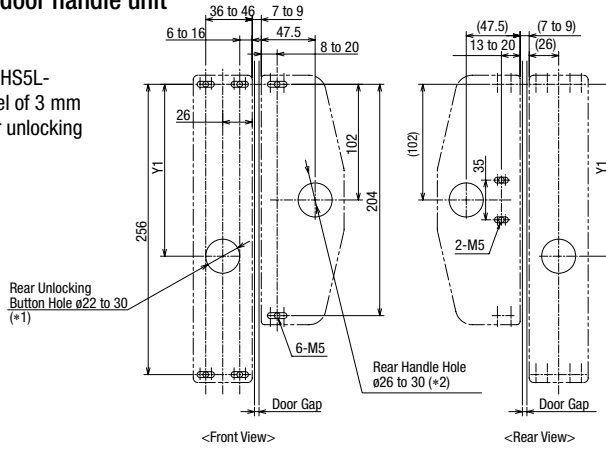
All dimensions in mm.

HS5 Series Door Handle Actuator

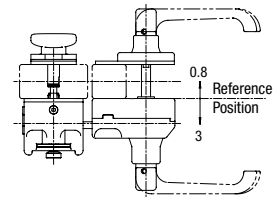
Panel Cut-out

HS9Z-DH5RH right-hand door handle unit

When using the HS5E-K□L and HS5L-□44LM-G on the mounting panel of 3 mm or less in thickness (use the rear unlocking button).

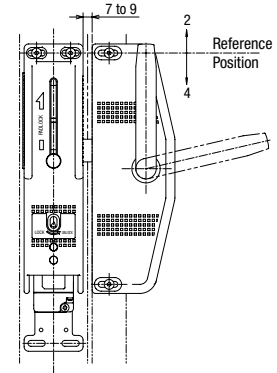
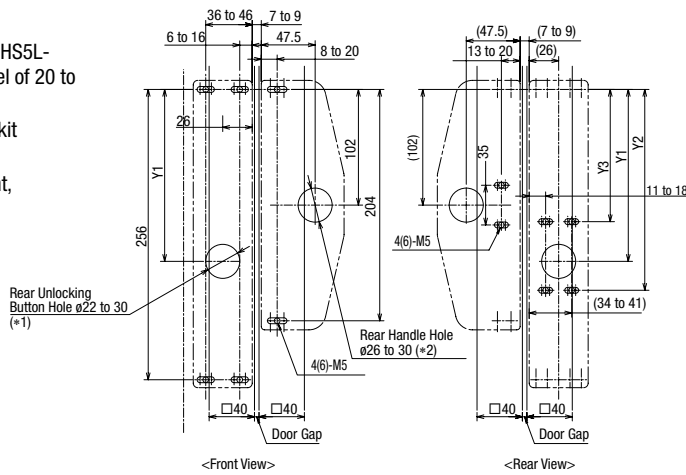


Mounting Position Tolerance



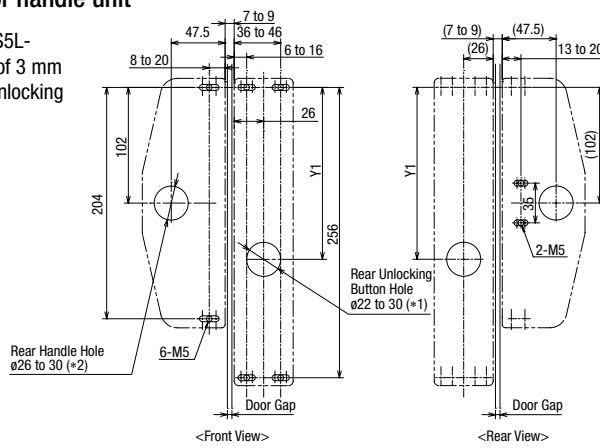
When using the HS5E-K□L and HS5L-□44LM-G on the mounting panel of 20 to 40 mm in thickness.

- Use the rear unlocking button kit (HS9Z-FL5□).
- In the figure shown on the right, □40mm frame is used.



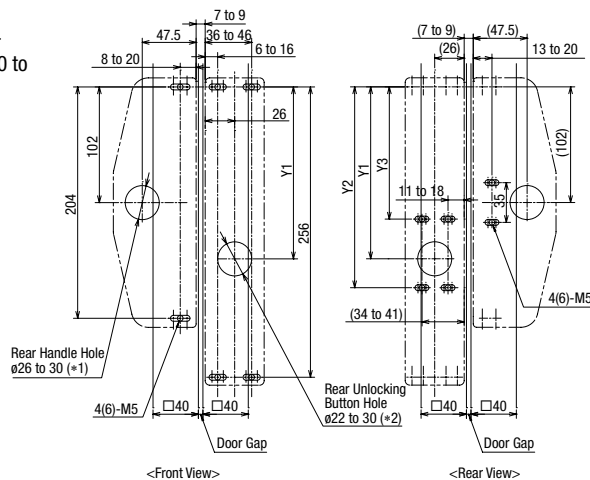
HS9Z-DH5LH left-hand door handle unit

When using the HS5E-K□L and HS5L-□44LM-G on the mounting panel of 3 mm or less in thickness (use the rear unlocking button).



When using the HS5E-K□L and HS5L-□44LM-G on the mounting panel of 20 to 40 mm in thickness.

- Use the rear unlocking button kit (HS9Z-FL5□).
- In the figure shown on the right, □40mm frame is used.



Note 1:

Required when using the HS5E-□L, HS5E-K□L, and HS5L-□L.

Not required when using the HS5D-□Z or (70mm-thick is necessary for mounting panel).

Note 2:

Ensure that the hole in the mounting panel does not interfere with the rear handle shaft.

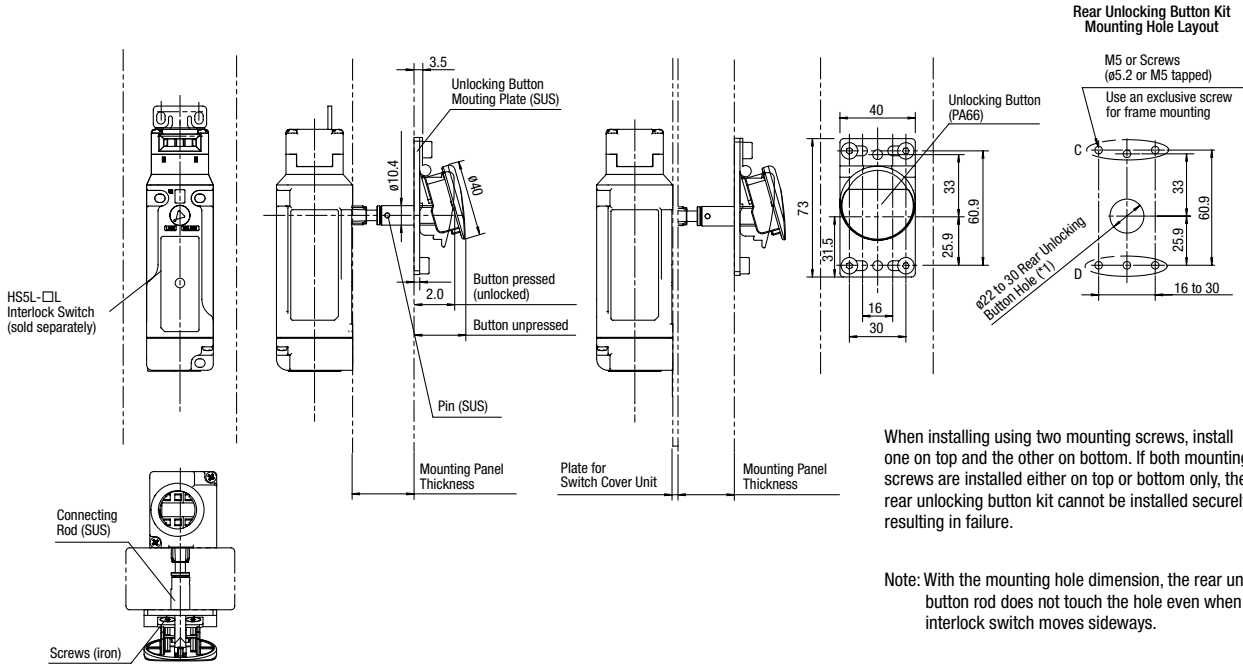
	HS5E-□L HS5E-K□L	HS5L-□L
Y1	151.6mm	147.2mm
Y2	177.5mm	173.1mm
Y3	116.6mm	112.2mm

All dimensions in mm.

Dimensions

Rear Unlocking Button Kit

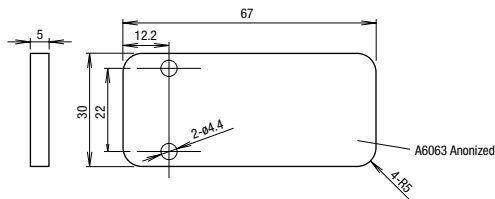
(HS9Z-FL53/HS9Z-FL54/HS9Z-FL55) (Use with the HS5E-□44L**-G/HS5L-□44LM-G rear unlocking button model interlock switch)



When installing using two mounting screws, install one on top and the other on bottom. If both mounting screws are installed either on top or bottom only, the rear unlocking button kit cannot be installed securely, resulting in failure.

Note: With the mounting hole dimension, the rear unlocking button rod does not touch the hole even when the interlock switch moves sideways.

HS5D Installation Kit (HS9Z-DH5B)



Note: The illustration kit contains the aluminum mounting plate shown above and two spacers.

All dimensions in mm.

- APEM
- Switches & Pilot Lights
- Control Boxes
- Emergency Stop Switches
- Enabling Switches
- Safety Products
- Explosion Proof
- Terminal Blocks
- Relays & Sockets
- Circuit Protectors
- Power Supplies
- LED Illumination
- Controllers
- Operator Interfaces
- Sensors
- AUTO-ID

- Interlock Switches
- Non-contact Interlock Switches
- Safety Laser Scanners
- Safety Light Curtains
- Safety Modules

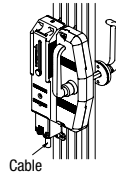
- HS6B
- HS6E
- HS5D
- HS5L

- HS1L
- Actuators for HS1/HS5/HS6
- Actuators/ Padlock Hasp

HS5 Series Door Handle Actuator

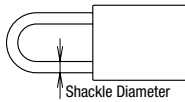
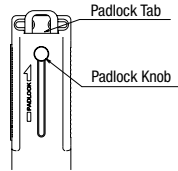
Instructions

- The door handle actuator can be used with the HS5D-□Z (metal head), and HS5E-□L/HS5E-K□L/HS5L-□L (rear unlocking button) only. Do not use with HS5D plastic head or HS5E/HS5E-K rear unlocking button models.
- When using the door handle actuator in the safety-related part of the system, make sure of proper operation while observing the safety standards and regulations of the relevant country or region where the actual machine/system is used. Also, perform a risk assessment before operation.
- Read the instruction sheet of interlock switch before installing the door handle actuator.
- Install the switch cover unit and handle unit on the outside of the door. Do not install them inside the door, otherwise the door cannot be opened or closed by the operator, affecting the operation and causing danger to the operator.
- Install the door handle actuator in the direction as shown on the right, so that the cable faces downward. Do not install in any other direction, otherwise malfunction will be caused.
- Do not modify or disassemble the door handle actuator.



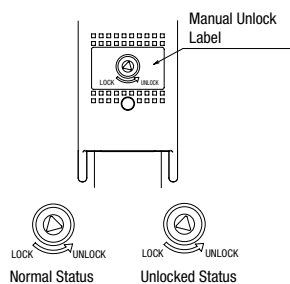
Padlocking

- When padlocking the HS9Z-DH5, lift the knob on the front of the HS9Z-DH5. A tab will appear. Install padlock(s) or a hasp on the tab.
- Make sure that the total load by the padlocks and hasp does not exceed 30N. Otherwise the door handle actuator will become deformed or damaged.
- The applicable shackle diameter of padlock is $\phi 6.0$ to 7.5 mm.



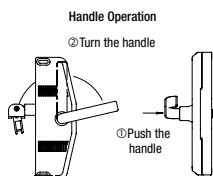
Manual Unlocking

- When using the HS5E-□L/HS5L-□L interlock switch, attach the manual unlock label on the front of the switch cover unit.
- For manual unlocking, refer to the specifications for the HS5E-□L/HS5L-□L rear unlocking button model.



Handle Operation

- Push the handle, and turn the handle to insert the actuator.



Note: Do not force to turn the handle without pushing in the handle, otherwise damage will occur.

- Do not close the door when the actuator is in the locked status, otherwise the actuator will hit the door, resulting in deformation or damage.
- When turning the handle, make sure that your hands or fingers are not caught by the door.

Installation

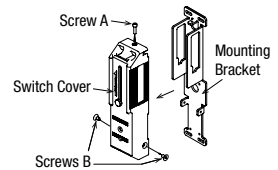
- Check whether the following parts are included.

Unit	Part	Quantity
Switch Cover Unit HS9Z-DH5C	Mounting Bracket	1
	Switch Cover	1
	Blind Cap	1
	Screw A *	1
	Screw B *	2
	Screw C	4
Handle Unit HS9Z-DH5RH HS9Z-DH5LH HS9Z-DH5RHN HS9Z-DH5LHN	Actuator Cover	1
	Front Handle (black)	1
	Rear handle (gunmetal color)	1
	Rear handle Shaft	1
	Rear handle Plate	1
	Rear handle Base	1
	Screw D *	2
Screw E	2	
	HS5D Installation Kit HS9Z-DH5B	Mounting Plate
	Spacer	2

* Screws A and B are loosely attached to the switch cover. Screws D are loosely attached to the handles.

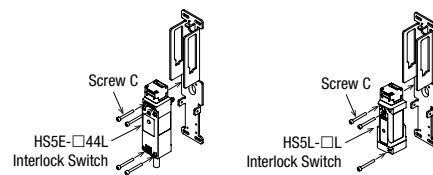
Installing the Switch Cover Unit (HS9Z-DH5C)

- Remove one Screw A and two Screws B from the switch cover and remove the switch cover from the mounting bracket.



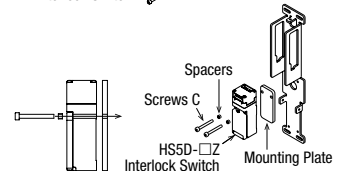
- HS5E-□L/HS5E-K□L/HS5L-□L Interlock Switches

Using four Screws C, install the interlock switch on the mounting bracket (panel thickness 3 mm or less). When installing on a mounting panel (X) of $20 \leq X \leq 50$ mm, install the connecting rod onto the push rod and press the pin into the hole in the push rod as described in the "Installing the Rear Unlocking Button Kit" on E-071, before installing the switch on the mounting bracket.

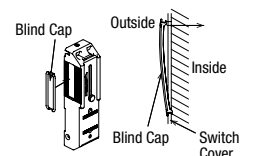


[HS5D-□Z Interlock Switch]

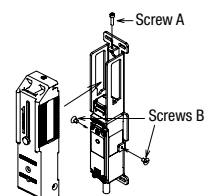
Install the interlock switch using the HS5D Installation Kit (HS9Z-DH5B) and two Screws C.



- Plug the unused actuator entry slot using the blind cap. To do so, attach the tab on one end to the switch cover, and bending the blind cap, attach the other end on the switch cover.



- Install the switch cover on the mounting plate using one Screw A and two Screws B.



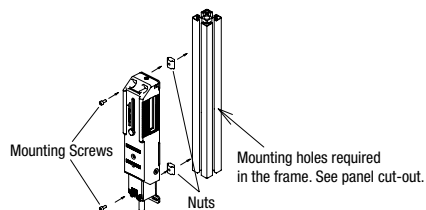
APEM
Switches & Pilot Lights
Control Boxes
Emergency Stop Switches
Enabling Switches
Safety Products
Explosion Proof
Terminal Blocks
Relays & Sockets
Circuit Protectors
Power Supplies
LED Illumination
Controllers
Operator Interfaces
Sensors
AUTO-ID

Interlock Switches
Non-contact Interlock Switches
Safety Laser Scanners
Safety Light Curtains
Safety Modules

HS6B
HS6E
HS5D
HS5L
HS1L
Actuators for HS1/HS5/HS6
Actuators/ Padlock Hasp

Instructions

- Install the switch cover unit on the mounting frame and panel. Mounting screws or nuts are not supplied and must be provided by the user.



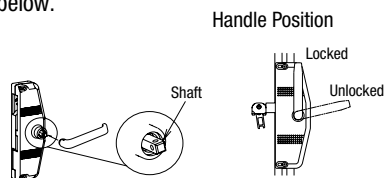
Installing the rear unlocking button

When the total thickness of mounting panel is 3.0 mm or less: Install the rear unlocking button on the rod on the back of the switch. For details, see the instruction sheet for the HS5E-□L/HS5E-K□L/HS5L-□L.

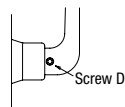
When the total thickness of mounting frame or panel is 20 mm or more: Install the rear unlocking button kit (HS9Z-FL5□) sold separately. For installation, see the instruction sheet for the HS9Z-FL5□.

Installing the Handle Unit HS9Z-DH5RH

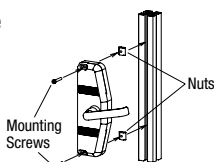
- Install the front handle (black) on the shaft on the actuator cover as shown below.



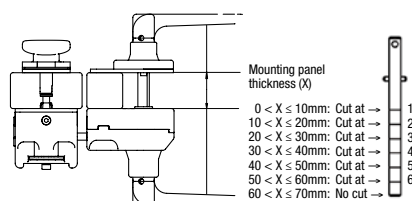
- Tighten Screw D attached to the handle using a hexagonal wrench (size: 2.5). Apply Loctite to the screw so that it does not become loose.



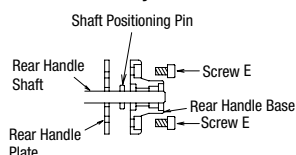
- Install the handle unit on the mounting frame and panel, aligning the handle unit and switch cover unit as illustrated under "Actuator Mounting Reference Position." Mounting screws and nuts are not supplied and must be provided by the user.



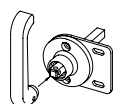
- Cut the rear handle shaft according to the thickness of the mounting frame and panel.



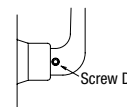
- Align the rear handle plate, rear handle shaft, and the rear handle base as shown below, and fasten them using two Screws E. Apply Loctite to the screws so that they do not become loose.



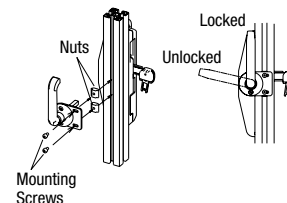
- Install the rear handle (gunmetal color) on the rear handle shaft.



- Tighten Screw D attached to the handle using a hexagonal wrench (size: 2.5). Apply Loctite to the screw so that it does not become loose.



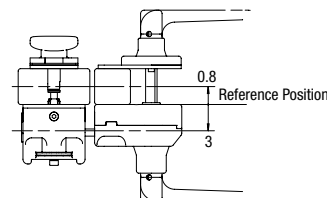
- Turn the handle to the locked position, and insert the rear handle shaft into the actuator cover. The rear handle should be in the locked position.
- While adjusting to ensure smooth operation of the rear handle, fasten the rear handle unit on the mounting frame and panel.



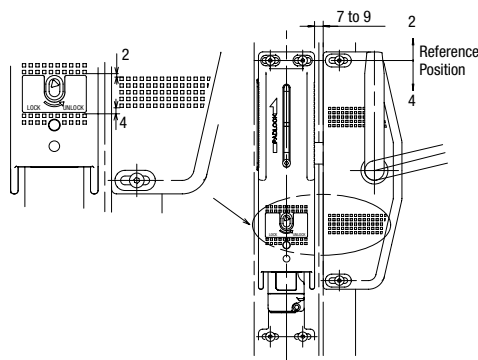
- * Install the HS9Z-DH5LH in a similar fashion as the HS9Z-DH5RH. Note that the handle direction becomes opposite.
- * Mounting screws and nuts are not supplied and must be provided by the user.

Actuator Mounting Reference Position

- The mounting reference position and allowable mounting range are as shown below.



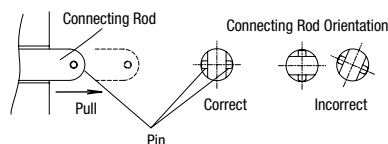
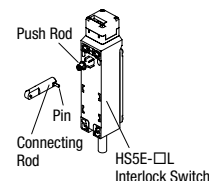
- Use the square dot pattern as a guide of the allowable mounting range.



All dimensions in mm.

Installing the Rear Unlocking Button Kit

- Install the connecting rod onto the push rod on the HS5E/HS5E-K/HS5L rear unlocking button model (HS5E-□L/HS5E-K□L/HS5L-□L) rear unlocking button interlock switch.
- A pin is attached to the connecting rod. Using pliers, press the pin into the hole in the push rod.
- Pull out the connecting rod from the hole in the mounting frame, and turn the button operating pin to the horizontal position.

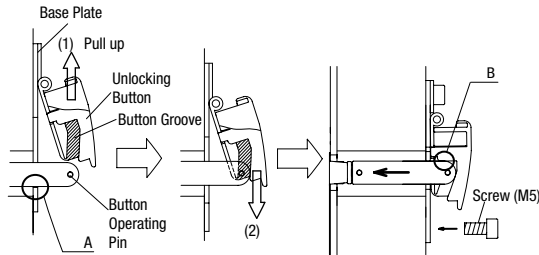


Instructions

Notes

Ensure that the connecting rod is pulled out completely and it is horizontal to the interlock switch, otherwise the unlocking button cannot be installed. Frame or panel must be supplied by the user.

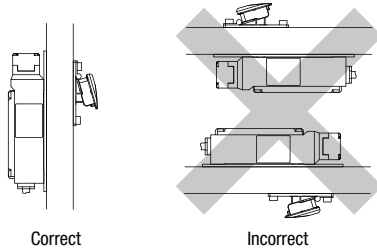
- Lift the unlocking button slightly (1) until the button touches the connecting rod at part A, and then lower the button until the groove on the button fits the button operating pin on the connecting rod.
- Press the button (unlocked status), and lower the button (2) until the button and the connecting rod touch on part B, then fasten using the screw.



- After tightening the mounting screws to a torque of 4.8 to 5.2 N·m, check if locking and unlocking operations can be performed.

Notes

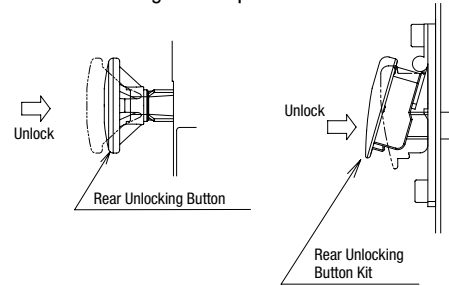
Install the rear unlocking button kit in the correct direction as shown below. Do not install the kit in incorrect directions, otherwise malfunction will be caused.



Do not apply strong force exceeding 100 m/s^2 to the rear unlocking button kit, otherwise malfunction will be caused.

Manual Unlocking Using the Rear Unlocking Button

- The rear unlocking button is used by the operator confined in a hazardous area for emergent escape.



How to operate

- When the rear unlocking button is pressed, the interlock switch is unlocked and the door can be opened.
- To lock the interlock switch, pull back the button.
- While the button remains pressed, the interlock switch cannot be locked even if the door is closed, and the main circuit remains open.

Notes

- Install the rear unlocking button in the place where only the operator inside the hazardous area can use it. Do not install the button in the place which can be reached by an operator outside the hazardous area, otherwise the interlock switch may be unlocked during machine operation, causing danger.
- Operate the rear unlocking button by hand only. Do not operate using a tool or with excessive force. Do not apply force to the button from the direction other than the proper direction, otherwise the button will be damaged.

Recommended Tightening Torque

Screw	Recommended Tightening Torque
HS9Z-DH5C Switch Cover Unit	
To install HS5D/HS5E-□L/HS5E-K□L interlock switch: Screw C (M4)	1.5 to 1.8 N·m
To install HS9Z-DH5C on the interlock switch : Three M5 screws	4.5 to 5.0 N·m
To install switch cover unit mounting screws: Two Screws B (flat-head screw for M5 hexagonal socket) One Screw A for M4 hexagonal socket	4.5 to 5.0 N·m
HS9Z-DH5RH/RHN/LHN Handle Unit	
To install HS9Z-DH5RH/LH handle unit Two M5 screws each on the front and back	4.5 to 5.0 N·m
To install rear handle plate: Two Screws E (M5)	2.5 to 3.0 N·m
To fasten handles: One Screw D (M5 hex set screw)	1.0 to 1.2 N·m

Note: The above recommended tightening torques of the mounting screws are the values with hex socket head bolts. When other screws are used and tightened to a smaller torque, make sure that the screws do not become loose after mounting.

HS5 Series Slide Handle Actuator

Shock-resistant metal slide handle actuators ensure safety

- Metal guide is resistant against shocks.
- 2-step sliding action prevents unintended closing of the door.
- Rear lever can be used by an operator trapped inside the hazardous area for escape in case of emergency.
- Padlockable bolt prevents unintended closing of the door.
- Easy positioning with no need for angle adjustment when installing.
- Can be installed on sliding/hinged or right-hand/left-hand doors.
- Interlock switches with/without lock can be used.

Specifications

Applicable Interlock Switches (Note 1)	Without lock: HS5D interlock switch With lock: HS5E interlock switch with solenoid HS5E-K interlock switch with key HS5L interlock switch with solenoid
Operating Temperature	-30 to +70°C (no freezing)
Mechanical Life	100,000 operations minimum
Applicable Padlock Shackles	ø6 to 13 mm
Padlock Withstand Load	50N minimum
Handle Travel	Approx. 80mm (removed←→inserted)
Weight (approx.)	1,800g

Note 1: Use rear unlocking button model for HS5E/HS5E-K/HS5L.

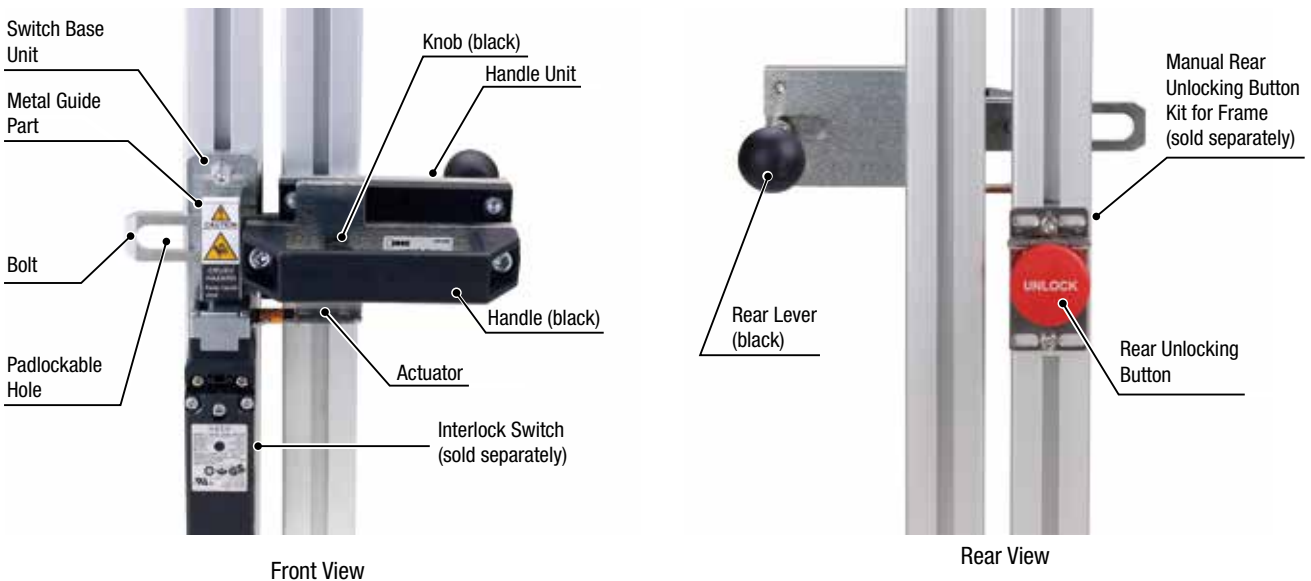
- Interlock switches are not supplied with the actuator and must be purchased separately. For interlock switches, see relevant catalogs.
- For the specifications of interlock switches, see catalogs of HS5D/HS5E/HS5E-K, and HS5L.



Item	Part No.	Note
Slide Handle Actuator	HS9Z-EH5L	Use with an interlock switch.
Manual Rear Unlocking Button Kit for Frame (Note 1)	HS9Z-FL54	Thickness of mounting part (such as a frame) Y: 30 ≤ Y ≤ 35 (mm)
	HS9Z-FL55	Thickness of mounting part (such as a frame) Y: 30 < Y ≤ 35 (mm)

Note 1: Must be purchased when using HS5E-□L/HS5E-K□L/HS5L-□L rear unlocking button model.

Parts Description

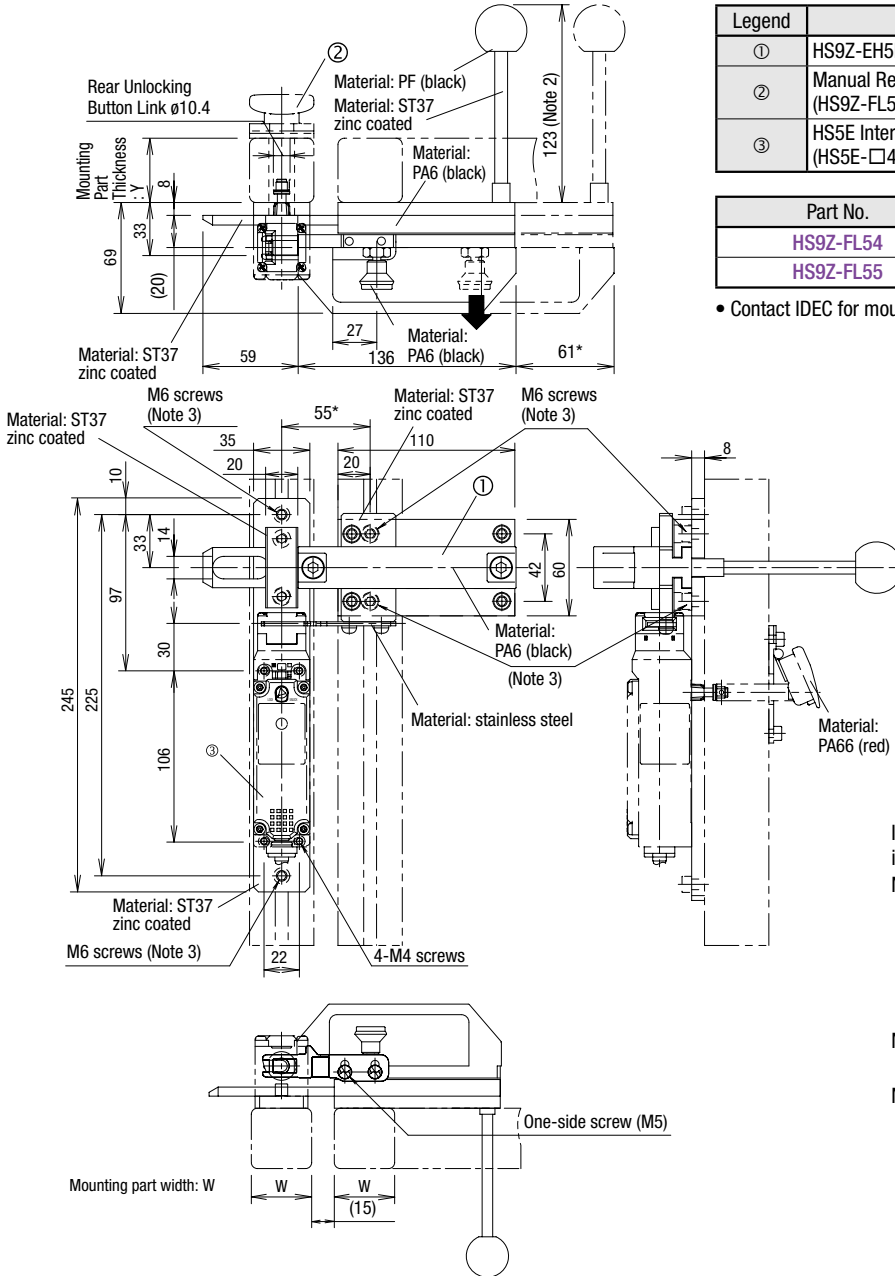


- APEM
- Switches & Pilot Lights
- Control Boxes
- Emergency Stop Switches
- Enabling Switches
- Safety Products
- Explosion Proof
- Terminal Blocks
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- Circuit Protectors
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- Interlock Switches
- Non-contact Interlock Switches
- Safety Laser Scanners
- Safety Light Curtains
- Safety Modules
- HS6B
- HS6E
- HS5D
- HS5L
- HS1L
- Actuators for HS1/HS5/HS6
- Actuators/Padlock Hasp

HS5 Series Slide Handle Actuator

Dimensions



Legend	Item
①	HS9Z-EH5L Slide Handle Actuator
②	Manual Rear Unlocking Button Kit for Frame (HS9Z-FL5□, sold separately) (See the table below)
③	HS5E Interlock Switch with Rear Unlocking Button (HS5E-□44L**-G, sold separately)

Part No.	Mounting Part Thickness: Y
HS9Z-FL54	30 ≤ Y ≤ 35
HS9Z-FL55	35 < Y ≤ 45

• Contact IDEC for mounting part thicker than specified above.

In the example shown on the left, a □40mm frame is used.

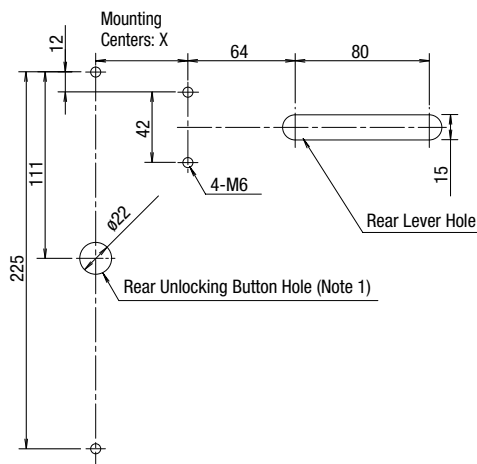
Note 1: Mounting holes must be provided when using HS5E/HS5E-K/HS5L. When using HS5D, rear unlocking button is not required and mounting holes are not required. Mounting part (frame) of up to 70mm thick can be used.

Note 2: Ensure that rear lever does not interfere with the frame.

Note 3: When choosing mounting part (frame), note that the mounting screws are M6 (must be purchased separately).

All dimensions in mm.

Panel Cut-out



Applicable frame size (hinged door)

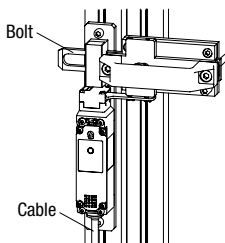
Frame Size W	Mounting Centers X
40 ≤ W ≤ 45	55 ≤ X ≤ 60
45 ≤ W ≤ 50	55 ≤ X ≤ 65
50 ≤ W ≤ 55	60 ≤ X ≤ 70
55 ≤ W ≤ 60	65 ≤ X ≤ 70

• Make sure to observe the applicable frame size, otherwise the actuator cannot be inserted/removed properly.

Operating Instructions

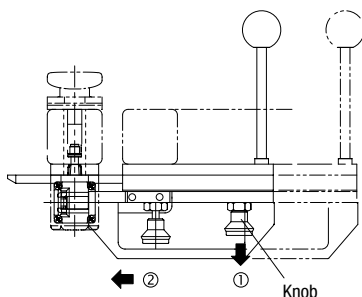
- In order to avoid electric shock or fire, turn power off before installation, removal, wire connection, maintenance, or inspection of the interlock switch.
- Do not disassemble or modify the interlock switch, otherwise a breakdown or an accident may occur.
- The slide handle actuator can be used with the HS5D, HS5E-□L, and HS5E-K□L/HS5L-□L only. Do not use with other interlock switches.
- When using the slide handle actuator in the safety-related part of the system, make sure of proper operation while observing the safety standards and regulations of the relevant country or region where the actual machine/system is used. Also, perform a risk assessment before operation.
- Read the instruction sheet of interlock switch before installing the slide handle actuator.
- Install a mechanical door stop at the end of the door to protect the interlock switch against excessive force.
- Do not force the handle when the door is locked. Otherwise damage will result.

- Install the slide handle actuator on the outside of the door. Do not install inside the door, otherwise the door cannot be opened or closed by the operator, affecting the operation and causing danger to the operator.
- Do not close the door when the bolt is slid out, otherwise damage will result.
- Install the slide handle actuator as shown at right, so that the cable hub faces downward. Do not install in any other direction.



Handle Operation

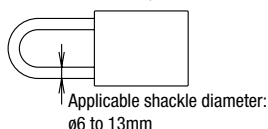
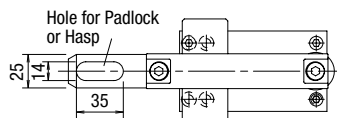
- Lift the knob completely before operating the handle, as shown at right. Make sure to lift the knob first, otherwise damage may be caused.



- Do not attempt to close the door without lifting the knob, otherwise damage will result.
- The knob is latched when the handle unit is open, preventing the unintended closing of the door. Lifting the knob unlatches the knob.
- Be careful so that your hand or finger is not caught when operating the handle actuator.

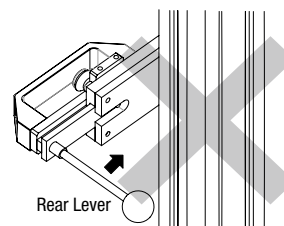
Padlockable Bolt

- Install the padlock or hasp on the padlockable bolt as shown at right.
- Make sure that the load on the padlockable bolt does not exceed 50N, otherwise the slide handle actuator may be deformed or damaged.
- The applicable shackle diameter is $\phi 6$ to 13.



Padlockable Bolt

- The actuator cannot be inserted using the rear lever.



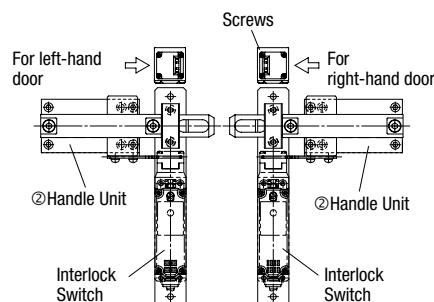
Mounting

- Confirm that the package contains the following parts.

Unit	Parts	Quantity
HS9Z-EH5L	① Switch Base Unit	1
	② Handle Unit	1
	③ Actuator	1
	④ Plastic Stopper	1
	⑤ One-side Screw (M5)	2
	⑥ Spring Washer	2
	⑦ Rear Lever	1

Interlock Switch Head Direction

- Before installing the interlock switch, change the head direction according to the door orientation (right-hand or left-hand) as shown below. The head direction can be changed by removing the four screws from the corners of the interlock switch head and rotating the head. Make sure to turn the manual unlock to UNLOCK when changing the head direction after wiring. Also, make sure that no foreign object enters into the interlock switch. Tighten the screws tightly, without leaving space between the head and body, otherwise the interlock switch may malfunction. Recommended tightening torque: 0.9 to 1.1 N·m.

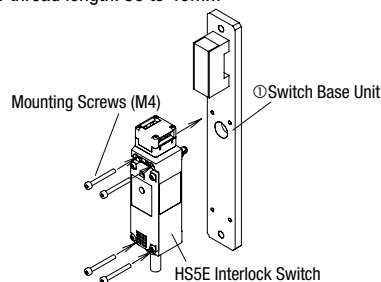


Installing the Switch Base Unit

When using HS5E-□L/HS5E-K□L/HS5L-□L

1. Using M4 mounting screws, fasten the interlock switches on the switch base unit. Mounting screws are not supplied and must be provided by the user.

Mounting screw thread length: 36 to 40mm



2. Fasten the switch base unit on the mounting frame or panel. Mounting screws and nuts are not supplied and must be provided by the user.

APEM

Switches & Pilot Lights

Control Boxes

Emergency Stop Switches

Enabling Switches

Safety Products

Explosion Proof

Terminal Blocks

Relays & Sockets

Circuit Protectors

Power Supplies

LED Illumination

Controllers

Operator Interfaces

Sensors

AUTO-ID

Interlock Switches

Non-contact Interlock Switches

Safety Laser Scanners

Safety Light Curtains

Safety Modules

HS6B

HS6E

HS5D

HS5L

HS1L

Actuators for HS1/HS5/HS6

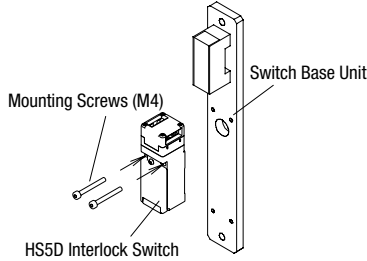
Actuators/ Padlock Hasp

Operating Instructions

When using HS5D

- Using M4 mounting screws, fasten the HS5D interlock switch on the switch base unit. Mounting screws are not supplied and must be provided by the user.

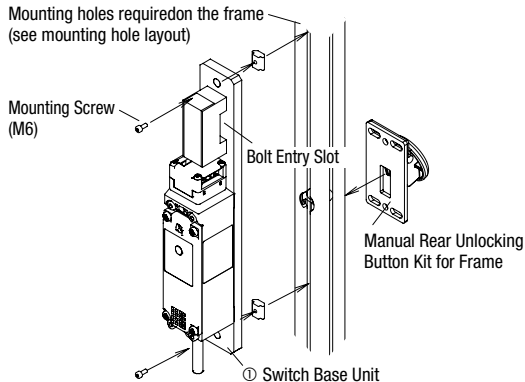
Mounting screw thread length: 27 to 31mm



- Fasten the switch base unit on the mounting frame or panel. Mounting screws and nuts are not supplied and must be provided by the user.

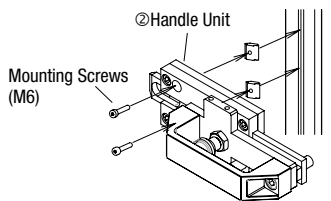
Installing the rear unlocking button

- Install the rear unlock button kit for frame mounting (HS9Z-FL5□). For detail, see the instruction sheet of HS9Z-FL5□.
- The button supplied with the HS5E-□L/HS5L-□L is not used. See **E-083** for applicable manual rear unlocking button kit for frame and mounting part thickness.



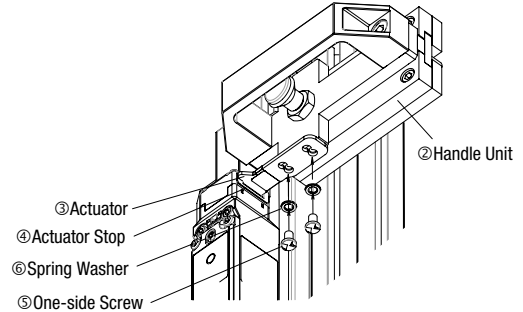
Installing the handle unit

- Fasten ② handle unit on the mounting frame or panel. Mounting screws and nuts are not supplied and must be provided by the user. Make sure that the bolt fits the bolt entry slot. See "Actuator Mounting Reference Position."

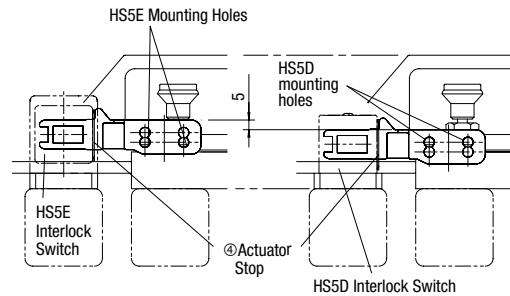


Installing the Actuator

- Insert ② handle unit into ① switch base unit.
- With ④ actuator stop lightly touching the interlock switch, install ③ actuator on the ② handle unit using ⑥ spring washers and ⑤ one-side screws.

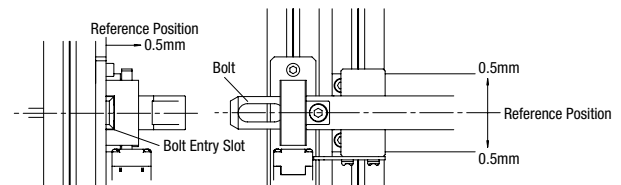


- Make sure that the actuator is installed straight.
- Actuators have different mounting holes depending on the interlock switch model. Using the mounting screws supplied with the actuator, fasten the actuator referring to the figure below and the instructions shown on the label on the actuator.
- One-way screw removal tool is needed for removing the attached mounting screws (removal tool OW510 by SAIMA CORPORATION).
- After mounting the actuator, remove the actuator stop from the interlock switch.



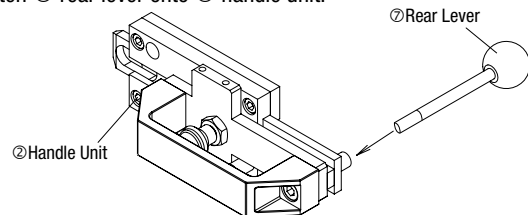
Actuator Mounting Reference Position

- See below for the mounting reference position and allowable mounting range.



Installing the Rear Lever

- Fasten ⑦ rear lever onto ② handle unit.



- Apply Loctite to the screw so that it does loosen.
- Mounting screws and nuts are not supplied and must be provided by the user.

- APEM
- Switches & Pilot Lights
- Control Boxes
- Emergency Stop Switches
- Enabling Switches
- Safety Products
- Explosion Proof
- Terminal Blocks
- Relays & Sockets
- Circuit Protectors
- Power Supplies
- LED Illumination
- Controllers
- Operator Interfaces
- Sensors
- AUTO-ID
- Interlock Switches
- Non-contact Interlock Switches
- Safety Laser Scanners
- Safety Light Curtains
- Safety Modules

- HS6B
- HS6E
- HS5D
- HS5L
- HS1L
- Actuators for HS1/HS5/HS6
- Actuators/ Padlock Hasp

APEM

Switches & Pilot Lights

Control Boxes

Emergency Stop Switches

Enabling Switches

Safety Products

Explosion Proof

Terminal Blocks

Relays & Sockets

Circuit Protectors

Power Supplies

LED Illumination

Controllers

Operator Interfaces

Sensors

AUTO-ID

Interlock Switches

Non-contact Interlock Switches

Safety Laser Scanners

Safety Light Curtains

Safety Modules

HS6B

HS6E

HS5D

HS5L

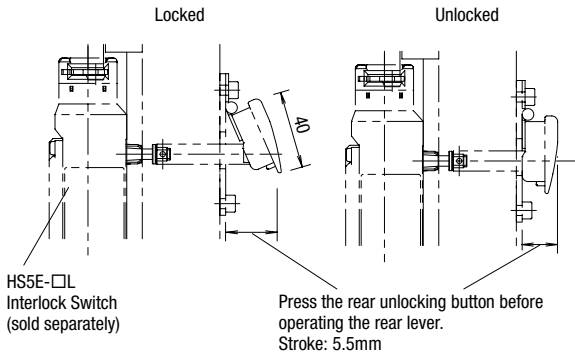
HS1L

Actuators for HS1/HS5/HS6

Actuators/ Padlock Hasp

Operating Instructions

Rear Unlocking Button Operation



Recommended Tightening Torque

Item	Tightening Torque
HS5D (Two M4 screws) HS5E-□L/HS5E-K□L/HS5L-□L (Four M4 screws)	1.8 to 2.2 N·m
Switch base unit (Two M6 screws)	4.5 to 5.5 N·m
Handle unit (Two M6 screws)	4.5 to 5.5 N·m
Actuator (Two M5 ☉ one-side screws)	2.7 to 3.3 N·m

The above tightening torque of the mounting screw is the value confirmed with hex socket head bolts. When other screws are used and tightened to a smaller torque, make sure that the screws do not become loose after mounting.

Safety Distance and Minimum Gaps

Before installing the HS5 series slide handle actuator, make sure to take safety distance and safety clearance into consideration in order to secure the distance between the mounting part (frame) and the hazard.

ISO 13852: Safety of machinery – Safety distances to prevent danger zones being reached by the upper limbs

ISO 13853: Safety of machinery – Safety distances to prevent danger zones being reached by the lower limbs

ISO 13854: Safety of machinery – Minimum gaps to avoid crushing of parts of the human body

HS5 Series Sliding Actuator

Sliding actuators allow for easy installation and adjustment.

- Angle adjustment is not required, enabling easy positioning.
- Installation is possible both vertically and horizontally, and also on any type of doors.
- Can be used on the HS5L, HS5D metal head and HS5E/HS5E-K interlock switches.
- Safety measures can be provided easily on existing facilities.



Sliding Actuator

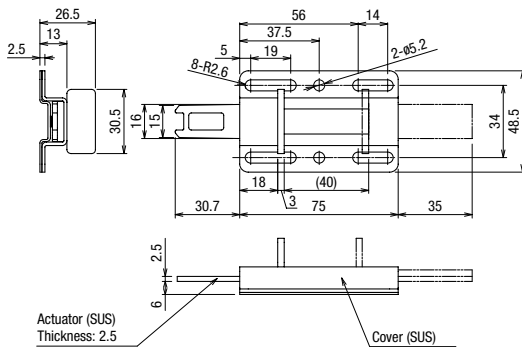
Description	Part No.
HS5 Series Sliding Actuator	HS9Z-SH5

Note: HS5D/HS5E/HS5E-K/HS5L interlock switches are not supplied with the sliding actuators and must be ordered separately.

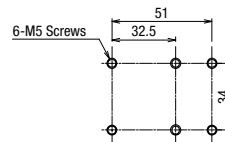
Specifications

Applicable Model	HS5D-**Z Metal Head Interlock Switches HS5E Interlock Switches HS5E-K Interlock Switches with key HS5L Interlock Switches
Weight	125g
Mechanical Durability	100,000 operations minimum
Operation Stroke	40 mm
Direct Opening Force	HS5D: 60N minimum HS5E: 90N minimum HS5E-K: 80N minimum HS5L: 120N minimum

Dimensions



Mounting Hole Layout



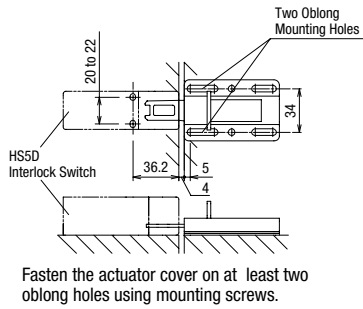
All dimensions in mm.

- APEM
- Switches & Pilot Lights
- Control Boxes
- Emergency Stop Switches
- Enabling Switches
- Safety Products
- Explosion Proof
- Terminal Blocks
- Relays & Sockets
- Circuit Protectors
- Power Supplies
- LED Illumination
- Controllers
- Operator Interfaces
- Sensors
- AUTO-ID

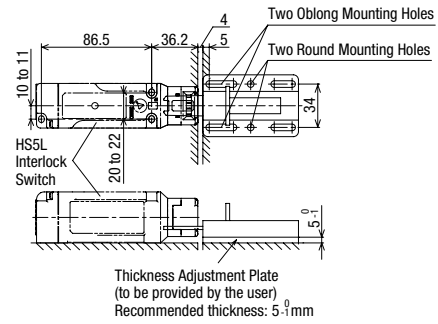
- Interlock Switches
- Non-contact Interlock Switches
- Safety Laser Scanners
- Safety Light Curtains
- Safety Modules
- HS6B
- HS6E
- HS5D
- HS5L
- HS1L
- Actuators for HS1/HS5/HS6
- Actuators/Padlock Hasp

Installation

When using with HS5D-**Z interlock switch



When using with HS5L interlock switch



Fasten the actuator cover on at least two rectangular holes and two round mounting holes using mounting screws. The thickness adjustment plate requires mounting holes.

APEM

Switches & Pilot Lights

Control Boxes

Emergency Stop Switches

Enabling Switches

Safety Products

Explosion Proof

Terminal Blocks

Relays & Sockets

Circuit Protectors

Power Supplies

LED Illumination

Controllers

Operator Interfaces

Sensors

AUTO-ID

Interlock Switches

Non-contact Interlock Switches

Safety Laser Scanners

Safety Light Curtains

Safety Modules

HS6B

HS6E

HS5D

HS5L

HS1L

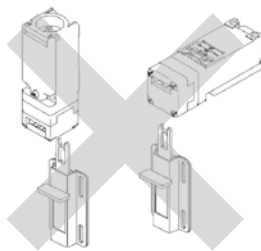
Actuators for HS1/HS5/HS6

Actuators/ Padlock Hasp

Instructions

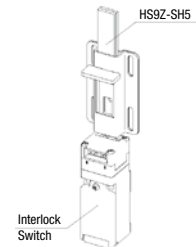
Operating Instructions

- When using the sliding actuator in a safety-related part of the system, make sure of proper operation while observing the safety standards and regulations of the relevant country or region where the actual machine/system is used. Also, perform a risk assessment before operation.
- Read the instruction sheet of the interlock switch carefully before installation or operation.
- The actuator has projections on the end. Take care not to injure hands.
- Regardless of door types, do not use the sliding actuator as a door stop.
- When the actuator is inserted to an interlock switch in the different direction from the open/close direction of the door, do not open the door with excessive force, otherwise failure or damage will be caused.
- When an operator enters the hazardous zone, take a safety measure such as using padlock hasp HS9Z-PH5 so that the operator is not trapped inside and the machine is not operated while the operator is in the hazardous zone.
- Do not install the sliding actuator as shown below, otherwise the actuator may be removed from the interlock switch due to shocks.



- Ensure to slide the sliding actuator completely. Incomplete insertion of the actuator may cause unstable contact operation of the interlock switch. Also, door may not be opened, damaging the actuator.
- Do not close the door when the actuator is slid out of the cover, otherwise the actuator may be damaged.
- When using the sliding actuator, take care so that fingers or hands are not caught between the actuator and interlock switch.

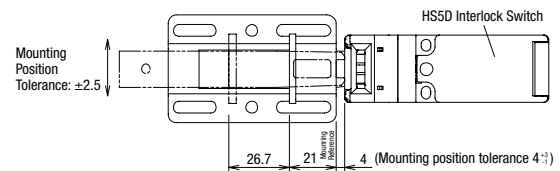
- When installing the sliding actuator over the interlock switch as shown below, do not apply a shock exceeding 100 m/s² to the actuator, otherwise the actuator may be inserted to the interlock switch and cause unintended machine operation.
- Use the sliding actuator with HS5D/HS5E/HS5E-K/HS5L interlock switches only. Do not use with other products.
- Do not modify or disassemble the sliding actuator.



Adjustment

1. Mounting Reference Position

- The mounting reference position of sliding actuator is shown below.



2. Recommended Tightening Torque of Mounting Screws

- M5 screws for mounting the sliding actuator: 4.5 to 5.5 N·m
- M4 screws for mounting the interlock switch: 1.8 to 2.2 N·m

Note: The above recommended tightening torque of the mounting screws are the values with hex socket head bolts. When other screws are used and tightened to a smaller torque, make sure that the screws do not become loose after mounting.

HS5 Series Plug Actuator

Allows HS5 series interlock switches to be used as interlock plug units.

- By chaining a plug actuator to a guard door for use with the HS5 series interlock switches, the open/close status of a guard door can be detected.
- Unlike interlock plugs, the plug actuators can be removed/ installed while power is applied.
- Defeating-prevention structure is provided within the HS5 series interlock switches.
- Selection of with or without locking function is possible by selecting HS5 series interlock switches.
- Contact configuration of the HS5 series interlock switches remains the same.
- IP67 protection of the HS5 series interlock switches remains the same.
- Usage of the HS9Z-PH5 padlock hasps allows the interlock plug to be used as a hostage control unit.



Description	Part No.
HS5 series Plug Actuator	HS9Z-A5P

Note: The HS5D/HS5E/HS5E-K/HS5L interlock switches are ordered separately.

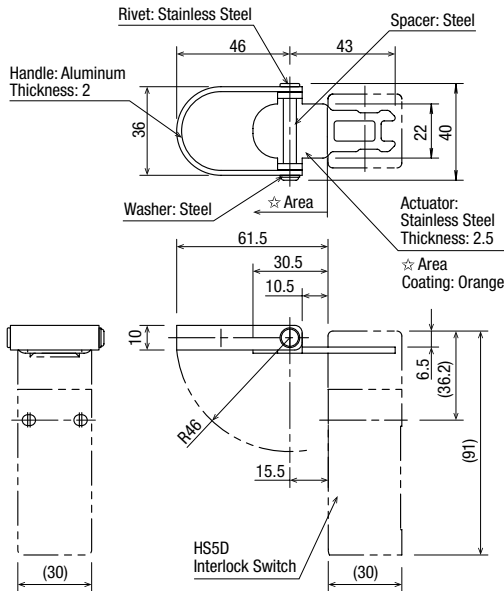
Specifications

Applicable Model	HS5D Miniature Interlock Switches HS5E Miniature Interlock Switches with Solenoid HS5E-K Interlock Switches with Key HS5L Interlock Switches with Solenoid
Weight (approx)	35g

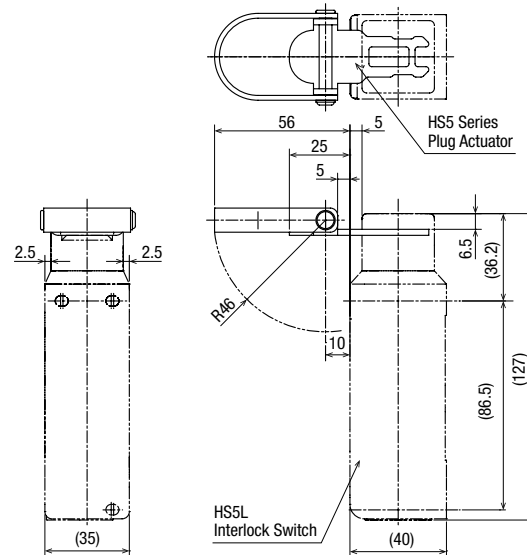
Note: Refer to the specifications of each interlock switch.

Dimensions

When used with the HS5D interlock switch



When using with the HS5L interlock switch



All dimensions in mm.

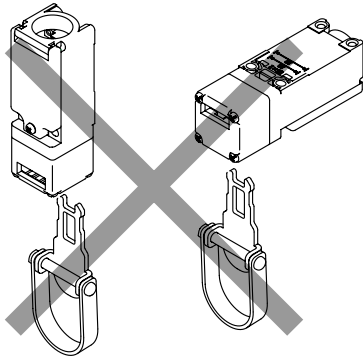
- APEM
- Switches & Pilot Lights
- Control Boxes
- Emergency Stop Switches
- Enabling Switches
- Safety Products
- Explosion Proof
- Terminal Blocks
- Relays & Sockets
- Circuit Protectors
- Power Supplies
- LED Illumination
- Controllers
- Operator Interfaces
- Sensors
- AUTO-ID

- Interlock Switches
- Non-contact Interlock Switches
- Safety Laser Scanners
- Safety Light Curtains
- Safety Modules

- HS6B
- HS6E
- HS5D
- HS5L
- HS1L
- Actuators for HS1/HS5/HS6
- Actuators/ Padlock Hasp

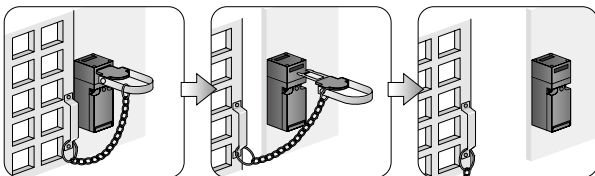
Precautions for Installation

- When using the HS9Z-A5P for safety-related equipment in a control system, refer to the safety standards and regulations in each country to make sure of correct operation. Also, perform a risk assessment to ensure safety before starting operation.
- Read the instruction sheet of the interlock switch to be used.
- Note the projections on the HS9Z-A5P to prevent injury.
- Regardless of door types, do not use the HS9Z-A5P as a door lock. Install a separate lock such as a metal latch.
- When the direction to insert the HS9Z-A5P into the interlock switch is different from the opening/closing direction of the door, do not open the door while the HS9Z-A5P remains in the interlock switch.
- Do not insert the HS9Z-A5P from the lower side as shown in the following figure. Otherwise the HS9Z-A5P may fall because of vibration.



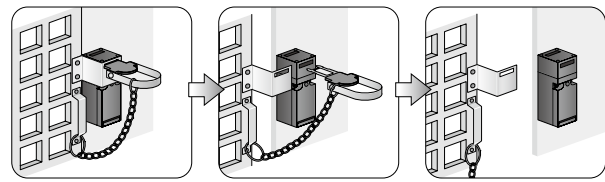
- The HS9Z-A5P is used for HS5D/HS5E/HS5E-K/HS5L interlock switches only. Do not use the HS9Z-A5P with other products.
- Do not modify or disassemble the HS9Z-A5P.

When linking the HS9Z-A5P to the door with a chain

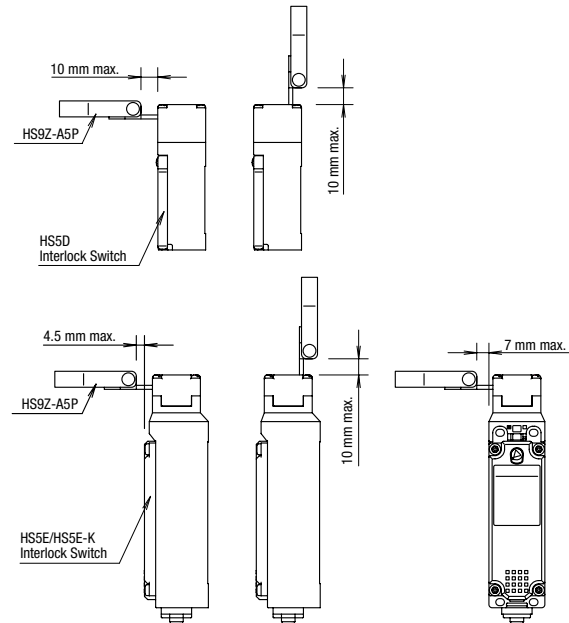


- Connect the chain to the handle of the HS9Z-A5P and the door firmly.
- Use a chain which has welded joints and does not break apart easily. Stop using the interlock device when the chain breaks.
- Give proper slack to the chain, and do not apply excessive force to the HS9Z-A5P. Determine the proper length of the chain so that the door does not open wide and that the danger zone can not be accessed by the operator.
- Refer to the following standards for safety distances and safety gaps. ISO13857 (Safety distances to prevent hazard zones being reached by upper and lower limbs) ISO13854 (Minimum gaps to avoid crushing of parts of the human body.)
- When an operator enters the danger zone, take measures such as using a Padlock Hasp (HS9Z-PH5) so that the operator is not trapped, and the machine can not be started by mistake.

When inserting the HS9Z-A5P into a part of the door

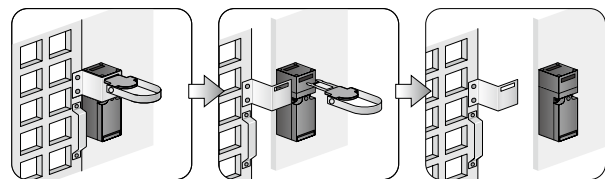


- The thickness of a door to insert the HS9Z-A5P depends upon the insertion direction as shown in the following figure. When placing a thicker objects, the HS9Z-A5P cannot enter sufficiently, causing malfunction of the interlock switch.



- Refer to the standard (ISO13852 through 13854) for safety distances and safety gaps.
- When an operator enters the danger zone, take measures such as using a Padlock Hasp (HS9Z-PH5) so that the operator is not trapped, and the machine can not be started by mistake.

When using the HS9Z-A5P as a hostage key



- Do not use two or more HS9Z-A5P for one interlock switch.
 - Treat the HS9Z-A5P with care, and ensure that the HS9Z-A5P is not inserted into other interlock switches.
- When an operator enters the danger zone, take measures such as using a Padlock Hasp (HS9Z-PH5) so that the operator is not trapped, and the machine can not be started by mistake.

APEM

Switches & Pilot Lights

Control Boxes

Emergency Stop Switches

Enabling Switches

Safety Products

Explosion Proof

Terminal Blocks

Relays & Sockets

Circuit Protectors

Power Supplies

LED Illumination

Controllers

Operator Interfaces

Sensors

AUTO-ID

Interlock Switches

Non-contact Interlock Switches

Safety Laser Scanners

Safety Light Curtains

Safety Modules

HS6B

HS6E

HS5D

HS5L

HS1L

Actuators for HS1/HS5/HS6

Actuators/ Padlock Hasp

HS5 Series Padlock Hasp

Padlock hasps prevent unauthorized insertion of actuators.

- Ideal to prevent machines from operating when two or more operators are inside the danger zone.
- Accommodates up to four padlocks when the hasp is installed on the interlock switch.
- By providing each operator with a padlock to install on the hasp before entering the danger zone, the machine can not restart until all operators have left the zone and removed their padlocks (use a hasp for five or more operators).

Note: Use of padlocks to ensure safety requires strict observance of opening rules. Safety cannot be ensured if the rules are neglected, such as failing to install the padlocks.



Padlock Hasp

Description	Part No.
HS5 Series Padlock Hasp	HS9Z-PH5

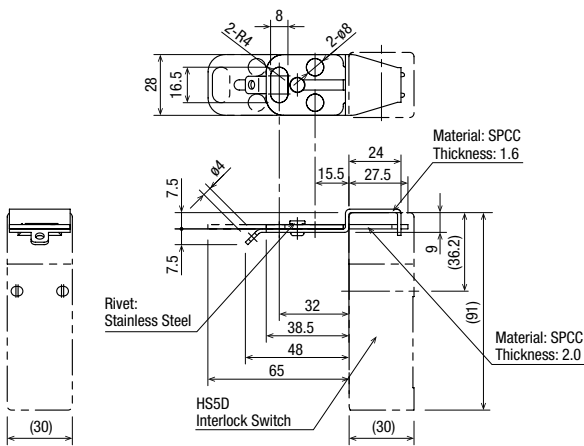
Note: The HS5D/HS5E/HS5E-K/HS5L interlock switches are ordered separately.

Specifications

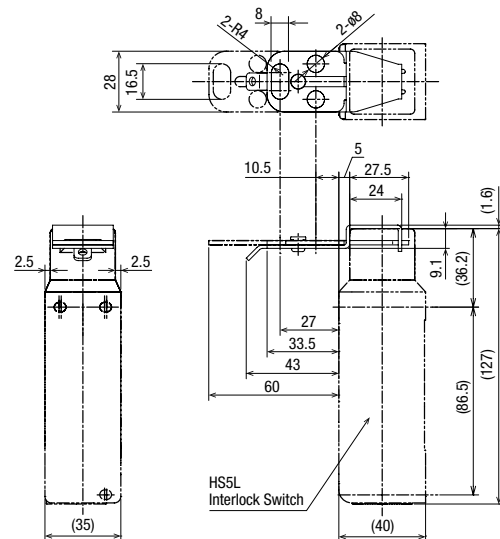
Applicable Model	HS5D Miniature Interlock Switches HS5E Miniature Interlock Switches with Solenoid HS5E-K Interlock Switches with Key HS5L Interlock Switches
Shackle Diameter of Applicable Padlock	ø5.5 to 7.5 mm
Withstand Force	30N maximum
Weight (approx)	35g

Dimensions

When used with the HS5D interlock switch



When using with the HS5L interlock switch



All dimensions in mm.

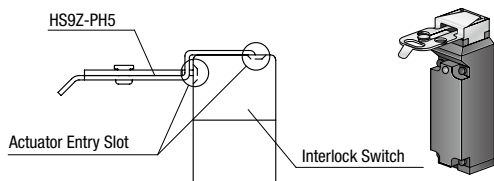
- Interlock Switches
- Non-contact Interlock Switches
- Safety Laser Scanners
- Safety Light Curtains
- Safety Modules
- HS6B
- HS6E
- HS5D
- HS5L
- HS1L
- Actuators for HS1/HS5/HS6
- Actuators/Padlock Hasp

APEM
Switches & Pilot Lights
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Safety Products
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Interlock Switches
Non-contact Interlock Switches
Safety Laser Scanners
Safety Light Curtains
Safety Modules

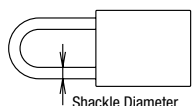
HS6B
HS6E
HS5D
HS5L
HS1L
Actuators for HS1/HS5/HS6
Actuators/ Padlock Hasp

Precautions for Installation

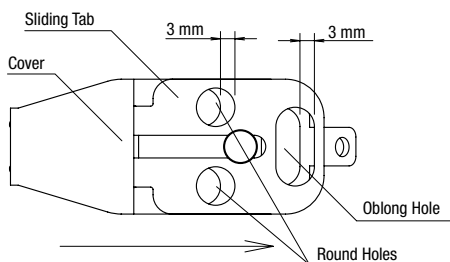
- When using the HS9Z-PH5 for safety-related equipment in a control system, refer to the safety standards and regulations in each country to make sure of correct operation. Also, perform a risk assessment to ensure safety before starting operation.
- Read the instruction sheet of the interlock switch to be used.
- Note the projections on the HS9Z-PH5 when using to prevent injury.
- Insert the HS9Z-PH5 in the direction as shown in the following figure. Do not insert from any other direction. Also, do not use the slot plug supplied with the interlock switch.



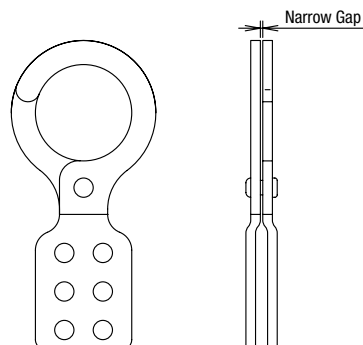
- Do not deform the HS9Z-PH5. The HS9Z-PH5 may come off from the interlock switch even if a padlock is installed. Stop using immediately if the HS9Z-PH5 becomes deformed.
- The shackle diameter of the applicable padlock (refer to the following figure) is $\varnothing 5.5$ to 7.5 mm.



- When using a hasp or special padlock, make sure that the sliding tab does not slide 3 mm or more in the direction shown below, otherwise the HS9Z-PH5 may come off the interlock switch.



- When using a hasp such as shown below, make sure that the hasp is installed in round holes not in the oblong hole. Otherwise the sliding tab may slide 3 mm or more. Check periodically that the narrow gap between the jaws is not widened, so that the HS9Z-PH5 does not fall off from the hasp.



- Keep the weight of padlocks and hasps to a maximum of 1500g on one tab hole, and at a maximum of 3000g for the total of all tab holes. Using padlocks and hasps weighing over the maximum allowable weight may cause deformation of the HS9Z-PH5, and the interlock switch may be damaged.
- Do not apply excessive shock to the HS9Z-PH5 while installing it on the interlock switch, otherwise failure or damage may be caused.
- Do not apply excessive vibration while padlocks or hasps are installed, otherwise failure or damage may be caused.
- The HS9Z-PH5 is used for HS5D/HS5E/HS5E-K/HS5L interlock switches. Do not use the HS9Z-PH5 for any other products.
- Make sure that locking and unlocking the padlock and hasp do not interfere with other products in close proximity.
- Do not modify or disassemble the HS9Z-PH5.
- Padlocks and hasps are available from the following manufacturers. Panduit Corporation (<http://www.panduit.com/>) Master Lock Company (<http://www.masterlock.com/>)

Ordering Terms and Conditions

Thank you for using IDEC Products.

By purchasing products listed in our catalogs, datasheets, and the like (hereinafter referred to as "Catalogs") you agree to be bound by these terms and conditions. Please read and agree to the terms and conditions before placing your order.

1. Notes on contents of Catalogs

- (1) Rated values, performance values, and specification values of IDEC products listed in this Catalog are values acquired under respective conditions in independent testing, and do not guarantee values gained in combined conditions.
Also, durability varies depending on the usage environment and usage conditions.
- (2) Reference data and reference values listed in Catalogs are for reference purposes only, and do not guarantee that the product will always operate appropriately in that range.
- (3) The specifications / appearance and accessories of IDEC products listed in Catalogs are subject to change or termination of sales without notice, for improvement or other reasons.
- (4) The content of Catalogs is subject to change without notice.

2. Note on applications

- (1) If using IDEC products in combination with other products, confirm the applicable laws / regulations and standards.
Also, confirm that IDEC products are compatible with your systems, machines, devices, and the like by using under the actual conditions. IDEC shall bear no liability whatsoever regarding the compatibility with IDEC products.
- (2) The usage examples and application examples listed in Catalogs are for reference purposes only. Therefore, when introducing a product, confirm the performance and safety of the instruments, devices, and the like before use. Furthermore, regarding these examples, IDEC does not grant license to use IDEC products to you, and IDEC offers no warranties regarding the ownership of intellectual property rights or non-infringement upon the intellectual property rights of third parties.
- (3) When using IDEC products, be cautious when implementing the following.
 - i. Use of IDEC products with sufficient allowance for rating and performance
 - ii. Safety design, including redundant design and malfunction prevention design that prevents other danger and damage even in the event that an IDEC product fails
 - iii. Wiring and installation that ensures the IDEC product used in your system, machine, device, or the like can perform and function according to its specifications
- (4) Continuing to use an IDEC product even after the performance has deteriorated can result in abnormal heat, smoke, fires, and the like due to insulation deterioration or the like. Perform periodic maintenance for IDEC products and the systems, machines, devices, and the like in which they are used.
- (5) IDEC products are developed and manufactured as general-purpose products for general industrial products. They are not intended for use in the following applications, and in the event that you use an IDEC product for these applications, unless otherwise agreed upon between you and IDEC, IDEC shall provide no guarantees whatsoever regarding IDEC products.
 - i. Use in applications that require a high degree of safety, including nuclear power control equipment, transportation equipment (railroads / airplanes / ships / vehicles / vehicle instruments, etc.), equipment for use in outer space, elevating equipment, medical instruments, safety devices, or any other equipment, instruments, or the like that could endanger life or human health
 - ii. Use in applications that require a high degree of reliability, such as provision systems for gas / waterworks / electricity, etc., systems that operate continuously for 24 hours, and settlement systems
 - iii. Use in applications where the product may be handled or used deviating from the specifications or conditions / environment listed in the Catalogs, such as equipment used outdoors or applications in environments subject to chemical pollution or electromagnetic interference
If you would like to use IDEC products in the above applications, be sure to consult with an IDEC sales representative.

3. Inspections

We ask that you implement inspections for IDEC products you purchase without delay, as well as thoroughly keep in mind management/maintenance regarding handling of the product before and during the inspection.

4. Warranty

- (1) Warranty period
The warranty period for IDEC products shall be one (1) year after purchase or delivery to the specified location. However, this shall not apply in cases where there is a different specification in the Catalogs or there is another agreement in place between you and IDEC.
- (2) Warranty scope
Should a failure occur in an IDEC product during the above warranty period for reasons attributable to IDEC, then IDEC shall replace or repair that product, free of charge, at the purchase location / delivery location of the product, or an IDEC service base. However, failures caused by the following reasons shall be deemed outside the scope of this warranty.
 - i. The product was handled or used deviating from the conditions / environment listed in the Catalogs
 - ii. The failure was caused by reasons other than an IDEC product
 - iii. Modification or repair was performed by a party other than IDEC
 - iv. The failure was caused by a software program of a party other than IDEC
 - v. The product was used outside of its original purpose
 - vi. Replacement of maintenance parts, installation of accessories, or the like was not performed properly in accordance with the user's manual and Catalogs
 - vii. The failure could not have been predicted with the scientific and technical standards at the time when the product was shipped from IDEC
 - viii. The failure was due to other causes not attributable to IDEC (including cases of force majeure such as natural disasters and other disasters)Furthermore, the warranty described here refers to a warranty on the IDEC product as a unit, and damages induced by the failure of an IDEC product are excluded from this warranty.

5. Limitation of liability

The warranty listed in this Agreement is the full and complete warranty for IDEC products, and IDEC shall bear no liability whatsoever regarding special damages, indirect damages, incidental damages, or passive damages that occurred due to an IDEC product.

6. Service scope

The prices of IDEC products do not include the cost of services, such as dispatching technicians. Therefore, separate fees are required in the following cases.

- (1) Instructions for installation / adjustment and accompaniment at test operation (including creating application software and testing operation, etc.)
- (2) Maintenance inspections, adjustments, and repairs
- (3) Technical instructions and technical training
- (4) Product tests or inspections specified by you

The above content assumes transactions and usage within your region. Please consult with an IDEC sales representative regarding transactions and usage outside of your region. Also, IDEC provides no guarantees whatsoever regarding IDEC products sold outside your region.

IDEC CORPORATION

Head Office 6-64, Nishi-Miyahara-2-Chome, Yodogawa-ku, Osaka 532-0004, Japan

USA IDEC Corporation
EMEA APEM SAS

Singapore IDEC Izumi Asia Pte. Ltd.
Thailand IDEC Asia (Thailand) Co., Ltd.
India IDEC Controls India Private Ltd.

China IDEC (Shanghai) Corporation
IDEC Izumi (H.K.) Co., Ltd.
Taiwan IDEC Taiwan Corporation

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 www.idec.com

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