B-1666-1(1)

INSTRUCTION SHEET

Spring Loaded Actuator
HS5E/HS5L Series

Confirm that the delivered product is what you have ordered.
Read this instruction sheet to make sure of correct operation.
Make sure that the instruction sheet is kept by the end user.

Safety Precautions

In this operation instruction sheet, safety precautions are categorized in order of importance to Warning and Caution :

⚠ WARNING

- Warning notices are used to emphasize that improper operation may cause severe personal injury or death.
- For your safety, do not use the product if the safety distance is not ensured. (ISO 13857 (JIS B 9718))

⚠ CAUTION

Caution notices are used where inattention might cause personal injury or damage to equipment.

1 Type

HS9Z-BA5

2 Specifictions

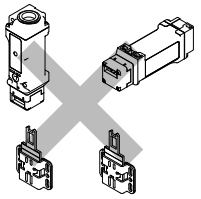
Applicable Model	HS5E interlock switch HS5E-K interlock switch HS5L interlock switch
Weight (approx.)	70g
Mechanical Durability	2,000,000 operations minimum.
Direct Opening Force	HS5E/HS5E-K: 80N minimum HS5L: 120N minimum
Direct Opening Travel	24.5mm (mounting reference position: 0.8mm line) (3.3mm when mounting reference position is a the 0.8mm line)
Operating Speed	0.05 to 1.0 m/s

- Interlock switch is not supplied with HS9Z-BA5 and must be ordered separately.
- Refer to the specifications of the HS5E / HS5E-K / HS5L interlock switch for the specifications of the interlock switch used.

2 Precautions for Operation

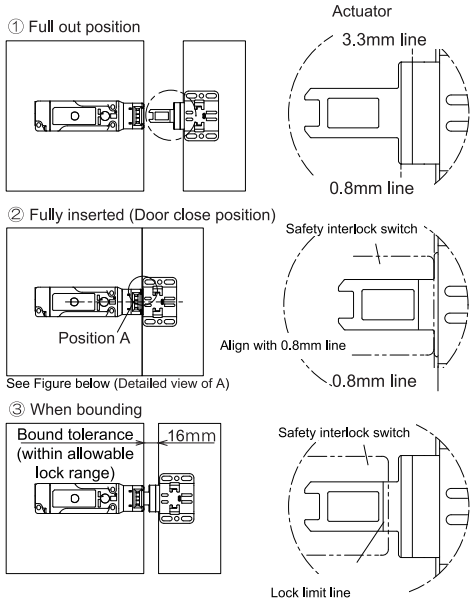
⚠ WARNING

- When using the HS9Z-BA5 for safety-related equipment in a control system, refer to the safety standards and regulations in each country and region depending on the application purpose of the actual machines and installations to make sure of correct operation.
  Also, perform risk assessment to make sure of safety before starting operation.Especailly be aware of machinery−Minimum gaps for safety use.
- Read the instruction sheet of the interlock switch used.
- Be careful of the projections on the HS9Z-BA5.
- Regardless of door types, do not use the HS9Z-BA5 as a door lock. Install a separate lock such as a metal hook.
- When a worker enters the danger zone, take a measure such as using Padlock Hasp (HS9Z-PH5) together so that the worker is not trapped inside and the machine does not start unexpectedly.
- **This product should only be used on slide doors. Do not use on swing door.**
- Do not insert the HS9Z-BA5 from below as shown in the figure on the right. Otherwise the HS9Z-BA5 may fall out because of vibration.
- The HS9Z-BA5 can be used for HS5E/HS5E-K/HS5L interlock switch only. Do not use the HS9Z-BA5 for other products.
- Do not ruin the functions of the HS9Z-BA5 by modifying or disassembling.

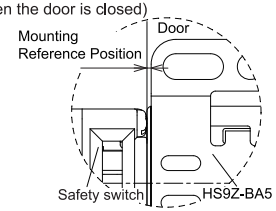


4 Mounting / Adjustment

Installation (mounting reference position: 0.8mm line)
The actuator extends out of the body when the door is open (figure ①).
To set the standard for mounting, close the door and align the position where the guide line is placed on 0.8mm. (figure ②)



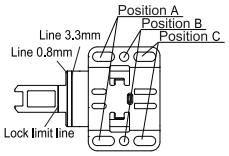
The position of the safety switch and HS9Z-BA5 when fully inserted (when the door is closed)



Detailed view of A

● Mounting Adjustment and Adjustment Procedure
1. Make a hole for the slit A or C. (Refer to 6. Dimensions)
2. Tighten a screw temporarily to check the position.
3. Make holes for hole 'B', and fix the actuator completely with a screw or rivet.

- 3.3 mm line
The mounting reference position is where the door is fully closed, and there is a 0.8mm gap between the safety switch and HS9Z-BA5, but can be adjusted up to the 3.3mm line.
The maximum lockable range is secured when the mounting reference position is at the 0.8mm line. However, adjust between 0.8 to 3.3mm if the safety switch is mounted on a door where the gap might become smaller.
Use within the specified range, otherwise failure may occur.
- Lock line limit
When a door opens by bouncing back, if the lock limit line is outside of the safety switch, the force of the bounce may be too large so that door may not lock.



⚠ WARNING

Maximum gap of the door is 16mm. (mounting reference: 0.8mm line)
If the safety distance and minimum gap does not satisfy the requirements of ISO13857, make the gap smaller by overlapping the doors or provide sufficient distance from the hazardous source.

- See **5**. Contact Operation for more detail.

Recommended Screw Tightening Torque

Name or Use	Screw Tightening Torque
For mounting the HS9Z-BA5 (M5 screw)*1	4.5 to 5.5 N・m

⚠ CAUTION

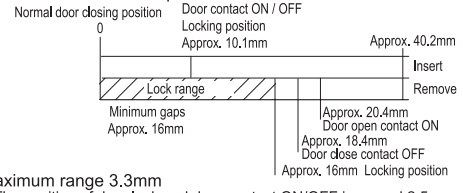
*1: If the torque is not enough, use Screw Locking Glue to lock it properly.

To prevent the actuator from being removed easily, use a screw that needs to be attached such as one way screw or by using a special tool, or mount so that it cannot be removed using a common tool such as welding or by using a rivet .

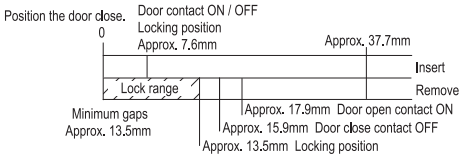
5 Contact Operation

- Operation characteristics when using with with HS5E/HS5E-K/HS5L safety interlock switch

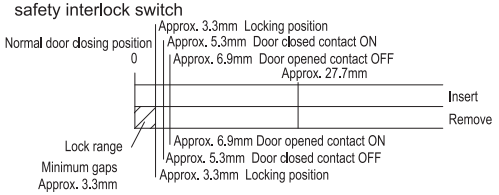
When the mounting reference is at the 0.8mm line
It can lock the door up to 16mm bound.



Maximum range 3.3mm
The position of door lock and door contact ON/OFF is moved 2.5mm

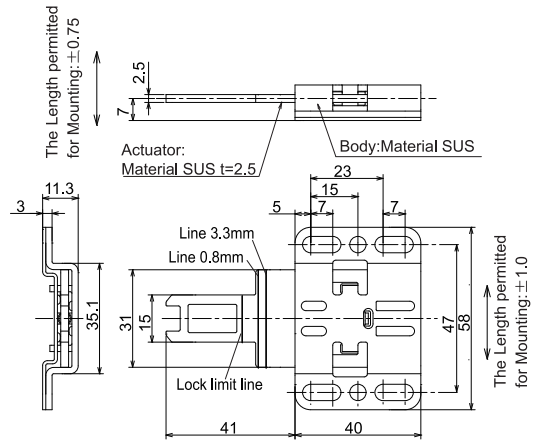


[Reference] HS9Z-A51A when using with HS5E/HS5E-K/HS5L safety interlock switch



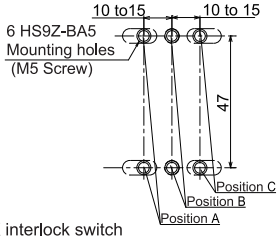
6 Dimensions (mm)

- Dimension

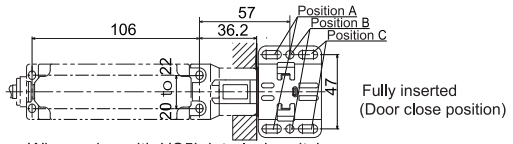


- Mounting Hole Layout

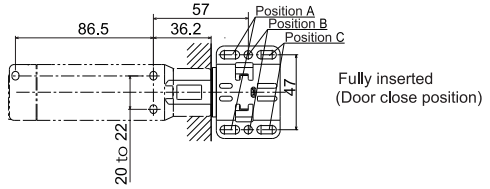
HS9Z-BA5 should be fixed by four screws at least. (Slit A and B,or B and C)
To avoid the position gap during the operation, Hole B must be screwed.

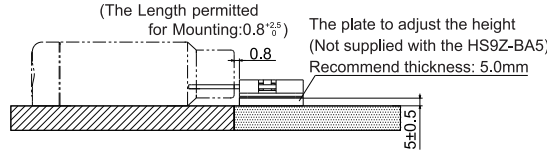


- When using with HS5E/HS5E-K interlock switch



- When using with HS5L interlock switch





∗ Product height of HS9Z-BA5 is 5mm lower than HS5E, HS5E-K, and HS5L if it is installed to the same level. Please place HS9Z-BA5 to the appropriate position.

7 Precaution for Disposal

- Dispose of the HS9Z-BA5 as an industrial waste.

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2014.10