# HS5E Miniature Interlock Switches with Solenoid

Spring Lock Type Features:
- Automatically locks the actuator without power applied to the solenoid
- After the machine stops, unlocking is completed by the solenoid, providing high safety features
- Manual unlocking is possible in the event of power failure or maintenance
- Gold-plated contacts

Solenoid Lock Type Features:
- The actuator is locked when energized
- The actuator is unlocked when de-energized
- Flexible locking function can be achieved for an application where locking is not required and sudden stopping of machine must be prevented
- Gold-plated contacts
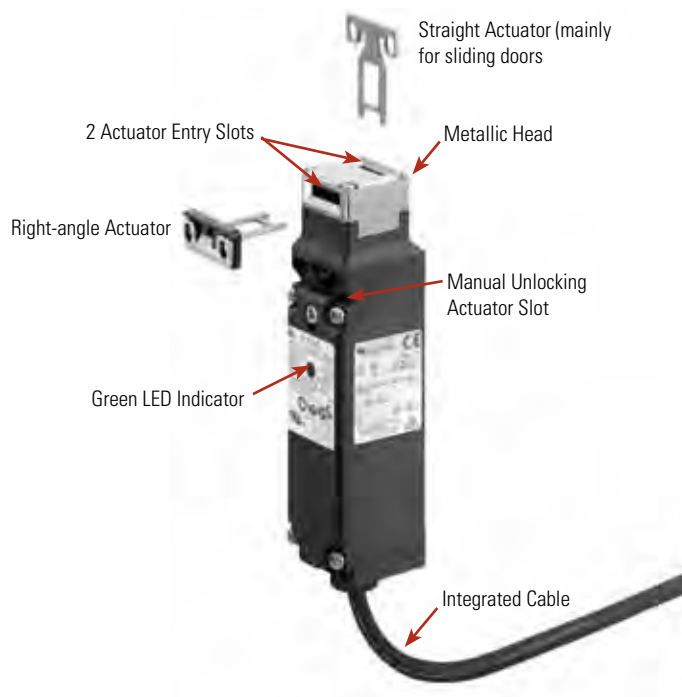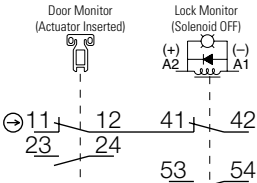
Overview

XW Series E-Stops

Interlock Switches

Enabling Switches
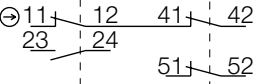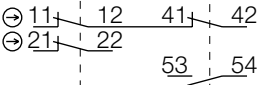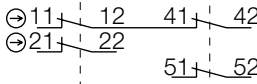
Safety Control Relays

Light Curtains

AS-Interface Safety at Work

Straight Actuator (mainly for sliding doors)

2 Actuator Entry Slots

Metallic Head

Right-angle Actuator

Manual Unlocking Actuator Slot

Green LED Indicator

Integrated Cable
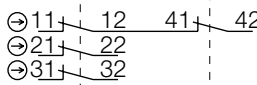
Vertical side tab labels: Overview | XW Series E-Stops | Interlock Switches | Enabling Switches | Safety Control Relays | Light Curtains | AS-Interface Safety at Work

Part Numbers
Spring Lock Type (Power Solenoid to VA Lock)

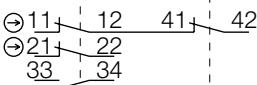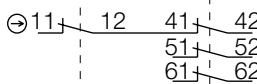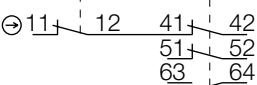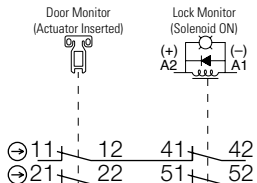| Circuit Code	Contact Configuration		Cable Length	Part Number		
				Without LED	With LED	With LED and Rear Unlock Button
A — Main Circuit: 1NC+1NC, Door Monitor Circuit: 1NO, Lock Monitor Circuit: 1NO	Main Circuit: 11-12, 41-42; Monitor Circuit: 23-24; Monitor Circuit: 53-54		1m	HS5E-A4001	HS5E-A4401-G	HS5E-A44L01-G
			3m	HS5E-A4003	HS5E-A4403-G	HS5E-A44L03-G
			5m	HS5E-A4005	HS5E-A4405-G	HS5E-A44L05-G
B — Main Circuit: 1NC+1NC, Door Monitor Circuit: 1NO, Lock Monitor Circuit: 1NC	Main Circuit: 11-12, 41-42; Monitor Circuit: 23-24; Monitor Circuit: 51-52		1m	HS5E-B4001	HS5E-B4401-G	
			3m	HS5E-B4003	HS5E-B4403-G	
			5m	HS5E-B4005	HS5E-B4405-G	
C — Main Circuit: 1NC+1NC, Door Monitor Circuit: 1NC, Lock Monitor Circuit: 1NO	Main Circuit: 11-12, 41-42; Monitor Circuit: 21-22; Monitor Circuit: 53-54		1m	HS5E-C4001	HS5E-C4401-G	HS5E-C44L01-G
			3m	HS5E-C4003	HS5E-C4403-G	HS5E-C44L03-G
			5m	HS5E-C4005	HS5E-C4405-G	HS5E-C44L05-G
D — Main Circuit: 1NC+1NC, Door Monitor Circuit: 1NC, Lock Monitor Circuit: 1NC	Main Circuit: 11-12, 41-42; Monitor Circuit: 21-22; Monitor Circuit: 51-52		1m	HS5E-D4001	HS5E-D4401-G	HS5E-D44L01-G
			3m	HS5E-D4003	HS5E-D4403-G	HS5E-D44L03-G
			5m	HS5E-D4005	HS5E-D4405-G	HS5E-D44L05-G
F — Main Circuit: 1NC+1NC, Door Monitor Circuit: 2NC	Main Circuit: 11-12, 41-42; Monitor Circuit: 21-22; Monitor Circuit: 31-32		1m	HS5E-F4001	HS5E-F4401-G	HS5E-F44L01-G
			3m	HS5E-F4003	HS5E-F4403-G	HS5E-F44L03-G
			5m	HS5E-F4005	HS5E-F4405-G	HS5E-F44L05-G
G — Main Circuit: 1NC+1NC, Door Monitor Circuit: 1NC, 1NO	Main Circuit: 11-12, 41-42; Monitor Circuit: 21-22; Monitor Circuit: 33-34		1m	HS5E-G4001	HS5E-G4401-G	HS5E-G44L01-G
			3m	HS5E-G4003	HS5E-G4403-G	HS5E-G44L03-G
			5m	HS5E-G4005	HS5E-G4405-G	HS5E-G44L05-G
H — Main Circuit: 1NC+1NC, Door Monitor Circuit: 2NC	Main Circuit: 11-12, 41-42; Monitor Circuit: 51-52; Monitor Circuit: 61-62		1m	HS5E-H4001	HS5E-H4401-G	
			3m	HS5E-H4003	HS5E-H4403-G	
			5m	HS5E-H4005	HS5E-H4405-G	
J — Main Circuit: 1NC+1NC, Door Monitor Circuit: 1NC, 1NO	Main Circuit: 11-12, 41-42; Monitor Circuit: 51-52; Monitor Circuit: 63-64		1m	HS5E-J4001	HS5E-J4401-G	
			3m	HS5E-J4003	HS5E-J4403-G	
			5m	HS5E-J4005	HS5E-J4405-G	

Door Monitor (Actuator Inserted) / Lock Monitor (Solenoid OFF) — (+) A2, (−) A1

The contact configuration shows the status when the actuator is inserted and the switch is locked.
The contact configuration shows the status when the indicator is installed.
Actuators are not supplied with the interlock switch and must be ordered separately.

Dual Safety Circuit type

Circuit Code	Contact Configuration		Cable Length	Part Number
DD — Main Circuit: 1NC+1NC, 1NC+1NC	Main Circuit ①: 11-12, 41-42; Main Circuit ②: 21-22, 51-52		1m	HS5E-DD4401-G
			3m	HS5E-DD4403-G
			5m	HS5E-DD4405-G

Door Monitor (Actuator Inserted) / Lock Monitor (Solenoid ON) — (+) A2, (−) A1

The contact configuration shows the status when the actuator is inserted and the switch is locked.
Actuators are not supplied with the interlock switch and must be ordered separately.

Four-circuit Independent Output Type (Spring Lock)

Circuit Code	Contact Configuration		Cable Length	Part Number
	Door Monitor (Actuator Inserted)	Lock Monitor (Solenoid OFF) (+)A2 (−)A1		
VA Door Monitor Circuit: 1NC, 1NO Lock Monitor Circuit: 1NC, 1NO	Monitor Circuit: 11 12 / 23 24 Monitor Circuit: Monitor Circuit:	41 42 53 54	1m	HS5E-VA4401-G
			3m	HS5E-VA4403-G
			5m	HS5E-VA4405-G
VB Door Monitor Circuit: 1NC, 1NO Lock Monitor Circuit: 2NC	Monitor Circuit: 11 12 / 23 24 Monitor Circuit: Monitor Circuit:	41 42 51 52	1m	HS5E-VB4401-G
			3m	HS5E-VB4403-G
			5m	HS5E-VB4405-G
VC Door Monitor Circuit: 2NC Lock Monitor Circuit: 1NC, 1NO	Monitor Circuit: 11 12 Monitor Circuit: 21 22 Monitor Circuit:	41 42 53 54	1m	HS5E-VC4401-G
			3m	HS5E-VC4403-G
			5m	HS5E-VC4405-G
VD Door Monitor Circuit: 2NC Lock Monitor Circuit: 2NC	Monitor Circuit: 11 12 Monitor Circuit: 21 22 Monitor Circuit:	41 42 51 52	1m	HS5E-VD4401-G
			3m	HS5E-VD4403-G
			5m	HS5E-VD4405-G

ℹ The contact configuration shows the status when the actuator is inserted and the switch is locked.
Actuators are not supplied with the interlock switch and must be ordered separately.

Four-circuit Independent Output Type (Solenoid Lock)

Circuit Code	Contact Configuration		Cable Length	Part Number
	Door Monitor (Actuator Inserted)	Lock Monitor (Solenoid OFF) (+)A2 (−)A1		
VA Door Monitor Circuit: 1NC, 1NO Lock Monitor Circuit: 1NC, 1NO	Monitor Circuit: 11 12 / 23 24 Monitor Circuit: Monitor Circuit:	41 42 53 54	1m	HS5E-VA7Y401-G
			3m	HS5E-VA7Y403-G
			5m	HS5E-VA7Y405-G
VB Door Monitor Circuit: 1NC, 1NO Lock Monitor Circuit: 2NC	Monitor Circuit: 11 12 Monitor Circuit: 23 24 Monitor Circuit:	41 42 51 52	1m	HS5E-VB7Y401-G
			3m	HS5E-VB7Y403-G
			5m	HS5E-VB7Y405-G
VC Door Monitor Circuit: 2NC Lock Monitor Circuit: 1NC, 1NO	Monitor Circuit: 11 12 Monitor Circuit: 21 22 Monitor Circuit:	41 42 53 54	1m	HS5E-VC7Y401-G
			3m	HS5E-VC7Y403-G
			5m	HS5E-VC7Y405-G
VD Door Monitor Circuit: 2NC Lock Monitor Circuit: 2NC	Monitor Circuit: 11 12 Monitor Circuit: 21 22 Monitor Circuit:	41 42 51 52	1m	HS5E-VD7Y401-G
			3m	HS5E-VD7Y403-G
			5m	HS5E-VD7Y405-G

ℹ The contact configuration shows the status when the actuator is inserted and the switch is locked.
Actuators are not supplied with the interlock switch and must be ordered separately.

Overview

XW Series E-Stops

Interlock Switches

Enabling Switches

Safety Control Relays

Light Curtains

AS-Interface Safety at Work

Solenoid Locking Safety Switches

Solenoid Lock Type (Remove Power to Unlock)

Circuit Code	Contact Configuration		Cable Length	Part Number	
				Without LED	With LED
		Door Monitor (Actuator Inserted) / Lock Monitor (Solenoid OFF) (+) A2 (−) A1			
A Main Circuit: 1NC+1NC Door Monitor Circuit: 1NO Lock Monitor Circuit: 1NO	Main Circuit: 11 12 41 42 Monitor Circuit: 23 24 Monitor Circuit: 53 54		1m	HS5E-A7Y001	HS5E-A7Y401-G
			3m	HS5E-A7Y003	HS5E-A7Y403-G
			5m	HS5E-A7Y005	HS5E-A7Y405-G
B Main Circuit: 1NC+1NC Door Monitor Circuit: 1NO Lock Monitor Circuit: 1NC	Main Circuit: 11 12 41 42 Monitor Circuit: 23 24 Monitor Circuit: 51 52		1m	HS5E-B7Y001	HS5E-B7Y401-G
			3m	HS5E-B7Y003	HS5E-B7Y403-G
			5m	HS5E-B7Y005	HS5E-B7Y405-G
C Main Circuit: 1NC+1NC Door Monitor Circuit: 1NC Lock Monitor Circuit: 1NO	Main Circuit: 11 12 41 42 Monitor Circuit: 21 22 Monitor Circuit: 53 54		1m	HS5E-C7Y001	HS5E-C7Y401-G
			3m	HS5E-C7Y003	HS5E-C7Y403-G
			5m	HS5E-C7Y005	HS5E-C7Y405-G
D Main Circuit: 1NC+1NC Door Monitor Circuit: 1NC Lock Monitor Circuit: 1NC	Main Circuit: 11 12 41 42 Monitor Circuit: 21 22 Monitor Circuit: 51 52		1m	HS5E-D7Y001	HS5E-D7Y401-G
			3m	HS5E-D7Y003	HS5E-D7Y403-G
			5m	HS5E-D7Y005	HS5E-D7Y405-G
F Main Circuit: 1NC+1NC Door Monitor Circuit: 2NC	Main Circuit: 11 12 41 42 Monitor Circuit: 21 22 Monitor Circuit: 31 32		1m	HS5E-F7Y001	HS5E-F7Y401-G
			3m	HS5E-F7Y003	HS5E-F7Y403-G
			5m	HS5E-F7Y005	HS5E-F7Y405-G
G Main Circuit: 1NC+1NC Door Monitor Circuit: 1NC, 1NO	Main Circuit: 11 12 41 42 Monitor Circuit: 21 22 Monitor Circuit: 33 34		1m	HS5E-G7Y001	HS5E-G7Y401-G
			3m	HS5E-G7Y003	HS5E-G7Y403-G
			5m	HS5E-G7Y005	HS5E-G7Y405-G
H Main Circuit: 1NC+1NC Door Monitor Circuit: 2NC	Main Circuit: 11 12 41 42 Monitor Circuit: 51 52 Monitor Circuit: 61 62		1m	HS5E-H7Y001	HS5E-H7Y401-G
			3m	HS5E-H7Y003	HS5E-H7Y403-G
			5m	HS5E-H7Y005	HS5E-H7Y405-G
J Main Circuit: 1NC+1NC Door Monitor Circuit: 1NC, 1NO	Main Circuit: 11 12 41 42 Monitor Circuit: 51 52 Monitor Circuit: 63 64		1m	HS5E-J7Y001	HS5E-J7Y401-G
			3m	HS5E-J7Y003	HS5E-J7Y403-G
			5m	HS5E-J7Y005	HS5E-J7Y405-G

The contact configuration shows the status when the actuator is inserted and the switch is locked.
The contact configuration shows the status when the indicator is installed.
Actuators are not supplied with the interlock switch and must be ordered separately.

Actuator Keys & Accessories (order separately)

Appearance	Part Number	Description
	HS9Z-A51	Straight
	HS9Z-A52	Right-angle
	HS9Z-A53	Angle adjustable vertical operation
	HS9Z-A55	Angle adjustable horizontal/vertical operation [1]
	HS9Z-A5P	Plug Actuator (allows switch to be used as interlock plug unit)

Item	Part Number	Description
	HS9Z-PH5	Padlock Hasp (prevents unauthorized insertion of actuator)
	HS9Z-SP51	Mounting Plate (allows easy mounting to aluminum frames)
	HS9Z-T3	Manual unlock key (long type - metal)
	HS9Z-SH5	Sliding Actuator

1. The actuator tensile strength is 500N minimum.
2. Actuators are not included and must be included separately.

Specifications

Conforming Standards	ISO14119, IEC60947-5-1, EN60947-5-1 (TÜV approval), EN1088, GS-ET-19 (BG approval), UL508, CSA C22.2, No. 14, GB 140485.5 (CCC approval) IEC60204-1/EN60204-1
Application Standards	IEC60204-1/EN60204-1
Operating Temperature	−25 to 50°C (no freezing)
Relative Humidity	45 to 85% (no condensation)
Storage Temperature	−40 to +80°C (no freezing)
Operating Environment	Degree of pollution: 3
Impulse Withstand Voltage	2.5 kV (between LED, solenoid and grounding: 0.5 kV)
Insulation Resistance (DC megger)	Between live and dead metal parts: 100 MΩ minimum Between live metal part and ground: 100 MΩ minimum Between live metal parts: 100 MΩ minimum Between Terminals of the same pole: 100 MΩ minimum
Electric Shock Protection Class	Class II (IEC61140)
Degree of Protection	IP67 (IEC60529)
Shock Resistance	Operating extremes: 100 m/s² (10 G) Damage limits: 1000 m/s² (100 G)
Vibration Resistance	Operating extremes: 10 to 55 H, amplitude 0.35 mm minimum Damage limits: 30 Hz, amplitude 1.5 mm minimum
Actuator Operating Speed	0.05 to 1.0m/s
Direct Opening Travel	Actuator HS9Z-A51: 11mm minimum Actuator HS9Z-A52/A53/A55: 12mm minimum
Direct Opening Force	80N minimum
Actuator Retention Force	1400N minimum (GS-ET-19)
Operating Frequency	900 operations per hour
Mechanical Life	1,000,000 operations minimum (GS-ET-19)
Electrical Life	100,000 operations minimum (operating frequency 900 operations per hour, rated load AC-12, 250V, 1A)
Conditional Short-circuit Current	50A (250V) (Note: Use 250V/10A fast acting type fuse for short circuit protection.)
Cable	21AWG - 8-core: 0.5mm² or equivalent/core (HS5E-V types: No. 22AWG - 12-core :0.3mm² on equivalent/ core)
Cable Diameter	ø7.6 mm
Weight (approx.)	400g - 1m cable type, 580g - 3m cable type, 760g - 5m cable type

Specifications

Rated Voltage	24V DC
Current	266 mA
Coil Resistance	90Ω (at 20°C)
Operating Voltage	Rated voltage x 85% or less (at 20°C)
Return Voltage	Rated voltage x 10% or more (at 20°C)
Maximum Continuous Applying Voltage	Rated voltage x 110%
Insulation Class	Class F

Pilot Light

Rated Voltage	24V DC
Current	10mA
Light Source	LED
Light Color	Green

Current Ratings

| Rated Insulation Voltage (U_i) [2]			250V (between LED, solenoid and grounding: 30V)		
Thermal Current (I_{th})			2.5A		
Rated Voltage (U_e)			30V	125V	250V
Rated Current (Ie) [3]	AC	Resistive load (AC12)	—	2A	1A
		Inductive Load (AC15)	—	1A	0.5A
	DC	Resistive load (DC12)	2A	0.4A	0.2A
		Inductive Load (DC13)	1A	0.22A	0.1A

1. Minimum applicable load (reference value): 3V AC/DC, 5 mA
2. UL rating: 125V
3. TUV, BG rating: AC-15, 0.5A/250V, DC-13, 0.22A/125V
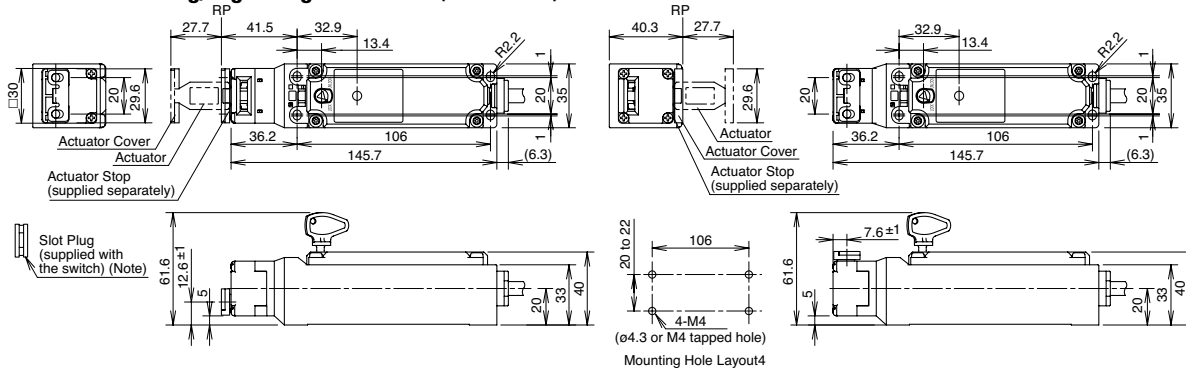   UL, c-UL rating: Pilot duty AC 0.5A/125V, Pilot duty DC 0.22A/125V

Overview

XW Series E-Stops

Interlock Switches

Enabling Switches

Safety Control Relays

Light Curtains

AS-Interface Safety at Work

Dimensions (mm) and Mounting Hole Layouts
HS5E-□□4□-G (with indicator)
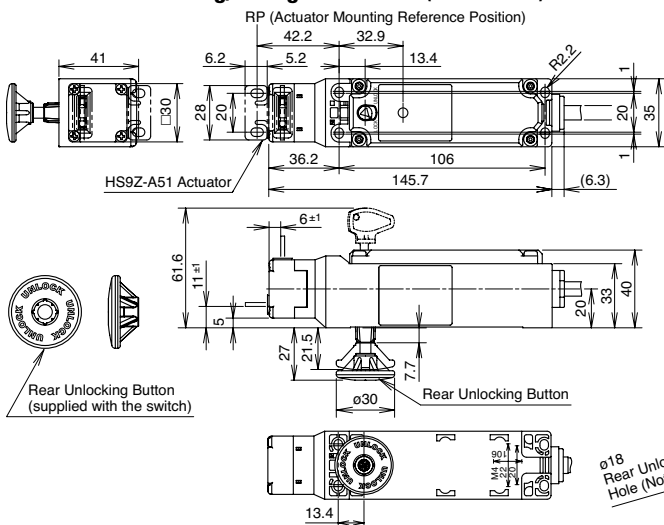## Horizontal Mounting/Straight Actuator (HS9Z-A51)
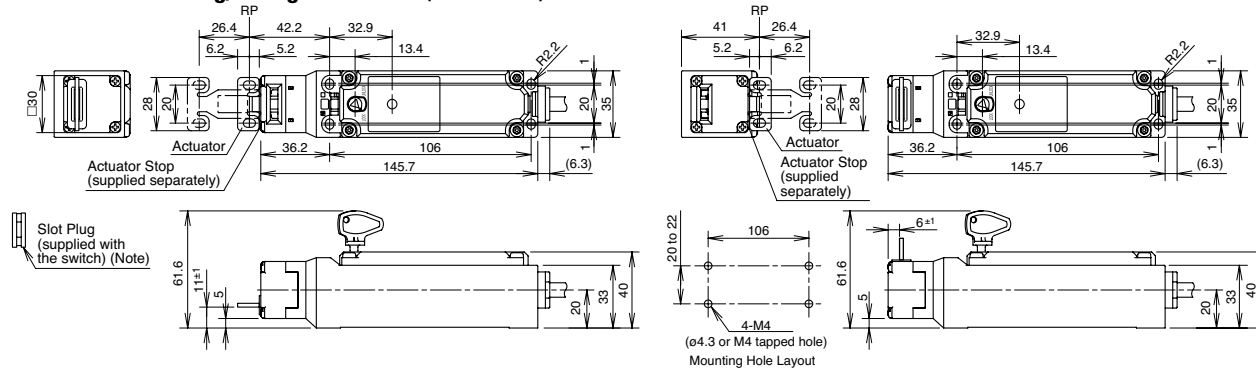
Vertical Mounting/Right-angle Actuator (HS9Z-A52)

HS5E-□44L□-G (rear unlocking button type)
Horizontal Mounting/Straight Actuator (HS9Z-A51)

Rear unlocking button mounting

X ≤ 6	Panel mounting
6 < X < 23	Not mountable
23 ≤ X ≤ 33	Use HS9Z-FL53 rear unlocking button kit (Note)
33 < X ≤ 43	Use HS9Z-FL54 rear unlocking button kit (Note)

X = Panel thickness
(including panel, mounting frame, and mounting plate)

Note: See page 306 for details.

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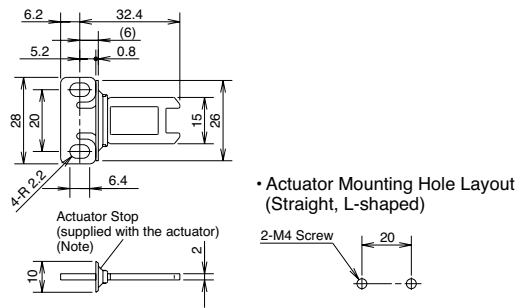
Actuator Mounting Reference Position

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

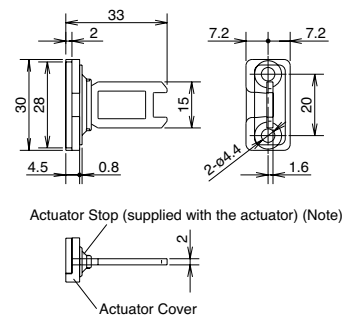Note: After mounting the actuator, remove the actuator stop from the actuator.
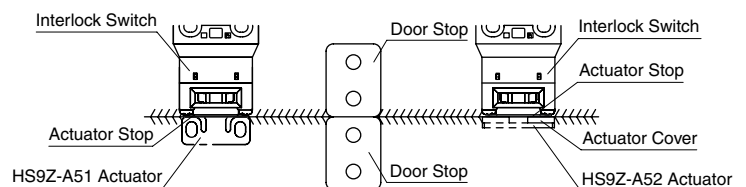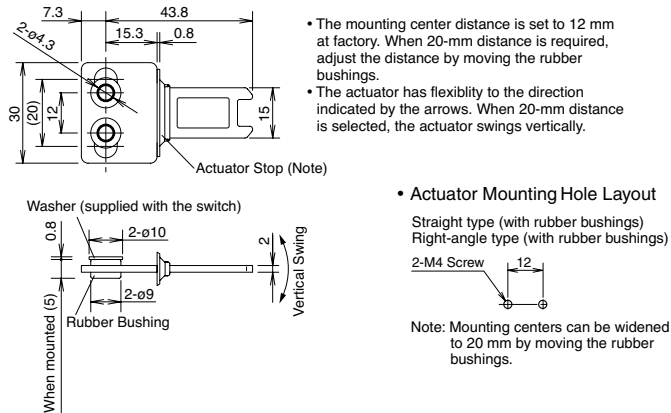
Dimensions and Mounting Hole Layouts, continued
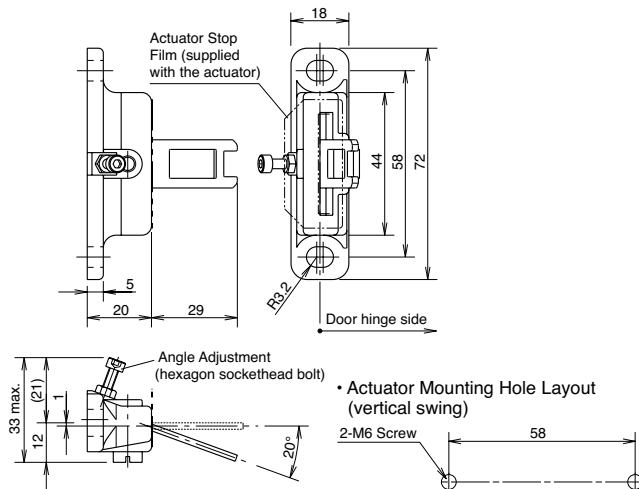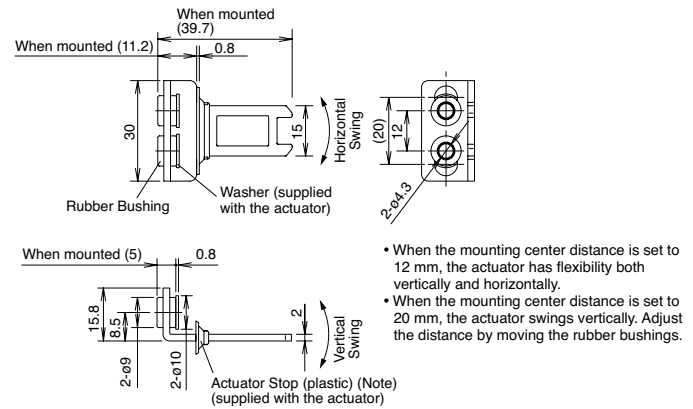
Straight Actuator (HS9Z-A51)

• Actuator Mounting Hole Layout (Straight, L-shaped)

Actuator Stop (supplied with the actuator) (Note)

Right-angle Actuator (HS9Z-A52)

Actuator Stop (supplied with the actuator) (Note)

Actuator Cover

Straight Actuator w/Rubber Bushings (HS9Z-A51A)

• The mounting center distance is set to 12 mm at factory. When 20-mm distance is required, adjust the distance by moving the rubber bushings.
• The actuator has flexiblity to the direction indicated by the arrows. When 20-mm distance is selected, the actuator swings vertically.

Actuator Stop (Note)

Washer (supplied with the switch)

Rubber Bushing

• Actuator Mounting Hole Layout
  Straight type (with rubber bushings)
  Right-angle type (with rubber bushings)

Note: Mounting centers can be widened to 20 mm by moving the rubber bushings.

Actuator Stop Film (supplied with the actuator)

Door hinge side

Angle Adjustment (hexagon sockethead bolt)

• Actuator Mounting Hole Layout (vertical swing)

2-M6 Screw

Right-angle Actuator w/Rubber Bushings (HS9Z-A52A)

When mounted (11.2)
When mounted (39.7)

Rubber Bushing
Washer (supplied with the actuator)

When mounted (5)

Actuator Stop (plastic) (Note) (supplied with the actuator)

• When the mounting center distance is set to 12 mm, the actuator has flexibility both vertically and horizontally.
• When the mounting center distance is set to 20 mm, the actuator swings vertically. Adjust the distance by moving the rubber bushings.

Horizontal Adjustment

Orienting Insert

Angle Adjustment (M3 Hexagon Socket Head Screw)

Actuator Stop (Note)

R2.1 (M4 Holes)

Vertical Adjustment

Orienting Insert

Actuator Stop (Note)

Angle Adjustment (M3 Hexagon Socket Head Screw)

• Actuator Mounting Hole Layout (horizontal/vertical swing)

2-M4 Screw

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. Do not lose the orientating insert, otherwise the actuator will not swing properly.

Dimensions and Mounting Hole Layouts, continued

Mounting Plate (HS9Z-SP51)

Material:　Anodized aluminum A6063
Weight:　　Approx. 180g

Drilling Rear Unlocking Button Hole

When installing the HS5E-□44L□-G
(rear unlocking button type), provide a rear
unlocking button hole on the HS9Z-SP51.

Manual Unlocking Key (Metal) (HS9Z-T3)

Manual Unlocking Key (plastic)

Rear Unlocking Button Kit (HS9Z-FL5□)

Button (PA66)

Hinge + Plate (SUS)

Button pressed (unlocked)

Button released

HS5E-L Interlock Switch (sold separately)

Pin (SUS)

Total thickness of mounting frame,
panel, and mounting plate: 23 to 43 mm

Link Rod (SUS)

Screw (Iron)

**Rear Unlocking Button Kit
Mounting Hole Layout**

2 or 4-M4 Screws

ø18 Rear Unlocking
Button Hole (Note)

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

Solenoid Locking Safety Switches | HS5E

Overview

XW Series E-Stops

Interlock Switches

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Safety Control Relays

Light Curtains

AS-Interface Safety at Work

Circuit Diagrams and Operating Characteristics

Standard and Rear Unlocking Type - Spring Lock Type

Interlock Switch Status	Status 1	Status 2	Status 3	Status 4	Manual Unlock
	• Door Closed • Machine ready to operate • Solenoid de-energized	• Door Closed • Machine cannot be operated • Solenoid de-energized	• Door Open • Machine cannot be operated • Solenoid de-energized	• Door Open • Machine cannot be operated • Solenoid energized	• Door Closed • Machine cannot be operated • Solenoid de-energized → energized
Door Status					
Circuit Diagram (HS5E-A4)					
Door	Closed (locked)	Closed (unlocked)	Open	Open	Closed (unlocked)

Contact Configuration			Status 1	Status 2	Status 3	Status 4	Manual Unlock
HS5E-A4		Main Circuit 11–42	ON (closed)	OFF (open)	OFF (open)	OFF (open)	OFF (open)
		Monitor Circuit (door open) 23-24	OFF (open)	OFF (open)	ON (closed)	ON (closed)	OFF (open)
		Monitor Circuit (unlocked) 53–54	OFF (open)	ON (closed)	ON (closed)	ON (closed)	ON (closed)
HS5E-B4		Main Circuit 11–42	ON (closed)	OFF (open)	OFF (open)	OFF (open)	OFF (open)
		Monitor Circuit (door open) 23–24	OFF (open)	OFF (open)	ON (closed)	ON (closed)	OFF (open)
		Monitor Circuit (locked) 51–52	ON (closed)	OFF (open)	OFF (open)	OFF (open)	OFF (open)
HS5E-C4		Main Circuit 11–42	ON (closed)	OFF (open)	OFF (open)	OFF (open)	OFF (open)
		Monitor Circuit (door closed) 21–22	ON (closed)	ON (closed)	OFF (open)	OFF (open)	ON (closed)
		Monitor Circuit (unlocked) 53–54	OFF (open)	ON (closed)	ON (closed)	ON (closed)	ON (closed)
HS5E-D4		Main Circuit 11–42	ON (closed)	OFF (open)	OFF (open)	OFF (open)	OFF (open)
		Monitor Circuit (door closed) 21–22	ON (closed)	ON (closed)	OFF (open)	OFF (open)	ON (closed)
		Monitor Circuit (locked) 51–52	ON (closed)	OFF (open)	OFF (open)	OFF (open)	OFF (open)
HS5E-F4		Main Circuit 11–42	ON (closed)	OFF (open)	OFF (open)	OFF (open)	OFF (open)
		Monitor Circuit (door closed) 21–22	ON (closed)	ON (closed)	OFF (open)	OFF (open)	ON (closed)
		Monitor Circuit (door closed) 31–32	ON (closed)	ON (closed)	OFF (open)	OFF (open)	ON (closed)
HS5E-G4		Main Circuit 11–42	ON (closed)	OFF (open)	OFF (open)	OFF (open)	OFF (open)
		Monitor Circuit (door closed) 21–22	ON (closed)	ON (closed)	OFF (open)	OFF (open)	ON (closed)
		Monitor Circuit (door open) 33–34	OFF (open)	OFF (open)	ON (closed)	ON (closed)	OFF (open)
HS5E-H4		Main Circuit 11–42	ON (closed)	OFF (open)	OFF (open)	OFF (open)	OFF (open)
		Monitor Circuit (locked) 51–52	ON (closed)	OFF (open)	OFF (open)	OFF (open)	OFF (open)
		Monitor Circuit (locked) 61–62	ON (closed)	OFF (open)	OFF (open)	OFF (open)	OFF (open)
HS5E-J4		Main Circuit 11–42	ON (closed)	OFF (open)	OFF (open)	OFF (open)	OFF (open)
		Monitor Circuit (locked) 51–52	ON (closed)	OFF (open)	OFF (open)	OFF (open)	OFF (open)
		Monitor Circuit (unlocked) 63–64	OFF (open)	ON (closed)	ON (closed)	ON (closed)	ON (closed)
Solenoid Power A1-A2 (all types)			OFF (de-energized)	ON (energized)	ON (energized)	OFF (de-energized)	OFF (de-energized)

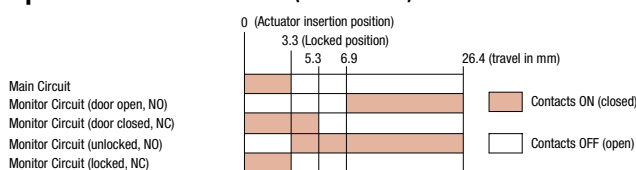Door Monitor (Actuator Inserted) / Lock Monitor (Solenoid OFF)

ℹ The above contact configuration shows the status when the actuator is inserted and locked.
Main Circuit: Connected to the control circuit of machine drive part, sending interlock signals of the protective door.
Monitor Circuit: Sends monitoring signals of protective door open/closed status or protective door lock/unlock status.

Operation Characteristics (reference)

0 (Actuator insertion position)
3.3 (Locked position)
5.3 6.9
26.4 (travel in mm)

Main Circuit
Monitor Circuit (door open, NO)
Monitor Circuit (door closed, NC)
Monitor Circuit (unlocked, NO)
Monitor Circuit (locked, NC)

■ Contacts ON (closed)
□ Contacts OFF (open)

The operation characteristics shown in the chart above are of the HS9Z-A51. For other actuator types, add 1.3 mm.

The operation characteristics show the contact status when the actuator enters the entry slot of an interlock switch.
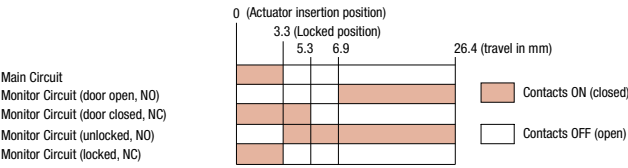
Standard Type - Solenoid Lock Type

		Status 1	Status 2	Status 3	Status 4	Manual Unlock
Interlock Switch Status		• Door Closed • Machine ready to operate • Solenoid de-energized	• Door Closed • Machine cannot be operated • Solenoid de-energized	• Door Open • Machine cannot be operated • Solenoid de-energized	• Door Open • Machine cannot be operated • Solenoid energized	• Door Closed • Machine cannot be operated • Solenoid de-energized → energized
Door Status						Manual Unlock Status
Circuit Diagram (HS5E-A7Y)						
Door		**Closed (locked)**	**Closed (unlocked)**	**Open**	**Open**	**Closed (unlocked)**
Contact Configuration	**HS5E-A7Y** — Main Circuit 11–42	ON (closed)	OFF (open)	OFF (open)	OFF (open)	OFF (open)
	Monitor Circuit (door open) 23-24	OFF (open)	OFF (open)	ON (closed)	ON (closed)	OFF (open)
	Monitor Circuit (unlocked) 53–54	OFF (open)	ON (closed)	ON (closed)	ON (closed)	ON (closed)
	HS5E-B7Y — Main Circuit 11–42	ON (closed)	OFF (open)	OFF (open)	OFF (open)	OFF (open)
	Monitor Circuit (door open) 23–24	OFF (open)	OFF (open)	ON (closed)	ON (closed)	OFF (open)
	Monitor Circuit (locked) 51–52	ON (closed)	OFF (open)	OFF (open)	OFF (open)	OFF (open)
	HS5E-C7Y — Main Circuit 11–42	ON (closed)	OFF (open)	OFF (open)	OFF (open)	OFF (open)
	Monitor Circuit (door closed) 21–22	ON (closed)	ON (closed)	OFF (open)	OFF (open)	ON (closed)
	Monitor Circuit (unlocked) 53–54	OFF (open)	ON (closed)	ON (closed)	ON (closed)	ON (closed)
	HS5E-D7Y — Main Circuit 11–42	ON (closed)	OFF (open)	OFF (open)	OFF (open)	OFF (open)
	Monitor Circuit (door closed) 21–22	ON (closed)	ON (closed)	OFF (open)	OFF (open)	ON (closed)
	Monitor Circuit (locked) 51–52	ON (closed)	OFF (open)	OFF (open)	OFF (open)	OFF (open)
	HS5E-F7Y — Main Circuit 11–42	ON (closed)	OFF (open)	OFF (open)	OFF (open)	OFF (open)
	Monitor Circuit (door closed) 21–22	ON (closed)	ON (closed)	OFF (open)	OFF (open)	ON (closed)
	Monitor Circuit (door closed) 31–32	ON (closed)	ON (closed)	OFF (open)	OFF (open)	ON (closed)
	HS5E-G7Y — Main Circuit 11–42	ON (closed)	OFF (open)	OFF (open)	OFF (open)	OFF (open)
	Monitor Circuit (door closed) 21–22	ON (closed)	ON (closed)	OFF (open)	OFF (open)	ON (closed)
	Monitor Circuit (door open) 33–34	OFF (open)	OFF (open)	ON (closed)	ON (closed)	OFF (open)
	HS5E-H7Y — Main Circuit 11–42	ON (closed)	OFF (open)	OFF (open)	OFF (open)	OFF (open)
	Monitor Circuit (locked) 51–52	ON (closed)	OFF (open)	OFF (open)	OFF (open)	OFF (open)
	Monitor Circuit (locked) 61–62	ON (closed)	OFF (open)	OFF (open)	OFF (open)	OFF (open)
	HS5E-J7Y — Main Circuit 11–42	ON (closed)	OFF (open)	OFF (open)	OFF (open)	OFF (open)
	Monitor Circuit (locked) 51–52	ON (closed)	OFF (open)	OFF (open)	OFF (open)	OFF (open)
	Monitor Circuit (unlocked) 63–64	OFF (open)	ON (closed)	ON (closed)	ON (closed)	ON (closed)
Solenoid Power A1-A2 (all types)		ON (energized)	OFF (de-energized)	OFF (de-energized)	ON (energized)[2]	OFF to ON [1, 2]

Door Monitor (Actuator inserted) / Lock Monitor (Solenoid ON)

The above contact configuration shows the status when the actuator is inserted and locked.
Main Circuit: Connected to the control circuit of machine drive part, sending interlock signals of the protective door.
Monitor Circuit: Sends monitoring signals of protective door open/closed status or protective door lock/unlock status.

1: Actuator can be unlocked manually for confirming the door movement before wiring and energizing, and also for emergency situation such as power failure.

2: When the operator is confined in a hazardous zone, the actuator can be unlocked manually by pressing the rear unlocking button.
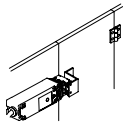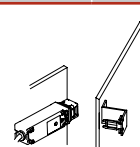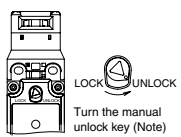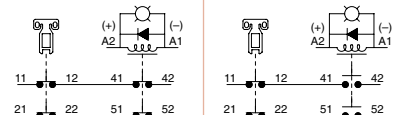
Operation Characteristics (reference)

0 (Actuator insertion position)
3.3 (Locked position)
5.3   6.9
26.4 (travel in mm)

Main Circuit
Monitor Circuit (door open, NO)
Monitor Circuit (door closed, NC)
Monitor Circuit (unlocked, NO)
Monitor Circuit (locked, NC)

Contacts ON (closed)
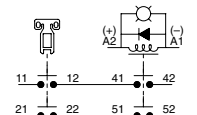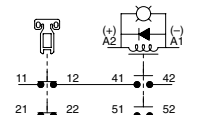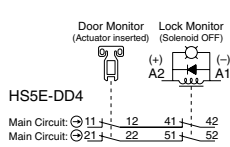Contacts OFF (open)

The operation characteristics shown in the chart above are of the HS9Z-A51. For other actuator types, add 1.3 mm.

The operation characteristics show the contact status when the actuator enters the entry slot of an interlock switch.
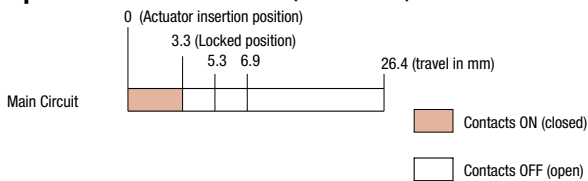
Dual Safety Circuit Type

Interlock Switch Status		Status 1	Status 2	Status 3	Status 4	Manual Unlock
		• Door Closed • Machine ready to operate • Solenoid de-energized	• Door Closed • Machine cannot be operated • Solenoid energized	• Door Open • Machine cannot be operated • Solenoid energized	• Door Open • Machine cannot be operated • Solenoid de-energized	• Door Closed • Machine cannot be operated • Solenoid de-energized
Door Status						LOCK UNLOCK Turn the manual unlock key (Note)
Circuit Diagram (HS5E-A7Y)						
Door		Closed (locked)	Closed (unlocked)	Open	Open	Closed (unlocked)
Contact Configuration	Main Circuit 11–42	ON (closed)	OFF (open)	OFF (open)	OFF (open)	OFF (open)
	Main Circuit 21–52	ON (closed)	OFF (open)	OFF (open)	OFF (open)	OFF (open)
Solenoid Power A1-A2 (all types)		OFF (de-energized)	ON (energized)	ON (energized)	OFF (de-energized)	OFF (de-energized)

Contact Configuration:

Door Monitor (Actuator inserted)   Lock Monitor (Solenoid OFF)
HS5E-DD4
Main Circuit: 11 — 12   41 — 42
Main Circuit: 21 — 22   51 — 52

ℹ The above contact configuration shows the status when the actuator is inserted and locked.
Main Circuit: Connected to the control circuit of machine drive part, sending interlock signals of the protective door.

Note: Actuator can be unlocked manually for confirming the door movement before wiring and energizing, and also for emergency situation such as power failure.
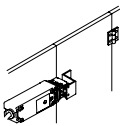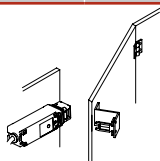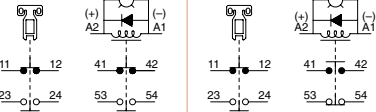
Operation Characteristics (reference)

0 (Actuator insertion position)
3.3 (Locked position)
5.3 6.9
26.4 (travel in mm)
Main Circuit

▨ Contacts ON (closed)
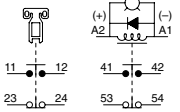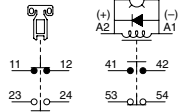☐ Contacts OFF (open)

The operation characteristics shown in the chart above are of the HS9Z-A51. For other actuator types, add 1.3 mm.

The operation characteristics show the contact status when the actuator enters the entry slot of an interlock switch.
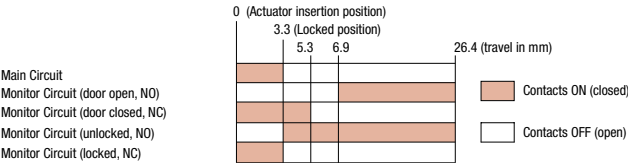
Overview

XW Series E-Stops

Interlock Switches

Enabling Switches

Safety Control Relays

Light Curtains

AS-Interface Safety at Work

Sidebar navigation: Overview | XW Series E-Stops | **Interlock Switches** | Enabling Switches | Safety Control Relays | Light Curtains | AS-Interface Safety at Work

Standard Type - Solenoid Lock Type

Interlock Switch Status	Status 1	Status 2	Status 3	Status 4	Manual Unlock
	• Door Closed • Machine ready to operate • Solenoid de-energized	• Door Closed • Machine cannot be operated • Solenoid energized	• Door Open • Machine cannot be operated • Solenoid energized	• Door Open • Machine cannot be operated • Solenoid de-energized	• Door Closed • Machine cannot be operated • Solenoid de-energized
Door Status					Turn the manual unlock key (Note) LOCK — UNLOCK
Circuit Diagram (HS5E-VA4)	11–12, 23–24 / 41–42 (+) A2, A1 (−), 53–54	11–12, 23–24 / 41–42 (+) A2, A1 (−), 53–54	11–12, 23–24 / 41–42 (+) A2, A1 (−), 53–54	11–12, 23–24 / 41–42 (+) A2, A1 (−), 53–54	11–12, 23–24 / 41–42 (+) A2, A1 (−), 53–54
Door	Closed (locked)	Closed (unlocked)	Open	Open	Closed (unlocked)

Contact Configuration

HS5E-VA4 — Door Monitor (Actuator Inserted), Lock Monitor (Solenoid OFF)
Monitor Circuit: 11–12, 23–24, 41–42, 53–54

	Status 1	Status 2	Status 3	Status 4	Manual Unlock
Main Circuit 11–42	ON (closed)	ON (closed)	OFF (open)	OFF (open)	ON (closed)
Monitor Circuit (door open) 23-24	OFF (open)	OFF (open)	ON (closed)	ON (closed)	OFF (open)
Monitor Circuit (door open) 41-42	ON (closed)	OFF (open)	OFF (open)	OFF (open)	OFF (open)
Monitor Circuit (unlocked) 53–54	OFF (open)	ON (closed)	ON (closed)	ON (closed)	ON (closed)

HS5E-VB4
Monitor Circuit: 11–12, 23–24, 41–42, 51–52

	Status 1	Status 2	Status 3	Status 4	Manual Unlock
Main Circuit 11–42	ON (closed)	ON (closed)	OFF (open)	OFF (open)	ON (closed)
Monitor Circuit (door open) 23–24	OFF (open)	OFF (open)	ON (closed)	ON (closed)	OFF (open)
Monitor Circuit (door open) 41-42	ON (closed)	OFF (open)	OFF (open)	OFF (open)	OFF (open)
Monitor Circuit (locked) 51–52	ON (closed)	OFF (open)	OFF (open)	OFF (open)	OFF (open)

HS5E-VC4
Monitor Circuit: 11–12, 21–22, 41–42, 53–54

	Status 1	Status 2	Status 3	Status 4	Manual Unlock
Main Circuit 11–42	ON (closed)	ON (closed)	OFF (open)	OFF (open)	ON (closed)
Monitor Circuit (door closed) 21–22	ON (closed)	ON (closed)	OFF (open)	OFF (open)	ON (closed)
Monitor Circuit (door open) 41-42	ON (closed)	OFF (open)	OFF (open)	OFF (open)	OFF (open)
Monitor Circuit (unlocked) 53–54	OFF (open)	ON (closed)	ON (closed)	ON (closed)	ON (closed)

HS5E-VD4
Monitor Circuit: 11–12, 21–22, 41–42, 51–52

	Status 1	Status 2	Status 3	Status 4	Manual Unlock
Main Circuit 11–42	ON (closed)	ON (closed)	OFF (open)	OFF (open)	ON (closed)
Monitor Circuit (door closed) 21–22	ON (closed)	ON (closed)	OFF (open)	OFF (open)	ON (closed)
Monitor Circuit (door open) 41-42	ON (closed)	OFF (open)	OFF (open)	OFF (open)	OFF (open)
Monitor Circuit (locked) 51–52	ON (closed)	OFF (open)	OFF (open)	OFF (open)	OFF (open)

| Solenoid Power A1-A2 (all types) | OFF (de-energized) | ON (energized) | ON (energized) | OFF (de-energized) | OFF (de-energized) |

> ℹ The above contact configuration shows the status when the actuator is inserted and locked.
> Monitor Circuit: Sends monitoring signals of protective door open/closed status or protective door lock/unlock status.

Note: Actuator can be unlocked manually for confirming the door movement before wiring and energizing, and also for emergency situation such as power failure.
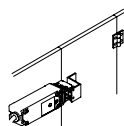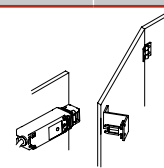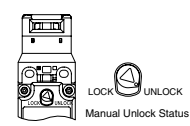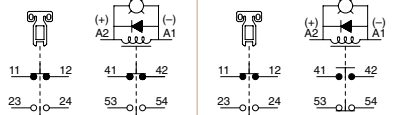
Operation Characteristics (reference)

0 (Actuator insertion position)
3.3 (Locked position)
5.3   6.9   26.4 (travel in mm)

Main Circuit
Monitor Circuit (door open, NO)
Monitor Circuit (door closed, NC)
Monitor Circuit (unlocked, NO)
Monitor Circuit (locked, NC)

■ Contacts ON (closed)
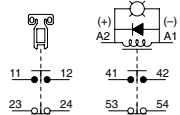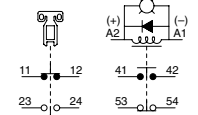□ Contacts OFF (open)

The operation characteristics shown in the chart above are of the HS9Z-A51. For other actuator types, add 1.3 mm.

The operation characteristics show the contact status when the actuator enters the entry slot of an interlock switch.
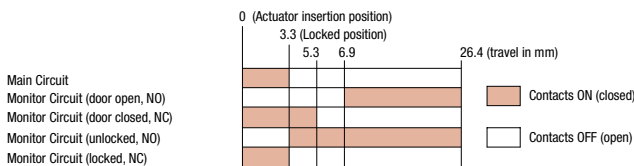
Standard Type - Solenoid Lock Type

Interlock Switch Status	Status 1	Status 2	Status 3	Status 4	Manual Unlock
	• Door Closed • Machine ready to operate • Solenoid energized	• Door Closed • Machine cannot be operated • Solenoid de-energized	• Door Open • Machine cannot be operated • Solenoid de-energized	• Door Open • Machine cannot be operated • Solenoid energized	• Door Closed • Machine cannot be operated • Solenoid de-energized → energized
Door Status					LOCK — UNLOCK Manual Unlock Status
Circuit Diagram (HS5E-VA4)	(diagram)	(diagram)	(diagram)	(diagram)	(diagram)
Door	Closed (locked)	Closed (unlocked)	Open	Open	Closed (unlocked)

Contact Configuration

HS5E-VA7Y
Door Monitor (Actuator Inserted) / Lock Monitor (Solenoid ON)
Monitor Circuit: 11–12, 23–24, 41–42, 53–54

		Status 1	Status 2	Status 3	Status 4	Manual Unlock
HS5E-VA7Y	Main Circuit 11–42	ON (closed)	ON (closed)	OFF (open)	OFF (open)	ON (closed)
	Monitor Circuit (door open) 23-24	OFF (open)	OFF (open)	ON (closed)	ON (closed)	OFF (open)
	Monitor Circuit (door open) 41-42	ON (closed)	OFF (open)	OFF (open)	OFF (open)	OFF (open)
	Monitor Circuit (unlocked) 53–54	OFF (open)	ON (closed)	ON (closed)	ON (closed)	ON (closed)
HS5E-VB7Y	Main Circuit 11–42	ON (closed)	ON (closed)	OFF (open)	OFF (open)	ON (closed)
	Monitor Circuit (door open) 23–24	OFF (open)	OFF (open)	ON (closed)	ON (closed)	OFF (open)
	Monitor Circuit (door open) 41-42	ON (closed)	OFF (open)	OFF (open)	OFF (open)	OFF (open)
	Monitor Circuit (locked) 51–52	ON (closed)	OFF (open)	OFF (open)	OFF (open)	OFF (open)
HS5E-VC7Y	Main Circuit 11–42	ON (closed)	ON (closed)	OFF (open)	OFF (open)	ON (closed)
	Monitor Circuit (door closed) 21–22	ON (closed)	ON (closed)	OFF (open)	OFF (open)	ON (closed)
	Monitor Circuit (door open) 41-42	ON (closed)	OFF (open)	OFF (open)	OFF (open)	OFF (open)
	Monitor Circuit (unlocked) 53–54	OFF (open)	ON (closed)	ON (closed)	ON (closed)	ON (closed)
HS5E-VD7Y	Main Circuit 11–42	ON (closed)	ON (closed)	OFF (open)	OFF (open)	ON (closed)
	Monitor Circuit (door closed) 21–22	ON (closed)	ON (closed)	OFF (open)	OFF (open)	ON (closed)
	Monitor Circuit (door open) 41-42	ON (closed)	OFF (open)	OFF (open)	OFF (open)	OFF (open)
	Monitor Circuit (locked) 51–52	ON (closed)	OFF (open)	OFF (open)	OFF (open)	OFF (open)
Solenoid Power A1-A2 (all types)		OFF (de-energized)	ON (energized)	ON (energized)	OFF (de-energized)	OFF (de-energized)

HS5E-VB7Y Monitor Circuit: 11–12, 23–24, 41–42, 51–52
HS5E-VC7Y Monitor Circuit: 11–12, 21–22, 41–42, 53–54
HS5E-VD7Y Monitor Circuit: 11–12, 21–22, 41–42, 51–52

ℹ The above contact configuration shows the status when the actuator is inserted and locked.
Monitor Circuit: Sends monitoring signals of protective door open/closed status or protective door lock/unlock status.

Note: Actuator can be unlocked manually for confirming the door movement before wiring and energizing, and also for emergency situation such as power failure.

Operation Characteristics (reference)

0 (Actuator insertion position)
3.3 (Locked position)
5.3   6.9   26.4 (travel in mm)

Main Circuit	
Monitor Circuit (door open, NO)	
Monitor Circuit (door closed, NC)	
Monitor Circuit (unlocked, NO)	
Monitor Circuit (locked, NC)	

▨ Contacts ON (closed)
☐ Contacts OFF (open)

The operation characteristics shown in the chart above are of the HS9Z-A51. For other actuator types, add 1.3 mm.

The operation characteristics show the contact status when the actuator enters the entry slot of an interlock switch.

Sidebar: Overview | XW Series E-Stops | Interlock Switches | Enabling Switches | Safety Control Relays | Light Curtains | AS-Interface Safety at Work

Operating Instructions

Overview

XW Series E-Stops

Interlock Switches

Enabling Switches

Safety Control Relays

Light Curtains

AS-Interface Safety at Work

Minimum Radius of Hinged Door

- When using the interlock switch for a hinged door, refer to the minimum radius of doors shown below. For the doors with small minimum radius, use angle adjustable actuators (HS9Z-A53 or HS9Z-A55).
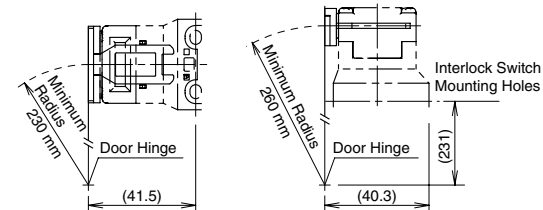
ℹ️ Because deviation or dislocation of hinged door may occur in actual applications, make sure of the correct operation before installation.

HS9Z-A52 Actuator

When the door hinge is on the extension line of the interlock switch surface:
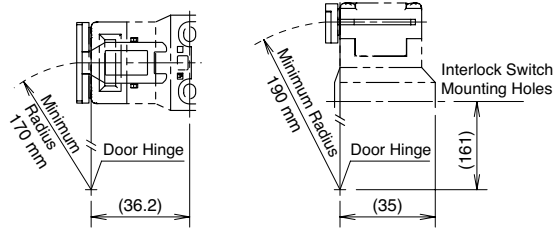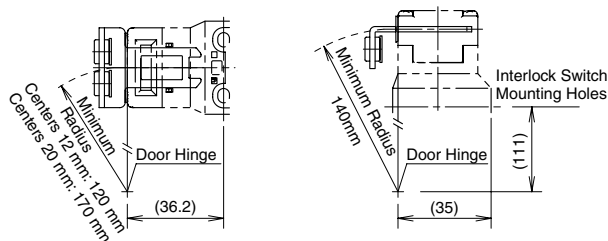

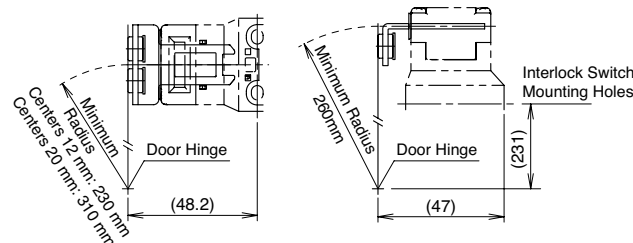When the door hinge is on the extension line of the actuator mounting surface:

HS9Z-A52 Actuator (w/rubber bushings)

When the door hinge is on the extension line of the interlock switch surface:

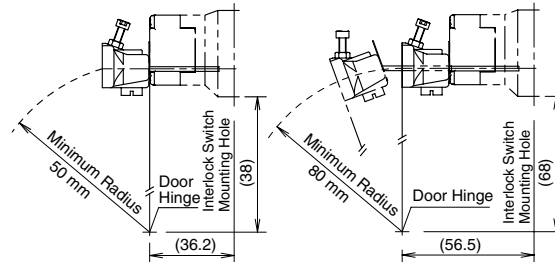When the door hinge is on the extension line of the actuator mounting surface:

Actuator Angle Adjustment

- Using the angle adjustment screw, the actuator angle can be adjusted (refer to the dimensional drawing on pagepage 304).
  Adjustable angle: 0 to 20°
- The larger the adjusted angle of the actuator, the smaller the applicable radius of the door opening.
- After installing the actuator, open the door. Then adjust the actuator so that its edge can be inserted properly into the actuator entry slot of the interlock switch.
- After adjusting the actuator angle, apply Loctite to the adjustment screw so that the screw will not move.

When using the HS9Z-A53 Angle Adjustable (vertical) Actuator

When the door hinge is on the extension line of the interlock switch surface: 50 mm

When the door hinge is on the extension line of the actuator mounting surface: 80 mm
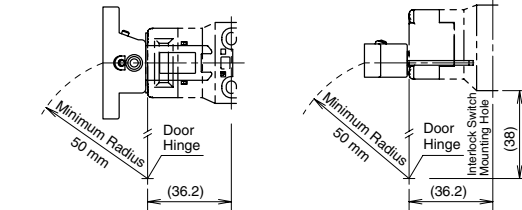

When using the HS9Z-A55 Angle Adjustable (vertical/horizontal) Actuator

When the door hinge is on the extension line of the interlock switch surface: 50 mm
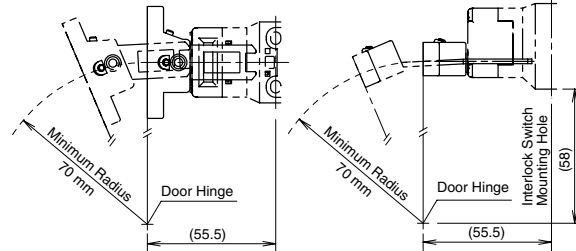
When the door hinge is on the extension line of the actuator mounting surface: 70 mm

Rotating the Head

The head of the HS5E can be rotated by removing the four screws from the corners of the HS5E head and reinstalling the head in the desired orientation. Before wiring the HS5E, replace the head if necessary. Before replacing the head, turn the manual unlock to the UNLOCK position using the manual unlock key. When reinstalling the head, make sure that no foreign object enters 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.
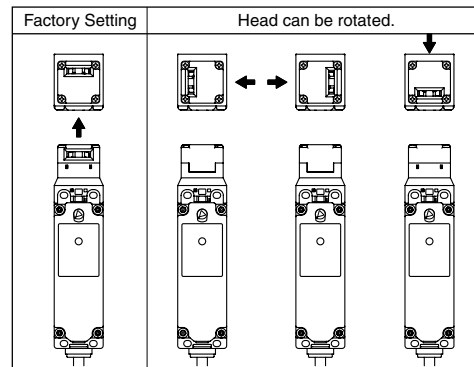
Instructions, continued

For Manual Unlocking
Spring lock type
The HS5E allows manual unlocking of the actuator to pre-check proper door movement before wiring or turning power on, as well as for emergency use such as a power failure.

Solenoid lock type
The solenoid lock type interlock switch normally does not need the manual unlock. However, only when the interlock switch would not release the actuator even though the solenoid is de-energized, the interlock switch can be unlocked manually. Unlock the interlock switch manually only when the solenoid is de-energized. Do not unlock the interlock switch manually when the solenoid is energized.

Lock — Unlock
Normal Position

Lock — Unlock
Manual Unlocking Position
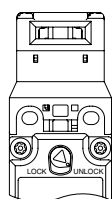
When locking or unlocking the interlock switch manually, turn the key fully using the manual unlock key supplied with the interlock switch.

Using the interlock switch with the key not fully turned (less than 90°) may cause damage to the interlock switch or operation failures (when manually unlocked, the interlock switch will keep the main circuit disconnected and the door unlocked).

Do not apply excessive force to the manual unlock, otherwise the manual unlock will become damaged.

Do not leave the manual unlock key attached to the interlock switch during operation. This is dangerous because the interlock switch can always be unlocked while the machine is in operation.


Manual Unlocking Key
(supplied with the switch)
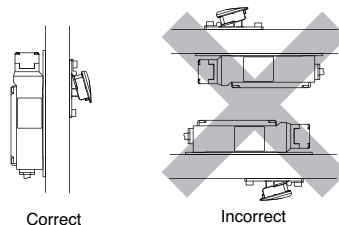
Installing the Rear Unlocking Button
After installing the interlock switch on the panel, place the rear unlocking button (supplied with the switch) on the push rod on the back of the interlock switch, and fasten the button using the M3 sems screw. Rear unlocking button can be installed alone when the total thickness of mounting frame and panel is 6 mm or less. When the total thickness of mounting frame, panel, and mounting plate is 23 to 43 mm, use the rear unlocking button kit (HS9Z-FL53 or HS9Z-FL54) sold separately.

Panel
Push Rod
Rear Unlocking Button
M3 Sems Screw
HS5E-L
Interlock Switch
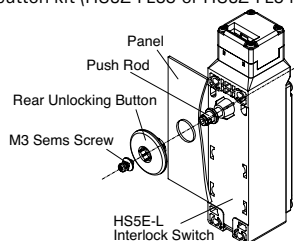
Cables
- When bending the cable during wiring, make sure that the cable radius is kept at 30 mm minimum.

- Solenoid has polarity. Be sure of the correct polarity when wiring.

Lid
Gland
Minimum Radius 30 mm min.
(48)
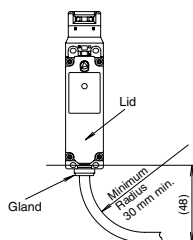
Safety Precautions
Install the rear unlocking button kit in the correct direction as shown below. Do not install the kit in incorrect directions, otherwise malfunction will be caused.

Correct

Incorrect

Do not apply strong force exceeding 100 m/s2 to the interlock switch while the rear unlocking button is not pressed, 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.

Unlock
Rear Unlocking Button

Unlock
Rear Unlocking Button
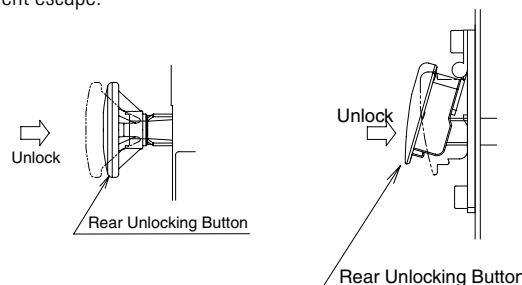
How to operate
When the rear unlocking button is pressed, the interlock switch is unlocked and the door can be opened.

To lock the interlock switch, pull back the button.

When the button remains pressed, the interlock switch cannot be locked even if the door is closed, and the main circuit remains open.

Recommended Tightening Torque
- HS5E interlock switch: 1.8 to 2.2 N·m (four M4 screws) (Note)

- Rear unlocking button: 0.5 to 0.7 N·m

- Rear unlocking button kit: 4.8 to 5.2 N·m (M5 screw)

- Actuators
  HS9Z-A51: 1.8 to 2.2 N·m (two M4 screws)
  HS9Z-A52: 0.8 to 1.2 N·m (two M4 Phillips screws)
  HS9Z-A51A/A52A: 1.0 to 1.5 N·m (two M4 screws)
  HS9Z-A53: 4.5 to 5.5 N·m (two M6 screws)
  HS9Z-A55: 1.0 to 1.5 N·m (two M4 screws)

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.

Overview

XW Series E-Stops

Interlock Switches

Enabling Switches

Safety Control Relays

Light Curtains

AS-Interface Safety at Work

Instructions, continued

Wire Identification

Wires can be identified by color and a white line printed on the wire.

- HS5E-V: Wires of gray and gray/white insulation cannot be used.
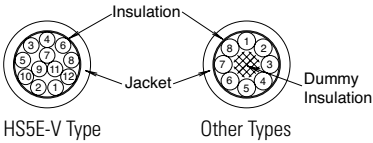- HS5E-DD: Wires of brown and brown/white insulation cannot be used.

No.	Insulation	No.	Insulation	No.	Insulation	No.	Insulation
1	White	4	Blue	7	Blue/White	10	Pink/White
2	Black	5	Brown/White	8	Orange/White	11	Gray
3	Brown	6	Orange	9	Pink	12	Gray/White

Insulation

Jacket

Dummy Insulation

HS5E-V Type   Other Types

Terminal Number Identification

- When wiring, the terminal number of each contact can be identified by wire color.
- The following table shows the identification of terminal numbers.

Type	Circuit Diagram
HS5E-A	White A2 (+) (−) A1 Black Main Circuit: Blue 11 12 41 42 Blue/White Monitor Circuit: Orange 23 24 Orange/White Monitor Circuit: Brown 53 54 Brown/White
HS5E-B	Main Circuit: Blue 11 12 41 42 Blue/White Monitor Circuit: Orange 23 24 Orange/White Monitor Circuit: Brown 51 52 Brown/White
HS5E-C	Main Circuit: Blue 11 12 41 42 Blue/White Monitor Circuit: Orange 21 22 Orange/White Monitor Circuit: Brown 53 54 Brown/White
HS5E-D	Main Circuit: Blue 11 12 41 42 Blue/White Monitor Circuit: Orange 21 22 Orange/White Monitor Circuit: Brown 51 52 Brown/White
HS5E-F	Main Circuit: Blue 11 12 41 42 Blue/White Monitor Circuit: Orange 21 22 Orange/White Monitor Circuit: Brown 31 32 Brown/White
HS5E-G	Main Circuit: Blue 11 12 41 42 Blue/White Monitor Circuit: Orange 21 22 Orange/White Monitor Circuit: Brown 33 34 Brown/White
HS5E-H	Main Circuit: Blue 11 12 41 42 Blue/White Monitor Circuit: Brown 51 52 Brown/White Monitor Circuit: Orange 61 62 Orange/White
HS5E-J	Main Circuit: Blue 11 12 41 42 Blue/White Monitor Circuit: Brown 51 52 Brown/White Monitor Circuit: Orange 63 64 Orange/White
HS5E-DD	Main Circuit: Blue 11 12 41 42 Blue/White Main Circuit: Orange 21 22 51 52 Orange/White

Type	Circuit Diagram
HS5E-VA	White A2 (+) (−) A1 Black Monitor Circuit: Blue 11 12 Blue/White Pink 41 42 Pink/White Monitor Circuit: Orange 23 24 Orange/White Monitor Circuit: Brown 53 54 Brown/White
HS5E-VB	Monitor Circuit: Blue 11 12 Blue/White Pink 41 42 Pink/White Monitor Circuit: Orange 23 24 Orange/White Monitor Circuit: Brown 51 52 Brown/White
HS5E-VC	Monitor Circuit: Blue 11 12 Blue/White Pink 41 42 Pink/White Monitor Circuit: Orange 21 22 Orange/White Monitor Circuit: Brown 53 54 Brown/White
HS5E-VD	Monitor Circuit: Blue 11 12 Blue/White Pink 41 42 Pink/White Monitor Circuit: Orange 21 22 Orange/White Monitor Circuit: Brown 51 52 Brown/White

ℹ The above contact configuration shows the status when the actuator is inserted and locked.

ℹ When wiring, cut unnecessary wires such as the dummy insulation (white) and any unused wires.

IDEC