

### HS2B Full Size Interlock Switches

**Key features:**

- Direct Opening Action: If the door is forced open, the contacts are disconnected even if they are welded or stuck
- Available with or without an indicator (red or green)
- Flexible Installation: Two actuator entries and three conduit ports are provided
- 1NC-1NO contacts
- Compact and lightweight plastic housing
- Degree of Contact Protection: IP67



GS-ET-15  
BG standard in Germany




Direct Opening Action



Double Insulation


**Part Numbers  
Body**

Model	Contact Configuration	Pilot Light	Part Number
 HS2B (plastic housing)	1NC-1NO	Without	HS2B-11NB
		With red LED	HS2B-114NB-R
		With green LED	HS2B-114NB-G



Order the actuators separately (not supplied with the switch).

**Actuator Keys & Accessories (order separately)**

Appearance	Part Number	Description
	HS9Z-A1	Straight Actuator (Mainly for sliding doors)
	HS9Z-A2	Right-angle Actuator (Mainly for rotating doors)
	HS9Z-A3	Adjustable Actuator
	HS9Z-P1	Conduit Opening Plug

**Specifications**

Conforming to Standards		IEC60947-5-1, EN60947-5-1, GS-ET-15, UL508
Operating Temperature		-25 to +70°C (no freezing)
Storage Temperature		-40 to +80°C
Operating Humidity		85% RH maximum (no condensation)
Altitude		2,000m maximum
Rated Insulation Voltage (Ui)		300V (between LED and ground: 60V)
Impulse Withstand Voltage (Uimp)		4 kV (between LED and ground: 2.5 kV)
Insulation Resistance		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)
Pollution Degree		3 (IEC60947-5-1)
Degree of Protection		IP67 (IEC60529)
Vibration Resistance	Operating Extremes	10 to 55 Hz, amplitude 0.5mm
	Damage Limits	60 m/sec <sup>2</sup> (approx. 6G)
Shock Resistance		1,000 m/sec <sup>2</sup> (approx. 100G)
Actuator Operating Speed		1 m/sec maximum
Positive Opening Travel		11 mm minimum
Positive Opening Force		36N minimum
Thermal Current (Ith)		10A
Operating Frequency		900 operations/hour
Mechanical Life		1,000,000 operations
Electrical Life		100,000 operations (rated load)
Conditional Short-circuit Current		100A (IEC60947-5-1)
Recommended Short Circuit Protection		250V, 10A fuse (Type D01 based on IEC60269-1, 60269-2)
Indicator	Operating Voltage	24V DC
	Current	10 mA
	Light Source	LED lamp
	Lens Color	Red or Green (12 mm dia. Lens)
Weight		Approx. 130g

**Contact Ratings**

		Operating Voltage (Ue)			
		30V	125V	250V	
Rated Operating Current (Ie)	AC	Resistive load (AC12)	10A	10A	6A
		Inductive load (AC15)	10A	5A	3A
	DC	Resistive load (DC12)	8A	2.2A	1.1A
		Inductive load (DC13)	4A	1.1A	0.6A

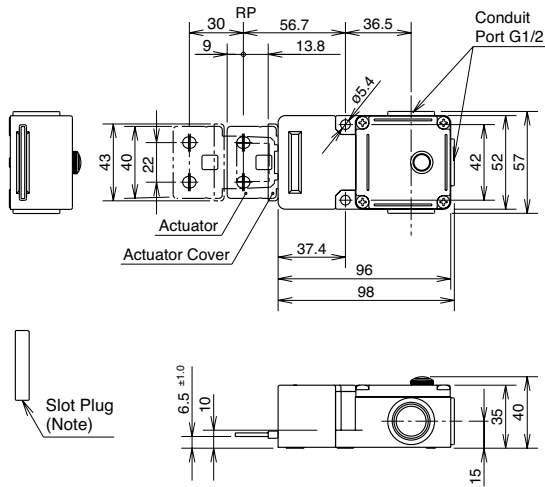
Application Examples and Circuit Diagrams

	Status 1	Status 2		Status 1	Status 2
Door/ Switch Status	Door Closed Machine ready to operate	Door opened Machine cannot be started	Door/ Switch Status	Door Closed Machine ready to operate	Door opened Machine cannot be started
Door			HS2B-11 (1NO-1NC)  Circuit Diagram		
Main Circuit	3-4: Closed	3-4: Open	Main Circuit	3-4: Closed	3-4: Open
Aux. Circuit	1-2: Open	1-2: Closed	Aux. Circuit	1-2: Open	1-2: Closed

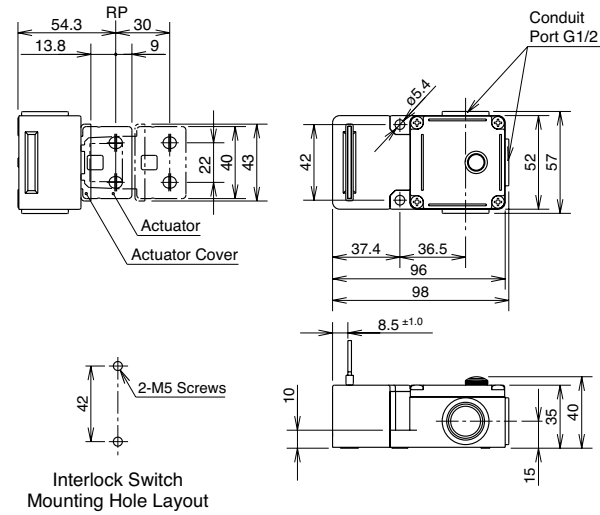
1. Main Circuit: used to enable the machine to start only when the main circuit is closed. Auxiliary Circuit: used to indicate whether the main circuit or door is open or closed.
2. Terminals + and - are used for the LED indicator, and are isolated from door status.

Dimensions (mm)  
Using the straight actuator (HS9Z-A1)

(Horizontal Mounting)



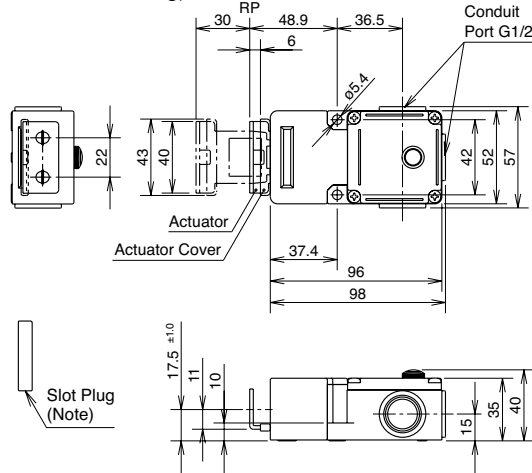
(Vertical Mounting)



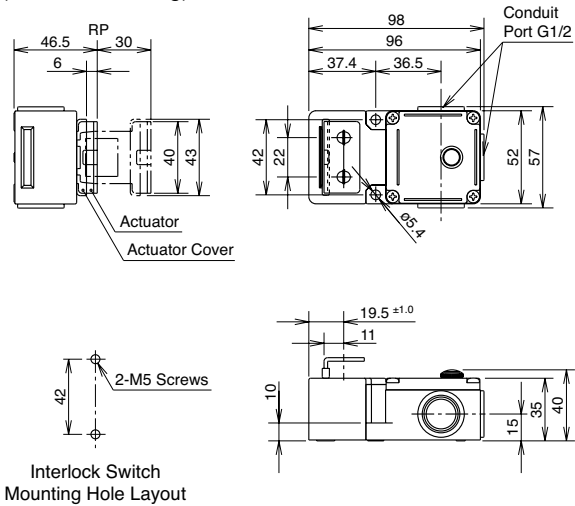
Dimensions (mm), continued

Using the Right-angle actuator (HS9Z-A2)

(Horizontal Mounting)



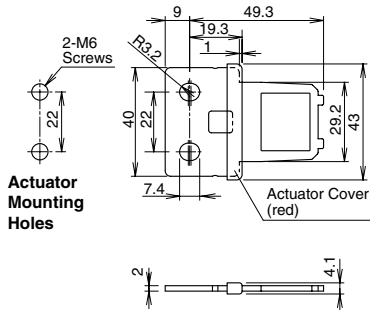
(Vertical Mounting)



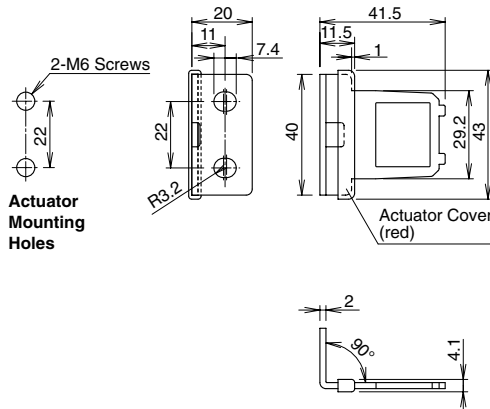
Plug the unused actuator insertion slot using the slot plug supplied with the interlock switch.

Actuator Dimensions

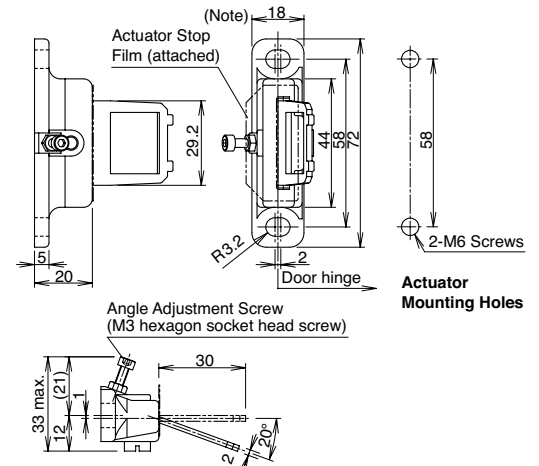
Straight Actuator HS9Z-A1



Right-angle Actuator HS9Z-A2



Angle-adjustable Actuator HS9Z-A3



Adjustable Actuator

The actuator angle is adjustable (0° to 20°) for hinged doors.

The minimum radius of the door opening can be as small as 100mm.

Actuator Angle Adjustment

- Using the screw (M3 hex socket head screw), the actuator angle can be adjusted (refer to the dimensional drawing). 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 entry slot of the safety switch.
- Recommended tightening torque: 0.8 N·m (approx. 8.0 kgf·cm)
- After adjusting the actuator angle, apply loctite or the like to the adjustment screw to prevent it from loosening.