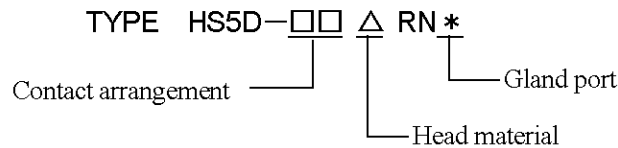


## HS5D SERIES SAFETY SWITCH



### 1. Applicable standard

Applicable Standards	IEC60947-5-1
	EN60947-5-1 (TUV approved)
	GS-ET-15 (BG approved)
	UL508 (UL listed)
	CSA C22.2 No.14 (c-UL listed)
	GB/T14048.5(CCC approved)
	EN ISO/ISO14119
Applicable Standards for Use	IEC60204-1/EN60204-1

### 2. Operating conditions

- |                         |                             |
|-------------------------|-----------------------------|
| (1) Ambient temperature | -30 to +70°C (no freezing)  |
| (2) Operating humidity  | 45 to 85% (no condensation) |
| (3) Storage temperature | -40 to +80°C (no freezing)  |
| (4) Pollution degree    | 3 (IEC60664-1)              |

### 3. Ratings

- |   |      |
|---|------|
| (1) Rated insulation voltage                            | 300V |
| (2) Thermal current                                     | 10A  |
| (3) Rated operating voltage and rated operating current |      |

		Rated operating voltage			
		30V	125V	250V	
Rated operating current	A	Resistive load (AC12)	10A	10A	6A
	C	Inductive load (AC15)	10A	5A	3A
	D	Resistive load (DC12)	8A	2.2A	1.1A
	C	Inductive load (DC13)	4A	1.1A	0.6A

- |   |  |
|---|--|
| (4) Minimum applicable load (reference value) | 5V AC/DC, 1mA<br>(Applicable range may vary with operating conditions and load types.) |
| (5) Operating frequency                       | 900 operations/hour  |

### 4. Construction

- |                                |  |
|--------------------------------|--|
| (1) Outside view               | See attached sheet   |
| (2) Mounting screw             | Body: M4×2, Actuator: M4×2   |
| (3) Degree of protection       | IP67 (IEC60529)  |
| (4) Contact arrangement — (□□) | 1NO-1NC(11), 2NC(02), 1NO-2NC(12), 3NC(03)   |
| (5) Head material — (△)        | Plastic(blank), Metal (Z) (Zinc alloy die-casting)   |
| (6) Gland port — (*)           | G1/2(blank), M20(M), PG13.5(P)   |
| (7) Housing color              | Plastic head: head color: red, Housing color: Black<br>Metal head: head color: silver, Red,<br>Housing color/Black |

(8) Applicable wire	0.5~1.5 mm <sup>2</sup> × 1
(9) Operating type	Operation by special actuator
(10) Electrical shock protection	Class II (IEC61140)
(11) Weight (approx.)	Plastic head: 80g, Metal head: 110g

## 5. Characteristics

(1) Contact resistance	50 MΩ maximum (initial value)
(2) Insulation resistance	
(a) Between live and dead metal parts	100 MΩ minimum (Measured with a 500V DC megger)
(b) Between terminals of different poles	100 MΩ minimum (Measured with a 500V DC megger)
(3) Impulse withstand voltage	4kV
(4) Dielectric strength	1,000V 1minutes (initial value)
(5) Vibration resistance	
(a) Operating extremes	Frequency 5 to 55Hz, Amplitude 0.5mm
(b) Damage limits	Frequency 30Hz, Amplitude 1.5mm
(6) Shock resistance	1000m/s <sup>2</sup>
(7) Terminal strength	
(a) Tightening torque	1.1 N · m minimum
(b) Wire tensile strength	40 N minimum
(8) Operating force	
(a) Actuator insertion	Approx. 5.0 ± 3.0N (initial value)
(b) Actuator removal	Approx. 13.0 ± 3.0N (initial value)
(9) Direct opening travel	HS9Z-A51:10.0mm minimum HS9Z-A52:11.3mm minimum
(10) Positive opening force	50N minimum (Actuator insertion)
(11) Actuator operating speed	0.05 to 1.0m/s
(12) Conditional short circuit current	100A (250V)

## 6. Life

(1) Mechanical life(without load)	1,000,000 operation minimum (GS-ET-15)
(2) Electrical life (rated load)	100,000 operation minimum (AC-12 250V,6A) 1,000,000 operation minimum (24V AC/DC,100mA)

# Contact Configuration and Operation Chart

Type	Contact Configuration	Contact Operation Chart (reference)
HS5D-11*	 Main Circuit ⊖ 11-12	 Monitor Circuit 23-24
	 Main Circuit ⊖ 21-22	
HS5D-02*	 Main Circuit ⊖ 11-12	 Main Circuit ⊖ 21-22
	 Monitor Circuit 33-34	
HS5D-03*	 Main Circuit ⊖ 11-12	 Main Circuit ⊖ 21-22
	 Main Circuit ⊖ 31-32	
	 Monitor Circuit ⊖ 31-32	

- The operation characteristics shown in the chart above are for 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.

## Head Removal Detection Function

Only the NC contact of the main circuit (11-12) turns OFF (open) when the head is removed, such as when rotating the head. Because NC contacts of other than the main circuit (11-12) turn ON (closed), be sure to connect the main circuit (11-12) to the safety circuit.