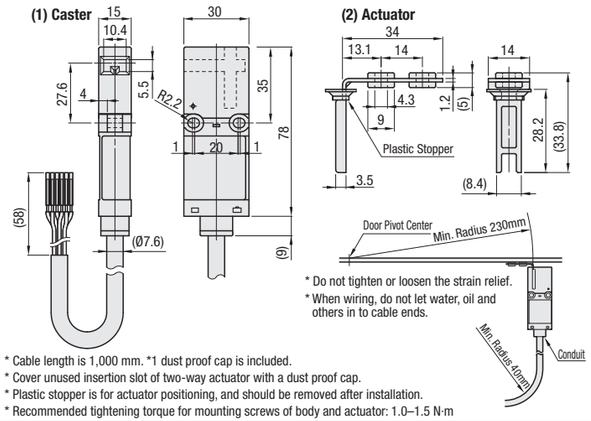
Safety Door Switches

Safety Door Switches

HSWCA (Contact Type 1NO / 1NC)
HSWCC (Contact Type 3NC)

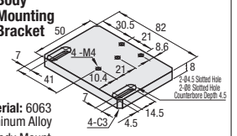


* Do not tighten or loosen the strain relief.
* When wiring, do not let water, oil and others in to cable ends.

* Cable length is 1,000 mm. *1 dust proof cap is included.
* Cover unused insertion slot of two-way actuator with a dust proof cap.
* Plastic stopper is for actuator positioning, and should be removed after installation.
* Recommended tightening torque for mounting screws of body and actuator: 1.0–1.5 N·m

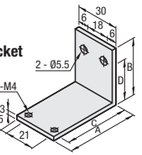
Components

(3) Body Mounting Bracket



Material: 6063 Aluminum Alloy
(3) Body Mounting Bracket

(4) Body Mounting Bracket



Material: 304 Stainless Steel
(4) Body Mounting Bracket)

Body Side Extrusion	Actuator Side Extrusion	A	B	C	D
HFS5-2020	HFS5-2020	46	19	41.4	14.5
HFS6-3030		36	27	31.4	19.5
HFS8-4040		26	34	21.4	24.5
HFS8-4545		21		16.4	27
HFS6-3030	HFS6-3030	46	31	41.4	24.5
HFS8-4040		36	40	31.4	29.5
HFS8-4545		31		26.4	32

Part Number Type	No.	Body Mounting Side	Actuator Mounting Side	Accessories: Body Mounting Extrusion Side: Mounting Brackets for Body	(5) Screw	Qty	(6) Nut	Qty	(7) Mounting Screws for Body	Qty	Actuator Mounting Door Side: (8) Screw	Qty	(9) Nut	Qty
HSWCA HSWCC	5	HFS5-2020	Panel (3mm or 5mm)	(3)	SCB4-8		HNTASN5-4		SCB4-18		SCB4-12		SLBNR4	
	6	HFS6-3030	Panel (3mm or 5mm)		SCB4-10		HNTASN6-4							
	8	HFS8-4040 HFS8-4545	Panel (3mm or 5mm)		SCB4-12		HNTASN8-4							
	5-5	HFS5-2020		(4)	SCB5-8	2	HNTASN5-5	2	SCB4-15	2	SCB4-10	2	HNTFSN5-4	2
	6-5	HFS6-3030			SCB5-10		HNTASN6-5							
	8-5	HFS8-4040			SCB5-14		HNTFSN8-5							
	845-5	HFS8-4545			SCB5-15									
	6-6	HFS6-3030	HFS6-3030		SCB5-10		HNTASN6-5							
	8-6	HFS8-4040			SCB5-15		HNTASN8-5				SCB4-12		HNTFSN6-4	
	845-6	HFS8-4545												

Contact Ratings

Rated Insulation Voltage (Ui)			300V		
Rated Current (Ith)			2.5A		
Rated Operating Voltage (Ue)			30V	125V	250V
Rated Operating Current (Ie)	AC	Resistive Load (AC–12)	—	2.5A	1.5A
		Inductive Load (AC–15)	—	1.5A	0.75A
	DC	Resistive Load (DC–12)	2.5A	1.1A	0.55A
		Inductive Load (DC–13)	2.3A	0.55A	0.27A

Min. Load (Reference Values)=AC/DC3V, 5 mA
(Useable operating range may change depending on load conditions and types.)
* Safety Standard Certification Rating C300: AC–15 0.75A/240V Q300: DC–13 0.27A/250V

Performance Specifications

Applicable Standards	ISO14119, EN1088, IEC60947–5–1, EN60947–5–1 (DEMKO Certification), GS-ET-15 (BG Certification), UL508 (UL Listing Certification), CSA C22.2 No.14 (c-UL Listing Certification)
Application Standards	IEC60204-1/EN60204-1
Applicable Directives	73 / 23 / EEC (Low Voltage Directive)
Standard Use Condition	Operating Ambient Temperature: -25–70°C (No condensation) Relative Humidity: 45–85% (No condensation) Storage Ambient Temperature: -40–80°C (No condensation) Operating Environment: Pollution Level 3
Impulse Withstand Voltage	4 kV
Insulation Resistance	Charged part and non-charged part: 100 M or more (with DC 500V High Resistance Meter) Between polar charged parts: 100M or more (with DC 500V mega)
Contact Resistance	Less than 300m (Initial value, cable length 1m)
Appliance Class	Class II (IEC61140)
Degree of Protection	IP67 (IEC60529)
Impact Resistance	Malfunction: 300 m/s² Endurance: 1000 m/s²
Vibration Resistance	Malfunction: 5–55 Hz, Amplitude 0.5 mm or more Endurance: 30 Hz, Amplitude 1.5 mm or more
Actuator Operating Speed	0.05–1.0 m/s
Direct Opening Action Stroke	8 mm or More
Direct Opening Force	60 N or More
Operating Frequency	1200 times/h
Mechanical Durability	Over 1,000,000 Times (GS–ET–15)
Electrical Durability	Over 100,000 Times (Operating Frequency 1200 times/h, Load Condition: AC–12 250V 1.5A, DC-12 250V 0.2A)
Conditional Short-Circuit Current	50A (250V) (Note)
Body Color	Black
Cable	UL2464 No.20 AWG (6-Conductors)
Mass	About 120g (For HSWCC body)

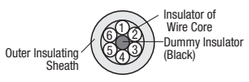
Note: Please use 250V/10A fast-blow fuse as short-circuit protection device.

Contact Config. & Operation Characteristics

Type	Contact Configurations	Operating Characteristics
HSWCA	1NC-1NO Zb (Blue) 11 — 12 (Blue / White) (Orange) 33 — 34 (Blue / Orange)	0.8 (Actuator Installation Standard) 0 5.5 5.8 28.2 (Stroke: mm) 11-12 33-34
HSWCC	3NC Zb (Blue) 11 — 12 (Blue / White) (Brown) 21 — 22 (Brown / White) (Orange) 31 — 32 (Orange / White)	11-12 21-22 31-32 (Actuator Inserted) (Actuator Pulled Out) : Contact Point ON (Close) : Contact Point OFF (Open)

Please refer to insulation colors and white lines for conductor identification.

No.	Insulator Color	No.	Insulator Color
1	Orange / White	4	Brown
2	Blue / White	5	Blue
3	Brown / White	6	Orange



Safety Cautions
– Shut off the power before attaching, detaching, wiring, maintaining and examining. There is a possible risk of fire or electric shock.
– If a relay is to be placed between a emergency stop switch and a potentially hazardous load, use special safety relays to make the system redundant. The safety may be compromised by using non-safety relays due to fused contacts.
– Do not place a PLC between the safety switch and potentially hazardous load. PLC malfunction may compromise safety.
– Do not disassemble, modify, or interfere with the safety switch functions in any means. Malfunction and accidents may occur.
– Mount an actuator in places where human body do not come in contact when opening and closing the door to prevent injury.

Cautions for Use
– Do not use the safety switches as a door stopper for any door type. Add a mechanical door stopper at the end of the door stroke. Protect safety switches from being overloaded.
– Do not open/close the door roughly in order to avoid causing excessive impacts on the the safety switch. An impact over 300 m/s² may cause safety switch failure.
– Prevent any foreign objects from getting inside the safety switch through actuator's insertion slot. Excess amount of foreign objects or dust in the safety switch may affect the internal mechanisms and cause failures.
– Safety switches should not be stored in dusty or wet locations, or locations witch are subject to organic gas or direct sunlight.
– Operation without an actuator designed for the safety switch may cause switch failures.

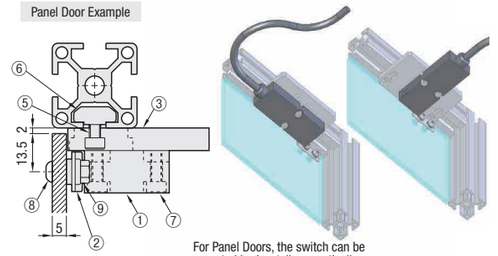
MiSUMi

Safety Door Switches, *continued*

Locks

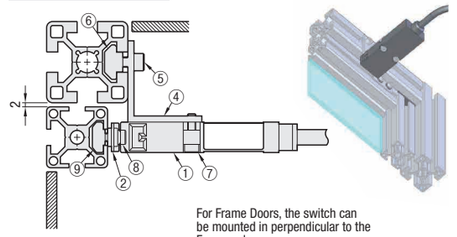
Application Example

Panel Door Example



For Panel Doors, the switch can be mounted horizontally or vertically.

Example of Extrusion Door



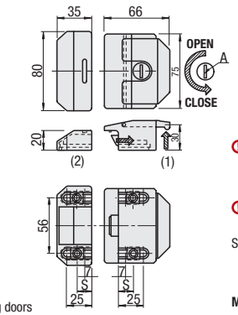
For Frame Doors, the switch can be mounted in perpendicular to the Frame only.

Part Number Example

Part Number
HSWCA6

Locks for Aluminum Extrusions

HFLOCK



To lock (1), insert key into opening (A) and rotate counterclockwise 180°.

When (1) is lifted, (2) is retracted.

S: Moving range of special nuts
7≤S≤25

Cannot be used for sliding doors

Material: JIS–ADC12

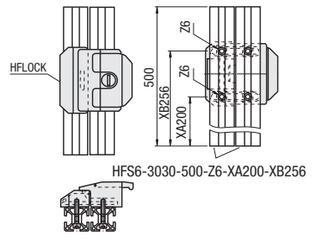
Part Number Type	No.	Extrusions (Series)	Accessory: Screws		Nuts		Key	
HFLOCK	5	HFS5	CBM6-20	4 pcs.	Dedicated M6 Nut	4 pcs.	Key	2 pcs.
	6	HFS6	CBM6-30					
	8	HFS8	CBM6-35					
	8-45	HFS8-45	CBM6-40					

Part Number Example

Part Number
HFLOCK5

Application Example

Extrusion Installation Example



Alteration Examples of Counterbore Machining on Extrusions for HFLOCK Mounting

Extrusion Square	Alternation Instruction	Qty.
20	HFS5-2020-500-Z6-XA200-XB256	2
30	HFS6-3030-500-Z6-XA200-XB256	2
40	HFS8-4040-500-Z6-XA200-XB256	2
45	HFS8-4545-500-Z6-XA200-XB256	2

HFLOCK is a lock for aluminum extrusions. The lock is mounted on the counterbored extrusion using the included screws, as shown on the Alteration Examples above.