

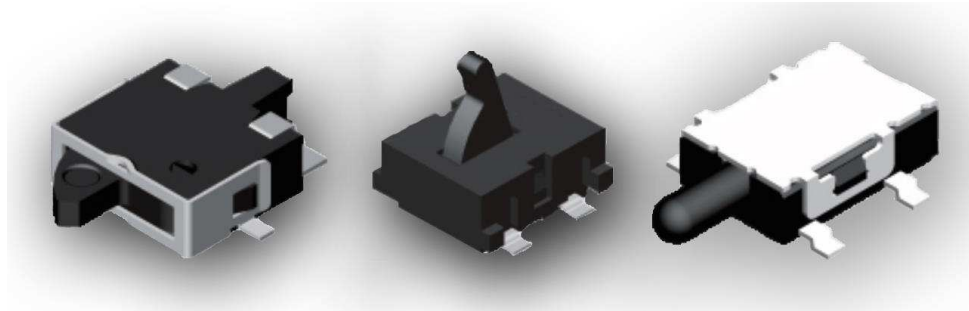
**Applications**

- Automotive
- Instrumentation
- White goods
- Telecommunications

**Benefits**

- RoHS Compliant
- Halogen and Lead Free
- Sharp detection feeling
- Compact Size

**JJ Series – Detector Switches**



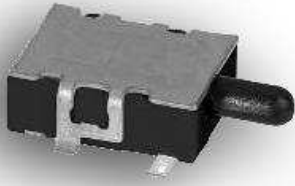
TE Connectivity is pleased to introduce its JJ Series of Detector Switches, suitable for a wide variety of applications given their several presentations ranging from horizontal or vertical actuated options as well as Gull-winged, J-leaded and Through-Hole mounting possibilities.

The Detector Switches will be offered in a wide range of sizes giving the possibility for countless applications going from automotive to telecommunications.

**JJ Series – Family Classification**

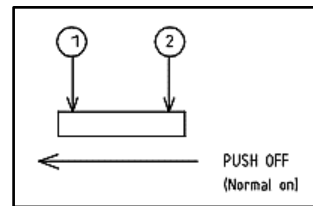
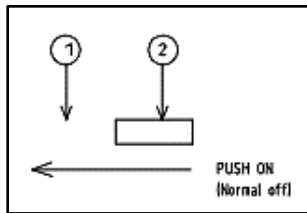
Series	Body Size
JJA	3.5x2.8 mm
JJB	3.5x2.98 mm
JJC	3.5x3.3 mm
JJD	4.2x3.6 mm
JJE	4.7x3.5 mm
JJF	4.7x3.8 mm
JJG	5.7x4.0 mm (High-Rating)
JJH	5.7x4.0 mm (Standard-Rating)
JJI	5.0x4.4 mm
JJJ	6.0x4.85 mm / 5.5x4.7 mm
JJK	6.3x3.0 mm
JJL	6.5x3.9 mm
JJM	5.7x4.0 mm
JJN	5.7x4.0 mm (Wedge)
JJO	10.0x3.8 mm
JJP	10.6x10.0 mm

**JJM Family – 5.7x4.0 mm**

	Contact Rating	100mA, 12VDC
	Contact Resistance	80mΩ Max.
	Insulation Resistance	100MΩ Min. 100VDC
	Dielectric Strength	100VAC/1 minute
	Operating Force	70gF Max.
	Travel	2.00mm
	Operating Life	50,000 cycles
	Operating Temperature	-10°C to 60°C
	Storage Temperature	-30°C to 80°C

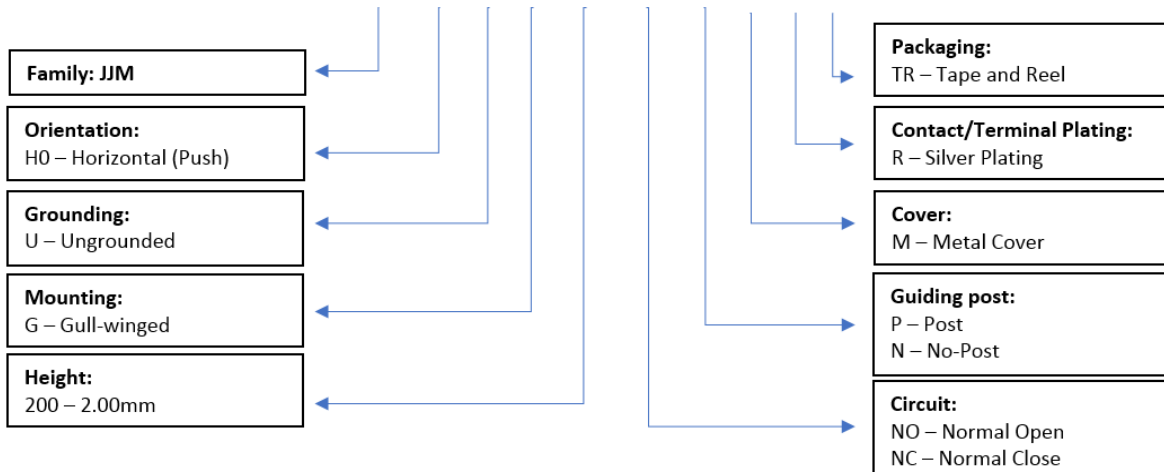
Features	Applications
<ul style="list-style-type: none"> <li>• Post and No-Post options available.</li> <li>• NO and NC circuit options available.</li> </ul>	<ul style="list-style-type: none"> <li>• Automotive.</li> <li>• Telecommunications.</li> <li>• Measurement instrumentations.</li> </ul>

**Circuit**



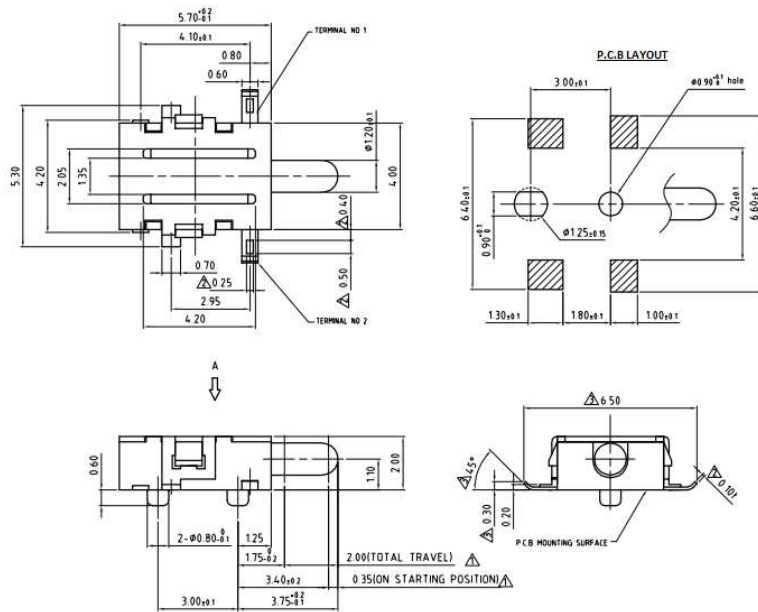
**How To Order**

JJM – H0 – U – G – 200 – N□ – □ – M – R – TR

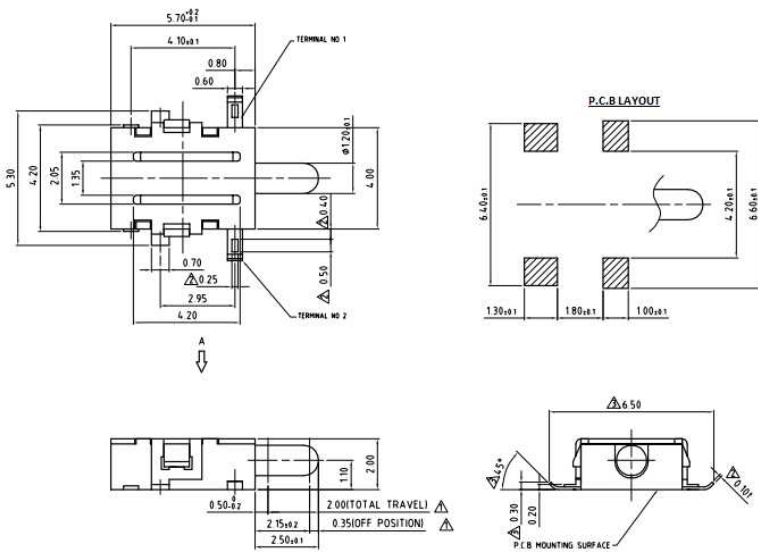


## Diagrams

### -Post



### -No Post



## PN List

Smart PN	Orientation	Grounding	Mounting	Height	Circuit	Guiding Post	Cover	Plating	Packaging	MOQ	TE PN
JJMHOUG200NOPMRTR	Horizontal (Push)	Ungrounded	Gull-Winged	2.00mm	NO	Post	Metal	Silver	Tape and Reel	1,900	2331293-1
JJMHOUG200NCNMRTR	Horizontal (Push)	Ungrounded	Gull-Winged	2.00mm	NC	No-Post	Metal	Silver	Tape and Reel	1,900	2331327-1

## 1. Style

“Detector Switches” are mainly used as signal switches of electric devices, with the general requirements of mechanical and electrical characteristic.

1.1 Operating Temperature Range: -10°C to 60°C

1.2 Storage Temperature Range: -30°C to 80°C

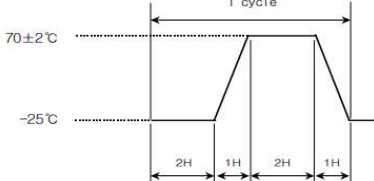
1.3 The shelf life of product is within 6 months.

**2. Current Range:** 100mA, 12VDC

**3. Type of Actuation:** Auto Return

## 4. Test Sequence:

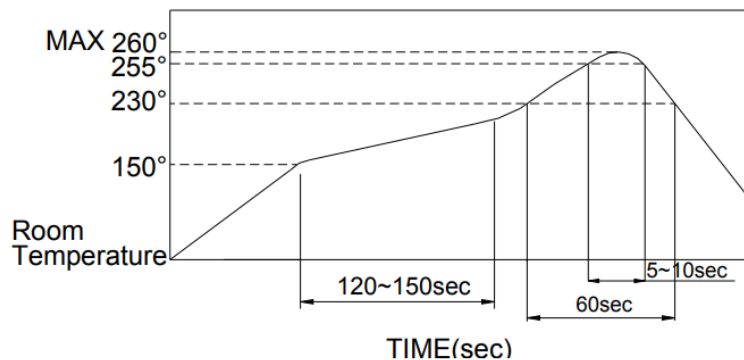
	Item	Description	Test Conditions	Requirements
Appearance	1	Visual Examination	Physical inspection without applying any external forces.	There shall be no defects that affect the serviceability of the product.
Electric Performance	2	Contact Resistance	Shall be measured at 1KHz $\pm$ 200Hz (20mV Max, 50mA Max) or 1A 5VDC by voltage drop method.	80m $\Omega$ Max.
	3	Insulation Resistance	Measurements shall be made at 100 VDC potential between terminals and cover.	100M $\Omega$ Min.
	4	Dielectric Withstanding Voltage	Apply 100 VAC (50Hz or 60Hz) between terminals and cover for 1 minute.	There shall be no breakdown or flashover

Mechanical Performance	5	Operating Force	Applying force to the center of the stem for 2.00mm	70gF Max. (.69N Max.)
	6	Terminal Strength	Fixing the switch then apply with a static load of 0.3KgF to the tip of the terminal in a desired direction for 1 minute	Shall be free from any terminal damage and looseness and breakage of terminal holding position. Terminal may be bent after test, electrical performance requirement specified in item 4 shall be satisfied.
	7	Control Strength	1) A static load of 1KgF shall be applied in the operating direction of actuator for 15 seconds. 2) A static load of 0.3KgF shall be applied in the pulling direction of actuator for 15 seconds. (For construction with lock, the test shall be conducted at the condition of lock released) 3) A static load of 0.7KgF shall be applied to the vertical direction of operation at the tip of actuator for 15 seconds.	Shall be free from mechanical and electrical abnormalities.
Durability	8	Operating Life	50,000 cycles operations at a rate of 15 to 20 cycles/min. without load. (When pushing the actuator at right angle)	1) Contact resistance: 150mΩ Min. 2) Insulation resistance: 10MΩ Min. 3) Voltage proof: Applying 100V AC for 1 minute, no dielectric breakdown shall occur. 4) Operating force: Within 30% of specified value. 5) No abnormalities shall be recognised in appearance construction.
Weather-proof	9	Temperature cycling	After 5 cycles of following conditions, the switch shall be allowed to stand under normal temperature and humidity condition for 1 hour and then measurement shall be made within 1 hour after that. Water drops shall be removed. 	1) Contact resistance: 150mΩ Min. 2) Insulation resistance: 10MΩ Min. 3) Voltage proof: Applying 100V AC for 1 minute, no dielectric breakdown shall occur. 4) Operating force: Within 30% of specified value. 5) No abnormalities shall be recognised in appearance construction.

Weather-proof	10	Resistance Low Temperature	Following the test set forth below the sample shall be left in normal temperature and humidity conditions for 1 hour before the measurements are made: 1) Temperature: $-30\pm 2^{\circ}\text{C}$ 2) Time: 96 hours Water drops shall be removed.	1) Contact resistance: $150\text{m}\Omega$ Min. 2) Insulation resistance: $10\text{M}\Omega$ Min. 3) Voltage proof: Applying 100V AC for 1 minute, no dielectric breakdown shall occur. 4) Operating force: Within 30% of specified value. 5) No abnormalities shall be recognised in appearance construction.
	11	Heat Resistance	Following the test set forth below the sample shall be left in normal temperature and humidity conditions for 1 hour before the measurements are made: 1) Temperature: $85\pm 2^{\circ}\text{C}$ 2) Time: 96 hours Water drops shall be removed.	
	12	Humidity Resistance	Following the test set forth below the sample shall be left in normal temperature and humidity conditions for 1 hour before the measurements are made: 1) Temperature: $60\pm 2^{\circ}\text{C}$ 2) Relative Humidity: 90 to 95% 3) Time: 96 hours Water drops shall be removed.	
	13	Salt mist	Switch shall be checked after the following test: 1) Temperature: $35\pm 2^{\circ}\text{C}$ 2) Salt saturation: $5\pm 1\%$ (Solids by weight) 3) Duration: $24\pm 1$ hours After the test, salt deposit shall be removed in running water.	No remarkable corrosion shall be recognised in metal part.

**5. Soldering Conditions:**

■ Recommended Soldering Profile for the JJM Series



■ The temperatures defined above are the temperatures measured on the surface of the Printed Circuit Board. There are cases where the printed circuit board's temperature differs greatly from the temperature of the switch. Critical note: the switch's surface temperature must not exceed  $260^{\circ}\text{C}$ .

■ Manual Soldering

Preheat:  $150^{\circ}\text{C}$  to  $200^{\circ}\text{C}$ ,  $120\pm 20$  (sec)

Soldering area temperature:  $217^{\circ}\text{C}$ , 90 to 120 (sec)

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■ Precautions in Handling

1. Care must be taken to ensure excess flux on the top surface of the printed circuit board does not adhere to the switch.
2. Do not wash the switch.

■ Recommended storage conditions:

Store the products in the original packaging material. After opening the package, the remaining products must be stored in the appropriate moisture-proof & airtight environment.

Do not store the switch in the following environment or it may affect performance and solderability:

1. temperatures below -10°C to 40°C & humidity at 85% (min)
2. environment with corrosive gas
3. storage over 6 months
4. place in direct sunlight