

Rotary Coded Switch

multicomp PRO



Characteristics:

Operating Temperature Range : -30°C to +80°C
 Storage Temperature Range : -40°C to +85°C
 The shelf life of product is within 6 months.

Current Range

Non-Switching : 100mA, 50V DC
 Switching : 25mA, 24V DC
 Type of Actuation : Rotating

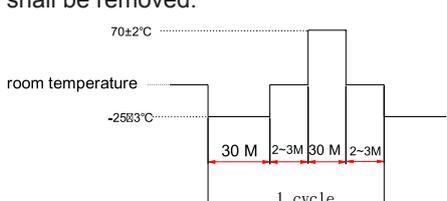
Test Sequence

Item	Characteristics	Description	Test Conditions	Requirements
1	Electric Performance	Visual Examination	By visual examination check without any out pressure & testing.	There shall be no defects that affect the serviceability of the product.
2		Contact Resistance	To be measured between the two terminals associated with each switch pole. Measurements shall be made with a 1kHz shall current contact resistance meter	100mΩ max. (initial)
3		Insulation Resistance	100V DC, 1 minute ± 5 seconds.	100MΩ min.
4		Dielectric withstanding Voltage	250V AC (50Hz or 60 Hz) shall be applied between all the adjacent terminals and between the terminal and the frame for 1 minute.	There shall be no breakdown or flashover.
5		Capacitance	1MHz ±10kHz	5 pF max.
6	Mechanical Performance	Operation Force	Applied in the direction of operation. 	MCR7□□-□□□-V 200gf·cm Max (1.96N·cm Max)
7		Stop Strength	A static load of 1 kgf is applied in the vertical direction operated for a period of 15 seconds.	There shall be no sign of damage mechanically.
8		Soldering Heat Resistance	Soldering Temperature: P.C. Board Terminal R7□ 3, R7□ 3 SMT Type Terminal R7M 260°C ±5°C See the Temperature profile 5 ±1sec Duration of Solder Immersion: 5±1 sec. Frequency of Soldering Process: 2 times max. (PCB is 1.6mm in thickness.)	As shown in item 2 ~ 6
9		Vibration	Shall be vibrated in accordance with Method 201A of MIL-STD-202F 1) Frequency: 10-55-10 Hz 1 min/cycle. 2) Direction: 3 vertical directions including the direction of operation. 3)Test Time: 2 hours each direction.	As shown in item 2~6

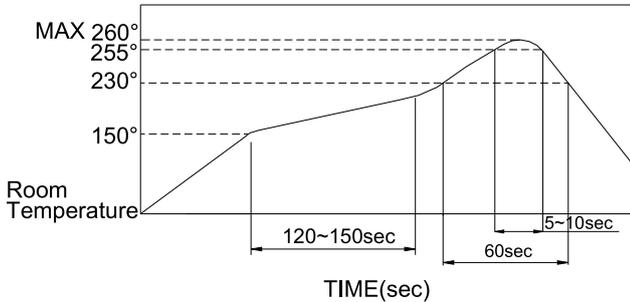
Newark.com/multicomp-pro
 Farnell.com/multicomp-pro
 Element14.com/multicomp-pro

multicomp PRO

Rotary Coded Switch

Item	Characteristics	Description	Test Conditions	Requirements
10	Mechanical Performance	Shock	Shall be shocked in accordance with Method 213B condition A of MIL-STD-202F 1) Acceleration: 50G. 2) Action Time : 11 ± 1 m sec. 3) Testing Direction: 6 sides. 4) Test cycle : 3 times in each direction	As shown in item 2~6
11		Solderability	1) MCR7H Soldering Temp: 245°C ±3°C Lead-Free solder: M705E JIS Z 3282 Class A (Tin 96.5%, Silver 3%, Copper 0.5%) 2) Flux: 5-10 seconds. 3) Duration of solder Immersion: 5±1 sec.	No anti-soldering and the coverage of dipping into solder must more than 75% was requested.
12	Durability	Operation Life	Measurements shall be made following the test set forth below: 1) 100mA, 5V DC resistive load 2) Rate of Operation: 1 cycles/ minute 3) Step of Operation: 10000 Steps.	1) As shown in item 3,4 2) Contact Resistance: 200mΩ max. 3) Final-after test
13	Weather-Proof	Resistance Low Temperature	Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before measurements are made : 1) Temperature : -40°C ±2°C 2) Time: 240 hours	As shown in item 2~6
14		Resistance High Temperature	Following the test set forth below the Sample shall be left in normal temperature and humidity conditions for an hour before measurements are made : 1) Temperature : 85°C ±2°C 2) Time: 240 hours	1) As shown in item 3~6 2) Contact Resistance: 200mΩ max.
15		Resistance Humidity	Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before measurements are made: 1) Temperature : 85°C ±2°C 2) Relative Humidity :90~95% 3) Time: 240 hours	1) As shown in item 4,6 2) Contact Resistance: 200mΩ max. 3) Insulation Resistance: 10MΩ min.
16		Change of temperature	After 5 cycles of following conditions, the switch shall be allowed to stand under normal room temperature and humidity conditions for 1 hr, and measurement shall be made within, 1 hr after that. Water drops shall be removed. 	1. As shown in item 2~6 2. No abnormalities shall be recognized in appearance and construction.

Soldering Conditions

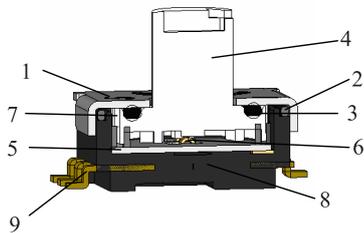


The condition mentioned above is the temperature on the Cu foil of the PCB surface.

There are cases where board's temperature greatly differs from switch's surface temperature depending on board's material, size, thickness, etc. Care, therefore, should be used not to allow switch's surface temperature to exceed 260°C.

Manual Soldering

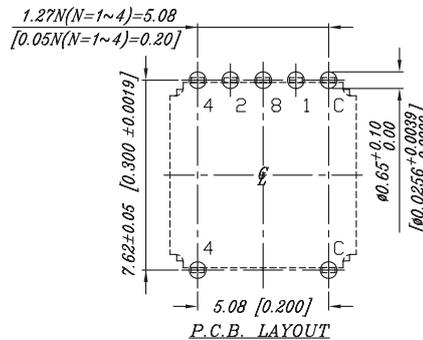
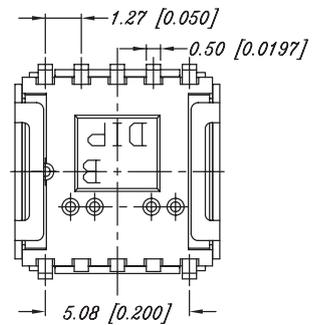
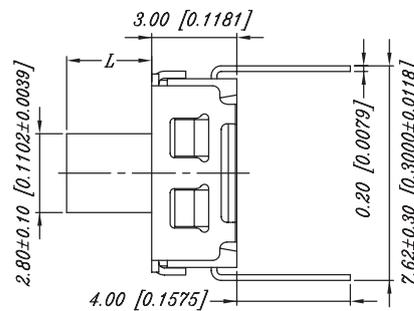
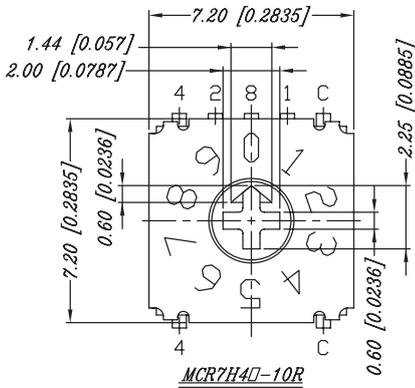
Soldering Temperature	Max. 350°C
Continuous Soldering Time	Max. 5 seconds



Item	Description	Materials	Treatment	Qty.
1	Cover	Nickel Silver Stainless Steel	-	1
2	Seal-1	Silicone Rubber	Molded Black	
3	Seal-2			
4	Actuator	High - Temp Thermoplastic LCP UL94V - 0	Molded White	
5	Block	Stainless Steel	-	
6	Contact	Alloy Copper	Gold Plated	
7	Spring Plate	Stainless Steel	-	2
8	Base	High - Temp Thermoplastic Nylon UL94V - 0	Molded Black	1
9	Terminal	Brass (3×3) Phosphor Bronze (4×1)	Gold Plated	

Rotary Coded Switch

Diagram:



TYPE	POSITION	CODE			
		1	2	4	8
10 STEP	0	●	●	●	●
	1	○	●	●	●
	2	○	○	●	●
	3	○	○	○	●
	4	●	●	○	●
	5	○	●	○	●
	6	●	○	○	●
	7	○	○	○	●
	8	●	●	●	○
	9	○	○	●	○
16 STEP	A	○	○	○	○
	B	○	○	●	○
	C	●	○	○	○
	D	○	○	○	○
	E	●	○	○	○
	F	○	○	○	○

CIRCUIT CHART

Dimensions : Millimetres (Inches)
General Tolerances: ±0.2mm

Part Number Explanation

MCR7 **H** **4** - **10** **R** **A** - **V** - **B**

Series Through Hole Terminals 4 = 4 × 1 10 = 10 Steps. Real Codes A = Cross-head Actuator Soldering: V = Lead Free Solderable Package: B = Tube

Part Number Table

Description	Part Number
Rotary Coded Switch, Through Hole, 10 Position, 24V DC, 25mA	MCR7H4-10RA-V-B

Important Notice : This data sheet and its contents (the "Information") belong to the members of the AVNET group of companies (the "Group") or are licensed to it. No licence is granted for the use of it other than for information purposes in connection with the products to which it relates. No licence of any intellectual property rights is granted. The Information is subject to change without notice and replaces all data sheets previously supplied. The Information supplied is believed to be accurate but the Group assumes no responsibility for its accuracy or completeness, any error in or omission from it or for any use made of it. Users of this data sheet should check for themselves the Information and the suitability of the products for their purpose and not make any assumptions based on information included or omitted. Liability for loss or damage resulting from any reliance on the Information or use of it (including liability resulting from negligence or where the Group was aware of the possibility of such loss or damage arising) is excluded. This will not operate to limit or restrict the Group's liability for death or personal injury resulting from its negligence. Multicomp Pro is the registered trademark of Premier Farnell Limited 2019.

Newark.com/multicomp-pro
Farnell.com/multicomp-pro
Element14.com/multicomp-pro