



Datasheet

RS PRO Sub-Miniature Pushbutton Switches

Stock number: **175-9XXX (Details as follows)**

EN



The picture above is for reference only.

Specifications:

RATING : lth 5A/250VAC resistive load 3A/250VAC

CONTACT RESISTANCE : 50 mΩ max. @ 1A 12VDC (initial value)

INSULATION RESISTANCE : 1,000 MΩ min. at 500VDC

DIELECTRIC STRENGTH : 2,000V RMS @ sea level

OPERATION TEMPERATURE : -20°C to 55°C

MECHANICAL LIFE : Momentary 1,000,000 cycles

Self-lock 500,000 cycles

ELECTRICAL LIFE : 50,000 make-and-break cycles at full load

TORQUE : 5~14Nm

PANEL THICKNESS : 10mm (Ø22.20mm)

OPERATION PRESSURE : 1Pole 2.5±1N / 2Poles 3.5±1N

TRAVEL : About 3.2mm

INGRESS PROTECTION : IP67, IK10(Stainless)

RS Part no.

175-9332	MPB22-A0F10E-124-JQ
175-9320, 175-9737	MPB22-A0F11E-124-JQ
175-9229	MPB22-A0F21E-124-JQ
175-9230	MPB22-A0F20E-124-JQ
175-9328	MPB22-A0F10E-324-JQ
175-9316	MPB22-A0F11E-324-JQ
175-9239	MPB22-A0F21E-324-JQ
175-9250	MPB22-A0F20E-324-JQ
175-9327	MPB22-A0F10E-524-JQ
175-9314	MPB22-A0F11E-524-JQ
175-9238	MPB22-A0F21E-524-JQ
175-9249	MPB22-A0F20E-524-JQ
175-9326	MPB22-A0F10E-624-JQ
175-9313	MPB22-A0F11E-624-JQ
175-9237	MPB22-A0F21E-624-JQ
175-9248	MPB22-A0F20E-624-JQ
175-9325	MPB22-A0F10E-724-JQ
175-9312	MPB22-A0F11E-724-JQ
175-9235	MPB22-A0F21E-724-JQ
175-9247	MPB22-A0F20E-724-JQ
175-9309	MPB22-A0F10E-A24-JQ
175-9311	MPB22-A0F11E-A24-JQ
175-9234	MPB22-A0F21E-A24-JQ
175-9246	MPB22-A0F20E-A24-JQ
175-9331	MPB22-A0F10E2-324-JQ
175-9319	MPB22-A0F11E2-324-JQ
175-9242	MPB22-A0F21E2-324-JQ
175-9284	MPB22-A0F20E2-324-JQ
175-9330	MPB22-A0F10E2-624-JQ

175-9318	MPB22-A0F11E2-624-JQ
175-9254	MPB22-A0F21E2-624-JQ
175-9252	MPB22-A0F20E2-624-JQ
175-9329	MPB22-A0F10E2-724-JQ
175-9317	MPB22-A0F11E2-724-JQ
175-9240	MPB22-A0F21E2-724-JQ
175-9251	MPB22-A0F20E2-724-JQ
175-9233	MPB22-D0F10E3-324-JQ
175-9268	MPB22-D0F11E3-324-JQ
175-9278	MPB22-D0F21E3-324-JQ
175-9281	MPB22-D0F20E3-324-JQ
175-9232	MPB22-D0F10E3-624-JQ
175-9241	MPB22-D0F11E3-624-JQ
175-9277	MPB22-D0F21E3-624-JQ
175-9280	MPB22-D0F20E3-624-JQ
175-9231	MPB22-D0F10E3-724-JQ
175-9243	MPB22-D0F11E3-724-JQ
175-9276	MPB22-D0F21E3-724-JQ
175-9279	MPB22-D0F20E3-724-JQ

Specifications:

1. Style :

This specification describes "Metal Pushbutton Switch", mainly used as signal or double switch of electric devices, with the general requirements of mechanical and electrical characteristic.

①Switch combination : 1NO1NC/2NO2NC.

②Enclosure material : Stainless steel / Nickel plated brass/ Aluminum alloy.

③Operating Type : Resettable or Self-locking.

④Operating Temperature Range : -20 °C~+55 °C.

Storage Temperature Range : -40°C~+85 °C.

⑤Degrees of protection provided by enclosures

IP code: IP67.

IK code: IK08 .(For case :Nickel plated brass / Aluminum alloy)

IK10 .(for case :stainless steel)

2. Electrical Rating : Ith :5A / Ui :250VAC.

Ie: 3A / Ue :250VAC (resistive load).

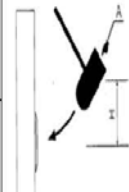
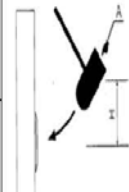
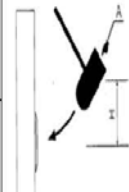
Ie: 3A / Ue :28VDC (resistive load).

3. Type of Actuation : Pushbutton Switch.

4. Test Sequence :

	ITEM	DESCRIPTION	TEST CONDITIONS	REQUIREMENTS
APPEARANCE	1	Visual Examination	By Visual Examination check without and 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.	50mΩ Max.
ELECTRIC PERFORMANCE	3	Insulation Resistance	Measurements shall be made following application of 500 VDC / 100mA potential across terminals and cover for 1 minute.	1000MΩ min.
	4	Dielectric Withstanding Voltage	①2000VAC(50Hz or 60Hz) / between terminals /1minute. ②2000 VAC(50Hz or 60Hz) /between terminals and frame/ 1minute.	There shall be no breakdown or flashover.

Jan.05.2018

MECHANICAL PERFORMANCE	ITEM	DESCRIPTION	TEST CONDITIONS	REQUIREMENTS													
	5	Operation pressure	MODEL-1305N MECHANICAL TEST 500gram、1000gram、2000gram.	1Pole about $2.5 \pm 1N$. 2Pole about $3.5 \pm 1N$.													
	6	Operation Travel	Full Travel.	$3.2 \pm 0.3mm$.													
	7	Torque	Applied to nut.	About 5-14Nm.													
	8	Panel Thickness	Applied to nut.	About 1-10mm.													
9	IK Code	<table border="1"> <thead> <tr> <th>IK Degree</th> <th>Weight (A)</th> <th>Original Height (H)</th> <th>Impact Energy</th> <th>Impact Diagram</th> </tr> </thead> <tbody> <tr> <td>08</td> <td>1.25 kg</td> <td>40cm</td> <td>5J</td> <td rowspan="2">  </td> </tr> <tr> <td>10</td> <td>5.0kg</td> <td>40cm</td> <td>20J</td> </tr> </tbody> </table>	IK Degree	Weight (A)	Original Height (H)	Impact Energy	Impact Diagram	08	1.25 kg	40cm	5J		10	5.0kg	40cm	20J	After three mechanical impact with corresponding grade energy at the same position of the crust, the switch has no harmful effect.
IK Degree	Weight (A)	Original Height (H)	Impact Energy	Impact Diagram													
08	1.25 kg	40cm	5J														
10	5.0kg	40cm	20J														
OPERATING LIFE	10	Operating Life	Measurements shall be made following the test forth below : ①Ie:3A /Ue:250VAC .(resistive load) ②Rate of Operation: 6-8operation cycles per minute. ③Electronics Life Test : 50,000 cycles.(for 3A/250VAC) ④Electronics Life Test : 6,000 cycles.(for 3A/28VDC)	①Dielectric Strength : between terminals :1000VAC. between terminals of opposite polarity :2000VAC. ②Insulation Resistance : 1000MΩ (at 500VDC)min. ③Contact Resistance : 100mΩ Max.													
			④Mechanical Life Test : Resettable : 1,000,000 cycles. Self-locking: 500,000 cycles.														

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ITEM	DESCRIPTION	TEST CONDITIONS	REQUIREMENTS
11	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 : $-20\pm 3^{\circ}\text{C}$. ② Time : 96 hours.	As shown in item 2~4.
12	Resistance High 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 : $55\pm 3^{\circ}\text{C}$. ② Time : 96 hours.	As shown in item 2~4.
13	Resistance Humidity	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: $40\pm 2^{\circ}\text{C}$ ② Relative Humidity: 90~95% ③ Time: 96 hours.	① Contact Resistance: 100 mΩ Max. ② Insulation Resistance: 1000MΩ min.

HUMIDITY RESISTANCE

	ITEM	DESCRIPTION	TEST CONDITIONS	REQUIREMENTS
HUMIDITY RESISTANCE	14	Salt spray Testing	Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before the measurements are made: ①Temperature:35±2°C. ②The ratio of salt-water : 5%. ③The spray amount of salt- water : 1-2 ml/h. ④Time:48 hours.	The testing standard based on bubble, crack, And magnifying glass with gauge.
	15	Test of IP 67	Protected against the effects of Temporary immersion in water. (1m below the surface of the water for a duration of 30 min).	IP67 According to EN 60529 : 1991 + A1 : 2000 IEC 60529 : 2001
ROHS	16	HSF	Refer RoHS Standard : The electronic electrical machinery product limits with six big chemical materials.	Cd : 100ppm Pb : 1000ppm Hg : 1000ppm Cr6+ : 1000ppm PBB · PBDE : 1000ppm
SOLDER HEAT RESISTANCE	17	Manual Soldering	■ hand Soldering : ①Soldering Temperature : 290°C. (Max) ②Duration of Solder Heated : 3 seconds (Max). ■ Precautions in Handling: ①Please make sure that there is no flux rose over the surface of the PCB.	①Shall be free from pronounced backlash and falling-off or breakage terminals. ②As shown in item 2-4.

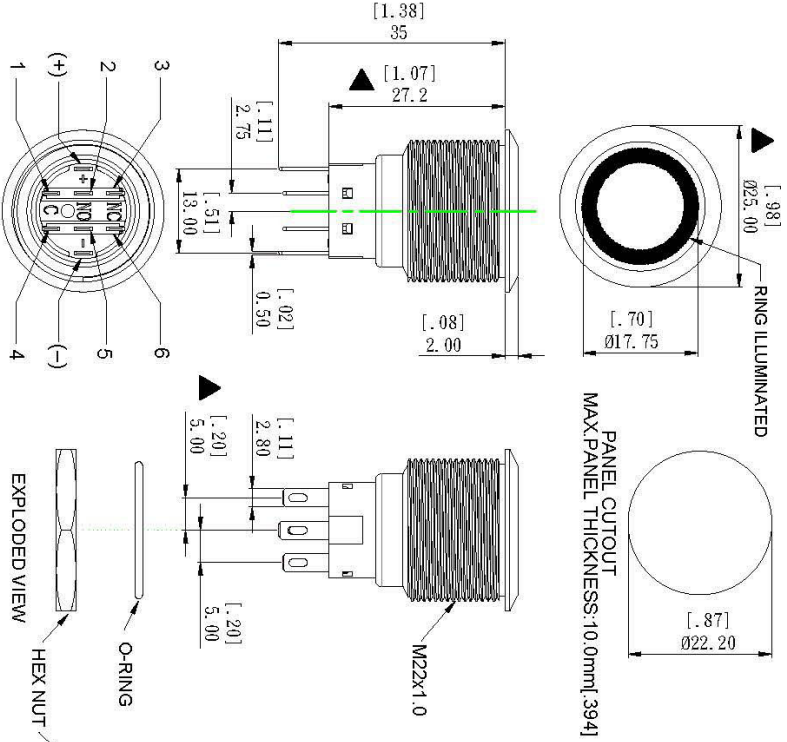
Wiring:

- 1.Solder the terminals using a 60W soldering iron at 290°C within 3 seconds. (Sn-Ag-Cu type solder is recommended.)
- 2.When soldering, be sure to keep the soldering iron as far away from the housing as possible.
- 3.Also ensure that no tensile force is applied to the terminal. Do not bend the terminal or apply excessive force to the terminal.

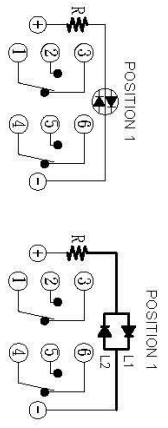
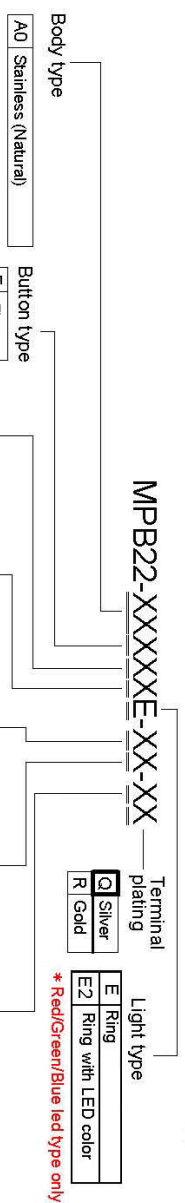
5. LED Specifications : (LED Without resistor)

Color	VF(v) Min.	VF(v) TYP.	VF(v) MAX.	IF(MAX)
White	2.8	3.3	3.8	20mA
Red	1.8	2.1	2.5	20mA
yellow	1.8	2.1	2.5	20mA
Blue	2.8	3.2	3.8	20mA
Green	2.8	3.2	3.6	20mA

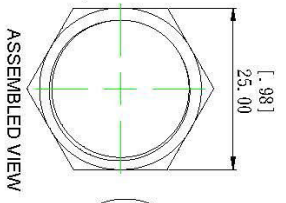
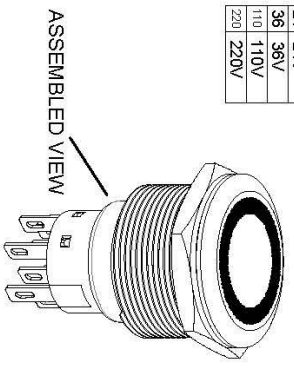
MATERIAL:
 BUSHING: Stainless Steel.
 BASE: PBT(UL 94-V0), PC(UL 94-V2)
 ACTUATOR: PC ; Stainless Steel.
 INNER ASSEMBLY: POM/PA66
 SPRING: spring steel.
 SEALING: Silicone.
 O-Ring: Silicone.
 TERMINAL: Brass, silver or gold plated.
 HEX NUT: Nickel plated brass.
 ROHS



MPB22-XXXXXE-XX-XX



LED color	LED voltage	Terminal shape
0 Without LED	0 Without Resistor	J Solder Terminal
1 White	3 3V	
3 Red	6 6V	
5 Yellow	12 12V	
6 Green	24 24V	
7 Blue	36 36V	
BI color LED	110 110V	
A Red/Green	220 220V	
B Red/Blue		
D Blue/Yellow		
G Red/Yellow		
H Green/Yellow		
J Orange/Green		

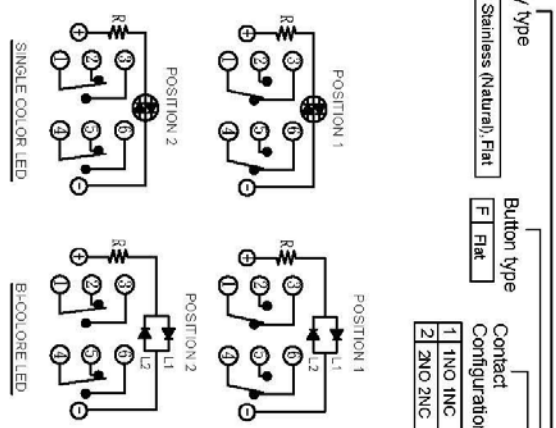
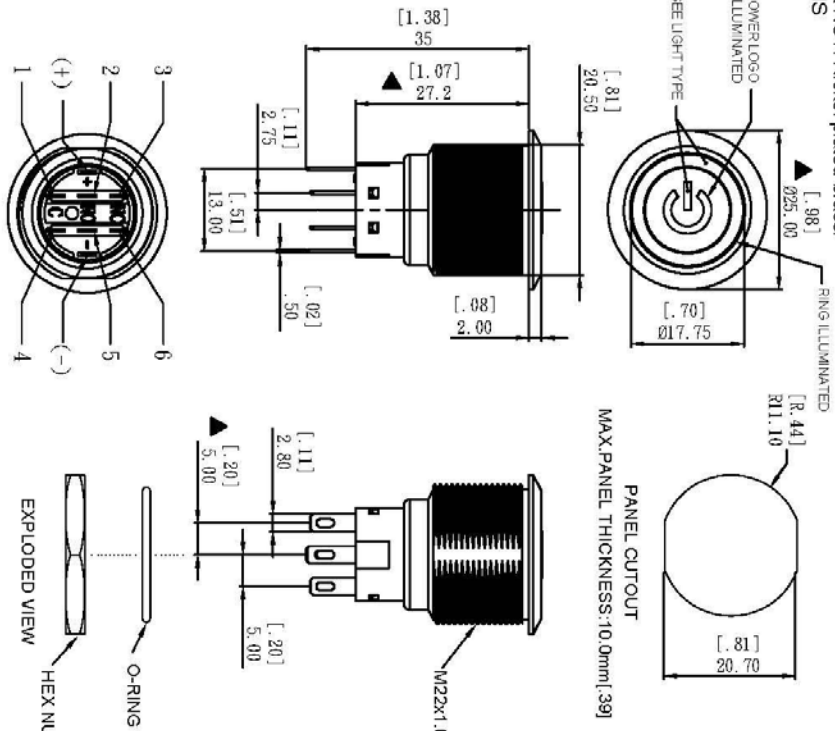


SPECIFICATIONS

- CONTACT MATERIAL: Q=SILVER.
- RATING: 1/8 5A/250VAC, resistive load, 3A/250VAC.
- ELECTRICAL LIFE: 50,000 MAKE-AND-BREAK CYCLES AT FULL LOAD.
- MECHANICAL LIFE: Momentary 1,000,000. SELF-LOCK 500,000.
- INSULATION RESISTANCE: 1,000MΩ MIN. AT 500VDC.
- DIELECTRIC STRENGTH: 2,000V RMS@sea level.
- CONTACT RESISTANCE: 50mΩ MAX. @1A 12VDC(initial value).
- OPERATING TEMPERATURE: -20 °C to 55 °C.
- TRAVEL: ABOUT 3.2mm.
- OPERATION PRESSURE: 1Pole 2.5±1N. / 2Pole 3.5±1N.
- INGRESS PROTECTION: IP67, IK10(Stainless).
- TORQUE: 5~14Nm.

TOLERANCE (公差):
 0.00 mm ± 0.25mm
 0.0 mm ± 0.40mm
 ANGULAR: ± 2°

MATERIAL:
 BUSHING: Stainless Steel
 BASE: PBT(UL 94-V0) , PC(UL 94-V2)
 ACTUATOR: PC : Stainless Steel
 INNER ASSEMBLY: POM/PA66
 SPRING: spring steel
 SEALING: Silicone
 O-Ring: Silicone
 TERMINAL: Brass, silver or gold plated.
 HEX NUT: Nickel plated brass.
 RoHS



MPB22-XXXXXX-XX-XX

Body type	Button type	Contact Configuration
DO Stainless (Natural), Flat	F Flat	1 1NO 1NC 2 2NO 2NC

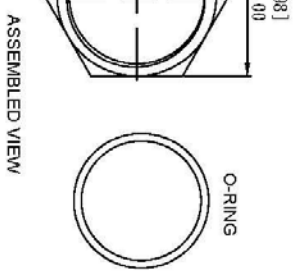
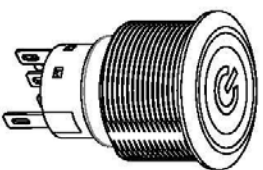
Operating type
0 Momentary 1 LOCK

LED color	LED voltage
0 Natural LED 1 White 3 Red 5 Yellow 6 Green 7 Blue Bi-color LED A Red/Green B Red/Blue D Blue/Yellow G Red/Yellow H Green/Yellow J Orange/Green	0 Without Resistor 3 3V 6 6V 12 12V 24 24V 36 36V 110 110V 220 220V

Terminal plating
Q Silver R Gold

Light type
E3 Ring+Power logo with LED color * Red/Green/Blue led type only

Terminal shape
J Solder Terminal



TOLERANCE (公差):
 0.00 mm ± 0.25mm
 0.0 mm ± 0.40mm
 ANGULAR: ±2°

SPECIFICATIONS
 1. CONTACT MATERIAL: O=SILVER.
 R=Brass, Coin silver, Gold plated.
 2. RATING: 1th 5A/250VAC, resistive load 3A/250VAC.
 3. ELECTRICAL LIFE: 50,000 MAKE-AND-BREAK CYCLES AT FULL LOAD.
 4. MECHANICAL LIFE: Momentary 1,000,000. SELF-LOCK 500,000.
 5. INSULATION RESISTANCE: 1,000MΩ MIN AT 500VDC.
 6. DIELECTRIC STRENGTH: 2,000V RMS@sea level.
 7. CONTACT RESISTANCE: 50mΩ MAX @1A 12VDC (initial value).
 8. OPERATING TEMPERATURE: -20°C to 55°C.
 9. TRAVEL: ABOUT 3.2mm.
 10. OPERATION PRESSURE: 1-Pole 2.5±1N / 2-Pole 3.5±1N.
 11. INGRESS PROTECTION: IP67, IK10 (Stainless).
 12. TORQUE: 5~14Nm.