



## 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 m $\Omega$  max. @ 1A 12VDC (initial value)  
INSULATION RESISTANCE : 1,000 M $\Omega$  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 ( $\varnothing$ 22.20mm)  
OPERATION PRESSURE : 1Pole 2.5 $\pm$ 1N / 2Poles 3.5 $\pm$ 1N  
TRAVEL : About 3.2mm  
INGRESS PROTECTION : IP67, IK10(Stainless)

# 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.
ELECTRIC PERFORMANCE	2	Contact Resistance	To be measured between the two terminals associated with each switch pole.	50mΩ Max.
	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.

MECHANICAL PERFORMANCE	ITEM	DESCRIPTION	TEST CONDITIONS	REQUIREMENTS													
	5	Operation pressure	MODEL-1305N MECHANICAL TEST 500gram、1000gram、2000gram.	1Pole about 2.5 ± IN. 2Pole about 3.5 ± IN.													
	6	Operation Travel	Full Travel.	3.2 ±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.														

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 m $\Omega$ Max.  ② Insulation Resistance: 1000M $\Omega$ 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: ③Please make sure that there is no flux rose over the surface of the PCB.	④Shall be free from pronounced backlash and falling-off or breakage terminals. ⑤As shown in item 2-4.

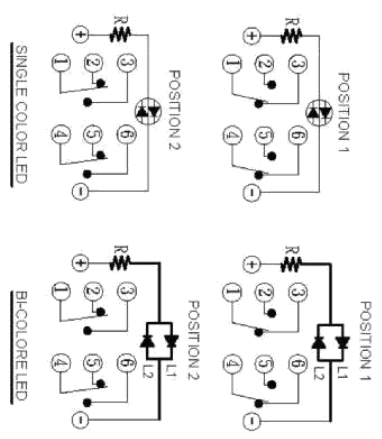
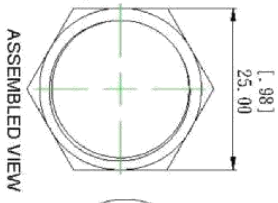
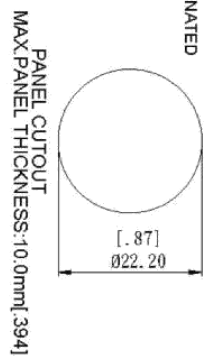
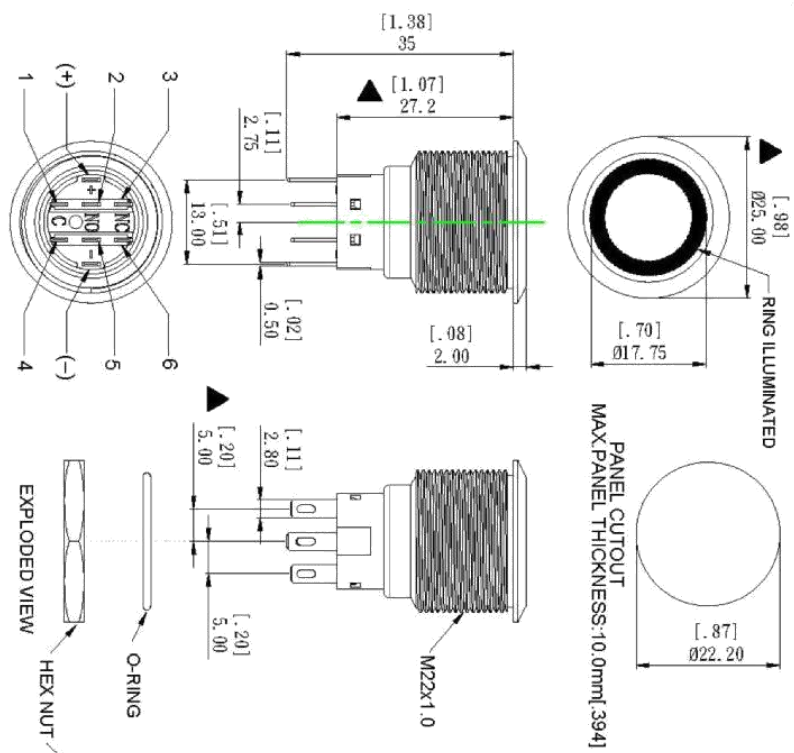
Wiring:

- 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

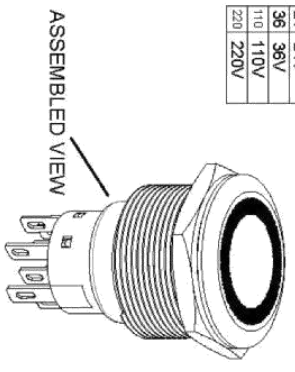
**MATERIAL:**  
 BUSHING: Stainless Steel.  
 BASE: PBT(UL 94-V0), PC(UL 94-V2)  
 ACTUATOR: PC ; Stainless Steel.  
 INNER ASSEMBLY: POM /PA66  
 SPRING: spring steel.  
 SEALING: Silicone.  
 O-Ring: Silicone.  
 TERMINAL: Brass, silver or gold plated.  
 HEX NUT: Nickel plated brass.  
 ROHS



# MPB22-XXXXXE-XX-XX

Body type	A0 Stainless (Natural)
Button type	F Flat
Contact Configuration	1 1NO 1NC 2 2NO 2NC
Operating Type	0 Momentary 1 LOCK
LED color	0 Without LED 1 White 3 Red 5 Yellow 6 Green 7 Blue
LED voltage	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	E Ring E2 Ring with LED color * Red/Green/Blue led type only
Terminal shape	J Solder Terminal

LED color	LED voltage	Terminal shape
A Red/Green	110 110V	J
B Red/Blue	220 220V	J
D Blue/Yellow	110 110V	J
G Red/Yellow	110 110V	J
H Green/Yellow	110 110V	J
J Orange/Green	220 220V	J

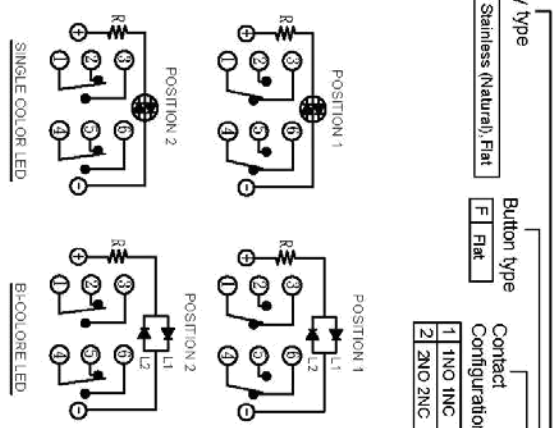
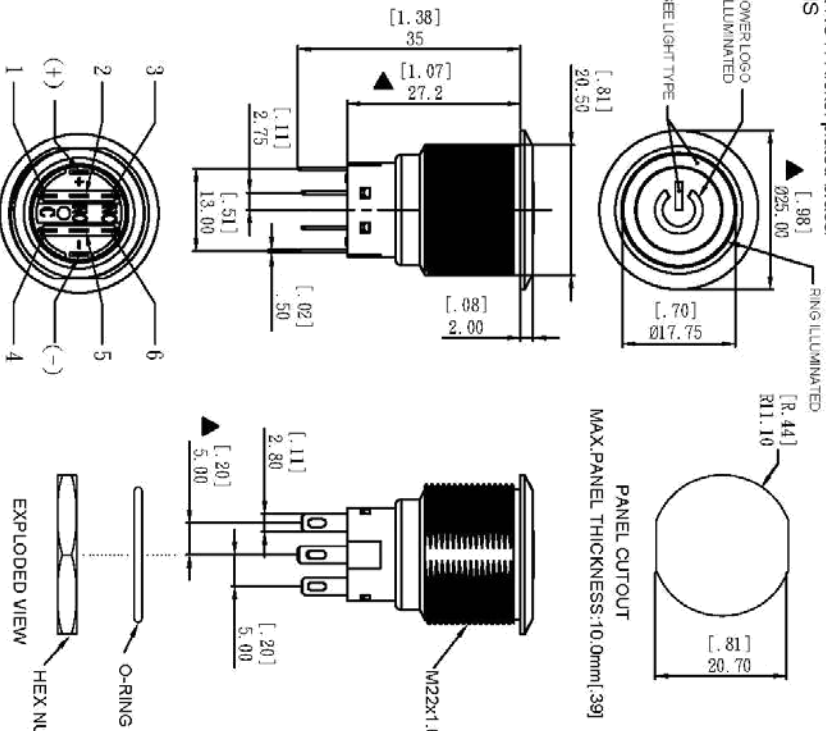


**SPECIFICATIONS**  
 1. CONTACT MATERIAL : Q=SILVER.  
 R=Brass, Coin silver, Gold plated.  
 2. RATING: 1/8 5A/250VAC, resistive load 3A/250VAC.  
 3. ELECTRICAL LIFE: 50,000 MAKE-AND-BREAK CYCLES AT FULL LOAD.  
 4. MECHANICAL LIFE: Momentary 1,000,000. SELF-LOCK 500,000.  
 5. INSULATION RESISTANCE: 1,000MO 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.

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



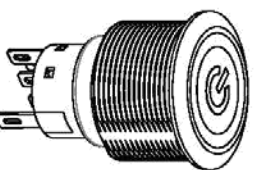
**MATERIAL:**  
 BUSHING: Stainless Steel  
 BASE: PBT(UL 94-V0) , PC(UL 94-V2)  
 ACTUATOR: PC : Stainless Steel  
 INNER ASSEMBLY: POM /PA66  
 SPRING: spring steel  
 SEALING: Silicone  
 O-Ring: Silicone  
 TERMINAL: Brass, silver or gold plated.  
 HEX NUT: Nickel plated brass  
 RoHS



### MPB22-XXXXXX-XX-XX

Body type	Button type	Contact Configuration	Operating type	LED color	LED voltage	Terminal plating	Light type
DO Stainless (Natural), Flat	F Flat	1 1NO 1NC 2 2NO 2NC	0 Momentary 1 LOCK	0 White 1 White 3 Red 5 Yellow 6 Green 7 Blue Bi-color LED	0 Without Resistor 3 3V 6 6V 12 12V 24 24V 36 36V 110 110V 220 220V	Q Silver R Gold	Ring-Power logo E3 with LED color * Red/Green/Blue led type only

LED color	LED voltage
0 White	0 Without Resistor
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**  
 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.

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