



## Datasheet

# RS PRO Illuminated Pushbutton Switches

Stock number: **175-8XXX (Details as follows)**

EN



The picture above is for reference only.  
Please refer to the table in the drawing below for other colors.

### Specifications:

RATING : 1th 5A/250VAC. resistive load 3A/250VAC.

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

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

DIELECTRIC STRENGTH : 2,000V RMS@sea level.

OPERATION TEMPERATURE : -20°C to 55°C.

MECHANICAL LIFE : Momentary 1,000,000 cycles

Lock 500,000 cycles

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

TORQUE : 1~3Nm.

PANEL THICKNESS : 6mm (Ø22.00mm)

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

TRAVEL : ABOUT 3.2mm.

INGRESS PROTECTION : IP65

**RS Part no.**

175-8249	KPB22-8000-F10-00-JQ
175-8275	KPB22-8000-F11-00-JQ
175-8320	KPB22-8000-F21-00-JQ
175-8278	KPB22-8000-F20-00-JQ
175-8308	KPB22-8200-F10-00-JQ
175-8307	KPB22-8200-F11-00-JQ
175-8304	KPB22-8200-F21-00-JQ
175-8305	KPB22-8200-F20-00-JQ
175-8269	KPB22-8800-F10-00-JQ
175-8268	KPB22-8800-F11-00-JQ
175-8266	KPB22-8800-F21-00-JQ
175-8267	KPB22-8800-F20-00-JQ

# Specifications:

## 1. Style :

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

- ①Switch combination : 1N01NC/2N02NC.
- ②Enclosure material : PC/POM/PA66/Sillicone/Brass/Silver/Steel.
- ③Operating Type : Resettable or Self-locking.
- ④Ambient operating temperature Range : -20 °C~+55 °C (with no icing or condensation).
- ⑤Ambient operating humidity : 35%~85% RH.
- ⑦Ambient storage temperature : -25°C to +65°C (with no icing or condensation).
- ⑧Degrees of protection IP code: IP65.

## 2. Electrical Rating :

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	2000VAC(50Hz or 60Hz) / between terminals /1minute.	There shall be no breakdown or flashover.

ITEM	DESCRIPTION	TEST CONDITIONS	REQUIREMENTS
MECHANICAL PERFORMANCE	5	Operation pressure MODEL-1305N MECHANICAL TEST 500gram、1000gram、2000gram.	1Pole about 2.5 ± 1N. 2Pole about 3.5 ± 1N.
	6	Operation Travel	Full Travel. 3.2 ±0.3mm.
	7	Torque	Applied to nut. About 0.3-0.5Nm.
	8	Panel Thickness	Applied to nut. About 1-6mm.
OPERATING LIFE	9	<p>Operating Life</p> <p>Measurements shall be made following the test forth below :</p> <p>①Ie:3A /Ue:250VAC .( resistive load)</p> <p>②Rate of Operation: 6-8operation cycles per minute.</p> <p>③Electronics Life Test : 50,000 cycles.(for 3A/250VAC)</p> <p>④Electronics Life Test : 6,000 cycles.(for 3A/28VDC)</p>	<p>②Dielectric Strength : between terminals :1000VAC. between terminals of opposite polarity :2000VAC.</p> <p>②Insulation Resistance : 1000MΩ (at 500VDC)min.</p> <p>③Contact Resistance : 100mΩ Max.</p>
		<p>④Mechanical Life Test : Resettable : 1,000,000 cycles. Self-locking: 500,000 cycles.</p>	

ITEM	DESCRIPTION	TEST CONDITIONS	REQUIREMENTS
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 : $-20\pm 3^{\circ}\text{C}$ . ② Time : 96 hours.	As shown in item 2~4.
11	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.
12	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

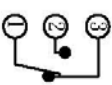
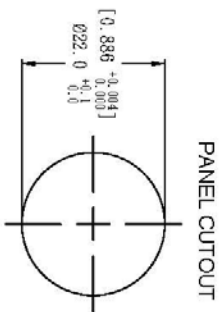
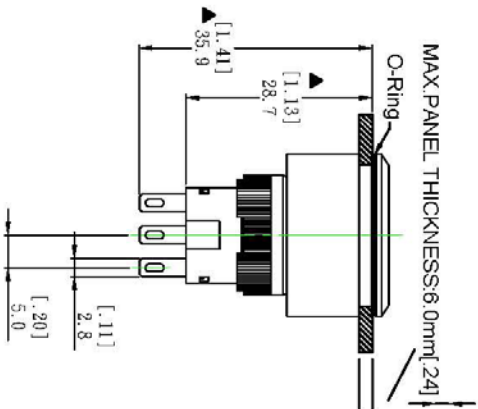
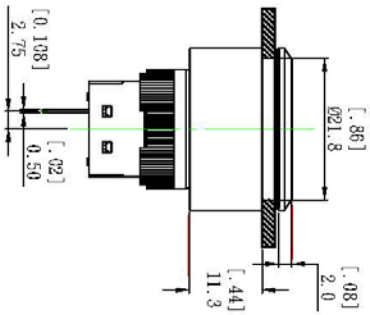
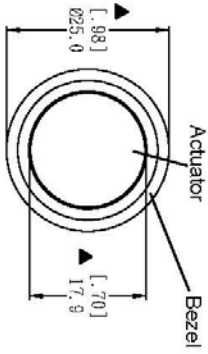
	ITEM	DESCRIPTION	TEST CONDITIONS	REQUIREMENTS
HUMIDITY RESISTANCE	13	Salt spray Testing	<p>Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before the measurements are made:</p> <p>①Temperature:35±2°C.            ②The ratio of salt-water : 5%.            ③The spray amount of salt- water : 1~2 ml/h.            ④Time:48 hours.</p>	The testing standard based on bubble, crack, And magnifying glass with gauge.
	14	Test of IP 65	<p>①Water projected by a nozzle (6.3 mm) against Actuator from any direction shall have no harmful effects.            ②Test duration: 3 minutes.            ③Water volume: 12.5 L /min.            ④Distance : 2.5m~3 m.</p>	IP65 According to EN 60529 : 1991+A1 : 2000 IEC 60529 : 2001
RoHS	15	HSF	<p>Refer RoHS Standard :            The electronic electrical machinery product limits with six big chemical materials.</p>	<p>Cd : 100ppm            Pb : 1000ppm            Hg : 1000ppm            Cr6+ : 1000ppm            PBB、PBDE : 1000ppm</p>
SOLDER HEAT RESISTANCE	16	Manual Soldering	<p>■ 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.</p>	<p>①Shall be free from pronounced backlash and falling-off or breakage terminals.            ②As shown in item 2~4.</p>

Wiring:

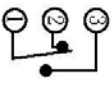
1. Solder the terminals using a 60W soldering iron at 290°C within 3 seconds.  
(Sn-Ag-Cu type solder is recommended.)
2. Wait for one minute after soldering before exerting any external force on the solder.
3. When soldering, be sure to keep the soldering iron as far away from the housing as possible.
4. Use a non-corrosive rosin liquid for the flux.
5. 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)**

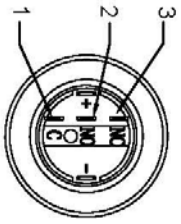
顏色	VF(v) Min.	VF(v) TYP.	VF(v) MAX.	IF(MAX)
White	2.8	3.3	3.8	20mA
Red	1.8	2.1	2.5	20mA
yellow	1.8	2.1	2.5	20mA
Blue	2.8	3.2	3.8	20mA
Green	2.8	3.2	3.6	20mA



POSITION 1



POSITION 2



**SPECIFICATIONS**

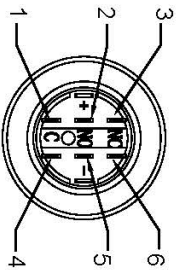
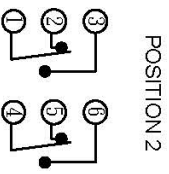
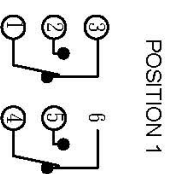
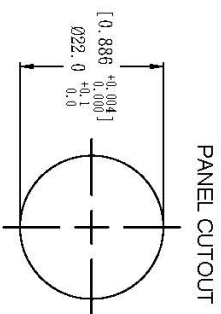
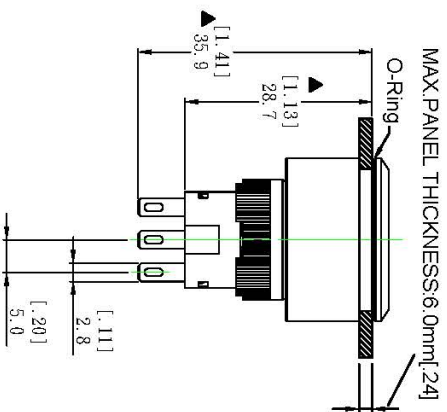
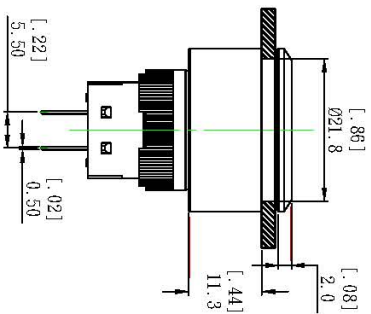
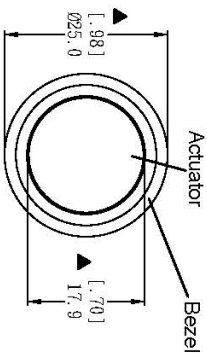
1. CONTACT MATERIAL: SILVER.
2. RATING: resistive load 3A/250VAC.
3. ELECTRICAL LIFE: 50,000 MAKE-AND-BREAK CYCLES AT FULL LOAD.
4. MECHANICAL LIFE: Momentary 1,000,000 cycles  
Lock 500,000 cycles
5. INSULATION RESISTANCE: 1,000MΩ MIN AT 500VDC.
6. DIELECTRIC STRENGTH: 2,000V RMS@sea level.
7. CONTACT RESISTANCE: 50mΩ MAX@1A 12VDC (initial value).
8. OPERATING TEMPERATURE: -20°C to 55°C.
9. TRAVEL: ABOUT 3.2mm.
10. OPERATION PRESSURE: 1Pole 2.5±1N / 2Poles 3.5±1N
11. INGRESS PROTECTION: IP65.
12. TORQUE: 1~3Nm.

**MATERIAL:**  
 BEZEL: PC.  
 BASE: PBT(UL 94-V0), PC(UL 94-V2)  
 ACTUATOR: PC, POM,  
 INNER ASSEMBLY: POM/PA66.  
 SPRING: Stainless steel.  
 SEALING: Silicone.  
 O-Ring: Silicone.  
 TERMINAL: Brass, Silver plated.  
 HEX NUT: PC.  
 ROHS

Actuator Type	
000	Transparent Actuator Yellow all LED color available
100	White Actuator Yellow all LED color available
200	Black Actuator Non-LED
300	Transparent Red Actuator LED in Red only
400	Transparent Orange Actuator LED in Yellow only
600	Transparent Green Actuator LED in Green only
700	Transparent Blue Actuator LED in Blue only
800	Silver Actuator Non-LED

TOLERANCE	
0.00 mm	± 0.25mm
0.0 mm	± 0.40mm
ANGULAR: ± 2°	





**SPECIFICATIONS**

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- 2 RATING: resistive load 3A/250VAC.
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- 11 INGRESS PROTECTION: IP65
- 12 TORQUE: 1~3Nm.

**MATERIAL:**  
 BEZEL: PC.  
 BASE: PBT/UL 94-V0, PC(UL 94-V2)  
 ACTUATOR: PC; POM.  
 INNER ASSEMBLY: POM/PA66.  
 SPRING: Stainless steel.  
 SEALING: Silicone.  
 O-Ring: Silicone.  
 TERMINAL: Brass, Silver plated.  
 HEX NUT: PC.  
 ROHS

Actuator Type	Color
000	Transparent Actuator
100	White Actuator
100	Yellow all LED color available
200	Black Actuator Non-LED
300	Transparent Red Actuator
300	LED in Red only
400	Transparent Orange Actuator
400	LED in Orange only
600	Transparent Green Actuator
600	LED in Green only
700	Transparent Blue Actuator
700	LED in Blue only
800	Silver Actuator Non-LED

TOLERANCE
0.00 mm ± 0.25mm
0.0 mm ± 0.40mm
ANGULAR: ± 2°