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 : Ith 5A/250VAC. resistive load 3A/250VAC.
CONTACT RESISTANCE : 50mΩ MAX.@1A 12VDC(inital 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.

RS Pro MPN	Packs of 1	Packs of 20
KPB22-88P1-F10-00-JQ	1758876	1758265
KPB22-88P1-F11-00-JQ	1758990	1758252
KPB22-88P1-F21-00-JQ	1759097	1758392
KPB22-88P1-F20-00-JQ	1759020	1758403
KPB22-88P2-F10-00-JQ	1759016	1758433
KPB22-88P2-F11-00-JQ	1759007	1758432
KPB22-88P2-F21-00-JQ	1758989	1758430
KPB22-88P2-F20-00-JQ	1758998	1758431

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 : 1NO1NC/2NO2NC.
②Enclosure material : PC/POM/PA66/Sillicone/Brass/Silver/Steel.
③Operating Type : Resettable or Self-locking.
④Ambient operating temperature Range : -20 ℃~+55 ℃ (with no icing or condensation).
⑥Ambient 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 PERFPRMANCE	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	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
HUMIDITY RESISTANCE	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±3℃. 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±3℃. 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: ①Temperature:40±2℃ ②Relative Humidity:90~95% ③Time:96 hours.	①Contact Resistance: 100 mΩ Max. ②Insulation Resistance: 1000MΩ min.

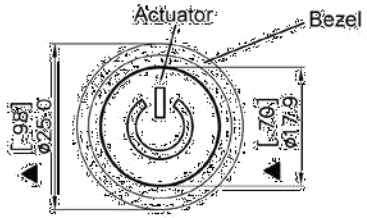
	ITEM	DESCRIPTION	TEST CONDITIONS	REQUIREMENTS
HUMIDITY RESISTANCE	13	Salt spray Testing	Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before the measurements are made: ①Temperature:35±2℃. ②The ratio of salt-water：5%. ③The spray amount of salt- water：1~2 ml/h. ④Time:48 hours.	The testing standard based on bubble, crack, And magnifying glass with gauge.
	14	Test of IP 65	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.	IP65 According to EN 60529：1991＋A1：2000 IEC 60529：2001
RoHs	15	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	16	Manual Soldering	■ hand Soldering： ①Soldering Temperature：290℃.(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.

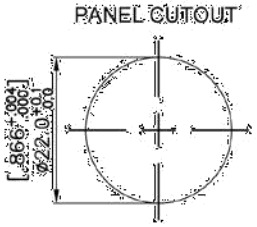
Wiring:

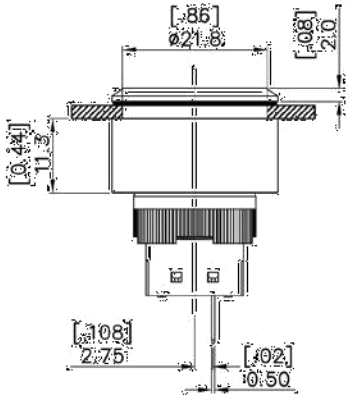
1. Solder the terminals using a 60W soldering iron at 290°C within 3 seconds. (Sn-Ag-Cu type solder is recommended.)
2. Wait for one minute after soldering before exerting any external force on the solder.
3. When soldering, be sure to keep the soldering iron as far away from the housing as possible.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

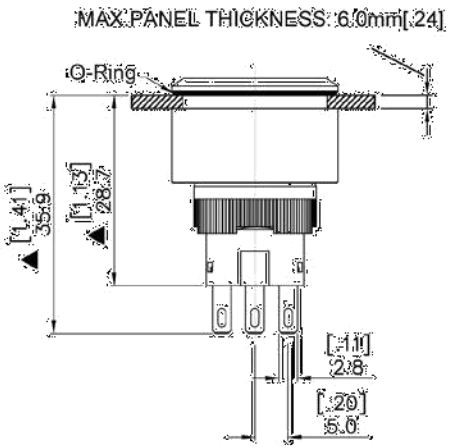
5. LED Specifications： (LED Without resistor)

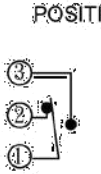
颜色	VF(v) Min.	VF(v) TYP.	VF(v) MAX.	IF(MAX)
White	2.8	3.3	3.8	20mA
Red	1.8	2.1	2.5	20mA
yellow	1.8	2.1	2.5	20mA
Blue	2.8	3.2	3.8	20mA
Green	2.8	3.2	3.6	20mA

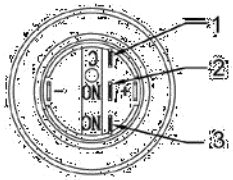












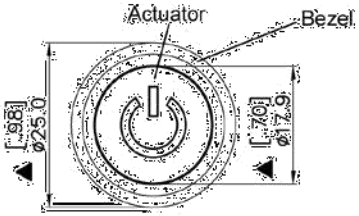
SPECIFICATIONS
1.CONTACT MATERIAL: SILVER.
2.RATING: resistive load: 3A/250VAC.
3.ELECTRICAL LIFE: 50,000 MAKE AND BREAK CYCLES
AT FULL LOAD.
4.MECHANICAL LIFE: Momentary 1,000,000 cycles.
Lock 500,000 cycles.
5.INSULATION RESISTANCE: 1,000MΩ MIN AT 500VDC.
6.DIELECTRIC STRENGTH: 2,000V RMS@sea level.
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.

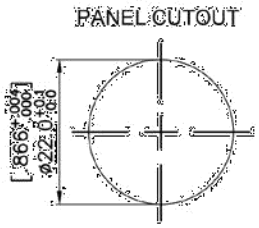
MATERIAL:
BEZEL: PC.
BASE: PBT(UL 94-V0), PC(UL 94-V2)
ACTUATOR: PC /POM.
INNER ASSEMBLY: POM /PA66.
SPRING: Stainless steel.
SEALING: Silicone.
O-Ring: Silicone.
TERMINAL: Brass ,Silver plated.
HEX NUT: IPC.
RoHS

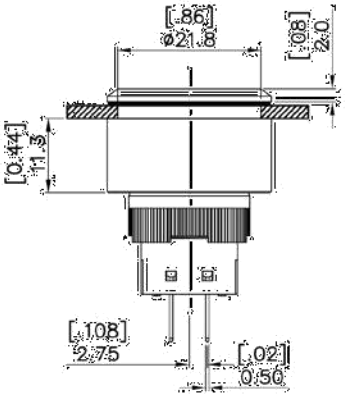
Actuator Type:

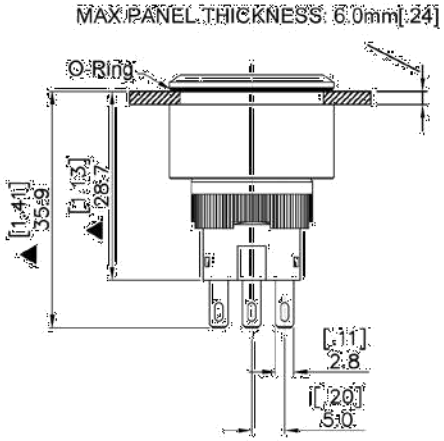
8P1	Silver Actuator, White power LED,in red only. (below all LED color available.)
8P2	Silver Actuator, Black power LED,Non-LED
8P3	Silver Actuator, Red power LED,in red only.
8P6	Silver Actuator, Green power LED,in Green only.
8P7	Silver Actuator, Blue power LED,in Blue only.

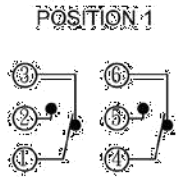
TOLERANCE	
0.00 mm	± 0.25mm
0.0 mm	± 0.40mm
ANGULAR	± 2°

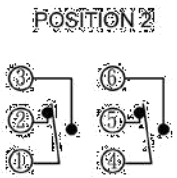


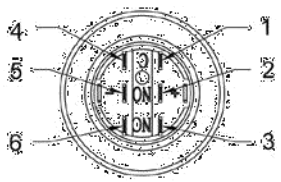












SPECIFICATIONS
1.CONTACT MATERIAL: SILVER.
2.RATING: resistive load: 3A/250VAC.
3.ELECTRICAL LIFE: 50,000 MAKE-AND-BREAK CYCLES AT FULL LOAD.
4.MECHANICAL LIFE: Momentary 1,000,000 cycles
Lock 500,000 cycles
5.INSULATION RESISTANCE:1,000MΩ MIN(AT 500VDC.
6.DIELECTRIC STRENGTH: 2,000V RMS@sea level.
7.CONTACT 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

8P1	Silver Actuator-White power LED,below all LED color available.
8P2	Silver Actuator-Black power, Non-LED.
8P3	Silver Actuator-Red power LED in red only.
8P6	Silver Actuator-Green power LED in Green only.
8P7	Silver Actuator-Blue power LED in Blue only.

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