



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 colours.

Specifications:

RATING : Ith 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.

RS Pro MPN	Packs of 1	Packs of 20
KPB22-8000-F10-124-JQ	1758890	1758299
KPB22-8000-F11-124-JQ	1758908	1758301
KPB22-8000-F21-124-JQ	1758984	1758318
KPB22-8000-F20-124-JQ	1758882	1758288
KPB22-8000-F10-1220-JQ	1758900	1758300
KPB22-8000-F11-1220-JQ	1758891	1758289
KPB22-8000-F21-1220-JQ	1758994	1758319
KPB22-8000-F20-1220-JQ	1758934	1758315
KPB22-8000-F10-324-JQ	1758872	1758297
KPB22-8000-F11-324-JQ	1758986	1758286
KPB22-8000-F21-324-JQ	1758953	1758316
KPB22-8000-F20-324-JQ	1759100	1758327
KPB22-8000-F10-3220-JQ	1758881	1758298
KPB22-8000-F11-3220-JQ	1758874	1758287
KPB22-8000-F21-3220-JQ	1758917	1758302
KPB22-8000-F20-3220-JQ	1758899	1758290
KPB22-8000-F10-524-JQ	1758959	1758295
KPB22-8000-F11-524-JQ	1758949	1758284
KPB22-8000-F21-524-JQ	1758923	1758314
KPB22-8000-F20-524-JQ	1759067	1758325
KPB22-8000-F10-5220-JQ	1758975	1758296
KPB22-8000-F11-5220-JQ	1758967	1758285
KPB22-8000-F21-5220-JQ	1758935	1758329
KPB22-8000-F20-5220-JQ	1759091	1758326
KPB22-8000-F10-624-JQ	1758926	1758293
KPB22-8000-F11-624-JQ	1758925	1758281
KPB22-8000-F21-624-JQ	1758905	1758311
KPB22-8000-F20-624-JQ	1759050	1758323
KPB22-8000-F10-6220-JQ	1758940	1758294
KPB22-8000-F11-6220-JQ	1758932	1758282
KPB22-8000-F21-6220-JQ	1758915	1758313
KPB22-8000-F20-6220-JQ	1759059	1758324
KPB22-8000-F10-724-JQ	1758909	1758291
KPB22-8000-F11-724-JQ	1758904	1758279
KPB22-8000-F21-724-JQ	1758886	1758309
KPB22-8000-F20-724-JQ	1759029	1758321
KPB22-8000-F10-7220-JQ	1758919	1758292
KPB22-8000-F11-7220-JQ	1758912	1758280
KPB22-8000-F21-7220-JQ	1758896	1758310
KPB22-8000-F20-7220-JQ	1759042	1758322

KPB22-8300-F10-324-JQ	1758965	1758263
KPB22-8300-F11-324-JQ	1758884	1758276
KPB22-8300-F21-324-JQ	1758939	1758242
KPB22-8300-F20-324-JQ	1758888	1758244
KPB22-8300-F10-3220-JQ	1758927	1758303
KPB22-8300-F11-3220-JQ	1758887	1758224
KPB22-8300-F21-3220-JQ	1758880	1758243
KPB22-8300-F20-3220-JQ	1758897	1758245
KPB22-8400-F10-524-JQ	1759089	1758240
KPB22-8400-F11-524-JQ	1759058	1758238
KPB22-8400-F21-524-JQ	1758916	1758247
KPB22-8400-F20-524-JQ	1758879	1758223
KPB22-8400-F10-5220-JQ	1759098	1758241
KPB22-8400-F11-5220-JQ	1759069	1758239
KPB22-8400-F21-5220-JQ	1759027	1758235
KPB22-8400-F20-5220-JQ	1759049	1758237
KPB22-8600-F10-624-JQ	1758982	1758232
KPB22-8600-F11-624-JQ	1758947	1758230
KPB22-8600-F21-624-JQ	1758906	1758226
KPB22-8600-F20-624-JQ	1758921	1758228
KPB22-8600-F10-6220-JQ	1758992	1758233
KPB22-8600-F11-6220-JQ	1758963	1758231
KPB22-8600-F21-6220-JQ	1758914	1758227
KPB22-8600-F20-6220-JQ	1758929	1758229
KPB22-8700-F10-724-JQ	1758936	1758260
KPB22-8700-F11-724-JQ	1759041	1758236
KPB22-8700-F21-724-JQ	1758920	1758270
KPB22-8700-F20-724-JQ	1758944	1758272
KPB22-8700-F10-7220-JQ	1758895	1758225
KPB22-8700-F11-7220-JQ	1759010	1758234
KPB22-8700-F21-7220-JQ	1758911	1758271
KPB22-8700-F20-7220-JQ	1758961	1758273

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 °C~+55 °C (with no icing or condensation).
- ⑤Ambient operating humidity : 35%~85% RH.
- ⑥Ambient storage temperature : -25°C to +65°C (with no icing or condensation).
- ⑦Degrees 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	Operating Life	<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>①Dielectric 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 Ω Max. ② Insulation Resistance: 1000M Ω min.

HUMIDITY RESISTANCE

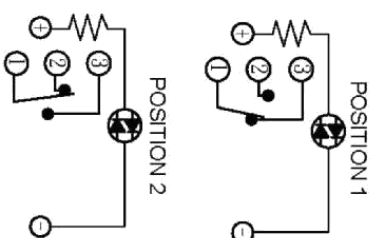
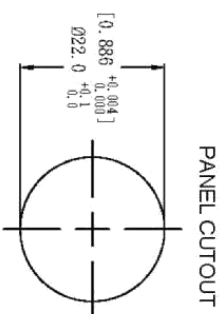
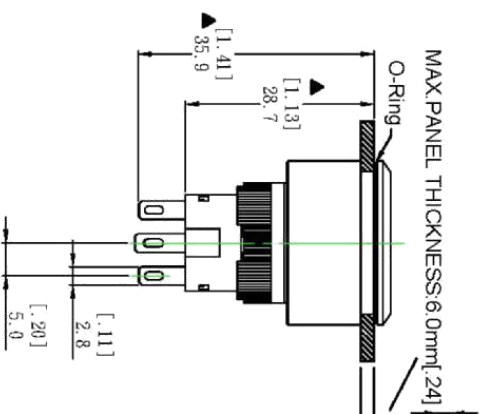
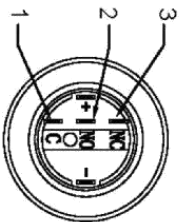
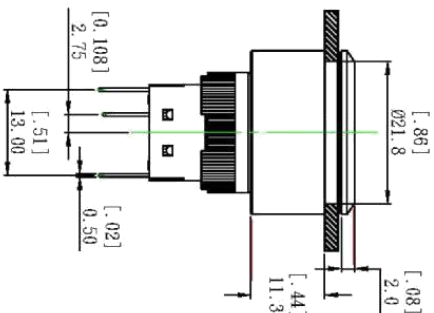
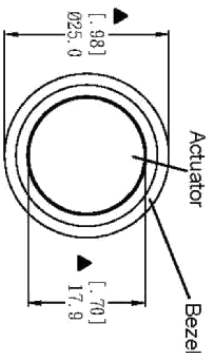
	ITEM	DESCRIPTION	TEST CONDITIONS	REQUIREMENTS
HUMIDITY RESISTANCE	13	Salt spray Testing	<p>Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before the measurements are made:</p> <p>①Temperature:35±2°C. ②The ratio of salt-water : 5%. 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



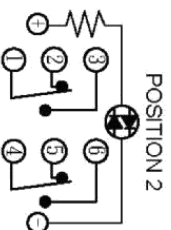
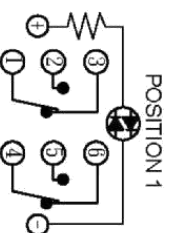
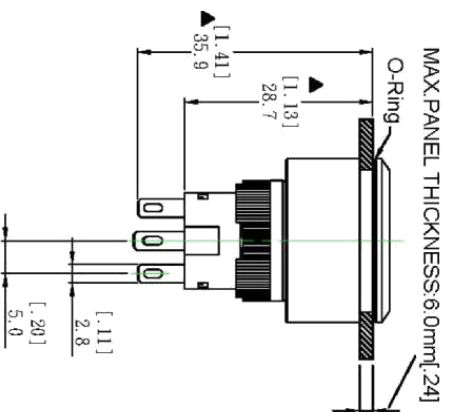
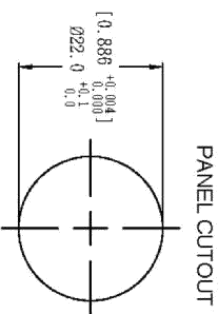
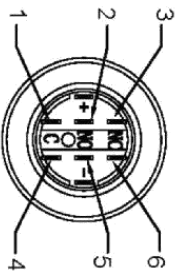
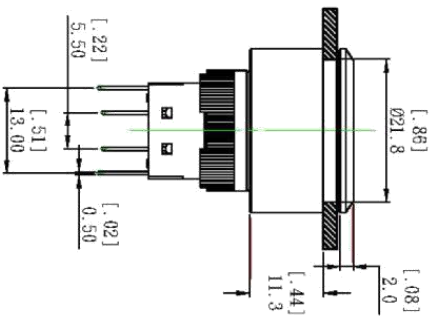
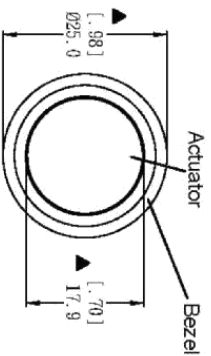
- SPECIFICATIONS**
- CONTACT MATERIAL: SILVER.
 - RATING: resistive load 3A/250VAC.
 - ELECTRICAL LIFE: 50,000 MAKE-AND-BREAK CYCLES AT FULL LOAD.
 - MECHANICAL LIFE: Momentary 1,000,000 cycles
Lock 500,000 cycles
 - INSULATION RESISTANCE: 1,000MΩ MIN AT 500VDC.
 - DIELECTRIC STRENGTH: 2,000V RMS@sea 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 / 2Poles 3.5±1N
 - INGRESS PROTECTION: IP65
 - 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	LED color
000	Transparent Actuator
100	Yellow Actuator
200	White Actuator
300	Black Actuator / Non-LED
400	Transparent Red Actuator
600	LED in Red only
700	Transparent Orange Actuator
800	LED in Green only
	Transparent Blue Actuator
	LED in Blue only
	Silver Actuator / Non-LED

LED color	LED voltage
0	Without LED
1	White
3	Red
5	Yellow
6	Green
7	Blue
0	Without LED or resistor
3	3V
6	6V
12	12V
24	24V
36	36V
110	110V
220	220V

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



PANEL CUTOUT

- SPECIFICATIONS**
- CONTACT MATERIAL: SILVER.
 - RATING: resistive load 3A/250VAC.
 - ELECTRICAL LIFE: 50,000 MAKE-AND-BREAK CYCLES AT FULL LOAD
 - MECHANICAL LIFE: Momentary 1,000,000 cycles
Load 500,000 cycles
 - 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 2.5f1N / 2poles 3.5f1N
 - INGRESS PROTECTION: IP65.
 - 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	LED color
000 Transparent Actuator	Without LED
100 White Actuator	White
200 Black Actuator Non-LED	Red
300 Transparent Red Actuator	Yellow
400 Transparent Orange Actuator	Green
600 Transparent Green Actuator	Blue
700 Transparent Blue Actuator	
800 Silver Actuator Non-LED	

LED color	LED voltage
0 Without LED	0 Without LED or resistor
1 White	3V
3 Red	6V
5 Yellow	12V
6 Green	24V
7 Blue	36V
	110V
	220V

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