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-F10-124-JQ	1758928	1758248
KPB22-88P1-F11-124-JQ	1758955	1758250
KPB22-88P1-F21-124-JQ	1759066	1758390
KPB22-88P1-F20-124-JQ	1759004	1758401
KPB22-88P1-F10-1220-JQ	1758988	1758264
KPB22-88P1-F11-1220-JQ	1758972	1758251
KPB22-88P1-F21-1220-JQ	1759088	1758391
KPB22-88P1-F20-1220-JQ	1759014	1758402
KPB22-88P1-F10-324-JQ	1758979	1758274
KPB22-88P1-F11-324-JQ	1758907	1758246
KPB22-88P1-F21-324-JQ	1759048	1758388
KPB22-88P1-F20-324-JQ	1758987	1758399
KPB22-88P1-F10-3220-JQ	1758951	1758262
KPB22-88P1-F11-3220-JQ	1759046	1758355
KPB22-88P1-F21-3220-JQ	1759057	1758389
KPB22-88P1-F20-3220-JQ	1758995	1758400
KPB22-88P1-F10-524-JQ	1758913	1758258
KPB22-88P1-F11-524-JQ	1758973	1758409
KPB22-88P1-F21-524-JQ	1759011	1758422
KPB22-88P1-F20-524-JQ	1758969	1758397
KPB22-88P1-F10-5220-JQ	1758922	1758259
KPB22-88P1-F11-5220-JQ	1758970	1758317
KPB22-88P1-F21-5220-JQ	1759039	1758387
KPB22-88P1-F20-5220-JQ	1759008	1758385
KPB22-88P1-F10-624-JQ	1758892	1758256
KPB22-88P1-F11-624-JQ	1758956	1758406
KPB22-88P1-F21-624-JQ	1758978	1758398
KPB22-88P1-F20-624-JQ	1758954	1758395
KPB22-88P1-F10-6220-JQ	1758901	1758257
KPB22-88P1-F11-6220-JQ	1758964	1758408
KPB22-88P1-F21-6220-JQ	1758960	1758396
KPB22-88P1-F20-6220-JQ	1758983	1758410
KPB22-88P1-F10-724-JQ	1758877	1758253
KPB22-88P1-F11-724-JQ	1759028	1758404
KPB22-88P1-F21-724-JQ	1759024	1758434
KPB22-88P1-F20-724-JQ	1758933	1758393
KPB22-88P1-F10-7220-JQ	1758885	1758254
KPB22-88P1-F11-7220-JQ	1758952	1758405
KPB22-88P1-F21-7220-JQ	1759032	1758436
KPB22-88P1-F20-7220-JQ	1758950	1758394

KPB22-88P3-F10-324-JQ	1758971	1758427
KPB22-88P3-F11-324-JQ	1759035	1758425
KPB22-88P3-F21-324-JQ	1759000	1758421
KPB22-88P3-F20-324-JQ	1759018	1758423
KPB22-88P3-F10-3220-JQ	1758981	1758428
KPB22-88P3-F11-3220-JQ	1758962	1758426
KPB22-88P3-F21-3220-JQ	1759037	1758437
KPB22-88P3-F20-3220-JQ	1758991	1758411
KPB22-88P6-F10-624-JQ	1758985	1758419
KPB22-88P6-F11-624-JQ	1758966	1758417
KPB22-88P6-F21-624-JQ	1759009	1758413
KPB22-88P6-F20-624-JQ	1759030	1758415
KPB22-88P6-F10-6220-JQ	1758993	1758420
KPB22-88P6-F11-6220-JQ	1758976	1758418
KPB22-88P6-F21-6220-JQ	1759022	1758414
KPB22-88P6-F20-6220-JQ	1758958	1758416
KPB22-88P7-F10-724-JQ	1758931	1758371
KPB22-88P7-F11-724-JQ	1759025	1758386
KPB22-88P7-F21-724-JQ	1758948	1758351
KPB22-88P7-F20-724-JQ	1759021	1758353
KPB22-88P7-F10-7220-JQ	1759002	1758412
KPB22-88P7-F11-7220-JQ	1759015	1758331
KPB22-88P7-F21-7220-JQ	1759003	1758352
KPB22-88P7-F20-7220-JQ	1759033	1758354

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.

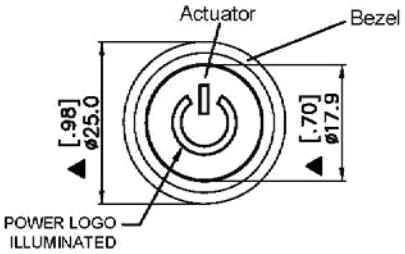
	ITEM	DESCRIPTION	TEST CONDITIONS	REQUIREMENTS
HUMIDITY RESISTANCE	13	Salt spray Testing	Following the test set forth below the sample shall be left in normal temperature and humidity conditions for an hour before the measurements are made: ①Temperature:35±2℃. ②The ratio of salt-water：5%. ③The spray amount 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.

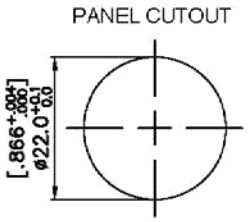
Wiring:

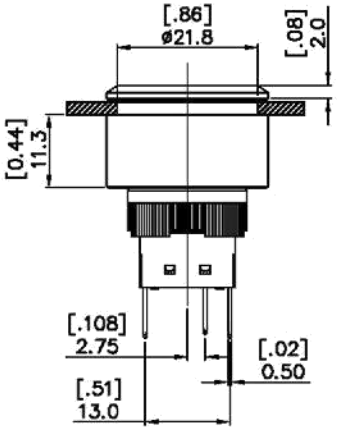
1. Solder the terminals using a 60W soldering iron at 290°C within 3 seconds. (Sn-Ag-Cu type solder is recommended.)
2. Wait for one minute after soldering before exerting any external force on the solder.
3. When soldering, be sure to keep the soldering iron as far away from the housing as possible.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

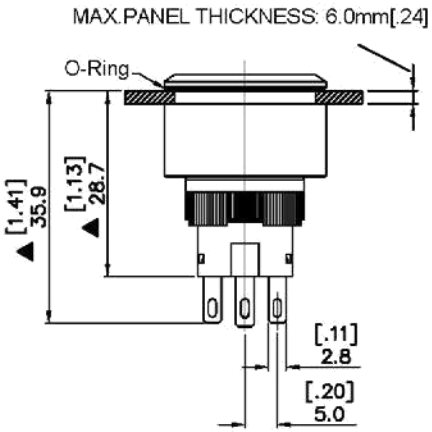
5. LED Specifications： (LED Without resistor)

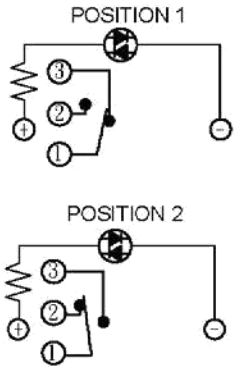
颜色	VF(v) Min.	VF(v) TYP.	VF(v) MAX.	IF(MAX)
White	2.8	3.3	3.8	20mA
Red	1.8	2.1	2.5	20mA
yellow	1.8	2.1	2.5	20mA
Blue	2.8	3.2	3.8	20mA
Green	2.8	3.2	3.6	20mA

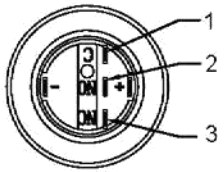












SPECIFICATIONS

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℃ to 55℃ .
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: Sillicone.
O-Ring:Sillicone.
TERMINAL: Brass ,Silver plated.
HEX NUT: PC.
RoHS

Actuator Type

8P1	Silver Actuator+White power 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

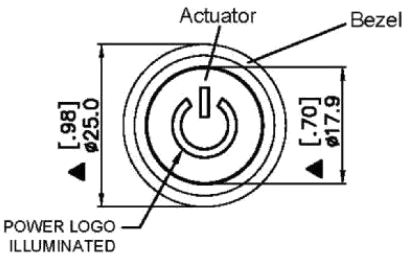
LED color

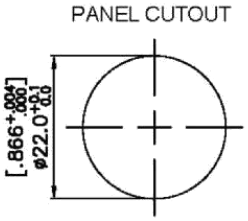
0	Without LED
1	White
3	Red
5	Yellow
6	Green
7	Blue

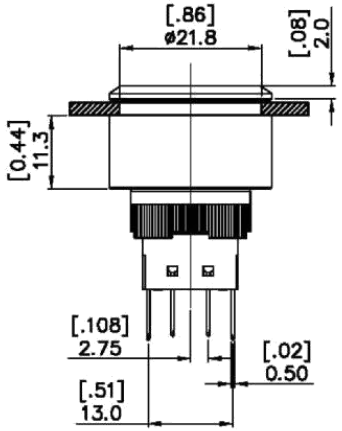
LED voltage

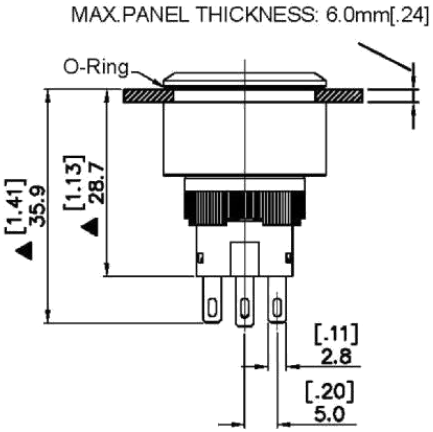
0	Without LED or resistor
3	3V
6	6V
12	12V
24	24V
36	36V
110	110V
220	220V

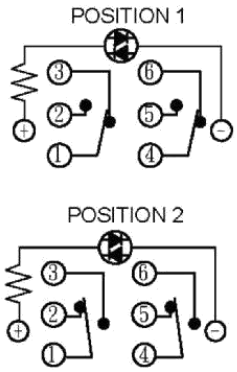
TOLERANCE
0.00 mm ± 0.25mm
0.0 mm ± 0.40mm
ANGULAR: ± 2°

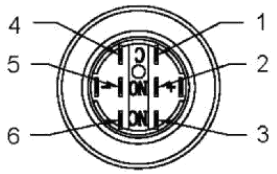












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Lock 500,000 cycles
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11.INGRESS PROTECTION: IP65.
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TERMINAL: Brass ,Silver plated.
HEX NUT: PC.
RoHS

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LED color

0	Without LED
1	White
3	Red
5	Yellow
6	Green
7	Blue

LED voltage

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˚