



Datasheet

RS PRO Sub-Miniature 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.

Package Contain:

- 1x Nut
- 1x Locking Washer
- 1x Splash Proof O-Ring

Specifications:

- Switch type: Pushbutton
- Poles/throws: SPST
- Switch functions: off-mom

Max. Current/voltage rating with resistive load:

400ma 32vac - 200 ma 50vdc - 125 ma 125vac.

Initial contact resistance: 50mΩmax.

Insulation resistance: 1GΩmin.at 500VDC.

Dielectric strength: 1,500 VAC rms.

Electrical life at full load: 500,000 cycles.

Operating temperature: -30°C to 85°C.

Panel thickness: 1.5 mm (.059) min. -4 mm (.157) max.

Total travel: 1.5 mm(.059)

Operating force: 3N~6N

Contact bounce: 10 ms.

Mechanical life: 1,000,000 cycles.

Torque : 0.5 Nm max. applied to nut

Degree of protection: IP68

Manual soldering:

Use soldering iron of 30 watts, controlled at 350°C approximately 5 seconds while applying solder.

Wave soldering:

Recommended soldering temperature: 260 ± 5°C

※Ambient temperature of the soldered surface of PCB.110°C max.

Duration of solder immersion: max 5 sec. (PCB is 1.6mm in thickness).

RS Part no.

175-8784	SP Off-Mom. / Flat, Matte (Non LED) / Red Cap Color
175-8701	SP Off-Mom. / Flat, Matte (Non LED) / Black Cap Color
175-8698	SP Off-Mom. / Flat, Matte (White LED) / Black Cap Color
175-8697	SP Off-Mom. / Flat, Matte (Red LED) / Black Cap Color
175-8694	SP Off-Mom. / Flat, Matte (Yellow LED) / Black Cap Color
175-8692	SP Off-Mom. / Flat, Matte (Green LED) / Black Cap Color
175-8762	SP Off-Mom. / Flat, Matte (Blue LED) / Black Cap Color
175-8782	SP Off-Mom. / Flat, Matte (White LED) / Red Cap Color
175-8781	SP Off-Mom. / Flat, Matte (Red LED) / Red Cap Color
175-8779	SP Off-Mom. / Flat, Matte (Yellow LED) / Red Cap Color
175-8777	SP Off-Mom. / Flat, Matte (Green LED) / Red Cap Color
175-8775	SP Off-Mom. / Flat, Matte (Blue LED) / Red Cap Color

175-8739	SP Off-Mom. / Flat, Matte (White LED) / Yellow Cap Color
175-8764	SP Off-Mom. / Flat, Matte (Red LED) / Yellow Cap Color
175-8788	SP Off-Mom. / Flat, Matte (Yellow LED) / Yellow Cap Color
175-8760	SP Off-Mom. / Flat, Matte (Green LED) / Yellow Cap Color
175-8758	SP Off-Mom. / Flat, Matte (Blue LED) / Yellow Cap Color
175-8757	SP Off-Mom. / Flat, Matte (White LED) / Green Cap Color
175-8754	SP Off-Mom. / Flat, Matte (Red LED) / Green Cap Color
175-8753	SP Off-Mom. / Flat, Matte (Yellow LED) / Green Cap Color
175-8749	SP Off-Mom. / Flat, Matte (Green LED) / Green Cap Color
175-8748	SP Off-Mom. / Flat, Matte (Blue LED) / Green Cap Color
175-8746	SP Off-Mom. / Flat, Matte (White LED) / Blue Cap Color
175-8743	SP Off-Mom. / Flat, Matte (Red LED) / Blue Cap Color
175-8742	SP Off-Mom. / Flat, Matte (Yellow LED) / Blue Cap Color
175-8664	SP Off-Mom. / Flat, Matte (Green LED) / Blue Cap Color
175-8597	SP Off-Mom. / Flat, Matte (Blue LED) / Blue Cap Color

Specifications:

1. Style :

This specification describes “Snap-Acting Pushbutton Switches”, mainly used as signal switch of electric devices, with the general requirements of mechanical and electrical characteristic.

Operating Temperature Range : -30 °C~+85°C.

2. Current Range :

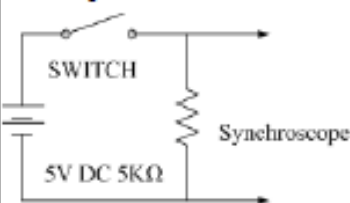
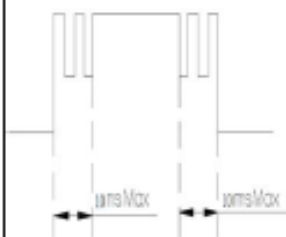
2.1 Silver Plating Standard :

Plating		Rating
C=Gold over silver	Fixed Terminal : Copper alloy with silver plated over gold plate. Movable contact : Copper alloy with silver plated over gold plate.	400mA @32VAC Max. 125mA @125VAC Max. 200mA @50VDC Max.

3. Type of Actuation : Snap-Acting Pushbutton Switches.

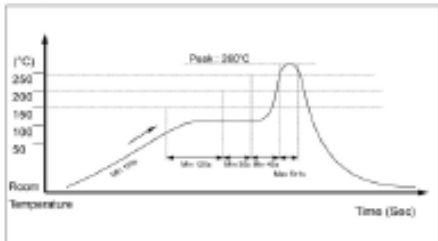
4. Test Sequence :

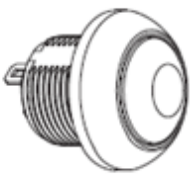
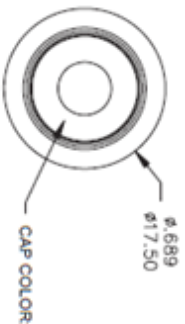
ELECTRIC PERFORMANCE	ITEM	DESCRIPTION	TEST CONDITIONS	REQUIREMENTS
	1	Visual Examination	By Visual Examination check without and out pressure & testing.	There shall be no defects that affect the serviceability of the product.
	2	Contact Resistance	To be measured between the two terminals associated with each switch pole.	50mΩ Max.
	3	Insulation Resistance	Measurements shall be made following application of 500 V/DC 100mA potential across terminals and cover for 1 minute.	1GΩ min/500V.
	4	Dielectric Withstanding Voltage	1500 VAC(50Hz or 60Hz) Between the two terminals contacts for 1 minute.	There shall be no breakdown or flashover.

	ITEM	DESCRIPTION	TEST CONDITIONS	REQUIREMENTS
ELECTRIC PERFORMANCE	5	Bounce	<p>3 to 4 operations at a rate of 1 cycle per second.</p> 	<p>10 m seconds max.</p> 
	6	Actuation Force	<p>MODEL-1305N MECHANICAL TEST 500gram、1000gram、2000gram. OFF TO ON Total Travel.</p>	<p>① At for test the force. Force : 3N~6N. ② Total Travel : 1.5mm ③ Operating Position : 1.10mm±0.20mm</p>
MECHANICAL PERFORMANCE	7	Torque	Applied to nut.	About 0.5 Nm Max.
OPERATING LIFE	8	Operating Life	<p>Measurements shall be made following the test forth below :</p> <p>① Plastic Material : 200mA,50VDC resistive load-gold over silver plated.</p> <p>② Electronics Life Test : 500,000 cycles.</p> <p>③ Rate of Operation: 6-8 operation cycles per minute.</p>	<p>① Electronics Life Test : As shown in item 3~4.</p> <p>② Mechanical Life Test : As shown in item 2~4.</p>
			<p>④ Mechanical Life Test : 1,000,000cycles.</p>	

ITEM	DESCRIPTION	TEST CONDITIONS	REQUIREMENTS
9	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 : $-30\pm 3^{\circ}\text{C}$. ② Time : 96 hours.	As shown in item 2~4.
10	Resistance High Temperature	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 : ① Temperature : $85\pm 3^{\circ}\text{C}$. ② Time : 96 hours.	As shown in item 2~4.
11	Resistance Humidity	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 : ① Temperature : $40\pm 2^{\circ}\text{C}$. ② Relative Humidity : 90~95%. ③ Time : 96 hours.	① Contact Resistance : $50\text{m}\Omega$ Max. ② Insulation Resistance : $1\text{G}\Omega$ min.
12	The Salt 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 : ① Temperature : $35\pm 2^{\circ}\text{C}$. ② The ratio of salt-water : 5%. ③ The spray amount of salt-water : 1~2 ml/h. ④ Time : 48 hours.	The testing standard based on bubble, crack, and magnifying glass with gauge.

HUMIDITY RESISTANCE

	ITEM	DESCRIPTION	TEST CONDITIONS	REQUIREMENTS
HUMIDITY RESISTANCE	13	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
	14	Test of IP 68	Protected against the effects of continuous immersion in water at a depth 1 m /60 minutes.	IP68 According to EN 60529 : 1991 + A1 : 2000 IEC 60529 : 2001
SOLDER HEAT RESISTANCE	15	Wave Soldering	<p>■ Wave Soldering :</p> <p>① Soldering Temperature: $260 \pm 5^{\circ}\text{C}$.</p> <p>② Duration of Solder Immersion: 5 ± 1 seconds.</p> <p>Temperature Profile</p>  <p>③ PCB is 1.6mm in thickness.</p> <p>■ Ambient temperature of the soldered Surface of PC board. 110°C Max.</p>	<p>① Shall be free from pronounced backlash and falling-off or breakage terminals.</p> <p>② As shown in item 2~4.</p>



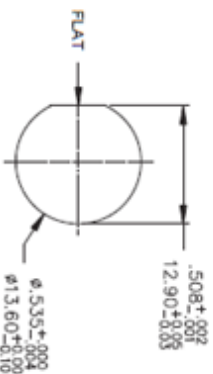
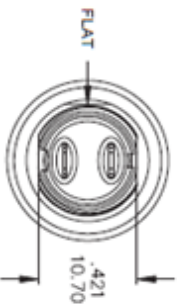
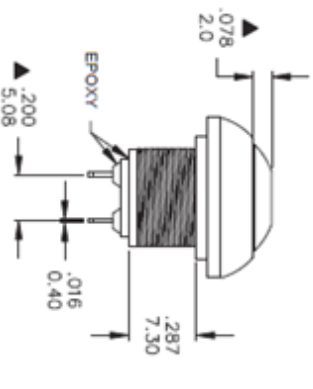
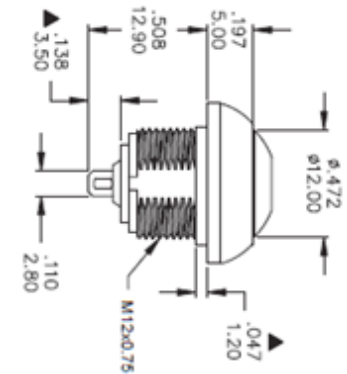
MATERIALS
 CAP: Polyamide 6/6.
 PLUNGER: PC.
 RUBBER: Silicone.
 BUSHING: Polyamide 6/6.
 CASE: Dialyl phthalate (DAP)(UL94V-0).
 TERMINAL/CONTACTS: Gold over silver plated.
 ROHS & Lead Free

PART NO.	PART NAME	QTY
1 MNU-PA03	M12 X 0.75 NUT	1
2 MNU-1M09	LOCKING WASHER	1
3 FCP-A253	O-RING	1

FILE NAME: HARDWARE-0086

Model No.	POS.1	POS.2
PF56	OFF	MOM(C/N)
CONNECTED TERMINALS	OPEN	CLOSE
SCHEMATIC		

SWITCH FUNCTION



PANEL CUT-OUT
 THICKNESS: 1.5 mm ~ 4.0 mm

TOLERANCE :
 0.00 mm ± 0.25mm
 0.0 mm ± 0.40mm
 ANGULAR : ± 5°

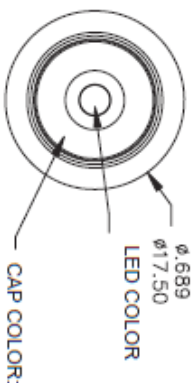
SPECIFICATIONS
 Max. current/voltage rating with resistive load:
 400mA 32VAC - 200 mA 50VDC - 125 mA 125VAC.
 INITIAL CONTACT RESISTANCE: 50 mΩ max.
 INSULATION RESISTANCE: 1 GΩ min. at 500VDC.
 DIELECTRIC STRENGTH: 1,500 VAC ms.
 ELECTRICAL LIFE AT FULL LOAD: 500,000 cycles.
 TOTAL TRAVEL: 1.5 mm(.059).
 OPERATING FORCE: 3N~6N.
 CONTACT BOUNCE: 10 ms.
 MECHANICAL LIFE: 1,000,000 cycles.
 TORQUE: 0.5 Nm max. applied to nut.
 SOLDERING: 350°C max. for 5 seconds.
 OPERATING TEMPERATURE: -30°C to 85°C.
 DEGREE OF PROTECTION: IP68

* Only flat cap available with LED.

CAP COLOR	ITEM NO.
Mate	Bright
White	A1M A1S G1S
Black (Std)	A2M A2S G2S
Red (Std)	A3M A3S G3S
Yellow	A5M A5S G5S
Green	A6M A6S G6S
Blue	A7M A7S G7S

* Besides standard color, other colors need to check stocks available.

ITEM NO.	LED Color
L00	Without LED
L01	White
L03	Red
L05	Yellow
L06	Green
L07	Blue



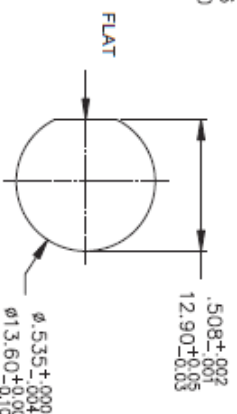
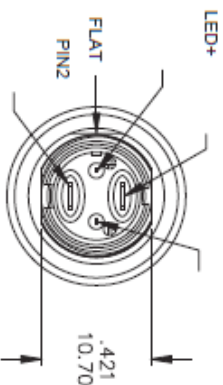
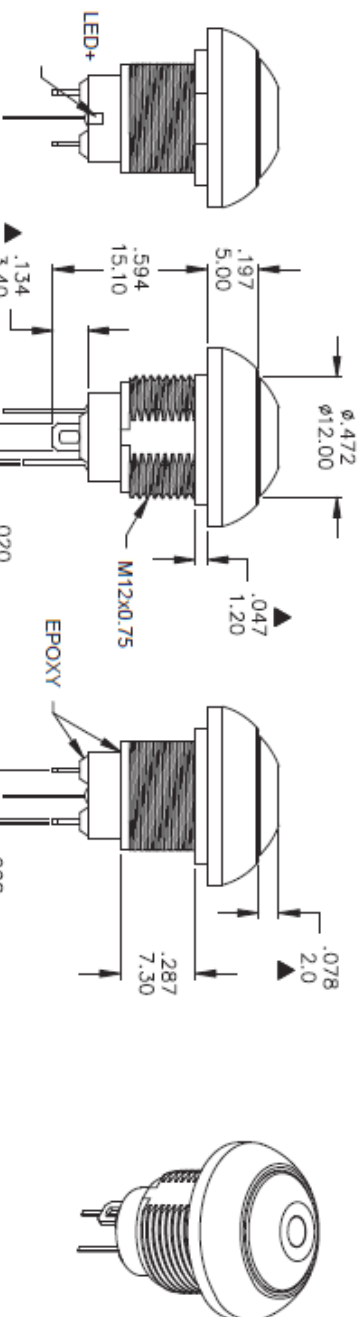
MATERIALS
 CAP: Polyamide 6/6.
 PLUNGER: PC.
 RUBBER: Silicone.
 BUSHING: Polyamide 6/6.
 CASE: Diallyl phthalate (DAP)(UL94V-0).
 TERMINAL/CONTACTS: Gold over silver plated.
 RoHS & Lead Free

PART NO.	PART NAME	QTY
1	MNU-PA03	1
2	MNU-IM08	1
3	FCP-A253	1

FILE NAME: HARDWARE-0085

Model No.	POS.1	POS.2
PFS6	OFF	MOM(ON)
CONNECTED TERMINALS	OPEN	CLOSE
SCHEMATIC		

SWITCH FUNCTION



PANEL CUT-OUT
 THICKNESS: 1.5 mm ~ 4.0 mm

SPECIFICATIONS
 Max. current/voltage rating with resistive load:
 400mA 32VAC - 200 mA 50VDC - 125 mA 125VAC.
 INITIAL CONTACT RESISTANCE: 50 mΩ max.
 INSULATION RESISTANCE: 1 GΩ min. at 500VDC.
 DIELECTRIC STRENGTH: 1,500 VAC ms.
 ELECTRICAL LIFE AT FULL LOAD: 500,000 cycles.
 TOTAL TRAVEL: 1.5 mm(.059).
 OPERATING FORCE: 3N~6N.
 CONTACT BOUNCE: 10 ms.
 MECHANICAL LIFE: 1,000,000 cycles.
 TORQUE: 0.5 Nm max. applied to nut.
 SOLDERING: 350°C max. for 5 seconds.
 OPERATING TEMPERATURE: -30°C to 85°C.
 DEGREE OF PROTECTION: IP68