Datasheet

RS PRO Sub-Miniature Pushbutton Switches

Stock number: 175-XXXX (Details as follows)

EN



The picture above is for reference only.

Specifications:

RATING : 2A/36VDC
ELECTRICAL LIFE : 200,000 make-and-break cycles at full load
MECHANICAL LIFE : 1,000,000 cycles
INSULATION RESISTANCE : 1,000 MΩ min. at 500VDC
DIELECTRIC STRENGTH : 2,000V RMS @ sea level
CONTACT RESISTANCE : 50 mΩ max.
OPERATION TEMPERATURE : -20°C~+70°C
TRAVEL: About 2.0±0.20mm
OPERATION PRESSURE : 4.5N±1.5N
INGRESS PROTECTION : IP67
TORQUE : 11.5 kgf · cm
THICKNESS : 8.0mm (Max.)
Current limiting resistor is required to limit LED forward current to 20mA.

RS Part no.

Packs of 1	Packs of 20
1759478	1758497
1759374	1758493
1759369	1758492
1759524	1758515
1759382	1758495
1759567	1758483
1759621	1758474
1759548	1758482
1759608	1758632
1759604	1758730
1759445	1758724
1759463	1758727
1759451	1758726
1759394	1758712
1759465	1758707
1759421	1758738
1759597	1758708
1759658	1759131
1759619	1759171
1759676	1759133
1759635	1759172

Specifications:

1. Style :

This specification describes "Metal Pushbutton Switch", mainly used as signal switch of electric devices, with the general requirements of mechanical and electrical characteristic.

①Switch combination : Off-Mom. Single Pole
②Enclosure material : Aluminum alloy / Stainless steel.
③Operating Type : Momentary.
④Operating Temperature Range : -20 ℃~+70 ℃.
⑤Degrees of protection provided by enclosures
IP code: IP67.

2. Electrical Rating : 2A /36VDC (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/500VDC 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.	4.5N±1.5N
	6	Operation Travel	Full Travel.	2.0mm±0.20
	7	Torque	Applied to nut.	11.5kgf · cm.
	8	Panel Thickness	Applied to nut.	8.0mm MAX.
OPERATING LIFE	9	Operating Life	Measurements shall be made following the test forth below： ① 2A / 36VDC.(resistive load) ② Electronics Life Test：200,000 cycles. ③ Rate of Operation：6-8 operation cycles per minute. ④ Operating force:8N (MAX).	①Dielectric Strength： between terminals :1000VAC. ②Insulation Resistance： 1000MΩ (at 500VDC)min. ③Contact Resistance：150mΩ Max. ④Operation pressure: 3N±1.5N (for Mechanical Life Test).
			① Mechanical Life Test： Resettable : 1,000,000 cycles. ② Operating force:8N (MAX).	

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	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 : 70±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 67	Protected against the effects of Temporary immersion in water. (1m below the surface of the water for a duration of 30 min).	IP67 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：280°C. 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.

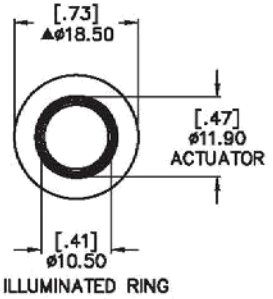
Wiring:

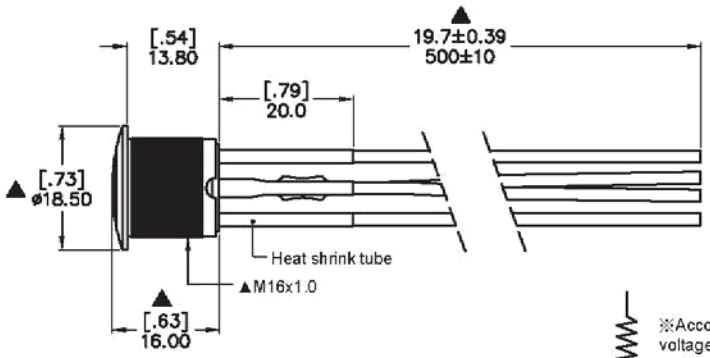
1. Solder the terminals using a 60W soldering iron at 280°C within 3 seconds. (Sn-Ag-Cu type solder is recommended.)
2. When soldering, be sure to keep the soldering iron as far away from the housing as possible.
3. Also ensure that no tensile force is applied to the terminal. Do not bend the terminal or apply excessive force to the terminal.

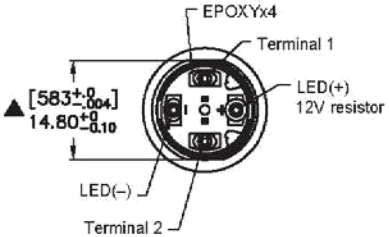
5. LED Specifications： (LED Without resistor)

Color	VF(v) Min.	VF(v) MAX.	IF(Typ.)
White	2.8	3.7	20mA
Red	1.7	2.5	20mA
yellow	1.7	2.5	20mA
Blue	2.8	3.7	20mA
Green	2.8	3.7	20mA
Orange (Amber)	1.7	2.5	20mA

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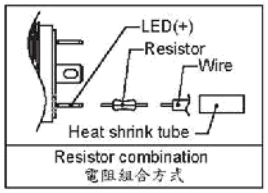


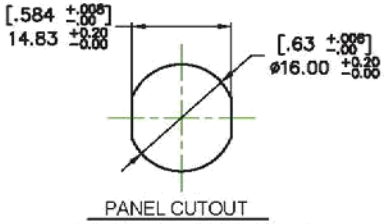


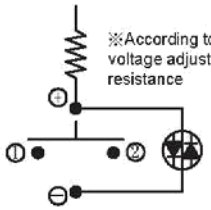


Multi-wire lead AWG20,section 0.6mm²,UL approved

SWITCH	WIRE
Terminal 1	BLACK
Terminal 2	BLACK
LED+	RED
LED–	GREEN

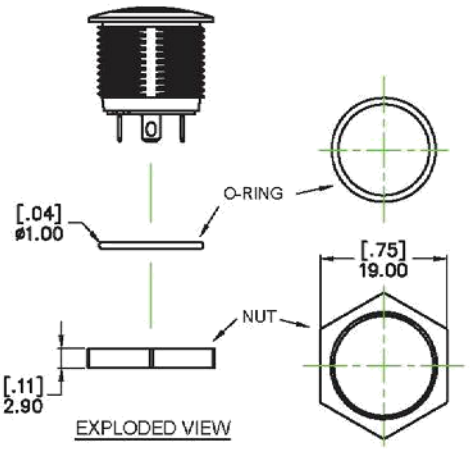






Specifications :
1.Rating : 2A/36VDC.
2.Electrical Life : 200,000 Make-And-Break Cycles At Full Load.
3.Mechanical Life : 1,000,000 Cycles.
4.Insulation Resistance : 1,000 MΩ Min. at 500VDC.
5.Dielectric Strength : 2,000V RMS@sea level.
6.Contact Resistance : 50 mΩ Max.
Note: When the switches with the wire assembly, we only test the electric conduction and will not test the contact resistance on the wire.
7.Operation Temperature : -20℃~+70℃.
8.Travel : About 2.0mm±0.20mm
9.Operation Pressure : 4.5N±1.5N.
10.Ingress Protection : IP67.
11.Torque : 11.5 kgf · cm.
12.Current limiting resistor is required to limit LED forward current to 20mA.

MATERIAL :
Bushing : Aluminum alloy.
Base : PBT(UL-94V0).
Actuator : PC(Translucent UL-94V2).
Cap : Aluminum alloy.
Spring : Steel.
Sealing : Sillicone(Translucent).
O-ring : Sillicone(Translucent).
Nut : Brass(Nickel Plated).
Terminal : Brass.Gold flash plated.
Contact : Silver alloy.



MPB16-XXRE-X-XR-XV

Body type & color	
CA	AL alloy Natural Anodized
CB	AL alloy Black Anodized

Button type	
R	Round

Light type	
E	Ring

LED color	
1	White
3	Red
5	Yellow
6	Green
7	Blue

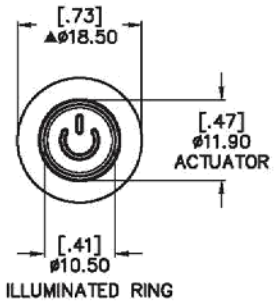
Accessories	
Resistance (About LED Voltage)	
0	Without Resistance
3V	LED input 3 VDC,47Ω ※Red/Yellow led type only
6V	LED input 6 VDC,180Ω
12V	LED input 12 VDC,470Ω
24V	LED input 24 VDC,1000Ω

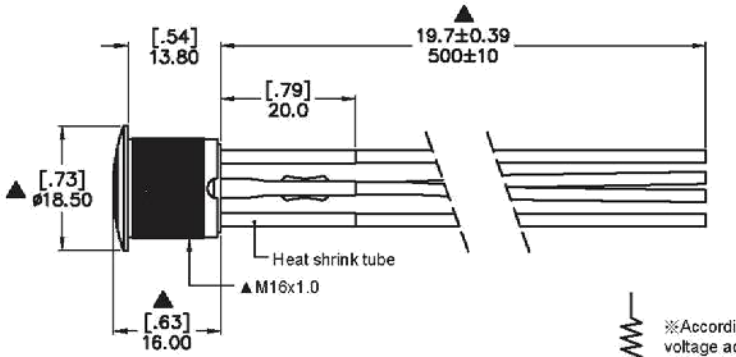
※ ohms value of resistance tolerance : ±5%

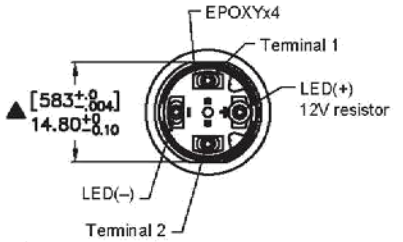
Terminal plating	
R	Gold Flash

Terminal shape	
J	Solder terminal
T1	Wire length 500mm

TOLERANCE (公差):
0.00 mm ± 0.25mm
0.0 mm ± 0.40mm
ANGULAR: ±5°

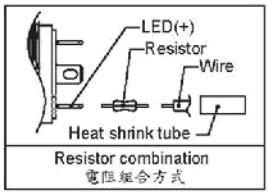


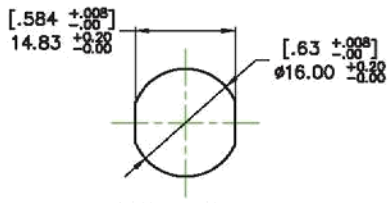




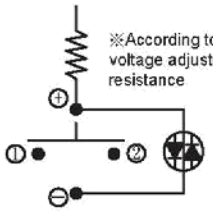
Multi-wire lead AWG20,section 0.6mm²,UL approved

SWITCH	WIRE
Terminal 1	BLACK
Terminal 2	BLACK
LED+	RED
LED–	GREEN





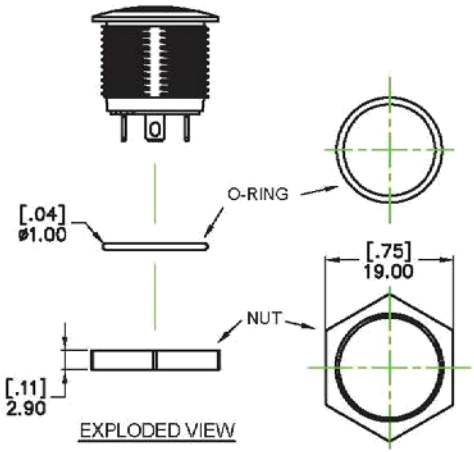
PANEL CUTOUT
THICKNESS:8.0mm[.315](Max.)



SCHEMATIC

Specifications :
1.Rating : 2A/36VDC.
2.Electrical Life : 200,000 Make-And-Break Cycles At Full Load.
3.Mechanical Life : 1,000,000 Cycles.
4.Insulation Resistance : 1,000 MΩ Min. at 500VDC.
5.Dielectric Strength : 2,000V RMS@sea level.
6.Contact Resistance : 50 mΩ Max.
Note: When the switches with the wire assembly, we only test the electric conduction and will not test the contact resistance on the wire.
7.Operation Temperature : -20°C~+70°C.
8.Travel : About 2.0mm±0.20mm
9.Operation Pressure : 4.5N±1.5N.
10.Ingress Protection : IP67.
11.Torque : 11.5 kgf · cm.
12.Current limiting resistor is required to limit LED forward current to 20mA.

MATERIAL :
Bushing : Aluminum alloy.
Base : PBT(UL-94V0).
Actuator : PC(Translucent UL-94V2).
Cap : Aluminum alloy.
Spring : Steel.
Sealing : Sillicone(Translucent).
O-ring : Sillicone(Translucent).
Nut : Brass(Nickel Plated).
Terminal : Brass,Gold flash plated.
Contact : Silver alloy.



EXPLODED VIEW

MPB16-XXRP-X-XR-XV

Body type & color	
CA	AL alloy Natural Anodized
CB	AL alloy Black Anodized

Button type	
R	Round

Light type	
P	Power Logo

LED color	
1	White
3	Red
5	Yellow
6	Green
7	Blue

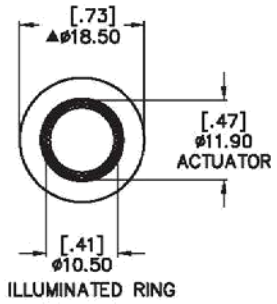
Accessories Resistance (About LED Voltage)	
0	Without Resistance
3V	LED input 3 VDC,47Ω ※Red/Yellow led type only
6V	LED input 6 VDC,180Ω
12V	LED input 12 VDC,470Ω
24V	LED input 24 VDC,1000Ω

※ ohms value of resistance tolerance: ±5%

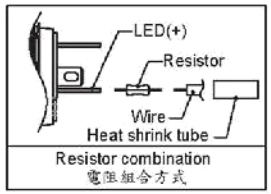
Terminal plating	
R	Gold Flash

Terminal shape	
J	Solder terminal
T1	Wire length 500mm

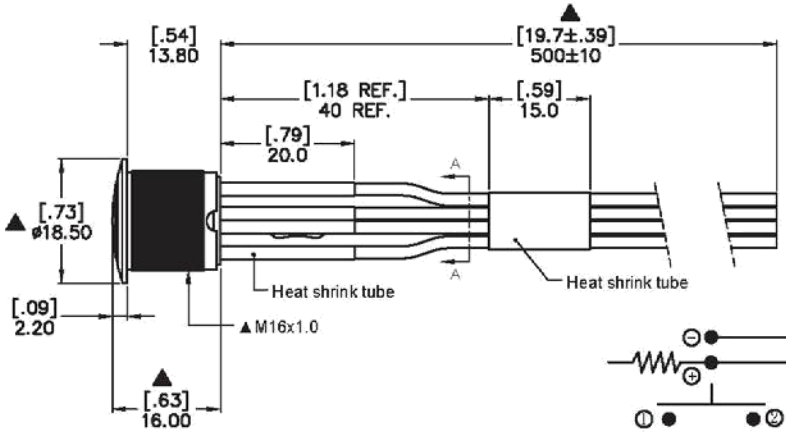
TOLERANCE(公差):
0.00 mm ± 0.25mm
0.0 mm ± 0.40mm
ANGULAR: ±5°

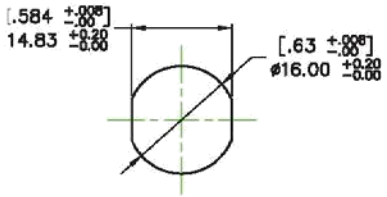


ILLUMINATED RING



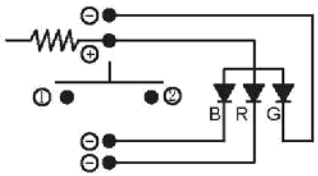
Resistor combination
電阻組合方式





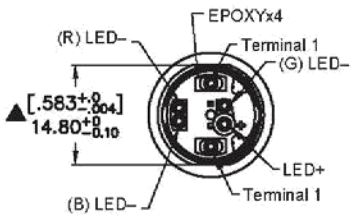
PANEL CUTOUT

THICKNESS:8.0mm[.315](Max.)



SCHEMATIC

※ According to the input voltage adjustment resistance



SECTION A-A

Multi-wire lead AWG20,section 0.6mm²,UL approved

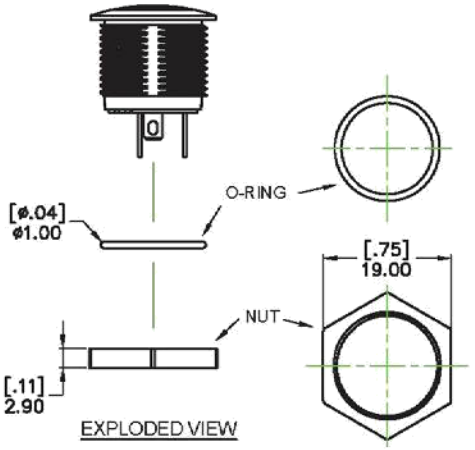
SWITCH	WIRE
Terminal 1	BLACK
Terminal 2	BLACK
LED+	WHITE
(R) LED–	RED
(B) LED–	BLUE
(G) LED–	GREEN

Specifications :

1.Rating : 2A/36VDC.
2.Electrical Life : 200,000 Make-And-Break Cycles At Full Load.
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10.Ingress Protection : IP67.
11.Torque : 11.5 kgf · cm.
12.Current limiting resistor is required to limit LED forward current to 20mA.

MATERIAL :

Bushing : Aluminum alloy.
Base : PBT(UL-94V0).
Actuator : PC(Translucent UL-94V2).
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Spring : Steel.
Sealing : Sillicone(Translucent).
O-ring : Sillicone(Translucent).
Nut : Brass(Nickel Plated).
Terminal : Brass,Gold flash plated.
Contact : Silver alloy.



EXPLODED VIEW

MPB16-XXRP-X-XR-XV

Body type & color	
CA	AL alloy Natural Anodized
CB	AL alloy Black Anodized

Button type	
R	Round

Light type	
E	RING

LED color	
RGB	RED/GREEN/BLUE

Accessories	Resistance (About LED Voltage)
0	Without Resistance
3V	LED input 3 VDC,47Ω ※Red/Yellow led type only
6V	LED input 6 VDC,180Ω
12V	LED input 12 VDC,470Ω
24V	LED input 24 VDC,1000Ω

※ ohms value of resistance tolerance: ±5%

Terminal plating	
R	Gold Flash

Terminal shape	
J	Solder terminal
T1	Wire length 500mm

TOLERANCE (公差):
0.00 mm ± 0.25mm
0.0 mm ± 0.40mm
ANGULAR: ±5°