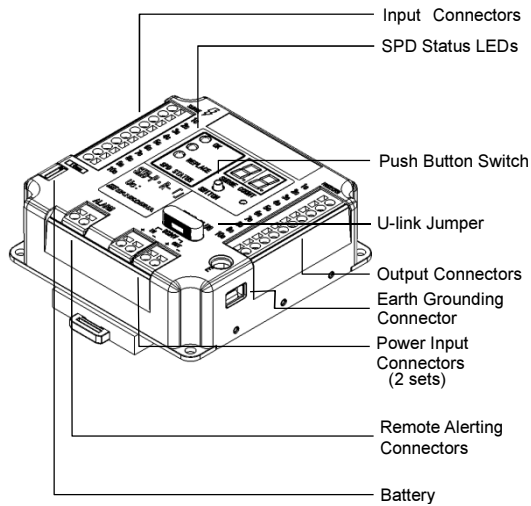


■ PRODUCT DESCRIPTION

This series of products are surge protection devices (SPD). The features of this product include a surge counter and a deterioration self-diagnosis which can be reported remotely. This device can be mounted directly or via a DIN rail mounting bracket.

■ PART NAMES

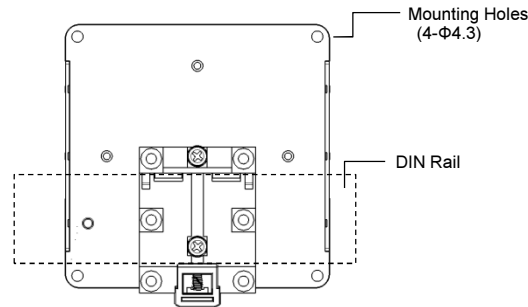


■ MOUNTING

- Before mounting the device, pull out the battery insulation tab and verify that the 7-segment LED lights up and shows "- -" for 1 second.

Note: The battery insulation tab may be bent during storage, this is not a problem.

- Use the body mounting holes for attaching directly to a surface or use the DIN clamp for mounting to a DIN rail mounting plate.



- Note 1 : Tightening Torque: 0.3N.m(kgf.cm)
- Note 2 : Device can be mounted in any orientation or direction. (The 7 segment numeric LED display does not change direction.)
- Note 3 : For mounting to DIN rail, please check with customer.

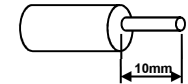
■ Wire Connections

<Normal Wire Connectors>	<Earth Grounding Cable Connector>
<ol style="list-style-type: none"> Insert a screwdriver to open the wire connector. Insert the wire. Pull out the screwdriver and verify wire connection. 	<ol style="list-style-type: none"> Loosen the grounding screw. Insert the grounding cable. Tighten the grounding screw and verify cable connection. <p>※ Grounding cable should be more than 3.2mm² and a length less than 50cm. ※ Recommended crimp terminals: 9mm or less for the round crimp terminal M4.</p>

■ Wire Size Criteria

Single Line	0.2~1.5mm ² (AWG24~16)
Twisted Pair	
Bar Terminal	0.25~0.75mm ²

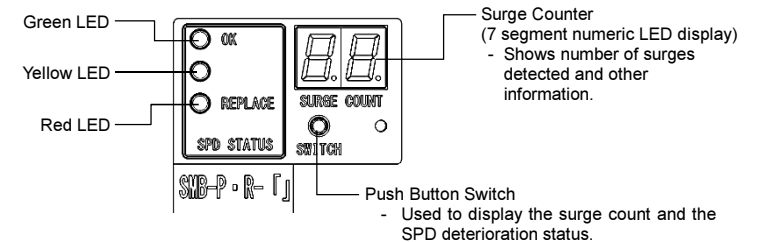
<Recommended Wire Stripping>



■ SPECIFICATIONS

Mounting Locations	Indoor Only				
Operational Temperature Range	-20°C ~ +60°C				
Items	Characteristics For Each Model				
	K2	NM	H3	485	NM(H)
Maximum Continuous Operating DC Voltage (U _c)	DC110V	DC48V	DC27V	485: DC15V Phone: DC48V	DC48V
Rated Load Current	3A	1A	100mA	485: 100mA, Phone: 1A	
Operating Voltage Range	280V~420V	74V~90V	31V~35V	485: 16.8V~19.1V, Phone: 74V~90V	
Series Resistance	≤1Ω	≤1Ω	4~6Ω	485: 4~6Ω Phone: ≤1Ω	≤1Ω
Voltage Protection Level (U _p) ^{※1}	L-E (to ground) 1.2/50μs, 10kV				
	≤1kV	≤500V	≤150V	485: ≤100V Phone: ≤500V	≤500V
Impulse Durability ^{※2}	8/20μs, 5kA(C2)				
	10/350μs, 2.5kA(D1)				

※1- Voltage applied to all lines. ※2- Current flowing to all lines.



Electrical Surge Current & Detection Performance	
Surge Detection Current Sensitivity	8/20μs, ≥±30A
Number of Counts	1~99 (if 100 or more, then "FL" is displayed)
Power Sources	DC24V±15% and 3V button-type battery (CR1632)

■ Maintenance and Self-Diagnostics Test

It is recommended that the following procedure and test should be conducted at least once or twice a year while the product is in use.

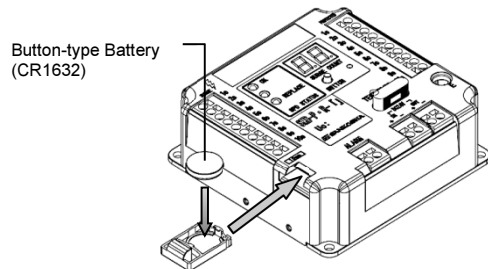
Press the push-button "Switch" to check the SPD status, surge count, and battery condition.

Status LED / 7-segment LED		Content
Green LED lights up 1 time	for 1 sec	SPD is OK
Yellow LED lights up 1 time		SPD should be replaced
Red LED lights up 1 time		SPD needs to be replaced
7-segment LED displays number or "FL"	for 1 sec	Number of surges detected
7-segment LED displays "b t"	for 1 sec	Need to change the battery

Note: If a yellow or a red LED is shown, or if "b t" is shown, then the remote alerting is triggered.

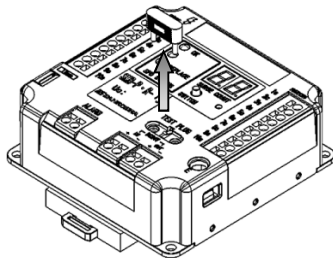
■ CHANGING THE BATTERY

- Step 1: Pull out and remove the battery holder from the SPD
- Step 2: Replace the old button-type battery with a new battery (CR1632). Make sure the + side of the battery is facing up.
- Step 3: Insert the battery holder. If done correctly, the 7-segment LED should displays "- -" for one second.



■ INSULATION TEST

To verify that the insulation resistance is good, an insulation test can be performed by removing the U-link jumper. If a buzzer sound and "t" is displayed on the 7-segment LED, then the unit passes.



Note:
With a good battery, a buzzer sound and "t" should be displayed on the 7 segment LED when the U-link is removed. If not, then the unit should be replaced.

■ CAUTIONS AND WARNINGS

Follow these instructions for proper use of the device.

WARNING

- There is a risk of electric shock.
 - Do not touch SPD with wet hands.
 - Never wash SPD in water.

CAUTION

- Electric shock and product failure may occur.
 - Avoid putting foreign objects into the terminals. Avoid touching the connections with bare hands.
 - To clean, wipe off dirt with a soft cloth.
- Product damage and failure may occur.
 - Do not use this product for unintended purposes.
 - This product is for indoor use only and is not waterproof. Do not install in areas directly exposed to water.
 - Do not disassemble, force out of shape, use in higher than specified temperature environments, or replace any components.
 - Do not drop
- Product failure, warping and cracking may occur.
 - Do not clean with liquid, such as water or thinner. Do not pour any liquid on this product.

Manufacturer's Warranty

Product warranty is one year from the product delivery date. Only products with defects found within the warranty period will be exchanged for a new one.

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