



## Surge Protective Device (SPD) Qualified Person

For the purpose of this instruction leaflet, a qualified person:

1. is familiar with the subject equipment and the hazards involved with their application, use, administration and maintenance.
2. is trained and authorized to de-energize, clear, ground, and tag circuits and equipment in accordance with established safety practices.
3. is trained in the proper care and use of personal protective equipment such as rubber gloves, hard hat, safety glasses or face shields, arc-flash clothing, etc., in accordance with established safety practices.
4. is trained to render first aid.
5. has received safety training to recognize and avoid the hazards involved.
6. has the skills and knowledge pertaining to the construction and operation of this equipment and its installation.

	<b>DANGER</b>
	<p><b>Hazardous Voltage</b> Will cause severe injury or death. Working on or near energized circuits poses a serious risk of electrical shock. De-energize and confirm all circuits before installing or servicing this equipment and follow all prescribed safety procedures.</p>

## Installation Instructions

**IMPORTANT:** Read these instructions carefully to assure proper installation and assembly. Ensure all fasteners and connections are properly tightened. Installation in a manner inconsistent with these instructions will void warranty.

To ensure integrity of the finished installation, do NOT install the SPD if it has been dropped or abused during the installation process.

The SPD contains no user serviceable parts and cannot be repaired. Performing the following will compromise the unit's performance and will void the warranty. Do NOT:

- Megger or IR (Insulation Resistance) test the system with the SPD installed
- Install in a system that has a voltage greater than the unit's rated voltage



Ungrounded power systems are inherently unstable and can produce excessively high line-to-ground voltages during certain fault conditions. During these fault conditions any electrical equipment, including an SPD, may be subjected to voltages which exceed their designed ratings. This information is being provided to the user so that an informed decision can be made before installing any electrical equipment on an ungrounded power system.

## SPD General Specifications

Family	L
Short-Circuit Current Rating (SCCR)	200 kA
Nominal Discharge Current (8x20 $\mu$ s) $I_n$	20 kA
Voltage Frequency	50 / 60 Hz
Conductor Gauge / Type	Stranded 10 AWG / 6 mm <sup>2</sup>
Enclosure	NEMA 1, 2, 3, 3R, 3X, 4, 4X
Degree of Protection (Installed State with liquid tight connections)	IP65
SPD Install Location	Indoor or Outdoor
Operating Temperature	-40° C to +65° C -40° F to +150° F
Recommended Circuit Breaker	30 Amp

## Safety Concerns

This instruction sheet is not comprehensive. It is assumed the SPD installer will follow trade and NEC 70E established safety precautions for working in an electrical environment.

- Suitable for use on a circuit capable of delivering not more than 200,000 RMS symmetrical amperes at the nominal system voltage.
- This device features internal protection that will disconnect the surge protective component at the end of its useful life but will maintain power to the load - now unprotected. If the situation is undesirable for the application, follow the manufacturer's instructions for replacing the device.
- The LED status indicators report the status of the protection circuitry.
- Contains no serviceable parts
- Warning - Shock Hazard - Do not open



**Required Additional Materials:** To maintain outdoor and liquid-tight ratings, the Myers hub (conduit fitting) installed on the SPD should be utilized in conjunction with the sealing washer and chase nipple provided. The sealing washer is placed between the Myers hub and wall of the panelboard or enclosure to which the SPD is to be installed. Further, it is recommended that thread seal tape (aka "Teflon tape") be used to wrap the threads of the chase nipple before installation in addition to using the sealing washer. If other conduit connections are used in place of the provided hardware, follow the manufacturer's instructions on maintaining a liquid tight seal on the connections.

- Inspect the unit to determine if the unit:
  - has the correct nominal system and Maximum Continuous Operating Voltage (MCOV) ratings and is the correct configuration for the installation site. (See Table 1 for specifications), it is required that the power system voltages be verified with the appropriate meter prior to installation and those values confirmed to be lower than the MCOV. Use Table 2 to record your readings and verify the recorded values are lower than those listed in Table 1 for the unit.
  - is NOT damaged, do not attempt to install if it is damaged. Obtain a proper replacement before proceeding with the installation.
- De-energize the electrical panel or equipment and follow the established lockout / tagout procedures. Confirm the location is de-energized using the appropriate test equipment before proceeding with the SPD installation.
- Select a location on the panel or equipment that allows the SPD leads to reach their intended connection points using the shortest possible lead lengths. A dedicated multipole breaker is recommended.
- Remove a knockout sized for, or make an appropriate sized hole for the conduit hub where the SPD is to be mounted. For an outdoor or liquid-tight installation, follow the instructions provided in the CAUTION statement above.
- Remove the chase nipple from the Myers hub attached to the SPD. Mount the SPD to the panelboard or enclosure by routing the wires from SPD through the sealing washer (if outdoor or liquid-tight installation is needed) and then open knockout or hole into the panel. On the inside of the panel or enclosure, route the wires through the threaded end of the chase nipple. Thread the chase nipple into the Myers hub and tighten so that the SPD is mechanically attached to the panel or enclosure. Be careful not to damage the insulation of the wires during the mounting process. If the sealing washer is used, be sure it is not damaged or displaced by the Myers hub and it maintains a liquid-tight seal. The mounting feet provided with the SPD can also be used to aid in mechanically mounting the SPD as necessary.
- Cut the leads to the shortest possible length to reach the connection point (i.e. breaker or grounding bar). Trim the insulation of the leads so that they can be connected appropriately (review manufacturer's instructions for terminating to the breaker or grounding bar as needed). The shorter the SPD leads, the better the SPD will protection against surges.
- Twist the phase conductors and avoid sharp bends (NEC Art 285.12). Make electrical connections appropriate for the application (see Power System Diagrams). If your electrical system is not represented in the circuit diagrams, contact manufacturer. Tighten the electrical terminals to the terminal manufacturer's specifications.
- Energize panel or equipment and verify the LED status indicator is ON (Blue).
- Option Package – P/N suffix DG2 - Connecting Dry (voltage free) Relay Contacts**
  - NOTE: SPD is equipped with sets of colored 18 to 22 AWG wires. Blue = Common, Orange = N/C, Yellow = N/O when power is applied. (SPDT; Form C)
  - Contacts are rated at ≤60 W/125 VA (from 30 VDC @ 2 A to 150 VDC @ 0.4 A), max. switched current = 2 A.
  - Follow rules for NEC class 2 wiring when routing alarm leads. To maintain NEMA-4X (IP65) rating use appropriate cable and liquid tight strain relief if needed (user supplied)
  - Connect alarm circuit(s) to Normally Open (N/O) or Normally Closed (N/C) circuits as required.
  - If not using these contacts, please cap off the wires with a UL Listed wire nut.

**BLUE LED = Good**  
The circuit is energized and protected.

**No LED / LED is Out = Investigate:**

- The circuit could be de-energized
- The unit's leads could be disconnected
- The unit could be damaged

**RED LED = Replace SPD**  
The circuit is energized and unprotected. Please replace the unit.

Note: The lid of the enclosure may be rotated 180 ° for aesthetic reasons while de-energized

## Power System Diagrams Showing SPD Wire Colors

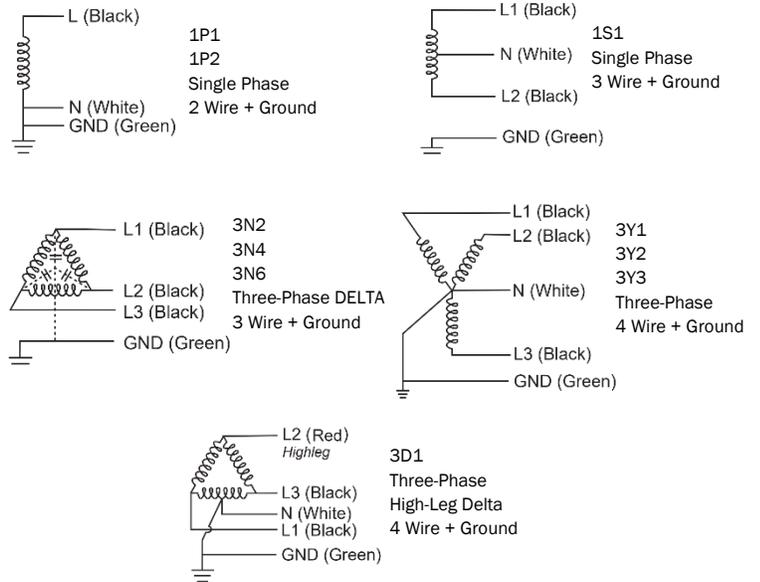


Table 1

Voltage Code	Electrical System	Max. Continuous Operating Voltage (MCOV)				
		L-N	L-G	L-L	N-G	Hi-Leg
1P1	100 to 127 Vac Single Phase	150 V	150 V	-	150 V	-
1P2	200 to 277 Vac Single Phase	320 V	320 V	-	320 V	-
1S1	120/240 Vac, Split Phase	150 V	150 V	300 V	150 V	-
3Y1	208 Y/120 V; 190 Y/110 V; 220 Y/127 V; 3 Φ Wye	150 V	150 V	300 V	150 V	-
3Y2	480 Y/277 V; 440 Y/254 V; 460 Y/267 V, 3 Φ Wye	320 V	320 V	640 V	320 V	-
3Y3	600 Y/347 V; 525 Y/305 V; 3 Φ Wye	420 V	420 V	800 V	420 V	-
3D1	120/240 Vac, 3 Φ, High-Leg Delta	150 V	150 V	320 V	150 V	320 V
3N2	208 to 240 Vac, 3 Φ Delta or Wye	-	320 V	320 V	-	-
3N4	440 to 480 Vac, 3 Φ Delta or Wye	-	550 V	550 V	-	-
3N6	525 to 600 Vac, 3 Φ Delta or Wye	-	840 V	840 V	-	-

Table 2

Installation Voltage Measurement Worksheet			
Measure between	Measurement Value, fill-in	Measure Between	Measurement Value, fill-in
L1 - Gnd	_____ VAC	L1 - Neut	_____ VAC
L2 - Gnd	_____ VAC	L2 - Neut	_____ VAC
L3 - Gnd	_____ VAC	L3 - Neut	_____ VAC
Neut - Gnd	_____ VAC	L1 - L3	_____ VAC
L1 - L2	_____ VAC	L2 - L3	_____ VAC

Use Table 2 to verify system voltages prior to installation.

Warranty service is available by either (a) returning the product to the dealer from whom the unit was purchased or (b) completing a warranty claim online at [www.intermatic.com](http://www.intermatic.com). This warranty is made by: Intermatic Incorporated, 1950 Innovation Way, Suite 300, Libertyville, IL 60048. For additional product or warranty information go to: <http://www.intermatic.com> or call 815-675-7000.