Installation Instructions for ACT 452, 453 and 455 Family Surge Protection Devices

1. Preparation for Install of Surge Protection Device (SPD)

A. Verify the system voltage and wiring configuration is the same as the enclosed surge suppressor by checking it against the product label located on the side wall of the enclosure.

B. Review the installation area to ensure the proper space is available to properly mount and install the SPD. The enclosure should be mounted ***no more than 3 feet away*** from the distribution panel.

C. Check that the buildings facility grounding system meets all NEC & CEC requirements as well as local codes. A low resistance ground system is essential to the proper functioning of any surge suppression device. The soil resistance level should be no more than 5 ohms for best performance. This can be verified by performing a soil resistivity test.

2. Location of Surge Protection Device

A. For Service Entrance applications, install the SPD at the main distribution panel on the load side after the main disconnect.

IMPORTANT! Remember to keep conductor lead length to a minimum; 3ft or less.

B. For Feeder/Sub-panel applications, install the SPD directly adjacent to the panelboard.

3. Wiring of Surge Protection Device

A. TURN OFF the power to the distribution panel where the SPD will be installed.

B. Install a 30A time delay fuse (Ferraz AJT30, Littelfuse JTD30) or a 30A circuit breaker to feed the model surge suppressor. This will allow safety personnel to remove power from the device in order to diagnose or service the unit. In addition, the device incorporates internal fusing, UL & CSA approved, that will protect against short circuit fault conditions within the unit.

Warning - "For continued protection against risk of fire, replace only with the same type and rating fuse."

Notes:

a) Install either a rigid or flexible metal conduit between the SPD and the distribution panel.

b) Run wires of surge suppressor to distribution panelboard, see section 5, wiring diagrams for details.

C. Ensure proper color codes:

Wire	Color
Ground	Green or Green/Yellow
Neutral	White
Hot	Phase A = Black, B = Red (Hi-Leg is always on B Phase), C = Blue

D. Tighten and recheck all connections.

a) If remote monitoring is employed, connect the form "C" contacts to the building monitor system or independent alarm, i.e. addressable relay.

E. Switch MAIN power ON. Check all front panel indicator lamps for illumination.

4. Phase Connections

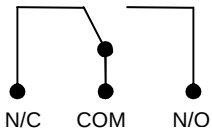
A. Wire SPD to Service Panel - Minimize conductor lead length by cutting back excess cabling. Recommended lead length is **less than 3 feet**. In addition, conductors should be tightly taped together for the entire run. Refer to figure 1, 2, 3, 4 for section 5, wiring diagrams for connecting surge suppressor to AC power network.

B. Overcurrent Protection - A circuit breaker or fuse should be coordinated with the wire size used to connect surge suppressor to AC power network. The primary function of this overcurrent device is to provide a means of removing power from the unit for maintenance. The overcurrent device will not trip during normal operation of the surge suppressor since the response time of the overcurrent device is much longer than the duration of a transient event.

C. Recommended Circuit Breaker/Fuse

Wire Size	Circuit Breaker/Fuse
#12 AWG	20A rms
#10 AWG	30A rms

Alarm Conditions – Contact Status

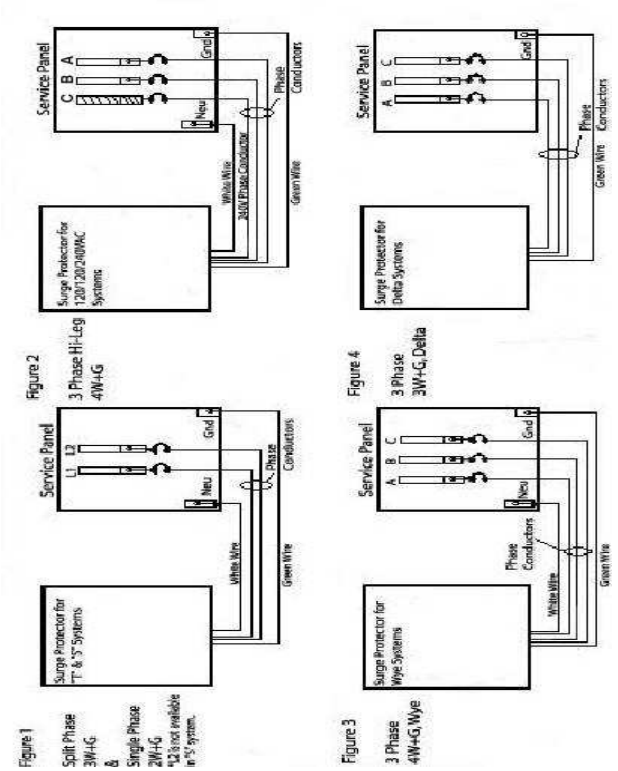


1. SPD de-energized
2. SPD energized, fault
3. NC-COM (White-Black)
4. NO-COM (White-Red)
5. COM- (Yellow)

Connection: #24-16 AWG (0.2mm – 1.5mm²)
Rating: 0.5A, 125Vac, 1A 30Vdc

5. Wiring Diagrams

Voltage	# Ph	Wires	Neutral	
120Vac,or 220Vac	1	2W+G	Yes	Fig. 1
120/240Vac	2	3W+G	Yes	Fig. 1
120/120/240Vac	3	4W+G	Yes	Fig. 2
120/208Vac	3	4W+G	Yes	Fig. 3
220/380,240/415Vac	3	4W+G	Yes	Fig. 3
277/480, 347/600Vac	3	4W+G	Yes	Fig. 3
240Vac, 240/480Vac	1/3	2/3W+G	No	Fig. 1/4



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