



*NEMA 12
(Steel)*



*NEMA 1
(Non-Metallic)*

Model 350

**ASCO SURGE PROTECTIVE DEVICE
INSTALLATION, OPERATION AND MAINTENANCE MANUAL**

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CALIFORNIA CUSTOMERS - PROP 65 WARNING

⚠WARNING: This product can expose you to chemicals including DINP, which is known to the State of California to cause cancer, and DIDP, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

⚠ADVERTENCIA: Este producto puede exponerle a químicos incluyendo DINP, que es conocido por el Estado de California como causantes de cáncer y DIDP, que es conocido por el Estado de California como causante de defectos de nacimiento u otros daños reproductivos. Para mayor información, visite www.P65Warnings.ca.gov.

⚠AVERTISSEMENT: Ce produit peut vous exposer à des agents chimiques, y compris DINP, identifiés par l'État de Californie comme pouvant causer le cancer, et DIDP, reconnu par l'État de Californie comme pouvant causer des malformations congénitales ou autres troubles de l'appareil reproducteur. Pour de plus amples informations, prière de consulter www.P65Warnings.ca.gov.

The **ASCO Model 350** Surge Protective Devices are high quality, high energy surge current diversion system designed to protect sensitive equipment from damaging transient voltage surges resulting from load switching, lightning strikes and other sources.

The installer should perform the following steps to assure a quality installation. Please read all instructions before starting the installation of this product. These instructions do not replace national or local electrical codes — check applicable codes to ensure compliance.

INSTALLATION



DANGER! ONLY QUALIFIED PERSONNEL SHOULD INSTALL OR SERVICE THIS SYSTEM. ELECTRICAL SAFETY PRE-CAUTIONS MUST BE FOLLOWED WHEN INSTALLING OR SERVICING THIS EQUIPMENT. TO PREVENT RISK OF ELECTRICAL SHOCK, TURN OFF AND LOCK OUT ALL POWER SOURCES TO THE UNIT BEFORE MAKING ELECTRICAL CONNECTIONS OR SERVICING.

Environment: The unit is designed for operation indoors in ambient temperatures of 0°C (+32°F) to +50°C (+122°F) with a relative humidity of 0% to 95% (non-condensing). The unit is provided in an industrial enclosure, which should not be installed in areas with excessive dust, corrosive vapors, flammable materials or explosive atmospheres.

Mounting: Mount unit as close as possible to the service panel in close proximity to the breaker that will feed the SPD. Use #10 (NEMA 12) or #6 (NEMA 1) mounting hardware. For best performance, unit should be positioned so that the length of the wiring to the surge protective device (SPD) unit is minimized.

Wire Sizing/Routing: #12 AWG wiring is provided with unit. To reduce the wiring impedance to surge currents, the phase, neutral (if required), and ground conductors are recommended to be twisted together and routed in the same raceway (conduit). Avoid any sharp bends in the conductors. All wiring must comply with the National Electrical Code (NEC) and applicable local codes.

Conduit Connection: Feed all wires into the panel through the knockout selected and secure the conduit connection.

Wiring Connections: Before making connections to the unit, verify the unit model number and nameplate voltage rating are appropriate for connection to the intended power source (See table).

1. It is recommended that a circuit breaker be used for installation and connection to the service panel. See pages 5-6 for recommended amperage.
2. Connect the white wire (if provided) of the SPD to the neutral of the supply, and connect the green wire (if provided) of the SPD to source ground.
3. Connect each Black Phase Wire to corresponding phase on the service panel.
4. If not using the relay contact wires for remote sensing, cut and dress the wires. If using remote sensing, these wires are connected to COM (orange), NC (blue), and NO (yellow) respectively. (Relay's maximum switching capacity is 125VAC, 5A.)



CAUTION - FOR PROPER AND SAFE OPERATION, NEUTRAL AND GROUND MUST BE RELIABLY CONNECTED. FAILURE TO OPERATE THIS UNIT FROM A SOLIDLY GROUNDED POWER SOURCE OF THE PROPER CONFIGURATION WILL REDUCE OR IMPEDE OPERATION, AND MAY RESULT IN UNIT FAILURE.

Applying Power: Apply power to the SPD and assure status indications are normal. The NEMA 1 unit status light should be “green”. The NEMA 12 unit should have “green” phase 1,2, and 3 indicators, and the red “service” indicator should not be on. If normal status indicators do not exist, see “TROUBLESHOOTING”.

Model 350 Number Configurator & Options

350

Model 350
Product Line



Voltage Codes

P

Per Phase
kA Rating
System



kA Rating
Per Phase



Modes of
Protection

Common Systems

- 120S = 240/120V Split Phase - 1Ø, 3W+Grnd, (Fig 1)
- 120Y = 208Y/120V Wye - 3Ø 4W+Grnd, (Fig 2)
- 240H = 240/120V High Leg Delta (B High), (Fig 3)
- 277Y = 480Y/277V Wye - 3Ø 4W+Grnd, (Fig 2)
- 480D = 480V Delta - 3Ø 3W+Grnd, (Fig 4) & HRG Wye

Other Available Systems - Confirmation Encouraged

- 120N = 120V Single Phase (Fig 5)
- 208D = 208V Delta - 3Ø, 3W+Grnd (Fig 4)
- 220N = 220V Single Phase (Fig 5)
- 220Y = 380Y/220V Wye - 3Ø 4W+Grnd (Fig 2)
- 230Y = 400Y/230V Wye - 3Ø 4W+Grnd (Fig 2)
- 230N = 230V Single Phase (Fig 5)
- 240N = 240V Single Phase (Fig 5) - Not split phase
- 240S = 480/240V Split Phase, or Two legs of Wye, (Call)
- 240Y = 415Y/240V Wye - 3Ø 4W+Grnd (Fig 2)
- 240C = 240V B Corner Grnd Delta, 3Ø 3W+Grnd (Fig 6)
- 240D = 240V Delta - 3Ø 3W+Grnd (Fig 4)
- 254Y = 440Y/250V Wye - 3Ø 4W+Grnd (Fig 2)
- 277N = 277V Single Phase (Fig 5)
- 277S = 480/240V Split Phase, or Two legs of Wye, (Call)
- 380D = 380V Delta - 3Ø, 3W+Grnd (Fig 4)
- 400D = 400V Delta - 3Ø, 3W+Grnd (Fig 4)
- 415D = 415V Delta - 3Ø, 3W+Grnd (Fig 4)
- 480C = 480V B Corner Grnd Delta - 3Ø 3W+Grnd (Fig 6)
- 480H = 480/240V High Leg Delta (B High), (Fig 3)

10 = 100kA Per Phase
(50kA Per Mode)

05 = 50kA Per Phase
(25kA Per Mode)

*In Addition - For
B & E Modes of
Protection Only: '05'
Denotes 50kA Per
Mode*

A = All Standard Modes for that
Voltage Code

B = All Modes except L-G
*Standard for H, N, S, X & Y Suffix
Voltage Codes. Requires 05 kA rating.*

E = L-L Modes *Standard for C, D & L Suffix
Voltage Codes. Requires 05 kA rating.*

*Delete Mode Options & Alt.
Configurations: Contact Factory*

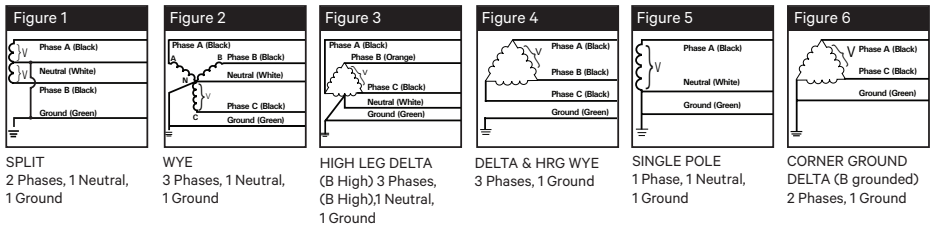
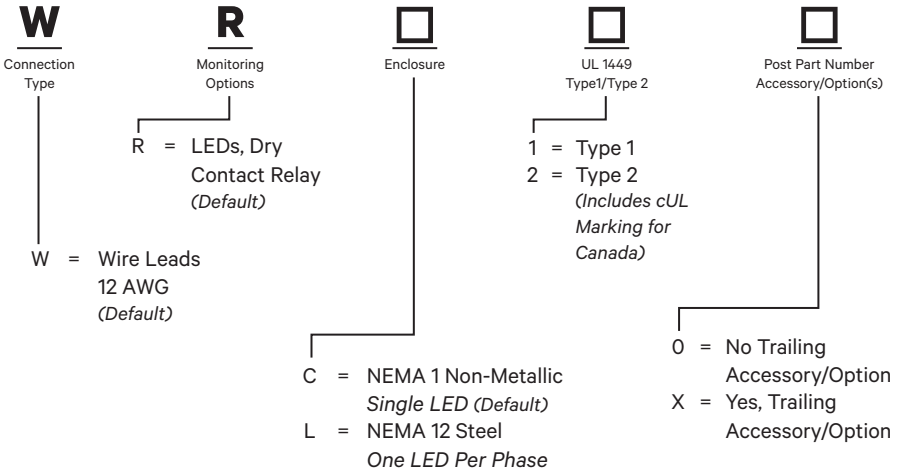
PRODUCT RATINGS AND LIMITATIONS

Voltage Protection Rating: To obtain the voltage protection ratings (VPRs), as obtained by Underwriters Laboratories (UL), in accordance with the Standard for Safety, Surge Protective Devices (SPDs), Standard 1449 Fourth Edition, marked on this product, the wire supplied must be utilized to connect the SPD to your facilities' power grid.

TROUBLESHOOTING

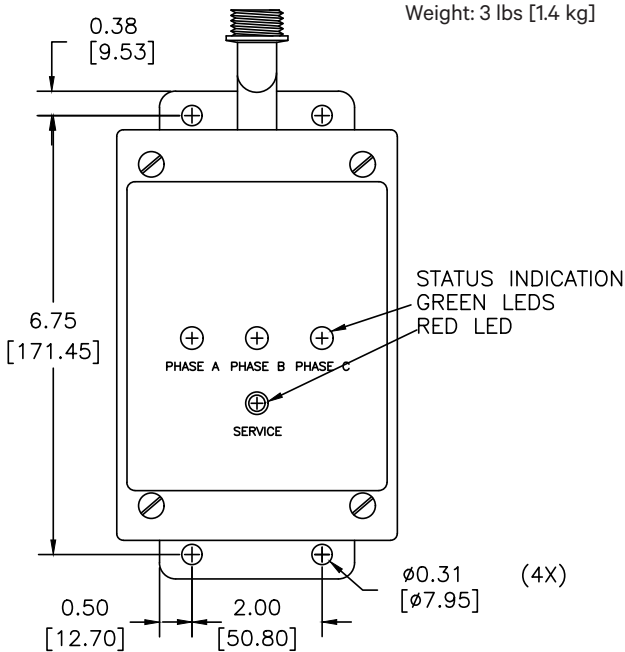
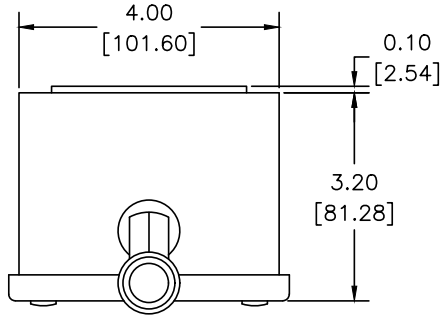
If any of the diagnostic indicators indicates a problem (i.e. red LED ON, and/or green LED OUT), check all connections and voltages to the unit. If all connections are reliable, and proper voltages are supplied to the unit, call ASCO Power Technologies at 800-237-4567.

Model 350 Number Configurator & Options



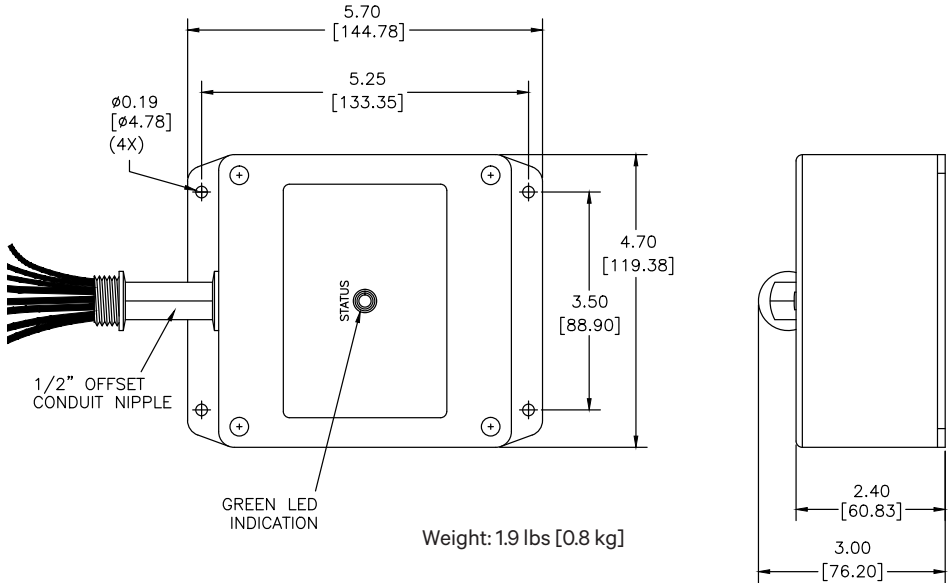
NEMA 12 UNIT- CIRCUIT BREAKER & WIRE SIZE

Overcurrent Protection	20A Recommended	
Connection Wire	Phase/Neutral/Ground	
	18" of #12 AWG Included	
Summary Alarm Contacts	18" of #18 AWG Included; 125VAC, 5A max (All units)	
	Normally Open (NO)	Yellow
	Normally Closed (NC)	Blue
	Common (COM)	Orange
(With AC Applied)		

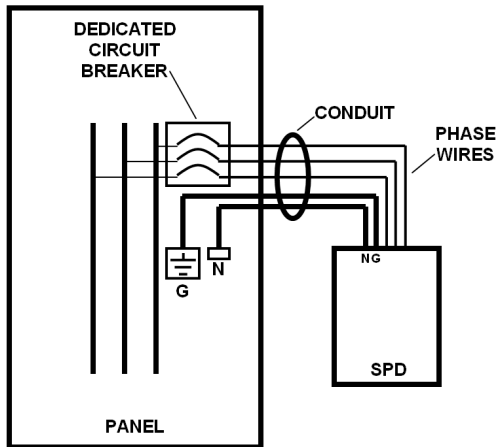


NEMA 1 UNIT- CIRCUIT BREAKER & WIRE SIZE

Overcurrent Protection	20A Recommended	
Connection Wire	Phase/Neutral/Ground	
	18" of #12 AWG Included	
Summary Alarm Contacts	18" of #18 AWG Included; 125VAC, 5A max	
	Normally Open (NO)	Yellow
	Normally Closed (NC)	Blue
	Common (COM)	Orange
	(With AC Applied)	



PARALLEL WIRING DIAGRAM



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