

# STABILINE® Transient Voltage Surge Suppressors DIN3-165 Series - OWNERS MANUAL

*Congratulations*

Thank you for purchasing the DIN3-165 Series STABILINE Transient Voltage Surge Suppressor...another Superior product!!

Expect exceptional performance. The unit is built to the highest standards for your complete satisfaction.

To assure many years of uninterrupted service, please read this Owners Manual to familiarize yourself with the operation and proper installation of the DIN3-165 Series unit.



DIN3-165 Series STABILINE® Transient Voltage Surge Suppressors are single pole, parallel and/or "in-line" connected, MOV technology Class I, Category C Surge Protective Devices suitable for use in AC electrical power systems for protection against surge and transient activity. DIN3-165 Series protectors provide 165 or 100 kA Surge Amp Capacity in a maintenance free, low profile, DIN Rail mountable module. All line voltage protectors (L-In / L-Out) can also be connected "in-line" and provide for 50A Maximum Continuous Operating Current protection.

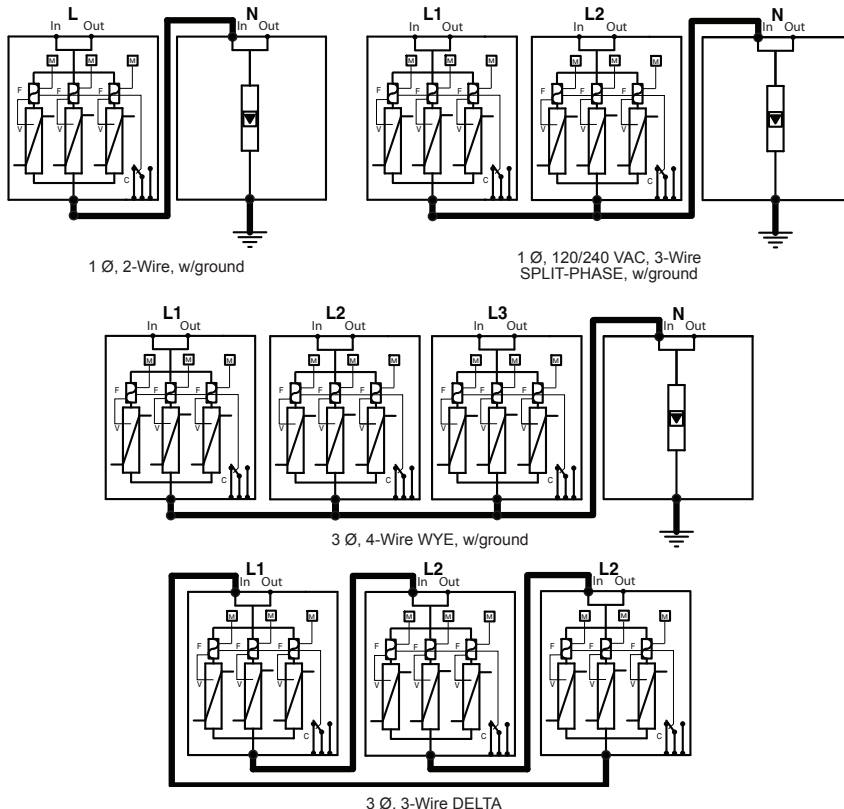
## MODEL NUMBER & Typical System Voltage / Service Configurations

STABILINE Model	Typical System Voltage / Service Configuration	Protection Mode	Protector Quantity		Surge Performance Specifications				
			Line Voltage	N-G	MCOV	Max Surge Current Rating	① Nominal Surge Current Rating	② UL 1449 SVR Rating	③ C3 Comb Wave
DIN3-165-120-L1	1 Ø, 120 VAC, 2-Wire, w/ground	L-N, N-G	1	1	150 VAC	165 kA	70 kA	500 VAC	625 VAC
	1 Ø, 120/240 VAC, 3-Wire SPLIT-PHASE, w/ground	L-N / L-N, N-G	2	1					
	3 Ø, 208Y/120 VAC, 4-Wire WYE, w/ground	L-N / L-N / L-N, N-G	3	1					
DIN3-165-220-L1	1 Ø, 220 VAC, 2-Wire, w/ground	L-N, N-G	1	1	330 VAC	165 kA	70 kA	900 VAC	950 VAC
	3 Ø, 380Y/220 VAC, 4-Wire WYE, w/ground	L-N / L-N / L-N, N-G	3	1					
	3 Ø, 220 or 240 VAC, 3-Wire DELTA	L-L / L-L / L-L	3	N/A					
DIN3-165-277-L1	1 Ø, 277 VAC, 2-Wire, w/ground	L-N, N-G	1	1	330 VAC	165 kA	70 kA	900 VAC	950 VAC
	3 Ø, 480Y/277 VAC, 4-Wire WYE, w/ground	L-N / L-N / L-N, N-G	3	1					
DIN3-165-480-L1	1 Ø, 480 VAC, 2-Wire, w/grounded neutral	L-N, N-G	1	1	550 VAC	165 kA	70 kA	1500 VAC	1750 VAC
	3 Ø, 380 or 480 VAC, 3-Wire DELTA	L-L / L-L / L-L	3	N/A					
DIN3-100-NG1	120, 120/240, 220, 277, 380, 480 VAC Neutral to Ground	N-G	N/A	1	600 VAC	100 kA	50 kA	800 VAC	----

- ① For a minimum of (20) 8 x 20usec surges
- ② UL 1449 2nd Edition, (6kV, 500A 8 x 20usec) Surge Voltage Rating
- ③ C3 Combination Wave, 20kV, 8 x 20usec, 10 kA

### TYPICAL SERVICE CONFIGURATIONS for Parallel-Connected Method

Contact Factory for additional configurations



### SPECIFICATIONS

#### Electrical Specifications

Modes of Protection: L-N; L-G; L-L protectors use MOV technology and N-G protector use Gas Tube.

Line Voltage Protectors: Multi-redundant protection circuit (triple stage fault indicators).

Input Power Frequency: 47-64 Hz.

Associated Fusing: DIN3-165 protectors incorporate an internal thermal disconnect system with time-delayed Class J,30A-125A over current fuses.

#### Environmental Specifications

Operating Temperature: -40° C to 85° C (-40° F to 185° F).

Relative Humidity: 5% to 95% non-condensing.

Max. Operating Altitude: 4,000 meters (13,000 feet).

#### Mechanical Specifications

Enclosure: IP20 enclosures (UL94V0 thermoplastic housing material).

Mounting: Din Rail 35mm symmetrical.

Connection Method: Screw terminal # 2-10 AWG.

Size (H x W x D): 3.5 x 1.42 x 2.63 inches (90.0 x 36.0 x 67 mm).

Weight (Shipping): 0.80 lbs (0.35 kg).

#### General Specifications

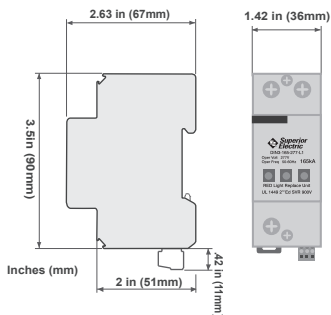
Standards Compliance and Safety Approvals: Meet UL 1449, 2nd Edition, EN61643-11 (Europe), ANSI/IEEE C62.41-2002, NF EN 61643-11 (France), VDE0675-6, CSA-22.2 and CE marked.

Warranty: Ten Years.

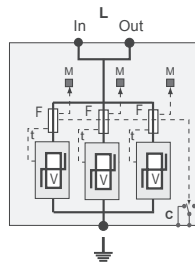
\* These INSTRUCTIONS are subject to change without notice.

# SAVE THESE INSTRUCTIONS!!

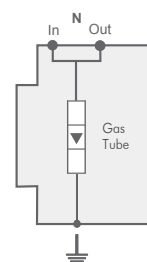
## Dimensions



## Internal Protector Schematics



Line Voltage Protector



Neutral to Ground Protector

- V : Heavy Duty Varistor
- F : Thermal Fuse
- C : Remote and Signal Contact
- t : Thermal Disconnect
- M : Monitor (Window)

## The Importance of Correct Installation

THE FOLLOWING IS INTENDED FOR QUALIFIED ELECTRICAL PERSONNEL ONLY. COMPLETELY READ THESE INSTRUCTIONS BEFORE INSTALLATION. IT IS THE FINAL RESPONSIBILITY OF THE INSTALLING ELECTRICIAN TO ENSURE THAT ALL LOCAL CODES AND OTHER APPLICABLE SAFETY/ENVIRONMENTAL CONDITIONS ARE MET AND THE UNIT IS CORRECTLY INSTALLED.

This manual provides guidelines for the proper installation of DIN3-165 Series units. Proper product selection and compliance with these guidelines will help your new suppression system provide years of reliable service. If installer's are unsure about the facility's electrical configuration or have other installation-related questions, we recommend they consult with a master electrician or other qualified electrical

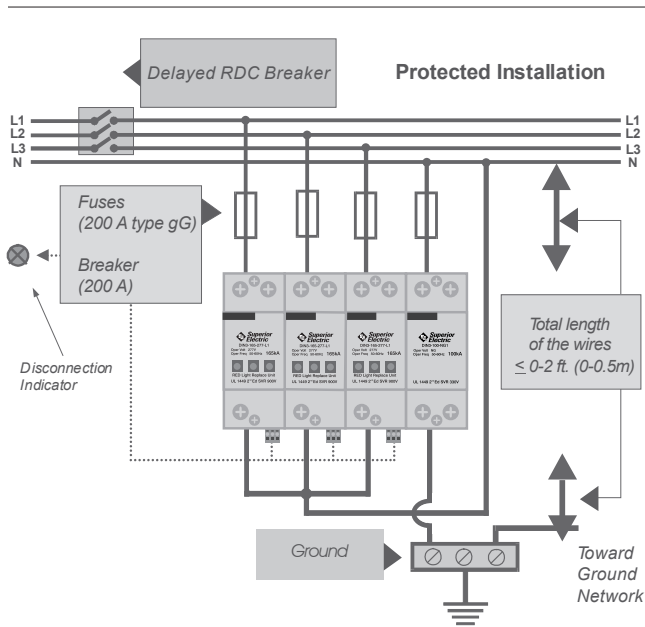
## Installation

### REMOVE POWER FROM ELECTRICAL SYSTEM PRIOR TO INSTALLATION.

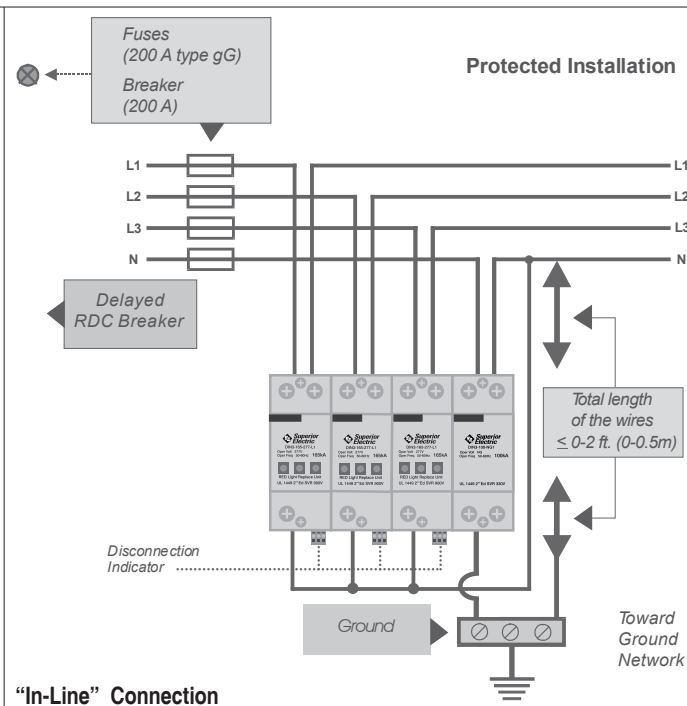
The DIN3-165 protectors are installed/connected in Parallel with the line and the equipment to be protected.

The DIN3-165 Series unit should be installed down stream of a 200 A maximum fuse or breaker (see diagram). If pre-existing fuses or breakers are present, then the fusing or breaker used for the DIN3-165 protector should have a lower rating in order to be properly coordinated, as per applicable electrical regulatory standards. The Short Circuit current rating for these DIN3-165 protectors are 25,000 Amps using a 50A Class J time delayed fuse.

## Connection Methods Example: 3 Ø, 4-Wire WYE, w/ground service configuration



Parallel Connection



"In-Line" Connection

## DO NOT INSTALL THE DIN PROTECTOR IF MEASURED VOLTAGE EXCEEDS UNIT RATINGS.

The DIN3-165 protector MUST BE mounted in an enclosure to assure personnel safety from exposed terminals. Mechanically mount the DIN3-165 protector utilizing customer supplied Din-Rail.

Wiring connection between the DIN3-165 protector and protected equipment should be kept as short as possible. Superior Electric recommends that wire lengths be less than 20 inches (0.5m). Wire should be straight and should not contain 90 degree bends. If bends are required, they should be sweeping bends.

Unprotected cables should not be installed in parallel with the protected cables. This will minimize coupling of inductively induced surges onto unprotected cables.

## Remote Signal

DIN3-165 protectors (except N-G protector) come standard with one remote monitoring relay with "dry Form C contacts" per module. The contact can be used to drive several different types of indicators such as a remote light indicator or an audible alarm. The signal strength is (Vmax:250V rms, Imax: 2A). The connection to the remote signal is through the screw terminals. Protector DIN3-164-480-L1 is provided with a "Form B dry contact" per module.

## Maintenance

The DIN3-165 protector is a maintenance free device. If the unit is subjected to a prolonged over-voltage condition, an internal thermal element will activate, disconnecting the DIN3-165 from the line. When the unit is no longer providing protection the window on the front of the DIN3-165 becomes red and a replacement unit will be required.



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