

# SOLA<sup>HD</sup>

## Active Tracking<sup>®</sup> Filter

### STFE Elite Series



## Instruction Manual

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# Introduction

The STFE Elite Series combines rugged, high-energy transient protection with the original Active Tracking® Filter technology to provide protection against the full spectrum of voltage transients and surges.

Proper installation is required for maximum system performance. To ensure a quality installation, the installer should read the entire manual and follow all instructions before and during the installation.

These instructions do not replace national or local electrical codes. Check applicable electrical codes to ensure compliance. Installation of the STFE Elite Series should only be performed by qualified personnel.

## Warnings Defined



**Danger:** Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations.



**Warning:** Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury.



**Caution:** Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

# Pre-Installation

## Location Considerations

**Environment:** The unit is designed for indoor operation in ambient temperatures of -40°C (-40°F) to +60°C (+140°F) with a relative humidity of 0% to 95% (non-condensing).

**Supplemental Enclosures:** All units provided with terminal blocks must be installed inside an enclosure and located so as to prevent accidental contact with terminals during maintenance and service.

## Electrical Connections



**Verify that all power circuits are de-energized and locked out before making electrical connections.**

All electrical connections must be installed by a qualified (licensed) electrician. All wiring must comply with the National Electrical Code (NEC) and applicable local codes.

## Voltage, Current and Power Configurations



**Before making connections to the unit, verify that the unit model number and nameplate voltage rating are appropriate for connection to the intended power source.**

**Maximum Current Capability:** The total current draw that a unit may continuously handle is provided in the Voltage, Current and Power Configurations table on page 6.

**Note:** Overloading the unit can permanently damage the device.

**Nominal Voltage:** The nominal operating voltage for each model is provided in the Voltage, Current and Power Configurations table on page 6.

**Note:** Failure to use the unit at its rated voltage can permanently damage the unit or provide inadequate protection.

## Grounding

Input and output ground terminals must be connected for proper operation. Grounding is not only required for safety, but also for equipment performance. Incorrect grounding can reduce or impede the operation of the unit.

Voltage, Current and Power Configurations				
Model Number	Load Current	Minimum Wire Size* (AWG Suggested)	Fuse/Circuit Breaker Ampacity	
			Suggest	Max
Single-Phase Models (120 V ac)				
STFE030-10N	3.0 A	24	3.0 A	3.75 A
STFE050-10N	5.0 A	22	5.0 A	6.25 A
STFE100-10N	10.0 A	20	10.0 A	12.5 A
STFE200-10N	20.0 A	12	20.0 A	25.0 A
Single-Phase Models (240 V ac)				
STFE030-24L	3.0 A	24	3.0 A	3.75 A
STFE050-24L	5.0 A	22	5.0 A	6.25 A
STFE100-24L	10.0 A	20	10.0 A	12.5 A
STFE200-24L	20.0 A	12	20.0 A	25.0 A

\*16 AWG wire or larger may be required by code, dependent upon application

Wiring Diagrams	
Single-Phase Models (120 V ac)	
STFE030-10N	
STFE050-10N	
STFE100-10N	
STFE200-10N	
Single-Phase Models (240 V Ac)	
STFE030-24L	
STFE050-24L	
STFE100-24L	
STFE200-24L	

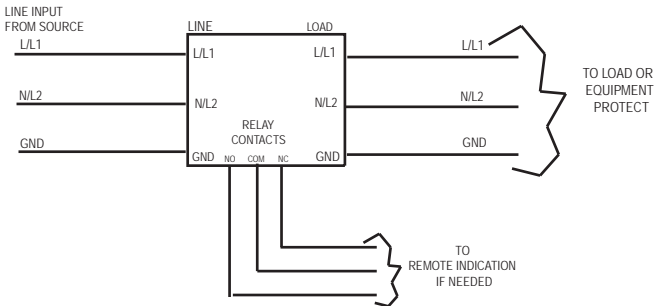
# Installation

## **⚠ DANGER**

Only qualified personnel should install or service this system. Electrical safety precautions 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.

- For units provided with a ground connection, a green (with or without one or more yellow stripes) insulated grounding conductor identical in size, insulation material, and thickness to the grounded and ungrounded conductors must be installed (ref. NEC Table 250-95) and referenced back to an acceptable building earth ground.
- Attachment plugs, receptacles, etc. in the vicinity of the STFE Elite Series must be of grounding type, with the grounding conductors connected to an acceptable building earth ground.
- Terminals, lugs, and connectors used in installation must be suitable for the material of the conductors. Conductors of dissimilar metals shall not be intermixed in a terminal or splicing.

## Connection Diagram

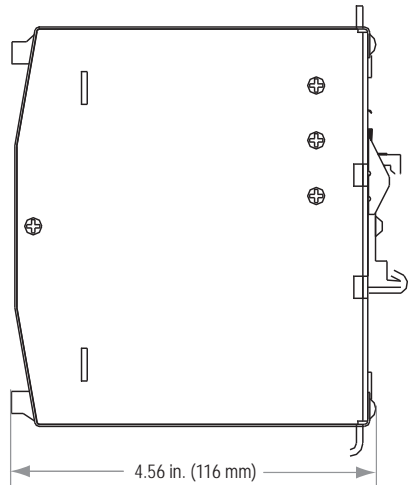
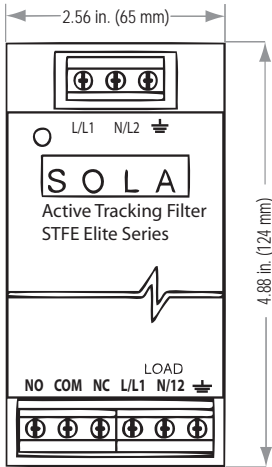


# Technical Specifications

Description	Catalog Number	
	STFEXXX-10N	STFEXXX-24L
Input Voltage	120 V (0-150 VRMS)	240 V (0-275 VRMS)
Line Frequency	47-63 Hz	
Response Time	< 0.5 ns normal mode; < 5 ns common mode	
Enclosure	Fully enclosed metal housing	
Connection/Mounting Type	DIN rail mount	
Status Indication	Green LED "OK", Form C contact, 10 A @ 250 V ac or 5 A @ 100 V dc	
Weight	1.7 lb. (0.7 kg)	
Dimensions H x W x D	4.88 in. (124 mm) x 2.56 in. (65 mm) x 4.56 in. (116 mm)	
Operating Temperature	-40°C to +50°C at full load; derate linearly to 60% at +70°C	
Operating Humidity	0% to 95% Non-condensing	
Peak Surge Current Capability		
Per Phase	30,000 A	
Line to Neutral	20,000 A	
Line to Ground	10,000 A	
Neutral to Ground	10,000 A	
Load Surge Current Rating	10 ms	5 x Nominal
	1 sec.	3 x Nominal
	10 sec.	2 x Nominal
Frequent Response		
Normal Mode (forward-reverse)	100 kHz to 50 MHz	90 dB Max
Common Mode (forward-reverse)	5 kHz to 50 MHz	60 dB Max
Transient Reduction (IEEE C62.41)* <i>*All Voltage configurations are single phase, 2 wire + ground</i>	Typical Category A Ringwave (6 kV, 200 A, 100 kHz) < 60 V peak	
	Typical Category B Ringwave (6 kV, 500 A, 100 kHz) < 100 V peak	
Safety Agency Approvals	UL 1449, UL 1283 (recognized component), CE	
Warranty	5 year limited warranty	

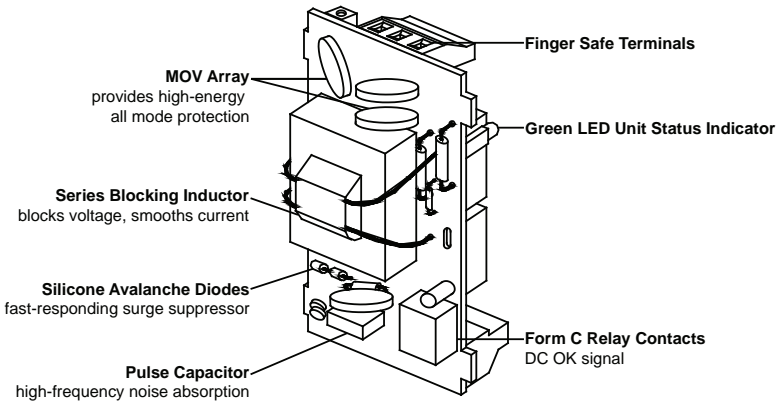
UL 1449 (2nd Edition) Suppressor Classification				
	120 V, 3-5 A Models	120 V, 10-20 A Models	240 V, 3-5 A Models	240 V, 10-20 A Models
L-N	330 V	330 V	N/A	N/A
L-L	N/A	N/A	600 V	600 V
L-G	500 V	400 V	1000 V	900 V
N-G	400 V	400 V	N/A	N/A

# Dimensional Drawings

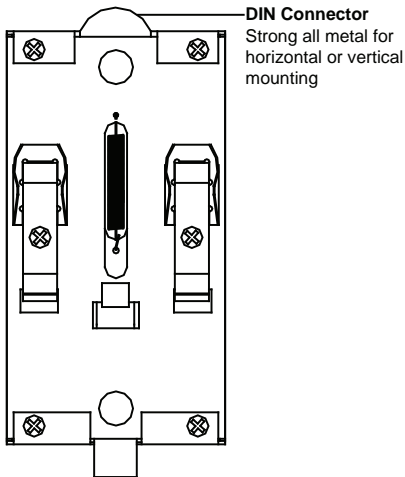


# System Design

## Internal View of Components



## Rear View



## Troubleshooting/Service/Maintenance

### **⚠ DANGER**

Only qualified personnel should perform maintenance on the system.

Hazardous voltages are present inside the unit during normal operations.

Electrical safety precautions must be followed when servicing this unit.

To prevent risk of electrical shock, turn off and lock out all power sources to the unit before servicing.

This product is designed for years of trouble-free operation and requires little or no operator intervention after installation. If the unit is not functioning properly, check all connections, verify the voltage, and ensure that the total current draw on the unit does not exceed the rated current.

For service assistance, contact your local Sola/Hevi-Duty Representative.

## Product Registration & Warranty Information

### Warranty Information

Please see the enclosed “Terms and Conditions” and “Sales Policies and Procedures”.



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