

Surge Protective Devices



STFE Series

SOLAHD™



Safety Information

Important Information

Read these instructions carefully and look at the equipment to become familiar with the device before trying to install, operate, service or maintain it. The following special messages may appear throughout this bulletin or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.



The addition of either symbol to a “Danger” or “Warning” safety label indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

DANGER

DANGER indicates a hazardous situation which, if not avoided, **will result in** death or serious injury.

WARNING

WARNING indicates a hazardous situation which, if not avoided, **could result in** death or serious injury.

CAUTION

CAUTION indicates a hazardous situation which, if not avoided, **could result in** minor or moderate injury.

NOTICE

NOTICE is used to address practices not related to physical injury. The safety alert symbol shall not be used with this signal word.

Please Note

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Appleton Grp LLC d/b/a Appleton Group for any consequences arising out of the use of this material.

A qualified person is one who has skills and knowledge related to the construction, installation, and operation of electrical equipment and has received safety training to recognize and avoid the hazards involved.

DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices. See NFPA 70E, NOM-029-STPS or CSA Z462.
- This equipment must only be installed and serviced by qualified electrical personnel.
- Turn off all power supplying this equipment before working on or inside equipment.
- Always use a properly rated voltage sensing device to confirm power is off.
- Replace all devices, doors and covers before turning on power to this equipment.
- This equipment must be effectively grounded per all applicable codes. Use an equipment-grounding conductor to connect this equipment to the power system ground.
- Do not supply more than 24VDC / 24VAC and no more than a current of 2A.
- Confirm that the Surge Protective Device voltage rating on the module or nameplate label is not less than the operating voltage.
- This equipment must be installed inside an enclosure and located so, as to prevent accidental contact with terminals during maintenance or servicing.
- Do not install in areas with excessive dust, corrosive vapors, flammable materials, or explosive atmospheres.

Failure to follow these instructions will result in death or serious injury.



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.

NOTICE

LOSS OF SURGE SUPPRESSION

- Make certain that Surge Protective Device is disconnected from the circuit it is protecting before conducting high potential insulation testing.

Failure to follow these instructions can result in equipment damage.

Introduction

The STFE 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 Series should only be performed by qualified personnel.

STFE Series

Preinstallation

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% (noncondensing).

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.

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- This equipment must be installed inside an enclosure and located so, as to prevent accidental contact with terminals during maintenance or servicing.
- Do not install in areas with excessive dust, corrosive vapors, flammable materials, or explosive atmospheres.

Failure to follow these instructions will result in death or serious injury.

Electrical Connections

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

Voltage, Current and Power Configurations

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

NOTICE

LOSS OF SURGE SUPPRESSION

- Overloading the unit can cause permanent damage.

Failure to follow these instructions can result in equipment damage.

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

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Confirm that the Surge Protective Device voltage rating on the module or nameplate label is not less than the operating voltage.

Failure to follow these instructions will result in death or serious injury.

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.

⚠ DANGER	
HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH	
<ul style="list-style-type: none"> This equipment must be effectively grounded per all applicable codes. Use an equipment-grounding conductor to connect this equipment to the power system ground. 	
Failure to follow these instructions will result in death or serious injury.	

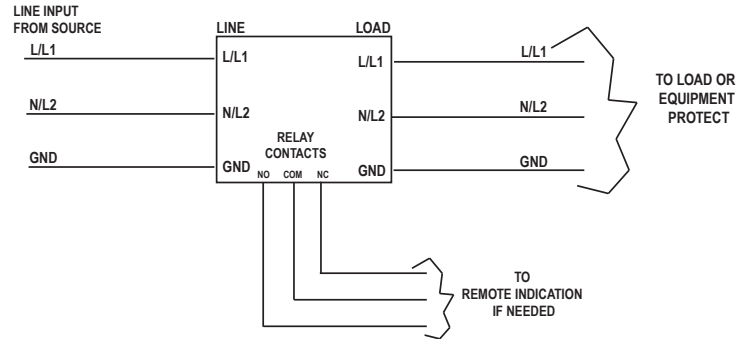
Voltage, Current and Power Configurations					
Catalog Number	Load Current	Wire Size Range (AWG)	Required Torque (lb-in.)	Fuse/Circuit Breaker Ampacity	
				Suggest	Max
Single-Phase Models (120 VAC)					
STFE03010N	3.0 A	14 - 10	4.4 lb-in. (0.50 N•m)	3.0 A	3.75 A
STFE05010N	5.0 A	12 - 10		5.0 A	6.25 A
STFE10010N	10.0 A	14 - 12	4.0 lb-in. (0.45 N•m)	10.0 A	12.5 A
STFE20010N	20.0 A	12 only		20.0 A	25.0 A
Single-Phase Models (240 VAC)					
STFE03024L	3.0 A	14 - 10	4.4 lb-in. (0.50 N•m)	3.0 A	3.75 A
STFE05024L	5.0 A	12 - 10		5.0 A	6.25 A
STFE10024L	10.0 A	14 - 12	4.0 lb-in. (0.45 N•m)	10.0 A	12.5 A
STFE20024L	20.0 A	12 only		20.0 A	25.0 A

Installation

- 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 ground.
- Attachment plugs, receptacles, etc. in the vicinity of the STFE Series must be of grounding type, with the grounding conductors connected to an acceptable building 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.

STFE Series

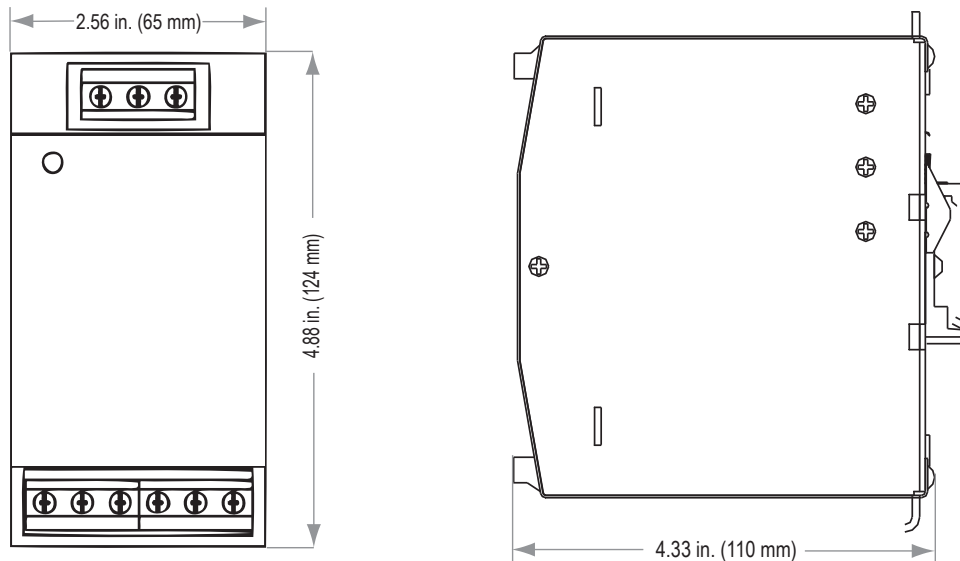
Connection Diagram



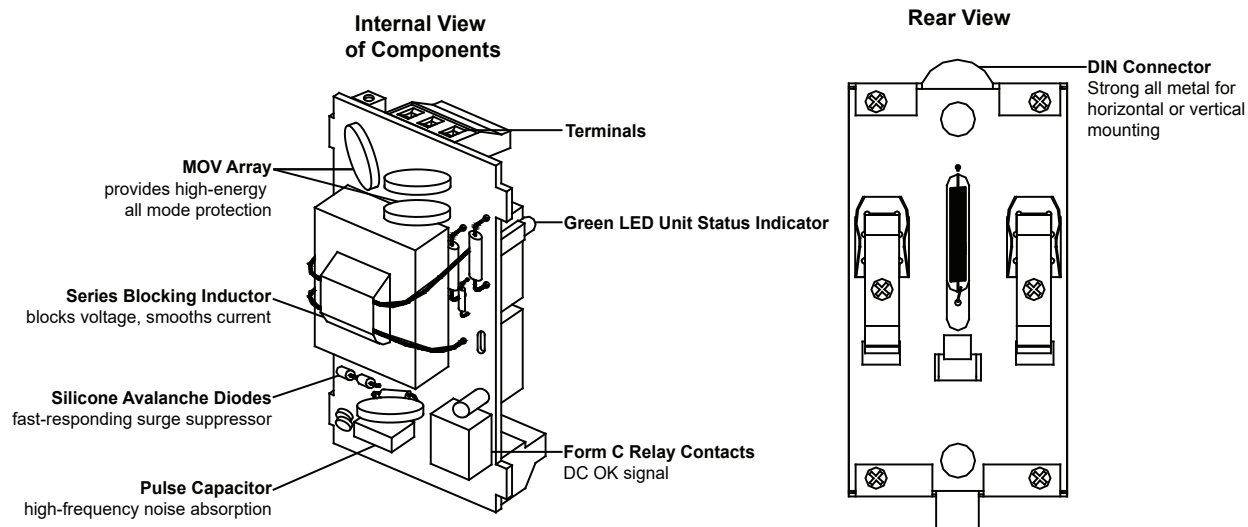
Technical Specifications

Description	Catalog Number	
	STFEXXX10N	STFEXXX24L
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, 5 A @ 125 VAC or 5 A @ 100 VDC	
Weight	1.0 lb. (0.45 kg)	
Dimensions H x W x D	4.88 x 2.56 x 4.33in. (124 x 65 x 110mm)	
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 s	3 x Nominal
	10 s	2 x Nominal
Nominal Discharge Current Rating	3 kA	
Short Circuit Current Rating (SCCR)	5kA	
Maximum Continuous Operating Voltage (MCOV)	150V L-N, L-G, N-G	320 L-L
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)* * All Voltage configurations are single phase, 2 wire + ground	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	
Standards Certifications	cRUUs: UL 1449, CSA 22.2 No. 269, UL 1283, CSA 22.2 No. 8 (recognized component)	
Warranty	5 year limited warranty	

Dimensional Drawings



System Design



Technical Support

Website: www.solahd.com
 Technical Support E-Mail: solahd.technicalservices@emerson.com

Toll-Free: 1-800-377-4384
 USA: 1-847-268-6651

Warranty

Please refer to the “Terms & Conditions of Sale” document.

While every precaution has been taken to ensure accuracy and completeness in this manual, Appleton Grp LLC d/b/a Appleton Group assumes no responsibility, and disclaims all liability for damages resulting from use of this information or for any errors or omissions.

STFE Series

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