



## SURGE PROTECTIVE DEVICES (SPD) AND FILTERING — PRODUCT GUIDE

# INTRODUCTION

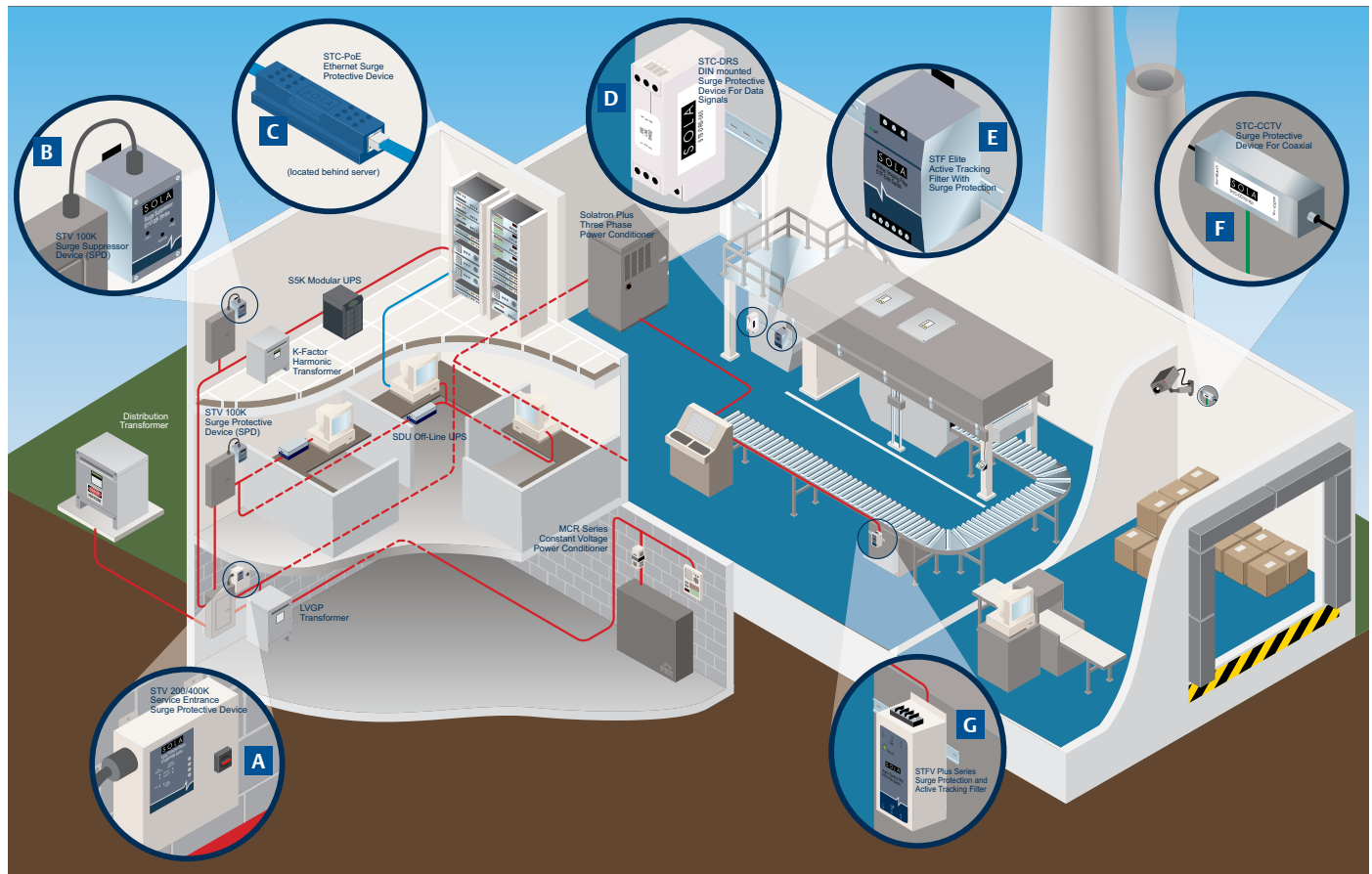
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SolaHD understands that your operations depend on clean, continuous power. That is why, since 1915, SolaHD has focused exclusively on being the premier brand for industrial power quality by eliminating the power interruptions, transients and noise that can stop production and corrupt data. Our full breadth of products convert, clean and maintain electric current from the factory entrance to equipment throughout your facility. Combined with service and support, our total power quality offering can save you time, money and space to ensure optimal production efficiencies.

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# HOW DO YOU PROTECT YOUR POWER?

Employing an entire facility protection strategy will safeguard the electrical system against most transients. Multi-stage protection involves clamping the initial high energy surge, filtering any remaining noise or transients to the protected sensitive equipment and finally, protecting the data/signal lines entering or leaving the control panel or the factory floor. This coordination of devices provides the lowest possible let through voltage to the equipment.



- A STV 200/400K**  
Surge protective devices capable of handling the high-impulse, potentially damaging transients commonly found at the service entrance, distribution panels, and placement in the most severe exposure locations.
- B STV 100K**  
Surge protective devices designed to protect sensitive equipment and microprocessor-based systems from transients on distribution and sub-distribution panels, or any medium exposure locations.
- C STC-POE**  
Surge protective devices designed to work on Power-over-Ethernet Category 5 PoE transmission lines as well as Category 6 applications.
- D STC-DRS**  
DIN Rail mountable, single pair, low voltage data, surge protective devices. The hybrid design of these data/signal line protective devices allows them to respond quickly.
- E STFE**  
DIN Rail mountable high-frequency noise filter/surge protection that offers the original Active Tracking Filter technology with UL approved transient protection to guard against commonly occurring, but very damaging transients, plus provides excellent noise reduction.
- F TC-CCTV**  
Surge protective devices tailored to protect CCTV, data, audio and cable applications.
- G STFV**  
High-frequency noise filter/surge protection that offers the original Active Tracking technology with transient protection to guard against commonly high voltage transients, plus provides excellent noise reduction.

# SURGE PROTECTION, FILTERING, DATA/SIGNAL LINE PROTECTION

## SURGE PROTECTION: FIRST LINE OF DEFENSE IN LIMITING HIGH-IMPULSE TRANSIENTS

High-energy transients either externally or internally generated pose an immediate threat to the reliability and performance of your sensitive electronic equipment. SolaHD recommends placing high-energy Surge Protective Devices (SPDs) on key panels throughout your facility. Within your facility, motors, inductive loads and various equipment load switching can cause damage or costly downtime.

Our surge protective devices focus on limiting high-voltage spikes to a level that is acceptable to most electronic equipment. Plus, they are a great first line of defense, using components that are placed in parallel with the line and serve as clamping mechanisms for high-energy impulses. Protection at this level is referred to in the industry as Sine Wave Tracking or electronic grade. Surge Protective Devices are typically installed at service entrances and on larger distribution panels.

## ACTIVE TRACKING FILTERING WITH SURGE PROTECTION: PROVIDES CLEAN AC POWER BY ELIMINATING LOW-VOLTAGE NOISE

Low-energy transients and high-frequency noise are the primary causes for system disruption and long-term degradation of microprocessor-based equipment within your facility. For more than 30 years, our Active Tracking Filters have proven to be the most effective solution in critical equipment protection within harsh industrial environments. Active Tracking Filters are built upon a unique multi-stage hybrid design. This design creates a foundation for a family of products that attenuate impulses that would normally go untouched by standard, parallel clamping devices.

Changing technology and dependence on total automation processes within modern facilities create a critical need for clean AC power at the equipment level. Active Tracking Filters are a perfect solution for your microprocessor-based products, including industrial PLCs, OEM applications and motion control systems.

## DATA/SIGNAL LINE SURGE PROTECTION: DESIGNED TO PROTECT SENSITIVE INSTRUMENTATION

The rapid development of automated controls, telecommunications and fire/alarm/security systems make it imperative to have properly coordinated low-voltage surge protection. Modern networked industrial facilities require error-free transmission of information for maximum productivity and integrity of data, but these areas are often overlooked when it comes to power protection.

The need to protect all susceptible low-voltage cable routes entering a facility and at key points within the building is as critical as protecting the equipment from high-energy impulses. The importance of protecting at this level grows as your facility's reliance on sensitive instrumentation, networked automation, and uncorrupted data transmission increases. Our Data/Signal Line products utilize high-speed, high-energy components that come in a variety of voltage levels and unique packaging configurations.



### Service Entrance/ Sub Panels

STV 200/400K

- Typical applications of 800 amperes and above
- Surge current capacity – 200,000 to 400,000 Amps

### Branch Distribution

STV 100K

- Typical applications up to 1,200 amperes
- Surge current capacity – 100,000 Amps per phase

### Point of Use Locations

STV 25K

- Typical applications of 20 amperes and below
- Surge current capacity – 25,000 Amps per phase



### STFE Elite Series

- DIN mount
- Critical loads up to 20 amperes of continuous current



### STF & STFV Series

- Hard-wired connection
- Critical loads up to 30 amperes of continuous current



### STC Series

- Three stage hybrid protection
- <1 nanosecond response times
- Variety of voltage and packaging configurations

# SURGE PROTECTIVE DEVICE/FILTER APPLICATION SELECTION TABLE

Applications	Surge Protection			Active Tracking Filtering With Surge Protection		Data/Signal
	STV 200/400K	STV 100K	STV 25K	STFE	STFV	STC
Facility Service Entrance	●					
Distribution Panels	●	●				
Sub-Distribution Panels		●				
Branch Panelboards (Commercial)		●				
Branch Panelboards (Residential)		●				
Motor Control Centers		●	●			
Programmable Logic Controllers			●	●	●	
Control Panels (AC Power)			●	●	●	
Various OEM Equipment				●	●	
Transmitters						●
PoE (Power-over-Ethernet)						●
Industrial Communications						●
Programmable Logic Controllers (I/O Circuits)						●
Control Panels (Low Voltage)						●
Water/Wastewater Instrumentation						●

# UL 1449 AND IEEE

Underwriters Laboratories, UL 1449, is the Safety Standard for Surge Protective Devices. It is used to evaluate these types of products.

UL categorizes surge protective devices (SPD) into categories based on its intended application.

SPD Locations by UL 1449 Types:

- TYPE 1 - Connect anywhere in the customer's facility – we strongly urge this to be specified for all critical installations.
- TYPE 2 - Connect downstream on load side of main breaker. Be aware that some competitors may have “conditions of acceptability” that can limit how the device is installed.
- TYPE 3 - Typically cord connected, plug in devices.
- TYPE 4 - Components

Nominal Discharge Current (I Nominal Rating):

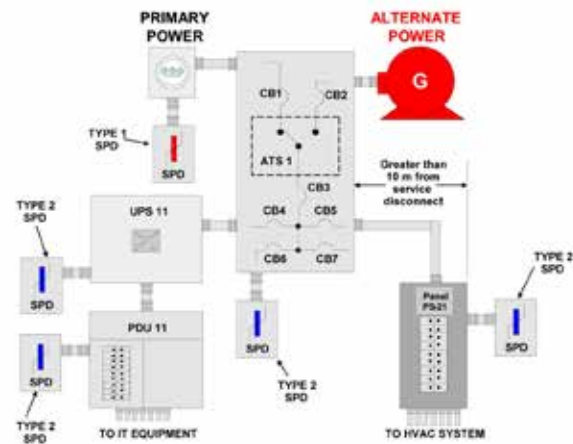
This is the peak value of surge current which goes through the SPD (15 surges).

- TYPE 1 - UL tests to 10kA or 20kA. Not to be confused with maximum kA rating of the device. We recommend 20kA I Nominal rating be specified. While this is the highest UL rating, it is a low level surge which should be required by any device in even moderate exposure installations.
- TYPE 2 - UL tests to 3kA, 5kA, 10kA or 20kA I Nominal ratings. Again, 20kA is recommended for all specified SPD located at service entrances.

Voltage Protection Rating (VPR):

These ratings replace the Suppressed Voltage Ratings (SVR) of the prior standard. UL uses a surge six times the current level of the SVR testing, so ALL measured VPR ratings are higher than the previous SVR rating.

All facilities that employ mission-critical electronic equipment should have a properly sized surge protective device (SPD) installed at the main electrical service entrance and throughout their facility at the distribution and branch levels. The surge protection connected to the incoming power line provides the first line of defense against transient surges which are typically caused by nearby utility grid switching, lightning or other power disturbances. However, disturbances can be internally generated as well as externally generated so employing SPDs at key panels throughout your facility will also provide suitable downstream protection from external surges and local protection from internal high-energy transients caused by motors, inductive loads, and various equipment load switching that can also cause damage or costly downtime.



SPD Locations by UL 1449 Types

IEEE Standard 1100-2005, The Emerald Book: IEEE Recommended Practice for Powering and Grounding Electronic Equipment recommends a tiered SPD protection from your Service Entrance down to branch panel level.

7.2.4 Surge suppressors: “...Effective surge protection for an entire building power distribution system requires the coordinated use of large-capacity current-diverting devices at the service entrance followed by lower capacity voltage-clamping devices applied strategically throughout the power system.”

# STV 200/400K SERIES

SolaHD STV 200/400K Series offers continuous protection from damaging voltage transients and electrical noise commonly found at the service entrance or distribution panel. The modular design of the STV 200/400K allows for installation flexibility and the robust design allows for installation in the most severe exposure locations. They are capable of handling the high-impulse, potentially damaging transients commonly found at the service entrance or distribution panels.

The STV 200/400K utilizes circuitry to monitor the status of all protection modes, including neutral to ground. Should protection be unavailable in any mode, the Green LED will be extinguished, and the Red LED will be illuminated. In addition, high isolation form C dry contacts provide remote monitoring of protection system failure, under voltage, phase and power loss. The STV 200/400K protection integrity monitoring indicates failure for both shorted or opened protection components.

These devices are built to meet your unique requirements, and are available in hardwire, three phase configuration. They are designed for years of trouble free operation and require little or no operator intervention after installation.

## APPLICATIONS

The STV 200/400K Series can be a facility-wide product family and may be installed from service entrances to distribution panels to branch panels.

- Industrial Plants
- Commercial Buildings
- Institutional Facilities
- Any facility that has an environment with electronics based equipment

## FEATURES

- Modular design allows for flexibility
- Surge current capacity of 200 to 400 kA per phase
- UL 1449 4th Edition, Type 1, 20kA I-nominal approved device
- Industry's highest surge current repeatability
- All modes transient protection (L-N, L-G, and N-G)
- Form C dry contacts and audible alarm status indications
- Internal/external monitoring, including neutral to ground
- EMI/RFI Filtering
- Five year limited warranty
- Custom options (contact technical support)
  - NEMA 12 enclosure, NEMA 3R, 4, and 4X
  - Optional rotary disconnect, transient counter and remote monitor panel



# STV 200/400K SERIES

## SELECTION TABLE

Catalog Number	Input Voltage	
STV 200K-10Y	208 Y/120 V	Three-Phase Wye, 4-Wire + Ground
STV 200K-27Y	480 Y/277 V	Three-Phase Wye, 4-Wire + Ground
STV 200K-48D	480 V	Three-Phase D, 3-Wire + Ground
STV 400K-10Y	120/208 V	Three-Phase Wye, 4-Wire + Ground
STV 400K-27Y	480 Y/277 V	Three-Phase Wye, 4-Wire + Ground
STV 400K-48D	480 V	Three-Phase D, 3-Wire + Ground

## SPECIFICATIONS

Catalog Number	STV200K-10Y	STV200K-27Y	STV200K-48D	STV400K-10Y	STV400K-27Y	STV400K-48D
Input Voltage	208 Y/120 V	480 Y/277 V	480 V	208 Y/120 V	480 Y/277 V	480 V
	3Ph Wye, 4 W + G	3Ph Wye, 4 W + G	3Ph D, 3 W + G	3Ph Wye, 4 W + G	3Ph Wye, 4 W + G	3Ph D, 3 W + G
Maximum Continuous Operating Voltage (MCOV)	125% of the nominal level for 120 V; 115% for all other voltages					
Line Frequency	47–63 Hz					
Response Time	< 0.5 ns					
Enclosure	Metal, UL Listed /NEMA type 12 (3R, 4, 4X also available)					
Mounting Type	Wall Mounted (mounting hardware ¼ in.)					
Connection	Internally connected					
Status Indication	Red and green LED status indicators, audible alarm, summary alarm contacts					
Operating Temperature	-40°C to +50°C (-40°F to +122°F)					
Operating Humidity	0% to 95% non-condensing					
Noise Attenuation	50 dB maximum					
Modes of Protection	All Modes: L–N, L–L, L–G, N–G ①					
SCCR Rating	200 kAIC					
Nominal Discharge Current Rating (In)	20 kA					
Warranty	5 year limited warranty					
<b>UL 1449, 4th Edition, Type 1 Voltage Protection Ratings (VPRs)</b>						
Line to Neutral	800 V	1200 V	N/A	700 V	1200 V	N/A
Line to Line	1200 V	2000 V	2000 V	1200 V	1800 V	2000 V
Line to Ground	900 V	1200 V	1800 V	800 V	1200 V	1800 V
Neutral to Ground	700 V	1000 V	N/A	700 V	1000 V	N/A
<b>Peak Surge Current Capability</b>						
Per Phase	200 kA	200 kA	200 kA	400 kA	400 kA	400 kA
Line to Neutral	100 kA	100 kA	N/A	200 kA	200 kA	N/A
Line to Line	100 kA	100 kA	100 kA	200 kA	200 kA	200 kA
Line to Ground	100 kA	100 kA	100 kA	200 kA	200 kA	200 kA
Neutral to Ground	100 kA	100 kA	N/A	200 kA	200 kA	N/A

① Delta Model does not offer N–G mode of protection

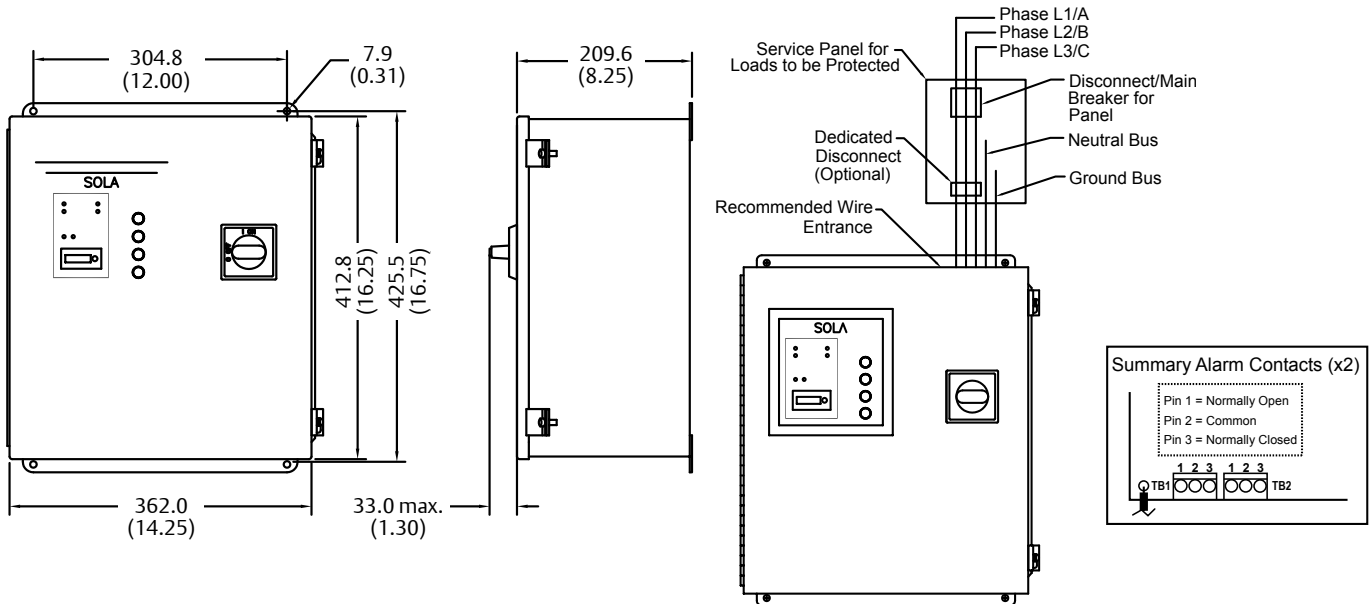


# STV 200/400K SERIES

## DIMENSIONAL SPECIFICATIONS

Catalog Number	DIMENSIONS D x W x H MM (IN.)	Suggested Breaker Size	Suggested Wire Size (AWG)	WEIGHT LBS (KG)	STV 200/400K Series		Units With Rotary Disconnect		
					Allowable Breaker Range	Allowable WIRE Range	WEIGHT LBS (KG)	Allowable Breaker Range	Allowable WIRE Range
STV200K	209.55 x 361.95 x 412.75 (8.25 x 14.25 x 16.25)	40 A	#8	35 (15.88)	15–100 A	#14–2	38 (17.23)	15–175 A	#14–2/0
STV400K	209.55 x 361.95 x 412.75 (8.25 x 14.25 x 16.25)	100 A	#2	42 (19.05)	15–100 A	#14–2	45 (20.41)	15–175 A	#14–2/0

## DIMENSIONS IN MILLIMETERS (INCHES)



# STV 100K SERIES

SolaHD's STV 100K hardwired surge protective devices are designed for installation at the service entrance, branch panel or a dedicated sensitive electronic load. These units feature all mode protection, LED and audible alarm status indication, sinewave tracking and form C dry contacts. The STV 100K series also contains the highest levels of safety built into the product including thermal fusing and a fault current fusing level of 65 kAIC.

## APPLICATIONS

- Distribution Panels (<1200 A)
- Branch, Lighting and Control Panels
- Factory Automation Installations
- Dedicated Industrial Equipment

## FEATURES

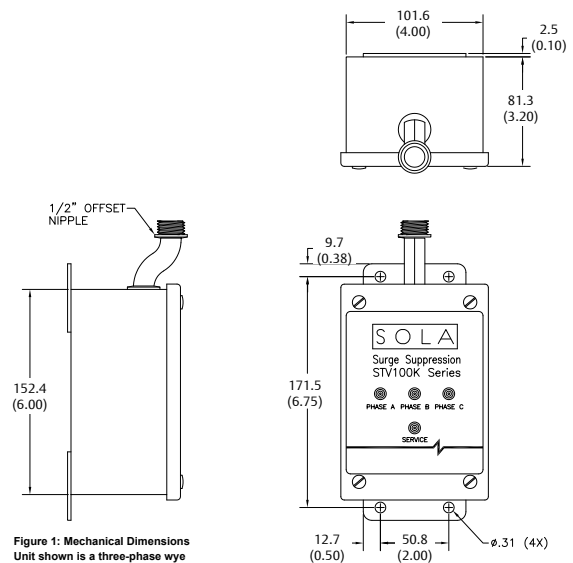
- 100,000 Amp peak current rating provides all mode protection against severe transients
- UL 1449 4th edition, Type 2, 3kA I-nominal approved device
- Low clamping levels for more effective protection
- 100 kAIC fault current fusing level provides safety and NEC conformance
- LED status and audible alarms
- Compact, rugged metal



## SELECTION TABLE

Catalog Number	Input Voltage	Input Voltage
STV 100K-10S	120/240 V	Single Phase, 3-Wire + Ground
STV 100K-10Y	208 Y/120 V	Three Phase, Wye 4-Wire + Ground
STV 100K-10N	120 V	Single Phase, 2-Wire + Ground
STV 100K-24L	240 V	Single Phase, 2-Wire + Ground
STV 100K-23Y	230 Y/400 V	Three Phase, Wye 4-Wire + Ground
STV 100K-27Y	480 Y/277 V	Three Phase, Wye 4-Wire + Ground
STV 100K-24D	240 V	Three Phase, D 3-Wire + Ground
STV 100K-48D	480 V	Three Phase, D 3-Wire + Ground
STV 100K-10D4	240/120 CT	Three Phase, D 4-Wire + Ground
STV 100K-24D4	480/240 CT	Three Phase, D 4-Wire + Ground

## DIMENSIONS IN MILLIMETERS (INCHES)



# STV 100K SERIES

## SPECIFICATIONS

Catalog Number	STV 100K-10S	STV 100K-10N	STV 100K-24L	STV 100K-10Y	STV 100K-23Y	STV 100K-27Y	STV 100K-24D	STV 100K-48D	STV 100K-10D4	STV 100K-24D4
Nominal Input Vac	120/240 V	120 V	240 V	208 Y/120 V	400 Y/230 V	480 Y/277 V	240 V	480 V	240 D/120 V	480 D/240 V
System Configuration	1PH 3 W + G	1PH 2 W + G		3PH Wye 4 W + G			3PH D 3 W + G		3PH D High Leg 4 W + G	
Maximum Continuous Operating Voltage (MCOV)	125% of the nominal level for 120 V; 115% for all other voltages									
Line Frequency	47-63 Hz									
Response Time	< 0.5 nanoseconds									
SCCR Rating	100 kAIC									
Fusing	Thermal and Fault Current									
Nominal Discharge Current Rating	3 kA									
Modes of Protection	All Mode: L - N, L - L, L - G, N - G									
Operating Temperature	-40°C to +60°C (-40°F to +140°F)									
Operating Humidity	0% to 95% Non-condensing									
Noise Attenuation	40 dB maximum									
Dimensions W x D x H mm (in)	152.4 x 101.6 x 81.3 (6.00 x 4.00 x 3.20)									
Net Weight (kg) lbs	3.63 (8.0) maximum									
Enclosure	Metal, UL Listed/NEMA Type 12 Enclosure									
Connection/Mounting Type	Parallel/Flange									
Status Indication	Red and green LED status indicators, audible alarm, Form C contacts									
Warranty	10 year limited warranty									
<b>UL 1449 4th Edition, Type 2 Voltage Protection Ratings (VPRs) Vpeak</b>										
Line to Neutral	600 V	600 V	N/A	600 V	1200 V	1200 V	N/A	N/A	600 V	1200 V
Line to Line	1000 V	N/A	1000 V	1000 V	2000 V	2000 V	2000 V	2000 V	1000 V	2000 V
Line to Ground	700 V	700 V	1200 V	700 V	1200 V	1200 V	1200 V	2000 V	700 V	1200 V
Neutral to Ground	700 V	700 V	N/A	700 V	1200 V	1200 V	N/A	N/A	700 V	1200 V
High Leg to Neutral	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1200 V	2000 V
High Leg to Line	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1500 V	2500 V
High Leg to Ground	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1200 V	2000 V
<b>Peak Surge Current Capability</b>										
Per Phase	100 kA	100 kA	100 kA	100 kA	100 kA	100 kA	100 kA	100 kA	100 kA	100 kA
Line to Neutral	50 kA	50 kA	N/A	50 kA	50 kA	50 kA	N/A	N/A	50 kA	50 kA
Line to Line	50 kA	N/A	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA
Line to Ground	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA	50 kA
Neutral to Ground	50 kA	50 kA	N/A	50 kA	50 kA	50 kA	N/A	N/A	50 kA	50 kA

# STV 25K DIN RAIL SERIES

This series provides point-of-use protection, at the dedicated equipment level, against damaging transients. Ideal for installation in electronic control cabinets found in harsh industrial environments such as the factory floor or at remote locations. These devices provide 25,000 Amps of surge protection per phase, sine wave tracking, LED status indication and form C dry contacts. This DIN Rail series also provides protection on all electrical paths and comes with a standard ten year product warranty. The STV 25K DIN Rail series surge protective devices are UL recognized to Standard 1449, 4th Edition.

## APPLICATIONS (20 AMP MAX)

- Control Cabinets for Industrial Automation
- Point-of-Use Industrial/Service Equipment
- Remote Commercial or Industrial Equipment
- Instrumentation and Large Test Equipment
- Commercial and Building Automation Systems

## FEATURES

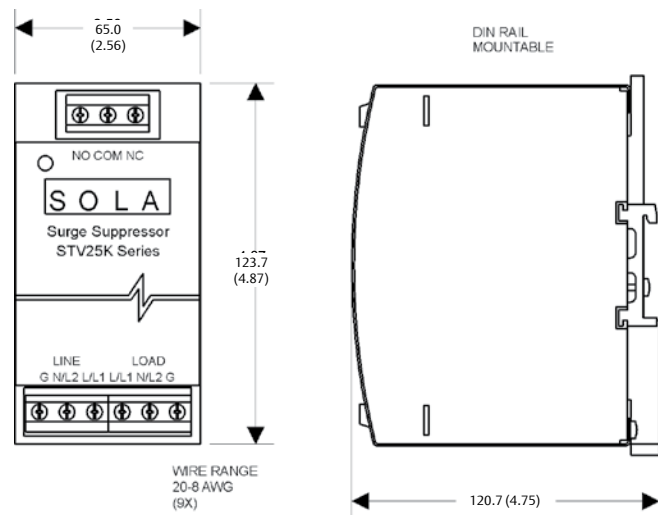
- Compact and narrow design maximizes panel space.
- Low clamping levels for more effective protection.
- Easy access terminal screws for quick mounting and installation.
- 25,000 Amps of surge protection.
- Sine wave tracking and all-mode protection provide consistent and reliable protection on all electrical paths.
- Thermal fusing prevents MOV overheating caused by excessive current levels.



## SELECTION TABLE

Catalog Number	Input Voltage	
STV 25K-10S	120 V	Single Phase (L - N)
STV 25K-24S	240 V	Single Phase (L1 - L2)

## DIMENSIONS IN MILLIMETERS (INCHES)



# STV 25K DIN RAIL SERIES

## SPECIFICATIONS

Description	STV 25K-10S	STV 25K-24S
Input Voltage	120 Vac, Single Phase 0-135 Vrms	240 Vac, Single Phase 0-260 Vrms
Maximum Continuous Operating Voltage (MCOV)	150 Vrms	300 Vrms
Line Frequency	47-63 Hz	
Connection/Mounting Type	DIN Rail Mount with screw terminals for #12 AWG.	
Input Current Rating	20 Amps	
Phase Configuration	2 wire + GND	
Short Circuit Current Rating (SCCR)	5kA	
Weight - kg (lbs)	1.36 (3.0)	
Dimensions H x W x D - mm (in)	123.7 x 65.0 x 120.7 ( 4.87 x 2.56 x 4.75) includes mounting bracket	
Modes of Protection	All Mode: L - N, L - L, L - G, N-G	
Status Indication	Green LED, Form C Contacts	
Packaging	Metal DIN Rail Mount Enclosure, IP20	
Response Time	< 0.5 nanoseconds	
Operating Temperature	-40°C to +60°C (-40°F to +140°F)	
Operating Humidity	0% to 95% Non-condensing	
<b>Noise Attenuation</b>		
Normal Mode	50 dB minimum	
Common Mode	40 dB minimum	
<b>UL 1449, 4th Edition, Type 4 Voltage Protection Ratings (VPR) Vpeak</b>		
L - N	500	—
L - L	—	900
L - G	500	900
N - G	500	—
<b>Peak Surge Current Capability (8 x 20 μS)</b>		
Line to Neutral	12.5 kA	
Line to Ground	12.5 kA	
Neutral to Ground	12.5 kA	
Warranty	10 year limited warranty	

## STF SERIES

Low voltage/high frequency noise is caused by everyday events such as turning on machinery, motors, or equipment. Although noise is less dramatic than high voltage transients, the long term effects of these frequent disturbances can be as damaging. Filtering systems such as SolaHD Active Tracking® Filters provide clean AC power by eliminating lower voltage noise.

The SolaHD STF Series offers the original active tracking technology to guard against commonly occurring but very damaging, lower energy transients. Offering excellent noise reduction, the filter continuously tracks the input AC power line and responds instantly upon detecting extraneous high frequency noise.

The STF Series eliminates low voltage/high frequency noise via a low-pass or L-C filter. These filters are used for low energy, high frequency noise reduction and consist of a series of inductors, capacitors and resistors. STFs are load dependent which means that the series inductors located on each phase and neutral conductors are sized to handle the maximum current draw on the line. These inductors together with the capacitors and resistors form a circuit capable of absorbing a large bandwidth of noise.

These devices are designed to meet UL 1283, and CSA C22.2 No. 8 for Electromagnetic Interference Filters. STFs attenuate or reduce the amplitude of noise to a minimum of 40 dB that occurs in a frequency range of 50 KHz to 50 MHz. They also provide the industry's best IEEE Category A protection, typically reducing normal mode transients to +/- 5 volts.

Built to meet your unique requirements, these filters are available in a multitude of voltage configurations. They are hardwired and designed for years of trouble free operation requiring little or no operator intervention after installation.

Active Tracking® Filters are one part of a total power quality solution. They can be used alone or in conjunction with other SolaHD products to solve more complex power quality problems.

### APPLICATIONS

- Branch and Control Panels
- Factory Automation Installations
- Point of Use Industrial Service Equipment
- Dedicated Industrial and Machine Tools Equipment
- Telecommunications Equipment



### FEATURES

- Non degrading, series filter technology for total durability
- High frequency noise filter, RLC low-pass filter
- Three phase applications up to 200 Amp
- Attenuates noise to 40 dB in frequency range of 50 kHz to 50 MHz
- Operating temperature from -40°C to +45°C (-40°F to 113°F)
- Hardwired connection
- MTBF greater than 100,000 hours, Mil Std. 217F
- Ten year limited warranty

# STF SERIES

Catalog Number	Amps	Min. Wire Size (AWG Suggested)	Fuse/Circuit Breaker Ampacity		Case Dim. mm (in) - A x B x C	Mounting Flange Dim. mm (in) - D x E x F	Weight kg (lbs)	Design Style
			Suggest	Max				
<b>Three-Phase Models (120/208 Vac WYE) ①</b>								
STF0150-10Y	15	14	15 A	18.75 A	355.6 x 304.8 x 152.4 (14.00 x 12.00 x 6.00)	374.7 x 254.0 x 393.7 (14.75 x 10.0 x 15.5)	19.90 (35.0)	4
STF0300-10Y	30	10	30 A	37.5 A	355.6 x 304.8 x 152.4 (14.00 x 12.00 x 6.00)	374.7 x 254.0 x 393.7 (14.75 x 10.0 x 15.5)	19.90 (35.0)	4
STF0500-10Y	50	4	50 A	62.5 A	508 x 406.4 x 228.6 (20.00 x 16.00 x 9.00)	539.8 x 254.0 x 571.5 (21.25 x 10.0 x 22.5)	20.41 (45.0)	2
STF1000-10Y	100	2	100 A	125 A	508 x 406.4 x 228.6 (20.00 x 16.00 x 9.00)	539.8 x 254.0 x 571.5 (21.25 x 10.0 x 22.5)	29.48 (65.0)	2
STF2000-10Y	200	3/0	200 A	250 A	609.6 x 508 x 228.6 (24.00 x 20.00 x 9.00)	641.4 x 355.6 x 673.1 (25.25 x 14.0 x 26.5)	52.16 (115.0)	2
<b>Three-Phase Models (240 V D) ①</b>								
STF0150-24D	15	14	15 A	18.75 A	355.6 x 304.8 x 152.4 (14.00 x 12.00 x 6.00)	374.7 x 254.0 x 393.7 (14.75 x 10.0 x 15.5)	19.90 (35.0)	4
STF0300-24D	30	10	30 A	37.5 A	355.6 x 304.8 x 152.4 (14.00 x 12.00 x 6.00)	374.7 x 254.0 x 393.7 (14.75 x 10.0 x 15.5)	19.90 (35.0)	4
STF0500-24D	50	4	50 A	62.5 A	508 x 406.4 x 228.6 (20.00 x 16.00 x 9.00)	539.8 x 254.0 x 571.5 (21.25 x 10.0 x 22.5)	20.41 (45.0)	2
STF1000-24D	100	2	100 A	125 A	508 x 406.4 x 228.6 (20.00 x 16.00 x 9.00)	539.8 x 254.0 x 571.5 (21.25 x 10.0 x 22.5)	29.48 (65.0)	2
STF2000-24D	200	3/0	200 A	250 A	609.6 x 508 x 228.6 (24.00 x 20.00 x 9.00)	641.4 x 355.6 x 673.1 (25.25 x 14.0 x 26.5)	52.16 (115.0)	2
<b>Three-Phase Models (277/480 V wye) ①</b>								
STF0150-27Y	15	14	15 A	18.75 A	355.6 x 304.8 x 152.4 (14.00 x 12.00 x 6.00)	374.7 x 254.0 x 393.7 (14.75 x 10.0 x 15.5)	19.90 (35.0)	4
STF0300-27Y	30	10	30 A	37.5 A	355.6 x 304.8 x 152.4 (14.00 x 12.00 x 6.00)	374.7 x 254.0 x 393.7 (14.75 x 10.0 x 15.5)	19.90 (35.0)	4
STF0500-27Y	50	4	50 A	62.5 A	508 x 406.4 x 228.6 (20.00 x 16.00 x 9.00)	539.8 x 254.0 x 571.5 (21.25 x 10.0 x 22.5)	20.41 (45.0)	2
STF1000-27Y	100	2	100 A	125 A	508 x 406.4 x 228.6 (20.00 x 16.00 x 9.00)	539.8 x 254.0 x 571.5 (21.25 x 10.0 x 22.5)	29.48 (65.0)	2
STF2000-27Y	200	3/0	200 A	250 A	609.6 x 508 x 228.6 (24.00 x 20.00 x 9.00)	641.4 x 355.6 x 673.1 (25.25 x 14.0 x 26.5)	52.16 (115.0)	2
<b>Three-Phase Models (480 V D) ①</b>								
STF0150-48D	15	14	15 A	18.75 A	254.0 x 203.2 x 152.4 (10.0 x 8.0 x 6.0)	273.1 x 152.4 x 292.1 (10.75 x 6.0 x 11.5)	19.90 (35.0)	4
STF0300-48D	30	10	30 A	37.5 A	254.0 x 203.2 x 152.4 (10.0 x 8.0 x 6.0)	273.1 x 152.4 x 292.1 (10.75 x 6.0 x 11.5)	19.90 (35.0)	4
STF0500-48D	50	4	50 A	62.5 A	355.6 x 304.8 x 152.4 (14.00 x 12.00 x 6.00)	374.7 x 254.0 x 393.7 (14.75 x 10.0 x 15.5)	20.41 (45.0)	4
STF1000-48D	100	2	100 A	125 A	508 x 406.4 x 228.6 (20.00 x 16.00 x 9.00)	539.8 x 254.0 x 571.5 (21.25 x 10.0 x 22.5)	29.48 (65.0)	2
STF2000-48D	200	3/0	200 A	250 A	609.6 x 508 x 228.6 (24.00 x 20.00 x 9.00)	641.4 x 355.6 x 673.1 (25.25 x 14.0 x 26.5)	52.16 (115.0)	2

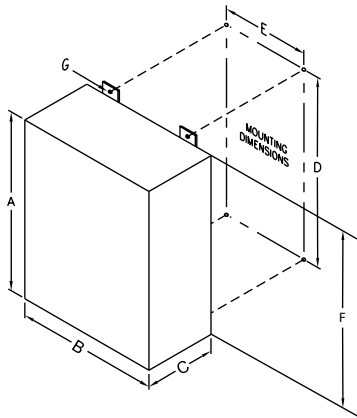
① Units are standard in NEMA 12 hinged enclosures

# STF SERIES

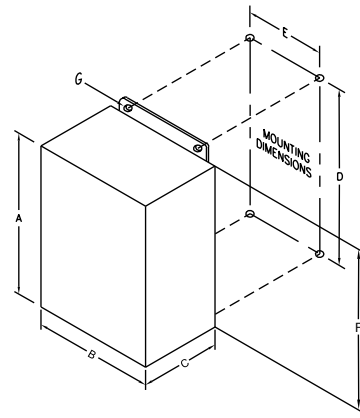
## SPECIFICATIONS

Description	120/208 Vac Models	277/480 Vac Models	480 Vac Models
Input Voltage	0-150/240 Vrms	0-320/520 Vrms	0-520 Vrms
Line Frequency	50/60 Hz		
Transient Attenuation Response Time	Instantaneous		
Mean Time Between Failure (MTBF)	> 100,000 Hours (Mil Std. 217F)		
Packaging	Single phase < 30 Amps housed in black, high impact plastic case, vacuum impregnated magnetics, epoxy encapsulated. Single phase > 30 Amps, 480 Vac, and three phase units housed in NEMA 12 enclosures.		
Operating Temperature	-40°C to +45°C (-40°F to +113°F); Derate Linearly to 60% at +70°C (+ 158°F)		
Load Surge Current Rating	10 milliseconds: 5 x Nominal		
	1 second : 3 x Nominal		
	5 seconds: 2 x Nominal		
Transient Reduction	Minimum of 40dB from 50 kHz through 50 MHz. Attenuation is greater than 50 dB to the surge withstand capability Ringwave test IEEE C62.41, Category A (IEEE Category A Ringwave 6 kV, 200A, 100 kHz) and B (IEEE Category B Ringwave 6 kV, 500 A, 100 kHz).		
Warranty	10 year limited warranty		

## DIMENSIONS IN MILLIMETERS (INCHES)



Design Style 2



Design Style 4



# STFV PLUS SERIES

The SolaHD STFV Plus Series combines Active Tracking® filtration for low energy noise and surge protection for high energy transients. It continuously tracks the input AC power line responding instantly into action upon detecting extraneous high frequency noise and high voltage transients caused by everyday events such as turning on machinery, motors or equipment.

These devices are designed to meet UL 1283 for Electromagnetic Interference Filters. STFV Plus attenuates or reduces the amplitude of high frequency noise to a maximum of 90 dB that occurs in a range of 100 kHz to 50 MHz. STFV Plus provides the industry's best IEEE C62.41 Category A and B Ringwave protection.

They are built to meet your unique requirements, and are available in hardwired, single phase configuration. They are designed for years of trouble free operation and require little or no operator intervention after installation.

Active Tracking® Filters Plus is one part of a total power quality solution. They can be used alone or in conjunction with other SolaHD products to solve more complex power quality problems.

## APPLICATIONS

- Branch and Control Panels
- Factory Automation Installations
- Point of Use Industrial Service Equipment
- Programmable Logic Controllers
- Dedicated Industrial and Machine Tools
- Telecommunications and IT Equipment

## FEATURES

- Non degrading, series filter/TVSS technology for total durability
- UL surge current capacity – 25,000 Amps
- High impact plastic case, epoxy encapsulated enclosure
- Transient protection in all modes (L-N, L-G, and N-G)
- Single phase applications up to 30 Amps
- Operating temperature from -40°C to +60°C (-40°F to +140°F)
- Hardwired connection
- LED power indication
- Ten year limited warranty

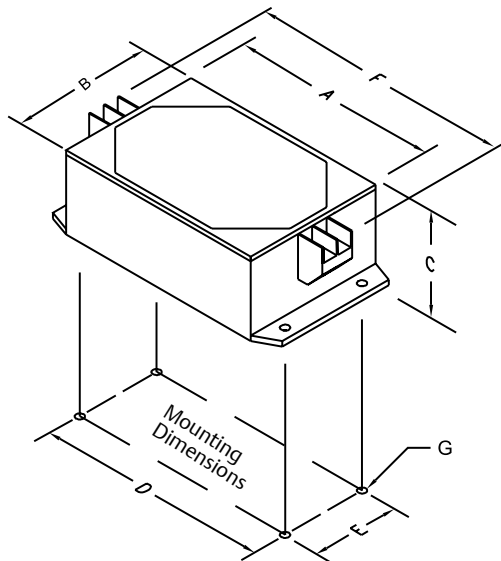


# STFV PLUS SERIES

## SELECTION TABLE

Catalog Number	Amps	Case Dim. mm (in) - A x B x C	Mounting Flange Dim. mm (in) - D x E x F x G	Number Min. Wire Size (AWG Suggested)	Screw Size	Fuse/Circuit Breaker Ampacity		Weight lbs (kg)
						Suggest	Max	
Single-Phase Models (120 Vac)								
STFV02-10N	2.5	101.6 x 73.2 x 46.0 (4.00 x 2.88 x 1.81)	111.3 x 53.8 x 134.9 x 4.8 (4.38 x 2.12 x 5.31 x 0.19)	26	#6	2.5	3.125	.45 (1.0)
STFV050-10N	5.0	101.6 x 73.2 x 46.0 (4.00 x 2.88 x 1.81)	111.3 x 53.8 x 134.9 x 4.8 (4.38 x 2.12 x 5.31 x 0.19)	22	#6	5	6.25	.59 (1.3)
STFV075-10N	7.5	120.7 x 120.7 x 59.7 (4.75 x 4.75 x 2.35)	133.4 x 88.9 x 158.8 x 4.8 (5.25 x 3.50 x 6.25 x 0.19)	18	#6	7.5	6.25	.91 (2.0)
STFV150-10N	15.0	158.8 x 120.7 x 59.7 (6.25 x 4.75 x 2.35)	171.5 x 88.9 x 196.9 x 4.8 (6.75 x 3.50 x 7.75 x 0.19)	14	#8	15	18.75	1.59 (3.5)
STFV300-10N	30.0	196.9 x 120.7 x 59.7 (7.75 x 4.75 x 2.35)	209.6 x 88.9 x 228.6 x 4.8 (8.25 x 3.50 x 9.00 x 0.19)	10	#8	30	37.5	2.72 (6.0)
Single-Phase Models (240 Vac)								
STFV025-24L	2.5	101.6 x 73.2 x 46.0 (4.00 x 2.88 x 1.81)	111.3 x 53.8 x 134.9 x 4.8 (4.38 x 2.12 x 5.31 x 0.19)	26	#6	2.5	3.125	.59 (1.3)
STFV050-24L	5.0	120.7 x 120.7 x 59.7 (4.75 x 4.75 x 2.35)	133.4 x 88.9 x 158.8 x 4.8 (5.25 x 3.50 x 6.25 x 0.19)	22	#6	5	6.25	.91 (2.0)
STFV075-24L	7.5	158.8 x 120.7 x 59.7 (6.25 x 4.75 x 2.35)	171.5 x 88.9 x 196.9 x 4.8 (6.75 x 3.50 x 7.75 x 0.19)	18	#6	7.5	9.375	1.59 (3.5)
STFV150-24L	15.0	196.9 x 120.7 x 59.7 (7.75 x 4.75 x 2.35)	209.6 x 88.9 x 228.6 x 4.8 (8.25 x 3.50 x 9.00 x 0.19)	14	#8	15	18.75	2.63 (5.8)
STFV300-24L	30.0	196.9 x 120.7 x 59.7 (7.75 x 4.75 x 2.35)	209.6 x 88.9 x 228.6 x 4.8 (8.25 x 3.50 x 9.00 x 0.19)	10	#8	30	37.5	2.72 (6.0)

## DIMENSIONAL DRAWINGS



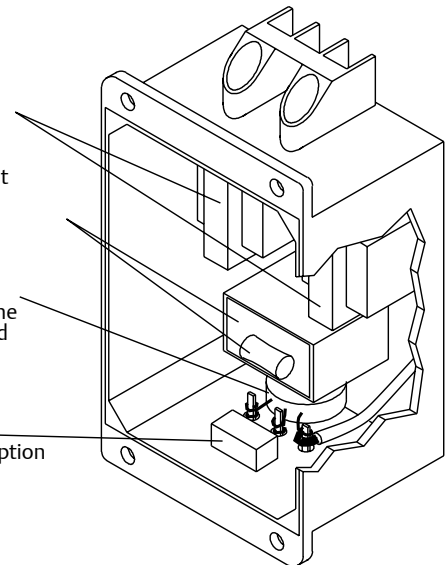
## SYSTEM DESIGN

Series Blocking Inductors  
smoothing inductors

Shunt Absorbing Component  
sine wave tracking circuitry

MOV Transient Protection  
high-energy transient  
protection line to neutral, line  
to ground, neutral to ground

Pulse Capacitor  
high-frequency noise absorption



# STFV PLUS SERIES

## SPECIFICATIONS

Description	Value	
Input Voltage	120 Vac Models	0-150 Vrms
	240 Vac Models	0-275 Vrms
Line Frequency	50/60 Hz	
Configuration	Single Phase (2 wire + ground)	
Response Time	< 5 nanoseconds	
Enclosure	High impact plastic case, 94V-0, Vacuum impregnated magnetics, epoxy encapsulated	
Fusing	External	
Status Indication	Green LED	
Connection/Mounting Type	Series/Panel Mount	
Operating Temperature	-40°C to +60°C (-40°F to +140°F) at full load Derate Linearly to 60% at +70°C (+158°F)	
Operating Humidity	0% to 95% Non-condensing	
Mean Time Between Failure (MTBF)	Greater than 100,000 hours (Mil. Std. 217F)	
Packaging	High impact plastic case, vacuum impregnated magnetics, epoxy encapsulated	
Peak Surge Current Capability (8 x 20 μs)	Per Phase	25,000 Amps
	Line to Neutral	12,500 Amps
	Line to Ground	12,500 Amps
	Neutral to Ground	12,500 Amps
Load Surge Current Rating	10 milliseconds	5 x Nominal
	1 second	3 x Nominal
	10 seconds	2 x Nominal
Frequency Response (Forward Reverse)	100 kHz to 50 MHz	90 dB maximum
Transient Reduction ① (IEEE C62.41)	Typical Category A Ringwave (6 kV, 200A, 100 kHz)	< 10 volts peak
	Typical Category B Ringwave (6 kV, 500A, 100 kHz)	< 50 volts peak
Warranty	10 year limited warranty	

# STFE ELITE SERIES

The SolaHD STF Elite DIN Rail Mount Series combines Active Tracking® technology with UL Listed surge protection to protect against the full spectrum of voltage transients and surges. It continuously tracks the input AC power line responding instantly into action upon detecting extraneous high frequency noise and high voltage transients caused by everyday events such as turning on machinery, motors or equipment.

The STFE Series attenuates or reduces the amplitude of normal mode noise to a minimum of 90dB that occurs in a frequency range of 100KHz to 50MHz, and common mode noise to a minimum of 60dB that occurs in a frequency range of 5MHz to 50MHz. STFE provides the industry's best IEEE C62.41 Category A and B Ringwave protection.

They are built to meet your unique requirements, and are available in hardwired DIN Rail mount, single phase configuration. They are designed for years of trouble free operation and require little or no operator intervention after installation.

## APPLICATIONS

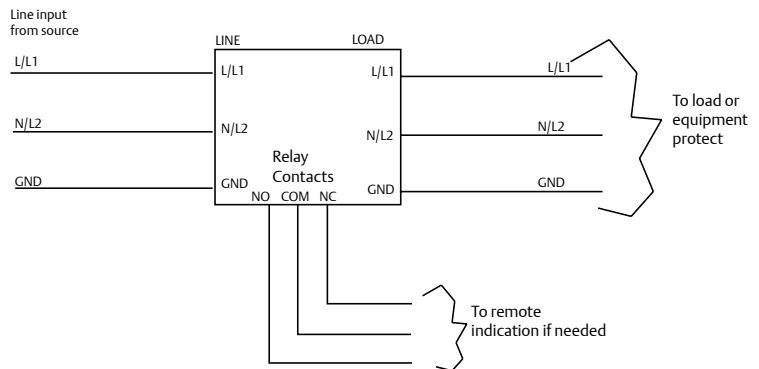
- Control Panels
- Factory Automation Installations
- Point of Use Industrial Equipment
- Programmable Logic Controllers
- Dedicated Industrial and Machine Tools Equipment

## FEATURES

- Series connected DIN Rail mounted filter
- Durable metal mount clip
- UL Listed surge current capacity – 45,000 Amps
- Transient protection in all modes (L-N, L-G, and N-G)
- Single phase applications up to 20 Amps
- Operating temperature from -40°C to +50°C (-40°F to +122°F)
- Screw terminal connections
  - Reliable and convenient screw clamp connections
  - Accepts 10-16 AWG wire
  - Meets IP20 specifications for ingress protection
- LED status indication
- Form C contact for remote monitoring
- Five year limited warranty



## CONNECTION DIAGRAM



# STFE ELITE SERIES

## SELECTION TABLE

Catalog Number	Amps	Input Voltage	
STFE030-10N	3.0	120 V	Single Phase, 2 Wire + Ground
STFE050-10N	5.0	120 V	Single Phase, 2 Wire + Ground
STFE100-10N	10.0	120 V	Single Phase, 2 Wire + Ground
STFE200-10N	20.0	120 V	Single Phase, 2 Wire + Ground
STFE030-24L	3.0	240 V	Single Phase, 2 Wire + Ground
STFE050-24L	5.0	240 V	Single Phase, 2 Wire + Ground
STFE100-24L	10.0	240 V	Single Phase, 2 Wire + Ground
STFE200-24L	20.0	240 V	Single Phase, 2 Wire + Ground

## SPECIFICATIONS

Description	STFEXX-10N	STFEXX-24L
Input Voltage	120 V (0-150 Vrms)	240 V (0-275 Vrms)
Line Frequency	47 - 63 Hz	
Response Time	< .5 nanoseconds normal mode, <5 nanoseconds common mode	
Enclosure	Fully Enclosed Metal Housing	
Fusing	Reference Fuse/Circuit Breaker Chart	
Status Indication	Green LED "OK"/Form C Contact/10 Amps @ 250 Vac or 5 Amps @ 100 Vdc	
Connection/Mounting Type	DIN Rail Mount	
Operating Temperature	-40°C to +50°C (-40°F to +122°F) at full load Derate Linearly to 60% at +70°C (+158°F)	
Weight - kg ( lbs)	0.70 (1.7)	
Dimensions - mm (in) (H x W x D)	124.0 x 65.0 x 116.0 (4.88 x 2.56 x 4.56)	
Operating Humidity	0% to 95% Non-condensing	
Peak Surge Current Capability	Per Phase	30,000 Amps
	Line to Neutral	20,000 Amps
	Line to Ground	10,000 Amps
	Neutral to Ground	10,000 Amps
Load Surge Current Rating	10 milliseconds	5 x Nominal
	1 second	3 x Nominal
	10 seconds	2 x Nominal
Short Circuit Current Rating (SCCR)	5kA	
Frequency Response		
Normal Mode (Forward-Reverse)	100 kHz to 50 MHz	90 dB maximum
Common Mode (Forward-Reverse)	5 MHz to 50 MHz	60 dB maximum
Transient Reduction (IEEE C62.41)	Typical Category A Ringwave (6 kV, 200A, 100 kHz)	< 60 V Peak
	Typical Category B Ringwave (6 kV, 500A, 100 kHz)	<100 V Peak UL 1449
Warranty	5 year limited warranty	

# STC SERIES

The rapid development of automated controls, telecommunications and fire/security systems has made it imperative to have properly coordinated low-voltage protection. Modern networked industrial facilities require error free transmission of information for maximum productivity and integrity of data.

The SolaHD STC series protects all susceptible low-voltage cable routes entering a facility and at key points within the building. These devices can be used as part of a multi-stage protection strategy which involves clamping the initial high-energy impulse, filtering any remaining noise or transients to the PLC or sensitive equipment and finally, protecting the Data/Signal lines entering and leaving the control panel. Modern, networked industrial facilities require error free transmission of information for maximum productivity and data integrity.

The hybrid design of these Data/Signal Line surge suppressors allows them to respond quickly with high energy absorption. These units are available in a variety of application specific voltage levels and packaging configurations. The STC series is used to protect network signal lines entering or leaving control panels including PLCs, universal remote I/O, DeviceNet™ and Data Highway Plus.



## LOW VOLTAGE - DATA/SIGNAL, STC SERIES

Series	Application
STC-POE	Power-over-Ethernet, Category 5 and Category 6
STC-DRS	DIN Rail mountable, single-pair surge protection
STC-642	Two-pair data/signal protection
STC-CCTV	High-frequency coaxial protection for head and camera ends

# STC-POE SERIES

The SolaHD STC Power-over-Ethernet (PoE) series is designed to work on Category 5 PoE transmission lines as well as Category 6 applications. They feature both female to female and male to female RJ-45 connection options for ease of installation.

Power-over-Ethernet is a technology for wired Ethernet LANs (Local Area Networks) that allows the electrical current to be carried by the data cables rather than power cords. This minimizes the number of wires that must be strung in order to install the network. The result is lower cost, less downtime, easier maintenance and greater installation flexibility than with traditional wiring.

PoE allows users to power devices over Ethernet cabling. Power and networking is provided over a single cable. PoE has tremendous advantages in industrial applications. The ease of combining signal and power in a single Ethernet cable connection is contributing to the already rapid evolution of Ethernet-based industrial control systems. Category 5e and Category 6 commonly known as Cat5e and Cat6 are the most widely used Ethernet connectivity methods on the market today. Cat5e and Cat6 are defined in ANSI/TIA/EIA 568-B standard for Unshielded Twisted Pair Cabling.

The STC POE series is ideally suited to protect expensive equipment and critical communication/data transfer from internally generated transients and noise.



## FEATURES

- Exceeds CAT6 PoE and 6 transmission values
- Applications up to 60 Vdc @ 300 mA
- Three year limited warranty

## STC-POE-65FF FEATURES

- Single use design
- 60 Vdc @ 300 mA continuous
- Cost effective protection

## STC-CAT6-POE-I FEATURES

- Hybrid PTC (positive temperature coefficient) resettable fuse - up to 5,000 times
- 60 Vdc @ 750 mA continuous
- Isolated ground available
- 10 kA peak surge current
- Premium protection

## SELECTION TABLE

Catalog Number	Description
STC-P0E-65FF	Female to Female Connector
STC-CAT6-P0E-I	Female to Female Connector with isolated ground
STC-C6-MP4	CAT6 PoE Mounting Plate

## SPECIFICATIONS

Description	STC-P0E-65FF	STC-CAT6-PoE-I
Mode of Protection	Normal Mode (L-L) All Lines (1-8) Protected	All Lines (1-8) Protected (L-L) and (L-G) Signal High-Low; High-Ground; Low-Ground
DC Breakover Voltage	60 Vdc	
Insertion Loss	< .1 dB	
Certified Transmission Speeds	10 baseT, 100 baseT, 1000 baseT	
Peak Surge Energy	300 Watt	750 Watt
Response Time	<1 nanosecond	
Connectors	RJ-45 (Female - Female)	
Dimensions - mm (in)	58.4 x 25.4 x 20.3 (2.30 x 1.00 x .80)	137.2 x 40.7 x 43.2 (5.40 x 1.60 x 1.70)
Warranty	3 year limited warranty	5 year limited warranty

# STC-DRS SERIES

Using three-stage hybrid technology, this DIN Rail mountable, single pair, surge suppressor attenuates over-voltage transients with gas tubes and silicon avalanche components while resettable fuses (PTCs) mitigate sneak currents. The PTC increases resistance by several orders of magnitude when over-currents exceed safe levels. A normal state resumes when over-currents are removed. The ability to self-restore in this manner significantly increases suppressor performance and survivability.

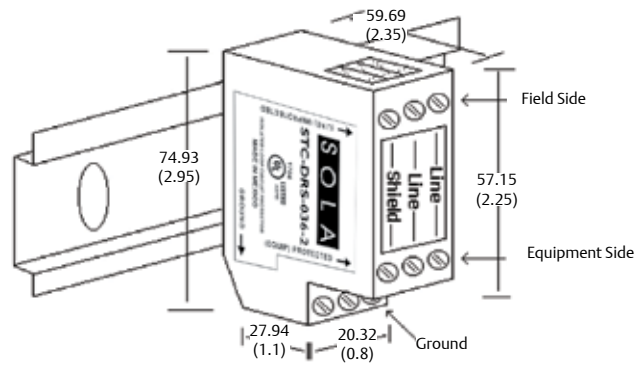
The STC-DRS Series mounts onto a standard 35 mm industrial DIN rail. There are three Field Side and three Electronics Side screw terminals. One is reserved for a shield. Three electrically tied ground terminals are provided for grounding the unit to building-approved ground. The shield is isolated from ground.

## FEATURES

- Low-Voltage data surge protection
- Three-Stage hybrid technology
- Sneak/Fault current protection with resettable fuses (PTCs)
- Low profile packaging
- Easy installation
- Fits standard 35 mm DIN Rail
- Fast response time <1 nanosecond
- Five year limited warranty



## DIMENSIONS IN MILLIMETERS (INCHES)



## SELECTION TABLE

Catalog Number	Max Peak Signal Voltage	Nominal Breakdown Voltage	Max Current 1p 10X1000 ms (Occurrences)	Peak Current 8X20 ms	Typ. Cap (PF)	Max. Continuous Current	Nominal Series Resistance
STC-DRS-232	15	22	>100	10 KA	1500	150 ma	5 Ω
STC-DRS-036	30	36	>100	10 KA	1500	150ma	5 Ω
STC-DRS-060	52	60	>100	10 KA	1500	150ma	5 Ω

### Notes:

These protectors are intended for indoor use on communication loop circuits that have been isolated from the Public Switch Telephone Network.

The communication loop circuits shall not be exposed to accidental contact with the electric light or power conductors. The protectors shall be installed per the applicable requirements of the National Electric Code, ANSI/NFPA 70.



# STC-642 SERIES

The STC-642 series of surge suppressors are dual pair (four wire) modules using three-stage hybrid technology. This module addresses over voltage transients with gas tubes and silicon avalanche components. In addition, sneak and fault currents are mitigated with resettable fuses (PTCs). The PTCs increase resistance several orders of magnitude when over currents exceed safe levels. A normal state resumes when over currents are removed. The ability to self restore in this manner significantly increases suppressor performance and survivability.

The STC-642 card edge module is gold-plated, double sided and is designed to mate with the STC-642 gold-plated female terminal connector (sold separately). When snapped together, the data circuits pass thru the protector in a serial fashion from the four Field Side terminals to the four Electronics Side terminals. Terminals 1 or 10 of the STC-PCB1B must be attached to building approved ground.

## APPLICATION

- Intended for indoor use on communication loop circuits which have been isolated from the Public Switch Telephone Network.
- RS232 applications used with STC642-020 and STC-PCB1B
- 4-20 ma signal applications used with STC642-036 and STC-PCB1B
- For use in service capable of supplying less than 150 milliamperes continuously.



## FEATURES

- Lightning protection for low voltage data
- Signal lines
- Three-stage protection
- Sneak/fault current protection
- Resettable solid-state fuses - PTCs
- Low capacitance option for high speed data
- Plug-in module / Requires PCB1B base
- Hybrid design of includes series resistance
- Fast response time
- Five year limited warranty

## SELECTION TABLE

Catalog Number	Description
<b>STC642-020</b>	20 Volt Clamp
<b>STC642-036</b>	36 Volt Clamp
<b>STC-PCB1B</b>	Base for all STC-642 models. Designed to accommodate up to 10 AWG wire. It offers Flat/Phillips screws and can be mounted using 2 #6 size screws. Must be ordered separately.
<b>STC-FM4-DRC</b>	Optional DIN Rail Mounting Clip for STC-PCB1B

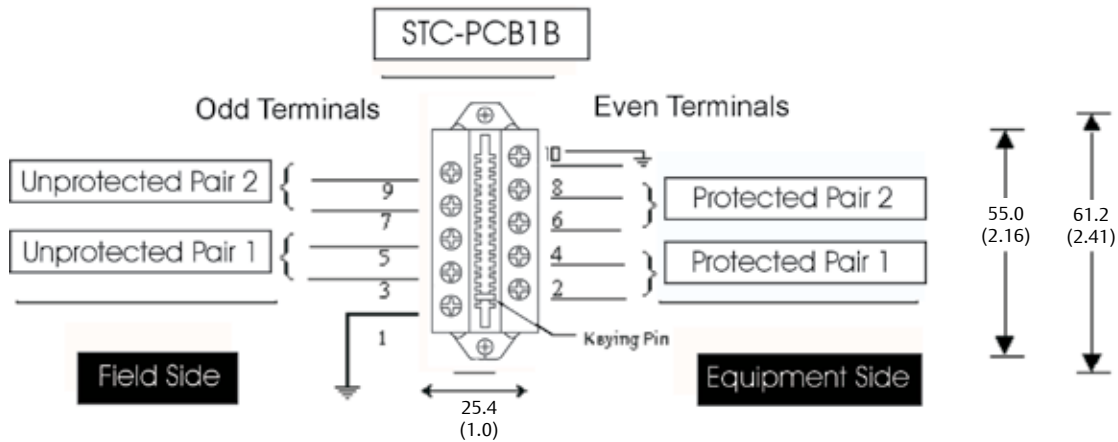
## SPECIFICATIONS

Description	STC642-020 ①	STC642-036 ①
Peak Surge Current (10 times)	8x20 s .. 10kA 10x700 s 500A per line	
Life Expectancy	8x20 s (2000A) .. >100 occurrences 10x700 s (400A)	
Response Time	<1 nanosecond	
Voltage Clamp	20	36
Technology	SAD Hybrid	
Resistance	5 (typical)	
Capacitance (typical)	1500 pf	
Operating Temperature	-40°C to +85°C (-40°F to +185°F)	
Weight - g (oz)	56.7 (2)	
Dimensions H x W x L - mm (in) (STC-642 & PCB1B)	52.1 x 25.4 x 61.0 (2.05 x 1.00 x 2.40)	
Warranty	5 year limited warranty	

① Part number STC-PCB1B sold separately

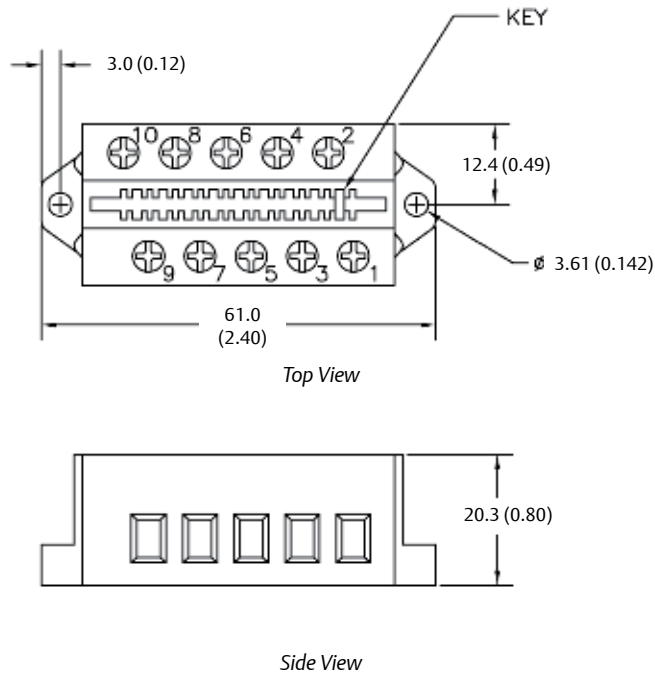
# STC-642 SERIES

## WIRING DIAGRAM (PIN ASSIGNMENTS)



Ground Terminal 1 or 10 (internally tied together) to building approved ground. The STC-PCB1B accommodates 24 to 10 AWG wire.

## DIMENSIONS IN MILLIMETERS (INCHES)



# STC-CCTV SERIES

The STC-CCTV Series is tailored specifically to CCTV, data, audio and cable applications. These units are single Coax Surge Protective Devices implementing three-stage hybrid technology. They address overvoltage transients with a primary gas tube, and secondary silicon avalanche components. Over-currents (e.g. sneak and fault currents) are mitigated with solid-state resettable fuses (PTCs). The STC-CCTV units are designed in accordance with NFPA 780 (2004 Edition) requirements, with up to 20 kA of surge current capability. The STC-CCTV-75I model has an isolated ground and is recommended for use at the camera end.

## APPLICATIONS

- CCTV Head End
- CCTV Camera End

## FEATURES

- Hybrid, three-stage technology
- Sneak/fault current protection
- Low insertion loss
- Shielded case
- Five year limited warranty

## SELECTION TABLE

Catalog Number	Description
<b>STC-CCTV -75</b>	Without isolated ground
<b>STC-CCTV -75I</b>	With isolated ground



## SPECIFICATIONS

Description	STC-CCTV-75	STC-CCTV-75I
Operating Voltage	5	
Clamping Voltage	6	
Frequency Range	0 to 20 MHz	
Equipment Location	IEEE Category C, and Category B	
Rated Load Current	0.35 amperes	
Topology	2-port Series	
STC Technology	Primary Stage: Gas Tubes, Secondary Stage: Silicon Avalanche Components Third Stage: resettable fuses (PTCs)	
Modes of Protection	Signal to Ground	
Nominal Discharge Current per Mode	10.0 kA	
Maximum Discharge Current per Mode	20.0 kA	
EMI Attenuation	< 0.1 dB at 20 MHz	
VSWR	< 1.2	
Continuous Power	0.72 Watts	
Operating Humidity	0-95 % Non-condensing	
Operating & Storage Temperature	-40°C to +85°C (-40°F to +185°F)	
Input & Output Connection Type	BNC, 50 Ohm	
Mounting	Flange	
Enclosure Type	Metal	
Certifications	UL 497B Pending, NFPA 780 (2004) Compliant for Communication Protectors	
Warranty	5 year limited warranty	

Emerson brings integrated manufacturing solutions to diverse industries worldwide. Our comprehensive product line, extensive experience, world-class engineering and global presence enable us to implement solutions that give our customers the competitive edge. SolaHD is our premium line of power-conversion and power quality solutions products.

For over 150 years, our electrical product brands have been providing a rich tradition of long-term, practical, high quality solutions with applications ranging from the construction and safe operation of petrochemical and process plants to providing quality power that precisely controls automotive robotic production.

Engineers, distributors, contractors, electricians and site maintenance professionals around the world trust Emerson brands to make electrical installations safer, more productive and more reliable.

The Appleton Group business unit of Emerson is organized into three focused groups that provide distributors and end users expert knowledge and excellent service.

#### **Electrical Construction Materials**

This group is made up of the Appleton and O-Z/Gedney brands. They manufacture a broad range of electrical products including conduit and cable fittings, plugs and receptacles, enclosures and controls, conduit bodies and industrial and hazardous lighting. Whether the application is hazardous location, industrial or commercial, the electrical construction materials group has the products to meet your needs.

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