

Southern Tier Technologies

2020 Product Portfolio



Innovative Solutions for Clean, Reliable Power



The **Tier 800AF** Arc Flash Relay System reduces arc flash incident energy and boundaries in both Medium-Voltage and Low-Voltage electrical systems.

The **Tier 500DPFC** Dynamic Power Factor Correction System combines 'real-time' power analytics with a unique, microprocessor driven array to provide immediate reactive power compensation, and infrastructure intelligence and control.



**2018 NYS 76West
Global
Clean Energy Winner**



The **Tier 460 Motor Surge Protection Device** combines our Tier 450 SPDs with a contactor restart or shunt trip controller. Surge levels range 25,000A/Mode - 150,000A/Mode, 50,000A/Phase - 300,000A/Phase;

- Contactor available in 30, 60, or 90 Amp. For custom contactor, call factory.

The **Tier 400SPD** is the industry's most comprehensive line of high-energy AC surge protective devices.

- Surge levels: 25,000A/Mode - 300,000A/Mode, 50,000A/Phase - 600,000A/Phase;



The **Tier 300DL** Demand Limiter monitors demand and actively controls load sequence and timing. Ensures your system operates within its billed peak demand "window" and safeguards against excessive peak demands associated with power outages.

The **Tier 200ACF** series of filters are designed with surge protection and a unique multi-stage hybrid series design.

- Up to 30A continuous capability, 120 or 240 volt, single phase



The **Tier 100SPD** product line is a broad family of data signal and DC power products. Features a 3-stage hybrid platform; SAD, GDT, and PTC technology. Typical applications include Fire/Alarm/Security, Transportation, and industrial/wastewater industries.



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Product Portfolio Table of Contents

Product Family	Product	Page
Tier 800	Arc Flash Relay	4-5
Tier 500	Dynamic Power Factor Correction	6-7
Tier 460	M3 Disconnect with Contactor	8
	M3 Terminal Block with Contactor	9
	M3 Disconnect with Shunt Trip Controller	10
	M3 Terminal Block with Shunt Trip Controller	11
	M2 25kA Terminal Block with 30 or 60 Amp Contactor	12
	M2 No SPD Terminal Block with 30 or 60 Amp Contactor	13
	P5 Terminal Block 25kA SPD with 30 Amp Contactor	14
	P5 Line-Cord 25kA SPD with 30 Amp Contactor	15
	P5 Terminal Block 25kA SPD with Shunt Trip Controller	16
	P5 Line-Cord 25kA SPD with Shunt Trip Controller	17
	P5 No SPD Terminal Block with 30 Amp Contactor	18
Tier 450	M3 Modular Disconnect SPD	19
	M3 Modular Terminal Block SPD	20
	M2 Modular Disconnect SPD	21
	M2 Modular Terminal Block SPD	22
	M1 Non-Modular Wire Lead SPD	23
	Option - Flush Mount Cover	24
	P3 Non-Modular Wire Lead SPD	25
	P2 Non-Modular Wire Lead SPD	26
Tier 420	P1 Non-Modular Wire Lead SPD	27
Tier 300	HVAC Demand Limiter	28
Tier 200	Line Reactor	29
	Multi-Stage Hybrid Bronze Lug Filter	30
	Multi-Stage Hybrid Terminal Block Filter	31
	Multi-Stage Hybrid Outlet/Receptacle Filter	32
Tier 100	Cat6 POE T4C8 Hybrid Filter SPD	33
	CX-06 BNC Hybrid Filter SPD	34
	HVCP48 6-Pin Hybrid Filter SPD	35

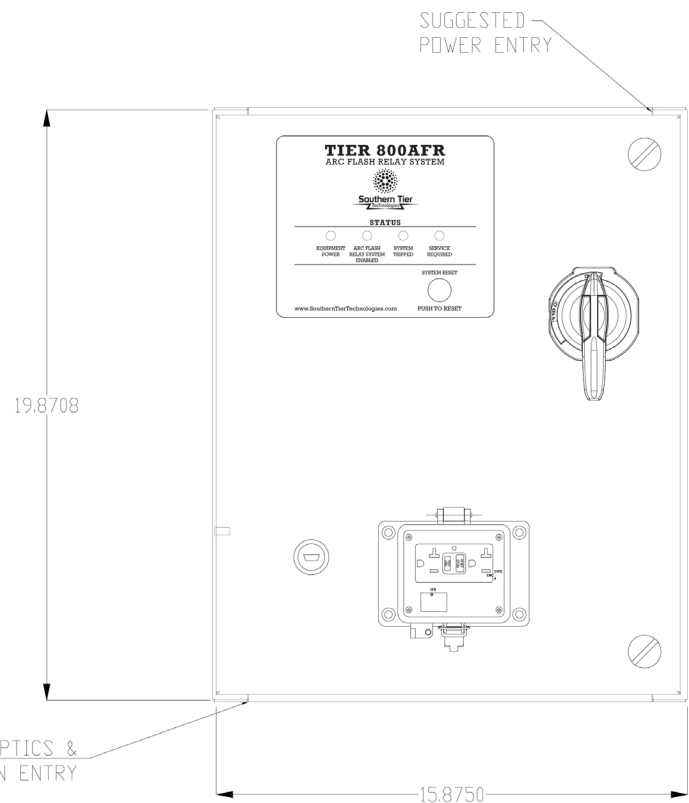


The Tier 800AFR Series Arc Flash Relay System reduces arc flash incident energy and boundaries in both Medium-Voltage and Low-Voltage electrical systems. The Tier AF series is an externally installed control cabinet that uses fiber optic sensors to immediately detect light associated with an arc flash event and quickly activate a system disconnect.

Control Voltage		
Model Code	Voltage	Source Configuration
12	120V	Single Phase , 2W+G (L1, L2/N, G)
20	208V	Single Phase , 2W+G (L1, L2/N, G)
24	240V	Single Phase , 2W+G (L1, L2/N, G)
27	277V	Single Phase , 2W+G (L1, L2/N, G)
40	400V	Single Phase , 2W+G (L1, L2/N, G)
48	480V	Single Phase , 2W+G (L1, L2/N, G)

Features:

- External Connection:
 - Enables fast & easy install
 - Ensures electrical equipment warranties, listings & selective coordination is maintained.
 - Universal equipment connection
- Arc Flash(incident energy) reduced to less than 1.2 cal/cm²
- Evaluates both light & current
- Digital Inputs
- Remote Communications via RS485 or Ethernet TCP
- Warranty: AF Relay 5 Years



Why Install an Arc Flash Disconnect System?

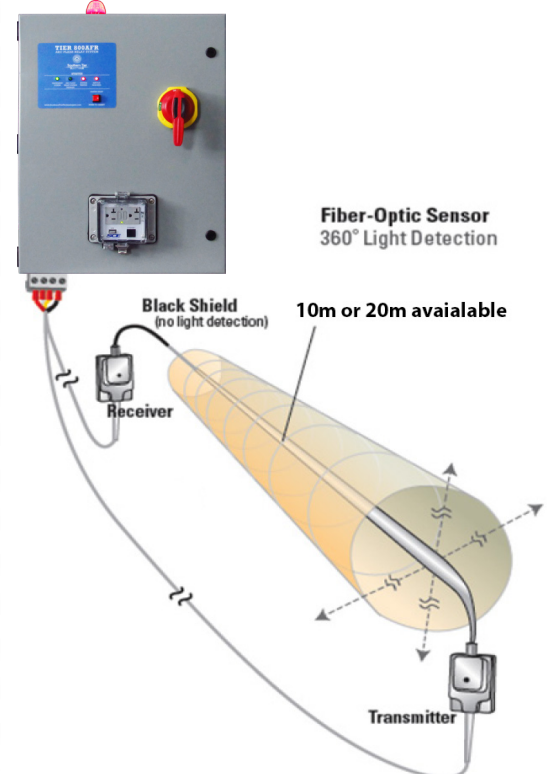
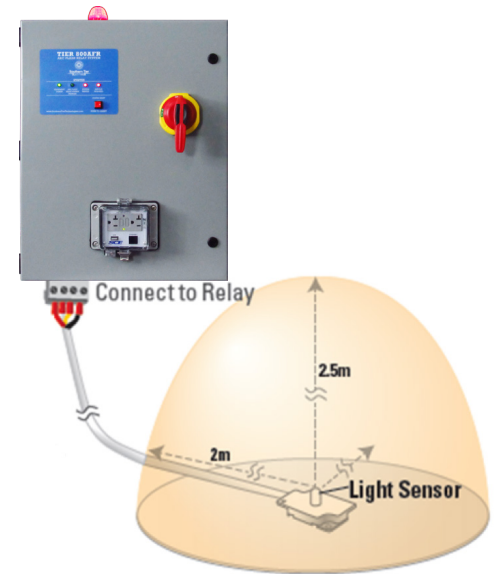
The Tier AF series Arc Flash Relay System is a cost effective solution to protect employees working, testing, troubleshooting, or energizing electrical equipment. The Arc Flash Relay System increases equipment safety & reliability by limiting the amount of fault current that can flow through your equipment.

Technical Specifications

Input Control Voltage	120 - 480 VAC Single Phase (2W+G)
Control Voltage for Shunt Trip	Two 120V or Two 24V Controlled Output
Connection Type	Parallel Connection
Relay System Type	Optical Arc Sensor
Termination	Fused Disconnect, #12 - #2 AWG
Mounting	External Mount
Front Panel Outlet (Optional)	120V 5A Graceport (Power, Ethernet, USB-A)
Input Current	5A, 60Hz
Overcurrent Protection	Internally fused at 5 Amps
Short Circuit Current Rating	200 kA (UL 508A)
Response Time	<1 ms relay
Enclosure Rating	NEMA 4 Steel
Programming Comms	Internal - USB Type B, RJ-45 Ethernet
Form 'C' Contacts	250V 1A
Operating Temperature	-40°C to +75°C
Operating Humidity	0% to 95% non-condensing
Fiber Optic Sensors	
Sensor Types	10m Point, 10m Rope, 20m Rope
Number of Sensors	Maximum 4 sensors, any combination.
External Status	
Power ON	Green LED
System Enabled	Green LED
System Tripped	Red LED
Service Required	Red LED
Optional Strobe	Red Strobe Light
Internal Status	
Supply 1&2	Green LED for each
Error	Red LED
C/B Fail	Red LED
C/B On (2)	Green LED for each
Tripped (3)	Red LED for each
Trip Coil 1&2	Red LED for each
Sensors 1-4	Dual Color Green/Red LED for Each
Reset Button	External Front Panel and Internal on Relay
Warranty	Arc Flash Relay - 5 Years

External Digital Inputs

Trip (2)	Wired Inputs - 2 LEDs
Inhibit (2)	Wired Inputs - 2 LEDs
Reset (2)	Wired Inputs - 1 LED





Features:

- Hybrid array drives sub-cycle response without the heat dissipation of other systems.
- Lower temperature means a longer life, smaller enclosure and a lower cost to operate.
- Electronic control ensures transient and “in-rush free” switching.
- Redundant safety and disconnect features at both the component and system level.
- Active power monitoring provides infrastructure intelligence and precision control.

Monitor and Measure

Track power usage and quality at your most active locations

- Voltage and Current (Phase to Phase)
- Real Time & Peak: kW, kVA, kVAR, Power Factor
- Voltage and Current Harmonics (Phase to Phase)
- Peak harmonic events

No need for inconvenient and expensive on-site power audit

- Captures kVAR engaged and kVAR required
- Modular design allows for easy field kVAR upgrades

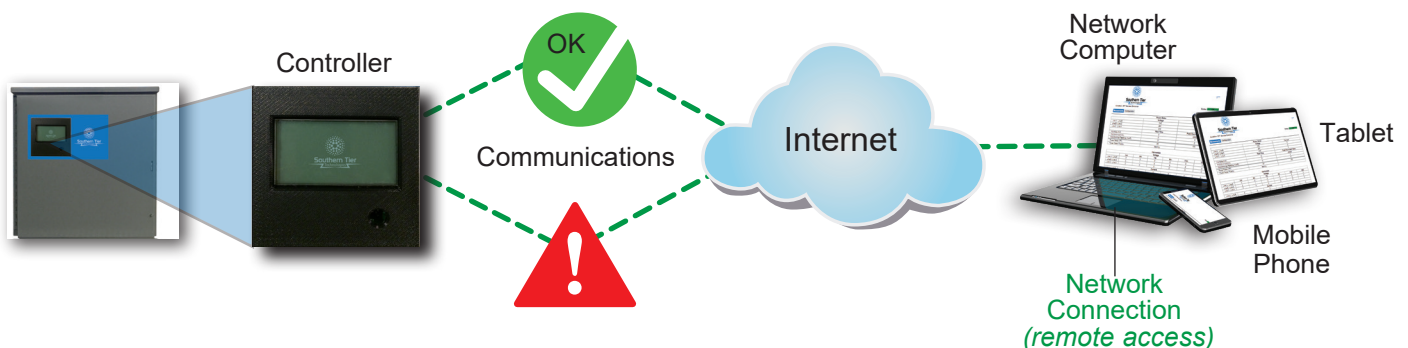
Quickly assess system health

- Monitors system level and component level; over current, over temp, component error or failure
- Receive remote alerts via text or log-on to view detailed status update
- Set system threshold, ID and alert status

The Tier 500 Dynamic Power Factor Correction unit combines “real-time” power analytics with a unique, microprocessor driven array to provide immediate reactive power compensation.

Traditional methods of power factor correction are often too slow for the environment modern technology creates. Dynamic loads require dynamic switching, real-time intelligence and immediate reactive compensation.

The Tier 500DPFC continuously evaluates your electrical system and engages the exact amount of power correction at the precise moment it’s needed. Its sub-cycle response means the system is fast enough to respond to any load type, including those that are random and dynamic in nature.



Hybrid Switching and Control

Sub-Cycle Speed and Zero Cross

- Reacts to any load condition or requirement
- Eliminates high in-rush currents and transients typical of electro-mechanical systems
- Address additional power related issues; flicker, voltage stabilization
- Reduce instantaneous, (peak) demand charges

Patent Pending Sequencer and Control System

- Extends the life of the PFC components and connected equipment
- Enables precision control and timing

Tuned PQ Circuitry

- Lower temperature than traditional systems
- Eliminate PQ concerns associated with PFC systems
- Lowest cost to operate



Why Install Power Factor Correction?

There's no easier way to manage reactive power consumption and reap the rewards of an improved electrical system. Immediately lower your utility bill, enhance your existing system capacity, improve on-site power quality and ultimately reduce your operation's overall carbon footprint.

Controller	
Display	LCD 128 x 64, LED backlit, menu driven
RJ-45 Port	Ethernet
Terminals (#24-14)	RS-485 communication
Communications	RS-485, MODBUS TCP/RTU, Ethernet, SNMP
Embedded Webpage	Standard
Measurements	Voltage, Current, kW, kVAR, kVA, Harmonics

General Technical Specifications	
Nominal Voltage	120 - 480 VAC
Nominal Frequency	50/60 Hz
Number of Phases	2-phase/3 wire, 3-phase/3 wire and 3-phase/4 wire
kVAR at Rated Voltage	12.5, 25, 50, 100
Power Switching	Thyristor
Response Time	< 1 cycle
Dynamic Compensation	< 1 cycle
Capacitor	Metallized polypropylene, aluminum can
Overvoltage	120% rated peak
Overcurrent	150% of IR including combined effects of harmonics, overvolt and capacitances, tolerances
Mount	Stud
Safety	Three, self-healing windings, Pressure sensitive disconnect, discharge resistor
Enclosure	Type 3R, flange mount 12 gauge steel - standard Others Available - contact factory
Dimensions	20"w x 24"h x 12"d (508 x 609.6 x 404.8 mm) Harmonic Rated: 16" Depth
Weight	110 lbs
Operating Temperature	0°C to 60°C continuous
Relative Humidity	0-95%, noncondensing
Operating Altitude	2000 m
Agency Listing	Tested to: UL 508A, cUL, Capacitors-IEC 831, UL 810
Standards	IEC60831, IEC 60439-3, IEC 60664-1/61326

Tier 460 Motor Surge Protection Device M3 Disconnect with Contactor



The Tier 460 Disconnect Motor Surge Protection Contactor Restart Device will protect a motor, or an entire system, from power quality events. It runs an onboard surge protection device in series to an onboard contactor restart. The contactor will disconnect the load at predetermined levels, and will reconnect the load at separate predetermined levels automatically. The onboard SPD remains online while the load is disconnected. This twofold level of protection greatly improves system defenses from power disruption damage.

Contactor: 30A, 60A, 90A Stock and Custom Upon Request

Connection: Disconnect

Surge Capacity: 50kA-150kA/Mode, 100kA-300kA/Phase

Features:

Surge

- Thermally Protected MOV
- Surge Levels Available
- 50 kA/Mode, 100kA/ Phase to 150 kA/Mode, 300kA/ Phase
- ANSI/UL 1449 4th Edition, CUL
- Sine Wave Tracking: Type 2
- Surge Impulse Rated and Tested

Monitoring & Control

- Monitor Under/Over voltage, Phase Loss, Imbalance
- Audible Alarm w/ disable switch, and LED indication
- Active Load Disconnect & Reset
- User Selectable Controls:
- +/- 5, 7.5, 10, 15, 20, 25% Over/ Under Voltage Trip Settings
- Auto restart with user selectable reset time. Includes: No delay, 5s, 10s, 30s, 1m, 5m, 10m, No restart

General Technical Specifications

General Technical Specifications	
Connection Type	Contactor is Series
Maximum Continuous Operating Voltage	120V, 150 VAC, 125%; 240V, 320 VAC; 277V, 320 VAC; 480V, 550 VAC; All Others 115%
Short Circuit Current Rating (SCCR)	200kAIC Surge; 22kAIC Contactor
Contactor Current Rating	30 Amp, 60 Amp, 90Amp (120V Supply Voltage) For higher rating, contact factory
Protection Modes	All Connected Modes: L-N, L-L, L-G, N-G
Operating Frequency Range	47 - 63 Hz
UL 1449 Location Type	Type 1 or Type 2
UL 1449 Nominal Discharge Current (In)	20 kA
Connection	Disconnect
Status Indication	Blue/Red LEDs, Form C, Audible Alarm w/ disable switch
Monitoring	Under Voltage/ Over Voltage + activation LED, Phase loss, Phase Imbalance
Enclosure	NEMA 4, 12, & 13 Rated (16 Gauge Steel)
50 Ohm EMI/RFI Attenuation	60 /40dB Max
Response Time	<0.5 nanoseconds
Operating Temperature	-40°C to +75°C
Operating Humidity	0% to 95% non-condensing
Weight	40lbs
50 - 150 kA/Mode Case Size	16.00" x 16.00" x 8.00"
50 - 150 kA/Mode Mounting	14.50" x 14.50"
Selectable Over/Under Voltage Trigger Levels	+/- 5%, 7.5%, 10%, 15%, 20%, 25%
Contactor Options for Auto Reset	Selectable resets: No Delay, 5s, 10s, 30s, 1m, 5m, 10 m, No Restart
Warranty	SPD: 10 years

Tier 460 Motor Surge Protection Device M3 Terminal Block with Contactor



The Tier 460 Terminal Block Motor Surge Protection Contactor Restart Device will protect a motor, or an entire system, from power quality events. It runs an onboard surge protection device in series to an onboard contactor restart. The contactor will disconnect the load at predetermined levels, and will reconnect the load at separate predetermined levels automatically. The onboard SPD remains online while the load is disconnected.

This twofold level of protection greatly improves system defenses from power disruption damage.

Contactor: 30A, 60A, 90A Stock and Custom Upon Request

Connection: Terminal Block

Surge Capacity: 50kA-150kA/Mode, 100kA-300kA/Phase

Features:

Surge

- Thermally Protected MOV
- Surge Levels Available
- 50 kA/Mode, 100kA/ Phase to 150 kA/Mode, 300kA/ Phase
- ANSI/UL 1449 4th Edition, CUL
- Sine Wave Tracking: Type 2
- Surge Impulse Rated and Tested

Monitoring & Control

- Monitor Under/Over voltage, Phase Loss, Imbalance
- Audible Alarm w/ disable switch, and LED indication
- Active Load Disconnect & Reset
- User Selectable Controls:
- +/- 5, 7.5, 10, 15, 20, 25% Over/ Under Voltage Trip Settings
- Auto restart with user selectable reset time. Includes: No delay, 5s, 10s, 30s, 1m, 5m, 10m, No restart

General Technical Specifications

General Technical Specifications	
Connection Type	Contactor is Series
Maximum Continuous Operating Voltage	120V, 150 VAC, 125%; 240V, 320 VAC; 277V, 320 VAC; 480V, 550 VAC; All Others 115%
Short Circuit Current Rating (SCCR)	200kAIC Surge; 22kAIC Contactor
Contactor Current Rating	30 Amp, 60 Amp, 90Amp (120V Supply Voltage) For higher rating, contact factory
Protection Modes	All Connected Modes: L-N, L-L, L-G, N-G
Operating Frequency Range	47 - 63 Hz
UL 1449 Location Type	Type 1 or Type 2
UL 1449 Nominal Discharge Current (In)	20 kA
Connection	Terminal Block
Status Indication	Blue/Red LEDs, Form C, Audible Alarm w/ disable switch
Monitoring	Under Voltage/ Over Voltage + activation LED, Phase loss, Phase Imbalance
Enclosure	NEMA 4, 12, & 13 Rated (16 Gauge Steel)
50 Ohm EMI/RFI Attenuation	60 /40dB Max
Response Time	<0.5 nanoseconds
Operating Temperature	-40°C to +75°C
Operating Humidity	0% to 95% non-condensing
Weight	40lbs
50 - 150 kA/Mode Case Size	16.00" x 16.00" x 8.00"
50 - 150 kA/Mode Mounting	14.50" x 14.50"
Selectable Over/Under Voltage Trigger Levels	+/- 5%, 7.5%, 10%, 15%, 20%, 25%
Contactor Options for Auto Reset	Selectable resets: No Delay, 5s, 10s, 30s, 1m, 5m, 10 m, No Restart
Warranty	SPD: 10 years

Tier 460 Motor Surge Protection Device M3 Disconnect with Shunt Trip Controller



The Tier 460 Disconnect Motor Surge Protection Shunt Trip Controller Device will protect a motor, or an entire system, from power quality events. It runs an onboard surge protection device in parallel with an onboard shunt trip controller. The shunt trip controller will send a signal, at predetermined levels, to a shunt trip breaker located on a panel, or at the system or motor, and force it to disconnect the load. Please note, shunt trips require a manual reset after a disconnection event.

The onboard SPD remains online while the load is disconnected. Available for 120V or 240V breakers.

Shunt Trip Supply Voltage: 24V, 120V, or 277V

Connection: Disconnect

Surge Capacity: 50kA-150kA/Mode, 100kA-300kA/Phase

Features:

Surge

- Thermally Protected MOV
- Surge Levels Available
- 50 kA/Mode, 100kA/ Phase to 150 kA/Mode, 300kA/ Phase
- ANSI/UL 1449 4th Edition, CUL
- Sine Wave Tracking: Type 2
- Surge Impulse Rated and Tested

Monitoring & Control

- Monitor Under/Over voltage, Phase Loss, Imbalance
- Audible Alarm w/ disable switch, and LED indication
- Active Load Disconnect & Reset
- User Selectable Controls: +/- 5, 7.5, 10, 15, 20, 25% Over/Under Voltage Trip Settings
- Form C Relays
- System Enable/Disable Switch

General Technical Specifications

General Technical Specifications	
Connection Type	Shunt Trip is Parallel
Maximum Continuous Operating Voltage	120V, 150 VAC, 125%; 240V, 320 VAC; 277V, 320 VAC; 480V, 550 VAC; All Others 115%
Short Circuit Current Rating (SCCR)	200kAIC Surge;
Shunt Trip Breaker Voltage Levels	120V or 240V
Shunt Trip Separate Supply Voltage	24V, 120V, or 277V
Protection Modes	All Connected Modes: L-N, L-L, L-G, N-G
Operating Frequency Range	47 - 63 Hz
UL 1449 Location Type	Type 1 or Type 2
UL 1449 Nominal Discharge Current (In)	20 kA
Connection	Disconnect
Status Indication	Blue/Red LEDs, Form C, Audible Alarm w/ disable switch
Monitoring	Under Voltage/ Over Voltage + activation LED, Phase loss, Phase Imbalance
Enclosure	NEMA 4, 12, & 13 Rated (16 Gauge Steel)
50 Ohm EMI/RFI Attenuation	60 /40dB Max
Response Time	<0.5 nanoseconds
Operating Temperature	-40°C to +75°C
Operating Humidity	0% to 95% non-condensing
Weight	40lbs
50 - 150 kA/Mode Case Size	16.00" x 16.00" x 8.00"
50 - 150 kA/Mode Mounting	14.50" x 14.50"
Selectable Over/Under Voltage Trigger Levels	+/- 5%, 7.5%, 10%, 15%, 20%, 25%
Warranty	SPD: 10 years

Tier 460 Motor Surge Protection Device M3 Terminal Block with Shunt Trip Controller



The Tier 460 Terminal Block Motor Surge Protection Shunt Trip Controller Device will protect a motor, or an entire system, from power quality events. It runs an onboard surge protection device in parallel with an onboard shunt trip controller. The shunt trip controller will send a signal, at predetermined levels, to a shunt trip breaker located on a panel, or at the system or motor, and force it to disconnect the load. Please note, shunt trips require a manual reset after a disconnection event.

The onboard SPD remains online while the load is disconnected. Available for 120V or 240V breakers.

Shunt Trip Supply Voltage: 24V, 120V, or 277V

Connection: Terminal Block

Surge Capacity: 50kA-150kA/Mode, 100kA-300kA/Phase

Features:

Surge

- Thermally Protected MOV
- Surge Levels Available
- 50 kA/Mode, 100kA/ Phase to 150 kA/Mode, 300kA/ Phase
- ANSI/UL 1449 4th Edition, CUL
- Sine Wave Tracking: Type 2
- Surge Impulse Rated and Tested

Monitoring & Control

- Monitor Under/Over voltage, Phase Loss, Imbalance
- Audible Alarm w/ disable switch, and LED indication
- Active Load Disconnect & Reset
- User Selectable Controls: +/- 5, 7.5, 10, 15, 20, 25% Over/Under Voltage Trip Settings
- Form C Relays
- System Enable/Disable Switch

General Technical Specifications

General Technical Specifications	
Connection Type	Shunt Trip is Parallel
Maximum Continuous Operating Voltage	120V, 150 VAC, 125%; 240V, 320 VAC; 277V, 320 VAC; 480V, 550 VAC; All Others 115%
Short Circuit Current Rating (SCCR)	200kAIC Surge;
Shunt Trip Breaker Voltage Levels	120V or 240V
Shunt Trip Separate Supply Voltage	24V, 120V, or 277V
Protection Modes	All Connected Modes: L-N, L-L, L-G, N-G
Operating Frequency Range	47 - 63 Hz
UL 1449 Location Type	Type 1 or Type 2
UL 1449 Nominal Discharge Current (In)	20 kA
Connection	Terminal Block
Status Indication	Blue/Red LEDs, Form C, Audible Alarm w/ disable switch
Monitoring	Under Voltage/ Over Voltage + activation LED, Phase loss, Phase Imbalance
Enclosure	NEMA 4, 12, & 13 Rated (16 Gauge Steel)
50 Ohm EMI/RFI Attenuation	60 /40dB Max
Response Time	<0.5 nanoseconds
Operating Temperature	-40°C to +75°C
Operating Humidity	0% to 95% non-condensing
Weight	40lbs
50 - 150 kA/Mode Case Size	16.00" x 16.00" x 8.00"
50 - 150 kA/Mode Mounting	14.50" x 14.50"
Selectable Over/Under Voltage Trigger Levels	+/- 5%, 7.5%, 10%, 15%, 20%, 25%
Warranty	SPD: 10 years

Tier 460 Motor Surge Protection Device M2 25kA SPD Terminal Block with 30 or 60 Amp Contactor



The **460 M2 25kA Terminal Block** comes with either a 30 or 60 Amp contactor. It has a smaller enclosure than our M3 460 units, and houses any voltage and phase configuration of our P2 SPDs. When you don't need a higher surge capacity rating, take a look at this budget friendly alternative.

Contactor: 30A or 60A

Connection: Terminal Block

Surge Capacity: 25kA/Mode, 50kA/Phase

Features:

Surge

- Thermally Protected MOV
- Surge Levels Available
- 25 kA/Mode, 50kA/ Phase
- ANSI/UL 1449 4th Edition, CUL
- Sine Wave Tracking: Type 2
- Surge Impulse Rated and Tested

Monitoring & Control

- Monitor Under/Over voltage, Phase Loss, Imbalance
- Audible Alarm w/ disable switch, and LED indication
- Active Load Disconnect & Reset
- User Selectable Controls:
- +/- 5, 7.5, 10, 15, 20, 25% Over/Under Voltage Trip Settings
- Auto restart with user selectable reset time. Includes: No delay, 5s, 10s, 30s, 1m, 5m, 10m, No restart

General Technical Specifications

Connection Type	Series
Maximum Continuous Operating Voltage	120V, 150 VAC, 125%; 240V, 320 VAC; 277V, 320 VAC; 480V, 550 VAC; All Others 115%
Short Circuit Current Rating (SCCR)	200kAIC Surge; 22kAIC Contactor
Contactor Current Rating	30 Amp or 60 Amp (120V Supply)
Protection Modes	All Connected Modes: L-N, L-L, L-G, N-G
Operating Frequency Range	47 - 63 Hz
UL 1449 Location Type	Type 1 or Type 2
UL 1449 Nominal Discharge Current (In)	20 kA
Connection	Terminal Block
Status Indication	Blue/Red LEDs, Form C, Audible Alarm w/ disable switch
Monitoring	Under Voltage/ Overvoltage + activation LED, Phase loss, Phase Imbalance
Enclosure	NEMA 4, 12, & 13 Rated (Steel)
50 Ohm EMI/RFI Attenuation	60 /40dB Max
Response Time	<0.5 nanoseconds
Operating Temperature	-40°C to +75°C
Operating Humidity	0% to 95% non-condensing
Size/Weight	(Height x Width x Depth)
25 kA/Mode Case Size	12.00" x 12.00" x 6.269", 22lbs
25 kA/Mode Mount Footprint	13.500" x 13.000" x 6.375", 22lbs
Selectable Over/Under Voltage Trigger Levels	+/- 5%, 7.5%, 10%, 15%, 20%, 25%
Contactor Options for Auto Reset	Selectable resets: No Delay, 5s, 10s, 30s, 1m, 5m, 10 m, No Restart
Warranty	SPD: 10 years



The **460 M2 No Surge Terminal Block** comes with either a 30 or 60 Amp contactor. It has a smaller enclosure than our M3 460 units, and but large enough to house our advanced control board, and contactors with a current rating over 30 Amps. When you need a higher contactor current rating, and already have a surge protection solution, this no surge contactor only unit will suit your needs.

Contactor: 30A or 60A
Connection: Terminal Block
Surge Capacity: None

Features:

Surge

- There is no Surge Protective Device in this configuration

Monitoring & Control

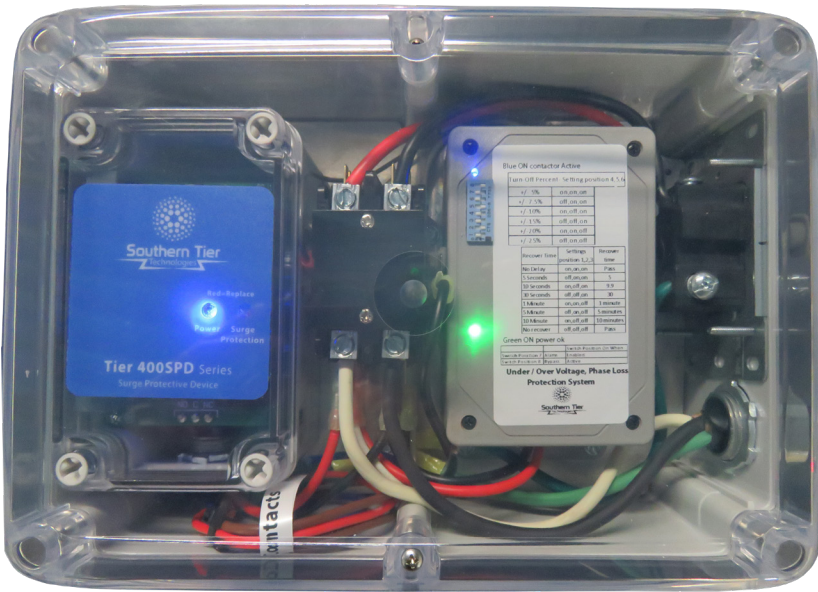
- Monitor Under/Over voltage, Phase Loss, Imbalance
- Audible Alarm w/ disable switch
- Green Power LED
- Blue Active System LED
- Active Load Disconnect & Reset
- User Selectable Controls:
 - +/- 5, 7.5, 10, 15, 20, 25% Over/Under Voltage Trip Settings
 - Auto restart with user selectable reset time. Includes: No delay, 5s, 10s, 30s, 1m, 5m, 10m, No restart

General Technical Specifications

General Technical Specifications	
Connection Type	Series
Surge Short Circuit Current Rating (SCCR)	22kAIC
Contactor Current Rating	30 or 60Amp (120V Supply Voltage)
Protection Modes	All Lines and Neutral
Operating Frequency Range	60 Hz
Connection	Terminal Block
Status Indication	Green Power LED, Blue Active System LED, Audible Alarm w/disable switch
Monitoring	Under/Over Voltage, Phase Loss, Phase Imbalance
Enclosure	NEMA 4, 12, & 13 Indoor/Outdoor Rated (Steel)
Operating Temperature	-40°C to +75°C
Operating Humidity	0% to 95% non-condensing
Weight	20.6 lbs
Contactor Only Case Size	12.00" x 12.00" x 6.269"
Contactor Only Case Size w/ Mount	13.500" x 13.000" x 6.375"
Selectable Over/Under Voltage Trigger Levels	+/- 5%, 7.5%, 10%, 15%, 20%, 25%
Contactor Options for Auto Reset	Selectable resets: No Delay, 5s, 10s, 30s, 1m, 5m, 10 m, No Restart
Warranty	10 years



Tier 460 Motor Surge Protection Device P5 Terminal Block 25kA SPD with 30 Amp Contactor



The 460 P5 25kA Terminal Block Receptacle with 30 Amp Contactor is our smallest motor surge protection unit, and houses any voltage and phase configuration of our P2 SPDs.

When size is a factor, and you don't need a higher surge capacity or contactor current rating, this is the ideal selection for a surge and motor protection package.

Contactor: 30A (120V supply)

Connection: Terminal Block

Surge Capacity: 25kA/Mode, 50kA/Phase

Features:

Surge

- Thermally Protected MOV
- Surge Levels Available
- 25 kA/Mode, 50kA/ Phase
- ANSI/UL 1449 4th Edition, CUL
- Sine Wave Tracking: Type 2
- Surge Impulse Rated and Tested
- Blue/Red LED Indication

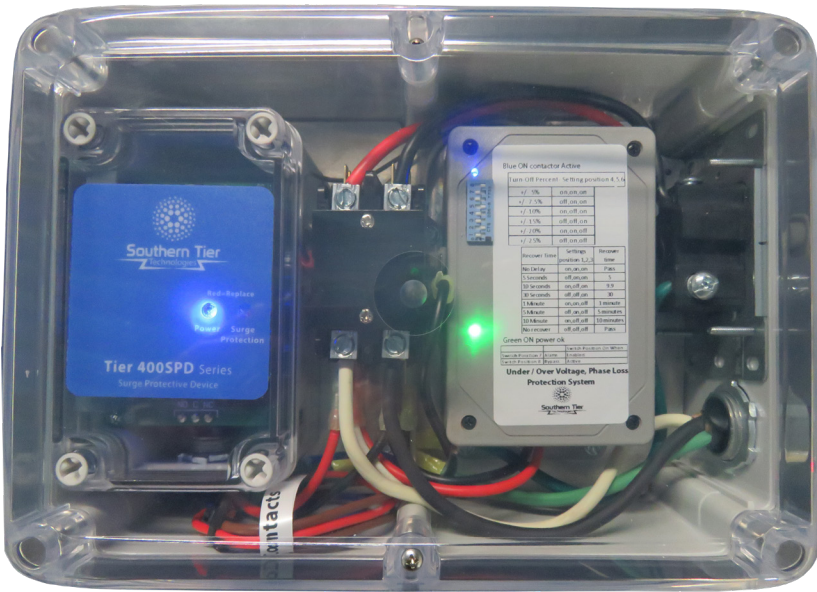
Monitoring & Control

- Monitor Under/Over Voltage, Phase Loss, Imbalance
- Audible Alarm w/ disable switch
- Green Power LED
- Blue Active System LED
- Active Load Disconnect & Reset
- User Selectable Controls:
- +/- 5, 7.5, 10, 15, 20, 25% Over/Under Voltage Trip Settings
- Auto restart with user selectable reset time. Includes: No delay, 5s, 10s, 30s, 1m, 5m, 10m, No restart

General Technical Specifications

Connection Type	Series
Maximum Continuous Operating Voltage	120V, 150 VAC, 125%; 240V, 320 VAC; 277V, 320 VAC; 480V, 550 VAC; All Others 115%
Short Circuit Current Rating (SCCR)	200kAIC Surge; 22kAIC Contactor
Contactor Current Rating	30 Amp
Protection Modes	All Connected Modes: L-N, L-L, L-G, N-G
Operating Frequency Range	47 - 63 Hz
UL 1449 Location Type	Type 1 or Type 2
UL 1449 Nominal Discharge Current (In)	20 kA
Connection	Terminal Block
Status Indication	Blue/Red LEDs, Form C, Audible Alarm w/ disable switch, Green Power LED
Monitoring	Under Voltage/ Overvoltage + Blue Activation LED, Phase loss, Phase Imbalance
Enclosure	NEMA 4X Rated (Polycarbonate)
50 Ohm EMI/RFI Attenuation	60 /40dB Max
Response Time	<0.5 nanoseconds
Operating Temperature	-40°C to +75°C
Operating Humidity	0% to 95% non-condensing
25 kA/Mode Case Size	8.965" x 10.00" x 4.000", 6.4 lbs
25 kA/Mode Mount Footprint	8.965" x 11.25" x 4.000", 6.4 lbs
Selectable Over/Under Voltage Trigger Levels	+/- 5%, 7.5%, 10%, 15%, 20%, 25%
Contactor Options for Auto Reset	Selectable resets: No Delay, 5s, 10s, 30s, 1m, 5m, 10 m, No Restart
Warranty	SPD: 10 years

Tier 460 Motor Surge Protection Device P5 Line-Cord 25kA SPD with 30 Amp Contactor



Features:

Surge

- Thermally Protected MOV
- Surge Levels Available
- 25 kA/Mode, 50kA/ Phase
- ANSI/UL 1449 4th Edition, CUL
- Sine Wave Tracking: Type 2
- Surge Impulse Rated and Tested
- Blue/Red LED Indication

Monitoring & Control

- Monitor Under/Over Voltage, Phase Loss, Imbalance
- Audible Alarm w/ disable switch
- Green Power LED
- Blue Active System LED
- Active Load Disconnect & Reset
- User Selectable Controls:
- +/- 5, 7.5, 10, 15, 20, 25% Over/Under Voltage Trip Settings
- Auto restart with user selectable reset time.
Includes: No delay, 5s, 10s, 30s, 1m, 5m, 10m, No restart

The **460 P5 25kA Line-Cord Receptacle** comes with a 30 Amp contactor. This is our smallest motor surge protection unit, and houses any voltage and phase configuration of our P2 SPDs. When size is a factor, and you don't need a higher surge capacity or contactor current rating, this is the ideal selection for a surge and motor protection package.

Contactor: 30A (120V supply)

Connection: Line-Cord Receptacle

Surge Capacity: 25kA/Mode, 50kA/Phase

General Technical Specifications

General Technical Specifications	
Connection Type	Series
Maximum Continuous Operating Voltage	120V, 150 VAC, 125%; 240V, 320 VAC; 277V, 320 VAC; 480V, 550 VAC; All Others 115%
Short Circuit Current Rating (SCCR)	200kAIC Surge; 22kAIC Contactor
Contactor Current Rating	30 Amp
Protection Modes	All Connected Modes: L-N, L-L, L-G, N-G
Operating Frequency Range	47 - 63 Hz
UL 1449 Location Type	Type 1 or Type 2
UL 1449 Nominal Discharge Current (In)	20 kA
Connection	Line Cord Receptacle
Status Indication	Blue/Red LEDs, Form C, Audible Alarm w/ disable switch, Green Power LED
Monitoring	Under Voltage/ Overvoltage + Blue Activation LED, Phase loss, Phase Imbalance
Enclosure	NEMA 4X Rated (Polycarbonate)
50 Ohm EMI/RFI Attenuation	60 /40dB Max
Response Time	<0.5 nanoseconds
Operating Temperature	-40°C to +75°C
Operating Humidity	0% to 95% non-condensing
25 kA/Mode Case Size	8.965" x 10.00" x 4.000", 6.4 lbs
25 kA/Mode Mount Footprint	8.965" x 11.25" x 4.000", 6.4 lbs
Selectable Over/Under Voltage Trigger Levels	+/- 5%, 7.5%, 10%, 15%, 20%, 25%
Contactor Options for Auto Reset	Selectable resets: No Delay, 5s, 10s, 30s, 1m, 5m, 10 m, No Restart
Warranty	SPD: 10 years



Tier 460 Motor Surge Protection Device P5 Terminal Block 25kA SPD with Shunt Trip Controller



The **460 P5 25kA Terminal Block Shunt Trip** is our smallest motor surge protection unit, and houses any voltage and phase configuration of our P2 SPDs. When size is a factor, and you don't need a higher surge capacity, this is the ideal selection for a surge and motor protection package. Available for 120V or 240V breakers. **Shunt Trip Supply Voltage: 24V, 120V, or 277V**
Connection: Terminal Block
Surge Capacity: 25kA/Mode, 50kA/Phase

Features:

Surge

- Thermally Protected MOV
- Surge Levels Available
- 25 kA/Mode, 50kA/ Phase
- ANSI/UL 1449 4th Edition, CUL
- Sine Wave Tracking: Type 2
- Surge Impulse Rated and Tested
- Blue/Red LED Indication

Monitoring & Control

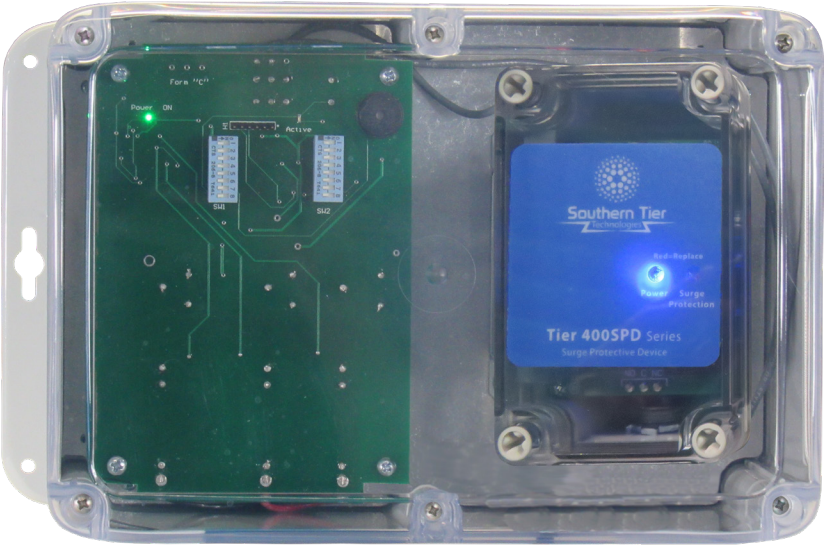
- Monitor Under/Over Voltage, Phase Loss, Imbalance
- Audible Alarm w/ disable switch
- Green Power LED
- Blue Active System LED
- Active Load Disconnect & Reset
- User Selectable Controls:
- +/- 5, 7.5, 10, 15, 20, 25% Over/Under Voltage Trip Settings

General Technical Specifications

Connection Type	Parallel
Maximum Continuous Operating Voltage	120V, 150 VAC, 125%; 240V, 320 VAC; 277V, 320 VAC; 480V, 550 VAC; All Others 115%
Short Circuit Current Rating (SCCR)	200kAIC Surge; 22kAIC Contactor
Shunt Trip Breaker Voltage Levels	120V or 240V
Shunt Trip Separate Supply Voltage	24V, 120V, or 277V
Protection Modes	All Connected Modes: L-N, L-L, L-G, N-G
Operating Frequency Range	47 - 63 Hz
UL 1449 Location Type	Type 1 or Type 2
UL 1449 Nominal Discharge Current (In)	20 kA
Connection	Terminal Block
Status Indication	Blue/Red LEDs, Form C, Audible Alarm w/ disable switch, Green Power LED,
Monitoring	Under Voltage/ Overvoltage + Blue Activation LED, Phase loss, Phase Imbalance
Enclosure	NEMA 4X Rated (Polycarbonate)
50 Ohm EMI/RFI Attenuation	60 /40dB Max
Response Time	<0.5 nanoseconds
Operating Temperature	-40°C to +75°C
Operating Humidity	0% to 95% non-condensing
25 kA/Mode Case Size	8.965" x 10.00" x 4.000", 6.4 lbs
25 kA/Mode Mount Footprint	8.965" x 11.25" x 4.000", 6.4 lbs
Selectable Over/Under Voltage Trigger Levels	+/- 5%, 7.5%, 10%, 15%, 20%, 25%
Warranty	SPD: 10 years



Tier 460 Motor Surge Protection Device P5 Line-Cord 25kA SPD with Shunt Trip Controller



The **460 P5 25kA Line-Cord Receptacle Shunt Trip** is our smallest motor surge protection unit, and houses any voltage and phase configuration of our P2 SPDs. When size is a factor, and you don't need a higher surge capacity, this is the ideal selection for a surge and motor protection package. Available for 120V or 240V breakers. **Shunt Trip Supply Voltage: 24V, 120V, or 277V**
Connection: Line-Cord Receptacle
Surge Capacity: 25kA/Mode, 50kA/Phase

Features:

Surge

- Thermally Protected MOV
- Surge Levels Available
- 25 kA/Mode, 50kA/ Phase
- ANSI/UL 1449 4th Edition, CUL
- Sine Wave Tracking: Type 2
- Surge Impulse Rated and Tested
- Blue/Red LED Indication

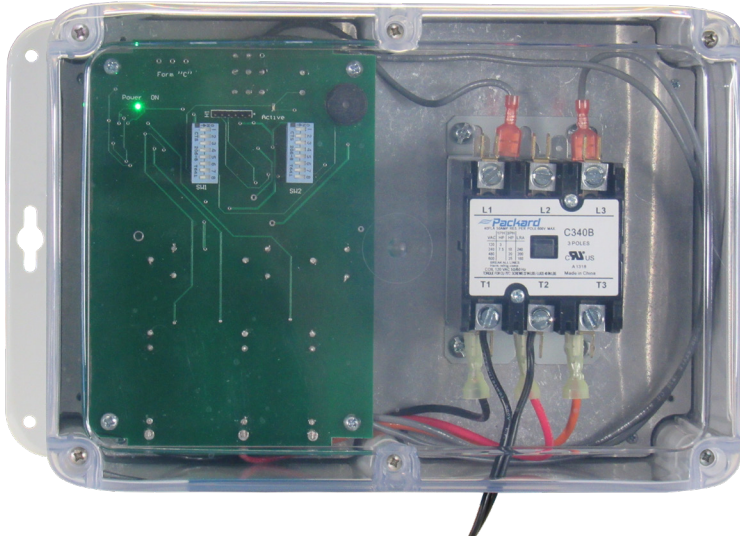
Monitoring & Control

- Monitor Under/Over Voltage, Phase Loss, Imbalance
- Audible Alarm w/ disable switch
- Green Power LED
- Blue Active System LED
- Active Load Disconnect & Reset
- User Selectable Controls:
- +/- 5, 7.5, 10, 15, 20, 25% Over/Under Voltage Trip Settings

General Technical Specifications

Connection Type	Parallel
Maximum Continuous Operating Voltage	120V, 150 VAC, 125%; 240V, 320 VAC; 277V, 320 VAC; 480V, 550 VAC; All Others 115%
Short Circuit Current Rating (SCCR)	200kAIC Surge; 22kAIC Contactor
Shunt Trip Breaker Voltage Levels	120V or 240V
Shunt Trip Separate Supply Voltage	24V, 120V, or 277V
Protection Modes	All Connected Modes: L-N, L-L, L-G, N-G
Operating Frequency Range	47 - 63 Hz
UL 1449 Location Type	Type 1 or Type 2
UL 1449 Nominal Discharge Current (In)	20 kA
Connection	Line Cord Receptacle
Status Indication	Blue/Red LEDs, Form C, Audible Alarm w/ disable switch, Green Power LED,
Monitoring	Under Voltage/ Overvoltage + Blue Activation LED, Phase loss, Phase Imbalance
Enclosure	NEMA 4X Rated (Polycarbonate)
50 Ohm EMI/RFI Attenuation	60 /40dB Max
Response Time	<0.5 nanoseconds
Operating Temperature	-40°C to +75°C
Operating Humidity	0% to 95% non-condensing
25 kA/Mode Case Size	8.965" x 10.00" x 4.000", 6.4 lbs
25 kA/Mode Mount Footprint	8.965" x 11.25" x 4.000", 6.4 lbs
Selectable Over/Under Voltage Trigger Levels	+/- 5%, 7.5%, 10%, 15%, 20%, 25%
Warranty	SPD: 10 years

Tier 460 Motor Surge Protection Device P5 No SPD Terminal Block with 30 Amp Contactor



Features:

Surge

- There is no Surge Protective Device in this configuration

Monitoring & Control

- Monitor Under/Over Voltage, Phase Loss, Imbalance
- Audible Alarm w/ disable switch
- Green Power LED
- Blue Active System LED
- Active Load Disconnect & Reset
- User Selectable Controls:
 - +/- 5, 7.5, 10, 15, 20, 25% Over/Under Voltage Trip Settings
 - Auto restart with user selectable reset time. Includes: No delay, 5s, 10s, 30s, 1m, 5m, 10m, No restart

The 460 P5 Terminal Block 30 Amp Contactor Only is our smallest motor protection unit. This unit does not have an onboard SPD.

If you already have a surge protection solution in place, and need a 30 Amp contactor in a small and easy to install package, this is the ideal selection.

Contactor: 30A (120V Supply)

Connection: Terminal Block

Surge Capacity: None

General Technical Specifications

Connection Type	Series
Surge Short Circuit Current Rating (SCCR)	22kAIC
Contactor Current Rating	30 Amp
Protection Modes	All Lines and Neutral
Operating Frequency Range	60 Hz
Connection	Terminal Block
Status Indication	Green Power LED, Blue Active System LED, Audible Alarm w/disable switch
Monitoring	Under/Over Voltage, Phase Loss, Phase Imbalance
Enclosure	NEMA 4X Indoor/Outdoor Rated (Polycarbonate)
Operating Temperature	-40°C to +75°C
Operating Humidity	0% to 95% non-condensing
Weight	5lbs
Contactor Only Case Size	8.965" x 10.00" x 4.000"
Contactor Only Case Size w/ Mount	8.965" x 11.25" x 4.000"
Selectable Over/Under Voltage Trigger Levels	+/- 5%, 7.5%, 10%, 15%, 20%, 25%
Contactor Options for Auto Reset	Selectable resets: No Delay, 5s, 10s, 30s, 1m, 5m, 10 m, No Restart
Warranty	10 years



Tier 450 Surge Protection Device M3 Modular Disconnect SPD



The Tier 450 M3 Disconnect SPD is available in a range of high surge capacity levels, and multiple voltage and phase configurations. With its NEMA 4, 12, & 13 rated steel enclosure it is suitable for any environment or location. Its multiple MOV technology allows it to continue to operate after a module failure, under reduced protection, until a repair or replacement can be made (This is covered under our warranty). These features makes this SPD an ideal choice for any business that relies on microprocessor driven equipment. These are modular units and can be configured for higher surge capacity ratings.

Connection: Disconnect

Surge Capacity:

200kA/Mode-300kA/Mode - Upgraded M3 Enclosure

Features:

- Thermally Protected MOVs
- Surge Current Levels:
 - 200 kA/Mode, 400 kA/Phase
 - 250 kA/Mode, 500 kA/Phase
 - 300 kA/Mode, 600 kA/Phase
- ANSI/UL 1449 4th Edition, CUL
- Short Circuit Rating: 200 kAIC
- Sine Wave Tracking: UL Type 2
- Surge Impulse Rated and Tested
- Lifecycle tested up to 12,000 impulses per mode
- NEMA 4,12, &13 Enclosure
- Audible Alarm
- Visual Diagnostics - Dual color LED status indication, Form C Relays, Surge Counter
- Disconnect
- Warranty: 10 Years

General Technical Specifications

General Technical Specifications	
Connection Type	Parallel
Maximum Continuous Operating Voltage	120V, 150 VAC (125%); 240V, 320 VAC; 277V, 320 VAC; 480V, 550 VAC; All Others 115%
Short Circuit Current Rating (SCCR)	200kAIC
Protection Modes	All Connected Modes: L-N, L-L, L-G, N-G
Operating Frequency Range	47 - 63 Hz
UL 1449 Location Type	Type 2 or Type 1
UL 1449 Nominal Discharge Current (In)	20kA
Connection	Disconnect
Status Indication	Blue/Red LEDs, Form C Relay, Surge Counter, Audible Alarm
Enclosure	NEMA 4, 12, &13 Rated Steel Enclosure
50Ohm EMI/RFI Attenuation(Type 2 only)	60 /40dB Max
Response Time	<0.5 nanoseconds
Operating Temperature	-40°C to +75°C
Operating Humidity	0% to 95% non-condensing
Weight: Modular M3	34.70 lbs
Size: Modular M3 NEMA 4 (Steel) 200kA-300kA/Mode, 400kA-600kA/Phase	16.00" x 16.00" x 8.80" (H x W x D)
Warranty	10 Years



Tier 450 Surge Protection Device M3 Modular Terminal Block SPD



The Tier 450 M3 Terminal Block SPD is available in a range of high surge capacity levels, and multiple voltage and phase configurations. With its NEMA 4, 12, & 13 rated steel enclosure it is suitable for any environment or location. Its multiple MOV technology allows it to continue to operate after a module failure, under reduced protection, until a repair or replacement can be made (This is covered under our warranty). These features makes this SPD an ideal choice for any business that relies on microprocessor driven equipment. These are modular units and can be configured for higher surge capacity ratings.

Connection: Terminal Block

Surge Capacity:

200kA/Mode-300kA/Mode - Upgraded M3 Enclosure

Features:

- Thermally Protected MOVs
- Surge Current Levels:
 - 200 kA/Mode, 400 kA/Phase
 - 250 kA/Mode, 500 kA/Phase
 - 300 kA/Mode, 600 kA/Phase
- ANSI/UL 1449 4th Edition, CUL
- Short Circuit Rating: 200 kAIC
- Sine Wave Tracking: UL Type 2
- Surge Impulse Rated and Tested
- Lifecycle tested up to 12,000 impulses per mode
- NEMA 4,12, &13 Enclosure
- Audible Alarm
- Visual Diagnostics - Dual color LED status indication, Form C Relays, Surge Counter
- Terminal Block Connection
- Warranty: 10 Years

General Technical Specifications

General Technical Specifications	
Connection Type	Parallel
Maximum Continuous Operating Voltage	120V, 150 VAC (125%); 240V, 320 VAC; 277V, 320 VAC; 480V, 550 VAC; All Others 115%
Short Circuit Current Rating (SCCR)	200kAIC
Protection Modes	All Connected Modes: L-N, L-L, L-G, N-G
Operating Frequency Range	47 - 63 Hz
UL 1449 Location Type	Type 2 or Type 1
UL 1449 Nominal Discharge Current (In)	20kA
Connection	Terminal Block
Status Indication	Blue/Red LEDs, Form C Relay, Surge Counter, Audible Alarm
Enclosure	NEMA 4, 12, & 13 Rated Steel Enclosure
50Ohm EMI/RFI Attenuation(Type 2 only)	60 /40dB Max
Response Time	<0.5 nanoseconds
Operating Temperature	-40°C to +75°C
Operating Humidity	0% to 95% non-condensing
Weight: Modular M3	34.00 lbs
Size: Modular M3 NEMA 4 (Steel) 200kA-300kA/Mode, 400kA-600kA/Phase	16.00" x 16.00" x 8.80" (H x W x D)
Warranty	10 Years



Tier 450 Surge Protection Device M2 Modular Disconnect SPD



The Tier 450 M2 Disconnect SPD is available in a wide range of surge capacity levels, and voltage and phase configurations. With its NEMA 4, 12, & 13 rated steel enclosure it is suitable for any environment or location. Its multiple MOV technology allows it to continue to operate after a module failure, under reduced protection, until a repair or replacement can be made (This is covered under our warranty). These features makes this SPD an ideal choice for any business that relies on microprocessor driven equipment. These are modular units and can be easily replaced or upgraded.

Connection: Disconnect

Surge Capacity:

50kA/Mode-150kA/Mode - Standard M2 Enclosure

Features:

- Thermally Protected MOVs
- Surge Current Levels:
 - 50 kA/Mode, 100 kA/Phase
 - 75 kA/Mode, 150 kA/Phase
 - 100 kA/Mode, 200 kA/Phase
 - 125 kA/Mode, 250 kA/Phase
 - 150 kA/Mode, 300 kA/ Phase
- ANSI/UL 1449 4th Edition, CUL
- Short Circuit Rating: 200 kAIC
- Sine Wave Tracking: UL Type 2
- Surge Impulse Rated and Tested
- Lifecycle tested up to 12,000 impulses per mode
- NEMA 4,12, &13 Enclosure
- Audible Alarm
- Visual Diagnostics - Dual color LED status indication, Form C Relays, Surge Counter
- Disconnect
- Warranty: 10 Years

General Technical Specifications

General Technical Specifications	
Connection Type	Parallel
Maximum Continuous Operating Voltage	120V, 150 VAC (125%); 240V, 320 VAC; 277V, 320 VAC; 480V, 550 VAC; All Others 115%
Short Circuit Current Rating (SCCR)	200kAIC
Protection Modes	All Connected Modes: L-N, L-L, L-G, N-G
Operating Frequency Range	47 - 63 Hz
UL 1449 Location Type	Type 2 or Type 1
UL 1449 Nominal Discharge Current (In)	20kA
Connection	Disconnect
Status Indication	Blue/Red LEDs, Form C Relay, Surge Counter, Audible Alarm
Enclosure	NEMA 4, 12, &13 Rated Steel Enclosure
50Ohm EMI/RFI Attenuation(Type 2 only)	60 /40dB Max
Response Time	<0.5 nanoseconds
Operating Temperature	-40°C to +75°C
Operating Humidity	0% to 95% non-condensing
Weight: Modular M2	21.00 lbs
Size: Modular M2 NEMA 4 (Steel) 50kA-150kA / Mode, 100kA-300kA/Phase	13.50" x 13.00" x 6.375" (H x W x D)
Warranty	10 Years

Tier 450 Surge Protection Device M2 Modular Terminal Block SPD



The **Tier 450 M2 Terminal Block SPD** is available in a wide range of surge capacity levels, and voltage and phase configurations. With its NEMA 4, 12, & 13 rated steel enclosure it is suitable for any environment or location. Its multiple MOV technology allows it to continue to operate after a module failure, under reduced protection, until a repair or replacement can be made (This is covered under our warranty). These features makes this SPD an ideal choice for any business that relies on microprocessor driven equipment. These are modular units and can be easily replaced or upgraded.

Connection: Terminal Block

Surge Capacity:

50kA/Mode-150kA/Mode - Standard M2 Enclosure

Features:

- Thermally Protected MOVs
- Surge Current Levels:
 - 50 kA/Mode, 100 kA/Phase
 - 75 kA/Mode, 150 kA/Phase
 - 100 kA/Mode, 200 kA/Phase
 - 125 kA/Mode, 250 kA/Phase
 - 150 kA/Mode, 300 kA/ Phase
- Surge Impulse Rated and Tested
- ANSI/UL 1449 4th Edition, CUL
- Short Circuit Rating: 200 kAIC
- Sine Wave Tracking: UL Type 2
- Lifecycle tested up to 12,000 impulses per mode
- NEMA 4,12, &13 Enclosure
- Audible Alarm
- Visual Diagnostics - Dual color LED status indication, Form C Relays, Surge Counter
- Terminal Block Connection
- Warranty: 10 Years

General Technical Specifications

General Technical Specifications	
Connection Type	Parallel
Maximum Continuous Operating Voltage	120V, 150 VAC (125%); 240V, 320 VAC; 277V, 320 VAC; 480V, 550 VAC; All Others 115%
Short Circuit Current Rating (SCCR)	200kAIC
Protection Modes	All Connected Modes: L-N, L-L, L-G, N-G
Operating Frequency Range	47 - 63 Hz
UL 1449 Location Type	Type 2 or Type 1
UL 1449 Nominal Discharge Current (In)	20kA
Connection	Terminal Block
Status Indication	Blue/Red LEDs, Form C Relay, Surge Counter, Audible Alarm
Enclosure	NEMA 4, 12, &13 Rated Steel Enclosure
50 Ohm EMI/RFI Attenuation(Type 2 only)	60 /40dB Max
Response Time	<0.5 nanoseconds
Operating Temperature	-40°C to +75°C
Operating Humidity	0% to 95% non-condensing
Weight: Modular M2	20.30 lbs
Size: Modular M2 NEMA 4 (Steel) 50kA-150kA / Mode, 100kA-300kA/Phase	13.50" x 13.00" x 6.375" (H x W x D)
Warranty	10 Years



Tier 450 Surge Protection Device M1 Non-Modular Wire Lead SPD



Features:

- Thermally Protected MOVs
- Surge Current Levels:
 - 50 kA/Mode, 100 kA/Phase
 - 75 kA/Mode, 150 kA/Phase
 - 100 kA/Mode, 200 kA/Phase
 - 125 kA/Mode, 250 kA/Phase
 - 150 kA/Mode, 300 kA/ Phase
- ANSI/UL 1449 4th Edition, CUL
- Short Circuit Rating: 200 kAIC
- Sine Wave Tracking: UL Type 2
- Surge Impulse Rated and Tested
- NEMA 4,12, &13 Enclosure
- Audible Alarm
- Visual Diagnostics - Dual color LED status indication, Form C Relays, Surge Counter
- 5ft Wire Lead
- Warranty: 10 Years

The **Tier 450 M1 SPD** is available in a wide range of surge capacity levels, and voltage and phase configurations. With its NEMA 4, 12, & 13 rated steel enclosure, with a liquid tight connector, it is suitable for any environment or location. Its multiple MOV technology allows it to continue to operate after a module failure, under reduced protection, until a repair or replacement can be made (This is covered under our warranty). These features makes this SPD an ideal choice for any business that relies on microprocessor driven equipment.

Connection: 5 ft. Wire Lead

Surge Capacity:

50kA/Mode-150kA/Mode - Standard M1 Enclosure

General Technical Specifications	
Connection Type	Parallel
Maximum Continuous Operating Voltage	120V, 150 VAC (125%); 240V, 320 VAC; 277V, 320 VAC; 480V, 550 VAC; All Others 115%
Short Circuit Current Rating (SCCR)	200kAIC
Protection Modes	All Connected Modes: L-N, L-L, L-G, N-G
Operating Frequency Range	47 - 63 Hz
UL 1449 Location Type	Type 2 or Type 1
UL 1449 Nominal Discharge Current (In)	20kA
Connection	5 ft Wire Lead
Status Indication	Blue/Red LEDs, Form C Relay, Surge Counter, Audible Alarm
Enclosure	NEMA 4 Steel
50Ohm EMI/RFI Attenuation(Type 2 only)	60 /40dB Max
Response Time	<0.5 nanoseconds
Operating Temperature	-40°C to +75°C
Operating Humidity	0% to 95% non-condensing
Weight	9.2 lbs
Size: Non-Modular M1 NEMA 4/12/13 (Steel)	11.25" x 7.75" x 4.99" (H x W x D)
Warranty	10 Years



STT now offers a Stainless Steel Flush Mount Enclosure Front Panel option.

This option is for when a unit must be mounted recessed into a wall or another enclosure. These panels are attached/removed straight on, and mount in place with screws and standoffs. Included with the panel are the mounting standoffs, screws, and rubber washers.

This option is currently only available for our 50-150 kA/Mode polycarbonate surge enclosure: P3.

This is an add-on option and can be signified by adding a -FMK to the end of a product number. Example - T45120Y100AWAM2C -FMK

STT also offers a full Stainless Steel Enclosure upgrade for P3, M1, M2, and M3 units.

This is an upgrade option and can be signified by changing the J or M value in position #14 of the product number to "S". Example - T45120Y100AWAS2C

Tier 450 Surge Protection Device P3 Non-Modular Wire Lead SPD



The **Tier 450 P3 SPD** is available in a wide range of surge capacity levels, and voltage and phase configurations. Its NEMA 4X enclosure and liquid tight connector make it suitable for any environment or location. Its multiple MOV technology allows it to continue to operate after a module failure, under reduced protection, until a repair or replacement can be made (This is covered under our warranty). It has status indication for each phase, an audible alarm, and an optional surge counter. These features make this SPD an ideal choice for any business that relies on microprocessor driven equipment.

Connection: 5 ft. Wire Lead

Surge Capacity:

50kA/Mode-150kA/Mode - Standard P3 Enclosure

Features:

- Thermally Protected MOVs
- Surge Current Levels:
 - 50 kA/Mode, 100 kA/Phase
 - 75 kA/Mode, 150 kA/Phase
 - 100 kA/Mode, 200 kA/Phase
 - 125 kA/Mode, 250 kA/Phase
 - 150 kA/Mode, 300 kA/ Phase
- ANSI/UL 1449 4th Edition, CUL
- Short Circuit Rating: 200 kAIC
- Sine Wave Tracking: UL Type 2
- Surge Impulse Rated and Tested
- NEMA 4X Enclosure
- Audible Alarm
- Visual Diagnostics - Dual color LED status indication, Form C Relays, Surge Counter
- 5ft Wire Lead
- Warranty: 10 Years

General Technical Specifications

General Technical Specifications	
Connection Type	Parallel
Maximum Continuous Operating Voltage	120V, 150 VAC (125%); 240V, 320 VAC; 277V, 320 VAC; 480V, 550 VAC; All Others 115%
Short Circuit Current Rating (SCCR)	200kAIC
Protection Modes	All Connected Modes: L-N, L-L, L-G, N-G
Operating Frequency Range	47 - 63 Hz
UL 1449 Location Type	Type 2 or Type 1
UL 1449 Nominal Discharge Current (In)	20kA
Connection	5 ft Wire Lead
Status Indication	Blue/Red LEDs, Form C Relay, Surge Counter, Audible Alarm
Enclosure	NEMA 4X Polycarbonate
50Ohm EMI/RFI Attenuation(Type 2 only)	60 /40dB Max
Response Time	<0.5 nanoseconds
Operating Temperature	-40°C to +75°C
Operating Humidity	0% to 95% non-condensing
Weight	5.3lbs
Size: Non-Modular P3 NEMA 4X (Polycarbonate)	9.14" x 5.7" x 4.15"; (H x W x D)
Warranty	10 Years

Tier 450 Surge Protection Device P2 Non-Modular Wire Lead SPD



Features:

- Thermally Protected MOV
- Surge Current Levels:
25 kA/Mode; 50 kA/Phase
- ANSI/UL 1449 4th Edition, CUL
- Short Circuit Rating: 200 kAIC
- Sine Wave Tracking: Type 2
- Surge Impulse Rated and Tested
- NEMA 4X Enclosure
- Visual Diagnostics - Dual LEDs, Form C Relays
- 30" Wire Lead
- Warranty: 10 Years

The **Tier 450 Series** of products incorporates this technology in a compact, easy to install package. The **Tier 450 P2** is available in 25 kA/mode, and a wide range of voltage and phase configurations. With its **NEMA 4X enclosure**, and liquid tight connector, it is suitable for any environment or location. The **P2** is our smallest SPD in the Tier 450 series, and the smallest SPD in the Tier 400 family that has a **UL 1449 Type 2 location**. These features make this SPD an ideal choice for any business that relies on microprocessor driven equipment.

Connection: 30" Wire Lead
Surge Capacity:
25kA/Mode, 50kA/Phase - Standard P2 Enclosure

General Technical Specifications

General Technical Specifications	
Connection Type	Parallel
Maximum Continuous Operating Voltage	120V, 150 VAC (125%); 240V, 320 VAC; 277V, 320 VAC; 480V, 550 VAC; All Others 115%
Short Circuit Current Rating (SCCR)	200kAIC
Protection Modes	All Connected Modes: L-N, L-L, L-G, N-G
Operating Frequency Range	47 - 63 Hz
UL 1449 Location Type	Type 1 or Type 2
UL 1449 Nominal Discharge Current (In)	20kA
Connection	Wire Lead
Status Indication	Blue/Red LEDs, Form C
Enclosure	NEMA 4X Polycarbonate
50Ohm EMI/RFI Attenuation(Type 2 only)	60 /40dB Max
Response Time	<0.5 nanoseconds
Operating Temperature	-40°C to +75°C
Operating Humidity	0% to 95% non-condensing
Weight	1.4 lbs
Size: Non-Modular P2 NEMA 4X (Polycarbonate)	6.375" x 3.16" x 3" (H x W x D)
Warranty	10 Years

Tier 420 Surge Protection Device P1 Non-Modular Wire Lead SPD



The **Tier 420 P1 SPD** is available in 25kA/mode, 120V single phase, and its NEMA 4X enclosure with liquid tight wire lead connector make it suitable for any environment or location, making this SPD an ideal choice for any business that relies on microprocessor driven equipment. This is the smallest SPD in the Tier 400 family, and is only available in UL 1449 Type 1. Sine wave tracking is not available on UL 1449 Type 1 devices.

Connection: 30" Wire Lead

Surge Capacity:

25kA/Mode, 50kA/Phase - Standard P1 Enclosure

Features:

- Thermally Protected MOV
- Single Phase SPD
- Surge Current Levels:
25 kA/Mode; 50 kA/Phase
- ANSI/UL 1449 4th Edition, CUL
- Short Circuit Rating: 200 kAIC
- UL 1449 Location Type 1
- Surge Impulse Rated and Tested
- NEMA 4X Enclosure
- Visual Diagnostics - LED
- 30" Wire Lead
- Warranty: 10 Years

General Technical Specifications

Connection Type	Parallel
Maximum Continuous Operating Voltage	120V, 150 VAC; (125%)
Short Circuit Current Rating (SCCR)	200kAIC
Protection Modes	All Connected Modes: L-N, L-L, L-G, N-G
Operating Frequency Range	47 - 63 Hz
UL 1449 Location Type	Type 1 only
UL 1449 Nominal Discharge Current (In)	20kA
Connection	Wire Lead
Status Indication	Blue LED
Enclosure	NEMA 4X Polycarbonate
50Ohm EMI/RFI Attenuation(Type 2 only)	60 /40dB Max
Response Time	<0.5 nanoseconds
Operating Temperature	-40°C to +75°C
Operating Humidity	0% to 95% non-condensing
Weight	0.50 lbs
Size: Non-Modular P1 NEMA 4X (Polycarbonate)	1.63" x 3.545" x 2.29" (H x W x D)
Warranty	10 Years



The Tier 300DL Demand Limiter offers a simple way to directly control your operation's peak demand. It's estimated that 4% of the power you actually use drives around 40% of your total billed usage. The Tier 300DL series is ideally suited for HVAC systems, air compressors, pumps and other non-critical industrial loads. Install the Tier 300DL series and reduce your utility bill by as much as 15% within the first month of operation. There are 6 zones of control per unit, and the ability to daisy chain up to 3 units, allowing for up to 18 independent zones of control.

Features:

- Reduce your monthly utility bill kW (demand charges) by 8 -15%
- Priority selection for each Zone
- Demand savings selector
- Sequential soft start to control equipment startup after power outages or generator start-up
- 6 Zones of control in each unit
- Daisy chain up to 3 unit for 18 zones of control
- Visual indication of requested and activated loads.
- Multiple Color LED Indication
- Sliding switch for "Bypass Mode" activation per zone.

General Technical Specifications

Nominal Voltage	120 VAC
Nominal Frequency	50/60 Hz
Control I/O	Open / Closed Contacts
Number of Zones	6 Zones per unit; Daisy Chain up to 3 units
Mount	Flange (#6 Screw)
Safety	Low voltage control design
Enclosure	NEMA 4X
Dimensions	9.6"w x 4.9"h x 4"d (243 x 125 x 101 mm)
Weight	1.5 lbs
Operating Temperature	0°C to 60°C continuous
Relative Humidity	0-95%, non condensing
Operating Altitude	2000 m
Bypass Mode	Each Zone may be bypassed if needed by sliding switch to "Bypass" mode

Display

Input Display	One Green LED per Zone
Output Active Display	One Blue LED per Zone
Terminals (#24-#18)	Spring clamp connection
Bypass	One Yellow LED when in Bypass mode

Tier 200 AC Surge Filters Line Reactor



The Tier 200ACLR AC Line Reactor is designed for the absorption of current spikes and also has harmonic mitigation with increasing effectiveness the higher the impedance selected. It reduces low frequency interference, current harmonics, distortion of reactive power, circuit feedback, and losses at the line transformer and in neutral wire loads. Available in impedance ranges of 3-5%. Standard available configurations come in 30A, 60A and 100A nominal. Other configurations can be accommodated, please contact the factory for details. These units feature both starting and peak current limitations to increase the lifetime of connected components.

- 30 Amps and Under: Terminal Block 8-10AWG

- Over 30 Amps: #14-2/0 Compression Lug

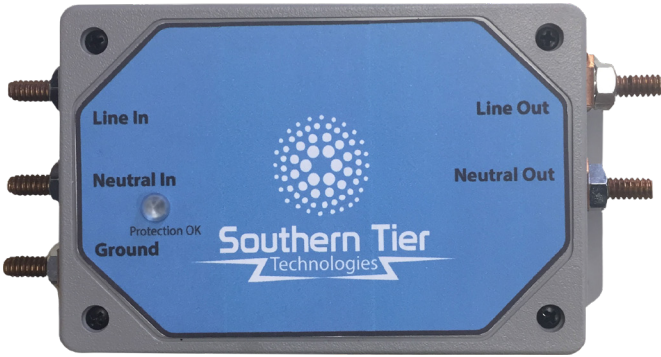
Features:

- Operating Voltage: 120V-480V
- Maximum Operating Current: 30A, 60A, 100A, +
- Inrush current limitation
- Starting and peak current limitation
- Harmonic Mitigation (level impedance dependent)
- Connection:
 - Terminal Block 8-10AWG
 - #14-2/0 Compression Lug
- Meets cURus, cULus, Ce & UL506 standards
- Reduction in reactive power consumption
- Circuit feedback protection
- Reduction in losses
- Warranty: 5 Years

General Technical Specifications

Operating Voltage	120-480V
Line Reactor Impedance	3% - 5%
Maximum Operating Current	30A, 60A, 100A, Contact Factory for Other
Maximum Continuous Operating Voltage (MCOV)	Up to 550VAC
Connection Type	Series: 30A - Terminal Block 8-10AWG 60A+ - #14-2/0 Compression Lug
Operating Frequency Range	50 - 60 Hz
Protection Modes	All Modes:L1 in-L1 out, L2 in-L2 out L3 in-L3 Out
Standards: Designed and tested to:	cURus, cULus, Ce, UL 506, CSA 22.2
Maximum Heat Dissipation	Varies by Voltage, Inductance, & Current See Individual Spec sheets.
Insulation Class	IEF Class F, UL Class 155
Status Indication	None
Enclosure	NEMA 1 or Better Size Depends on Bend Needed for Wire per NEC
Operating Temperature	-10°C/14°F to +40°C/104°F
Operating Humidity	0% to 95% non-condensing
Warranty	5 Years

Tier 200 AC Surge Filters Multi-Stage Hybrid Bronze Lug Filter



The Tier 200ACF AC Surge Filter with Bronze Lugs is a multi-stage hybrid filter has a coordinated surge and noise mitigation array. The filter can attenuate disruptive impulses that would normally go untouched by standard clamping devices. A complete power protection strategy should include installation of a high frequency noise/surge filter at the input of your most critical equipment as well as at the output of known disruptive devices. Its high energy capability makes this an ideal product to protect sensitive equipment in the harshest environments.

- 1/4-20 Copper Bronze Lugs
- 5A, 10A, 20A: 50kA/Mode, 100kA/Phase, 150kA/Total
- 30A: 75kA/Mode, 150kA/Phase, 200kA/Total

Features:

- Operating Voltage: 120V or 240V
- Maximum Operating Current: 5A, 10A, 20A, or 30A
- Connection: 1/4-20 Copper Bronze Lugs
- Clamping Voltage: 340VAC
- UL 1449 4th Edition Recognized SPD, Type 2 Component Assembly, CSA 22.2, UL 1283 Rec. Filter
- Short Circuit Rating: 65 kAIC
- Hybrid technology featuring thermally protected MOVs, Inductors and Capacitors
- Green LED status indication
- ABS Enclosure with UL94V-0 Flame Rating
- Warranty: 5 Years

General Technical Specifications

Operating Voltage	120VAC or 240VAC
Maximum Operating Current	5A, 10A, 20A, or 30A
Maximum Continuous Operating Voltage (MCOV)	120 VAC; 125% 240 VAC; 115%
Peak Surge Current Rating	5A, 10A, 20A: 50 kA/Mode, 100 kA/Phase, 150 kA/Total
	30 A: 75 kA/Mode, 150 kA/Phase, 200 kA/Total
Connection Type	Series, Input/Output; 1/4-20 Copper Bronze Lugs
Clamping Voltage	340 VAC
Operating Frequency Range	47 - 63 Hz
EMI Attenuation	Up to 60 dB typical
Short Circuit Current Rating (SCCR)	65kAIC
Protection Modes	All Connected Modes: L-N, L-G, N-G
Technology	Hybrid technology featuring thermally protected MOVs, Inductors, and Capacitors
Standards: Designed and tested to:	UL 1449 4th Edition Recognized SPD, Type 2 Component Assembly, CSA 22.2, UL 1283 Recognized Filter
Status Indication	Green LED
Dimensions (in/mm)	1.875"(H) x 3.25" (W) x 5.75" (L) (47.6 x 82.6 x 146.1 mm)
Weight (lb/kg)	12 oz (.34 kg)
Operating Temperature	-40°C to +85°C
Operating Humidity	0% to 95% non-condensing
Warranty	5 Years

Tier 200 AC Surge Filters Multi-Stage Hybrid Terminal Block Filter



The Tier 200ACF AC Surge Filter with Terminal Block or Wire Lead is a multi-stage hybrid filter has a coordinated surge and noise mitigation array. The filter can attenuate disruptive impulses that would normally go untouched by standard clamping devices. A complete power protection strategy should include installation of a high frequency noise/surge filter at the input of your most critical equipment as well as at the output of known disruptive devices. Its high energy capability makes this an ideal product to protect sensitive equipment in the harshest environments.

- 18-10AWG Terminal Connections, or up to 10AWG Wire
- 5A, 10A, 20A: 50kA/Mode, 100kA/Phase, 150kA/Total
- 30A: 75kA/Mode, 150kA/Phase, 200kA/Total

Features:

- Operating Voltage: 120V or 240V
- Maximum Operating Current: 5A, 10A, 20A, or 30A
- Connection: 18-10AWG Terminal Connections, or up to 10AWG Wire
- Clamping Voltage: 340VAC
- UL 1449 4th Edition Recognized SPD, Type 2 Component Assembly, CSA 22.2, UL 1283 Rec. Filter
- Short Circuit Rating: 65 kAIC
- Hybrid technology featuring thermally protected MOVs, Inductors and Capacitors
- Green LED status indication
- ABS Enclosure with UL94V-0 Flame Rating
- Warranty: 5 Years

General Technical Specifications

Operating Voltage	120VAC or 240VAC
Maximum Operating Current	5A, 10A, 20A, or 30A
Maximum Continuous Operating Voltage (MCOV)	120 VAC; 125% 240 VAC; 115%
Peak Surge Current Rating	5A, 10A, 20A: 50 kA/Mode, 100 kA/Phase, 150 kA/Total 30 A: 75 kA/Mode, 150 kA/Phase, 200 kA/Total
Connection Type	Series, 18-10AWG Terminal Connections, or up to 10AWG Wire
Clamping Voltage	340 VAC
Operating Frequency Range	47 - 63 Hz
EMI Attenuation	Up to 60 dB typical
Short Circuit Current Rating (SCCR)	65kAIC
Protection Modes	All Connected Modes: L-N, L-G, N-G
Technology	Hybrid technology featuring thermally protected MOVs, Inductors, and Capacitors
Standards: Designed and tested to:	UL 1449 4th Edition Recognized SPD, Type 2 Component Assembly, CSA 22.2, UL 1283 Recognized Filter
Status Indication	Green LED
Dimensions (in/mm)	1.875"(H) x 3.25" (W) x 5.75" (L) (47.6 x 82.6 x 146.1 mm)
Weight (lb/kg)	12 oz (.34 kg)
Operating Temperature	-40°C to +85°C
Operating Humidity	0% to 95% non-condensing
Warranty	5 Years

Tier 200 AC Surge Filters Multi-Stage Hybrid Outlet/Receptacle Filter



The Tier 200ACF AC Surge Outlet/Receptacle is a multi-stage hybrid filter has a coordinated surge and noise mitigation array. The filter can attenuate disruptive impulses that would normally go untouched by standard clamping devices. A complete power protection strategy should include installation of a high frequency noise/surge filter at the input of your most critical equipment as well as at the output of known disruptive devices. Its high energy capability makes this an ideal product to protect sensitive equipment in the harshest environments.

- **Input/Output; L5 or L6-20 (Plug/Receptacle - ≤ 20A) or L5 or L6-30 (Plug/Receptacle - 30A) - locking or Non-locking version**
- **5A, 10A, 20A: 50kA/Mode, 100kA/Phase, 150kA/Total**
- **30A: 75kA/Mode, 150kA/Phase, 200kA/Total**

Features:

- Operating Voltage: 120V or 240V
- Maximum Operating Current: 5A, 10A, 20A, or 30A
- Connection: L5 or L6 Plug/ Receptacle
- Clamping Voltage: 340VAC
- UL 1449 4th Edition Recognized SPD, Type 2 Component Assembly, CSA 22.2, UL 1283 Rec. Filter
- Short Circuit Rating: 65 kAIC
- Hybrid technology featuring thermally protected MOVs, Inductors and Capacitors
- Green LED status indication
- ABS Enclosure with UL94V-0 Flame Rating
- Warranty: 5 Years

General Technical Specifications

Operating Voltage	120VAC or 240VAC
Maximum Operating Current	5A, 10A, 20A, or 30A
Maximum Continuous Operating Voltage (MCOV)	120 VAC; 125% 240 VAC; 115%
Peak Surge Current Rating	5A, 10A, 20A: 50 kA/Mode, 100 kA/Phase, 150 kA/Total
	30 A: 75 kA/Mode, 150 kA/Phase, 200 kA/Total
Connection Type	Series, Input/Output; L5 or L6-20 (Plug/Receptacle - ≤ 20A) or L5 or L6-30 (Plug/Receptacle - 30A) - locking or Non-locking version
Clamping Voltage	340 VAC
Operating Frequency Range	47 - 63 Hz
EMI Attenuation	Up to 60 dB typical
Short Circuit Current Rating (SCCR)	65kAIC
Protection Modes	All Connected Modes: L-N, L-G, N-G
Technology	Hybrid technology featuring thermally protected MOVs, Inductors, and Capacitors
Standards: Designed and tested to:	UL 1449 4th Edition Recognized SPD, Type 2 Component Assembly, CSA 22.2, UL 1283 Recognized Filter
Status Indication	Green LED
Dimensions (in/mm)	1.875"(H) x 3.25" (W) x 5.75" (L) (47.6 x 82.6 x 146.1 mm)
Weight (lb/kg)	12 oz (.34 kg)
Operating Temperature	-40°C to +85°C
Operating Humidity	0% to 95% non-condensing
Warranty	5 Years

Tier 100 DC Data/Signal Filters Cat6 POE Hybrid Filter SPD



The **Tier 100 Cat6 POE DC Surge Protection Device** is a multi-stage hybrid filter SPD. It is designed to work on applications where power is required over 4 pairs, and the power source outputs up to 90 watts. Its high-energy gas discharge tube (GDT) and ultra-fast acting silicon avalanche diode (SAD) components allow this device to protect in the harshest environments, while sneak and fault currents are mitigated with solid-state resettable fuses (PTCs).

The SPD is ideally suited for high-energy surge protection for PTZ IP cameras with heaters, industrial automation equipment, VOIP systems or computers.

Connection: RJ45 Female/Female

10BaseT/ 100BaseT/1000BaseT/1000BaseTX (CAT6)/POE

Key Specs:

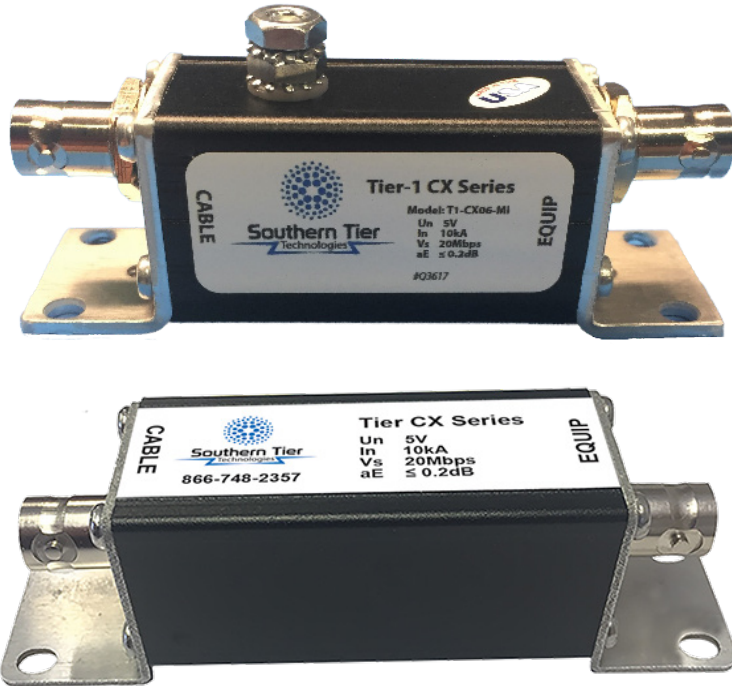
- Nominal Voltage: 48VDC
- Operating Current: 0.8A
- IEEE: 802.3at/af
- Clamping Voltage: 68VDC
- Surge Capacity: 10 kA
- Connection: Input/Output: RJ45

Features:

- Power-Over-Ethernet
- Shielded Case
- Exceeds Cat6 Transmission Standards
- Delivery over 4 Pairs
- Protection: 8-Wire
- Low insertion loss
- High Energy: GDT/SAD Hybrid
- Resettable Solid State Fuses (PTCs)
- Backwards compatible with Cat5e applications
- Warranty: 5 year

General Technical Specifications

Nominal Voltage	48VDC
Clamping Voltage	68 VDC
Operating Current	800mA
C2 Total nominal Discharge Current (8/20us)	10 kA (8x20 us)
Frequency Range	0 to 1GHz
Insertion Loss	≤0.1
Transmission Speed	1000Mbps
SPD Technology	GDT, SAD, PTC
Type of Connection IN/OUT	RJ45 (shielded)Female/ Female
Temperature Range	--40°C ~ +85°C (operating current adjusted to 40% @ +85°C)
Transmission standards	10BaseT/ 100BaseT/1000BaseT /1000BaseTX(CAT6)/POE
Exceeds the requirements	IEEE 802.3at/af, UL497b
Pinning	1/2, 3/6, 4/5, 7/8 for data; 1&2/ 3&6,4&5/ 7&8 for POE
Modes of Protection	All lines (1-8) protected (L-L, & L-G)
Dimensions (in/mm)	4 x 1.5 x 1.2 (in) 103 x 40 x 30 (mm)
Weight (oz/kg)	5 oz (142 g)
Warranty	5 Years



The **Tier 100 CX-06 DC Surge Protection Device** is a multi-stage hybrid filter SPD. Its high-energy gas discharge tube (GDT) and ultra-fast acting silicon avalanche diode (SAD) components allow this device to protect in the harshest environments, while sneak and fault currents are mitigated with solid-state resettable fuses (PTCs). Monitoring for public safety, traffic control or loss prevention is an integral part of our world today. As a result, the equipment used is changing quickly, incorporating intelligent features that rely upon signal-carrying circuits. While these changes become more sophisticated, they also are more susceptible to transients and surges.

The CX06 is designed for BNC connected security or traffic control cameras. The product is designed to protect directly at the camera (isolated ground model) and at the cabinet or head-end of the system.

Connection: BNC Male/Male

Key Specs:

- Operating Voltage: 0 - 5VDC
- Operating Current: 750mA
- Clamping Voltage: 6VDC
- Surge Capacity: 20 kA
- Connection: BNC, 75 Ohm

Features:

- Sneak/fault current protection
- Low insertion loss
- Shielded case
- Resettable Solid State Fuses (PTCs)
- High Energy Gas Discharge Tube and Silicon Avalanche Diode Multi Stage Hybrid Technology
- Isolated ground models available
- 5 year warranty

General Technical Specifications

Operating Voltage	5 VDC
Clamping Voltage	6 VDC
Operating Current	0.750 A
Peak Surge Current	20 kA (8x20 us)
Frequency Range	0 to 20 MHz
Modes of Protection	All Lines Protected (L-L, & L-G)
Insertion Loss	< 0.2 dB @ 20MHz
Response Time	<0.5 ns
SPD Technology	GDT, SAD, PTC
Connection Type	BNC, 75 Ohm
Temperature Range	-40 C to +85 C
Dimensions (in/mm)	1.142" x 0.984" x 3.504" 29 x 25 x 89 (mm)
Weight (oz/kg)	2.3 oz 0.07 kg
Design Std	UI 497B IEC61643-21
Warranty	5 Years

Tier 100 DC Data/Signal Filters HVCP48 6-Pin Hybrid Filter SPD



Key Specs:

- Operating Volt./Current: Combination Unit
- Clamping Volt: Power:70VDC, Data & Video: 6VDC
- Surge Capacity: 20 kA
- Connection: 6 Pin

Features:

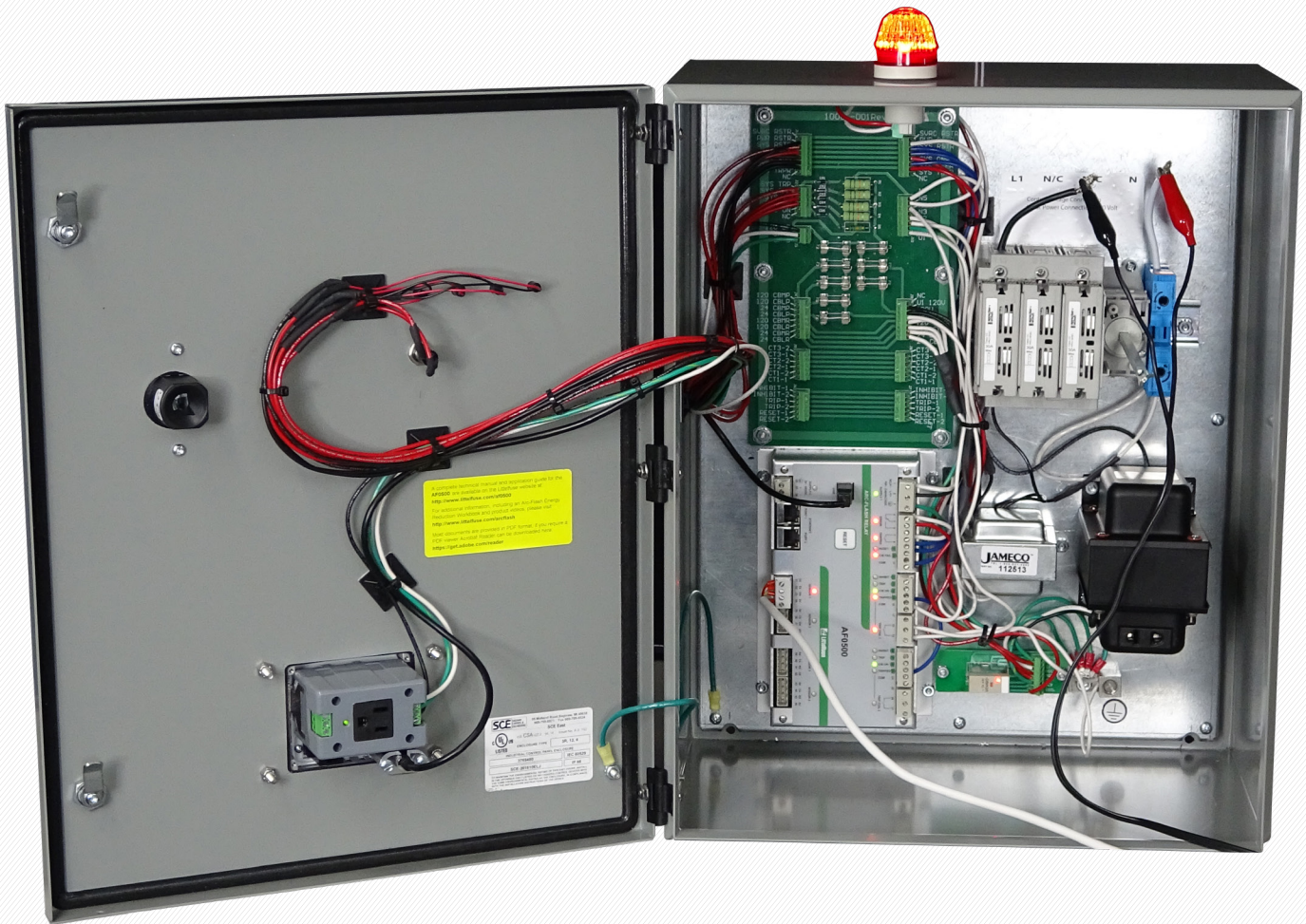
- High Energy Gas Discharge Tube and Silicon Avalanche Diode Multi Stage Hybrid Technology
- High Impact Plastic Enclosure
- Resettable Solid State Fuses(PTCs)
- Sneak/fault current protection
- Three Separate Circuits
- Individual hybrid circuits for power, data, and video
- DIN Clips available
- 5 Year Warranty

The Tier 100 HVCP-48 DC Surge Protection Device is a hybrid surge protective device (SPD) featuring DC power, data and video protection in one compact package. Each circuit is capable of handling high-energy events and protecting your most sensitive equipment. The hybrid design features both gas discharge tubes (GDTs), silicon avalanche diodes (SADs) and PTCs for maximum energy handling capability and transient response. The product includes three separate circuits, capable of diverting high-energy, transient events that would otherwise disrupt data and damage equipment.

Connection: 6 Pin Plug

Technical Specifications

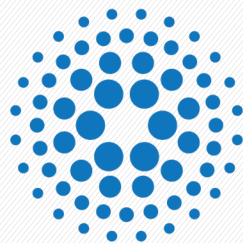
Technical Specifications	
DC Power Protection	
Operating Voltage	48 VDC
Clamping Voltage	70 VDC
Operating Current	1 Amp
Peak Surge Current	20 kA (8x20 us)
SPD Technology	GDT, SAD, Resistor
High Speed Data Protection (SDIO)	
Clamping Voltage	6V SDIO(+)to SDIO(-), 12V SDIO(+) to Gnd & SD IO(-) to Gnd
Operating Current	750 mA
Peak Surge Current	20 kA (8x20 us)
SPD Technology	GDT, SAD, PTC
Video Protection	
Clamping Voltage	6V Video(+)to Video(-), 12V Video(+) to Gnd, 12V Video (-) to Gnd
Peak Surge Current	20 kA (8x20 us)
SPD Technology	GDT, SAD, PTC
General Data	
Ground Wire (in/mm)	12 AWG, 12.0"/
Connection	6 Pin Plug Connection
Dimensions (in/mm)	3.3" x 3.3" x 1.35" (83.82 x 83.82 x 34.29 mm)
Material	High Impact Plastic
Weight (oz/kg)	12 oz (0.34 kg)
Operating Temperature	-40
Operating Humidity	0% to 95% Non-condensing
Mounting	Flange mounted, 3.75" mounting hold distance
Warranty	5 Year



We strive to meet the specific needs of our customers. If a product specification is needed outside of the standard configurations, please contact us. We accommodate custom requests, daily. We will also assist with quoting specs and production of submittal data.

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