

Surge Protective Devices Product Catalog



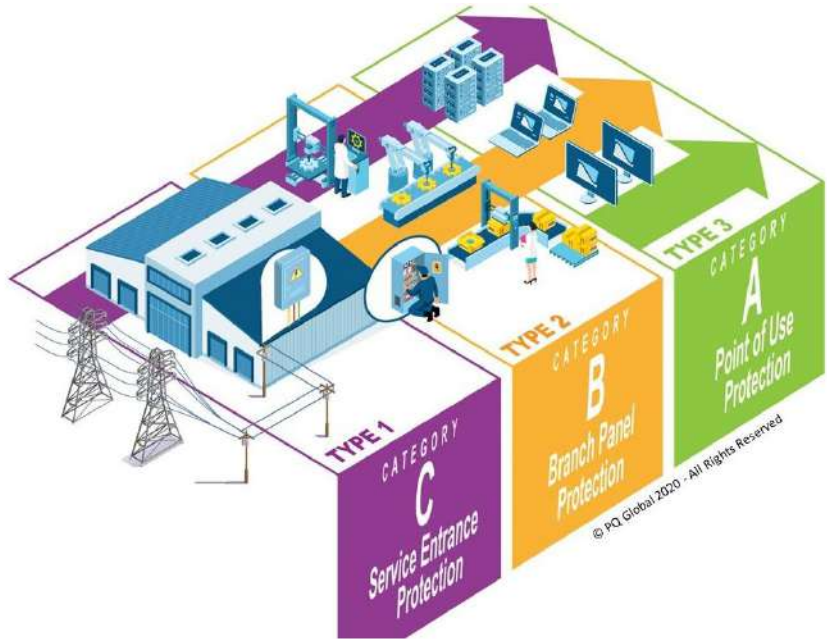
YOU CANNOT AVOID TRANSIENTS, BUT YOU CAN PROTECT AGAINST THEM

Transients are the most destructive power quality problem, causing continuous or permanent damage to your critical equipment and are responsible for 80% of downtime costs.

Fortunately, Surge Protection Devices (SPD) are simple to select, simple to implement, simple to install, and is the lowest cost power quality solution there is.

UL-1449 and National Electric Code 285 recommend 3 levels of protection

- **Service Entrance**
(Category C or Type 1)
- **Branch Panels**
(Category B or Type 2)
- **Point of Use**
(Category A or Type 3)



SERVICE ENTRANCE:

External transients are generated by lightning, utility switching or nearby facilities. Your service entrance can be fully protected with a surge suppressor > 150KA

BRANCH PANEL:

65% of all transients are generated inside a building and can damage or reduce the life of expensive critical equipment, stopping important costly processes and causing long term power outages.

Your facility's everyday operation is the cause of these transients. (Load switching, motor starts, air conditioners, robotics, chillers, or any equipment that turns on and off)

These branch panel transients cause millions of dollars in equipment damage and production losses.

Branch panel protection recommended is >100KA

POINT OF USE:

At the point of use, it is important to protect the equipment and processes that are critical to your operation. Such as VFDs, controls, CNCs, AC controls, communication equipment, servers, routers, internet equipment, and Building Management Systems.

Point of use protection recommended is >50KA

IN SUMMARY:

If you know the electrical location (Service Entrance, Branch Panel, or Point of Utilization) and you know the voltage of the panel, you can easily define what protection you need.

SPD Solutions by Product Specifications

Category A (Type 3)

Point of Use Protection
50 KA to 100 KA Surge Rating



50 KA



50 KA



50KA (Motor Protection)

Category B (Type 2)

Branch Panel Protection
100 KA to 200 KA Surge Rating



100KA



100KA, 150KA, 200KA, 250KA, 300KA

Category C (Type 1)

Service Entrance Protection
200 KA to 600 KA Surge Rating



100KA, 150KA, 200KA, 250KA, 300KA



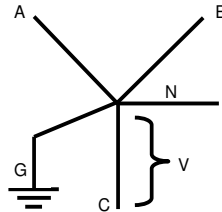
400KA, 500KA, 600KA

- Based on secondary side of upstream transformer, **NOT** by how load is connected.
- Most SPD order errors are misunderstandings related to grounding or neutrals.
- **Grounded system means that the system is referenced to ground, NOT that there is a safety ground.**
- By convention, ground wires are not 'counted' as one of the wires (3-wire, 4-wire, etc.).

3-phase 4-wire Grounded Wye / Neutral Pulled

Neutral bonded to ground.
Neutral pulled into facility.

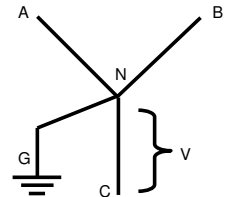
- V = 120V (208Y/120V)
- V = 277V (480Y/277V)
- V = 347V (600Y/347V)
- V = 127V (220Y/127V)*
- V = 220V (380Y/220V)*



3-phase 4-wire Grounded Wye

Neutral bonded to ground. Neutral NOT pulled into facility.

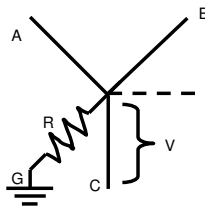
- V = 120V (208Y/120V)
- V = 277V (480Y/277V)
- V = 347V (600Y/347V)
- V = 127V (220Y/127V)*
- V = 220V (380Y/220V)*



Resistive or Impedance Grounded Wye

Neutral bonded to ground via grounding resistor. Neutral may, or may not, be pulled into facility.

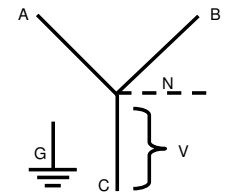
- V = 120V (208Y/120V)
- V = 277V (480Y/277V)
- V = 347V (600Y/347V)
- V = 127V (220Y/127V)*
- V = 220V (380Y/220V)*



3-phase 4-wire Ungrounded Wye

Neutral NOT bonded to ground. Neutral may or may not be pulled into facility.
Note NEC 285.3(2).

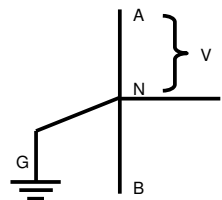
- V = 120V (208Y/120V)**
- V = 277V (480Y/277V)
- V = 347V (600Y/347V)
- V = 127V (220Y/127V)**
- V = 220V (380Y/220V)**



Split-Phase 'Single-Phase'

Neutral bonded to ground. Neutral usually pulled into facility.

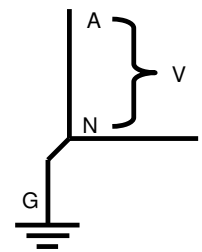
- V = 120V (120/240V)
- V = 240V (240/480V)**
- V = 127V (127/254V)*



Single-Phase

Verify where neutral and ground are! Often this is used for one leg or one piece of equipment. Neutral is bonded to ground.

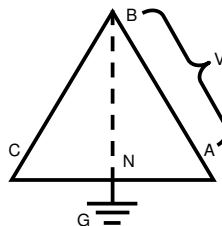
- V = 120V
- V = 240V
- V = 277V
- V = 480V**
- V = 127V*
- V = 220V*



Hi-Leg Grounded Delta

Neutral bonded to ground. Neutral often pulled into facility.

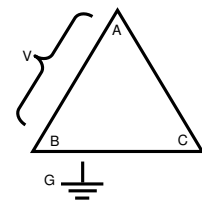
- V = 120/240V
- V = 240/480V**



3-phase 3-wire Ungrounded Delta

System has NO reference to ground. L-L voltages fixed by transformer, but L-G voltages can vary.

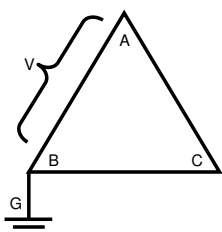
- V = 240V
- V = 480V
- V = 600V
- Note NEC 285.3(2)



3-phase 3-wire Corner Grounded Delta

System has reference to ground because B phase is grounded.

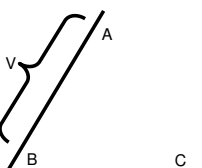
- V = 240V
- V = 480V
- V = 600V
- Note NEC 285.3(2)



Open Delta

3-phase 3 or 4-wire. Could be ungrounded, corner grounded or Hi-leg.

Call PQ Global for information.



* non-USA
** Call PQ Global

T42 Non-Modular Surge Protective Device 50kA per Phase

50kA/phase Model



This is the T42 Non-Modular SPD with a 50kA per Phase surge current capacity. This T42 Non-Modular Surge Protective Device has a 2.3" x 2.5" x 1.6" NEMA 4X rated polycarbonate enclosure and weighs 0.5 pounds. It has a watertight indoor/outdoor rating, a liquid-tight connector, and external mounting flanges. This unit is the perfect fit for applications in which the SPD must fit in a small space or where high-capacity units are not required. These qualities also make this unit especially useful in downstream applications.

The T42 is a single phase unit, available in 120V and 240V configurations; the 120V unit may be used interchangeably in 127V applications. Phase protection is indicated by a single LED. The LED will remain lit to let the user know the unit has power and is in good health. The LED should be lit after installation; an off condition after proper installation will indicate one of the monitored modes experienced a failure.

It is only available as a UL 1449 Type 1 device, which may be placed on the line or load side of a main disconnect. This SPD uses advanced Thermally Protected Metal Oxide Varistors. Its MOVs are of the same high quality and design as all the other SPDs in our surge protection family of units. The T42 carries a 10-year warranty.

This unit has 30" of #12 AWG wire leads.

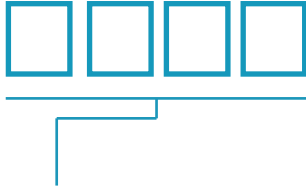
General Technical Specifications

Connection Type	Parallel, Wire Lead - #12 AWG
Voltage, Phase Configuration	120V Single Phase, (L1, N, G) 240V Single Phase, (L1, L2, G)
Maximum Continuous Operating Voltage	120V, 150 VAC (125%); 127V, 150 VAC (118%); 240V, 320 VAC (115%)
Surge Capacity	25kA/Mode, 50kA/Phase
Short Circuit Current Rating (SCCR)	200kAIC
Protection Modes	All Modes: L-N, L-G, N-G
Operating Frequency Range	47 - 63 Hz
UL 1449 Location Type	Type 1 (SPDs intended for Line or Load Side of Main Disconnect) only
UL 1449 Nominal Discharge Current	10 kA
Standards	UL 1449 4th Edition, CSA, UL 96A Lightning Protection Master Label compliant
Status Indication	LED
Enclosure	NEMA 4X Polycarbonate
Dimensions	2.29" x 2.54" x 1.63" (H x W x D)
Weight	0.50 lbs
50 Ohm EMI/RFI Attenuation	-45db max(Type 1); from 10 kHz to 100MHz. The system provides up to 120dB insertion loss from 100 kHz to 100 MHz when used in a coordinated facility system.
Response Time	<0.5 nanoseconds
Operating Temperature	-40°C to +75°C
Operating Humidity	0% to 95% non-condensing
Warranty	10 Years



T42 Non-Modular Surge Protective Device 50kA per Phase

T42



Voltage & Phase Configuration Code

120N = 120V Single Phase (L1, N, G) - Fig 1

240L = 240V Single Phase (L1, L2, G) - Fig 2



Surge Current Capacity Code
025 = 50kA/Phase

A W A J 1 S M

Connection Type

W - Wire Lead

UL 1449 Location Type

1 - Type 1

Example Product number:

Filled in:

Complete:

T42 120N 025 A W A J 1 S M = T42120N025AWAJ1SM

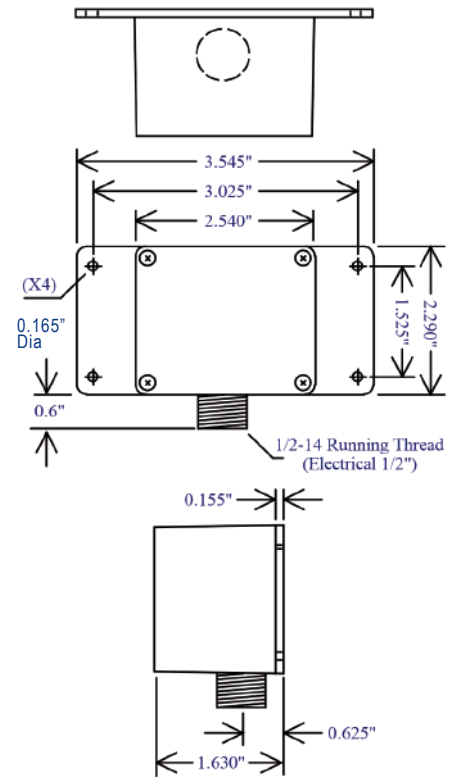


Fig. 1

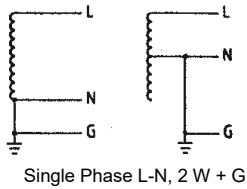
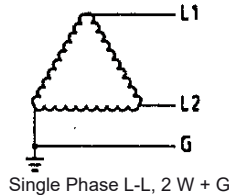


Fig. 2



System Voltage Compatibility

Model Voltage/ Phase Code	Nominal System Voltages	System Configuration	MCOV	I _n	SCCR	UL 1449 Voltage Protection Rating			
						L-N	L-G	N-G	L-L
120N	120	Single Phs, 2W+G	150	10kA	200kA	700	700	700	
240L	240	Single Phs, 2W+G	320	10kA	200kA		1200		1200



T45 Non-Modular Surge Protective Device 50kA per Phase

50kA/phase Model



This is the T45 Non-Modular unit in the 50kA per Phase surge current capacity. This T45 Non-Modular Surge Protective Device has a 5.2" x 3.2" x 2.8" NEMA 4X rated polycarbonate enclosure and weighs less than 1.5 pounds, making this the smallest T45 SPD. It has a watertight indoor/outdoor rating, a liquid-tight connector, and external mounting flanges. The flange brackets are removable, and the unit may be mounted with #6 screws. This second mounting location is beneath the cover screws and will exit where the brackets were attached, allowing for an even more compact install. This unit is the perfect fit for applications in which the SPD must fit in a small space or where high-capacity units are not required. These qualities also make this unit especially useful in downstream applications.

This is the smallest T45 unit; however, it is still available in a wide range of voltage and phase configurations. Each protected phase uses combined indication by a singular LED. It has Form "C" dry contact relays for remote indication capabilities. There is a separate "Power" LED to let users know it is energized and functional since the service LED will remain off unless there is a failure. All modes are monitored by the service LED.

It is available as either a UL 1449 Type 1 or Type 2 device. Despite its small size, this SPD in a Type 2 configuration is still equipped with a UL 1283 Listed filter.

This SPD uses advanced Thermally Protected Metal Oxide Varistors. They are in the same rugged MOVs as the larger units in the T45 family, and we continue to use symmetrical surge pathways to allow the unit to take a strike at its full capacity rating.

This unit has 36" of #12 AWG wire leads.

Features:

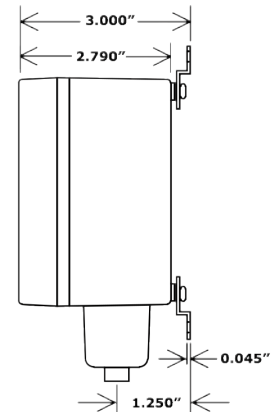
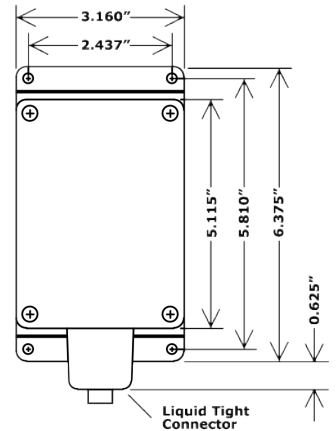
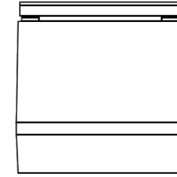
- 50kA/phase available
- Compact and easy to install
- UL 1449 Fourth Edition Listed
- Available in UL 1449 Type 1 or Type 2 Configurations
- Sine Wave Tracking: UL 1449 Type 2
UL 1283 Listed
- 36" of #12 AWG Wire Leads
- LED Status Indication
- Form "C" Dry Contacts
- Flange style mounting brackets pre-installed

- NEMA 4X rated enclosure for indoor & outdoor use
- Liquid tight connection
- 200kA SCCR
- Lifecycle tested to 12,000 10kA Impulses
- All modes of protection
- Thermally Protected MOVs
- Multiple MOV technology featuring large and robust MOVs
- Equidistant and symmetrical surge pathways for a true surge capacity rating
- 10 Year Warranty



T45 Non-Modular Surge Protective Device 50kA per Phase

General Technical Specifications	
Connection Type	Parallel, Wire Lead - #12 AWG
Voltage, Phase Configuration	120/240 Split Phase, (3W+G) 120/208V Three Phase Wye, (4W+G)* (127/220V Three Phase Wye, (4W+G))* (220/380V Three Phase Wye, (4W+G))** 277/480V Three Phase Wye (4W+G)** 240V Three Phase Delta (3W+G) 480V Three Phase Delta, (3W+G) 240/480V Three Phase Delta Hi-Leg, (4W+G)
Maximum Continuous Operating Voltage	120V, 150 VAC (125%); 127V, 150 VAC (118%); 220V, 320 VAC (145%); 240V, 320 VAC; 277V, 320 VAC; 480V, 550 VAC; All Others 115%
Surge Capacity	25kA/Mode, 50kA/Phase
Short Circuit Current Rating (SCCR)	200kAIC
Protection Modes	All Modes: L-N, L-L, L-G, N-G
Operating Frequency Range	47 - 63 Hz
UL 1449 Location Type	Type 1 (SPDs intended for Line or Load Side of Main Disconnect) or Type 2 (Intended for Load Side of Main Disconnect)
UL 1449 Nominal Discharge Current (In)	10 kA
Standards	UL 1449 4th Edition, CSA, UL 96A Lightning Protection Master Label compliant
Status Indication	Power and Service LEDs, Form "C" Dry Contact Relay
Enclosure	NEMA 4X Polycarbonate
Dimensions	5.115" x 3.16" x 2.79" (H x W x D)
Weight	1.40 lbs
50 Ohm EMI/RFI Attenuation	-50 db max(Type 2), -45db max(Type 1); from 10 kHz to 100MHz. The system provides up to 120dB insertion loss from 100 kHz to 100 MHz when used in a coordinated facility system.
Response Time	<0.5 nanoseconds
Operating Temperature	-40°C to +75°C
Operating Humidity	0% to 95% non-condensing
Warranty	10 Years

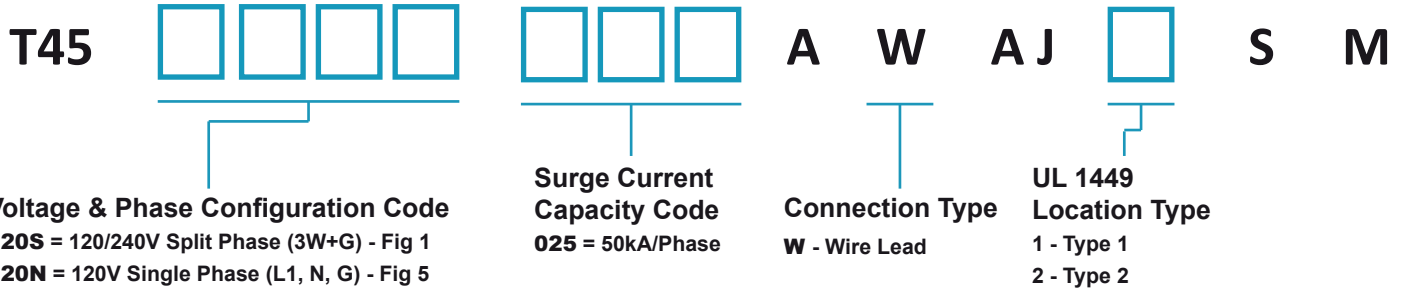


*This is a 120/208V unit, and can be used in 127/220V applications

**This is a 277/480V unit, and can be used in 220/380V applications



T45 Non-Modular Surge Protective Device 50kA per Phase



Example Product number:

Filled in:

Complete:

T45 120Y 025 A W AJ 1 S M = T45120Y025AWAJ1SM

Fig. 1

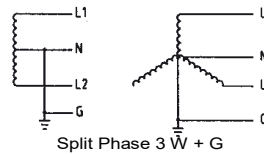
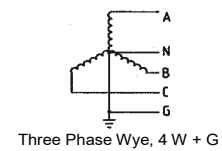


Fig. 2



*This is a 120/208V unit, and can be used in 127/220V applications

**This is a 277/480V unit, and can be used in 220/380V applications

You may place the order as either part number.

Fig. 3

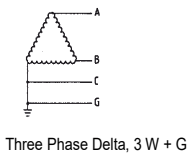


Fig. 4

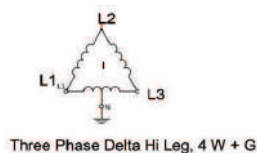


Fig. 5

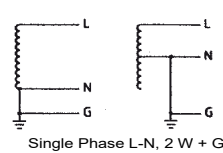
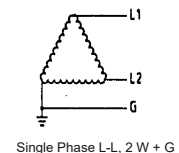


Fig. 6



System Voltage Compatibility

Model Voltage/ Phase Code	Nominal System Voltages	System Configuration	MCOV	I _n	SCCR	UL 1449 Voltage Protection Rating			
						L-N	L-G	N-G	L-L
120N	120	Single Phs, 2W+G	150	10kA	200kA	700	700	700	
120S	120/240	Split Phs, 3W+G	150	10kA	200kA	700	700	700	1200
120Y	120/208; 127/220	3 Phs Wye, 4W+G	150	10kA	200kA	700	700	700	1200
127Y	120/208; 127/220	3 Phs Wye, 4W+G	150	10kA	200kA	700	700	700	1200
220Y	220/380; 240/415; 277/480	3 Phs Wye, 4W+G	320	10kA	200kA	1200	1200	1200	2000
240L	240	Single Phs, 2W+G	320	10kA	200kA		1200		1200
240H	240/480	3 Phs Delta Hi-leg, 4W+G	320/550	10kA	200kA	1200/1800	1200/1800	1200	2000/3000
277Y	220/380; 240/415; 277/480	3 Phs Wye, 4W+G	320	10kA	200kA	1200	1200	1200	2000
240D	220; 230; 240	3 Phs Delta, 3W+G	320	10kA	200kA		1200		1200
480D	380; 400; 415; 440; 460; 480	3 Phs Delta, 3W+G	550	10kA	200kA		1800		3000
600D	525; 600	3 Phs Delta, 3W+G	690	10kA	200kA		2000		4000



The “2-In-1” Over/Under Motor Protection System



Why Install Surge Protection with Dedicated Motor Protection?

Transient impulses can significantly impact your facility's power quality, easily disrupting or damaging your process or equipment. While it's important to protect against high-energy events, a more frequent, yet often overlooked power quality concern is the damage caused by a phase loss, a temporary voltage sag, or a voltage swell condition. Disconnecting your sensitive loads during these longer duration PQ events is the easiest way to safeguard important equipment.

Why Install a Tier 460 Contactor with an Auto Disconnect and Restart Controller?

The Tier 460 Over/Under Motor Surge Protection system, or the “2-In-1”, will protect a motor, or an entire system, from power quality events. It runs a surge protective device with a series equipped contactor and controller. Our proprietary monitor and control system will disconnect the load at predetermined levels, and will reconnect the load at separate predetermined levels automatically. The SPD remains online while the load is disconnected.

This twofold level of protection greatly improves system defenses from power disruption damage. This unit is also available in a shunt trip configuration.

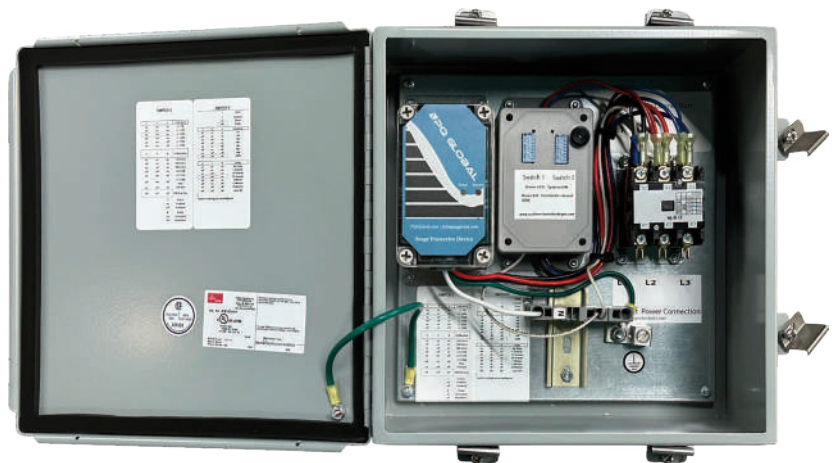
Features:

Surge

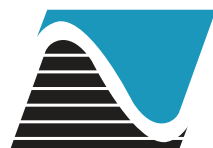
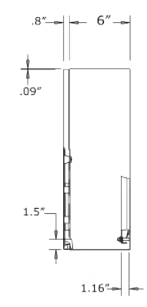
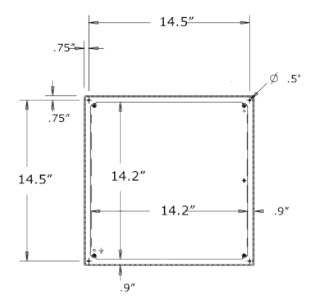
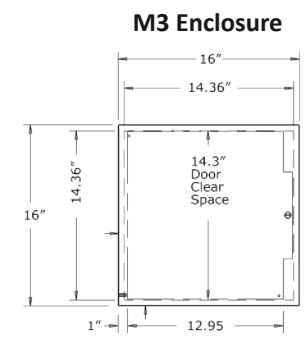
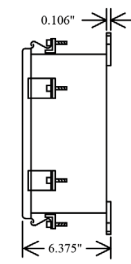
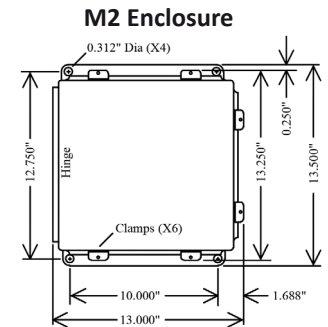
- Thermally Protected MOVs
- Surge Levels Available:
25 kA/Mode, 50kA/Phase
- ANSI/UL 1449 4th Edition, cUL
- Sine Wave Tracking: Type 2
- Surge Impulse Rated and Tested

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 available with user selectable reset time. Includes: No delay, 5s, 10s, 30s, 1m, 5m, 10m, No restart



General Technical Specifications	
Connection Type	Contactor is Series
Voltage, Phase Configuration	120/240 Split Phase, (3W+G) 120/208V Three Phase Wye, (4W+G)* (127/220V Three Phase Wye, (4W+G))* (220/380V Three Phase Wye, (4W+G))* 277/480V Three Phase Wye (4W+G)** 240V Three Phase Delta (3W+G) 480V Three Phase Delta, (3W+G)
Maximum Continuous Operating Voltage	120V, 150 VAC (125%); 127V, 150 VAC (118%); 220V, 320 VAC (145%); 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, 40, 50, 60, or 90 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
Nominal Discharge Current (In)	10 kA
Connection	Terminals
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	-50 db max(Type 2), -45db max(Type 1); from 10 kHz to 100MHz. The system provides up to 120dB insertion loss from 100 kHz to 100 MHz when used in a coordinated facility system.
Response Time	<0.5 nanoseconds
Operating Temperature	-40°C to +75°C
Operating Humidity	0% to 95% non-condensing
50 kA/Phase Case Size	M2 - 12" x 12" x 6" M3 - 16" x 16" x 6"
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, 10m, No Restart
Warranty	SPD: 10 years; Control System: 5 years



Tier 460 Over/Under Motor Protection: 50kA T45 Series Surge Protective Device With a Contactor and Active Monitoring & Control

T46  **025 AL**   **S**  **M**

Voltage & Phase Configuration Code

- 120S** = 120/240V Split Phase (3W+G)- Fig 1
- 120Y** = 120/208V 3 Phase Wye, (4W+G)* - Fig 2
- 127Y** = 127/220V 3 Phase Wye, (4W+G)* - Fig 2
- 220Y** = 220/380V 3 Phase Wye, (4W+G)** - Fig 2
- 277Y** = 277/480V 3 Phase Wye (4W+G)** - Fig 2
- 240D** = 240V 3 Phase Delta (3W+G) - Fig 3
- 240H** = 240/480V 3 Phase Delta Hi-Leg (4W+G) - Fig 4
- 480D** = 480V 3 Phase Delta, (3W+G) - Fig 3

*This is a 120/208V unit, and can be used in 127/220V applications

**This is a 277/480V unit, and can be used in 220/380V applications

You may place the order as either part number.

Enclosure

- M2** - 12x12x6
- M3** - 16x16x6

Enclosure size is determined based on selected options. Please see pre-configured options on product list.

1449 Location

- 1** - UL Type 1
- 2** - UL Type 2

Current Rating

- 03** - 30 Amp
- 04** - 40 Amp
- 05** - 50 Amp
- 06** - 60 Amp
- 09** - 90 Amp

Example Product number:

Filled in:

Complete:

T46 120Y 025 AL M3 1 S 09 M = T46120Y025ALM31S09M

Tier 460 - 2-In-1 Over/Under SPD - Product List

Product Number	Surge Rating	Current Rating	Enclosure (HxWxD)	Weight
2-In-1 Over/Under Motor Surge System: SPD, Contactor, and Controller				
T46XXX025ALM2XS03M	25 kA/Mode, 50 kA/Phase	30 Amps	M2 - 12" x 12" x 6"	21 lbs
T46XXX025ALM2XS04M		40 Amps	M2 - 12" x 12" x 6"	21.5 lbs
T46XXX025ALM3XS05M		50 Amps	M3 - 16" x 16" x 6"	26.5 lbs
T46XXX025ALM3XS06M		60 Amps	M3 - 16" x 16" x 6"	27 lbs
T46XXX025ALM3XS09M		90 Amps	M3 - 16" x 16" x 6"	28 lbs

Fig. 1

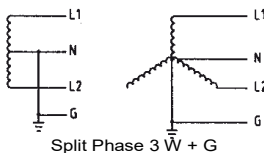


Fig. 2

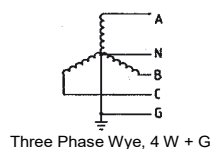


Fig. 3

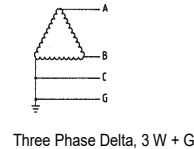
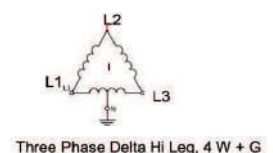


Fig. 4



The "3-In-1" Power Quality System



Why Install a Tier 470 Contactor with an Auto Disconnect and Restart Controller, a Line Reactor, and SPD?

The Tier 470 Power Quality System is a motor surge protection contactor restart device with a line reactor, or the "3-In-1". It will protect a motor, or an entire system, from power quality events. It runs a surge protective device with a series contactor, a line reactor, and our proprietary monitor and control system.

The contactor will disconnect the load at predetermined levels, and will reconnect the load at separate predetermined levels automatically. The SPD remains online while the load is disconnected. The line reactor will limit Inrush current, along with starting and peak current; as well as reducing low frequency interference, current harmonics, distortion of reactive power, circuit feedback, and losses at the line transformer and in neutral wire loads.

This "3-In-1" Power Quality System rigorously defends your essential equipment from damaging disruptions. If you are experiencing power quality anomalies that you have not been able to identify or remediate, or are continuously replacing equipment due to damage from a known process; this unit may provide the solution you have been looking for.

Features:

Surge

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

Line Reactor

- Inrush Current Limitation
- Starting and Peak Current Limitation
- Circuit Feedback Protection
- Harmonic Mitigation
- Reduction in Losses

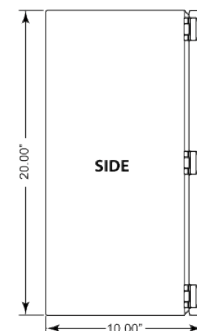
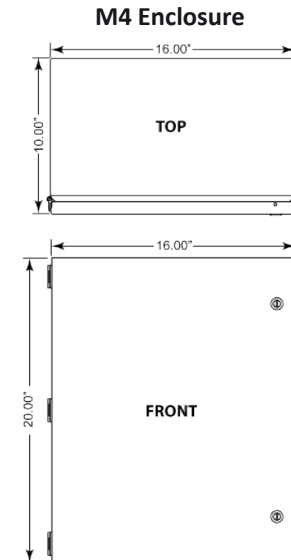
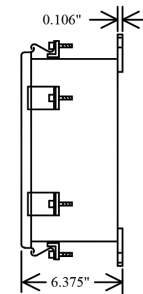
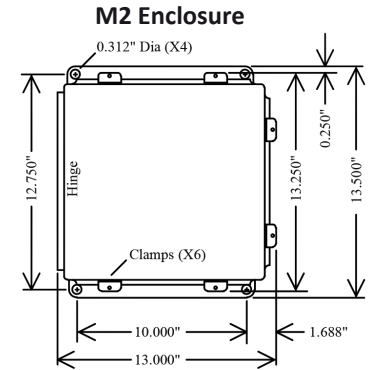
Monitoring & Control

- 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 available with user selectable reset time. Includes: No delay, 5s, 10s, 30s, 1m, 5m, 10m, No restart



General Technical Specifications

Connection Type	Contactor and Line Reactor are Series
Voltage, Phase Configuration	120/240 Split Phase, (3W+G) 120/208V Three Phase Wye, (4W+G)* (127/220V Three Phase Wye, (4W+G))* (220/380V Three Phase Wye, (4W+G))* 277/480V Three Phase Wye (4W+G)** 240V Three Phase Delta (3W+G) 480V Three Phase Delta, (3W+G)
Maximum Continuous Operating Voltage	120V, 150 VAC (125%); 127V, 150 VAC (118%); 220V, 320 VAC (145%); 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, 40, 50, 60 Amps
Line Reactor Current Rating	30, 40, 50, 60(Typically matches Contactor)
Line Reactor Impedance	3% or 5%
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
Nominal Discharge Current (In)	10 kA
Connection	Terminals
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	-50 db max(Type 2), -45db max(Type 1); from 10 kHz to 100MHz. The system provides up to 120dB insertion loss from 100 kHz to 100 MHz when used in a coordinated facility system.
Response Time	<0.5 nanoseconds
Operating Temperature	-40°C to +75°C
Operating Humidity	0% to 95% non-condensing
3-in-1 50kA/Phase Case Size	M2 12" x 12" x 6" M4 20" x 16" x 10" Note: Different dimensions may be required as size depends on bend needed for wire per NEC
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, 10m, No Restart
Warranty	SPD: 10 years Control System and Line Reactor: 5 Years



T47  025 AL     M

Voltage & Phase Configuration Code

- 120S** = 120/240V Split Phase (3W+G)- Fig 1
- 120Y** = 120/208V 3 Phase Wye, (4W+G)* - Fig 2
- 127Y** = 127/220V 3 Phase Wye, (4W+G)* - Fig 2
- 220Y** = 220/380V 3 Phase Wye, (4W+G)** - Fig 2
- 277Y** = 277/480V 3 Phase Wye (4W+G)** - Fig 2
- 240D** = 240V 3 Phase Delta (3W+G) - Fig 3
- 240H** = 240/480V 3 Phase Delta Hi-Leg (4W+G) - Fig 4
- 480D** = 480V 3 Phase Delta, (3W+G) - Fig 3

- Enclosure**
M2 - 12x12x6
M4 - 20x16x10

Enclosure size is determined based on selected options. Please see pre-configured options on product list.

- 1449 Location**
1 - UL Type 1
2 - UL Type 2

Options

- 3** - 3% Line Reactor
- 5** - 5% Line Reactor

- Current Rating***
03 - 30 Amp
04 - 40 Amp
05 - 50 Amp
06 - 60 Amp

*Line Reactor Current Size will Match Contactor Current Size Selection in Position 17-18 of the product number.

*This is a 120/208V unit, and can be used in 127/220V applications

**This is a 277/480V unit, and can be used in 220/380V applications

You may place the order as either part number.

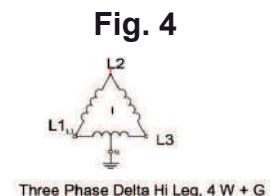
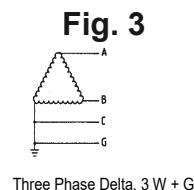
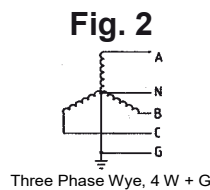
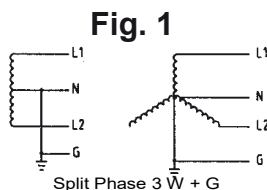
Example Product number:

Filled in:

Complete:

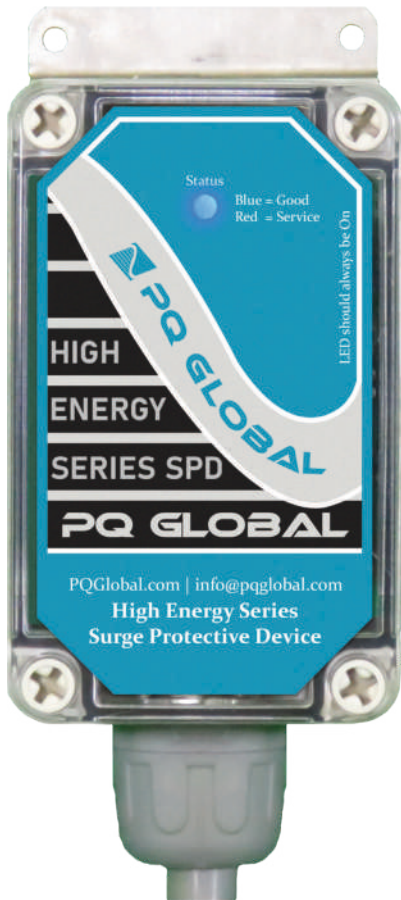
T47 120Y 025 AL M4 1 3 06 M = T47120Y025ALM41306M

Tier 470 - 3-In-1 Power Quality Systems - Product List				
Product Number	Surge Rating	Current Rating	Enclosure (HxWxD)	Weight
3-In-1 Power Quality System: SPD, Contactor, Controller, and Line Reactor 3%				
T47XXX025ALM2X303M	25 kA/Mode, 50 kA/Phase	30 Amps	M2 - 12" x 12" x 6"	33 lbs
T47XXX025ALM2X304M		40 Amps	M2 - 12" x 12" x 6"	37 lbs
T47XXX025ALM4X305M		50 Amps	M4 - 20" x 16" x 10"	50 lbs
T47XXX025ALM4X306M		60 Amps	M4 - 20" x 16" x 10"	51 lbs
Product Number	Surge Rating	Current Rating	Enclosure	Weight
3-In-1 Power Quality System: SPD, Contactor, Controller, and Line Reactor 5%				
T47XXX025ALM2X503M	25 kA/Mode, 50 kA/Phase	30 Amps	M2 - 12" x 12" x 6"	37 lbs
T47XXX025ALM2X504M		40 Amps	M2 - 12" x 12" x 6"	41 lbs
T47XXX025ALM4X505M		50 Amps	M4 - 20" x 16" x 10"	58 lbs
T47XXX025ALM4X506M		60 Amps	M4 - 20" x 16" x 10"	61 lbs



T71 Non-Modular Surge Protective Device High Energy Series 100kA per Phase

100kA/phase Model



This is the T71 Non-Modular unit in the 100kA per Phase surge current capacity, a member of the Tier 700 High-Energy Surge Protection family of products. This T71 Non-Modular Surge Protective Device has a 5.2" x 3.2" x 2.8" NEMA 4X rated polycarbonate enclosure and weighs less than 1.5 pounds, making this the smallest T71 SPD.

This SPD uses Enhanced Thermally Protected Metal Oxide Varistors. These are a UL 5th Edition High-Energy version of our Tier 400 Series SPD MOVs, taking our robust MOVs to even greater protection capabilities in a similar-sized enclosure.

It has a watertight indoor/outdoor rating, a liquid-tight connector, and external mounting flanges. This unit is the perfect fit for applications in which the SPD must fit in a small space, but still needs higher energy surge current capacity protection. These qualities also make this unit especially useful in downstream applications where more demanding protection is required.

This is the smallest T71 unit; however, it is still available in a wide range of voltage and phase configurations. Each protected phase uses combined indication by a singular LED, each mode is monitored. It has Form "C" dry contact relays for remote indication capabilities. It uses a dual-color LED, so regardless of unit status, it will remain lit to let users know it is energized and functional. If the LED is off, it likely indicates an issue with the installation, facility, or power to the unit.

It is available as either a UL 1449 Type 1 or Type 2 device. Despite its small size, this SPD in a Type 2 configuration is still equipped with a UL 1283 Listed filter.

This unit has 36" of #12 AWG wire leads.

Features:

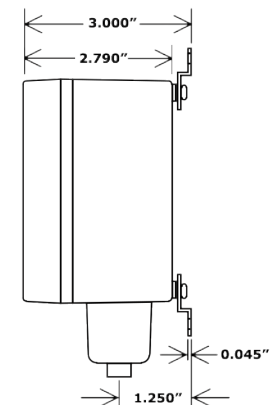
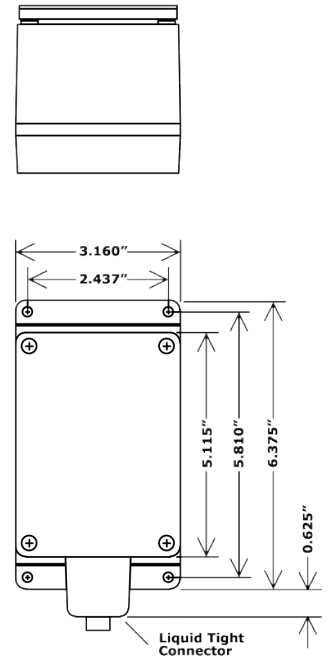
- 100kA/phase available
- Compact and easy to install
- UL 1449 Fifth Edition Listed
- Available in UL 1449 Type 1 or Type 2 Configurations
- Sine Wave Tracking: UL 1449 Type 2
UL 1283 Listed
- 36" of #12 AWG Wire Leads
- LED Status Indication
- Form "C" Dry Contacts
- Flange style mounting brackets pre-installed

- NEMA 4X rated enclosure for indoor & outdoor use
- Liquid tight connection
- 200kA SCCR
- Lifecycle tested to 12,000 10kA Impulses
- All modes of protection
- Thermally Protected MOVs
- Multiple MOV technology featuring large and robust MOVs
- Equidistant and symmetrical surge pathways for a true surge capacity rating
- 10 Year Warranty



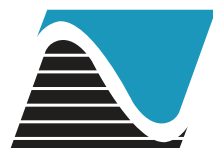
T71 Non-Modular Surge Protective Device High Energy Series 100kA per Phase

General Technical Specifications	
Connection Type	Parallel, Wire Lead - #12 AWG
Voltage, Phase Configuration	120/240 Split Phase, (3W+G) 120/208V Three Phase Wye, (4W+G)* (127/220V Three Phase Wye, (4W+G))* (220/380V Three Phase Wye, (4W+G))** 277/480V Three Phase Wye (4W+G)** 240V Three Phase Delta (3W+G) 480V Three Phase Delta, (3W+G) 240/480V Three Phase Delta Hi-Leg, (4W+G)
Maximum Continuous Operating Voltage	120V, 150 VAC (125%); 127V, 150 VAC (118%); 220V, 320 VAC (145%); 240V, 320 VAC; 277V, 320 VAC; 480V, 550 VAC; All Others 115%
Surge Capacity	50kA/Mode, 100kA/Phase
Short Circuit Current Rating (SCCR)	200kAIC
Protection Modes	All Modes: L-N, L-L, L-G, N-G
Operating Frequency Range	47 - 63 Hz
UL 1449 Location Type	Type 1 (SPDs intended for Line or Load Side of Main Disconnect) or Type 2 (Intended for Load Side of Main Disconnect)
UL 1449 Nominal Discharge Current (In)	20 kA
Standards	UL 1449 5th Edition, CSA, UL 96A Lightning Protection Master Label compliant
Status Indication	Each phase is monitored, and uses combined indication by a single dual-color LED
Enclosure	NEMA 4X Polycarbonate
Dimensions	5.115" x 3.16" x 2.79" (H x W x D)
Weight	1.40 lbs
50 Ohm EMI/RFI Attenuation	-50 db max(Type 2), -45db max(Type 1); from 10 kHz to 100MHz. The system provides up to 120dB insertion loss from 100 kHz to 100 MHz when used in a coordinated facility system.
Response Time	<0.5 nanoseconds
Operating Temperature	-40°C to +75°C
Operating Humidity	0% to 95% non-condensing
Warranty	10 Years

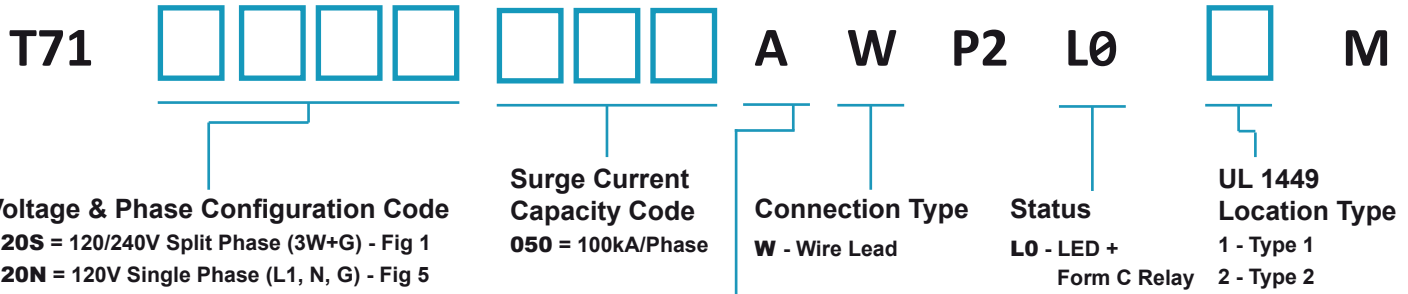


*This is a 120/208V unit, and can be used in 127/220V applications

**This is a 277/480V unit, and can be used in 220/380V applications



T71 Non-Modular Surge Protective Device High Energy Series 100kA per Phase



Modes

- A** - All Connected Modes
- G** - Neutral Delete (L-L & L-G Only)

Example Product number:

Filled in:

T71 120Y 050 A W P2 L0 1 M

Complete:

T71120Y050AWP2L01M = T71120Y050AWP2L01M

*This is a 120/208V unit, and can be used in 127/220V applications

**This is a 277/480V unit, and can be used in 220/380V applications

You may place the order as either part number.

Fig. 1

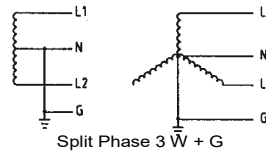


Fig. 2

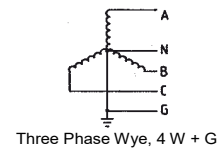


Fig. 3

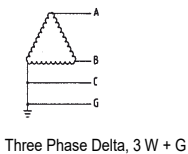


Fig. 4



Fig. 5

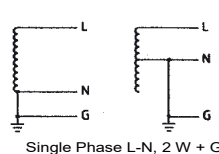
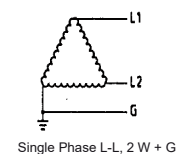


Fig. 6



System Voltage Compatibility

Model Voltage/Phase Code	Nominal System Voltages	System Configuration	MCOV	I _n	SCCR	UL 1449 Voltage Protection Rating			
						L-N	L-G	N-G	L-L
120N	120	Single Phs, 2W+G	150	20kA	200kA	700	700	700	
120S	120/240	Split Phs, 3W+G	150	20kA	200kA	700	700	700	1200
120Y	120/208; 127/220	3 Phs Wye, 4W+G	150	20kA	200kA	700	700	700	1200
127Y	120/208; 127/220	3 Phs Wye, 4W+G	150	20kA	200kA	700	700	700	1200
220Y	220/380; 240/415; 277/480	3 Phs Wye, 4W+G	320	20kA	200kA	1200	1200	1200	2000
240L	240	Single Phs, 2W+G	320	20kA	200kA		1200		1200
240H	240/480	3 Phs Delta Hi-leg, 4W+G	320/550	20kA	200kA	1200/1800	1200/1800	1200	2000/3000
277Y	220/380; 240/415; 277/480	3 Phs Wye, 4W+G	320	20kA	200kA	1200	1200	1200	2000
240D	220; 230; 240	3 Phs Delta, 3W+G	320	20kA	200kA		1200		1200
480D	380; 400; 415; 440; 460; 480	3 Phs Delta, 3W+G	550	20kA	200kA		1800		3000



T45 Non-Modular Surge Protective Device 100kA - 300kA per Phase

100kA/phase - 300kA/phase Model



This is the T45 Non-Modular unit in the 100kA - 300kA per Phase surge current capacity range.

This T45 Non-Modular Surge Protective Device has a 8" x 6" x 4" NEMA 4X rated polycarbonate enclosure. This unit is highly versatile due to the small form factor, the watertight indoor/outdoor rating, and the external mounting flanges. These features allow this unit to be placed in most locations that require an SPD, without taking up much space or requiring time-consuming mounting procedures.

This unit is more compact than its modular counterpart, but it still houses a full array of status indication. Each protected phase is separately indicated by a dual-color LED; it has an audible alarm with a silence switch and Form "C" Relays. It is also available with an externally viewable surge counter(optional).

It is available in surge current capacities from 100kA - 300kA/phase, in increments of 50kA/phase spanning the range. The large range of current capacity is another testament to the versatility of this unit. It can be placed anywhere that the larger Terminal Block unit in the same capacity range can go, provided the wire size properly fits the application and there is no need for a steel enclosure.

The modules use advanced Thermally Protected Metal Oxide Varistors. The large-capacity MOVs with symmetrical surge pathways allow these modules to take a strike at their full capacity rating. They come in a variety of voltage and phase configurations. UL 1449 Type 2 configurations have a UL 1283 listed filter installed.

This SPD has 5ft of #10 AWG wire leads.

Features:

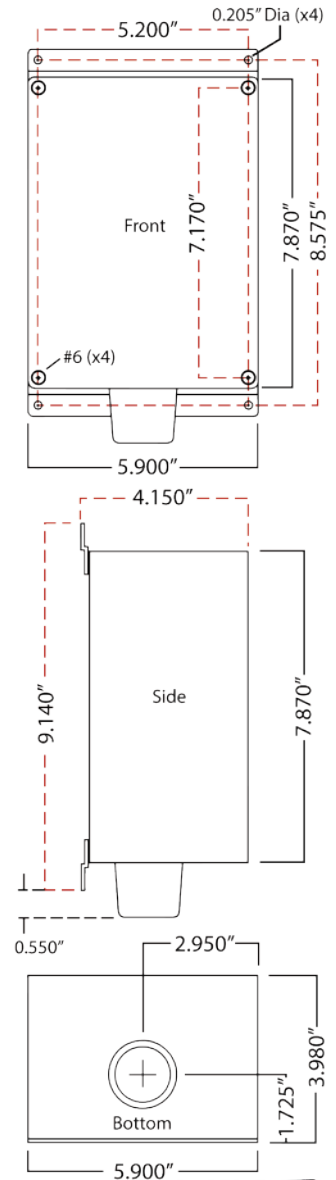
- 100kA, 150kA, 200kA, 250kA & 300kA/phase available
- Compact and easy to install
- UL 1449 Fourth Edition Listed
- Available in UL 1449 Type 1 or Type 2 Configurations
- Sine Wave Tracking: UL 1449 Type 2
UL 1283 Listed
- Audible Alarm with a Disable Switch
- Per Phase Dual LED Status Indication
- Form C Dry Contacts
- Flange style mounting brackets pre-installed

- NEMA 4X rated enclosure for indoor & outdoor use
- 20kA Inominal
- 200kA SCCR
- Lifecycle tested to 12,000 10kA Impulses
- All modes of protection
- Thermally Protected MOVs
- Multiple MOV technology featuring large and robust MOVs
- Equidistant and symmetrical surge pathways for a true surge capacity rating
- 10 Year Warranty



T45 Non-Modular Surge Protective Device 100kA - 300kA per Phase

General Technical Specifications	
Connection Type	Parallel, Wire Lead - #10 AWG
Voltage, Phase Configuration	120/240 Split Phase, (3W+G) 120/208V Three Phase Wye, (4W+G)* (127/220V Three Phase Wye, (4W+G))* (220/380V Three Phase Wye, (4W+G))** 277/480V Three Phase Wye (4W+G)** 240V Three Phase Delta (3W+G) 480V Three Phase Delta, (3W+G) 240/480V Three Phase Delta Hi-Leg, (4W+G)
Maximum Continuous Operating Voltage	120V, 150 VAC (125%); 127V, 150 VAC (118%); 220V, 320 VAC (145%); 240V, 320 VAC; 277V, 320 VAC; 480V, 550 VAC; All Others 115%
Surge Capacity	50 kA/Mode, 100kA/Phase 75 kA/Mode, 150kA/Phase 100 kA/Mode, 200kA/Phase 125 kA/Mode, 250kA/Phase 150 kA/Mode, 300kA/Phase
Short Circuit Current Rating (SCCR)	200kAIC
Protection Modes	All Modes: L-N, L-L, L-G, N-G
Operating Frequency Range	47 - 63 Hz
UL 1449 Location Type	Type 1 (SPDs intended for Line or Load Side of Main Disconnect) or Type 2 (Intended for Load Side of Main Disconnect)
UL 1449 Nominal Discharge Current (In)	20 kA
Standards	UL 1449 4th Edition, CSA, UL 96A Lightning Protection Master Label compliant
Status Indication	Dual Colored LEDs, Audible Alarm, Form C Relay, Surge Counter(Optional)
Enclosure	NEMA 4X Polycarbonate
Dimensions	7.87" x 5.90" x 3.98" (H x W x D)
Weight	5.3 lbs
50 Ohm EMI/RFI Attenuation	-50 db max(Type 2), -45db max(Type 1); from 10 kHz to 100MHz. The system provides up to 120dB insertion loss from 100 kHz to 100 MHz when used in a coordinated facility system.
Response Time	<0.5 nanoseconds
Operating Temperature	-40°C to +75°C
Operating Humidity	0% to 95% non-condensing
Warranty	10 Years

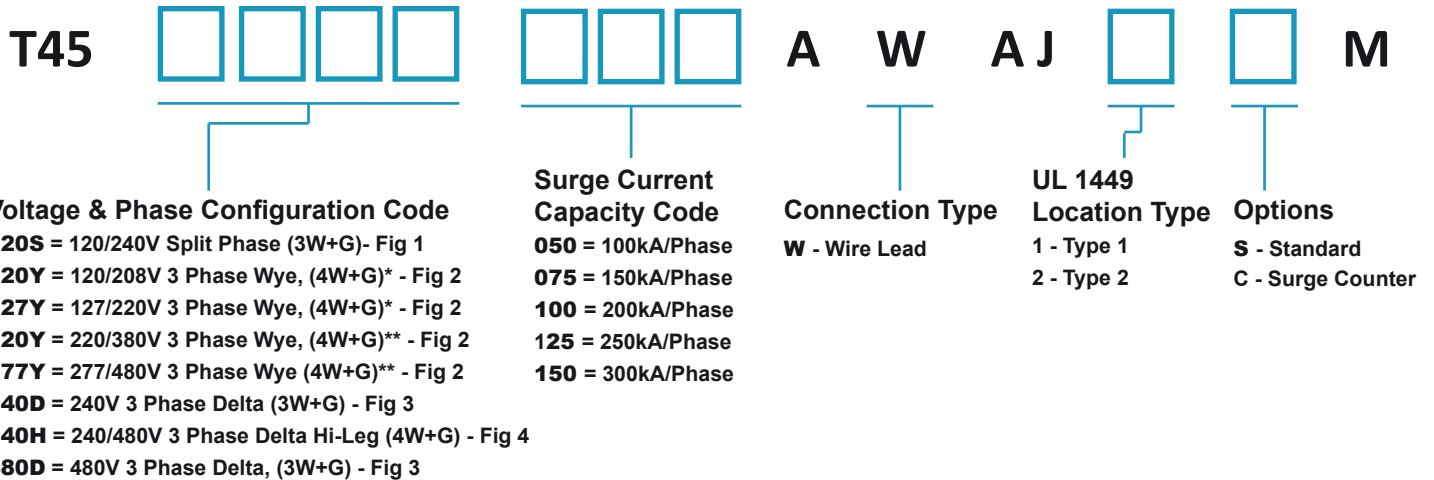


*This is a 120/208V unit, and can be used in 127/220V applications

**This is a 277/480V unit, and can be used in 220/380V applications



T45 Non-Modular Surge Protective Device 100kA - 300kA per Phase



*This is a 120/208V unit, and can be used in 127/220V applications

**This is a 277/480V unit, and can be used in 220/380V applications

You may place the order as either part number.

Example Product number:

Filled in:

T45 120Y 100 A W AJ 1 S M =

Complete:

T45120Y100AWAJ1SM

Fig. 1

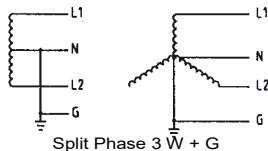


Fig. 2

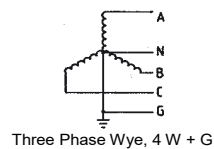


Fig. 3

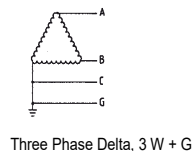
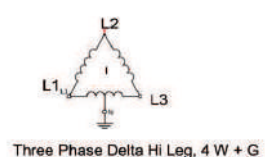


Fig. 4



System Voltage Compatibility									
Model Voltage/ Phase Code	Nominal System Voltages	System Configuration	MCOV	I _n	SCCR	UL 1449 Voltage Protection Rating			
						L-N	L-G	N-G	L-L
120S	120/240	Split Phs, 3W+G	150	20kA	200kA	600	700	700	1200
120Y	120/208; 127/220	3 Phs Wye, 4W+G	150	20kA	200kA	600	700	700	1200
127Y	120/208; 127/220	3 Phs Wye, 4W+G	150	20kA	200kA	600	700	700	1200
220Y	220/380; 240/415; 277/480	3 Phs Wye, 4W+G	320	20kA	200kA	1200	1200	1200	2000
240L	240	Single Phs, 2W+G	320	20kA	200kA		1200		1200
240H	240/480	3 Phs Delta Hi-leg, 4W+G	320/550	20kA	200kA	1200/1800	1200/1800	1200	2000/3000
277Y	220/380; 240/415; 277/480	3 Phs Wye, 4W+G	320	20kA	200kA	1200	1200	1200	2000
240D	220; 230; 240	3 Phs Delta, 3W+G	320	20kA	200kA		1200		1200
480D	380; 400; 415; 440; 460; 480	3 Phs Delta, 3W+G	550	20kA	200kA		1800		2000



T45 Modular Surge Protective Device 100kA - 300kA per Phase

100kA/phase - 300kA/phase Models

Terminal Block Option



These units are the T45 Modular units in the 100kA - 300kA per Phase surge current capacity range. These T45 Modular Surge Protective Devices have a 12" x 12" x 6" NEMA 4 rated steel exterior enclosure. This unit houses a surge module inside that is additionally protected by a NEMA 4X rated polycarbonate enclosure. This helps protect the surge modules during shipping, installation, and provides an extra level of personal safety.

These are modular units; in the event of a module failure or the need to upgrade capacity, the module may be removed and replaced without disturbing the mounted external enclosure or the unit's wiring connections. Due to the internal module being in a NEMA 4X enclosure, replacement and upgraded modules are quick and easy to install, with a greatly mitigated risk of damage from the installer. After disconnecting power, the installer must simply attach the encased module to the mount, and connect the wires to the terminal block.

Rotary Disconnect Option



The modules use advanced Thermally Protected Metal Oxide Varistors. The large-capacity MOVs with symmetrical surge pathways allow these modules to take a strike at their full capacity rating. They come in a variety of voltage and phase configurations. Each module houses dual LED status lights that indicate per phase health, Form "C" dry contact relays, and an Audible Alarm with a silence switch. The module also contains a Surge Counter that is externally viewable. The integrated external mount flange makes mounting quick and easy.

This unit utilizes a terminal block connection that allows for a connection range from #10AWG to 2/0. It is available with a rotary disconnect option.

Features:

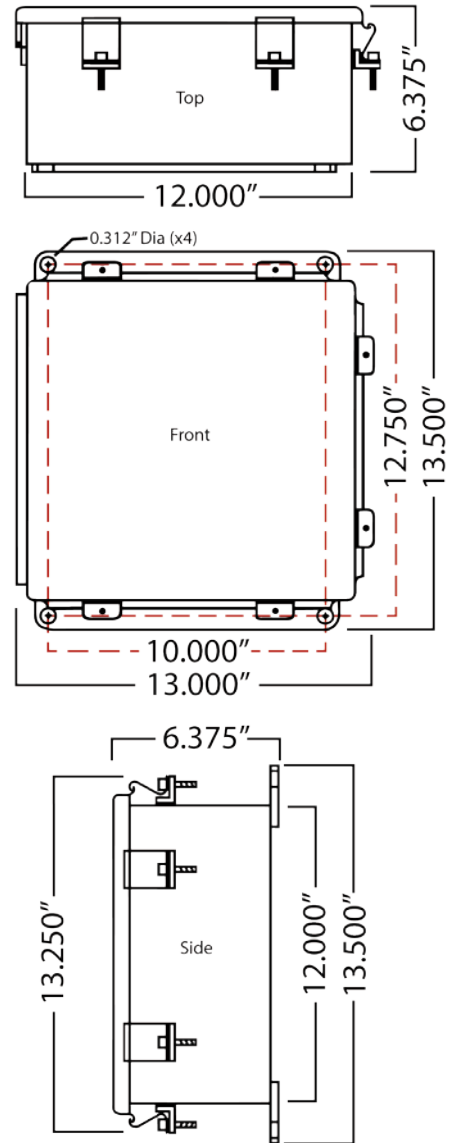
- 100kA, 150kA, 200kA, 250kA & 300kA/phase available
- Replaceable & Upgradable Module
- UL 1449 Fourth Edition Listed
- Available in UL 1449 Type 1 or Type 2 Configurations
- Sine Wave Tracking: UL 1449 Type 2
UL 1283 Listed
- Audible Alarm with a Disable Switch
- Per Phase Dual LED Status Indication
- Externally Viewable Surge Counter
- Form C Dry Contacts

- NEMA 4 Steel Unit with NEMA 4X encased module installed inside
- 20kA Inominal
- 200kA SCCR
- Lifecycle tested to 12,000 10kA Impulses
- All modes of protection
- Thermally Protected MOVs
- Multiple MOV technology featuring large and robust MOVs
- Equidistant and symmetrical surge pathways for a true surge capacity rating
- 10 Year Warranty



T45 Modular Surge Protective Device 100kA - 300kA per Phase

General Technical Specifications	
Connection Type	Parallel, Terminal Lugs - #10AWG - 2/0 AWG Disconnect - #10AWG - 1/0
Voltage, Phase Configuration	120/240 Split Phase, (3W+G) 120/208V Three Phase Wye, (4W+G)* (127/220V Three Phase Wye, (4W+G))* (220/380V Three Phase Wye, (4W+G))** 277/480V Three Phase Wye (4W+G)** 240V Three Phase Delta (3W+G) 480V Three Phase Delta, (3W+G)
Maximum Continuous Operating Voltage	120V, 150 VAC (125%); 127V, 150 VAC (118%); 220V, 320 VAC (145%); 240V, 320 VAC; 277V, 320 VAC; 480V, 550 VAC; All Others 115%
Surge Capacity	50 kA/Mode, 100kA/Phase 75 kA/Mode, 150kA/Phase 100 kA/Mode, 200kA/Phase 125 kA/Mode, 250kA/Phase 150 kA/Mode, 300kA/Phase
Short Circuit Current Rating (SCCR)	200kAIC
Protection Modes	All Modes: L-N, L-L, L-G, N-G
Operating Frequency Range	47 - 63 Hz
UL 1449 Location Type	Type 1 (SPDs intended for Line or Load Side of Main Disconnect) or Type 2 (Intended for Load Side of Main Disconnect)
UL 1449 Nominal Discharge Current (In)	20 kA
Standards	UL 1449 4th Edition, CSA, UL 96A Lightning Protection Master Label compliant
Status Indication	Dual Colored LEDs, Audible Alarm, Form C Relay, Surge Counter
Enclosure	NEMA 4, 12, & 13 Rated
Weight	21 lbs
Dimensions	12" x 12" x 6.375"
50 Ohm EMI/RFI Attenuation	-50 db max(Type 2), -45db max(Type 1); from 10 kHz to 100MHz. The system provides up to 120dB insertion loss from 100 kHz to 100 MHz when used in a coordinated facility system.
Response Time	<0.5 nanoseconds
Operating Temperature	-40°C to +75°C
Operating Humidity	0% to 95% non-condensing
Warranty	10 Years

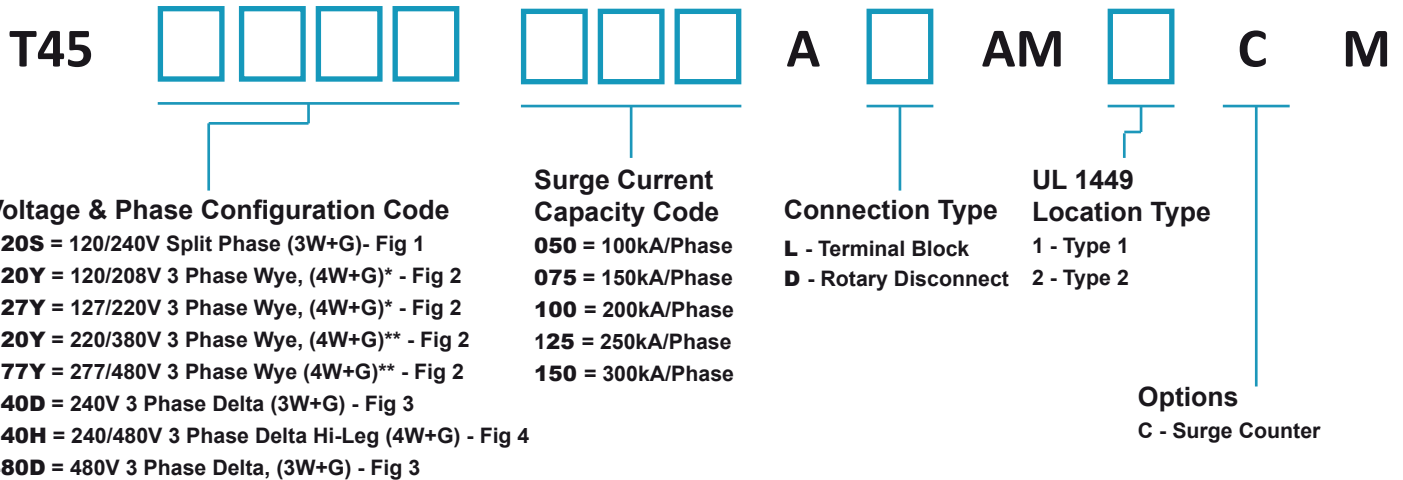


*This is a 120/208V unit, and can be used in 127/220V applications

**This is a 277/480V unit, and can be used in 220/380V applications



T45 Modular Surge Protective Device 100kA - 300kA per Phase



*This is a 120/208V unit, and can be used in 127/220V applications

**This is a 277/480V unit, and can be used in 220/380V applications

You may place the order as either part number.

Example Product number:

Filled in:

Complete:

T45 120Y 150 A L AM 1 C M = T45120Y150ALAM1CM

Fig. 1

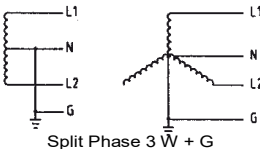


Fig. 2

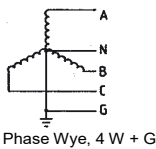


Fig. 3

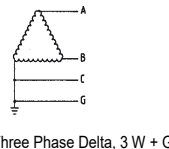


Fig. 4



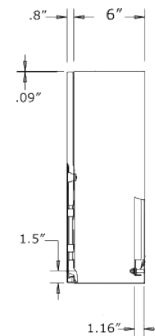
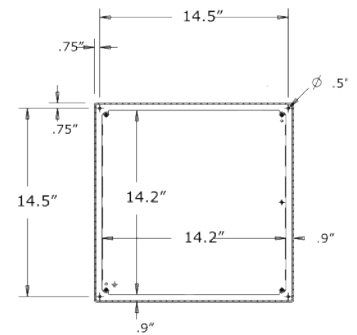
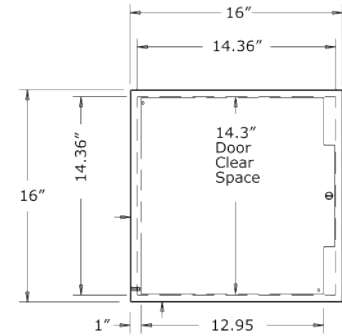
System Voltage Compatibility

Model Voltage/Phase Code	Nominal System Voltages	System Configuration	MCOV	I _n	SCCR	UL 1449 Voltage Protection Rating			
						L-N	L-G	N-G	L-L
120S	120/240	Split Phs, 3W+G	150	20kA	200kA	700	700	700	1200
120Y	120/208; 127/220	3 Phs Wye, 4W+G	150	20kA	200kA	700	700	700	1200
127Y	120/208; 127/220	3 Phs Wye, 4W+G	150	20kA	200kA	700	700	700	1200
220Y	220/380; 240/415; 277/480	3 Phs Wye, 4W+G	320	20kA	200kA	1000	1000	1000	1800
240L	240	Single Phs, 2W+G	320	20kA	200kA		1200		1200
240H	240/480	3 Phs Delta Hi-leg, 4W+G	320/550	20kA	200kA	1200/1800	1200/1800	1200	2000/3000
277Y	220/380; 240/415; 277/480	3 Phs Wye, 4W+G	320	20kA	200kA	1000	1000	1000	1800
240D	220; 230; 240	3 Phs Delta, 3W+G	320	20kA	200kA		1200		1200
480D	380; 400; 415; 440; 460; 480	3 Phs Delta, 3W+G	550	20kA	200kA		1800		2000



T45 Modular Surge Protective Device 400kA - 600kA per Phase

General Technical Specifications	
Connection Type	Parallel, Terminal Lugs - #10AWG - 2/0 AWG Disconnect - #10AWG - 1/0
Voltage, Phase Configuration	120/208V Three Phase Wye, (4W+G)* (127/220V Three Phase Wye, (4W+G))* (220/380V Three Phase Wye, (4W+G)** 277/480V Three Phase Wye (4W+G)** 240V Three Phase Delta (3W+G) 480V Three Phase Delta, (3W+G)
Maximum Continuous Operating Voltage	120V, 150 VAC (125%); 127V, 150 VAC (118%); 220V, 320 VAC (145%); 240V, 320 VAC; 277V, 320 VAC; 480V, 550 VAC; All Others 115%
Surge Capacity	200 kA/Mode, 400kA/Phase 250 kA/Mode, 500kA/Phase 300 kA/Mode, 600kA/Phase
Short Circuit Current Rating (SCCR)	200kAIC
Protection Modes	All Modes: L-N, L-L, L-G, N-G
Operating Frequency Range	47 - 63 Hz
UL 1449 Location Type	Type 1 (SPDs intended for Line or Load Side of Main Disconnect) or Type 2 (Intended for Load Side of Main Disconnect)
UL 1449 Nominal Discharge Current (In)	20 kA
Standards	UL 1449 4th Edition, CSA, UL 96A Lightning Protection Master Label compliant
Status Indication	Dual Colored LEDs, Audible Alarm, Form C Relay, Surge Counter
Enclosure	NEMA 4, 12, & 13 Rated
Dimensions	16" x 16" x 6.8"
Weight	34.7 lbs
50 Ohm EMI/RFI Attenuation	-50 db max(Type 2), -45db max(Type 1); from 10 kHz to 100MHz. The system provides up to 120dB insertion loss from 100 kHz to 100 MHz when used in a coordinated facility system.
Response Time	<0.5 nanoseconds
Operating Temperature	-40°C to +75°C
Operating Humidity	0% to 95% non-condensing
Warranty	10 Years

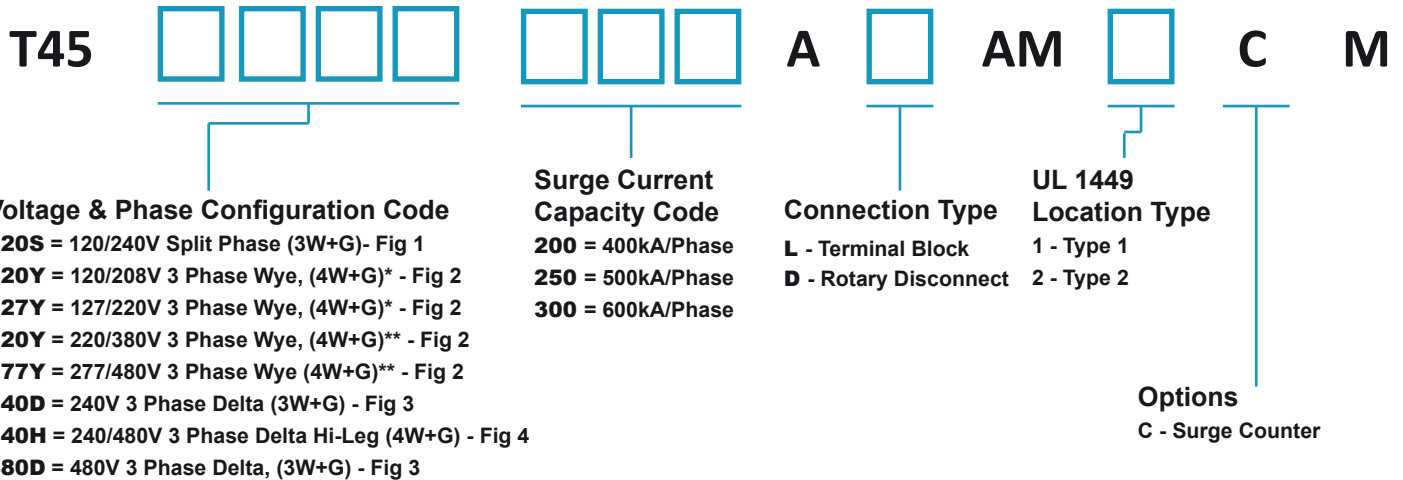


*This is a 120/208V unit, and can be used in 127/220V applications

**This is a 277/480V unit, and can be used in 220/380V applications



T45 Modular Surge Protective Device 400kA - 600kA per Phase



*This is a 120/208V unit, and can be used in 127/220V applications

**This is a 277/480V unit, and can be used in 220/380V applications

You may place the order as either part number.

Example Product number:

Filled in:

Complete:

T45 120Y 300 A L AM 1 C M = T45120Y300ALAM1CM

Fig. 1

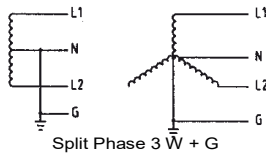


Fig. 2

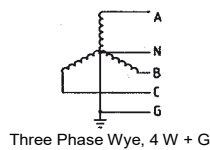


Fig. 3

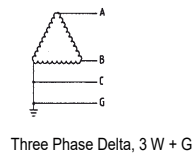


Fig. 4



System Voltage Compatibility

Model Voltage/Phase Code	Nominal System Voltages	System Configuration	MCOV	I _n	SCCR	UL 1449 Voltage Protection Rating			
						L-N	L-G	N-G	L-L
120S	120/240	Split Phs, 3W+G	150	20kA	200kA	700	700	700	1200
120Y	120/208; 127/220	3 Phs Wye, 4W+G	150	20kA	200kA	700	700	700	1200
127Y	120/208; 127/220	3 Phs Wye, 4W+G	150	20kA	200kA	700	700	700	1200
220Y	220/380; 240/415; 277/480	3 Phs Wye, 4W+G	320	20kA	200kA	1000	1000	1000	1800
240L	240	Single Phs, 2W+G	320	20kA	200kA		1200		1200
240H	240/480	3 Phs Delta Hi-leg, 4W+G	320/550	20kA	200kA	1200/1800	1200/1800	1200	2000/3000
277Y	220/380; 240/415; 277/480	3 Phs Wye, 4W+G	320	20kA	200kA	1000	1000	1000	1800
240D	220; 230; 240	3 Phs Delta, 3W+G	320	20kA	200kA		1200		1200
480D	380; 400; 415; 440; 460; 480	3 Phs Delta, 3W+G	550	20kA	200kA		1800		2000



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