



Features:

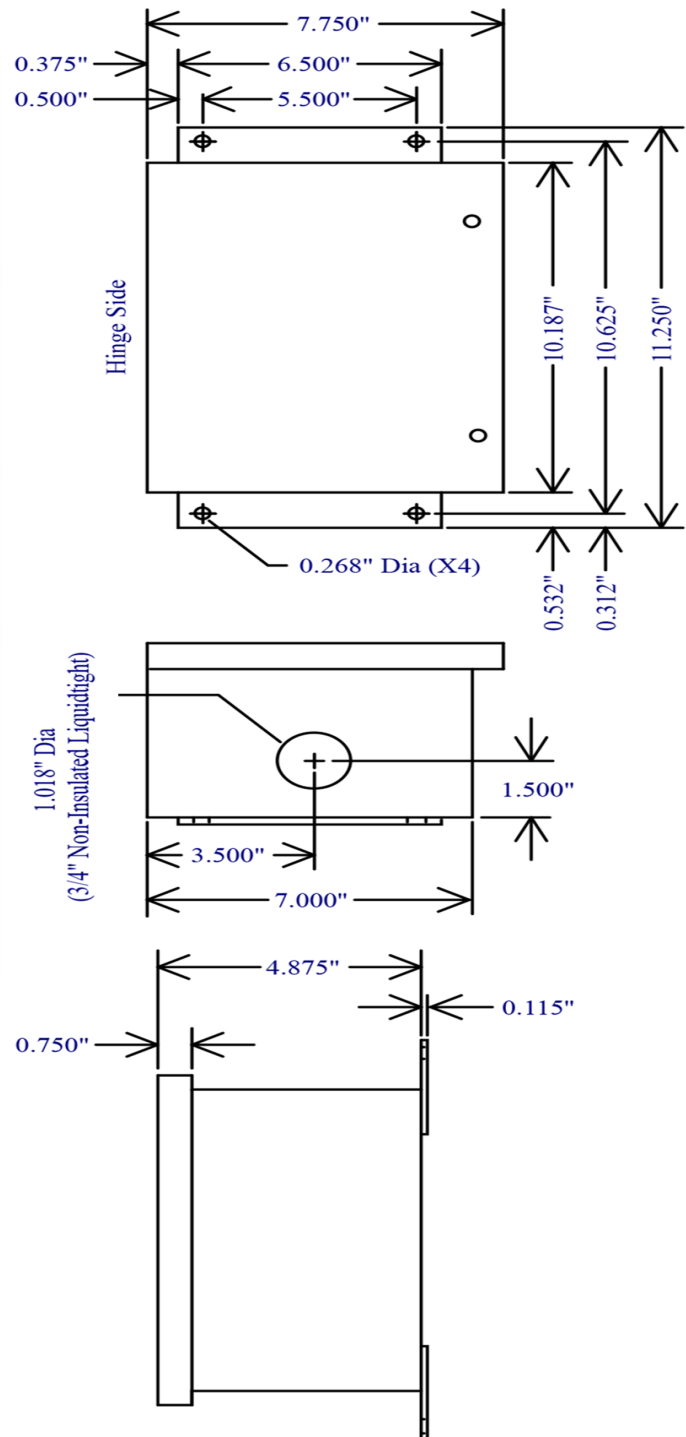
- Thermally Protected MOV
- Surge Current Levels:
 - 50 kA/Mode, 100 kA/Phase
 - 75 kA/Mode, 150 kA/Phase
 - 100 kA/Mode, 200 kA/Phase
 - 125 kA/Mode, 250 kA/Phase
 - 150 kA/Mode, 300 kA/ Phase
- ANSI/UL 1449 4th Edition, CUL
- Short Circuit Rating: 200 kAIC
- Sine Wave Tracking: UL Type 2
- Surge Impulse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

The **Tier 450** Series of surge protection devices (SPDs) feature the industry's most advanced metal oxide varistor (MOV) technology. Its thermally protective and arc extinguishing design have a significant advantage when subjected to abnormal over-voltage and high fault current. The **Tier 450** Series of products incorporates this technology in a compact, easy to install package. The **Tier 450 M1** is available in a wide range of surge capacity levels, and voltage and phase configurations. This is our only standard configuration wire lead unit in a NEMA 4 steel enclosure. All other wire lead units are in polycarbonate enclosures, or special purpose configurations such as a panel extender. Its NEMA 4, 12, & 13 rated steel enclosure, with a liquid tight connector, makes 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). These features makes this SPD an ideal choice for any business that relies on microprocessor driven equipment. This unit is a good, and cost effective, option where a wire lead connection is practical and a steel enclosure is necessary.

If you don't see a specification you are looking for, call our factory. We will accommodate custom job 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 w/ Disable Switch
Enclosure	NEMA 4 Steel
50Ohm EMI/RFI Attenuation(Type 2 only)	50dB
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



The **M1 SPD** is lifecycle tested. Repeated IEEE Category C, 10kA impulses ensures each product will last for years.

Why Install Surge Protection?

Transients generated by lightning, utility switching or an internal process can significantly impact your facility's power quality. These power anomalies can easily disrupt your process or damage important equipment, leading to costly downtime and equipment repair.

Install SPDs Throughout Your Building

The IEEE (Institute of Electrical and Electronics Engineers) recommends cascading surge protection throughout your facility. Placing high surge capacity SPDs at the service entrance (or conductor entry points), followed by SPDs at critical downstream distribution and branch locations.



Southern Tier Technologies

Tier 450 M1 Non-Modular Wire Lead Surge Protection Device

Table A: Voltage & Source Configuration

Model Code	Voltage	Source Configuration
120S	120/240	Split Phase, 3W+G (L1, L2, N, G)
120N	120	Single Phase, 2W+G (L1, N, G)
120Y	120/208	Three Phase Wye, 4W+G (L1, L2, L3, N, G)
208N	208	Single Phase, 2W+G (L1, L2, G)
240N	240	Single Phase, 2W+G (L1, L2, G)
240D	240	Three Phase Delta, 3W+G (L1, L2, L3, G)
277Y	277/480	Three Phase Wye, 4W+G (L1, L2, L3, N, G)
480D	480	Three Phase Delta, 3W+G (L1, L2, L3, G)
480N	480	Single Phase, 2W+G (L1, L2, G)

Table B: Surge Current Capacity

Model Code	Surge Capacity /Mode	Surge Capacity / Phase
025	25 kA	50kA
050	50 kA	100 kA
075	75 kA	150 kA
100	100 kA	200 kA
125	125 kA	250 kA
150	150 kA	300 kA
200*	200 kA	400 kA
250*	250 kA	500 kA
300*	300 kA	600 kA

* Surge levels only available on M3 Modular Disconnect and M3 Modular Terminal Block Models

Dimensional Data with Mount Footprint

Enclosure	Height	Width	Depth	Weight	Mounting Dimensions	Height	Width
200 - 300 kA/Mode M3 Double Module NEMA 4, 12, & 13 Disconnect	16.000"	16.000"	8.800"	34.70 lbs		14.500"	14.500"
200-300 kA/Mode M3 Double Module NEMA 4, 12, & 13 Terminal Block	16.000"	16.000"	8.800"	34.00 lbs		14.500"	14.500"
M2 Modular (Steel) NEMA 4, 12, & 13 Terminal Block	13.500"	13.000"	6.375"	20.30 lbs		12.750"	10.000"
M2 Modular (Steel) NEMA 4, 12, & 13 Disconnect	13.500"	13.000"	6.375"	21.00 lbs		12.750"	10.000"
M1 Non-Modular NEMA 4 (Steel) Wire Lead	11.250"	7.750"	4.990"	9.20 lbs		10.625"	5.500"
P3 Non-Modular NEMA 4X (Polycarbonate) Wire Lead	9.140"	5.700"	4.150"	5.30 lbs		8.575"	5.200"
P2 Non-Modular NEMA 4X (Polycarbonate) Wire Lead	6.375"	3.160"	3.000"	1.40 lbs		5.810"	2.437"
P1 Non-Modular NEMA 4X (Polycarbonate) Wire Lead	1.630"	3.545"	2.290"	0.50 lbs		1.525"	3.025"

Available Voltage Levels By Model

Voltage Model Code	M2 or M3 Modular Disconnect or Terminal Block	Wire Lead M1 NEMA 4 Steel or P3 NEMA 4X Poly	Wire Lead NEMA 4X P2 25 kA	P1 Wire Lead NEMA 4X T42 25 KA Single Phase
120N			120V Single Phase	120V Single Phase
120S	120/240V Split Phase	120/240V Split Phase	120/240V Split Phase	
120Y	120V 3 Phase Wye	120V 3 Phase Wye	120V 3 Phase Wye	
208N			208V Single Phase	
240N			240V Single Phase	
240D	240V 3 Phase Delta	240V 3 Phase Delta	240V 3 Phase Delta	
277Y	277/480V 3 Phase Wye	277/480V 3 Phase Wye	277/480V 3 Phase Wye	
480D	480V 3 Phase Delta	480V 3 Phase Delta	480V 3 Phase Delta	

Tier400SPD Series, 450 Family Ordering Information: Example Model Number: T45120Y100AWAM2C

Positions: 1-3 Product Family	Positions: 4-7 Voltage / Phase Configuration	Positions: 8-10 Surge Capacity	Position: 11 Protected Modes	Position: 12 Connection Type	Position: 13 Status	Position: 14 Enclosure	Position: 15 UL Type	Position: 16 Options
T45 = 450 Family T42 = 420 Family	See Table A	See Table B	A = All connected modes	W = Wire Lead L = Terminal Block D = Disconnect	A = Form C Contact & LED L = LED only	J = NEMA 4X; Polycarbonate M = NEMA 4; Steel	1=UL Type 1 2=UL Type 2	S = Standard /No Options C = Surge Counter