

# SurgeFree™



## Models

**PT250 • PT160 • PT120**

## Service Panel Protection

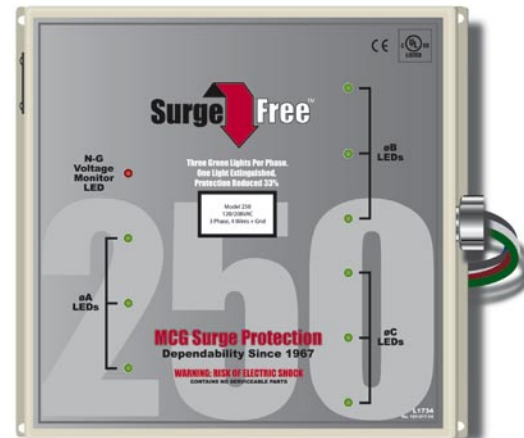
Taking compact protectors to the next level, MCG's new PT Series is the most advanced nonmodular protector money can buy. Within its small 10" x 10" enclosure, there are up to 20 high energy, thermally protected varistors packed inside. These high performance varistors are typically only found in much higher priced protectors.

Critical electronics are saved by multiple fused surge paths per phase. The redundant paths are comprised of high energy surge fuses that conduct large surge currents repeatedly without degrading. Front panel protection status LEDs and 1 Form C relay contacts let you know the protector's status at a glance. A surge event counter (standard on PT250) displays the number of times that the protector diverts a surge. An abnormal voltage monitor LED monitors voltage between Neutral and Ground, illuminating when abnormal voltages are detected.

The PT Series guards small to moderately sized service entrance panels as well as branch panels, transfer switches and network closets.

## FEATURES

- I peak: 250,000A/Phase (PT250), 160,000A/Phase (PT160), 120,000A/Phase (PT120)
- Redundancy - Multiple fused surge paths/phase  
PT250 - Triple Redundant  
PT160 & PT120 - Double Redundant
- Thermally protected varistors with integral fuse element
- Surge event counter optional (standard on PT250 only)
- Remote 1 Form C relay contacts with status LED,
- All modes protected
- Front Panel Status Monitoring
- 10 AWG connection cable
- EMI/RFI filter
- UL1449 2nd Ed Listed, including the requirements of Feb. 9, 2007
- NEMA 1, Powder Coated Steel Enclosure



**Ipeak up to 250,000A**

**UL 1449, 2nd Ed. Listed**  
Including the requirements of Feb 9, 2007



**20-Year Warranty**

Filter Attenuation			
MIL STD 220A (50 Ohm):	120 VAC	240 VAC	277 VAC
-30db	50kHz	50kHz	80kHz
-40db	130kHz	130kHz	180kHz
-50db	195kHz	195kHz	270kHz
-60db	230kHz	230kHz	300kHz

Surge Current/Phase (8/20 $\mu$ s) PT250:	1 Event - 250kA. 10,000 Events: 12kA.
Surge Current/Phase (8/20 $\mu$ s) PT160:	1 Event - 160kA. 10,000 Events: 6kA.
Surge Current/Phase (8/20 $\mu$ s) PT120:	1 Event - 120kA. 10,000 Events: 4.5kA.
Status Indicators:	Green LED Indicators - Protection Status, Red LED Indicator - N to G Voltage Monitor, Green relay contact status LED.
Modes of Protection:	L-N, L-G, L-L, N-G
Operating Altitude:	13,000ft. (4000m)
Temp. (Operating/Storage):	-40° to +70°C/-40° to +85°C
Enclosure:	NEMA 1, 16 gauge steel (0.050" thick), Powder Coated
Cable Connection:	10 AWG (5.27mm <sup>2</sup> ) cable, 3 ft. (91.4cm) provided
Dimensions:	10" x 10" x 4" (254 x 254 x 102mm)
Mounting:	10.75" x 8.5"/.220" ID - 4 holes (273 x 216mm/5.6mm ID) - 4 holes
Weight:	12 lbs. (5.5kg) for PT250 11.4 lbs. (5.2kg) for PT160 11.2 lbs. (5.1kg) for PT120



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# Specifications

- ANSI/IEEE C62.41-2002
- IEC 61643-1-1998
- UL 1449, 2nd Edition including requirements of Feb 9, 2007

## Model PT250

Model	Service	Higher Headroom MOVs VAC	UL SVR 500A 8/20 $\mu$ s	Cat. B3 6kV, 3kA Let-Thru V L-N	Cat. C3 20kV, 10kA Let-Thru V L-N	Energy Absorption (8/20 $\mu$ s) Joules
-120S	120VAC, 1 $\phi$ , 2W+Gnd	180	500	620	850	10,300
-120T	120/240, 1 $\phi$ , 3W+Gnd	180	500	620	850	10,300
-120Y	120/208, 3 $\phi$ , 4W+Gnd, Wye	180	500	620	850	14,720
-220Y	220/380, 3 $\phi$ , 4W+Gnd, Wye	390	1000	1140	1470	44,800
-240Y	240/415, 3 $\phi$ , 4W+Gnd, Wye	390	1000	1140	1470	44,800
-240DCT*	240/120/120, 3 $\phi$ , 4W+Gnd	320/180	1000/500	1100/620	1430/850	23,230
-277Y	277/480, 3 $\phi$ , 4W+Gnd, Wye	390	1000	1140	1470	44,800
-347Y**	347/600, 3 $\phi$ , 4W+Gnd, Wye	460	N/A	1190	1530	51,520

## Model PT160

Model	Service	Higher Headroom MOVs VAC	UL SVR 500A 8/20 $\mu$ s	Cat. B3 6kV, 3kA Let-Thru V L-N	Cat. C3 20kV, 10kA Let-Thru V L-N	Energy Absorption (8/20 $\mu$ s) Joules
-120S	120VAC, 1 $\phi$ , 2W+Gnd	180	500	650	880	7,360
-120T	120/240, 1 $\phi$ , 3W+Gnd	180	500	650	880	7,360
-120Y	120/208, 3 $\phi$ , 4W+Gnd, Wye	180	500	650	880	10,300
-220Y	220/380, 3 $\phi$ , 4W+Gnd, Wye	390	1000	1200	1530	31,360
-240Y	240/415, 3 $\phi$ , 4W+Gnd, Wye	390	1000	1200	1530	31,360
-240DCT*	240/120/120, 3 $\phi$ , 4W+Gnd	320/180	1000/500	1130/650	1500/880	14,560
-277Y	277/480, 3 $\phi$ , 4W+Gnd, Wye	390	1000	1200	1530	31,360
-347Y**	347/600, 3 $\phi$ , 4W+Gnd, Wye	460	N/A	1240	1600	36,060

## Model PT120

Model	Service	Higher Headroom MOVs VAC	UL SVR 500A 8/20 $\mu$ s	Cat. B3 6kV, 3kA Let-Thru V L-N	Cat. C3 20kV, 10kA Let-Thru V L-N	Energy Absorption (8/20 $\mu$ s) Joules
-120S	120VAC, 1 $\phi$ , 2W+Gnd	180	500	650	880	5,890
-120T	120/240, 1 $\phi$ , 3W+Gnd	180	500	650	880	5,890
-120Y	120/208, 3 $\phi$ , 4W+Gnd, Wye	180	500	650	880	8,100
-220Y	220/380, 3 $\phi$ , 4W+Gnd, Wye	390	1000	1200	1530	24,640
-240Y	240/415, 3 $\phi$ , 4W+Gnd, Wye	390	1000	1200	1530	24,640
-240DCT*	240/120/120, 3 $\phi$ , 4W+Gnd	320/180	1000/500	1130/650	1500/880	11,290
-277Y	277/480, 3 $\phi$ , 4W+Gnd, Wye	390	1000	1200	1530	24,640
-347Y**	347/600, 3 $\phi$ , 4W+Gnd, Wye	460	N/A	1240	1600	28,340

\* High-leg Delta Center Tapped \*\* Not Tested to UL1449

Note: PT120 L-G let-thru levels slightly higher than PT160 L-G due to lower Ipk capacity.  
Note: All let-thru levels measured with 6" lead length.

**A Note On Headroom** A surge protector responds to increases in voltage. Surge protectors triggered by the nominal line voltage are undesirable, consequently headroom is always factored into surge protector design. Long duration voltage swells occur on power lines and can damage a surge protector, leaving facility equipment vulnerable. By employing higher headroom, continuity of surge protection is guaranteed. This feature is standard in MCG surge protectors. Higher headroom allows varistors to ride out voltage swells while ensuring that let-through voltage remains within CBEMA (now ITIC) guidelines. The CBEMA curve is the most accepted graph worldwide for equipment susceptibility analysis.