STABILINE®

TB1 Series-Transient Voltage Surge Suppressors

Series-connected Design

Superior Electric

Terminal Board / Series-connected Suppression Filter System

The TB1 Series STABILINE® Transient Voltage Surge Suppressor is engineered for hard-wired installation within or adjacent to electrical loads such as programmable logic controllers, motion controllers, robotics, motors, adjustable speed drives, process automation systems, pumps, heaters, HVAC systems and other point-of-use applications.

Compact and powerful, the TB1 Series unit protects these and other individual components from damaging electrical transients, high frequency noise and high-energy disturbances. Available in two Load Current and Surge Amp Capacity per Mode ratings:

20A / 45kA or 40A / 65kA

TB1 Series Features

- ***Industry's Best Surge Current Rating***
- ***Series-connected Design***
- ***Rugged, Nonmetallic Enclosure***
- ***Sand-encapsulated***
- ***Integral Components***
- ***High-frequency Noise Filtering***
- ***Compact Footprint/Easy Installation***
- ***Status Indicator Light***
- ***X and Y Capacitors***

TB1 Series Benefits

- ***Extends Equipment Life***
- ***Increased Uptime***
- ***Provides Higher System Reliability***
- ***Increases Product Value***
- ***Offers Low-cost Protection***
- ***Reduces Maintenance Costs***
- ***Provides Point-of-use Protection***
- ***Eliminates System Upset***

Surge Current Protection

Parallel MOV Arrays: TB1 models employ metal oxide varistors (MOVs) in parallel arrays placed at the input and output terminals to protect critical loads from high-energy transient damage. Single phase 120, 220 and 277 VAC types provide 3 modes of protection (L-N, L-G and N-G), while 120/240 VAC (split phase) and 2 of 3 phase types provide 6 modes of protection (L1-N, L2-N, L1-G, L2-G, L1-L2 and N-G).

EMI / RFI Noise Attenuation

Capacitors and Inductors: TB1 models utilize UL-recognized inductors and X and Y capacitors to filter error-producing high-frequency noise. Frequency-specific noise attenuation values are published (see other side of data sheet) per NEMA LS-1 across the bandwidth of 1KHz to 100MHz.

Component Integrity

Sand-filled Enclosure: TB1 Model MOV arrays, capacitors and inductors are encapsulated in sand, the arc-quenching compound typically used in fuses. This ensures protection at the surge protection device level and overall system safety for the user.

Applications

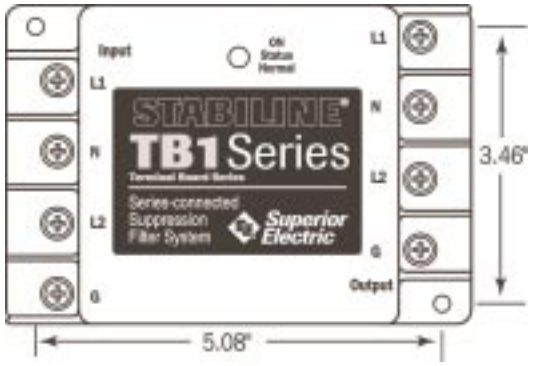
Choose from two Load Current and Surge Amp Capacity Series for unequaled surge current protection and high-frequency noise attenuation.

TB1-45- The most popular type, it has the highest noise attenuation capabilities and a surge rating of 45kA per mode.

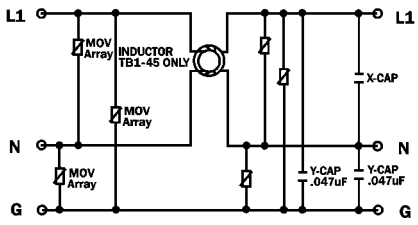
TB1-65- for use in high-exposure applications such as outdoor lighting, these types protect at 65kA in L-N and 55kA in L-G, L-L and N-G modes.

		Single Phase Models						Three Wire Models					
		120 VAC			220 VAC			120/240 VAC Split Phase			220/380 VAC 2 of 3 Phases			277/480 VAC 2 of 3 Phases		
	Load Current Rating 20A / 45kA	**TB1-45-120-1G-20**			**TB1-45-220-1G-20**			**TB1-45-277-1G-20**			**TB1-45-120/240-2G-20**			**TB1-45-220/380-2G-20**			**TB1-45-277/480-2G-20**		
PERFORMANCE SPECIFICATIONS	**Tested Single-pulse Surge Current Capacity per Mode**	45,000A									45,000A								
	Clamping Voltage (6kV/500A Combination Waveform)	L-N	L-G	N-G	L-N	L-G	N-G	L-N	L-G	N-G	L-N	L-G	N-G	L-N	L-G	N-G	L-N	L-G	N-G
		360V	360V	360V	660V	700V	640V	820V	820V	860V	360V	360V	360V	660V	700V	640V	820V	820V	860V
	High Frequency Noise Filtration	L-N	L-G								L-N	L-G							
	1 KHz	6 dB	6 dB								6 dB	6 dB							
	10 KHz	16 dB	6 dB								16 dB	6 dB							
	100 KHz	42 dB	16 dB								42 dB	16 dB							
	1 MHz	25 dB	55 dB								25 dB	55 dB							
	10 MHz	21 dB	81 dB								21 dB	81 dB							
	100 MHz	36 dB	80 dB								36 dB	80 dB							
PERFORMANCE SPECIFICATIONS	**Load Current Rating 40A / 65kA**	**TB1-65-120-1G-40**			**TB1-65-220-1G-40**			**TB1-65-277-1G-40**			**TB1-65-120/240-2G-40**			**TB1-65-220/380-2G-40**			**TB1-65-277/480-2G-40**		
	Tested Single-pulse Surge Current Capacity per Mode	65,000A									65,000A								
	Clamping Voltage (6kV/500A Combination Waveform)	L-N	L-G	N-G	L-N	L-G	N-G	L-N	L-G	N-G	L-N	L-G	N-G	L-N	L-G	N-G	L-N	L-G	N-G
		360V	360V	360V	660V	700V	640V	820V	820V	860V	360V	360V	360V	660V	700V	640V	820V	820V	860V
	High Frequency Noise Filtration	L-N	L-G								L-N	L-G							
	1 KHz	6 dB	6 dB								6 dB	6 dB							
	10 KHz	16 dB	6 dB								16 dB	6 dB							
	100 KHz	42 dB	16 dB								42 dB	16 dB							
	1 MHz	25 dB	55 dB								25 dB	55 dB							
	10 MHz	21 dB	81 dB								21 dB	81 dB							
	100 MHz	36 dB	80 dB								36 dB	80 dB							
GENERAL SPECIFICATIONS	**Line Frequency Range**	50/60 Hz									50/60 Hz								
	Maximum Continuous Operation Voltage (MCOV)	> 125%			> 125%			> 115%			> 125%			> 125%			> 115%		
	Modes of Protection	3 modes (L-N, L-G, N-G)									6 modes (L1-N, L2-N, L1-G, L2-G, L1-L2, N-G)								
	Connection	Series/In-line; Terminal Block Termination									Series/In-line; Terminal Block Termination								
	Minimum Wire Size	#12 AWG THHN									#12 AWG THHN								
	Maximum Wire Size	#8 AWG THHN									#8 AWG THHN								
	Warranty	Five Years																	
	Protection Present Status	Illuminated LED Indicates Proper Operation of the Device																	
	Temperature *Operating & Storage*	-40˚C to 60˚C (-40˚F to 140˚F)																	
	Humidity	5-95 % Non-condensing																	
	Weight	2.25 lbs (1kg)																	
	Dimensions *H x W x D Inches*	4.0 x 5.8 x 2.0																	
	H x W x D (mm)	(102 x 147 x 51)																	
	Standards Compliance	UL 1449-Recognized (2nd Edition), UL 1283, NEMA LS-1 1992 ANSI/IEEE C62.41 and ANSI/IEEE C62.45																	

The information and specifications stated in this document are subject to change without notice.

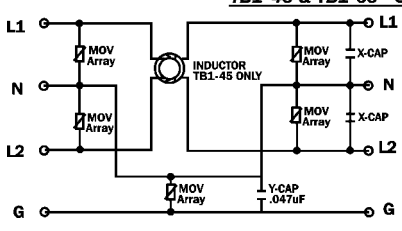


TB1-45 & TB1-65 - SINGLE PHASE



USE ONLY THE L1 TERMINAL LUG FOR THE PHASE WIRES (INPUT & OUTPUT) WHEN CONNECTING TB1 IN A SINGLE PHASE CONFIGURATION

TB1-45 & TB1-65 - SPLIT PHASE



MATCH THE CORRESPONDING L1 & L2 TERMINAL LUGS FOR THE INPUT AND OUTPUT PHASE WIRES WHEN CONNECTING A SPLIT PHASE CONFIGURATION

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