TD0100AX

Technical Data

AC SURGE PROTECTOR

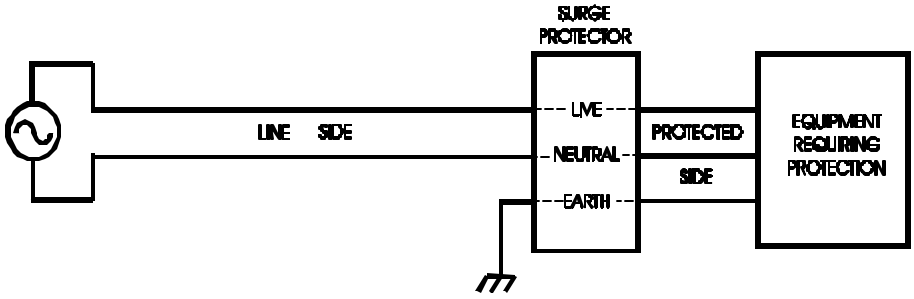
Type: **TSP-WG6-xxxVAC-10A-01**
Where: **xxx = Input Voltage**

Features:

- Handles large current surges and voltage spikes without wear and tear to the circuitry of the protector
- Protection against closer (stronger) lightning strikes
- Hybrid design features reflection of surge energy as well as MOV suppression
- LED indicator ensures continued protection and avoids unnecessary replacement costs
- 100% redundancy
- Compact WEG 6 pin DIN rail mount

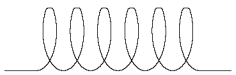
Application: Transient surge protectors provide common and differential mode protection for toll booths, drawbridges, street light controllers and railroad crossing gates/signals. Electronic equipment is extremely susceptible to transient voltages and surge currents due to its relatively fragile semiconductor construction. A surge protector is a cost effective method of ensuring that equipment will have maximum life.

Function: The module has a PROTECTED - LIVE, NEUTRAL and EARTH side which is connected to the equipment supply lines requiring protection. It also has a LINE - LIVE, NEUTRAL and EARTH side which is connected to the AC supply power conductors. The EARTH connection of the modules must be terminated to earth by low impedance heavy gauge wire.



Description: The TSP-WG6-xxxVAC-10A-01 is a three stage transient protection module which provides over-voltage and surge current protection for single phase supply lines. The first stage provides transient rise time reduction. The second stage provides the primary transient voltage clamping and a LED circuit to indicate that the device is still fully functional. This second stage will be removed from the circuit well before the useful life of the device has expired. This will provide ample time for the device to be replaced ensuring continued protection of the connected equipment. The third stage is the most rugged and provides the bulk of the transient protection.

STAGE 1



Consists of an inductor that results in an impedance mismatch which reflects some of the energy back down the line in the case of a surge. None of the actual clamping occurs at this stage.

STAGE 2

Consists of a fuse, LED and a single MOV. Provides less than 5% of the protection, but it does start clamping some surges.After many clamping cycles, the MOV will become resistive and the fuse will blow. The indicator LED will go out, whichis an advanced warning that the surge protector is starting to wear out. It will still function, but it should be replaced soon.

STAGE 3

The bulk of the protection takes place at this stage. It consists of numerous MOVs that clamp surges and can handle large amounts of power.

Part Number	MOV Stage 2	MOV Stage 3
TSP-WG6-120VAC-10A-01 (120Vac)	S10V-S14K130	S10V-S520K140
TSP-WG6-240VAC-10A-01 (240Vac)	S10V-514K275	S10V-S520K300

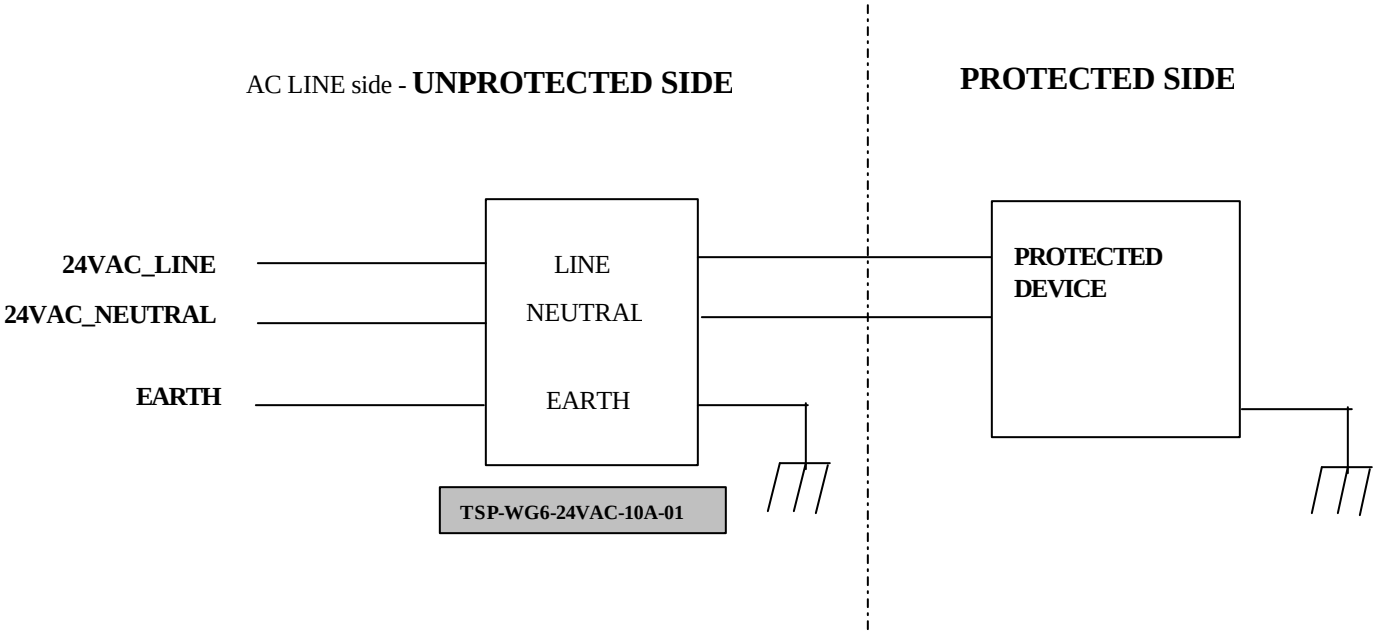
Technical Specifications: All voltages are RMS unless otherwise specified. All specifications typical at nominal input voltage and 25 degrees C unless otherwise specified.

Packaging / Dimensions: WEG 6 terminal modular housing, #12 to #22 AWG terminals
Size: 60.6 mm x 90.5 mm x 22.5 mm (2.39" x 3.56" x 0.89")
(W x H x D excluding DIN Rail)

Operating Conditions: -40 to +85°C (-40 to 185°F), 0 to 93% Relative Humidity

Operating Voltage:	**18VAC**	**24VAC**	**48VAC**	**120VAC**	**240VAC**
LINE Side Max. Input Voltage	20VAC	30VAC	60VAC	130VAC	270VAC
PROTECTED Side Voltage Level Suppression Begins:					
Stage Two	30V	42V	90V	175V	390V
Stage Three	35V	50V	110V	195V	440V
Max. Clamp Volts for Maximum Transients on Line:					
Stage Two	65V	93V	165V	340V	710V
Stage Three	77V	110V	200V	360V	775V
Surge Current:					
8/20µSec Pulse L to N	9000A	9000A	30500A	36500A	28500A
L to E	4000A	4000A	13000A	16000A	16000A
N to E	4000A	4000A	13000A	16000A	8000A
2mSec Pulse L to N	94J	139J	177J	346J	590J
L to E	44J	66J	80J	156J	346J
N to E	44J	66J	80J	156J	173J
Response Time	<5 nSec	<5 nSec	<5 nSec	<5 nSec	<5 nSec
Resistance to Earth:					
Max. Over-Voltage	0.01 Ohm	0.01 Ohm	0.01 Ohm	0.01 Ohm	0.01 Ohm
Operating Voltage	>1 MOhm	>1 MOhm	>1 MOhm	>1 MOhm	>1 MOhm

Wiring:



Ordering Part Number: **With Indicator**

18VAC 10A ... TSP-WG6-18VAC-10A-01
24VAC 10A ... TSP-WG6-24VAC-10A-01
48VAC 10A ... TSP-WG6-48VAC-10A-01
120VAC 10A ... TSP-WG6-120VAC-10A-01
240VAC 10A ... TSP-WG6-240VAC-10A-01

Variations are available by special order.

Specifications are subject to change without notice. Form: TD0100AX-06/17/03