One wire
4 to 20mA CURRENT LOOP
SURGE PROTECTOR

Type: TSP-WG4-20MA-xxxV-01 (Unipolar)
Type: TSP-WG4-20MA-xxxV-03 (Bipolar)
Where:  xxx = Compliance 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 TRANZORB and MOV suppression
- 100% redundancy
- Compact WEG 4 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 side which is connected to the transducer output or to the data acquisition system input and a LINE side which is connected to the transmission wire. The EARTH connection of the modules must be terminated to earth by low impedance heavy gauge wire.

Description:  The transient surge protector features a three stage protection mechanism which provides over-voltage and surge current protection for 1 wire +/- 4-20mA current loops. Internally, the module has 100% redundancy to safeguard the system and prevent nuisance failures. This series of modules is for systems using a separate power supply for the transducer and the data acquisition system.
**Technical Specifications:** All specifications typical at nominal input voltage and 25 degrees C unless otherwise specified.

**Operating Voltage:**

<table>
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<tr>
<th>Unipolar = +VDC</th>
<th>Bipolar = +/-VDC or AC RMS</th>
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<tbody>
<tr>
<td>+(+/−)15V</td>
<td>+(+/−)30V</td>
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<tr>
<td>+(+/−)60V</td>
<td>+(+/−)200V</td>
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- **LINE Side Max. Input Voltage:**
  - 17.1VDC
  - 33.3VDC
  - 70.1VDC
  - 256VDC

- **Over-Voltage Level PROTECTED Side Suppression Begins:**
  - Stage Two TRANZORB: 19VDC, 37.1VDC, 77.9VDC, 285VDC
  - Stage Three MOV: 20VRMS, 42VRMS, 89VRMS, 330VRMS

- **Maximum Clamp Volts For Maximum Transients on Line:**
  - Stage Two TRANZORB: 27.7VDC, 53.9VDC, 113VDC, 414VDC
  - Stage Three MOV: 43VRMS, 93VRMS, 165VRMS, 595VRMS

- **Surge Current:**
  - 8/20µSec Pulse: 4000A, 4000A, 13000A, 8000A
  - 2mSec Pulse: 24 Joules, 52 Joules, 66 Joules, 130 Joules

- **Series Resistance:**
  - 15 Ohms

- **Resistance to Earth:**
  - Max Over-Voltage: 0.01 Ohm, 0.01 Ohm, 0.01 Ohm, 0.01 Ohm
  - Operating Voltage: >1 MOhm, >1 Mohm, >1 MOhm, >1 MOhm

- **Suppression Threshold Voltage Derating (mV/EC):**
  - 19.0, 36.0, 86.0, 315.0

**Packaging / Dimensions:**

- WEG 4 terminal modular housing, #12 to #22 AWG terminals
- Size: 60.6 mm x 90.5 mm x 16.5 mm (2.39" x 3.56" x 0.65")
- (W x H x D excluding DIN Rail)

**Operating Conditions:**

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

**Ordering Part Number:**

- +15V ...... TSP-WG4-20MA-15V-01 (Unipolar)
- +30V ...... TSP-WG4-20MA-30V-01
- +60V ...... TSP-WG4-20MA-60V-01
- +200V ..... TSP-WG4-20MA-200V-01
- +(+/−)15V ...... TSP-WG4-20MA-15V-03 (Bipolar)
- +(+/−)30V ...... TSP-WG4-20MA-30V-03
- +(+/−)60V ...... TSP-WG4-20MA-60V-03
- +(+/−)200V .... TSP-WG4-20MA-200V-03

Variations are available by special order.

Specifications are subject to change without notice. Form: TD0102AX-7/20/98