SP-RS485-12V-O

Weather Resistant Lightning and Surge Protector for RS-485 Control plus DC Power Lines

Applications

- RS-485 lines DC supply voltage
- Analog or IP video surveillance cameras
- Pool/spa and industrial controllers and keyboards
- Door/gate access control with RS-485 and power
- Pan-Tilt-Zoom (PTZ) camera controllers

Features

- Individual protection circuits for RS-485 control and power lines
- 3-Stage protection provided for all lines
- Will also protect two single ended data, analog or control lines
- Impact and weather resistant enclosure with locking hinged cover

RoHS Compliant

Description

The SP-RS485-12V-O is designed to provide superior lightning and surge protection for RS-485 control and DC power lines. These protectors incorporate individual protection circuits for the RS-485 control lines and DC power lines. All housed in one weatherproof resistant enclosure.

RS-485 Control Lines

A high power 3-stage design is used to provide protection for the RS-485 control line. The 3-stage design can handle higher-level transients than a protector that uses only diodes. The first stage is comprised of a differential gas discharge tube. Stage two is a pair of current limiting series resistors and the final stage is a low capacitance diode array. The use of three terminal differential gas discharge tubes provides superior common and differential mode protection against conducted transients versus the use of lower cost two terminal tubes. The second stage series resistance limits the power dissipation of the fast diode clamp array in the third stage. This allows time for the slower but higher power gas tubes to flash over. The diode array clamps the leading edge of fast transients to safe levels until the high power gas tubes turn on. This eliminates the damaging leading edge spike that single stage gas tube protectors let leak through. The diode array's low capacitance assures that the protector will not degrade the high-speed signals. The RS-485 control line is connected to the protector via its screw terminal blocks. The SP-RS485-12V-O is designed to work with 1 half duplex RS-485 line.

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DC Power Lines

The DC power lines are also protected using a 3-stage design. This provides superior protection from transients and surges. The first stage is comprised of a differential gas discharge tube. Stage two is a pair of suppression coils and the final stage is a 1500 Watt uni-polar Transient Voltage Suppression (TVS) Diode. Power lines are connected to the protector via screw terminals.

Weatherproof Resistant

The compact weather resistant housing features a lockable hinged cover and holes are provided on the rear for mounting. The cable grommet may be adjusted to cable size and is removable.

Specifications

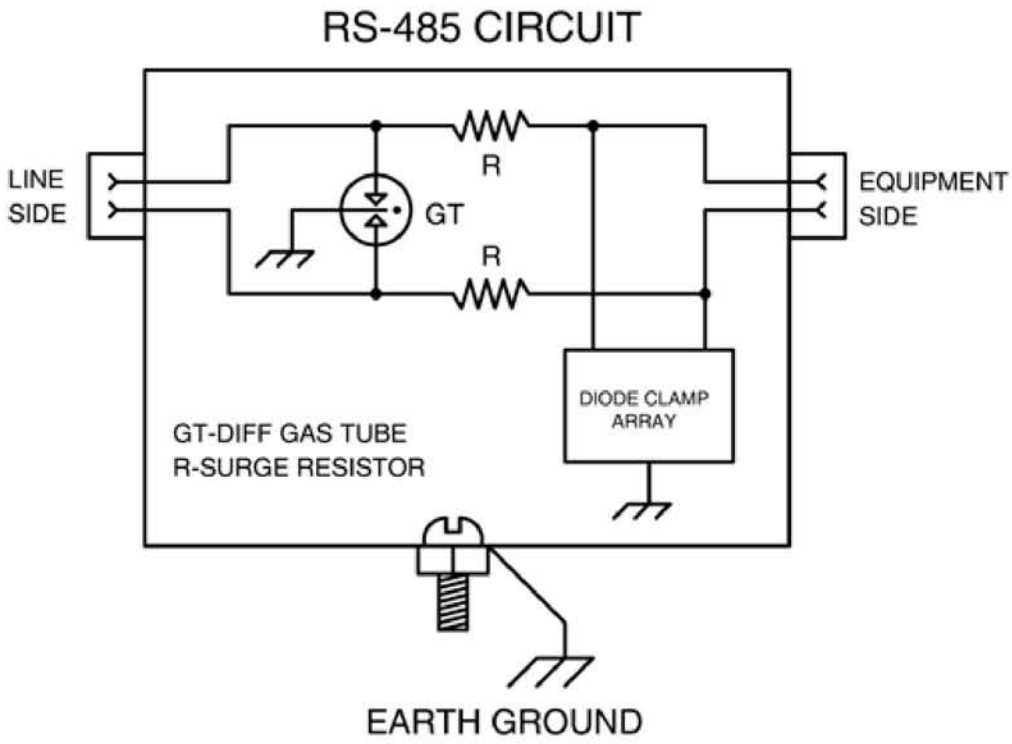
Electrical Specifications – RS-485

Connectors	(2) Screw Terminal Blocks
Stage 1 Clamping Voltage	± 90 Volts
Stage 2 Resistance	3.3 Ohms
Stage 3 Clamping Voltage	± 7.5 Volts

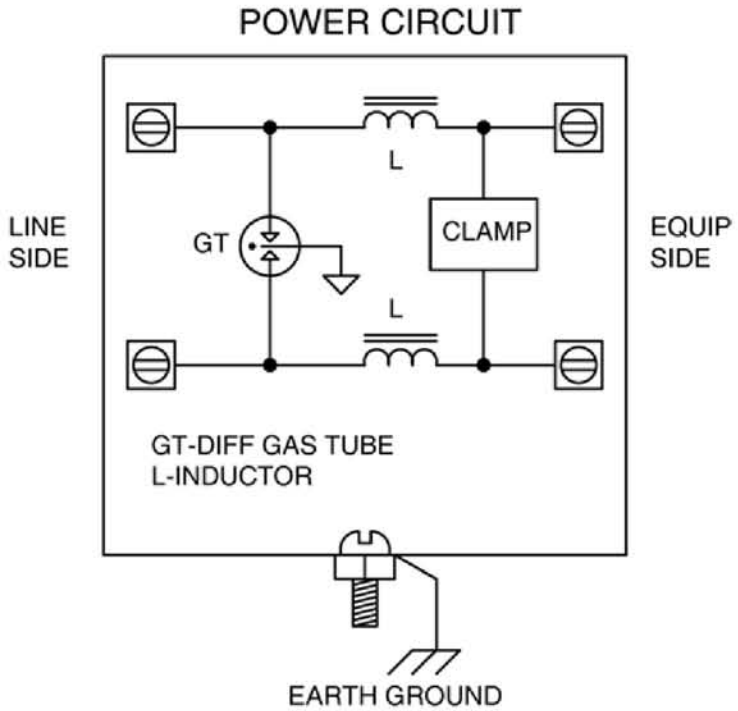
Electrical Specifications – DC Power

Connectors	(2) Screw Terminal Blocks
Stage 1 Clamping Voltage	± 90 Volts
Stage 2 Current Rating	3 Amps
Stage 3	12 Volt TVS Diode

Simplified Circuit Schematic – RS-485



Simplified Circuit Schematic – Power



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