# RS485 Surge Protection
**SU485R0**


This unit will provide protection against surge and lightning. The 2 way connector connects to the protected equipment and the 3 way connector connects to the data lines and the building earth. See below for specifications and wiring details.

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## Specifications

The protection on each data line consists of:

1. 20 kilo Amp 90 volt gas arrestor
2. 2 Joule 500 Amp MOV
3. Power surge absorbing resistor
4. 1500Watt 200Amp tranzorb

## Connection

The 2 way connector goes to the unit (host computer or controller) that needs to be protected. Connect the RS485 line A to terminal 1 and line B to terminal 2.

The 3 way connector goes to the data line network which is exposed to surges and lightning induced potentials. Connect the RS485 line A to terminal 1 and line B to terminal 3. Most important, connect terminal 2 of the 3 way connector to a very good building earth point. Without this earth connection, the surge protector will not work and offer no protection.

The earth conductor should be as short as possible and should not be smaller than 2mm diameter. The data line from the 2 way connector to the host computer or controller should not be very long or you may risk exposure to surges to be induced into the data line again.

## Functional Information

Data will pass through the surge protector without any degradation. If a power surge is induced into the data line network, it will firstly be reduced to a lower potential by the gas arrestors. The fast acting MOV's and tranzorbs will further clamp the voltage on the line. If the voltage and current exceed the maximum rating of the tranzorb, it will fail and short the data line to ground, preventing the surge from entering the unit being protected.

In most cases the surge protection will stop surges without failing, in the case where a very high surge causes the tranzorbs to fail, the data line can no longer function and the surge protection will need to be replaced.

The MOV's in the unit will degrade in time while working to protect your equipment and may require replacement from time to time.

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