

Application note

Using a PT100 probe

This note shows the connection of PT100 / PT1000 probes to SIRA System arresters.
 The aim is to protect the acquisition and monitoring systems from transient voltages transmitted by the probe cables.

3-wires PT100

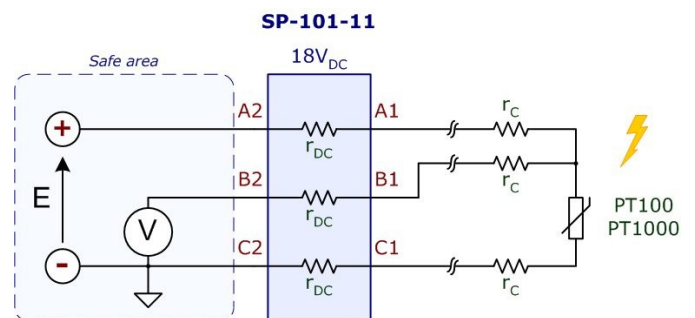
Protecting acquisition equipment can be made with 3-lines surge protectors such as SP-101 product family.

The r_{DC} serial resistance is added to the r_c resistance of each cable.

The choice of SP-101-11 arrester requires that E voltage is limited to 18V.

In the case where E is directly connected to a DC power supply, the SP-101-12 module will be use instead.

Thermal protection is added to the channel A. This does not affect the quality of the measurement which is performed on channels B and C.



4-wires PT100

Protecting acquisition equipment can be made with 6-lines surge protectors such as SP-102 product family.

The r_{DC} serial resistance is added to the r_C resistance of each cable.

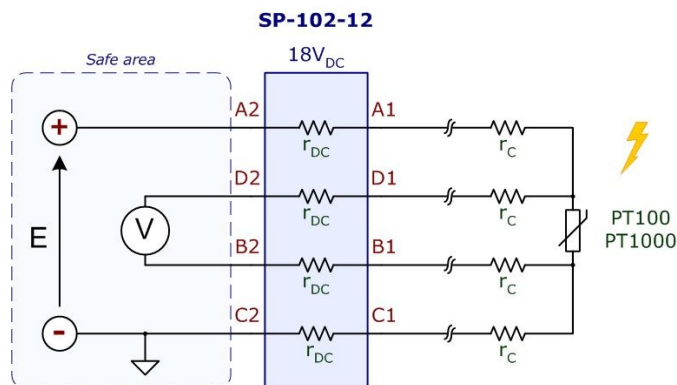
The choice of SP-102-12 arrester requires that E voltage is limited to 18V.

Thermal protection is added to the channel A. This does not affect the quality of the measurement which is performed on channels B and D.

If E is not connected directly to a power supply, a SP-102-11 arrester can be used.

However, we can imagine that, on the measurement equipment (V), a voltage higher than the voltage protection may be present. For example, +15 V on channel B and -15V on the D channel; the measured voltage reaches an amplitude of 30V.

If this voltage is not acceptable, a differential protection should be chosen.



To ensure that the measurements do not exceed the protection voltage, differential protection SP-112 will be used.

Differential protection is on channels A and B.

The input voltage of the measurement equipment (V) is limited to 18V.

A supply can be connected on the channel D.

