

Technote #03

IRt/c can be used with up to 300m (1,000 ft) of thermocouple extension wire

With twisted shielded pair thermocouple extension wire, an IRt/c can be mounted as far as 300 m (1,000 ft) from the readout device, even in a very fierce electrical noise environment. The extraordinary noise suppression characteristics designed into the IRt/c make this possible, without using a transmitter. The IRt/c housing is electrically isolated from the signal leads and is connected to the shielded ground of the extension cable. For long distances, the twisted shielded extension cable should be used, and the shield connected to a good electrical ground.

A demonstration test was performed with a 300 m (1000 ft) coil of twisted shielded pair of extension wire, with 30 m (100 ft) unwound, connecting an IRt/c to a fast (100 ms response) A/D conversion module to a computer.

As a noise generator, a 60 Hz 10,000 volt transformer and spark generator was set up to spark within 15 cm (6") of the wire. The test results showed less than 0.1°C (0.2°F) of noise at any relative position of the wire, spark, and transformer.

