IRt/c'S ARE INTRINSICALLY SAFE WHEN USED WITH BARRIERS

"Field Apparatus having energy storing or generating characteristics of <1.2V, 0.1A, 25 mW or 25 microJ shall be considered Simple Apparatus (nonenergy storing). These general purpose devices may be used in a hazardous (classified) location without further approval when connected to a certified intrinsically safe circuit." -*Quote from R. Stahl, Inc. Comprehensive Product Manual On Intrinsic Safety Barrier and Repeater Relays.*
Examples of non-energy storing Intrinsically Safe Apparatus are:

- Thermocouples, RTD's, LED's
- Dry Switch Contacts
- NAMUR Inductive Proximity Switches
- Non-inductive Strain Gauge Devices and Resistors

The IRt/c falls into the category of thermocouples, since it generates its signal by converting the radiated heat energy to an electrical signal via Seebeck effects, the basic driving force of thermocouples. Like all thermocouples, it requires no power source and generates signals measured in millivolts of voltage, microamps of current and nanowatts of power. IRt/c's have a small capacitance, but at one microFarad, the energy storage is measured in nanojoules and is a thousand times lower than the 25 microjoule criterion.

Accordingly, the IRt/c qualifies as a Simple Apparatus for use in hazardous locations, and with the appropriate barrier, qualifies as Intrinsically Safe.

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