



## Remtron Technical Note Intrinsically Safe

Remtron provides specially produced versions of selected models of our products for use in hazardous environments. These products are qualified as “intrinsically safe.” What does that mean? Extra safety is required in environments that include flammable gases, vapors, liquids, or dust. For electronic equipment, the requirement is to eliminate any point in the electronics that could be an ignition source. Depending on the nature of the combustible environment, the ignition source must be kept well beneath the combustible initiation temperature of gas and dust in the environment. Gases such as propane, and dust such as metals, coal, and grain, have their own combustion temperatures. In some highly combustible environments, we also can seal the electronics in enclosures that contain combustion and prevent it from igniting the local environment.

Remtron defines “intrinsically safe” in terms of Underwriters Laboratories (UL) standards. Depending on the model, Remtron’s intrinsically safe products are rated UL Class I, Division 1 and Groups C and D; Class II, Division 1 and Groups E, F and G; and temperature code T3.

- Class – Class I includes environments of flammable gases, vapors, or liquids. Class II includes combustible dust.
- Division 1 – This is the most stringent division of either class. It covers situations where ignitable concentrations of flammable gases, vapor, or liquids (Class I) and combustible dust (Class II) can exist all of the time or some of the time under normal operating conditions.
- Groups – This specifies the type of flammable substance in the hazardous environment. We are qualified in five groups: C (ethylene), D (propane), E (metals), F (coal), and G (grains).
- T3 – This is a temperature code and rates the equipment for environments of less than 200 degrees C.

Remtron uses the Intrinsically safe (2-fault) method as defined in UL 913 (US) and CSA-157 (Canada) to achieve this level of safety. These standards specify the design and constructional requirements and test procedures for equipment and parts of equipment intended for use in hazardous locations and also for associated equipment intended for use in safe locations. Each product that is rated carries a unique label that specifies the rating, operational limits, and instructions for maintaining the rating. Remtron’s intrinsically safe processes are inspected quarterly by ETL to maintain our listing.