**Hazardous (Classified) Location**

Class I / Division 1, 2 / Groups ABCD
Class I / Zone 0 / BC
Class II / Division 1 / Groups EFG
Class III

**Nonhazardous Locations**

- e.g. Process Transmitter or RTD or TC Sensor
- Connecting a passive current source
  - e.g. a sensor with its own power supply and active current output

**Temperature range**

- **T4** -40°C ... +85°C
- **T5** -40°C ... +60°C
- **T6** -40°C ... +50°C

**Intrinsically Safe (IS) Class I / Div. 1 / Groups ABCD**

- FM Approved Apparatus must be installed in accordance with manufacturer's instructions.
- Install per National Electrical Code (NFPA 70)
- Use supply wires suitable for 5°C above surroundings.
- Warning: Substitution of components may impair intrinsic safety or suitability for Class I, Division 2.

**Intrinsically Safe (IS)**

- FM Approved Apparatus must meet the following parameters:
  - \( U_o \leq U_i \)
  - \( I_o \leq I_i \)
  - \( P_o \leq P_i \)
  - \( C_i \geq C_i + \text{Grable} \)
  - \( L_a \geq L_i + \text{Lable} \)

**FM approved Related Apparatus**

- e.g. Process Transmitter or RTD or TC Sensor
- Connecting a passive current source
  - e.g. 2-wire transmitter with additional loop power supply

**Connecting an active current source**

- e.g. a sensor with its own power supply and active current output

**Nonincendive (NI) Class I / Div. 2 / Groups ABCD**

- Depending on location install per National Electrical Code (NEC) using wiring methods described in article 500 through article 510.
- Intrinsic safety barrier not required. \( V_{max} \leq 35 \text{ V DC} \).
- Warning: Do not disconnect equipment unless power has been switched off or the area is known to be non-hazardous.

**Dust Ignition Proof (DIP) Class II, III / Div. 1 / Groups EFG**

- A dust tight seal must be used for conduit entries when the field indicator is used in a Class II or Class III location.

**Nonincendive Field Wiring (NI)**

- Depending on location install per National Electrical Code (NEC) using wiring methods described in article 500 through article 510.
- Intrinsic safety barrier not required. \( V_{max} \leq 35 \text{ V DC} \).
- Warning: Do not disconnect equipment unless power has been switched off or the area is known to be non-hazardous.

**Nonincendive Field Wiring Circuit Concept**

- The Nonincendive Field Wiring Circuit Concept allows interconnection of Nonincendive Field Wiring Apparatus with Associated Nonincendive Field Wiring Apparatus or Associated Apparatus not specifically examined in combination as a system using any of the wiring methods permitted for unclassified locations.

**Nonincendive Field Wiring parameters**

- Active Configuration Connection requirements:
  - \((+\text{-})\text{terminals}\)
  - \( \text{V}_{max}\text{of RIA} \geq \text{V}_{oc}\text{ of the Associated Nonincendive Field Wiring Apparatus}\)
  - \( \text{I}_{max}\text{ of RIA} \geq \text{I}_{sc}\text{ Not relevant} \)
  - \( \text{P}_{max}\text{ of RIA} \geq \text{P}_{max}\text{ of RIA and P}_{max}\text{ of Nonincendive Field Wiring Apparatus}\)
  - \( \text{C}_{i}\text{ of RIA + C}_{i}\text{ of Nonincendive Field Wiring Apparatus + C}_{c}\text{ cable} \)
  - \( \text{L}_{i}\text{ of RIA + L}_{i}\text{ of Nonincendive Field Wiring Apparatus + L}_{c}\text{ cable} \)

- Passive Configuration Connection requirements:
  - \((+\text{, 1, and -})\text{terminals}\)
  - \( \text{V}_{oc}\text{ of RIA + V}_{max}\text{ of Nonincendive Field Wiring Apparatus} \)
  - \( \text{I}_{sc}\text{ Not relevant} \)
  - \( \text{P}_{max}\text{ of RIA + P}_{max}\text{ of Nonincendive Field Wiring Apparatus} \)
  - \( \text{C}_{i}\text{ of RIA + C}_{i}\text{ of Nonincendive Field Wiring Apparatus + C}_{c}\text{ cable} \)
  - \( \text{L}_{i}\text{ of RIA + L}_{i}\text{ of Nonincendive Field Wiring Apparatus + L}_{c}\text{ cable} \)

- For these current controlled circuits, the parameter \( \text{I}_{max} \) is not required and need not to be aligned with parameter \( \text{I}_{sc} \) and \( \text{I}_{t} \) of the Associated Nonincendive Field Wiring Apparatus or Associated Apparatus.

**Functional ratings**

- These ratings do not supersede Hazardous Location values
  - \( \text{U}_{nom} \leq 35 \text{ DC} \)
  - \( \text{I}_{nom} \leq 4 \text{ to } 20 \text{ mA} \)

**Endress+Hauser**

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