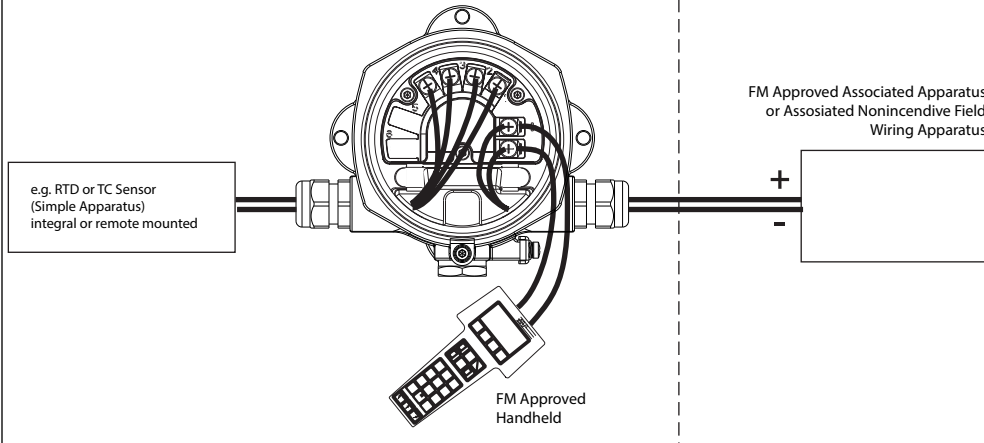


Hazardous (Classified) Location
Class I / Division 1, 2 / Groups ABCD
Class I, Zone 0, IIC



Nonhazardous Locations



Installation Notes Series 642



- FM Approved Apparatus must be installed in accordance with manufacturer instructions.
- Use supply wires suitable for 5 °C above surroundings.
- Only simple apparatus should be terminated to the sensor connection.
Simple apparatus are components as defined by the NEC (1.2 V, 0.1 A, 0.25 mW or 20 μJ).
- Warning: Substitution of components may impair intrinsic safety or suitability for Class I, Division 2.

INTRINSICALLY SAFE

IS Class I / Div. 1 / Groups ABCD

- Installation should be in accordance with ANSI/ISA RP 12.6.01 "Installation of Intrinsically safe systems for Hazardous (classified) locations" and the National Electrical Code (ANSI/NFPA 70).
- FM Approved Associated Apparatus must meet the following parameters:

$$U_o \leq U_i \quad I_o \leq I_i \quad P_o \leq P_i \quad C_a \geq C_i + C_{cable} \quad L_a \geq L_i + L_{cable}$$

Transmitter entity parameters are as follows:

$$U_i \text{ or } V_{max} \leq 30 \text{ V dc} \quad C_i = 5.3 \text{ nF}$$

$$I_i \text{ or } I_{max} \leq 300 \text{ mA} \quad L_i = 0$$

$$P_i \leq 1000 \text{ mW}$$

- $V_{oc} + V_{oc}$ of Handheld device < V_{max} , $I_{sc} + I_{sc}$ of Handheld device < I_{max} ,
- $P_o + P_o$ of Handheld device < P_i , $C_a > C_i + C_{cable} + C_i$ of Handheld device,
- $L_a > L_i + L_{cable} + L_i$ of Handheld device, when Programming Handheld device is used.

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. $V_{max} \leq 40 \text{ V dc}$.
- Warning: Do not disconnect equipment unless power has been switched off or the area is known to be nonhazardous.

Nonincendive field wiring installation

The Nonincendive Field Wiring Circuit Concept allows interconnection of Nonincendive Field Wiring Apparatus with Associated Nonincendive Field Wiring Apparatus or Associated Intrinsically Safe Apparatus or Associated Apparatus not specifically examined in combination as a system using any of the wiring methods permitted for unclassified locations, when $V_{oc} \leq V_{max}$, $C_a \geq C_i + C_{cable}$, $L_a \geq L_i + L_{cable}$.

Transmitter Nonincendive Field Wiring parameters are as follows:

$$U_i \text{ or } V_{max} \leq 40 \text{ V dc} \quad C_i = 5.3 \text{ nF} \quad L_i = 0$$

$$I_i \text{ or } I_{max} = \text{see following note below}$$

For these current controlled circuits, the parameter I_{max} is not required and need not to be aligned with parameter I_{sc} and I_t of the Associated Nonincendive Field Wiring Apparatus or Associated Apparatus.

Functional ratings

These ratings do not supersede Hazardous Location values

$$U_{nom} \leq 40 \text{ dc} \quad I_{nom} \leq (4 \text{ to } 20) \text{ mA}$$

Temperature range

- T4 -40 °C ... +85 °C
- T5 -40 °C ... +70 °C
- T6 -40 °C ... +55 °C

INTRINSICALLY SAFE **IS Class I / Div. 1 / Groups ABCD**
NONINCENDIVE, FIELD WIRING **NI Class I / Div. 2 / Groups ABCD**

Sensor circuits (Terminals 1...4)

U_o or V_{oc} or $V_t = 7.6 \text{ V}$	I_o or $I_{sc} = 29.3 \text{ mA}$	$P_o = 55.6 \text{ mW}$
Group A, B resp. IIC	C_o or $C_a = 10.4 \mu\text{F}$	L_o or $L_a = 40 \text{ mH}$
Group C, D resp. IIB, IIA	C_o or $C_a = 160 \mu\text{F}$	L_o or $L_a = 400 \text{ mH}$

TITLE: Series 642 FM Control Drawing IS, NI		PART NUMBER:		DATE: 11/05/2012		 beyond measure FORT WAYNE, INDIANA (260) 484-2580
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