Installation Notes RMA42

- CSA Approved Apparatus must be installed in accordance with manufacturer’s instructions.
- Depending on location install per National Electrical Code (CEC) using wiring methods.
- Use supply wires suitable for 5°C above surroundings.
- For Non-hazardous area install the device of Protection Ratings of least NEMA 1, Type 1
- For hazardous area Class I, II Install the device of Protection Ratings of least NEMA 4X, Type 4X.
- For Class II keep tight when circuits alive.
- The unit is installed in Class I, Division 2 area with two I.S. output channels (1 & 2), with cables clearance of 2 mm minimum.
- Warning: Substitution of components may impair suitability for Class I, Division 2.

INTRINSICALLY SAFE

Class I / Zone 0 [Ex ia] IIC
- The device is an Associated intrinsically safe equipment and must be installed in Division 2 or non-hazardous locations only.
- Installation should be in accordance with the Canadian Electrical Code (CEC).
- For entity installations use certified equipment that satisfy the following condition
  \[
  \frac{U_o}{V_{oc}} \leq \frac{V_{max}}{U_i}, \quad \frac{I_{o}}{I_{sc}} \leq \frac{I_{max}}{I_i}, \quad \frac{P_{o}}{P_{i}} \leq \frac{I_{o}}{I_{sc}} \leq \frac{I_{max}}{I_i}, \quad \frac{C_{a}}{C_{i}} \leq \frac{C_{i} + C_{cable}}{L_{a}} \leq \frac{L_{a} + L_{i} + L_{cable}}{L_{i} + L_{cable}}
  \]
- The Terminal of the intrinsically safe circuit must be placed at a distances of least 50mm from terminals of the non intrinsically safe circuits, or adequate separators (e.g. ground metal partitions) must be used.

NONINCENDIVE Field Wiring INSTALLATION

Class I / Div. 2 / Groups ABCD
- The device is an Associated Nonincendive safe equipment and must be installed in Division 2 or nonhazardous locations only.
- The Nonincendive Field Wiring Circuit Concept allows interconnection of Nonincendive Field Wiring Apparatus with Associated Nonincendive Field Wiring Apparatus or Associated Intrinsically Safe Apparatus not specifically examined in combination as a system using any of the wiring methods permitted for unclassified locations, when \( V_{oc} \leq V_{max}, \frac{C_{a}}{C_{i}} \leq \frac{C_{i} + C_{cable}}{L_{a}} \leq \frac{L_{a} + L_{i} + L_{cable}}{L_{i} + L_{cable}} \).
- For entity installations use certified equipment that satisfy the following condition
  \[
  \frac{U_o}{V_{oc}} \leq \frac{V_{max}}{U_i}, \quad \frac{I_{o}}{I_{sc}} \leq \frac{I_{max}}{I_i}, \quad \frac{P_{o}}{P_{i}} \leq \frac{I_{o}}{I_{sc}} \leq \frac{I_{max}}{I_i}, \quad \frac{C_{a}}{C_{i}} \leq \frac{C_{i} + C_{cable}}{L_{a}} \leq \frac{L_{a} + L_{i} + L_{cable}}{L_{i} + L_{cable}}
  \]

Temperature range

\[ T_a \quad -20^\circ C \ldots +60^\circ C \]

ASSOCIATED INTRINSICALLY SAFE

Class I, Zone 0 [Ex ia] IIC
Class I, Zone 2 Ex nA[ia] IIC

ASSOCIATED NONINCENDIVE

Class I / Div. 2 / Groups ABCD

T4 \[-20^\circ C \ldots +60^\circ C\]
Power supply

\[ U \leq 24 \ldots 230 \text{ V AC/DC (-20%/+10%)} \text{ 50/60 Hz} \]

Output circuit limit relays

\[ \text{Umax} \leq 250 \text{ VAC} \quad \text{Imax} \leq 3 \text{ A} \]

Terminal R12, R11, R13 or R22, R21, R23

\[ \text{Umax} \leq 30 \text{ DC} \quad \text{Imax} \leq 3 \text{ A} \]

CDI interface for device configuration

\[ 0/4 \ldots 20 \text{ mA} \]

Impulse or Current output

\[ \text{Um} \leq 250 \text{ V} \]

Output collector

\[ \text{Imax} \leq 200 \text{ mA} \]

Terminal D11, D12

\[ \text{Um} \leq 30 \text{ VDC} \]

4-wire transmitter power supply:

\[ \text{Voc} \leq 27.3 \text{ V} \]

Terminal 11, 12 or 21, 22

\[ \text{Isc} \leq 91.1 \text{ mA} \quad \text{Po} = 622 \text{ mW} \]

Group A, B resp. IIC

\[ \text{Ca} = 80 \text{ nF} \quad \text{La} = 4.625 \text{ mH} \]

Group C, D resp. IIB, IIA

\[ \text{Ca} = 675 \text{ nF} \quad \text{La} = 19.125 \text{ mH} \]

ASSOCIATED INTRINSICALLY SAFE

\[ \text{CL I, Gps ABCD} \quad \text{CL II, Gps EFG, CL III} \quad \text{CL I, Zone 0, IIC} \]

Voltage input (RTD, TC):

\[ \text{Voc} \leq 27.3 \text{ V} \]

Terminal 15, 16, 17, 18 and 12, 14 or 25, 26, 27, 28 and 22, 24

\[ \text{Isc} \leq 22.1 \text{ mA} \quad \text{Po} = 151 \text{ mW} \]

Group A, B resp. IIC

\[ \text{Ca} = 80 \text{ nF} \quad \text{La} = 81.725 \text{ mH} \]

Group C, D resp. IIB, IIA

\[ \text{Ca} = 675 \text{ nF} \quad \text{La} = 327.425 \text{ mH} \]

ASSOCIATED NONINCENDIVE FIELD WIRING

\[ \text{CL I, II, III/2/ABCDEFG} \]

Entity parameters for channel 1\&2 – Only one connected at a time:

2-wire transmitter power supply:

\[ \text{Voc} \leq 27.3 \text{ V} \]

Terminal 11, 14, 12, 18 or 21, 22, 28

\[ \text{Isc} \leq 96.5 \text{ mA} \quad \text{Po} = 659 \text{ mW} \]

Group A, B resp. IIC

\[ \text{Ca} = 80 \text{ nF} \quad \text{La} = 4.125 \text{ mH} \]

Group C, D resp. IIB, IIA

\[ \text{Ca} = 675 \text{ nF} \quad \text{La} = 17.025 \text{ mH} \]

Voltage input:

\[ \text{Voc} \leq 27.3 \text{ V} \]

Terminal 17, 18 and 13, 18 or 27, 28 and 23, 28

\[ \text{Isc} \leq 5 \text{ mA} \quad \text{Po} = 34.2 \text{ mW} \]

Group A, B resp. IIC

\[ \text{Ca} = 80 \text{ nF} \quad \text{La} = 1.525 \text{ H} \]

Group C, D resp. IIB, IIA

\[ \text{Ca} = 675 \text{ nF} \quad \text{La} = 6.325 \text{ H} \]

Current input:

\[ \text{Voc} \leq 27.3 \text{ V} \]

Terminal 14, 18 or 24, 28

\[ \text{Isc} \leq 5 \text{ mA} \quad \text{Po} = 34.2 \text{ mW} \]

Group A, B resp. IIC

\[ \text{Ca} = 80 \text{ nF} \quad \text{La} = 6.325 \text{ H} \]

Group C, D resp. IIB, IIA

\[ \text{Ca} = 675 \text{ nF} \quad \text{La} = 6.325 \text{ H} \]

Voltage input:

\[ \text{Voc} \leq 27.3 \text{ V} \]

Terminal 14, 18 or 24, 28

\[ \text{Isc} \leq 5 \text{ mA} \quad \text{Po} = 34.2 \text{ mW} \]

Group A, B resp. IIC

\[ \text{Ca} = 80 \text{ nF} \quad \text{La} = 6.325 \text{ H} \]

Group C, D resp. IIB, IIA

\[ \text{Ca} = 675 \text{ nF} \quad \text{La} = 6.325 \text{ H} \]