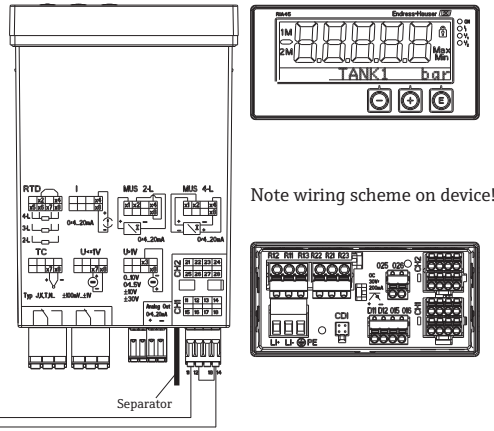
Hazardous (Classified) Locations
Class I, Groups ABCD
Class II, Groups EFG
Class III
Class I, Zone 0 Group IIC
Class I, Zone 2 Group IIC

Nonhazardous Locations




Note wiring scheme on device!

FM approved unit

Rating of enclosure at least NEMA 4X or Type 4X when installed in Divison 2

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**Installation Notes RIA45**

- FM Approved Apparatus must be installed in accordance with manufacturer's instructions and the control drawing.
- Depending on location install per National Electrical Code (NEC) using wiring methods described in article 500 through article 510.
- Use supply wires suitable for 5°C above surroundings.
- For Non-hazardous area install the device of Protection Ratings of least IP20, NEMA 1, Type 1.

**INTRINSICALLY SAFE CONNECTION TO Class I, II, III / Div. 1+2 / Groups ABCDEFG**

- The device is an Associated Intrinsically Safe equipment and must be installed in Division 2 or nonhazardous locations only.
- Installation should be in accordance with ANSI/ISA RP 12.06.01 "Installation of Intrinsically safe systems for Hazardous (classified) locations" and the National Electrical Code (ANSI/NFPA 70).
- For entity installations use certified equipment that satisfy the following condition
  $U_o/V_{oc} \leq V_{max}/U_i$ $I_o/I_{sc} \leq I_{max}/I_i$ $P_o \leq P_i$ $C_o/C_a \geq C_i + C_{cable}$ $L_o/L_a \geq L_i + L_{cable}$
- 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 CONNNECTION TO Class I, II, III / Div. 2 / Groups ABCDEFG**

- 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 or Associated Apparatus not specifically examined in combination as a system using any of the wiring methods permitted for unclassified locations, when $V_{oc} \leq V_{max}$, $C_a \geq C_i + C_{cable}$, $L_a \geq L_i + L_{cable}$.

| | Approved | Date (yyyy-mm-dd) | Drawing No. | Dwg.rev. | Revision no. | Revision date (yyyy-mm-dd) | Name | Material | |
|---|---|---|---|---|---|---|---|---|---|
| | Pfanzelt | 2009-06-03 | 12 03 00 111 | - | - | - | - | 71540265 XA02313R/09/EN/01.20 | Endress+Hauser |
| Volume (mm³) | Designed | Date (yyyy-mm-dd) | Unit | Scale | Title | | | Serie | |
| | Pfanzelt | 2009-05-11 | RIA45 | 1:1 | CONTROL DRAWING FM approval AIS, ANI | | | | |
| Refer to protection notice ISO 16016 | Edge of working parts ISO 13715 | Geometrical tolerancing ISO 2768-mH-E | Part No. - | Format A4 | | | | Objekt version / Sheet 1 of 2 | Endress + Hauser GmbH+Co. KG Wetzer Nesselwang / Germany |

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**Temperature range**

Ta -20°C ... +60°C

**AIS** **Class I, II, III, Div. 1+2, Groups ABCDEFG**
**Cl. I, Zone 0 [AEx ia] IIC**

**ANI** **Class I, II, III, Div. 2, Groups ABCDEFG**

**NI** **Class I, Div. 2, Groups ABCD**

T4 -20°C ... +60°C

Power supply U ≤ 24...230 V AC/DC (-20%/+10%) 50/60 Hz
Terminal LI+, LI-, PE

Output circuit limit relays Umax ≤ 250 VAC Imax ≤ 3A
Terminal R12, R11, R13 or Umax ≤ 30 DC Imax ≤ 3A
R22, R21, R23

CDI interface for device configuration

Impulse or Current output 0/4...20 mA, 0...10 VDC
Terminal O15, O16 or O25, O26

Output collector Imax ≤ 200 mA
Terminal D11, D12 Um ≤ 30 VDC

| | | | |
|---|---|---|---|
| 2-wire transmitter power supply: | Voc ≤ 27.3 V | | |
| Terminal 11, 14, 12, 18 | Isc ≤ 96.5 mA | | |
| 21, 24, 22, 28 | Po = 659 mW | | |
| | Ci = 8nF | | |
| | Li = 75µH | | |
| Group A, B resp. IIC | Ca = 80 nF | La = 4.2 mH | |
| Group C, D resp. IIB, IIA | Ca = 675 nF | La = 17.1mH | |
| 4-wire transmitter power supply: | Voc ≤ 27.3 V | | |
| Terminal 11, 12, 21, 22 | Isc ≤ 91.1 mA | | |
| | Po = 622 mW | | |
| | Ci = 8nF | | |
| | Li = 75µH | | |
| Group A, B resp. IIC | Ca = 80 nF | La = 4.7 mH | |
| Group C, D resp. IIB, IIA | Ca = 675 nF | La = 19.2 mH | |
| 4-wire transmitter power supply: | Voc ≤ 27.3 V | | |
| Terminal 14, 18, 24, 28 | Isc ≤ 5 mA | | |
| | Po = 34.2 mW | | |
| | Ci = 8nF | | |
| | Li = 75µH | | |
| Group A, B resp. IIC | Ca = 80 nF | La = 1.6 H | |
| Group C, D resp. IIB, IIA | Ca = 675 nF | La = 6.4 H | |
| temperature input: | Voc ≤ 27.3 V | | |
| Terminal 15, 16, 17, 18 | Isc ≤ 22.1 mA | | |
| | Po = 151 mW | | |
| | Ci = 8nF | | |
| | Li = 75µH | | |
| Group A, B resp. IIC | Ca = 80 nF | La = 81.8 mH | |
| Group C, D resp. IIB, IIA | Ca = 675 nF | La = 327.5 mH | |
| Current input: | Voc ≤ 27.3 V | | |
| Terminal 14, 18, 24, 28 | Isc ≤ 5 mA | | |
| | Po = 34.2 mW | | |
| | Ci = 8nF | | |
| | Li = 75µH | | |
| Group A, B resp. IIC | Ca = 80 nF | La = 1.6 H | |
| Group C, D resp. IIB, IIA | Ca = 675 nF | La = 6.4 H | |
| Voltage input: | Voc ≤ 27.3 V | | |
| Terminal 17, 18, 13, 18 | Isc ≤ 5 mA | | |
| 27, 28, 23, 28 | Po = 34.2 mW | | |
| | Ci = 8nF | | |
| | Li = 75µH | | |
| Group A, B resp. IIC | Ca = 80 nF | La = 1.6 H | |
| Group C, D resp. IIB, IIA | Ca = 675 nF | La = 6.4 H | |

| | Approved | Date (yyyy-mm-dd) | Drawing No. | Dwg.rev. | Revision no. | Revision date (yyyy-mm-dd) | Name | Material | |
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| | Pfanzelt | 2009-06-03 | 12 03 00 111 | - | - | - | - | 71540265 XA02313R/09/EN/01.20 | Endress+Hauser |
| Volume (mm³) | Designed | Date (yyyy-mm-dd) | Unit | Scale | Title | | | Serie | |
| | Pfanzelt | 2009-05-11 | RIA45 | 1:1 | CONTROL DRAWING FM approval AIS, ANI | | | | |
| Refer to protection notice ISO 16016 | Edge of working parts ISO 13715 | Geometrical tolerancing ISO 2768-mH-E | Part No. - | Format A4 | | | | Objekt version / Sheet 2 of 2 | Endress + Hauser GmbH+Co. KG Wetzer Nesselwang / Germany |