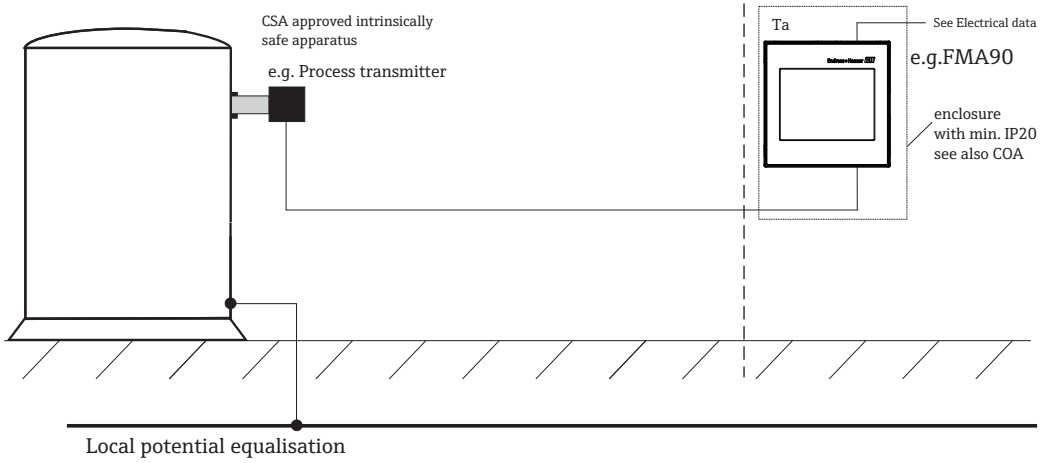
Endress+Hauser

Hazardous (Classified) Locations
I,II,II/1+2/ABCDEFG
Class I, Zone 0, IIC

Non-hazardous area



CONDITIONS OF ACCEPTABILITY (COA)

- The RU48 Process Indicator / FMA 90 Control Unit (DC Version) shall only be powered by a power supply unit with a limited energy electric circuit in accordance with CAN/CSA C22.2 No. 61010-1-12 and ANSI/UL 61010-1, or Class 2 as defined in the Canadian Electrical Code C22.1, Section 16-200 and/or National Electrical Code (NFPA 70), article 725.121.
- Service may only be performed by a qualified person.
- For the 85 to 253 VAC version (mains connection), a switch marked as a circuit breaker, as well as an overload protection device (rated power = 10 A) shall be fitted in the supply line near the device (easy to reach).
- The end enclosure (DIN rail & Panel Version), and the polymeric enclosure for Field Unit shall not be opened when the device is energized.
- The DIN/Panel versions shall be installed in a suitable enclosure based on the environmental conditions of the end application and acceptable to the Authority having Jurisdiction.
- The polymeric field housing shall be fitted with suitable cable entry devices compatible with the environmental conditions and Ingress protection level required.

Housing	Ambient temperature Ta
DIN rail mounting, Polycarbonat (A)	-40... +60°C
Panel mounting, Polycarbonat (B) Field mounting, Polycarbonat (C)	-35... +60°C

Electrical data

Supply:
terminals L/+, N/-
U = 10.5 to 32 V DC
U = 85 to 253 V AC 50/60Hz
Um = 250V

Analog In
terminals 11-12, 21-22
2... 22 mA

LPS (Loop Power Supply)
terminals 13, 23
14... 27V DC

Analog Out
terminals 71/72, 73/74
0... 23 mA (22,5mA DC + 0,5mA HAI

Digital input, passive:
terminals 52-55
max. 30V DC

Open Collector
max. 30V DC, max. 120 mA

Output circuits, limit-value relay
terminals 111 through 114, 211 through 214, x13 through x14
4A, 250V AC, 1000VA
4A, 30V DC

Output circuit:
U = 30V DC
I = 0/4-20mA
Um = 250V

Input circuit:
terminals 11, 12 , 13, 13
optional: 21, 22, 23, 23
Uo/Voc ≤ 27.3V DC
Io/Isc ≤ 84.1mA
Po = 574mW
Ci = negligibly small
Li = negligibly small

Maximum connection values

Single values:	Ex ia IIC	Lo = 1.7mH	Co = 65nF
	Ex ia IIB	Lo = 25mH	Co = 551nF
	Ex ia IIA	Lo = 47mH	Co = 1.790nF
Combined values:	Ex ia IIC	Lo = 0.5mH	Co = 0.065µF
	Ex ia IIB	Lo = 2mH	Co = 0.390µF
	Ex ia IIA	Lo = 20mH	Co = 1.3µF

Installation Notes FMA90, RU48

- CSA Approved Apparatus must be installed in accordance with manufacturer's instructions.
- Install per Canadian Electrical Code or National Electrical Code (NFPA 70).
- Use supply wires suitable for 5˚C above surroundings.
- For Non-hazardous area install the device of Protection Ratings of least IP 20 or equivalent.

INTRINSICALLY SAFE

[Ex ia Ga] IIC / [AEx ia Ga] IIC
[Ex ia Da] IIIC / [AEx ia Da] IIIC
Associated Apparatus for Class I, Division 1, Groups A, B, C, D
Associated Apparatus for Class I, Groups A, B, C & D; Class II, Groups E, F & G; Class III

- The device is an Associated Intrinsically Safe equipment and must be installed in non-hazardous locations only.
- For entity installations use certified equipment that satisfy the following condition
  Uo/Voc ≤ Vmax/Ui Io/Isc ≤ Imax/Ii Po ≤ Pi Co/Ca ≥ Ci + Ccable Lo/ La ≥ Li + Lcable
- The Terminal of the intrinsically safe circuit must be placed at least a distance of 50mm from terminals of the non-intrinsically safe circuits, or adequate separators (e.g. ground metal partitions) must be used.
- Screw tight the unused terminals for keeping the required distances between intrinsically safe circuits/terminals.

- WARNING: SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY"
  AVERTISSEMENT: LA SUBSTITUTION DE COMPOSANTS PEUT COMPROMETTRE LA SECURITE INTRINSEQUE
- WARNING – POTENTIAL ELECTROSTATIC CHARGING HAZARD – SEE INSTRUCTIONS
  AVERTISSEMENT – DANGER POTENTIEL DE CHARGES ÉLECTROSTATIQUES – VOIR INSTRUCTIONS
- WARNING - EXPLOSION HAZARD - DO NOT OPEN WHILE CIRCUIT IS LIVE UNLESS AREA IS KNOWN TO BE NON-HAZARDOUS
  AVERTISSEMENT - RISQUE D'EXPLOSION - NE PAS OUVRIR PENDANT QUE LE CIRCUIT EST SOUS TENSION, A MOINS QUE LA ZONE SOIT SUSCEPTIBLE D'ÊTRE NON DANGEREUSE

NONINCENDIVE Field WIRING INSTALLATION

- The device is an Associated Nonincendive safe equipment and must be installed in non-hazardous 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 Voc ≤ Vmax, Ca ≥ Ci + Ccable, La ≥ Li + Lcable.
- For entity installations use certified equipment that satisfy the following condition
  Uo/Voc ≤ Vmax/Ui Io/Isc ≤ Imax/Ii Po ≤ Pi Co/Ca ≥ Ci + Ccable Lo/ La ≥ Li + Lcable