

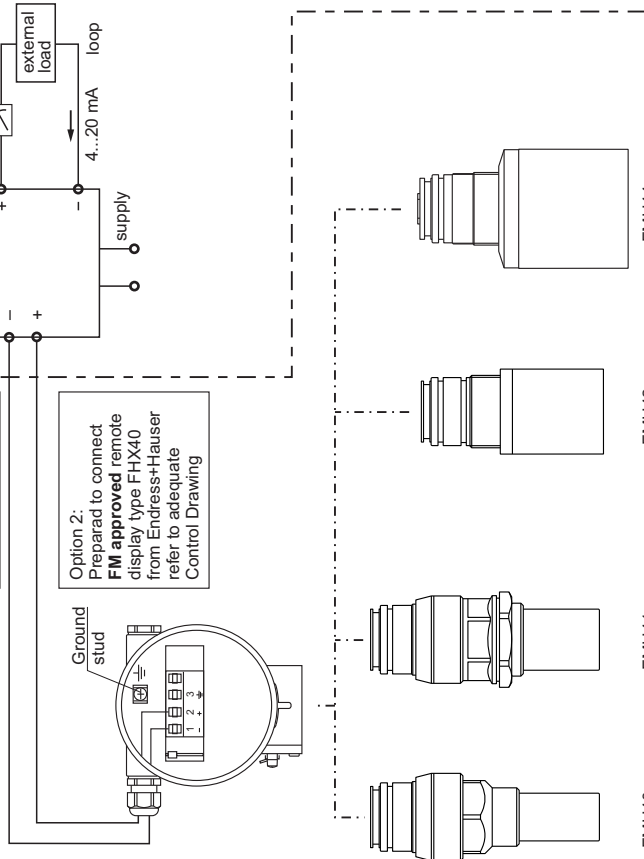
HAZARDOUS LOCATION

Class I, Div. 1, 2, Groups A, B, C, D
Class I, Zone 0, IIC
Class II, Div. 1, 2, Groups E, F, G
Class III

'F'-type housing:
IS/ I, II, III/ 1/A, B, C, D, E, F, G

Option 1:
Interconnection with
FM approved Service
Interface Commbox
FXA193 with ToF-Cable
from Endress+Hauser

Option 2:
Prepared to connect
FM approved remote
display type FHx40
from Endress+Hauser
refer to adequate
Control Drawing



NON HAZARDOUS LOCATION

Any FM approved associated apparatus or associated nonincendive field wiring apparatus

Notes:

Intrinsically safe installation
Intrinsically safe (entity), Class I, Div. 1, Groups A, B, C, D Class II, Div. 1, Groups E, F, G, Class III or Class I, Zone 0 AEx ia IIC, Hazardous Location Installation

- Control room equipment may not use or generate over 250 V_{RMS};
- Installation should be in accordance with the National Electrical Code NFPA 70 (NEC) and ANSI/ISA RP12.06.01.
- Warning: Substitution of components may impair intrinsic safety.
- Use FM Approvals Entity-Approved intrinsic safety barrier with

$$U_0 / V_{oc} \leq U_j / V_{max}, I_0 / I_{sc} \leq I_j / I_{max}, C_0 / C_a \geq C_1 + C_{cable}, L_0 / L_a \geq L_1 + L_{cable}$$

Barrier must be incapable of delivering more than defined value (P_{max}) to a matched load.
Transmitter entity parameters are as follows:

U _j / V _{max} [V]	I _j / I _{max} [mA]	P _j / P _{max} [W]	C ₁ [nF]	L ₁ [μH]
30	300	1.0	≤ 13	0

- Use supply wires suitable for 5 K above surrounding ambient.
- Intrinsic safety barrier manufacturer's installation drawing must be followed when installing this equipment.
- The configuration of the intrinsic safety barrier(s) must be approved by FM Approvals.
- This version of Prosonic M may be provided with a connection to an external display unit, already installed or via a set up kit. This connection is for the use of the approved display unit FHx40 only. Refer to safety instructions of the external display unit FHx40.

Division 2 installation

Nonincendive Class I, Div. 2, Groups A, B, C, D Hazardous Location Installation
Installation shall be in accordance with NEC using threaded conduits or other wiring methods in accordance with Article 500 through Article 510. Intrinsic safety barrier not required. Max. supply voltage 30 V. For T-code see table.

- Warning: Explosion hazard - Do not disconnect equipment unless power has been switched off or the area is known to be non-hazardous.

Warning: Explosion hazard - Substitution of components may impair suitability for Class I, Div. 2.

Nonincendive Field Wiring installation:

- Installation shall be in accordance with NEC.
- The Nonincendive Field Wiring 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, when

$$V_{max} \geq V_{oc} \text{ or } V_r, C_0 \text{ or } C_a \geq C_1 + C_{cable}, L_0 \text{ or } L_a \geq L_1 + L_{cable}$$

Transmitter non incendive field wiring parameters for these current controlled circuits are as follows:

$$V_{max} = 30 \text{ V}, C_1 \leq 13 \text{ nF}, L_1 = 0 \text{ } \mu\text{H}, I_{max} \text{ *see note 3.}$$

- For this current controlled circuit, the parameter I_{max} is not required and need not be aligned with parameter I_{sc} or I_o of the barrier or associated nonincendive field wiring apparatus.

Class II, III installation

DIP for Class II and III, Div. 1, Groups E, F, G, Hazardous Location Installation
Installation shall be in accordance with NEC using threaded conduits or other wiring methods in accordance with Article 500 through Article 510.

- Use a dust tight seal at the conduit entry.

Functional ratings

These ratings do not supersede Hazardous Locations Values

$$V_{nom} = 14...30 \text{ V}, I_{nom} = 4...20 \text{ mA}$$

Example nameplate:

Endress+Hauser	
Prosonic M	IP68 TYPE 4X/6P Encl.
Order code: FMU4x-Sbcdef	FMMaxUSxxxx
Ser. no.: 12345678901234	
(at 20 °C / 68 °F)	
IS CL, III, DIV 1, GP A-G T6...T4	
DIP CL, III, DIV 1, GP E-G	
NI CL, DIV 2, GP A,B,C,D T6...T4	
CL I, ZN 0, AEx ia IIC T6...T4 Ga	
Temperature class per control drawing	
960006274	
<input type="checkbox"/> X = if modification	Patents →
<input type="checkbox"/> see sep. label	Date:

Area of application
The compact instruments are suitable for use in areas subject to explosion caused by gases, vapours or mists.

Permissible ambient temperature:
Electronics: intrinsically safe, 'F'-type enclosure: -40...+80 °C (-40...+176 °F)
Sensors: (FMU40, FMU41, FMU42, FMU44): -40...+80 °C (-40...+176 °F)

Permissible process / ambient temperature and temperature code:

Temperature code of FMU40/41/42/44	Permissible medium temperature (flange)	Permissible ambient temperature of electronics compartment as a function of medium temperature (sensor)
T6	+60 °C	-40...+80 °C (-40...+176 °F)
T5	+80 °C	-40...+80 °C (-40...+176 °F)
T4	+80 °C	+60 °C
		+80 °C

Field no.	Order code FMU4x-Sbcdef	Contents
3	-	Made in Germany, 79689 Maulburg Assembled in USA
50	FMU40, FMU41 FMU42, FMU44	Assembled in India P _{abs} = 0.7...3 bar / 10.15...43.5 psi P _{abs} = 0.7...2.5 bar / 10.15...36.25 psi

XA01140F-E/00/EN/02.19
CCS/FM10
FM/E 10.06.19



FM Control Drawing 960006274 E

Prosonic M
FMU40, FMU41, FMU42, FMU44
HART
IS

Endress+Hauser
People for Process Automation