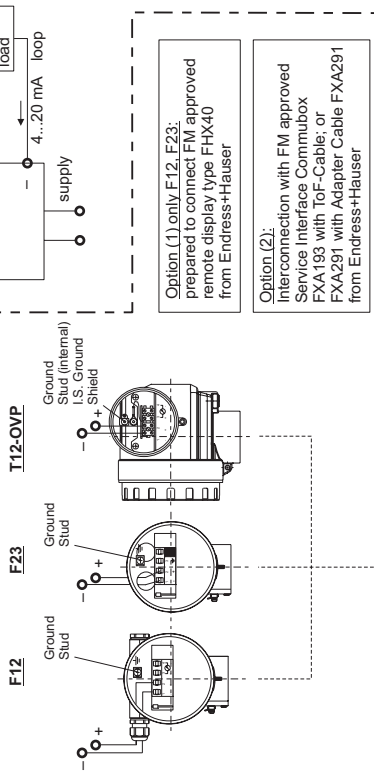


**HAZARDOUS LOCATION**

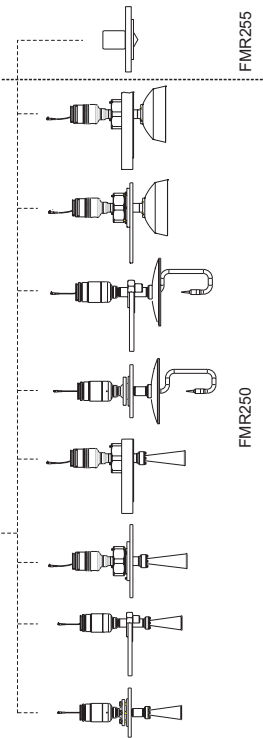
Class I, Div. 1, 2, Groups A, B, C, D  
 Class I, Zone 0, IIC  
 Class II, Div. 1, 2, Groups E, F, G  
 Class III

F12 / F23 / T12-OVP - Housing:  
 IS / I, II, III / 1/A, B, C, D



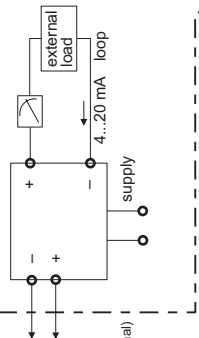
**Option (1):** Only F12, F23; prepared to connect FM approved remote display type FXH40 from Endress+Hauser

**Option (2):** Interconnection with FM approved Service Interface Commubox FXA193 with ToF-Cable; or FXA291 with Adapter Cable FXA291 from Endress+Hauser



**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, Hazardous Location Installation.**

- Control room equipment may not use or generate over 250 Vrms.
- Use FM Approved Entity-Approved intrinsic safety barrier with Voc or Vi ≤ Vmax, Isc or It ≤ Imax, Ca ≥ Ci + C cable, La ≥ Li + Lcable. Transmitter entity parameters are as follows:  
**F12, F23 enclosure:** Vmax = 30 V, Imax = 273 mA, Ci ≤ 13 nF, Li = 0 µH, Pmax = 1 W  
**T12-OVP enclosure:** Vmax = 30 V, Imax = 300 mA, Ci ≤ 13 nF, Li = 0 µH, Pmax = 1 W
- Installation should be in accordance with ANSI / ISA RP12.06.01.
- Warning: Substitution of components may impair intrinsic safety.
- Intrinsic safety barrier manufacturer's installation drawing must be followed when installing this equipment.
- The configuration of the intrinsic safety barrier(s) must be FM Approved.
- Use supply wires suitable for 5 K above surrounding ambient.
- FMR 250; Use of scavange junction

It is the users responsibility to use the adequate method by using the scavange device, like: Installation has to be IP-grade 67 resp. IP-grade 65 (IEC / EN 60529), depends on location. Scavage pressure > inside pressure at the container, max 10 bar resp. 150 psi. At non-scavage status, a barrier spigot resp. valve must be closed. If the valve / spigot is open and no scavange fluid is present the risk of flammable gas or combustible dust releases and flame entrance from outside exists.

- FMR255: Avoid electrostatic charge at the antenna; (e.g. do not rub with dry cloth; do not install within the filling curtain).
- Apparatus with faucet: In case of disconnection of Micropilot M from the faucet (e.g. for maintenance) we recommend to secure resp. to close the faucet e.g. with an additional blind flange. The responsibility for applicability of the arrangement behoves exclusive the operator.
- T12-OVP housing: The surge protection device (OVP) fulfills the requirements of IEC 60079-14 clause 12.3.

**Division 2 and Zone 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.
- 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 apparatus not specifically examined in combination as a system using any of the wiring methods permitted for unclassified locations, when Vmax ≥ Voc or Vi, Ca ≥ Ci + Ccable, La ≥ Li + Lcable.  
 Transmitter non incendive field wiring parameters for these current controlled circuit are as follows: Vmax = 30 V; Ci ≤ 13 nF; Li = 0 µH; Imax = see note 3.
- For these current controlled circuit, the parameter Imax is not required and need not to be aligned with parameter Isc and It of the associated nonincendive field wiring apparatus associated apparatus.
- Warning: Explosion Hazard - do not disconnect equipment unless power has been switched off or the area is known to be Non-Hazardous.  
 Warning: Substitution of components may impair suitability for Class I, Division 2.
- The transmitter is suitable to be installed according the FNICO concept.

**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.

Temperature class without display VU331	Permissible max. medium temperature at the probe (process connection) Tmed	Permissible max. ambient temperature of the electronic compartment (Ta)					
		FMR250 (Horn or parabolic antenna) 4, 5 or 6		FMR255			
		Option 20 (Antenna): D, E, G, H or 9 <sup>2)</sup>	Option 20 (Antenna): D, E, G, H or 9 <sup>2)</sup>	F12 or T12-OVP housing	F23 housing	F12 or T12-OVP housing	F23 housing
T6	+ 80 °C + 60 °C	+55 °C +60 °C	+55 °C +60 °C	+55 °C +60 °C	+55 °C +60 °C	+55 °C +60 °C	+55 °C +60 °C
T5	+ 95 °C + 75 °C	+70 °C +75 °C	+70 °C +75 °C	+70 °C +75 °C	+70 °C +75 °C	+70 °C +75 °C	+70 °C +75 °C
T4	+130 °C + 80 °C	+75 °C +80 °C	+70 °C +80 °C	+70 °C +80 °C	+70 °C +80 °C	+70 °C +80 °C	+65 °C +80 °C
T3C (functional) <sup>1)</sup>	+150 °C + 80 °C	+73 °C +80 °C	+68 °C +80 °C	+70 °C +80 °C	+68 °C +80 °C	+65 °C +80 °C	+60 °C +80 °C
T3	+195 °C + 80 °C	+70 °C +80 °C	+65 °C +80 °C	+65 °C +80 °C	+60 °C +80 °C	-----	-----
T2, T1 (functional) <sup>1)</sup>	+200 °C + 80 °C	+70 °C +80 °C	+65 °C +80 °C	+65 °C +80 °C	+60 °C +80 °C	-----	-----

Note: the applicable temperature of probe must be within their specified limits  
<sup>1)</sup> functional means max. permissible process temperature  
<sup>2)</sup> special version of horn or parabolic reflector dimensions

Permissible ambient temperature:  
 Electronic: F12, F23, T12-OVP enclosure: -40...+80 °C resp. -40...+176 °F

Type	Type of antennas	Operation temperature
FMR250 -	Horn, Parabolic	-40 °C/-40 °F to +200 °C/392 °F
FMR255 -	Compact	-40 °C/-40 °F to +150 °C/302 °F

Note: take care to specific temperature ranges of antenna versions

**Functional ratings:**  
 These ratings do not supersede Hazardous Locations values  
 Unom ≤ 30 V  
 Inom = 4...20 mA (max. 25 mA)

ZD168F-D/00/EN/07.09  
 CCS/FM6.0  
 FM/D 06.05.09



71100405

**FM Control Drawing**  
**960006748 D**  
 Micropilot M  
 FMR250/255  
 (F12, F23, T12-OVP / IS-HART)