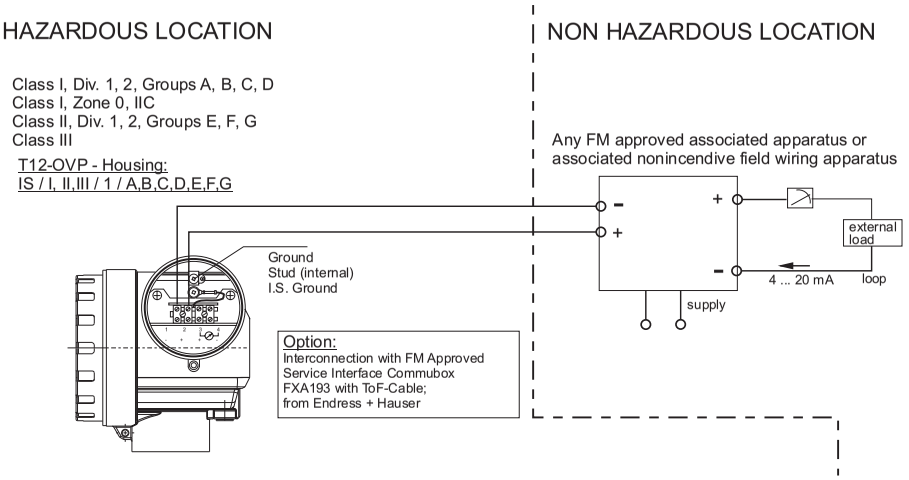
ZD165F/00/en/08.04
CCS/FM6.0
FM

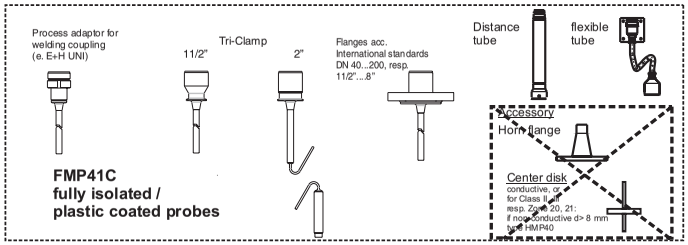
52025282

Control drawing
960414-1069 A

Levelflex M FMP41C
T12 OVP / IS-HART

Endress+Hauser
People for Process Automation





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

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

Permissible ambient temperature:

Electronic:	T12 OVP enclosure (with integrated surge protection)	-40.... +80°C resp. -40...176°F
Probes:	FMP41C	refer Technical Information

Notes:

Intrinsically safe installation

Intrinsically safe (entity),. Class I, Div. 1, Group A, B, C, D Hazardous Location Installation.

1. Control room equipment may not use or generate over 250 Vrms.
2. Use FM Approvals Entity-Approved intrinsic safety barrier
   with Voc or Vt ≤ Vmax, Isc or It ≤ Imax, Ca ≥ Ci + C cable, La ≥ Li + Lcable
   barrier must be incapable of delivering more than 1 Watt to a matched load.
   Transmitter entity parameters are as follows:
   Vmax.= 30V; Imax. = 273mA; Ci ≤ 13nF; Li = 0 µH; Pmax. = 1Watt
3. Installation should be in accordance with ANSI / ISA RP12.06.01
   Installation of intrinsically safe systems for Hazardous (Classified) locations and the National
   Electrical code (ANSI / NFPA 70)
4. Warning: Substitution of components may impair intrinsic safety.
5. 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.
6. Use supply wires suitable for 5°K above surrounding ambient.
7. 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, Group A, B, C, D Hazardous Location Installation.

1. 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 30V. For T-code see table.
2. 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 Vt, Ca ≥ Ci + C_{cable}, La ≥ Li + L_{cable}
   Transmitter non incendive field wiring parameters for these current controlled circuit are as follows:
   Vmax.= 30V; Ci ≤ 13nF; Li = 0 µH; Imax = see note 3
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 apparatusor associated apparatus.
4. 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.

Class II, III installation

DIP for Class II and III, Div.1, Group E, F, G Hazardous Location Installation.

1. Installation shall be in accordance with NEC using threaded conduits or other wiring methods in accordance with Article 500 through Article 510 .
2. Use a dust tight seal at the conduit entry.

FMP41C

Temperature class with / without Display VU 331	permissible maximum medium temperature at the probe (process connection) Tmed	permissible maximum ambient of electronic compartment (Ta) (enclosure T12-OVP (integrated surge protection)		
		FMP41C	FMP41C with Remote electronic with distance tube	FMP41C with Remote electronic with flexible tube
T6	+80 °C +60 °C	+ 57 °C + 60 °C	+ 59 °C + 60 °C	60 °C 60 °C
T5	+95 °C +75 °C	+ 72 °C + 75 °C	+ 74 °C + 75 °C	75 °C 75 °C
T4	+130 °C +80 °C	+ 72 °C + 80 °C	+ 78 °C + 80 °C	80 °C 80 °C
T3 (functional)[1)]	+150 °C +80 °C	+ 68 °C + 80 °C	+ 77 °C + 80 °C	80 °C 80 °C
T3	+195 °C +80 °C	+ 62 °C + 80 °C	+ 76 °C + 80 °C	80 °C 80 °C

note: the applicable temperature of probe must be within their specified limits
[1)] functional means max. permissible process temperature

Zone Concept:
Electrostatic (X-Marking)
The probes (rod and rope) of the Levelflex M FMP41C- consists out of plastic coated surfaces, which are able to load up with electrostatic charge.

For hazardous (classified) Locations Zone 0 resp. Zone 1 groups IIC through IIA the following limits are required:

Zone	permissible transferred load Q in nC		
	II A	**IIB**	**IIC**
Zone 0	60	30	10
Zone 1	60	30	10
Zone 2	no limit		

Applied to the Levelflex M FMP41C-..... the following context is stated:

Area with plastic surfaces	measured transferred load [nC] (Test Report)	X-Marking for following gas groups required		
Flange cladding	< 75	IIA	IIB	IIC
Rod	< 30	--	--	IIC
Rope	< 10	--	--	--
Weight of rope	< 30	--	--	IIC

Measures:
Without any additional protection measures, it is allowed to use the apparatus with flange cladding in Hazardous (classified) Locations Zone 0 and Zone 1 for group IIB and IIA, if through the kind of installation the loading of the flange cladding with electrostatic charge is not possible (e.g. no free plastic surface or installation within metallic connection pieces / nozzle).