
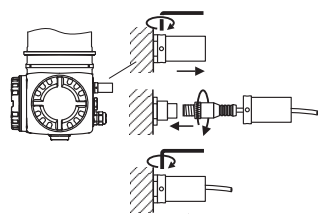


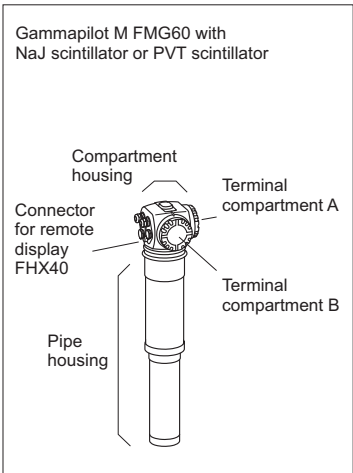
**CAUTION:**  
The screws at the pipe housing must not be loosened!



For previous connection depicted below refer to installation drawing: 960007128 A or B

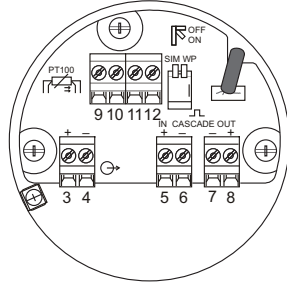


**CAUTION:**  
After connecting the FHX40 to the FMG60 the protective tube must be installed and secured by the screws.

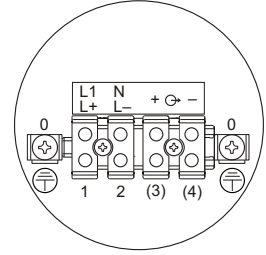


**Warning :**  
The non-metallic labels, surface and coatings may store an electrostatic charge and become a source of ignition in gas and dust environments. Clean with a damp cloth to prevent the buildup of electrostatic charge.

**TERMINAL COMPARTMENT B**



**TERMINAL COMPARTMENT A**



Intrinsically safe circuits Entity Parameters		Group A, B (IIC)	Group C, D (IIA, IIB)
4...20 mA/HART (active) * <sup>1</sup> 	Voc = 21.2 V Isc = 92 mA Po = 479 mW Ri = 235 Ω  Vmax = 30 V Imax = 13 mA Pi = 390 mW	Ca = 169 nF La = 4 mH	Ca = 1.2 μF La = 15 mH
PT100 	Voc = 8.4 V Isc = 8.3 mA Po = 17.5 mW Ri = 1012 Ω	Ca = 5.2 μF La = 400 mH	Ca = 43 μF La = 400 mH
Cascade out 	Voc = 8.4 V Isc = 19.2 mA Po = 40.3 mW Ri = 439 Ω Only for connection to Gammapilot FMG60 signal circuit "Cascade out"	Ca = 5.1 μF La = 69 mH	Ca = 42 μF La = 199 mH
Cascade in 	Vmax = 8.4 V Imax = 19.2 mA Pi = 40.3 mW Ci = 0 Li = 67 μH Only for connection to Gammapilot FMG60 signal circuit "Cascade in"		
Connection for FHX40 	Voc = 4.7 V Isc = 37.7 mA Po = 44.3 mW  This circuit may also be connected to the FM approved Endress+Hauser Service Interface Commubox FXA193 with associated connection cable for ToF instruments.	For connection to the FM approved intrinsically safe Endress+Hauser display FHX40 with associated cable. Observe Installation Drawing 960411-1006.	

\*<sup>1</sup> only available at the version FMG60-\*\*E\*\*\*\*\*

**INTRINSICALLY SAFE (Entity) Class I, Div. 1, Group A, B, C, D or Zone 1, IIC**

1. FM approved apparatus must be installed acc. to manufacturer instructions.
2. The installation must be in accordance with the National Electrical Code ANSI/NFPA 70 and ANSI/ISA-RP 12.06.01.
3. WARNING: Substitution of components may impair intrinsic safety.
4. Control room equipment must not use or generate over 250 V.
5. Wiring: Use cables not subject to short circuiting, e.g. shielded pairs with shield grounded.  
Use wires suitable for 20 K above surrounding ambient.
6. The maximum permissible values of voltage and current as well as the maximum permissible external capacitance and inductance are shown in the table above.  
Ca ≥ Ci + Ccable; La ≥ Li + Lcable
7. Do not interconnect the 4...20 mA/HART signal circuits of detectors (e.g. within a cascade set).
8. Do not operate a temperature sensor with "ib" circuit in Zone 0!
9. Do not operate a temperature sensor with "ic" circuit in Zone 0 or Zone 1!

Supply circuit		
	Terminal	Supply voltage
AC type	L1 N	90...253 VAC, 50/60 Hz
DC type	L+ L-	18...35 VDC
Signal circuit		
		not connected

**EXPLOSION PROOF Class I, Div. 1, Group A, B, C, D or Zone 1, IIC**

1. Install per National Electrical Code (NEC).
2. Control room equipment must not use or generate over 250 V.
3. Supply wires shall be installed in conduit in accordance with the NEC.
4. Do not open the terminal compartment A if the supply voltage is switched on and a combustible atmosphere is present.  
If a combustible atmosphere is present, wait 3 minutes after switching off the supply voltage, before opening the cover.
5. Use supply wires suitable for 20 K above surrounding ambient.
6. Sealing plugs of the terminal compartment A must not be exchanged with those of the terminal compartment B.
7. Types with stainless steel terminal housing (FMG60-\*\*\*\*\*1\*\*\*, FMG60-\*\*\*\*\*2\*\*\*) Seal not required (apparatus was tested with 15 feet conduit).
8. Types with aluminium terminal housing (FMG60-\*\*\*\*\*3\*\*\*, FMG60-\*\*\*\*\*4\*\*\*) Seal required at enclosure wall!
9. The equipment includes flamepath joints, consult with the manufacturer if repair of the flamepath joints is necessary.

**Class II, Div. 1, Group E, F, G, Class III**

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 in Class II or III locations.
3. Do not open the terminal compartment A if the supply voltage is switched on and a combustible atmosphere is present.  
If a combustible atmosphere is present, wait 3 minutes after switching off the supply voltage, before opening the cover.
4. Use supply wires suitable for 20 K above surrounding ambient.

Models with PVT or NaJ scintillator	Permissible ambient temperature	Temperature class
Detector without water cooling: • Instruments with NaJ crystal scintillator • Instruments with PVT plastic scintillator	-40 °C ≤ Ta ≤ +60 °C -40 °C ≤ Ta ≤ +60 °C	T6
Detector with water cooling in operation**: • Instruments with NaJ crystal scintillator • Instruments with PVT plastic scintillator	-40 °C ≤ Ta ≤ +75 °C -40 °C ≤ Ta ≤ +75 °C	T6
**Notes: With water cooling in operation, the temperature at the pipe housing (within the water cooling) cannot exceed +60°C. In case if water cooling fails, the permissible maximum ambient temperature is still +75°C.		

Water cooling: For additional information see Operating Instructions BA00236F (e.g. mounting, safety, flow rate).

