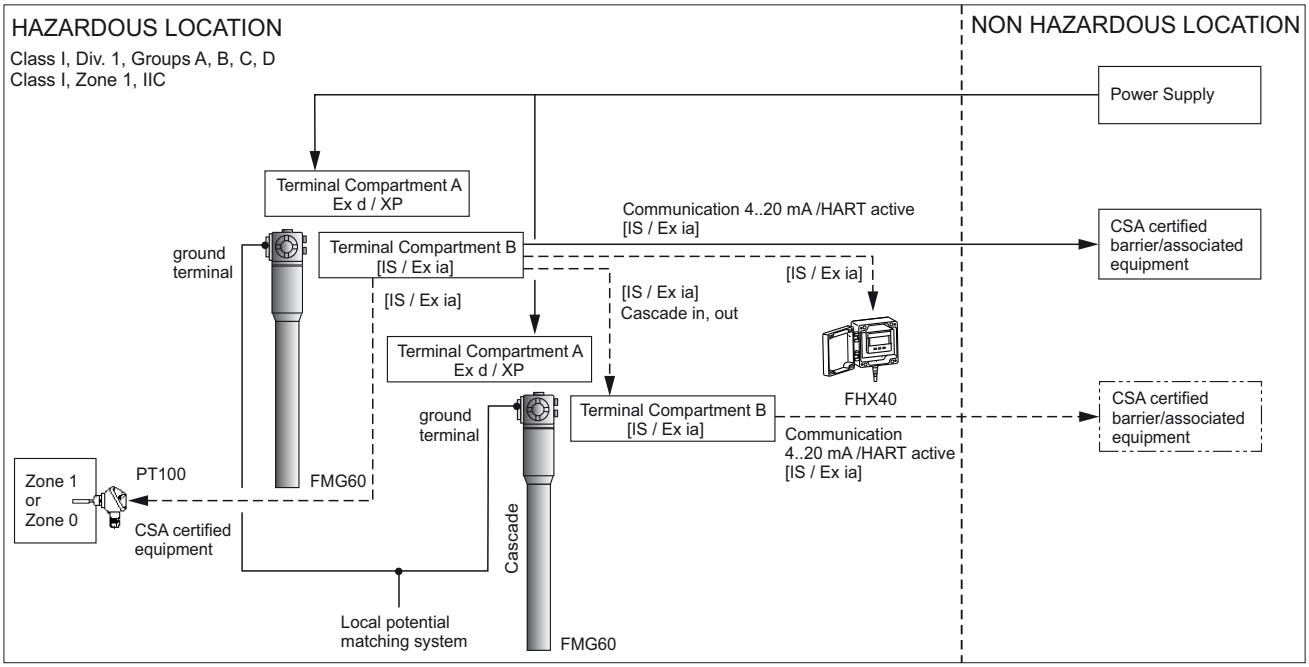
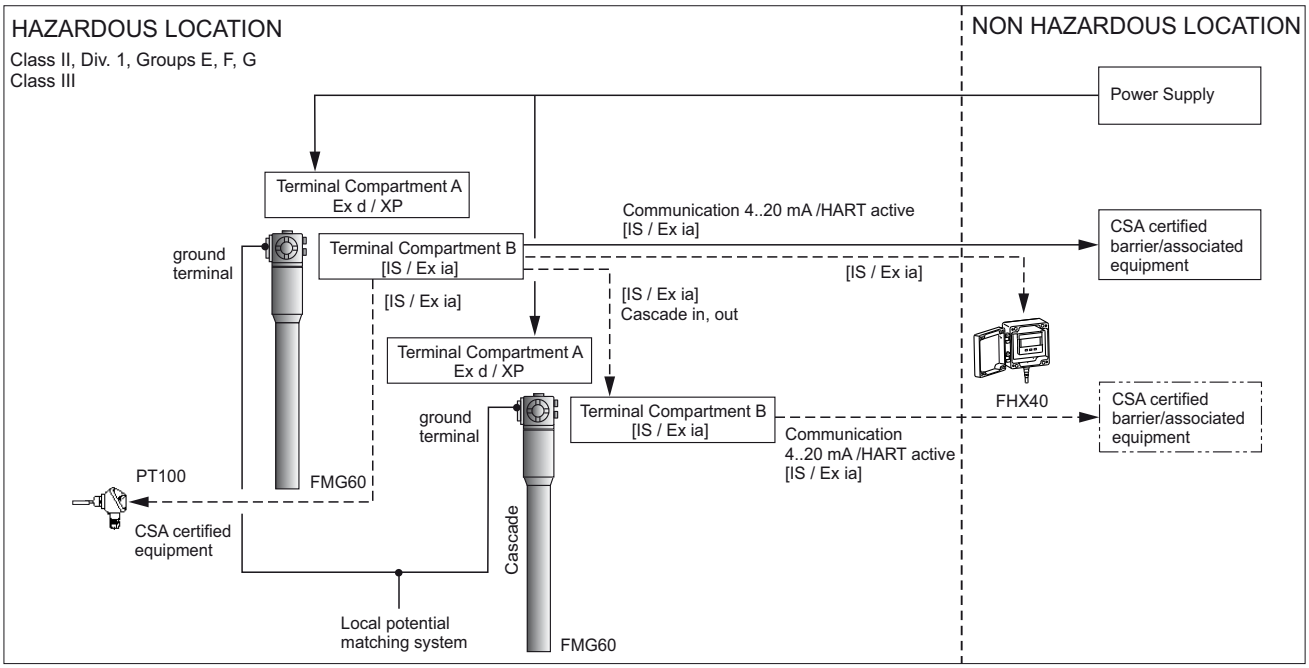
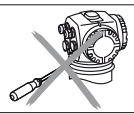
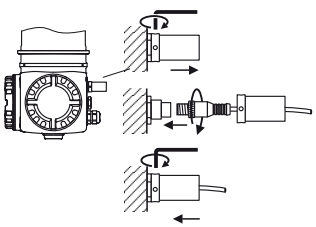




CAUTION:
The screws at the pipe housing must not be loosened!

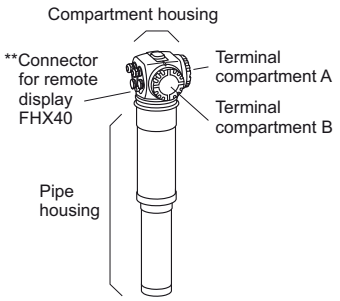


**For previous connection depicted below refer to installation drawing: 960007132 - A



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

Gammapilot M FMG60 with
NaJ scintillator or PVT scintillator



WARNING:
Avoid electrostatic charging of plastic surfaces or coatings

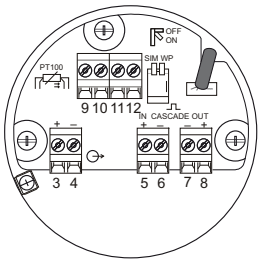
AVERTISSMENT :
Eviter le chargement électrostatique de surfaces ou revêtements

CSA Control Drawing 960007132 E

Gammapilot M FMG60
4...20 mA /HART (IS)

Endress+Hauser
People for Process Automation

TERMINAL COMPARTMENT B



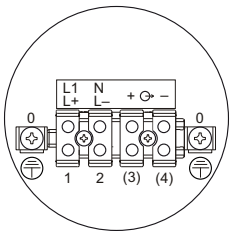
Intrinsically safe circuits Entity Parameters		Group A, B (IIC)	Group C, D (IIA, IIB)
4..20 mA/ HART (active) *[1]  + –	Uo/Voc = 21.2 V Io/Isc = 92 mA Po = 479 mW Ri = 235 Ω Ui/Vmax = 30 V Ii/Imax = 13 mA Pi = 390 mW Ci = 13.4 nF Li = 0	Co/Ca = 169 nF Lo/La = 4 mH	Co/Ca = 1.2 µF Lo/La = 15 mH
PT100 	Uo/Voc = 8.4 V Io/Isc = 8.3 mA Po = 17.5 mW Ri = 1012 Ω	Co/Ca = 5.2 µF Lo/La = 400 mH	Co/Ca = 43 µF Lo/La = 400 mH
Cascade out  – +	Uo/Voc = 8.4 V Io/Isc = 19.2 mA Po = 40.3 mW Ri = 439 Ω	Co/Ca = 5.1 µF Lo/La = 69 mH	Co/Ca = 42 µF Lo/La = 199 mH
	Only for connection to Gammapilot FMG60 signal circuit "Cascade in"		
Cascade in  + –	Ui/Vmax = 8.4 V Ii/Imax = 19.2 mA Pi = 40.3 mW Ci = 0 Li = 67 µH		
	Only for connection to Gammapilot FMG60 signal circuit "Cascade out"		
Connection for FHX40 	Uo/Voc = 4.7 V Io/Isc = 37.7 mA Po = 44.3 mW	For connection to the CSA certified intrinsically safe Endress+Hauser display FHX40 with associated cable. Observe Installation Drawing 960411-2006.	
	This circuit may also be connected to the CSA certified Endress+Hauser Service Interface Commubox FXA193 with associated connection cable for ToF instruments. Observe Installation Drawing FES 0071.		

*[1] only available at the version FMG60-**E******

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

1. CSA certified apparatus must be installed acc. to manufacturer instructions.
2. Install per Canadian Electrical Code (CEC).
3. WARNING: Substitution of components may impair intrinsic safety. AVERTISSMENT : La substitution de composants peut compromettre la sécurité intrinsèque!
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.
   For entity installation use CSA certified intrinsic safety barrier or other associated equipment that satisfy the following conditions:
   Uo/Voc ≤ Ui/Vmax; Io/Isc ≤ Ii/Imax;
   Co/Ca ≥ Ci + Ccable; Lo/La ≥ Li + Lcable
7. Install barrier/associated equipment in accordance to the manufacturer instructions.
8. Do not interconnect the 4...20 mA/HART signal circuits of detectors (e.g. within a cascade set).
9. Where two or more IS circuits leave the enclosure through a common conduit entry, these circuits must be separated from each other by grounded shields.
10. [ia] defines "Associated Equipment".
11. Do not operate a temperature sensor with "ib" circuit in Zone 0!
12. Do not operate a temperature sensor with "ic" circuit in Zone 0 or Zone 1!

TERMINAL COMPARTMENT A



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 Canadian Electrical Code (CEC).
2. Control room equipment must not use or generate over 250 V.
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.
5. Sealing plugs of the terminal compartment A must not be exchanged with those of the terminal compartment B.
6. In Division 1: Seal not required.
7. In Zone 1: Seal required within 2"!

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

1. Install per Canadian Electrical Code (CEC).
2. Use a dust tight seal at the conduit entry in Class II an 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.

Gammapilot M FMG60 with NaJ scintillator or PVT scintillator	**Permissible ambient temperature**	**Temperature class**
Detector without water cooling or detector with water cooling out of operation:		T6
• Detector with NaJ crystal scintillator	–40 °C ≤ Ta ≤ +60 °C	
• Detector with PVT plastic scintillator	–40 °C ≤ Ta ≤ +60 °C	
Detector with water cooling in operation:		T6
At the pipe housing (inside the water cooling):		
• Detector with NaJ crystal scintillator	–40 °C ≤ Ta ≤ +60 °C	
• Detector with PVT plastic scintillator	–40 °C ≤ Ta ≤ +60 °C	
At the compartment housing:	–40 °C ≤ Ta ≤ +75 °C	