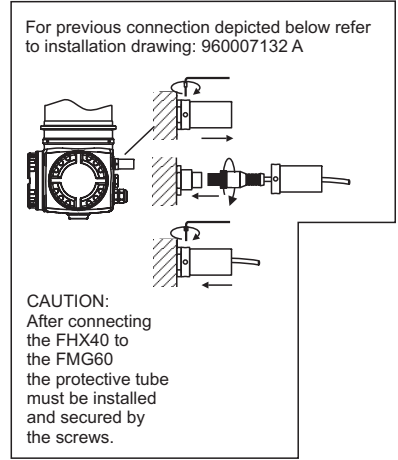
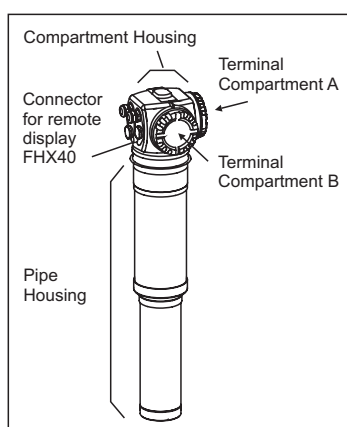
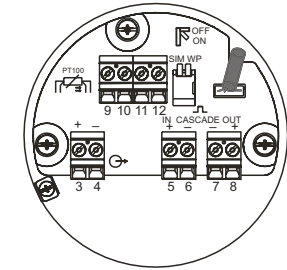


CAUTION:
The screws at the pipe housing must not be loosened!



TERMINAL COMPARTMENT B



Intrinsically safe circuits Entity Parameters		Group A, B (IIC)	Group C, D (IIA, IIB)
4...20 mA / HART (active) *1		$U_0/V_{oc} = 21.2\text{ V}$ $I_0/I_{sc} = 92\text{ mA}$ $P_o = 479\text{ mW}$ $R_i = 235\ \Omega$ $U_i/V_{max} = 30\text{ V}$ $I_i/I_{max} = 13\text{ mA}$ $P_i = 390\text{ mW}$ $C_i = 13.4\text{ nF}$ $L_i = 0$	$C_o/C_a = 169\text{ nF}$ $L_o/L_a = 4\text{ mH}$ $C_o/C_a = 1.2\ \mu\text{F}$ $L_o/L_a = 15\text{ mH}$
PT100		$U_0/V_{oc} = 8.4\text{ V}$ $I_0/I_{sc} = 8.3\text{ mA}$ $P_o = 17.5\text{ mW}$ $R_i = 1012\ \Omega$	$C_o/C_a = 5.2\ \mu\text{F}$ $L_o/L_a = 400\text{ mH}$ $C_o/C_a = 43\ \mu\text{F}$ $L_o/L_a = 400\text{ mH}$
Cascade out		$U_0/V_{oc} = 8.4\text{ V}$ $I_0/I_{sc} = 19.2\text{ mA}$ $P_o = 40.3\text{ mW}$ $R_i = 439\ \Omega$	$C_o/C_a = 5.1\ \mu\text{F}$ $L_o/L_a = 69\text{ mH}$ $C_o/C_a = 42\ \mu\text{F}$ $L_o/L_a = 199\text{ mH}$
Cascade in		$U_i/V_{max} = 8.4\text{ V}$ $I_i/I_{max} = 19.2\text{ mA}$ $P_i = 40.3\text{ mW}$ $C_i = 0$ $L_i = 67\ \mu\text{H}$	
Connection for FHX40		$U_0/V_{oc} = 4.7\text{ V}$ $I_0/I_{sc} = 37.7\text{ mA}$ $P_o = 44.3\text{ mW}$	For connection to the CSA approved intrinsically safe Endress+Hauser display FHX40 with associated cable. Observe Installation Drawing 960411-2006. This circuit may also be connected to the CSA approved Endress+Hauser Service Interface Commubox FXA193 with associated connection cable for ToF instruments. Observe Installation Drawing FES 0071.

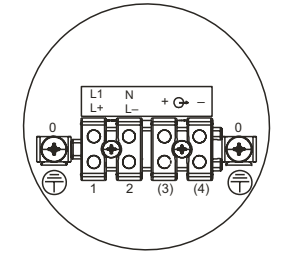
*1 only available at the version FMG60-**E*****

INTRINSICALLY SAFE (Entity)

Class I, Div. 1, Groups A, B, C, D or Zone 1, IIC

- CSA certified apparatus must be installed in accordance with manufacturer instructions.
- Install per Canadian Electrical Code (CEC).
- WARNING:** Substitution of components may impair intrinsic safety.
- Control room equipment must not use or generate over 250 V.
- Wiring: Use cables not subject to short circuiting. Use wires suitable for 5 K above surrounding ambient.
- 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:
 $U_0/V_{oc} \leq U_i/V_{max}$; $I_0/I_{sc} \leq I_i/I_{max}$;
 $C_o/C_a \geq C_i + C_{cable}$; $L_o/L_a \geq L_i + L_{cable}$.
- Install barrier / associated equipment in accordance to the manufacturer's instruction.
- Do not interconnect the 4...20 mA/HART signal circuits of detectors (e.g. within a cascade set).
- 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.
- [ia] defines "Associated Equipment".

TERMINAL COMPARTMENT A



Supply Circuit	Terminal	Supply Voltage
AC type	L1 N	90...250 VAC, 50/60 Hz
DC type	L+ L-	18...36 VDC

Signal Circuit	Terminal	Supply Voltage
		not connected

EXPLOSION PROOF

Class I, Div. 1, Groups A, B, C, D or Zone 1, IIC

- Install per Canadian Electrical Code (CEC).
- Control room equipment must not use or generate over 250 V.
- 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.
- Use supply wires suitable for 5 K above surrounding ambient.
- Sealing plugs of the terminal compartment A must not be exchanged with those of the terminal compartment B.
- In Division 1: Seal not required.
- In Zone 1: Seal required within 2"!

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

- Install per Canadian Electrical Code (CEC).
- Use a dust tight seal at the conduit entry in Class II an III locations.
- 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.
- Use supply wires suitable for 5 K above surrounding ambient.

	Permissible ambient temperature	Temperature class
Detector without water cooling or Detector with water cooling out of operation	<ul style="list-style-type: none"> Detector with NaI crystal scintillator: -40°C...+60°C Detector with plastic scintillator: -40°C...+60°C 	T6
Detector with water cooling in operation	At the pipe housing (inside the water cooling): <ul style="list-style-type: none"> Detector with NaI crystal scintillator: -40°C...+60°C Detector with plastic scintillator: -40°C...+60°C At the compartment housing: -40°C...+75°C	T6

ZD192F-D/00/en/05.09
CCS/FM6.0
CSA/08.08.08

CSA Control Drawing
960007132 D



Gammapiot M
FMG60
4-20 mA/HART (IS)

Endress+Hauser
People for Process Automation