XA00608P-C/00/EN/13.11
CCS/FM6.0
CSA/C 20.01.11

71138405

CSA Installation Drawing
960503-2009 C

Waterpilot FMX167
(IS)

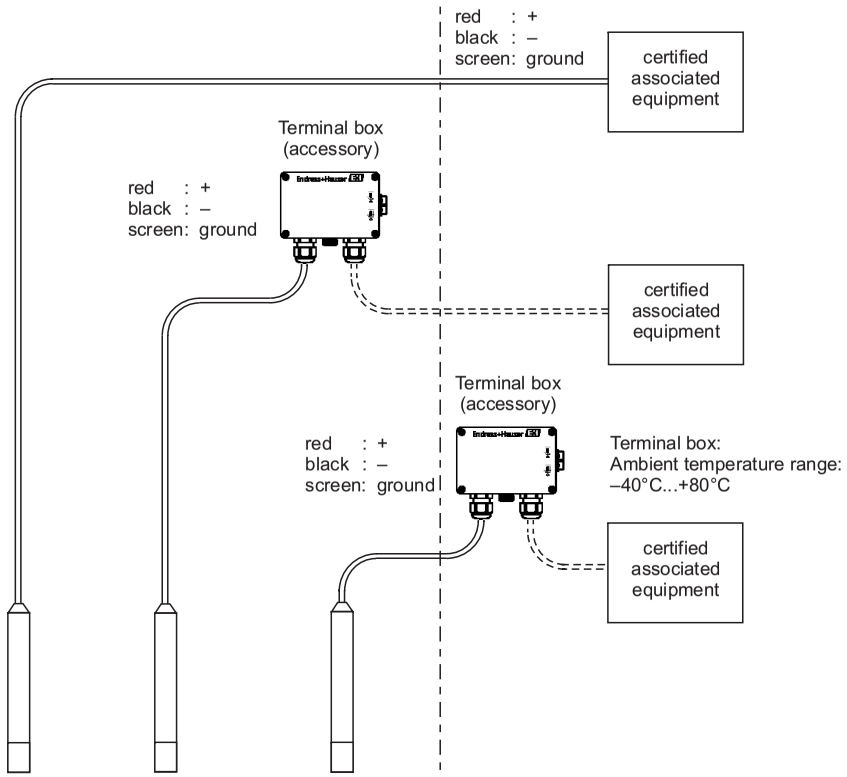
Endress+Hauser

People for Process Automation

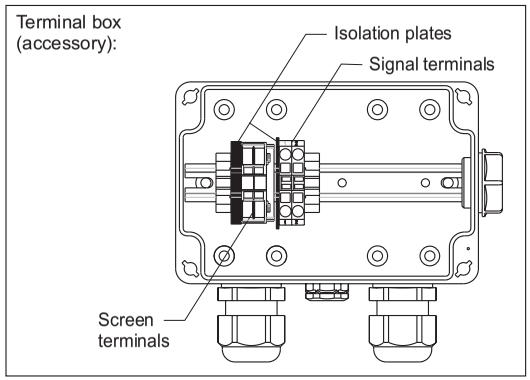
Hazardous location

Class I, Div. 1, Groups A, B, C, D
Class I, Zone 0, Ex ia IIC T6

Non hazardous location



	Temperature class	Ambient temperature range
Sensor	T6	–10°C ≤ Ta ≤ +70°C
Terminal box	T6	–40°C ≤ Ta ≤ +80°C



Intrinsically safe (entity), Class I, Div. 1, Groups A, B, C, D
Hazardous locations installations

1. Control room equipment may not use or generate over 250 V.
2. Install per the Canadian Electrical Code.
3. Use CSA certified intrinsic safety barrier or other associated equipment that satisfy the following conditions: $V_{oc} \leq V_{max}$, $I_{sc} \leq I_{max}$, $C_a \geq C_i + C_{cable}$, $L_a \geq L_i + L_{cable}$.
   Barrier must be incapable of delivering more than 1 Watt to a matched load.
   Transmitter entity parameters are as follows:
   $U_i / V_{max} = 30$ VDC $I_i / I_{max} = 133$ mA $P_{max} = 1$ W
   $C_i = C_{isensor} + C_{icable}$ $L_i = L_{isensor} + L_{icable}$
   Ci and Li shall be calculated depending of cable length (see table).

Length of sensor cable	Ci (10 nF + 180 pF/m)	Li (1 µH/m)
5 m	10.9 nF	5 µH
10 m	11.8 nF	10 µH
20 m	13.6 nF	20 µH
30 m	15.4 nF	30 µH
50 m	19.0 nF	50 µH
100 m	28.0 nF	100 µH
200 m	46.0 nF	200 µH
300 m	64.0 nF	300 µH

4. For system installation:
   Use CSA certified safety barriers as follows:
   (a) 28 V / 300 Ω + ground or
   (b) 28 V / 300 Ω + 28 V / diode or
   (c) 28 V / 300 Ω + 10 V / 50 Ω
5. Warning: Substitution of components may impair intrinsic safety.
   Avertissement : La substitution de composants peut compromettre la sécurité intrinsèque.
6. Intrinsic safety barrier manufacturer's installation drawing must be followed, when installing this equipment: The configuration of the intrinsic safety barrier(s) must be CSA approved.
7. Use supply wires suitable for 5°C above surrounding ambient.
8. Avoid friction and impact sparks. Anchor sensor if necessary, secure against swinging.
9. Warning: Avoid electrostatic charging of plastic surfaces.
   Do not rub. Do not use in media or environments which may generate electrostatic charges on plastic surfaces.
10. Do not remove or move terminal blocks, fastening elements or insulation plates of the terminal box. Do not build in additional components.