



HAZARDOUS LOCATIONS

INTRINSICALLY SAFE VIBRATION TRANSMITTER MODEL 140T

DESCRIPTION

The **Model 140T Intrinsically Safe Vibration Transmitter** is low-cost, yet highly accurate and rugged. It is ideal for use with all machines, even those which previously may have been considered uneconomical to monitor. The **Model 140T** easily mounts by use of a standard 1/4"-20 stud. It is a two-wire, loop-powered transmitter that can feed the vibration level of operating machinery to a data logger, milliamp monitor, or process control computer. Solid-state accelerometer and circuit design provide a 4-20 mA signal proportional to vibration velocity. Intrinsically safe, it can be used safely in hazardous environments when coupled with a Model MTL7706 intrinsic safety barrier.



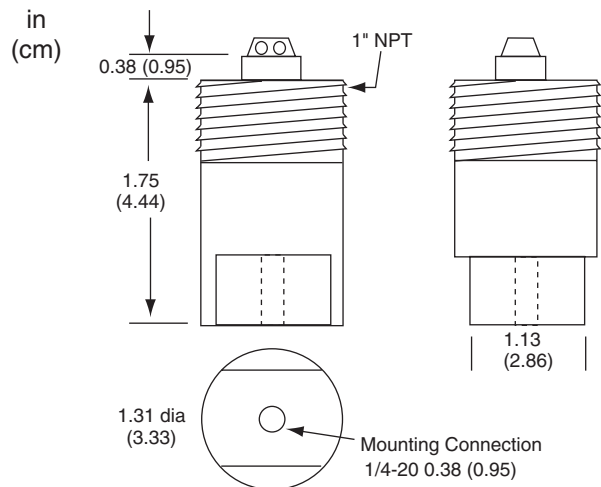
FEATURES

- **Reliable performance**
- **Easy to install**
- **4-20 mA output**
- **Intrinsically safe Class I, Division 1, Groups A, B, C, D; Class II, Division 1, Groups E, F, G**
- **Two-year warranty**

APPLICATION

Vibration monitoring can help alert the maintenance staff to the destructive effects of vibration on mechanical system equipment such as air handler fans, cooling tower fans, pumps, and compressors.

DIMENSIONS



SPECIFICATIONS

Vibration range	Output 4-20 mA, proportional to vibration level
140T-1	0-1 in/sec (25.4 mm/sec)
140T-2	0-2 in/sec (50.8 mm/sec)
Frequency range	7-1300 Hz \pm 3% (420-78,000 rpm)
Supply voltage (Vs)	20-35 VDC, unregulated; black=negative, red=positive, with reverse voltage protection
Max load resistance	RL = 50 Ω (Vs-12) 600 Ω @ 24 VDC

Isolation	500V, circuit-to-case
Conduit connection	1" MNPT
Temp range	-4° to 185°F (-20° to 85°C)
Environment rating	NEMA 4, weatherproof
Case	Cadmium-plated steel
Mounting	1/4"-20 stud
Weight	1.4 lb (0.64 kg)
Area	Intrinsically safe Class I, Div 1, Groups A, B, C, D; Class II, Div 1, Groups E, F, G
Entity parameters	V _{max} = 28 VDC, I _{max} = 110 mA C _i = 0.04 μ F, L _i = 0.0 mH
Warranty	2 years



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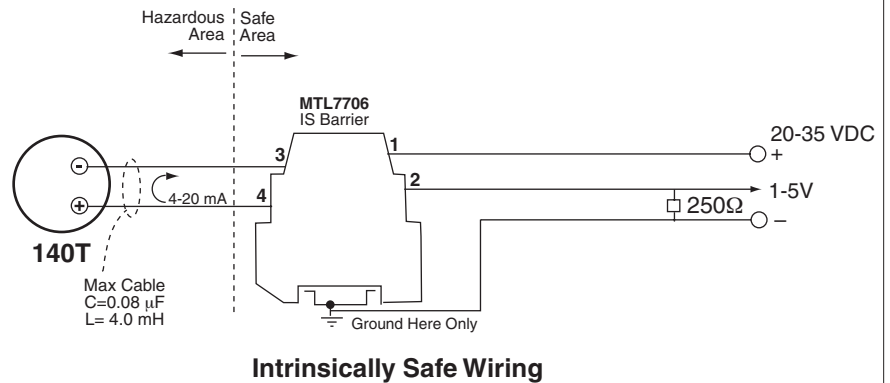
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INSTALLATION

The mounting orientation can be in any position. This position should be in an area for the best vibration signal definition or where there is a good transfer of the machine's (fan's, pump's, etc.) vibrations. The best location will vary from machine to machine. The location of the transmitter should be selected carefully. When selecting the site for the mounting location, it is helpful to survey the site with the aid of a vibration meter.

WIRING

Wiring subject to physical damage should be adequately protected. When installing electrical conduit, it is recommended that a short length (12"/30 cm) of flexible conduit be used between the transmitter and an associated junction box. This construction will provide some vibration isolation in the conduit line. Conduit and fittings should conform to the environment of the transmitter location. Weather-resistant or rain-tight fittings should be used to protect the transmitter wiring from a humid or corrosive atmosphere. Make all connections in accordance with national and local codes.



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CAUTION: Intrinsically safe devices require the use of an intrinsic safety barrier when applied in hazardous locations. Provide wiring and grounding strictly in accordance with manufacturers' instructions. When the Model 140T transmitter is combined with the Model MTL7706 intrinsic safety barrier, total cable capacitance between the two must be limited to 0.08 μ F, and total cable inductance must be limited to 4.0 mH (equivalent to 1800'/548m maximum Belden® #8760 18/2 twisted pair cable 0.18 μ H/FT, 44 pF/F).

CAUTION: You must ensure that the transmitter is rigidly attached to the monitoring point for the proper "sensing" of the vibration.

ORDERING INFORMATION

MODEL	DESCRIPTION
140T-1	Intrinsically-safe vibration transmitter, range 0-1 in/sec (25.4 mm/sec)
140T-2	Intrinsically-safe vibration transmitter, range 0-2 in/sec (50.8 mm/sec)
MTL7706	Intrinsic safety barrier

Note: Each application should be evaluated on an individual basis. Consult equipment manufacturers for specific details concerning safe vibration levels.