

Wire Rope Attachment

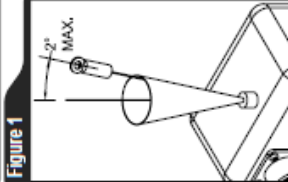


Figure 1

Angularity – The wire rope should be aligned within 2° of perpendicular (Fig. 1) when at full extension.

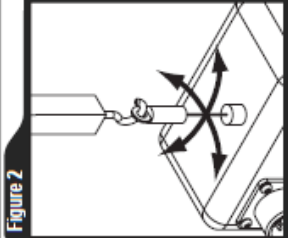


Figure 2

Eye Fitting Freedom – The eye fitting on the end of the wire rope should be mounted to allow rotation both axially about the pivot point and perpendicular to the axis of the pivot (Fig. 2 & 3) to allow the crimp barrel of the eye fitting to follow the direction of the wire rope. This eliminates all bending stress on the wire rope at the crimp of the eye fitting.

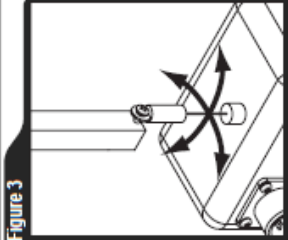


Figure 3

Eye Fitting Freedom – The eye fitting on the end of the wire rope should be mounted to allow rotation both axially about the pivot point and perpendicular to the axis of the pivot (Fig. 2 & 3) to allow the crimp barrel of the eye fitting to follow the direction of the wire rope. This eliminates all bending stress on the wire rope at the crimp of the eye fitting.

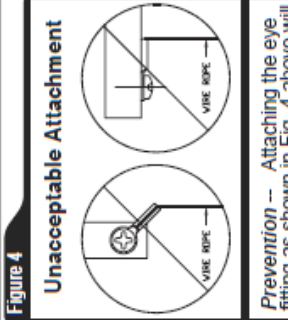


Figure 4

Unacceptable Attachment
Prevention – Attaching the eye fitting as shown in Fig. 4 above will put undue bending stress on the wire rope which may cause early fatigue. To prevent premature wire rope failure, eye fitting mounting conditions as shown above should be avoided.

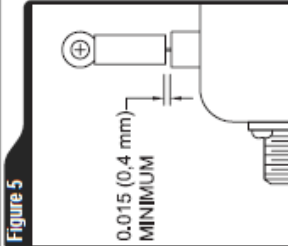


Figure 5

Zero Extension – Insure that the wire rope starting point is not less than .015" (0.4 mm) from the zero extension position (Fig. 5).

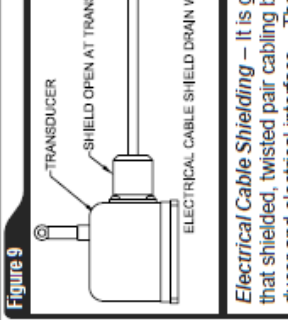


Figure 9

Electrical Cable Shielding – It is generally recommended that shielded, twisted pair cabling be used between transducer and electrical interface. The shield should remain open at the transducer and be tied to ground at the electrical interface. As shown in Fig. 9 above.

Alternative Mounting Suggestions

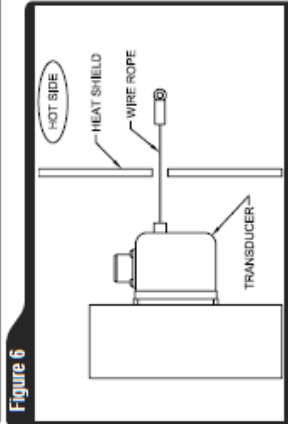


Figure 6

Close Proximity to Hot Areas – In applications where radiated heat can increase the temperature of the transducer beyond its operating temperature limit, it is advisable to use a heat shield between the transducer and the hot area as shown in Fig. 6 above.

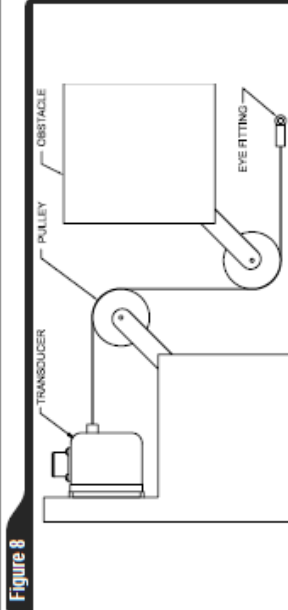


Figure 8

Obstacle Avoidance – The wire rope of the transducer may be routed over pulleys to facilitate mounting. To maximize wire rope life the minimum root pulley diameter should be 1.5" (38 mm) for wire rope diameters less than $\varnothing 0.020"$ (0.5 mm) and 2.5" (64 mm) for wire rope diameters between $\varnothing 0.020"$ and $\varnothing 0.040"$ (0.5 and 1.0 mm).

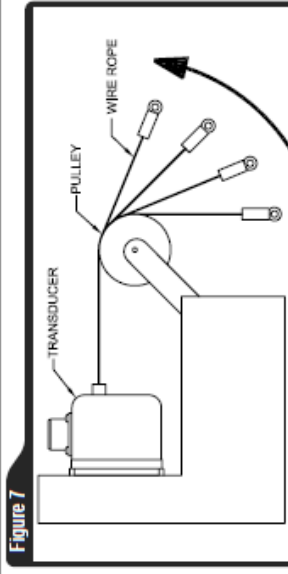


Figure 7

Oscillating Motion – For applications where oscillating motion as shown in Fig. 7 above may be encountered, a pulley should be employed to insure that the wire rope exits the transducer in a perpendicular manner.

Other Information

Short Range Transducers

Units with ranges of 6" (150 mm) or less employ single turn potentiometers without end stops. As the wire rope is extracted from the unit, the wiper on the potentiometer will traverse the full electrical working range. However, since no mechanical stop exists in the potentiometer, it is possible to continue extracting the wire rope beyond the working range of the transducer. When this occurs, the wiper of the potentiometer passes through a dead zone where no electrical output is observed and then begins at the zero output position again and repeats its output. Although the full extension of the wire rope may in some cases, approach 12" (300 mm) the working range occurs from initial extension.



WARNING

Do not allow cable to snap back or permanent damage may result



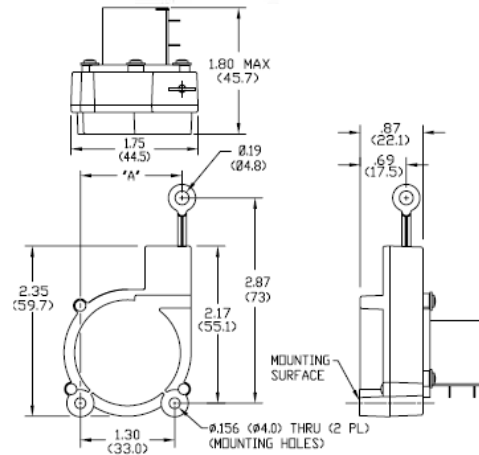
Installation Information

- Unit mounts on surface shown in Figure 1.
- To maximize cable life, align transducer with moving element so that cable exits unit within 2° of vertical (with unit oriented as shown in Figure 1).
- Use Table 1 to determine cable exit location relative to transducer mounting holes.
- Mount unit with two #6 or smaller machine screws or two M3.5 or smaller metric machine screws.

Note

- Place a flat washer under the head of each screw.
 - Torque 6-32 screws to **5 lb-in** maximum.
 - Torque M3.5 screws to **0.56 N-m** maximum.
5. Solder electrical leads to potentiometer on transducer per the circuit diagram shown in Figure 2 (designators in diagram correspond to pin designators on potentiometer). Output may be reversed by reversing the +Vin and Common leads. Electrical leads may be strain relieved by fastening to the potentiometer with a cable tie.
6. **Note:** Units with ranges 4.7" and less employ a single turn potentiometer which has no stops. On these units the wire rope will extend to a total length of approximately 8" to 10". When extension beyond the specified measurement range occurs, the wiper of the potentiometer traverses a deadband after which the electrical output begins again.

Figure 1



Dimensions in brackets are millimeters

Table 1

Range		Dim "A"	
(inch)	(inch)	(inch)	(mm)
10"	1.01		25.7
15"	1.14		29.0

General

Measurement Ranges See Table 1
 Sensing Device Precision Potentiometer
 Resolution Essentially Infinite
 Linearity

±0.5% Full Scale

Repeatability ±0.03% Full Scale
 Construction Thermoplastic Body
 Cable 0.018 (0.46 mm) Jacketed
 Stainless Steel
 Wire Rope Tension See Table 1
 Weight 3 oz. (85 gm)
 Connections Solder terminals
 Dimensional Information See Supplemental Data¹
 Life

250,000 full stroke cycles

Environmental

Operating Temperature -25°C to 75°C
 Storage Temperature -50°C to 80°C
 Operating Humidity 95 R.H. max. non-condensing
 Vibration 15 G's 0.1 ms max.
 Shock 50 G's 0.1 ms max.
 Ingress Protection NEMA 1, IP-40

Electrical

Input Impedance 1000 Ω ±15%
 Output Impedance 0 to 1000 Ω
 Excitation Voltage 25 Volts max. AC or DC

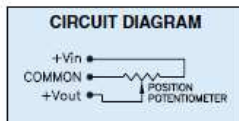


Table 2

Range		Nominal Output		Nominal Wire Rope Tension	
(inch)	(mm)	mV/V/in	mV/V/MM	(oz)	(N)
10	250	88	3.5	16	4.4
15	380	64	2.5	14	3.9



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