

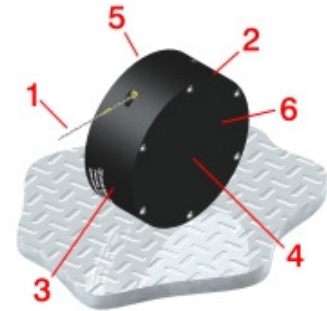
Data Sheet - Model 174-0321T High-Frequency-Response Position Transducer

For Crash Test, Impact Testing, and High-Acceleration Applications

Shaded characteristics are verified during production and test. All others are for REFERENCE and information only.

Key Features

1. 4-Inch (102-mm) Maximum Travel
2. Analog Signal Using Precision Conductive Plastic Potentiometer
3. AccuTrak™ Grooved Drum for Enhanced Repeatability and Longer Cable Life
4. Bearing-Mounted Rotating Components
5. High-Tension Displacement Cable
6. DirectConnect™ Sensor-To-Drum Technology = Zero Backlash, No Torsion Springs or Clutches



Potentiometer Specifications

| | |
|--------------------------------|--|
| Potentiometer Type | 1-turn, precision, conductive plastic |
| Resistance: Value, Tolerance | 5K ohms, $\pm 10\%$ |
| Travel: Electrical, Mechanical | 340°, 340° min |
| Mechanical Life | 100 million shaft revolutions min |
| Output Signal | analog signal from 0 to supply voltage (voltage divider circuit) |
| Power Rating | 1.0 W at 158° F (70° C) |
| Supply Current | 12 mA max |
| Supply Voltage | 35 VDC max (using voltage divider circuit) |
| Independent Linearity Error | $\pm 0.5\%$ max per VRCI-P-100A |
| Output Smoothness | 0.1% max |
| Insulation Resistance | 1000 Mohms at 500 VDC min |
| Dielectric Strength | 1000 VDC min |
| Resolution | infinite signal |
| Operating Temperature | -85° to +257° F (-65° to +125° C) |
| Shock, Vibration | 100 g for 6 ms, 10 to 2000 Hz at 15 g per Mil-R-39023 |
| Temperature Coefficient | ± 400 ppm/°C max |

Other Specifications

| | |
|--------------------------------------|--|
| Case Materials | precision-machined anodized 2024 aluminum |
| Displacement Cable | 0.024-inch (0.61-mm) dia., 7-by-7 stranded stainless steel, 70-lb (311-N) min breaking strength |
| Displacement Cable Hardware | 1 each of 300196 loop sleeve , 300292 copper sleeve , 160032 copper sleeve , 300688 ball-end plug , 300495 pull ring , and 301003 nickel swivel ; all items provided uncrimped |
| Nominal Mass | 3 oz (85 g) |
| Displacement Cable Tension (Nominal) | 56 oz (15.5 N) min |
| Cable Acceleration (Nominal) | 50 g's max |

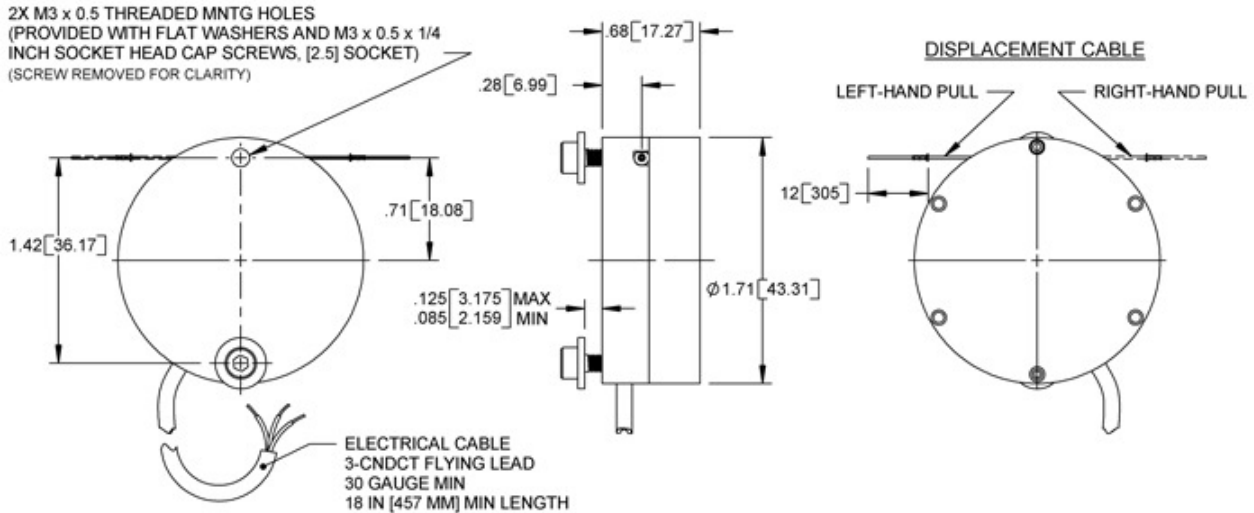
| | |
|--------------------------|---|
| Environmental Protection | NEMA 3S / IP 54, DO-160D (ED-14D) Env. Cat. E1E1ABSHXFDXSAXXXXXXXXXXX |
|--------------------------|---|

Model Numbers and Ordering Codes

| | |
|--|--|
| 174-0321Ta | position transducer (4.00-inch (102-mm) range) |
| Example: 174-0321T (left-hand displacement cable pull) | |

| Variable | Value | Description |
|----------|-------|------------------------------------|
| a | - | left-hand displacement cable pull |
| | R | right-hand displacement cable pull |

Drawing



Electrical Connection for Increasing Output with Displacement Cable Extraction

| Left-Hand Pull | Right-Hand Pull | Signal |
|----------------|-----------------|------------------------|
| black | red | input, V+ |
| white | white | output, signal, S+ |
| red | black | ground, common, V-, S- |

For crimping of hardware to displacement cable, consider the [160001-01 installation kit](#).

Need something not shown? Complete a [Custom Solution Request](#).

All dimensions are REFERENCE and are in inches [mm] • Data Sheet Model 174-0321T Rev. -

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