

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

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

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, ±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	±0.5% max per VRCL–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

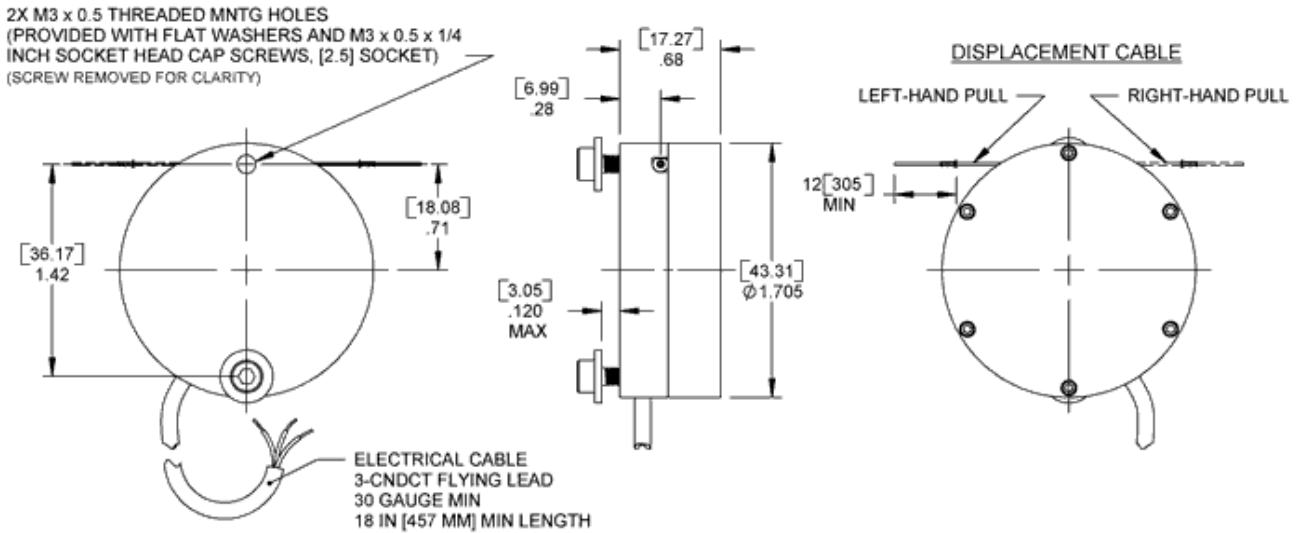
Case Materials	precision–machined anodized 2024 aluminum
Displacement Cable	0.024–inch (0.61–mm) dia., 7–by–7 stranded stainless steel, 70–lb (311–N) min breaking strength
Displacement Cable Hardware	1 each of 300196 loop sleeve, 300292 copper sleeve, 160032 copper sleeve, 300688 ball–end plug, 300495 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

<p><i>Left-Hand Pull</i> black white red</p>	<p><i>Right-Hand Pull</i> red white black</p>	<p><i>Signal</i> input, V+ output, signal, S+ ground, common, V-, S-</p>
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For crimping of hardware to displacement cable, consider the [160001-01 installation kit](#).

All dimensions are REFERENCE and are in inches [mm] • Document number: S021G2(040129)