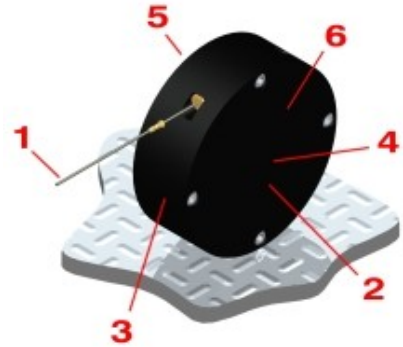


**Data Sheet – Series 173, 174, 175 and 176 Analog–Output Subminiature Position Transducer****Subminiature Size, Easy Mounting****Key Features**

- 6.5–Inch (165–mm) Maximum Travel (Series 176)
- Analog Signal Using Precision Conductive Plastic Potentiometer
- AccuTrak™ Grooved Drum for Enhanced Repeatability
- Bearing–Mounted Rotating Components
- Optional Flexible Mounting Bases
- 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	0.018–inch (0.46–mm) dia., 7–by–7 stranded stainless steel, 40–lb (177–N) min breaking strength				
Displacement Cable Hardware	1 each of 300196 loop sleeve, 300292 copper sleeve, 300688 ball–end plug, 300495 pull ring, 160026 brass swivel, and 301003 nickel swivel; all items provided uncrimped				
Series	173 (Opt. 1)	173 (Opt. 2)	174	175	176
Nominal Mass	1 oz (28 g)	1 oz (28 g)	2 oz (57 g)	3 oz (85 g)	4 oz (113 g)
Displ. Cable Tension (Nom., Min)	0.5 oz (0.1 N)	2 oz (0.6 N)	3 oz (0.8 N)	2 oz (0.6 N)	2.5 oz (0.7 N)
Displ. Cable Tension (Nom., Max)	4 oz (1.1 N)	10 oz (2.8 N)	12 oz (3.3 N)	10 oz (2.8 N)	8 oz (2.2 N)
Displ. Cable Accel. (Nom., Max)	8 g	17 g	9 g	8 g	6 g
Environmental Protection	NEMA 3S / IP 54, DO–160D (ED–14D) Env. Cat. E1E1ABSHXFDXSAXXXXXXXXXXX				

**Model Numbers and Ordering Codes**

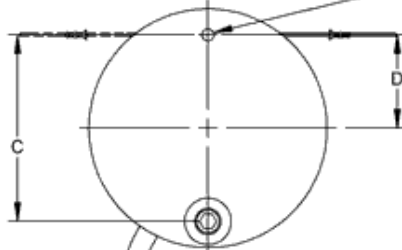
173–0241–abc	position transducer (3.00–inch (76–mm) range)
174–0321–abc	position transducer (4.00–inch (102–mm) range)
175–0401–abc	position transducer (5.00–inch (127–mm) range)
176–0521–abc	position transducer (6.50–inch (165–mm) range)
Example: 173–0241–L2N (left–hand displacement cable pull, cable tension: –020, no base)	

Variable	Value	Description
a	L	left–hand displacement cable pull
	R	right–hand displacement cable pull
b	1	cable tension: –010 (173 only)
	2	cable tension: –020 (173 only)
	3	cable tension: –030 (174, 175, and 176 only)
c	N	no base
	C	base: L (173 only); pn 173015
	D	base: L (174/175 only); pn 174015
	E	base: L (176 only); pn 176015

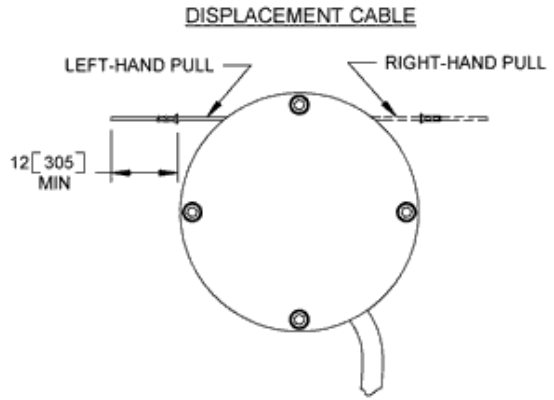
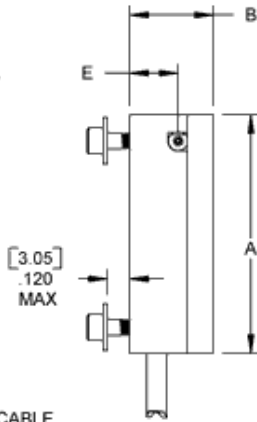
**Drawing**

SERIES 173, 174, 175 - 2X 2-56 UNC THREADED MNTG HOLES  
(PROVIDED WITH FLAT WASHERS AND 2-56 UNC x 1/4 INCH SOCKET HEAD CAP SCREWS, 5/64 SOCKET)

SERIES 176 - 2X 4-40 UNC THREADED MNTG HOLES  
(PROVIDED WITH FLAT WASHERS AND 4-40 UNC x 1/4 INCH SOCKET HEAD CAP SCREWS, 3/32 SOCKET)  
(SCREW REMOVED FOR CLARITY)



ELECTRICAL CABLE  
3-CNDCT FLYING LEAD  
30 GAUGE MIN  
18 IN [457 MM] MIN LENGTH



SERIES	A	B	C	D	E
173	1.28 [32.5]	.45 [11.4]	1.00 [25.4]	.50 [12.7]	.260 [6.60]
174	1.705 [43.31]	.49 [12.5]	1.425 [36.20]	.713 [18.1]	.260 [6.60]
175	1.99 [50.5]	.52 [13.2]	1.425 [36.20]	.845 [21.46]	.275 [6.99]
176	2.46 [63.3]	.52 [13.2]	1.425 [36.20]	1.104 [28.04]	.275 [6.99]

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](#).

All dimensions are REFERENCE and are in inches [mm] • Document number: S021G1(040129)