

Data Sheet – Series D60, D61 and D62 Digital–Output Position Transducers

High–Resolution, Digital–Output, Miniature Size

Summary Features

1. 43–inch (1092–mm) Maximum Travel (Series D62)
2. Digital Signal Using Precision, High–Resolution Incremental Optical Encoder
3. AccuTrak™ Threaded Drum for Enhanced Repeatability
4. Bearing–Mounted Rotating Components
5. Optional Flexible Mounting Bases
6. Predicted Life: 10 Million Full–Stroke Cycles
7. NEMA 4X / IP 66 Environmentally Protected
8. DirectConnect™ Sensor–To–Drum Technology = Zero Backlash, No Torsion Springs or Clutches



Sensor Specifications

SENSOR SPECIFICATIONS (incremental optical encoder)

Power Requirement	5 to 26 VDC
Supply Current	35 mA max at 5 VDC
Logic Output	open collector with Schmitt trigger and 10 Kohm pull–up resistor
Power Consumption	150 mW max, 16 mA sink current at 0.40 VDC
Travel: Electrical, Mechanical	360° continuous
Mechanical Life	100 million shaft revolutions min
Resolution	8192 quadrature pulses per revolution
Output	2–bit (quadrature) code, A leads B by 90° w/CW
Operating Temperature	–4° to 212° F (–20° to 100° C)
Shock / Vibration	50 g for 11 ms / 50 to 500 Hz at 20 g
Humidity	98% non–condensing

Other Specifications

Case/Drum Materials	precision–machined, anodized 2024 aluminum
Displacement Cable	0.027 inch (0.6858 mm) diameter, 7–by–7 stranded stainless steel, 90–lb (400–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
Nominal Mass	D60: 6 oz (170 g), D61: 8 oz (227 g), D62: 11 oz (312 g)
Environmental Sealing	NEMA 4X / IP 66

Part Numbers

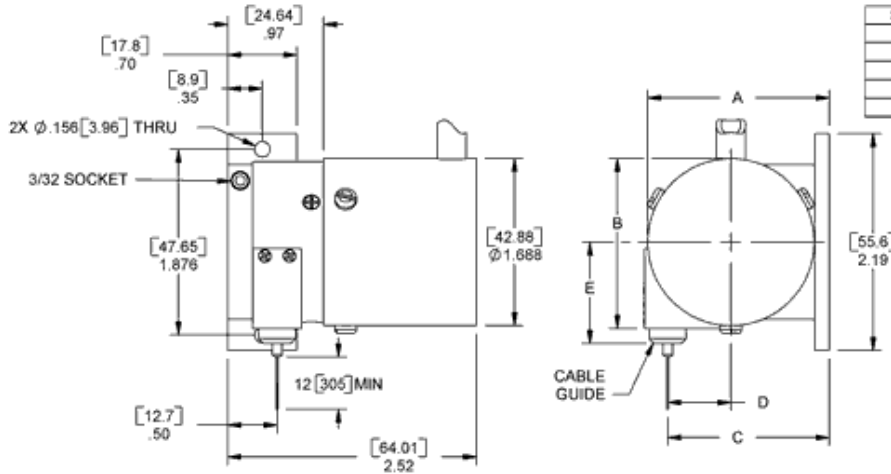
Part Number (Order Code)	Nominal Range in (mm)	Nominal Resolution# pulses/in (pulses/mm)	Nominal Cable Tension oz (N)	max Cable Accel. g
D60–090	11.25 (286)	3587 (141)	9 to 15 (3 to 4)	40
D60–170	21.25 (540)	1883 (74)	7 to 17 (2 to 5)	40
D61–244	30.50 (775)	1338 (53)	7 to 22 (2 to 6)	71
D62–345	43 (1092)	951 (37)	7 to 17 (2 to 5)	32

after quadrature decode by user

Electrical Connection

Electrical Connection Type	Pin/Wire Assignment	
10–conductor dark gray PVC cable with 24 AWG flying leads, 60–in (1524–mm) min length, 0.250 (6.35) nominal diameter, –20° to +80° C operating temperature range	Wire Color	
	red	Signal common
	gray	+VDC
	brown	Z
	green	Z'
	blue	B
	orange	B'
	yellow	A
	white	A'
purple	N/C	
black	case	

Drawing



Related Products

Part Number	Description
160005	base: magnet (.6)
160030-	base: universal (.6)
160040-1	base: mounting disk (.6)
160015-1	base: big foot (.6)
160015-G1	base: h (.60)
300460	base: universal (miniature) (.60)
160001-01	installation kit

Options

Electrical Cable Termination	straight pins (two rows of 5 pins on 0.10" centers)
Input Signal	5 VDC ±5%
Output Signal	TTL or RS-422A line driver
Resolution	50% and 25% resolution
Operating Temperature	-40° to +185° F (-40° to +85° C)
Display Meter	LCD readout, two registers; scalable output
Interface Products	cables, adapters, interface circuits, power supplies

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

All dimensions are REFERENCE and are in inches [mm] • Document number: S021I(031007)