

# DPT250

## Cable Actuated Sensor

### Instrument Grade • Incremental Encoder

**Short-Range String Encoder • High Resolution**  
**25, 50-inch Stroke Range Options**  
**Powder Painted & Anodized Aluminum Enclosure**  
**Perfect Solution for Industrial & Testing Applications**

#### General

<b>Full Stroke Range Options</b>	0-25 to 0-50 inches [0-625 to 0-1250 mm]
<b>Output Signal</b>	incremental encoder (quadrature)
<b>Output Driver Options</b>	TTL/CMOS, Open Collector, Line Driver
<b>Accuracy</b>	.01 to .02 in. (see ordering information)
<b>Repeatability</b>	.005 to .010 in. (see ordering information)
<b>Resolution</b>	25 to 1250 pulses per inch
<b>Measuring Cable</b>	0.019-in. dia. nylon-coated stainless steel
<b>Enclosure Material</b>	powder-painted and anodized aluminum
<b>Sensor</b>	optical encoder
<b>Weight</b>	2 lbs. max.

#### Electrical

<b>Input Voltage</b>	see ordering information
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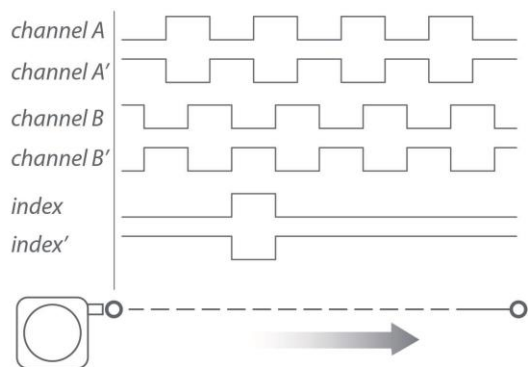
#### Environmental

<b>Enclosure</b>	IP 55, NEMA 12
<b>Operating Temperature</b>	0°F to 160°F (-20°C to 70°C)
<b>Vibration</b>	up to 10g to 2000 Hz
<b>Humidity</b>	98% RH, no condensation

The DPT250 Cable-Extension Transducer offers a highly accurate incremental encoder output signal that can provide both position and velocity information. The output is a digital pulse stream that can provide resolution down to less than a thousandth's of an inch!

Delivering high accuracy and fine resolution without the need for perfect parallel alignment, this compact device offers the additional benefits of ease of installation and ability to interface to any PLC or controller. These features make the DPT250 the perfect choice for many applications that range from hydraulic cylinder positioning to robotic arm motion feedback.

#### Electrical Output Signal Options

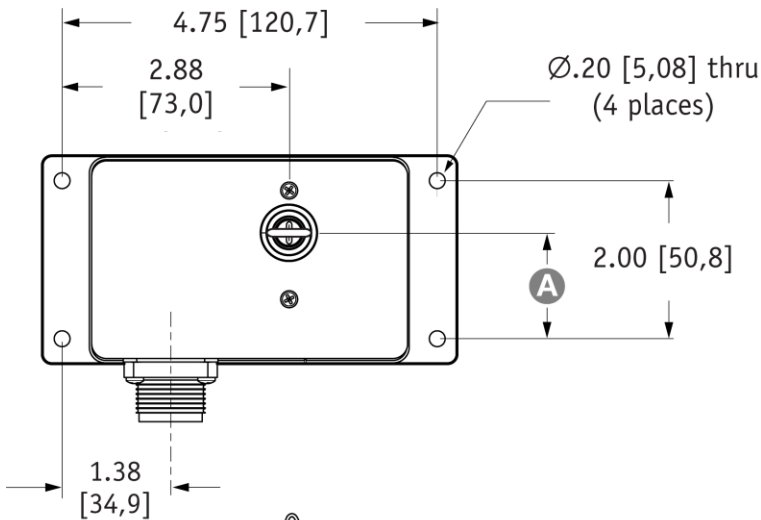


-- see ordering information for available channels

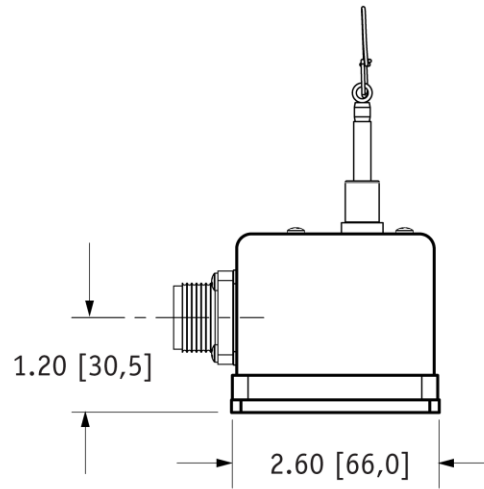
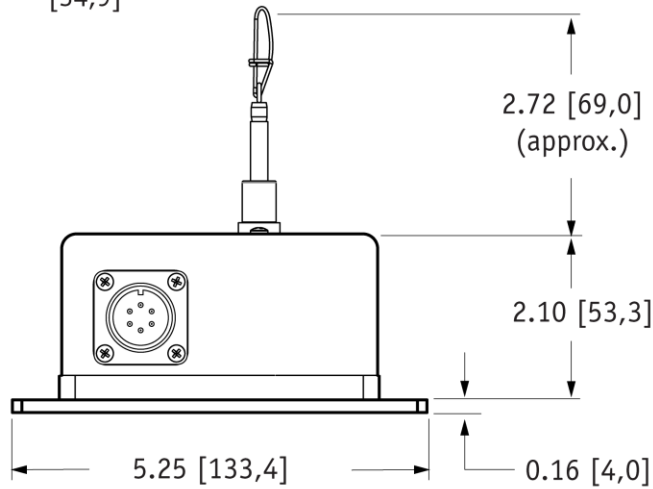
# DPT250

Instrument Grade • Incremental

## Outline Drawing:



Range	A
25", 625mm	1.31 [33,3]
50", 1250mm	1.63 [41,4]



ALL DIMENSIONS ARE IN INCHES [MM] • tolerances are ±0.02 in. [±0,5mm]

## Ordering Information

### Model Number:

**DPT250** -      -      -      **1** **1** -      -      -      **0**

order code:      R      A      B      C      D      E      F      G

Sample Model Number:

**DPT250 - 0025 - 111 - 1130**

- R** range: 25 inches
- A** measuring cable tension: standard - 12 oz.
- D** sensing circuit/channels: TTL/CMOS, A,B
- E** resolution: 500 pulses per inch
- F** electrical connection: 6-pin plastic connector

**Full Stroke Range:**

<b>R</b> order code:	<b>0025</b>	<b>0050</b>	<b>0625</b>	<b>1250</b>
full stroke range, min:	25 in.	50 in.	625 mm	1250 mm
accuracy:	±0.010 in. (max)	±.020 in. (max)	±0.25 mm (max)	±0.50 mm (max)
repeatability:	±0.005 in. (max)	±.010 in. (max)	±0.12 mm (max)	±0.25 mm (max)
cable tension* (±30%):	13 oz.	6 oz.	3,6 N	1,6 N
cable acceleration, max.:	11 g	4 g	11 g	4 g
resolution options:	50, 500, 1000, 1250 pulses per inch	25, 250, 500, 625 pulses per inch	2, 20, 40, 50 pulses per mm	1, 10, 20, 25 pulses per mm

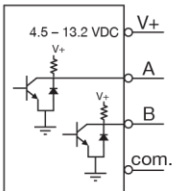
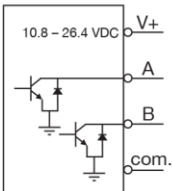
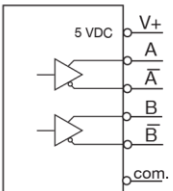
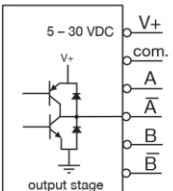
\*note: increased cable tension options available (see below)

**Measuring Cable Tension:**

<b>A</b> order code:	<b>1</b>	<b>H</b>
	standard tension*	high tension*
25 inch range:	13 oz.	65 oz.
50 inch range:	6 oz.	33 oz.
625 mm range:	3,6 N	18,1 N
1250 mm range:	1,6 N	9,2 N

\*-note: spring tension tolerance: ±30%

**Sensing Circuit / Channels:**

<b>I</b> order code:	<b>1</b>	<b>2</b>	<b>4</b>	<b>6</b>
description:	TTL / CMOS	open collector	line driver	universal line driver
Input voltage (V+):	4.5...13.2 Vdc	10.8...26.4 Vdc	5 Vdc	5...30 VDC
Sink current:	20 mA max.	20 mA max.	20 mA max.	20 mA max.
Input current:	80 mA max.	80 mA max.	150 mA max.	50 mA max, no load
				

**Resolution:**

<b>B</b> order code:	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
25 in. range:	500 ppi	1000 ppi	1250 ppi	50 ppi
50 in. range:	250 ppi	500 ppi	625 ppi	25 ppi
625 mm range:	20 ppmm	40 ppmm	50 ppmm	2 ppmm
1250 mm range:	10 ppmm	20 ppmm	25 ppmm	1 ppmm

**Electrical Connection:**

**1** *order code:*

**1**  
15-inch, shielded instrumentation cable

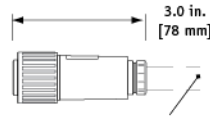


15-inch, multiconductor cable

color	TTL/CMOS Open Collector	5 V Line Driver Universal Line Driver
red	input voltage	input voltage
black	common	common
green	channel A	channel A
white	channel B	channel B
blue	-	channel A'
brown	-	channel B'
yellow	-	index
orange	-	index'

**3**

6-pin plastic connector with mating plug



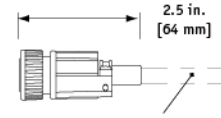
contact view

.30 - .39 in. [8 - 10 mm] cable dia.  
16 AWG max conductor size  
connector: MS3102E-14S-6P  
mating plug: MS3106E-14S-6S

pin	TTL/CMOS Open Collector	5 V Line Driver Universal Line Driver
A	input voltage	input voltage
B	common	common
C	channel A	channel A
D	channel B	channel B
E	-	channel A'
F	-	channel B'

**4**

18-pin plastic connector with mating plug



contact view

.26 - .30 in. [6,6 - 7,6 mm] cable dia.  
20 - 24 AWG conductor size  
connector: Conxall 14282-18PG-300-K  
mating plug: Conxall 13282-18SG-326-K

pin	TTL/CMOS Open Collector	5 V Line Driver Universal Line Driver
1	input voltage	input voltage
2	common	common
3	channel B	channel B
6	channel A	channel A
7	-	index
11	-	channel B'
12	-	channel A'
15	-	index'

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