

DPT250

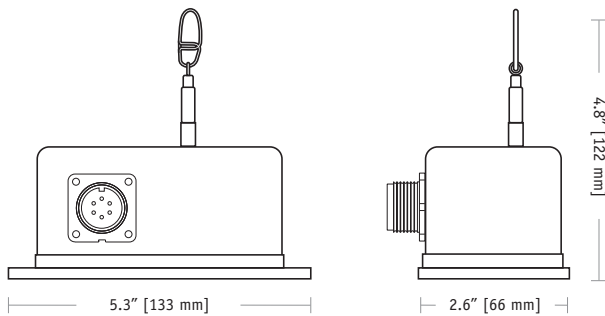
Instrument Grade • Incremental Encoder

Short-Range String Encoder • High Resolution

25, 50-inch Stroke Range Options

Powder Painted & Anodized Aluminum Enclosure

Perfect Solution for Industrial & Testing Applications



General

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

Electrical

Input Voltage	see ordering information
---------------	--------------------------

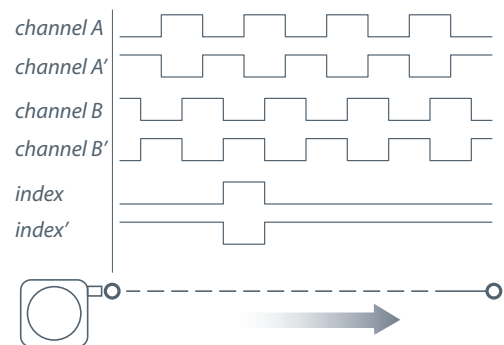
Environmental

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

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!

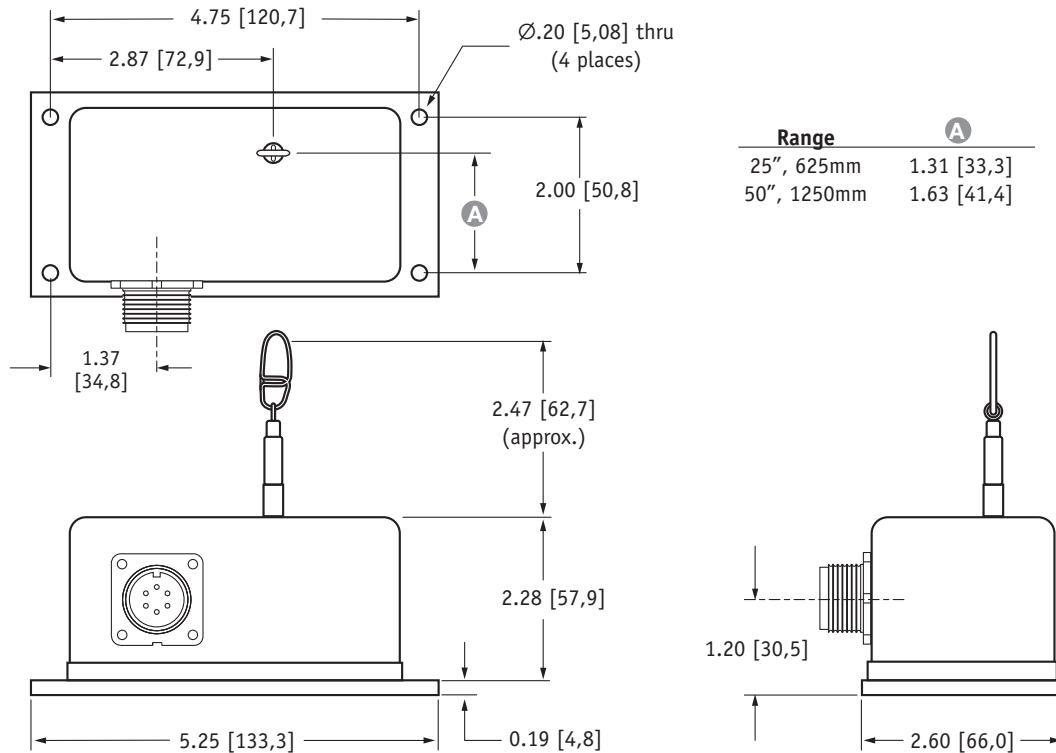
Delivering high accuracy and fine resolution without the need for perfect parallel alignment, this compact device offers the additional benefits of ease of installation and ability to interface to any PLC or controller. These features make the DPT250 the perfect choice for many applications that range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

Electrical Output Signal Options



-- see ordering information for available channels

Fig. 1, Top Exit:



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

Ordering Information:

Model Number:

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

order code: R A B C D E F G

Sample Model Number:

DPT250 - 0025 - 111 - 1130

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

Full Stroke Range:

R order code:	0025	0050	0625	1250
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 gs
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 for re-orders only (see below)

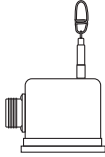
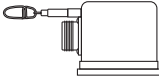
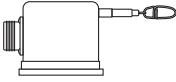
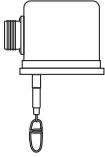
Measuring Cable Tension:

A order code:	1	H	2**	3**
	standard tension	high tension*		
25 inch range:	13 oz.	65 oz.	44 oz.	73 oz.
50 inch range:	6 oz.	33 oz.	22 oz.	36 oz.
625 mm range:	3,6 N	18,1 N	12 N	20 N
1250 mm range:	1,6 N	9,2 N	6 N	10 N
measuring cable:	.019-in. dia. nylon-coated stainless steel		.024-in. dia. stainless steel	

*-note: spring tension tolerance: ±20%

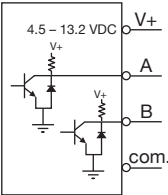
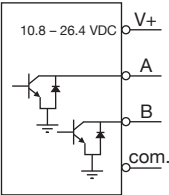
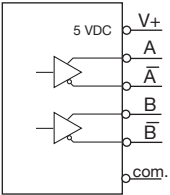
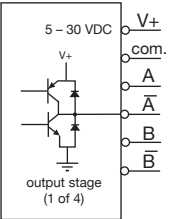
**-note: outline dimensions for these options not controlled on this datasheet.

Measuring Cable Exit:

① order code:	1	2	3	4
	top exit (see fig. 1)	front exit*	rear exit*	bottom exit*
				

*-note: dimensions for optional cable exits not controlled on this datasheet, please contact factory


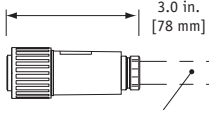
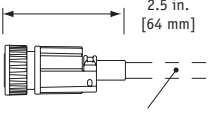


Sensing Circuit / Channels:

① order code:	1	2	4	6
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:

② order code:	1	2	3	4
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:

③ order code:	1	3	4																																																																																				
	15-inch, shielded instrumentation cable	6-pin plastic connector with mating plug	18-pin plastic connector with mating plug																																																																																				
																																																																																							
	15-inch, multiconductor cable	.30 - .39 in. [8 - 10 mm] cable dia. 16 AWG max conductor size connector: MS3102E-14S-6P mating plug: MS3106E-14S-6S	.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																																																																																				
																																																																																							
		contact view	contact view																																																																																				
	<table border="1"> <thead> <tr> <th></th> <th>TTL/CMOS</th> <th>5 V Line Driver</th> </tr> </thead> <tbody> <tr> <td>color</td> <td>Open Collector</td> <td>Universal Line Driver</td> </tr> <tr> <td>red</td> <td>input voltage</td> <td>input voltage</td> </tr> <tr> <td>black</td> <td>common</td> <td>common</td> </tr> <tr> <td>green</td> <td>channel A</td> <td>channel A</td> </tr> <tr> <td>white</td> <td>channel B</td> <td>channel B</td> </tr> <tr> <td>blue</td> <td>-</td> <td>channel A'</td> </tr> <tr> <td>brown</td> <td>-</td> <td>channel B'</td> </tr> <tr> <td>yellow</td> <td>-</td> <td>index</td> </tr> <tr> <td>orange</td> <td>-</td> <td>index'</td> </tr> </tbody> </table>		TTL/CMOS	5 V Line Driver	color	Open Collector	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'	<table border="1"> <thead> <tr> <th></th> <th>TTL/CMOS</th> <th>5 V Line Driver</th> </tr> </thead> <tbody> <tr> <td>pin</td> <td>Open Collector</td> <td>Universal Line Driver</td> </tr> <tr> <td>A</td> <td>input voltage</td> <td>input voltage</td> </tr> <tr> <td>B</td> <td>common</td> <td>common</td> </tr> <tr> <td>C</td> <td>channel A</td> <td>channel A</td> </tr> <tr> <td>D</td> <td>channel B</td> <td>channel B</td> </tr> <tr> <td>E</td> <td>-</td> <td>channel A'</td> </tr> <tr> <td>F</td> <td>-</td> <td>channel B'</td> </tr> </tbody> </table>		TTL/CMOS	5 V Line Driver	pin	Open Collector	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'	<table border="1"> <thead> <tr> <th></th> <th>TTL/CMOS</th> <th>5 V Line Driver</th> </tr> </thead> <tbody> <tr> <td>pin</td> <td>Open Collector</td> <td>Universal Line Driver</td> </tr> <tr> <td>1</td> <td>input voltage</td> <td>input voltage</td> </tr> <tr> <td>2</td> <td>common</td> <td>common</td> </tr> <tr> <td>3</td> <td>channel B</td> <td>channel B</td> </tr> <tr> <td>6</td> <td>channel A</td> <td>channel A</td> </tr> <tr> <td>7</td> <td>-</td> <td>index</td> </tr> <tr> <td>11</td> <td>-</td> <td>channel B'</td> </tr> <tr> <td>12</td> <td>-</td> <td>channel A'</td> </tr> <tr> <td>15</td> <td>-</td> <td>index'</td> </tr> </tbody> </table>		TTL/CMOS	5 V Line Driver	pin	Open Collector	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'
	TTL/CMOS	5 V Line Driver																																																																																					
color	Open Collector	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'																																																																																					
	TTL/CMOS	5 V Line Driver																																																																																					
pin	Open Collector	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'																																																																																					
	TTL/CMOS	5 V Line Driver																																																																																					
pin	Open Collector	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'																																																																																					

version: 6.0 last updated: November 27, 2012