

# Cable-Extension Position Transducer

**Incremental Encoder Output**  
**Ranges: 0-600 to 0-1700 inches**  
**Industrial Grade**

<Extended Range>

# PT9150



## Specification Summary:

### GENERAL

Full Stroke Range Options—on this datasheet ..... 0-600 to 0-1700 inches  
 Output Signal ..... incremental encoder (quadrature)  
 Output Driver Options ..... TTL/CMOS, open collector or line driver  
 Accuracy  
 Typical ... the lesser of 0.02% f.s. or 0.04% of measurement  $\pm 1/2$  pulse max.  
 Best ..... not less than 0.001 in. (0,03 mm)  
 Repeatability .....  $\pm 0.02\%$  full stroke  $\pm 1/2$  pulse max.  
 Resolution Options ..... 10 to 250 pulses per inch  
 Measuring Cable ..... stainless steel *see ordering information*  
 Enclosure Material ..... powder-painted aluminum or stainless steel  
 Sensor ..... optical incremental encoder  
 Maximum Retraction Acceleration ..... *see ordering information*  
 Maximum Velocity ..... *see ordering information*  
 Weight, Aluminum (Stainless Steel) Enclosure ..... 14 lbs. (28 lbs.) max.

### ELECTRICAL

Input Voltage ..... *see ordering information*  
 Input Current ..... *see ordering information*

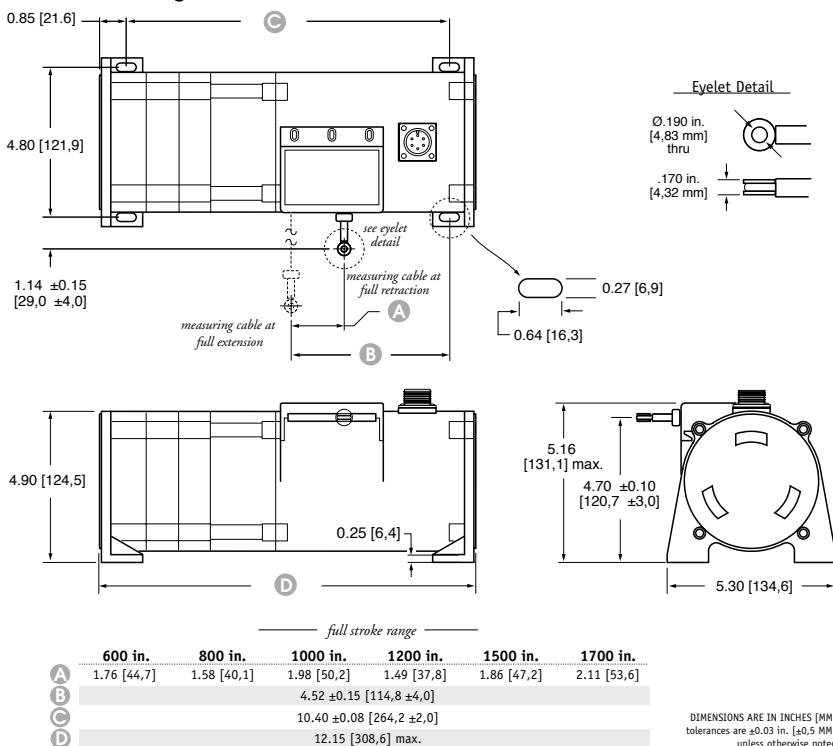
### ENVIRONMENTAL

Enclosure ..... NEMA 4/4X/6, IP 67/68  
 Operating Temperature ..... 0° to 160°F (-17° to 71°C)  
 Vibration ..... up to 10 G's to 2000 Hz maximum

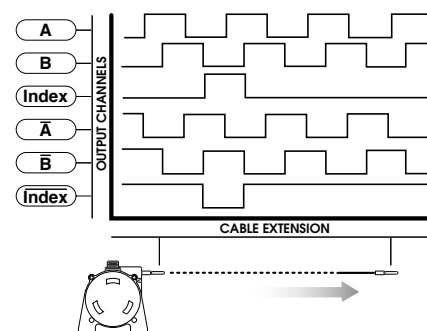
With its incremental optical encoder and industrial design this rugged transducer provides the highest accuracy and longest life of any measurement device of its kind. This model is available in a wide variety of resolutions and output stages to fit virtually any requirement.

It can measure up to 1700", yet when its cable is retracted it is only 6" long. Its small size and low-cost-to-measurement ratio offers remarkable flexibility and value.

### Outline Drawing



### Output Signal



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**Ordering Information:**

**Model Number:**

**PT9150-** order code: **0600** - **1** - **0**

Sample Model Number:

**PT9150 - 0800 - 111 - 1110**

- R** range: 500 inches
- A** enclosure: aluminum
- C** cable exit: front
- D** output signal: TTL/CMOS driver
- F** resolution: 100 ±2 pulses per inch
- G** electrical connection: 6-pin plastic connector

**Full Stroke Range:**

<b>R</b> order code:	<b>0600</b>	<b>0800</b>	<b>1000</b>	<b>1200</b>	<b>1500</b>	<b>1700</b>
full stroke range, min:	600 in.	800 in.	1000 in.	1200 in.	1500 in.	1700 in.
cable tension (30%):	25 oz.	25 oz.	24 oz.	24 oz.	23 oz.	23 oz.
measuring cable:	Ø.034-in. nylon-coated stainless	Ø.024-in. nylon-coated stainless	Ø.024-in. nylon-coated stainless	Ø.019-in. nylon-coated stainless	Ø.015-in. non-coated stainless	Ø.015-in. non-coated stainless

english ranges

<b>R</b> order code:	<b>15000</b>	<b>20000</b>	<b>25000</b>	<b>30000</b>	<b>35000</b>	<b>40000</b>
full stroke range, min:	15.000 mm	20.000 mm	25.000 mm	30.000 mm	35.000 mm	40.000 mm
cable tension (30%):	7,0 N	7,0 N	6,7 N	6,7 N	6,4 N	6,4 N
measuring cable:	0,86-mm dia. nylon-coated stainless	0,61-mm dia. nylon-coated stainless	0,61-mm dia. nylon-coated stainless	0,48-mm dia. nylon-coated stainless	0,38-mm dia. non-coated stainless	0,38-mm dia. non-coated stainless

metric ranges

**Enclosure Material:**

<b>A</b> order code:	<b>1</b>	<b>3</b>
enclosure material:	powder-painted aluminum	303 stainless steel
max. acceleration:	1G	.33G
max. velocity:	60 inches/sec.	20 inches/sec.

**Cable Exit:**

<b>C</b> order code:	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
	front	top	back	down

**Output Signals:**

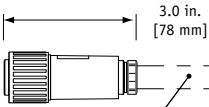
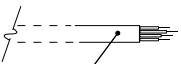
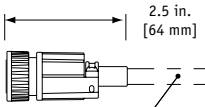
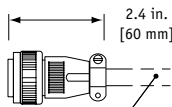
<b>D</b> order code:	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
output driver:	TTL - CMOS	Open Collector	5 V - Line Driver	Universal Line Driver
Input voltage (V+):	4.5...13.2 Vdc	10.8...26.4 Vdc	5 Vdc	5...30 VDC
Sink current:	20 mA max.	20 mA max.	20 mA max.	20 mA max.
Input current:	80 mA max.	80 mA max.	150 mA max.	100 mA max, no load

**Ordering Information:**

**Resolution:**

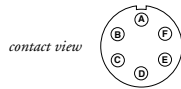
<b>E</b> order code:	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>english</b> ranges:	100 ±2 pulses per in.	200 ±4 pulses per in.	250 ±5 pulses per in.	10 ±0.2 pulses per in.
<b>metric</b> ranges:	5 ±0,1 pulses per mm	10 ±0,2 pulses per mm	12,5 ±0,25 pulses per mm	0,5 ±0,01 pulses per mm

**Electrical Connection:**

<b>F</b> order code:	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
	6-pin plastic connector with mating plug <b>IP 67, NEMA 4X*,6</b>	25-ft. instrumentation cable 24 AWG, shielded <b>IP 67, NEMA 6</b>	18-pin plastic connector with mating plug <b>IP 65, NEMA 4</b>	6-pin metal connector with mating plug <b>IP 67, NEMA 6</b>
				
	.30 - .39 in. [8 - 10 mm] cable dia. 16 AWG max conductor size connector: MS3102E-14S-6P mating plug: MS3106E-14S-6S	25 ft. x 0.2-in. dia. [7,5 M x 5 mm dia.] 24 AWG, shielded	.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	3/8-in. [9 mm] max cable dia. 16 AWG max conductor size connector: MS3102E-14S-6P mating plug: MS3106E-14S-6S

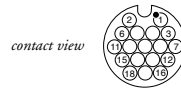
**6-pin mating plug:**

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'



**18-pin mating plug:**

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'



**25-ft. instrumentation 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'

\* -applies to stainless steel enclosure only.