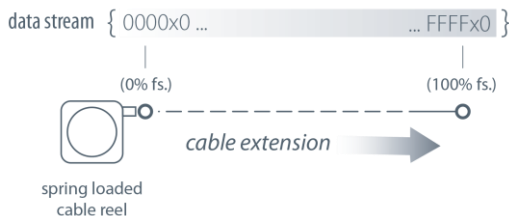


The PT5232, delivers position feedback via RS232 serial communication to your data acquisition or controller system. The PT5232 sends a raw 16-bit position count from 0000 to FFFF (hex). Additionally this device can be set to continuously send data or send data only when polled.

As the internal position sensing element is a precision potentiometer, this transducer maintains current accurate position even during power loss and does not need to be reset to a "home" position.

#### Output Signal



## PT5232

### Cable Actuated Sensor Industrial Grade • RS232

**Absolute Linear Position to 250 inches (6350 mm)**

**Hard Anodized Aluminum Enclosure**

**High Cycle Applications**

**IP67 • NEMA 6 Protection**

#### General

<b>Full Stroke Range</b>	0-2 to 0-50 inches
<b>Electrical Interface</b>	RS232
<b>Format</b>	Hex
<b>Accuracy</b>	± 0.75 to 0.18% full stroke (see ordering information)
<b>Repeatability</b>	see ordering information
<b>Resolution</b>	± 0.003% full stroke
<b>Measuring Cable</b>	thermoplastic or stainless steel
<b>Enclosure</b>	hard-anodized aluminum
<b>Sensor</b>	plastic-hybrid precision potentiometer
<b>Potentiometer Cycle Life</b>	see ordering information
<b>Maximum Cable Velocity • Acceleration</b>	see ordering information
<b>Weight</b>	5 lbs., max

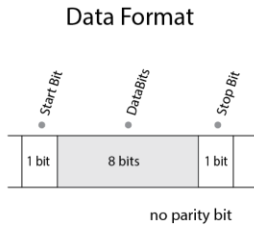
#### Electrical

<b>Input Voltage</b>	9...22 VDC
<b>Input Current</b>	40 mA
<b>Baud Rate</b>	9600 (selectable to 38.4K)
<b>Update Rate</b>	32msec

#### Environmental

<b>Environmental Suitability</b>	NEMA 6, IP 67
<b>Operating Temperature</b>	-40° to 200°F (-40° to 90°C)
<b>Vibration</b>	up to 10 g to 2000 Hz maximum

I/O Format



Data Frame

6 byte Hex string:

STX	CMD	B <sub>0</sub>	B <sub>1</sub>	B <sub>2</sub>	ETX
STX = 0x02	CMD = Command Code*	B <sub>0</sub> - B <sub>2</sub> = Data Field*			ETX = 0x03

\* -see below

Important! All communications to/from the transducer are in HEX!

User Commands:

Description	User Command				Sensor Response			
	<CMD>	<B <sub>0</sub> >	<B <sub>1</sub> >	<B <sub>2</sub> >	<CMD>	<B <sub>0</sub> >	<B <sub>1</sub> >	<B <sub>2</sub> >
Get Sensor Info	0x05	0x00	0x00	0x00	0x05	version <sup>(4)</sup>	date <sup>(5)</sup>	date <sup>(5)</sup>
Get Serial Number	0x15	0x00	0x00	0x00	0x15	serial number <sup>(3)</sup>		
Start Continuous Data	0x25	0x00	0x00	0x00	0x25	0x00	0x00	0x00
Stop Continuous Data	0x35	0x00	0x00	0x00	0x35	0x00	0x00	0x00
Get Position Data	0x45	0x00	0x00	0x00	0x45	CMC <sup>(1)</sup>	CMC <sup>(1)</sup>	status <sup>(2)</sup>

<sup>(1)</sup>CMC - Current Measurement Count (Position)

The Current Measurement Count (CMC) is the output data that indicates the present position of the measuring cable.

The CMC is a 16-bit value that occupies the first two bytes (B<sub>0</sub> and B<sub>1</sub>) of the data field. B<sub>0</sub> is the MSB (most significant byte) and B<sub>1</sub> is the LSB (least significant byte).

The CMC starts at 0000H with the measuring cable fully retracted and continues upward to the end of the stroke range stopping at FFFFH. This holds true for all ranges.

<sup>(2)</sup>Status

The status byte is used as a flag to indicate the validity of the position signal that the internal electronics receives from the potentiometer.

Flags are as follows:  
0x00 = GREEN, 0x55 = YELLOW, 0xAA = RED

A "green" flag shows everything OK. A "yellow" or "red" flag indicates that the sensor has either been extended beyond its range or that there is a problem with the potentiometer.

<sup>(3)</sup>Serial Number

Each sensor has its own unique serial number. This information can be retrieved by sending the sensor the "Get Serial Number" command.

The serial number is a 3 byte value from which ranges from 0 to 9999999 (decimal).

<sup>(4)</sup>Version

This is a single byte value (0-255 decimal) which indicates the currently installed firmware version of the sensor.

<sup>(5)</sup>Date

This is a 2 byte value showing the date of currently installed firmware. This value ranges from 01011 - 12319 (decimal). Format is MMDDY. While the month and day are expressed as two digit numbers the year is expressed in a single digit only.

Example: 08054 = August 5, 2004

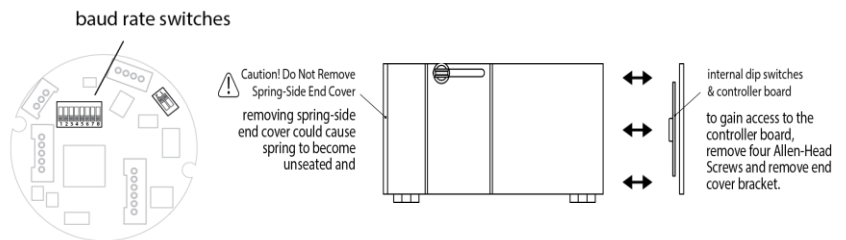
Baud Rate

The baud rate can be set using switches 7 & 8 on the 8-pole DIP switch found on the rs232 controller board located inside the transducer.

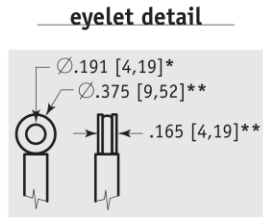
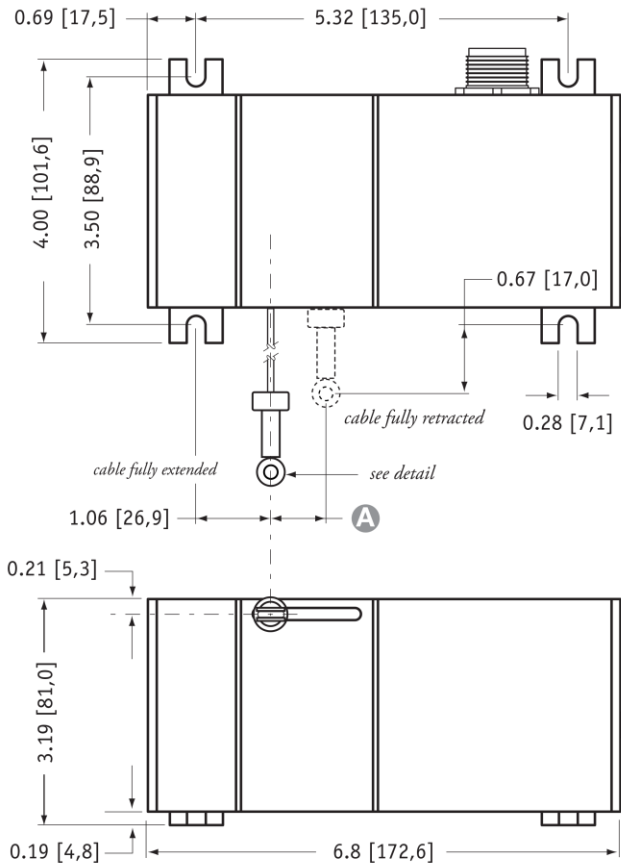
DIP-7	DIP-8	baud rate
0	0	9600
1	0	19200
0	1	38400
1	1	9600



RS232 Controller Board and DIP Switch Location

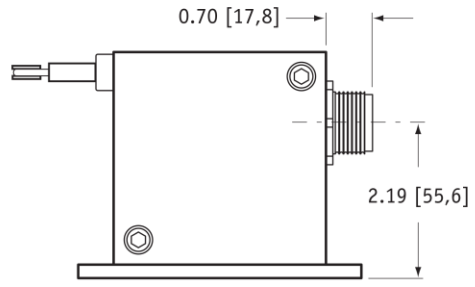


**Outline Drawing**



**A DIMENSION (inches [mm])**

RANGE	DIMENSION (inches [mm])	
	N34 measuring cable	S47 & V62 measuring cable
10	0.05 [1,2]	0.08 [2,0]
15	0.07 [1,8]	0.12 [3,0]
20	0.09 [2,4]	0.16 [3,9]
30	0.14 [3,5]	0.23 [5,9]
40	0.19 [4,7]	0.31 [7,9]
50	0.23 [5,9]	0.39 [9,9]
60	0.28 [7,0]	0.47 [11,8]
80	0.37 [9,4]	0.62 [15,8]
100	0.46 [11,7]	0.78 [19,7]
125	0.58 [14,7]	0.97 [24,7]
150	0.69 [17,6]	1.16 [29,6]
200	0.92 [23,5]	n/a
250	1.16 [29,3]	n/a



DIMENSIONS ARE IN INCHES [MM]  
tolerances are 0.03 IN. [0.5 MM] unless otherwise noted.

\* tolerance = +.005 -.001 [+.13 -.03]  
\*\* tolerance = +.005 -.005 [+ .13 -.13]

**Ordering Information**

**Model Number:**

**PT5232** - **R** - **A** - **B** - **C**  
order code:

Sample Model Number:

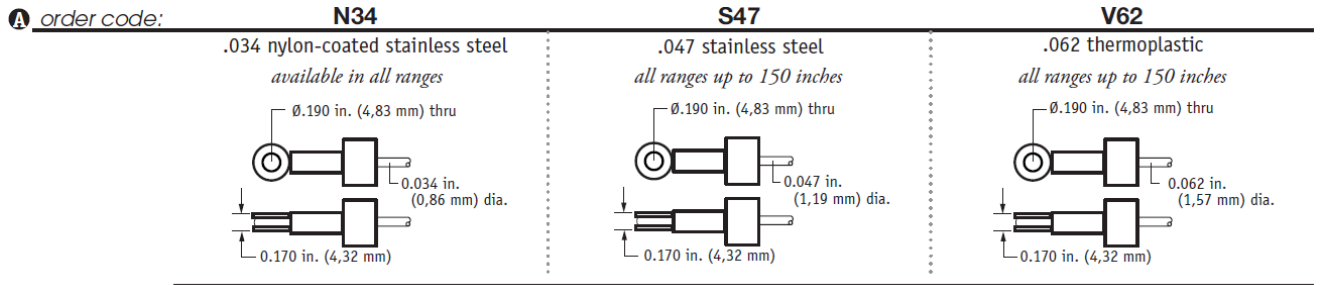
**PT5232 - 50 - N34 - UP - M6**

- R** range: 50 inches
- A** measuring cable: .034 nylon-coated stainless
- B** measuring cable exit: up (top exit)
- C** electrical connection: 6-pin plastic connector

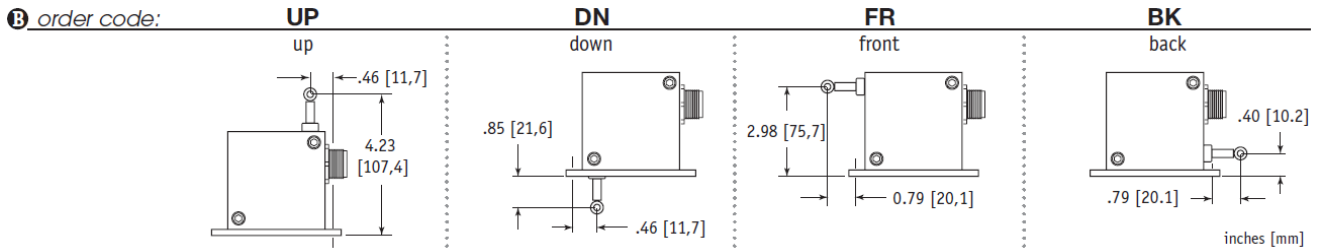
**Full Stroke Range:**

<b>R</b> order code:	10	15	20	25	30	40	50	60	80	100	125	150	200	250
full stroke range, min:	10 in.	15 in.	20 in.	25 in.	30 in.	40 in.	50 in.	60 in.	80 in.	100 in.	125 in.	150 in.	200 in.	250 in.
accuracy (±% of f.s.):	.75%	.6%	.5%	.5%	.5%	.3%	.3%	.25%	.25%	.25%	.25%	.18%	.18%	.18%
repeatability (±% of f.s.):	.1%	.1%	.05%	.05%	.05%	.05%	.05%	.02%	.02%	.02%	.02%	.02%	.02%	.02%
potentiometer cycle life:	2,500,000 cycles						500,000 cycles					250,000 cycles		
cable tension (20%):	41 ounces											21 ounces		
max. cable velocity/acceleration:	300 in./sec • 5 g											120 in./sec • 2 g		

**Measuring Cable:**



**Cable Exit:**



**Electrical Connection:**

