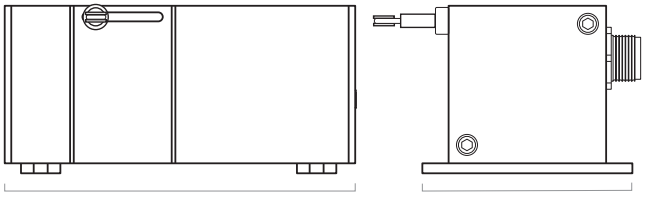
PT5232

Industrial Grade • RS232 Communication

Absolute Linear Position to 250 inches (6350 mm)
Hard Anodized Aluminum Enclosure
High Cycle Applications
IP67 • NEMA 6 Protection





GENERAL

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

ELECTRICAL

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

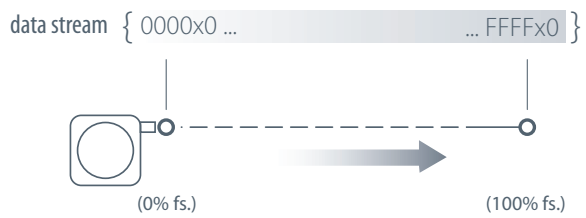
ENVIRONMENTAL

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

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.

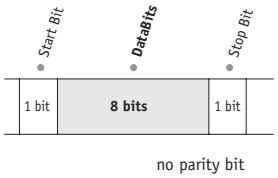
Output Signal:



20630 Plummer Street • Chatsworth, CA 91311
tel: 800.423.5483 • +1.818.701.2750 • fax: +1.818.701.2799

I/O Format:

Data Format



no parity bit

Data Frame

6 byte Hex string:

STX	CMD	B_0	B_1	B_2	ETX

STX = 0x02 **CMD** = Command Code* B_0 - B_2 = Data Field* **ETX** = 0x03

** –see below*

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

User Commands:

	User Command				Sensor Response			
Description	**<CMD>**	**<B_0>**	**<B_1>**	**<B_2>**	**<CMD>**	**<B_0>**	**<B_1>**	**<B_2>**
Get Sensor Info	0x05	0x00	0x00	0x00	0x05	version(4)	date(5)	date(5)
Get Serial Number	0x15	0x00	0x00	0x00	0x15	serial number(3)		
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(1)	CMC(1)	status(2)

(1)CMC - Current Measurement Count (Position)

The **C**urrent **M**easurement **C**ount (**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_0 and B_1) of the data field. B_0 is the MSB (most significant byte) and B_1 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.

(2)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.

(3)Serial Number

Each sensor has it's 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).

(4)Version

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

(5)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

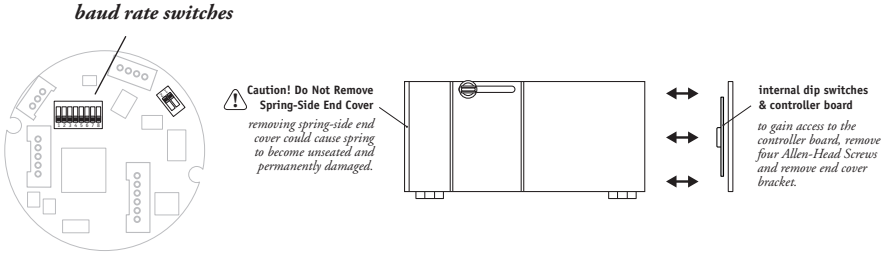
Baud Rate

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.

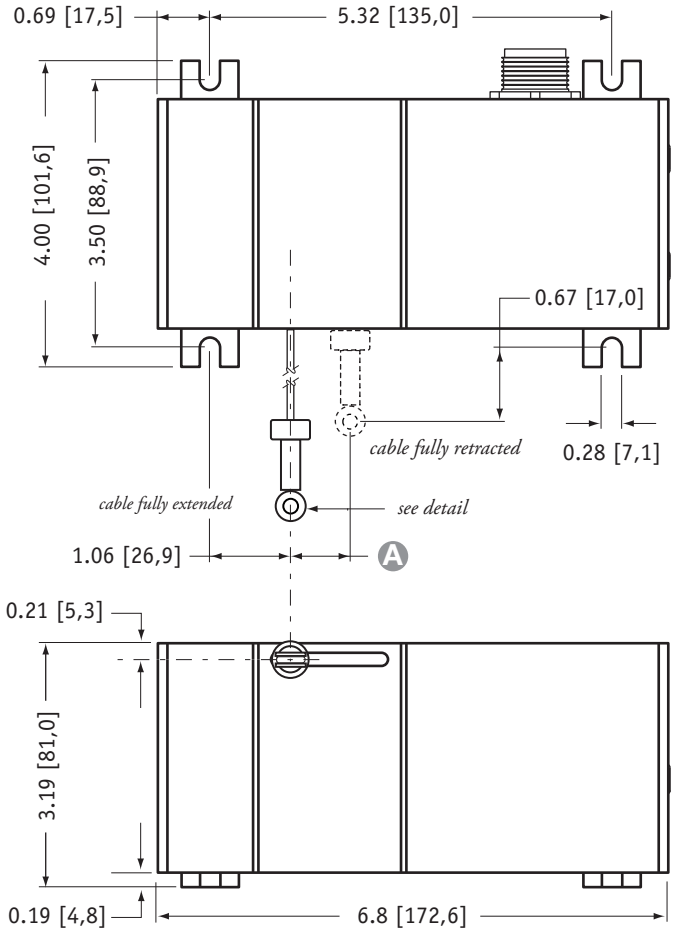
DIP-7	DIP-8	baud rate
0	0	9600
1	0	19200
0	1	38400
1	1	9600



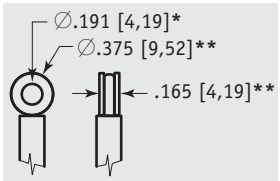
RS232 Controller Board and DIP Switch Location



Outline Drawing:

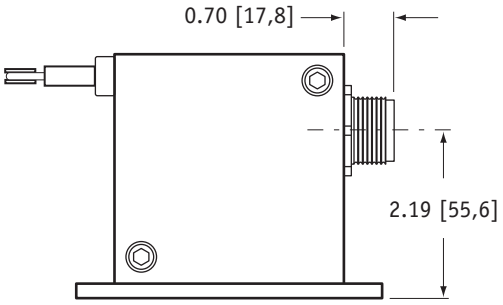


eyelet detail



A DIMENSION (inches[mm])

RANGE	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 - ____ - ___ - ___ - ___
order code: Ⓡ Ⓐ Ⓑ Ⓒ

Sample Model Number:

PT5232 - 50 - N34 - UP - M6

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

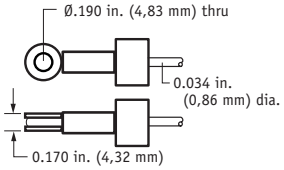
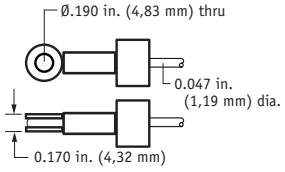
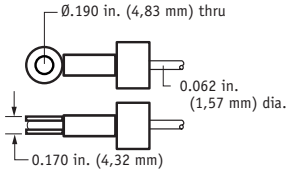
Full Stroke Range:

Ⓡ *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	

Ordering Information (cont.):

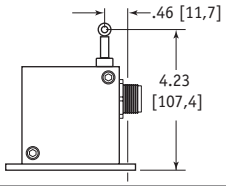
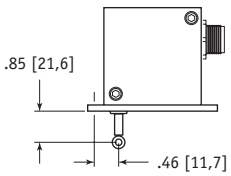
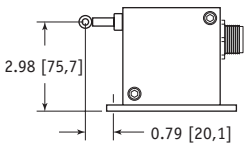
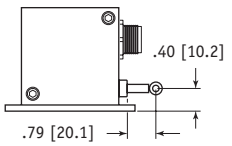
Measuring Cable:

Ⓐ *order code:*

N34	S47	V62
.034 nylon-coated stainless steel *available in all ranges*	.047 stainless steel *all ranges up to 150 inches*	.062 thermoplastic *all ranges up to 150 inches*
		

Cable Exit:

Ⓑ *order code:*

UP	DN	FR	BK
up	down	front	back
			

inches [mm]

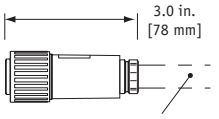
Electrical Connection:

Ⓒ *order code:*

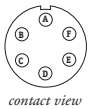
M6

6-pin plastic connector with mating plug

IP 67, NEMA 6



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



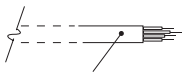
contact view

pin	signal
A	9...22 VDC
B	common
C	–
D	Transmitted Data
E	Received Data
F	common

C25

25-ft. instrumentation cable 24 AWG, shielded

IP 67, NEMA 6



25 ft. x 0.2-in. dia.
[7,5 M x 5 mm dia.]
24 AWG, shielded

color code	signal
Red	9...22 VDC
Black	common
White	–
Green	Transmitted Data
Blue	Received Data
Brown	common

version: **4.0** last updated: **March 28, 2014**