

# PTS 420 Series – 4 to 20mA Position Transmitter



- Process controls transmitter
- 4-20mA, 2-wire current loop operation
- Measurement ranges from 0.25 to 10 inch
- Self contained electronics
- Zero and span adjustable
- Rugged splash-proof housing
- Pipe thread ports for electrical conduits

## DESCRIPTION

The **PTS 420 Series Position Transmitter** combines a linear position sensor with custom electronics and a rugged splash-proof housing. Designed specifically for operation in demanding environments, the PTS 420 delivers a 4-20mA current loop output, making it the ideal choice for process control applications.

The PTS 420 operates on a +10.5 to +28VDC loop voltage. The integral conditioning electronics convert the DC input voltage into the required AC excitation voltage for the position sensor, and demodulates the AC voltage output into a smooth 4-20mA signal. Zero and span adjustment with 10-turn potentiometers, as well as the barrier type terminal strip, are all easily accessible by removing the top cover, thereby simplifying installation and calibration.

Available in a number of linear measurement ranges from 0.25 to 10 inches, the rugged construction and reliable performance of the PTS 420 satisfies the most challenging application requirements such as in power generation, rolling mills and water treatment plants. The 4-20mA current loop output is compatible with most PLCs and allows operation with long cables.

Also see our other position transmitter models; **CTS 420** (linear/rotary, remote sensor operation), **HCT-IS** (intrinsically safe, FM Approved) and **GCT** (heavy-duty gage head).

Measurement Specialties, Inc. (NASDAQ MEAS) offers many other types of sensors and signal conditioners. Data sheets can be downloaded from our web site at: <http://www.meas-spec.com/datasheets.aspx>

*MEAS acquired Schaevitz Sensors and the **Schaevitz**® trademark in 2000.*

## FEATURES

- Compatible with most process controllers
- Ideal for electrically noisy environments
- 2-wire current loop operation
- Screwdriver adjustments for ease of calibration
- Rain-tight, splash-proof housing
- Imperial or metric threaded core
- Calibration certificate supplied with all units

## APPLICATIONS

- Process control
- Power generation
- Air-handling systems
- Valve position monitoring
- Waste water sluice gate control
- Water filtration/treatment plants
- Rolling mill roller gap feedback

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## PERFORMANCE SPECIFICATIONS

ELECTRICAL SPECIFICATIONS						
Parameter	PTS 420-250	PTS 420-500	PTS 420-1000	PTS 420-2000	PTS 420-5000	PTS 420-10000
Stroke range	0.25 [6.35]	0.5 [12.7]	1 [25.4]	2 [50.8]	5 [127]	10 [254]
Sensitivity, mA/in [mm]	64 [2.52]	32 [1.26]	16 [0.63]	8 [0.315]	3.2 [0.126]	1.6 [0.063]
Linearity% of FS max.	0.5%				0.75%	1.25%
Temperature coefficient of sensitivity	0.022%/°F [0.04%/°C]					
Loop supply voltage	+10.5 to +28VDC					
Output	4 to 20mA					
Output at null position	12mA					
Max loop resistance	540 ohms @ +24VDC (see chart)					
Output noise & ripple	25 µA peak-to-peak, maximum					
Stability	0.05% of FS, after 30 minute warm up					
Frequency response	50Hz @ -3db					
Controls	Zero and span potentiometers (10 turn)					

ENVIRONMENTAL AND MATERIAL SPECIFICATIONS	
Operating temperature range	-13°F to +185°F [-25°C to +85°C]
Housing material	Aluminum
Electrical connection	Barrier type terminal strip with two #8-32 screws

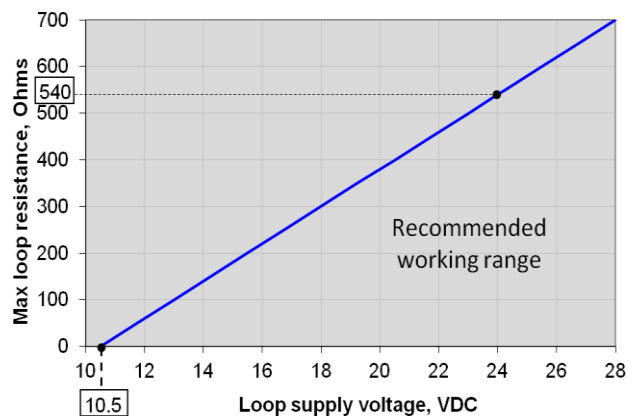
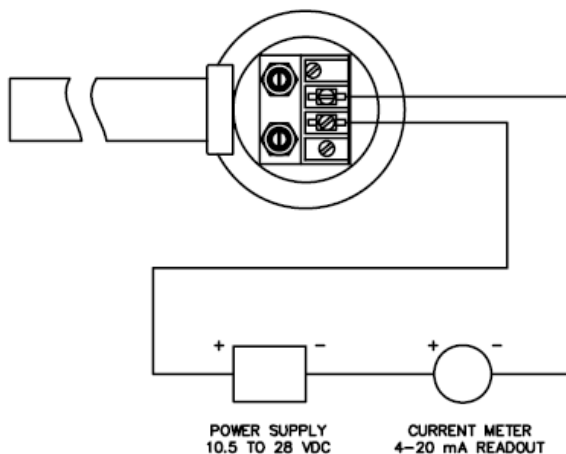
**Notes:**

All values are nominal unless otherwise noted

Dimensions are in inch [mm] unless otherwise noted

FS: Full Scale is the difference in outputs between the stroke ends

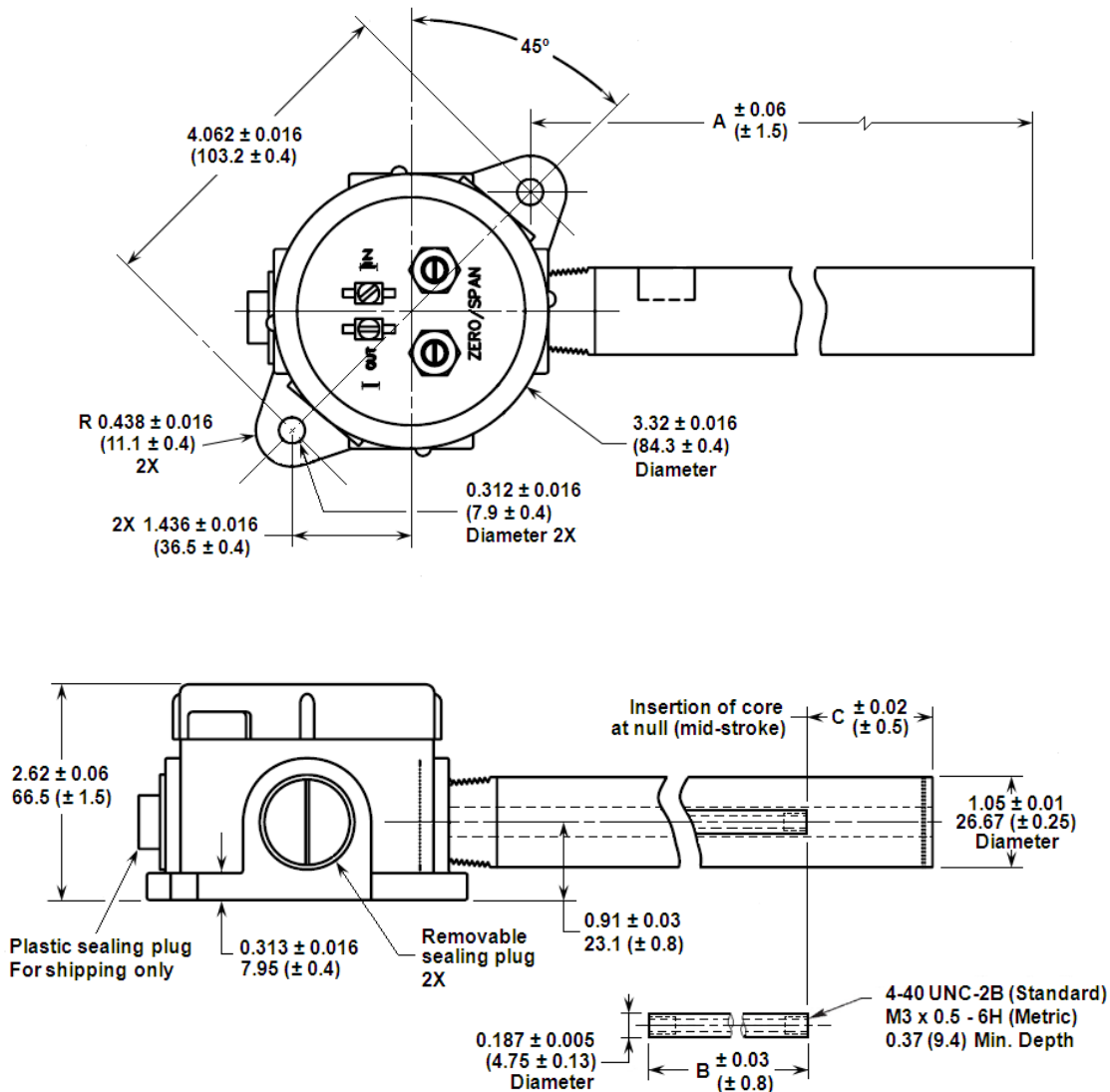
## WIRING SCHEMATIC & LOOP RESISTANCE



# PTS 420 Series – 4 to 20mA Position Transmitter

## MECHANICAL SPECIFICATIONS

Parameter	PTS 420 250	PTS 420 500	PTS 420 1000	PTS 420 2000	PTS 420 5000	PTS 420 10000
Main body length "A"	3.53 [89.7]	4.66 [118.4]	6.07 [154.2]	8.34 [211.8]	11.46 [291.1]	20.77 [527.6]
Core length "B"	1.10 [27.9]	1.80 [45.7]	3.00 [76.2]	3.80 [96.5]	3.80 [96.5]	6.20 [157.5]
Insertion of core at null (mid-stroke) "C"	0.44 [11.2]	0.65 [16.5]	0.75 [19.1]	1.48 [37.6]	3.05 [77.5]	6.48 [164.6]
Weight, body, lb [kg]	1.6 [0.74]	1.8 [0.81]	2.0 [0.91]	2.3 [1.05]	2.5 [1.14]	2.9 [1.30]
Weight, core, oz [gram]	0.11 [3]	0.14 [4]	0.25 [7]	0.35 [10]	0.46 [13]	0.49 [14]



Dimensions are in inches (mm)

# PTS 420 Series – 4 to 20mA Position Transmitter

## ORDERING INFORMATION

Description	Model	Part Number
0.25 inch stroke transmitter	PTS 420-250	02560967-000
0.5 inch stroke transmitter	PTS 420-500	02560967-001
1 inch stroke transmitter	PTS 420-1000	02560967-002
2 inch stroke transmitter	PTS 420-2000	02560967-003
5 inch stroke transmitter	PTS 420-5000	02560967-004
10 inch stroke transmitter	PTS 420-10000	02560967-005
OPTIONS		
Metric threaded core (M3 x 0.5 – 6H)	ALL	02560967-60X

*Example: PTS 420 with 0.5 inch stroke and metric threaded core, part number 02560967-601*

ACCESSORIES	
Core connecting rod, 6 inches long, 4-40 threads	05282946-006
Core connecting rod, 12 inches long, 4-40 threads	05282946-012
Core connecting rod, 24 inches long, 4-40 threads	05282946-024
Core connecting rod, 36 inches long, 4-40 threads	05282946-036
Core connecting rod, 6 inches long, M3x0.5 metric threads	05282977-006
Core connecting rod, 12 inches long, M3x0.5 metric threads	05282977-012

Note: Refer to our "[Accessories for LVDT's](#)" brochure for LVDT signal conditioning instrumentation and other accessories

## TECHNICAL CONTACT INFORMATION

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