



PTS-420 SERIES

4 to 20mA Position Transmitter

SPECIFICATIONS

- ✦ 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

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.

Like in most of our LVDTs, the PTS-420 windings are vacuum impregnated with a specially formulated, high temperature, flexible resin, and the coil assembly is potted inside its housing with a two-component epoxy. This provides excellent protection against hostile environments such as high humidity, vibration and shock.

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

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] |
| Non-linearity, max. | 0.5% of FR | | | | 0.75% of FR | 1.25% of FR |
| Temperature coefficient of sensitivity | 0.022%/°F [0.04%/°C] | | | | | |
| Loop supply voltage | 10.5 to 28VDC | | | | | |
| Output | 4 to 20mA (Increases when the core is displaced towards the electrical connections) | | | | | |
| Output at null position | 12mA (null position is defined as the mid-stroke position) | | | | | |
| Max loop resistance | 540 ohms @ 24VDC (see loop resistance chart below) | | | | | |
| Output noise & ripple | 25 μ A peak-to-peak, maximum | | | | | |
| Stability | 0.05% of FSO, 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 alloy |
| Electrical connection | Barrier type terminal strip with two #8-32 screws |
| IEC 60529 rating | IP65 |

Notes:

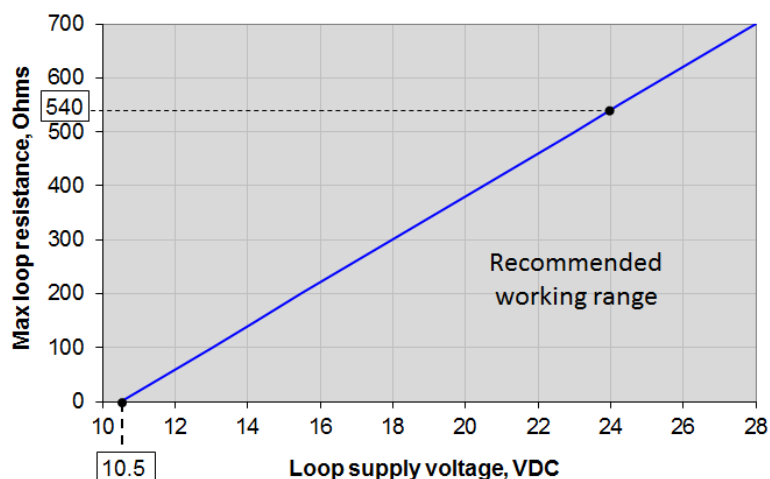
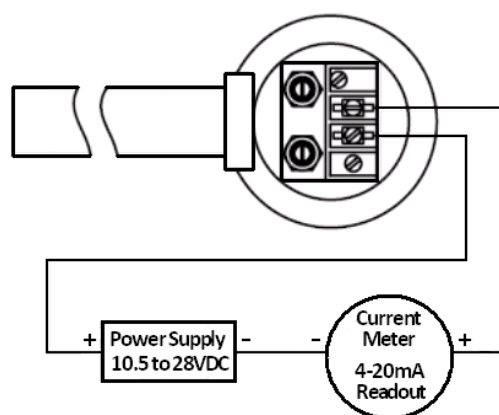
All values are nominal unless otherwise noted

Dimensions are in inch [mm] unless otherwise noted

FR: Full Range is the stroke range, end to end; FR=S for a 0 to S stroke range

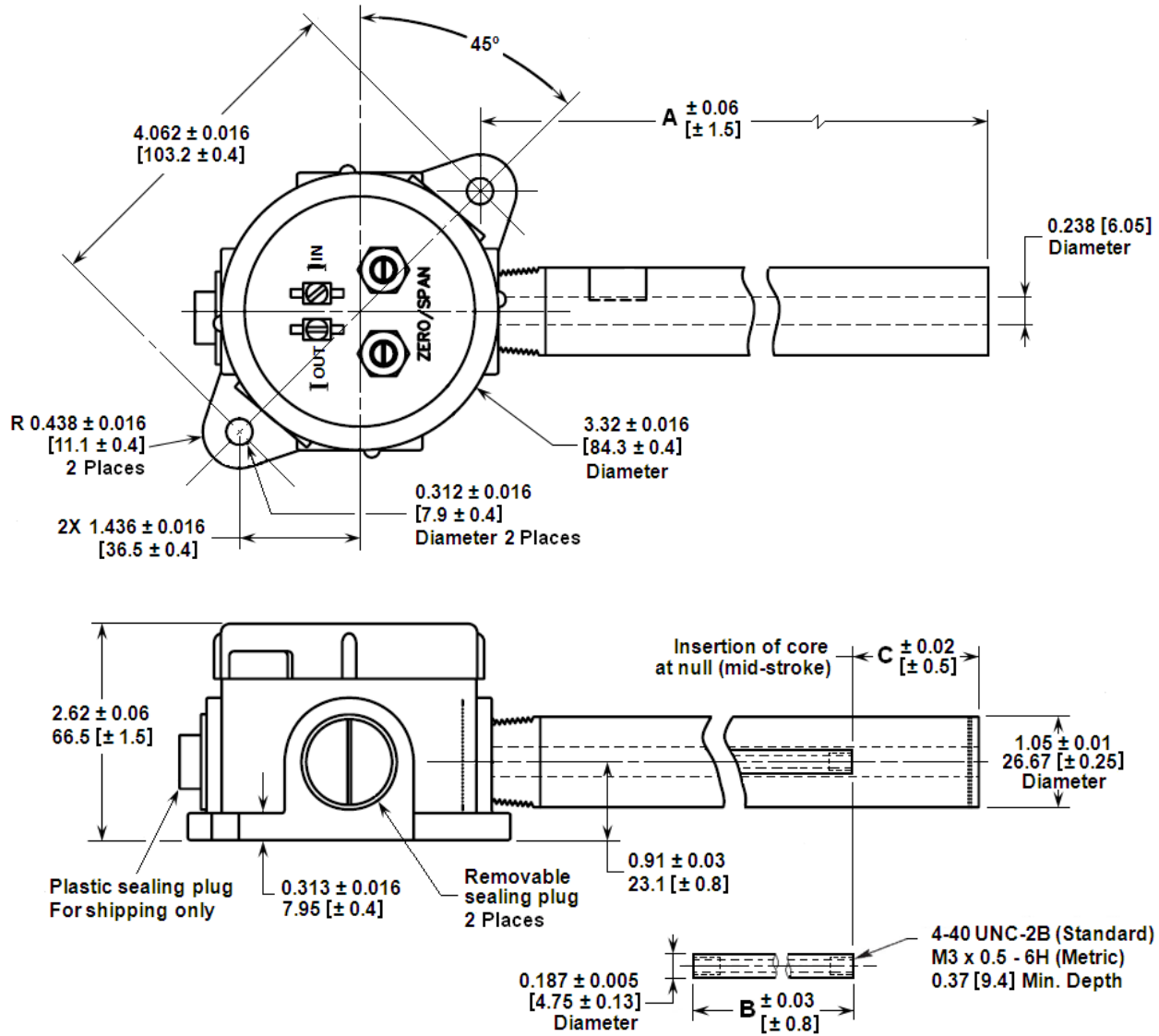
FSO (Full Scale Output): Largest absolute value of the outputs measured at the ends of the range

WIRING SCHEMATIC & LOOP RESITANCE



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 inch [mm]

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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) | | 02560967-60X |

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

| ACCESSORIES | |
|--|--------------|
| DC power supply (15VDC), Model PSD 40-15 | 02291339-000 |
| 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 |

NORTH AMERICA

Measurement Specialties, Inc.,
a TE Connectivity company
Tel: 800-522-6752
Email: customercare.frm@te.com

EUROPE

Measurement Specialties (Europe), Ltd.,
a TE Connectivity Company
Tel: 800-440-5100
Email: customercare.bevx@te.com

ASIA

Measurement Specialties (China) Ltd.,
a TE Connectivity company
Tel: 0400-820-6015
Email: customercare.shzn@te.com

TE.com/sensorsolutions

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