



mm PT8420

Description

- Absolute Linear Position to 60 inches (1524 cm)
- Aluminum or Stainless Steel Enclosure Options
- VLS Option To Prevent Free-Release Damage
- IP68 · NEMA 6 Protection · Hazardous Area Certification



The PT8420 with its 4-20 mA feedback signal, is ideal for monitoring the stroke of a hydraulic cylinder and other applications requiring position data acquisition in harsh environments.

As a member of our family of NEMA 4-rated cable-extension transducers, the PT8420 provides a feedback signal that is proportional to the linear movement of a traveling stainless-steel extension cable. Simply mount the body of the transducer to a fixed surface and attach the extension cable to the moving object.

General

Full Stroke Range Options	0-2 to 0-60 inches
Output Signal Options	4...20 mA (2-wire) and 0...20 mA (3-wire)
Accuracy	see ordering information
Repeatability	± 0.05% full stroke
Resolution	essentially infinite
Measuring Cable Options	stainless steel or thermoplastic
Enclosure Material	powder-painted aluminum or stainless steel
Sensor	plastic-hybrid precision potentiometer
Potentiometer Cycle Life	see ordering information
Maximum Retraction Acceleration	see ordering information

Environmental

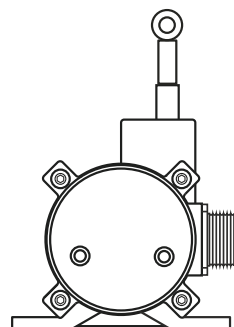
Emission/Immunity	EN50081-2 / EN50082-2
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Emc compliance per directive 89/336/EEC

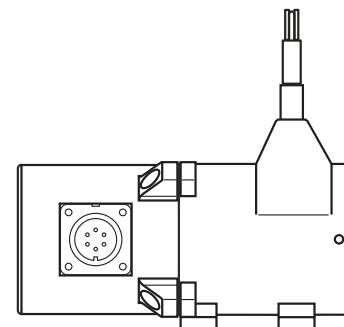
Enclosure	NEMA 4/4X/6, IP 67/68
Hazardous Area Certification	see ordering information
Operating Temperature	-40° to 200°F (-40° to 90°C)
Vibration	up to 10 g's to 2000 Hz maximum
Weight, Aluminum (Stainless Steel) Enclosure	3 lbs. (6 lbs.) max.

Electrical

Input Voltage	see ordering information
Input Current	20 mA max.
Maximum Loop Resistance (Load)	(loop supply voltage - 8)/0.020
Circuit Protection	38 mA max.
Impedance	100M ohms@100 VDC, min.
Signal Adjust, Zero	from factory set zero to 50% of full stroke range
Signal Adjust, Span	to 50% of factory set span
Thermal Effects, Zero	0.01% f.s./°F, max.
Thermal Effects, Span	0.01% f.s./°F, max.

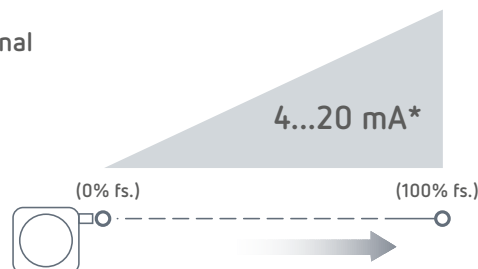


3.6" [91 mm]



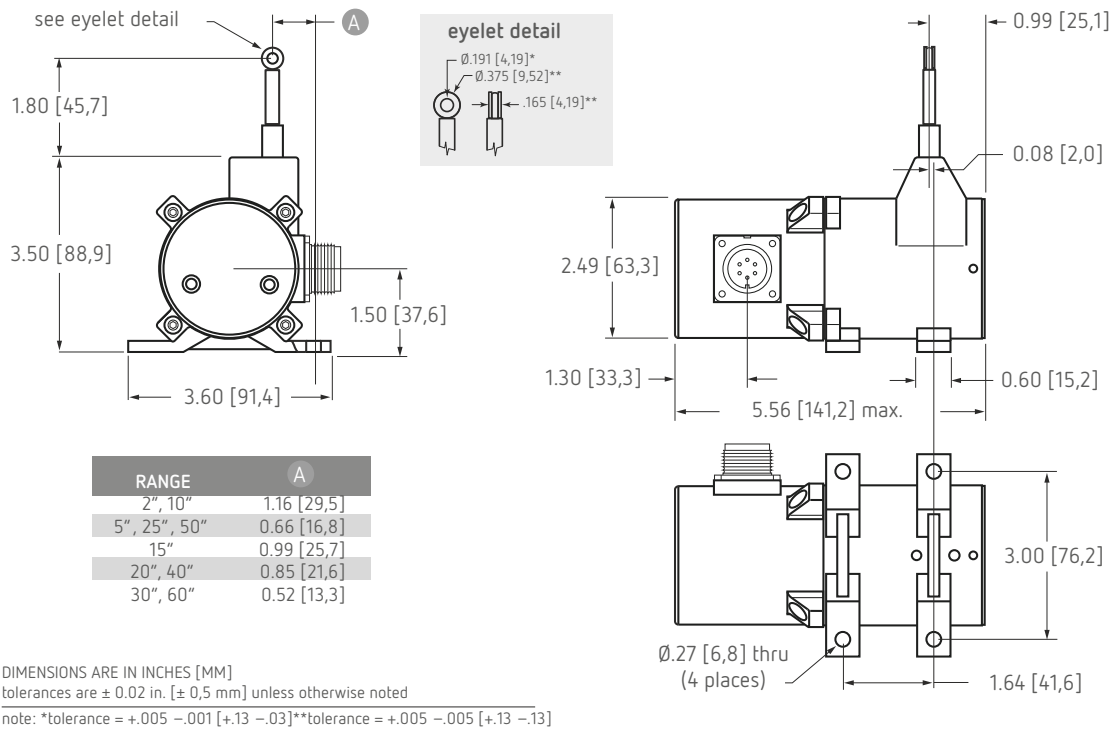
5.6" [141 mm]

Output signal



*Optional 3-wire, 0...20mA output signal available.

Outline Drawing



Ordering code

Model Number

PT8420- _____ - _____ **1** - **1** _____ - _____ - _____ - _____ - _____
order code: R A B C D E F G

Sample Model Number:

PT8420 - 0030 - 111 - 1110

- R range: 30 inches
- A enclosure/cable tension: aluminum/standard (13 oz.)
- B measuring cable: .034 nylon-coated stainless
- E output signal: 4...20mA, 2-wire
- F electrical connection: 6-pin plastic connector
- G cable guide option: standard nylon cable guide

Full Stroke Range

R order code:	0002	0005	0010	0015	0020	0025	0030	0040	0050	0060
full stroke range, min:	2 in.	5 in.	10 in.	15 in.	20 in.	25 in.	30 in.	40 in.	50 in.	60 in.
accuracy (% of f.s.):	0.28%	0.28%	0.18%	0.18%	0.18%	0.18%	0.18%	0.15%	0.15%	0.15%
potentiometer cycle life*:	2.5 x 10 ⁶	2.5 x 10 ⁶	5 x 10 ⁵	5 x 10 ⁵	5 x 10 ⁵	5 x 10 ⁵	5 x 10 ⁵	2.5 x 10 ⁵	2.5 x 10 ⁵	2.5 x 10 ⁵

*-1 cycle is defined as the travel of the measuring cable from full retraction to full extension and back to full retraction

Enclosure Material and Measuring Cable Tension

A order code:	1	5	2	3	6	4	8	7	9		
enclosure:	aluminum			303 stainless			316 stainless				
cable tension:	Standard	medium	high	standard	medium	high	standard	medium			
max. acceleration:	high 15 g	25 g	40 g	6 g	12 g	18 g	6 g	12 g	18 g		
cable tension option specifications	Range:	2 in.	5 in.	10 in.	15 in.	20 in.	25 in.	30 in.	40 in.	50 in.	60 in.
	Standard:	39 oz.	16 oz.	39 oz.	26 oz.	20 oz.	16 oz.	13 oz.	20 oz.	16 oz.	13 oz.
	Medium:	65 oz.	26 oz.	65 oz.	43 oz.	33 oz.	26 oz.	22 oz.	33 oz.	26 oz.	22 oz.
	High:	116 oz.	47 oz.	116 oz.	77 oz.	60 oz.	47 oz.	40 oz.	60 oz.	47 oz.	40 oz.

tension tolerance: ± 50%

Outline Drawing

Measuring Cable

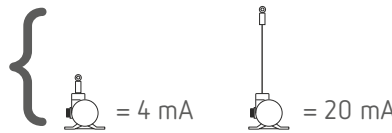
B order code:	1	2	3	4
cable construction:	Ø.034-inch nylon-coated stainless steel rope	Ø.047-inch bare stainless steel rope	Ø.058-inch PVC jacketed vectra fiber rope	Ø.031-inch bare stainless steel rope
available ranges:	all ranges	5, 15, 20, 25, 30-inch only	thru 30 inches only	40, 50, 60-inch only
general use:	indoor	outdoor, debris, high temperature	high voltage or magnetic field	outdoor, debris, high temperature

Output Signals

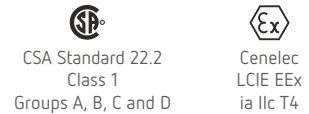
E order code:	1	2	3	4	5	6*
output signal options:	4...20 mA 	20...4mA 	0...20mA 	20...0mA 	4...20mA 	20...4 mA
sensitivity:	16 mA/full stroke ±0.25%		20 mA/full stroke ±0.25%		16 mA/full stroke ±0.25%	
wiring configuration:	2 – wire		3 – wire		2 – wire	
input voltage:	8 – 34 vdc		14 – 29 vdc		14 – 32 vdc	
hazardous area certification:	not certified		not certified		CSA • Cenelec	

Example:

ordercode = 1 = 4...20 mA



Hazardous Area Certifications:



*IMPORTANT: intrinsically safe when powered from a CSA certified zener barrier rated 28 VDC max, 110 mA max per installation drawing#677984

Electrical Connection

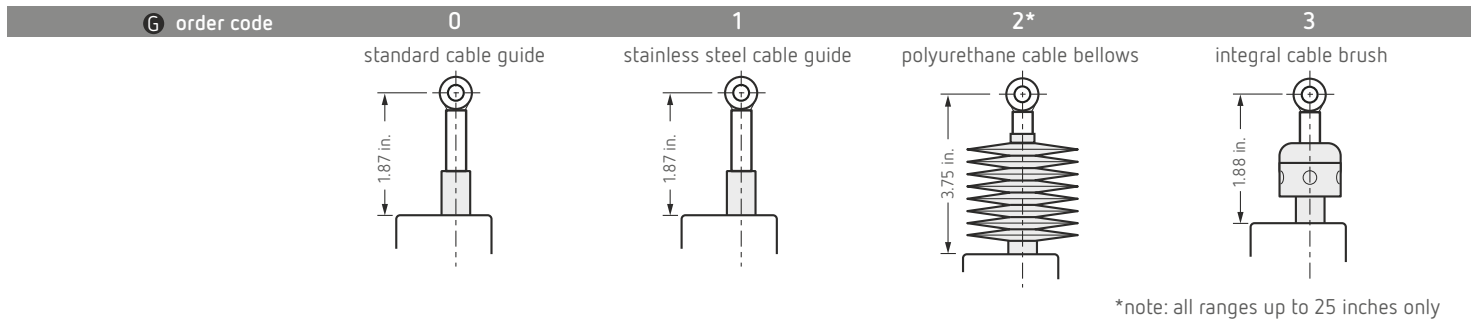
F order code:	1	2	3	4
	6-pin plastic connector w/ mating plug IP 67, NEMA 4X**,6	10-ft. [3 M] waterproof cable IP 67, NEMA 4X**, 6	6-pin metal connector w/ mating plug IP 65, NEMA 4	25-ft. [7.5 M] instrumentation cable IP 67, NEMA 6
	 1/2 - 5/16" [14 - 8 mm] cable dia. 16 AWG max conductor size connector: MS3102E-14S-6P mating plug: MS3106E-14S-6S	 10 ft. x 0.4-in. dia. [3 M x 10 mm dia.] 3-conductor, 18 AWG type SJTOW	 3/8-in. [9 mm] max cable dia. 16 AWG max conductor size connector: MS3102E-14S-6P mating plug: MS3106E-14S-6S	 25 ft. x 0.2-in. [7.5 M x 5 mm] dia. 6-conductor, 24 AWG shielded

F order code:	5	6	7																																							
	100-ft. [30 M] waterproof cable IP 67, NEMA 4X**,6	10-ft. [3 M] pressure tested* waterproof cable IP 68, NEMA 4X**, 6P	100-ft. [30 M] pressure tested* waterproof cable IP 68, NEMA 4X**, 6P																																							
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Note: WHITE, BLUE, BROWN are not used.
*–Test pressure: 100 feet [30 meters] H₂O (40 PSID) Test Medium: Air; Duration: 2 hours. ** –applies to stainless steel enclosure only. ***14–32 VDC for hazardous area option.

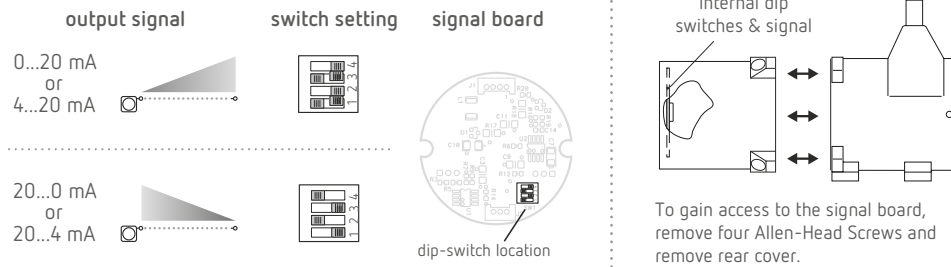
Ordering Information (cont.)

Cable Guide Options



Output Signal Selection

The output signal direction can be reversed at any time by simply changing the dip-switch settings found on the internal signal board. After the settings have been changed, adjustment of the Zero and Span trimpots will be required to precisely match signal values to the beginning and end points of the stroke.



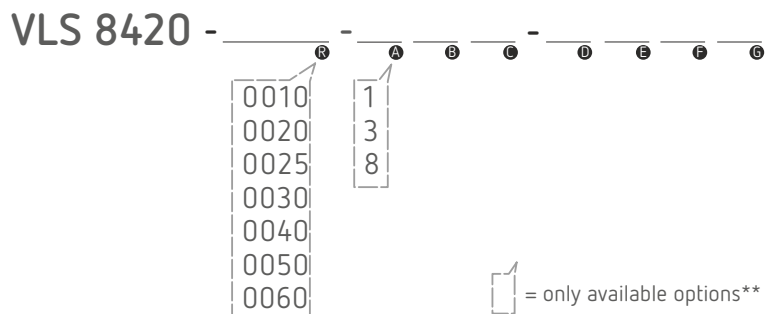
VLS Option - Free Release Protection

The patented Velocity Limiting System (VLS) is an option for PT8000 Series cable extension transducers that limits cable retraction to a safe 40 to 55 inches per second.

The VLS option prevents the measuring cable from ever reaching a damaging velocity during an accidental free release. This option is ideal for mobile applications that require frequent cable disconnection and reconnection. It prevents expensive unscheduled downtime due to accidental cable mishandling or attachment failure.

VLS is NOT available for medium and high cable tension options or 2, 5 and 15-inch stroke ranges.

How To Configure Model Number for VLS Option:



creating VLS model number (example):

- | | |
|--------------------------------------|----------------------------------|
| 1. select PT8420 model | PT8420-0060-111-1110 |
| 2. remove "PT" from the model number | PT 8420-0060-111-1110 |
| 3. add "VLS" | VLS + 8420-0060-111-1110 |
| 4. completed model number ! | VLS8420-0060-111-1110 |

**Note: please contact factory for a solution to options not supported.

The information provided herein is to the best of our knowledge true and accurate, it is provided for guidance only. All specifications are subject to change without prior notification.