0/4...20 mA Output • Hazardous Area Certification
Ranges: 0-2 to 0-60 inches
Industrial Grade

PT8420

Specification Summary:

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	± 0.28% to ±0.15% full stroke *see ordering information*
Repeatability	± 0.05% full stroke
Resolution	essentially infinite
Measuring Cable Options	nylon-coated 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*
Weight, Aluminum (Stainless Steel) Enclosure	3 lbs. (6 lbs.) max.

ELECTRICAL

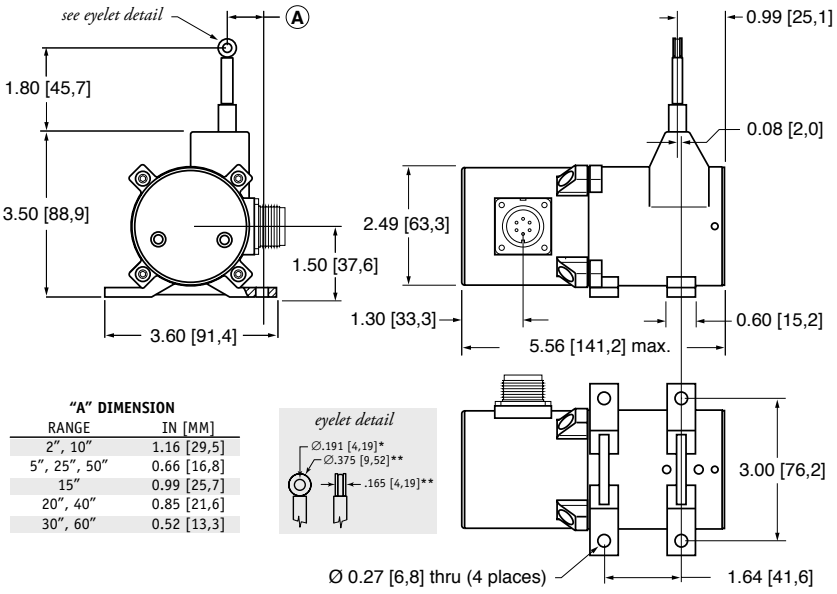
Input Voltage	*see ordering information*
Input Current	20 mA max.
Maximum Loop Resitance (Load)	(loop supply voltage - 8)/0.020
Circuit Protection	38 mA max.
Impedence	100M ohms@100 VDC, min.
Output Signal Adjustment	
Zero Adjustment	from factory set zero to 50% of full stroke range
Span Adjustment	to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

ENVIRONMENTAL

Enclosure	NEMA 4/4X/6, IP 67/68
Hazardous Area Certification	*see ordering information*
Operating Temperature	-40º to 200ºF (-40º to 90ºC)
Vibration	up to 10 G's to 2000 Hz maximum

EMC COMPLIENCE PER DIRECTIVE 89/336/EEC

Emission/Immunity	EN50081-2/EN50082-2



"A" DIMENSION

RANGE	IN [MM]
2", 10"	1.16 [29,5]
5", 25", 50"	0.66 [16,8]
15"	0.99 [25,7]
20", 40"	0.85 [21,6]
30", 60"	0.52 [13,3]

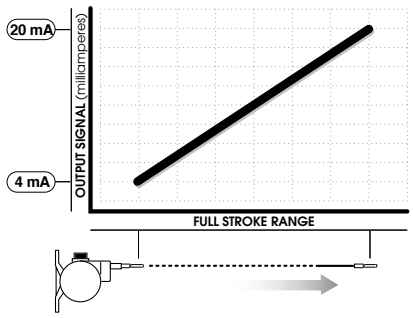
DIMENSIONS ARE IN INCHES [MM]
tolerances are ±0.02 in. [±0,5 mm] unless otherwise noted

* tolerance = +.005 –.001 [+.13 –.03]
** tolerance = +.005 –.005 [+.13 –.13]

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 acquistion in harsh environments.

As a member of Celesco's 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.

Output Signal



Celesco Transducer Products, Inc.

Ordering Information:

Model Number:

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

Sample Model Number:

PT8420 - 0030 - 111 - 1110

Ⓡ	range:	30 inches
Ⓐ	enclosure/cable tension:	aluminum/standard (9 oz.)
Ⓑ	measuring cable:	.034 nylon-coated stainless
Ⓔ	output signal:	4...20mA, 2-wire
Ⓕ	electrical connection:	6-pin plastic connector
Ⓖ	cable guide option:	standard nylon cable guide

Full Stroke Range:

Ⓡ *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	60
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*:	2.5×10^6	2.5×10^6	5×10^5	5×10^5	5×10^5	5×10^5	5×10^5	2.5×10^5	2.5×10^5	2.5×10^5

**–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:

Ⓐ *order code:*	1	3	8	5	6	7	2	4	9
enclosure:	aluminum	303 stainless	316 stainless	aluminum	303 stainless	316 stainless	aluminum	303 stainless	316 stainless
cable tension (±30%)	standard tension			medium tension			high tension		
2, 10-inch ranges:	39 oz. [35 G max. acceleration]			65 oz. [53 G max. acceleration]			116 oz. [100 G max. acceleration]		
15-inch range:	26 oz. [13 G max. acceleration]			43 oz. [23 G max. acceleration]			77 oz. [40 G max. acceleration]		
20, 40-inch ranges:	20 oz. [10 G max. acceleration]			33 oz. [16 G max. acceleration]			60 oz. [32 G max. acceleration]		
5, 25, 50-inch ranges:	16 oz. [6 G max. acceleration]			26 oz. [11 G max. acceleration]			47 oz. [19 G max. acceleration]		
30, 60-inch ranges:	13 oz. [4 G max. acceleration]			22 oz. [8 G max. acceleration]			40 oz. [13 G max. acceleration]		

Measuring Cable:

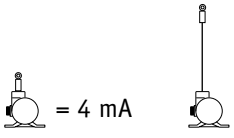
Ⓑ *order code:*	1	2	3
	Ø.034-inch nylon-coated stainless steel *available in **all** ranges*	Ø.047-inch stainless steel *5, 15, 20, 25, 30-inch ranges only*	Ø.062-inch thermoplastic *all ranges up to **30 inches** only*

Output Signals:

Ⓑ *order code:*	1	2	3	4	5*	6*
output signal options:	4...20 mA	20...4 mA	0...20 mA	20...0 mA	4...20 mA	4...20 mA
	4 → 20	20 → 4	0 → 20	20 → 0	4 → 20	20 → 4
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 – 40 vdc		14 – 40 vdc		14 – 32 vdc	
hazardous area certification:	not certified				CSA • Cenelec	

Example:

ordercode = **1** = 4...20 mA



Hazardous Area Certifications:

CSA Standard 22.2 Class 1 Groups A, B, C and D

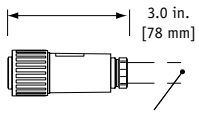
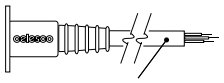
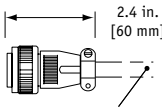
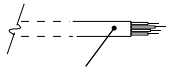
Cenelec LCIE EEx ia IIc T4

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

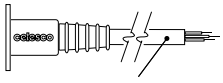
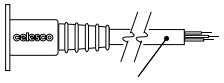
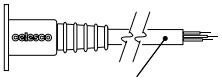
Ordering Information:

Electrical Connection:

F *order code:*

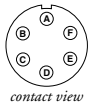
1	2	3	4
6-pin plastic connector w/mating plug	10-ft. [3 M] waterproof cable	6-pin metal connector w/mating plug	25-ft. [7.5 M] instrumentation cable
IP 67, NEMA 4X,6**	**IP 67, NEMA 4X**, 6**	**IP 65, NEMA 4**	**IP 67, NEMA 6**
			
1/2 - 5/16" [14 - 8 mm] cable dia. 16 AWG max conductor size connector: MS3102E-14S-6P mating plug: MS3106E-14S-6S	10 ft. x 0.4-in. dia. [3 M x 10 mm dia.] 18 AWG, type SJTW	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. dia. [7,5 M x 5 mm dia.] 24 AWG, shielded

F *order code:*

5	6	7
100-ft. [30 M] waterproof cable	10-ft. [3 M] **pressure tested*** waterproof cable	100-ft. [30 M] **pressure tested*** waterproof cable
IP 67, NEMA 4X,6**	**IP 68, NEMA 4X**, 6P**	**IP 68, NEMA 4X**, 6P**
		
100 ft. x 0.4-in. dia. [30 M x 10 mm dia.] 18 AWG, type SJTW	10 ft. x 0.4-in. dia. [3 M x 10 mm dia.] 18 AWG, type SJTW	100 ft. x 0.4-in. dia. [30 M x 10 mm dia.] 18 AWG, type SJTW

6-pin Mating Plug

pin	2-wire	3-wire
A	8...40 vdc***	14...40 vdc
B	4...20 mA out	common
C	–	0...20 mA out
D	case ground	–



contact view

Waterproof Cable

color code	2-wire	3-wire
WHITE	8...40 vdc***	14...40 vdc
BLACK	4...20 mA out	common
GREEN	case ground	0...20 mA out

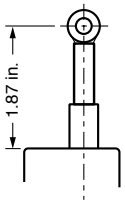
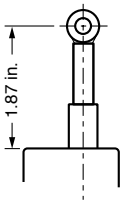
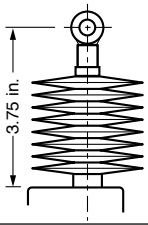
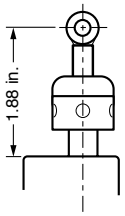
Instrumentation Cable

color code	2-wire	3-wire
RED	8...40 vdc***	14...40 vdc
BLACK	4...20 mA out	common
WHITE	n/a	n/a
GREEN	case ground	0...20 mA out

**–Test pressure: 100 feet [30 meters] H_2O (40 PSID) Test Medium: Air; Duration: 2 hours. ** –applies to stainless steel enclosure only. ***14-32 VDC for hazardous area option.*

Cable Guide Options:

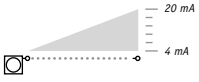
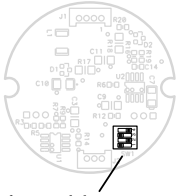
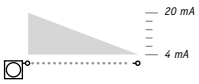
G *order code:*

0	1	2*	3
standard cable guide	stainless steel cable guide	polyurethane cable bellows	integral cable brush
			

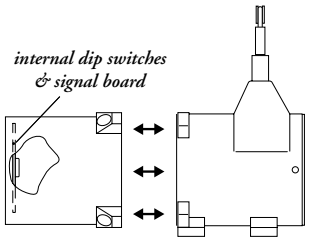
**note: all ranges up to 25 inches only*

Output Signal Selection (4...20mA output signals only):

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 the 4 mA and 20mA signal values to the beginning and end points of the stroke.

output ordercode	*output signal*	*switch setting*	*signal board*
1			
2			

dip-switch location



To gain access to the signal board, remove four Allen-Head Screws and remove rear cover.

version: **4.1** last updated: **March 18, 2007**