Cable-Extension Position Transducer

▼ **Short to Medium Range**

▼ **Industrial Grade**

▼ **Precision Potentiometric Output**   C€

PT8101

Specification Summary:

GENERAL
Full Stroke Ranges .... 0-2 to 0-60 inches, see ① next page
Output Signal .... voltage divider (potentiometer)
Accuracy .... + 0.25 to 0.10% full stroke, see ②
Repeatability .... + 0.02% full stroke
Resolution .... essentially infinite
Measuring Cable .... stainless steel, nylon-coated or thermoplastic, see ⑤
Enclosure Material ....powder-painted aluminum or stainless steel, see ④
Sensor ....plastic-hybrid precision potentiometer
Weight, Aluminum (Stainless Steel) Enclosure .... 3 lbs. (6 lbs.), max.

ELECTRICAL
Input Resistance ....500, 1K, 5K, 10K ohms (+ 10%) or bridge, see ⑨
Power Rating, Watts .... 2.0 at 70° F (derated to 0 @ 250°F)
Recommended Maximum Input Voltage .... 30 V(AC or DC)
Output Signal Change Over Measurement Range ...... 94% +3% of input voltage

ENVIRONMENTAL
Enclosure Design.................................... NEMA 4/4X/6, IP67/68, see ⑥ and ⑦
Operating Temperature .... -40° to 200°F

The PT8101, using a high cycle plastic-hybrid potentiometer, operates with any basic panel meter or programmable controller in factories and harsh environments requiring linear position measurements in ranges up to 60".

As a member of Celesco's innovative family of NEMA 4 rated cable-extension transducers, the PT8101: installs in minutes by mounting it's body to a fixed surface and attaching it's cable to the movable object, works without perfect parallel alignment, and when it's stainless-steel cable is retracted, it measures only 5".

"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)

ALL DIMENSIONS ARE IN INCHES (MM)
tolerances are +0.02 in. (+0.5mm)
unless otherwise noted
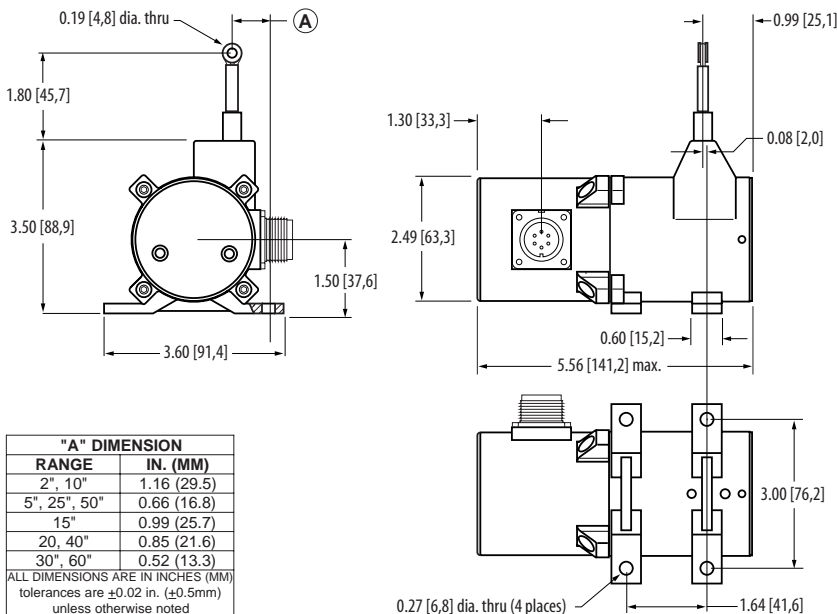
Electrical Output Signal:
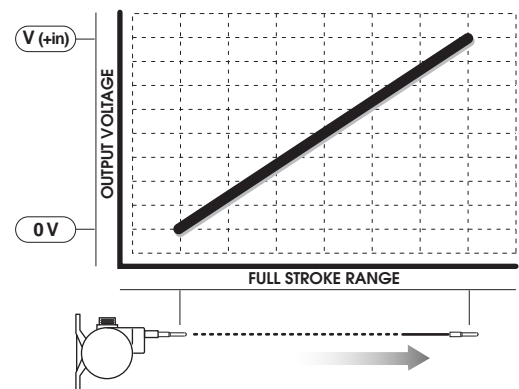
celesco
Celesco Transducer Products, Inc.
20630 Plummer Street • Chatsworth, CA • 91311
tel: (800) 423-5483 • (818) 701-2750 • fax: (818) 701-2799
www.celesco.com • info@celesco.com

▼ Ordering Information

Model Number:

PT8101-_____ - ___ ___ 1 - ___ 1 ___ ___
  order code: ❶   ❷ ❸ ❹   ❺ ❻ ❼ ❽

Full Stroke Range:

❶ order code:	0002	0005	0010	0015	0020	0025	0030	0040	0050	0060
① full stroke range, min:	2 in.	5 in.	10 in.	15 in.	20 in.	25 in.	30 in.	40 in.	50 in.	60 in.
② accuracy (% of f.s.):	0.25%	0.25%	0.15%	0.15%	0.15%	0.15%	0.15%	0.10%	0.10%	0.10%
maximum cable acceleration:	25 G's	5 G's	25 G's	10 G's	8 G's	5 G's	3 G's	8 G's	5 G's	3 G's
③ std. cable tension (±20%):	28 oz.	12 oz.	28 oz.	19 oz.	15 oz.	12 oz.	9 oz.	15 oz.	12 oz.	9 oz.
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
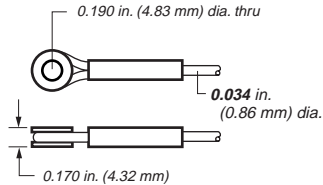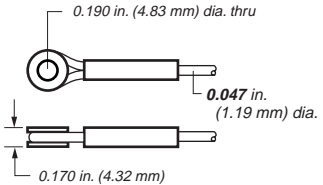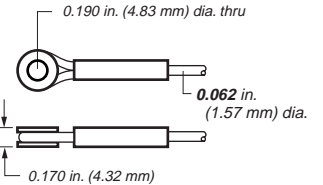
*note: **potentiometer cycle life** is defined as the minimum number of times the measuring cable can be fully extended and retracted before any measurable degradation of the output signal occurs.*

Enclosure Material and Measuring Cable Tension:

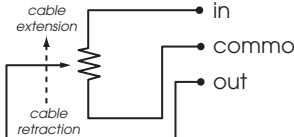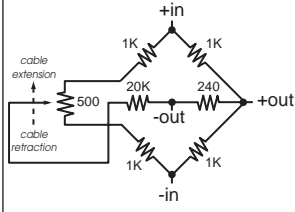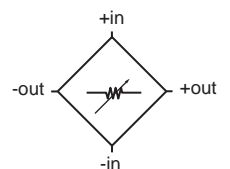| ❷ order code:	1	2	3	4
④ enclosure material:	powder-painted aluminum		303 stainless steel	
cable tension* multiplier:	1x	3x	1x	3x

note: refer to ③ above

Measuring Cable:

❸ order code:	1*	2**	3***
⑤ cable construction:	.034 nylon-coated stainless steel	.047 stainless steel	.062 thermoplastic

0.190 in. (4.83 mm) dia. thru **0.034** in. (0.86 mm) dia. 0.170 in. (4.32 mm)

0.190 in. (4.83 mm) dia. thru **0.047** in. (1.19 mm) dia. 0.170 in. (4.32 mm)

0.190 in. (4.83 mm) dia. thru **0.062** in. (1.57 mm) dia. 0.170 in. (4.32 mm)

notes: *available in **all** ranges **5, 15, 20, 25, 30-inch** ranges only ***available in ranges up to **30-inches** only

Output Signals:

❹ order code:	1	2	3	4	5	6
⑨ sensing circuit:	500 ohm	1K ohm	5K ohm	10K ohm	2 mV/V bridge	0...30 mV/V bridge

cable extension — in, common, out — cable retraction

2 mV/V bridge: +in, 1K, 1K, cable extension, 20K, 500, 240, -out, +out, cable retraction, 1K, 1K, -in

0...30 mV/V bridge: full scale output: adjustable from 0 to 30mV/V; zero adjust: from full retraction to 50% of full stroke; +in, -out, +out, -in

Electrical Connection:

F order code:	1	2	3	4
electrical connection:	6-pin plastic connector and mating plug	10 ft. waterproof cable	6-pin metal connector and mating plug	25 ft. instrumentation cable

1 — 6-pin plastic connector and mating plug

MS3106E-14S-6S
5/16" (8 mm) max cable dia.
16 AWG max conductor size

~ 3.2 in. (81 mm)

MS3102E-14S-6P

2 — 10 ft. waterproof cable

3-CONDUCTOR, 18 GA., **TYPE SJOW-A**

~0.35 in. (9 mm) dia.

3 — 6-pin metal connector and mating plug

MS3106E-14S-6S
5/16" (8 mm) max cable dia.
16 AWG max conductor size

~ 3.2 in. (81 mm)

MS3102E-14S-6P

4 — 25 ft. instrumentation cable

MULTICONDUCTOR, **24 GA.**, SHIELDED

~0.2 in. (5 mm) dia.

contact view	connections		connections		contact view	connections		connections	
	standard	**bridge**	**standard**	**bridge**		**standard**	**bridge**	**standard**	**bridge**
A B F C E D	A = +IN B = COMMON C = +OUT	A = +IN B = -IN C = -OUT D = +OUT	WHT = +IN BLK = COMMON GRN = OUT	not available	A B F C E D	A = +IN B = COMMON C = +OUT	A = +IN B = -IN C = -OUT D = +OUT	RED = +IN BLK = COMMON GRN = OUT	RED = +IN BLK = -IN WHT = -OUT GRN = +OUT

		1	2	3	4
⑦	**IP** rating:	67	67, 68*	67	67
⑧	**NEMA** rating:	6, 4X**	6, 4X**	4	6

note: *requires factory submersion test   **applies to stainless steel enclosure, see ④

Cable Guide Options:

G order code:	0	1	2*	3
	standard nylon cable guide	stainless steel cable guide	polyurethane cable bellows	integral cable brush

0 — standard nylon cable guide — 1.87 in.

1 — stainless steel cable guide — 1.87 in.

2* — polyurethane cable bellows — 3.75 in.

3 — integral cable brush — 1.88 in.

*note: *will limit measurement range to **25 inches (635 mm)** maximum*

▼ Sample Model Number

PT8101- 0030 - 1 2 1 - 4 1 1 0
order code: Ⓡ   Ⓐ Ⓑ Ⓒ   Ⓓ Ⓔ Ⓕ Ⓖ

Specifications:	Full Stroke Range:	30 inches
	Enclosure Material:	powder-painted aluminum
	Measuring Cable:	0.047-in dia. stainless steel cable
	Output Signals:	10 K ohm potentiometer sensor
	Electrical Connection:	6-pin plastic connector
	Cable Guide:	standard nylon

VLS8000

- **VLS prevents cable from ever reaching damaging velocity**

- **VLS is ideal for applications requiring frequent connections**

- **VLS provides safer operation in mobile operations**

- **VLS eliminates the chance of breaking a cable**

The new patent-pending Celesco Velocity Limiting System (VLS) is an option for PT8000 Series cable extension transducers that limits cable retraction to a safe 40 to 50 inches per second. It prevents a cable from ever reaching a damaging velocity during an accidental free release. VLS 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 available for the Celesco PT8000 Series, but not with high cable tension or stainless steel enclosure options. Use the ordering guide below to configure a VLS transducer.

Ordering Information

The appropriate VLS8000 Series transducer can be selected from any model found in the Celesco PT8000 sections in the Celesco catalog. VLS is used as a prefix for all VLS model designations.

VLS [——— - ——— - **1*** ***** **1** - ——— ——— ——— **0**]
ℝ ⒶⒷⒸⒹⒺⒻⒼ

sample order code: **VLS8420-0050-111-1110**

*VLS is only available with aluminum enclosure and nylon-coated or thermoplastic measuring cable.