

Linear Encoders

CP-8600, Encoder + Linear to Rotation Position Module

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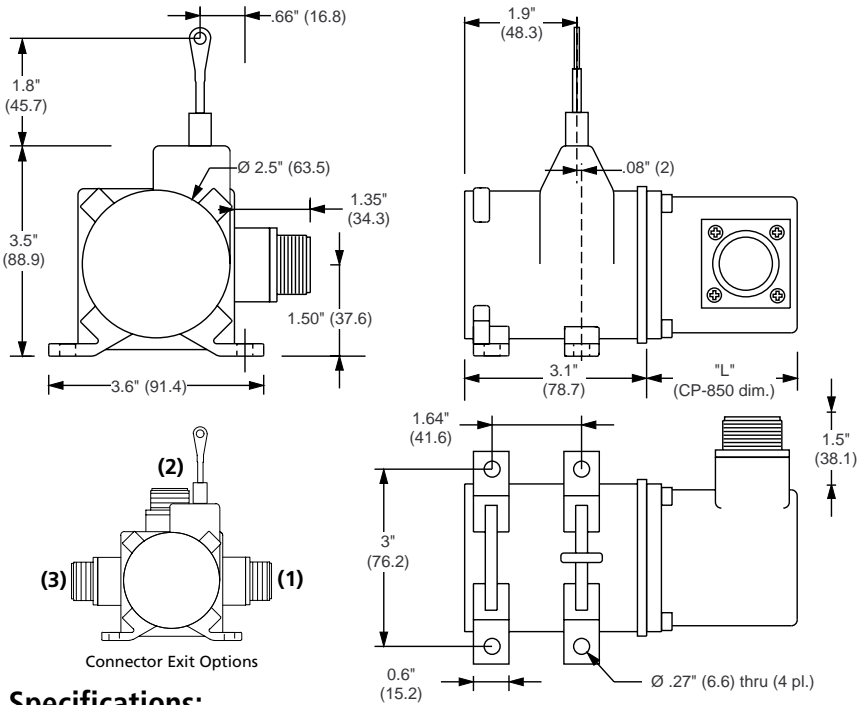


Description:

The CP-8600 allows any of the CP-8xx series encoders to be mated to a cable-extension linear to rotational position module. This unit takes only minutes to install and can easily be placed in tight locations. The CP-8600 does not require perfect parallel alignment and provides reliable and precise position measurements without needing periodic adjustments.

In addition to linear measurements, the CP-8600 may be used to measure slow velocities down to less than 0.1 inch per minute.

A large choice of encoder configurations are available. The CP-850-24MT programmable encoders supply the position in a scalable absolute digital format. The encoder is always active and will keep track of cable position, even during a power failure. An analog (4-20 mA and/or 0-10 V) output is also supplied and is field programmable over an arbitrary stroke length. The CP-850 and CP-850-HCE encoders supply position information in incremental format which can be scaled to any required number per unit of length or per arbitrary stroke length.



Specifications:

Measuring Cable:

English Ranges: 25, 50 inches
 Metric Ranges: 625, 1250mm
 Cable Diameter: 0.036" (0.9mm)
 Fitting: MS20668 stainless steel
 Tension: 12 oz.
 Increased Tension Option: 36 oz.
 Accuracy: lesser of 0.02% of full stroke or 0.04% of measurement range

Module:

Weight: 1 lb. (0.5kg) typical
 Material: aluminum (stainless steel available)

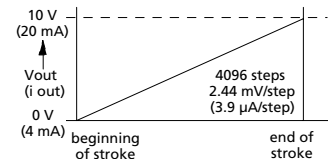
Linear Measurements per Sensor Shaft Rotation:

English Ranges: 5 inches, nominal
 Metric Ranges: 125 mm, nominal

Full Scale Programming:

The reset line and direction line are used to program the analog outputs. The reset line is normally tied to ground or left "floating", the direction line is either tied to the positive power supply or to ground, dependent on preferred counting direction. The programming sequence is as follows:

- 1) At the desired beginning point of the stroke, connect the reset line to the positive power supply. This forces the analog output to zero Volt or 4 mA. The encoder is now in program mode.
- 2) Pull the cable to the desired end point of the stroke.
- 3) Change the logic level of the direction input line. If it was tied to ground, connect to the positive power supply and back to ground. If it was tied to the positive power supply, connect to ground and back to the positive power supply. This signals the encoder that this position is the end of the stroke.
- 4) Connect the reset line to ground. The encoder output should now be 10 V/20 mA. It is very important not to change the state of direction input during a "normal" reset as this will re-program the full-scale setting of the unit.



Ordering Information:

CP-8600-(1)-(2)-(3)-(4)-(5)-(6)

- (1): Full Stroke Range
 0025 = 25" 0625 = 625mm 0050 = 50" 1250 = 1250mm
- (2): Enclosure Material/Cable Tension
 1 = aluminum / standard 2 = aluminum / increased
 3 = stainless steel / standard 4 = stainless steel / increased
- (3): Measuring Cable
 1 = 0.036" dia, stainless steel
 2 = 0.047" dia, stainless steel (0025 & 0625)
 3 = 0.062" dia, thermoplastic (0025 & 0625)
- (4): Additional Operations (not required)
 BR = integral cable brush
 BL = polyurethane cable bellows (0025 only)
 SS = stainless steel cable guide
 x = none of the above

- (5): Connector Exit Options
 1 = per mech. drawing; 2 = per photo; 3 = opposite of mech. drawing

- (6): Encoder p/n per CP-850 datasheets:
 CP-850-24MT, absolute, 16 bit word field/factory programmable for any number of integer measuring steps per arbitrary unit of length (default: 819.2 steps per inch, 32.2 steps per mm max). Transmission can be either parallel, serial asynchronous or SPI, in Gray code, natural binary, BCD format or ASCII. In addition, a 4-20 mA and/or 0-10V analog output is available, field programmable over any arbitrary stroke length (see "full scale programming").
 CP-850-xxxxx, quadrature incremental, factory programmable for any number of integer measuring steps per arbitrary unit of length up to 8,000 measuring steps/inch max. (approx. 315 steps/mm).
 CP-850-HCE-xxxk, quadrature incremental, factory programmable for any number of integer measuring steps per arbitrary unit of length up to 288,000 measuring steps/inch (approx. 11,338 steps/mm).

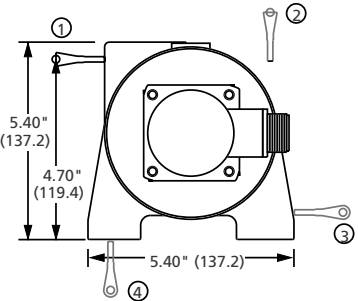
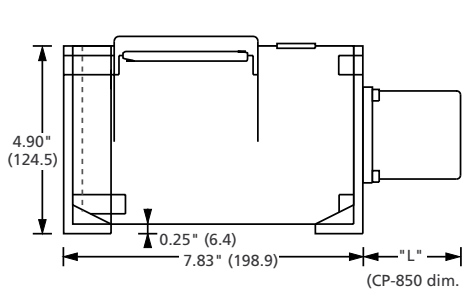
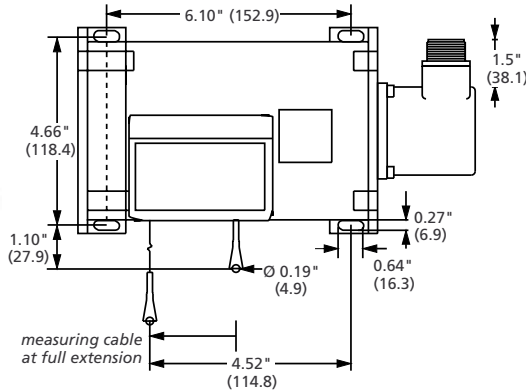


Description:

The CP-9600 allows any of the CP-8xx series encoders to be mated to a long range cable-extension linear to rotational position module. This unit takes only minutes to install and can easily be placed in tight locations. The CP-9600 does not require perfect parallel alignment and provides reliable and precise position measurements without needing periodic adjustments.

In addition to linear measurements, the CP-9600 may be used to measure slow velocities down to less than 0.1 inch per minute.

A large choice of encoder configurations are available. The CP-850-24MT programmable encoders supply the position in a scalable absolute digital format. The encoder is always active and will keep track of cable position, even during a power failure. An analog (4-20 mA and/or 0-10 V) output is also supplied and is field programmable over an arbitrary stroke length. The CP-850 and CP-850-HCE encoders supply position information in incremental format which can be scaled to any required number per unit of length or per arbitrary stroke length.



Specifications:

Measuring Cable:

Full Stroke Range: 0-75" to 0-550"
 Rotational to Linear Ratio: 1 turn = 12.7", nominal

Cable Diameter: 0.036" (0.9mm) stainless steel

Cable Fitting: MS20668 stainless steel
 Cable Tension: see graph

Tension Option: 2x standard
 Accuracy: lesser of 0.02% of full stroke or 0.04% of measurement range

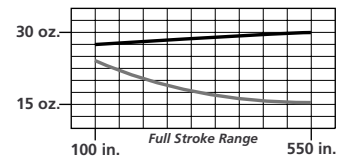
Module:

Weight: 7 lb. (3.5kg) typical powder-painted aluminum
 Material: (stainless steel available)

Full Scale Programming:

See CP-8600 for full scale programming instructions

Measuring Cable Tension:



RANGE	0.036 in.	0.047 in.	0.062 in.
75	0.22	0.29	0.37
100	0.29	0.39	0.49
150	0.44	0.59	0.73
200	0.58	0.79	0.98
250	0.73	0.98	1.22
300	0.88	1.18	1.47
350	1.02	1.38	1.71
400	1.17	1.57	1.98
450	1.31	1.77	N/A
500	1.46	1.97	N/A
550	1.61	N/A	N/A

Ordering Information:

CP-9600-(1)-(2)-(3)-(4)-(5)

(1): Full Stroke Range

0075 = 75" 0100 = 100" 0150 = 150" 0200 = 200"
 0250 = 250" 0300 = 300" 0350 = 350" 0400 = 400"
 0450 = 450"* 0500 = 500"* 0550 = 550"*

*increased cable tension is recommended for these ranges

(2): Enclosure Material/Cable Tension

1 = aluminum / standard 2 = aluminum / increased
 3 = stainless / standard 4 = stainless steel / increased

(3): Measuring Cable

1 = 0.036 inch diameter, stainless steel
 2 = 0.047 inch diameter, stainless steel (500 inch range maximum)
 3 = 0.062 inch diameter, thermoplastic (400 inch range maximum)

(4): Measuring Cable Exit

1 = top left 2 = top right 3 = bottom right 4 = bottom left

(5): Encoder p/n per CP-850 datasheets:

CP-850-24MT, absolute, 17 bit word @ 550", field/factory programmable for any number of integer measuring steps per arbitrary unit of length up to 322.5 steps per inch, 12.7 steps per mm. Transmission can be either parallel, serial asynchronous or SSI, in Gray code, natural binary, ASCII or BCD format. In addition, a 4-20 mA and/or 0-10V analog output is available, field programmable over any arbitrary stroke (see "full scale programming").

CP-850-xxxxx, quadrature incremental, factory programmable for any number of integer measuring steps per arbitrary unit of length up to 3,146.6 measuring steps/inch max. (approx. 124 steps/mm).

CP-850-HCE-xxxk, quadrature incremental, factory programmable for any number of integer measuring steps per arbitrary unit of length up to 113,386 measuring steps/inch (approx. 4,464 steps/mm).