

# Enercon Pancake Pillow Block Load Cells



## High Quality Load Cells for Reliability & Accuracy

Enercon Asia Pacific Load Cells are designed for rugged performance with the sensitivity for today's challenging applications. Available in both dead and liveshaft configurations, Enercon Load Cells feature Full Wheatstone Bridge construction enable high sensitivity & low temperature drift.

**RUGGED AND RELIABLE DESIGN**

**IDEAL FOR A WIDE RANGE OF TENSION APPLICATIONS**

**OVERLOAD PROTECTION**

**COMPACT FOOT PRINT**

**STAINLESS STEEL & NICKEL PLATED DESIGNS**

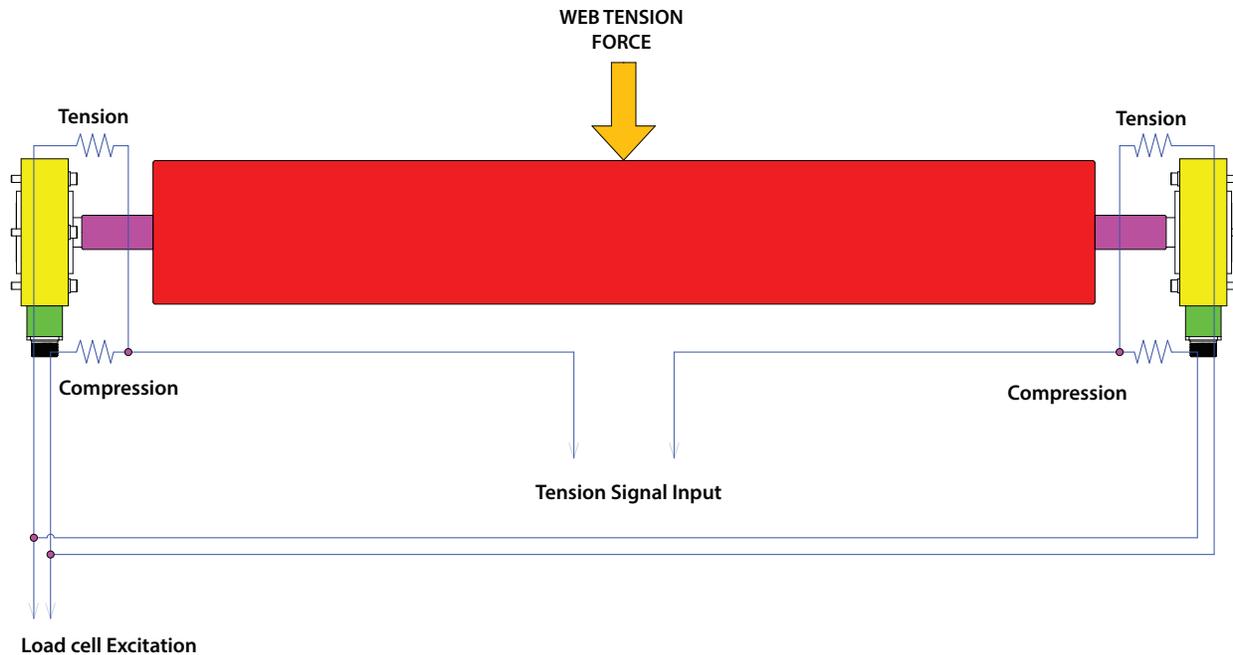
**DEAD AND LIVE SHAFT OPTIONS**



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Ensuring Your Treating Success.**

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# Load Cell Electrical Measurement Detail



## Technical Specification

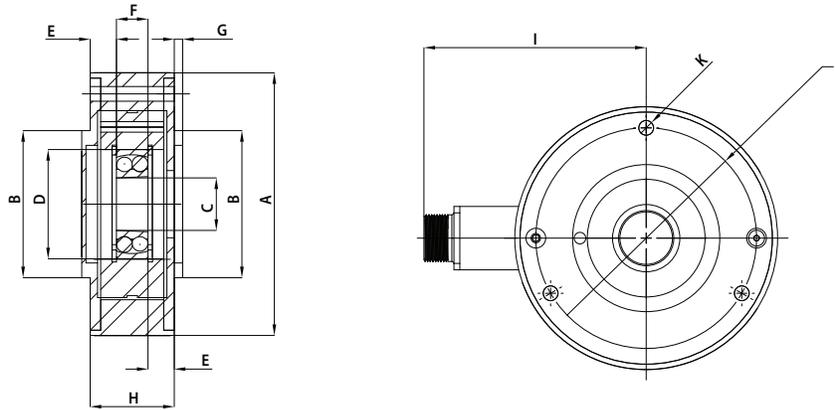
<b>Gauge Resistance</b>	350 $\Omega$
<b>Temperature Range °F (°C)</b>	-4 to +150 (-20 to +70)
<b>Temperature Coefficient (% Per Degree) °F (°C)</b>	0.02 (0.01) typ.
<b>Overload Protection</b>	10X OF Full Load Rating
<b>Sensitivity</b>	1.0mV/V
<b>Bridge Excitation</b>	10VDC
<b>Outputs</b>	1.0mV/V, 10mVdc Full Load Rating
<b>Repeatability</b>	0.2% Of Full Scale
<b>Flange Mounting</b>	4 HOLES
<b>Protection</b>	IP40
<b>Ball Bearings</b>	Self-Lubricated
<b>Load Ratings</b>	100 – 1500 N
<b>Overload Stops Engagement</b>	105%-150% Of Full Load
<b>Non-Linearity &amp; Hysteresis</b>	0.5% Of Full-Scale Maximum
<b>Construction Of Material</b>	Nickel Plated Steel Body, Stainless Steel Body

## Key Features

- Flange & foot mounting options available
- Inbuilt overload protection
- Stainless steel & nickel plated steel housing options available
- Multiple bore sizes available for 500N
- Full Wheatstone Bridge construction enable high sensitivity & low temperature drift
- Self-aligned bearing will allow live shaft rollers to mount directly
- Dead shaft and live shaft options available

## Mounting Surfaces:

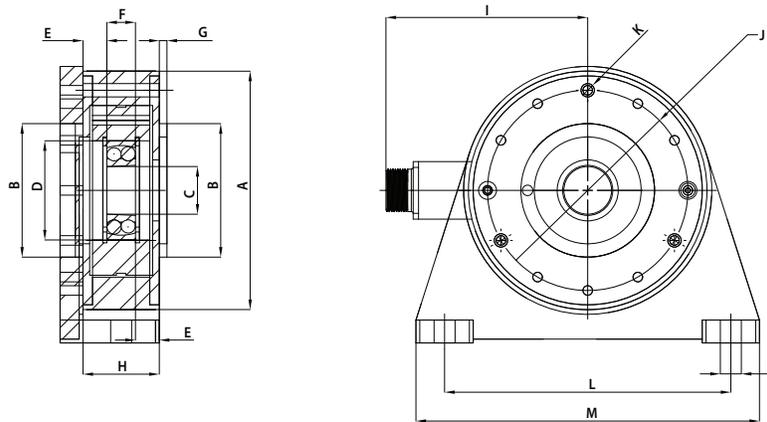
The load cells must be mounted on strong, rigid surface



Model	Rating (Newton)	A	B	C	D	E	F	G	H	I	J	K
EA-100-FL-N	100 N	Ø105	Ø60	Ø17	Ø40	10	12	3	32	~95	Ø90	Ø7
EA-200-FL-N	200 N	Ø105	Ø60	Ø17	Ø40	10	12	3	32	~95	Ø90	Ø7
EA-500-FL-N	500 N	Ø105	Ø60	Ø17	Ø40	10	12	3	32	~95	Ø90	Ø7
EA-500-FL-N	500 N	Ø125	Ø70	Ø25	Ø52	12.5	15	4	40	~95	Ø105	Ø7
EA-750-FL-N	750 N	Ø125	Ø70	Ø25	Ø52	12.5	15	4	40	~95	Ø105	Ø7
EA-1500-FL-N	1500 N	Ø175	Ø100	Ø35	Ø80	18	21	4	57	~95	Ø150	Ø9

## Mounting Hole Locations – Pillow Block Mount:

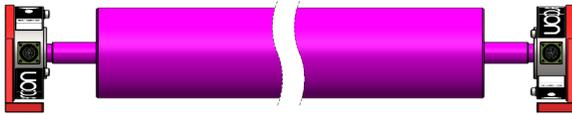
The optional mounting foot offers fast and easy installation. The foot mounts to the machine frame and allows for shaft length adjustment.



Model	Rating (Newton)	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
EA-100-FT-N	100 N	Ø105	Ø60	Ø17	Ø40	10	12	3	32	~95	Ø90	Ø7	120	Ø11	150	70	123
EA-200-FT-N	200 N	Ø105	Ø60	Ø17	Ø40	10	12	3	32	~95	Ø90	Ø7	120	Ø11	150	70	123
EA-500-FT-N	500 N	Ø105	Ø60	Ø17	Ø40	10	12	3	32	~95	Ø90	Ø7	120	Ø11	150	70	123
EA-500-FT-N	500 N	Ø125	Ø70	Ø25	Ø52	12.5	15	4	40	~95	Ø105	Ø7	150	Ø11	180	80	145
EA-750-FT-N	750 N	Ø125	Ø70	Ø25	Ø52	12.5	15	4	40	~95	Ø105	Ø7	150	Ø11	180	80	145
EA-1500-FT-N	1500 N	Ø175	Ø100	Ø35	Ø80	18	21	4	57	~95	Ø150	Ø9	190	Ø11	230	105	193

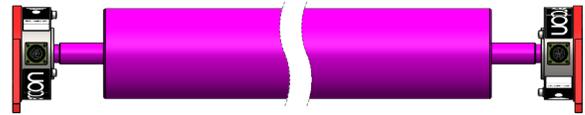
## Typical Installation

### Pillow Block (On Top Of Horizontal Frames)

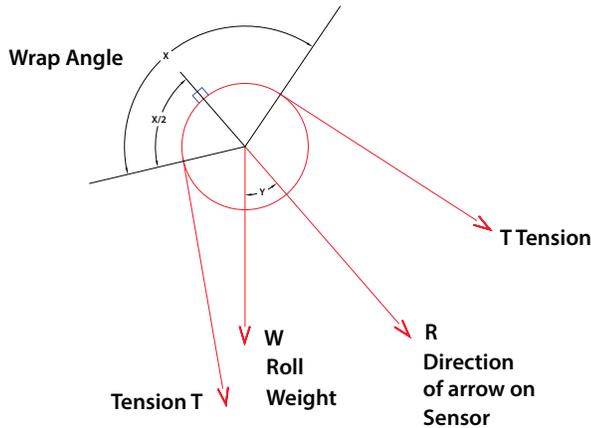


(Can Be Mounted On Inside Of Bracket Is Desired)

### Flange Mount (Inside Of Vertical Frames)



## Sizing



**T** = web tension

**X** = web wrap angle

**R** = resultant force direction from web tension that bisects the wrap angle

**Y** = angle between wrap angle midpoint (r) and the roll weight

**NOTE:** connector should always be aligned with (r)

**L** = calculated minimum force rating for each load cell

To size and select the tension sensors, the total load on the sensing roll must be calculated. This load consists of the tension components plus the roll weight components in the sensing plane. Using the known maximum tension, roll weight and angles as shown, apply the equation below to calculate the actual load.

$$\text{LOAD} = 2T (\sin (X/2)) \pm (W (\cos Y))$$

This is the total load, but since tension transients are generally quite large, the "T" should be multiplied by 2, and since there are two sensors supporting this load, the total load is divided by 2. The final equation for load rating required for each sensor is then:

$$\text{LOAD} = 2T (\sin (X/2)) \pm (W (\cos Y))$$

$$L = (4T (\sin (X/2)) \pm (W (\cos Y)) \div 2$$

**Note:** Use +  $W (\cos Y)$  if the resultant force is in the direction opposite the connector on the load cell and -  $W (\cos Y)$  if pulling towards the connector.

After calculating L, select 2 sensors, each with a load rating greater than L.

## Model Number Key

EA	XXXX	Mounting-FL/FT	Material	Connector	Cable Length
LOAD CELL MODEL	LOAD CELL RATING (IN NEWTON)	CONNECTOR (FL-FLANGE MOUNT) (FT-FOOT)	NICKEL PLATED STEEL(N), STAINLESS STEEL(S)	STRAIGHT(S), RIGHT ANGLE (R)	5m,10m,15m

## Available Models

Model Number	Newton	lbf	kg
EA-100-FL-N & EA-100-FT-N	100N	23 lbf	10 kg
EA-250-FL-N & EA-250-FT-N	250N	56 lbf	26 kg
EA-500-FL-N & EA-500-FT-N	500N	113 lbf	51 kg
EA-750-FL-N & EA-750-FT-N	750N	168 lbf	76 kg
EA-1000-FL-N & EA-1000-FT-N	1000N	225 lbf	102 kg
EA-1500-FL-N & EA-1500-FT-N	1500N	337 lbf	152 kg