

*Stainless steel construction*

*Sensitive to high & low tension*

*360° beam overload stop protection*

*High output, excellent linearity, low hysteresis*

*Supplied with industry standard ER (Extended Race) bearings*

*Unique design compensates for shaft expansion, misalignment & bending*

**IP54**

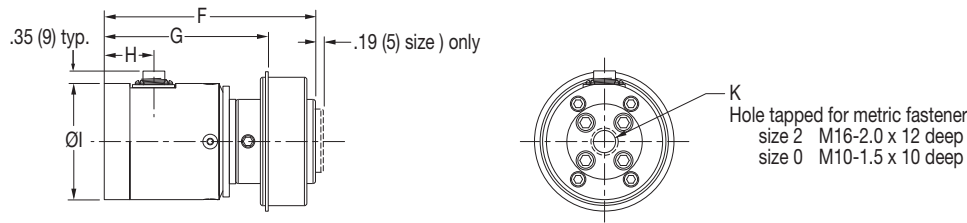
## Montalvo Load Cells

### *T/er-Series Live Roller Load Cells*

T/er load cells are a versatile alternative to the T-Series Idler. They are designed to fit existing rollers or to be inserted into new rollers for quick and efficient sensing roller installation. A wide range of ER bearings are available to match standard bores. In addition, the S mount configuration may be used with rollers that fit to within ½" of a machines frame-to-frame dimension.

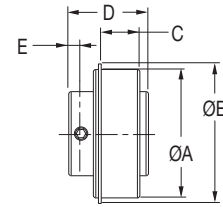
# T/er - Series Live Roller Load Cells

## Model ST-L



Model	F	G	H	I	K
ST2-L	5.23 (133)	4.12 (105)	1.22 (31)	2.85 (72.50)	M16-2.0x12
ST0-L	4.20 (107)	3.13 (80)	1.12 (28.50)	2.26 (57.50)	M10-1.5x10

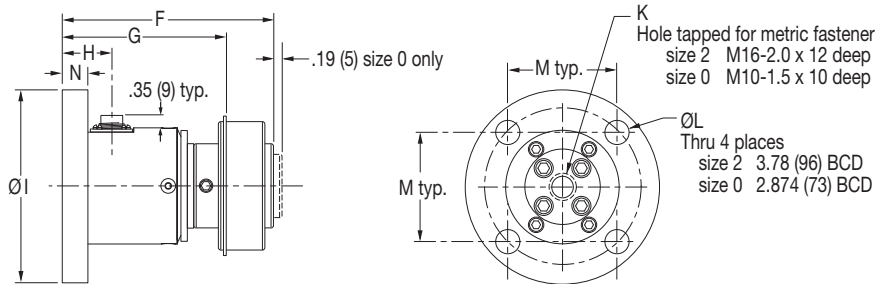
## Standard ER bearing (supplied with load cells)



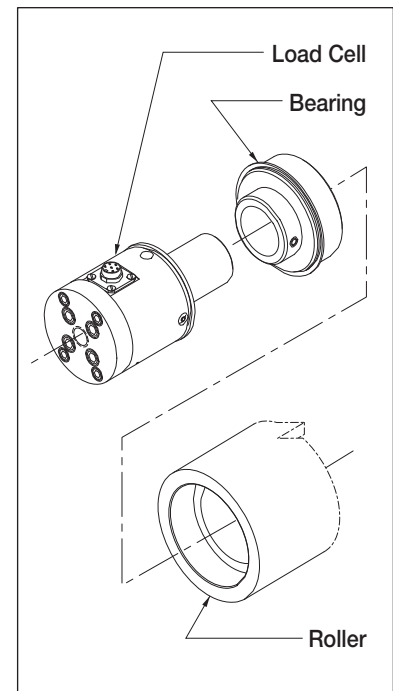
Model/Bearing	A	B	C	D	E
ST2-L / ER-24	3.15 (80)	3.41 (87)	.91 (23)	1.94 (49)	.31 (8)
ST0-L / ER-19	2.44 (62)	2.66 (67)	.69 (17)	1.50 (38)	.22 (6)

Bearing dimensions are for standard sizes supplied by Montalvo

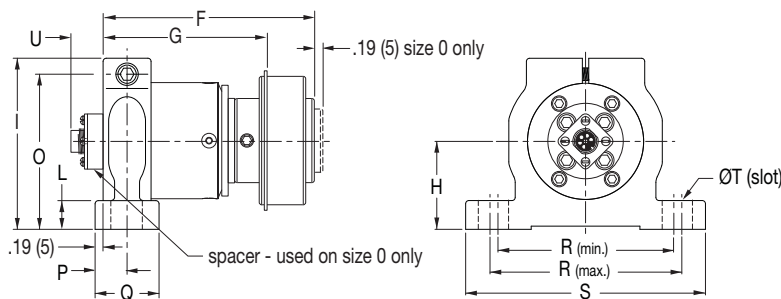
## Model FT-L



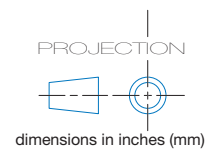
Model	F	G	H	I	K	L	M	N
FT2-L	5.23 (133)	4.12 (105)	1.22 (31)	4.72 (120)	M16-2.0x12	.53 (13.50)	2.67 (67.88)	.63 (16)
FT0-L	4.20 (107)	3.13 (80)	1.12 (28.50)	3.50 (89)	M18-1.5x10	.35 (9)	2.03 (51.62)	.59 (15)



## Model PBT-L



Model	F	G	H	I	L	O	P	Q	R (min.)	R (max.)	S	ØT	U
PBT2-L	5.23 (133)	4.12 (105)	2.17 (55)	4.21 (107)	.71 (18)	3.82 (97)	.79 (20)	1.57 (40)	4.33 (110)	4.73 (120)	5.91 (150)	.55 (14)	.47 (12)
PBT0-L	4.20 (107)	3.13 (80)	1.65 (42)	3.27 (83)	.47 (12)	2.99 (76)	.59 (15)	1.18 (30)	3.39 (86)	3.71 (94)	4.57 (116)	.35 (9)	.83 (21)



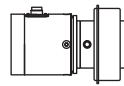
Note: Bearing dimensions are for standard sizes (size 2 = ER-24 & size 0 = ER-19)

# How to specify a Montalvo LIVE ROLLER load cell

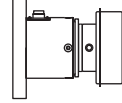
## Mount

S, F, or PB

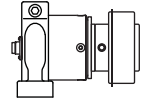
S (standard)



F (flange)



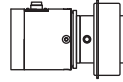
PB (split pillow block)



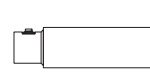
## Series

T, N, U or F

T



N



U



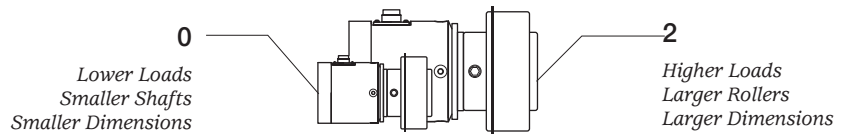
F



## Size

0 or 2

Consider the following:  
Load rating, shaft size  
& dimensions

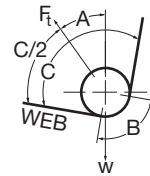


## Load Rating

Size 0 25, 50, 75, 100 or 150  
Size 2 75, 150, 250 or 500

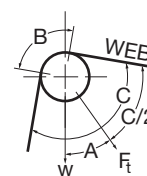
LR = load rating  
P = maximum tension (pull) on web  
B = wrap angle  
W = weight of roller in pounds  
A = angle between Ft and verticle axis  
C = angle between entering and exiting web  
F = resultant force

F<sub>t</sub> points **ABOVE** horizon



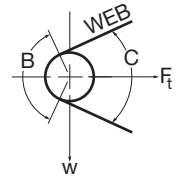
$$LR = \frac{4P \sin(B/2) - W \cos(A)}{2}$$

F<sub>t</sub> points **BELOW** horizon



$$LR = \frac{4P \sin(B/2) + W \cos(A)}{2}$$

F<sub>t</sub> is **HORIZONTAL**



$$LR = \frac{4P \sin(B/2)}{2}$$

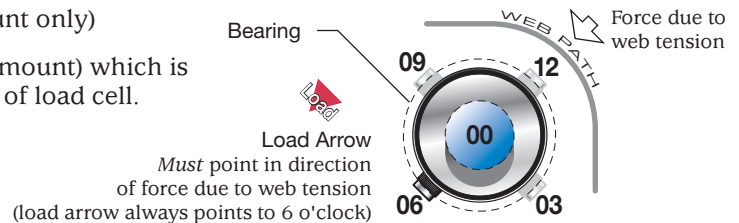
## Connector Position

03, 06, 09 or 12 o'clock (specify 00 for PB mount only)

Position is relative to LOAD ARROW (except PB mount) which is always 6 o'clock, as observed from bearing end of load cell.

Standard position:

6 o'clock for S & F mounts  
3 & 9 for a pair of P mounts  
00 for PB mount (only position available)



## Roller Type / Bearing Size

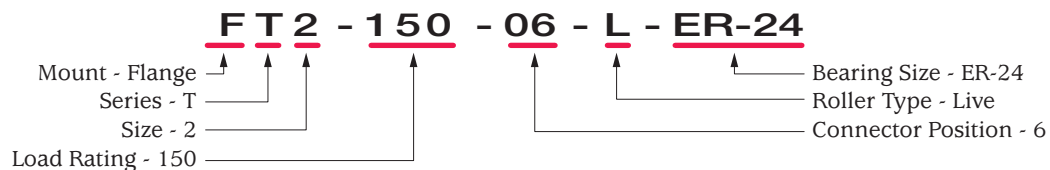
L = Live Roller



Size 0 ER-19 (62mm Ø) standard  
Size 2 ER-24 (80mm Ø) standard

Non-standard bearings available by request.  
**IMPORTANT** - Roller preparation to accept specified bearing is critical. Roller preparation drawings are available by request.

## Example

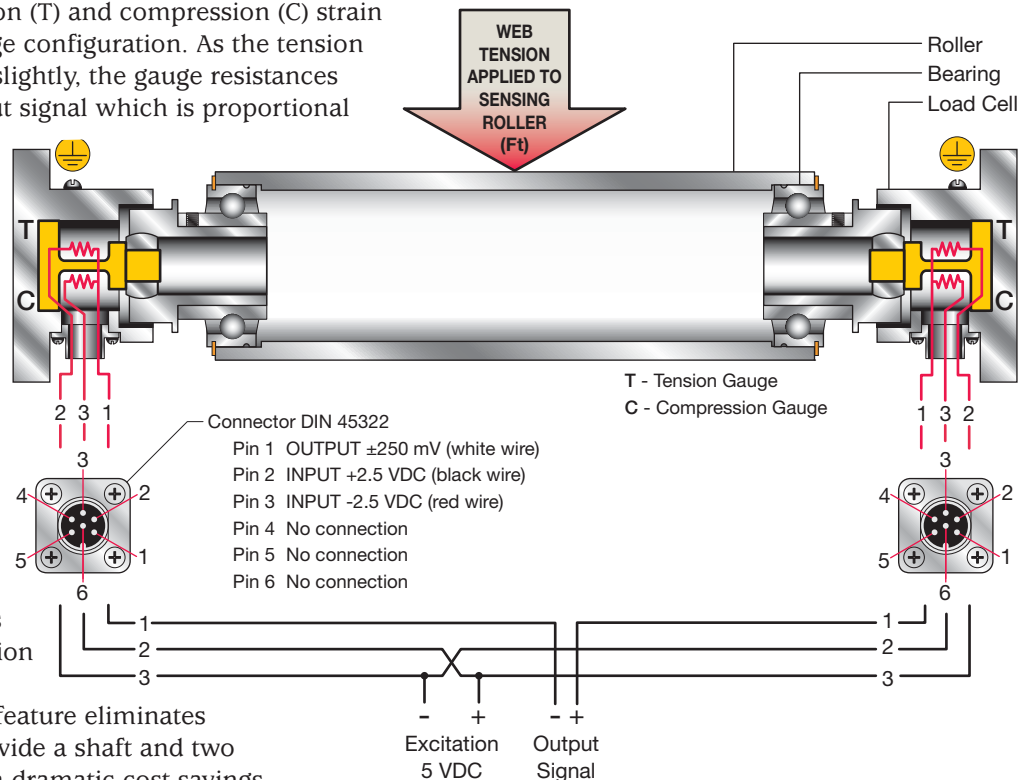


### How it works...

Montalvo T-Series use tension (T) and compression (C) strain gauges connected in a bridge configuration. As the tension forces (Ft) bend the beams slightly, the gauge resistances change, producing an output signal which is proportional to web tension.

The unique joint design of the T-Series load cell incorporates the use of an integral, high performance spherical bearing assembly. This allows for misalignment, roller deflection, and changes in roller length due to temperature variation.

The live roller load cell utilizes ER (Extended Inner Ring) deep groove ball bearings which are available in a wide range of sizes to match standard bores. Units may be furnished for insertion into the bearing bore of an existing or new roller. This feature eliminates the need for the user to provide a shaft and two bearings inside the roller - a dramatic cost savings.



### Specifications

**Electrical**

Excitation .....	5 VDC
Output .....	250 mV, nominal @ full load
Gauge Resistance .....	80 - 130 Ω
Type .....	semi-conductor
Non-Repeatability .....	± 1/4 % full span
Non-Linearity and hysteresis (combined) .....	± 1/2 % full span

**Connector**

Type .....	DIN 45322 (6 pin)
Pin 1 .....	± 250 mV output
Pin 2 .....	+ 2.5 VDC input
Pin 3 .....	- 2.5 VDC input
Pin 4 .....	no connection
Pin 5 .....	no connection
Pin 6 .....	no connection

**Loading lb (kg)**

Rated Size 0 .....	25 (125), 50 (250), 75 (375), 100 (500), 150 (750)
Size 2 .....	75 (375), 150 (750), 250 (1250), 500 (2500)
Overload .....	tested @ 300% max. rated
Overload Stops .....	110% of full load

**Important** - For optimum performance and safety, we highly recommend that you contact a Montalvo Application Specialist to assist you in selecting the correct product for your particular application.

**Environmental**

Classification .....	IP54
Temperature Operating range .....	-4° to 150°F (-20° to 70°C)
Coefficient .....	0.02% per °F typ.

**Mechanical**

Deflection .....	0.008 to 0.015 (0.203 to 0.381)
Alignment .....	1° max.
Standard Bearing (shown in drawings) Size 0 .....	ER-19
Size 2 .....	ER-24
Finish .....	stainless steel

**Dimensions<sup>1</sup> (WxDxH) inch(mm)**

ST0-L .....	4.39 x 2.66 x 2.66 (112 x 67 x 67)
ST2-L .....	5.24 x 3.41 x 3.41 (133 x 87 x 87)
FT0-L .....	4.39 x 3.5 x 3.5 (112 x 89 x 89)
FT2-L .....	5.24 x 4.75 x 4.75 (133 x 121 x 121)
PBT0-L .....	5.16 x 4.57 x 3.27 (131 x 116 x 83)
PBT2-L .....	6.14 x 5.91 x 4.21 (156 x 150 x 107)

**Weight<sup>1</sup> lb (kg)**

ST0-L .....	~ 3.00 (1.37)
ST2-L .....	~ 5.92 (2.69)
FT0-L .....	~ 3.86 (1.76)
FT2-L .....	~ 7.74 (3.52)
PBT0-L .....	~ 4.14 (1.88)
PBT2-L .....	~ 8.78 (3.99)

<sup>1</sup> Including standard bearing