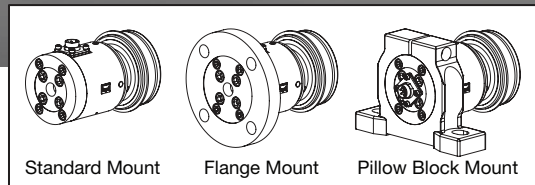


ES-Series

Extended Sensitivity Live Roller Load Cells



IP54



Standard Mount

Flange Mount

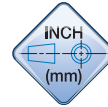
Pillow Block Mount

Montalvo ES-Series Extended Sensitivity Live Roller Load Cells

Montalvo's ES-Series has evolved from intelligent design to delivering the finest sensitivity in the industry. The **live roller** version provides safe, secure support of a Live Roller. All ES-Series offer multiple load ranges, three mounts and two body sizes.

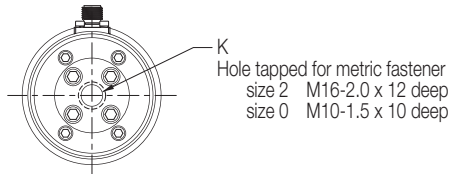
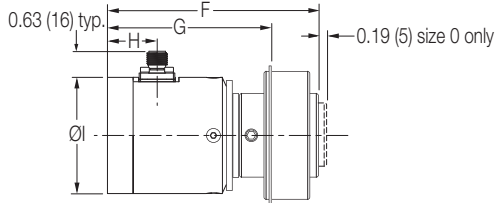
Features & Benefits

- ▶ **Industry Leading Resolution** - and sensitivity for superior accuracy and response
- ▶ **M12 Connector** - industry standard for wide cable selection
- ▶ **Multiple Mounting Options** - standard, flange or pillow block to fit most any machine frame
- ▶ **Stainless Steel Construction** - & dust proof (IP54) rating for durability & extended, dependable service life
- ▶ **Mechanical Variance Compensation** - for shaft expansion & misalignment from installation variables
- ▶ **360° Overload Protection**

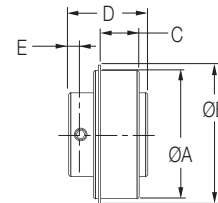


Dimensions

Standard Mount (S)



Standard ER bearing (supplied with load cells)



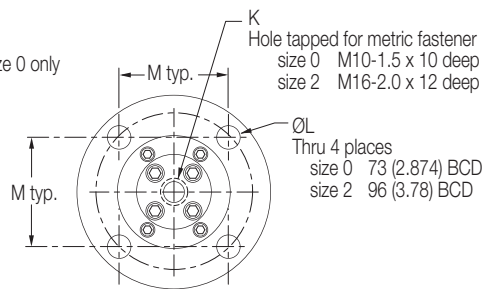
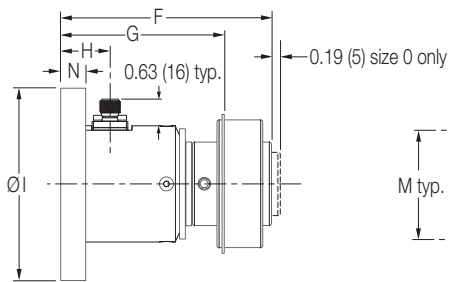
Model	F	*G (min.)	*G (max.)	H	I	K
ES-L-S0	4.20 (107)	3.13 (80)	3.33 (85)	1.12 (28.50)	2.26 (57.50)	M10-1.5x10 deep
ES-L-S2	5.23 (133)	4.12 (105)	4.18 (106)	1.22 (31)	2.85 (72.50)	M16-2.0x12 deep

Size/Bearing	A	B	C	D	E
0 / ER-19	2.44 (62)	2.66 (67)	0.69 (17)	1.50 (38)	0.22 (6)
2 / ER-24	3.15 (80)	3.41 (87)	0.91 (23)	1.94 (49)	0.31 (8)

*When using Standard ER bearing. Other bearings may have different dimensions.

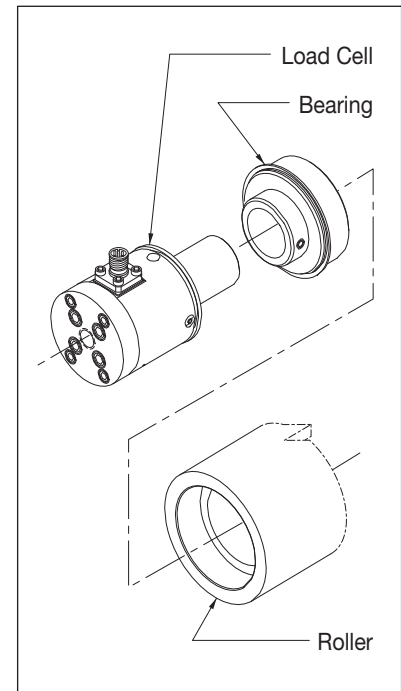
Bearing dimensions are for standard sizes supplied by Montalvo

Flange Mount (F)

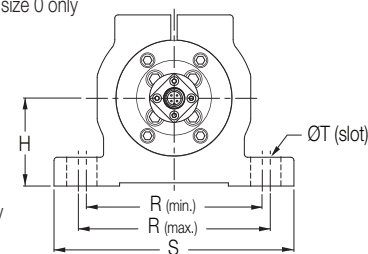
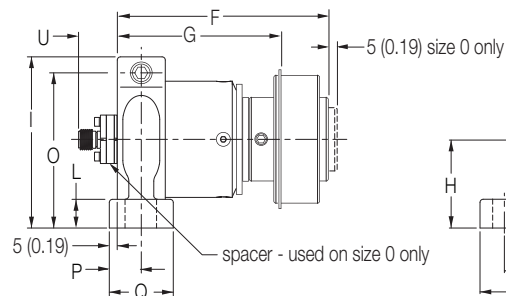


Model	F	*G (min.)	*G (max.)	H	I	K	L	M	N
ES-L-F0	4.20 (107)	3.13 (80)	3.33 (85)	1.12 (28.50)	3.50 (89)	M18-1.5x10	0.35 (9)	2.03 (51.62)	0.59 (15)
ES-L-F2	5.23 (133)	4.12 (105)	4.18 (106)	1.22 (31)	4.72 (120)	M16-2.0x12	0.53 (13.50)	2.67 (67.88)	0.63 (16)

*When using Standard ER bearing. Other bearings may have different dimensions.



Pillow Block Mount (P)

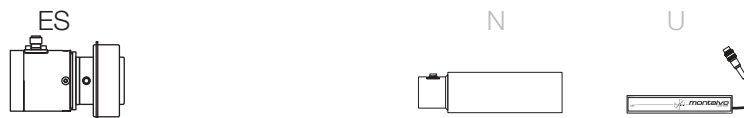


Model	F	*G (min.)	*G (max.)	H	I	L	O	P	Q	R (min.)	R (max.)	S	ØT	U
ES-L-P0	4.20 (107)	3.13 (80)	3.33 (85)	1.65 (42)	3.27 (83)	0.47 (12)	2.99 (76)	0.59 (15)	1.18 (30)	3.39 (86)	3.71 (94)	4.57 (116)	0.35 (9)	1.08 (28)
ES-L-P2	5.23 (133)	4.12 (105)	4.18 (106)	2.17 (55)	4.21 (107)	0.71 (18)	3.82 (97)	0.79 (20)	1.57 (40)	4.33 (110)	4.73 (120)	5.91 (150)	0.55 (14)	0.75 (19)

How To Specify

Series

ES, N, U or F



Shaft / Bearing Size (ER#)

L (LIVE roller)



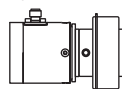
Size 0 ER-19 (62mm Ø) standard
Size 2 ER-24 (80mm Ø) standard

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

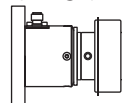
Mount

S, F, or P

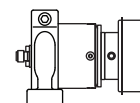
S (standard)



F (flange)



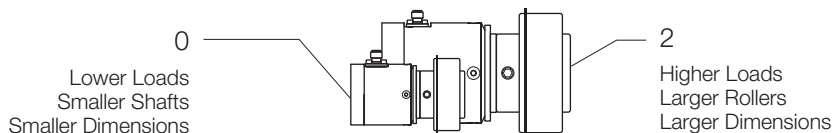
P (pillow block)



Size

0 or 2

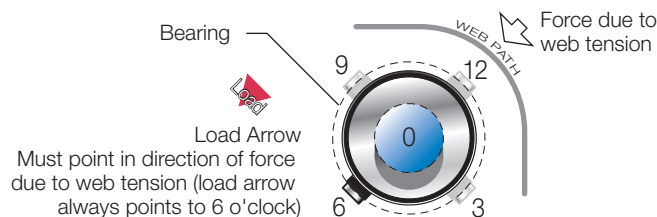
Consider the following:
Load rating, shaft size & dimensions



Connector Position

6 (standard on S and F mounts)
3, 9 or 12 (available upon request)
0 (only position available for P mount)

Position is relative to LOAD ARROW (except P mount), which is always 6, as observed from clamp end of load cell.



Load Rating lb (N)

Size 0 25(125), 50(250), 75(375), 100(500), 150(750)
Size 2 75(375), 100(500), 150(750), 250(1250), 500(2500), 1000*(5000)*

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

F_t points ABOVE horizon

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

F_t points BELOW horizon

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

F_t is HORIZONTAL

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

* For F and P mounts only.
Note: It is recommended that Montalvo be contacted to ensure proper sizing.

Example

ES - L - F 2 - 6 - 150 lb - ER - 24

Series → ES

Shaft → L

Mount → F

Size → 2

Bearing Size → ER

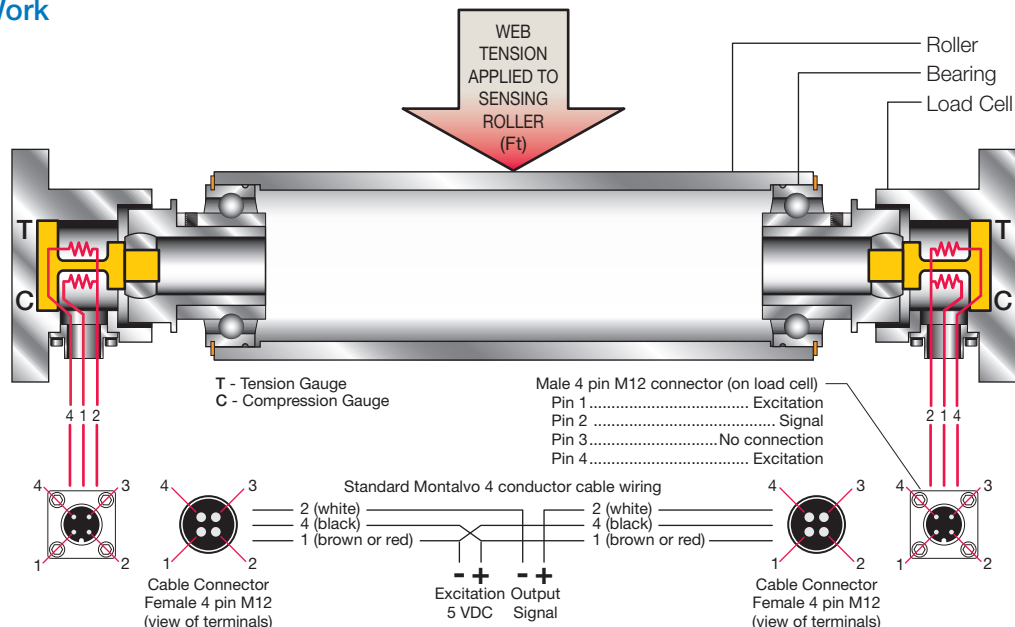
Load Rating (include unit of measure lb or N) → 150 lb

Connector Position → 24

Montalvo ES-Series

Extended Sensitivity Live Roller Load Cells

How They Work



Specifications

Electrical

Excitation.....	5 VDC
Output (Half Bridge Option).....	250 mV, nominal @ full load
Output (Full Bridge Option)	500 mV, nominal @ full load
Gauge Resistance.....	80 - 130 Ω
Gauge Type	semi-conductor strain
Non-Repeatability.....	±1/4% full span
Non-Linearity and hysteresis (combined).....	±1/2% full span

Connector (Male 4 pin M12) - Pin Out

	Half Bridge Option	Full Bridge Option
Pin 1.....	Excitation.....	Excitation
Pin 2.....	Signal.....	Signal
Pin 3.....	No connection.....	Signal
Pin 4.....	Excitation.....	Excitation

Load Ratings - lb (N)

Size 0	25(125), 50(250), 75(375), 100(500), 150(750)
Size 2	75(375), 100(500), 150(750), 250(1250), 500(2500), 1000*(5000)*
Overload Stops	110% of Load Rating
Overload Rating.....	300% of Load Rating

* For F and P mounts only.

Note: It is recommended that Montalvo be contacted to ensure proper sizing.

Environmental

Classification	IP54
Temperature °F(°C)	
Operating range.....	-4 to +150 (-20 to +70)
Coefficient (% per degree).....	0.02 (0.01) typ.

Mechanical

Deflection in (mm).....	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

Weight** lb (kg) approximately

ES-L-S0	3.00 (1.37)
ES-L-S2	5.92 (2.69)
ES-L-F0.....	3.86 (1.76)
ES-L-F2.....	7.74 (3.52)
ES-L-P0	4.14 (1.88)
ES-L-P2	8.78 (3.99)

** Including standard bearing

Related Montalvo Products

Tension Controllers
Load Cell Amplifiers
Tension Indicators
and... Cables

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	+49 (0)511 760 691 41



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