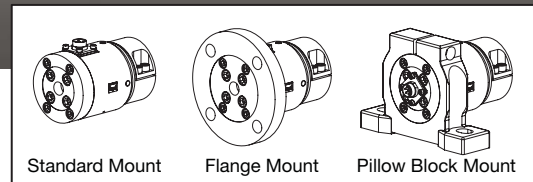


ES-Series

Extended Sensitivity Dead Shaft Idler Roller Load Cells



IP54



Montalvo ES-Series Extended Sensitivity Dead Shaft Idler Roller Load Cells

Montalvo's ES-Series has evolved from intelligent design to delivering the finest sensitivity in the industry. The **dead shaft** version provides safe, secure support of a dead shaft idler 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**

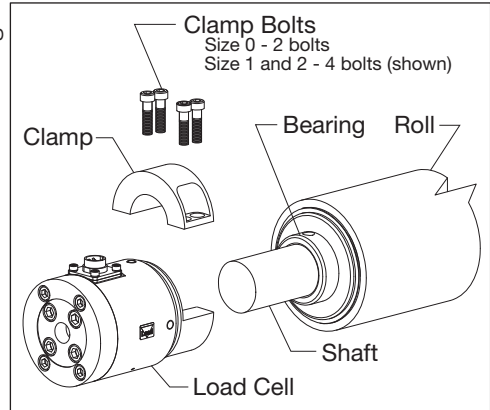
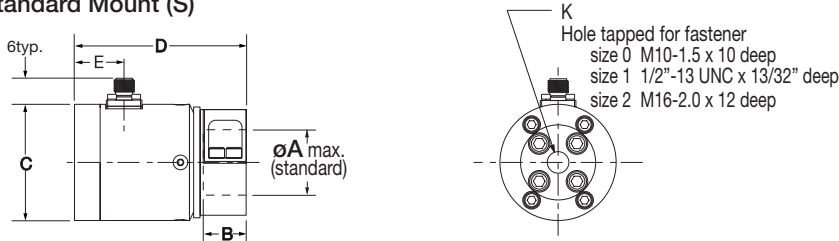
ES-Series

Extended Sensitivity Dead Shaft Idler Roller Load Cells

Dimensions

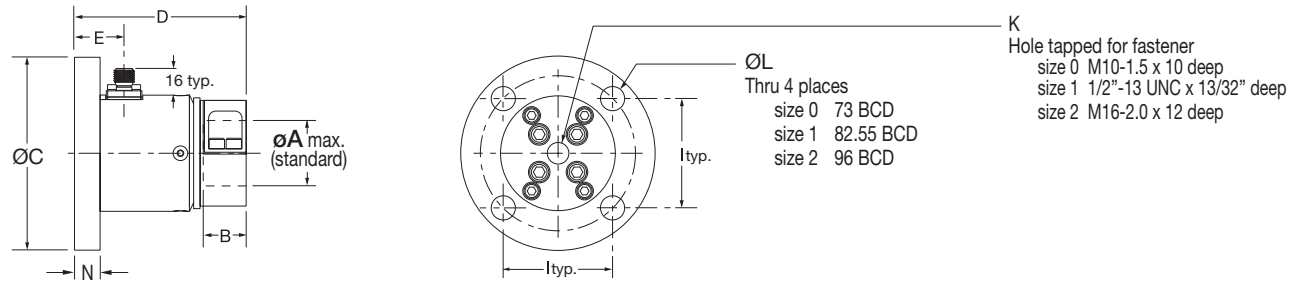


Standard Mount (S)



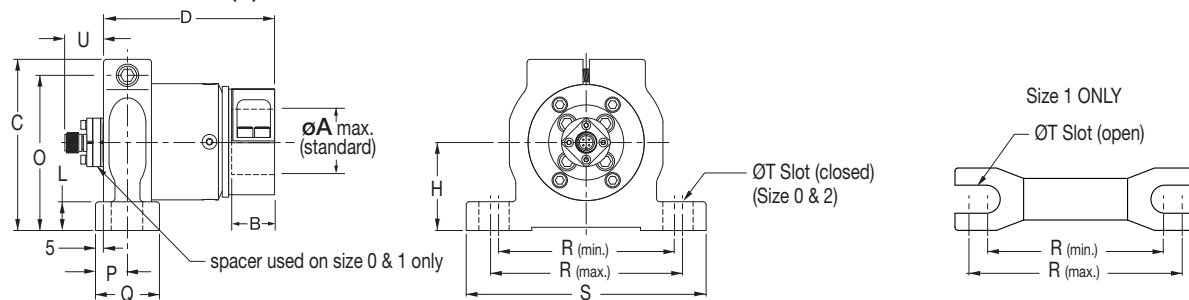
Model	A	B	C	D	E	K
ES-I-S0	25	13	57.50	76	28.50	M10-1.5x10
ES-I-S1	40	26.2	57.50	92.2	28.50	1/2"-13 x 13/32"
ES-I-S2	40	28.07	72.50	108.79	31	M16-2.0x12

Flange Mount (F)



Model	A	B	C	D	E	l typ.	K	L	N
ES-I-F0	25	13	89	76	28.50	51.62	M10-1.5x10	9	15
ES-I-F1	40	26.2	101.6	92.2	28.50	58.4	1/2"-13 x 13/32"	9	15
ES-I-F2	40	28.07	120	108.79	31	67.88	M16-2.0x12	13.50	16

Pillow Block Mount (P)



Model	A	B	C	D	H	L	O	P	Q	R (min.)	R (max.)	S	T	U
ES-I-P0	25	13	83	76	42	12	76	15	30	86	94	116	9	28
ES-I-P1	40	26.2	82.3	92.2	41.3	11.3	75.2	15	30	86.1	101.6	116	-	28
ES-I-P2	40	28.07	107	108.79	55	18	97	20	40	110	120	150	14	19

How To Specify

Series

ES, N, U or F



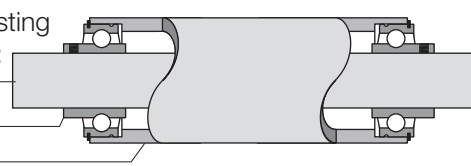
Shaft / Shaft Size (mm)

I- Dead Shaft Idler Roller consisting of the following components:

Shaft

Bearing

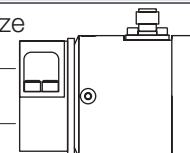
Roller



Maximum shaft size

Size 0 25mm
Size 1 & 2 40mm

Bushings available for other size shafts at no charge.



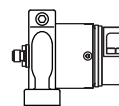
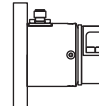
Mount

S, F, or P

S (standard)

F (flange)

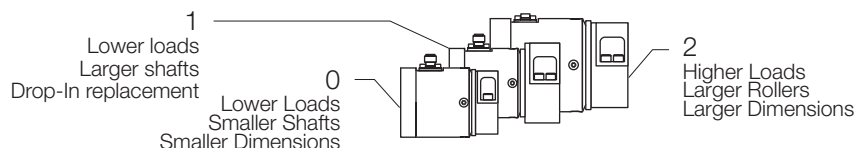
P (pillow block)



Size

0 or 2

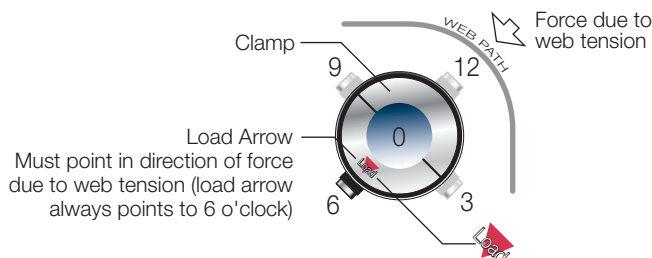
Consider the following:
Load rating, shaft size & dimensions



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 (N)

Size 0 50 / 125 / 250 / 375 / 500 / 750

Size 1 500 / 750 / 1250

Size 2 375 / 500 / 750 / 1250 / 2500 / 5000*

LR load rating

P maximum tension (pull) on web

B wrap angle

W weight of roller (kg x 9,82m/s²)

A angle between F_t and vertical axis

C angle between entering and exiting web

F resultant force

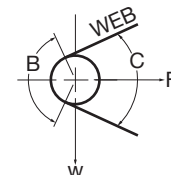
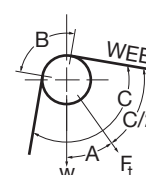
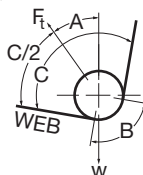
* For F and P mounts only.

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

F_t points ABOVE horizon

F_t points BELOW horizon

F_t is HORIZONTAL



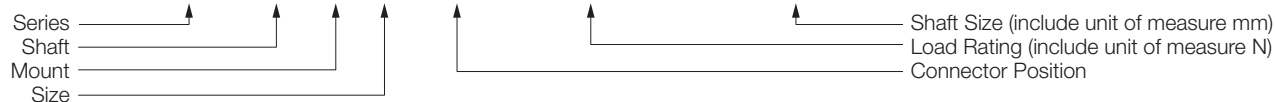
$$LR = \frac{4P \sin(B/2) - W \cos(A)}{2}$$

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

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

Example

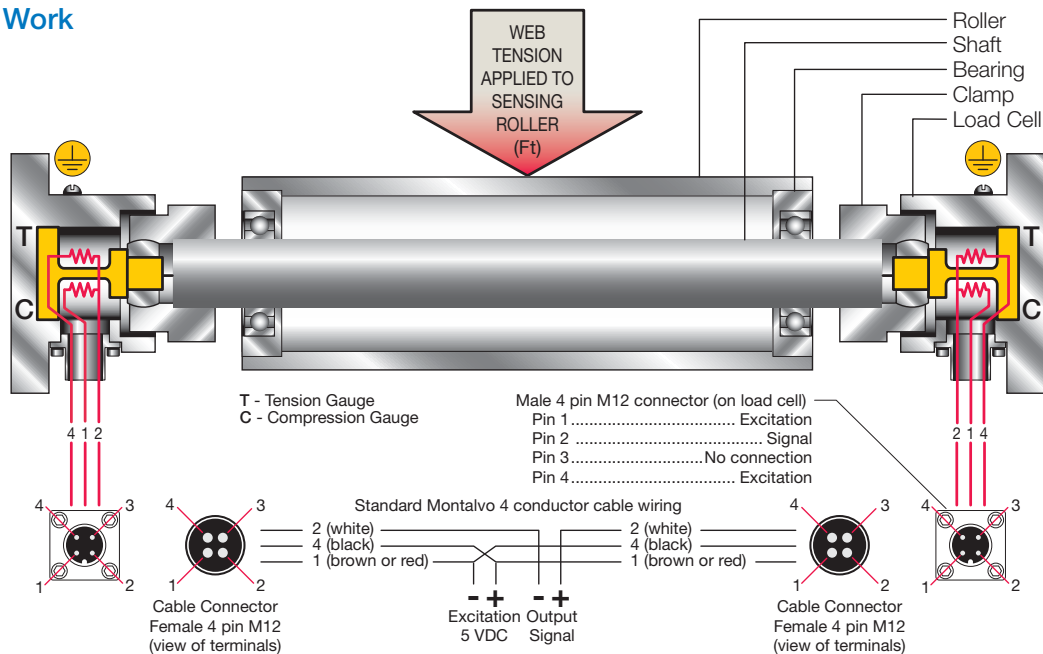
ES - I - F 2 - 6 - 2500 N - 40 mm



ES-Series

Extended Sensitivity Dead Shaft Idler Roller Load Cells

How They Work



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	Male 4 pin M12
Pin 1.....	Excitation
Pin 2.....	Signal
Pin 3.....	No connection
Pin 4.....	Excitation

Load Ratings (N)

Size 0.....	50 / 125 / 250 / 375 / 500 / 750
Size 1	500 / 750 / 1250
Size 2	375 / 500 / 750 / 1250 / 2500 / 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	
Operating range	-20 to +70°C
Coefficient (% per degree).....	0.01 typ.

Mechanical

Deflection	0.203 to 0.381 (mm) typ.
Alignment	1° max.
Bore** Size 0	25 mm std.
Size 1	40 mm std.
Size 2	40 mm std.

*Bushings available for smaller shaft sizes.

Finish

Weight kg approximately

ES-I-S0	1.02
ES-I-S1	1.37
ES-I-S2	2.12
ES-I-F0	1.41
ES-I-F1	1.76
ES-I-F2.....	2.95
ES-I-P0	1.54
ES-I-P1	1.88
ES-I-P2	3.42

Related Montalvo Products

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

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	+45 75 57 27 11
	+49 (0)511 760 691 41



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EST. 1947



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