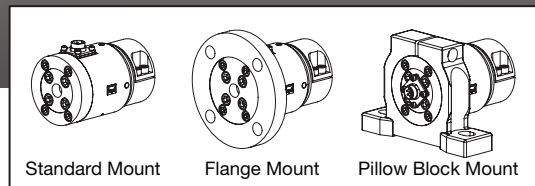


ES-Series

Extended Sensitivity Dead Shaft Idler Roller Load Cells



IP54



Standard Mount

Flange Mount

Pillow Block Mount

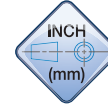
Montalvo ES-Series Extended Sensitivity Dead Shaft Idler Roller Load Cells

ES Dead Shaft Idler roller (ES-I) load cells deliver industry leading signal sensitivity to measure the slightest tension changes ensuring maximum product quality from full roll to core. Exclusive mechanical variance compensation and stainless steel construction gives you maximum performance and a longer service life. ES-I load cells are available in multiple load ratings, three mounting configurations and three different body sizes to meet the specific requirements of your application.

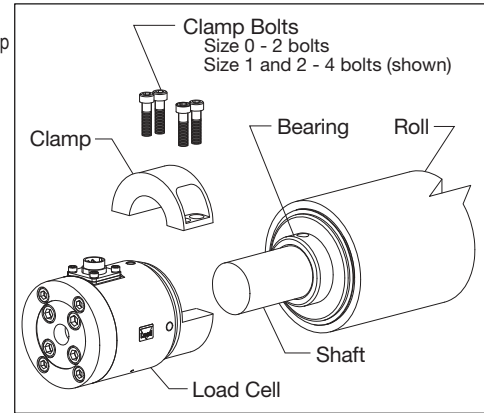
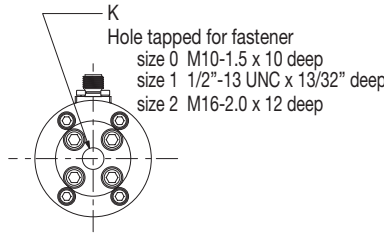
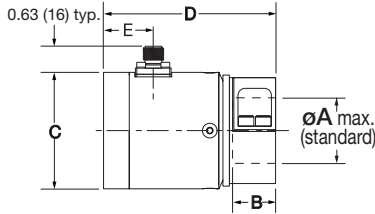
Features & Benefits

- ▶ **Industry Leading Resolution** - and sensitivity for superior accuracy and response
- ▶ **Drop-In Design** - whether replacing load cells or adding new, the ES-I is available in three different sizes to meet the dimensional requirements of your machine.
- ▶ **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** - and dust proof (IP54) rating for durability and extended, dependable service life
- ▶ **Mechanical Variance Compensation** - for shaft expansion and misalignment from installation variables
- ▶ **360° Overload Protection**

Dimensions



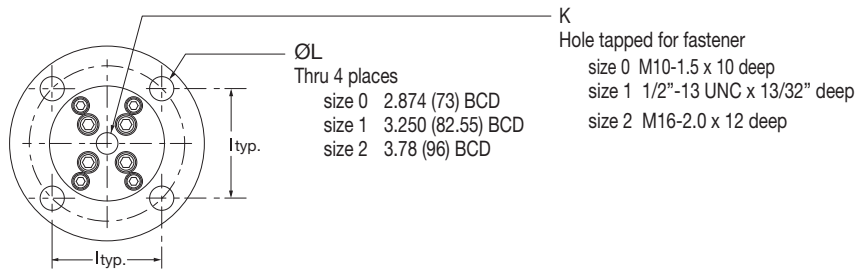
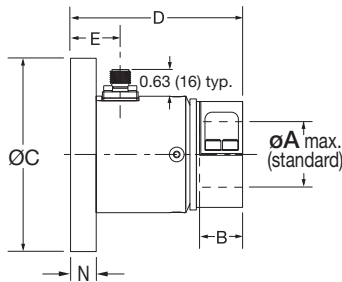
Standard Mount (S)



Model	A	A (metric option)	B	C	D	E	K
ES-I-S0	1.125	25mm	0.53 (13)	2.26 (57.50)	3.00 (76)	1.12 (28.50)	M10-1.5x10
ES-I-S1	1.50	40mm	1.03 (26.2)	2.26 (57.50)	3.63 (92.2)	1.12 (28.50)	1/2"-13 x 13/32"
ES-I-S2	1.50	40mm	1.10 (28.07)	2.85 (72.50)	4.28 (108.79)	1.22 (31)	M16-2.0x12

Dimension A indicates actual inch or optional metric bore size. Bushings available for smaller bore sizes.

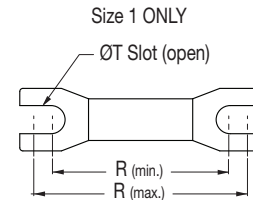
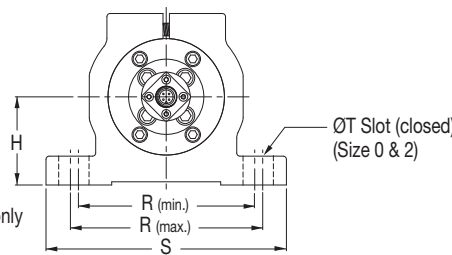
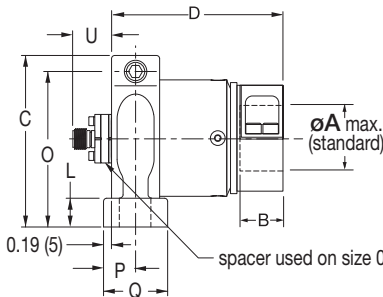
Flange Mount (F)



Model	A	A (metric option)	B	C	D	E	I typ.	K	L	N
ES-I-F0	1.125	25mm	0.53 (13)	3.50 (89)	3.00 (76)	1.12 (28.50)	2.03 (51.62)	M10-1.5x10	0.35 (9)	0.59 (15)
ES-I-F1	1.50	40mm	1.03 (26.2)	4.00 (101.6)	3.63 (92.2)	1.12 (28.50)	2.298 (58.4)	1/2"-13 x 13/32"	0.43 (11)	0.59 (15)
ES-I-F2	1.50	40mm	1.10 (28.07)	4.72 (120)	4.28 (108.79)	1.22 (31)	2.67 (67.88)	M16-2.0x12	0.53 (13.50)	0.63 (16)

Dimension A indicates actual inch or optional metric bore size. Bushings available for smaller bore sizes.


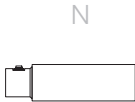

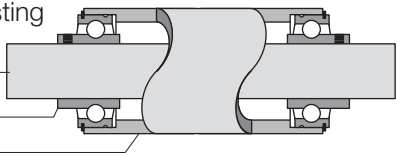
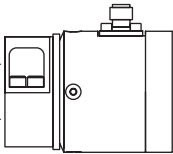


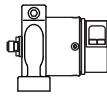
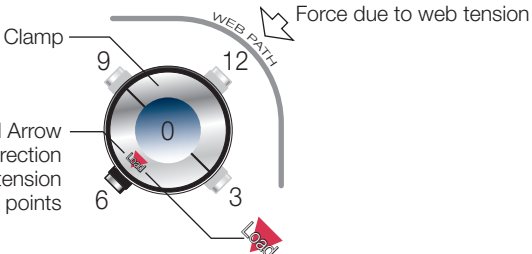
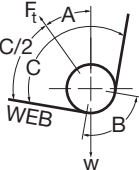
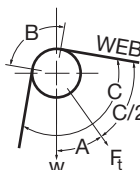
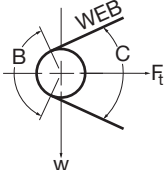
Pillow Block Mount (P)



Model	A	A (metric option)	B	C	D	H	L	O	P	Q	R (min.)	R (max.)	S	T	U
ES-I-P0	1.125	25mm	0.53 (13)	3.27 (83)	3.00 (76)	1.65 (42)	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-I-P1	1.50	40mm	1.03 (26.2)	3.24 (82.3)	3.63 (92.2)	1.626 (41.3)	0.445 (11.3)	2.96 (75.2)	0.59 (15)	1.18 (30)	3.39 (86.1)	4.00 (101.6)	4.57 (116)	-	1.08 (28)
ES-I-P2	1.50	40mm	1.10 (28.07)	4.21 (107)	4.28 (108.79)	2.17 (55)	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)

Dimension A indicates actual inch or optional metric bore size. Bushings available for smaller bore sizes.

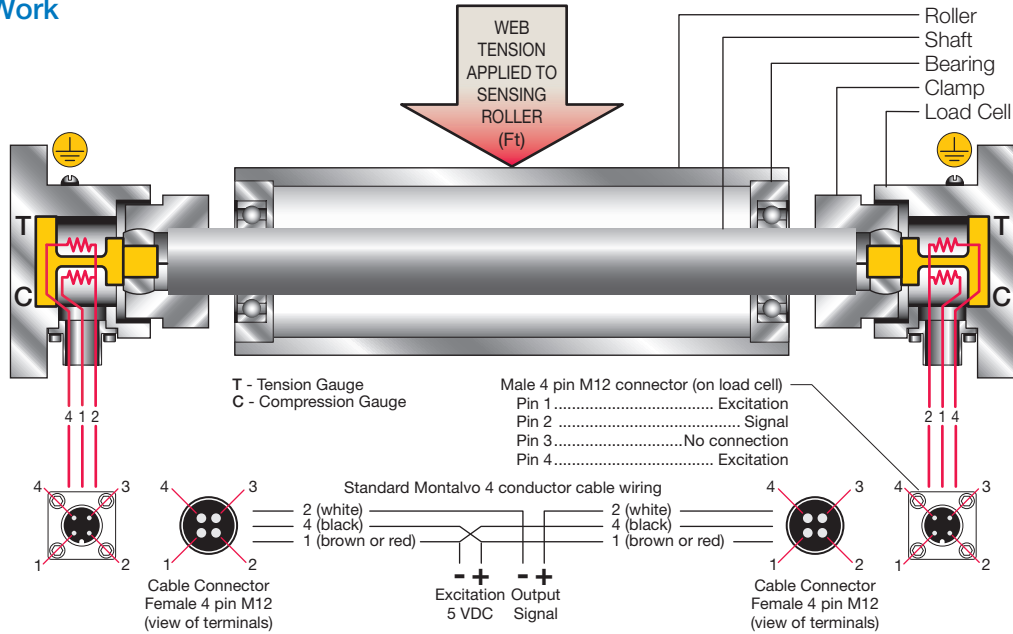
How To Specify

Series			
ES, N, or U			
Shaft / Shaft Size in or mm			
I - Dead Shaft Idler Roller consisting of the following components: Shaft Bearing Roller		Maximum shaft size Size 0 1.125" or optional 25mm Size 1 & 2 1.500" or optional 40mm Bushings available for other size shafts at no charge.	
Mount			
S, F, or P	S (standard) 	F (flange) 	P (pillow block) 
Size			
0, 1 or 2	Consider the following: Load rating, shaft size, dimensions and replacement mounting	1 Lower loads Larger shafts Drop-In replacement	2 Higher Loads Larger Rollers Larger 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 10(50), 25(125), 50(250), 75(375), 100(500), 150(750) Size 1 50(250), 75(375), 100(500), 150(750), 250(1250) Size 2 75(375), 100(500), 150(750), 250(1250), 500(2500), 1000*(5000)*	F_t points ABOVE horizon	F_t points BELOW horizon	F_t is HORIZONTAL
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			
	$LR = \frac{4P \sin(B/2) - W \cos(A)}{2}$	$LR = \frac{4P \sin(B/2) + W \cos(A)}{2}$	$LR = \frac{4P \sin(B/2)}{2}$
* For F and P mounts only. Note: It is recommended that Montalvo be contacted to ensure proper sizing.			
Example			
ES - I - F 2 - 6 - 500 lb - 1.500 in			
Series	Shaft	Mount	Size
			Shaft Size (include unit of measure in or mm) Load Rating (include unit of measure lb or N) Connector Position

Montalvo 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 - lb (N)

Size 0 10(50), 25(125), 50(250), 75(375), 100(500), 150(750)

Size 1 50(250), 75(375), 100(500), 150(750), 250(1250)

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.

Max. Bore (standard)** Size 0 1-1/8" or 25 mm std.

Size 1 1-1/2" or 40 mm std.

Size 2 1-1/2" or 40 mm std.

**Bushings available for smaller shaft sizes.

Finish stainless steel

Weight lb (kg) approximately

ES-I-S0 2.25 (1.02)

ES-I-S1 3.00 (1.37)

ES-I-S2 4.67 (2.12)

ES-I-F0 3.11 (1.41)

ES-I-F1 3.86 (1.76)

ES-I-F2 6.48 (2.95)

ES-I-P0 3.39 (1.54)

ES-I-P1 4.14 (1.88)

ES-I-P2 7.52 (3.42)

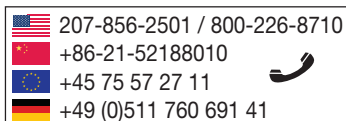
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