

N-Series

Cantilever Load Cells



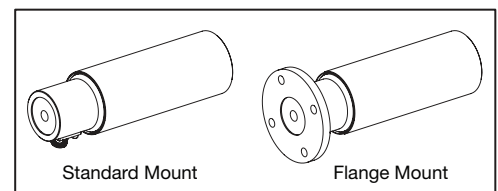
IP54

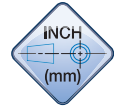
Montalvo N-Series Cantilever Load Cells

Precise, repeatable, superior tension measurement for label, film, foil, and other narrow web applications utilizing single side machine frames. Montalvo's N-Series Cantilever Load Cells feature four semiconductor strain gauges (two on each end) for a higher quality signal, sensitive to the slightest changes in tension across the entire load cell, without being affected by the position of the web on the roller. N Series are available in multiple standard diameters and roll lengths, two mounting options and a wide range of load ratings to meet the specific needs of your application.

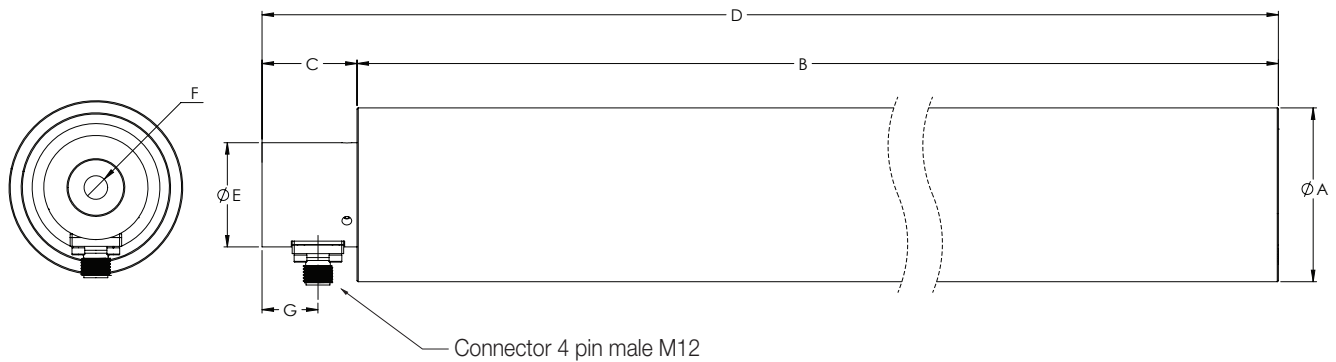
Features

- ▶ Easy Installation
- ▶ All in One System – Load Cell and Idler Roller
- ▶ Anti Deflection Design
- ▶ Eliminates Web Steering
- ▶ Radial Stops to Prevent Overload Damage - 360° protection
- ▶ Custom Rolls Widths, Diameters, and Roll Finishes Available
- ▶ Enhanced Reliability and Repeatability





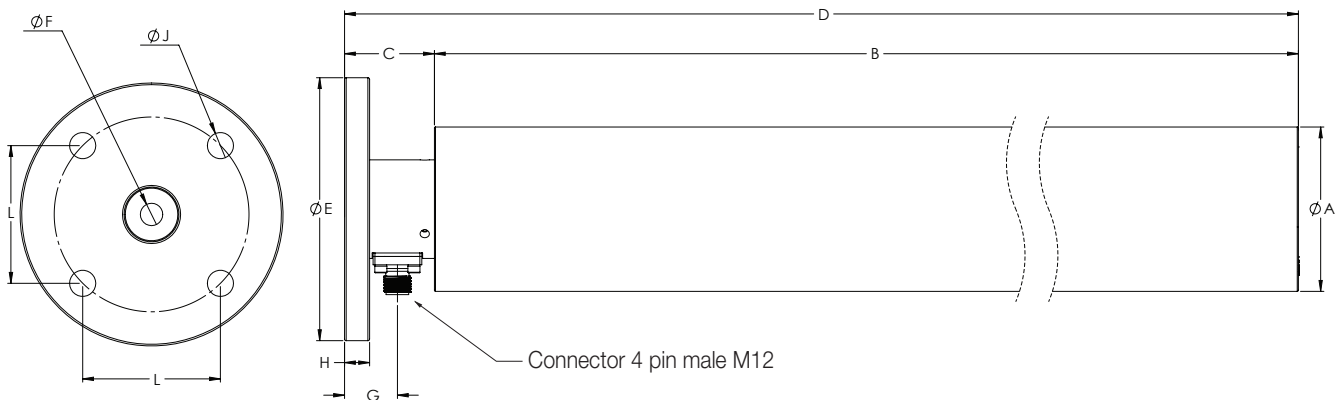
Dimensions - Standard Mount



Size	A		B					C	D	E	F	G			
N2-S	1.97 (50)	5.90 (150)	7.87 (200)	9.84 (250)	11.81 (300)	13.78* (350)*	15.75* (400)*	1.59 (40.5)	B+C (B+C)	1.57 (40)	M10 x 1.5 (15 deep)	0.91 (23)			
N3-S	2.95 (75)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)		1.61 (41)	B+C (B+C)	1.77 (45)	M12 x 1.75 (24 deep)	.95 (24)			
N4-S	3.94 (100)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	19.68 (500)	21.65 (550)	23.62 (600)	1.97 (50)	B+C (B+C)	2.56 (65)	M16 x 2.0 (32 deep)	1.08 (27.5)

* Available in 25LB (125N) Load Ratings only

Dimensions - Flange Mount



Size	A	B					C	D	E	F	G	H	J	K	L				
N2-F	1.97 (50)	5.90 (150)	7.87 (200)	9.84 (250)	11.81 (300)	13.78* (350)*	15.75* (400)*	1.59 (40.5)	B+C (B+C)	2.91 (74)	M10 x 1.5 (15 deep)	0.91 (23)	0.276 (7)	0.28 (7)	2.28 (58)	1.614 (41)			
N3-F	2.95 (75)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)		1.61 (40.9)	B+C (B+C)	4.72 (120)	M12 x 1.75 (24 deep)	.95 (24)	0.45 (11.5)	0.47 (12)	3.5 (88.9)	2.474 (63)			
N4-F	3.94 (100)	7.87 (200)	9.84 (250)	11.81 (300)	13.78 (350)	15.75 (400)	17.72 (450)	19.68 (500)	21.65 (550)	23.62 (600)	1.97 (50)	B+C (B+C)	4.72 (120)	M16 x 2.0 (32 deep)	1.08 (27.5)	0.59 (15)	0.51 (13)	3.82 (97)	2.700 (68.5)

* Available in 25LB (125N) Load Ratings only

How To Specify

Series

N, ES, U etc.

N



ES



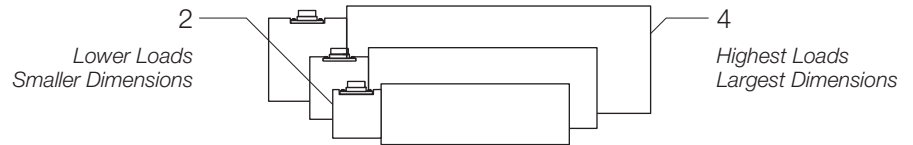
U



Size

2, 3 or 4

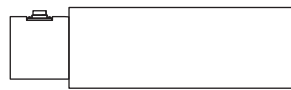
Consider the following:
 Load rating, roller length
 & dimensions



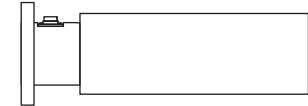
Mount

S or F

S (standard)



F (flange)

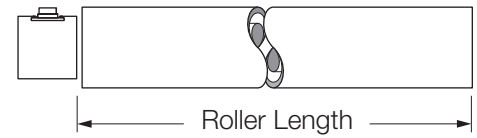


Roller Size dia x length (mm)

N2 50 x 150, 200, 250, 300, 350 or 400

N3 75 x 200, 250, 300, 350 or 400

N4 100 x 200, 250, 300, 350, 400, 450, 500, 550 or 600



Load Rating LB/N

N2 25/125, 50/250* or 100/500*

N3 25/125, 50/250, 100/500, 150/750 or 200/1000

N4 50/250, 100/500, 150/750 or 200/1000

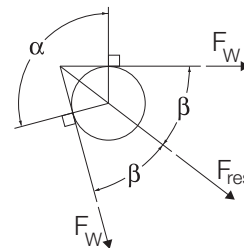
* Not available in 350 and 400 mm Roller Lengths

F_{res} = resultant force

F_w = maximum web force (total web tension)

α = wrap angle

β = angle between resultant force and web



$$\beta = 90 - 1/2 \times \alpha$$

$$F_{res} = 2 \times F_w \times \cos \beta$$

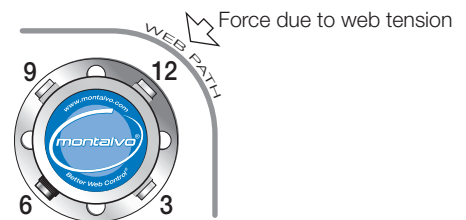
Connector Position

03, 06, 09 or **12 o'clock**

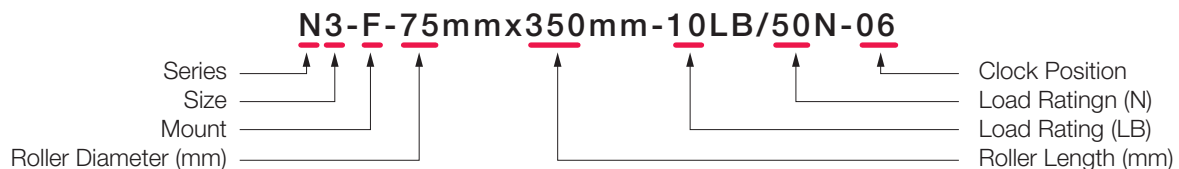
Position is relative to LOAD ARROW, which is always
 6 o'clock, as observed from end of load cell.

6 o'clock is **standard**
 3, 9 and 12 are **optional**

Load Arrow
 Must point in direction
 of force due to web tension
 (load arrow always points to 6 o'clock)



Example



EST. 1947

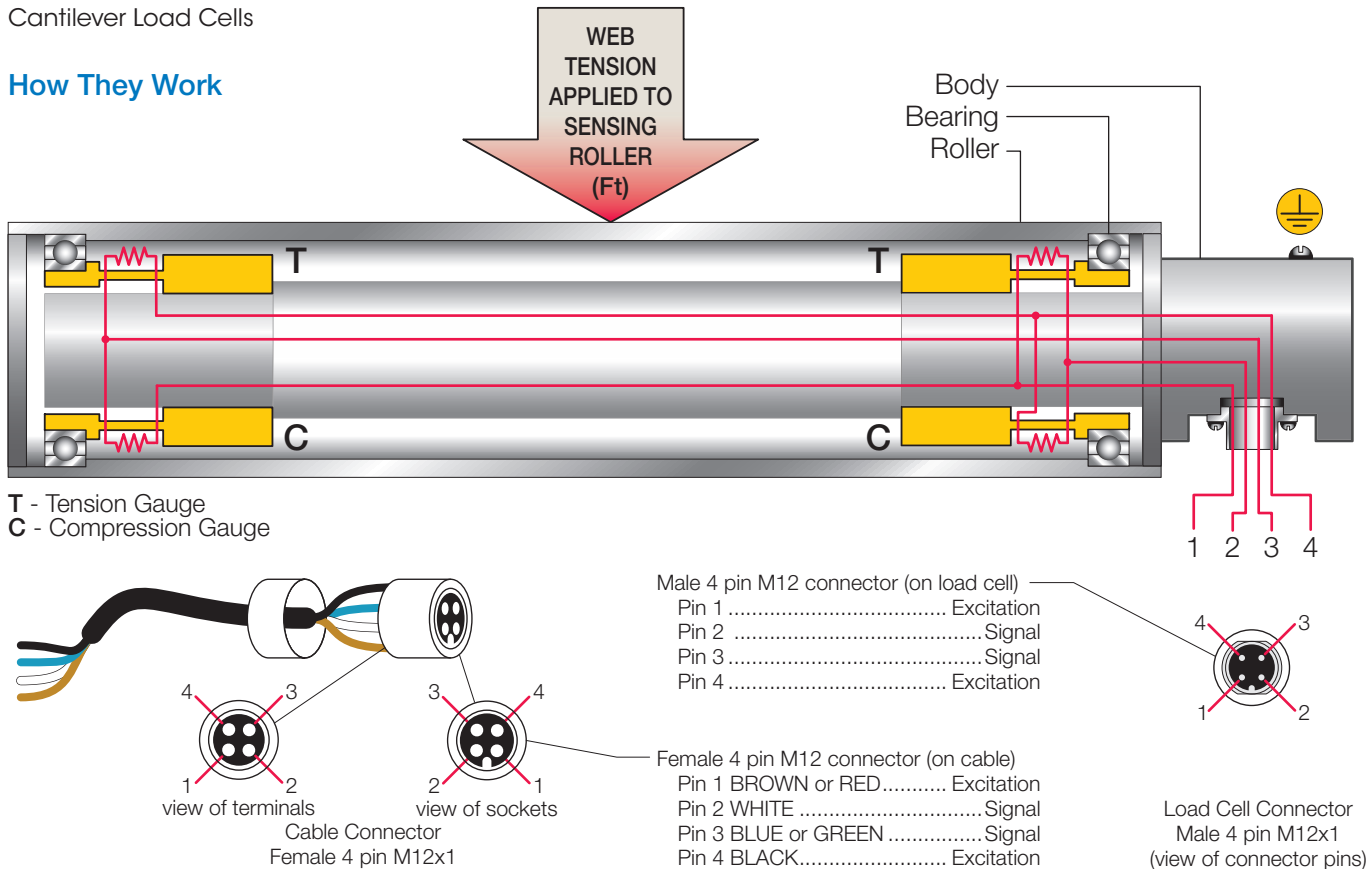
montalvo

Better Web Control®

1-800-226-8710 / info@montalvo.com / www.montalvo.com

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How They Work



Specifications

Electrical

Excitation.....	5 VDC
Output - Nominal.....	50 mV/V
Gauge Resistance.....	80 - 130 Ω
Type.....	full bridge semi-conductor
Non-Repeatability.....	±0.25% full span
Non-Linearity and hysteresis (combined)	±0.50% full span

Connector

Type.....	Male 4 pin M12
Pin 1	Excitation
Pin 2	Signal
Pin 3	Signal
Pin 4	Excitation

Loading LB (N)

Rated N2	25(125), 50(250), 100(500)*
N3	25(125), 50(250), 100(500), 150(750), 200(1000)
N4	50(250), 100(500), 150(700), 200(1000)

Overload 300% max. of rated
 * Not available in 350 and 400 mm Roller Lengths

Environmental

Classification	IP54
Temperature Compensated	14 to 131°F (-10 to 55°C)
Operating.....	-4 to 185°F (-20 to 85°C)
Effect on zero	0.015% / °C
Effect on span	0.015% / °C

Mechanical

Deflection in(mm).....	< 0.010 (0.25)
Finish Mount	stainless steel
*Roller.....	32 microinch aluminum
*Optional roller surface coatings available	

Related Montalvo Products

- Z4 Hybrid Digital Tension Controller
- S4 Digital Tension Controller
- A4 Digital Load Cell Amplifier
- M Series Analog Load Cell Amplifiers
- Tension Indicators
- and... Cables

	207-856-2501 / 800-226-8710
	+86-21-52188010
	+45 75 57 27 11
	+49 (0)511 760 691 41



The Montalvo Corporation

EST. 1947

montalvo
 Better Web Control®

50 Hutcherson Drive, Gorham, Maine 04038 USA
 Fax: 1-800-644-5097 / 207-856-2509

1-800-226-8710 / info@montalvo.com / www.montalvo.com

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