OWECON OWL250 Series Load Cell

The OWECON OWL250 Series wire, ribbon or narrow web Load Cell has our dual beam design to maximize performance and reliability. The unique dual beam design minimizes deflection. Lower deflection means fewer tracking and steering problems on your machine and greater accuracy in the control.

The unique and very compact design makes this load cell fit into all types of application and has especially an advantage when customers want to use existing rollers or pulleys.

The hollow beam design allows the shaft to go all through the machine side, easing the need for setting the web flow in multiple positions using the same shaft.

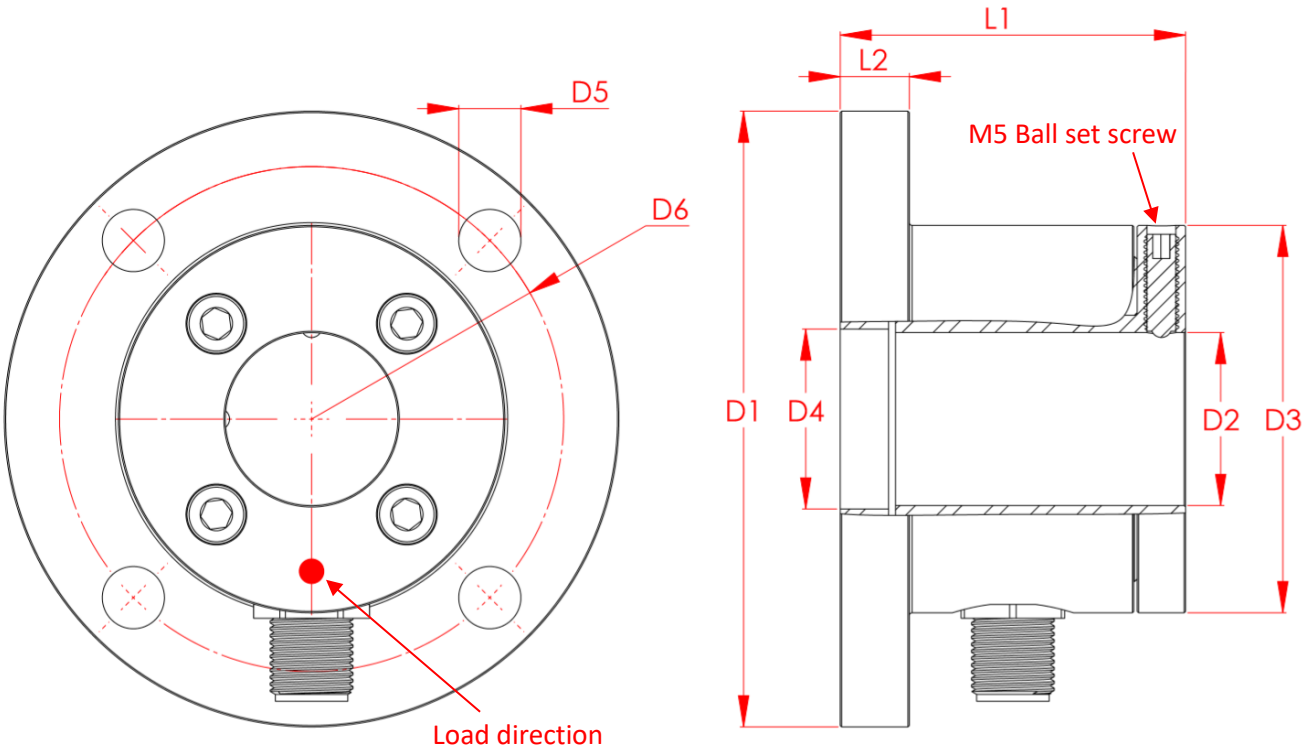
The load cell comes with an easy exchangeable shaft adaptor in multiple standard bore sizes for various shaft diameters.

The two M5 ball set screws ensures a smooth shaft exchange without use of unnecessary force or damaging the shaft surface.

Advantages:

- ✓ Compact design for installation in narrow spaces
- ✓ The designed eases the use of existing roller or pulley
- ✓ Dual beam giving lowest possible deflection
- ✓ Easy roller or pulley exchange
- ✓ Industry standard M12x1 connector. With turn able socket for L-plug
- ✓ Connector position available in 4 different positions relative to the load direction
- ✓ Overload ratings up to 5 times nominal load rating
- ✓ Ideal for cantilever narrow web, ribbon or wire applications

Dimensions for OWL250



Dimension mm									
Type		**D1**	**D2**	**D3**	**D4**	**D5**	**D6**	**L1**	**L2**
OWL250	**mm**	89	12	56	26	9	73	50	10
	mm		20						
	mm		25						

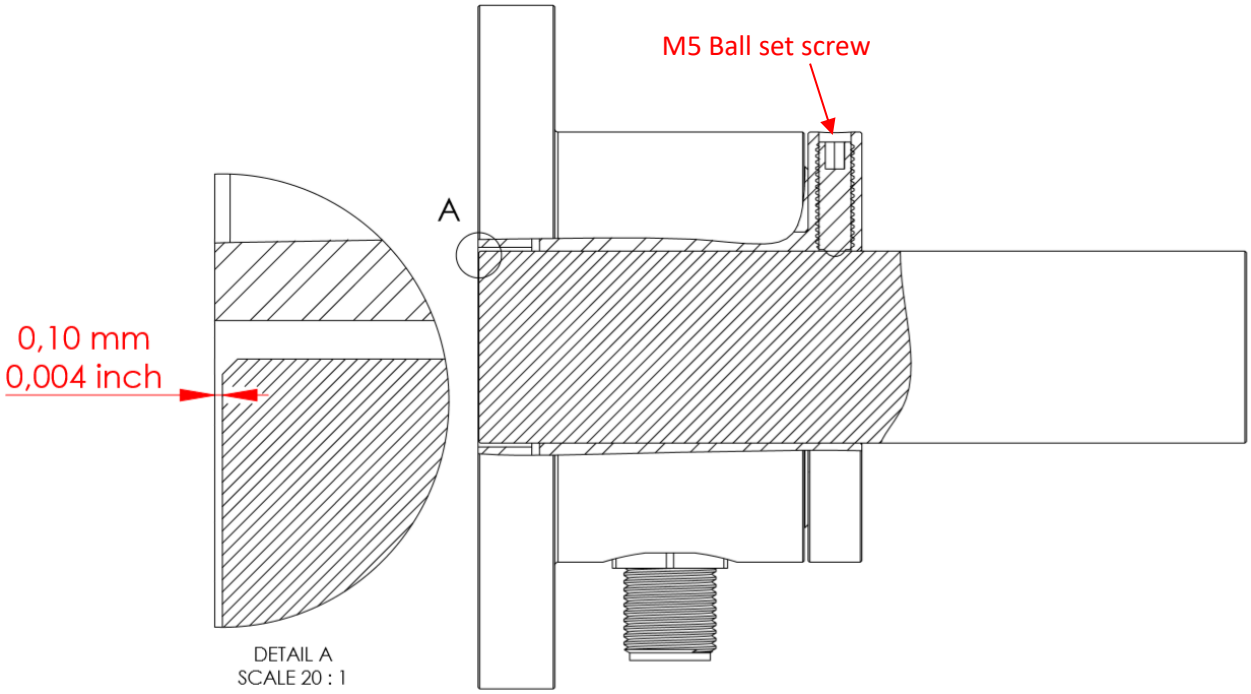
Dimension Inches									
Type		**D1**	**D2**	**D3**	**D4**	**D5**	**D6**	**L1**	**L2**
OWL250	**inch**	3,50	½”	2,20	1,02	0,35	2,87	1,97	0,39
	inch		¾”						
	inch		1”						

Load rating N and Lbs.					
OWL250	**N**	50N	125N	250N	375N
	Lbs.	11	28	56	84

Installation of OWL250

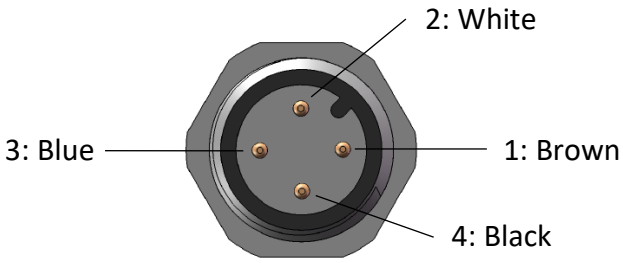
When installing the OWL250 make sure the M5 Ball set screw is loosened and does not obstruct the free passage of the shaft and never use force. If the shaft is moved all the way back to the side of the machine, make sure that the shaft is not in contact as the shaft and measuring beam must move freely in the load direction. We recommend a gap of min. 0,10 mm or 0,004 inches

When the shaft is in the correct position, the two M5 Ball set screws are tightened, but do not tighten too much. We recommend a toque of max. 2 Nm or 1,5 lb ft.



Foil gauge Full Bridge:

M12 - 4 pin male, Code A, IEC61076-2-101



One Full Bridge Foil Gauge (350 Ohm)

Specifications full bridge:

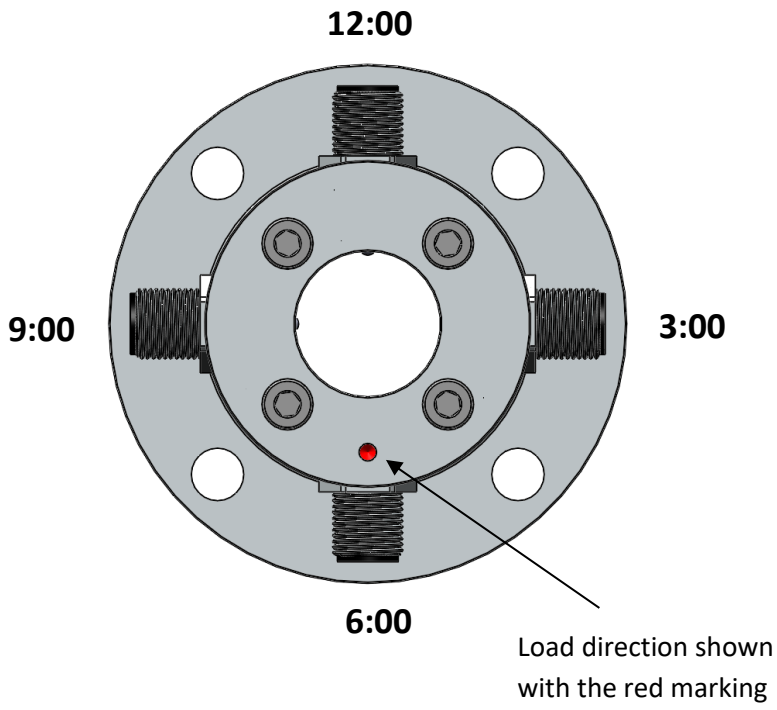
Max operating force relative to F_n 150%
Force limit relative to F_n 300%
Foil gauge resistance.....350 ohm
Foil gauge configuration.....full bridge
Supply .....10 VDC
Nominal output 1mV/V
Combined error relative to F_n .....< 0.5%
Temperature coefficient .....<0.4% / 10K
Operating temperature range ..... to 185°F) -20 to +85° C
Deflection at F_n .....(< 0.0039") < 0.1 mm

Connector type and orientation:

The Load Cells comes with an M12x1 standard connector radial oriented and with a turn able socket for better positioning when using L-plugs.

Connector position and load direction:

For the connector there are 4 possible mounting positions named as 3:00 o'clock, 6:00 o'clock, 9:00 o'clock and 12:00 o'clock, please see illustration.
The load direction is always towards the red marking and as standard this will be at 6:00 o'clock and if another position is wanted, this has to be specified when ordering.



Calculating the sizing force for OWL200 Load Cell:

The correct Load Cell load rating for an application is determined by maximum web tension, web wrap angle around the roller, and mass of the roll.

The force $\mathbf{F_{(roll)}}$ from the mass $\mathbf{m_{(roll)}}$ of the roll, is determined as

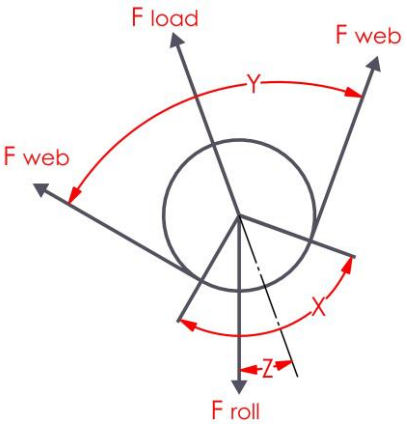
$\mathbf{F_{(roll)}} = \mathbf{m_{(roll)}} \times 9.82$ (N) (9,82 = mass acceleration m/s^2)

The force $\mathbf{F_{(Load)}}$, from the web tension $\mathbf{F_{(web)}}$, is determined as

$\mathbf{F_{(Load)}} = 2 \times \mathbf{F_{(web)}} \times \sin(X/2)$

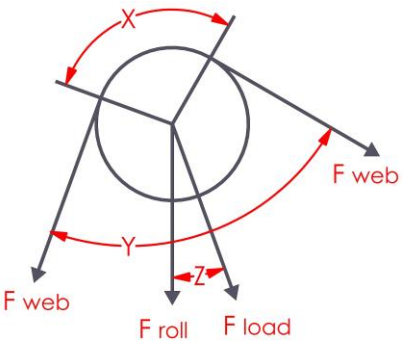
To determine the load cell size the 2 forces must be added together

Load direction upwards:



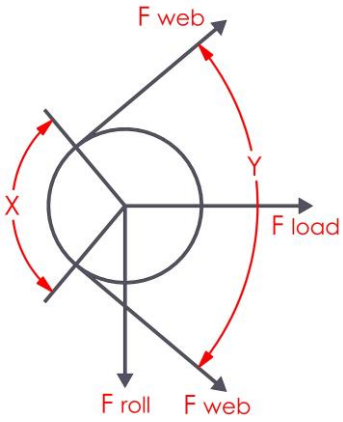
(($\mathbf{F_{(Load)}}$ x 1,5) - ($\mathbf{F_{(roll)}}$ x cos(**Z**))

Load direction downwards:



(($\mathbf{F_{(Load)}}$ x 1,5) + ($\mathbf{F_{(roll)}}$ x cos(**Z**))

Load direction sidewards:



($\mathbf{F_{(Load)}}$ x 1,5)

(1,5 = Safety factor)

Note:

The minimum load cell size has to be > $\mathbf{F_{(roll)}}$