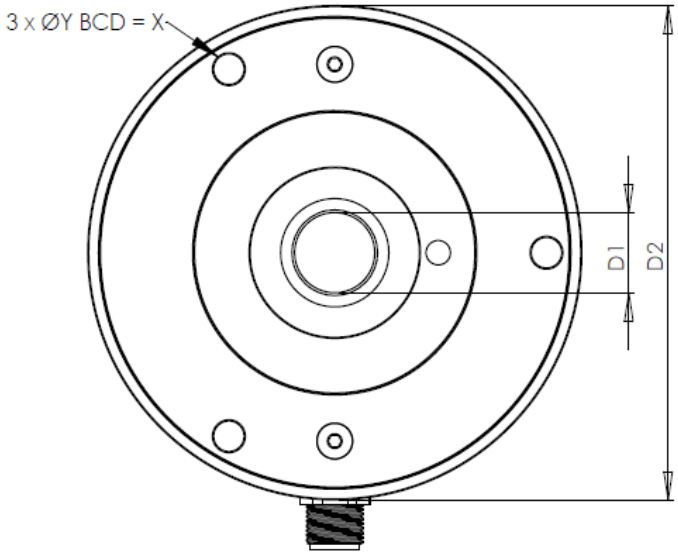
OWECON OWL100 Series Loadcell

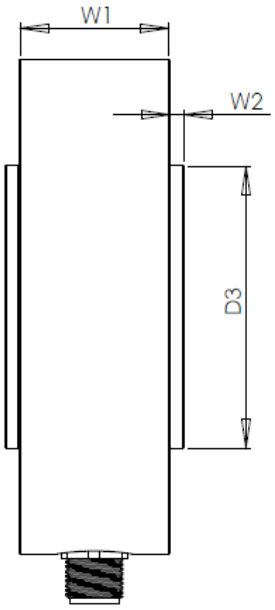
The OWECON Loadcell Type OWL-100 Series is an all new designed, slim style loadcell to meet todays demands of foil, wire and paper converting machines. Featuring a unique beam design, it is a very precise, long life product.
The OWL-100 is for use with either rotating or dead shaft rollers, is available in 2 build sizes – each offering various load ratings.
The OWL-100 Series cover a load range from 50N to 1.500N

Advantages:

- ✓ Twin Parallel Beam design ensuring high output at a minimum deflection.
- ✓ Slim profile, designed for use under tight mounting space conditions.
- ✓ All metric dimensions, stainless steel or aluminum design.
- ✓ Built-in compensation for changes in axial load caused by idler roller temperature variation.
- ✓ Semiconductor or foil strain gauge.
- ✓ Industry standard M12 connector. L – plug turnable in socket for optimum wiring ease.
- ✓ Overload ratings typical 200 – 500%.
- ✓ Price / performance competitive.

Dimensions





OWL100 Loadcells

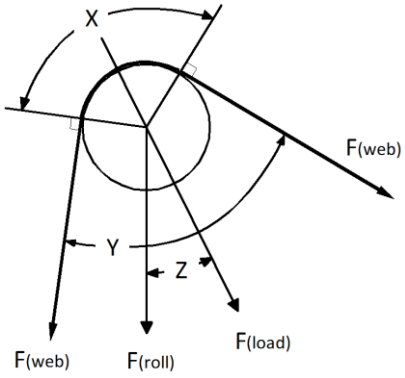
Type	Dimension mm.	D1	D2	D3	W1	W2	X	Y
OWL117		17	105	60	32	3	90	6.5
OWL125		25	125	70	34	4	105	6.5

Dimensioning the OWL100 Loadcell:

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 Cell size = ½ x $\mathbf{F_{(Load)}}$ + ½ $\mathbf{F_{(roll)}}$ x cos(**Z**) x 1,5

(1,5 = Safety factor)

Note:

The minimum load cell size has to be > ½ x $\mathbf{F_{(roll)}}$

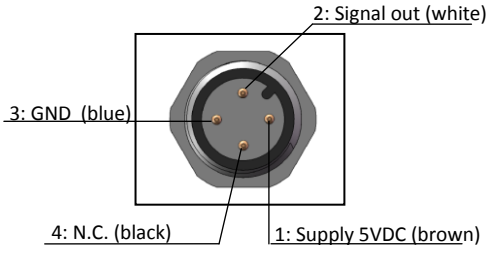
$\mathbf{m_{(roll)}}$ = The mass of the roller in kg, $\mathbf{F_{(web)}}$ = Maximum web tension, **Z** = Angle between $\mathbf{F_{(Load)}}$ and vertical, **X** = Web wrap angle = 180° - **Y°**

Specifications:

Nominal force F_n OWL117	50; 100; 200; 500; 1.000 N
Nominal force F_n OWL125	250; 500; 750; 1.000; 1.500 N
Max operating force relative to F_n	110%
Force limit relative to F_n	200 - 500%
Strain gauge resistance	80 to 120 ohm
Strain gauge configuration	half bridge
Supply	5VDC
Nominal output	50mV/V
Combined error relative to F_n	< 0.5%
Temperature coefficient	<0.4% / 10K
Operating temperature range	-20 to +85 ^{0}C
Deflection at F_n	0.1 to 0.2 mm

Electrical connector:

M12 - Male 4 pin industrial standard
(reference to wire colour)



Ordering info: OWL100 Series loadcells

Type	Description	Nom. Load	Item	Order ☒
OWL117	OWL117-50N	50N	51170500	☐
	OWL117-100N	100N	51171000	☐
	OWL117-200N	200N	51171500	☐
	OWL117-500N	500N	51172000	☐
	OWL117-1.000N	1.000N	51172500	☐
OWL125	OWL125-250N	250N	51250500	☐
	OWL125-500N	500N	51251000	☐
	OWL125-750N	750N	51251500	☐
	OWL125-1.000N	1.000N	51252000	☐
	OWL125-1.500N	1.500N	51252500	☐

Accessories

Cable 5m, 4pol, 2 plugs, F/F, straight	90080024	☐
Cable 10m, 4pol, 2 plugs, F/F, straight	90080025	☐
Cable 5m, 4pol, 2 plugs, F/F, L-plug + straight	90080011	☐
Cable 5m, 4pol, 2 plugs, M/F, straight (as extension)	90080011	☐
Cable 5m, 4pol, 1 plug, F/pigtail, straight	90080026	☐

Special cables and lengths on request.