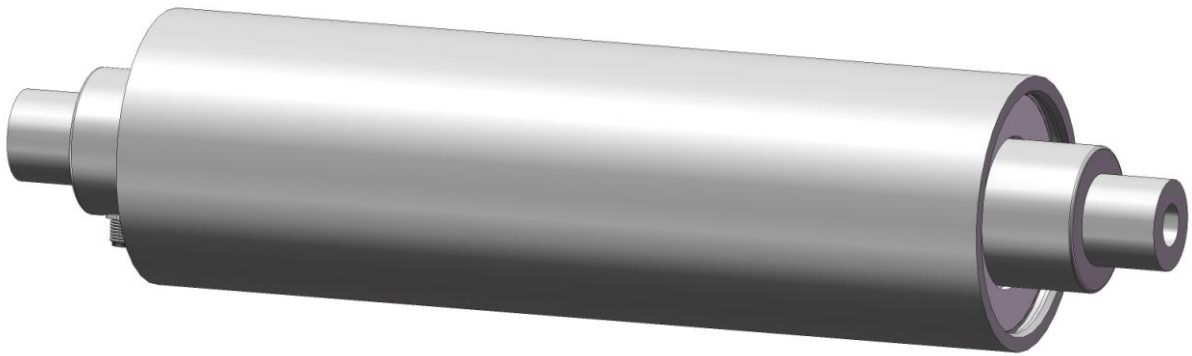


OWECON OWL500 Series Load Cell



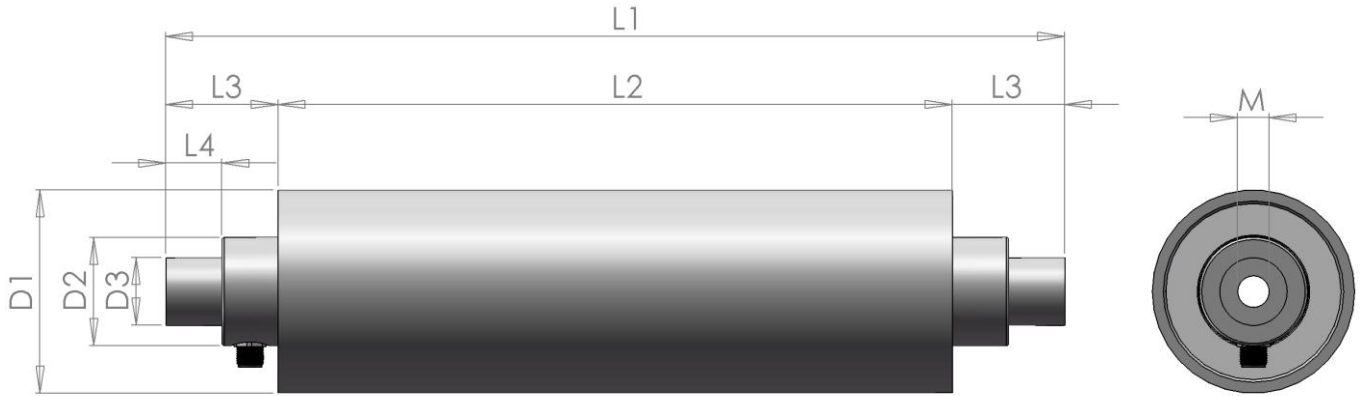
The OWECON Load cell Type OWL500 Series is an all new designed load cell to meet todays demands of foil and paper converting machines. Featuring a unique beam design, it is a very long life product
The OWL500 for two side mounting applications is available in 3 build sizes – each offering various load ratings.

The OWL500 Series cover a load range from 50N to 1.000N

Advantages:

- ✓ Compact design with a clean closed surface.
- ✓ Twin Parallel Beam design ensuring high output at a minimum deflection.
- ✓ 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.
- ✓ Stud mount and flange mount standard versions. 4 different load directions available.
- ✓ Overload ratings typical 200 – 500%
- ✓ Price / performance competitive

Dimensions



Dimension mm								
Type	D1	D2	D3	L1	L2	L3	L4	M
OWL5050	50	25	-	=L2+2*L3	See below	30	-	M10
OWL5090	90	48	30	=L2+2*L3	See below	50	25	M16
OWL5120	120	48	30	=L2+2*L3	See below	50	25	M16

Dimension mm	
Type	L2 = standard length available
OWL5050	150, 200, 250, 300, 350, 400, 500, 600
OWL5090	150, 200, 250, 300, 350, 400, 450, 500, 600, 700, 800, 900, 1.000, 1.100, 1.200
OWL5120	400, 500, 600, 700, 800, 900, 1.000, 1.100, 1.200, 1.300, 1.400, 1.500, 1.600

Other dimensions available on request

Standard loads available:

Type	Description	Nom. Load
OWL5050	OWL5050-150	50N/125N/250N
	OWL5050-200	50N/125N/250N
	OWL5050-250	50N/125N/250N
	OWL5050-300	50N/125N/250N
	OWL5050-350	50N/125N/250N
	OWL5050-400	50N/125N/250N
	OWL5050-500	125N/250N
	OWL5050-600	125N/250N

OWL5090	OWL5090-150	125N/250N/500N/1.000N
	OWL5090-200	125N/250N/500N/1.000N
	OWL5090-250	125N/250N/500N/1.000N
	OWL5090-300	125N/250N/500N/1.000N
	OWL5090-350	125N/250N/500N/1.000N
	OWL5090-400	125N/250N/500N/1.000N
	OWL5090-450	125N/250N/500N/1.000N
	OWL5090-500	125N/250N/500N/1.000N
	OWL5090-600	125N/250N/500N/1.000N
	OWL5090-700	250N/500N/1.000N
	OWL5090-800	250N/500N/1.000N
	OWL5090-900	250N/500N/1.000N
	OWL5090-1.000	250N/500N/1.000N
	OWL5090-1.100	250N/500N/1.000N
OWL5090-1.200	250N/500N/1.000N	

OWL5120	OWL5120-400	500N/1.000N
	OWL5120-500	500N/1.000N
	OWL5120-600	500N/1.000N
	OWL5120-700	500N/1.000N
	OWL5120-800	500N/1.000N
	OWL5120-900	500N/1.000N
	OWL5120-1.000	500N/1.000N
	OWL5120-1.100	500N/1.000N
	OWL5120-1.200	500N/1.000N
	OWL5120-1.300	500N/1.000N
	OWL5120-1.400	500N/1.000N
	OWL5120-1.500	500N/1.000N
	OWL5120-1.600	500N/1.000N

Dimensioning the OWL500 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 $F_{(roll)}$ from the mass $m_{(roll)}$ of the roll, is determined as

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

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

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

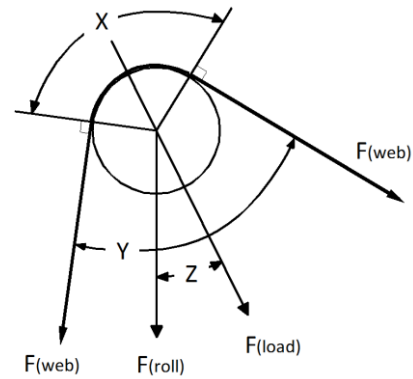
To determine the load cell size the 2 forces must be added together

$$\text{Load Cell size} = \frac{1}{2} \times F_{(Load)} + \frac{1}{2} F_{(roll)} \times \cos(Z) \times 1,5$$

(1,5 = Safety factor)

Note:

The minimum load cell size has to be $> \frac{1}{2} \times F_{(roll)}$



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

Specifications:

Nominal force F_n OWL500 up to.....	1.000N
Max operating force relative to F_n	110%
Force limit relative to F_n	200%
Strain gauge resistance.....	80 to 120 ohm
Strain gauge configuration.....	half bridge
Strain gauge supply.....	5VDC
Strain gauge nominal output	50mV/V
Foil gauge.....	350 ohm foil gauge
Foil gauge configuration.....	2 x full bridge parallel
Foil gauge supply.....	max. 10 V
Foil gauge nominal output	1mV/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 colors)

