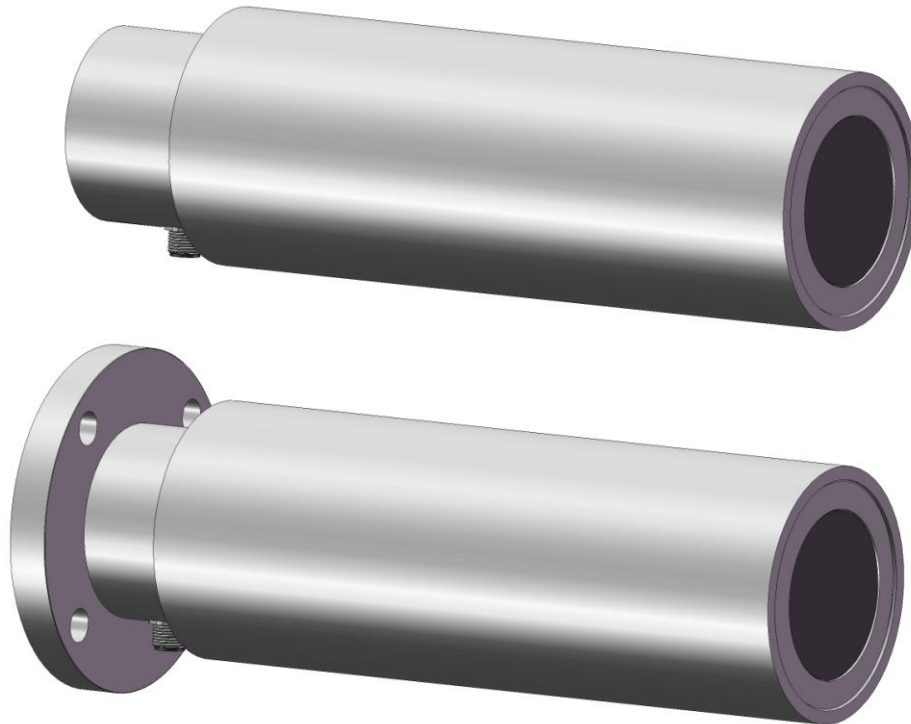


OWECON OWL400 Series Load Cell

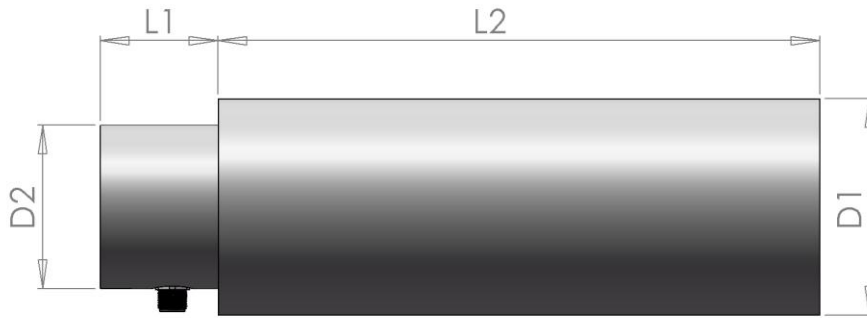


The OWECON Load cell Type OWL400 Series is an all new designed load cell to meet todays demands of foil and paper converting machines. Featuring a unique beam design, it is a very long life product
The OWL400 for one side mounting applications is available in 3 build sizes – each offering various load ratings and 2 different mounting options.
The OWL400 Series cover a load range from 50N to 1.000N

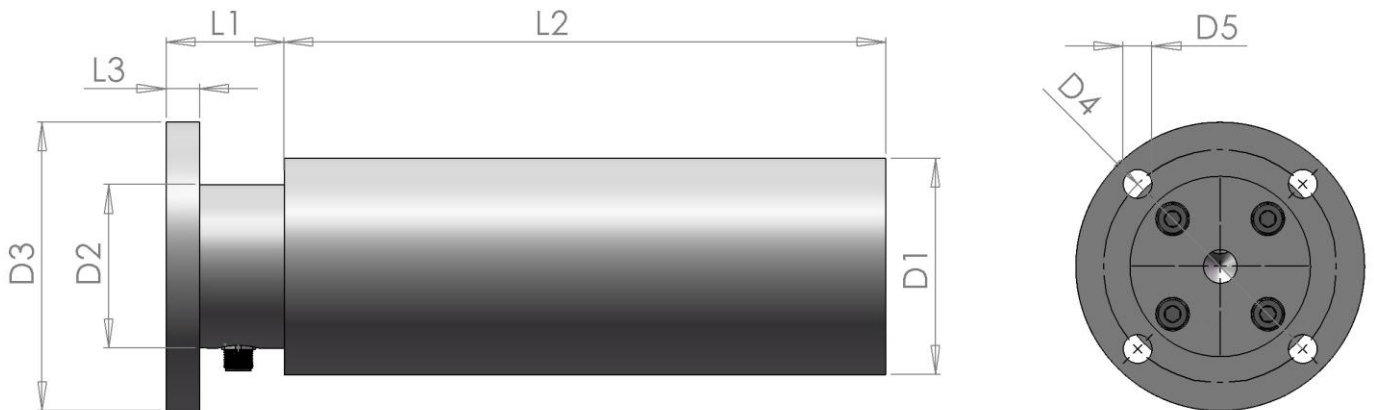
Advantages:

- ✓ 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	L1	L2	M
OWL4050	50	40	40	See below	M10
OWL4090	90	68	50	See below	M16
OWL4120	120	110	60	See below	M20



Dimension mm									
Type	D1	D2	D3	D4	D5	L1	L2	L3	M
OWL4050F	50	40	74	58	7	40	See below	8	M10
OWL4090F	90	68	120	97	12	50	See below	14	M16
OWL4120F	120	110	164	138	14	60	See below	20	M20

Dimension mm	
Type	L2 = standard length available
OWL4050 / F	150, 200, 250, 300, 350, 400
OWL4090 / F	150, 200, 250, 300, 350, 400, 450, 500
OWL4120 / F	400, 500, 600, 700, 800, 900, 1.000

Other dimensions available on request

Standard loads available:

Type	Description	Nom. Load
OWL4050	OWL4050-150	50N/125N/250N
	OWL4050-200	50N/125N/250N
	OWL4050-250	50N/125N/250N
	OWL4050-300	50N/125N/250N
	OWL4050-350	50N/125N
	OWL4050-400	50N/125N

OWL4090	OWL4090-150	125N/250N/500N/1.000N
	OWL4090-200	125N/250N/500N/1.000N
	OWL4090-250	125N/250N/500N/1.000N
	OWL4090-300	125N/250N/500N/1.000N
	OWL4090-350	125N/250N/500N/1.000N
	OWL4090-400	125N/250N/500N/1.000N
	OWL4090-450	125N/250N/500N
	OWL4090-500	125N/250N/500N

OWL4120	OWL4120-400	500N/1.000N
	OWL4120-500	500N/1.000N
	OWL4120-600	500N/1.000N
	OWL4120-700	500N/1.000N
	OWL4120-800	500N/1.000N
	OWL4120-900	500N
	OWL4120-1.000	500N

Dimensioning the OWL400 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

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

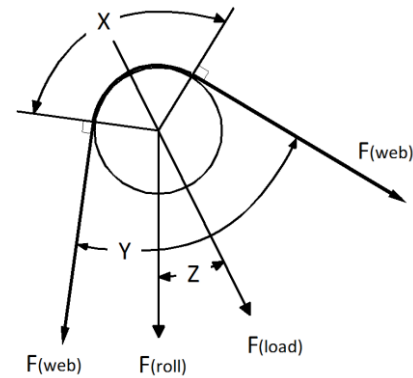
To determine the load cell size the 2 forces must be added together

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

(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 OWL400 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
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 ^o C
Deflection at F_n	0.1 to 0.2 mm

Electrical connector:

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

