

OWECON OWL200 Series Load Cell

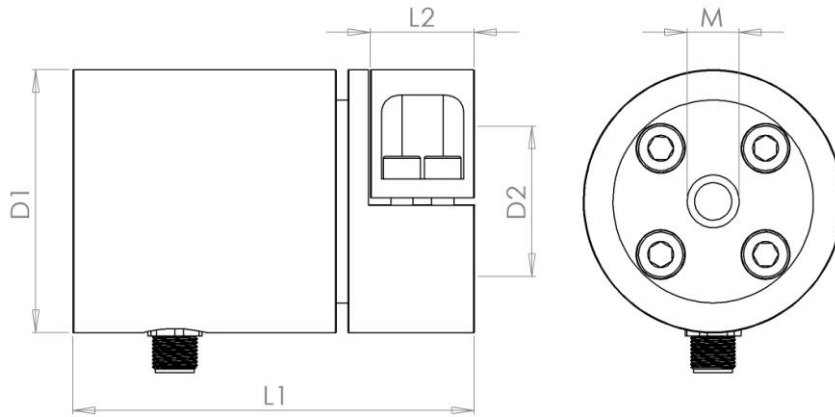


The OWECON Load cell Type OWL-200 Series is an all new designed loadcell to meet todays demands of foil and paper converting machines. Featuring a unique beam design, it is a very long life product
The OWL-200 is for use with a dead shaft idler roller, is available in 2 build sizes – each offering various load ratings and 2 different mounting options.
The OWL-200 Series cover a load range from 25N to 5000N

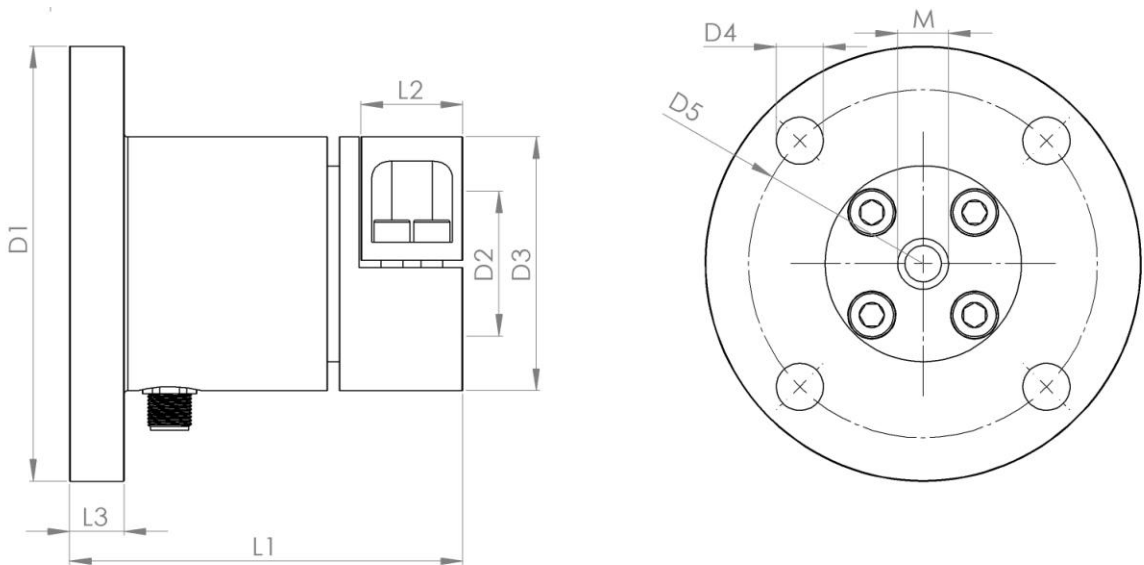
Advantages:

- ✓ Compact, sleek design, clean closed surface. All stainless steel housing, metric
- ✓ 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%
- ✓ Ribbon / thread application version available, special socket arrangement.
- ✓ Price / performance competitive

Design specifications OWL210, OWL220, OWL210F and OWL220F



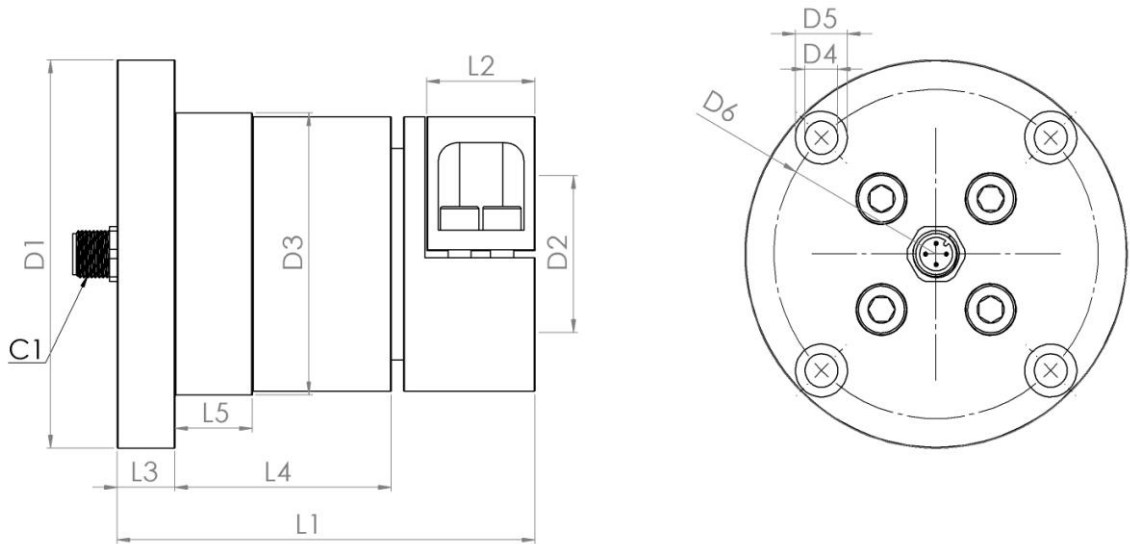
Dimension mm.					
Type	D1	D2	L1	L2	M
OWL210	50	25	75	13	M10
OWL220	70	40	108	28	M16



Dimension mm.									
Type	D1	D2	D3	D4	D5	L1	L2	L3	M
OWL210F	89	25	50	9	73	75	13	12	M10
OWL220F	120	40	70	13	96	108	28	15	M16

Size	Nominal Force F_n									
	OWL210	25N	50N	125N	250N	375N	500N	750N		
OWL220					375N	500N	750N	1.250N	2.500N	5.000N

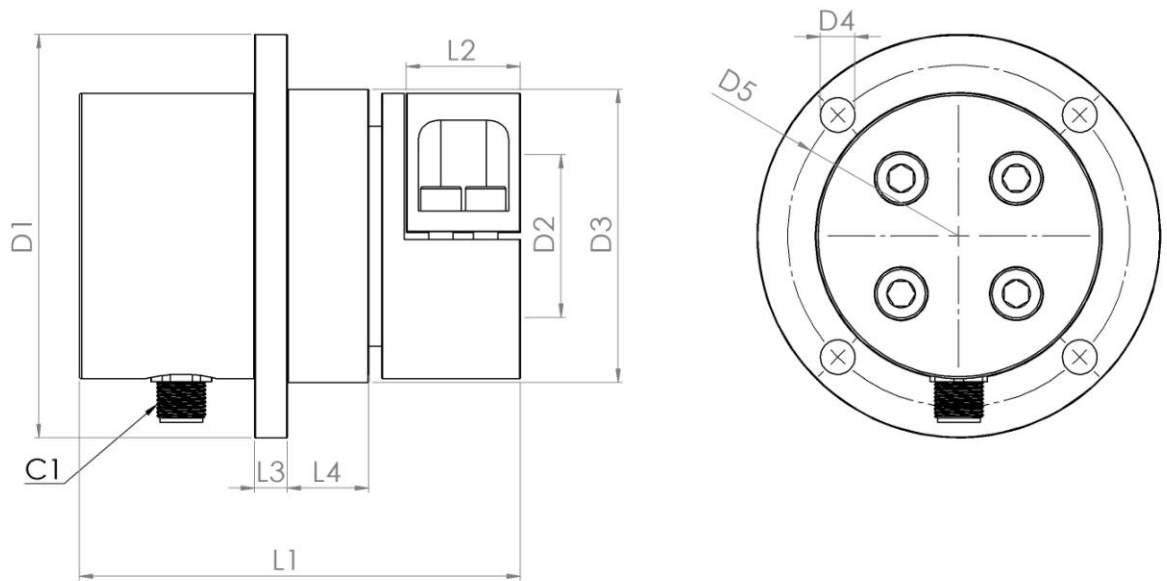
Design specifications OWL210C and OWL220C



Dimension mm.												
Type	D1	D2	D3	D4	D5	D6	L1	L2	L3	L4	L5	C1
OWL210C	79	25	52	6,5	10,5	64	75	13	12	43	20	M12x1
OWL220C	99	40	72	8,5	13,5	84	108	28	15	56	20	M12x1

Size	Nominal Force F_n									
OWL210	25N	50N	125N	250N	375N	500N	750N			
OWL220					375N	500N	750N	1.250N	2.500N	5.000N

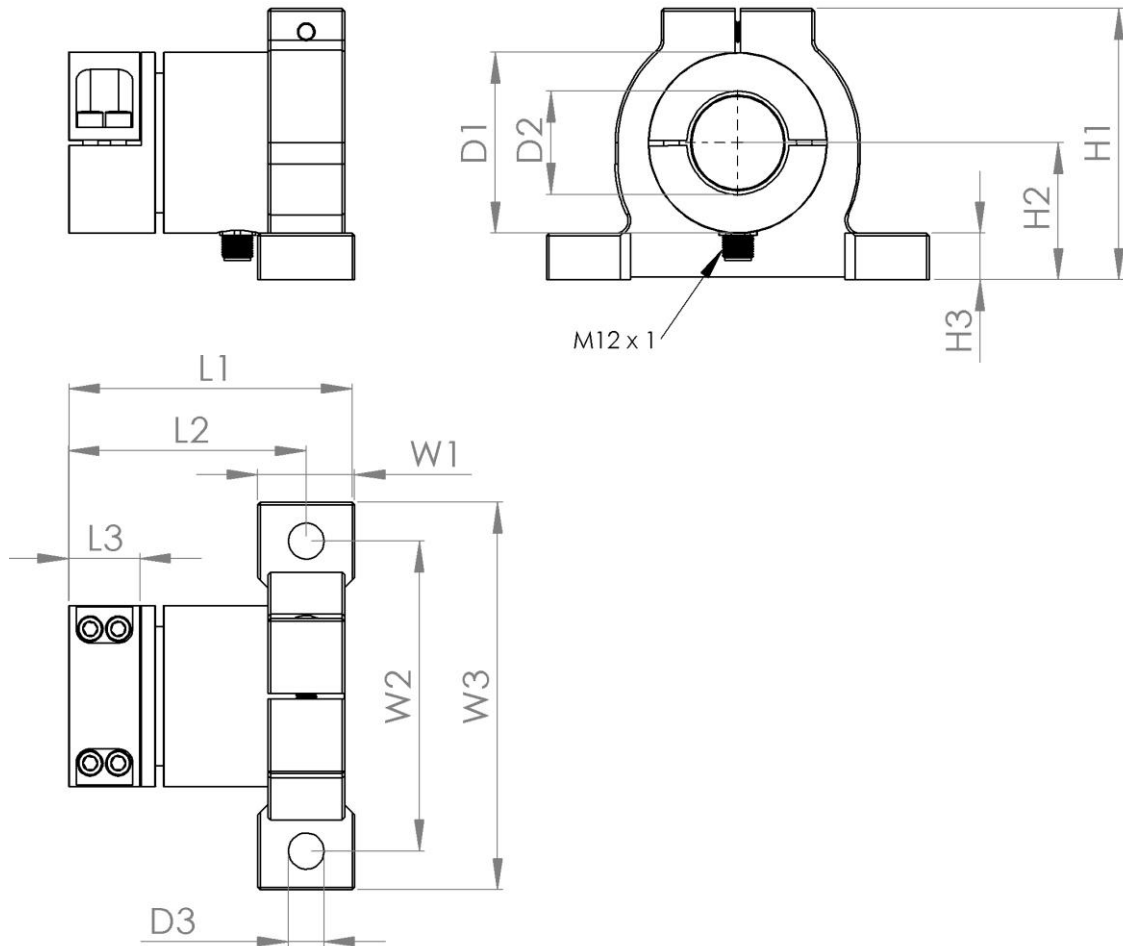
Design specifications OWL210C20 and OWL220C20



Dimension mm.										
Type	D1	D2	D3	D4	D5	L1	L2	L3	L4	C1
OWL210C20	79	25	52	6,5	64	75	13	6	20	M12x1
OWL220C20	99	40	72	8,5	84	108	28	8	20	M12x1

Size	Nominal Force F_n									
OWL210	25N	50N	125N	250N	375N	500N	750N			
OWL220					375N	500N	750N	1.250N	2.500N	5.000N

Design specifications OWL210P and OWL220P



Dimension mm.												
Type	D1	D2	D3	L1	L2	L3	H1	H2	H3	W1	W2	W3
OWL210P	50	25	9,5	75	65	13	83	37	12	20	94	116
OWL220P	70	40	14	111	93	28	105	53	18	38	120	150

Size	Nominal Force F_n									
OWL210	25N	50N	125N	250N	375N	500N	750N			
OWL220					375N	500N	750N	1.250N	2.500N	5.000N

Dimensioning the OWL200 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 $F_{(roll)}$ 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

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

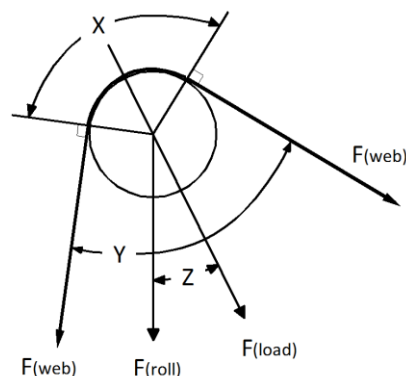
To determine the load cell size the 2 forces must be added together

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

(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:

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 ⁰ C
Deflection at F_n	0.1 to 0.2 mm

Electrical connector:

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

