

OWECON OWL-300 Series Loadcell



The OWECON Loadcell Type OWL-300 Series is an all new designed loadcell to meet todays demands of wide webs, rotating live shaft applications in paper - and converting machines. Featuring a unique beam design, it is a very long life product.

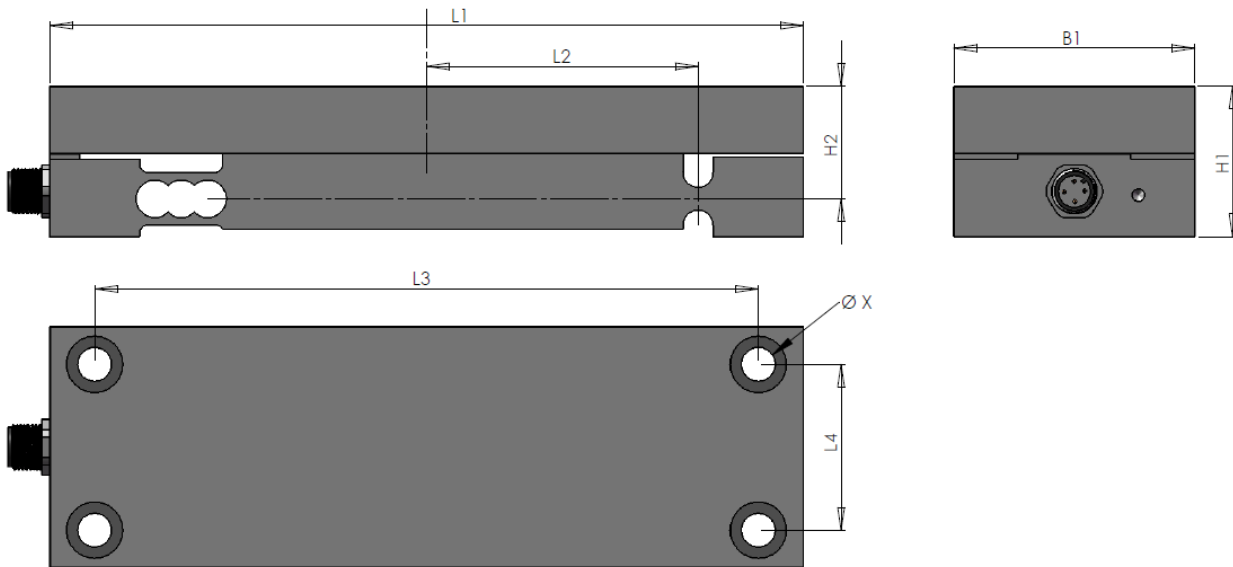
The OWL-300 is a block type loadcell for use with a top mounted pillow block bearing, for very high load applications. Various load ratings available. The OWL-310 and 320 Series cover a load range from 250 N to 25kN

Advantages:

- ✓ Compact, sleek design, clean closed surface. Aluminum housing, available in stainless steel.
- ✓ OWECON beam design ensuring very precise, repetitive performance and long life.
- ✓ All metric dimensions.
- ✓ Wash down duty, corrosive and chemical resisting
- ✓ Industry standard M12 connector.
- ✓ Easy to install.
- ✓ Price / performance competitive.

Dimensions

Outline OWL310 + 320 loadcells



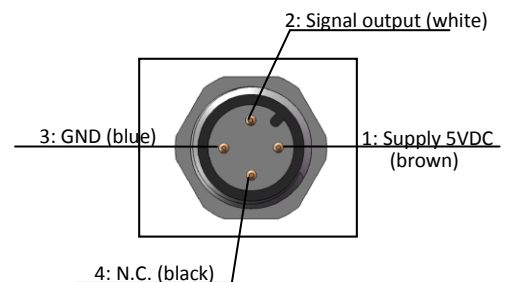
| Dimension mm | | | | | | | | | |
|--------------|-----|----|----|----|----|-----|----|----|-------------|
| Typ | L1 | L2 | H1 | H2 | B1 | L3 | L4 | X | Weight (kg) |
| OWL310 | 200 | 72 | 40 | 30 | 64 | 176 | 44 | 9 | 2.8 |
| OWL320 | 280 | 95 | 48 | 42 | 94 | 230 | 66 | 13 | 8.3 |

Specifications:

Nominal force F_n OWL310.....250; 500; 1.250; 2.500; 5.000 N
 Nominal force F_n OWL320.....5000; 12.500; 25.000; 50.000 N
 Max operating force relative to F_n150%
 Overload capacity relative to F_n typical.....500 %
 Strain gauge resistance.....80 to 130 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° C
 Deflection at F_n0.1 to 0.2 mm
 Material finish.....Aluminum

Electrical connector:

M12 - Male 4 pin industrial standard



Dimensioning the OWL300 Loadcell:

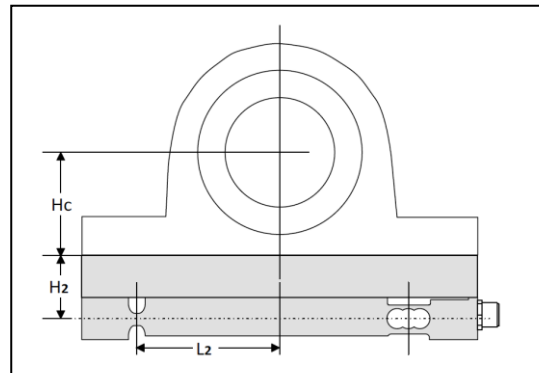
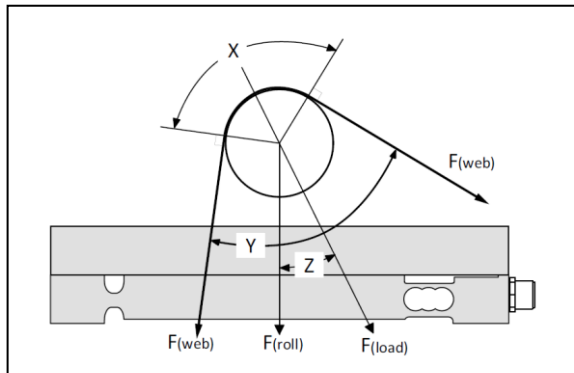
The correct Load Cell load rating for an application is determined by maximum web tension, web wrap angle around the roller, and mass of the roll.

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

Force action arm $H = H_c + H_2$



$$F_{(dim)} = \frac{2K F_{(Load)} (H \sin Z) (+/-) F_{roll} L_2}{2L_2} \quad (*: \text{ If } Z \text{ is below horizontal, use } "+"; \text{ above horizontal, use } "-")$$

Select the next higher nominal load for the right size of OWL300 loadcell.

Note:

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

For mounting situations different from horizontal or vertical, ask your OWECON team for advise.

$m_{(roll)}$ = The mass of the roller/shaft in kg; $F_{(web)}$ = Maximum web tension; Z = Angle between $F_{(Load)}$ and vertical; X = Web wrap angle; $H = H_2 + H_c$ (center height of bearing); K = Transient safety factor(1.5); L_2 = Center-Hinge distance (table page 2)

Ordering info: OWL200 Series loadcells

| Type | Description | Nom. Load | Item | Order <input checked="" type="checkbox"/> |
|--------|----------------|-----------|----------|---|
| OWL310 | OWL310-250N | 250N | 53100500 | <input type="checkbox"/> |
| | OWL310-500N | 500N | 53101000 | <input type="checkbox"/> |
| | OWL310-1.250N | 1.250N | 53101500 | <input type="checkbox"/> |
| | OWL310-2.500N | 2.500N | 53102000 | <input type="checkbox"/> |
| | OWL310-5.000N | 5.000N | 53102500 | <input type="checkbox"/> |
| OWL320 | OWL320-5.000N | 5.000N | 53200500 | <input type="checkbox"/> |
| | OWL320-12.500N | 12.500N | 53201000 | <input type="checkbox"/> |
| | OWL320-25.000N | 25.000N | 53201500 | <input type="checkbox"/> |
| | OWL320-50.000N | 50.000N | 53202000 | <input type="checkbox"/> |

Accessories:

| | | |
|---|----------|--------------------------|
| Cable 5m, 4pol, 2 plugs, F/F, straight | 90080024 | <input type="checkbox"/> |
| Cable 10m, 4pol, 2 plugs, F/F, straight | 90080025 | <input type="checkbox"/> |
| Cable 5m, 4pol, 2 plugs, F/F, L-plug + straight | 90080011 | <input type="checkbox"/> |
| Cable 5m, 4pol, 2 plugs, M/F, straight (as extension) | 90080012 | <input type="checkbox"/> |
| Cable 5m, 4pol, 1 plug, F/pigtail, straight | 90080026 | <input type="checkbox"/> |

Special cables and lengths on request.