WAT-B Series

Slim profile Load Cell

The MEROBEL Load cell Type WAT-B Series is an all new designed, slim style load cell to meet todays demands of foil, wire and paper converting machines. Featuring a unique beam design, it is a very precise, long life product.

Designed for use with either rotating or dead shaft rollers, the WAT-B is available in several sizes – each offering various load ratings.

Benefits

- Beam design ensuring high accuracy at a minimum deflection.
- Slim profile, designed for use under tight mounting space conditions
- All metric dimensions, aluminum housing (stainless steel optional)
- Industry standard M12 connector
  L-plug turnable in socket for optimum wiring ease
- Overload ratings typical up to 500%
- Back side shoulder for easy alignment

- Cable length 5 m included

Specifications

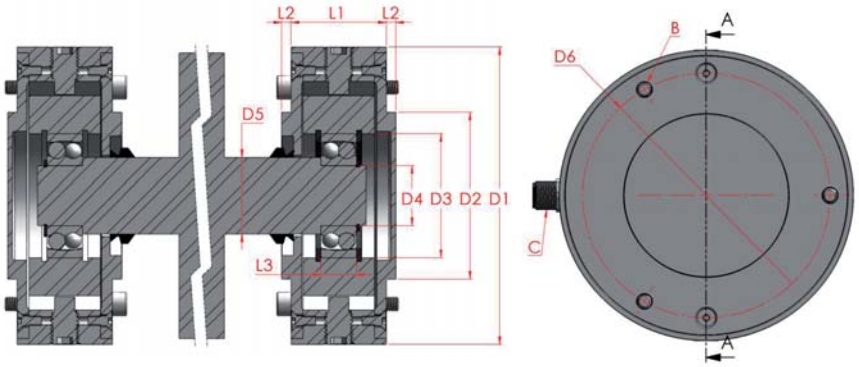
Max operating force relative to Fn	150%
Force limit relative to Fn	up to 500%
Strain gauge resistance	350 ohm
Strain gauge configuration	full bridge
Supply	5 to10 VDC
Nominal output	1mV/V
Combined error relative to Fn	< 0.5%
Temperature coefficient	<0.4% / 10K
Operating temperature range	-20 to +85 C
Deflection at Fn	< 0.1 mm

Reference	Load rating **Fn**(N)	Part N#
WAT-B 25	250	ME132626-10
WAT-B 50	500	ME132627-10
WAT-B 100	1000	ME132628-10

Dimensions

D1	D2	D3	D4	D5	D6
125 g6	70 g6	52 H7	25 j6	32	105

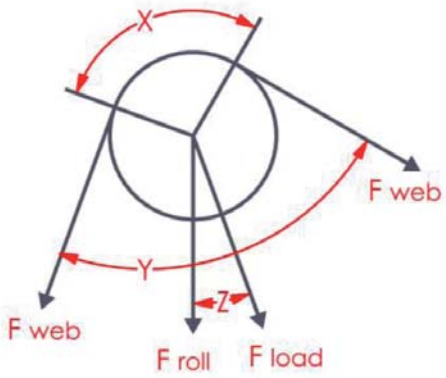
L1	L2	L3	B	C	B-Bearing
40	4	15	M6	M12 x 1	1205



Calculating the force sizing

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) x 9.82 (N)
The force F(Load), from the web tension F(web), is determined as F(Load) = 2 x F(web) x Sin(X/2)
To determine the load cell size the 2 forces must be added together



Load cell size

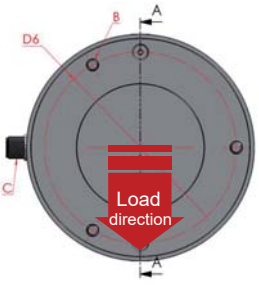
[(½ x F(Load) x 1,5*] + [½ F(roll) x cos(Z)]

* safety factor

The minimum load cell size has to be > ½ x F(roll)

m(roll) = mass of the roller in kg
F(web) = maximum web tension
Z = angle between F(Load) and vertical
X = web wrap angle = 180° - Y°

Connector orientation and wirings



* Follow L (left) and R (right) labels on load cells for easy mounting operation