

Load Cells

SIWAREX WL500S

Load cell

Overview



The bending beam load cell is particularly suitable for use in small-scale container and platform scales.

Design

The measuring element is a double bending beam made of stainless steel to which 4 strain gauges are applied.

The strain gauges are arranged so that two are stretched and two are compressed.

Under the influence of the load acting in the measuring direction, the spring bodies and therefore the friction-locked strain gauges are elastically deformed. This generates a measuring signal voltage that is proportional to the load.

Technical specifications

SIWAREX WL500S

Possible applications

Model	Container, conveyor and platform scales
Rated load/maximum load E_{max}	Bending beam
Accuracy class according to OIML R60	10, 20, 50, 100, 200, 500 kg
Max. load cell verification interval n_{LC}	C3 ¹⁾
Min. load cell verification interval V_{min}	3 000
· $E_{max} = 10, 20, 50, 100$ kg	
· $E_{max} = 200, 500$ kg	
Minimum application range $R_{min(LC)}$	$E_{max}/15\ 000$
· $E_{max} = 10, 20, 50, 100$ kg	$E_{max}/6000$
· $E_{max} = 200, 500$ kg	
Combined error F_{comb}	30 %
Repeatability F_v	50 %
Return of zero signal	0.02 % C_n
Creep error F_{cr}	0.017 % C_n
· 30 min	not applicable
Temperature effect	
· Zero signal T_{K0}	± 0.02 % C_n
· Characteristic value T_{Kc}	
Min. dead load E_{min}	± 0.017 % $C_n/5$ K
Safe load limit L_u	± 0.014 % $C_n/5$ K
Ultimate load L_d	0 % E_{max}
Safe side load L_{sq}	150 % E_{max}
Rated measuring path h_n at E_{max}	300 % E_{max}
Recommended supply voltage (range)	100 % E_{max}
Rated characteristic value C_n	5 ... 10 V DC

2.0 ± 0.02 % mV/V

Tolerance D_0 of zero signal	< ± 1.0 % C_n
Input resistance R_e	460 ± 50
Output resistance R_a	350 ± 3.5
Insulation resistance R_{is}	5 000 M at 50 V DC
Rated temperature range B_n	-10 ... +40 °C
Operating temperature range B_u	-35 ... +65 °C
Storage temperature range B_s	-35 ... +65 °C
Sensor material (DIN)	Stainless steel
Degree of protection according to EN 60529; IEC 60529	IP68
Max. tightening torque of the fixing screws	
· $E_{max} = 10, 20, 50, 100, 200$ kg	23 Nm
· $E_{max} = 500$ kg	70 Nm
Current calibration	Standard

Cable connection

Function	Color
· EXC + (supply +)	· Green
· EXC - (supply -)	· Black
· SIG + (measured signal +)	· White
· SIG - (measured signal -)	· Red
· Screening	· Transparent

¹⁾ OIML type approval for SIWAREX WL500S 10 kg available soon