

Load Cells SIWAREX R350

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 R350

Possible applications	Container, conveyor and platform scales
Model	Bending beam
Rated load/maximum load E_{max}	10/20/50/100/200/350 kg
Accuracy class acc. to OIML R60	C3
Max. load cell verification intervals n_{LC}	3 000
Min. load cell verification intervals V_{min}	$E_{max}/15\ 000$
Minimum application range $R_{min(LC)}$	20 %
Combined error F_{comb}	$\pm 0.02\ % C_n$
Repeatability F_V	$\pm 0.01\ % C_n$
Return of zero signal	$\pm 0.0167\ % C_{n1}$
Creep error F_{cr}	
· 30 min	$\pm 0.0245\ % C_{n1}$
· 20 ... 30 min	$\pm 0.0053\ % C_{n1}$
Temperature effect	
· Zero signal T_{K0}	$\pm 0.0045\ % C_n/5K$
· Characteristic value T_{Kc}	$\pm 0.0045\ % C_n/5K$
Min. dead load E_{min}	0 % E_{max}
Safe load limit L_u	150 % E_{max}
Ultimate load L_d	300 % E_{max}
Safe side load L_{iq}	100 % E_{max}
Rated measuring path h_m at E_{max}	$0.3 \pm 0.03\ mm$
Supply voltage U_{sr} (reference value)	10 V
Supply voltage (range)	5 ... 15 V
Rated characteristic value C_n	2 mV/V
Tolerance D_c of characteristic value	$\pm 1\ %$
Tolerance D_0 of zero signal	$\pm 1.0\ % C_n$

Input resistance R_e	460 ± 50
Output resistance R_a	350 ± 3.5
Insulation resistance R_{is}	5 000 M
Rated temperature range B_n	-10 ... +40 °C
Operating temperature range B_u	-40 ... +80 °C
Storage temperature range B_s	-40 ... +90 °C
Sensor material (DIN)	Stainless steel, mat. no. 1.4542
Degree of protection to EN 60529; IEC 60529	IP66/IP68
Max. tightening torque of the fixing screws	23 Nm
Current calibration ²⁾	Standard
Ex protection to ATEX (optional)	II 2 G EEx ib IIC T6/T4 II 3 G EEx nA/nL IIC T6/T4 II 1D/2D/3D T 70 °C

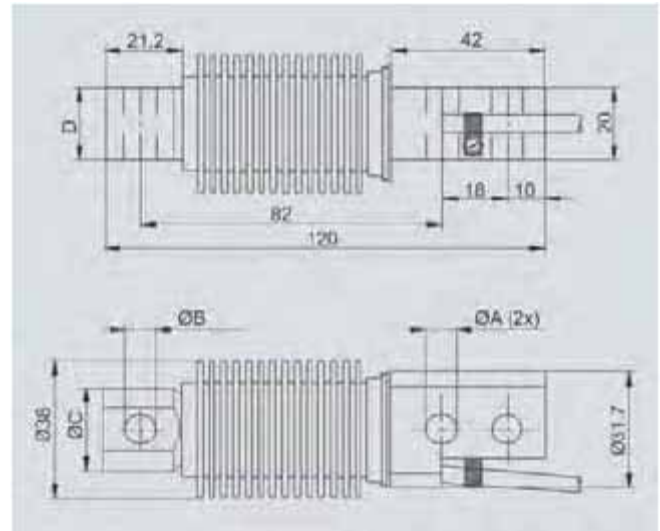
Cable connection

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

¹⁾ For rated temperature -10 ... +40 °C.

²⁾ "Current calibration"; rated characteristic value and output resistance are adjusted so that the output current is calibrated within 0.05 % of a reference value. This makes it easier to connect several load cells in parallel.

Dimensional drawings



Rated load $\varnothing A$	$\varnothing B$	$\varnothing C$	D
10 ... 200 kg	8.2	23	20
350 kg	10.3	24	19

SIWAREX R350, dimensions in mm