

Load Cells

Compression load cells SIWAREX WL270 CP-S SA

Load cell

Overview



The compression load cell is particularly suitable for implementation in container, hopper and vehicle scales.

Design

The measuring element is a solid cylinder made of stainless steel to which 4 strain gauges are applied.

The load which acts centrally in the measuring direction causes the spring bodies and therefore the friction-locked strain gauges to be elastically deformed. This generates a measuring signal voltage that is proportional to the load.

Technical specifications

| SIWAREX WL270 CP-S SA | |
|---|---|
| Possible applications | Vehicle scales, overhead rail scales, hopper scales |
| Model | Compression load cell |
| Rated load/maximum load E_{max} | <ul style="list-style-type: none"> • 0.5 t (0.49 tn. L.) • 1 t (0.98 tn. L.) • 2 t (1.97 tn. L.) • 5 t (4.42 tn. L.) • 10 t (9.84 tn. L.) • 20 t (19.68 tn. L.) • 30 t (29.53 tn. L.) • 50 t (49.21 tn. L.) |
| Accuracy class according to OIML R60 | C3 ¹⁾ |
| Max. load cell verification intervals n_{lc} | 3 000 |
| Min. load cell verification intervals V_{min} | $E_{max}/10\ 000$ |
| Minimum application range $R_{min(lc)}$ | 30% |
| Combined error F_{comb} | $\pm 0.02\% C_n$ |
| Repeatability F_v | Not applicable |
| Creep error F_{cr} | • 30 min |
| Temperature effect | $\pm 0.023\% C_n$ |
| • Zero signal T_{Ko} | 0.023% $C_n/5\ K$ |
| • Characteristic value T_{Kc} | 0.017% $C_n/5\ K$ |
| Min. dead load E_{min} | 0 kg |
| Safe load limit L_u | 150% E_{max} |

SIWAREX WL270 CP-S SA

| | |
|---|---------------------------------|
| Ultimate load L_d | 150% E_{max} |
| Safe side load L_{Iq} | 75% E_{max} |
| Rated measuring path h_n at E_{max} | 0.5 mm |
| Recommended supply voltage (range) | 5 ... 12 V DC |
| Rated characteristic value C_n | $2.0 \pm 0.02\ mV/V$ |
| Tolerance D_0 of zero signal | $\leq \pm 1.0\% C_n$ |
| Input resistance R_e | $700\ \Omega \pm 7\ \Omega$ |
| Output resistance R_a | $700\ \Omega \pm 7\ \Omega$ |
| Insulation resistance R_{is} | 5 000 M Ω at 50 V DC |
| Rated temperature range B_{tn} | -10 ... +40 °C (-14 ... 104 °F) |
| Operating temperature range B_{tu} | -35 ... +65 °C (-31 ... 149 °F) |
| Storage temperature range B_{ts} | -35 ... +65 °C (-31 ... 149 °F) |
| Sensor material | Stainless steel |
| Degree of protection according to EN 60529; IEC 60529 | IP68 |

Cable connection

| Function | Color |
|-----------------------------|-------------|
| • EXC + (supply +) | red |
| • EXC - (supply -) | black |
| • SIG + (measured signal +) | green |
| • SIG - (measured signal -) | white |
| • Screening | transparent |

Selection and ordering data

Article No.

Load cells type WL270 CP-S SA

[↗](#) **7MH5108-**

Legal-for-trade according to OIML R60 to 3000d, 15 m connecting cable (49.21 ft)

D 0

[↗](#) Click on the Article No. for the online configuration in the PIA Life Cycle Portal.

Rated load

| | |
|-----------------------------------|------------|
| 0.5 t (0.49 tn. L.) ¹⁾ | 3 P |
| 1 t (0.98 tn. L.) ¹⁾ | 4 A |
| 2 t (1.97 tn. L.) ¹⁾ | 4 G |
| 5 t (4.92 tn. L.) ¹⁾ | 4 P |
| 10 t (9.84 tn. L.) | 5 A |
| 20 t (19.68 tn. L.) | 5 G |
| 30 t (29.63 tn. L.) | 5 K |
| 50 t (49.21 tn. L.) | 5 P |

Explosion protection

| | |
|--|----------|
| Without | 0 |
| Explosion protection for zones 0, 1, 2, 20, 21, 22 | 1 |

¹⁾ SIWAREX WL270 CP-S SA 0.5 t, 1 t, 2 t and 5 t are not approved for legal-for-trade operation.