

# Load Cells

## SIWAREX WL5T

Load cell

### Overview



The shear beam load cell is particularly suitable for implementation in container, overhead rail conveyor and platform scales.

### Design

The measuring element is a shear tension spring made of stainless steel to which strain gauges are applied. The strain gauges are arranged at 45° to the longitudinal axis on the side of the spring body and are therefore subject to shear forces. 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 WL5T

Possible applications	Container, conveyor, overhead rail and platform scales
Model	Shear beam
Rated load/maximum load $E_{max}$	0.5, 1, 2, 5 t
Accuracy class according to OIML R60	C3 <sup>1)</sup>
Max. load cell verification interval $n_{LC}$	3 000
Min. load cell verification interval $V_{min}$	
· $E_{max} = 500$ kg	$E_{max}/10\ 000$
· $E_{max} = 1, 2, 5$ t <sup>1)</sup>	$E_{max}/15\ 000$
Minimum application range $R_{min(LC)}$	
· $E_{max} = 500$ kg	30 %
· $E_{max} = 1, 2, 5$ t	20 %
Combined error $F_{comb}$	± 0.02 % $C_n$
Repeatability $F_v$	± 0.02 % $C_n$
Creep error $F_{cr}$	
· 30 min	± 0.02 % $C_n$
Temperature effect	
· Zero signal $T_{K0}$	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 % $E_{max}$
Ultimate load $L_d$	300 % $E_{max}$
Safe side load $L_{sq}$	100 % $E_{max}$
Rated measuring path $h_n$ at $E_{max}$	
· $E_{max} = 500$ kg	0.13 mm
· $E_{max} = 1$ t	0.21 mm
· $E_{max} = 2$ t	0.29 mm
· $E_{max} = 5$ t	0.38 mm

Supply voltage (range)	5 ... 12 V DC
Rated characteristic value $C_n$	2.0 ± 0.002 mV/V
Tolerance $D_0$ of zero signal	± 1.0 % $C_n$
Input resistance $R_i$	1000 ± 10
Output resistance $R_o$	1004 ± 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
Recommended tightening torque of the fixing screws	
· $E_{max} = 0.5, 1, 2$ t	150 Nm
· $E_{max} = 5$ t	550 Nm

#### Cable connection

Function	Color
· EXC +	· Green
· EXC -	· Black
· SIG +	· White
· SIG -	· Red
· Shield	· Transparent

<sup>1)</sup> OIML type approval for SIWAREX WL5T 5 t available soon