

## Overview



The SIWAREX WL230 SB-S CA shear beam load cell is made of special nickel-plated steel. The 100 kg (220.46 lb) and 250 kg (551.16 lb) load classes are implemented as bending beams.

The WL230 SB-S CA load cells are especially suited for platform scales and hopper scales where it is easy to introduce the load into the load cell by means of an adjustable foot. The load cell is available in rated loads from 100 kg to 10 t (220.46 lb ... 0.98 tn l.). This means that scales with multiple weighing ranges can be equipped with a single cell type.

The load cells are legal-for-trade according to OIML R-60. They are available in accuracy classes C3, C4 and 5.

## Design

The measuring element is a spring body made of special steel. Due to the galvanic coating of nickel and the IP67 degree of protection it is suitable for use in harsh environments.

## Technical specifications

SIWAREX WL230 SB-S CA	
<b>Possible applications</b>	<ul style="list-style-type: none"> <li>Platform scales</li> <li>Hopper scales</li> </ul>
<b>Type of construction</b>	<ul style="list-style-type: none"> <li>Bending beam up to rated load 250 kg (551.16 lb)</li> <li>Shear beam from rated load 500 kg (1 102.31 lb)</li> </ul>
<b>Loads</b>	
Rated load $E_{max}$ .	<ul style="list-style-type: none"> <li>100 kg (220.46 lb)</li> <li>250 kg (551.16 lb)</li> <li>500 kg (1 102.31 lb)</li> <li>1 t (0.98 tn. l.)</li> <li>2 t (1.97 tn. l.)</li> <li>3 t (2.95 tn. l.)</li> <li>5 t (4.92 tn. l.)</li> <li>10 t (9.84 tn. l.)</li> </ul>
Minimum initial loading $E_{min}$	0 kg
Max. working load $L_u$	150% $E_{max}$ .
Breaking load $L_d$	300% $E_{max}$ .
Safe side load $L_{Iq}$	100% $E_{max}$
<b>Measurement characteristic values</b>	
Deflection $h_n$ at $E_{max}$	
<ul style="list-style-type: none"> <li><math>E_{max} = 100</math> kg (220.46 lb)</li> <li><math>E_{max} = 250</math> kg (551.16 lb)</li> <li><math>E_{max} = 500</math> kg (1 102.31 lb)</li> <li><math>E_{max} = 1</math> t (0.98 tn. l.)</li> <li><math>E_{max} = 2</math> t (1.97 tn. l.)</li> <li><math>E_{max} = 3</math> t (2.95 tn. l.)</li> <li><math>E_{max} = 5</math> t (4.92 tn. l.)</li> <li><math>E_{max} = 10</math> t (9.84 tn. l.)</li> </ul>	<ul style="list-style-type: none"> <li>0.17 mm</li> <li>0.15 mm</li> <li>0.32 mm</li> <li>0.63 mm</li> <li>1.2 mm</li> <li>0.9 mm</li> <li>0.6 mm</li> <li>0.8 mm</li> </ul>
Rated characteristic value $C_n$	$3.0 \pm 0.003$ mV/V
Tolerance $D_0$ of zero signal	$\leq \pm 1.0\%$ $C_n$

## SIWAREX WL230 SB-S CA

Max. scale interval $n_{LC}$	
<ul style="list-style-type: none"> <li>For accuracy class OIML C3</li> <li>For accuracy class OIML C4</li> <li>For accuracy class OIML C5</li> </ul>	<ul style="list-style-type: none"> <li>3 000</li> <li>4 000</li> <li>5 000</li> </ul>
Min. scale interval $V_{min}$	
<ul style="list-style-type: none"> <li>At <math>E_{max}</math> 100 kg ... 10 t (220.46 lb ... 9.84 tn. l.) and accuracy class OIML C3</li> <li>At <math>E_{max}</math> 100 kg ... 10 t (220.46 lb ... 9.84 tn. l.) and accuracy class OIML C4</li> <li>At <math>E_{max}</math> 100 kg ... 2 t (220.46 lb ... 1.97 tn. l.) and accuracy class OIML C5</li> <li>At <math>E_{max}</math> 3 t ... 10 t (2.95 ... 9.84 tn. l.) and accuracy class OIML C5</li> </ul>	<ul style="list-style-type: none"> <li><math>E_{max}/10\ 000</math></li> <li><math>E_{max}/15\ 000</math></li> <li><math>E_{max}/20\ 000</math></li> <li><math>E_{max}/18\ 000</math></li> </ul>
Combined error $F_{comb}$	
<ul style="list-style-type: none"> <li>For accuracy class OIML C3</li> <li>For accuracy class OIML C4</li> <li>For accuracy class OIML C5</li> </ul>	<ul style="list-style-type: none"> <li><math>\leq \pm 0.023\%</math> <math>C_n</math></li> <li><math>\leq \pm 0.018\%</math> <math>C_n</math></li> <li><math>\leq \pm 0.014\%</math> <math>C_n</math></li> </ul>
Creep error $F_{cr}$	
<ul style="list-style-type: none"> <li>30 min</li> </ul>	$\leq \pm 0.015\%$ $C_n$
<b>Electrical characteristic values</b>	
Recommended supply voltage	5 ... 12 V DC
Maximum supply voltage	18 V DC
Input resistance $R_e$	$350 \pm 3.5 \Omega$
Output resistance $R_a$	$350 \pm 3.5 \Omega$
Insulation resistance $R_{is}$	$\geq 5\ 000$ M $\Omega$ at 50 V DC
<b>Connection and ambient conditions</b>	
Rated temperature range $B_{rn}$	-10 ... +40 °C
Operating temperature range $B_{lu}$	-35 ... +65 °C
Storage temperature range $B_{ls}$	-40 ... +80 °C
Sensor material (DIN)	Steel, nickel-plated
Degree of protection acc. to EN 60529	IP67
Recommended tightening torque of the fixing screws	
<ul style="list-style-type: none"> <li>For M12</li> <li>For M18</li> <li>For M24</li> </ul>	<ul style="list-style-type: none"> <li>75 Nm</li> <li>500 Nm</li> <li>750 Nm</li> </ul>
Length of the connecting cable (four-core)	
<ul style="list-style-type: none"> <li>For rated loads up to 2 t</li> <li>For rated loads more than 2 t</li> </ul>	<ul style="list-style-type: none"> <li>Length 4 m (13.1 ft)</li> <li>Length 6 m (19.7 ft)</li> </ul>
Diameter of the connecting cable	5 mm
Degree of protection acc. to EN 60529	IP67
<b>Cable connection</b>	
Function	Color
<ul style="list-style-type: none"> <li>EXC + (supply +)</li> <li>EXC - (supply -)</li> <li>SIG + (measured signal +)</li> <li>SIG - (measured signal -)</li> <li>Shield (not connected to the load cell body)</li> </ul>	<ul style="list-style-type: none"> <li>Red</li> <li>Black</li> <li>Green</li> <li>White</li> <li>Transparent</li> </ul>
ATEX	-
<b>Certificates and approvals</b>	
Accuracy class according to OIML R-60	C3, C4, C5

## Load Cells

Shear beam load cells

SIWAREX WL230 SB-S CA

### Load cell

#### Selection and ordering data

##### Load cell, type SIWAREX WL230 SB-S CA

Material: Steel, nickel-plated

Length of the connecting cable:

4 m at rated load up to 2 t, 6 m from rated load 3 t

➤ Click on the Article No. for the online configuration in the PIA Life Cycle Portal.

##### Rated load

- 100 kg (220.46 lb)
- 250 kg (551.16 lb)
- 500 kg (1 102.31 lb)
- 1 t (0.98 tn. l.)
- 2 t (1.97 tn. l.)
- 3 t (2.95 tn. l.)
- 5 t (4.92 tn. l.)
- 10 t (9.84 tn. l.)

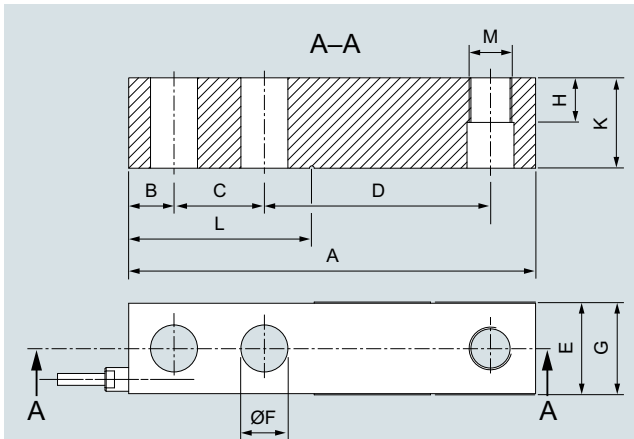
##### Accuracy class according to OIML R-60

- C3
- C4
- C5

#### Article No.

7MH5121-				
	0	0		
3	A			
3	H			
3	P			
4	A			
4	G			
4	K			
4	P			
5	A			
			D	
			E	
			F	

#### Dimensional drawings



	A	B	C	D	E	ØF	G	H
0.1t - 2t	130	15.8	25.4	76.2	31.8	13.5	34	15.8
3t - 5t	171.5	19.1	38.1	95.3	38.1	19.8	40	18.8
10t	222.3	25.4	50.8	120.7	50.8	26	52.4	25.4

K	L	M
31.8	54.2	M12
38.1	77.2	M18x1.5
50.8	101.6	M24x2

SIWAREX WL230 SB-S CA load cell, dimensions in mm (inch)

3

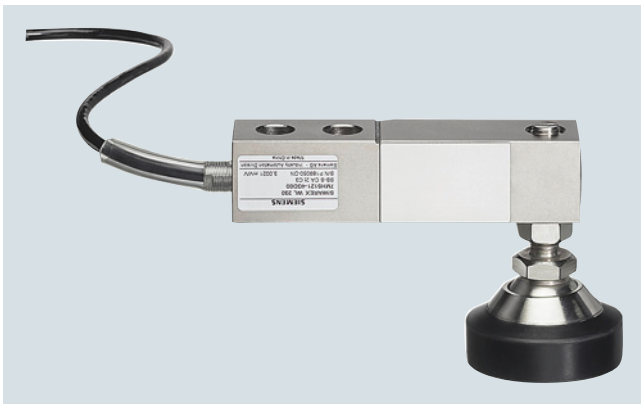
### Overview



Load foot for SIWAREX WL230 SB-S CA

The self-centering load foot for SIWAREX WL230 SB-S CA load cells can be used for the quick and easy assembly of platform and hopper scales. Together with the load cell it forms a self-centering bearing unit. The load foot transmits the force directly into the load cell. The load foot is suitable for rated load cell ranges from 100 kg up to 10 t (220.46 lb up to 9.84 tn. l.).

### Design



SIWAREX WL230 SB-S CA with load foot

The load foot is screwed into the load cell. The foot element possesses a ball joint with an oscillation function

which prevents stresses in the load cells. Stresses can arise during installation or when the length of the load bearing implement changes due to thermal expansion.

The rubber cap prevents the load foot from slipping.

### Technical specifications

#### Load foot for SIWAREX WL230 SB-S CA load cells

	100 kg ... 2 t (220.46 lb ... 1.97 tn. l.)	3 ... 5 t (2.95 ... 4.92 tn. l.)	10 t (9.842 tn. l.)
Rated load			
Maximum lateral deflection	± 1 mm (0.04 inch)	± 1 mm (0.04 inch)	± 1 mm (0.04 inch)
Maximum vertical load	30 kN	70 kN	130 kN

### Selection and ordering data

### Article No.

#### Load foot

For SIWAREX WL230 SB-S CA load cells

Material: Steel, nickel-plated, NBR (nitrile butadiene rubber)

For load cells with a rated load of<sup>1)</sup>

- 100 kg ... 2 t (220.46 lb ... 1.97 tn. l.)
- 3 ... 5 t (2.95 ... 4.92 tn. l.)
- 10 t (9.842 tn. l.)

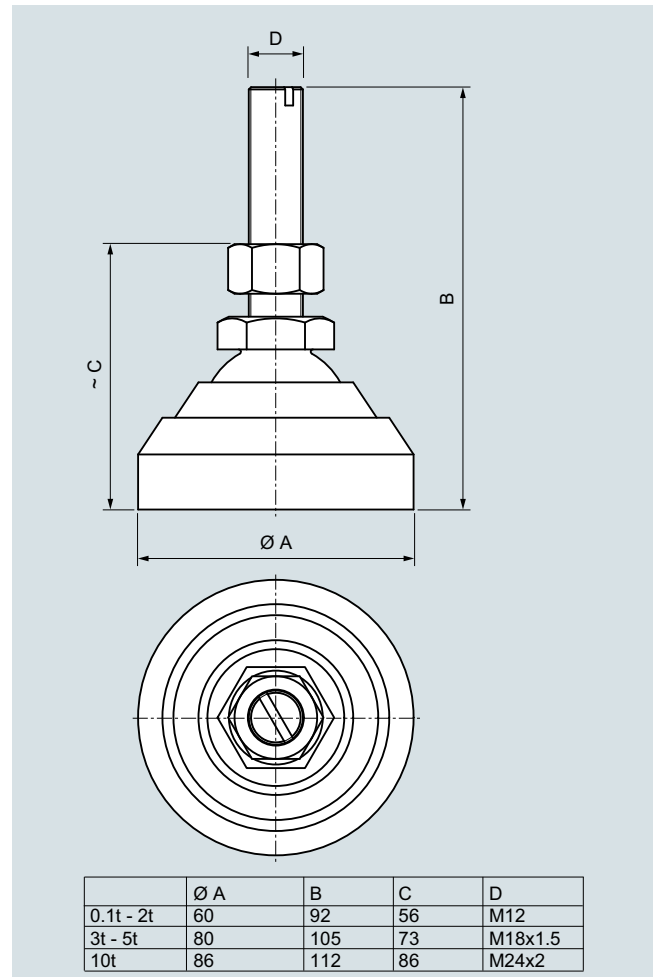
**7MH5721-4GH10**

**7MH5721-4PH10**

**7MH5721-5AH10**

<sup>1)</sup> The load cell is not included in the scope of delivery.

### Dimensional drawings



SIWAREX WL230 SB-S CA load foot