Precision load cell for measuring tension and compressive forces

X-134-S

With internal thread (M16 x 1.5) for force application

Ø 68 x 25 mm,
0... 2 kN
0... 3 kN
0... 5 kN
0... 10 kN
0... 20 kN

Features

- Solid steel housing
- IP66 protected
- Easy installation with metal screws
- Specific measuring ranges available

Application

The load cell X-134-S is suitable for universal force measurement in applications where high accuracies are required. The load cells can be supplied with a factory calibration certificate on request. The force application can be adapted to the measuring environment by using appropriate mounting adapters.

The sensors are based on proven strain gauge technology and deliver a linear signal, proportional to the centrally applied force. The solid steel housing and the tight design according to IP66 guarantee problem-free operation, even under difficult environmental conditions.

Ordering code

Description	Measuring range	Output-signal	Contact surface in mm	Assembly	Characteristic	Specifi-cations
X-134-S-1kN-3.0-4-0	0…1 kN	2 mV/V	Ø 68 x 25 mm	8x screws	With internal thread (M16x1.5) for force application	page 3
X-134-S-2kN-3.0-4-0	0…2 kN	2 mV/V	Ø 68 x 25 mm	8x screws	With internal thread (M16x1.5) for force application	page 3
X-134-S-3kN-3.0-4-0	0…3 kN	2 mV/V	Ø 68 x 25 mm	8x screws	With internal thread (M16x1.5) for force application	page 3
X-134-S-5kN-3.0-4-0	0…5 kN	2 mV/V	Ø 68 x 25 mm	8x screws	With internal thread (M16x1.5) for force application	page 3
X-134-S-10kN-3.0-4-0	0…10 kN	2 mV/V	Ø 68 x 25 mm	8x screws	With internal thread (M16x1.5) for force application	page 3
X-134-S-20kN-3.0-4-0	0…20 kN	2 mV/V	Ø 68 x 25 mm	8x screws	With internal thread (M16x1.5) for force application	page 3

Precision load cell X-134-S

Ø 68 x 25 mm

From 2 to 20 kN

Specifications

Performance	
Measuring range / Nominal force	0... 2 kN 0... 3 kN 0... 5 kN 0... 10 kN 0... 20 kN
Zero signal unmounted	± 0.5 %
Nonlinearity	± 2 % from fullscale
Hysteresis	± 0.05 % ~ 0.1 % from fullscale
Repeatability	± 0.05 % from fullscale
Temperature influence on final value	± 0.05 % FS /10°C
Temperature influence on zero point	± 0.05 % FS /10°C

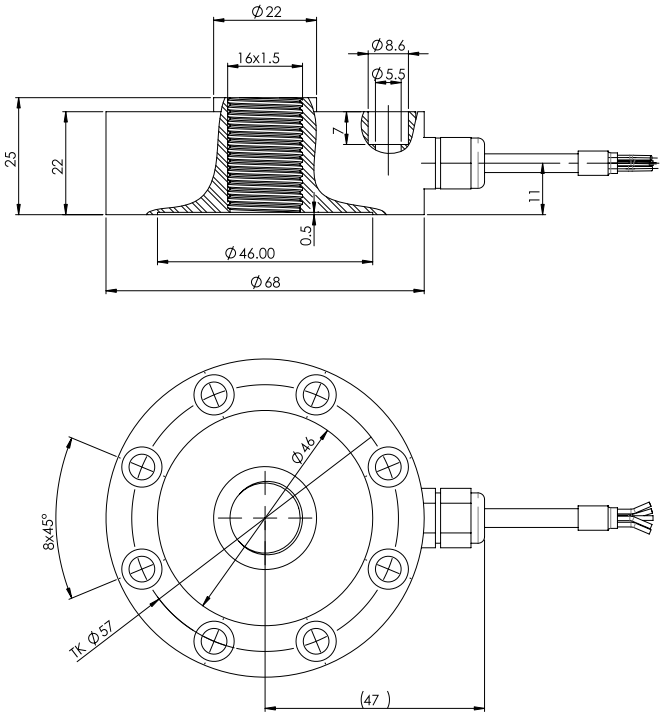
Electrical data	
Output signal at full scale	+ 2.0 mV/V ± 10 %
Bridge resistance	700 ohms

Materials	
Housing	Alloy steel nickel plated
Cable	PVC

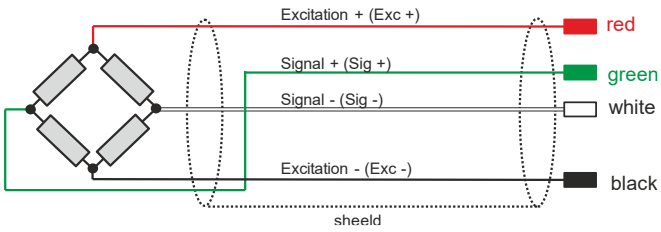
Mechanical data	
Application of force	Internal thread M16x1.5
Overload	150% from final value
Ultimate load	200 % from final value
Electrical connection	Connection cable
Cable length	3 m
Connector-type	Open leads, connector plug on request

Environmental data	
Ambient temperature	- 20 ... 80 °C
Compensated temperature range	- 10... 60 °C
Protection rate	IP 65

Mechanical dimensions



Wiring



Ordering code

The load cell is delivered without fastening screws and calibration certificate. A calibration certificate is available on request.

For detailed ordering information, please see page 2.

Zero point adjustment

The zero point adjustment for the force sensors with an mV/V-output signal takes place in the following measuring amplifiers. There are two options for X-Xensors products available. For cyclic and fast load changes there is a control input to trigger the zero point adjustment from outside. For static applications there is a version with DIP-switches and potentiometers, for the adjustment of the zero point.

Further information for the zero adjustment can be found at the data sheets of the the measuring amplifiers which are listed in the accessories.

Definition of accuracy

For force sensors, the following points should be noted with regard to accuracy:

1. Linearity, Repeatability and Hysteresis (combined error)
   The linearity and hysteresis specifies the measurement deviation in reference to the ideal BFSL-characteristic curve. This maximum measurement error is given in reference to the full scale value. This means that an accuracy of 0.2% FS at a force transducer with a measuring range of 0 ... 20 kN corresponds to a maximum measuring deviation of only 0.04 kN over the entire measuring range.

2. Sensitivity
   The data sheet specifies the sensitivity of the sensors (2.0 mV/V). However, the sensitivity is not always exactly the same. For this reason, the deviation of the sensitivity is specified.