Universal force sensor for monitoring press and joining processes

X-136

With internal or external thread for load application

Ø 51x 34 mm,
0... 0.5 kN
0... 1 kN
0... 2 kN
0... 3 kN
0... 5 kN
0... 10 kN
0... 20 kN

Features

- Load application for OEM-applications can be adapted to customer requirements
- Very good price/performance ratio
- Low overall height for space-saving installation
- With internal thread M12 or external thread M12 as force transmission
- IP65 protected
- Measuring ranges from 0.5 kN to 20 kN available

Application

The load cell X-136 is suitable for force monitoring in press and joining processes where a high accuracy is required. The force sensors are integrated directly into the force transmission.

The load cells can be supplied with a factory calibration certificate on request.

The sensors are based on proven strain gauge technology and provide a linear signal, proportional to the centrally applied force. The solid steel housing and the tight design according to IP65 guarantee problem-free operation, even under difficult environmental conditions.

Ordering code

Description	Measuring range	Output-signal	Contact area in mm	Assembly	Specifications
X-136-D-0.5kN-3.0m-2-4-A-0	0 ... 0.5 kN	1.5-2 mV/V	Ø 51x 34 mm	Threaded bolt M12 top / Internal thread M12 bottom	page 3
X-136-D-1kN-3.0m-2-4-A-0	0 ... 1 kN	1.5-2 mV/V	Ø 51x 34 mm	Threaded bolt M12 top / Internal thread M12 bottom	page 3
X-136-D-2kN-3.0m-2-4-A-0	0... 2 kN	1.5-2 mV/V	Ø 51x 34 mm	Threaded bolt M12 top / Internal thread M12 bottom	page 3
X-136-D-3kN-3.0m-2-4-A-0	0... 3 kN	1.5-2 mV/V	Ø 51x 34 mm	Threaded bolt M12 top / Internal thread M12 bottom	page 3
X-136-D-5kN-3.0m-2-4-A-0	0... 5 kN	1.5-2 mV/V	Ø 51x 34 mm	Threaded bolt M12 top / Internal thread M12 bottom	page 3
X-136-D-10kN-3.0m-2-4-A-0	0... 10 kN	1.5-2 mV/V	Ø 51x 34 mm	Threaded bolt M12 top / Internal thread M12 bottom	page 3
X-136-D-20kN-3.0m-2-4-A-0	0... 20 kN	1.5-2 mV/V	Ø 51x 34 mm	Threaded bolt M12 top / Internal thread M12 bottom	page 3
X-136-D-0.5kN-3.0m-2-4-B-0	0 ... 0.5 kN	1.5-2 mV/V	Ø 51x 34 mm	Threaded bolt M12 top / Threaded bolt M12 bottom	page 4
X-136-D-1kN-3.0m-2-4-B-0	0 ... 1 kN	1.5-2 mV/V	Ø 51x 34 mm	Threaded bolt M12 top / Threaded bolt M12 bottom	page 4
X-136-D-2kN-3.0m-2-4-B-0	0... 2 kN	1.5-2 mV/V	Ø 51x 34 mm	Threaded bolt M12 top / Threaded bolt M12 bottom	page 4
X-136-D-3kN-3.0m-2-4-B-0	0... 3 kN	1.5-2 mV/V	Ø 51x 34 mm	Threaded bolt M12 top / Threaded bolt M12 bottom	page 4
X-136-D-5kN-3.0m-2-4-B-0	0... 5 kN	1.5-2 mV/V	Ø 51x 34 mm	Threaded bolt M12 top / Threaded bolt M12 bottom	page 4
X-136-D-10kN-3.0m-2-4-B-0	0... 10 kN	1.5-2 mV/V	Ø 51x 34 mm	Threaded bolt M12 top / Threaded bolt M12 bottom	page 4
X-136-D-20kN-3.0m-2-4-B-0	0... 20 kN	1.5-2 mV/V	Ø 51x 34 mm	Threaded bolt M12 top / Threaded bolt M12 bottom	page 4

Tension and compression force sensor X-136

Ø 51 x 34 mm

From 0.5 to 20 kN

Specifications

Performance	
Measuring range / Nominal force	0... 0.5 kN 0... 1 kN 0... 2 kN 0... 3 kN 0... 5 kN 0... 10 kN 0... 20 kN
Zero signal unmounted	<± 2 % from full-scale
Nonlinearity	<± 0.5 % from full-scale
Hysteresis	<± 0.5 % from full-scale
Repeatability	<± 0.5 % from full-scale
Temperature influence on final value	± 0.05 % FS/10 ° C
Temperature influence on zero point	± 0.05 % FS/10 ° C

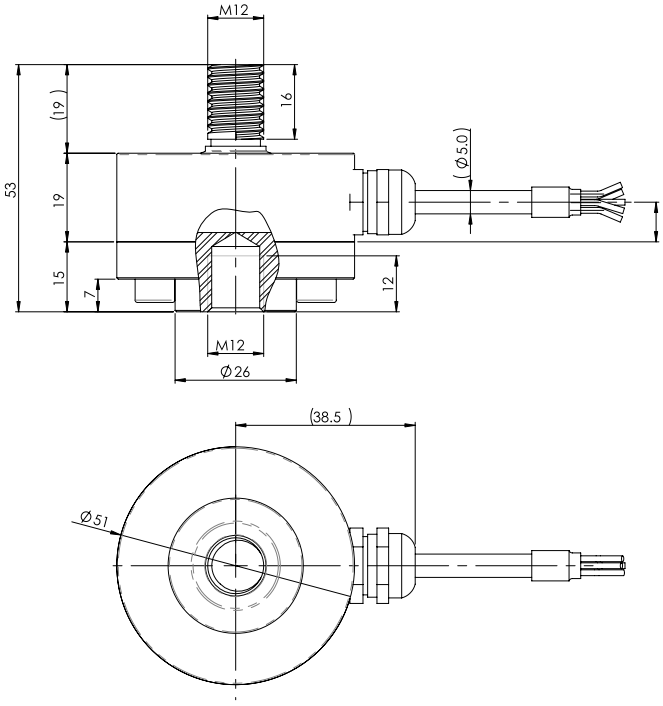
Electrical data	
Output signal at full scale	1.5 - 2.0 mV/V
Bridge resistance	700 ohms
Power supply	5 - 10 VDC

Materials	
Housing	Steel
Cable	PVC

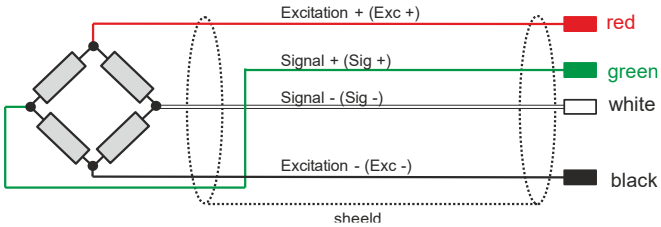
Mechanical data	
Load application	Threaded bolt M12 Internal thread M12
Overload	120 % from full-scale
Breaking load	150 % from full-scale
Electrical connection	Connection cable
Cable length	3 m
Connector-type	Open leads, connector plug on request

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. Calibration certificate available on request.

For detailed ordering information, see page 2.

Tension and compression force sensor X-136

Ø 51 x 34 mm

From 0.5 to 20 kN

Specifications

Performance	
Measuring range / Nominal force	0... 0.5 kN 0... 1 kN 0... 2 kN 0... 3 kN 0... 5 kN 0... 10 kN 0... 20 kN
Zero signal unmounted	<± 2 % from full-scale
Nonlinearity	<± 0.5 % from full-scale
Hysteresis	<± 0.5 % from full-scale
Repeatability	<± 0.5 % from full-scale
Temperature influence on final value	± 0.05 % FS/10 ° C
Temperature influence on zero point	± 0.05 % FS/10 ° C

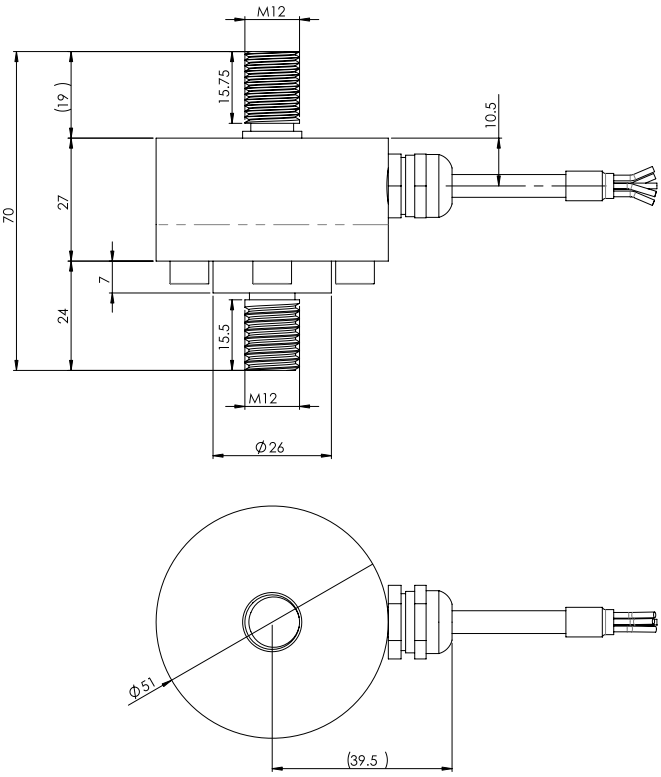
Electrical data	
Output signal at full scale	1.5 - 2.0 mV/V
Bridge resistance	700 ohms
Power supply	5 - 10 VDC

Materials	
Housing	Steel
Cable	PVC

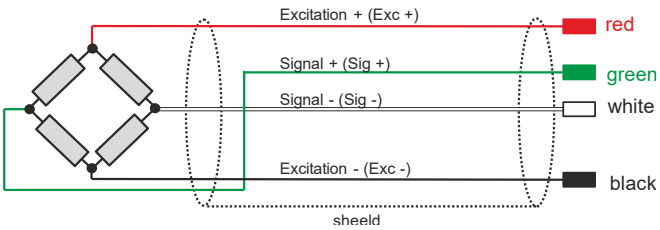
Mechanical data	
Load application	Threaded bolt M12 Threaded rod M12
Overload	120 % from full-scale
Breaking load	150 % from full-scale
Electrical connection	Connection cable
Cable length	3 m
Connector-type	Open leads, connector plug on request

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

Mechanical dimensions



Wiring



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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 1.5% FS at a force transducer with a measuring range of 0 ... 20 kN corresponds to a maximum measuring deviation of only 0.3 kN over the entire measuring range.

2. Sensitivity
   The data sheet specifies the sensitivity of the sensors (1.8 mV/V). However, the sensitivity is not always exactly the same. For this reason, the deviation of the sensitivity is specified.