Ring load cell

X-142

with internal diameter

Ø 120 x 20 mm,
0...5 kN
bis
0...50 kN

Features

- inside diameter of 60 mm
- very flat body design
- internal diameter for easy mounting

Application

Due to the flat design, it is possible to mount the ring force transducer X-142 even in low space conditions. In addition, the through hole simplifies mounting.
This force sensor is ideal for measuring compressive forces and is particularly suitable for applications in industry.

The sensors are based on proven strain gauge technology and provide a linear signal, proportional to the centrally applied compressive force.

Ordering code

Description	Measuring range	Output signal	Contact area in mm	Assembly	Specification
X-142-D-5kN-3.0m-4-T-B	0...5kN	2.0 mV/V	Ø 120 x 20 mm	6x Ø 6.5 mm clearance hole top 6x Ø 6.8 mm clearance hole bottom	page 3
X-142-D-10kN-3.0m-4-T-B	0...10kN	2.0 mV/V	Ø 120 x 20 mm	6x Ø 6.5 mm clearance hole top 6x Ø 6.8 mm clearance hole bottom	page 3
X-142-D-20kN-3.0m-4-T-B	0...20kN	2.0 mV/V	Ø 120 x 20 mm	6x Ø 6.5 mm clearance hole top 6x Ø 6.8 mm clearance hole bottom	page 3
X-142-D-30kN-3.0m-4-T-B	0...30kN	2.0 mV/V	Ø 120 x 20 mm	6x Ø 6.5 mm clearance hole top 6x Ø 6.8 mm clearance hole bottom	page 3
X-142-D-50kN-3.0m-4-T-B	0...50kN	2.0 mV/V	Ø 120 x 20 mm	6x Ø 6.5 mm clearance hole top 6x Ø 6.8 mm clearance hole bottom	page 3

Ring load cell X-142

Ø 120 x 20 mm,
Von 5 bis 50 kN

Specifications

Performance	
Measuring range / Nominal force	5 kN 10 kN 20 kN 30 kN 50 kN
Zero signal unmounted	< ±1 % from fullscale
Deviation sensitivity	±0.5 %
Nonlinearity	< ±0.05 % from fullscale
Hysteresis	< ±0,05 % from fullscale
Repeatability	< ±0,05 % from fullscale
Creep (30 min)	< ±0.05 % from fullscale
Temperature influence on final value	±0,05 % FS /10°C
Temperature influence on final value	±0,05 % FS /10°C

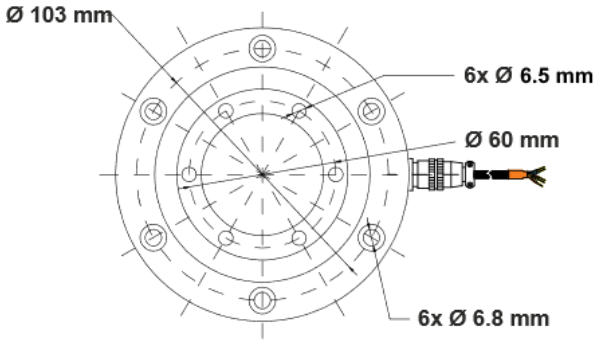
Electrical data	
Sensitivity	2.0 mV/V
Bridge resistance / sensor element strain gauge full bridge	700 Ohm
Supply voltage	5-10 VDC

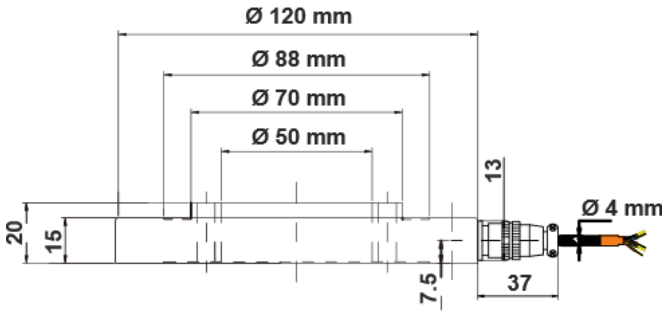
Materials	
Housing	Steel

Mechanical data	
Force application	6x Ø 6.5 mm 6x Ø 6.8 mm Clearance hole
Overload	150 % from fullscale
Breaking load	200 % from fullscale
Electrical connection	Connection cable UL certified
Cable length	3 m
Plug type	Open stranded wires, connectors available on request

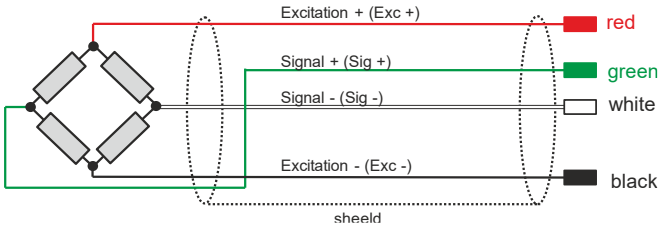
Environmental data	
compensated temperature	-10...60 °C
Oparaiting temperature	-20...80 °C
Protection class	IP 67

Mechanical dimensions





Wiring



Ordering code

The load cell is supplied without mounting screws and calibration certificate. Calibration certificate available on request.

For detailed ordering information, see page 2.

Definition of accuracy

For force sensors, there are the following points to consider regarding accuracy:

1. linearity, repeatability and hysteresis (combined error)
   The linearity, repeatability and hysteresis specify the measurement deviation compared to the ideal characteristic curve. This maximum measurement deviation is specified in relation to the final value. I.e. for example an inaccuracy of 0.3 % FS corresponds to a maximum measurement deviation of 0.15 kN over the entire measurement range for a force sensor with a measurement range of 0...50 kN.

2. Sensitivity
   The sensitivity of the sensors is specified in the data sheet. However, the sensitivity is not always exactly identical. For this reason, the deviation of the sensitivity is specified.