Cable force transducer
Up to 2000 kN

Cable force transducer XCT-171

Suitable for force monitoring on
ropeways of cable cars, industrial cranes, buildings and mining

Ø 149.5 x 150 mm, 0…150 kN 0…200 kN 0…250 kN 0…300 kN	Ø 149.5 x 150 mm, 0…400 kN 0…600 kN 0…2000 kN	Ø 149.5 x 150 mm thickening at the bottom inner diameter of 115.0 mm 0…1200 kN

Characteristics

- Solid steel housing
- Redundant measuring bridge with 2x 4-20 mA for increased safety
- Measuring range up to 2000 kN
- Robust design with IP67 protection
- High accuracy
- Specific measuring ranges available

Application

The cable force transducers have an inner diameter of 100.2 mm. They are ideal for monitoring the force at the end of a rope. Due to their dimensioning, they are particularly suitable for heavy duty applications:

- Cable cars
- Industrial cranes
- Buildings
- Mining

The cable force transducers are equipped with a redundant measuring bridge. This guarantees an increased level of safety.

The load cells can be supplied with a recognized calibration certificate if desired. The sensors are based on proven strain gage technology and provide a linear signal, proportional to the applied force.

Ordering code

Description	Measuring range	Output signal	Dimensions in mm	Inner diameter	Characteristic	Specification
XCT-171-150-D100.2	0…150 kN	4…20 mA	Ø 149.5 x 150 mm	Ø 100.2 mm	Redundant measuring bridge	page 3 & 4
XCT-171-200-D100.2	0…200 kN	4…20 mA	Ø 149.5 x 150 mm	Ø 100.2 mm	Redundant measuring bridge	page 3 & 4
XCT-171-250-D100.2	0…250 kN	4…20 mA	Ø 149.5 x 150 mm	Ø 100.2 mm	Redundant measuring bridge	page 3 & 4
XCT-171-300-D100.2	0…300 kN	4…20 mA	Ø 149.5 x 150 mm	Ø 100.2 mm	Redundant measuring bridge	page 3 & 4
XCT-171-400-D100.2	0…400 kN	4…20 mA	Ø 149.5 x 150 mm	Ø 100.2 mm	Redundant measuring bridge	page 3 & 4
XCT-171-600-D100.2	0…600 kN	4…20 mA	Ø 149.5 x 150 mm	Ø 100.2 mm	Redundant measuring bridge	page 3 & 4
XCT-171-1200-D100.2	0…1200 kN	4…20 mA	Ø 149.5 x 150 mm	Ø 100.2 mm / 115 mm	Redundant measuring bridge	page 3 & 4
XCT-171-2000-D141.1	0…2000 kN	4…20 mA	Ø 149.5 x 150 mm	Ø 141.1 mm	Redundant measuring bridge	page 3 & 4

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Ø 149.5 x 150 mm

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Specifications

Performance	
Measuring range	0...150 kN 0...200 kN 0...250 kN 0...300 kN 0...400 kN 0...600 kN 0...1200 kN 0...2000 kN
Output signal	2x 4-20 mA
Linearity	< 0.5 % from full-scale
Repeatability	< 0.2 % from full-scale
Full scale drift over temperature range	± 0.02 % FS /10°C
Zero drift over temperature range	± 0.02 % FS /10°C

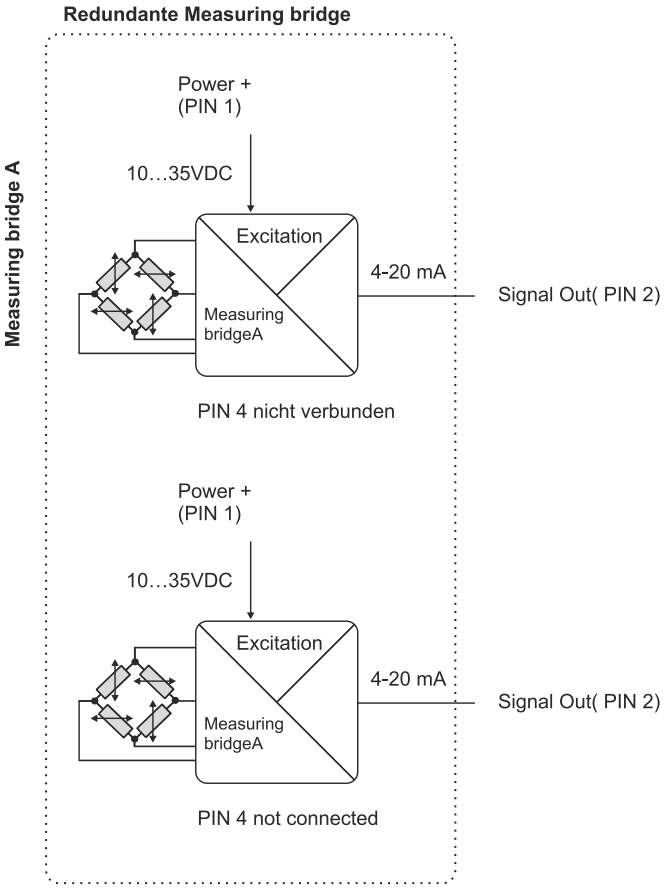
Electrical data	
Power supply	10...35 VDC
Recommended power supply	20...28 VDC
Load resistor	< 1000 Ohm
Recommended load resistor	50...500 Ohm
Voltage drop across sensor	< 10 V

Material	
Housing	Stainless steel
Sensor housing	Aluminium

Mechanical data	
Overload	100 % of full scale
Life endurance alternating 50 % load	10 Mio cycles
Deflection at rated load	< 0.25 mm
Electrical connection	2x M12, 4 pole

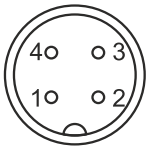
Environmental data	
Ambient temperature	-40...85 °C
Protection rate	IP 67
Strength against vibration	EN60068-2

Pin assignment / wiring



Pin assignment

Front viweM12- Connector:



Assignment	Functionality	Description sensor
PIN 1	Supply	V+
PIN 2	Signal Out	Out
PIN 3	Earth	Case
PIN 4	Not connected	N.C.

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Ø 149.5 x 150 mm

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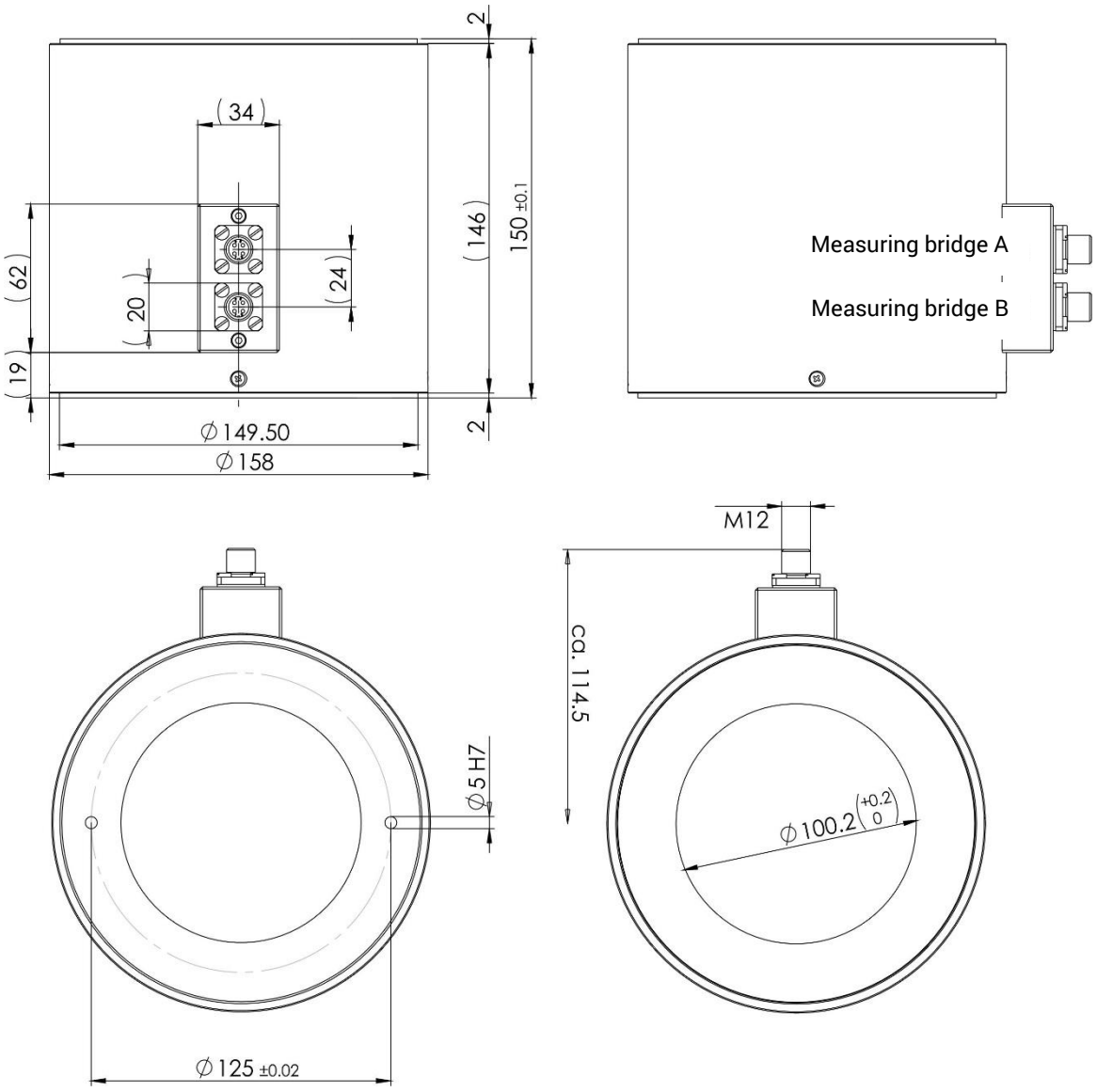
Mechanical dimensions



Definition of accuracy

The accuracy includes the following parameters:

1. Linearity and hysteresis
   The linearity and hysteresis specifies the measuring error in reference to the ideal BFSL curve. The maximum measuring error is stated in reference to the full scale value. This means that an accuracy of 0.5 % FS at a force sensor with a measuring range of 0…0,6 kN correspondents to a measuring error of only 3 kN.