

## Cable force transducer Up to 600 kN

### Cable force transducer XCT-171



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

Ø 158 x 150 mm,

0...150 kN

0...200 kN

0...250 kN

0...300 kN

0...375 kN

0...500 kN

0...600 kN

#### Characteristics

- Solid steel housing
- Redundant measuring bridge with 2x 4-20 mA for increased safety
- Measuring range up to 600 kN
- Robust design with IP67 protection
- High accuracy
- Specific measuring ranges available

## Application

The cable force transducers have an inner diameter of 100 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.

| Description        | Measuring range | Output signal | Dimensions in mm | Inner diameter | Characteristic             | Specification |
|--------------------|-----------------|---------------|------------------|----------------|----------------------------|---------------|
| XCT-171-150-D100.2 | 0...150 kN      | 4...20 mA     | Ø 158 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 158 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 158 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 175 x 150 mm   | Ø 100.2 mm     | Redundant measuring bridge | page 3 & 4    |
| XCT-171-375-D100.2 | 0...375 kN      | 4...20 mA     | Ø 175 x 150 mm   | Ø 100.2 mm     | Redundant measuring bridge | page 3 & 4    |
| XCT-171-500-D100.2 | 0...500 kN      | 4...20 mA     | Ø 175 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 175 x 150 mm   | Ø 100.2 mm     | Redundant measuring bridge | page 3 & 4    |

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Ø 158 x 150 mm

Up to 600 kN



## Specifications

### Performance

|  |  |
|--|--|
| <b>Measuring range</b>                         | 0...150 kN<br>0...200 kN<br>0...250 kN<br>0...300 kN<br>0...375 kN<br>0...500 kN<br>0...600 kN |
| <b>Output signal</b>                           | 2x 4-20 mA   |
| <b>Linearity</b>                               | < 0.5 % from full-scale  |
| <b>Repeatability</b>                           | < 0.2 % from full-scale  |
| <b>Full scale drift over temperature range</b> | ± 0.02 % FS /10°C  |
| <b>Zero drift over temperature range</b>       | ± 0.02 % FS /10°C  |

### Electrical data

|                                   |              |
|-----------------------------------|--------------|
| <b>Power supply</b>               | 10...35 VDC  |
| <b>Recommended power supply</b>   | 20...28 VDC  |
| <b>Load resistor</b>              | < 1000 Ohm   |
| <b>Recommended load resistor</b>  | 50...500 Ohm |
| <b>Voltage drop across sensor</b> | < 10 V       |

### Material

|                       |                 |
|-----------------------|-----------------|
| <b>Housing</b>        | Stainless steel |
| <b>Sensor housing</b> | Aluminium       |

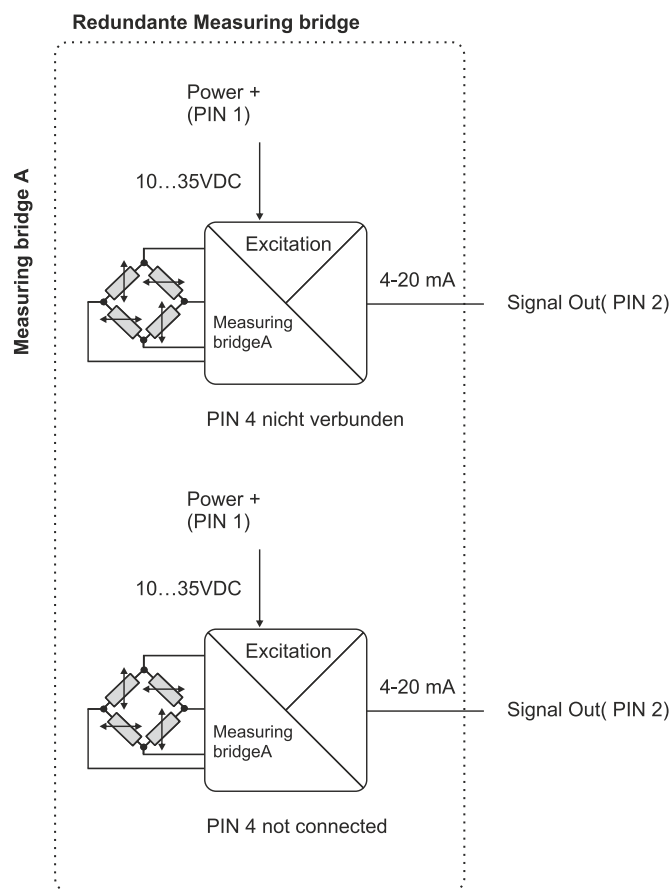
### Mechanical data

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

### Environmental data

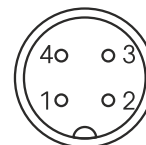
|                                   |             |
|-----------------------------------|-------------|
| <b>Ambient temperature</b>        | -40...85 °C |
| <b>Protection rate</b>            | IP 67       |
| <b>Strength against vibration</b> | EN60068-2   |

## Pin assignment / wiring



## Pin assignment

Front view M12- Connector:



| Assignment   | Functionality | Description sensor |
|--------------|---------------|--------------------|
| <b>PIN 1</b> | Supply        | V+                 |
| <b>PIN 2</b> | Signal Out    | Out                |
| <b>PIN 3</b> | Earth         | Case               |
| <b>PIN 4</b> | Not connected | N.C.               |

## Ordering code

For detailed ordering information, please see page 2.

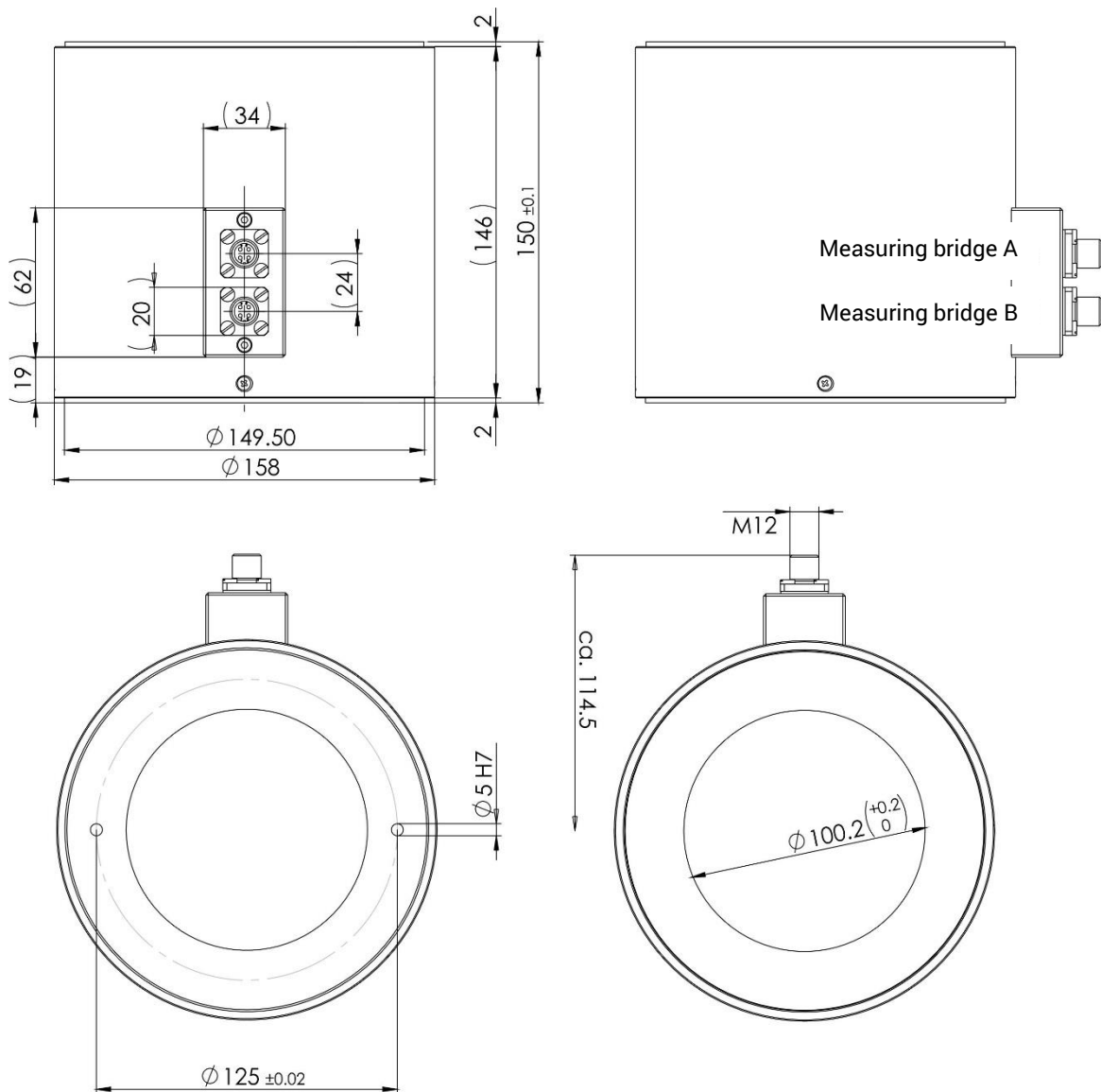
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### Mechanical dimensions



### 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 corresponds to a measuring error of only 3 kN.