

Measuring Anchor

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HIGHLIGHTS

- Simple and fast installation
- Robust construction
- Performs the function of an anchor
- Automatic data acquisition possible



Measuring heads with displacement transducers and dial gauge set

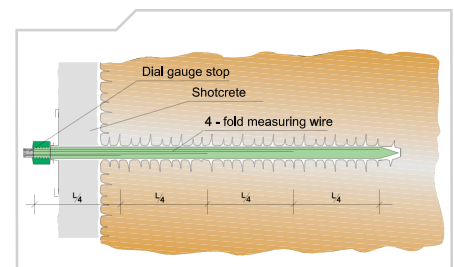
Field of Application

Measuring anchors are valuable instruments for optimising anchoring. They are advantageously used everywhere where fully cemented anchors are required with a maximum length of approx. 12 m. These anchors can determine the magnitude of the anchor load in kN at a maximum of 4 depths. Distribution of the applied forces along the length of the measuring anchor can in this way be determined.

Principle of Operation

The measuring principle is similar to that of an extensometer, which measures relative movement between individual fixed points in the borehole and the measuring head. Differing from the extensometer, however, all the devices are mounted inside a hollow anchoring tube. Anchoring forces result in extension of the anchor.

The integrated extensometer measures movements along the anchor at 4 positions maximum, converts these to elongations and then to forces using the known modulus of elasticity and cross-sectional area. In this way the load distribution along an anchor can easily be displayed.



Schematical assembly of an installed measuring anchor

Measuring Anchor

Data Acquisition

The measurements can be performed either manually, using dial gauges, or by means of electrical displacement transducers. The GEODATA information software KRONOS is available for analysis of the data. In this way, the software can compile lists and also clarifying graphs. In addition to displaying the change of forces over time, cross-section related graphs also enable establishing the magnitude of the forces in relation to the depth of their introduction.

Technical Specifications

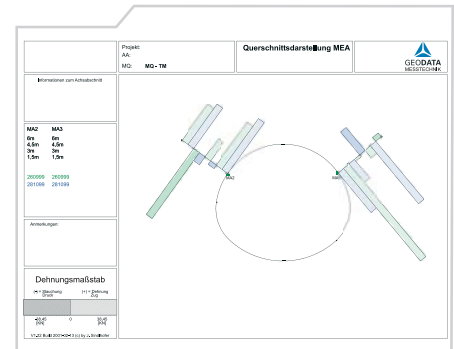
Length (standard)	3 - 4 - 6 - 8 - 9 - 12 m
Number of fixed points	max. 4
Borehole diameter	min. 51 mm
Steel quality	St 52 DIN 2448
Loading capacity	250 kN optional 350 kN
Cross-sectional area	447 mm ² (250 kN) 509 mm ² (350 kN)
E-Module	210 kn/mm ²

Displacement transducer (optional)

Measuring range	50 mm 100 mm; 250 mm optional
Linearity	± 0.1 % FS (without linearization)
Sensor type	Potentiometer
Output signal	optional 4 to 20 mA
Sealing class	IP 65

The following other datasheets are associated with this datasheet:

<u>Services:</u>	<i>Geotechnical Monitoring - Installation, Data Acquisition and Evaluation</i>
<u>Systems:</u>	<i>DAMOS - Automatic Data Acquisition System</i>
<u>Software:</u>	<i>KRONOS Tunnel Information System</i>



Example of a cross-section related evaluation