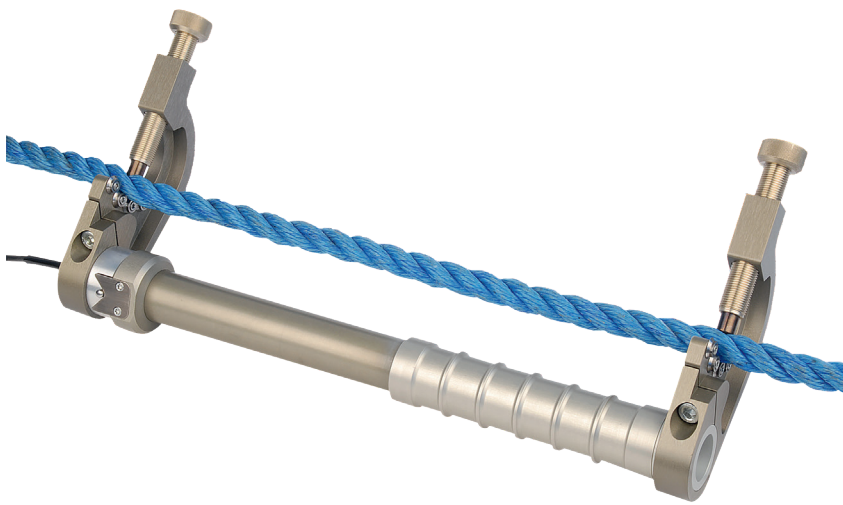


Long Gauge Length Axial Extensometer Series MFI

The MFI series extensometers have been specially designed for applications where long gauge lengths are required. Available are units with measuring range 20 mm, 40 mm or 100 mm and gauge lengths up to 1000 mm. Typical applications includes testing of wire strands, wires, cables, chains, belts and others.

One of the key advantages, beside its long gauge lengths, of the MFI series is its sturdy construction combined with high accuracy. The units are well suited for vertical as well as horizontal operation. There are three (3) different units available with 20 mm, 40 mm and 100 mm measuring range.



Key Features

- Long gauge lengths available
- High accurate system
- Flexible adjustable gauge lengths with extension tubes
- Quick exchange between gauge lengths through easy to change extension tubes
- Class 0.5 according to ISO 9513, Model MFI 40 and MFI 100 Class 1
- Robust yet light design
- Adjustable clamping force

Area of Application

The extensometer MFI is suitable for testing deformation of samples with a large gauge length (Le up to 1000 mm), for example wire cables, chains, construction steel rods, belts etc. This instrument is manufactured in three versions which has their differences in the measuring displacement and the gauge length. It can be operated in horizontal and vertical test machines. In spite of its sturdy construction and the large Le variation, it is easy to operate due to its low weight.

Design and Function

The MFI consists of a tubular design that extends like a telescope. The measuring system, a well-protected inductive transducer, is mounted at its centre. The clamping elements are arranged at the ends of the instrument, so that Le can be utilized to almost the grips of the testing machine. On the clamping elements five knife edges are arranged in a circular arc, which attach firmly to round, twisted or plaited samples from 3 to 35 mm diameter.

The edges are circular and can be rotated. A long life is achieved by using the whole perimeter. For fine adjustment of clamping a spindle with a spring-loaded pressure plate is arranged facing the knife edges. A combination of different extension tubes allows the extension of the basic Le to any length up to 1 m.

Operation

Before a tensile test there is no adjustment or unbolting on the MFI needed. By setting the MFI to the gauge length, the clamping elements centre themselves in such a way that during clamping the instrument aligns itself parallel to the sample axis. The centring device opens by itself with increasing extension and the MFI can follow the torsion movements of twisted test samples during a tensile test. The extension tubes can be easily screwed in between the basic body and the clamping elements without any tool. To dismantle firmly fitted parts the two provided T10 star screw driver can be used.

Type MFI	20	40	100
Accuracy class EN ISO 9513	0.5	1	1
Measurement principle	Inductive (LVDT)	Inductive (LVDT)	Inductive (LVDT)
Travel	20 mm	40 mm	100 mm
Initial gauge length	225 mm	250 mm	300 mm
Gauge length with extension tubes	(optional 200 mm)	up to 1000 mm	up to 1000 mm
Gauge length tolerance	up to 1000 mm	50 µm	100 µm
Linearity error include. hysteresis	50 µm	0.2 %	0.2 %
Indication error (rel.)*	0.2 %	1 %	1 %
Indication error (absolute) *	0.5 %	3 µm	3 µm
Error in gauge length (L0)	1.5 µm	50 µm	50 µm
Activating force	50 µm	100 cN	100 cN
Operating temperature range	100 cN	1 – 70 °C	1 – 70 °C
Weight	1 – 70 °C	approx. 800 g	approx. 1000 g
Clamping force **	approx. 700 g	0.5 N	0.5 N
Operating temperature range	0 – 50 °C	0 – 50 °C	0 – 50 °C
Weight	approx. 26 kg	approx. 31 kg	approx. 38 kg

* The larger of the values is admissible.

Sample Dimensions	
Specimen diameter	Ø 3 to Ø 28 mm, with available accessories up to Ø80 mm
Flat specimen	Up to thickness 30 mm x width 50 mm Option for thicker specimen with wider width available

Parts supplied

MFI
Clamping device with two counter roller
Ordered gauge length adapters
Spare star screws M3x8 T10
Screw driver T10

Standard Extension Tubes

Extension Tube 10 to 99 mm in any required lengths
Extension Tube 50 mm
Extension Tube 75 mm
Extension Tube 100 mm
Extension Tube 200 mm
Extension Tube 300 mm
Remark: Others available
Remark: Extension tubes can be combined

