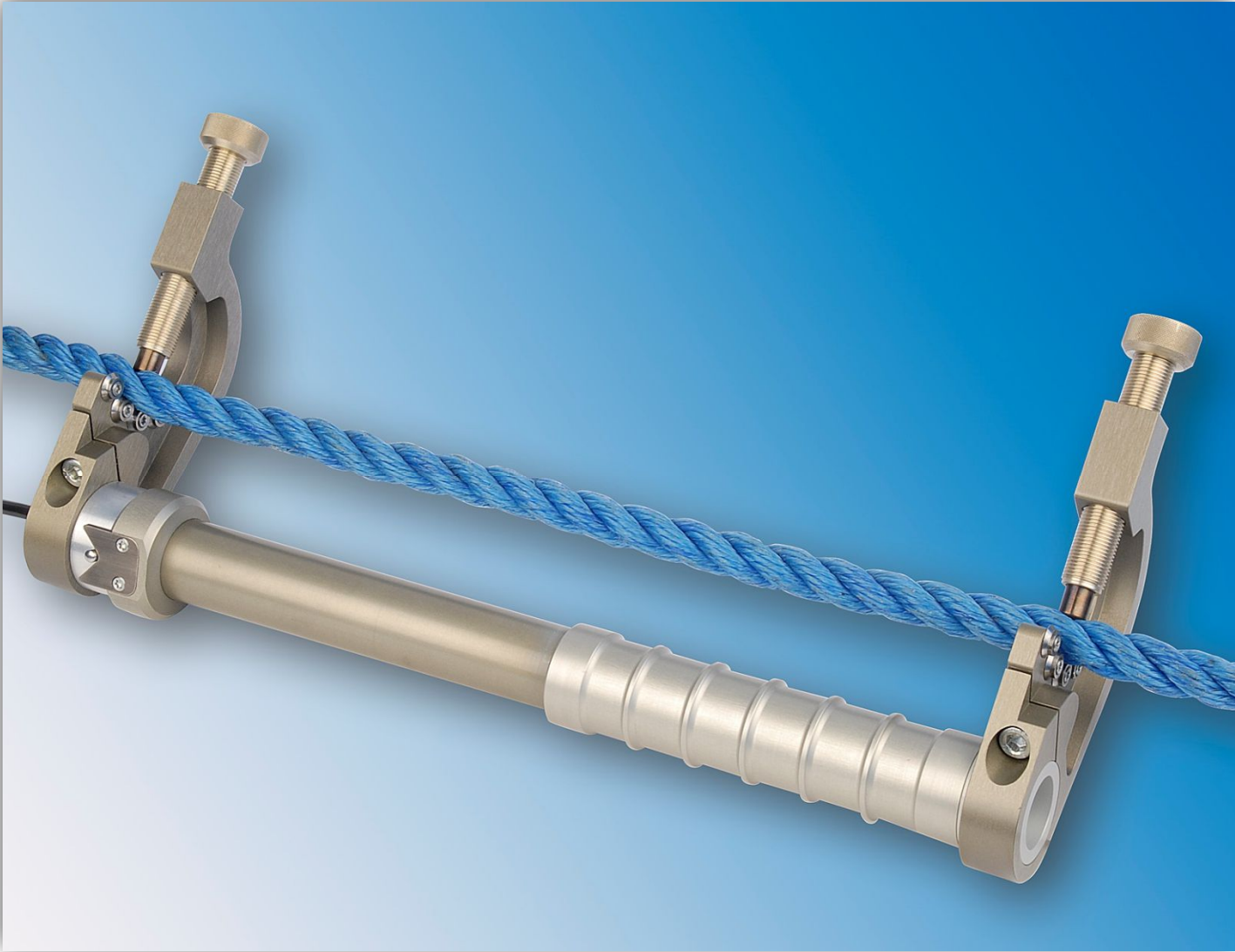


Technical data	MFI 20	MFI 40	MFI 100
Accuracy class EN ISO 9513	0.5		
Measurement principle	inductive		
Measurement range for tensile test	+ 20 mm	+ 40 mm	+ 100 mm
Gauge length tolerance	50 µm	50 µm	100 µm
Gauge length tolerance	0.2 %		
Linearity error including hysteresis	0.2 %		
Indication error* (rel.)	0.5 %		
Indication error* (abs.)	1.5 µm		
Error in gauge length (L ₀)	0.2 %		
Error in gauge length (L ₀)	0.4 mm	0.5 mm	0.5 mm
Activating force	100 cN		
Standard gauge length (L ₀)	225 mm (optional 200 mm)	250 mm	300 mm
Gauge length (L ₀) with accessory	226 - 1000 mm	251 - 1000 mm	301 - 1000 mm
Operation temperature	0 - 70 °C		
Weight	700 g	800 g	1000 g
Sample Cross section round	3 to 35 mm (up to 80 mm with special accessories)		
Length of connection cable	2.5 m		

* The larger value is admissible

LVDT			
Sensitivity	260 mV/V	360 mV/V	580 mV/V
Input terminal voltage	Up to 5 V effective		
Carrier frequency	5...10 kHz		
Temperature error of zero point	±0,02% / 10K		
Temperature error of sensitivity	±0,05% / 10K		



MFI

Hand clamped extensometer



M e s s - & F e i n w e r k t e c h n i k G m b H



P r e c i s i o n t e s t i n g o f l i n e a r s t r a i n

Area of application

The extensometer MFI is suitable for testing deformation of samples with a large gauge length (L_e 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 L_e 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 center. The clamping elements are arranged at the ends of the instrument, so that L_e 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 allow the extension of the basic L_e to any length up to 1 m.

Operation

Before a tensile test no adjustment or unbolting on the MFI is needed. By setting the MFI to the gauge length, the clamping elements center themselves in such a way that during clamping the instrument aligns itself parallel to the sample axis. The centering 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.

Calibration

The gauge length steps of the MFI are most suitable for sensitivity calibration of the amplifier, because of its precise parallel path with firm stoppers. The gauge length is adjusted to ± 0.2% and can be checked exactly with an accurate sliding calipers or dial gauge.

Spare parts and accessories

Extension tube 10 - 99 mm in any required length (not adjustable)	
Extension tube	50 mm
Extension tube	75 mm
Extension tube	100 mm
Extension tube	200 mm
Extension tube	300 mm
Clamping elements for sample up to Ø 80 mm	
Spare knife edge Ø 9 mm	
Knife edge fastening star screws M3x8 T10	

Delivery scope

1 MFI 20 (20 mm travel, L _e 225 mm) or 1 MFI 40 (40 mm travel, L _e 250 mm) or 1 MFI 100 (100 mm travel, L _e 300 mm)	
1	Cable 2.5 m
2	Spare star screws M3 x 8 T10
2	star screw driver T10

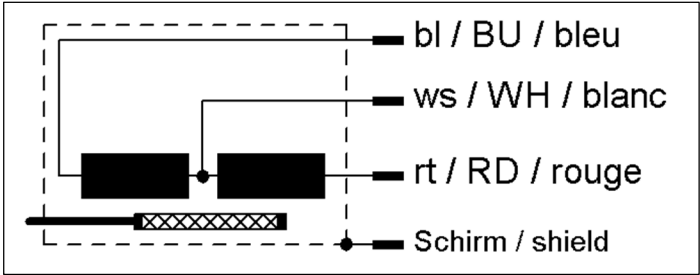
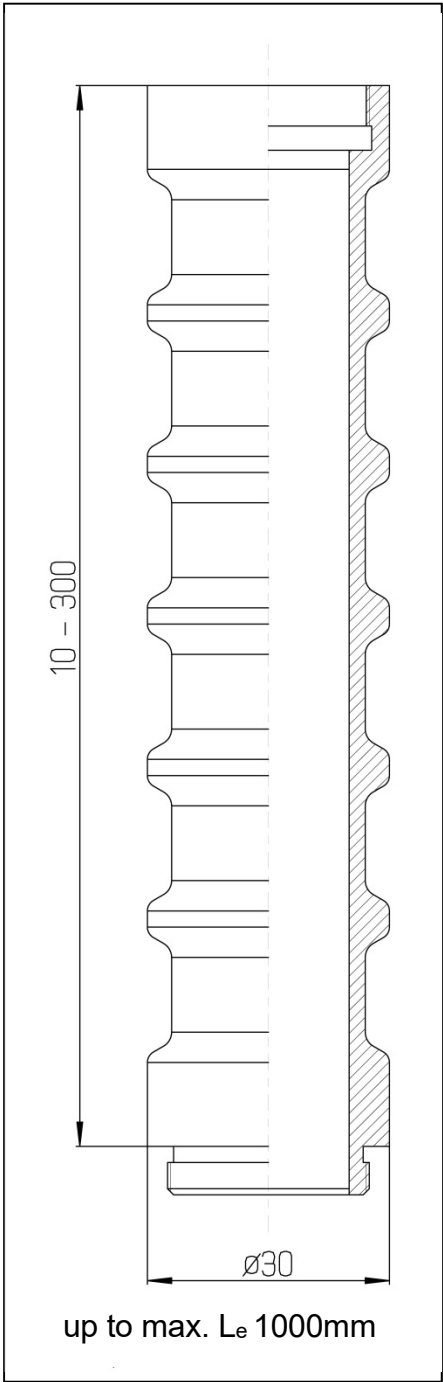
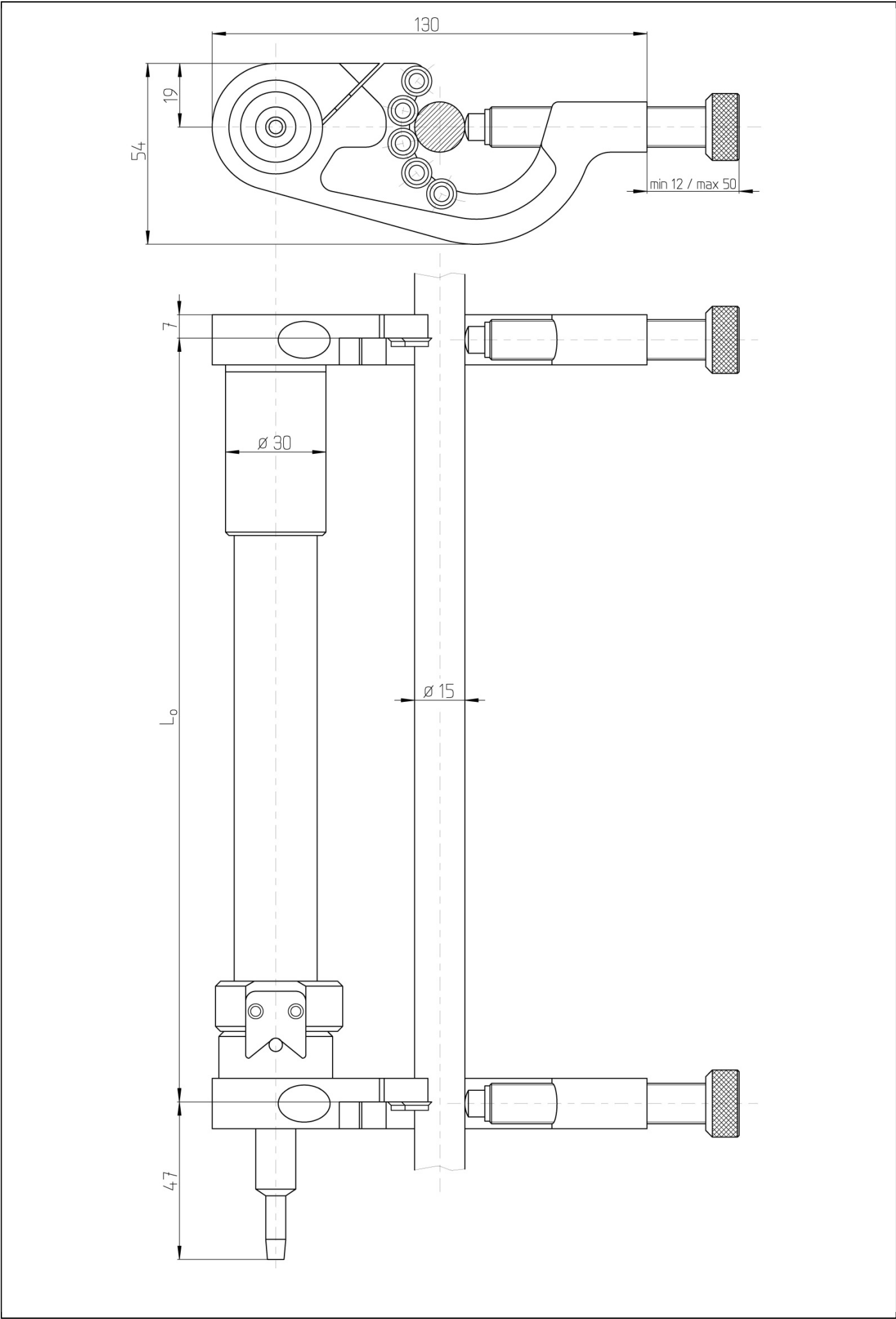


Figure 2: connection diagram effective from 2015



Picture 1: Extension tube



Picture 3: MFI - Dimensions