

MFT 4

High accuracy measuring feeler strain gauge type



Area of application

The MFT is a measuring feeler with highest accuracy based on a full bridge strain gauge. With a travel 4 mm it is suited for many measuring tasks. The MFT is superior compared to inductive transducers due to its markedly higher accuracy and smaller size. Advantages of the MFT over incremental gauges are:

- 1. Smaller dimensions
- 2. Reduced weight
- 3. Less susceptible to disturbances
- 4. No counting mistakes by exceeding the measuring speed (impacts)
- 5. The measured value is retained if the supply is switched off or in case of power failure
- 6. Many MFTs can be connected in parallel to obtain an averaged value
- 7. The linearity proceeds in a continuous curve so that the measurement errors for short distances lie well below the given accuracy

Design and function

A full bridge strain gauge bonded to a measuring spring is seated in an aluminium housing milled from a solid block. The measuring pin is guided in parallel and its travel is limited by stoppers. The measuring spring is deflected by a miniature grooved bearing so that transverse forces and over loading are ruled out. The measuring tip contains a steel sphere which can be replaced by a commercially available spare with M2.5 threading. The shaft Ø 8 or the 4 housing threads serve as a fastener of the MFT 4. The MFT is also available with pneumatic lifting of the measuring tip (MFTP). For measurements where the loading force at the measuring tip is very critical a gauge head model with continuously adjustable loading force can be supplied as per customer's requirement.

Operation and calibration

The sensitivity calibration of the gauge head is easily and exactly performed with gauge blocks. Linearity changes are improbable but they can be monitored with gauge blocks as well. The calibration instrument KMF 01 is also well suited for this purpose.

The MFTP model must be operated with a 1 m pneumatic pipe and a MF-coupling.

Delivery	sco	pe
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1	MFT 4 with connector and 5 m cable
1	Measuring tip with steel sphere
1	Calibration block 4 mm
1m	Pneumatic pipe with MF-coupling compatible with Festo-coupling socket KD-M5-B (only MFTP)
1	Test report

Spare parts and accessories

Measuring tip with steel sphere

Lid with pneumatic cylinder for lifting the

measuring tip

Dust protection measuring pin



Drawing 1: MFT 4 - Dimensions

MFT 4
Full bridge strain gauge
4 mm
+/- 0.6 μm
0.2 %
2 mV/V
350 Ω
20 40 cN
40 g
ca. 3 bar

* The larger value is admissible

Connection instructions

Pin 1	Ua / Output strain gauge
Pin 2	U _e / Supply voltage
Pin 3	U _e / Supply voltage
Pin 4	U _a / Output strain gauge
Pin 5	Shield
To change measuring direction exchange leads 1 + 4 or 2 + 3	