

MAGNET HOLDER WITH STRAINPAD

TENSION &
COMPRESSION



- $\pm 800 \mu\epsilon$
- MOUNTED IN SECONDS, REUSABLE
- 1 000 000 LOAD CHANGES


Dynamic
Measurement


Aluminum
Alloy

NOMINAL STRAIN (FS)

$\mu\epsilon$	Bridge resistance (Ω)	Gauge factor (GF)	Accuracy	Load changes at 300 $\mu\epsilon$
± 800	350	$2.0 \pm 3 \%$	$< \pm 0.5 \%$	1 000 000

Further standard mounting devices, and individual ones built to the application, are available — please state the measuring point.



OVERVIEW

Surface strain measured without glue: two springs and two knurled screws press the StrainPad — an encapsulated foil strain gauge of 10 mm diameter and 0.2 mm height — so firmly against a ferromagnetic surface that friction takes over the task of the adhesive. What the gauge then reads is the surface strain, in the same quality as a bonded gauge, and it reads it within seconds instead of the three quarters of an hour a bonded gauge needs to be prepared, glued and cured. The holder is taken off as quickly as it went on and used again on the next measuring point; nothing is drilled, nothing is ground, nothing is consumed. It cannot be overloaded — instead of damage an offset appears. The gauge is uniaxial, calibrated to $GF = 2.0$, and works into any strain gauge amplifier, which makes it the usual instrument for checking FEM calculations and for stress analysis on steel structures. Other mounting devices are available, and individual ones are built to the application.

MEASUREMENT

- Direct reading of the surface strain, like a bonded strain gauge
- Maximum elongation $\pm 800 \mu\epsilon$
- 350Ω foil gauge, $GF = 2.0 \pm 3 \%$
- Uniaxial, measuring grid 0.6 mm, $\varnothing 10$ mm
- Accuracy $< \pm 0.5 \%$ of the final value
- Cannot be overloaded — an offset appears instead of damage
- 1 000 000 load changes at $300 \mu\epsilon$ elongation
- Dynamic applications

MOUNTING AND USE

- Held by magnet — no drilling, no grinding, no glue
- Mounted and removed in seconds
- Reusable — no consumables
- Contact pressure 100 ... 300 N, setting time 15 min
- Smallest radius of curvature 3 mm
- Passive: no amplifier inside
- Individual mounting devices on request
- For checking FEM calculations and stress analysis



TECHNICAL DATA

STRAINPAD

Measuring grid length	0.6 mm
Direction	uniaxial
Measuring grid material	constantan
Capsule material	polyimide
Outer diameter · height	10 mm · 0.2 mm
Connections	solder pads

PRECISION

Maximum elongation	$\pm 800 \mu\epsilon$
Accuracy	$< \pm 0.5 \%$ from the final value
Cross sensitivity	-0.1%
Reference temperature	23 °C
Usage temperature	5 ... 60 °C
Possible temperature adjustment	10.8E-6 1/K, ferritic steel

MECHANICAL PROPERTIES

Housing material	aluminium
Dimensions	102 x 73.5 x 46 mm · 36 mm wide · 78 mm high with the connector

MECHANICAL LIMITS

Overload capacity	unlimited — an offset can occur
Achievable load changes	1 000 000 at 300 $\mu\epsilon$ elongation

ELECTRICAL CONNECTION

	¼ bridge		
1	strain gauge · black	4	not used
2	strain gauge · white	5	not used
3	not used	6	not used



A quarter bridge on pins 1 and 2 — black and white lead; the remaining four pins are not used.

ELECTRICAL PROPERTIES

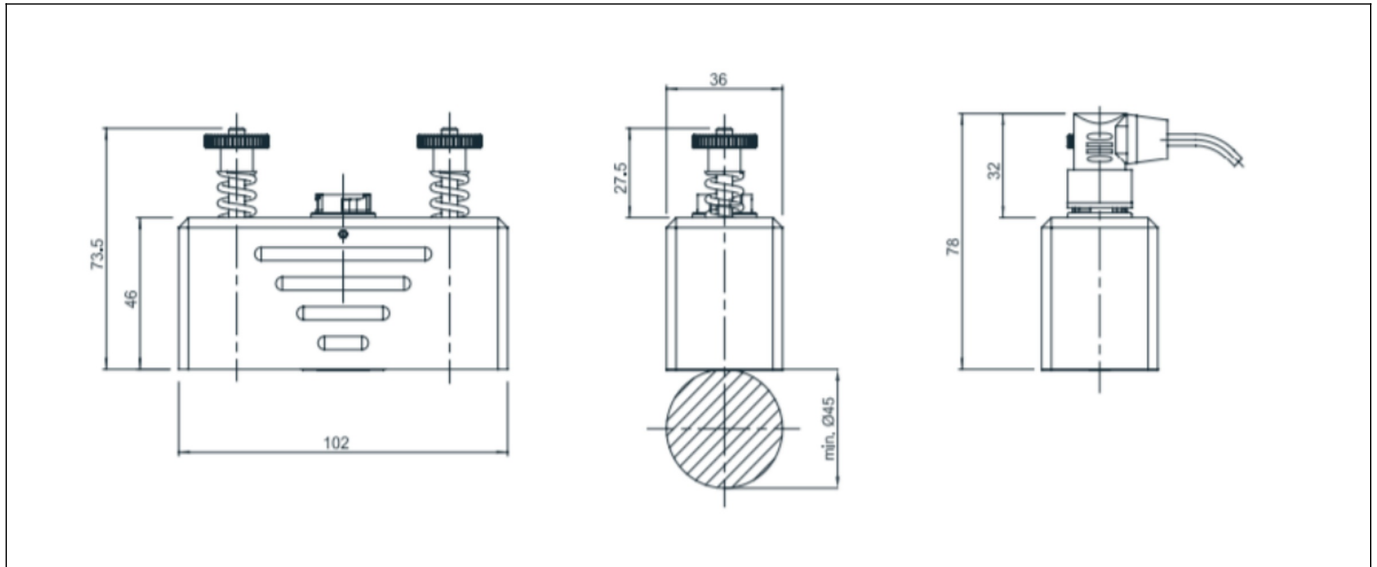
Bridge resistance	350 Ω
Resistance tolerance	$\pm 0.2 \%$
Gauge factor (GF) · tolerance	$2.0 \cdot \pm 3 \%$
Recommended bridge voltage	1 V
Maximum bridge voltage	10 V

MOUNTING

Surface required	ferromagnetic, min. $\varnothing 45$ mm
Contact pressure	100 ... 300 N
Smallest radius of curvature	3 mm
Setting time	15 min



DIMENSIONS (mm)



Three views of the holder. The hatched circle in the middle view is the smallest surface the magnet needs: min. $\varnothing 45$ mm.

