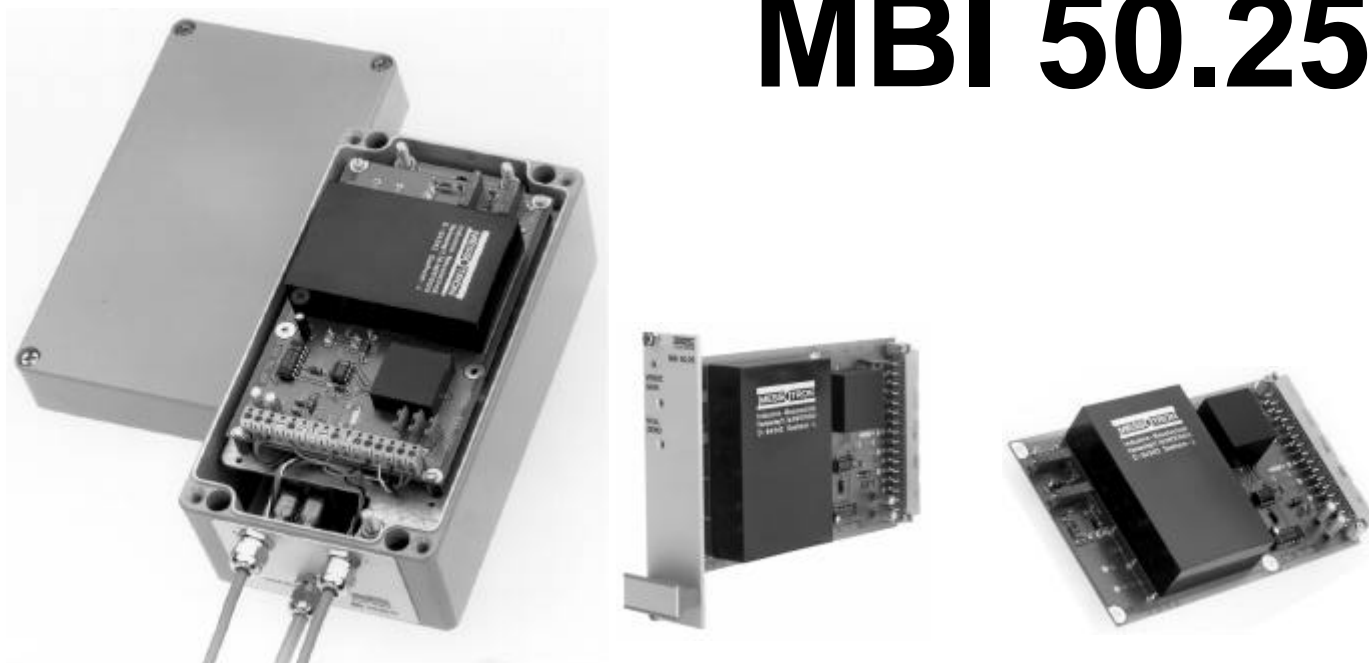


MEASURING AMPLIFIER

MBI 50.25



The MBI 50.25 series measuring amplifiers are designed to operate inductive displacement transducers based on differential inductor or differential transformer principle.

- ↙ Demonstrated in industry and laboratories
- ↙ Robust design on Euro PCB or in sealed housing
- ↙ Compatible with 19"-assemblies and 19"- housings
- ↙ Output 10 V or 4...20 mA

MESSOTRON Hennig GmbH & Co.KG
Friedrich-Ebert-Str. 37
D-64342 Seeheim-Jugenheim
Germany

Tel.: +49/6257 82331
Fax: +49/6257 85783

Technical description

The measuring amplifier MBI 50.25 supplies the 10 kHz excitation bridge circuitry voltage required for operating inductive measuring transducers and it conditions the transducer output signal. The bridge supply voltage is trapezoidal.

The amplifier is available with either voltage output (max. ±10 V) or current output (4 ... 20 mA). The voltage output can be set to between ±1 V to ±10 V.

The measuring amplifier MBI 50.25 is accommodated on a European standard size PCB 100 x 160 mm. It can directly be inserted into 19"-units or racks, interfacing via a DIN 41612 connector or a terminal block. Optionally, a sealed case (IP 65) version is available.

Adjustment is possible of zero-point setting and the gain. Coarse setting is done by resistors, fine tuning on 10-turn high precision potentiometers or trimmers, according to type. These are accommodated on the front panel - no adjustment on the PCB is required. The phase can be adjusted by capacitors.

When ordered with or for MESSOTRON transducers, adjustments are effected before delivery.

Types

Euro PCB **without front panel**, with trimmers for gain and zero-point setting, supply voltage ±15 V

MBI 50.25.5	10 V output
MBI 50.25.7	4 ... 20 mA output

Euro PCB **with front panel**, with trimmers for gain and zero-point setting, supply voltage ±15 V

MBI 50.25.3	10 V output
MBI 50.25.8	4 ... 20 mA output

Euro PCB with front panel, with **10-turn precision potentiometers** for gain and zero-point setting, supply voltage ±15 V

MBI 50.25.1	10 V output
MBI 50.25.9	4 ... 20 mA output

Amplifier in **housing** (IP65), with trimmers for gain and zero-point setting, supply voltage 220 V~

MBI 50.25.10	10 V output
MBI 50.25.12	4 ... 20 mA output

Note: The 10 V port delivers an output signal of **±10 V** with symmetric systems (most standard inductive transducers), with asymmetric systems (e.g. MESSOTRON transducers) between **0 ... 10 V**.

Specifications

Suitable transducers

Type	inductive transducer in differential inductor or differential transformer circuit
Required sensitivity	10 ... 400 mV/V

Oscillator

Excitation frequency	approx. 10 kHz (trapezoidal)
Bridge supply voltage	approx. 1 V _{eff}

Amplifier

Linearity error	< 0.1%
Temperature coefficient of zero-point	< 0.1% /10K
Temperature coefficient of sensitivity	< 0.2% /10K
Noise level (Residual carrier voltage)	< 2 mV _{eff}
Max. load current	10 mA
Zero-point adjustment range	approx. ±10% of full nominal stroke; optionally, up to 100%
Cut-off frequency of measuring signal (-3 dB)	500 Hz

General technical data

Supply current max.	25 mA @ ±15 V without current output 50 mA @ ±15 V with current output
Zero-point adjustment	by trimmer or potentiometer
Gain adjustment	fine by trimmer or potentiometer coarse by resistor
Phase adaptation	by capacitor
Interface	connector acc. to DIN 41612, 32-pin, type C special version:: 16-pin terminal
Mating part	multiple contact strip (DIN 41612) 32-pin, type C/D
Operating temperature	0 ... 60°C
Storage temperature	-25 ... 85°C

Type dependent technical data

Supply	±15 V; or 220V~ for case-integrated
Output	±10 V; or 4 ... 20 mA
Dimensions (without front panel and case)	approx. 100 x 167 x 25 mm
Front panel dimensions	35.3 x 128.4 mm (19": 7 TE x 3 HE)
Mass (without front panel and case)	approx. 0.2 kg
Mass with front panel	approx. 0.23 kg

Dimensions and mass of case-integrated amplifier are specified on the dedicated data sheet 'Amplifier with housing'.

Subject to alteration
06/96