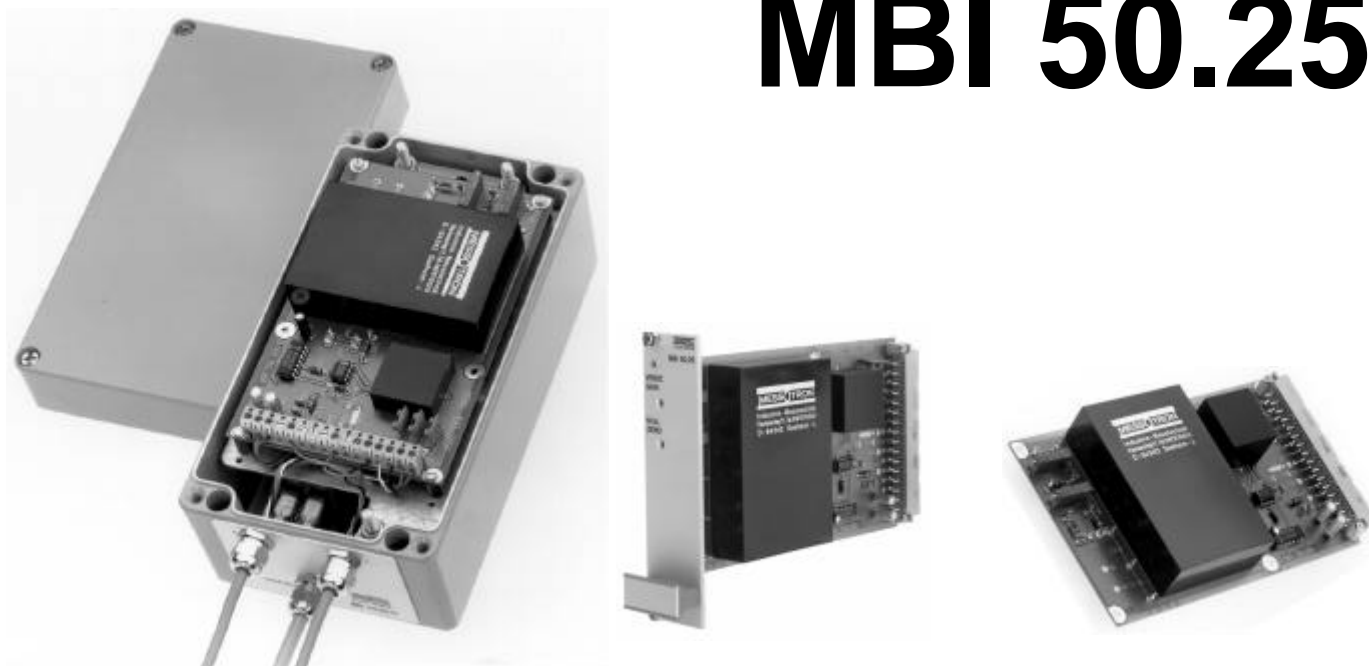


MEASURING AMPLIFIER

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**

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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