

Measuring amplifier for operation of inductive displacement sensors



- Suitable for LVDT and LVIT
- Eurocard PCB or field enclosure
- Supply: ± 15 V, +24 V, 230 V or 115 V
- Output: 10 V or 4...20 mA
- Configuration of gain, electrical zero and phase
- Adjustment by easy to reach trimming potentiometers

Technical Specifications

General information

Linearity error	< 0,1 % FSO
Carrier frequency	5 kHz ± 5 % (sine); optional 1...20 kHz
Dynamic bandwidth	500 Hz (± 3 dB) (max. 1/10 of carrier frequency)
Excitation voltage (primary)	approx. 2 V _{rms} @ 5 kHz, sinusoidal max. 12 mA _{rms}
Input resistance (secondary)	approx, 200 k Ω
Output signal	4...20 mA, impedance < 500 Ω or. ± 10 VDC, ballast resistor > 10 k Ω
Noise level and residual carrier voltage	< 5 mV _{rms}
Temperature coefficient of zero point	< 0,10 % / 10 K @ 100 mV/V < 0,15 % / 10 K @ 20 mV/V
Temperature coefficient of gain	< 0,05 % / 10 K @ 100 mV/V < 0,15 % / 10 K @ 20 mV/V
Operating temperature	0...60 °C
Storage temperature	-25...85°C
Electromagnetic compatibility	DIN EN 61326-1
Electric safety	DIN EN 61010-1

Eurocard PCB

Supply voltage	MBI 46.31.1y: ± 15 VDC stabilized MBI 46.31.3y: +20...+36 VDC
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Power consumption	max. 2 W
Electrical connection Required mating plug	Connector to DIN 41612, 32-pin multi-point plug, type C 32-pin multi-point strip Special designs: 16-pin terminal block
Dimensional data Front panel	approx. W 100 x H 18 x D 167 mm approx. 35,3 x 128,4 mm (7 U, 3 U)
Weight	approx. 0.1 kg

Field enclosure ± 15 V oder 24 V

Supply voltage	± 15 VDC stabilized or $+20 \dots +36$ VDC
Power consumption	max. 2 W
Electrical connection	Terminal block (internal), connecting cable for supply voltage, displacement sensor and output signal routed to the outside.
Dimensional data	approx. W 120 x H 91 x D 122 mm
Weight	approx. 1.4 kg
Protection rating	IP 65

Field enclosure 230 VAC (115 VAC)

Supply voltage	230 VAC (± 10 %), 48...60 Hz
Power consumption	max. 4 W
Electrical connection	Terminal block (internal), connecting cable for supply voltage (with earthed safety plug), displacement sensor and output signal routed to the outside.
Dimensional data	approx. W 120 x H 91 x D 220 mm
Weight	approx. 2 kg
Protection rating	IP 65

Suitable sensors



Inductive differential transformers (LVDTs)	with 4-wire technology
Differential inductors (LVITs) and Long-stroke sensors (eddy current design)	Inductive haft bridges with 3-wire technology
Rated output	20...600 mV/V
Input impedance	100...1000 *

Overview of types and options

MBI 46.31. x y		/zzz
Power supply	Version and output signal	Options
±15 VDC 1	1 Eurocard PCB without front panel, ±10 V output; connector	/nn kHz – alter-native CF in the range 1...20 kHz
230 VAC 2	2 Eurocard PCB without front panel, 4 ... 20 mA output; connector	/0-10 V ¹⁾ output signal 0...10 V
+24 VDC 3	3 Eurocard PCB with front panel, ±10 V output; connector	/0-20mA output signal 0...20 mA
	4 Eurocard PCB with front panel, 4 ... 20 mA output; connector	/115 V instead of 230V, only field enclosure available
	5 Eurocard PCB without front panel, ±10 V output; terminal block	
	6 Eurocard PCB without front panel, 4 ... 20 mA output; terminal block	
	7 Field enclosure, ±10 V output	
	8 Field enclosure, 4 ... 20 mA output	