

Multi-Functions-Amplifier MFA 1000

High-Frequency Voltage Amplifier with Integrated Sensor Supply

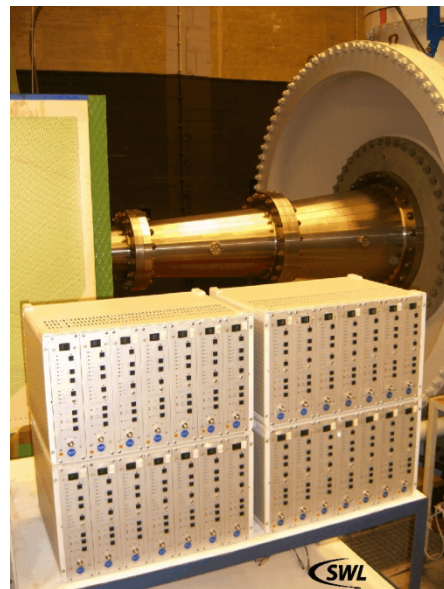
Applications

This multi-purpose amplifier fulfils several tasks at the same time. On the one hand, it is a precision high-frequency amplifier with different amplification factors. On the other hand, it can also supply sensors with different constant currents simultaneously.

It has been used successfully for years to supply and amplify thin-film thermometers, piezoresistive pressure sensors, thermocouples and similar sensors. Its original version was developed for flow experiments on the European space glider Hermes in the hypersonic shock wave wind tunnel in the 80s, where pressure sensors from e.g. Kulite, Entran and Endevco etc. as well as thermocouples and thin film probes were amplified with the MFA 1000..



Front and Back side of MFA 1000
incl. power supply (3rd Generation)



4 racks of 2nd generation with 7 MFA 1000
each at the Shock Wave Lab of RWTH Aachen
(courtesy of Prof. Dr. H. Olivier, Shock Wave Laboratory of the
RWTH Aachen),

With its unique wide frequency range, covering all settings above 1 MHz, it is the universal amplifier for all applications. Its particular strength lies in experiments in the shock wave and explosion wave range, where data must be acquired quickly.

It can also be used just as well for stationary processes. Various constant currents can be used as sensor supply independently of the amplifier section. Two different inputs (2-pole and 6-pole) make it possible to connect all types of sensors.

The handling of the amplifier with its clear display leads to a quick overview of all settings.

The MFA 1000 is available in housings with 2, 6, 10 or 16 amplifiers including power supply and optionally with RS 232 interface.

The MFA-100 of the former MF Instruments GmbH is identical to our amplifier.

Technical Data

| | |
|--------------------------|---|
| Input voltage: | ± 3.5 V |
| Operating range: | ± 2.5 V Wide range compensation range (ZI adjustment) after compensation (ZI) ± 1.0 V signal range |
| Input resistance: | 1 MOhm |
| Input connectors: | BNC negative, Lemosa 6-pole, RS 232 |
| Noise: | 10 μ V RMS/ 150 μ V p-p @ V = 500, open bandwidth |
| Gain range: | 1-2000 |
| Gain accuracy: | $< \pm 1$ ‰ error |
| Bandwidth: | for gain up to 100 ~1000 kHz upper FG. at amplification up to 1000 ~1300 kHz upper FG lower cut-off frequency approx. 1.0 Hz with AC coupling |
| Filter: | 2-4-10-20-40-100-200-400 kHz |
| Zero adjustment: | ± 2.5 V |
| Output voltage: | ± 10 V, 10 nF, short-circuit proof |
| Output connectors: | BNC negative |
| Constant current source: | 5.0 / 7.0 / 10 mA, voltage range 0-12 V |
| Control: | Adjustment manually or optionally via RS232 interface |
| Housing: | Housing incl. power supply for 2, 6 or 10 amplifiers |
| Dimensions (L x H x W): | 220 x 128.5 (3 U) x 25.4 mm (5HP) |
| Mains connection: | 100-240 V, ± 15 V, +180 to -100 mA |

Article Numbers

| | |
|------------|---|
| 200-130-1 | Müller multifunctional amplifier MFA 1000, 100-240 V |
| 200-130-4 | Table-top housing for up to two MFA 1000 incl. power supply |
| 200-130-5 | Table-top housing for up to two MFA 1000 incl. power supply and RS232 interface for setting the amplifier by computer |
| 200-130-6 | Table-top housing for up to 6 MFA 1000 incl. power supply (1/2 19" 42 TE) |
| 200-130-7 | Table-top housing for up to 10 MFA 1000 incl. power supply (3/4 19" 63 TE) |
| 200-130-8 | Table-top housing for up to 16 MFA 1000 incl. power supply (19" 84 TE) |
| 200-130-9 | Surcharge for additional RS232 interface for setting the amplifier via computer |
| 200-130-10 | MFA 1000 dummy plate for unused slots |
| 800-200-3 | 6-pole Lemosa connector for MFA 1000 |



Table-top Housing for one, two or more Amplifier incl. Power Supply

