



Datasheet

# 24ch Preamplifier

# MFPA-24B

|                               |   |
|-------------------------------|---|
| Microflown Technologies Phone | : +31 880 010 811   |
| Tivolilaan 205                | Fax : +31 880 010 810   |
| 6824 BV Arnhem                | Mail : <a href="mailto:info@microflown.com">info@microflown.com</a> |
| The Netherlands               | Web : <a href="http://www.microflown.com">www.microflown.com</a>    |

# MFPA-24B

## Improved Electronics for Microflow Arrays

### Connection of probes in batches of 12 all on one cable

The MFPA-24B enables the direct connection of 12 Microflow PU probes (2 channels per probe) to a front-end, without the need of a separate signal conditioner for each probe. The MFPA-24B has a single Lemo LM series connector to link preamplifier and array grid.

The amplifier provides power to the sensors and at the same time amplifies the signal prior to the Analog to Digital conversion at the front-end.

The MFPA-24B is connected to the array grid by means of the CAB-MFPA24B and to the Frontend by means of the Universal cable.

The Universal cable enables the connection of IEPE sensors to the measurement chain.

MFPA-24B can be used with any acquisition software. VELO software platform applications are fully compatible and built around MFPA-24B to ensure an optimal performance with extensive analyzing capabilities.

# I. MFPA-24B

## COMPATIBLE SENSORS

The MFPA-24 is specially designed to be used in any measurement environment with a large number of sensors in which using multiple regular MFPA's would be impractical. The following Microflow™ probes are compatible with the MFPA-24:



PU mini

PU match

PU regular

## II. CHARACTERISTICS

| Parameter                                     | Value          | Unit/ note |
|---|----------------|------------|
| <b>Physical</b>                               |                |            |
| Dimensions (W x D x H)                        | 126 x 49 x 180 | mm         |
| Weight  | 900            | g          |
| <b>Environmental parameters</b>               |                |            |
| Relative humidity range                       | 10 - 90%       | -          |
| Temperature range                             | -20 to +60     | °C         |
| <b>Power input</b>                            |                |            |
| Power supply voltage range                    | 10-30          | Vdc        |
| <b>Power output</b>                           |                |            |
| Absolute maximum input voltage (all channels) | ±12            | V          |
| Output voltage                                | 9.5            | Vdc        |
| <b>Signal input (LEMO LM series)</b>          |                |            |
| Input impedance AC                            | 22             | kΩ         |
| High pass cut-off frequency (all channels)    | 0.33           | Hz         |
| <b>Signal output (50 pin sub-d)</b>           |                |            |
| Short circuit current                         | ±65            | mA         |
| <b>Signal gain</b>                            |                |            |
| Gain velocity channels (even channels)        | (11 x) 20.83   | dB         |
| Gain pressure channel (odd channels)          | (4 x) 12.04    | dB         |

# III. INSTALLING MFPA-24B

## CONNECTING THE SENSOR GRIDS TO MFPA-24B

1. Use the Lemo LM series to connect the handle output with the MFPA-24B input



Figure 1. Connect probes to MFPA-24

- **REFERENCE SENSORS**

1. Reference sensors can be connected to the system directly via the 50 pin sub-d Universal cable BNC connectors. The pressure and velocity channels of probe input 12 are connected to channels 23 and 24 respectively. Connecting a reference to either or both BNC's will disconnect the corresponding pressure or velocity channel of probe input 12.



Figure 2. BNC connectors on 50 Pin Universal cable to Reference sensors

## CONNECTING MFPA TO FRONTEND

The default front-end is DIC-24 and all connections explained are assumed to be for this front-end. For other front-ends, specific cables and accessories need to be ordered.

1. Use the 50 pin sub-d Universal cable (CAB-50-UNV) to connect the MFPA-24 and Front-end.
2. Use the end with the Lemo connector to connect to the Heim “DIC 24.”
3. Use the end with the Power connector to connect to the MFPA-24.

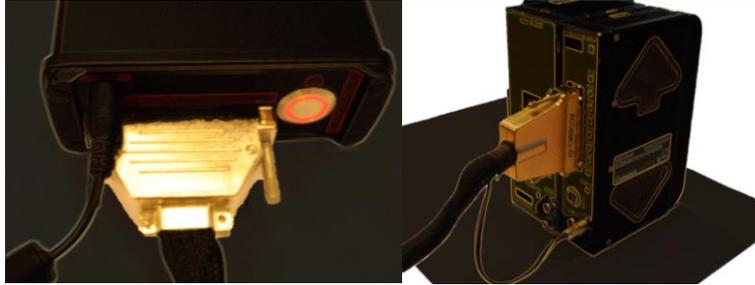


Figure 3. Insert 50 pin sub-d on DC 24 side and power connector Figure 4. Insert 50 pin sub-d into MFPA and power connector

### POWERING MFPA

1. Make sure that at both ends of 50 pin sub d cable (MFPA-24 and “Heim DIC 24”) the power cable is inserted so that the MFPA receives power from the front-end (refer to figure 2 & 3).
2. Connect the “Heim Dic-24” to the “Heim PWAC” module in order to provide power.
3. Connect the power cable to the “Heim PWAC.”
4. Turn the “Heim PWAC” on.



Figure 5. Connect power cable and link PWAC-DIC24; Click power ON.

If the system power connections were done properly, the LED ring around the power button on the MFPA-24 should be lit red when pressed.

## IV. USAGE AND PRECAUTIONS



- Do not submerge the electronics in water as this will lead to permanent damage.
- Only use the cables supplied with the kit. Any modifications to this cable or the use of cables of a different brand or type may result in permanent damage to the probe or the signal conditioner.
- The new Microflown 24-Channel signal conditioner (MFPA-24) CAN be exchanged with a product of the same type to be used with a different probe. Probe and MFPA-24 are no longer matched by calibration.
- The Microflown 24-Channel signal conditioner (MFPA-24B) MUST always be powered via battery or power supply. Do not use any other power supply than the one provided with the setup, as this may result in permanent damage to the signal conditioner!
- When connected to a front-end, ensure that the ICP power options are correctly set and disabled for the channels where Microflown™ probes are connected.

## V. TECHNICAL SUPPORT

If you experience any problem or doubt regarding your equipment, please contact Microflown™ Technologies Customer service:

- Mail: [cs@microflown.com](mailto:cs@microflown.com)
- Skype: cs.microflown
- Telephone: +31(0) 88 001 08 11 Monday to Friday, from 9:00 to 17:00 (UTC+1).

## VI. WARRANTY POLICY, REPAIRS AND REPLACEMENTS

### WARRANTY AND REPLACEMENT OR SUBSTITUTION

During the first two years (24 months) the seller offers a warranty on all its products, except for trading items and third party manufactured items. The seller warrants that all products will be free from defects in materials and workmanship for this period of two years. During this two year period, the seller will repair or replace defect products free of charge. Products damaged by accident, abuse, misuse, natural disaster or by any unauthorized disassembly, repair or

modification are not covered by this warranty. The incurred transportation costs of returning the products to seller will be borne by the buyer. The logistical cost for returning the products back to the buyer will be borne by the seller. Several products come with a “VOID if seal is broken” sticker, the warranty is void at all times when this sticker is broken.

#### **GRACE PERIOD (YEAR 3 AND 4)**

During the third and fourth year the seller offers a grace period. In the grace period the products purchased at an earlier date can be replaced by completely new state of the art products of the same scope of the original purchase. This applies only for the products known as standard probes and signal conditioners. In the first year of the grace period, (year 3) customers have an option to replace their products for 25 % of the actual ex works end-user price. The full freight and packaging charges apply.

In the second year of the grace period, (year4) customers have an option to replace their products for 50 % of the actual ex works end-user price. The full freight and packaging charges apply.

The new products are accompanied by a new warranty. Both the two years warranty and grace period become applicable again from the date of invoice.

#### **REPAIRS OUTSIDE WARRANTY POLICY**

Replaced/repared parts come with a six month warranty under the same conditions as the two year warranty.