AVL AMPLIFIERS AND SIGNAL CONDITIONING

MICROIFEM PIEZO 4TH GENERATION

PIEZO AMPLIFIER

The AVL MicroIFEM 4P4 is the new 4-channel piezoelectric amplifier for high-precision combustion pressure analysis on engine testbeds or in vehicle. Benefiting from the experience of 3 previous MicroIFEM generations and of close partnerships with our customers, the 4th generation offers new solutions to manage real-life constraints, and great flexibility in terms of test environment and application.

Its small dimensions (9.5”, 1HU) and robustness allow ideal mounting close to the sensors e.g. in a cable boom-box, meaning short signal cables and lowest impact of electromagnetic interferences on the signal quality. A differential amplifier stage at the input also eliminates unwanted ground loops, thus protecting the charge signal from noise and interferences.

Function Summary

- High-end piezoelectric amplifier with cycle-based drift compensation
- Automatic sensor recognition and monitoring via AVL SDM™ (Sensor Data Management)

Application Range

- Combustion pressure analysis on testbeds or in vehicle
- Any kind of pressure or vibration measurement with piezoelectric sensors

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Technical Data / Product Name	**MICROIFEM PIEZO 4P4**
GENERAL	
Input channels	4
Dimensions WxHxD	220 x 40 x 230 mm
Weigth	1.5 kg
Power supply	9.5 V ... 36 V DC or 100 … 240 V AC via optional AC adapter
Power consumption	Operation: 15 W; Startup: 22 W
Temperature range	-40°C…+60°C (-40°F…..+140°F)
Sensor Data Management (SDM™)	Supports both SID sensors and Sensor Data Connectors (SDC)
Parameterization	Remote-controlled via PC interface
CHARGE AMPLIFIER	
Input range	Standard range: up to 14,400 pC. Double range: up to 28,800 pC
Hum and noise (typical)	< 1 mV_{RMS} or 10 mV_{PP} (0 to 50 MHz)
Linearity error	< 0.01% FSO
Low-pass filter	12 kHz, 20 kHz, 30 kHz, 50 kHz or 100 kHz upper cut-off frequency
Drift compensation	Continuous drift compensation or cyclic drift compensation
Output signal	-10 V … 10 V on BNC sockets; Offset: 0 V or -8 V

Your Benefits at a Glance

- Remote parameterization from PC via user-friendly GUI
- Automatic gain calculation from sensor sensitivity, pressure range, desired output voltage
- Robust mechanical design for use on testbeds and in vehicle (mobile application)
- Wide temperature range down to –40°C for use in cold testbeds
- Full support of ground-isolated sensors
- Ground-loop suppression by full galvanic isolation between power supply and signal output
- Selectable zero level for the output voltage: 0V or –8V offset for increased output range
- Cyclic drift compensation allowing fine adjustments of the required compensation current

NEW!

- ✓ Larger choice of low-pass filters: 12, 20, 30, 50 or 100 kHz
- ✓ New Sensor ID generation with improved interrogation distance and time
- ✓ Easy device grounding via new external grounding screw on the back panel