



AVL AMPLIFIERS AND SIGNAL CONDITIONING

MICROIFEM 2P5 PIEZO & P_{MAX}

PIEZO AMPLIFIER AND PEAK PRESSURE METER

The AVL MicroIFEM piezo&p_{MAX} 2P5 is a 2-channel piezoelectric amplifier for conditioning and evaluation of cylinder pressure signals on engine testbeds. It can be used either in combination with a data acquisition system for high-end R&D activities, but also as a stand-alone, real-time peak meter for durability testing or basic calibration tasks. Its built-in intelligence indeed allows autonomous p_{MAX} calculation on both input channels, using a robust cycle detection algorithm.

The MicroIFEM 2P5 is fully compatible with AVL Sensor Data Management, and supports sensors with built-in SID element, as well as TEDS or SDC (Sensor Data Connectors). Its small dimensions (9.5", 1HU) and its 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 undesired ground loops, thus protecting the charge signal from noise and interferences.

Due to the large choice of output signals and interfaces it supports, the MicroIFEM 2P5 can be easily integrated in any type of test environment. Not only the raw pressure signals, but also the cyclic p_{MAX} values, are available as analog outputs. The peak pressure signals are furthermore delivered to the CAN-Bus socket. The device also supports definition and detection of single and/or buffered threshold overshoots, which can trigger TTLs and relays.



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Technical Data / Product Name

MICROIFEM 2P5 PIEZO&P_{MAX}

GENERAL	
Input channels	2
Dimensions WxHxD / Weight	218 x 42 x 230 mm / 1.6 kg
Power supply	9.5 V ... 36 V DC
Power consumption	Operation: 10 W; Startup: 13 W
Temperature range	-40°C...+60°C (-40°F.....+140°F)
Sensor Data Management (AVL SDM™)	Supports both sensors with SID elements and TEDS/SDC (Sensor Data Connectors)
Parameterization	Remote-controlled via PC interface (IndiSignal / IndiCom)
CHARGE AMPLIFIER	
Input range	Standard range (2P5G): up to 14,400 pC. Double range (2P5H): 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	2 kHz, 5 kHz, 10 kHz, 20 kHz, 50 kHz or 100 kHz upper cut-off frequency
Drift compensation	Cyclic or continuous
Output signal	-10 V ... 10 V on BNC sockets; Offset: 0 V or -8 V
p _{MAX} FUNCTION (OPTIONAL)	
Averaging	Average over up to 500 cycles, or cycle-by-cycle value
Zero-level correction	Voltage input for manifold pressure or speed-dependent correction table
DAC outputs	-10 V ... 10 V on BNC sockets; Can alternatively be used for engine speed (2 DACs)
Other outputs	CAN-bus output for p _{MAX} values; TTL and relays for customized events and alarms

YOUR BENEFITS AT A GLANCE

- Enables autonomous monitoring thanks to 0-level correction and multiple output formats
- Compatible with the AVL CAL UNIT for easy on-site accuracy check and adjustment
- Full integration in IndiCom: Parameterization, traceability, advanced sensor data logging

OPTIONS / EXTENSIONS

- **TI04P_{MAX}.01** Upgrade to p_{MAX} functionality
- **TI04CALUA.01** CAL UNIT: Calibration unit for accuracy check and adjustment