

AVL

AVL PLUtron™ CLASSIC PLUTRONIZE BEYOND LIMITS

Fuel flow meter for component, engine and vehicle testing

THE AVL SOLUTION

AVL PLUtron™ CLASSIC is a universal flow meter dedicated to automotive applications with a measurement range up to 300 l/h at up to 2 MPa pressure.

State-of-the-art PLU features, such as large measuring span with high accuracy down to low flow, have been massively improved. On top of this, AVL PLUtron impresses with truly unique new capabilities:

- Measuring span extended to reverse flow
- Direct mass flow measurement
- “Plug & Play” usability in setup and operation
- Increased reliability under rough conditions

Fast and accurate flow measurement over a 1:700 span is enabled by 50 x higher resolution. Increased dynamic capability supports pulsating flow conditions. Protection class IP67 and robustness against vibration and shock ensure reliable operation in rough environments.

Furthermore, AVL PLUtron™ CLASSIC features a wide media compatibility with fuels, test fluids and even urea solution. With an optionally integrated density meter it enables direct mass flow rate output. Flexible interfaces like CAN bus and an optional handheld display facilitate flow meter adaptation into every automotive testing environment. Smart sensor control and advanced self-diagnostics ensure simple startup and reliable operation.

THE ADDED VALUE

- Optimized workflow with unique Plug&Play usability
- No influence on tested system ($\Delta p=0$)
- Reliable results under rough conditions due to robust design and long-term stable calibration
- Higher flexibility due to large measuring ranges with highest resolution and accuracy
- Up to 15 % shorter test time in component production at affordable cost of ownership



Vehicle Testing



Engine Testing



Component Testing

THE CHALLENGE

Interconnection and compatibility between all stages of automotive engineering are today's major challenge in managing growing complexity. Integrated measurement technology must cover the complete application chain between component testing, engine testbed applications and in-vehicle testing at the chassis dynamometer and on the road.

The need to validate small improvement steps $< 1 \text{ g/kWh}$ increases accuracy requirements for fuel consumption measurement equipment. Particularly an intensifying focus on transient engine operation requires an even faster dynamic response of the flow meter and wide measuring span. In all of these concerns AVL PLUtron™ opens up a new dimension of dynamic fuel consumption measurement.

THE APPLICATION

In-vehicle testing on gasoline vehicles, such as passenger cars or motorcycles, where robustness against pressure pulsation and vibration is an increasingly important feature for achieving reliable results.

End-of-line testing in component production is another demanding field of application for AVL PLUtron™. Increasing efficiency requires faster stabilization and shorter measurement time.

Generic flow meter applications on testbeds and in the lab, like durability testing or HC- and SCR-dosing system characterization, profit most from flexible interfaces and simple setup supported by intelligent self-diagnostics.

AVL PLUtron™ simplifies flow measurement and helps to achieve reliable results quickly.

With AVL PLUtron™ it's time for a change!

TECHNICAL DETAILS AVL PLUtron™ CLASSIC

Measurement Range	-3 ... 30 l/h* -10 ... 100 l/h* -30 ... 300 l/h*
Measurement Resolution	48,000 ... 8,200 pulse/cm ³ (internal)
Measurement Uncertainty Volume / Mass Flow Density	$\leq 0,3 \%$ (acc. DIN 1319)** 1 g/dm ³ ***
Step Response Time T_{10-90}	$< 80 \text{ ms}$
Interfaces	CAN Frequency Ethernet (AK protocol) USB + SD card (log data access)
Media	Standard up to 100% bio fuel / alcohol; compatible test fluid; water, urea solution (e.g. AdBlue®)
Operating Pressure	0 ... 2 MPa rel.
Ambient Temperature	-20 ... 60 °C
Media Temperature	-20 ... 70 °C
Vibration	EN 60068-2-64 Cat.2a
Voltage Supply	9 ... 48 VDC
Power Consumption	~ 60 W
Dimensions (W x H x L)	346 x 109 x 97 mm
Weight	6.5 kg
Protection	IP67

* Mass flow range depending on medium density

** Calibration range 1:700 (1:70 reverse direction)

*** Calibration range 650 ... 1150 kg/m³

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