



AVL COMPACT™

AVL FUEL SYSTEM COMPACT™ FLEXFUEL **C**

The worldwide discussions regarding climatic changes like the greenhouse effect and CO₂ reductions have increased the importance of bio fuels. This means for fuel consumption measurement systems, which play a key role in engine development, that they have to be capable to handle these types of fuel with their specific properties. The AVL FUEL SYSTEM COMPACT™ FlexFuel meets the demands of steady-state testing in development, endurance, performance and end-of-line applications. With a measuring range from 0 to 125 kg/h and a conditioning unit with integrated heating, it covers applications for small engines up to heavy-duty diesel truck engines up to 600 kW. It can be used with various fuel injection systems.

The AVL FUEL SYSTEM COMPACT™ FlexFuel is designed for bio fuels, by the proper selection of the used materials. Bio diesel reacts with non-ferrous metals (e.g. copper or brass) as well as zinc and catalytic effects may lead to a sludge formation. Ethanol has a corrosive effect on nonferrous and light metals; some gaskets (elastomer) will mace-rate. More than 15,000 AVL fuel measurement devices in the field stand for proven technology. In a complex testing

environment, AVL FUEL SYSTEM COMPACT™ FlexFuel provides a simple, precise, and robust solution to measure fuel consumption.

Benefits at a Glance

- Biofuel resistant and copper free system
- Supports gasoline and diesel applications
- Flexibility in term of engine type & size - one size fits all
- Simple mounting for fast installation
- Optimized hydraulic design for high measurement quality and repeatability
- Measurement diagnosis functions

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AVL, the technology leader for automotive testing systems, provides AVL COMPACT™, an out-of-the-box easy to install and cost effective solution for the engine development, component testing and performance market.

Ready. Set. Go.



Figure left / right: control panel. Center: AVL DISPLAY UNIT COMPACT™

Applications

Since robustness and readiness are essential during engine testing AVL FUEL SYSTEM COMPACT™ FlexFuel has been designed to support easy operation and simple customer maintenance thanks to its optimized hydraulic design. This ensures high availability of the system at the test bed. Fast installation, simple mounting and menu supported commissioning can be done by you. You can operate the system within minutes following the menu of the AVL DISPLAY UNIT COMPACT™ that allows you to set the measurement time and the fuel temperature. AVL FUEL SYSTEM COMPACT™ is delivered with serial interface RS232 (AK-commands) and a preconfigured hybrid

interface to connect to any existing automation or data acquisition system. Preventive maintenance can be realized with a minimal number of spare parts and based on the information of operating time counters. The controlled conditioning system allows you to set the outlet fuel temperature anywhere between 15 and 60 °C. A pump in the engine fuel feed line ensures a constant flow to the bypass at the engine inlet and hence guarantees smooth heat transfer. AVL's long term stable sensor combined with a system zero check possibility avoids wrong measurement results - the basis for short measurement times. Fuel venting based on bubble detection can also be automatically triggered.

Technical Data

Measurement range	0...125 kg/h
Systematic measurement uncertainty	≤ 0.10 %
Maximal measuring frequency	(analog output) 2 Hz
Fuel circulation capacity	240 l/h or 540 l/h w/ alternative pump
Max Temperature control range	15°C ... 60°C
Temperature Stability	0.5°C
Heating / Cooling Power	1.6 kW / 2.2 kW
Step response time:	T90 < 1 s
Fuel Type:	Gasoline (EN228) with up to 100% alcohol (M100 or E100), Diesel (EN590) with up to 100% Biodiesel (EN14214)
Fuel supply pressure from facility	10 ... 80 kPa
Fuel supply temperature:	-10 ... +40°C
Outlet (return) pressure:	< 50 kPa @ 240 l/h
Feed pressure to engine	6 bar
Interfaces	RS232 (AK protocol), Analog 0... 10 V, Digital I/O
Ambient temperature:	5 ... 50°C
Power supply:	230V 50 Hz
Power consumption:	2.2 KW
Dimensions:	600 x 1580 x 415 mm (W x H x D)
Weight (dry):	140 kg

For further information please contact:

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