



AVL FLOWSONIX™ Air

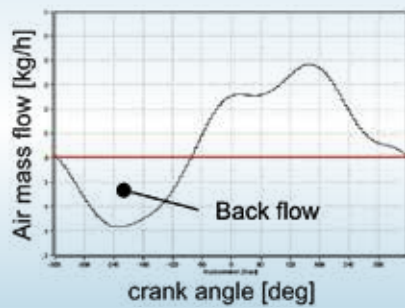
Fast and bi-directional measurement of intake air mass flow.

The AVL FLOWSONIX™ Air has been designed to measure the consumed intake air mass of combustion engines. The ultrasonic transit time measurement principle combined with specifically developed AVL ultrasonic sensors is capable of measuring highly dynamic bi-directional air flows with a data rate of up to 1 kHz. Due to this high data acquisition rate, precise measurement of the dynamic engine behaviour is ensured, e.g. the resolution of pulsations in the air intake flow. In contrast to conventional air mass flow meters the measurement will be performed independently of the flow direction. Thus correct measurement at applications with possible reverse flows are guaranteed. Additional damping systems or silencers are not necessary.

YOUR ADVANTAGE:

- The unique AVL ultrasonic sensor is non-sensitive to contamination, which enables long maintenance intervals.
- Marginal influence on the combustion engine due to small pressure drop in the measurement head.
- Quick and easy installation for any engine type.
- High availability of the measurement device due to extended calibration interval of one year.
- One-size-fits-all – due to the wide measurement range only two different instrument versions are required. Light-Duty- and Heavy-Duty-Version.
- Little space required – just 5 x DN up-stream and down-stream tubing.

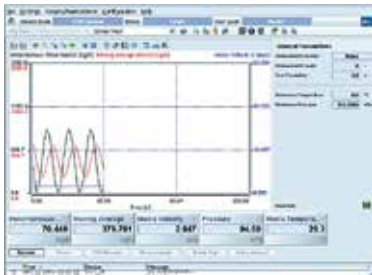
Single cylinder measurement



Evaluation Unit



Measuring Head



User Interface

SINGLE CYLINDER MEASUREMENT

- Maintenance can be done quick and easy by cleaning the measuring head, without necessity of re-calibration.
- Necessary calibrations will be done with the measuring head only. There's no need to dismount and disconnect the Evaluation Unit.
- The required space is very small due to the short upstream and downstream tubing - only 5 x DN each. The device can be mounted easily into systems with or without combustion air conditioning systems.
- The AVL FLOWSONIX™ Air comes with a 19" Evaluation Unit. It can be used as a standalone device and can be connected to test automation systems via standard AK-interfaces based on Ethernet (TCP/IP) or RS 232. Furthermore a digital hybrid interface is available.
- The default setup for the output value is the air mass flow [kg/h]. Results for air volume flow [m³/h] or normalized air volume flow [m³N/h] with freely definable reference temperature and pressure can be selected. Measurement data with data rates of up to 1 kHz are available via the analogue output as well as via the CAN Bus interface.

Technical Data AVL FLOWSONIX™ Air

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| Measurement principle | Ultrasonic transit time |
| Measurement ranges | 0...+/- 1400kg/h (LD Version) 0...+/- 2600kg/h (HD Version) |
| Response time | $T_{90} = <10\text{ms}$ |
| Accuracy (measuring span 1:70) | |
| Reproducibility | +/-0,25% of reading |
| Measurement uncertainty | <+/-1% of reading |
| Measurement conditions | |
| Temperature of air | -20...+80°C |
| Operating pressure max. | 250 kPa abs. (2,5 bar abs.) |
| Pressure drop of Measuring Head | 0,25 kPa (2,5 mbar) |
| Ambient temperature of Measuring Head | -20...+60°C |
| Ambient temperature of the Evaluation unit | -20...+60°C |
| Interfaces | AK Interface Ethernet (TCP/IP) AK Interface RS232 CAN Bus Interface Analog 0...10V, 4...20mA Digital I/O |
| Power consumption | 25W |
| Power supply | 110/230 VAC +/- 15% 50/60 Hz +/- 5% |
| Nominal size DN | Light-Duty-Version 100mm Heavy-Duty-Version 150mm |

FOR FURTHER INFORMATION PLEASE CONTACT:

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