



AVL COMBUSTION MEASUREMENT SYSTEMS

VISIOFEM

FLAME AND RADIATION MEASUREMENT MODULE

The AVL VisioFEM is an optoelectronic signal converter with a selection of photodiodes and narrow band optical filters adapted to specific applications for combustion engine flame and radiation measurement. Signal input is enabled with connectors for fiber optic cables. Signal conversion and signal conditioning ensures highest possible linearity of input radiation intensity to out signal voltage. Output voltage range is +/-10V to enable input into standard signal recorders.

Your Benefits at a Glance

- Compact 1 HU, 19 1/2 housing for up to 4 fiber optic input channels, +/-10V analog out signal
- Channel extension with cascading of VisioFEM modules
- Photodiode signal converter adapted for specific engine measurement tasks
- Best use of signal dynamics with gain, offset selection and drift compensation
- On test bed and in vehicle use
- Stand alone operation - as well as - modular component in AVL combustion measurement platform
- IndiCom - VisioFEM application packages for routine combustion measurement tasks
- AVL IndiCom user interface for parameter input, signal analysis and data reduction



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Technical Data / Product Name	VisioFEM
Product description	Optoelectronic photodiode signal converter. Analog voltage out. Signal gain and offset selection, drift compensation. On test bed and in vehicle operation.
Fiber optic input channels	2 or 4
Cascading	yes
Photodiodes	
VisioFEM gasoline	Broadband UV to IR: 200 nm to 1100 nm
VisioFEM diesel	Photodiodes with narrow band filters at 600 nm and 950 nm. Bandwidth 65 nm FWHM each
VisioFEM temperature	Broadband infrared: 1100 nm to 2200 nm
Signal conditionig analog bandwidth	135 kHz
Application	
VisioFEM gasoline	Crank angle based flame and thermal radiation measurement in IC engine cylinders and exhaust systems Identification of premixed versus diffusion flame events. Root cause analysis for particulate formation in stationary and transient operation. Cylinder pressure – Rate of heat release – Flame luminosity evaluation procedureds in IndiCom application packages for cold start and tip-in emissions tests
VisioFEM diesel	Identification of soot formation – soot oxidation processes in DI Diesel engines based on two-color flame temperature and soot concentration analysis. Identification of peak NOx formation cycles.
VisioFEM temperature	Application package for non-contact, crank angle resolved temperature measurement of catalyst front face. Evaluation package for transient thermal overload detection in full load tip-out sequences. Identification of catalyst risks at cylinder misfire events
Accessories	
Fiber optic cables	Connect sensor head to VisioFEM fiber optic input. Specific cables for sensor and application
Sensors	See application notes VisioFEM Gasoline, VisioFEM Diesel, VisioFEM Temperature
Power supply	10 V to 36 V DC
Interfaces	
Parameter setting	RS232
Signal test	Transmission measurement with calibration light source
SW package	IndiCom application packages. Find more about IndiCom: www.avl.com/indicom2
Instrument useability	Stand alone signal converter or within AVL combustion measurement platform
Temperature range	-20° C to 60° C (-15° C to 60°C VisioFEM Diesel)
Dimensions W x H x D in mm/ Weight in kg	218 x 40 x 240 / 2,5