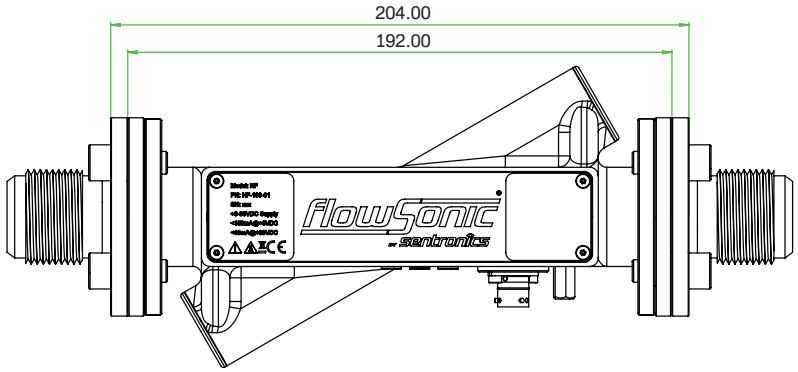
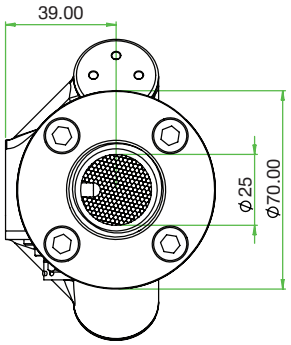
FlowSonic® HF High-Flow Sensor

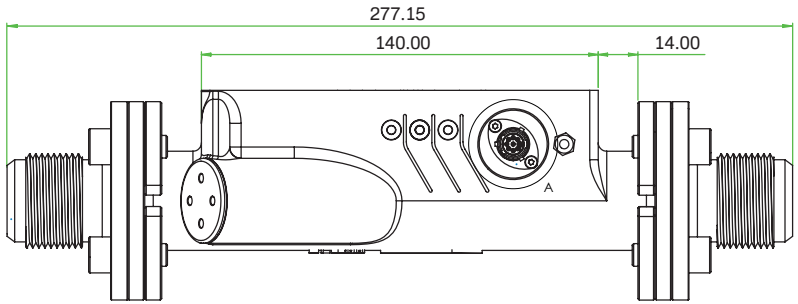
The FlowSonic® HF ultrasonic sensor from Sentronics™ represents a breakthrough in fluid flow measurement technology for automotive engines of every type. The FlowSonic® HF has been designed for the high-volume fuel, oil and coolant flow conditions found in heavy-duty commercial and industrial vehicle powerplants. Its precision makes the HF and ideal tool for efficiency-focused R&D as well as emissions testing. Key features and advantages include:

- Compact, lightweight, no moving parts
- Highly accurate and repeatable
- -40°C to +120°C temperature range
- Fast measurement rate for dynamic flows
- Class-leading ultrasonic turndown ratio
- Easily installed on test bench or vehicle
- Extremely robust and vibration-tolerant
- Internal processing and diagnostics
- CAN, TTL pulse, analog output formats
- Minimal operating and maintenance cost

FlowSonic® HF Dimensions (mm)

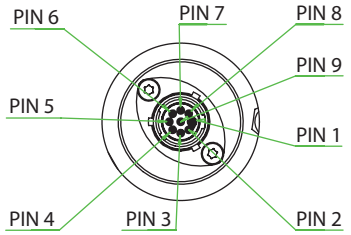






Complete general assembly drawing and CAD data available for download at www.sentronics.com

FlowSonic® HF Pin Out Functions



Deutsch ASDD006-09PN-HE Sensor Connector

Pin 1	Supply +
Pin 2	CAN High
Pin 3	CAN Low
Pin 4	TTL Pulse Output
Pin 5	Analog Output
Pin 6	Serial comms from sensor to PC (TXD)
Pin 7	Serial comms from PC to sensor (RXD)
Pin 8	Reserved - do not connect
Pin 9	Ground (GND)

Model References

Model	Colour	Part Number	Description
HF	●	HF-100-01	FlowSonic® HF High-Flow Sensor

Measurement Performance

Flow Measurement	
Repeatability	± 0.15% of reading
Uncertainty*	± 0.5% of reading
Turndown ratio	25:1
Operating flow range	± 0-500 l/min
Measurement flow range	20-500 l/min
Measurement rate	2.2 kHz
Maximum operating pressure	50 barg (5000 kPag)
Pressure drop at maximum flow	< 20 kPa
Fluid temperature range	-20°C to +120°C
Ambient temperature range	-40°C to +120°C
Temperature Measurement	1 x 1000 Ohm RTD (1/3 DIN standard)

** Calculated according to ISO/TR using root-sum square method yielding 95% confidence*

Mechanical

Dry weight	1000 g
Fluid capacity	140 ml
Wetted materials	FPM, anodised aluminium alloy, stainless steel, PEEK
Fuel line connection	-16AN fittings with 1-5/16 inch UNF thread
Deutsch sensor connector	ASDD006-09PN-HE
Deutsch mating connector	ASDD606-09SN-HE

Environmental

Storage temperature	-40°C to 85°C
External pressure rating	100 kPa
Environmental protection	IP65 (when mated to connector)

Electrical Supply

Voltage	8V to 30V DC
Current	< 70 mA @ +12V DC
Voltage protection	Over-voltage 45V DC, reverse polarity -45V DC

CAN Communications

Design standard	ISO 11898-2 (high-speed applications)
Message format	2.0A (11-bit identifier)
Baud rate	1 Mbit/sec
CAN termination resistor	No

TTL Pulse Output

Voltage output range	0-5V
Pulses per cc	30 (fully configurable)
Duty cycle	50%
Output resistance	1.0 kOhm

Analog Output

Voltage output range	0-10V DC
Resolution	16-bit
Output resistance	47.0 Ohm
Load resistance	> 1.0 kOhm

Configuration Interface

Configuration Interface	3.3V serial interface

Fuel Compatibility

Fuel Compatibility	Petrol, diesel, bio-diesel, ethanol, methanol, oil, engine coolant, water please contact us about other fluids

Specifications subject to change without prior notice

Sentronics Limited
Unit 15 Batten Road, Downton Business Centre
Downton, Salisbury, Wiltshire SP5 3HU England

Telephone +44 (0)1725 513703
Email info@sentronics.com
Web www.sentronics.com

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