

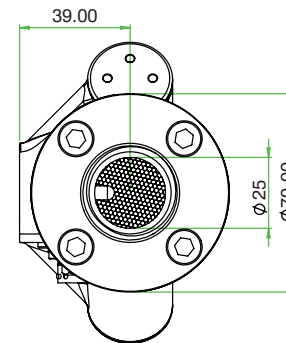
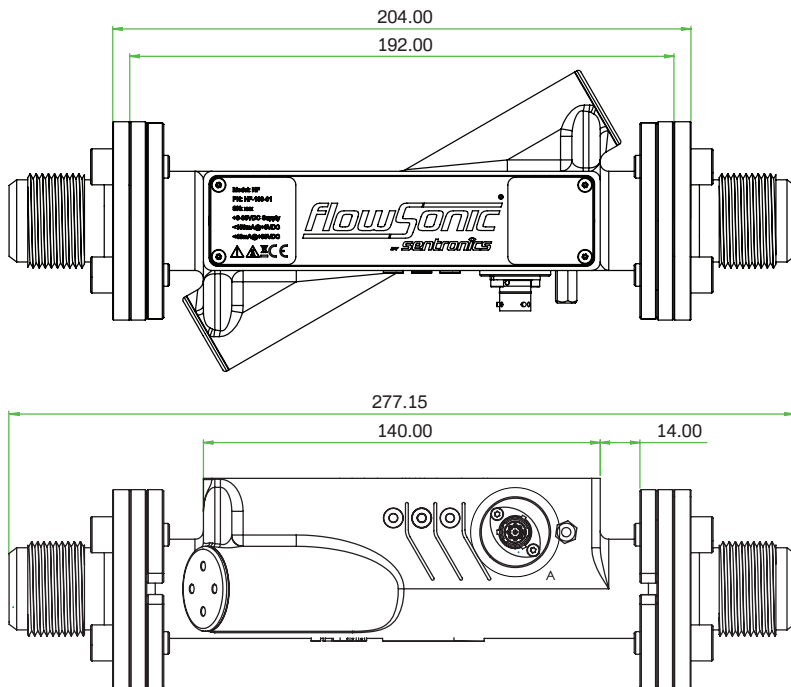
FlowSonic

POWERED BY *sentronics*®

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 an ideal tool for efficiency-focused R&D as well as emissions testing. Key features and advantages include:

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

FlowSonic® HF Dimensions (mm)

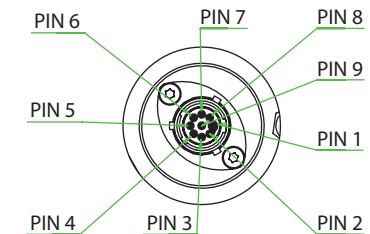


Complete general assembly drawing and CAD data available for download at www.sentronics.com

FlowSonic® HF High-Flow Sensor



FlowSonic® HF Pin Out Functions



Deutsch ASD006-09PN-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
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Fuel Compatibility

Fuel Compatibility	Petrol, diesel, bio-diesel, ethanol, methanol, oil, engine coolant, water please contact us about other fluids
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Specifications subject to change without prior notice