

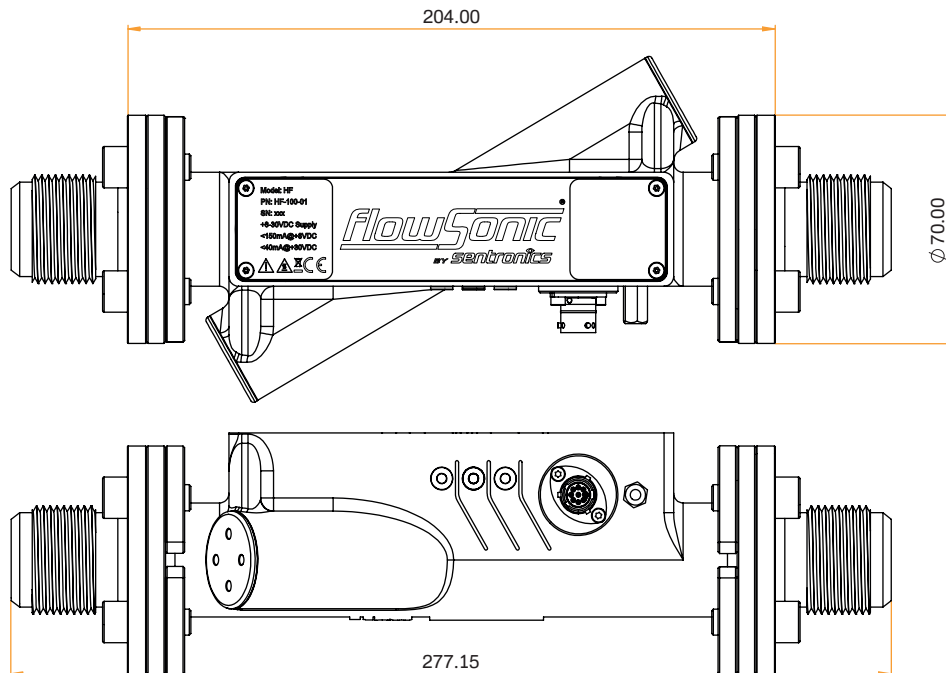
# FlowSonic<sup>®</sup>

by sentronics<sup>®</sup>

The FlowSonic<sup>®</sup> HF ultrasonic sensor from Sentronics<sup>™</sup> 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:

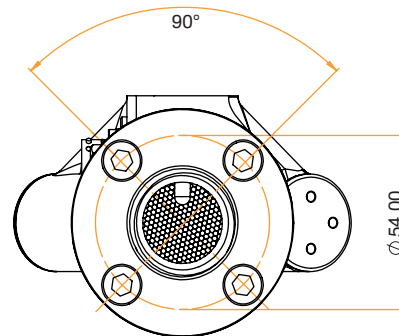
- ✔ Compact, lightweight, no moving parts
- ✔ Easily installed on test bench or vehicle
- ✔ Highly accurate and repeatable
- ✔ Extremely robust and vibration-tolerant
- ✔ -40°C to +120°C temperature range
- ✔ Internal processing and diagnostics
- ✔ Fast measurement rate for dynamic flows
- ✔ CAN, TTL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

## FlowSonic<sup>®</sup> HF Dimensions (mm)



Fluid line connections -16AN fittings with 1-5/16 inch UNF thread

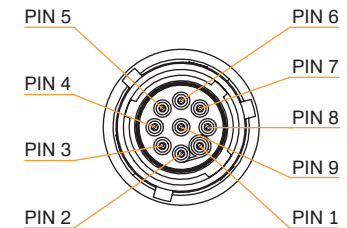
Complete general assembly drawings and CAD data available for download at [www.sentronics.com](http://www.sentronics.com)



# FlowSonic<sup>®</sup> HF High-Flow Sensor



## FlowSonic<sup>®</sup> 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)

## FlowSonic® HF Specifications and Features HF-100-01

### 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 < 20kPa

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)

### Mechanical

Dry weight 1000 g

Fluid capacity 140 ml

Wetted materials FPM, anodised aluminium alloy, stainless steel, PEEK

Fluid line connections -16AN fittings with 1-5/16 inch UNF thread

Deutsch sensor connector ASDD006-09-PN-HE

Deutsch mating connector ASDD606-09-SN-HE

### Environmental

Storage temperature -40°C to 85°C

External pressure rating 100 kPa

Environmental protection IP65 (when mated to connector)

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

### 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** 3.3V serial interface

### Fluid Compatibility

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

*Specifications subject to change without prior notice*

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