DV7 Doppler Velocity Sensor

The DV7 submersible velocity sensor is based on the principle of Doppler Effect; it exploits the latest IDSR (Intelligent Doppler Signal Recognition) technology and innovative engineering design. It outputs velocity value by employing the frequency shift between a transmitting ultrasonic wave and its echo caused by suspended particles or gas bubbles (discontinuities) in motion. The sensing elements are Doppler ultrasound twin 1 MHz piezoelectric crystals. The built-in electronic unit performs velocity calculation and outputs digital signal to a receiver like the Delta-Phase GDC. The receiver combines with level signal of a known flume cross section to provide corresponding Area/Velocity flow measurement for open channel and non-full pipe application without primary device. DV7 measures average velocity directly, no more tedious flow profiling work, and significantly reduces the cost of installation and operation for industrial and municipal wastewater pipeline applications provided that the liquid contains at least 50ppm with suspended solids larger than 30 micrometers.

FEATURES AND BENEFITS

- Easy installation and fast setup with no velocity calibration required.
- Completely sealed sensor withstands submergence and prolonged surcharge conditions.
- Advanced, ultrasonic 1 MHz Doppler technology avoids signal dropouts and ensures high levels of measurement accuracy even in low flow, reversed flow, full pipe and relatively clean water conditions.
- Signal auto-correlation detection and processing technology significantly reduces the noise caused by interference, which improves anti-jamming capability of the instrument.
- RS485 with Modbus RTU protocol.
- Fully compatible with Delta-Phase View™ for easy setup and data logging.
- POM Housing, Optional SS 316L.

TYPICAL APPLICATIONS

- Flow rate / cross-sectional area flow meter
  With Doppler velocity sensor and ultrasonic level sensor used for sewage pipelines such as non-full pipe or open channel without primary device.
- Flow Meter
  Portable instrument with Doppler velocity sensor used for river course and sewage pipelines.

Delta Phase
WATER GAS MONITORING

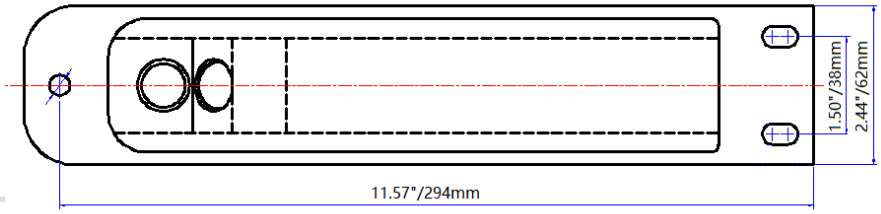
DELTA-PHASE ELECTRONICS, INC.

1502 E. Warner Ave., Suite B, Santa Ana, CA 92705 U.S.A. TEL: (714) 866-8070 www.delta-phase.us

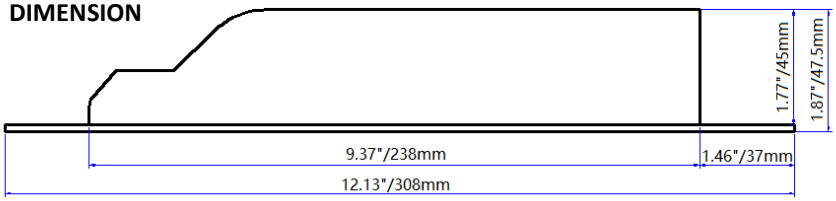
DV7 Doppler Velocity Sensor

SPECIFICATIONS

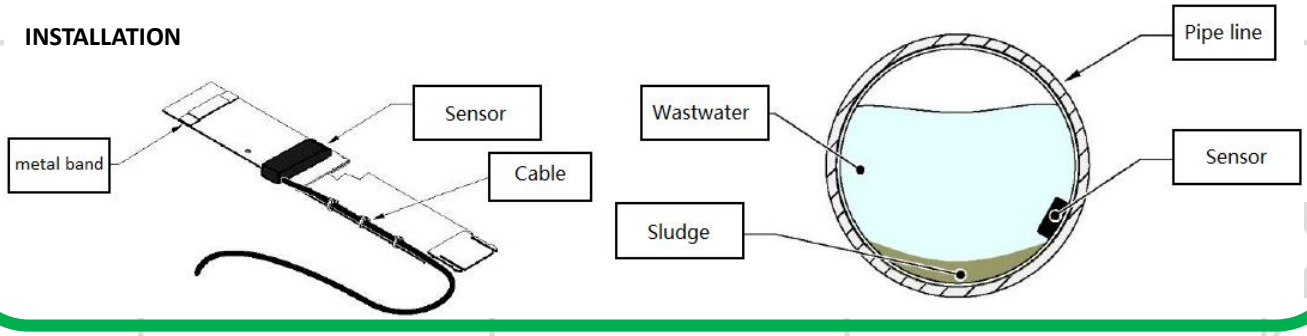
Principle:	Doppler ultrasound Twin 1 MHz piezoelectric crystals
Accuracy:	For flows at 1 ft/s (0.30m/s) or greater to + 2 % of velocity reading For Reynolds #'s above 100,000 depending on fluid conditions. To + 5% of velocity reading for Reynolds #'s 10,000 -100,000 (3:1 any range approximately) depending on fluid conditions. Linearity and repeatability to + 0.5% under the same pumping conditions.
Flow Range:	0.3 to 33 ft/s (0.1 to 10 m/s) liquids.50 parts per million (PPM) of a minimum of 30 micron size suspended solids, turbulence or bubbles to ensure accurate, repeatable flow measurement.
Temperature:	-40 to 122°F (-40 to 50°C)
Power:	24 VDC (18 to 36 VDC) by GDC
Interface:	RS485 Modbus RTU



DIMENSION



INSTALLATION



GDC-01/02 Transmitter
Single or dual-channels

GDC-04/06/08 Controller
Multi-channels up to 8

GDC-H Transmitter
Handheld Terminal

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