



Control Electronics, Inc.

PDS-360 Ultrasonic Open-Channel Flowmeter

Technology for a
Demanding Future

Featuring

- * 31 Day Daily Flow Totals with
Logged Flow Summary
- * Time Stamped Data Logging with
Flow Plot
- * Quick, Easy Setup
- * High Accuracy * Non-Contacting

Control Electronics advanced PDS-360 Ultrasonic Open Channel Flowmeter is a highly accurate, non-contacting liquid flow measuring device. The system is microprocessor controlled and will monitor flows through any flume or weir. Applications range from monitoring flow rates in sewage works to monitoring industrial waste discharge.

CONTROLLER

Reliable, Accurate, Smart

Precise flow depth measurements are continuously made under processor control. Ultrasonic sound pulses are transmitted from the sensor and elapsed time of echo return is accurately calculated. This information is converted to a depth-of-flow and is applied to the respective equation for the flow device selected. The built-in equations produce a flow rate and totalized flow.

Proportional analog flow rate signals, relay contact closures and RS-232/485 outputs are available for remote indicating, recording, process control and Downloading of Flow Data.

Complete solid-state design ensures repeatable, long term, trouble-free operation. All circuits are protected in a NEMA 4X enclosure with a clear polycarbonate hinged cover for easy viewing of flow indications. The controller can be located up to 1500 feet from the measuring site for your convenience.

SENSOR

Unique, Efficient, Non-Hazardous

The Sensor is a non-contacting, Ultrasonic type probe. Unlike many other flowmeters that apply a high voltage (as much as 1700 volts) to their sensor cable, the PDS-360 sensor requires a pulse of only 24 volts maximum. This means the sensor is non-hazardous, eliminating potential arcing of a faulty cable which could be a threat to personnel or the environment. The rugged sensor is housed in solid PVC, requires no maintenance and is explosion-proof, corrosion resistant and submersible.



PROGRAMMABLE

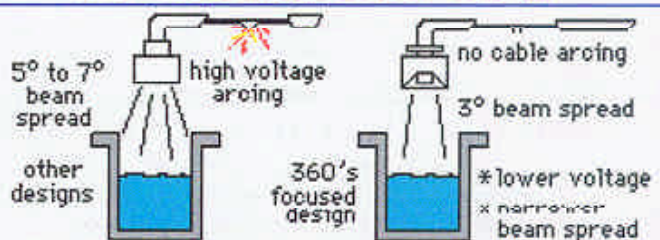
Flexible, Cost Effective, Simple

Programming of the flowmeter is accomplished by four (4) pressure sensitive buttons on the front panel. All parameters and flow information are indicated on the user friendly menu-driven alpha numeric display. Flow rate indication in PERCENT, GPM, MGD, DEPTH along with totalized flow, sensor temperature and data logging are all selectable from the front panel.

The programming options in the PDS-360 allow the flowmeter to be extremely flexible in application. A special section permits the operator to save a set of presets while operating the flowmeter under different flow parameters. This provides for quick return to original operational settings.

The PDS-360 will measure a Parshall Flume today and easily monitor a Palmer-Bowlius or other flume/weir tomorrow. All programmed and totalized flow data is password protected and saved in non-volatile memory in the event of a power failure.

PDS-360 Unique Sensor Design



DATA LOGGING

Sophisticated, Extensive, Powerful

The PDS-360 automatically logs daily flows for the past 31 days with auto wrap around. It records the daily average GPM, the min/max GPM flow rates and the time they occurred and most importantly, the total flow for each of the 31 days. This means the operator only needs to read his daily totals once a week or month or whatever is convenient. When using an optional serial or parallel printer, the user can DIRECTLY print from the flowmeter, on demand, the past number of days desired or set to print automatically on a daily bases.

A second data logging records and time stamps the average flow rate between samples taken. The logging sample rate is adjustable from 0 to 99 minutes. The samples can be viewed

at the flowmeter individually or set to auto advance ahead or back by ever 10 samples for hands free viewing. Data Logging with plotting can also be printed DIRECTLY to a parallel printer.

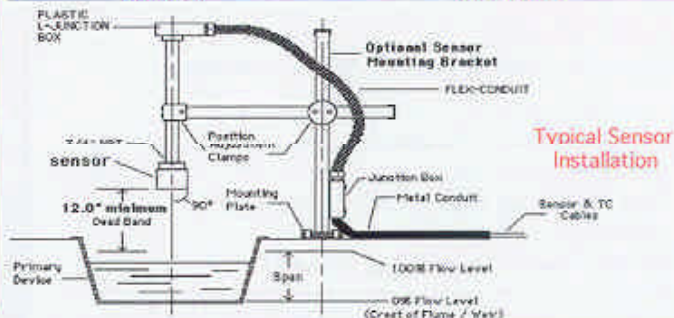
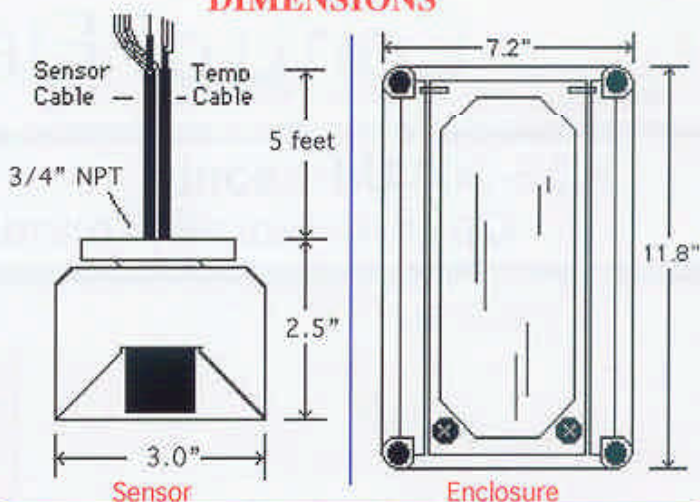
All data may be downloaded to a PC or Lap Top through the RS-232/485 output using any standard communication package.

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*****
Date: 11/10/97
ID Number: FT-01
Average Daily Flow = 1273.3 GPM
Minimum Flow = 256.8 GPM
Time: 04:34 AM
Maximum Flow = 1033.4 GPM
Time: 06:05 PM
Total for day = 1903045 gallons
*****
    
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Typical Serial Print Out

DIMENSIONS



Typical Sensor Installation

PDS-360 Specifications

Specifications and design subject to change without notice.

Made in USA Bulletin # 97-360-04

Electronics

Power Requirements:	120/220 VAC, $\pm 15\%$, 50/60 Hz 12-24 VDC @ 10W max.
Temperature:	30°F to 120°F (-5°F with opt. heater)
Display:	2 line x 20 character, Alphanumeric, LCD with LED backlighting
Totalizer:	8 digit accumulative with programmable multiplier. x1, x10, x100, x1000 31 daily, 8 digit totalizers
Outputs:	0-10 VDC adjustable, 4-20 mA isolated into 1000 ohm, RS-232, RS-485, 4 relay outputs - 2 Setpoints and 2 programmable pulse, SPDT 7A/250 VAC
Span Range:	0-1.00" to 0-150.00" full scale
Dead Band (blinking):	Automatic/Dynamic 10" to 150"
Resolution:	0.01", 0.01 GAL/MIN
Accuracy*:	$\pm 0.5\%$ of Range or better calculated error less than $\pm 0.04\%$
Memory:	Flash and non-volatile RAM
Flow Equations:	Parshall, Palmer-Bowlus, Leopold-Lagco, Rectangular Weirs with and without end contractions, V-Notch Weirs, User Defined

*Note: field conditions, such as turbulence, etc., may affect the apparent accuracy.

Sensor

Material:	PVC Housing, Epoxy, Aluminum
Beam Pattern:	6° Conical Max (3° from centerline)
Temperature:	-40°F to 160°F
Cable:	5 foot corrosion-resistant, 1500 ft. max.
Mounting:	3/4" NPT
Dimensions:	3.0" dia. x 2.5" len

Enclosure

Material:	Fiberglass with clear hinged Polycarbonate cover. Polystyrene enclosure opt.
Rating:	NEMA 4X, IP65, Water-Tight, Dust-Tight
Corrosion-Resistant:	CSA, UL listed
Dimensions:	7.2"x11.8"x6.8": mounting 4.92"x12.3" with stainless steel mounting feet

Options

Strip Chart and Circular Recorders, Heater/Thermostat, PVC Sensor Bracket, Sensor Cable, Serial printer, External Temperature Probe, SP-100 interface cable for Parallel Printer

Warranty: The PDS-360 system is pre-tested and quality control inspected before shipping. Warranty is against defects in parts and workmanship for a period of 1(one) year.

Represented by:



Sales & Service

Call

1-800-932-2548

<http://www.servonics.com>