Control Electronics, Inc.

CPS-460DH Ultrasonic Doppler Flowmeter

Technology For A Demanding Future

Features

* 6 Months of Daily Flow Totals with Pump Summary
* Time Stamped Data Logging of Average Pump Rate with EVENT List
* 5 Programmable Relay Outputs
* 2 Independent 4-20 mA. Outputs
* Quick, Easy Setup
* Non-Contacting

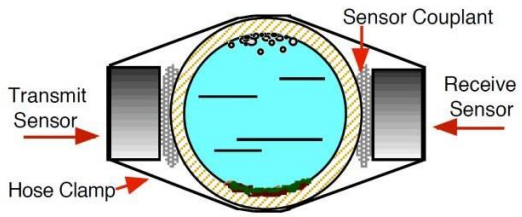
Control Electronics CPS-460 Series Ultrasonic Doppler Flowmeters are non-contacting liquid flow measuring systems. They are microprocessor controlled and will monitor liquid flow of solid bearing and/or aerated liquids in most standard pipe materials. Applications range from monitoring flow rates in sewage works to industrial waste discharges.

CONTROLLER *Reliable, Accurate, Smart*

Precise flow measurements are continuously made by a high frequency sound wave that penetrates through the pipe wall into the flow stream. Advanced techniques, under processor control, evaluate the returned Doppler signal, eliminating and rejecting unwanted components that may interfere with extraction of the true flow signal. This information is converted to an average flow velocity and is applied to the respective pipe size ID selected. The built-in equations calculate an average flow rate and total flow volume.

Proportional analog flow rate signals (4-20 mA.), five (5) relay contact closures and RS-232 outputs are available for remote indicating, recording, sampling, valve and process control. Data logging of flow rate and a 6 month summary of flow and pumping data are available for downloading and analysis.

All circuits are protected in a NEMA 4X (IP65) fiberglass enclosure with a clear polycarbonate hinged cover for easy viewing of all flow indications.



Dual Head Sensor Mounting

PROGRAMMABLE *Flexible, Cost Effective*

Programming of the flowmeter is accomplished by four pressure sensitive buttons on the front panel. All parameters and flow information are indicated on the menu-driven alpha numeric display. Flow rate indication in PERCENT of scale, GPM, MGD, VELOCITY (FPS) along with accumulated TOTAL volume pumped, Signal Strength and 200 daily flow totals are all selectable from the front panel. (Metric equivalents are also included).

Programming options in the CPS-460 allow the flowmeter to be extremely flexible in application. Two (2) scalable and independent 4-20 mA. outputs with four (4) control relays with independent ON/OFF settings and one (1) programmable pulse relay outputs will satisfy just about any application requirement.

The CPS-460's programming, totalized flow and data logging are password protected and saved in nonvolatile memory in the event of a power failure.

SENSOR *Non-Hazardous, Non-Intrusive*

The Sensor is a non-contacting, non-contaminating Ultrasonic type probe. Installation is fast and easy. No stoppage of flow or intrusion into the pipe is required. The Sensor may be installed on steel, PVC, cast iron and some lined pipes of 1" diameter and larger. Sensors are non-hazardous, housed in solid PVC and are considered explosion-proof, corrosion resistant and submersible.

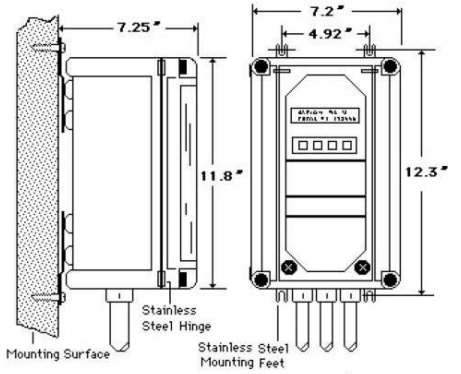
DATA LOGGING *Sophisticated, Powerful*

The CPS-460 automatically logs daily flows for the past 6 months with auto wrap around. It records the date, total pump cycles, total pumping run time, days average GPM pump rate and total pumped for each day. This means the operator only needs to read the daily totals once a week, month or whatever is convenient.

The system also logs and time stamps the start/stop time and average flow rate per cycle. The logging sample rate is programmable from 0-99 minutes. During no-flow conditions, the data logging will stop to conserve memory.

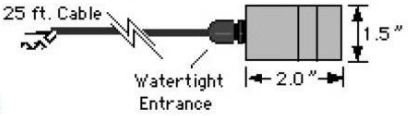
A time stamped EVENT list is also included to record actions the flowmeter has made such as relay ON/OFF, when programmed, power loss etc. All data logged information is preformatted and may be downloaded to a PC through the RS-232 output, using any standard communication software package such as HYPER-TERMINAL.

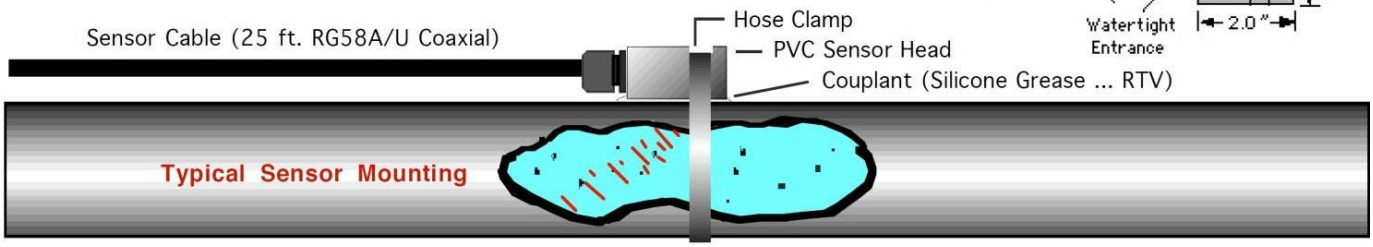
Dimensions



Enclosure

Sensor Head (qty. 2)





CPS-460 Specifications

Specifications and design subject to change without notice.
Made in USA. Bulletin # 98 - 460 -12 -11

Electronics

Power Requirements:	120/220 VAC, ±15%, 50/60 Hz 12-24 VDC @ 15W 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 of x1, x10, x100, x1000 **200 daily 8 digit totalizers**
Outputs:	**Two (2) 4-20 mA.** isolated into 1000 ohms, RS-232 terminal and RJ11 modular jack, 5 relays - 4 control and 1 programmable pulse, SPDT 5A/250 VAC contacts
Flow Range*:	0.5 - 25.0 feet per second (FPS)
Sensitivity**:	Minimum 75 ppm suspended solids and/or entrained gas/air bubbles, >40 microns
Display Resolution:	0.01 FPS, 0.01 GPM
Accuracy***:	±0.5% of received signal
Memory:	Flash and nonvolatile RAM
Data Log:	**200 Day Summary:** Date, total pump cycles, total pump(s) run time, total gallons pumped **Time Stamped:** AVG GPM flow rate with start/stop time and programmable sample log rate of 00-99 minutes in 1 minute increments **Event List:** time stamped events

Sensor

Material:	PVC Housing, Epoxy
Temperature:	-40°F to 160°F exposure
Cable:	25 foot corrosion resistant, 50 feet max. RG-58 A/U coaxial
Mounting:	1.0" to 72" pipe
Dimensions:	1.5"W x 2.0"L x 1.0"H (sensor head only)
Type Pipes:	Steel, PVC, Cast Iron, some FRP and lined

Enclosure

Material:	Fiberglass, clear hinged Polycarbonate cover
Rating:	NEMA 4X, IP65, Dust-Tight, watertight, Corrosion Resistant, CSA, UL listed
Dimensions:	7.2"x11.8"x6.8"
Mounting:	4.92"x12.3" , Stainless Steel mounting feet

Options

Heater/Thermostat, Sensor Cable

CPS-460DX Same as CPS-460 but no relays or data logging

CPS-460R Remote(up to 1000 ft. separation from sensor, Transmit/Receive located at sensor end in NEMA 4X box)

Warranty: the CPS-460 system is pre tested and inspected before shipping. Warranty is against defects in parts and workmanship for a period of one (1) year from ship date.

* Flow velocities less than 1.0 FPS (±0.5) not recommended
** Application Dependent - velocity/pipe may necessitate higher ppm
*** Received signal is application dependent. Application / Field conditions can affect apparent accuracy