Model PW VF-100

CiDRA®

Data Sheet

SONARtrac® Process Water Flow Measurement System

Now you can experience the same high reliability, proven performance, and value of CiDRA's multiphase *SONARtrac* product flow technology on your produced and process water applications with the *SONARtrac* PW VF-100.

CiDRA's *SONARtrac* volumetric flow technology is the new paradigm for process flow measurement technology. The *SONARtrac* clamp-on, non-contact system allows for on-line volumetric flow measurement on virtually any type of pipe material and lined pipe, without any coupling gels or special adjustments.

SONARtrac measurement systems do not utilize ultrasonics; they employ patented sonar array processing techniques to listen to, and interpret, naturally occurring and coherent flow turbulence in process piping with a high degree of accuracy and repeatability.

Passive Sonar Technology

CiDRA's *SONARtrac* technology represents an innovative new class of industrial measurement instrumentation. This sonar technology utilizes array processing techniques similar to those used in the field of sonar processing. CiDRA's proprietary sonar technology was initially developed for flow and compositional measurement in one of the world's most demanding environments: downhole, offshore oil and gas production. CiDRA has taken the proven reliability of its *SONARtrac* technology to provide new measurement capabilities and provide insight into the monitoring and optimization of industrial processes.

Benefits:

- Accurate and reliable operation in dirty and clean water
- Full bore measurement
- Enables accurate water balances
- Requires no recalibration
- Economic flow measurement for a wide variety of pipe sizes, pipe types and lined pipes
- Simple, quick installation, minimal surface preparation, no gel required, light weight
- Compact, low profile design
- Installs while process is running
- No pipe penetration, safe and easy to install
- No pressure restrictions
- Increased process efficiency and uptime
- Requires no maintenance
- Performance not affected by scaling

Volumetric Flow For Produced And Process Water Applications

Applications:

- Produced water
- Water Reinjection (disposal)
- Process Water
- Gland Water
- Recycled Water

Industries:

- Oil Sands Processing
- Minerals Processing

Features:

- ♦ Entirely non-contact, "wrap-around" flow sensor design
- ♦ Transmitter with integrated flow processor
  - Programmable by keypad or PC interface
  - Self-diagnostics capability
- ♦ Data logging capabilities
  - Volumetric flow
  - Flow Velocity
- ♦ USB Port and memory stick
  - Remote data logging retrieval
  - Flow diagnostic reporting to CiDRA technical support
- ♦ Analog /Digital Outputs
  - Two (2) 4-20 mA current outputs
  - Pulse output
  - Alarm output
  - HART® protocol
- ♦ Options
  - FOUNDATION Fieldbus™
  - PROFIBUS® PA
  - MODBUS®

SONARtrac® Technology

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SONARtrac® Process Water Flow Measurement System Specifications - PW-VF100

Parameter	Specifications	Comments
Pipe diameters	2" to 60" (50.8mm to 1524.0mm)	Metric and custom sizes available[a]
Flow velocity range	Liquid: 3 to 30 ft/s (0.91 to 9.1 m/s) [b]	Liquid-Only flow conditions may permit flow measurements below 3 ft/sec [c]
Flow rate accuracy	±1.0% of reading[a]	
Entrained Air Range	Not upgradeable to include Gas Volume Fraction (GVF) measurement	
Solids Content	Maximum by wt. 5%	
Repeatability	±0.3% of reading	
Sensor head	Clamp-mounted onto the existing pipe section; designed for single, permanent installation Certified to IP55	2"-36" Sensor Length–34.7" (91.4cm) Over 36" Sensor– 51.2" (130.0cm) Height within flange diameter of pipe Lightweight (22 lbs./10 kg for 8" meter) Stainless Steel designed to IP55
Transmitter with integrated flow processor	Programmable by keypad or PC interface Self-diagnostics capability	
Operating Temperature Range: Transmitter Sensor head process temp. Sensor head ambient temp.	 -4°F to +140°F (-20°C to +60°C) -40°F to +212°F (-40°C to +100°C) -40°F to +140°F (-40°C to +60°C)	 Inquire with CiDRA for temperatures outside these specified ranges.
Storage Temperature Range: Transmitter Sensor head	 -22°F to +176°F (-30°C to +80°C) -40°F to +185°F (-40°C to +85°C)	
Cable between transmitter and sensor head	PLTC or armored cable with one end connectorized	Cable lengths up to 400ft (121.9m)
Analog input	Two (2) 4-20 mA	Enables internal logging of optional process parameters
Analog output	Two (2) isolated 4-20 mA current outputs	One (1) with HART® protocol
Digital outputs	Pulse output Alarm output	
Digital interfaces	10Base-T Ethernet USB/Memory Stick RS232 serial	
Communication interfaces	Standard: RS232/485 Optional: MODBUS® RTU/ASCII Optional: FOUNDATION Fieldbus™ Optional: PROFIBUS® PA	
Transmitter local display	LCD with backlight	Provides flow rate, system status, system diagnostics
Data logging capability	Yes	
Transmitter enclosure	NEMA 4X , IP66	
Power requirements	AC version: 100 to 240 VAC, 50/60 Hz, 25 watts DC version: 18 to 36 VDC, 25 watts	
Area classification	Standard: General Purpose	
Altitude	5000 meters	Certified for high altitude regions

[a] Inquire with CiDRA for availability and specifications on sizes greater than 36".
[b] Minimum flow can be application dependent.
[c] Inquire with CiDRA for qualifying your application under 3 feet/second

Contact CiDRA

To speak with an applications engineer about CiDRA's *SONARtrac* systems or other CiDRA industrial process measurement solutions, call +1.203.265.0035 or visit our web site at www.cidra.com.

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