Model: PW-150

CiDRA®

Data Sheet

SONARtrac® digital Process Water Flow Measurement System

Now you can experience the same high reliability, proven performance, and value of CiDRA's multiphase *SONARtrac digital* product flow technology on your produced and process water applications with the *SONARtrac digital* PW-150.

CiDRA's *SONARtrac digital* volumetric flow technology is the new paradigm for process flow measurement technology. The *SONARtrac digital* 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 digital 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 digital* technology represents an innovative 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 PW Series

Applications:

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

Features:

- Entirely non-contact, "wrap-around" flow sensor design
- Transmitter with integrated flow processor
  - Programmable by keypad or PC interface
  - Self-diagnostics capability
  - High resolution color graphic display
- Data logging capabilities
  - Volumetric flow
  - Flow Velocity
- USB A & C Ports and memory stick
  - Remote data logging retrieval
  - Flow diagnostic reporting to CiDRA technical support
- Analog/Digital Outputs
  - 4-20 mA current outputs
  - Pulse output
  - HART® protocol
- Options
  - FOUNDATION Fieldbus™
  - PROFIBUS® PA
  - PROFIBUS® DP
  - MODBUS®

SONARtrac® Technology

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SONARtrac® *digital* PW-150 Process Water Flow Measurement System Specifications

Parameter	Specifications	Comments
Pipe diameters	2” to 30” (50.8mm to 762mm)	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 [b]	
Entrained Air Range	Not upgradeable to include Gas Volume Fraction (GVF) measurement	Speak with CiDRA Representative if GVF is desired.
Solids Content	Maximum by wt. 5%	
Repeatability	±0.3% of reading	
Sensor head Sensor head electronics	Clamp-mounted onto the existing pipe section; designed for single installation Designed to IP55 Certified to IP66	2”-30” Sensor Length–34.7” (91.4cm) Height within flange diameter of pipe Lightweight (30 lbs./10 kg for 8” meter)
Transmitter with integrated flow processor	Programmable by keypad or via USB Self-diagnostics capability	
Operating Temperature Range: Transmitter Sensor head process temperature Sensor head ambient temperature	 -40°F to +140°F (-40°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	 -40°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	Armored or unarmored cable with one end connectorized	Cable lengths up to 500ft (152m)
Analog input	One (1) 4-20 mA	Enables optional inclusion of dynamic process parameters
Analog output	Two (2) isolated 4-20 mA current outputs	One (1) with HART® protocol
Digital outputs	Pulse output	
Digital interfaces	10Base-T Ethernet USB A & C / Memory Stick HART	
Optional communication interfaces	MODBUS ® RTU PROFIBUS® PA PROFIBUS® DP FOUNDATION Fieldbus™	
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: Ordinary Location	
Altitude	5000 meters	Certified for high altitude regions

(a) Inquire with CiDRA for availability and specifications on sizes greater than 30”.
(b) Minimum flow velocity may be affected by pipe type and/or fluid characteristics.
(c) Inquire with CiDRA to qualify your application.

Contact CiDRA
To speak with an applications engineer about CiDRA’s *SONARtrac digital* 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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* *Approval in process*