Water Technologies

A1000i Loop Powered/ 4-20MA Submersible Level Transmitter

The A1000i Submersible Level Transducer is the industry's most highly engineered and advanced submersible level transmitter for the measurement of liquids containing high amounts of solids such as raw sewage/wastewater. The unit works equally well it potable water applications. The robustness and high reliability of the A000i is based on its maintenance free design and simplicity of operation allowing it to operate in harsh environments. The unit is unaffected by turbulence, foaming, false echoing, solids build up, and atmospheric changes that often cause other level transmitter technologies to fail. A selection of pressure ranges is available to fit most wet/well level/pressure measurement applications for high accuracy weir level/flow rate measurement to the deepest of wet wells and storage tanks. Several mounting options are available including vessel, pipe, fixed and suspension kits.

THEORY OF OPERATION

The A1000i utilizes pressure, the most reliable means to measure liquid level. The sensor assembly is mounted at a low point (fixed of suspended) within the liquid media and uses a sensing diaphragm to measure the hydrostatic head-pressure. The pressure produced is proportional to the height of the liquid above the sensing diaphragm. The protruding (no cavity) flexible Teflon coated Buna-N diaphragm uses a liquid fill to transfer the external diaphragm pressure to a stable and accurate gauge pressure type piezoresistive sensor. The transducer uses the loop power excitation source (9-30VDC) and converts the pressure to a proportional (4-20mA) electrical signal. The transducer is barometrically compensated via a rigid breather tube connected to a panel mounted sealed breather system.

APPLICATIONS

Wastewater
- Sewage lift station wet wells
- Headworks
- Combined Sewer Overflow (CSO)
- Sequencing Bath Reactors (SBR)
- Lagoons/Ponds, Lakes & Rivers
- Equalization Basins
- Weir Flow Measurement
- Contact Tanks
- Sumps

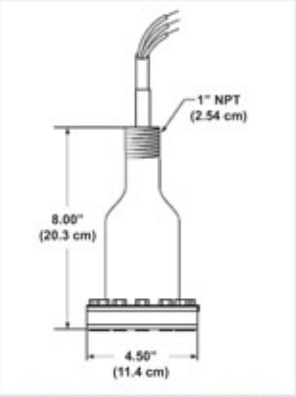
Water
- Raw Water Intake Level
- Filter Water Levels
- Clearwells
- Backflush Decant Tanks
- Above or Below Ground Storage Tanks
- Standpipes

FEATURES IN BRIEF

- Economically priced
- Easy trouble free installation
- Rugged, debris-fre non-fouling Teflon coated 316 stainless steel housing
- Large protruding (no cavity to clean) 2 5/8" (6.7cm) Teflon Coated-Buna-N sensing diaphragm
- Maintenance free "Rigid Sealed Breather System" reliably equalizes atmospheric pressure
- Versatile mounting arrangements
- Intrinsically safe, Class I, Div. A, B, C & D rated with approved barrier
- Pre-calicrated Pressure ranges from 1.5 PSI (0.1 Bar) to 30 PSI (2.1 Bar) 0-3.5ft (0-1.1m) to 0-69.3ft (0-21.1m)
- Transducer electronic componenets are electronically and physically isolated from senesed media

SPECIFICATIONS	
Housing	**316 Cast Stainless Steel, Teflon® Coated**
Cable	Heavy-duty Polyethylene with Vent Tube, Shielded 18 AWG Conductors
Atmosphere Ventilation	No Maintenance Sealed Breather System Equalizes Atmospheric Pressure
Mounting	Suspension Cable Mount or 1" (2.54 cm) Pipe Mount
Exposed Materials	316 Cast Stainless Steel, Teflon® Coated, PVC, Synthetic Rubber and Urethane
Sensing head	Two Layer Diaphragm With Teflon® and Buna-N Material
Power Required	9 – 30 VDC (750 ohm load @ 24VDC)
Signal Output	4 – 20mA
Agency Approval	FM and CSA Intrinsically Safe Class I, Div. 1, Groups A,B,C,D with Approved Barrier
Accuracy	0.25 % Full Scale with Long Term Stability of 0.2 % Full Scale per Year
Pressure Ranges	1.5 PSI to 30 PSI (0.1 Bar to 2.1 Bar) (Consult factory for ranges over 30 PSI (2.1 Bar))
Max Over Pressure Range	1.5 PSI (0.1 Bar) 8X Full Scale 5.0 PSI (0.3 Bar) 4X Full Scale 15 PSI & 30 PSI (1.0 Bar & 2.1 Bar) 2X Full Scale
Temperature Range	-40 to +185°F (-40 to 85°C) (Liquid must remain fluid)

DESCRIPTION	PART NUMBER
A1000i Sensors	
1.5 PSI (0.1 Bar) 4-20mA Output (0-3.5 ft (0-1.1 m) of water)	6012950011
5 PSI (0.3 Bar) 4-20mA Output (0-11.5 ft (0-3.5 m) of water)	6012950012
15 PSI (1.0 Bar) 4-20mA Output (0-34.7 ft (0-10.6 m) of water)	6012950013
30 PSI (2.1 Bar) 4-20mA Output (0-69.3 ft (0-21.1 m)of water) Consult Factory For Ranges Over 30 PSI	6012950014
Housing/Cable Assembly	
A1000 Housing/Cable Sub-Assembly 20ft (6.1 m)	6012640002
A1000 Housing/Cable Sub-Assembly 30ft (9.1 m)	6012640003
A1000 Housing/Cable Sub-Assembly 40ft (12.2 m)	6012640004
A1000 Housing/Cable Sub-Assembly 60ft (18.3 m)	6012640006
A1000 Housing/Cable Sub-Assembly 80ft (24.4 m)	6012640008
A1000 Housing/Cable Sub-Assembly 100ft (30.5 m)	6012640010
A1000 Housing/Cable Sub-Assembly Custom Length (XX equals number of feet)	60126400XX
Mounting Hardware and Accessories	
B100 9G CLS Stainless Steel Pipe Mounting Clamps	6011340001
Cable Suspension Mounting Pipe (without SS cable)	6014180001
Stainless Steel Cable; Each Additional 10 ft (3.1 m) (XX)	60144000XX
Breather Assembly Kit (Required for all A1000i sensors)	6012880001
Terminal Connection (Junction) Box with Built-in Breather Assembly	6012910002
Breather Assembly Kit (required with A1000i) Dual breather bags (2) for over 85' (25.9 m)	6012880002



COMPLETE CONTROL CAPABILITIES

Siemens Water Technologies offers a single, high-quality source for everything from simple level sensors to telemetry systems involving complex system control engineering and software. Based in Vadnais Heights, Minnesota, Control Systems is part of the Siemens Water Technologies leading global provider of industrial, municipal and residential water and wastewater treatment systems, products and services. As a major manufacturer/integrator with an extensive selection of specialized product lines in the areas of SCADA and telemetry, power equipment integration, automation and measurement, Control Systems is uniquely positioned to provide cost effective, comprehensive solutions for water, wastewater and process control and telemetry applications.

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