AMAZON BUBBLER

BUBBLER/PRESSURE SENSOR

Designed with simplicity in mind, the Amazon bubbler is the ideal system for long-term, water level monitoring sites. It can be used as a stand-alone system with internal data storage, or as a sensor connected to any manufacturers data logger. Easily configure and collect data using the browser-based graphical user interface with all standard web browsers on PCs, tablets and smart phones. It's rugged build, and technologically advanced system makes the Amazon Bubbler an attractive solution for real-time monitoring and data collection.

The Amazon provides a continuous air bubble and an integrated pressure sensor that measures the pressure required to push the bubble out of the orifice line, which is the line pressure. The line pressure value measured in psi is then converted into the desired units of measurement to represent water level.

KEY FEATURES

- Advanced rugged design
- High accuracy 0.02% FS
- "Powered by Storm" technology:
  - W-Fi Connection Interface
  - Storm Central Connectivity
  - Browser based software

- Range options:
  - 0 to 10.5 m (34.6 ft)
  - 0 to 21 m (69.2 ft.)
  - 0 to 35 m (115 ft.)
- Multiple output and connection options (SDI-12, Modbus, 4-20 mA, USB, Ethernet)
- Optional low-powered display for complete system configuration and data display.

Amazon Bubbler
*shown with optional display

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SPECIFICATIONS

PERFORMANCE

Accuracy	Pressure	Less than or equal to 0.02% of full scale output (FSO) over temperature range
	Pressure Hysteresis	Less than 0.01% of FSO
	Linearity	Less than 0.02% deviation
	Temperature	Internal ±1° C over temperature range
	Long-term Stability	Drift is less than ±0.05% of FSO per year
		Standard Pressure Ranges are 15 PSI, 30 PSI, and 50 PSI.

Resolution	Pressure	1 part in 1,000,000 (0.0001%)
	Temperature	1 part in 1,000,000 (0.0001%)

Range	Pressure	Depth	Accuracy
	0 to 15 PSI	0 to 10.54 m (34.6 ft)	±2.1 mm (0.007 ft)
	0 to 30 PSI	0 to 21 m (69.20 ft)	±4.3 mm (0.014 ft)
	0 to 50 PSI	0 to 35.15 m (115.34 ft)	±7.11mm (0.02333 ft)

Bubbler Gas Delivery	Microprocessor controlled unit	
	Gas Flow Technology	Constant mass Technology
	Gas Flow Control	Bubble rate is user programmable from 10 to 120 bubbles per minute based on 6.35 mm (1/4 in.) tubing.

Purge Functions	Purge Pressure Level	User Selectable 40 PSI to 90 PSI
	Options	• Manual • SDI driven purge • Purge sustain option (10 to 30 sec) • Automatic/programmable

Compressor	Type	Piston Compressor
	Operation	Low duty cycle (15 hours typical runtime per year at 60 bubbles per minute into 3.7 m (12 ft.) (purges not included)

General	Pressure Overload	Up to 2 times the rated pressure
	Media Capability	Non-corrosive dry gases only

MECHANICAL / POWER

Size	Housing	311.15 mm L x 222.25 mm W x 146.05 mm H (12.25 in. L x 8.75 in. W x 5.75 in. H)
Weight	Housing	5.44kg (12.0 lbs)

Material	Housing	Aluminum
	Atmospheric Vent	Sintered bronze, #10-32

Power Requirements	Voltage Input	10.0 to 16.5 V DC
	Current	Standby: 6mA
		Compressor Active, No Pressure: 3 A
		Compressor Active, Full Pressure: 6 A
		Startup Surge Required: 15 A
		Based on a 60 bubbles/min flow rate with a 15 min measurement cycle and a 1 purge/day frequency. Average active current 20mA
	Surge Protection	20 V DC

Connection	Quick Connect Phoenix Connectors	2-position quick connect for power
		5-position quick connect for SDI-12, 4 to 20mA, and RS-485
	Pressure Inlet	3.82 cm (1/8 in) female NPT

COMMUNICATION

SDI-12	Baud Rate	1200
	Protocol	SDI-12 V1.3, 7-bit even parity, 1 stop bit
	Output Voltage Levels	Minimum high level: 3.5 volts Maximum low Low: 0.8 volts
	Response Time	8-second measurement sequence (programmable)
RS-485	Baud Rate	Programmable (default = 9600)
	Protocol	Modbus RTU
4-20mA Output	Type	4-20mA, optically isolated
	Loop Voltage	8.0V min, 35V max
	Resolution	±0.24 uA (16-bit DAC)
	Accuracy	0.075% max error

ENVIRONMENTAL

General	Operating Temperature	-40° to +60° C
	Compensated Range	-40° to +60° C
	Storage Temperature	-60° to + 80° C

MISCELLANEOUS

Warranty	The Amazon Bubbler is warranted against defects in materials and workmanship for two years from date of shipment.
Note	Specifications subject to change without prior notice due to on going commitment to product testing and improvement. LR March 2016 (D59-04 0316) *Cell modem currently under development.

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