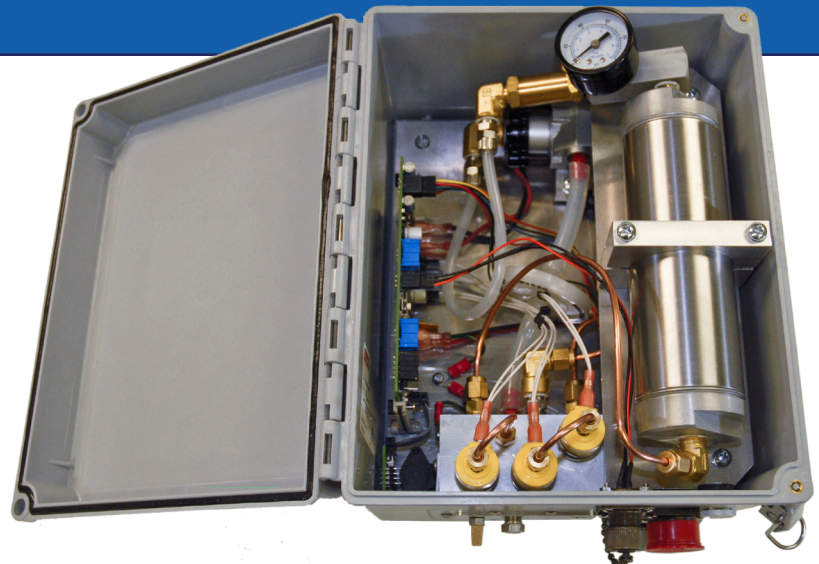# WATER LOG®

YSI incorporated

MODEL H-3553

Bubbler/Pressure Sensor

The WaterLOG® Model H-3553 is a combined Bubbler with built in Pressure Sensor. The Pressure sensor is a NIST traceable pressure sensor. The sensor directly measures dry gas with accuracy better than 0.02% FSO.

Combining high accuracy and low cost. The H-3553 provides the highest purge pressure in the industry at 90 psi.

KEY FEATURES

- A complete single unit replacement for gas purge bubbler systems that includes the pressure sensor.
- Measures depths up to 115 ft (50 psi, 35m)
- Pressure accuracy is 0.02% full scale
- Accuracy over temperature range exceeds ±0.01 ft. (3mm) of water
- Built-in temperature compensation
- Operating temperature range -40° to +60° C
- Easy to use Simple RS-232 Menu Interface
- SDI-12 output provides measurement data in programmable units such as feet, inches, meters, millimeters, centimeters, and user defined
- Output modes: SDI-12, 4-20mA, and RS-232
- Compatible with RS-232 Data Logger
- Enclosure is nonconductive and corrosion proof
- Low current operation (6mA standby)
- Extended SDI-12 command for setting the stage to the current water elevation or pressure
- Up to 90 psi purge pressure
- Unique purge sustain option
- Atmospheric Pressure Compensated

PERFORMANCE

Accuracy (Maximum percent of error in measurement)	Pressure	Less than or equal to 0.02% of full scale output (FSO) over temperature range referenced to a straight line stretched from zero PSI to maximum pressure
	Temperature	Internal temperature ±1° C over temperature range
Resolution (Smallest change detectable in output signal)	Pressure	1 part in 1,000,000 (0.0001%)
	Temperature	1 part in 1,000,000 (0.0001%)
Linearity		Less than 0.02% deviation from a straight line referenced to end points
Pressure Hysteresis		Less than 0.01% of FSO
Long-term Stability		Accuracy drift is less than ±0.05% of FSO per year

Standard Pressure Ranges: Custom calibration ranges available from 5 - 100 PSI

	Pressure	Depth	Accuracy
	0 to 15 PSI	0 to 34.6 ft. (10.54 m)	±0.007 ft. (2.1 mm)
	0 to 30 PSI	0 to 69.20 ft (21 m)	±0.014 ft. (4.26 mm)
	50 psi also availableInterfacrfacrface		

INTERFACE

SDI-12	Protocol	SDI-12 V1.3, 7-bit even parity, 1 stop bit
	Baud Rate	1200
	Minimum high level	3.5 volts
	Maximum low level	0.8 volts
	Response Time	8-second measurement sequence (programmable)
RS-232	Protocol	RS-232, 8-bit, no parity, 1 stop bit
	Baud Rate	9600
RS-485	Protocol	Modbus RTU/H-355 Control
	Baud Rate	Programmable (default=9600)
4-20mA Output	Type	4-20mA, optically isolated
	Loop Voltage	8.0V min, 35V max
	Resolution	16 bit resolution +- 0.24 uA (16-bit DAC)
	Accuracy	+-10uA

MECHANICAL DATA

Mechanical	Material	Fiberglass
	Size	9" wide x 10.5" long x 6.3" high 22.86 cm wide x 26.67 cm long x 16 cm high
	Weight	9.5 lbs (4.3 kg)
	Rating	NEMA 4 enclosure
	Connectors	Sealed Bendix type circular
	Pressure Inlet	1/8" female NPT
	Atmospheric Vent	Sintered bronze, # 10-32
Power (requirements)	Input Voltage	10.0 to 16.5 Volts DC
	Supply Current	Sleep Mode 6mA Active (measuring/Purging): <20mA based on a 60 bubbles/minute flow rate with a 15 minute measurement cycle and a 1 purge per day frequency.
	Surge Protection	20V DC
Bubbler Gas Delivery	Particulars	Microprocessor controlled unit
	Gas Flow Technology	Constant mass Technology
	Gas Flow Control	Bubble rate is user selectable from 30 to 120 bubbles per minute based on 1/4 in. tubing orifice pointing down. Auto zero error controlled flow nozzle
Compressor	Type	Piston Compressor
	Operation	Low duty cycle (7 hours typical runtime per year at 60 bubbles per minute flow rate into 12 ft. of stage-purges not included)
Purge Functions	Purge Pressure Level	User Selectable 30 psi to 90 psi
	Options	• Manual • SDI Driven Purge • Purge sustain option (10-240S)
Connections	7-pin circular	Power, SDI-12, 4-20mA and RS-485
	3-pin circular	RS-232 Data and Menu Setup Port
	Cables	Main Connector cable with 6-ft pigtail is provided. RS-232 Connector cable optional

ENVIRONMENT

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

MISCELLANEOUS

Warranty	The WaterLOG® H-3553 is warranted against defects in materials and workmanship for one year from date of shipment.
Note	Specifications subject to change without prior notice due to on going commitment to product testing and improvement. LR January 15, 2011. D25 0311.

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