HYDRA SX30

Portable Dual Frequency Doppler Flowmeter

Applications

- *Slurries*
- *Dredging*
- *Primary sludge*
- *Activated sludge*

Features

- *Accuracy to ±1%*
- *Simple and easy to use*
- *Excellent noise immunity*
- *NEMA 6 environmental sealing*
- *Up to 24 hours battery operation*
- *Powerful 90,000 point data logger*

POLYSONICS®

Amazingly Simple

HYDRA SX30
Portable Dual Frequency Digital Doppler Flowmeter

The Hydra SX30 is the world's most advanced portable Doppler flowmeter. Combining Dual Frequency Doppler (DFD) technology (patent pending) with digital signal processing, it features exceptional performance and simple operation. The new instrument, which is principally designed for the measurement of aerated and/or solids-bearing fluids, is immune to much higher levels of external noise than was historically possible with Doppler technology. This technique significantly improves the ability of the Hydra SX30 to operate in what were previously considered marginal applications for Doppler flowmeters.

Unlike conventional Doppler flowmeters, which operate at a single frequency, the Hydra SX30 generates two independent ultrasonic signals at different frequencies. The two frequencies are used to automatically identify and eliminate noise errors, from sources such as variable frequency drives.

In addition, the operation of the instrument is enhanced by an Expert System which allows the flowmeter to automatically "learn" the application parameters. As a result, the Hydra SX30 can be set up in four easy steps and at a fraction of the time necessary to configure competitive flowmeters.

So, say goodbye to complexity and say hello to the Hydra SX30!

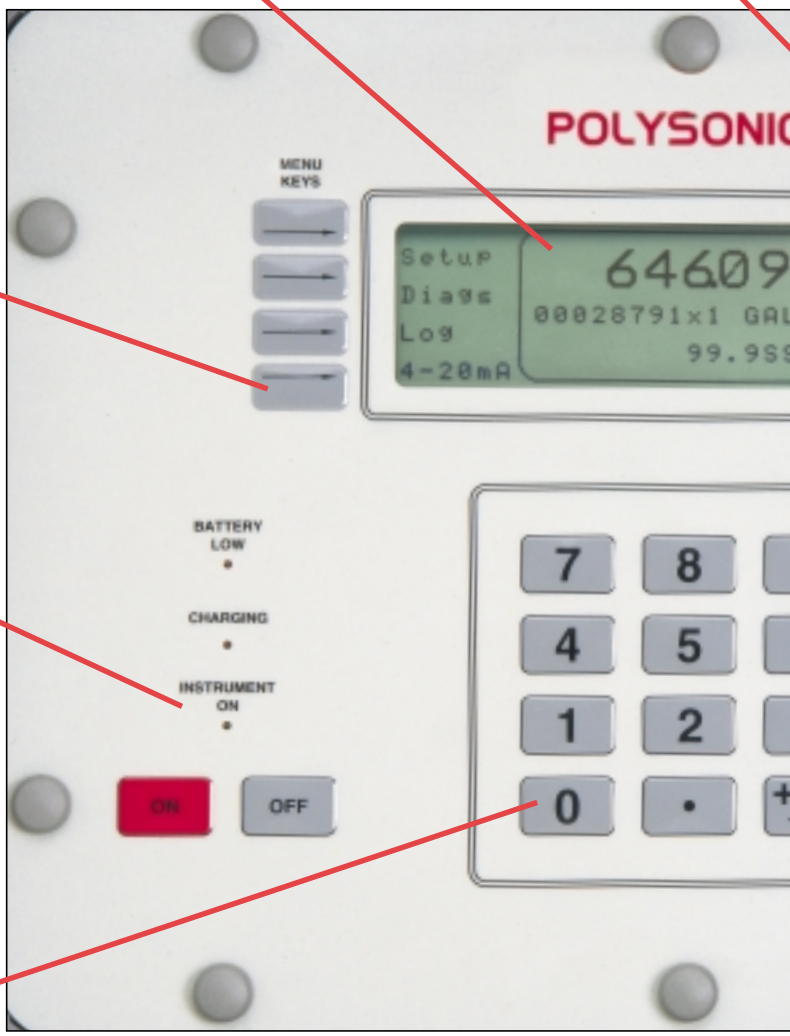
Backlit 240 x 60 dot matrix display with high resolution characters. Provides excellent viewing visibility even in poorly lit conditions.

Universal AC charging socket.

Menu keys for simple and quick access to site configuration, data logging and diagnostic functions.

LEDs for convenient indication of battery status.

Sealed membrane keypad with tactile action. Large keys make it easy to enter data – even with gloved hands.

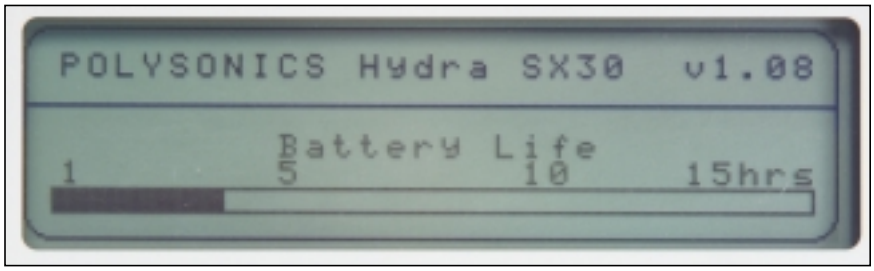


HYDRA SX

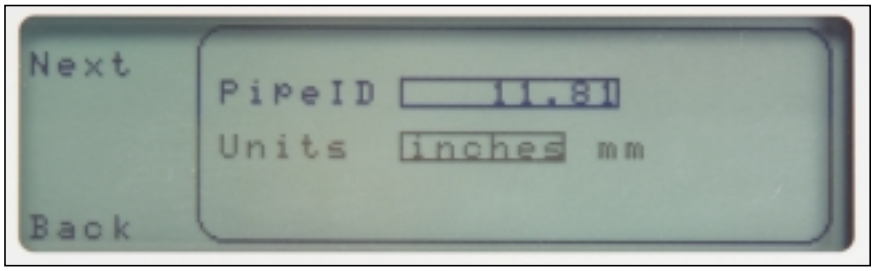
Serial interface port for data retrieval via HydraLink software.

The Hydra SX30 transducers feature stainless steel shrouds and are suitable for most pipe materials.

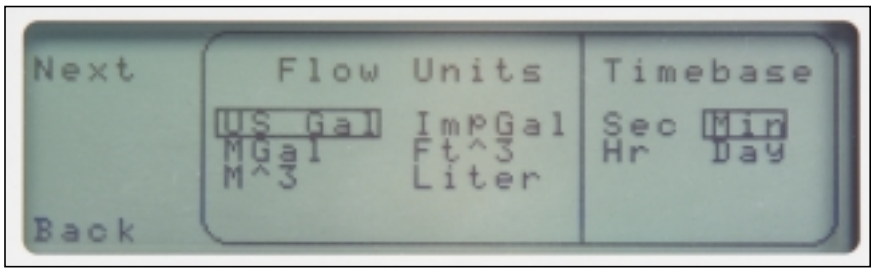
Just 4 Easy Steps...



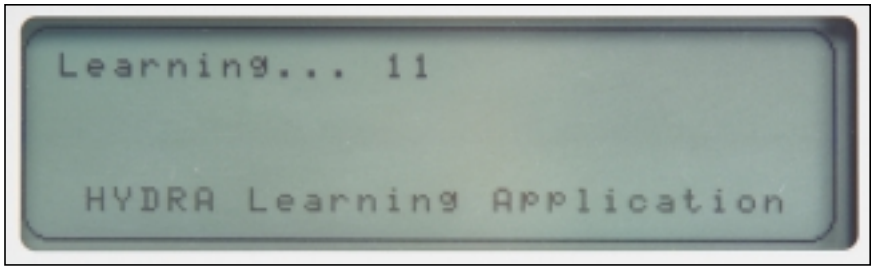
STEP 1 – *The flowmeter automatically provides verification of remaining battery life.*



STEP 2 – *Simply select from millimetres or inches and enter the pipe internal diameter.*



STEP 3 – *Now choose your preferred flow units.*



STEP 4 – ***There is nothing more to do!*** *The Hydra Expert System is now learning your application and will shortly display the flow rate.*

HYDRA SX30

Specifications

Established at reference conditions

Performance Specifications

Flow Range: See table below.

Velocity Range: 0.2 to 32 ft/s (0.06 to 10 m/s)

Accuracy: ±1% total error band

Fluids: Liquids containing entrained gas or particles.

Pipe Size: 0.5 to 200 in. (12 to 5000mm)

Physical Specifications

Transmitter: NEMA 6 (IP67), waterproof against accidental immersion and splashproof with lid open.

Transducers: Encapsulated dual frequency sensor heads, encased in stainless steel shrouds with integral transducer clamps and BNC connectors.
16 ft (5m) cable — standard

Weight: Approximately 11 lbs (4.9 kg) - 12 hour battery
Approximately 15 lbs (6.8 kg) - 24 hour battery

Functional Specifications

Outputs: 4-20mA (into 1000 ohms), 12 bit opto-isolated.
RS232 serial interface.

Power Supply: Built in lead acid gel battery.
12 hours continuous operation — standard
24 hours continuous operation — option
90-264 VAC, 50/60 Hz
12-15 VDC auxiliary power port

Charge Period: 8 hours

Keypad: 19 key with tactile action.

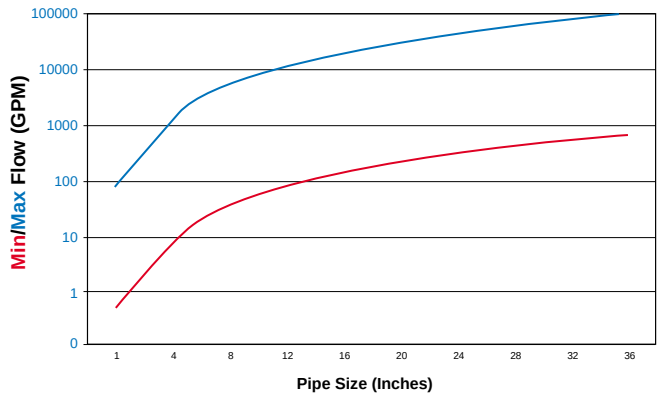
Display: Backlit, 240 x 60 dot, high resolution graphics display.

Data Logger: 90,000 point data logger. Programmable in log intervals of 30 sec., 1, 5, 15, 30, 60 mins. HydraLink retrieval software (Windows 95/98 version) included as standard. Compatible with Microsoft Excel, Lotus 123 and other similar packages.

Temperature: -40˚ to +250˚ F (-40˚ to 122˚C) - transducers
Optional higher temperature range available.
-5˚ to 140˚F (-20˚ to +60˚C) — electronics

Compliance: Designed to meet CE and CSA general purpose.

HYDRA SX30 Flow Range



Ordering Information

Model	**Product Description**
SX30	Hydra SX Portable Dual Frequency Doppler Flowmeter
Code	**Battery Duration**
1	12 hours
2	24 hours
Code	**Transducer Cable Length**
16A	16 ft. (5m) cable, standard
or XXXA	Additional cable, max. 500 feet (152m)
	10 ft. (3m) increments
Code	**Additional Options**
0704/0187	UTG Ultrasonic Thickness Gauge
Typical Model Number:	SX30 -1-16A

POLYSONICS®

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ISO 9001

Represented by:

Issue SX30/Oct. 1998

HYDRA SX30
DFD FLOWMETER

PORTABLE DUAL FREQUENCY DOPPLER FLOWMETER RECOMMENDED PROCUREMENT SPECIFICATION

1. The flowmeter shall utilize ultrasonic, Dual Frequency Doppler (DFD) technology, which will transmit a minimum of two independent frequencies through the flow stream, to provide indication, totalization, data logging and signal transmission of liquid flow rate in full pipes.

2. The instrument enclosure will be environmentally protected to NEMA 6 (IP67).

3. The flowmeter will incorporate a rechargeable, internal battery suitable for 12 hours continuous operation. An optional internal battery providing 24 hours continuous operation will also be available. The battery must be fully recharged within a maximum 8 hour period. The flowmeter will include an external 10-15 VDC auxiliary power connector.

4. Configuration will be via a front panel, 19-key, flat membrane keypad with tactile feedback. Input parameters will be password protected. The nonvolatile memory shall retain totalizer and user parameters for up to five years. Flowmeter diagnostics shall be accessible via the keypad.

5. The flowmeter will measure flow rates of solids-bearing and/or aerated fluids over a velocity span of 0.2 to 32 ft/s (0.06 to 10 m/s). Two dual frequency transducers will be supplied with the instrument and shall be suitable for pipe sizes from 0.5 to 200 inches (12 to 5000mm).

6. The instrument will provide a ±1% total error band under reference conditions.

7. The analog output shall be an opto-isolated 4-20mA DC proportional to flow. Output current limiting circuitry will be incorporated in the flowmeter electronics. An RS232 serial interface will also be provided.

8. The flowmeter electronics shall be designed to operate at temperatures between -5 F to +140 F (-20 C to +60 C). All electronic circuits are to be interchangeable with other flowmeters having the same model number. All circuit boards will be conformally coated with an anti-fungus compound.

9. The display will be a backlit, 240 x 60 dot graphics display.

10. The transducers will be encased in stainless steel shrouds and will be suitable for operation from -40 F to +250 F (-40 C to +122 C). BNC connectors will be utilized for quick connect/disconnect. The sonic coupling compound supplied with the flowmeter shall be suitable for operation from -20 F to +400 F (-28 C to +205 C)

11. A 90,000 point data logger, programmable in 30 second, 1, 5, 15, 30 and 60 minute intervals, will be included as standard in the flowmeter. HydraLink data retrieval software (Windows 95/98 version), will be supplied with the instrument.

12. The transducers will attach to the outside of the pipe by means of stainless steel straps. The standard transducer cable length will be 16 feet (5m).

13. The enclosure of the flowmeter will provide a facility for the attachment of a padlock to prevent unauthorized access to the display and front panel during unmanned flow monitoring.

14. The flowmeter will incorporate, as standard, the following components: (1) Hydra SX30 portable DFD flowmeter, (1) user operating manual, (1) nylon carry case, (2) DFD transducers, (2) 32 in. (813mm) stainless steel pipe straps, (1) 67 inch (1700mm) stainless steel pipe trap, (1) battery charger, (2) 16 ft. (5m) transducer cables with BNC connectors, (2) diskettes containing HydraLink datalog retrieval software, (1) RS232 serial interface cable, (1) tube of sonic coupling compound, (1) 3/8 inch hex socket driver.

15. The instrument shall be manufactured in the USA at an ISO 9001 certified facility.

16. The Dual Frequency Doppler flowmeter will be the Polysonics Hydra SX30 model manufactured by Polysonics, Inc. 10335 Landsbury, Suite 300, Houston, Texas 77099-3407, (281) 879-3700 Tel., (281) 498-7721 Fax