



Solve any sewer flow challenge with Hach FL900 Series Flow Meters.

NEW!
FH950 Portable Flow Meter with Electromagnetic Flow Sensor.



DATA DELIVERY SERVICES
Relief from the pain of DIY sewer flow monitoring.

AV9000 Analyzer brings new, advanced diagnostic tools to the Sigma Sub AV Sensor!



DATA DELIVERY SERVICES (DDS)

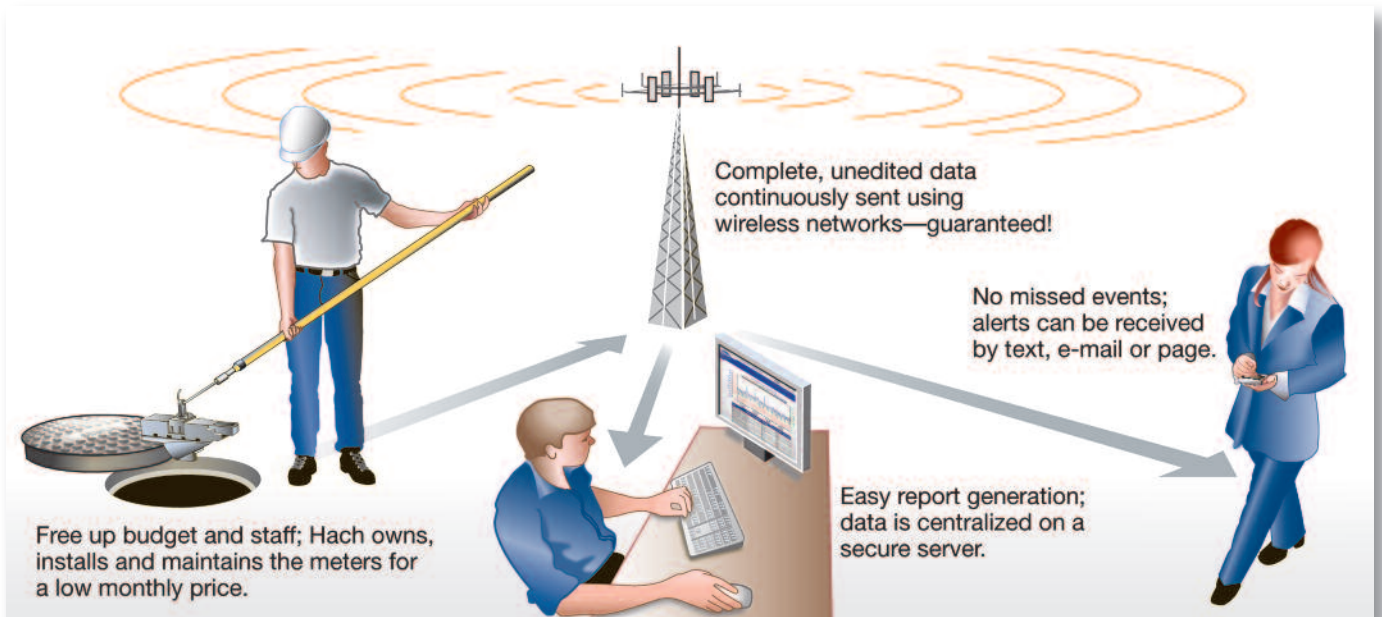
Sound familiar?

- *Missed events or useless data*
- *Never enough trained staff for flow meter installations, maintenance and data collection*
- *Disorganized data and reporting difficulties*
- *No budget to buy updated flow meters*



DDS—Relief from your flow monitoring pain!

- *Complete unedited flow data with Hach's 95% uptime guarantee*
- *Free up staff—Hach installs and maintains the meters*
- *Quick, easy report generation with centralized flow data*
- *Low monthly price—NO meters to buy*



For more information, call to request LIT2602, or visit: www.hachflow.com/dds

Relief from the Pain of Do-It-Yourself Flow Monitoring.

Getting the data you need is easy with DDS. Here's how we do it:

- You discuss your flow data needs with a trained Hach representative including the number of sites, start date, duration and the low monthly price.
- Hach schedules factory-certified installation of our innovative and trusted flow meters.
- Within 15 minutes of installation, your flow data is sent wirelessly by cellular modem to Hach's secure server.
- Complete, unedited flow data can be viewed 24/7 from any web browser using intuitive Hach *FSDATA*® software —includes 95% uptime guarantee!
- Hach monitors all sites and performs any necessary maintenance, including battery changes, for the duration of the contract.
- At the end of your contract, we work with you to schedule the removal and return of equipment.

Here's what you get:

- Flow Data - Anytime, Anywhere
- Certified Installation & Calibration
- 95% Data Uptime Guarantee
- Secure Server
- Professional Flow Reporting
- Event Notification
- Maintenance & Repair Included
- Rain Gauge Option



What our DDS customers are saying...

"Now we just go to the website and look at the flow...It's quite a timesaver. Everything is taken care of for us with DDS."

U.S. Steel

"Data Delivery Services is extremely helpful and has significantly increased our efficiency."

AH Environmental

"It just was more cost efficient to do DDS."

City of Hilliard, Ohio

"It did not make sense to invest a large sum of money into capital expenditures that were only needed for two years. With a fixed price per meter, per month, DDS was perfect for us."

City of Carmel, Indiana

"These radar meters are right on the money... they work very good!"

Steph Engineering

"The system has helped us provide quality data while saving us time in the field."

O'Brien & Gere

"It really fulfills our needs. The price was right, too."

City of Scottsdale, Arizona

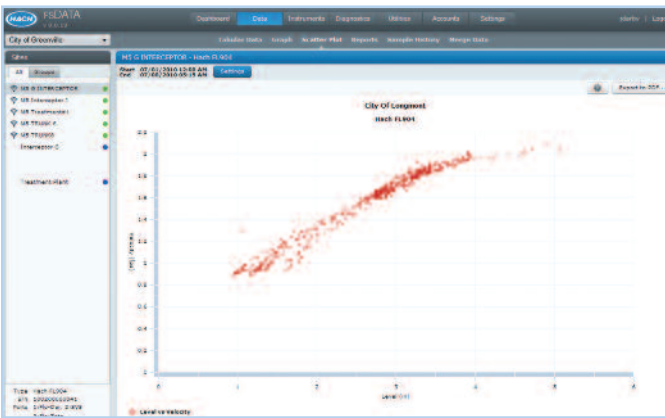
"It's maintenance free and the installation was very quick and convenient."

HMT Engineering & Surveying

Find it here... Buy it today on hachflow.com

U.S. customers only.





Date/Time	Flow Rate (L/S)	Flow (GPD)	Flow (MGD)	Flow (MGD)	Flow (MGD)
07/01/2010 12:00 AM	12.8	2.88	1.72	181.88	80.9
07/01/2010 12:05 AM	12.9	2.90	1.73	183.00	81.0
07/01/2010 12:10 AM	12.6	2.82	1.54	170.00	74.0
07/01/2010 12:15 AM	12.8	2.80	1.59	174.00	76.8
07/01/2010 12:20 AM	12.8	2.88	1.61	176.88	77.8
07/01/2010 12:25 AM	12.8	2.88	1.61	176.88	77.8
07/01/2010 12:30 AM	12.6	2.80	1.43	162.00	72.0
07/01/2010 12:35 AM	12.8	2.88	1.61	176.88	77.8
07/01/2010 12:40 AM	12.8	2.88	1.61	176.88	77.8
07/01/2010 12:45 AM	12.8	2.88	1.61	176.88	77.8
07/01/2010 12:50 AM	12.8	2.88	1.61	176.88	77.8
07/01/2010 12:55 AM	12.8	2.88	1.61	176.88	77.8
07/01/2010 01:00 AM	12.8	2.88	1.61	176.88	77.8
07/01/2010 01:05 AM	12.8	2.88	1.61	176.88	77.8
07/01/2010 01:10 AM	12.8	2.88	1.61	176.88	77.8
07/01/2010 01:15 AM	12.8	2.88	1.61	176.88	77.8
07/01/2010 01:20 AM	12.8	2.88	1.61	176.88	77.8
07/01/2010 01:25 AM	12.8	2.88	1.61	176.88	77.8
07/01/2010 01:30 AM	12.8	2.88	1.61	176.88	77.8
07/01/2010 01:35 AM	12.8	2.88	1.61	176.88	77.8
07/01/2010 01:40 AM	12.8	2.88	1.61	176.88	77.8
07/01/2010 01:45 AM	12.8	2.88	1.61	176.88	77.8
07/01/2010 01:50 AM	12.8	2.88	1.61	176.88	77.8
07/01/2010 01:55 AM	12.8	2.88	1.61	176.88	77.8
07/01/2010 02:00 AM	12.8	2.88	1.61	176.88	77.8
07/01/2010 02:05 AM	12.8	2.88	1.61	176.88	77.8
07/01/2010 02:10 AM	12.8	2.88	1.61	176.88	77.8
07/01/2010 02:15 AM	12.8	2.88	1.61	176.88	77.8
07/01/2010 02:20 AM	12.8	2.88	1.61	176.88	77.8
07/01/2010 02:25 AM	12.8	2.88	1.61	176.88	77.8
07/01/2010 02:30 AM	12.8	2.88	1.61	176.88	77.8
07/01/2010 02:35 AM	12.8	2.88	1.61	176.88	77.8
07/01/2010 02:40 AM	12.8	2.88	1.61	176.88	77.8
07/01/2010 02:45 AM	12.8	2.88	1.61	176.88	77.8
07/01/2010 02:50 AM	12.8	2.88	1.61	176.88	77.8
07/01/2010 02:55 AM	12.8	2.88	1.61	176.88	77.8
07/01/2010 03:00 AM	12.8	2.88	1.61	176.88	77.8

Flow data anytime, anywhere.

Hach FSDATA Flow Data Manager provides 24/7 access to your flow data and wireless flow meters from the comfort of the internet, reducing maintenance costs and keeping crews safe. Experience the benefits of FSDATA without owning wireless meters through Hach's Data Delivery Services (DDS).

- *Flow Data via the Internet*—know what is happening in your system anytime, anywhere.
- *Remote Instrument Programming and Diagnostics*—Eliminate costly site visits for meter adjustments.
- *Dashboards at Your Fingertips*—Clear-cut map view dashboard utilizes color-coded markers to indicate meter location and status
- *Easy-To-Use Interface*—Intuitive drop-down menus allow for easy site navigation.
- *Prepare Reports in Seconds*—View and create professional reports of your flow data in tabular spreadsheet or graphical formats.
- *Safe and Secure Data*—Hach's IT supports the communication and database servers providing proven system uptimes.
- *Event Notification*—Alarm messages sent by text or e-mail for any sensor parameter.



For a FREE FSDATA Demo visit: www.hachflow.com

For more information, call to request LIT2707 FSDATA, LIT2711 FL900 Wireless Flow Logger, LIT2708 FLO-DAR Sensor, LIT2712 FLO-TOTE 3 Sensor, LIT2773 AV9000 or visit: www.hachflow.com

FL900 SERIES FLOW METER FAMILY

One logger, five sensor technologies, endless possibilities! Solve any sewer flow monitoring challenge!

For use with FLO-DAR®, FLO-TOTE® 3 Sensors, Sub AV with AV9000 Module, US9001/US9003 Level Sensors and IM9001 Module.

Optimize your product inventories. When combined with either the Flo-Dar, Flo-Tote 3, Sub AV with AV9000 analyzer module or IM9001 interface module, the Hach FL900 Series Flow Logger takes flow monitoring to a whole new level. With features that reduce site time and increase crew safety, the flow monitoring system allows you to easily manage your flow data, as well as your budget.



- Optional wireless communication puts your flow data at your fingertips
- LED gives quick confirmation of logger status on site
- Available with 1, 2 or 4 “plug and play” sensor ports
- Versatile mounting options
- Dynamic logging intervals ensures data is collected as conditions change
- External power options for longer deployments
- Rain gauge connection, optional

Ideal for:

- Sanitary Sewer Evaluation Studies
- Collection Systems
- Capacity Studies
- Combined Sewer Overflows (CSO)
- Inflow and Infiltration (I&I) Studies
- Billing / Custody Transfer
- Plant Influent and Effluent

Specifications*

Dimensions (W x D x H)

25.4 x 22 x 40 cm (10.0 x 8.7 x 16.0 in.)

Enclosure

PC/ABS structural foam

Environmental Rating

NEMA 6P (IP68)

Weight (Using Model FL900)

4.5 kg (10 lb)—no batteries; 6.3 kg (14 lb)—2 batteries; 8.2 kg (18 lb)—4 batteries

Operating Temperature

-18 to 60°C (0 to 140°F) at 95% RH

Storage Temperature

-40 to 60°C (-40 to 140°F)

Power Requirements

8 to 18 Vdc from batteries or external power source, 2.5W max.

Battery Life at 15 minute logging intervals (at room temperature)

185 days with 4 lantern batteries and a Flo-Dar sensor
306 days with 4 lantern batteries and a Flo-Tote sensor
296 days with 4 lantern batteries and a Sub AV sensor with AV9000 Analyzer

The optional long life alkaline battery pack can be used to extend battery life, if the Flow Logger is ordered with the external power option connector.

Sensor Ports

1, 2 or 4 ports

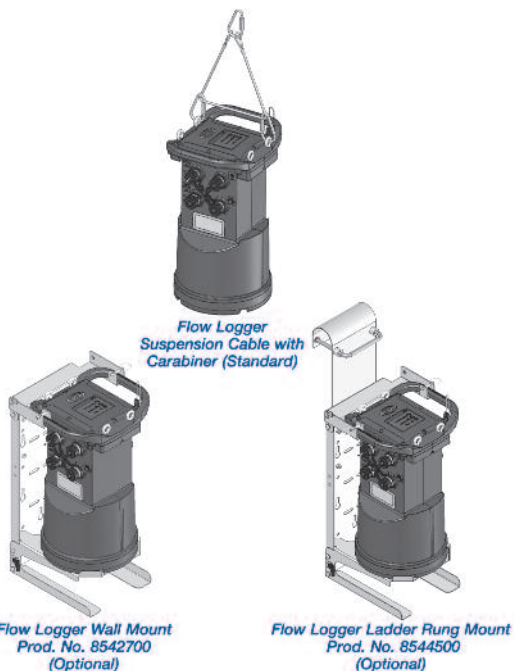
Alarms

Maximum of 16 channel alarms including high/high, high, low, low/low and system alarms including low battery, low RTC battery, low slate memory, slate memory full.

Alarm Actions

Trigger sampler, change logging interval, change call interval, send an e-mail, or send text message (SMS).

*Subject to change without notice.



Flow Logger Suspension Cable with Carabiner (Standard)

Flow Logger Wall Mount Prod. No. 8542700 (Optional)

Flow Logger Ladder Rung Mount Prod. No. 8544500 (Optional)

For more information, call to request LIT2711 FL900 Wireless Flow Logger, LIT2709 FL900 Std (Non-Wireless) Flow Logger, LIT2707 FSDATA, LIT2708 FLO-DAR Sensor, LIT2712 FLO-TOTE 3 Sensor, LIT2773 AV9000, LIT2804 Ultrasonic Level Sensors, LIT2805 Redundant Flow System and LIT2806 Wireless Level Alarm System or visit: www.hachflow.com

Find it here... Buy it today on hachflow.com

U.S. customers only.



FLO-DAR® RADAR VELOCITY FLOW METER SENSOR

Utilizes a revolutionary approach to open channel flow monitoring!



- Ideal for:
- Sanitary Sewer Evaluation Studies
 - Collection Systems
 - Capacity Studies
 - Combined Sewer Overflows (CSO)
 - Inflow and Infiltration (I&I) Studies
 - Billing / Custody Transfer
 - Plant Influent and Effluent

Combines advanced Digital Doppler Radar velocity sensing technology with ultrasonic pulse echo depth sensing to remotely measure open channel flow. Compatible with the Hach FL900 Series Cellular Wireless and Standard (Non-Wireless) Flow Loggers for portable applications or the Flo-Station for permanent applications.

- Non-Contact Sensor Eliminates Lost Data
- Accurate Flow Measurement From Above the Flow Stream
- Perfect Solution for Difficult Flow Conditions
- Optional Surge Velocity Sensor
- Intrinsically Safe Models Available



Reduced maintenance and improved crew safety. After initial installation, sensor may be retrieved from street level, eliminating the need for confined space entry.

Specifications*

<p>FLO-DAR SENSOR</p> <p>Enclosure IP68 Waterproof rating, Polystyrene</p> <p>Dimensions 160.5 W x 432.2 L x 297 D mm (6.32 x 16.66 x 11.7 in.), with SVS, D = 387 mm (15.2 in.)</p> <p>Weight 4.8 kg (10.5 lbs.)</p> <p>Operating Temperature -10 to 50°C (14 to 122°F)</p> <p>Storage Temperature -40 to 60°C (-40 to 140°F)</p> <p>Power Requirements Supplied by FL900 Flow Logger, Flo-Logger, or Flo-Station</p> <p>Interconnecting Cable—Disconnectable at both sensor and logger or Flo-Station Polyurethane, 0.400 (±0.015) in. diameter; IP68 Standard length 9M (30 ft), maximum 305 m (1000 ft) Cables are available in two styles: —connectors both ends —connector from sensor with open leads to desiccant hub, desiccant hub with connector to logger. A potting/sealant kit will be included. This can be used to run the cable through conduit.</p> <p>Certification Certified to: FCC Part 15.245: FCC ID: VIC-FLODAR24 Industry Canada Spec. RSS210. v7: IC No.: 6149A-FLODAR24</p>	<p>SURCHARGE DEPTH MEASUREMENT Auto zero function maintains zero error below 0.5 cm (0.2 in.)</p> <p>Method Piezo-resistive pressure transducer with stainless steel diaphragm</p> <p>Range 3.5 m (138 in.), overpressure rating 2.5 x full scale</p> <p>VELOCITY MEASUREMENT</p> <p>Method Radar</p> <p>Range 0.23 to 6.10 m/s (0.75 to 20 ft/s)</p> <p>Frequency Range 24.075 to 24.175 G-Hz, 15.2mW (max.)</p> <p>Accuracy ±0.5%; ±0.03 m/s (±0.1 ft/s)</p> <p>DEPTH MEASUREMENT</p> <p>Method Ultrasonic</p> <p>Standard Operating Range from Flo-Dar Housing to Liquid 0 to 152.4 cm (0 to 60 in.)</p> <p>Optional Extended Level Operating Range from Transducer Face to Liquid 0 to 6.1 m (0 to 20 ft.) with 43.18 cm (17 in.) dead band, temperature compensated.</p> <p>Accuracy ±1%; ±0.25 cm (±0.1 in.)</p>	<p>FLOW MEASUREMENT</p> <p>Method Based on Continuity Equation</p> <p>Accuracy ±5% of reading typical where flow is in a channel with uniform flow conditions and is not surcharged, ±1% full scale max.</p> <p>SURCHARGE CONDITIONS DEPTH/VELOCITY</p> <p>DEPTH (Std with Flo-Dar Sensor) Surcharge depth supplied by Flo-Dar sensor.</p> <p>VELOCITY (Optional Surge Velocity Sensor)</p> <p>Method Electromagnetic</p> <p>Range ±4.8 m/s (±16 ft/s)</p> <p>Accuracy ±0.15 ft/s or 4% of reading, whichever is greater.</p> <p>Zero Stability > ±0.05 ft/s</p> <p>CERTIFICATION INTRINSICALLY SAFE The Flo-Dar and Surge Velocity Sensors are certified to Class I, Zone 1 Standards. They conform to ANSI/UL 60079-11 and are certified to CAN/CSA E60079-11 and EN 60079-11 standards.</p> <p><i>*Subject to change without notice.</i></p>
--	---	---

For more information, call to request LIT2708 FLO-DAR Sensor, LIT2711 FL900 Wireless Flow Logger, LIT2709 FL900 Std (Non-Wireless) Flow Logger, LIT2707 FSDATA or visit: www.hachflow.com

FLO-TOTE® 3 ELECTROMAGNETIC FLOW METER SENSOR

Measures both velocity and depth in the same cross-section providing accurate flow measurements.

- Economical, compact solution for flow monitoring
- Field replaceable/interchangeable sensor
- Use with portable or permanent meters



Ideal for:

- Sanitary Sewer Evaluation Studies
- Collection Systems
- Capacity Studies
- Combined Sewer Overflows (CSO)
- Inflow and Infiltration (I&I) Studies
- Billing / Custody Transfer
- Plant Influent and Effluent

Specifications*

<p>FLO-TOTE 3 FLOW METER SENSOR</p> <p>Material Polyurethane</p> <p>Dimensions 13.6 L x 4.4 W x 2.8 H cm (5.37 L x 1.73 W x 1.10 H in.)</p> <p>Weight 1.1 kg (2.4 lb) with 30 ft cable</p> <p>Operating Temperature 0 to 45°C (32 to 113°F)</p> <p>Storage Temperature -20 to 52°C (-4 to 125°F)</p> <p>Power Requirements Supplied by FL900 Logger, Flo-Logger/Logger XT, or Flo-Station</p>	<p>DEPTH MEASUREMENT</p> <p>Method Submerged pressure transducer</p> <p>Standard Operating Range 10 mm to 3.5 cm (0.4 to 138 in.) Contact the factory for extended ranges.</p> <p>Accuracy ±1% of reading</p> <p>Zero Stability ±0.009 m (±0.03 ft.), for 0 to 3 m (0 to 10 ft.) Includes non-linearity, hysteresis and velocity effects.</p> <p>Resolution 2.5 mm (0.1 in.)</p> <p>Over Range Protection 2X range</p>	<p>TEMPERATURE MEASUREMENT</p> <p>Method 1 wire digital thermometer</p> <p>Range -10 to 85°C (14 to 185°F)</p> <p>Accuracy ±2°C (±3.5°F)</p> <p>SENSOR CABLE</p> <p>Material Polyurethane jacketed</p> <p>Length Available in specified lengths from 30 to 1000 ft.</p> <p>Connectors To use with portable FL900 Series Logger or Flo-Logger: Sensor with connector end (30 to 1000 ft. lengths) Sensor with junction box, desiccant hub, sealant/potting kit and connector; allows for usage with conduit (30 to 1000 ft. lengths)</p>
<p>VELOCITY MEASUREMENT</p> <p>Method Electromagnetic (Faraday's law)</p> <p>Range -1.5 to 6.1 m/s (-5 to +20 ft/s)</p> <p>Accuracy ±2% of reading</p> <p>Zero Stability ±0.015 m/s (±0.05 ft/s) at 0 to 3 m/s (0 to 10 ft/s)</p> <p>Resolution ±0.0003 m/s (0.01 ft/s)</p>	<p>FLOW MEASUREMENT</p> <p>Method Conversion of water depth and pipe size to fluid area. Conversion of local velocity reading to mean velocity. Multiplication of fluid area by mean velocity to equal flow rate.</p> <p>Conversion Accuracy ±5.0% of reading. Assumes appropriate site calibration coefficient, pipe flowing 10% to 90% full with a level greater than 5.08 cm (2 in.).</p>	<p>Important Note: The sensor cable assembly with desiccant hub is compatible with either the Marsh McBirney Flo-Logger/Logger XT or the Hach FL900 Series Flow Loggers. When using this cable assembly with the Marsh McBirney Flo-Logger, do not disconnect the desiccant cartridge that is attached to the Flo-Logger itself. If using Tote 3 cable with Flo-Station, sensor will have bare leads on cable end (30 to 1000 ft. lengths), and there will be no desiccant hub, as the air tube terminates inside of the Flo-Station housing.</p> <p><i>*Subject to change without notice.</i></p>

For more information, call to request LIT2712 FLO-TOTE 3 Sensor, LIT2711 FL900 Wireless Flow Logger, LIT2709 FL900 Std (Non-Wireless) Flow Logger, LIT2616 Flo-Station, LIT2707 FSDATA or visit: www.hachflow.com

Find it here... Buy it today on hachflow.com

U.S. customers only.



FLO-STATION™ FLOW MONITOR



The Marsh-McBirney Flo-Station provides an ideal solution for permanent sewer flow monitoring when combined with either the Flo-Dar or Flo-Tote 3 open channel flow meter sensors.

For more information, call to request LIT2616 Flo-Station Flow Monitor or visit: www.hachflow.com

Applications

Municipal

- Sanitary Sewer Evaluation Studies
- Collection Systems
- Capacity Studies
- Combined Sewer Overflows
- Inflow and Infiltration (I&I) Studies
- Billing / Custody Transfer
- Plant Influent and Effluent

Industrial

- Process Waste
- Plant Influent
- Plant Effluent
- Non-contact Cooling Water
- Stormwater Monitoring and Compliance

Available with or without display.

Intrinsically Safe models available.

Specifications*

Data Storage

64K (16K cycles of velocity/depth data)

Local Terminal

RS232C at 19.2K baud

Optional Display

Dimensions: 1 in. x 3 in. Four lines of text display, FLOW, LEVEL, VELOCITY, FLOW TOTAL or any combination of any four channels containing data. Screens may be programmed to alternate values displayed.

Time-Based Accuracy

1 second per day

Outputs

Four 4-20 mA outputs: system-isolated, up to 600 ohm load. Outputs are flow, level, velocity or surcharge level.

Contact Closure

Dry contact closure with adjustable duration selectable for flow-proportional or alarm based on: FLOW, LEVEL, VELOCITY, SURCHARGE LEVEL, TEMPERATURE, BATTERY VOLTAGE, EACH SAMPLE, BAD SAMPLE OR ANALOG INPUT. Rating: 1A @ 30 Vdc (resistive) 0.5A @ 125 Vac (resistive)

Power Requirements

AC: 85-264 Vac, 47-63 Hz, 32 watts
DC: 12 Vdc for Flo-Station without display or Flo-Station with display (backlight off) 180 mA (2.1 watts) with (1) 4-20 mA utilized.

Housing

Material: ABS plastic, NEMA 4
Dimensions: 257.8 W x 236.7 H x 95.3 D mm (10.15 W x 9.32 H x 3.75 D in.)
Weight: 2.3 kg (5 lbs)

Operating Temperature

Operating Range: -10 to 50°C (14 to 122°F)
-20 to 50°C (-4 to 122°F) without display

Storage Temperature

Without Display: -40 to 60°C (-40 to 140°F)
With Display: -20 to 60°C (4 to 140°F)

Set-up/Data Retrieval

Flo-Ware for Windows software is the user on-site set-up, data management, and report generation software. It is compatible with desktop/portable computers utilizing Windows 95/98/2000/Me/NT/XP.

**Subject to change without notice.*

US9001 AND US9003 ULTRASONIC LEVEL SENSORS

NEW ultrasonic sensors, Hach US9001 down-looking and Hach US9003 in-pipe, provide accurate and reliable level measurements for level-only or redundant-level applications.

NEW!

US9003 In-Pipe Ultrasonic Sensor

US9001 Down-Looking Ultrasonic Sensor

- New sensors bring independent level measurement to the FL900 Series Flow Meter family expanding the sensor technologies available on the system.
- Easy Installation
- Wireless data available 24/7 with *FSDATA*®
- Accurate and reliable level measurement

Applications

Municipal

- Wastewater
- Collection Systems
- Industrial Water



Specifications*

US9001 DOWN-LOOKING ULTRASONIC SENSOR		Cable Jacket Material Polyurethane	Measurement Range 0 to 382.91 cm (0.00 to 150.75 in.)
Dimensions Ø x L: Ø 3.02 x 10.31 cm (Ø 1.19 x 4.06 in.)	Cable Diameter 6.10 mm (0.24 in.)	Cable Length 9.14 m (30 ft), 91.44 m (300 ft) maximum	Power Requirements 12 VDC, 0.0416 A, 0.5 W
Enclosure 316 stainless steel	Beam Angle 6° (half angle typical)	Enclosure Rating NEMA 6P, IP 68	Operating Temperature -18 to 60°C (0 to 140°F)
Weight 0.76 kg (1.68 lb) with 9.14 m (30 ft) cable	Compatible Instruments FL900 series flow loggers	Certifications CE	Operating Humidity 0 to 95%, non-condensing
Mounting Wall mount, adjustable arm mount	US9003 IN-PIPE ULTRASONIC SENSOR	Dimensions Ø 4.06 x 28.04 cm (Ø 1.6 x 11.04 in.)	Storage Temperature -40 to 60°C (-40 to 140°F)
Frequency 120 kHz	Enclosure 316 stainless steel and ABS	Weight 0.92 kg (2.03 lb) with 9.14 m (30 ft) cable	Resolution 2.54 mm (0.01 in.)
Accuracy 0.008 in./in. from the calibration point at steady state temperature, still air and ideal target	Mounting In-pipe mount	Frequency 120 kHz	Cable Jacket Material Polyurethane
Measurement Range 13.34 to 396.24 cm (5.25 to 156 in.) 0 to 382.91 cm (0.00 to 150.75 in.)	Accuracy 0.008 in./in. from the calibration point at steady state temperature, still air and ideal target		Cable Diameter 6.10 mm (0.24 in.)
Power Requirements 12 VDC, 0.0416 A, 0.5 W			Cable Length 9.14 m (30 ft), 91.44 m (300 ft) maximum
Operating Temperature -18 to 60°C (0 to 140°F)			Beam Angle 6° (half angle typical)
Operating Humidity 0 to 95%, non-condensing			Enclosure Rating NEMA 6P, IP 68
Storage Temperature -40 to 60°C (-40 to 140°F)			Compatible Instruments FL900 series flow loggers
Resolution 2.54 mm (0.01 in.)			Certifications CE

*Subject to change without notice.

For more information, see LIT2806 Wireless Level-Only Alarming System, LIT2805 Redundant-Level Metering System, LIT2711 Wireless FL900 Series Flow Logger, LIT2709 Non-Wireless FL900 Series Flow Logger, and LIT2707 *FSDATA* Flow Data Manager Software or visit: www.hachflow.com

Find it here... Buy it today on hachflow.com

U.S. customers only.



REDUNDANT-LEVEL FLOW MONITORING SYSTEM

NEW!

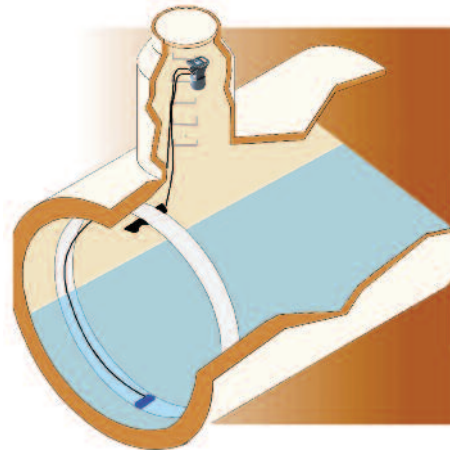


Ensure reliable and accurate level data with Hach's FL900 redundant-level system.

With Hach's FL900 Series plug-and-play flow meters, you can pair a Hach submerged area/velocity sensor with an US9003 In-Pipe ultrasonic level sensor for integrated redundant-level flow monitoring.

Applications

- Wastewater
- Collection Systems
- Industrial Water



The Hach redundant-level flow monitoring system components include the area velocity sensor, in-pipe ultrasonic sensor and the FL902 Flow Logger.

Specifications*

<p>US9003 IN-PIPE ULTRASONIC SENSOR</p> <p>Dimensions Ø 4.06 x 28.04 cm (Ø 1.6 x 11.04 in.)</p> <p>Enclosure 316 stainless steel and ABS</p> <p>Weight 0.92 kg (2.03 lb) with 9.14 m (30 ft) cable</p> <p>Mounting In-pipe mount</p> <p>Frequency 120 kHz</p> <p>Accuracy 0.008 in./in. from the calibration point at steady state temperature, still air and ideal target</p>	<p>Measurement Range 0 to 382.91 cm (0.00 to 150.75 in.)</p> <p>Power Requirements 12 VDC, 0.0416 A, 0.5 W</p> <p>Operating Temperature -18 to 60°C (0 to 140°F)</p> <p>Operating Humidity 0 to 95%, non-condensing</p> <p>Storage Temperature -40 to 60°C (-40 to 140°F)</p> <p>Resolution 2.54 mm (0.01 in.)</p> <p>Cable Jacket Material Polyurethane</p>	<p>Cable Diameter 6.10 mm (0.24 in.)</p> <p>Cable Length 9.14 m (30 ft), 91.44 m (300 ft) maximum</p> <p>Beam Angle 6° (half angle typical)</p> <p>Enclosure Rating NEMA 6P, IP 68</p> <p>Compatible Instruments FL900 series flow loggers</p> <p>Certifications CE</p>
---	---	---

*Subject to change without notice.

For more information, see LIT2805 Redundant-Level Metering System, LIT2804 In-Pipe Ultrasonic Sensors, LIT2711 Wireless FL900 Series Flow Logger, LIT2709 Non-Wireless FL900 Series Flow Logger, LIT 2773 AV9000, and LIT2707 rsDATA Flow Data Manager Software or visit: www.hachflow.com

WIRELESS LEVEL ALARMING SYSTEM

Know about overflows as soon as they happen with Hach's NEW wireless level alarming system.

NEW!

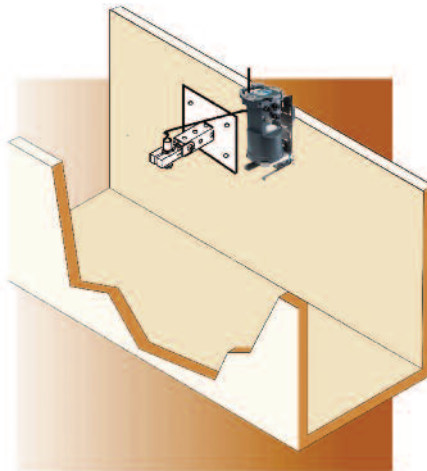
Hach's NEW ultrasonic level sensor combined with the Hach FL901 Wireless Flow Logger, represent the latest technological flow monitoring innovations from Hach. With Hach FL900 plug-and-play wireless loggers and sensors, you can use level and flow measurements to keep you on top of what's happening in your collection system.

- Affordable alarming - Up to 16 channel alarms that can be sent by email or text (SMS)
- Proven Hach US9001 down-looking non-contact ultrasonic sensor provides accurate and reliable flow level measurements
- Hach FL901 Wireless Flow Logger equipped with GPRS or CDMA cellular modem
- Hach FL900 Series Flow Loggers are compatible with any Hach plug-and-play sensors for future expansion
- Hach FSDATA web-based software provides secure 24/7 access to your real-time data and wireless meter



Applications

- Wastewater
- Collection Systems
- Industrial Water



Typical Wireless Level Alarming System Installation

Specifications*

US9001 DOWN-LOOKING ULTRASONIC SENSOR	Measurement Range 13.34 to 396.24 cm (5.25 to 156 in.) 0 to 382.91 cm (0.00 to 150.75 in.)	Cable Diameter 6.10 mm (0.24 in.)
Dimensions Ø x L: Ø 3.02 x 10.31 cm (Ø 1.19 x 4.06 in.)	Power Requirements 12 VDC, 0.0416 A, 0.5 W	Cable Length 9.14 m (30 ft), 91.44 m (300 ft) maximum
Enclosure 316 stainless steel	Operating Temperature -18 to 60°C (0 to 140°F)	Beam Angle 6° (half angle typical)
Weight 0.76 kg (1.68 lb) with 9.14 m (30 ft) cable	Operating Humidity 0 to 95%, non-condensing	Enclosure Rating NEMA 6P, IP 68
Mounting Wall mount, adjustable arm mount	Storage Temperature -40 to 60°C (-40 to 140°F)	Compatible Instruments FL900 series flow loggers
Frequency 120 kHz	Resolution 2.54 mm (0.01 in.)	Certifications CE
Accuracy 0.008 in./in. from the calibration point at steady state temperature, still air and ideal target	Cable Jacket Material Polyurethane	

*Subject to change without notice.

For more information, see LIT2806 Wireless Level-Only Alarming System, LIT2804 In-Pipe Ultrasonic Sensors, LIT2711 Wireless FL900 Series Flow Logger, and LIT2707 FS DATA Flow Data Manager Software or visit: www.hachflow.com

Find it here... Buy it today on hachflow.com

U.S. customers only.



AV9000 ANALYZER MODULE & SUB AV SENSOR

Advanced diagnostic tools and settings for difficult sites.

Ideal for:

- Sanitary Sewer Evaluation Studies
- Collection Systems
- Capacity Studies
- Combined Sewer Overflows (CSO)
- Inflow and Infiltration (I&I) Studies
- Billing / Custody Transfer
- Plant Influent and Effluent



AV9000 Analyzer Module shown with Sub AV Sensor and Wireless FL904 Flow Logger. Sensor, analyzer module and logger are ordered separately.

- Improved Accuracy
- Confidence in Your Data
- Less Maintenance and Troubleshooting

Area Velocity Data on the Web

When using the AV9000 with the Hach FL900 Series Flow Logger with cellular modem (optional) get real-time Area Velocity flow data on the internet, make remote programming changes and define site-specific alarm conditions to receive an alert on your cell phone or by email.

System Benefits Include

- Factory default settings for streamlined set up and optimized battery life
- Analyzer Diagnostics include:
 - Multi-Scale Doppler Spectrum
 - Diagnostic Statistics
 - Loggable Quality Parameters
- Increased Accuracy with Speed of Sound Compensation
- On-site sensor operation verification prior to leaving the site.
- Option available to log raw level data.

Specifications*

ANALYZER MODULE
VELOCITY MEASUREMENT

Measurement Method

1 MHz Doppler Ultrasound

Doppler Analysis Type

Digital Spectral Analysis

Doppler Accuracy

±1% of reading or 0.025 fps (with electronically simulated Doppler signal, -25 to +25 fps equivalent velocity)

Power Requirements

Supply voltage: 9-15 Vdc

Peak Current

<130 mA @ 12 Vdc with Sub A/V Sensor

Energy Per Measurement

<15 Joules (typical)

Operating Temperature

-18 to 60°C (0 to 140°F) at 95% RH

GENERAL ATTRIBUTES

Dimensions

5 cm H x 17.5 cm W x 13 cm L (2.0 in. H x 6.875 in. W x 5.0 in. L)

Enclosure

PC/ABS.

Environmental Rating

NEMA 6P (IP67)

Compatible Instruments

FL900 Series Flow Loggers and Sigma Submerged Area Velocity Sensors.

Compatible Software

Flo-Ware software and FL900 Series driver v1.0.4.0 or greater for local programming and reporting. When using with FL900 Series Loggers with wireless option, use with FSDATA for web access and remote programming.

SUBMERGED AREA VELOCITY SENSOR SPECIFICATIONS (See page 16.)

*Subject to change without notice.

For more information, call to request LIT2773, or visit: www.hachflow.com

Sigma Model 940 Intrinsically Safe Area Velocity Flow Meter

Its rugged design, low-profile probes, and one-year battery life significantly reduce site visits. Choose up to two area velocity sensors, or one area velocity and one depth backup. Whether you require redundancy in a single pipe or depth and velocity in separate pipes, you'll profit from new performance levels in a single meter.

Industry standard MODBUS ASCII protocol has been incorporated into the American Sigma 940 Flow Meter. The implementation of the MODBUS protocol allows your SCADA or DCS system to directly communicate with the 940 Flow Meter without the use (or additional cost) of a PLC.

Advanced Technology for Accuracy

- Automatically corrects for temperature effects
- Uses patented "drawdown correction" to correct the effects of velocity on accurate depth measurement
- Advanced Doppler technology avoids signal dropouts and ensures accuracy in low-flow, full-pipe, or reversed-flow conditions
- CSA-NRTL/C certified for operation in Class I, Division I, Groups C and D hazardous locations
- Multiple communications options
- NEMA 6P sealed to withstand submergence and prolonged surcharge conditions
- Sampler pacing capabilities, to document the extent of overflow problems

Ideal for:

- Long Term Flow Monitoring in Hazardous or Potentially Hazardous Areas
- Sanitary Sewer Evaluation Studies
- CSO Studies and Monitoring

Contact factory for pricing.

For more information, call to request LIT2579, or visit: www.hachflow.com



The Hach Sigma 940 intrinsically-safe flow meter supports dual sensors, interfaces with samplers, has a long battery life, and offers increased data storage and optional modem capability. (Sensors sold separately.)

Sigma Model 911 Intrinsically Safe Portable Area Velocity Flow Meter

With quick installation and minimum maintenance, the 911 is ideal for short-term flow studies in hazardous or potentially hazardous environments. Profiling to establish accurate average velocity is not needed.

Advanced Technology for Accuracy

- Automatically corrects for temperature effects
- Uses patented "drawdown correction" to correct the effects of velocity on accurate depth measurement
- Advanced Doppler technology avoids signal dropouts and ensures accuracy in low-flow, full-pipe, or reversed-flow conditions
- CSA-NRTL/C certified for operation in Class I, Division I, Groups C and D hazardous locations
- Low profile, non-fouling probe reduces maintenance and is detachable/interchangeable for ultimate flexibility
- Easy installation with a slender 6.5 in. diameter, no profiling required
- NEMA 6P sealed to withstand submergence and prolonged surcharge conditions
- Sampler pacing capabilities, to document the extent of overflow problems

Ideal for:

- Short Term Flow Studies in Hazardous or Potentially Hazardous Areas
- Sanitary Sewer Evaluation Studies
- CSO Studies and Monitoring
- Industrial Discharge Monitoring

Contact factory for pricing.

For more information, call to request LIT2578, or visit: www.hachflow.com



Are there hazardous gasses at your monitoring site? Be sure you're safe with an affordable Sigma 911 intrinsically safe flow meter. (Sensors sold separately.)

Find it here... Buy it today on hachflow.com

U.S. customers only.

SIGMA MODEL 950 SERIES AREA VELOCITY FLOW METER

Offers maximum flexibility for multiple applications.



The Sigma Model 950 Series Permanent/Portable Open Channel Flow Meters provide portable and/or permanent single-channel monitoring plus water quality testing, process control interface, and digital display. (Sensors sold separately.)



Versatility and Customization

The Sigma 950 series are the meters of choice by flow professionals, consultants, and municipalities. Choose from any of the following technologies to fit your application.

- Use the Submerged Area/Velocity flow meter to measure flow in collections systems for periods up to 40 days using our 6 amp-hr gel electrolyte battery
- Use any of our depth technologies when primary devices (Weirs and Flumes) are available to measure depth and calculate flow
- The bubbler depth technology is ideal for applications with high winds, high temperature or when foam is present
- The combination of bubbler depth technology and doppler velocity is the favorite of storm water professionals
- The ultrasonic depth technology is ideal to monitor industrial dischargers for your pre-treatment program in combination of any of our Automatic Wastewater samplers

Sampler Pacing and Equipment Control

The 950 Flow Meter is the perfect choice to do flow pacing sampling with portable samplers. Control samplers, pumps, or other equipment based on monitored flow or selected parameter(s). Sampler pacing provides the ability to document overflow problems.

Note: Hach Data Management software is required to program this Flow Meter.

Ideal for:

- Long Term or Permanent Flow Studies
- Sanitary Sewer Evaluation Studies
- CSO Studies and Monitoring
- NPDES Stormwater Compliance
- Industrial Compliance Monitoring

Battery life for our depth technologies greatly depend on logging intervals and environmental conditions Contact us to determine the battery life for your application. Other power options are available, such as AC power converters and Solar Panels.

Hach Sigma 950 Factory Installed Options:

- Integral pH-Temperature/ORP Meter
- Integral Dissolved Oxygen/Temperature Meter
- Integral Conductivity/Temperature Meter
- Rain Gauge Input
- Analog Input Data-logging Channels
- 4 – 20 mA Outputs
- Mechanical Totalizer
- Alarm Relays
- Modem
- Expanded Memory
- AC Power Backup



The 950 Flow and Quality Meter logs flow, depth, pH, temperature, dissolved oxygen, and conductivity.



The 950AV provides maximum versatility with the choice of three depth measurement technologies and velocity. OptiFlo-AV offers all three in one meter.



With solar power and radio communications, these 950AVs monitor three billing sites.

SIGMA MODEL 950 SERIES AREA VELOCITY FLOW METER

Model 950 Flow Meters Provide Maximum Versatility

Model	Choice of Depth Technology	Features
950 — Depth Only*	Bubbler Submerged Pressure Ultrasonic (50 kHz downlook) Ultrasonic (75 kHz downlook) Ultrasonic (75 kHz In-pipe)	Each 950 meter contains electronics for only one sensing technology.
950 — AV (Area Velocity)	Bubbler Submerged Pressure Ultrasonic (50 kHz downlook) Ultrasonic (75 kHz downlook) Ultrasonic (75 kHz In-pipe)	Measures velocity as well as depth. No need for primary device.
950 OptiFlow — Depth Only*	Up to three depth sensors in <u>one</u> meter. Bubbler Submerged Pressure Ultrasonic (50 kHz)	950 Optiflow meters have electronics for measuring depth with three different technologies. Only one can be used at a time.
950 OptiFlow — AV	Up to three depth sensors in <u>one</u> meter. Bubbler Submerged Pressure Ultrasonic (75 kHz)	950 Optiflow meters have electronics for measuring depth with three different technologies. In addition to measuring velocity. No need for primary device. Only one can be used at a time.

*To measure flow, depth only meters also require a primary device such as a weir or flume.

IM9001 Interface Module

Combine the Hach FL900 Series Logger with the Sigma Model 950 for Remote Monitoring and Wireless Data Access.



Solar Power System for Flow Meters and Samplers

- Uninterrupted operation; no recharging of power supply
- Accommodates varying size modules
- Handles wide range of battery options



Sigma Smart Chargers

- Compatible with Sigma Battery Pack Models 913US, 913EU, 913UK and 914US, 914EU, 914UK (12 Vdc, Gel Electrolyte and NiCad, 4 - 6 amp/hr)
- Fast Recharging time-typically less than one hour
- Two-Stage charging for Optimal Battery Life
- NiCad Charger for US Charger
Prod. No. 6427500,
Cord Prod. No. 1801000
- Gel-Electrolyte for US Charger
Prod. No. 6247400,
Cord Prod. No. 1801000



For more information, call to request LIT2547, or visit: www.hachflow.com

Specifications*

Units of Measurement

Flow: gps, gpm, gph, lps, lpm, lph, mgd, afd, cfs, cfm, cfh, cfd, m³s, m³m, m³h, m³d
Totalized Flow: L, m³, ft.³, gal., acre-ft.

Primary Devices

Flumes: Parshall, Palmer, Bowlus, Leopold-Lagco, H, HL, HS, trapezoidal
Weirs: N-notch (15 to 120°) contracted/non-contracted rectangular, Thelmar, compound Cipolletti
Manning Equation: Round, U and rectangular trapezoidal channels
Flow Nozzles: Kennison, parabolic, California pipe
Head vs. Flow: Custom programmable curve (up to 99 points)

Operating Temperature
-10 to 65.5°C (14 to 150°F)

Storage Temperature
-40 to 80°C (-40 to 176°F)

Humidity
0 to 100%, condensing

Time Based Accuracy
±6 seconds (±0.007%) per day

Totalizers
8-digit resettable and 8-digit non-resettable LCD software totalizer
Optional 6-digit non-resettable mechanical totalizer

Graphics Display
Back lit LCD; Auto-off when not in use
SCII Mode: 8 line x 40 character
Graphics Mode: 60 x 240 dot
Dimensions: 3.8 x 12.7 cm (1.5 x 5 in.)
Displays: depth vs. time, flow vs. time
Optional Displays: rainfall, pH, ORP, temp., DO, conductivity, vs. time, sampler events, and alarm events

Keypad
21 position sealed membrane switch with blinking green LED to indicate power on. Four "soft keys", function defined by display

*Subject to change without notice. Specifications will vary depending on channel size, channel. See page 16 for sensor specs.

Data Logging

"Smart" Dynamic memory allocation automatically partitions memory to provide the maximum logging time. No manual memory partitioning required.
Memory Mode: Either slate or wraparound may be selected
Data Points: Approximately 20,000 standard. Expandable up to 116,000 data points.
Daily Statistics: Available for up to 32 days
Recording Intervals: 1, 2, 3, 5, 6, 10, 12, 15, 20, 30, or 60-minute intervals

Program Memory

Non-volatile programmable flash, can be updated via RS-232 port

Sampler Output

12 to 17 Vdc pulse, 100 mA maximum at 500 ms duration

Communications

RS-232: Up to 19,200 baud
SCADA MODBUS communication protocol via RS-232 or optional modem
Modem (optional): 14,400 baud
Cellular Communications (optional): 14,400 bps, MNP 10-EC Cellular Protocol
Pager Alarms

Enclosure Material

ABS, UV resistant

Enclosure Rating

NEMA 4X, 6

Power Source

12 Vdc

Power Options

6 amp-hr. gel electrolyte rechargeable battery
4 amp-hr. Ni-Cad rechargeable battery
Lantern battery pack with two 6-Volt lantern batteries
115 Vac, 230 Vac or 100 Vac power converter with battery charger

Dimensions

34.3 x 25.4 x 24.1 cm (13.5 x 10.0 x 9.5 in.)

Weight

5 kg (11 lbs.) not including battery source

Find it here... Buy it today on hachflow.com

U.S. customers only.



SIGMA AREA VELOCITY FLOW SENSORS

Provides reliable, accurate data with minimal maintenance and greater life expectancy.



The Hach Sigma AV Flow Sensor is a robust sensor specially developed to withstand harsh environments typical of collection systems. It provides reliable, accurate data with minimal maintenance and greater life expectancy.

Specifications*

AV SENSORS VELOCITY MEASUREMENT

Method

Doppler ultrasound; twin 1 MHz piezoelectric crystals

Operating Depth

2 cm (0.8 in.) minimum, typical
Recommended Range
-1.52 to 6.10 m/s (-5 to 20 ft./s)

For velocity performance specifications, please refer to individual Hach Sigma Flow Meter specifications.

AV SENSORS DEPTH MEASUREMENT

Method

Pressure transducer with stainless steel diaphragm

Accuracy

±0.16% full scale ±1.5% of reading at constant temp ±2.5°C (±36.5°F)
±0.20% full scale ±1.75% of reading from 0 to 30°C (32 to 86°F)
±0.25% full scale ±2.1% of reading from 0 to 70°C (32 to 160°F)

Velocity-Induced Depth Error

Compensated based on pipe geometry and flow velocity

Depth Range

Standard: 0 to 3 m (0 to 10 ft.)
Extended: 0 to 9 m (0 to 30 ft.)

Maximum Allowable Depth

Standard: 10.5 m (34.5 ft.)
Extended: 31.5 m (103.5 ft.)

AV SENSORS GENERAL ATTRIBUTES

Air Intake

Atmospheric pressure transducer is desiccant protected

Body Material

Noryl® plastic outer shell with epoxy potting

Power Consumption

Less than or equal to 1.2 W at 12 Vdc

Cable

Urethane cable with air vent

Connector

Hard anodized; satisfies Military Spec 5015

Cable Lengths

Standard: 9, 15, 23 and 30.5 m (30, 50, 75 and 100 ft.)
Custom: Greater than 30.5 m (100 ft.); maximum: 76 m (250 ft.)

Cable Diameter

0.91 cm (0.36 in.)

Dimensions

2.3 x 3.8 x 13.5 cm (0.9 x 1.5 x 5.31 in.)

Operating Temperature

0 to 70°C (32 to 158°F)

*Subject to change without notice. Specifications will vary depending on channel size, channel. See page 15 (Model 950) and page 12 (AV9000) for flow meter specs.

Less Maintenance and Troubleshooting

Two interchangeable depth sensor cover plates are available to adapt the sensor to a variety of site conditions.

- *Oil-filled Cover Plate*—designed for sites susceptible to extreme fouling. The cavity is filled with a high-viscosity silicon oil that prevents fouling for as much as one year. The silicon oil is easily replenished, if needed, with a hand tool provided by Hach.
- *Non oil-filled Cover Plate*—designed to minimize fouling and can be used for most applications or in pipes that could run dry.

Designed for Harsh Environments

- Uses Noryl® plastic in the outer shell to protect the sensor against highly abrasive environments
- Cable is rigidly clamped inside the shell, then potted for strength
- Connectors are hard-anodized to the meter to prevent lost connection due to corrosion

Easy to Install

A single point calibration can be performed on-site without the need of a bucket of water.

Superior Sensor

- Stable and consistent
- Accurate and repeatable
- Versatile to meet many applications

Ideal for:

- Capacity Studies
- Infiltration and Inflow (I&I) Studies
- Sanitary Sewer Evaluation Studies (SSES)
- Billing or Custody Transfer
- CSO and SSO Monitoring
- Stormwater Monitoring and Compliance
- Industrial Wastewater Monitoring – Municipal Pretreatment

Submerged Area Velocity Sensors

Note: For Intrinsically Safe Sensors for use with 911 and 940 I.S. Flow Meters—Consult Factory.

Prod. No.	Description
Standard (Non Oil-Filled)	
77065-030	Submerged AV Sensor 0-10 ft. range, 30 ft. cable, with connector
77065-050	Submerged AV Sensor 0-10 ft. range, 50 ft. cable, with connector
77065-075	Submerged AV Sensor 0-10 ft. range, 75 ft. cable, with connector
77065-100	Submerged AV Sensor 0-10 ft. range, 100 ft. cable, with connector
77065-XXX	Submerged AV Sensor 0-10 ft. range, custom cable, with connector Requires cable 77155-PRB.
77075-030	Submerged AV Sensor 0-30 ft. range, 30 ft. cable, with connector
77075-050	Submerged AV Sensor 0-30 ft. range, 50 ft. cable, with connector
77075-075	Submerged AV Sensor 0-30 ft. range, 75 ft. cable, with connector
77075-100	Submerged AV Sensor 0-30 ft. range, 100 ft. cable, with connector
77075-XXX	Submerged AV Sensor 0-30 ft. range, custom cable, with connector Requires cable 77155-PRB.
Oil-Filled Sensor with Connector	
77064-030	Oil-Filled, Submerged AV Sensor 0-10 ft. range, 30 ft. cable, with connector
77064-050	Oil-Filled, Submerged AV Sensor 0-10 ft. range, 50 ft. cable, with connector
77064-075	Oil-Filled, Submerged AV Sensor 0-10 ft. range, 75 ft. cable, with connector
77064-100	Oil-Filled, Submerged AV Sensor 0-10 ft. range, 100 ft. cable, with connector
77064-XXX	Oil-Filled, Submerged AV Sensor 0-10 ft. range, custom cable, with connector Requires cable 77155-PRB.
77074-030	Oil-Filled, Submerged AV Sensor 0-30 ft. range, 30 ft. cable, with connector
77074-050	Oil-Filled, Submerged AV Sensor 0-30 ft. range, 50 ft. cable, with connector
77074-075	Oil-Filled, Submerged AV Sensor 0-30 ft. range, 75 ft. cable, with connector
77074-100	Oil-Filled, Submerged AV Sensor 0-30 ft. range, 100 ft. cable, with connector
77074-XXX	Oil-Filled, Submerged AV Sensor 0-30 ft. range, custom cable, with connector Requires cable 77155-PRB.
Bare Wire—Standard (Non Oil-Filled Sensor)	
77265-030	Submerged AV Sensor 0-10 ft. range, 30 ft. cable Requires Junction Box 7725000, Hub Assembly 7722800, Hub Assembly Cable 77155-HUB.
77265-XXX	Submerged AV Sensor 0-10 ft. range, custom cable Requires cable 77155-PRB, Junction Box 7725000, Hub Assembly 7722800, Hub Assembly Cable 77155-HUB.
77275-030	Submerged AV Sensor 0-30 ft. range, 30 ft. cable Requires Junction Box 7725000, Hub Assembly 7722800, Hub Assembly Cable 77155-HUB.
77275-XXX	Submerged AV Sensor 0-30 ft. range, custom cable Requires cable 77155-PRB, Junction Box 7725000, Hub Assembly 7722800, Hub Assembly Cable 77155-HUB.

Prod. No.	Description
Bare Wire—Oil-Filled	
77264-030	Oil-Filled, Submerged AV Sensor 0-10 ft. range, 30 ft. cable Requires Junction Box 7725000, Hub Assembly 7722800, Hub Assembly Cable 77155-HUB.
77264-XXX	Oil-Filled, Submerged AV Sensor 0-10 ft. range, custom cable Requires cable 77155-PRB, Junction Box 7725000, Hub Assembly 7722800, HUB Assembly Cable 77155-HUB.
77274-030	Oil-Filled, Submerged AV Sensor 0-30 ft. range, 30 ft. cable Requires Junction Box 7725000, Hub Assembly 7722800, Hub Assembly Cable 77155-HUB.
77274-XXX	Oil-Filled, Submerged AV Sensor 0-30 ft. range, custom cable Requires cable 77155-PRB, Junction Box 7725000, Hub Assembly 7722800, Hub Assembly Cable 77155-HUB.
Miscellaneous	
77155-PRB	Sensor Cable (per ft.) Maximum length 247 ft., minimum length 1 ft.
7725000	Junction Box Silicone gel potting recommended for corrosive or wet environments; use Gel Fill Kit (7725600) and Dispensing Gun (7715300).
7722800	Hub assembly for bare wire sensors Requires Hub Assembly Cable 77155-HUB.
77155-HUB	Hub assembly cable (per ft.) Connects junction box to hub. Maximum length 3 ft., minimum length 1 ft.
7725600	Silicone gel potting kit for j-box Includes 3 tubes of gel fill (7729800) and 3 static mixers (5909900) for replacing/refilling junction box. A single dispensing gun (7715300) is required.
7715300	Silicone oil/gel dispensing gun for oil-filled sub AV sensor

Find it here... Buy it today on hachflow.com

U.S. customers only.

FLOW AND DEPTH SENSORS

Low Profile Velocity Sensors-Non I.S.

Prod. No.	Description
88006	Velocity Sensor, with connector Requires 3722 cable.
88006-25	Velocity probe with connector with 25 ft. cable
88006-50	Velocity probe with connector with 50 ft. cable
88006-100	Velocity probe with connector with 100 ft. cable
88005	Velocity Sensor, bare leads Requires 3722 cable and 4924 junction box.
88005-25	Velocity probe with bare leads with 25 ft. cable Requires 4924 junction box.
88005-50	Velocity probe with bare leads with 50 ft. cable Requires 4924 junction box.
88005-100	Velocity probe with bare leads with 100 ft. cable Requires 4924 junction box.

75 KHz Ultrasonic Depth Sensors

Ultrasonic sensors approved for use in the USA –Class I, Zone 1, Groups A, B, C, D. Canada – Class I, Division 1, Groups A, B, C, D; Class II, Division 1, Groups E, F, G. For conduit installation use 1 inch or larger conduit and bare lead probe.

Prod. No. Description

Downlooking

1176-01	75 kHz ultrasonic sensor with connector Requires 2716 cable.
1176-03	75 kHz ultrasonic sensor with bare leads Requires 2716 cable and 3658 junction box.
5233-05	IS 75 kHz ultrasonic sensor without horn Requires 5245100 cable.
IN-PIPE	
3702-01	75 kHz in-pipe ultrasonic sensor with connector. Requires 2716 cable.
3702-02	75 kHz in-pipe ultrasonic sensor with bare leads. Requires 2716 cable and 3658 junction box.
4741	IS 75 kHz in-pipe ultrasonic sensor with connector and 25 ft. cable

50 KHz Ultrasonic Depth Sensors

Prod. No. Description

Downlooking

1177-01	50 kHz ultrasonic sensor with connector Requires 2716 cable.
1177-03	50 kHz in-pipe ultrasonic sensor with bare leads. Requires 2716 cable and 3658 junction box.

Submerged Depth Sensor

Prod. No. Description

2963	General purpose depth sensor, 0 to 5.76 ft. with 25 ft. cable Depth sensor cable cannot be extended.
------	--

Bubbler AV Sensors

Prod. No. Description

88007	Bubbler AV sensor, 6-pin connector Requires 3232 cable.
88008	Bubbler AV sensor, 10-pin connector Requires 3232 cable.
88007-25	Bubbler AV sensor, 6-pin connector with 25 ft. cable
88008-25	Bubbler AV sensor with connector with 25 ft. cable
88007-50	Bubbler AV sensor, 6-pin connector with 50 ft. cable
88008-50	Bubbler AV sensor with connector with 50 ft. cable
88007-100	Bubbler AV sensor, 6-pin connector with 100 ft. cable
88008-100	Bubbler AV sensor with connector with 100 ft. cable
88009	Bubbler AV sensor with bare leads Requires 3232 cable and 3366 junction box.
88009-25	Bubbler AV sensor with bare leads with 25 ft. cable Requires 3366 junction box.
88009-50	Bubbler AV sensor with bare leads with 50 ft. cable Requires 3366 junction box.
88009-100	Bubbler AV sensor with bare leads with 100 ft. cable Requires 3366 junction box.

Cable and Junctions Boxes

Prod. No. Description

3722	Cable for velocity sensor (per ft.) Maximum length is 300 ft.
9708000	Velocity cable (per ft.) Minimum length is 10 ft., maximum is 100 ft.
2716	Ultrasonic sensor cable (per ft.) Maximum length 50 ft. Consult factory for greater distances.
5245100	Ultrasonic sensor cable (per ft.) For use with 5233-05 sensor. Maximum length is 100 ft.
9702300	Ultrasonic sensor cable (per ft.) Minimum length is 10 ft., max. length is 500 ft.
3232	Coax cable, 2 pair, AV (per ft.)
4924	Junction box for velocity probes with bare leads
3658	Junction box for ultrasonic sensor conduit installations
3366	Junction box for bubbler depth/velocity probes 6 pin

sc200™ CONTROLLER WITH ULTRASONIC FLOW SENSOR

Designed to give highly accurate flow and depth measurement using ultrasonic sensor technology.

The sc200 Universal Controller with Ultrasonic Sensor is designed to give highly accurate flow and depth measurements for your open channel flow monitoring applications. From the easy-to-read display to reliable data management with SD card data transfer, the flow system provides an economical choice for flow monitoring.

System Benefits Include

- Built-in library of weir and flume types
- 15 user-selectable flow measurement units
- Simple, menu-guided operation
- Four relays and two 4–20 mA outputs

Ideal Applications

- Storm Water Monitoring
- NPDES Permitting
- Inlet Flow Monitoring
- Final Effluent Monitoring
- Activated Sludge



The flow system can be used for a variety of applications including NPDES permitting requirements and the monitoring of storm water, inlet flow, final effluent and activated sludge. Replaces the Hach GL153 analog controller with advanced features for easier operator use.

Prod. No.	Description
LXV404.99.00302	sc200 with Flow Module
9012700	Flow secondary analog input module
U53S010	Ultrasonic Sensor, 10 ft. cable
U53S030	Ultrasonic Sensor, 30 ft. cable
U53S100	Ultrasonic Sensor, 100 ft. cable

Contact flow meter customer support group for pricing.

For more information, request LIT2767 or visit: www.hach.com/sc200

Specifications*

sc200 SPECIFICATIONS	ULTRASONIC FLOW SENSOR
Display Graphic dot matrix LCD with LED backlighting Transreflective	Flow Rate 0-9999, 0-999.9, 0-99.99 with selectable flow rate units and multiplier
Display Size 48 x 68 mm (1.89 x 2.67 in.)	Volume 0-9,999,999 with selectable volume units
Display Resolution 240 x 160 pixels	Depth Measurement Range/Resolution 0.25 m (10 in.) to 6 m (20 ft.) ±1 mm (0.04 in.)
Height x Width x Depth 144 x 144 x 181 mm (5.7 x 5.7 x 7.1 in.)	Air Temperature -40 to to 90°C (-40 to 194°F) ±0.1°C (0.18°F)
Weight 1.70 kg (3.75 lb)	Input Filter 999 sec
Power Requirements 100- 240 Vac ±10%, 50/60 Hz; 24 Vdc -15% + 20%	Totalizers 8-digit resettable LCD software totalizer
Operating Temperature -20 to 60°C (-4 to 140°F), 0 to 95% RH non-condensing	Totalized Flow Gal., ft.3, acre-ft., lit., m3, in.3 Totalizer may be set to auto or manual mode. (Menu option to reset is available in manual mode only.)
Enclosure Rating NEMA 4X / IP 66	Accuracy ±0.5% of span
	Repeatability ±0.1% of span

*Subject to change without notice.

Find it here... Buy it today on hachflow.com
U.S. customers only.



FH950 PORTABLE FLOW METER WITH EM FLOW SENSOR

Provides accurate flow measurements while simplifying the entire measurement process in rugged field environments.

NEW!

Now Measures Both Depth and Velocity



The FH950 Velocity Meter simplifies set up, displays real time data and trend information, auto-calculates discharge volumes and eliminates the need for manual recording with its convenient USB to PC data download; with no moving parts, the sensor never requires mechanical maintenance!

See the Difference the FH950 makes!

- Reduce man-hours 50%—the step-by-step user interface simplifies programming, delivers real time data, and downloads direct to PC
- Automatically calculates total discharge based on USGS and ISO methods
- Real-time velocity graphed on color display
- One of the lowest maintenance solutions on the market
- Electromagnetic velocity sensor with no moving parts never requires mechanical maintenance

Applications Include:

- Streams
- Rivers
- Weir/Flume/Flow Meter Calibration
- Sewers
- Mining Channels
- Irrigation Channels



Specifications*

Sensor

VELOCITY MEASUREMENT

Method

Electromagnetic

Accuracy

±2% of reading ±0.05 ft/s (±0.015 m/s) through the range 0 to 10 ft/s (0 to 3.04 m/s); ±4% of reading from 10 to 16 ft/s. (3.04 to 4.87 m/s)

Zero Stability

±0.05 ft/s (± 0.015 m/s)

Range

0 to +20 ft/s (0 to +6.09 m/s)

DEPTH MEASUREMENT

Method

Diaphragm type: Absolute pressure with single point calibration

Accuracy (static)

The larger of ±2% of reading or ±0.504 in (0.015 m).

Steady state temperature and static non-flowing water.

Range

0 to 10 ft (0 to 3.05 m)

Minimum Water Depth

1.25 in (3.18 cm)

Portable Meter

GENERAL ATTRIBUTES

Material

Polycarbonate with a thermoplastic elastomer (TPE) overmold

Environmental Rating

IP67

Storage Temperature Range

-4 to 140°F (-20 to 60°C)

Operating Temperature Range

-4 to 131°F (-20 to 55°C)

USER INTERFACE AND PROGRAMMING

Graphics Display

Color, LCD; 3.5" QVGA, transreflective (readable in direct sunlight)

Weight

1.5 lbs (.68 kg)

*Subject to change without notice.

Prod. No.

Description

FH950.11005	FH950 meter/Velocity & Depth sensor, 5 ft, English manual
FH950.11020	FH950 meter/Velocity & Depth sensor, 20 ft, English manual
FH950.11040	FH950 meter/Velocity & Depth sensor, 40 ft, English manual
FH950.11100	FH950 meter/Velocity & Depth sensor, 100 ft, English manual
FH950.10005	FH950 meter/Velocity Only sensor, 5 ft, English manual
FH950.10020	FH950 meter/Velocity Only sensor, 20 ft, English manual
FH950.10040	FH950 meter/Velocity Only sensor, 40 ft, English manual
FH950.10100	FH950 meter/Velocity Only sensor, 100 ft, English manual

Includes portable meter, sensor with specified cable, universal sensor mount, USB cable, camera mount, power supply/charger, neck strap, thumb screw kit, soft case, and disposable cloth.

75002

Standard Wading Rod Kit, English consists of four 2-ft. long sections marked in tenth ft. increments, double end hanger and base plate

Contact flow meter customer support group for pricing. GSA pricing available.

For more information, request LIT2568 or visit: www.hachflow.com