

HACH FL900 SERIES FLOW LOGGER -WIRELESS

The wireless Hach FL900 Series Flow Logger revolutionizes open channel flow monitoring by providing reliable, innovative solutions for any sewer flow measurement challenge.



Applications

- Wastewater
- Collection Systems
- Industrial Water

From wireless communication with free data hosting to longer battery life, the FL900 is designed to reduce monitoring costs, increase efficiency, and provide better data 24/7 with less hassle than you ever thought possible. When combined with any of our full array of smart sensors, the FL900 wireless flow monitoring system will provide reliable flow data for any wastewater flow monitoring application. And with the FL900's included software tool, *fsDATA*® Online Data Manager, site time is reduced dramatically, allowing for increased time for data analysis and proactive actions for solving any flow related issue.

Plug and Play Sensor Ports

The FL900 is available with 1, 2 or 4 sensor ports. The sensor ports are "plug and play"; the logger auto detects the type of sensor connected to allow customers maximum flexibility for their Hach flow sensor inventories.

Compatible FL900 Flow Logger sensors include:

- *FLO-DAR*® AV Sensor with optional Surcharge Velocity Sensor
- *FLO-TOTE*® 3 AV Sensor
- *Sigma Submerged AV Sensor*
- *Hach US9001 Down-Looking Ultrasonic Sensor*
- *Hach US9003 In-Pipe Ultrasonic Sensor*

Quick Installation/On-Site Confirmation

Not only is the FL900 easy to install with a variety of mounting options, it also includes an LED status light so that you know it's fully functional before leaving the site.

Affordable Alarming Capabilities

User-selectable alarms can be sent by email or text (SMS) to specified recipients to keep you continuously informed on your monitoring sites. Up to 16 channel alarms can be selected, as well as alarms for low battery, low RTC battery, low slate memory, slate memory full, sensor timeout, sensor ID error or missed call.

Wireless Data Available 24/7 with *fsDATA*

Eliminate risk and make smarter, more-timely decisions with your sewer flow data. The *fsDATA* Online Data Manager provides secure 24/7 access to your flow data and wireless meter from the comfort of the internet. With *fsDATA*, site visits to collect flow data or to adjust meter settings are eliminated, decreasing maintenance costs. Set alarms and view sensor diagnostics remotely to maximize uptime. Multiple users can be granted different data access levels based on job function.

Redundant-Level Flow Monitoring

With FL900 Series plug-and-play flow meters, you can pair a Sigma Submerged AV Sensor with a Hach US9003 In-Pipe Ultrasonic Sensor for integrated redundant-level flow monitoring.



Specifications*

Portable DC Powered Electronics (Includes Models FL901, FL902 & FL904)

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

Varies with sensor type, logging intervals, telemetry and environment.

For a 15-minute logging interval, 60 minute call frequency, four 6 V lantern batteries at room temperature:
130 days with 4 lantern batteries and a FLO-DAR sensor
180 days with 4 lantern batteries and a FLO-TOTE 3 sensor
160 days with 4 lantern batteries and a Sigma Submerged AV sensor with AV9000 Analyzer
200 days with 4 lantern batteries and Ultrasonic Down-Looking or In-Pipe sensor

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.

LED Status Indicator

- Green Flashes every 3 seconds during normal operation.
Flashes every 15 seconds during sleep mode.
- Red Flashes when an attached sensor does not agree with the logger program, when an expected sensor is not found or the sensor is not working properly.

LED Modem Indicator

- Stays green during a call to the server. Goes blank after the call is successfully completed and terminated.
- Flashes red if the call to the server failed.

Sensor Ports 1, 2 or 4 ports

Connectors Stainless steel connectors

Datalog Channels 16 maximum

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, sensor timeout, sensor ID error.

Alarm Actions

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

Call Monitor

Sends a message by e-mail or text (SMS) if a logger has not called the server within an user-defined amount of time.

Logging Intervals

1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30 or 60 minutes
Primary and secondary intervals for dynamic logging.

Data Storage

Event Log: 1,000 events maximum in non-volatile flash memory
Sample History: 2,000 sample events maximum in non-volatile flash memory
Datalog: 325,000 data points; 1128 days for 3 channels at 15-minute log intervals

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Local Communication

USB
RS232 (Baud rates: 9600, 19200, 38400, 57600, 115200)

Remote Communication

Wireless modem; CDMA or GPRS technology with a mobile provider.

Protocols

Local Modbus RTU

Timebase Accuracy

±0.002%, synchronized every 24 hours with server software and modem

Supported Sensors

FLO-TOTE 3, FLO-DAR, FLO-DAR with SVS, Sigma Submerged AV Sensor†, Sigma 950†, and Rain Gauge

Sampler Interface

Compatible with Sigma 900 Standard, Sigma 900MAX, Sigma SD900 to support set-point sampling, flow pacing, and logging sample history.

Desktop Software

FLO-WARE software is required for programming the logger and can be used for data management and report generation. It is compatible with desktop/lap top computers utilizing Windows operating system. Minimum resolution needed is 1024x768.

Internet Application Software

rsDATA web-based software for flow meter programming, data management and report generation for wireless flow meters.

Certifications

Logger: CE; optional AC power supply: UL/CSA/CE

Warranty

1 year

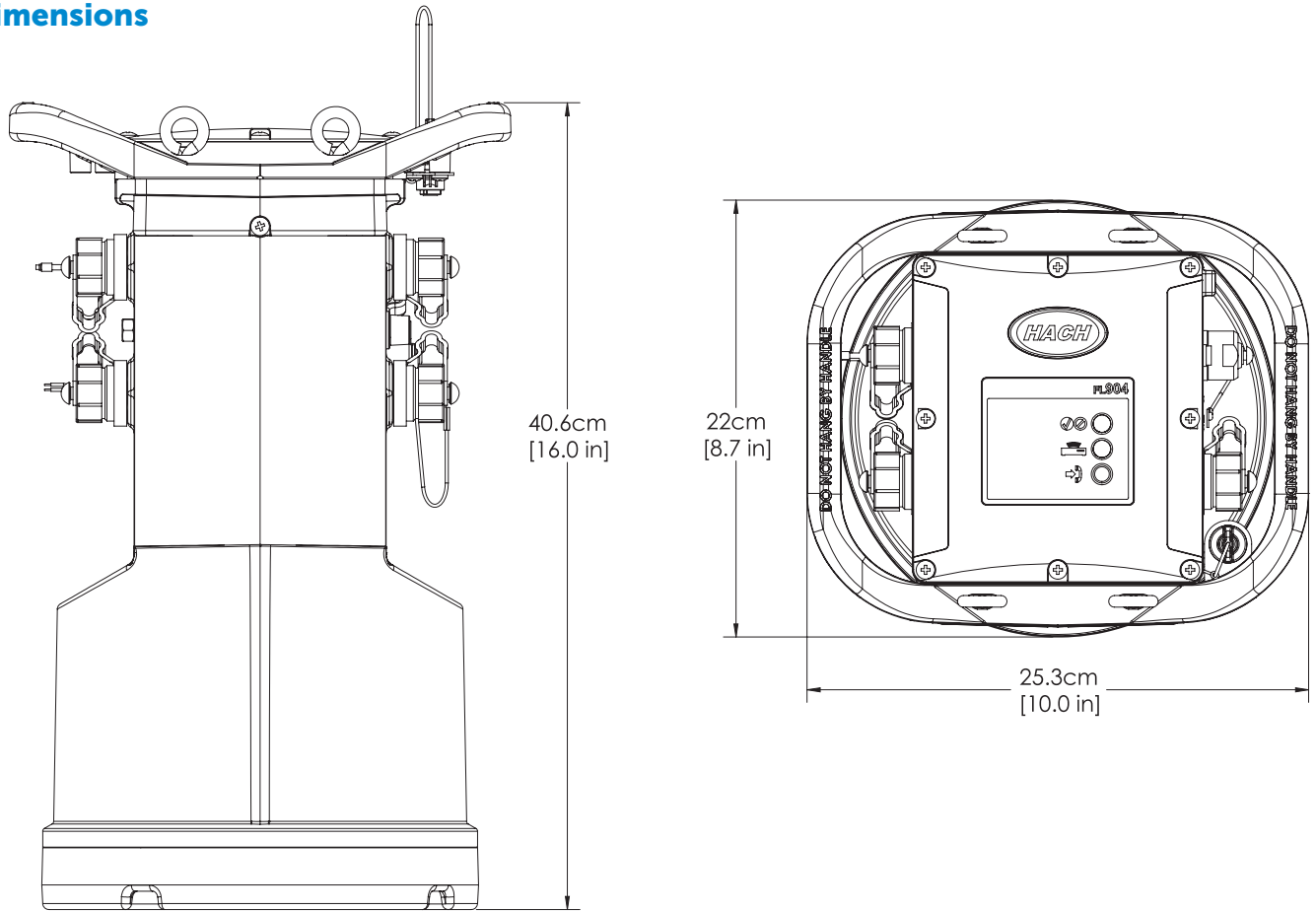


The FL900 Series Loggers meet CE requirements.

[†]Requires external module.

*Subject to change without notice.

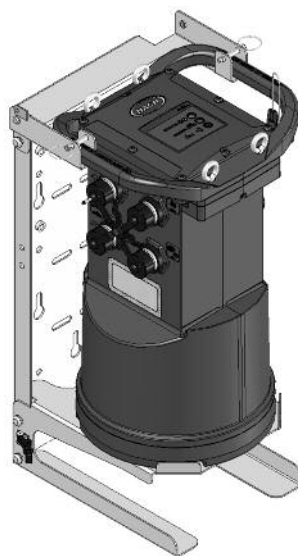
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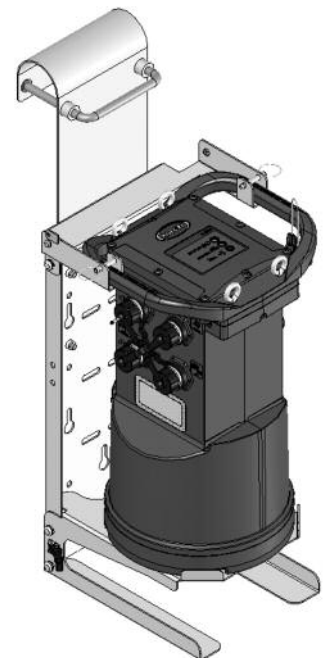
Installation/Mounting Options



Flow Logger Suspension Cable with Carabiner (Standard)



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



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

Ordering Information

		Sensor Connector(s)	Country Code	Modem	Rain Gauge
FL90X Electronics (Flow Logger)	Model FL90	—	97	—	—
1 Sensor Connector		1			
2 Sensor Connectors		2			
4 Sensor Connectors		4			
None				X	
AT&T (Activated)				A	
GPRS no SIM				G	
Sprint (Inactive)				R	
Sprint (Activated)				S	
Verizon (Inactive)				U	
Verizon (Activated)				V	
No Rain Gauge Connector					X
With Rain Gauge Connector					R

External Modules

- 8531300** AV9000 Area Velocity Analyzer module (required to attach a Sigma Sub AV sensor)
- 8549800** IM9001 Interface module (required to attach a Sigma 950 flow meter)

Cables

- 8528700** Cable, External power, 2 wire, 9 ft.
- 8528200** Cable, Communication, RS232
- 8528300** Cable, Communication, USB
- 8528400** Cable, Aux, 7pin MIL 5015 (Connect to Sigma Sampler), 9 ft.
- 8528401** Cable, Aux, 7pin MIL 5015 (Connect to Sigma Sampler), 25 ft

Software

- Model T200-900** FLO-WARE Desktop Software
- FS-HOSTING** Monthly data hosting service for FS-DATA
- FS-DATAFR** Monthly wireless service

Mounting Hardware

- 8543800** Wall mount bracket (304 Stainless)
- 8545600** Wall mount bracket with ladder hanger (304 Stainless)
- 8542700** Wall mount bracket with AC Power Supply shelf (304 Stainless)
- 8544500** Wall mount bracket with AC Power Supply Shelf with ladder hanger (304 Stainless)

Replacement Parts

- 8755500** Desiccant refill beads, Bulk 1.5 lb
- 11013M** Battery, 6V lantern
- 8542900** Battery, long-life alkaline
- 8543000** Battery pack top cap adaptor and cable (for long-life alkaline battery pack 800017701)
- 8542800** Rain Gauge with 100 ft. cable

For additional information on products mentioned in this data sheet, request the following data sheets:

FS-DATA® Online Data Manager (LIT2707)

FLO-DAR® AV Sensor (LIT2708)

FLO-TOTE® 3 AV Sensor (LIT2712)

HACH US9000 Ultrasonic Sensors (LIT2804)

HACH Redundant Flow Monitoring System (LIT2805)

HACH Wireless Level Alarming System (LIT2806)

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Hach Company reserves the right to alter specifications to equipment at any time.



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