Hach FL900 Series
Cellular Wireless Flow Logger

Flow

NEW!

When combined with the Flo-Dar®, Flo-Tote® 3, or Submerged Area Velocity Sensor*, the Hach FL900 Series Wireless Flow Logger takes flow monitoring to a whole new level. With features that reduce site time and increase crew safety, the wireless flow monitoring system allows you to easily manage your flow data 24/7, as well as your budget.

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Features and Benefits

The FL900 Wireless Flow Logger provides users with a reliable, budget saving open channel wireless flow monitoring solution for open portable flow monitoring applications. Flow data is accessible 24/7 with Hach FSDATA web-based software. When combined with the Flo-Dar, Flo-Tote 3, or Sub AV Sensor, the system will drastically reduce site time and increase safety for monitoring crews.

Increase Monitoring Crew Safety

With the time saving features designed into the FL900 Wireless Flow Loggers, crews spend less time in the manhole and less time on site to decrease monitoring costs while increasing the safety of flow monitoring crews.

Plug and Play Sensor Ports

The FL900 Series Flow Logger 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.

Flow Monitoring Data at Your Fingertips with FSDATA™ Flow Data Manager

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. Set alarms and view sensor diagnostics to maximize the uptime of your flow meters. (See Lit. No. 2707 for additional information on FSDATA.)

Easy Installation/Versatile Mounting Options

The logger can be quickly attached to a wall, pole or manhole ladder in minutes. Users can choose to hang logger from standard carabiner or optional 4-bolt wall mount for pole, horizontal or vertical wall mount or ladder rung mount.

LED Gives Quick Confirmation of Logger Status

Get peace of mind the logger is ready to capture the next flow event, before you leave the site. The rugged FL900 Wireless Flow Logger includes a status LED panel. The indicator light on the top of the logger shows the status of the instrument and modem (if equipped with wireless option). The user can manually send a call to the server to make sure the network connection is good by simply swiping the magnet over the call initiation target.

*Requires AV9000 Analyzer module.

HACH®

Be Right™

Specifications*

FL900 SERIES FLOW LOGGER
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 60ºC (0 to 140ºF) at 95% RH

Storage Temperature
-40 to 60ºC (-40 to 140ºF)

Power Requirements
8 to18 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.

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

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, Submerged Area
Velocity Sensor[†], Sigma 950[†], and Rain Gauge

Sampler Interface
Compatible with Sigma 900 Standard, Sigma 900 Max, Hach
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
FSDATA 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
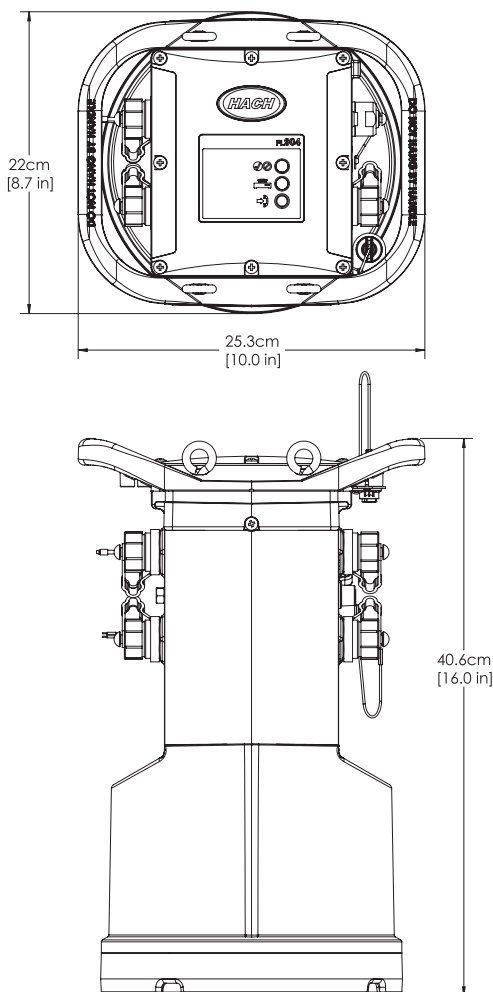
The FL900 Series Loggers meet CE requirements.

[†]Requires external module.

Engineering Specifications

1. Exterior dimensions of the Flow Logger shall be 25.4 W x 22 D x 40 cm H (10.0 W x 8.7 D x 16.0 in. H)

2. The Flow Logger enclosure material shall be PC/ABS structural foam with NEMA 6P (IP68) rating.

3. The operating temperature for the Flow Logger shall be –18 to 60ºC (0 to 140ºF) at 95% relative humidity and storage temperature of –40 to 60ºC (–40 to 140ºF).

4. Power requirements of the Flow Logger shall be 8 to18 Vdc from batteries or external power source, 2.5W max.

5. When used with a Flo-Dar sensor, the Flow Logger shall have a battery life of 185 days utilizing 4 6v alkaline batteries at a 15 minute logging interval (at room temp.). When used with a Flo-Tote sensor, the Flow Logger shall have a battery life of 306 days utilizing 4 6v alkaline batteries at a 15 minute logging interval (at room temperature). A long-life battery for longer deployments shall be available option. When used with a Submerged AV sensor and AV9000 Digital Analyzer module, the Flow Logger shall have a battery life of 360 days utilizing 4 6v alkaline batteries at a 15 minute logging interval (at room temperature).

6. The Flow Logger shall have 1, 2 or 4 sensor ports with stainless steel connector, 1 communications port and 1 auxiliary port.

7. The Flow Logger shall have primary logging intervals of 1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30 or 60 minutes.

8. The Flow Logger shall have secondary logging intervals available to modify the logging rate based on a defined channel alarm condition or trigger.

9. Optional remote communication shall be available on the FL900 Series Loggers via Wireless modem; CDMA2000 1xRTT or GPRS.

10. The Flow Logger data storage event log shall be 1,000 events maximum in non-volatile flash memory.

11. Timebase Accuracy of the Flow Logger shall be 0.002% synchronized every 24 hours with server software and modem.

12. The Flow Logger shall support the Flo-Dar, Flo-Dar with SVS, Flo-Tote 3, Submerged Area Velocity Sensor, Sigma 950. and Rain Gauge.

13. The Flow Logger shall be compatible with Sigma 900 Standard, Sigma 900 Max and Hach SD900 to support set point sampling, flow-pacing and sample history logging.

14. The Flow Logger shall be able to connect to a lap top or desk top PC using either USB or RS232 serial connection.

15. The Flow Logger shall have an LED indicator for operating /programming status visible on the topmost horizontal surface of the logger.

16. The internet data management software shall indicate sites in alarm condition in either a map view or list view.

17. When connected to an external power source, the FL900 series logger shall be capable of power switching, i.e. drawing power from the external source and conserving the alkaline batteries inside the logger base. At the time the external power source reaches a low alarm condition, it will then switch the power draw to the alkaline batteries mounted inside the base of the logger.

18. The internet software for flow data management shall be Hach FSDATA.

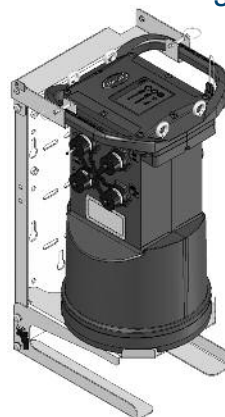19. The logger will be a Hach FL901, FL902, or FL904 Flow Logger.
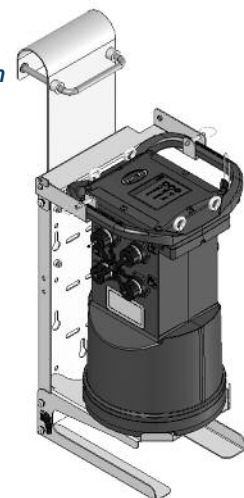
Dimensions

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

Antennas

5228400 Antenna, Half Wave (824-894, 1850-1990 MHz) —US for Verizon, Sprint, AT&T, T-Mobile
6241804 Antenna, Mini-Wing, (824-960, 1710-2170 MHz) —US for Verizon, Sprint, AT&T, T-Mobile
8537600 Antenna, Traffic Rated In Road/Burial (824-960MHz, 1850-1990MHz) —US for Verizon, Sprint, AT&T, T-Mobile
5255400 Antenna, Traffic Rated Manhole Lid (824-896, 1850-1990 MHz) —US for Verizon, Sprint, AT&T, T-Mobile

Software

Model T200-900 Flo-Ware Desktop Software
FS-HOSTING Monthly data hosting service for FSDATA
FS-DATAXFR 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

At Hach, it's about learning from our customers and providing the right answers. It's more than ensuring the quality of water—it's about ensuring the quality of life. When it comes to the things that touch our lives...

Keep it pure.

Make it simple.

Be right.

For current price information, technical support, and ordering assistance, contact the Hach office or distributor serving your area.

In the United States and all other countries except Europe, contact:

HACH COMPANY
4539 Metropolitan Court
Frederick, MD 21704-9452, U.S.A.
Telephone: 800-368-2723
Fax: 301-874-8459
E-mail: hachflowsales@hach.com
www.hachflow.com

In Europe contact:

Flow-Tronic
Rue J.H. Cool 19a
B-4840 Welkenraedt Belgium
Telephone: +32-87-899799
Fax: +32-87-899790
E-mail: site@flow-tronic.com
www.flow-tronic.com

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