AS950 ALL-WEATHER REFRIGERATED SAMPLERS

Applications

- Wastewater
- Collections
- Industrial Pretreatment
- Environmental Monitoring
- Stormwater

Sampling has never been this easy.

The AS950 All-Weather Refrigerated Sampler makes programming, data transfer and operation more intuitive and virtually error-free.

Easiest and Most Intuitive Operation

The large full color display and intuitive programming give you access to all your programmable criteria on a single screen—eliminating scrolling through menus and supporting error-free operation.

Most Convenient Data Transfer and Programming Available

The AS950 is the only sampler that utilizes a USB drive to upload and download data and copy programs from one sampler to another.

Confidence in Your Sampling Process

The program status screen instantly communicates alarms, missed samples and program progress for quick and easy troubleshooting.

Resists Corrosion

The All Weather Refrigerated (AWR) sampler base is designed to endure humid and highly corrosive environments, minimizing damage caused by corrosive gases, rodents, and standing water to guarantee environmental integrity.

Accurate and Consistent Sample Preservation

The custom-designed air-sensing thermostat controls temperature in accordance with USEPA and international guidelines, preserving samples regardless of outside temperatures and conditions.

Easy Maintenance at Low Cost

Spring-mounted rollers provide long tubing life keeping maintenance costs low. The desiccant and pump tubing can easily be accessed; the replacement is possible without any tools. The rugged see-through pump cover is made for a quick visual inspection.

HACH®

Be Right™

Specifications*

Sampling Features

Dual Programs
Up to 2 sample programs can be run sequentially, in parallel, or according to day of week scheduling; enabling a single sampler to function like multiple samplers

Sampling Modes
Pacing:
Time Weighted, Flow Weighted, Time Table, Flow Table, Event

Distribution:
Single bottle composite, multi-bottle composite, multi-bottle discrete, bottles per sample, samples per bottle or a combination of bottles per sample and samples per bottle

Run Modes
Continuous or non-continuous

Status Screen
Communicates what program is running, if there are any missed samples, when the next sample will be taken, how many samples remain, number of logged channels, time of last measurement, memory available, number of active channels, if alarms were triggered, when alarms were triggered, active sensors and cabinet temperature

Alarms
Configurable alarms that show on status screen and are recorded in diagnostics alarm logs. Alarms can be set for system diagnostics and logging such as program end, sample complete, missed samples and full bottle. Channel alarms are setpoint alarms for the recorded measurements (channels), such as pH, level and power supply voltage.

Manual Sample
Initiates a sample collection independent of program in progress

Automatic Shutdown
Multiple Bottle Mode: After complete revolution of distributor arm (unless Continuous Mode is selected)

Composite Mode: After preset number of samples have been delivered to composite container, from 1 to 999 samples, or upon full container.

Sample Volume
Programmable in 10-mL (0.34 oz) increments from 10 to 10,000 mL (3.38 oz to 2.6 gal)

Interval Between Samples
Selectable in single increments from 1 to 9,999 flow pulses (momentary contact closure 25 ms or 5 to 12 Vdc pulse; 4-20 mA interface optional), or 1 to 9,999 minutes in one minute increments

Set Point Sample Trigger
When equipped with flow sensor or pH/temperature sensor or peripheral monitoring options, sampling can be triggered upon an upset condition when field selectable limits are exceeded

Datalogging
SAMPLE HISTORY
Stores up to 4000 entries for sample time stamp, bottle number and sample status (success, bottle full, rinse error, user abort, distributor error, pump fault, purge fail, sample timeout, power fail and low main battery)

MEASUREMENTS
Stores up to 325,000 entries for selected measurement channels in accordance with the selected logging interval

EVENT LOG
Stores up to 2000 entries. Records Power On, Power Fail, Firmware Updated, Pump Fault, Distributor Arm Error, Low Memory Battery, Low Main Battery, User On, User Off, Program Started, Program Resumed, Program Halted, Program Completed, Grab Sample, Tube Change Required, sensor communication errors, cooling failed, heating failed, thermal error corrected

Diagnostics
View event and alarm logs as well as maintenance diagnostics

**Subject to change without notice.*

Specifications*

AS950 All Weather Refrigerated Sampler (AWRS)

Cabinet	IP24, low-density polyethylene with UV inhibitor
Refrigeration components and copper plumbing	Corrosion protected with conformal coating; all exposed copper tubing is insulated to avoid sweating and condensation
Sample Cooling	Top mounted compressor and fan-forced air cooled condenser 11/5 HP 115 VAC: 115 °C (239 °F) thermal overload protector, 7.1 locked rotor amps 230 VAC: 120 °C (248 °F) thermal overload protector, 7.6 A peak start current 3-sided wraparound plate type evaporator Rigid foam insulation: 3 in. sides, 5 in. top, 6 in. bottom Lockable lid to prevent tampering with programming Recovery Time: Sampler temperature recovers to 4°C within 5 minutes after door has been held open for one minute in 24°C (75°F) ambient environment while in an active cooling cycle. Pull Down Time: From 24°C (75°F) to 4°C (39°F), 20 minutes Temperature Control: 4 (±0.8) °C (39 (±1.5) °F)1
Sample Containers	SINGLE BOTTLE: 10 L (2.5 gal) glass or polyethylene, or 21 L (5.5 gal) polyethylene MULTIPLE BOTTLES: Two 10 L (2.5 gal) polyethylene or glass, four 10 L (2.5 gal) polyethylene or glass, eight 2.3 L (0.6 gal) polyethylene or 1.9 L (0.5 gal) glass, twelve 2 L (0.5 gal) polyethylene, twenty-four 1 L (0.3 gal) polyethylene or 350 mL (12 oz.) glass
Installation category, pollution degree	II, 2
Temperature	Operating: 0 to 50 °C (32 to 122 °F); with AC battery backup: 0 to 40 °C (32 to 104 °F) with controller compartment heater: –40 to 50 °C (–40 to 122 °F); with controller compartment heater and AC battery backup: -15 to 40 °C (5 to 104 °F Liquid Crystal Display (LCD): -10 to 70°C (-14 to 158°F) Storage: -40 to 60°C (-40 to 140°F)
Power Requirements (includes compressor)	115 VAC, 60 Hz, 4.2 A or 6.4 A with controller compartment heater 230 VAC, 50 Hz, 2.7 A or 4.1 A with controller compartment heater Overload Protection: 115 VAC: 7.5 A circuit breaker 230 VAC: 5.0 A circuit breaker
AC Power Backup (Pump Controller Only)	Rechargeable 6 amp-hour gel lead acid battery takes over automatically with AC line power failure Integral trickle charger maintains battery as full charge
Dimensions (W x D x H)	76 x 81 x 130 cm (30 x 32 x 51 in.)
Weight	86 kg (190 lb)
Certifications	CE, UL, CSA

AS950 Controller

Housing	PC/ABS blend, NEMA 4X, 6, IP68, corrosion and ice resistant
Graphics Display	1/4 VGA, Color; self-prompting/ menu-driven program
User Interface	Membrane switch keypad with 2 multiple function soft keys
Program Languages	Chinese, English, French, German, Italian, Spanish, Portuguese, Turkish, Hungarian, Czech, Polish, Romanian, Croatian, Greek, Slovenian, Slovak, Finnish, Russian, Japanese, Korean
Program Lock	Access code protection prevents tampering
Memory	Sample history: 4000 records; Data log: 325,000 records; Event log: 2000 records
Communications	USB and optional RS485 (Modbus)
AUX port inputs	One 0/4-20 mA input for flow pacing
Certifications	CE, UL

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Specifications*

Sample Pump and Strainer

Sample Pump
High-speed peristaltic, dual roller, with 0.95 ID x 0.16 OD cm (3/8 ID x 5/8 in. OD) pump tube

Pump Body
IP37, polycarbonate cover

Vertical Lift
8.5 m (28 ft) using 8.8 m (29 ft) maximum of 3/8-in vinyl intake tube at sea level at 20 to 25 °C (68 to 77 °F)

Tubing
Pump tubing:
9.5 mm ID x 15.9 OD mm (3/8-in ID x 5/8-in. OD) silicone

Intake tubing: 1.0 to 4.75 m (3.0 to 15.5 ft) minimum length, ¼-in. or 3/8-in. ID vinyl or 3/8-in. ID PTFE-lined polyethylene with protective outer cover (black or clear)

Sample Volume Repeatability (typical)
±5% of 200 mL sample volume with: 4.6 m (15 ft) vertical lift, 4.9 m (16 ft) of 3/8- in vinyl intake tube, single bottle, full bottle shut-off at room temperature and 1524 m (5000 ft) elevation

Sample Volume Accuracy (typical)
±5% of 200 mL sample volume with: 4.6 m (15 ft) vertical lift, 4.9 m (16 ft) of 3/8- in. vinyl intake tube, single bottle, full bottle shut-off at room temperature and 1524 m (5000 ft) elevation

Transfer Velocity (typical)
0.9 m/s (2.9 ft/s) with: 4.6 m (15 ft) vertical lift, 4.9 m (16 ft) of 3/8-in. vinyl intake tubing, 21 °C (70 °F) and 1524 m (5000 ft) elevation

Pump Flow Rate
4.8 L/min (1.25 gpm) at 1 m (3 ft) vertical lift with 3/8-in intake tube typical

Internal Clock
±1 second per day at 25 °C (77 °F)

Intake
Strainers: Choice of PTFE and 316 stainless steel construction, or all 316 stainless steel in standard size, high velocity, and low profile for shallow depth applications

Purge: Air purged automatically before and after each sample; duration automatically compensates for varying intake line lengths

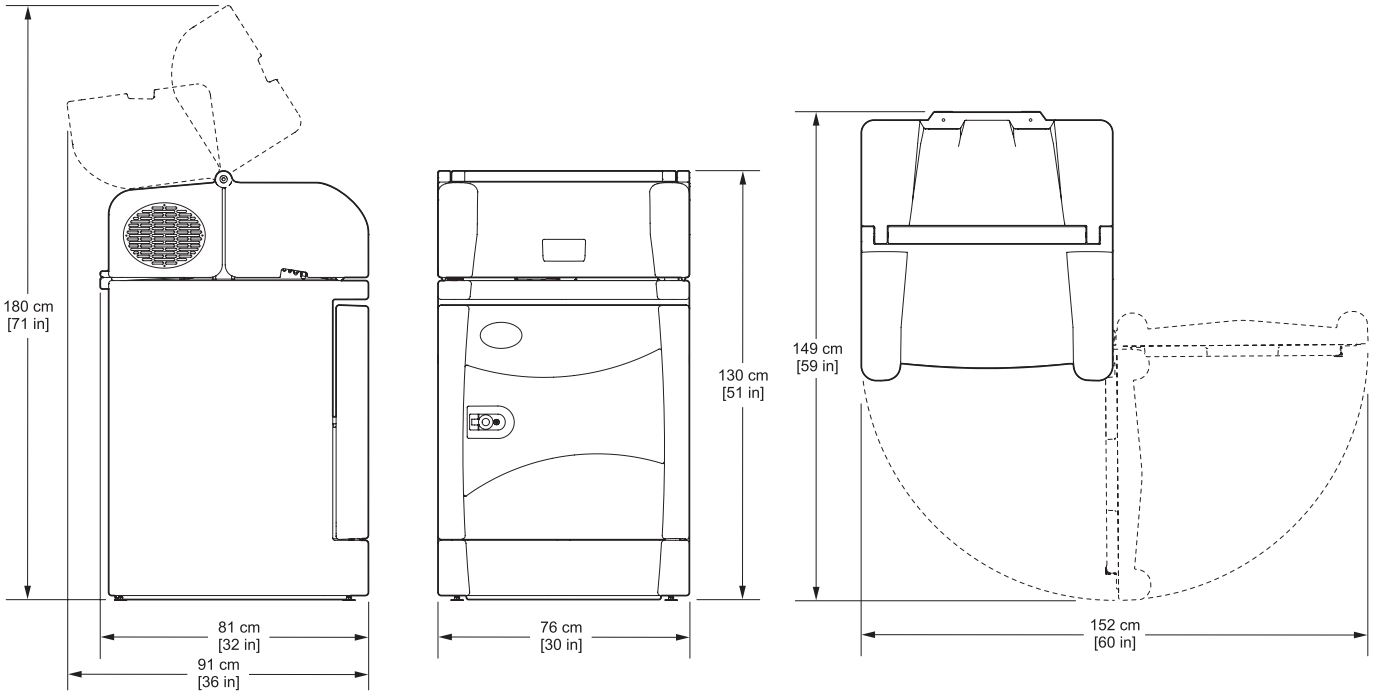
Rinse: Intake line automatically rinsed with source liquid prior to each sample, from 1 to 3 rinses

Retries or Fault: Sample collection cycle automatically repeated from 1 to 3 times if sample not obtained on initial attempt

**Subject to change without notice.*

Dimensions

The refrigeration compartment door of the AS950 All Weather Refrigerated Sampler is lockable (two keys are provided). The lid is also lockable for added security.



Ordering Information

AS950 All Weather Refrigerated Sampler (AWRS) Bundles

Includes AWRS base (115 Vac), sample bottle(s), vinyl intake tubing (25 ft.), and PTFE/stainless steel strainer. To order different combinations, please contact Hach Company.

ASA.CXXX1X11XX	All Weather Refrigerated Sampler with AS950 controller; includes 21-L (5.5 gal) PE container and full bottle shut off
ASA.CXXX1X31XX	All Weather Refrigerated Sampler with AS950 Controller; includes 4 10-L (2.5 gal) PE containers and distributor arm
ASA.CXXX1X41XX	All Weather Refrigerated Sampler with AS950 Controller; includes 24 1-L PE containers and distributor arm

Bottle Options

6559	2.5 Gallon Glass, with PTFE-lined cap
1918	2.5 Gallon Polyethylene, with cap
6494	5.5 Gallon Polyethylene, with cap
2318	Set of (2) 2.5 Gallon Glass, with PTFE-lined caps
2316	Set of (2) 2.5 Gallon Polyethylene, with caps
2317	Set of (4) 2.5 Gallon Glass, with PTFE-lined caps
2315	Set of (4) 2.5 Gallon Polyethylene, with caps
657	Set of (8) 2.3 Liter Polyethylene, with caps
1118	Set of (8) 1.9 Liter Glass, with PTFE-lined caps
9493000	Set of (12) 2 Liter Polyethylene, with caps
737	Set of (24) 1 Liter Polyethylene, with caps
732	Set of (24) 350 mL Glass, with PTFE-lined caps

Bottle Accessories

1511	Bottle Tray for 24 and 8 bottle sets
1322	Retainer for (24) 1 Liter Polyethylene and (8) bottle sets
1056	Retainer for (24) 350 mL Glass bottle sets
3527	Extension Tube for 6559 and 1918 Containers
8838	Composite Tube Support for all Composite Containers
8847	Full Bottle Shut-off for all Composite Containers

Distributors

8841	Distributor with Arm for 12 and 24 Bottle Configurations
8842	Distributor with Arm for 8 Bottle Configuration
8843	Distributor with Arm for 2 and 4 Bottle Configurations

Intake Tubing and Strainers

920	Vinyl Intake Tubing, 25 ft., 3/8-in. ID
922	PTFE-lined, Polyethylene Tubing, 25-ft., 3/8-in. ID (requires Connector Kit, Prod. No. 2186)
926	Strainer, PTFE/Stainless Steel
2070	Strainer, 316 stainless steel
2071	Strainer, for shallow depth applications, 316 stainless steel
2186	Connector Kit, for PTFE-lined polyethylene tubing
4652	Strainer, high velocity and shallow depth

Pump Tubing

4600-15	Pump Tubing, 15 ft.
4600-50	Pump Tubing, 50 ft.
8888	Pump Tube Insert
9501400	Pump Tube Insert, Non-contact liquid detect

Factory Installed Options (contact sales representative)

Two Sensor Ports
Accepts Hach digital Differential pH, Hach digital AV9000 analyzer with submerged area velocity flow and/or Hach digital US9000 ultrasonic level sensors

Rain/RS485 Port
Accepts Hach Rain Gauge (not included) or can be used as RS485 communications

Non-Contact Liquid Detect
Sample volume accuracy for applications that require complete tubing replacement

Inputs/Outputs

9494500	IO9001 Module (connects through auxiliary port) Includes 1 relay (high voltage).
9494600	IO9004 Module (connects through auxiliary port) Includes multiple 0/4-20 mA outputs and inputs for recorded measurements and to receive measurements from external instruments, four low voltage, contact closure, and four relays controlled by alarms.

Accessories

6613100	Anchor Kit Set
9504700	USB Cable, A to A
8520600	Pressurized sampling relay module

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