WS 316 Stationary Sampler

Remarkable Versatility and Impressive Capacity

Whether for indoor or outdoor use, the WS 316 is an all-rounder that impresses with its generous storage space and expandability.

It can be tailored for a wide variety of different sampling requirements and conditions, and can even be retrofitted later with other equipment. The WS 316 even has room for extended bottle sets.

ADVANTAGES AT A GLANCE

- Housing and roof made of durable stainless steel
- Three separate technical compartments in the upper section of the sampler to protect the pump, electronics, refrigeration unit, and other components
- Freely adjustable and highly accurate temperature control for the sample storage chamber, for ambient temperatures from -25°C to +42°C – optionally from -40°C up to +55°C
- High-performance vacuum sampling system – alternatively available with any other WaterSam sampling system
- Borosilicate glass metering vessel protected in sample storage chamber to minimize sample corruption that could stem from temperature extremes
- Hose inlet on the left and right side; optionally from below
- Available with a composite container up to 60 l or with an XY Distributor for direct filling of numerous bottle sets (up to 49 x 1 l or 64 x 350 ml) without cross-contamination
- Wide range of optional equipment: housing materials, pumps, valves, equipment for challenging sample media and environments, sample freezing, etc.

Made in Germany

TECHNICAL DATA

GENERAL

Stationary sampler for indoor and outdoor applications

Norms	CE; compliant with ISO 5667
Dimensions	H x W x D: 1.290 x 665 x 720 mm Width including mounting rails: 720 mm
Weight	Approx. 90 – 125 kg, depending on equipment
Power Requirements	230 V AC (optional: 110 V AC); 50 Hz (optional: 60 Hz); Main fuse 16 A
Output	Approx. 750 VA max. including high-performance cooling and heating
Ambient Temperature	-25°C to +42°C optional: to -40°C and/or +55°C

SAMPLING

Sampling System	Standard: VAC vacuum pump system for sampling under pressure-free conditions Alternative systems: For sampling under pressure-free conditions: VAR-B, VAR-E, VAR-C, peristaltic pump For sampling under pressurized conditions: FMWW, PRF, VAC with isolation valve, INLINEvent, WS INLINEcut®, VacuPress
Sampling Modes	All sampling systems from WaterSam can take time-, flow (CVVT)- and event-proportional samples For flow-proportional (CTVV) sampling, the following systems are suitable: VAR-B, VAR-E, VAR-C, peristaltic pump Note: the WS 316 can be equipped with two separate sampling systems
Sample Volumes	15-350 ml (optional: up to 1000 ml) multiple-shot metering possible
Metering Glass	DURAN 50 borosilicate glass; dishwasher-safe, resistant to acid, alkali, temperature fluctuations
Pump	230 V AC; -0.8 to 1.0 bar; 14l/min free flow; VM 0.5 m/s to 6 m; max. lift height 8 m (optional: high-performance pump; VacuPress for lift heights up to 30 m or more)
Intake Hose	12 mm ID PVC (optional: 16 mm ID)
Wetted Parts	Borosilicate glass, PE, PVC, stainless steel 304/316Ti, silicone (optional: alternative materials as required)

HOUSING / TEMPERATURE CONTROL

Housing Material	Stainless steel 304 Optional: ▪ Stainless steel 316Ti or 316L ▪ Powder coating (RAL colors) ▪ Plastic (UV resistant)
Insulation	40 mm; cold-bridge free; not foamed
Environmental	Construction facilitates easy material separation for proper recycling/disposal
Partitioning	Three separate technical compartments in top dry section for electrical, refrigeration unit and other components
Placement of Sampling System	Metering vessel in temperature-controlled sample chamber; protected from heat and frost
Installation	Easy floor mounting and firm footing with sturdy base rails
Temperature Control	PT 100 3-point thermostat
Refrigeration	Compressor cooling; 230 V AC, 150 W; CFC-free refrigerant R134a; adjustable automatic defrosting (interval, time, duration, max. temperature) Optional for corrosive environment, e.g. H2S: evaporator plate separate from sample storage chamber, clean external air drawn to cabinet via ventilation flange
Heating	Electric heating unit in stainless steel sleeve; 230 V AC, 350 W (optionally 24 V DC)
Sample Storage	Temperature adjustable; pre-set to 3 °C

DISTRIBUTOR (optional)

Distributor	XY Distributor: two-axis coordinate system for direct depositing of discrete samples with no cross-contamination
Bottle Synchronization	Automatic
Sample Bottles / Sets	See „Bottle Combinations“

CONTROLLER

MS3 Controller

With the MS3 controller, WaterSam has set new standards. In addition to comprehensive communications possibilities, the MS3 sets itself apart with its through its user-friendly layout and easy operation.

ADVANTAGES AT A GLANCE

Easy Operation

The large backlit graphic display permits a clear and simple view of menus. The 24 keys make menu navigation very straightforward and easy. In addition to the numerical and navigation keys, there are direct function keys to start, pause and stop selected programs, as well as take a grab sample. This means controller operation remains dependable regardless of precipitation or extreme temperatures; even when using gloves.

Versatile Parameter Settings

All programs can be configured according to the user's needs. Programs can be run simultaneously or in a specific order. If the application demands special considerations, a wide range of system and program parameters can be adjusted without hassle. In order to protect the sampler against unauthorized access, a special code can be set by the operator to limit access to several different menu levels. The levels of protection permit varying degrees of access to specific sampler functions and settings.

Comprehensive Communication

The numerous ports on the controller allow simple communication with the sampler. With a Modbus protocol, the sampler can be integrated into an on-site control system
The USB port can be used to retrieve saved data as well as load software updates. The available webserver allows access to sampler functions and information.
The controller has 4 GB of storage space, which can be expanded to 32 GB.
In addition to 4 separate analog inputs and an analog output, the MS3 controller features 16 digital inputs and 16 digital outputs as standard equipment.

Sensor Connection

Intelligent sensors can be connected directly to the MS3, and monitored data can then be stored. This completely eliminates the need for an expensive transmitter.

Energy Efficient

The technologically advanced MS3 has especially low power consumption.
Additionally, portable samplers feature an intelligent sleep mode to further increase efficiency and thereby extend battery life. The sleep mode is activated not only before and after a sampling campaign, but also in between individual samplings.

INNOVATIVE . INTUITIVE. COMMUNICATIVE

MS3 CONTROLLER TECHNICAL DATA

OPERATION

Waterproof keypad with 24 keys, incl. 4 color-coded direct function keys, navigation keys, numerical keypad, 3 flexible-function keys

SOFTWARE & PROGRAMS

Graphic menu;
optional display of various selectable data

Up to 9 programs
(number of programs adjustable), multiple / all programs can be run simultaneously

INTERFACE

RS-232, RS-485, TCP/IP, USB Host, USB Com Port Slave

SOFTWARE UPDATES

via USB flash drive

INPUTS

ANALOG
4 separate analog inputs
0/4-20mA

DIGITAL
16 digital inputs
e.g. for flow, events, external control, start, stop, distributor movement, etc.

OUTPUTS

ANALOG
1 analog output 4-20 mA

DIGITAL
16 digital outputs
e.g. for messages, external control; expandable by request

DATA STORAGE

4 GB, optionally 32 GB or more;

usable for storing internal data (sampling data, quality parameter values, other sampling information) and data from external sources (pH, flow, conductivity sensors, etc.)

COMMUNICATION

Modbus via RS-485 or TCP/IP
Webserver
Optional:
Profibus-DP, Modem

DATA RETRIEVAL

RS-232, RS-485, Modbus
download via USB flash drive / TCP/IP
Optional: via Webserver, Modem or Profibus-DP

NOTE : The MS3 controller is available as a retrofit for your existing WaterSam sampler!

XY DISTRIBUTOR

For direct bottle filling with numerous possibilities

Impresses with its unbeatable flexibility

For over 20 years, the WaterSam XY Distributor has been winning fans. As the standard discrete sample distribution system in our samplers, it has proven its reliability and long service life. Our customers value the wide range of possibilities available with the XY Distributor, and praise its low follow-up costs.

Discrete Sample Bottle Filling

The XY Distributor travels to each sample bottle to deposit samples directly. With this method, there is no need for a distributor plate, which can be time-consuming to clean. Cross-contamination is a thing of the past thanks to the XY Distributor.

Exact Positioning

The XY Distributor positions itself precisely above each sample bottle based on pre-set or customer-defined coordinates.

Maximum Storage Capacity

While a rotating distributor is limited by its diameter, the free mobility of the XY Distributor throughout the entire sample storage area allows it to fully utilize all available space.
This also ensures that sample bottles are easy to clean, since there is no need for wedge-shaped bottles.

Numerous Bottle Combinations

The free movement of the distributor permits a variety of pre-set bottle combinations. Switching between different bottle sets is simple and can be done without additional parts. If the bottle combination is switched, only the distributor setting must be changed on the controller.
Even customer-specific bottles can easily be used without the need for additional accessories.

Saving Time and Effort

Bottle combinations consisting of multiple bottles and an additional large container. This allows discrete samples and a composite sample to be taken at the same time.

Since there is no longer any need to homogenize the discrete samples into a composite sample, this type of combination serves to reduce the workload as well as eliminate filling mistakes. Abnormalities in discrete sample bottles can then be analyzed while a complete composite sample is still available.

BOTTLE COMBINATIONS

Composite Samples

Possible Sets:

4 x 10.4 l PE
4 x 12.0 l PE
4 x 15.4 l PE
4 x 20.0 l PE
4 x 25.0 l PE

5 x 6.4 l PE
5 x 12.0 l PE

6 x 6.4 l PE

Discrete Samples

Possible Sets:

12 x 2.9 l PE

14 x 4.0 l PE

16 x 4.0 l PE
16 x 2.9 l PE
16 x 2.0 l glass

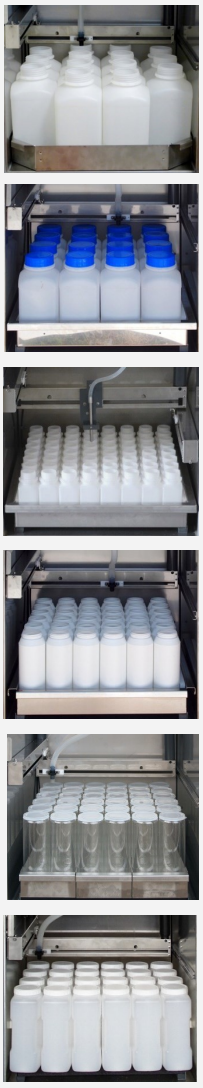
24 x 2.0 l PE

30 x 1.0 l glass

36 x 1.0 l PE
36 x 1.0 l glass

49 x 1.0 l PE
49 x 1.0 l glass

64 x 350 ml PE



Discrete + Composite Samples

Possible Sets:

12 x 2.9 l + 1 x 10.4 l PE
12 x 2.9 l + 1 x 12.0 l PE
12 x 2.0 l + 3 x 10.0 l PE

24 x 1.0 l + 1 x 12.0 l PE
24 x 1.0 l PE + 1 x 12 l glass

TIP

Combining multiple bottles with an additional composite container is highly recommended.

The discrete sample bottles and composite sample container can then be filled with sample media at the same time by parallel programs.

INFO

The use of custom bottle combinations and/or client-specific bottles is possible.

Haven‘t yet found the right bottle combination?
Contact us! Other combinations as well as custom solutions are available upon request.

OPTIONS

The equipment combination possibilities for the WS 316 are surprisingly varied. We will gladly create a quotation for a sampler especially designed for you and your requirements. You can profit from our years of experience and technical expertise. All desired options will be included when building your sampler to provide a complete package solution.

You'll be amazed at the possibilities.

HOUSING EQUIPMENT

- Carriage with castors
- 300 mm tall base (other heights upon request)
- Controller panel door; with or without window
- Drawer tray for sample containers
- Intake hose through floor or rear wall of sampler
- Upgrade to monitoring station
- Interior lighting with door switch
- Door switch for access surveillance
- Power socket installed in housing
- Cylinder locks for doors
- Protection hoods for ventilation grills
- Connection flange for hose with external air supply for refrigeration unit

TECHNICAL EQUIPMENT

- Main power switch
- Connection sockets
- Residual-current circuit breaker
- Various vacuum pumps
- Peristaltic pump
- Rotary distributor
- Data logger (for saving sampling data, monitoring data from internal measuring instruments and/or external on-line sensors)
- Easy Handling package
- Heavy-duty pump and valve package for corrosive media / environment
- Heavy-duty refrigeration unit for ambient temperatures up to +55°C
- Inlet hose heating

SAMPLING COMPONENTS

- Conforming of materials for the sampling line (intake hose, sampling system, distributor hose, sample bottles) e.g.: PTFE, PVDF, FPM.
- Metering vessels with alternative volumes (e.g. 200 / 350 / 500 / 750 / 1000 ml)
- Numerous sample containers with a variety of capacities and materials
- Drain position and rinsing with clean water
- Positioning armature for intake hose
- Filter basket

Other options available upon request

COMMUNICATION

- GSM modem for remote operation, SMS and program start via mobile telephone, complete access to sampler software via PC / Laptop
- Signal relays (general error alarm, bottle changed, sample taken, program started, program stopped, return of power after power outage)

WaterSam GmbH
Hölzlestr. 42
72336 Balingen
Germany

☎ +49 7433 277043 0
🖷 +49 7433 277043 22
✉ info@watersam.com

QUESTIONS ?

www.watersam.com

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