WaterSam®

SAMPLERS

MONITORING STATIONS

CUSTOM SAMPLING SOLUTIONS

Made in Germany

WaterSam GmbH & Co. KG was founded in 1996 by former employees of Edmund Bühler GmbH, the one-time market leader in the sampler industry. We have since become one of the leading manufacturers of automated samplers and monitoring stations, with a worldwide presence. Our clients include wastewater treatment facilities, manufacturers, large well-known corporations and many more.

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CUSTOMER FOCUS

Whether offering friendly professional advice or providing prompt and reliable after-sales service, we have built up impressive reputation by putting our customers at the center of our vision. Your long-term satisfaction will always be our highest priority.

QUALITY

Exclusively designed and manufactured in Germany, our samplers feature high-quality materials and components to provide long-term reliability, requiring minimal maintenance. Each sampler undergoes an extensive quality control check before leaving our manufacturing facilities.

EXPERIENCE

The success of WaterSam has been built on decades of experience with water sampling technology. In addition to manufacturing standard samplers, we have realized a wide variety of demanding international projects, and offer you the benefit of our expertise to find the water sampling solution best-suited to your requirements.

FLEXIBILITY

Our modular design approach allows us to offer samplers for a variety of highly specialized settings and applications. The versatile controller software and distributor system allow a vast array of modifications to meet your needs – even long after the initial purchase.

INNOVATION

Our technicians' extensive knowledge and hands-on field experience enables them to continuously refine our product designs, incorporating the latest technology and creating innovative new solutions such as the industry's first multi-axis distributor system.

SUSTAINABILITY

As a company in the environmental sector, we put a strong emphasis on sustainable solutions. Beginning with our product designs, we pay attention to energy efficiency, durability and material recyclability. We maintain internal company standards in our production facility regarding sustainable manufacturing processes, as well as the use of recyclable and biodegradable packaging material for product delivery. Our suppliers as well as our employees put value on environmentally-conscious resource handling.

GENERAL

- SAMPLERS
- CUSTOM SAMPLING SOLUTIONS
- MONITORING STATIONS
- HOUSING IN STAINLESS STEEL, PLASTIC OR COMBINED
- HOUSING INDIVIDUALLY ACCORDING TO CUSTOMER REQUIREMENTS
- REMOTE MONITORING OF SAMPLERS
- SAMPLING UNDER PRESSURE-FREE CONDITIONS
- SAMPLING UNDER PRESSURE CONDITIONS
- SPARE PARTS

SERVICE

- EUROPE-WIDE CUSTOMER SERVICE AND REPAIRS
- MAINTENANCE CONTRACTS
- REPAIRS AND SPARE PARTS FOR BÜHLER SAMPLERS
- TRAININGS

RENTAL

- RENTAL OF SAMPLERS, (ALSO COMBINED WITH FLOW METERS)
- MEASUREMENT CAMPAIGNS

MORE FLEXIBLE THAN ANY OTHER

The modular construction of our samplers makes them extremely flexible. Adjusting to special sampling demands and client wishes is often easily accomplished, ultimately ensuring representative samples.

Sampling Systems
- Up to 9 different sampling systems are available to select from for stationary samplers
- Sample metering vessels can be had in an array of different sizes and special materials
- Pinch valves can be either motorized or pneumatically-operated
- Intake hose ports through both the left and right sidewalls are standard in stationary samplers; optionally through the back wall or floor

Advantages
- The optimal system for each sampling application
- The sample metering vessel is located in the climate-controlled sample storage chamber where it is protected from frost in the winter and heat in the summer

Housing Options
- Stainless steel 304 (EN 1.4301)
- Stainless steel 316Ti (EN 1.4751)
- Powder coating finish for stainless steel (all standard RAL colours)
- Polymer housing
- Custom housing dimensions

Advantages
- Electric and electronic components are housed in a separate IP65-protected compartment at the top of the cabinet
- The wet area of the sampler with sample storage is located in the lower portion of the cabinet
- A double door seal prevents cold bridges

Numerous Bottle Combinations
- The free movement of the distributor permits a variety of pre-set bottle combinations
- Problem-free use of client-specific bottles
- Bottles made of PE or glass

Advantages
- Optimal use of available space in the sample storage chamber
- It is possible to change the bottle combination afterwards
- Problem-free use of client-specific bottles and bottle sizes

For more than 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 are a good solution for day-to-day-work. These combinations allow 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.

MS3 CONTROLLER

INNOVATIVE COMMUNICATIVE INTUITIVE

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.

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

optional recording of various selectable data

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

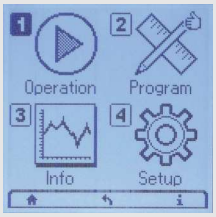
16 digital outputs

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

WS PORTI - PORTABLE SAMPLER

MOBILE AUTOMATED SAMPLING

The **WS Porti** is a battery-operated sampler for remote locations, combining portability with renowned WaterSam quality. Thanks to the modular design, transportation is made easy and various sample bottle storage options can be used.

Built-in battery allows use away from mains power

Up to **3 weeks battery run time** thanks to sleep mode and efficient technology

Optional **compressor refrigeration** with the ability to connect to vehicle socket for an uninterrupted cold chain during transport

An additional **transport box** enables quick replacement of full bottles

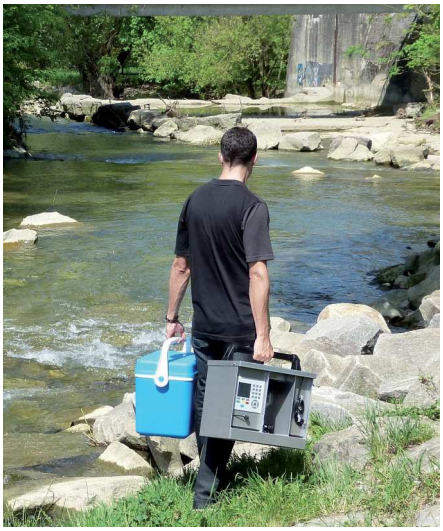
WS Porti 12

Robust and durable **stainless steel sampler housing**

Standard-equipped with **quality vacuum pump system** and 12 mm suction line for reliable sampling of a variety of media

Possibility of connection to various **water quality sensors**

Application:	Outdoors and indoors
Temperature:	0°C to +42°C
Housing:	Stainless steel 304 (EN 1.4301) Stainless steel 316Ti (EN 1.4571)* Powder coating (RAL colors)*
Sampling Systems:	VAC vacuum sampling system others* see page 28
Lift Height:	Max. 7 m / 13 m*
Sample Cooling:	Adjustable with compressor refrigeration (-22°C to +10°C)



* Optional

PASSIVE / NO COOLING

Composite Container (no distributor):
6.4 / 10 l PE
Discrete Samples:
2 x 5 l PE
12 x 1 l PE / 0.9 l glass
24 x 1 l PE* / 0.9 l glass*

* Only with Porti 24

TIP:

By purchasing a second cooler or transport box, samples can be taken to the lab while the sampler continues to fill another bottle set.

ACTIVE COOLING

Composite Container (no distributor):
6.4 / 10.4 l PE
Discrete Samples:
2 x 4.0 l PE
4 x 6.4 l PE*
12 x 1.0 l PE / 0.9 l glass
24 x 1.0 l PE* / 0.9 l glass*

* Only with Porti 24T

WS 312 - STATIONARY SAMPLER

THE MOST COMPACT ALL-WEATHER SAMPLER

The **WS 312** is a space-saving sampler for all standard indoor and outdoor applications.
With its built-in cooling and heating, samples are stored reliably at the desired temperature.

Weather-proof housing and roof made of durable stainless steel; upper panel door included

Freely adjustable and highly accurate temperature control for the sample storage chamber, for ambient temperatures from -25°C to +42°C

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

Simple upgrade to monitoring station possible at anytime

WS 312-24

Three separate technical compartments in the upper section of the sampler to protect the pump, electronics, refrigeration unit, and other components

High-performance vacuum sampling systems – alternatively available with other WaterSam sampling systems

Available with **XY Distributor** for direct filling of numerous bottle sets without cross-contamination

Wide range of **optional equipment:** housing materials, pumps, valves, etc.

Applications:	Outdoors and indoors
Temperature:	-25°C to +42°C
Housing:	Stainless steel 304 (EN 1.4301) Stainless steel 316Ti (EN 1.4571)* Powder coating (RAL colours)* Plastic (UV-resistant)*
Sampling System:	VAC vacuum sampling system others* see page 28
Lift Height:	Max. 8 m / 30 m*
Intake Hose Port:	Left and right; below*
Sample Cooling:	Adjustable (pre-set to +3°C)

WS 312 with powder coating and main power switch

* Optional

SAMPLE DISTRIBUTION

Composite Container:
1 x 10.4 l PE
1 x 15.4 l PE
1 x 20 l PE
1 x 26 l PE

2 x 10.4 l PE
4 x 6.4 l PE
4 x 12.0 l PE

Discrete Samples:
12 x 2.9 l PE
12 x 2 l glass
16 x 2 l PE
24 x 1 l PE
24 x 1 l glass

Discrete + Composite Samples:
12 x 1 l + 1 x 10 l PE
12 x 2 l + 1 x 6.4 l PE
7 x 2 l + 14 x 1 l PE

TIP:

To save time and effort, we recommend a combination of bottles and composite containers (see page 7)

INFO:

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

Please contact us for more combinations/ bottle sets

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.

Housing and roof made of durable **stainless steel**

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

Borosilicate glass metering vessel protected in sample storage chamber to minimize sample corruption that could stem from temperature extremes

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

WS 316-36

Three separate technical compartments in the upper section of the sampler to protect the pump, electronics, refrigeration unit, and other components

High-performance vacuum sampling system – alternatively available with any other WaterSam sampling system

Hose inlet on the left and right side; optionally from below

Wide range of optional equipment: housing materials, pumps, valves, equipment for challenging sample media and environments, sample freezing, etc.

Applications:	Outdoors and indoors
Temperature:	-25°C to +42°C; -40°C to +55°C*
Housing:	Stainless steel 304 (EN 1.4301) Stainless steel 316Ti (EN 1.4571)* Powder coating (RAL colours)* Plastic (UV-resistant)*
Sampling Systems:	VAC vacuum sampling system others* see page 28
Lift Height:	Max. 8 m / 30 m*
Intake Hose Port:	Left and right; below*
Sample Cooling:	Adjustable (pre-set to +3°C)

* Optional

WS 316 double sampler with VAC and WS INLINEvent, with carriage and side handles

SAMPLE DISTRIBUTION














Composite Container:
1 x 10.4 l PE
1 x 15.4 l PE
1 x 26.4 l PE
1 x 60 l PE

4 x 10.4 l PE
4 x 12 l PE
4 x 15.4 l PE
4 x 20 l PE
4 x 25 l PE
5 x 6.4 l PE
5 x 12.0 l PE
6 x 6.4 l PE

Discrete Samples:
12 x 2.9 l PE
14 x 4 l glass
16 x 4 l PE
16 x 2.9 l PE
16 x 2.0 l glass
24 x 2 l PE
30 x 1 l glass
36 x 1 l PE
36 x 1 l glass
49 x 1 l PE
49 x 1 l glass
64 x 350 ml PE

Discrete + Composite Samples:
12 x 2.9 l + 1 x 10.4 l PE
12 x 2.9 l + 1 x 12 l PE
12 x 2 l + 3 x 10 l PE
24 x 1 l + 1 x 12 l PE
24 x 1 l + 1 x 12 l glass

TIP:

To save time and effort, we recommend a combination of bottles and composite containers (see page 7)

INFO:

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

Please contact us for more combinations/ bottle sets

WS 316 SE - SELF-EMPTYING SAMPLER

FULLY AUTOMATIC EMPTYING AND RINSING OF SAMPLE BOTTLES

The fully automatic bottle emptying and rinsing function makes the WS 316 SE ideal for surveillance and other applications where samples are not regularly collected. Bottles are filled in sequence, and then automatically drained and rinsed with clean water if samples have not been collected. They are then available for the next samples.

Direct distribution for 2 to 24 bottles to ensure samples remain **free of cross-contamination**

Pull-out bottle tray for easy retrieval of samples

If required, sample storage chamber can be **provided with lock** and/or monitoring of door movements

Additional **monitoring of bottle fill level** possible

WS 316 SE double sampler with 24 x 1.8 l glass bottles + composite container

Available with second sampling system and composite container for additional samples, such as event-proportional samples

Sample retrieval at the touch of a button releases samples **directly** into transport container, without tap and therefore without cross-contamination

Optional **viewing window in door** of sample storage chamber

Applications:	Outdoors and indoors
Temperature:	-25°C to +42°C; -40°C* to +55°C*
Housing:	Stainless steel 304 (EN 1.4301) Stainless steel 316Ti (EN 1.4571)* Powder coating (RAL colours)* Plastic (UV-resistant)*
Sampling Systems:	VAC vacuum sampling system others* see page 28
Lift Height:	Max. 8 m / 30 m*
Intake Hose Port:	Left and right; below*
Sample Cooling:	Adjustable (pre-set to +3°C)

WS 316 SE with window door

* Optional

SAMPLE DISTRIBUTION

Composite Container:
1 x 25 l PE
2 x 10 l PE
2 x 10 l glass
2 x 5 l PE
4 x 10 l PE
4 x 10 l glass
4 x 5 l PE

Discrete Samples:
4 x 1.8 l PP / glass
8 x 1.8 l PP / glass
16 x 1.8 l PP / glass

Discrete + Composite Samples:
8 x 1.8 l PP / glass + 6.4 l PE
16 x 1.8 l PP / glass + 10.4 l PE
16 x 1.8 l PP / glass + 26 l PE
24 x 1.8 l PP / glass + 6.4 l PE

TIP:

We recommend a combination of bottles and composite containers for extra sample capacity. Additional samples can be taken in case of an event or for analysis by governmental institutions.

AUTOMATIC RINSING OF SAMPLING LINE WITH CLEAN WATER

With automatic rinsing of the complete sampling line (suction hose, metering glass and distributor hose) using clean water, the **WS 316 SR** is the ideal sampler for heavily soiled sample media. In addition to specifying the frequency of rinsing, the components to be rinsed can also be selected.

Separate drain for rinse water in sample storage chamber

Drain position accessed directly by **XY Distributor**

Optional upgrade to system with automatic **dosing of cleaning agent** when rinsing

WS 316 SR with drain position at back left

Numerous bottle combinations up to 35 x 1 l bottles; even customer-specific bottles can be used

Available with **warm water rinsing** if desired, e.g. for greasy media

SAMPLE DISTRIBUTION

12 x 2.9 l PE + 1 x 10 l PE
15 x 2 / 2.9 l PE
23 x 2 l PE
24 x 1 l PE + 1 x 12 l PE
35 x 1 l PE / glass
48 x 1 l PE / glass

INFO:

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

Please contact us for more combinations/ bottle sets

TIP:

To save time and effort, we recommend a combination of bottles and composite containers (see page 7)

WS 316 Ex II INTERIOR SAMPLER

WS 316 with Ex Interior with base and pull-out tray

Sample Chamber Protection for Explosive Substances

Especially in the chemical industry, sampling media can contain flammable substances and present an explosion hazard. In many cases, preventing ignition at the sampling point as well as in the sample storage area is sufficient.

This variation of the WS 316 was developed for such applications, where only the sample storage chamber is classified according to the ATEX norm for Ex Zone II. The huge cost savings compared to a fully ATEX-certified sampler, as well as the outstanding quality, make the WS 316 Ex II Interior a popular sampler among large international companies.

Advantages:

- Sample storage chamber classified according to ATEX norm
- Pneumatically-operated distributor for direct bottle filling, thereby eliminating the need for a distributor plate and preventing cross-contamination
- Numerous bottle combinations up to 24 x 1 l bottles
- Various sampling systems available
- No recalibrating sample volumes after cleaning
- Available with Ex-proof heating
- Optional static cooling with evaporator plate encased in the rear wall
- If required, sample storage chamber can be provided with lock and/or monitoring of door movements

SAMPLE STORAGE CABINET

Extended Sample Storage Capacity

Due to its accurate temperature control, the WaterSam sample storage cabinet is well-suited to storing samples after they are removed from the sampler. Unlike a simple commercial refrigerator, it offers more room for samples so that even complete bottle sets in carrying trays can be accommodated.

Advantages:

- Available in two sizes, based on the WS 312 and WS 316
- Designed for outdoor and indoor installation
- Freely adjustable interior temperature with high accuracy; for ambient temperatures from -25 °C to +42 °C – optionally from -40 °C to +55 °C
- Optional relay for alarm when set upper or lower temperature limits are exceeded
- Available with door lock or surveillance of door movements
- Possible upgrades for highly corrosive environments

WS 98 - WALL MOUNT SAMPLER

EXTRAORDINARY FLEXIBILITY IN A COMPACT UNIT

The **WS 98** is a compact sampler for indoor applications that do not require cooling.
It features the same range of functions as larger, stationary samplers.

Typical **WaterSam quality** and performance in a compact package

Compatible with all WaterSam sampling systems; even as a double sampler for sampling from two different points

Can be **combined with a commercially available refrigerator** for low-cost cooling of composite samples

Optional rinsing of complete sampling line with clean water

WS 98

Housing made of **high-value 316Ti stainless steel** as standard; well suited for use in demanding environments

Suitable for refitting existing samplers (including those from other manufacturers); optionally with connections for cooling, etc.

Optional XY Distributor in a support frame for discrete sample distribution to a variety of bottle combinations

Applications:	Indoors
Temperature:	+1°C to +42°C
Housing:	Stainless steel 316TI (EN 1.4571) Powder coating (RAL colours)* Plastic*
Sampling Systems:	VAC vacuum sampling system others* see page 28
Lift Height:	Max. 8 m / 30 m*

WS 98 SR with support frame

* Optional

SAMPLE DISTRIBUTION

With an optional support frame and XY Distributor, the bottle combinations available for the WS 98 are identical to those for the WS 316 or WS 316 SR.

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

HIGH-PERFORMANCE SAMPLE ADVANCING

Online analyzers are often not designed for demanding sampling applications. If sample media are to be drawn from large depths, exceptional distances or out of pressurized lines, analysers often reach the limits of their abilities. The solution is an intermediary system for sample advancing.
The WaterSam sample delivery system has been proven time and again, being deployed by large chemical companies as well as many other industries.

Sample advanced over long distances, from large depths or from a pressurized line

Adjustable sampling intervals

Minimizing of blockage in analyzer

Monitoring of delivery system and extraction by analyzer

With or without **viewing window**

Sample Delivery System

High availability of fresh sample medium for analyzers

Preparation of samples for extraction by analyzer

Adjustable rinsing function for sampling vessel and conveyance line

Optional **adapting of wetted parts**

Low maintenance

Applications:	Indoors
Temperature:	+1°C to +42°C
Housing:	GRP cabinet with or without viewing window
Lift Height:	Max. 8 m / 30 m*
Sampling Distance:	Horizontal up to 100 m or more; dependent on sampling interval

* Optional

WS 316 GMS LARGE MONITORING STATION

The Monitoring Station with Multiple Sensors in a Built-In Monitoring Vessel

The double-cabinet large monitoring station consists of a sampler and a monitoring cabinet. Either a regular WS 316 or a WS 316 SE may be selected as the sampler portion. The monitoring cabinet contains a monitoring vessel with constant flow to continuously provide fresh sample media. This ensures accurately measured values, and the sensors are easily accessible for cleaning and calibration.

Wide selection of sampling equipment

Monitoring vessel with built-in sensors

Easy access to sensors

WS 316 GMS
with three sensors installed in monitoring vessel,
automatic self-emptying and rinsing for sampling section

SAMPLERS WITH EXTERNAL OR BUILT-IN WATER MONITORING

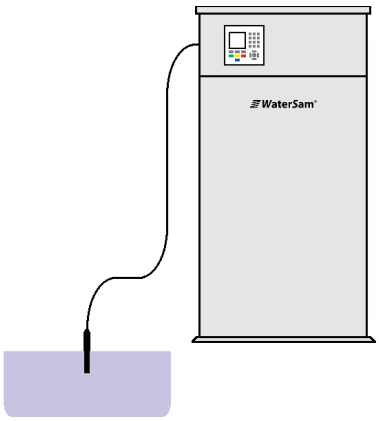
Monitoring Stations: Sampling and Water Quality Monitoring

Any WaterSam sampler can be upgraded to a monitoring station by connecting water quality monitoring instruments. A range of sensors and parameters are available to choose from, and measured values can be stored in the controller and easily retrieved.

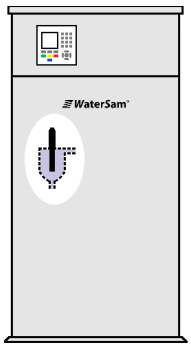
Sensors can be positioned directly in the sample medium source, or installed in a monitoring vessel inside the sampler. Installation in a sampler offers the benefits of protection as well as easy access for cleaning and calibration.

The sampler can be set to take samples in case upper and/or lower parameter limits are exceeded. If the sampler is equipped with an XY Distributor or an additional sampling system, event-based samples can be deposited in containers specially reserved for such a case.

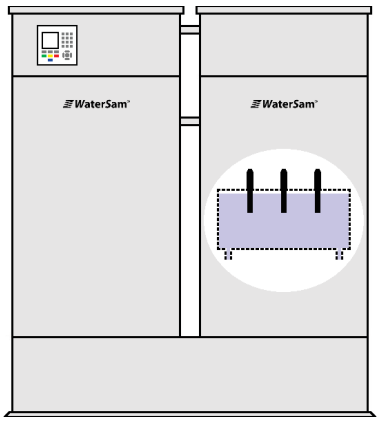
Standard Sampler
with one or more external sensors



WS 316 MS Monitoring Station
with built-in sensor



WS 316 GMS Large Monitoring Station
with multiple built-in sensors



COMBINATIONS

	WS Porti	WS 98	WS 312	WS 316	WS 316 SR	WS 316 SE
Standard Samplers Upgrade with one or more external sensors	■	■	■	■	■	■
WS 316 MS Monitoring station with built-in monitoring glass for a sensor	-	-	-	■	■	-
WS 316 GMS Large monitoring station with built-in monitoring vessel for multiple sensors	-	-	-	■	■	■

■ This sampler can be selected as the basis of a monitoring station

\- This sampler cannot be selected as the basis of a monitoring station

„PLUG & PLAY“ WATER QUALITY MONITORING

Measurement Sensors

The measurement sensors from WaterSam can be connected directly to the MS3 controller, without requiring a transmitter or amplifier. This makes it possible to add them to any WaterSam sampler, whether stationary or portable. Multiple sensors can be operated simultaneously, and switching between sensors is quick and easy. It is even possible to utilize products from other manufacturers, if desired.

Possible measurement parameters for waste water, drinking water, sea water and surface water (others upon request):

Turbidity

Oxygen

INFO:

Possible measurement parameters for waste water, drinking water, sea water and surface water

Others upon request

pH / Temperature

Conductivity

Standard samplers are not always suitable when it comes to special requirements and conditions. Thanks to the know-how of our team, it is possible to design solutions for your specialized applications. Together with our clients, we create an application profile and develop an individualized solution suited to the on-site conditions.

AT HOME ON THE WATER

Sampler for Scientific Research Ship

Safe sample storage – even in turbulent seas.
Research ships are often on excursions in far-flung regions. This means stormy seas must be taken into consideration. This sampler is required to securely store water samples in spite of large and unpredictable swells.

This custom sampler for a research ship is definitely up to the task.

SEALED AND DELIVERED

Sampler for Highly Volatile Substances

When sampling highly volatile substances, it is imperative to prevent degassing so that samples are not corrupted. There is even a WaterSam solution available for this application.

By using specially-designed sample containers and sophisticated technology, this sampler is able to take samples while completely eliminating the samples' exposure to air. This method ensures an accurate sample with exact representation of volatile substances.

PRECISE PRESERVATION

Sampler for the Petroleum Industry

Certain components in sample media can change during storage. By adding appropriate substances to the sample, this process can be prevented. The challenge is to add the precise amount required so that samples are not corrupted.

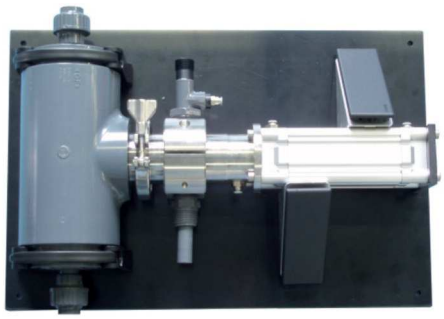
WaterSam developed this sampler specifically for the purpose of chemically stabilising samples. In order to ensure an optimal ratio, highly precise dosing pumps are used to provide the exact amount of acid necessary for each sample.

TRIPLE-SYSTEM SURVEILLANCE

Sampler for River Water Monitoring

For thorough monitoring of large rivers, samples are taken from multiple locations. Thanks to the special water switch system developed by WaterSam, one sampler can take samples from three different pipes in a river monitoring station, which draw water from three different sampling points.

ROBUST AND RELIABLE



Sampling System for Quartz-Kaolinite

Sampling despite challenging conditions. Even thick, abrasive substances must sometimes be sampled. Sampling such media, however, can be very difficult. In this case, it is imperative to make a sampling system that ensures samples are always taken reliably. This sampling system is in operation to monitor abrasive agents used in cleaning products.

TAKE THE HEAT

Sampler for Extreme Ambient Temperatures

Blisteringly hot or freezing cold? No problem for WaterSam. Certain regions are known for their extreme temperatures. But even then, samplers are required to keep samples stored at the optimal temperature.

HEAVY-DUTY DOUBLE DUTY

Sampler for Highly Corrosive Conditions

Samplers are commonly installed in locations where the ambient air is highly corrosive. The sample media can also have very corrosive properties. With the heavy-duty chemical upgrade by WaterSam, our samplers can withstand these conditions.

	STATIONARY				PORTABLE	
	WS 98	**WS 312**	**WS 316**	**WS 316 SE**	**WS Porti**	**Sampling Mode****
SAMPLING UNDER PRESSURE-FREE CONDITIONS						
VAC Vacuum System	■	■	■	■	■	
VAR-B Vacuum System	■	■*	■	■	—	
VAR-E Vacuum System	■	■*	■	■	■	
Peristaltic Pump	■	■	■	■	■	
SAMPLING UNDER PRESSURIZED CONDITIONS						
FMWW Water Switch	■	■*	■	■*	—	
PRF Water Switch	■	■*	■	■*	—	
VAC with **Isolation Valve**	■	■	■	■	■	
WS INLINEcut®	■	■	■	■	—	
WS INLINEvent	■	■*	■	■*	—	
SAMPLING FROM LARGE DEPTHS						
WS VacuPress Lift System	■	■	■	■	■	

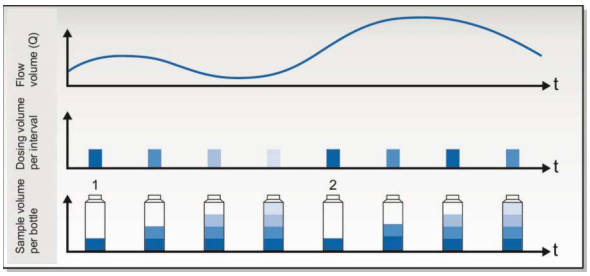
■ Sampler can be equipped with this sampling system

— Sampler cannot be equipped with this sampling system

* Requires a special housing or external mounting of the sampling system

** Explanation: see next page

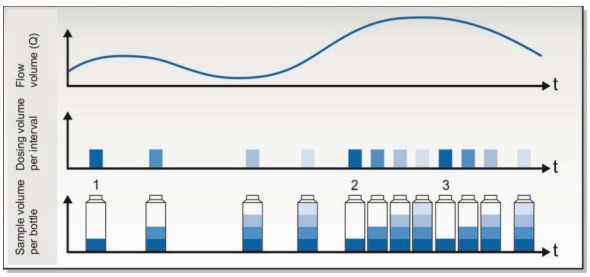
TIME-PROPORTIONAL SAMPLING



- Constant volume
- Constant time

The most common sampling mode; simple sampling performed at regular time intervals.

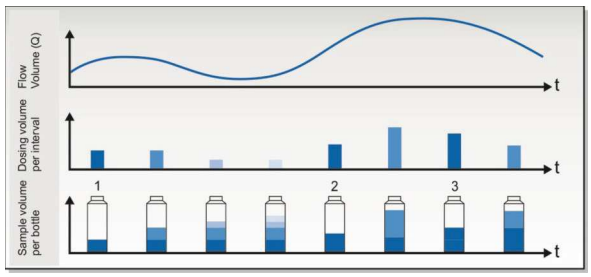
VOLUME-PROPORTIONAL SAMPLING



- Constant volume
- Variable time

Sampling based on input from a flow meter, with sample volumes remaining constant but time intervals between samples varying according to flow. It is also possible to combine volume and time-proportional sampling to moderate extreme fluctuations and prevent samples from being taken too close together (very high flow) or too far apart (very low flow).

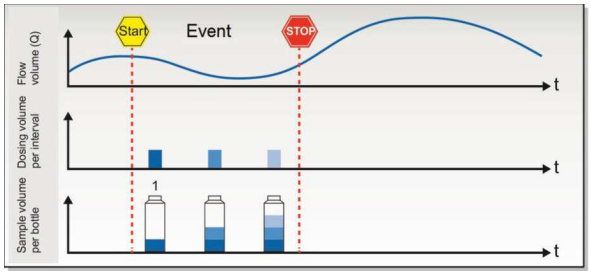
FLOW-PROPORTIONAL SAMPLING



- Variable volume
- Constant time

Sampling based on input from a flow meter, with time intervals between samples remaining constant but sample volumes varying according to flow. Offers representative samples if amount of flow and dirt content fluctuate widely. In some regions, this sampling mode is mandatory.

EVENT-PROPORTIONAL SAMPLING



- Constant volume
- Event-dependent

Sampling based on input from an online measuring device, e.g. pH sensor. As long as a predefined event is taking place, samples are drawn and handled according to program settings.

SAMPLING UNDER PRESSURE-FREE CONDITIONS

Vacuum System
VAC

Sample Media	Clean to very dirty water/wastewater Optional: pure/ultrapure water
Sampling Modes	Time-, volume-, event-proportional
Sample Volumes	Fixed, adjustable from: 12–200 ml (WS Porti, WS 312, WS 316 SE) 15–350 ml (WS 98, WS 316, WS 316 SR) Optional: larger volumes
Wetted Parts	Borosilicate glass (dishwasher-safe; resistant to acid, alkali, and temperature shock) silicone, PVC, stainless steel Optional: custom materials upon request
Available for	WS Porti, WS 98, WS 312, WS 316, WS 316 SE, WS 316 SR

This high-performance standard system for WaterSam samplers operates with the **vacuum/pressure principle** and offers many benefits.

Advantages:
- No recalibrating sample volumes after cleaning
- Highest repeatability
- No components to replace often (i.e. no peristaltic pump hose)
- Borosilicate glass metering vessel

The VAR-B system for f**low-proportiona**l sampling utilizes the vacuum/pressure principle as well as special technology for contactless sample volume metering. This makes it especially well-suited for very dirty sample media.

Advantages:
- Fast volume metering
- Minimizes sedimentation in the metering vessel
- Limits the max. volume to be drawn
- No electrodes to clean
- Simple switching to fixed volumes

Vacuum System
VAR-B

Sample Media	Pure/ultrapure water to very dirty water/wastewater
Sampling Modes	Time-, volume-, event-, flow-proportional
Sample Volumes	Variable (dependent on flow) or fixed; adjustable: 20–250 ml Optional: larger volumes
Wetted Parts	Borosilicate glass (dishwasher-safe; resistant to acid, alkali, and temperature shock), silicone, PVC, stainless steel
Available for	WS 98, WS 312, WS 316, WS 316 SE, WS 316 SR

SAMPLING UNDER PRESSURE-FREE CONDITIONS

Vacuum System
VAR-E
VAR-C

Sample Media	Clean water/wastewater
Sampling Modes	Time-, volume-, event-, flow-proportional
Sample Volumes	Variable (dependent on flow) or fixed; adjustable: 20–200 ml Optional: larger volumes
Wetted Parts	Borosilicate glass (dishwasher-safe; resistant to acid, alkali, and temperature shock), silicone, PVC, stainless steel
Available for	WS Porti, WS 98, WS 312, WS 316, WS 316 SE

The VAR-E vacuum pump sampling system is for **flow-proportional** sampling, and uses a method developed by WaterSam to meter sample volumes.

Advantages:
- Robust yet economical
- Simple switching to fixed volumes
- Borosilicate glass metering vessel

Peristaltic Pump

This is a kind of so-called “positive displacement pump” which moves the medium by squeezing a section of the hose in the desired direction. It is well-suited for taking a large-volume sample with a single draw, and flow-proportional samples are also possible with this system.

Advantages:
- Durable pump hose
- Easy method of replacing pump hose

Sample Media	Clean water/wastewater without abrasive contents
Sampling Modes	Time-, volume-, event-, flow-proportional
Sample Volumes	Variable; adjustable from 10–10000 ml
Wetted Parts	Silicone or PBT, PVC, stainless steel
Available for	WS Porti, WS 98, WS 312, WS 316, WS 316 SE, WS 316 SR

SAMPLING UNDER PRESSURIZED CONDITIONS

Water Switch FMWW

Sampling Points	Pressurized line/with continuous flow
Sample Media	Clean to very dirty water/wastewater Optional: pure/ultrapure water
Sampling Modes	Time-, volume-, event-proportional
Sample Volumes	Fixed, adjustable from: 20–350 ml
Wetted Parts	Borosilicate glass (dishwasher-safe; resistant to acid, alkali, and temperature shock), silicone, PVC, stainless steel Optional: custom materials upon request
Available for	WS 98, WS 312, WS 316, WS 316 SE, WS 316 SR

The FMWW system operates with continuous flow of the sample medium through the metering vessel. Optionally, the flow can be stopped for the periods in between sampling. When taking a sample, the flow is interrupted and a defined sample volume is metered.

Advantages:
- Highest repeatability
- Borosilicate glass metering vessel

Water Switch PRF

Sampling Points	Pressurized line/with continuous flow
Sample Media	Pure/ultrapure water to very dirty water/wastewater
Sampling Modes	Time-, volume-, event-proportional Optional: flow-proportional
Sample Volumes	Fixed, adjustable from: 20–250 ml
Wetted Parts	Borosilicate glass (dishwasher-safe; resistant to acid, alkali, and temperature shock), silicone, PVC, stainless steel
Available for	WS 98, WS 312, WS 316, WS 316 SE, WS 316 SR

This water switch version functions without the need for electrodes, and is therefore ideal for media with very corrosive properties.

Advantages:
- Highest repeatability
- Borosilicate glass metering vessel
- Optionally with variable metering for flow-proportional sampling

SAMPLING UNDER PRESSURIZED CONDITIONS

VAC with Isolation Valve

Sampling Points	Pressurized lines or vessels up to max. 2 bar
Sample Media	Clean to very dirty water/wastewater Optional: pure/ultrapure water
Sampling Modes	Time-, volume-, event-proportional
Sample Volumes	Fixed, adjustable from: 12–200 ml (WS Porti, WS 312, WS 316 SE) 15–350 ml (WS 98, WS 316, WS 316 SR) Optional: larger volumes
Wetted Parts	Borosilicate glass (dishwasher-safe; resistant to acid, alkali, and temperature shock), silicone, PVC, stainless steel Optional: custom materials upon request
Available for	WS 98, WS 312, WS 316, WS 316 SE, WS 316 SR

Based on the standard VAC system, this version is equipped with an additional isolation valve to protect the sampler from pressurized lines and vessels with a maximum of 2 bar. It offers the same benefits as the standard VAC system.

Advantages:

- No recalibrating sample volumes after cleaning
- Highest repeatability
- No components to replace often (i.e. no peristaltic pump hose)
- Borosilicate glass metering vessel

WS INLINEvent

The INLINEvent is designed for sampling from pressurized lines, and can operate with either a continual flow of the sample medium through the system, or with the flow interrupted during the standby phase in between samples.

Sampling Points	Pressurized line/with continuous flow; up to 6 bar Optional: up to 100 bar
Sample Media	Pure/ultrapure water to mechanically cleaned wastewater without abrasive contents
Sampling Modes	Time-, volume-, event-proportional
Sample Volumes	Fixed, adjustable from: 20–100 ml (WS Porti, WS 312, WS 316 SE) Optional: larger volume
Wetted Parts	PVC, silicone, Teflon
Available for	WS 98, WS 312, WS 316, WS 316 SE

SAMPLING UNDER PRESSURIZED CONDITIONS

WS INLINEcut®

Sampling Points	Pressurized line up to max. 10 bar
Sample Media	Clean to very dirty water/wastewater
Sampling Modes	Time-, volume-, event-proportional
Sample Volumes	Fixed: 20/25/36/50/54 ml
Wetted Parts	Stainless steel, EPDM or FKM, PVC or silicone
Available	WS 98, WS 312, WS 316, WS 316 SE, WS 316 SR

The WS INLINEcut® is mounted directly onto the pipe with the sample medium, and is actuated purely with pneumatics. It is typically controlled by a WaterSam PLC, however it is also possible to integrate it into an existing control system. By operating it manually with a simple pneumatic switch, no other controller is needed.

Advantages:
- No excess sample medium to drain
- Available with ATEX certification

DOUBLE SAMPLING SYSTEMS

Two Samplers in One
All sampling systems are also available as a double sampler. It is thereby possible to sample from two separate sampling points with a single sampler, even combining two different types of sampling systems. The sampling lines are kept completely separate, thereby eliminating the possibility of cross-contamination or corruption of samples.

In combination with a standard vacuum sampling system, the WS VacuPress is used to draw samples from depths that are far beyond the reach of other sampling systems.

WS VacuPress

Applications	Sampling from great depths
Sample Media	Pure/ultrapure water to very dirty water/wastewater
Lift Height	Up to 30 m
Housing Material	Selectable: PVC, stainless steel, conductive polymer PPs-el
Wetted Parts	Silicone, PVC or stainless steel or PPs-el
Optional	ATEX-Design
Available for	WS Porti, WS 98, WS 312, WS 316, WS 316 SE, WS 316 SR

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