WS 316

Waste water sampler for operation at waste water treatment plants or at effluent outlets of industrial plants; for sampling out of an open channel.

Autosampler
Fully automatic fixed-site water sampler for discontinuous time-, volume- (standard: with varying sampling intervals according to the flow / optionally: flow proportional with varying sample volumes) or event proportional sampling with vacuum system,
powered by 230 V, 50 Hz.

Housing
Inside and outside of stainless steel AISI 304 (optionally of AISI 316 Ti) with 40 mm of insulation, with the roof sustainable by a fold-out bracket.
Sandwich construction for easy separation of stainless steel and insulation – for ease of recycling

- Top of cabinet as dry compartment with three separate spaces:
    1. Electronics space including control board, electrical components, IP 65 protection
    2. Functional space for pumps, valves and if required for measuring equipment
    3. Machine space for cooling compressor with efficient cross aeration
- Bottom of cabinet (inside space) as wet space and temperature controlled compartment for storage of the samples

Temperature control of inside cabinet
Sample storage at +4°C, ±1,5° with ambient temperatures of -25°C to +42°C
Heater for frost protection with protection of temperature excursion which switches off the heater at max. 70°C
Fully automatic defrost. Outlet for condensation water

Control
Microprocessor with C-MOS-technology, water-proof 4 button tactile back lighted keypad
with 4 x 20col. LCD display
Protection of control space IP 65

Inputs flow meter
Direct current : 0/4 - 20 mA
Pulse input : potential free pulses, duration min. 50 ms, interval between two pulses min. 200 ms

Interface
- Interface RS 232 (optional RS 485)

Pulse divider
- Freely settable 1 – 9999

Program memory
- 9 freely programmable sampling programs
- 7 preset bottle layouts for X-Y distributor
- 1 freely programmable bottle layout for X-Y distributor

Information memory for
FIFO storage, 100 datasets
- Sample in bottle X resp. sampling error
- Start of program, date and time
- Bottle change, date and time
- Events, date and time
- Voltage loss and voltage return, date and time

PROGRAMS
All standard programs for time, volume and event proportional sampling can easily be set by the user himself.

Linkage of programs
for linkage of time, volume and event proportional sampling modes.
Up to 9 programs can be run simultaneously.

Chaining of programs
After termination of a chosen program a next chosen program will automatically be started.

Bottle change
Automatic catch up of bottle change after power loss
Automatic repetition of program for continuous operation

Program back up
Battery back up of user programs after power loss – min. 5 years after delivery date.

Dosing unit
Vacuum dosing vessel of borosilicate glass DURAN 50
Sample volume adjustable: 20 - 350 ml, optionally: 20 - 750 ml
Suction hose of PVC, fabric-reinforced (vacuum proof), 12 mm inside diameter, length 5 m from dosing vessel, with stainless steel nozzle

Vacuum-pressure pumps
Standard pump

Drive system	Motor 230 V AC (brushless)
Air capacity	14 litres / min
Pressure	1 bar
Vacuum	-0.8 bar
Suction height	7.5 m

Optional: Large pump

Drive system	Motor 230 V AC (brushless)
Air capacity	19 litres / min
Pressure	7 bar, limited to max. 3 bar
Vacuum	-0.85 bar
Suction height	8 m

Sample distribution, bottles and containers
X-Y direct distributor, the distribution hose is driven directly over the sample bottles and the samples are bottled directly
Manually adjustable in height (145 mm in z-axis) in order to allow using also larger or higher bottles or containers

(Please choose the desired option for your specifications:)
The following composite containers can be used without distributor:
25-litre PE composite container with screw cap of PE
50-litre PE composite container with screw cap of PE
60-litre PE composite container with clamp-on cap of PE

The following bottle combinations can be filled via X-Y distributor:
16 x 2.9-litre PE bottles with screw cap
(Option: 16 x 2.0-litre glass bottles, with PE snap-on cap)
alternatively:
12 x 2.9-litre PE bottles with screw cap plus
1 x 12-litre PE composite container with screw cap of PE
alternatively:
36 x 1.0-litre PE bottles with screw cap
(Option: 36 x 0.9-litre glass bottles, with PE snap-on cap)

alternatively:
5 x 12-litre PE composite containers with screw cap

alternatively:
4 x 25-litre PE composite containers with screw cap

(Further bottle combinations upon request.)

Technical data, dimensions and weight

Electricity supply	230 V, 50 Hz, 16 A; fused on site
Dimensions	height 1290 mm x width 655 mm x depth 770 mm
Weight	approx. 105-115 kg, depending on model

Type: **WS 316**
Manufacturer: **WaterSam® GmbH & Co. KG**
Germany

Optionals to be specified if desired:

Panel door with window
Panel door with acrylic glass window and with optional lock for additional protection of the control panel
(Protection against vandalism – generally the sampler can be installed outdoor also without the panel door.)

Interior light
Interior light with door contact switch

Program interruption for exchange of bottles or if the sampler shall be cleaned
Fully automatic interruption of program if the door is opened, e.g. when the bottles are exchanged or for cleaning purpose
Adjustable alarm time if the door accidentally has not been closed
After closure of the door the program will continue at the step it would have been without this interruption

Main switch
Main switch as circuit isolator mounted in front panel of the sampler

Telescope drawer
Ball bearing telescope drawer of stainless steel for bottles and containers
Expansion length min. 545 mm, bearing load 50 kg

Raised base
Raised base of stainless steel, height min. 300 mm

Mounting set
Mounting set with rings, clips, plugs and screws

Immersion jig
Swivelling immersion jig of PVC and stainless steel

Alarms via relay
- General failure
- Sampling error
- Distributor error
- Program is running
- End of program

VAR System for flow proportional sampling with fix time intervals and variable sample volumes