

For nearly 60 years we have been developing and producing analysis methods and devices for sludge-, ground water-, process water- and wastewater analysis. On the basis of our long experience we are your competent contact in the range of sampling, measurement and laboratory equipment.

www.origmbh.de



Analytics



ORI Abwassertechnik GmbH & Co

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• Sampling



• Measurement



• Laboratories



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For nearly 60 years now, ORI are manufacturers of

sampling devices and laboratory apparatus.

During this time the devices have been

steadily enhanced and advanced through customer-orientation.

With ORI we go a long way to experience reasonable product compilation.

The name ORI answers **quality in our products**

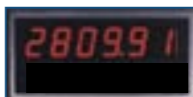
and employees who identify with these products for many years

look for **direct contact** with the **customer.**

Automated sampling of Waters and sewages

In today's analysis of sewage composition, modern precision analyser offer results with an exactness of several figures behind the comma. But whether this result actually is representative or not, it is often decided only by the sampling which provides the water that should be assessed for the analysis. The type and quality of the sample determines the test result prior to the comma. A benefit from our sixty years' experience in the development and the manufacturing of manual and automated samplers is to achieve representative test results.

Every sampling location is different. From a variety of different options and accessories we offer you a sampler that suits your requirements. We offer you affordable security.



For 20 years our company is a leading manufacturer of explosion-proof samplers that are appropriate for the assembly in explosive areas as well as for the sampling of explosive fluids. Due to the fact that you rarely can say beforehand which composition you expect from the sewages we offer our customers a high degree of affordable security. TÜV certificated ATEX II 3G – standard with all mobile samplers or ATEX II 2G devices. With our new product series BASIC and NeMo we want to continue the tradition of our company to offer our customers innovative solid automated samplers.

Sampler control

Aligned to the corresponding application you can choose between two controls:

BASIC: The BASIC control is applicable both for mobile and stationary automated samplers. The devices are characterised by the simplest operation, solid technology and high efficiency.

NeMo: The product series NeMo is far more than "only" a sampler. Modular expandable journalising, data transfer, measuring, controlling, regulating and telecontrolling tasks can be fulfilled safely with NeMo.



Sampler control

- basic

Very simple operation

By the 4-key menu navigation, we have an extensive LCD-display you can operate the sampler almost playfully. One keystroke is enough to start the program.

At a glance the following information is visible during the running program:

- Number of the present filled bottle / total amount of the programmed bottles
- Amount of the already taken single samples / total amount of the single samples
- Residual term of the program
- Sampling types
- Eventually occurring errors
- Real temperature
(with samplers with integrated cooling)



- **Display:** LCD-display point-matrix-module (20x4), selectable in three languages: German, French, English



- **Program memory:** six user programs (changeable)



- **No-Voltage protection:** the stored programs as well as error messages, events, time and date remain via a RAM up to 10 years in case of power failure or empty main battery.



- **Sampler initiation:**
 1. immediately
 2. after 1 min. – 255 h 59 min. relative time



- **Sample duration:** 1 – 255 h



- **Program repetition:** linkage of up to six programs as a sequence (without repetition) or as a loop



- **Event and error storage:** stores up to 100 events or errors with sample and bottle number



- **Sampling types:** time proportional, flow proportional (with switch over and shut down value only hose pump technology), mass proportional, event programs, parallel sampling, control option for extra conservation pumps



- **Journalising system:** sample journalising system is optionally available Stores the most important data of the corresponding samples:
 - Sampling type
 - start time and end
 - bottle amount and bottle volume
 - errors and events with date and time
 - Detailed filling protocol for every single bottle
 - possibility to export the data to Excel



- **Remote Control:** via a GSM-Modem and RS 232 interface (optionally)



- **Protection class:** ATEX II 2G/3G IIB T4 for the use in explosive areas (optionally)

Sampler control



Much more than only a control system
with internet technology

• User control:

On the device itself you can start the present program or activate the SBY mode via the operation button. The corresponding status will be displayed via a segment display. Unintended changes of the program parameters are eliminated when operating on site.

• Integrated webserver / remote control:

the operation is carried out by internet technology. Surf the user interface like your homepage. This standard device is equipped with an RS 232 interface that allows the control via a standard PC or a pocket PC. Optionally the NeMo control can be upgraded with the following modules:

- Ethernet interface (for the communication via a network cable or for the integration in an existing computer network/Premise for bluetooth and WLAN access)
- Bluetooth module (for the wireless access over a distance of up to 10 meters)
- WLAN module (for the wireless access via a distance of up to 400 meters)



• Possibility of Remote diagnosis:

allows a remote access for our service engineer from our factory.



• Modular expandable:

devices like pH, Lf, Te or Q measurement technology (without complex cabling) additionally can be linked and worked up with the NeMo control.



• Data logging function:

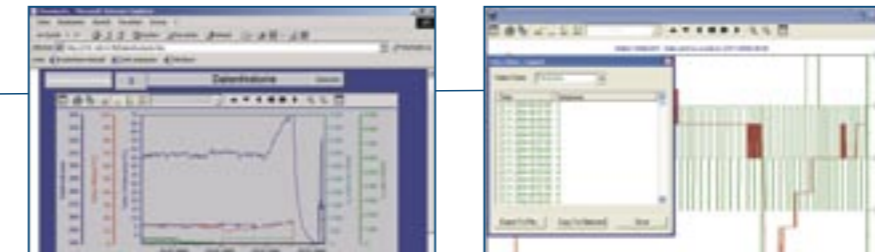
- with history display
- real time demonstration of measured values as bargraphs
- sampling journalising function

• Alarm function:

Via freely definable alarm lower and upper limits the sampler can be started event controlled. Short messages (SMS) (with device number and a short error description) can be sent to different mobile phones. Remote start is possible via a short message, too.

• E-Mail function:

in the case of alarm or at fixed times you can send data via mail to different addressees



• Sampling types:

- time proportional
- flow proportional
- volume proportional (with switch-over and switch-off value only hose pump technology)
- event proportional
- parallel sampling
- control possibility of additional conservation pumps



• Program repetition:

linkage of up to 7 programs as a sequence (without repetition) or as a loop



• Sampler initiation (relative / real time)

• volume calibration



• temperature control

• Maintenance interval display

• Protection class:

ATEX II 2G/3G IIB T4 for the use in explosive areas (optionally).

More information about this system
you can get for our special "NeMo" brochure.

Dosage systems

– Hose pump systems

Depending on the features of the sampling location you can choose between the following dosage systems:

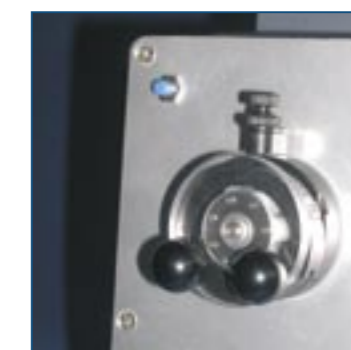
Name	SP 1	SP 2	SP 2 Mini
Typ	2-Reel hose pump (spring born) with Purge- / cleaning function	3-Reel hose pump with purge-/cleaning function and quick change system	for metering of the lowest volumes and as an extra pump for the sample conservation
Application area	Open channels, pressure lines up to max. 1 bar (max. 0,5 bar with purge function)	Open channels, pressure lines up to max. 1 bar (max. 0,5 bar with purge function)	
Sample medium	Stream- to raw sewage	Stream- to raw sewage	Cleaned fluids without solid parts
Sample temperature	>0°C bis 60° C	>0°C bis 60° C	>0°C bis 60° C
Sample touching materials	Silicone pump tube, PVC (optionally PVDF)	Silicone, Norprene (with Viton parts), Buthyl pump tubes, PVC (optionally PVDF)	Pharmed (with Viton parts)
Water sensor	contactless (optionally)	Contactless (optionally)	
Suction tube inner diameter	9 mm	9mm (optionally 12 mm)	according to customer preference
Suction rate / delivery rate / suction heights max	0,3 m/s (0,6m/s optionally) / ca. 1 l per Min. (ca. 2,3 l per Min.)/6m (optionally 7m)	0,6m/s (in connection with NeMo control adjustable by user) / ca. 2,3l /min/ 6m (optionally 8m)	according to customer preference
Dosage volume	From 5 ml variable with highest exactness	From 10 ml variable with highest exactness	according to customer preference
Sampling types	Time-, event-, quantity- and flow-proportional	Time-, event-, quantity- and flow-proportional	Time-, event-, quantity- and flow-proportional
Applicable in explosive areas	ATEX II 2G IIB T4 für Zone 1 and 2 (optionally)	ATEX II 2G IIB T4 für Zone 1 a. 2 (optionally)	ATEX II 2G IIB T4 für Zone 1 a. 2 (optionally)
Motor	Carbon brush motor with exchangeable contacts	Carbon brush motor with exchangeable contacts (BASIC control) brushless electric motor (NeMo control)	Carbon brush motor with exchangeable contacts (BASIC control) brushless electric motor (NeMo control)
Applicable for	Mobile and stationary samplers BASIC	Mobile and stationary samplers BASIC	Stationary sampler BASIC and NeMo



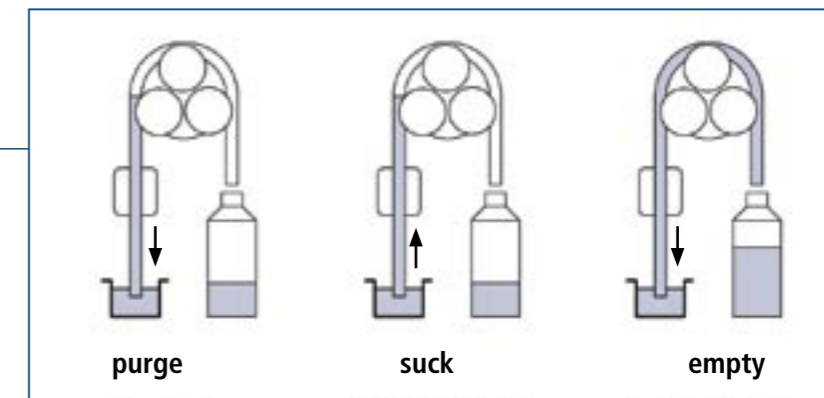
SP 1



SP 2



SP 2 mini



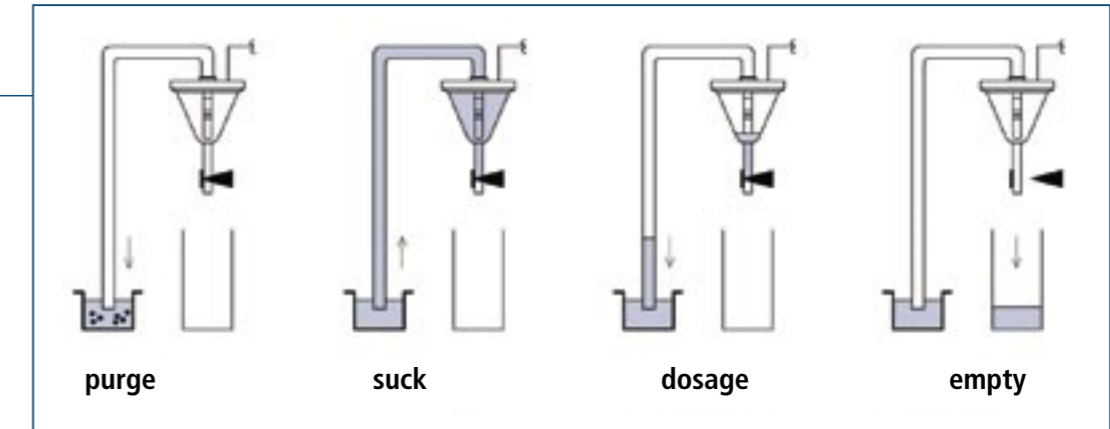
Dosage systems

– Vacuum membrane pump system

Name	VAC 1
Type	Vacuum membrane pump with fixed volume
Application area	Open channels
Sample Medium	Stream- to raw sewage
Sample temperature	>0°C bis 60° C
Sample touching materials	PVC or Borosilicate glass or Duran (optionally)
Water sensor	Conductivity sensor
Suction tube inner diameter	13 mm
Suction rate	0,6m/s
Suction rate / suction heights max	8 m / 20 m
Dosiervolumina	20-300 ml (larger on request)
Sampling types	Time-, event-, and mass-proportional
Applicable in explosive areas	ATEX II 3G IIB T4 (optionally)
Motor	Membrane pump with Teflon valves
Applicable for	Stationary sampler BASIC



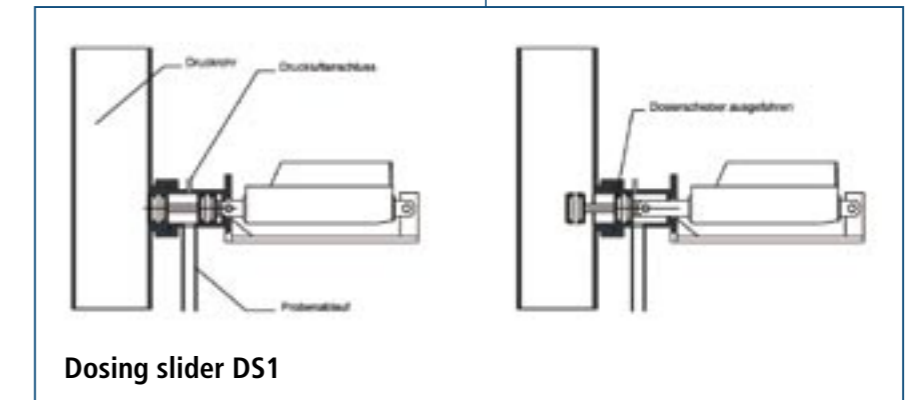
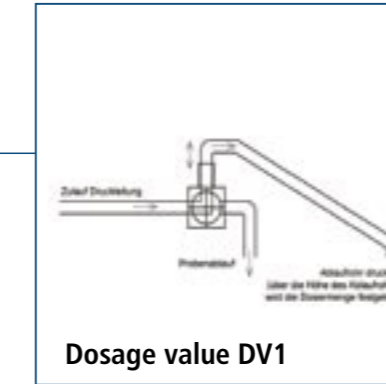
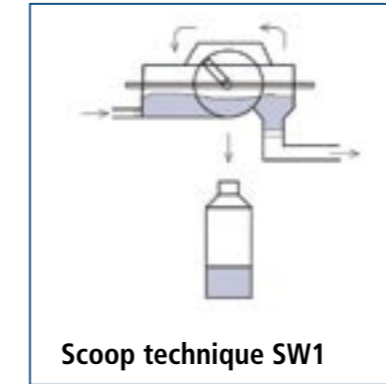
VAC 1



Dosage systems

– Systems for sampling from pressure lines:

Name	SW 1	DV 1	DS 1
Type	Water scoop with fixed volume and flow tank for the absorption of online measurement sensors	Dosage valve with fixed volume	Dosing slider with fixed volume
Application area	Pressure line, By pipelines up to 1,5 cbm/h; free downpipe necessary	Pressure lines up to max. 6 bar	Pressure lines up to 6 bar
Sample Medium	Stream-, raw- and industry sewages	Stream-, raw- and industry sewages	Stream-, raw sewages and viscose agents
Sampling temperature	>0°C to 80° C	>0°C to 80° C	>0°C to 80° C
Sample touching materials	PVC (optionally PVDF)	PVC, stainless steel	Stainless steel 1.4301/1.4305; PVDF (opt.)
Water sensor	Overflow protection on Lf-Basis; contactless (optionally)	Not applicable	Not applicable
Suction tube inner diameter	19 mm	9mm (optional 12 mm)	>100 mm
Suction rate / delivery rate	Up to max. 1,5 cbm/Std.	from 20 ml per Min.	from 50 ml per Min.
Max. suction heights/lengths	Not applicable	Not applicable	Not applicable
Dosage volume	10 ml, 20 ml, 30 ml	20-120 ml	Ca. 50 ml
Sampler types	Time-, event-, and mass-proportional	Time-, event-, and mass-proportional	Time-, event-, and mass-proportional
Applicable in explosive areas	ATEX II 2G / 3G IIB T4 for Zones 1 and 2 (optionally)	ATEX II 2G / 3G IIB T4 for Zones 1 and 2 (optionally only in connection with pneumatic actuator)	ATEX II 2G / 3G IIB T4 for Zones 1 and 2 (optionally only in connection with pneumatic actuator)
Motor	Carbon brush motor with exchangeable contacts (BASIC) brushless motor (NeMo)	Electrical actuator; optionally: pneumatic actuator (3 min. 3-5 bar)	Electrical actuator; optionally: pneumatic actuator (min. 3 bar)
Applicable for	Stationary sampler BASIC and NeMo	Stationary sampler BASIC and NeMo	Stationary sampler BASIC and NeMo



Distributor systems

According to bottles, amount of bottles and volume you can choose between various distributor systems. In the long-term monitoring with restoring sample self-emptying systems are also available.

– Circular distributor

- **Circular distributor with self-emptying function**

- Bottle circular with direct dosage
- Compact design through 2-circle arrangement of the bottles
- Automatic emptying of the bottles (free programmable)
- Automatic bottle cleaning (with interval switching for extra washing agent, optionally)
- Large emptying port for the comfortable extraction with single sample
- Manual emptying station for the comfortable extraction of a single sample
- With memory function of the bottle position during the SBY function
- Second inlet tube for preservatives (optionally)
- Extra 6l accumulative vat as event- or mixed accumulative sample (optionally)
- Available for Basic and NeMo control
- ATEX II 2/3G IIB T4 for zone 1 and 2 (optionally)



Bottle amount	Bottle volume	Extra bottles
24	1l Glass	6l PE
15	2l Glass	6l PE
12	1l Glass	6l PE
4	2l/10l Glass	6l/40l PE (PVDF)

– Round distributor

- **Round distributor**

- Direct dosage with round distributor arm
- With automatic bottle positioning at program start (valid only in connection with NeMo control)
- Parallel Event- or mixed accumulative sample possible
- ATEX II 2G/3G IIB T4 for zones 1 and 2 (optionally)



With this distributor system the power plant norm for the parallel sampling with extra dosage of preservatives can be fulfilled.

Bottle amount	Bottle volume	Extra Bottles
4	6l PE	
12	0,5l Glass	
12	1l PE	
12	1,8l PE	
12	2,5l PE	

– Round distributor with distributor disc:

- **Round distributor with distributor disc**

- Direct dosage with round distributor arm or distributor disc
- Very compact design with short air distances
- With automatic bottle positioning at program start (valid only in connection with NeMo control)
- ATEX II2G/3G IIB T4 for zones 1 and 2 (optionally)

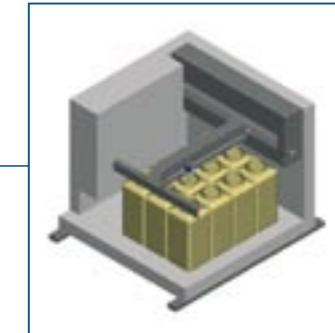


Bottle amount	Bottle volume	Extra Bottles
24	0,5l Glass	
24	1l Glas	
24	1l PE	
24	2l PE	

– XY-distributor:

- **XY-distributor**

- Direct dosage
- compact design
- Diverse bottle combinations and volumes are possible
- With automatic bottle positioning (valid only in connection with NeMo control)
- freely programmable bottle arrangements
- ATEX II 3G IIB T4 for zone 2 (optionally)



Bottle amount	Bottle volume	Extra bottles
on customer's dem.	on customer's demand	

Housing types:

– Mobile samplers

- **Simplex mobil**

mobile samplers with hose pump technology with integrated lead gel battery (also appropriate for float operation). It can be mounted direct on a 26l accumulative vat, in an existing refrigerator or to the wall. Offline programming happens via a corresponding software and transfer to a configuration clip. At only one push of a button the sample program can be started. Housing: splash water protected; IP 65



Control	Dosage	Distributor System	Bottle	Bottle volume	Measures HxWxD [mm]/ weight [kg]
Simplex	SP simplex	None	1	25l PE, 10 l PE, 6,3l PE, 4l PE	120 x 240 x 165/ 4,5

- **BASIC mobil Ex2**

The compact flyweight for Ex zone 2. Equipped with the comfortable BASIC control. With 7,2 Ah battery integrated in the housing (optionally with quick-change system). PUR material, shock-proof with good isolation attributes. Protection Class: ATEX II 3G IIB T4

Control	Dosage	Distributor systems	Bottle amount	Bottle volume	Measures HxWxD [mm]/ weight [kg]
Basic	SP1 or SP2	Round distributor	1, 12 bottles	26l; 12x0,5l Glass; 12x1l PE	590x370 / 14,5
see above	see above	Round distributor with distributor disc	24 bottles	24x0,5l Glass	590x500x500 / 18
see above	see above	see above	see above	24x1l PE	665X500x500 / 24



• **BASIC mobil Ex 2 with active cooling**

Basic mobile sampler is flexible and very easy to use. It has hose pump technology, integrated lead gel battery and mobile cooling unit, it is also appropriate for outdoor assembly. Housing: splash water protected, IP 64, PUR material with good isolation attributes.

- cooling volume 35l (equipped with 1x6,5l PE sample vessel)
- in the cold room there is space for another 6,5l PE bottle
- removable wheels and grip
- Thermostat for 230V operation
- Robust PE housing / With adapter for the gas kit

Control	Dosage	Distributor System	Bottle amount	Bottle volume	Measures HxWxD [mm]/ weight [kg]
BASIC	SP1 oder SP2	none	1	1x6,5 l PE, space for another 6,5 l PE Flasche	840x720x550/ ca. 33



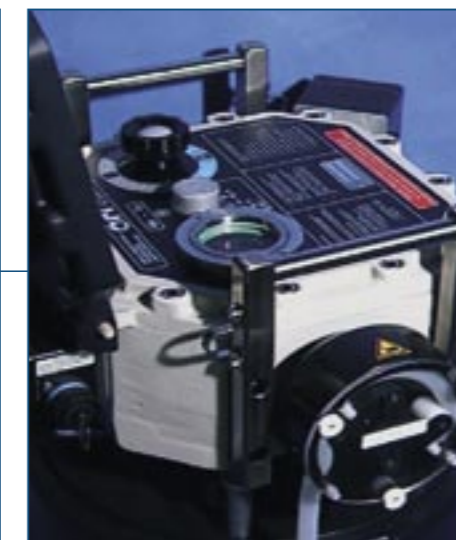
• **BASIC mobil Ex1**

The well proven, robust sampler for Ex zones 1 and 2 is equipped with the comfortable Basic control. With external battery (appropriate for changing in an explosive area). For long-term operation optionally available with an Ex-power supply unit. Connectable with adequate ex-proof flow-meter for flow-proportional sampling. Protection class ATEX II 2G IIB T6 for hazard zones 1 and 2

Set-up:

- Control in splash water protected pressure compact housing with protection class IP 65 (at disposed protection cover)
- PU-foam housing with good isolation attributes for sampling bottles

Control	Dosage	Distributor System	Bottle amount	Bottle volume	Measures HxWxD [mm]/ weight [kg]
BASIC	SP1	Round distributor	1, 12 Flaschen	26l; 12x0,5l Glas; 12x1l PE	560x370 Ø /24
see above	see above	Round distributor with distributor disc	24 Flaschen	24x0,5l Glas	560x500x500 /28
see above	see above	see above	see above	24x1l PE	635x500x500 /30



• **NeMo mobil Ex1/2**

Portable ex-hose pump sampler for fully automatic sampling according to the hose pump principle

The compact light weight for the Ex-zones 1 and 2 with data logger and remote control possibilities.
With separate control case and all options of the NeMo control

Sampler:

ATEX II 2G Eexe IIB T4
Protection Class IP 64
Only 11kg

With separate control case:

ATEX II 3G Eex IIB T4
Protection Class IP 68
Only 8kg
(Optionally available as a 2G variant)

Control	Dosage	Distributor System	Bottle amount	bottle volume	Measures HxWxD [mm]/ weight [kg]
NeMo	SP2	Round distributor	1, 12 bottles	26l; 12x0,5l Glass; 12x1l PE	590x370 Ø /19
	see above	Round distributor with distributor disc	24 bottles	24x0,5l Glass	590x500x500 /23
see above	see above	see above	see above	24x1l PE	665x500x500 /25

weight including battery and control case



– Stationary Sampler

- **BASIC oder NeMo solid**

Compact stationary sampler in a V2A (1.4301) housing with industry cooling unit with 2K laquering. Optionally available as a sampler with integrated measuring equipment (with extra place for the collet of further measurement technology modules and separate door), as V4-A (1.4571 PVC/PVDF) or plastic housing, with foamed vaporiser disc. Optionally available for the operation in explosive areas ATEX II 2/3G IIB T4 of zones 1 or 2.

Control	Dosage	Distributor System	Bottle amount	Bottle volume	Measures HxWxD [mm]/ weight [kg]
Basic oder NeMo	SP 1 / SP2 / VAC 1/ SW, DV1/ DS1	Round distributor	1, 12 bottles	26l; 12x0,5l Glass; 12x1,8l PE; 4x10l PE; 4x5l Glass; 4x6,5l PE	1030x750x750 / 80
see above	see above	Round distributor with distributor disc	24 bottles	24x1l Glass and 24x1l PE	1030x750x750 / 80
see above	see above	Round distributor for parallel sampling	2 bottles+ 1 in flanged housing	2x5l Glass + 1x 5l Glass	1030x750x750 / 80
see above	see above	X-Y distributor	Up to 48 bottles	Diverse bottle volumes	Can be combined according to bottle arrangement.



Nemo solid with optional round roof



- **BASIC or NeMo solid SE**

This is a sampler for the long-term monitoring with self-emptying function and bottle wash-up. Optionally the system can be equipped with a washing agent extra dosage feature or / and with an extra pump for the sample conservation. Equipped with an industry unit with 2K-protection lacquering and a heater for tempering the sampling internal space to 4°C+/-1°C. This is optionally available for the operation in explosive areas ATEX II 2/3G IIB T4 of zones 1 and 2. Alternatively, the system can be operated with either the Basic or the NeMo control.

Control	Dosage	Distributer System	Bottle amount	Bottle volume	Measures HxWxD [mm]/ weight [kg]
NeMo oder Basic	SP1/SP2/VAC/SW/DV1/DS1	Circular distributor with self-emptying	4 bottles	4x 2l Glass	1450x800x960 /180
see above	see above	see above	12 bottles	12x1l Glass	see above
see above	see above	see above	15 bottles	15x2l Glass	see above
see above	see above	see above	24 bottles	24x1l Glass	see above

Measures and weights correspond to the samplers with hose pump systems.



- **NeMo solid Industrie**

The industry sampler for the long-term monitoring and load determination. Appropriate for the most aggressive sample fluids. Perfect as a basis for the determination of sewage costs in industrial parks. With self-emptying function and second bottle level. Optionally available with integrated agitation system, ultrasonic levelling control of the bottles, air wash-up of the sample space (discontinuously or before the moment of sampling)... Casing frame made of stainless steel with PVC-insert technology. Foamed vaporiser disc. Optionally available for the use in explosive areas ATEX II 2/3G IIB T4 of zones 1 and 2. Equipped with the NeMo control this sampling system offers remote control via internet technology, e-mail function, intelligent data filing and an alarm system.

Control	Dosage	Distributor System	Bottle amount	Bottle volume	Measures HxWxD [mm]/ weight [kg]
NeMo	SW/SP2	Circular distributor with self-emptying	4 bottles + 1 bottle	4x10l Glass and in the 2nd area 1x40l PVDF	2000x1630x820 / 200



Accessories for automatic samplers:

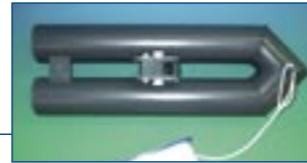
Art.-Nr: 8289048 Casing-in bar for canal well 655...950mm variable for different well sizes



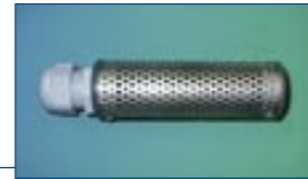
Art.-Nr: 8289049 3-Point suspension appliance



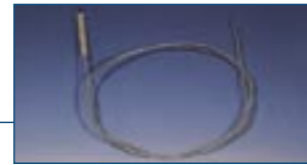
Art.-Nr: 8289083 Special floater for suction unit



Art.-Nr: 8285573 Filter cage for suction unit made of stainless steel 1.4301, butt made of PVC, clamp screwing made of PA, diameter: 40mm, length: 170mm, filter perforation: diameter 3mm, filter length: 98mm



Art.-Nr: 6529125 Special cleaning brush for suction tubes: length: 2500mm, brush: 120x10mm



Art.-Nr: 600028 Stainless steel extension for the bottle case



Art.-Nr: 8170004 Homogenisation vat, vat volume: 10l (optionally 6,3l, 15l), material: HDPE, PVC-U, stainless steel, silicone, Teflon, weight: ca. 1,1kg



Special samplers:

• Special construction

Not all standard devices can fulfil the needs of your special sampling location. We offer you individual solutions according to your requirements.



Groundwater sampling:

- **The sampling of groundwater...**

...serves the long-term protection of the drinking water supply and the check of refuse dump locations. Hazards can be caused by above-ground and under-ground leachate leaks, by the direct input of waste into the assets to be protected, or by landfill gas leaks from residual disposal sites. A pollution of the groundwater can be recognized by groundwater sampling and analysing.

With ORI Well you have an efficient implement for these tasks. This system allows a complete collection and documentation of the data determined during the groundwater sampling.

- **The following data will be collected as a standard:**

- ph-value, temperature, oxygen content
- clouding, electrical conductivity, redox potential
- rate of flow and the
- lowering of groundwater level

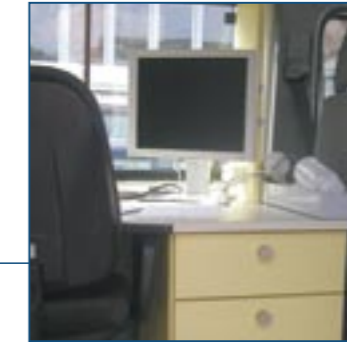
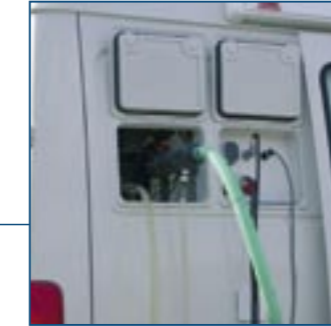
- **ORI Well consists of the following components:**

- PC program (starting up from Windows 95)
- programmable logic control PLC
- Frequency changer with control inlet
- Groundwater pump
- Run container (measuring pot)
- Measuring sensors for various parameters
- Frame for the accommodation of the PLC and the transducer
- Optionally: installation into a measuring vehicle



Mobile laboratories:

– We would be glad to offer you solutions for your individual mobile laboratory vehicle.



Manual sampling:

– The new generation of Extractors
Made of lightweight and solid fibreglass

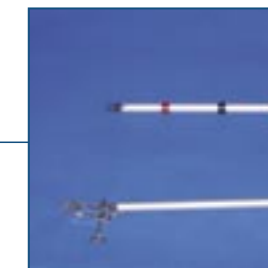
- Equipped with a hinge for the individual angle adjustment of the beaker
- Resistant against the most aggressive sewages
- Available in three different lengths
- For different beaker volumes
- Appropriate to take up different kinds of beaker
- adjustable to every length with a quick-change system (only with multipart extractors)



Order No.	Type	Length		Capacity
6250710	with scoop	1,20 m	(one-piece)	600 ml
6250711	with scoop	1,20 m	(one-piece)	1000 ml
6250715	with scoop	2,30 m	(two-piece)	600 ml
6250716	with scoop	2,30 m	(two-piece)	1000 ml
6250720	with scoop	3,20 m	(threepart)	600 ml
6250721	with scoop	3,20 m	(threepart)	1000 ml
6250722	with scoop plastic ball	2,30 m	(two-piece)	1000 ml
6250723	with scoop plastic ball	3,20 m	(threepart)	1000 ml
6250724	with scoop swivelling bottle	2,30 m	(two-piece)	600 ml
6250725	with scoop swivelling bottle	3,20 m	(threepart)	600 ml
6250726	with hinge, scoop made of glass, shock protection made of plastic	3,20 m	(threepart)	1000 ml

Furthermore from aluminium:

Order No.	Type	Length		Capacity
6250815	Plastic beaker with selectable lip direction	2,10 m	(threepart)	600 ml
6250818	With aluminium-clamp, flammable	3,50 m	(threepart)	-
6250726	with scoop	3,20 m	(threepart)	1000 ml
6250727	with scoop	3,20 m	(threepart)	2000 ml
3491004	Hinge with clamp and shock protection made of plastic without beaker for 2000ml glass, low form		without stick	
3491003	Hinge with clamp and shock protection made of plastic without beaker for 1000ml glass, low form		without stick	



Laboratory Devices

– Orimat laboratory balance Solid parts and humidity measuring with ash-residue function in one device

The all-round-talent for wastewater treatment plants, composting plants, power plants, food industry, agriculture and many more. At all times, when you need to determine high-precise laboratory balances and simultaneously the percentage of the solid parts (or humidity parts) of your organic or inorganic substances the ORimat is the right choice.

- for the deduction of the sewage sludge volume
- for the determination of the salinity
- for the determination of the lime residues
- for the determination of other dry parts and many more

• The Technique

Microprocessor controlled fully automatic solid and humidity part measuring with analysis kit for ash-residue, useable as a laboratory balance (up to 310g). Three fixed programs for the quick determination of TR with different temperature intervals. Manually operated for the evaluation of the TS-content. The user can configure individual drying programs and four value memories for the ash-residue.

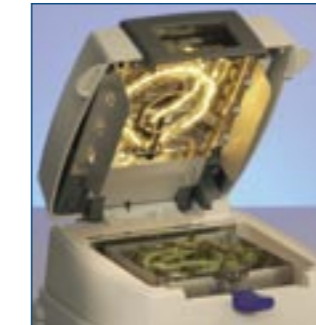
• Design

- "elegant housing with splashwater-proof keyboard"
- with large LCD-display
 - levelling feet with alignment bubble level
 - with interface for computer and printer



• The data

Heat source, radiator type:	halogen
Optionally:	I/R quartz crystal radiator
Measurements (WxHxD):	210x170x340 mm
Weight:	6 kg
Connection:	230V/50Hz, 450W 115V/50Hz possible
Temperature range:	30 – 230/1 (°C/step)
Weighing range:	310g
Reading precision:	0,001g
Interface for PV and printer:	RS232, PJ45 jack
Storage: three fixed programs with different temperature intervals	(°C) 105, 150/105, 220/150/105
- two different methods	
- 4 TR/TS value memories	
Clock:	for journalising with date and time
Result calculation:	- 100%...0% (solid part content)
	- 0%...100% (humidity loss)
	- ATRO 100%...999%
	- ATRO 0%...999%
	- g/kg, rest, loss, ash-residue
	- reading precision (%): 0,01
	- reproducibility ca. 1 g (%): 0,2



Laboratory Devices

– Deflocculating device:

• handy – strong

For mixing, milling and homogenising of fluids with solid parts, emulsions (mixing of a watery with an oily phase) and suspensions (solid parts in a fluid).

Perfect for the preparation of a sample for synthesis as well as analysis.

Principle:

The rotor-stator element consists of two gear rings which are turned against each other. The emerging shearing forces act on the medium, solid parts are hacked, fluids are spread into exiguous droplets. The ORI deflocculating device is offered singly or in a complete set.

Technical data:

Drive motor:

- power 500W
- stepless electronic motor regulation
- 7.00 – 27.000 rpm

Deflocculating tools:

- product touching material PTFE 1.4301
- immersion depths 185mm max.

Operating capacity:	10 – 2000ml
Shaft pipe diameter:	22mm
Stator diameter:	22mm
Rotor diameter:	16mm
Peripheral velocity max:	5,8 – 20,6m/s



– ORI-BOD-thermostat cabinet

For tempering of BOD-samples, according to DIN H51, vessel tests, ORI-test-measuring heads, methylene blue and AT4 ground respiration. The ORI-BOD-thermostat cabinets allow an exact compliance of a constant working temperature of +20°C. With the help of an integrated, adjustable thermostat the working temperature can be regulated from +10°C to 25°C (+0,5°C in water for ground analysis AT4 +0,5°C in air optionally available).

The ORI-BOD-thermostat cabinets have an automatic defrosting, an integrated forced ventilation and three integrated power sockets. The door hinge is changeable, the door is lockable.

1. Thermostat cabinet with controller for the correct compliance of the adjusted temperature.
2. With desired value lowering switch, desired- / actual temperature display (optionally)
3. LED- operation display. For the absorption of BOD-measurement devices with four integrated power sockets.



Small Version:

Artikel.-No. 80 22 14185

Content:	180 l
Outside dimension (H x W x D):	850 x 602 x 600 mm
Inside dimension (H x W x D):	734 x 513 x 433 mm
Operation voltage:	230 V / 50 Hz
Input Power:	120 W
Weight:	38 kg

for up to four BOD six-sensing points as well as oxygen cylinders or methylene blue test cylinders.

Large Version:

Artikel.-No. 80 22 14370

Content:	360 l
Outside dimension (H x W x D):	1589 x 602 x 600 mm
Inside dimension (H x W x D):	1418 x 513 x 433 mm
Operation voltage:	230 V / 50 Hz
Input Power:	150 W
Weight:	62 kg

Including five insertion grids (adjustable in height) and one ground grid. Appropriate for 8 BOD six-sensing points as well as oxygen- and methylene blue test cylinders. On request a favourable multi control unit for the eight BOD sensing-points can be mounted outside the cabinet. That saves energy and simplifies the cabling.

Measurement

– ORIflow

- **flow monitoring system for all ORI samplers**

includes a connection cable for the parameterisation and read-out of the measuring data via PC

Measuring instrument for the mobile monitoring of level, flow velocity, temperature and flow rate

- perfect for all flow proportional controls of ORI samplers
- Operation in all kinds of closed and open canals
- fast and simple installation in pipe profiles via flexible installation system (optionally)
- no clogging and accumulation via flow-optimised design
- water level measuring via ceramic pressure sensor
- logging of flow velocity via ultrasonic measurement process with automatic temperature compensation, measurable backflow by flow direction detection
- large measuring data memory, serially (512 kb)
- comfortable management, parameterisation and measuring data read-out via PC (software nivuLog required)
- Protection class IP 65
- with internal 7,2Ah battery

