



Water Management Catalogue

Equipment for Water Management Studies

Eijkelkamp Agrisearch Equipment



All it takes for environmental research





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Eijkelkamp Agrisearch Equipment BV, a subsidiary of Eijkelkamp Earth Sampling Group BV, is an international organisation that supplies all sorts of equipment in the field of environmental and agricultural research. Eijkelkamp's product range can be divided into four categories: Soil, Water, Watery sediment and residual substances and Earth monitoring.

This Water Management Catalogue contains an overview of various water-related products from the Eijkelkamp Agrisearch Equipment range. The catalogue has been divided into five chapters to help you find specific products easily.

If the product you are looking for is not in the category 'Water', ask for the complete Eijkelkamp catalogue, which handles all the product themes.

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1. Groundwater

1.1 Installing monitoring wells

It is important for the accuracy of the sampling that good-quality materials are chosen when installing monitoring wells. Monitoring wells can be installed in numerous ways. This catalogue gives the most important of these methods.

01.12.SA Hand-operated bailer boring auger set for heterogeneous soils

This set includes various types of soil augers for reaching the groundwater level, augers for taking soil samples with minimum disturbance of the soil, extension rods, plastic tubes with steel screw thread sockets and accessories, casing tube clamps for manipulating the tubes, bailers with steel and plastic valves, casing tube platforms to enable work to be carried out more ergonomically, spare parts and various accessories. The set is delivered in two aluminium transport boxes.

Applications:

- Preliminary soil borings;
- Soil sampling;
- **Installing monitoring wells;**
- Suitable for borings to a depth of about 7 metres.

Advantages:

- The set is very complete; it always has the right auger for the job in hand;
- Works both above and below the groundwater level;
- Both for sinking monitoring wells and for groundwater sampling;
- Extremely durable, robust, lightweight tubes;
- Percussion platform enables the operator to push down the tubes;
- Contains only non-contaminating elements.

10.100 Lost cone drilling set

The specially-constructed lost cone is hammered into the ground with an electric percussion hammer, which is placed on the casing. When the required depth is reached, a perforated pipe can be inserted through the tubes or sensors may be left in the bore hole, if required. Subsequently the casing can be pulled out of the soil using the 2-person operated extractor in combination with the universal casing and rod puller clamp. This set includes: an electric percussion hammer, a generator with insulation guard, striking pens, a casing shoe for the casing, steel casing, extractor, lost cones and various accessories.

Applications:

- **Installing monitoring wells with small diameters (for environmental research);**
- Making holes for inserting explosives for seismic research;
- The standard set is equipped for borings to a depth of 10 metre.

Advantages:

- The set is compact and can be used in many places;
- The lost cone makes a very straight bore hole;
- There is only limited friction when inserting and extracting the tubes;
- Sinking wells in stony soils is not a problem;
- Ideal in combination with DirectWell;
- Very complete set.



01.12.SA



01.12.SA



10.100



10.100

Sonic drilling

In addition to the methods for installing monitoring wells mentioned in this section, there is another option, that is, Sonic drilling.

In very soft soils, a pipe with a lost cone on its end can be pushed down to the depths which are of interest. However, other methods will have to be used if the soil in question is normal to hard. The monitoring wells may have to be sunk using augers or percussion or sonic drilling (which is much more efficient and faster).

Sonic drilling is used for various applications, including the following:

- profiles for mineral research and archaeology;
- soil sampling for environmental research and railway ballast;
- **installing monitoring wells;**
- soil and water remediation;
- seismic exploration for oil, gas and minerals;
- rapid installation of geothermal soil heat exchangers.

Eijkelpomp's subsidiary, SonicSampDrill, has been supplying advanced sonic drilling machines to customers all over the world, from Siberia to tropical Africa, for almost ten years. More information on SonicSampDrill and sonic drilling is available at www.sonicsampdrill.com.



04.19 Percussion gouge sets for heterogeneous soils

Use is often made of percussion gouge augers if bore holes have to be made in hard soils that may contain layers of rubble and/or stones. In this method, sampling augers (percussion gouges) equipped with a hardened cutting head are driven into the ground with a percussion hammer. Our standard set (04.19.SC) is equipped for boring to a depth of 5 metre. This set contains a petrol percussion hammer Cobra TT. The 04.19.SD and 04.19.SE sets are equipped with a light electric percussion hammer (HM 1400) and a heavy electric percussion hammer (HM 1800) respectively. A maximum drilling depth of about 10 metre is possible with the use of additional extension rods.

Applications:

- Investigating soil contamination;
- Determining particle size distribution;
- General soil classification;
- Making profiles;
- **Installing monitoring wells in hard soils, possibly with layers of rubble and/or stones.**

Advantages:

- Ideal for stony soils;
- Produces wonderfully clean samples;
- These sets make for efficient, quick and light work;
- Contains extremely robust parts.



04.19

Monitoring wells and accessories

packaging. All tubes have the following properties:

- Free from dust and sawdust;
- Demonstrably little leaching;
- Large open surface;
- Standardised slit width (0.3 mm).

Our monitoring wells are made from substances that do not cause contamination, such as teflon, HDPE or PVC. Teflon is chemically inert, and products made from HDPE and PVC do not contain any metallic stabilisers or organic colouring agents so that they cannot contaminate water samples.

Besides the traditional monitoring wells that we deliver in all sorts and sizes, we also manufacture a growing collection of SmartWells. The latter are all characterised by prefab bentonite elements, which guarantee the perfect repair of sealing layers and prevents bentonite grains from getting stuck in the casing tubes. Our SmartWells are available for use in auger bored holes, cable drilled holes, pushed casings, percussion casings or sonic casings with diameters from 50 to 100 mm.

We supply the following types of SmartWells:

- DirectWell;
- QualityWell;
- MultiChannelWell;
- ZeroDiffusionWell.

The monitoring well accessories available include (disposable) filters, floor and monitoring well covers, protective covers, monitoring well labels, filter sand, bentonite, PE and silicone hoses and hose dispensers. Ask for our complete general catalogue or visit our website at www.eijkelkamp.com.



04.19

1.2 Level measurement

11.03 Sounding device with acoustic and light signal

This sounding device is equipped with a probe that is lowered on a measuring tape with centimetre graduations. If the probe comes into contact with a conductive liquid, clear acoustic and light signals are emitted. If the cable is lifted up a little, the signal stops. By determining this point, the depth can be read off directly from the measuring tape. Measuring tapes are available in various lengths: 10, 15, 30, 50, 100, 150, 200, 300 and 500 metre. Instruments with a cable length of up to 50 metre are delivered with a reel and the longer versions also have a carrying frame.

Applications:

- Determining the water level in bore holes, monitoring wells, etc.

Advantages:

- Inexpensive and simple yet reliable instrument;
- Robust construction of cold-resistant plastic;
- As a result of the small diameter of the probe, the sounding device can be used in almost all monitoring wells.



11.03

11.08.07 Floating layer thickness meter with acoustic and light signals

The floating layer thickness meter probe distinguishes between conductive and non-conductive liquids. A light signal indicates the type of liquid that comes into contact with the probe at any particular time. The measuring tape is 30 metre in length.

Applications:

- Determining (ground)water levels;
- Determining oil levels;
- Determining the thickness of floating layers.

Advantages:

- Accurate reaction to liquid with infrared light;
- Suitable for both floating and sunken hydrocarbons;
- Provides maximum certainty.



11.08.07

11.11.01 Diver groundwater datalogger: Minidiver

11.11.02 Diver groundwater datalogger: MicroDiver

11.11.03 Diver groundwater datalogger: CeraDiver

The Schlumberger Water Services Diver® is the smallest instrument in the world for the automatic measurement and registration of groundwater levels and temperatures. The Diver fits into a one-inch monitoring well and is remarkably light. With a length of only 90 mm and a diameter of 22 mm (18 mm in the case of the MicroDiver), it can be used in almost any monitoring well.

For the measurement of groundwater levels, Eijkelkamp can supply the MiniDiver (for regular applications such as level monitoring), the MicroDiver (for small monitoring wells with small diameters) and the CeraDiver (for highly-contaminated, alkaline, acid or salt water).

Applications:

- Measuring and registering groundwater levels;
- Measuring and registering groundwater temperatures.

Advantages:

- Range 10, 20, 50 and 100 metre groundwater level fluctuation;
- Everything you need in a single intelligent water level datalogger;
- Ideal for monitoring wells and also suitable for open water;
- No mechanical parts, so no wear;
- Can be combined with e-SENSE telemetry.



11.11

Diver® accessories

The following accessories are available for the Diver:

- BaroDiver; a BaroDiver (monitoring well datalogger) must be used for each measuring field/area (radius of 15 km) in order to map air pressure variations. The purpose of the BaroDiver is to register and compensate for barometric pressure.
- Diver-NETZ; makes it possible to read out sensors in the field via wireless telecommunication.
- Diver-Pocket; software for programming Divers and reading out stored measurements with a Pocket PC (handheld meter).
- Diver-Office; desktop solution for the reading out and programming of multiple Divers at the office.
- DiverMate; a simple storage device with which Diver data can easily be stored in the field and which fits directly on to Diver data cables.
- Diver Data cable: the Diver can be connected to the top of the bore hole using this cable, so that data in the memory of the Diver can be read out without having to pull the Diver itself up out of the bore hole.
- e-SENSE; remote readings of divers can be taken (even from the office) with e-SENSE telemetry and a connection with an e-SENSE field modem. More information on e-SENSE is provided in chapter 5: Telemetry.

For more information ask for our special brochure "Groundwater monitoring and communication solutions – Diver / e-SENSE".

1.3 Sampling

1.3.1 Pumps

12.25 Peristaltic pump, standard version

12.26 Peristaltic pump, compact version

These peristaltic pumps, which have been specially designed for use in the field, are CE certified and splash-proof. They are highly reliable sampling devices for liquids and gases and can be used in all positions. They have been designed for long-term professional use in unfavourable conditions. Chargers are available for charging the 12 V battery in the peristaltic pump.

Applications:

- Sampling liquids and gases in the field.

Advantages:

- Lightweight, splash-proof housing of shockproof plastic;
- Reliable universal peristaltic pump that can create a perfect vacuum;
- Clearly laid out control panel with push-buttons;
- Safeguarded against overloading.

The most significant differences between the two peristaltic pumps are as follows:

12.25 Peristaltic pump, standard

- Clockwise and counter-clockwise rotation
- Memory for pump and sampling rotational speed
- Connections for two small 12V pumps
- Internal and external battery supply

12.26 Peristaltic pump, compact

- Only clockwise rotation
- No memories for speeds
- No external pump connection
- Only an internal battery supply



12.26



12.14



12.14 Motorised foot valve pump, standard set

Foot valve pumps are intended for pumping up groundwater for analysis for the purposes of environmental research. A foot valve pump consists of a tube fitted at the bottom end with a non-return flap with a ball check. Once submerged in water, water enters the tube through the valve. If the tube is then moved up and down, making use of the inertia of the water, new water is sucked into the tube and the water is pushed upward at the same time. The motorised foot valve pump pumps from a depth of about 60 metre with 'standard flow' inert tubes and from a depth of about 40 metre with 'high flow' tubes.

Applications:

- Conventional and 'low flow' purging/sampling in a monitoring well;
- Permeability tests in a bore hole;
- Well development;
- Multi-level 'low flow' sampling.

Advantages:

- Is supplied with a detachable backpack;
- The system is so light that it can be carried by 1 person;
- Ideal for use with a flow-through cell.



12.14

Pump accessories: tubes

A broad range of tubes is available from Eijkelkamp for the pumps described in this section. These tubes for groundwater sampling vary in diameter, length, type of material and packaging. One property that our polyethylene and silicone tubes all have in common, however, is the fact that they are subjected to a strict, selective leaching procedure to determine the degree of discharge of toxicological substances to water. Our tubes are therefore of high quality and meet the standards laid down. Accessories such as tube dispensers and clamps are also available from Eijkelkamp.

12.27 Submersible pump set

The submersible pump included in the MP1 set has been specially constructed for purging and sampling monitoring wells with a diameter from 50 mm. The large capacity of this pump ensures rapid purging of a measuring point. By setting the pump at a low pumping capacity, it can also be used for sampling and low flow purging. The standard set includes the following: MP1 submersible pump, cooling jacket, service set, frequency converter in case, teflon-coated cable, teflon tube with connection, hose reel cart, generator and insulation control.

Applications:

- Purging and sampling monitoring wells.

Advantages:

- High pumping capacity for purging, but slow pumping for sampling;
- Easy to install; portable;
- Resistant to aggressive liquids;
- The material pumped up only comes into contact with stainless steel and teflon;
- Anaerobic sampling;
- Simple cleaning procedures.

12.12.SA Submersible pump set

This submersible pump set is suitable for use in monitoring wells with a minimum diameter of 40 mm. The set contains three 'Gigant' submersible pumps, three booster pumps, a role of extension cable, sealed shrink sleeves (to enable a waterproof cable extension), a role of polyethylene sample tube and a battery with battery charger. Both types of pumps are small centrifugal pumps with small but powerful motors. As a result they fit in narrow monitoring wells. The Gigant pump can push water up to a height of 10 metre. The booster pumps have the same capacity and, as their name implies, can be used as boosters. By connecting one or more of these booster pumps to a Gigant pump, the pressure can be increased to about 20 metre. If long cables are used (for lower depths), the voltage loss in the cable has to be compensated for by means of a higher initial voltage.

Applications:

- Sampling in monitoring wells.

Advantages:

- Suitable for taking samples in narrow monitoring wells;
- Sampling depth to about 12 m (if only the battery supplied with the set is used);
- The low price of this set means that it is suitable for one-off use: in this way, cross contamination is prevented.

12.28.SA Bladder pump set, Ø 22 mm

12.28.SB Bladder pump set, Ø 42 mm

These stainless steel bladder pumps are used for purging and taking samples in monitoring wells. The teflon bladder in the pump prevents contact between the sample water and compressed air. These pumps are supplied with a pneumatic regulator and tubes. The regulator restricts the delivery during purging and sampling, which keeps the turbidity low (low flow purging/sampling). This technique is attracting increasing interest world wide (with the coming NEN5744-2008, this technique will become compulsory for all sampling carried out in the Netherlands).

Applications:

- Purging and taking samples (incl. in-line filtration) in Ø 25 mm (SA) and Ø 50 mm (SB) monitoring wells to depths of 60 m (SA) and 200 m (SB).

Advantages SA+SB:

- Pushes water up with very slight turbulence and cavitation and without underpressure;
- Suitable for direct in-line filtration;
- The sample only comes into contact with stainless steel 316 and teflon.

Advantages SA:

- No generator or compressor required, works on 12 Volt car battery;
- Fully adjustable automatic pneumatic regulator with built-in compressor;
- Maximum pressure head lift: 60 m.

Advantages SB:

- Fully-adjustable delivery;
- Fully-adjustable automatic pneumatic regulator;
- Can be connected to small external compressor (or gas bottle) and small 12 Volt battery;
- Can be used for very deep wells: maximum pressure head lift: 200 m.



12.27



12.12.SA



12.28



12.28



1.3.2 Other water samplers

- 12.04.SA Bailer sampler (stainless steel), holds 250 ml**
- 12.04.SB Bailer sampler (stainless steel), holds 1000 ml**

These stainless steel bailer samplers have been developed for sampling stagnant water (or other liquids) at any required depth. The samplers consist of a stainless steel tube with a diameter of 33 mm (12.04.SA) and 45 mm (12.04.SB). They are open at the top and fitted with an unscrewable cap at the bottom. A ball check is fitted in the bottom. As soon as the water sampler has been lowered it can be raised again. In order to ensure thorough replacement of the contents during lowering, the sampler should be raised half a metre several times.

Applications:

- Sampling stagnant water (or other liquids) at any required depth;
- Can be used in open water, tanks, basins or monitoring wells;
- Samples can be used for chemical, biological and bacteriological analysis.

Advantages:

- Simple, light and compact;
- High quality material prevents contamination of the sample;
- Can be emptied with bottom emptying device: less volatilisation, turbulence and oxidation;
- Easy to clean with diluted acids, lye, alcohol or detergents.

12.16 Bailer sampler (plastic)

Bailer samplers made from teflon are available in various sizes and diameters. A special teflon-coated cable can be supplied for lowering and raising the sampler. A teflon bottom emptying device is available for all the sizes to enable the contents of the sampler to run out without appreciable aeration or turbulence. Disposable HDPE bailer samplers, including an emptying device, are available for one-off sampling.

Applications:

- Sampling stagnant water (or other liquids) at any required depth;
- Can be used in open water, tanks, basins or monitoring wells;
- Samples can be used for chemical, biological and/or bacteriological analysis.

Advantages:

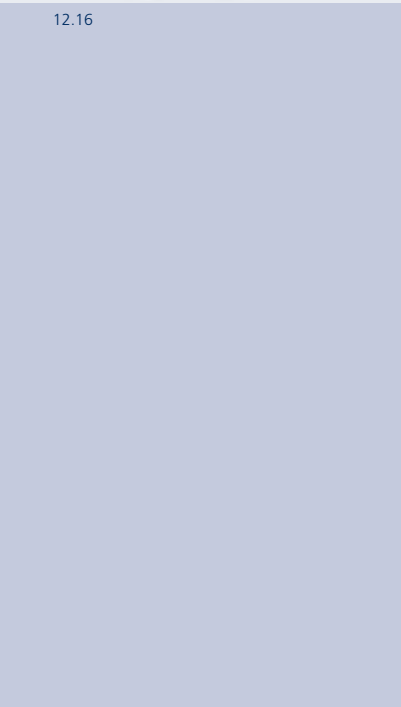
- Contents are clearly visible; any layers can be assessed immediately;
- The top section is half closed so that mixing of liquids is minimal while the water sampler is being raised;
- Can be used to detect whether a floating layer is present.



12.04



12.04



12.16



1.4 Water quality

11.11.58 CTD-Diver

The CTD-Diver is a compact instrument for measuring the groundwater level, temperature and conductivity all in one. Taking measurements in groundwater used to be labour-intensive and troublesome, especially when the remediation of polluted soil, the monitoring of rubbish dumps and the detection of salination were involved. The arrival of the CTD-Diver (with ceramic housing) has, however, changed all that. The CTD-Diver is available for various measuring levels to 100 metre in depth.

Applications:

- For use in polluted, salt or brackish water.

Advantages:

- In addition to groundwater levels and temperatures, this diver also measures conductivity;
- Resistant to sea water for long periods due to its ceramic housing.



11.11.58

CTD-Diver accessories

The Diver accessories mentioned on page 5 also apply to the CTD-Diver

One item is, however, specific to the CTD-Diver:

- Calibration liquid; at the beginning of a measuring session, the CTD-Diver must be calibrated by placing it in a calibration liquid with standard conductivity. (Please see the instructions for details on how to calibrate the diver.)

13.38.SA Multiparameter probe, basic version

13.38.SB Multiparameter probe, comprehensive version

This instrument for measuring water quality is operated via an integral key pad and liquid crystal display. The unit responds to water contact with a lamp and an acoustic signal. At the touch of a button the tone is cancelled and the LCD runs through the values of the parameters measured. We supply a basic set which includes a water level, temperature sensor and a plug-in-sensor for 1 additional electrode. There is also a comprehensive set into which a number of extra electrodes can be plugged, as well as the water level and temperature sensor. The following additional electrodes are available for the multiparameter probe: pH, O₂, Redox, turbidity and water level (with various measuring ranges).

Applications:

- Specially developed for the in-situ determination of water quality values.

Advantages:

- Simple profiling of water quality in bore holes, monitoring wells or open water;
- Can also be used for quality measurements in lakes, rivers and oceans.

18.50.SA pH/mV/EC/T/Sal/TDS multimeter set

18.52.SA pH/mV/EC/T/Sal/TDS/O₂ multimeter set

Draagbare multimeter sets, speciaal ontwikkeld voor het uitvoeren van analytische metingen onder zware Portable multimeter sets, specially designed for taking analytical measurements under difficult field conditions. The meters have a large screen so that the user can see all the important information at a glance during the various activities - all the parameters measured are displayed simultaneously. Very concise instructions written specially enable even inexperienced users to start using the equipment immediately. Demanding users will enjoy using the datalogging functions. The user-friendly meters are waterproof to IP67 and are equipped with advanced wireless communication technology. A sturdy rubber casing provides extra impact protection. All meters are delivered as complete sets, including electrodes and transport case.

Applications:

- Field and laboratory measurements of acidity, redox and ion-selective measurements;
- Measuring electrical conductivity and derivatives (TDS, salinity);
- 18.52.SA: as a result of the more accurate EC/T electrode, the measuring range goes far beyond sea water;
- 18.52.SA: also for measuring dissolved oxygen in water.

Advantages:

- Datalogging and wireless data transfer is possible;
- The standard setup menu is designed for simple use in the field;
- The most important parameters can be measured simultaneously;
- Air pressure and salinity are automatically compensated for during O₂ measurement ;
- Read-out of TDS salt content in accordance with ISO-EN standard 27888, which is compulsory in the EU.



11.11.58



13.38



18.50 / 18.52



18.55 Flow-through cell

The flow-through cell consists of a transparent chamber through which water flows upwards in a constant stream. The electrodes measure in water that has not yet come into contact with air. Various electrodes can be placed in the flow-through cell. The cell is easy to disassemble and clean.

Applications:

- To facilitate and improve the accuracy of in-line measurement of pH, EC, T, O₂, etc.

Advantages:

- Makes measuring pH/EC/O₂/Redox measurements simple;
- Works with practically all electrodes;
- The principle enables 0% O₂ measurements;
- Easy to clean, sand is not a problem;
- Simple and durable; can withstand field conditions.

18.55



13.55 PCcompact turbidimeter

The PCcompact has been designed as a compact, easy-to-use instrument for the fast, accurate determination of the turbidity of a liquid. A light emitting diode (LED) is used as a light source with a photodetector positioned to detect light scattered by a sample at 90° to the incident beam. The PCcompact is supplied as a fully functional unit in a handy case complete with accessories and calibration standards.

Applications:

- For testing water samples or samples of watery extracts;
- Suitable for use both in the field and the laboratory.

Advantages:

- Compact and user-friendly, and has an ergonomic design;
- Switches off automatically;
- Splash-proof keyboard.

13.55



18.41 RQ-flex reflectometer

Various anions and cations can be measured using the portable RQ-flex reflectometer. The measuring system consists of various analytical strips for different parameters and the reflectometer itself. The latter has an internal memory for a maximum of 50 measurements of 10 parameters. Analytical strips are available for a large number of parameters such as ammonium, nitrate, iron, copper, phosphate and potassium.

Applications:

- For use in water, watery extracts, substrates, compost or plant tissue.

Advantages:

- High-precision as a result of the double optics and charge-specific adjustment of the test strips;
- Mobile as a result of its small dimensions and battery power supply;
- No wastage or environmental problems (the test strips are biodegradable).

18.41



18.40 Nitrachek reflectometer

The Nitrachek reflectometer is a pocket-sized digital measuring instrument for the rapid, simple determination of the nitrate content of water or a watery sample originating from soil or plants. The method is based on reading nitrate test strips. After a test strip has been held in the test solution, it is placed in the optical read-out device. The instrument has a memory that will hold a maximum of 20 measurements, including the date and time.

Applications:

- For the rapid, simple determination of the nitrate content in the field; does not require transport.

Advantages:

- Works very accurately if used properly;
- Can also be used for diluted plant extracts;
- Soil material can be mixed with KCl solution.

18.40

2. Surface water

2.1 Current

13.12 Current meter with plastic propeller

This current meter can be used for the accurate determination of the current in watercourses, channels, rivers and the sea. The measurements are carried out with the propeller mounted on the rod(s) or attached to a cable with an optional weight. The complete set contains a streamlined current meter with plastic propeller, a digital counter, extension rods with graduations, cable, accessories and a case.

Use can be made of a PDA (Hydrological Digital Assistant) instead of the digital counter. This can be connected directly to the current meter. Using the software supplied, the pulse signals from the meter are immediately stored and converted into data and graphs for the analysis of the water discharge in the field.

Applications:

- Accurate determination of the current in watercourses, channels, rivers and seas;
- Can also be used in polluted streams;
- Meter with extension rods for use in shallow brooks or rivers.

Advantages:

- Only anticorrosive materials used;
- Almost frictionless contact transmission increases the precision of the instrument;
- Simple to use and maintain;
- Can be lowered on the rod(s) or cable;
- PDA provides an immediate analysis of the measuring results in the field.

13.13 Mini-current meter with aluminium propeller

The mini-current meter with aluminium propeller is used in small ditches with low water levels.

Applications:

- Suitable for use in shallow water (such as irrigation channels).

Advantages:

- Very accurate as a result of the minimal friction;
- Also produces accurate results in water with a low current;
- PDA provides an immediate analysis of the measuring results in the field.

13.14 Mechanical current meter with propeller

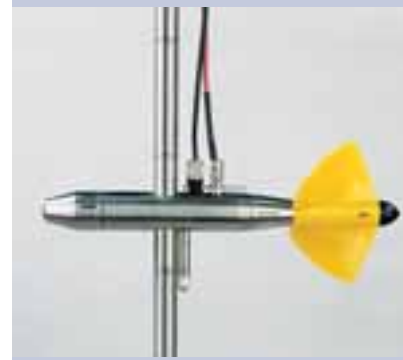
This small, lightweight, mechanical current meter is used for measuring the current in, for example, rivers, channels, sewers and piping systems. The meter can be used at greater depths if hung freely on a cable. The meter is balanced such that it remains horizontal, also if moved forward rapidly on, for example, a towing cable. The propeller is connected directly to a six-figure counter that registers and displays every revolution of the propeller in a similar method to the mileage counter in a car. A telescopic extension rod with an extended length of 240 cm is available for this current meter.

Applications:

- For indicative measurements of currents in rivers, channels, sewers, piping systems, etc.
- Can be used at great depths;
- Not suitable for low currents.

Advantages:

- Small and lightweight;
- Corrosion resistant;
- Balanced for dynamic stability.



13.12



13.12



PDA 13.12 / 13.13



13.14



13.15



13.15



13.17

13.15 Electromagnetic current meter (without propeller)

This strong, compact sensor has been specifically designed for use in open channels where fouling due to weeds or sewers may form a problem. The digital control unit supplied with the instrument gives values of current (real-time and average) and standard deviation, and enables full registration and calculation of average set and measured values. The unit can store up to a maximum of 1,000 values. The details can easily be exported to a PC. The instrument is rod operated.

Applications:

- Flow in brooks, rivers and sewers;
- Monitoring in open channels;
- In fresh, salt and wastewater.

Advantages:

- Very useful in open channels fouled by plant material or sewers;
- Can be used in depths as shallow as 5 cm;
- Very precise instrument for accurate measurements (0.5% of the measured value);
- Measuring range up to 5 m/sec;
- Datalogging.



13.17 RBC flumes

RBC flumes are used to measure the quantity of water flowing through, for example, an irrigation channel. The RBC flume is more accurate than the well-known WSC and Parshall flumes. It has been specially developed for use in small watercourses or channels (irrigation channels, inlet and discharge channels, furrows made to drain building sites, ditches and suchlike). Flumes with various measuring ranges are included in our standard programme. Larger measuring ranges are also possible on special request. A datalogger with pressure sensor that can be connected directly to the flume is supplied for automatic read-outs. Automatic registration is quick and very convenient, particularly in remote places.

Applications:

- Measuring quantities of irrigation water flowing to a field.

Advantages:

- Simple, reliable, user-friendly instrument;
- Measuring results are easy to read off;
- Information about the discharge rate is rapidly available;
- Lightweight and modest dimensions;
- Four standard sizes for all research situations.

2.2 Level measurement

11.41.53 e+ WATER L

The e+ WATER L (the L stands for 'Level') is an electronic instrument for the accurate measurement, registration and monitoring of the level and temperature of surface water. The sensor is frost resistant and can be used without problems in all seasons. The e+ WATER L can be fitted with an optional robust, functional mounting system that is easy to combine with existing water level systems.

Applications:

- Measuring and registering surface water temperatures and levels;
- Suitable for taking continuous measurements in the field for long periods of time;
- Ideal for use in various situations including channels, rivers, lakes, ditches and harbours.

Advantages:

- All-in-one water level logger;
- Is available in four lengths (0.5, 1, 1.5 and 2 metre);
- Is not influenced by air pressure;
- Flooding is not a problem;
- Can be configured and read out in various ways.



11.41.53

e+ WATER L accessories

The following accessories are available for the e+ WATER L:

- Robust mounting system;
- Batteries;
- Software; the e+ WATER L is configured using Logger Data Manager (LDM) e+ software;
- e+ CONTROL; field instrument for setting up and reading out all e+ sensors;
- e-SENSE; remote readings of e+ sensors can be taken (even from the office) with e-SENSE telemetry and a connection with an e-SENSE field modem. More information on e-SENSE is provided in chapter 5: Telemetry.

11.20 Staff gauges

The 'classical' staff gauge is used to read off the water level in watercourses. There are two types of staff gauges available. One is made from plastic (perspex), the other is made from enamelled steel plate. Scale graduations can be customised to suit the client's specific requirements.

Applications:

- Reading off the water level in watercourses.

Advantages:

- Clearly legible.



11.20

2.3 Sampling

12.06 Van Dorn water sampler

The Van Dorn water sampler (vertical water bottle) has been specially designed for the sampling of open water. As a result of the material choice, it is also suitable for sampling coastal waters and for the analysis for heavy metals. The vertical water flow through is not hindered by constrictions so that no appreciable contamination can occur in shallow water. As a result, the sampler is also suitable for measuring parameters in water with solid particles or constituents bound to them, possibly in large quantities. The Van Dorn water sampler holds 2.2 litre.

Applications:

- Various, including analysis for heavy metals in coastal waters.

Advantages:

- Complete with drop-weight, 30 metre polyester rope and transport case;
- The sample does not come into contact with metal parts;
- Minimum contamination;
- The CTD Diver can be used to monitor temperatures, vertical water depth and, if required, conductivity.

12.06

12.07 Kemmerer water sampler

The Kemmerer water sampler (vertical water bottle) is used for general water sampling in lakes, channels, wells and the sea. This sampler consists entirely out of plastic parts so that there is no risk of the sample coming into contact with metal. The Kemmerer water sampler holds 1.2 litre.

Applications:

- Water sampling in lakes, channels, wells and seas;
- Not suitable for chemical sampling for micro-parameters (use the Van Dorn water sampler for this kind of analysis).

Advantages:

- Bottle is made from transparent acrylic;
- The sample does not come into contact with metal parts;
- There are no constrictions at the top or bottom so that there is minimal vertical contamination;
- Complete with drop-weight, 30 metre polyester rope and transport case;
- The CTD Diver can be used to monitor temperatures, vertical water depth and, if required, conductivity.

12.07

12.10 Automatic portable continuous sampler

This very complete automatic, portable sampler can be used for continuous sampling at preset intervals in brooks, rivers, lakes and other open waters. The instrument collects sequential or combined samples, depending on the time, current or storm conditions. The patented detection possibilities for the presence of liquids and the well-thought-out pump sampling system ensure accurate sample vacuums every time.

Applications:

- Automatic continuous sampling for:
 - wastewater treatment plants;
 - water production plants;
 - flooding situations;
 - wastewater originating from industry;
 - studies into the pollution of surface water.

Advantages:

- Comprehensive programming options, easy to use;
- Delivers accurate sample volumes;
- Five different types of sample bottle holders (the 24 sample bottle holder is the standard version);
- Sample bottle holders can be exchanged rapidly;
- The high insulating value of the housing guarantees that samples are kept at the optimum temperature (even at high or low temperatures).

12.10

2.4 Water quality

- 13.38.SA Multiparameter probe, basic version
- 13.38.SB Multiparameter probe, comprehensive version
- 18.55 Flow-through cell
- 18.50.SA pH/mV/EC/T/Sal/TDS multimeter set
- 18.52.SA pH/mV/EC/T/Sal/TDS/O₂ multimeter set
- 13.55 PCcompact turbidimeter
- 18.40 Nitratechek reflectometer
- 18.41 RQ-flex reflectometer

(Information on these devices is provided in section 1.4)

2.5 Sewerage

11.41.70 e+ OVERFLOW

The e+ OVERFLOW sensor is an intelligent, accurate sensor for measuring and registering sewer overflows. The instrument is installed in the overflow wall in the sewer. The sensor measures the height of the water column accurately with the built-in pressure sensor.

Applications:

- Measuring and registering sewer overflows: how often does sewage flow over and how long do these spills last?

Advantages:

- Fitted with very stable, accurate sensors;
- Long periods of uninterrupted measurements are possible in the field;
- Sensor falls within the e-SENSE concept.



11.41.70



11.41.70

e+ OVERFLOW accessories

The following accessories are available for the e+ OVERFLOW:

- Mounting support;
- Batteries;
- Software; the e+ OVERFLOW is configured using Logger Data Manager (LDM) e+ software;
- e+ CONTROL; field instrument for setting up and reading out all e+ sensors;
- e-SENSE; remote readings can be taken from e+ sensors (even from the office) using e-SENSE telemetry and a connection with an e-SENSE field modem. More information on e-SENSE is provided in chapter 5: Telemetry.

3. Sediment

3.1 Floating sediment

12.02 'Watertrap' water sampler

The 'Watertrap' has been designed to take representative samples of flowing water to a depth of about 25 metre. The samples are taken using a stainless steel device by catching a part of a water column that moves horizontally at a specific depth and at a specific time.

Applications:

- Sampling to determine the quantity of sediment carried in a stream.

Advantages:

- The sample is sealed off in the sampler by waterproof rubber rings;
- Can be suspended in any position, relative to the current, that may be required;
- The whole set is packed in a transport case.

04.31 Delft bottle suspended load sampler for flowing sediment

This sampler is used to determine the quantity of suspended sediment in rivers and other water streams, from the surface to 0.1 metre above the soil. The sediment-containing water flows through a sampler in the form of a bottle. The shape of this sampler causes low pressure at the back, so that the water flows into the nozzle at almost the same speed as the undisturbed water current. The rapid decrease in speed in the broader part of the sampler gives the sediment the chance to settle.

Applications:

- Determining the quantity of suspended sediment in water streams;
- Can be used in two ways: suspended on a cable or in a frame on the soil.

Advantages:

- Easy to use;
- Sturdy construction;
- Can be used at any depth;
- Bronze, seawater-resistant version.

04.32 Arnhem bed-load transport sampler

This sampler is used for measuring the suspended load of coarse sand and fine gravel in rivers and other water streams. The streamlined sampler is mounted in a frame and consists of an inlet followed by a basket of fine wire mesh. The rapid decrease in speed in the broad sample chambers results in the settling of the sediment. A tail fin on the frame keeps the sampler facing into the current.

Applications:

- Measuring transport of coarse sand and fine gravel in water streams.

Advantages:

- Simple to drop from a bridge or boat;
- The tail fin ensures the correct positioning;
- The sample can be emptied at an ergonomic working height;
- Can be operated by one person.

3.2 Submerged sediment (on beds of water bodies)

13.50 Visibility disc (Secchi method)

A simple though not very accurate manner for determining the extent of the visual depth. The visibility disc is lowered on a wire. When it is no longer visible, the depth is read off from the graduations on the wire. After the disc has been lowered another half metre, it is slowly raised. The second measurement is made when the disc again becomes visible. The visual depth is the mathematical average of the two measurements.

Applications:

- Determining the visual depth in water.

Advantages:

- Simple to use.



12.02



04.31



04.32



13.50

13.51 Sediment level stave

The sediment level stave is part of the standard set for measuring the depth of the sediment to a depth of 4 metre. The set contains 4 sediment-measuring rods made from anodised aluminium with screw thread connections. The rods are 1 metre in length and have a diameter of 25 mm. The set also includes an elbow for taking measurements in the sediment with measuring rods from the waterside. A stainless steel grid and a core point make it possible to find the upper and lower limits of the sediment layer.

Applications:

- For determining the depth of the upper surface of a submerged sediment layer.

Advantages:

- Can be extended to 7 metre;
- Elbow connection makes it possible to work from the water side;
- The set is supplied in a transport bag.



13.51

13.52 Sludge Blanket detector

Sludge blanket detector with suspension hook for determining the depth of a layer of sediment or bed of a water body that gives an acoustic signal and works on an optical principle. Maximum working depth 240 cm, accuracy 2 cm, storage length 163 cm. Is supplied with storage tube and 9 Volt battery.

Applications:

- Determining the depth of sediment layers in treatment plants;
- Determining (undisturbed optical method) the depth of the first layer of sediment on beds of water bodies.

Advantages:

- All-in-one extendible detector;
- Contactless optical measurement;
- Very easy to use;
- Yes-no signal leaves no room for doubt;
- Lightweight.



13.52

04.30 Van Veen grab

Stainless steel Van Veen grabs are used for taking disturbed samples from submerged sediment in lakes, rivers, etc. At the surface the jaws are opened and fixed into position using a hook, after which the grab is lowered into the water. As soon as the grab touches sediment, the hook releases the jaws. When the grab is raised on the cable, the jaws close automatically due to the lever effect of the rods. The grabs are available in various sizes, but the action of all Van Veen grabs is similar. The smaller versions are manually operated and the larger ones are lowered using a winch.

Applications:

- Taking disturbed samples of submerged sediment in lakes, rivers etc.

Advantages:

- The quickest way to ascertain an indication of the sediment type;
- Inert stainless steel construction.



04.30

04.34 Ekman grab

This grab is intended for use in soft sediment that is free from plant growth. Two thin hinging flaps are open while the grab is lowered. The flaps close when a drop-weight is dropped (cable operated) or a button is pressed (rod operated). Samples can, therefore, also be taken from very soft top layers. The pressure of the sample prevents much loss of material. Nevertheless, small stones or stalks may prevent the grab from closing properly, in which case, the Vrijwit auger should be used. The grab holds 3.5 litre and the dimensions are 152 x 152 x 152 mm. A rod of 1.5 m in length is also available for the rod-operated use of the Ekman grab in shallow water.

Applications:

- Sampling in soft sediments free from debris and plant growth.

Advantages:

- The flaps overlap on closing to prevent the loss of the sample;
- Stainless steel construction;
- Equipped with drop-weight system so that sampling can be carried out at any depth.



04.30



04.34



12.42

12.42 Rod-operated multisampler

The multisampler is used for the anaerobic sampling of a wide diversity of wet materials, both solid and liquid. The piston can be moved in the sample tube using the piston rod, whilst the sample tube is held stationary. This means that the original layers of the material sampled are preserved. The standard set is suitable for sampling to a depth of 5 metre. The multisampler is made from stainless steel, NBR rubber (piston) and transparent acrylic plastic (sample tube).

Applications:

- Developed for sampling wet, solid and liquid materials;
- For low-budget sediment sampling.

Advantages:

- Rapid, simple sampling of a wide variety of water-saturated materials;
- Minimum compaction of the sample;
- Transparent sample tube enables the immediate visual inspection of the sample;
- Piston ensures perfect sample length.



04.23.SA

04.23.SA Beaker sediment sampler, basic set

04.23.SB Beaker sediment sampler, comprehensive set

This sediment sampler, also known as the Beaker sampler, is eminently suitable for taking undisturbed samples of submerged sediment. The samples are taken in a transparent tube and the original layers of the material sampled are preserved. As a result, clear profiles can be achieved. The standard set is suitable for use in water to a depth of 5 metre. Greater depths can, however, be sampled using the additional extension rods. There is another, more comprehensive set available that includes a discharge and partition system so that samples can be taken out and described in a highly refined, accurate manner.

Applications:

- Undisturbed sampling of submerged sediment;
- Clear profiles can be achieved on the basis of the samples taken.

Advantages:

- It is not necessary to assemble and disassemble the device for every new sample;
- Lightweight and easy to use: many samples can be taken per day;
- Can be used in many different types of sediment;
- Piston ensures perfect sample length.



04.23.SA

04.29 Free-fall corer

The Free-fall corer is a core sampler for taking reasonably undisturbed samples from the upper layers of both consolidated and unconsolidated submerged sediment. The free-fall corer consists of a frame with strengthening ribs, a drop-weight and the core sampler itself.

Applications:

- For environmental, soil science and geohydrological research;
- Primarily used when sampling with rod-operated device is problematic.

Advantages:

- Cable-operated, sampling at any depth;
- Very quick to use, no anchoring is required;
- Ball valve at the top prevents loss of the sample.



04.29

04.09 Peat sampler

The stainless steel peat sampler is, in fact, a type of gouge auger. The peat sampler is pushed into the soil by hand. The sampling section is sealed off by a plate (fin) that can pivot around the axle in the middle of the sampler and that is fitted with a cutting edge on one side. Having arrived at the correct sampling depth the complete sampler is given half a turn clockwise (180°). During the turning, the fin remains in position which allows the half cylinder to be filled and closed again.

Applications:

- Suitable for semi-disturbed sampling in weak and very soft soil types.

Advantages:

- No loss of sample as a result of the large closing flap;
- Effective for sampling young peat soils and sediments;
- Takes point samples at any depth;
- Samples can be taken above and below the groundwater level.



04.09

4. Rainfall

11.41.21.SA
11.41.22.SA

e+ RAIN with plastic rain gauge
e+ RAIN with stainless steel rain gauge

The e+ RAIN measures the intensity and the total (integration function) of rain that falls in a given period. The user can set the duration of the measuring period (resolution) so that it is possible to determine both peak intensities and rainfall averages over longer periods. The standard e+ RAIN set consists of a rain gauge with integrated datalogger, a reading unit and software. The e+ RAIN is available in both a plastic and a stainless steel version. A field support can also be supplied for installation in the field.

Applications:

- Determining the quantity and intensity of rainfall.

Advantages:

- The sensor can generate an alarm if preset limits are exceeded;
- Can be configured and read out in various ways;
- Makes up part of the e-SENSE programme;
- Can be read out using various methods including e+ CONTROL.

16.77 Standard rain gauge

This standard rain gauge consists of a funnel, a 1-litre collecting reservoir and a 0-10 mm precipitation vessel, graduated in 0.1 mm. The collecting surface area measures 200 cm².

Applications:

- Determining the amount of precipitation.

Advantages:

- Simple but durable, accurate gauge;
- Anyone can use it.



11.41.21.SA



16.77



11.41.21.SA

5. Telemetry (e-SENSE)

The measurement and management of equipment is increasingly carried out from a (considerable) distance. Setting up, reading out and, if necessary, taking measurements from a location of the client's choice, are standard requirements these days.

The use of the e-SENSE® telemetry measuring system, whereby measuring results are collected by intelligent sensors such as the e+®-sensors or the Diver®, enables you to do much more than simply measuring. Intelligent sensors measure independent data in the field and store these internally. Your measuring results or alarm signals are then sent to a database in your own PC (e-SENSE direct) via the connection with an e-SENSE field modem.

A complete e-SENSE telemetry system consists of the following components:

- A) PC modem set;
- B) Field modem;
- C) Housing for field modem;
- D) e+ sensor;
- E) Communication cables;
- F) Software.

A) 11.51.20 PC-modem set

You need the PC modem set for direct communication via e-SENSE to enable communication between your PC and the e-SENSE field modem. The complete set consists of a modem, a power source, an antenna, a communication cable and software.

B) Field modems

Four types of field modems are available. The sets with the suffix 'SA' have a standard power source; those with the suffix 'SB' are fitted with a power source with a long life.

- | | |
|--------------------|--|
| 11.31.12.SA | e-SENSE field modem set, 2 ports |
| 11.31.18.SA | e-SENSE field modem set, 8 ports |
| 11.31.12.SB | e-SENSE field modem set, long life, 2 ports |
| 11.31.18.SB | e-SENSE field modem set, long life, 8 ports |

An sms modem for gsm data communication with a maximum of 2 or 8 sensors (e+ sensors or Divers) with a status read out on the display. Power source 7.5 Vdc. Can be read out and configured via the database.

Installation in the field, 'plug and play'

The e-SENSE field modem is equipped with a display which displays the status during installation. One of the functions of the e-SENSE modem is, in the first instance, to determine what the best set up is for good gsm reception. The next step is to connect the sensors with waterproof connections. The e-SENSE modem checks whether the sensors connected work properly. If required, the current measuring values from the sensors can be checked using a laptop.

The configuration of the measuring setup is sent in encoded sms messages to the database. This processes the messages and sends an acknowledgement of receipt back to the sensors. The e-SENSE modem indicates that everything is working correctly and the user can close the waterproof, fraud-proof field housing with an easy mind.

The advantages are as follows:

- Inexpensive;
- Flexibility with regard to the measuring parameters;
- A long life;
- Various types of sensors can be used;
- Alarm function;
- The batteries have the capacity to provide power for the entire installation for a year (or 2 years in the case of the 'long life' versions).

C) Housings e-SENSE field modem

11.31.00 Underground housing

Underground housing for the e-SENSE field modem and batteries. Side port for a cable. Water and vandal-proof, closable. Including mounting bracket for the sms modem and the batteries. Dimensions 200 x 310 x 520 mm.

11.31.01 Above-ground housing

Above-ground housing for the e-SENSE field modem and the batteries. Including vandal-proof brackets for mounting on the lid of a monitoring well or a pole with a diameter of 50 – 270 mm. Dimensions 120 x 255 x 250 mm.



11.51.20



11.31.12 / 11.31.18



11.31



D) e+ sensors

The following intelligent sensors can be connected to the e-SENSE modem:

11.41.11 e+ SOIL MCT

For measuring and registering the level of sedimentary liquid, conductivity and temperature. Available in various lengths for measuring to a maximum depth of 100 metre.

11.41.21 e+ RAIN

For measuring and registering rainfall intensity over specific periods.

11.41.53 e+ WATER L

For measuring and registering levels and temperatures of surface water.

11.41.70 e+ OVERFLOW

For measuring and registering sewer overflows.

11.11.01 MiniDiver

For the automatic measurement and registration of groundwater levels and temperatures. With a stainless steel housing and a ceramic pressure sensor, diameter 22 mm, length 90 mm.

11.11.02 MicroDiver

Voor automatisch meten en vastleggen van grondwaterniveaus en –temperaturen. Met een roestvast stalen behuizing, een keramische druksensor, diameter 18 mm, lengte 90 mm.

11.11.03 CeraDiver

For the automatic measurement and registration of groundwater levels and temperatures. With a stainless steel housing, a ceramic pressure sensor, diameter 18 mm, length 90 mm.

11.11.58 CTD-Diver

For the automatic measurement and registration of groundwater levels, temperatures and conductivity. With a ceramic housing, a ceramic pressure sensor and a platinum/ceramic conductivity sensor (measuring range 0 – 80 mS/cm), diameter 22 mm, length 183 mm.

These sensors can be connected in any required combination to the e-SENSE modem. Sensors are being developed to measure other parameters.

E) Communication cables

There are two types of communication cables:

11.31.81 Communication cables for connecting the e+ sensors to the sms modem

Varying in length from 1 to 200 metre, with an IP68 connector for waterproof connections.

11.31.82 Communication cables for connecting Divers to the sms modem

Varying in length from 1 to 200 metre, with an IP68 connector for waterproof connections.

F) Software

The reading out and configuration of the e+ sensors and Divers can be carried out in various ways:

- using an e-SENSE modem, directly via e-SENSE software or via LDM (Logger Data Manager) e+ software;
- using an e+ CONTROL; a handy, robust field instrument for setting up and reading out all e+ sensors.



11.41.11



11.41.21



11.41.53



11.41.70



11.11



Water management

To be used for requesting additional information and/

1. Groundwater

1.1 Installing monitoring wells

- 01.12.SA Hand-operated bailer boring auger set for heterogeneous soils, complete standard set, drilling depth 7 metre
- 10.100 Lost cone auger set, complete standard set, drilling depth 10 metre
- 04.19.SC Percussion gouge set for heterogeneous soils with petrol percussion hammer Cobra TT, complete standard set, drilling depth 5 metre
- 04.19.SD Percussion gouge set for heterogeneous soils with light electric percussion hammer (HM1400), complete standard set, drilling depth 5 metre
- 04.19.SE Percussion gouge set for heterogeneous soils with heavy percussion hammer (HM 1800), complete standard set, drilling depth 5 metre

1.2 Level measurement

- 11.03.20 Sounding device with acoustic and light signal, cable length 10 metre
- 11.03.21 Sounding device with acoustic and light signal, cable length 15 metre
- 11.03.22 Sounding device with acoustic and light signal, cable length 30 metre
- 11.03.23 Sounding device with acoustic and light signal, cable length 50 metre
- 11.03.25 Sounding device with acoustic and light signal, cable length 100 metre, with carrying frame
- 11.03.26 Sounding device with acoustic and light signal, cable length 150 metre, with carrying frame
- 11.03.27 Sounding device with acoustic and light signal, cable length 200 metre, with carrying frame
- 11.03.28 Sounding device with acoustic and light signal, cable length 300 metre, with carrying frame
- 11.03.29 Sounding device with acoustic and light signal, cable length 500 metre, with carrying frame
- 11.08.07 Floating layer thickness meter with acoustic and light signal, cable length 30 metre
- 11.11.01.02 MiniDiver, measuring range 10 metre
- 11.11.01.04 MiniDiver, measuring range 20 metre
- 11.11.01.06 MiniDiver, measuring range 50 metre
- 11.11.01.08 MiniDiver, measuring range 100 metre
- 11.11.02.02 MicroDiver, measuring range 10 metre
- 11.11.02.04 MicroDiver, measuring range 20 metre
- 11.11.02.06 MicroDiver, measuring range 50 metre
- 11.11.02.08 MicroDiver, measuring range 100 metre
- 11.11.03.02 CeraDiver, measuring range 10 metre
- 11.11.03.04 CeraDiver, measuring range 20 metre
- 11.11.03.06 CeraDiver, measuring range 50 metre
- 11.11.03.08 CeraDiver, measuring range 100 metre

Additional Diver accessories available on request.

1.3 Sampling

1.3.1 Pumps

- 12.25 Peristaltic pump, standard
- 12.25.24 Battery charger 115-230 V, for pump 12.25
- 12.26 Peristaltic pump, compact
- 12.26.24 Battery charger 115-230 V, for pump 12.26
- 12.14 Motorised foot valve pump, complete standard set, max sampling depth about 50 metre
- 12.27.SA Submersible pump set with MP1 submersible pump, complete standard set, sampling depth 20 metre
- 12.27.SB Submersible pump set with MP1 submersible pump, complete standard set, sampling depth 40 metre

- 12.27.SC Submersible pump set with MP1 submersible pump, complete standard set, sampling depth 60 metre
- 12.27.SD Submersible pump set with MP1 submersible pump, complete standard set, sampling depth 80 metre
- 12.27.SE Submersible pump set with MP1 submersible pump, complete standard set, sampling depth 90 metre
- 12.12.SA Submersible pump set, with Gigant pump, complete set, max. sampling depth 20 metre
- 12.28.SA Bellow pump set, Ø 22 mm, complete standard set, sampling depth 60 metre
- 12.28.SB Bellow pump set, Ø 42 mm, complete standard set, sampling depth 200 metre

1.3.2 Other water samplers

- 12.04.SA Bailer sampler (stainless steel), holds 250 ml, complete set with measuring tape, sampling depth 20 metre
- 12.04.SB Bailer sampler (stainless steel), holds 1000 ml, complete set with measuring tape, sampling depth 20 metre
- 12.16.03 Bailer sampler (teflon), Ø 19 mm, length 90 cm, holds 170 ml
- 12.16.05 Bailer sampler (teflon), Ø 35 mm, length 60 cm, holds 450 ml
- 12.16.06 Bailer sampler (teflon), Ø 35 mm, length 90 cm, holds 690 ml
- 12.16.16 Disposable bailer sampler (HDPE), Ø 40 mm, length 97 cm, holds 1000 ml., set of 25 pcs

1.4 Water quality

- 11.11.58.01 CTD-Diver, measuring range 10 metre
- 11.11.58.02 CTD-Diver, measuring range 30 metre
- 11.11.58.03 CTD-Diver, measuring range 100 metre
- 13.38.SA Multiparameter probe, basic version for measuring water level, temperature and conductivity, cable length 100 metre
- 13.38.SB Multiparameter probe, comprehensive version for measuring water level, temperature and conductivity, pH, O₂ and redox, cable length 100 metre
- 18.50.SA pH/mV/EC/T/Sal/TDS multimeter set, complete set incl. electrodes, in case
- 18.52.SA pH/mV/EC/T/Sal/TDS/O₂ multimeter set, complete set incl. electrodes, in case
- 18.55 Flow-through cell
- 13.55 PCcompact turbidimeter, complete, in case
- 18.41 RQ-flex reflectometer, basic instrument
- 18.41.04 Ammonium test strips, measuring range 20 - 180 mg/l, set of 50 pcs
- 18.41.10 Iron test strips, measuring range 0.5 - 20 mg/l, set of 50 pcs
- 18.41.11 Iron test strips, measuring range 20 - 200 mg/l, set of 50 pcs
- 18.41.13 Potassium test strips, measuring range 0.25 - 1.20 mg/l, set of 50 pcs
- 18.41.14 Copper test strips, measuring range 5 - 200 mg/l, set of 50 pcs
- 18.41.18 Nitrate test strips, measuring range 5 - 225 mg/l, set of 50 pcs
- 18.40 Nitrate reflectometer, complete set
- 18.40.01 Nitrate test strips, set of 98 pcs



product overview

or making your order

2. Surface water

2.1 Current

- 13.12 Current meter with plastic propeller, complete set, incl. rods (200 cm)
- 13.13 Mini-current meter with aluminium propeller, complete set, incl. rods (150 cm)
- 13.12.20 PDA (Hydrological Digital Assistant) for 13.12 and 13.13 metres
- 13.12.22 PDA software for data evaluation and analysis in the field
- 13.14 Mechanical current meter with propeller, complete set
- 13.14.04 Telescopic rod for 13.14 metre, length 240 cm
- 13.15 Electromagnetic current meter, complete set, incl. rods (300 cm)
- 13.17.02 RBC flume, measuring range 0.1 – 8.7 litre/sec
- 13.17.04 RBC flume, measuring range 0.9 – 49 litre/sec
- 13.17.06 RBC flume, measuring range 1.6 – 86 litre/sec
- 13.17.08 RBC flume, measuring range 2 – 145 litre/sec
- 13.17.11 Datalogger and accessories for automatic read-outs of all flumes, complete set

2.2 Level measurement

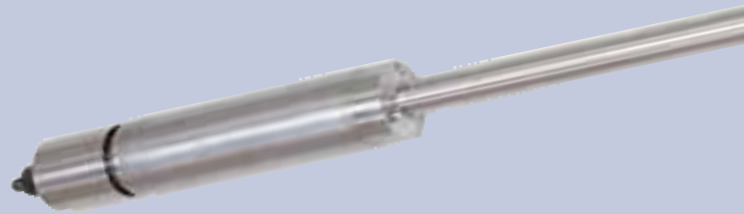
- 11.41.53 e+ WATER L, 50 cm length
- 11.41.54 e+ WATER L, 100 cm length
- 11.41.55 e+ WATER L, 150 cm length
- 11.41.56 e+ WATER L, 200 cm length
- 11.41.95.00 Mounting system for e+ WATER L 50 cm
- 11.41.95.01 Mounting system for e+ WATER L 100 cm
- 11.41.95.02 Mounting system for e+ WATER L 150 cm
- 11.41.95.03 Mounting system for e+ WATER L 200 cm
- 11.31.92 e+ CONTROL
- 11.20.01 Staff gauge, plastic (perspex) version, 7.5 * 100 cm
- 11.20.03 Staff gauge, enamelled steel plate, 13 * 100 cm

2.3 Sampling

- 12.06 Van Dorn water sampler, holds 2.2 litre, complete set
- 12.07 Kemmerer water sampler, holds 1.2 litre, complete set
- 12.10 Automatic portable continuous sampler, complete standard equipment

2.4 Water quality

- 13.38.SA Multiparameter probe, basic version for measuring water level, temperature and conductivity, cable length 100 metre
- 13.38.SB Multiparameter probe, comprehensive version for measuring water level, temperature and conductivity, pH, O₂ and redox, cable length 100 metre
- 18.55 Flow-through cell
- 18.50.SA pH/mV/EC/T/Sal/TDS multimeter set, complete set incl. electrodes, in case
- 18.52.SA pH/mV/EC/T/Sal/TDS/O₂ multimeter set, complete set incl. electrodes, in case
- 13.55 PCcompact turbidimeter, complete, in case
- 18.40 Nitrachek reflectometer, complete set
- 18.40.01 Nitrate test strips, set of 98 pcs
- 18.41 RQ-flex reflectometer, basic instrument
- 18.41.04 Ammonium test strips, measuring range 20 - 180 mg/l, set of 50 pcs



- 18.41.10 Iron test strips, measuring range 0.5 - 20 mg/l, set of 50 pcs
- 18.41.11 Iron test strips, measuring range 20 - 200 mg/l, set of 50 pcs
- 18.41.13 Potassium test strips, measuring range 0.25 – 1.20 mg/l, set of 50 pcs
- 18.41.14 Copper test strips, measuring range 5 - 200 mg/l, set of 50 pcs
- 18.41.18 Nitrate test strips, measuring range 5 - 225 mg/l, set of 50 pcs

2.5 Sewers

- 11.41.70 e+ OVERFLOW, measuring range 70 cm
- 11.41.71 e+ OVERFLOW, measuring range 120 cm
- 11.41.72 e+ OVERFLOW, measuring range 170 cm
- 11.41.73 e+ OVERFLOW, measuring range 200 cm
- 11.41.90.02 Field support (zinc plated) for mounting 1 e+ OVERFLOW
- 11.41.90.03 Field support (zinc plated) for mounting 2 e+ OVERFLOWS

3. Sediment

3.1 Floating sediment

- 12.02 Watertrap water sampler, complete set
- 04.31 Delft bottle suspended load sampler, complete set
- 04.32 Arnhem bed-load transport sampler, complete set

3.2

3.2 Submerged Sediment (on beds of water bodies)

- 13.50 Visibility disc (Secchi method) incl. cable
- 13.51 Sediment level stave, length 400 cm
- 13.52 Sludge blanket detector, complete set
- 04.30.01 Van Veen grab, holds 0.5 litre
- 04.30.02 Van Veen grab, holds 2 litre
- 04.30.03 Van Veen grab, holds 6 litre
- 04.30.05 Van Veen grab, holds 12 litre
- 04.34 Ekman grab
- 04.34.01 Rod for Ekman grab, length 150 cm
- 12.42 Multisampler, complete set, sampling depth 5 metre
- 04.23.SA Beeker sampler, basic set, sampling depth about 5 metre
- 04.23.SB Beeker sampler, comprehensive set with sample partition system, sampling depth 5 metre
- 04.29 Free-fall corer, complete set
- 04.09 Peat sampler, complete set, sampling depth 10 metre



Product overview

4. Rainfall

- 11.41.21.SA e+ RAIN with plastic rain gauge, complete set, incl. reading unit en software
- 11.41.22.SA e+ RAIN with stainless steel rain gauge, complete set, incl. reading unit and software
- 11.41.92.01 Field support for mounting e+ RAIN rain gauges
- 11.31.92 e+ CONTROL
- 16.77 Standard rain gauge

5. Telemetry

- 11.51.20 PC modem set
- 11.31.12.SA e-SENSE field modem set, 2 ports
- 11.31.18.SA e-SENSE field modem set, 8 ports
- 11.31.12.SB e-SENSE field modem set, long life, 2 ports
- 11.31.18.SB e-SENSE field modem set, long life, 8 ports
- 11.31.00 Underground housing
- 11.31.01 Above-ground housing
- 11.41.11 e+ SOIL MCT, for surface area measurement
- 11.41.14 e+ SOIL MCT, for measuring depth 25 cm
- 11.41.15 e+ SOIL MCT, for measuring depth 50 cm
- 11.41.16 e+ SOIL MCT, for measuring depth 75 cm
- 11.41.17 e+ SOIL MCT, for measuring depth 100 cm
- 11.41.21 e+ RAIN, with plastic rain gauge
- 11.41.22 e+ RAIN, with metal rain gauge
- 11.41.92.01 Field support for mounting e+ RAIN rain gauges
- 11.41.53 e+ WATER L, 50 cm length
- 11.41.54 e+ WATER L, 100 cm length
- 11.41.55 e+ WATER L, 150 cm length
- 11.41.56 e+ WATER L, 200 cm length
- 11.41.95.00 Mounting system for e+ WATER L 50 cm

- 11.41.95.01 Mounting system for e+ WATER L 100 cm
- 11.41.95.02 Mounting system for e+ WATER L 150 cm
- 11.41.95.03 Mounting system for e+ WATER L 200 cm
- 11.41.70 e+ OVERFLOW, measuring range 70 cm
- 11.41.71 e+ OVERFLOW, measuring range 120 cm
- 11.41.72 e+ OVERFLOW, measuring range 170 cm
- 11.41.73 e+ OVERFLOW, measuring range 200 cm
- 11.41.90.02 Field support (zinc plated) for mounting 1 e+ OVERFLOW
- 11.41.90.03 Field support (zinc plated) for mounting 2 e+ OVERFLOWS
- 11.11.01.02 MiniDiver, measuring range 10 metre
- 11.11.01.04 MiniDiver, measuring range 20 metre
- 11.11.01.06 MiniDiver, measuring range 50 metre
- 11.11.01.08 MiniDiver, measuring range 100 metre
- 11.11.02.02 MicroDiver, measuring range 10 metre
- 11.11.02.04 MicroDiver, measuring range 20 metre
- 11.11.02.06 MicroDiver, measuring range 50 metre
- 11.11.02.08 MicroDiver, measuring range 100 metre
- 11.11.03.02 CeraDiver, measuring range 10 metre
- 11.11.03.04 CeraDiver, measuring range 20 metre
- 11.11.03.06 CeraDiver, measuring range 50 metre
- 11.11.03.08 CeraDiver, measuring range 100 metre
- 11.11.58.01 CTD-Diver, measuring range 10 metre
- 11.11.58.02 CTD-Diver, measuring range 30 metre
- 11.11.58.03 CTD-Diver, measuring range 100 metre

Additional Diver accessories available on request

- 11.31.81 Communication cable e+ sensor sms modem, available in lengths of 1 to 100 metre
- 11.31.82 Communication cable Diver sms modem, available in lengths of 1 to 200 metre
- 11.51.10 e-SENSE direct software
- 11.31.98 LDM e+ software
- 11.31.92 e+ CONTROL

Reply form

Fax to +31 313 880 299

Personal details:

Company/Institute:

Contact : Mr/Mrs.

Adress :

Code and city :

country :

Telephone :

Telefax :

E-mail :

- Please send me information on the products I marked in the product overview
- Please send me a quotation for the products I marked in the product overview
- Please send me the complete Eijkelkamp catalogue in English / German / Dutch
- Please contact me to discuss my personal wishes

Signature: Date: