



More than **sensors + automation**



Water and Wastewater Engineering

Innovative solutions for your success

OneTemp^o pty ltd
MEASURE | CONTROL | RECORD
www.onetemp.com.au
1300 768 887





Dipl.-Ing. (FH) Matthias Kremer

Head of
Business Unit Analytical Measurement
Phone: +49 661 6003-402
Email: matthias.kremer@jumo.net

Dear Reader,

Water – humanity's most important food resource. As a manufacturer you have to depend on reliable measurement and control systems to help you comply with strict regulations.

JUMO, your reliable partner, is at your side to help when you have questions and to provide you with quick solutions. We do so regardless of whether you want to use conductivity, pH-value, redox potential, pressure, or temperature to monitor water quality or regulate and control your systems.

So how do we do it? By applying years of experience and professional expertise. JUMO has been a leading manufacturer of measurement and control systems for more than 60 years, and consequently, has been a professional partner to the water and wastewater engineering industry.

We place particular importance on regular new development cycles, on continuous improvements in existing products, and on continually making production methods more economical. These steps are the only way to achieve the highest level of innovation.

Here at JUMO we provide only the best for your water and wastewater engineering tasks with a wide range of solutions for a variety of applications.

This brochure is designed to give you an overview of JUMO's products and systems for water and wastewater engineering. Of course we would be happy to work with you to develop individually customized solutions for your requirements.

Matthias Kremer

P.S.: Detailed information about our products can be found under the specified type/product group number at www.industry.jumo.info

Contents



Measurement and control systems	4
Sensors	4
Fittings	5
Transmitters and controllers	6
Indicators and recorders	7
Drinking water	8
Groundwater	10
Brackish water and seawater	11
Swimming pool water	12
Highly-purified water	16
Highly-purified water in pharmaceutical industry	18
Purified water technology	19
Cooling water	20
Wastewater	22
Industrial wastewater	24
Municipal wastewater	25
Services & Support	26

Measurement and control systems



Sensors

pH-electrodes

The pH-value is measured during many water and wastewater engineering processes. JUMO can provide you with a vast selection of pH-electrodes. Whether the glass or plastic versions are involved, we can evaluate your needs and customize the pH-electrodes during production to optimize them to your application.

Pressure, liquid level, and flow

JUMO products allow you to meet for all your pressure, liquid level, or flow requirements. Our pressure measuring devices can be adapted to all water and wastewater engineering processes. Various special materials are also available for corrosive media.

The JUMO dTRANS p20 pressure transmitter and the JUMO dTRANS p33 level measurement probe are the ideal solution for measuring the pressure and liquid level in hazardous (Ex) areas (e.g. in a digester).

JUMO tecLine pH / JUMO tecLine Rd
pH and ORP combination electrodes
Types 201020, 201025



JUMO tecLine CR
Conductive conductivity cells
Type 202924



JUMO tecLine CR-4P
Conductive 4-electrode conductivity cells
Type 202930



JUMO tecLine Cl2, TC, ClO2, O3, H2O2, PAA

For free chlorine, chlorine dioxide, total chlorine, ozone, peracetic acid, and hydrogen peroxide
Types 202630, 202631, 202634, 202636



JUMO MAERA F27
Level measurement probe with ceramic measuring cell
Type 404391



JUMO MID
Flow transmitter
Type 406010



JUMO DELOS SI
Precision pressure transmitter with switching contacts and display
Type 405052



JUMO MIDAS C18 SW
OEM pressure transmitter – seawater
Type 401012



JUMO PROCESStemp
RTD temperature probe for process technology
Type 902820





Fittings

Simply safe

Regardless of whether you are measuring pH in closed circuits or redox in open containers – with JUMO fittings you always have the appropriate product for any application. Our fittings are available in different materials for both aggressive media and hygienic conditions to enable them to cope with any conditions.

JUMO pneumatic retractable assembly

Difficult process conditions can have a negative effect on the service life of a pH-electrode. Regular, automated cleaning of the pH-electrode can significantly increase its service life and reduce maintenance costs. JUMO type 202823 pneumatic retractable assemblies are used wherever sensors are exposed to exceptional loads.

JUMO Immersion Fittings

Type 202820



JUMO VA Immersion Process Fitting

Type 202821



JUMO Pneumatic Retractable Assembly

Type 202823



JUMO Process Fittings

Types 202825, Type 202831



JUMO Flow-Through Fittings

Type 202810



JUMO Manual Quick-Change Fittings

Type 202822





Transmitters and controllers

pH and ORP transmitters

In addition to sturdy pH and ORP electrodes, many processes also require measurement and control equipment that can be mounted according to on-site requirements. JUMO offers a wide selection of models to meet this need. Customers typically choose panel mounting (JUMO dTRANS pH02), installation in a wall-mounted case (JUMO AQUIS 500 pH) with a high protection rating (for example IP67), or a DIN rail mounting (JUMO ecoTRANS pH03).

Conductivity cells

Whether involved in desalination of seawater or monitoring the quality of highly-purified or cooling water, conductivity measurement has an important role to play in water and wastewater engineering. JUMO can provide measuring devices to cover all the current measuring systems on the market – conductive conductivity measurement (two and four-electrode systems) as well as low-maintenance inductive measuring with JUMO CTI-500 and JUMO CTI-750.

JUMO dTRANS 02 01

2-wire transmitter for dissolved oxygen (DO)
Type 202610



JUMO AQUIS 500 pH/CR/Ci/AS

Transmitter/controller series for pH-value, ORP, ammonia concentration, chlorine, chlorine dioxide, ozone, conductive and inductive conductivity, and temperature
Types 202560, 202565, 202566, 202568



JUMO AQUIS touch S/P

Multichannel measuring device for liquid analysis
Types 202580, 202581



JUMO CTI-500 and CTI-750

Inductive conductivity transmitter with plastic or stainless steel housing
Types 202755, 202756



JUMO ecoTRANS pH/Lf 03

Microprocessor transmitter/switching device for pH-value/ORP, conductivity, and temperature
Types 202723, 202732

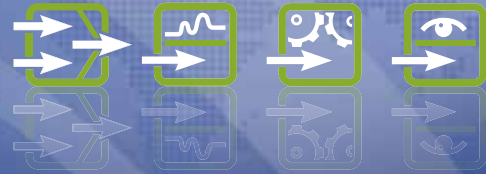


JUMO dTRANS pH/CR/AS 02

Transmitter/controller series for pH-value, ORP, chlorine, chlorine dioxide, ozone, conductive conductivity, and temperature
Types 202551, 202552, 202553



CU US



Indicators and recorders

Recording, archiving, and evaluating

With the JUMO LOGOSCREEN paperless recorder range, the measurement values from drinking water and wastewater treatment that require verification can be recorded, archived, and evaluated in an easy and tamper-proof manner. The new JUMO LOGOSCREEN nt generation in particular has an integrated web server or a remote alarm option in the event of a fault.

Automation and visualization

The SVS3000 process visualization software allows effective operator control, visualization, and documentation. Processes are made transparent by a user-friendly operator interface with numerous functions such as an application explorer, alarm, and event lists. The software is quick and easy to configure so that you can save high application costs.

JUMO ecoLine O-D0

Modular multichannel measuring devices for liquid analysis with integrated controller and paperless recorder

Types 202569, 202613



JUMO di 308

Digital temperature indicator
Type 701550



JUMO LOGOSCREEN fd

Paperless recorder for
FDA-compliant data recording
Type 706585



JUMO LOGOSCREEN nt

Paperless recorder with TFT display
Type 706581



JUMO LOGOSCREEN 500 cf

Paperless recorder with CF card,
RS232/485, Ethernet
Types 706560, 706570



JUMO SVS3000

Visualization software
Type 700755





Drinking water

Drinking water is humanity's most important food resource which cannot be replaced.

JUMO pH, conductivity, and level sensors support your process no matter which method of water treatment you use. They also make sure that your drinking water is of a consistent quality.



Measuring pH in drinking water

Different parameters are measured to ensure that the drinking water is reliably monitored. One of the most important parameters is the pH-value. The pH-value of drinking water should not be less than 6.5 and not more than 9.5. pH in drinking water is measured by JUMO tecLine pH-electrodes in conjunction with the JUMO AQUIS 500 pH transmitter/controller.

JUMO tecLine pH/JUMO tecLine Rd
pH and ORP combination electrodes
Types 201020, 201025



JUMO tecLine CR
Conductive conductivity cells
Type 202924



JUMO AQUIS 500 pH/CR/Ci/AS
Transmitter/controller series for pH-value, ORP, ammonia concentration, chlorine, chlorine dioxide, ozone, conductive and inductive conductivity, and temperature
Types 202560, 202565, 202566, 202568



JUMO dTRANS pH/CR/AS 02
Transmitter/controller series for pH-value, ORP, chlorine, chlorine dioxide, ozone, conductive conductivity, and temperature
Types 202551, 202552, 202553



Level measurement in groundwater

In groundwater or in wells the water level should be continuously measured by a level measurement probe using the liquid level pressure. The level measuring probe JUMO MAERA S28 – with a piezoresistive measuring cell – is particularly suitable for this task. It has an integrated surge protection, which protects the electronic components of the level measuring probe from an indirect lightning strike. With the additional high overload capacity and long-term stability the JUMO MAERA S28 offers you a high level of security.

JUMO tecLine Cl2
For free chlorine
Type 202630



JUMO AQUIS touch S/P
Multichannel measuring device for liquid analysis
Types 202580, 202581



Turbidity measurement in groundwater

Continuous turbidity measurement with JUMO ecoLine NTU is an easy method of monitoring the raw water quality regarding undissolved substances found in water. Furthermore, knowing the turbidity of the raw water makes the estimation of flocculating agents and the energy input in the flocculation stage easier.

JUMO ecoLine NTU
Optical turbidity sensor with evaluation unit
JUMO AQUIS 500 RS
Types 202569, 202670



JUMO MAERA S28
Level measurement probe
Type 404392



JUMO MID
Flow transmitter
Type 406010





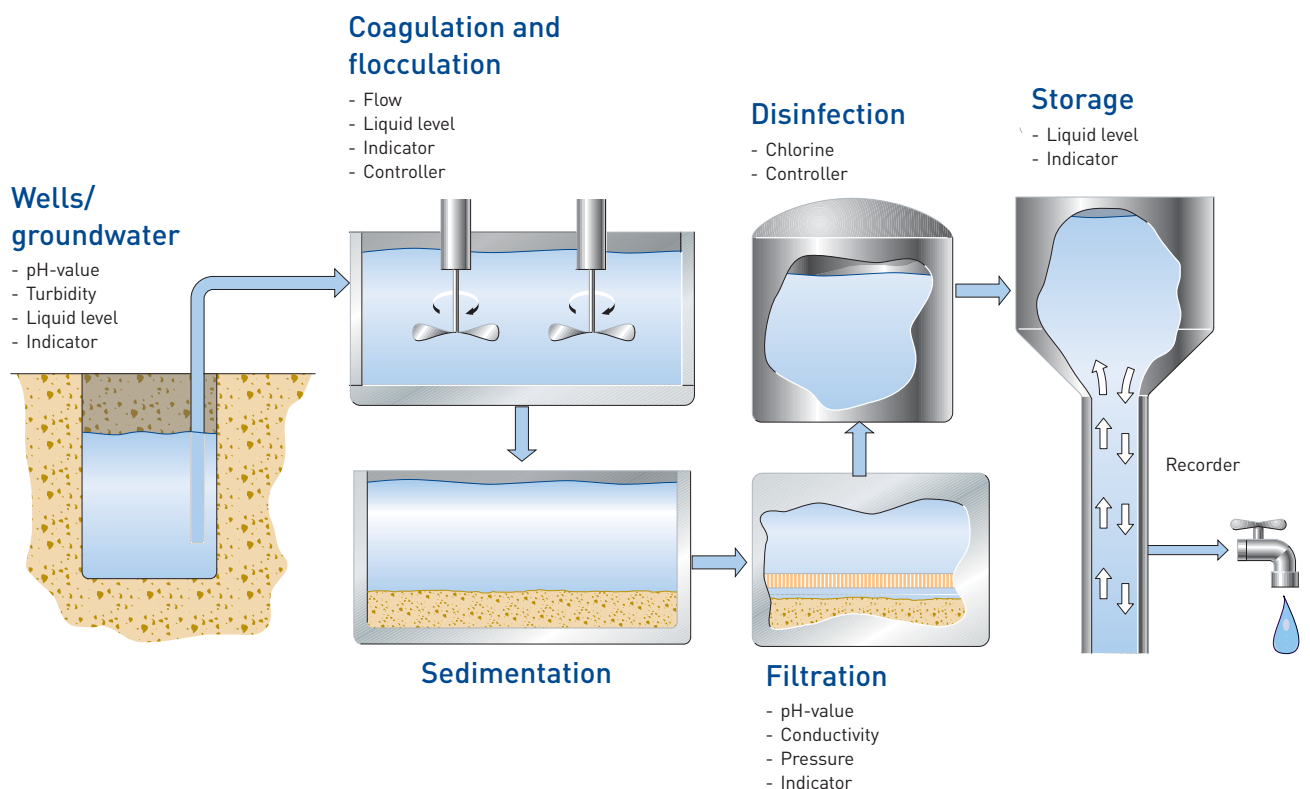
Groundwater

Where does our drinking water come from?

Drinking water treatment refers to the treatment of spring water, surface water, or groundwater. Spring water refers to water that emerges out of the earth from underground water sources. Surface water is taken from standing or flowing bodies of water above ground. Dam reservoir water, lake water, and river water are three types of surface water. Groundwater is part of the natural water cycle. It comes predominantly from rainwater seeping through the soil and the subsoil into the aquifer.

From groundwater to drinking water

Most drinking water comes from groundwater. The treatment of drinking water involves a number of different processes. Flocculation is a process of wastewater and drinking water treatment that reduces existing turbidity. The finest, suspended, or colloidal particles in the water coagulate and then settle – or it can be filtered. The solid matter and turbidities can be isolated by sedimentation. Filtration describes the process whereby a solid matter/liquid mixture in the water or wastewater can be separated or segregated by filters. Disinfection either removes microorganisms from the water or kills them so that hygienically perfect water is attained.





Brackish water and seawater

Brackish water and seawater desalination

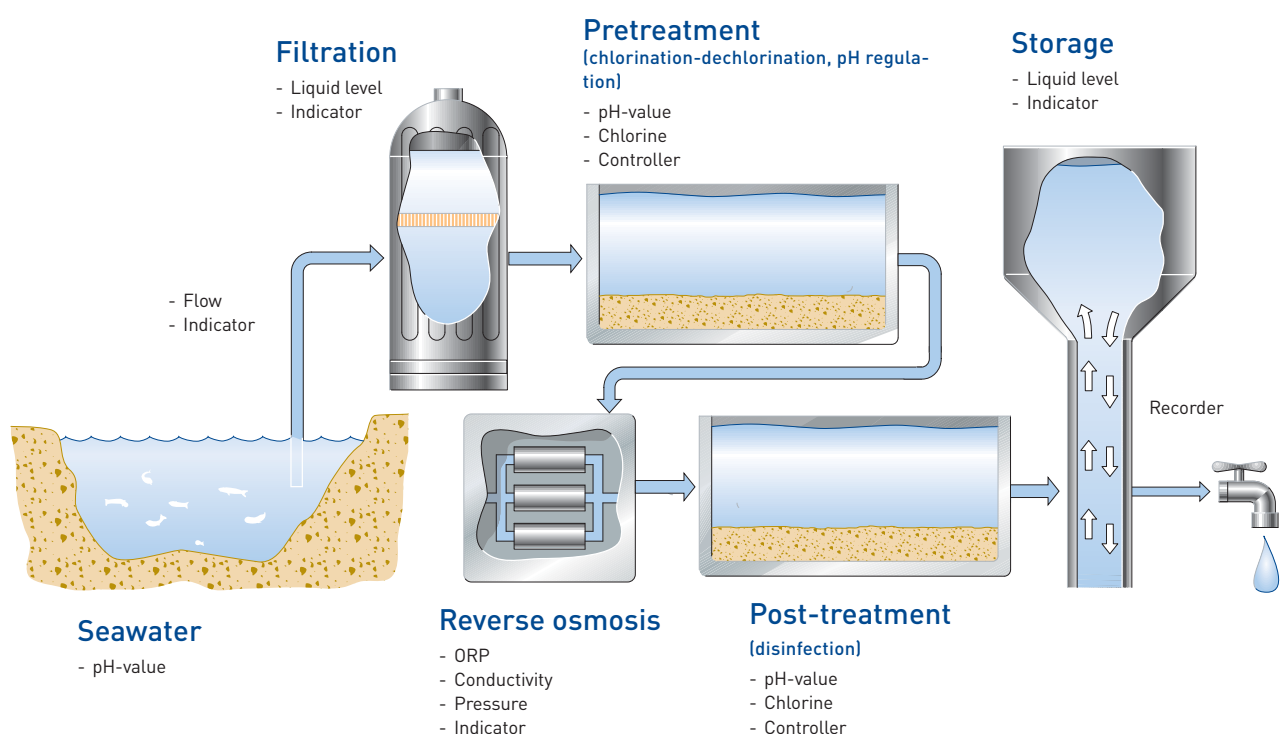
According to UNESCO, obtaining a supply of drinking water is highly problematic in many parts of the world. A limited amount of water is available on our planet and 97.5 % of the water in the world is salty. Because the availability of drinking water is limited, seawater is an important source of drinking water.

Seawater desalination is a method of obtaining drinking water or process water from seawater by reducing the salt content.

Pressure measurement before reverse osmosis

The crucial element in seawater desalination plants is the reverse osmosis (RO) unit. During reverse osmosis, the sea - water is pushed through a semi-permeable membrane at high pressure. This membrane acts like a filter and only al- lows certain ions and molecules to pass through.

Because seawater has such high salinity, a pressure of 60 to 80 bar is required. To ensure safe system operation, the pressure before reverse osmosis must be monitored. The obvious choice for this task is the JUMO MIDAS C08 pressure transmitter.





Swimming pool water

Swimming is a popular and healthy leisure activity – as long as the water has the right quality. To keep it consistent, swimming pools are continuously monitored and controlled.

Here, too, JUMO provides solutions that you can rely on.



Measuring pH in swimming pools

The pH-value is one of the most important parameters in swimming pool water. The optimum pH-value for swimming pool water lies between 7.2 and 7.8. pH-values that are too low or too high cause various problems including the risk of corrosion and skin/eye irritation. JUMO provides the following solution for monitoring the pH-value: JUMO tecLine pH-electrodes in conjunction with the JUMO AQUIS 500 pH transmitter/controller.

Measuring the concentration of the disinfectants

In addition, disinfectant content must also be determined weekly. With chlorine, for example, the content is ideally between 0.3 and 0.6 mg/l (free chlorine). JUMO amperometric measuring cells for free chlorine, chlorine dioxide, and ozone – with the JUMO AQUIS 500 AS transmitter/controller – are particularly suitable for this task.

JUMO tecLine pH/JUMO tecLine Rd

pH and ORP combination electrodes
Types 201020, 201025



JUMO tecLine Cl2

For free chlorine
Type 202630



JUMO AQUIS 500 pH/CR/Ci/AS

Transmitter/controller series for pH-value, ORP, ammonia concentration, chlorine, chlorine dioxide, ozone, conductive and inductive conductivity, and temperature
Types 202560, 202565, 202566, 202568



JUMO dTRANS pH/CR/AS 02

Transmitter/controller series for pH-value, ORP, chlorine, chlorine dioxide, ozone, conductive conductivity, and temperature
Types 202551, 202552, 202553



JUMO ecoTRANS pH/Lf 03

Microprocessor transmitter/switching device for pH-value/ORP, conductivity, and temperature
Types 202723, 202732



JUMO AQUIS touch S/P

Multichannel measuring device for liquid analysis
Types 202580, 202581



JUMO MAERA F27

Level measurement probe with ceramic measuring cell
Type 404391



JUMO Surface-Mounted Thermostat

Type 603026





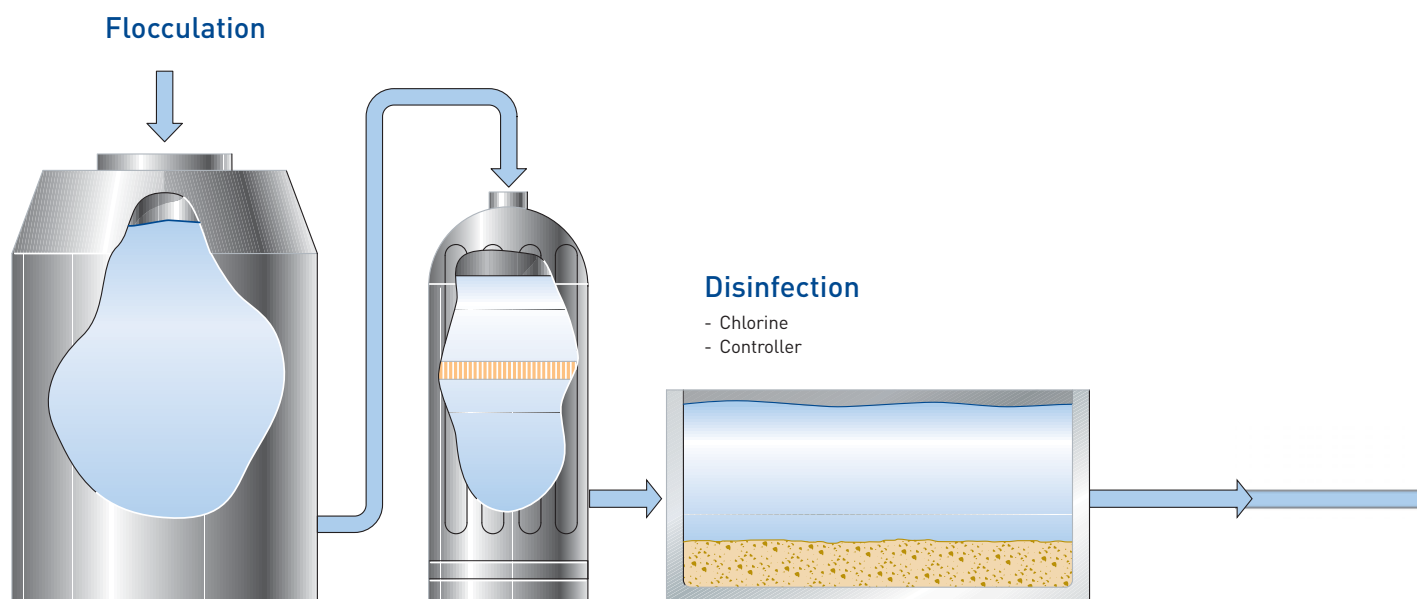
Swimming pool water production

Swimming pools include certain risks such as infections so that they must always have a guaranteed water quality. As a result, all swimming pools have to be continuously monitored and controlled.

The treatment of water serves primarily to kill or reduce the microorganisms contained in it (bacteria, viruses, etc.). This process can also be called disinfection or sterilization. Chlorination is the most commonly used method for water

disinfection. The usual procedure is to first prepare a chlorine gas or hypochlorite solution in water and then to add an appropriate quantity to the water to be treated.

When the water is treated the aim is to get as few undesirable byproducts as possible to be formed by disinfection. To a certain extent byproducts can be controlled by the conditions (amount of chlorine, temperature, pH-value) prevailing at the time of disinfection.





Level measurement

The term “pool hydraulics” refers to the continuous circulation of water in swimming pools.

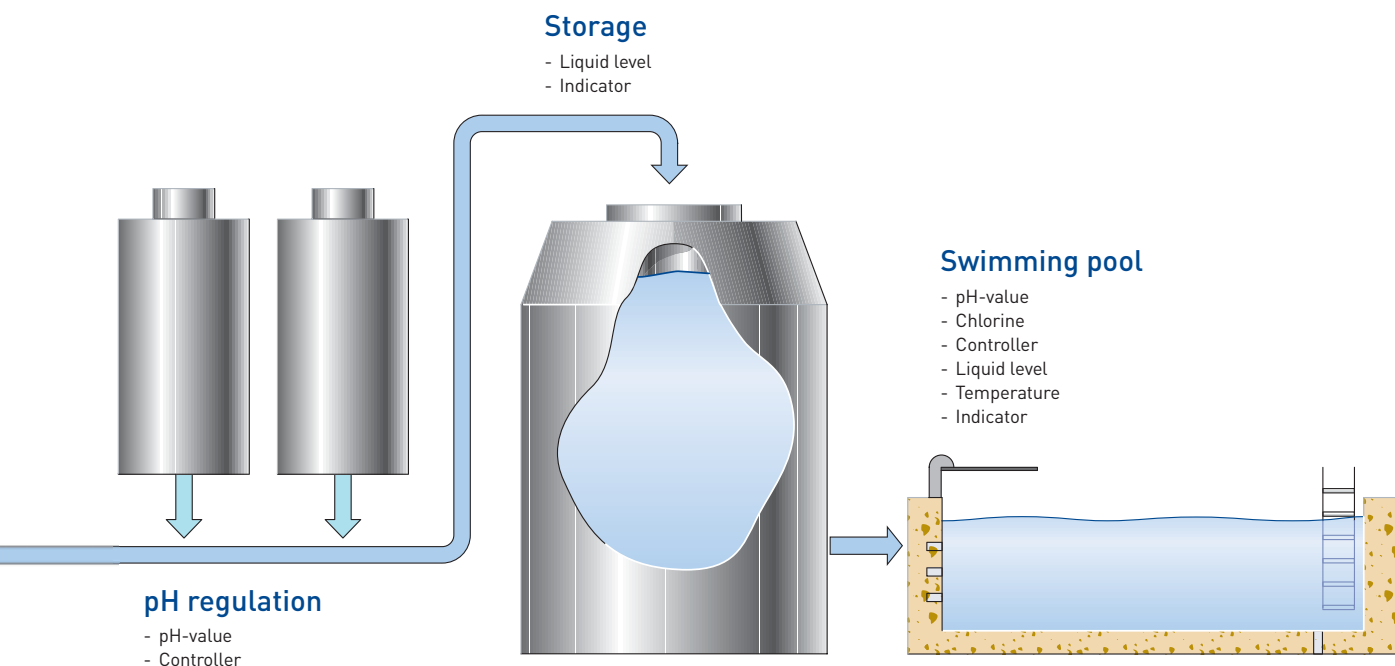
Good pool hydraulics ensure good distribution of disinfectants.

Pool hydraulics include not only the economical skimmer system to remove water from the surface, but also the more effective overflow system. Here the water that is pushed into the pool by the jets is directed over the edge of the pool into an overflow channel from which it goes to a balance tank.

This tank is designed so that when the pool is used it can hold the volume of water that is displaced – and when the pool is not used it has sufficient water stored for back washing.

Filling level measurement in the backwash water tank protects the filter pump against dry-running if not enough water is available. Such a measure causes fresh water to be added to the swimming pool when too little water is in it as a result of backwashing. Filling level measurement also re-activates the pump if too much water is in the splash water / overflow reservoir.

Level measurement can occur hydrostatically. For this purpose level measurement probes are available in un-pressurized or open tanks. Level measurement probes are pressure measuring devices that are especially developed for filling level assessment. In coordination with your specified guidelines JUMO offers a wide variety of level measurement probes out of stainless steel or plastic. These have different process or electrical connections as well as special cables.

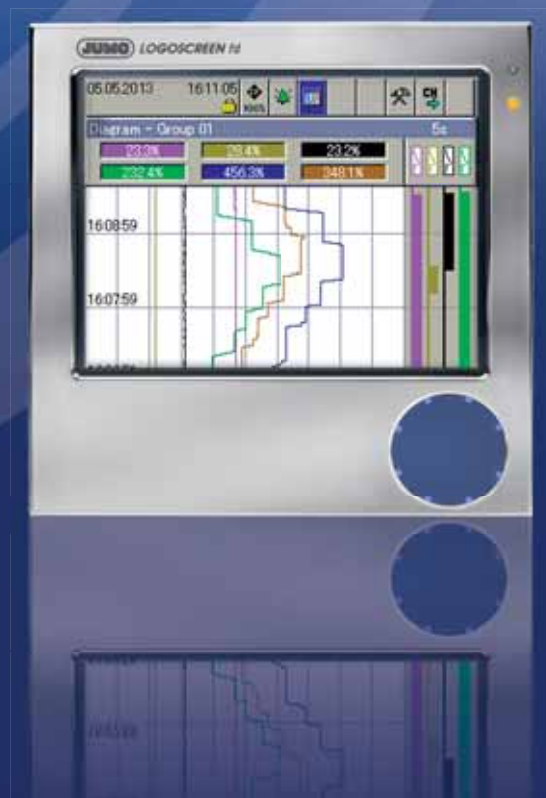




Highly-purified water

Highly-purified water is required in a wide variety of production processes such as a cleaning agent in the semiconductor industry, as a cleaning operation after the actual washing with cleaning agents in the food industry, and for cleaning and dilution purposes in the pharmaceutical industry.

Whatever water quality you require for your process, JUMO products provide pure water of a quality that you can rely on.



pH-measurement in highly-purified water

pH-measurement in highly-purified water is a stipulation in many areas. But the low conductivity and low ionic strength of highly-purified water cause technical problems in measuring the pH-value. JUMO's solution here is the refillable JUMO tecLine pH-electrode with a KCl storage vessel.

Measuring conductivity

Monitoring the quality of highly-purified water through conductivity is the safest and most reliable method.

A complete measurement chain for conductivity in highly-purified water consists of a highly-purified water transmitter/controller – JUMO AQUIS 500 CR, JUMO dTRANS CR 02, or JUMO ecoTRANS Lf 03, a JUMO tecLine Lf-VA conductivity cell with integrated temperature probe, and a connecting cable. JUMO highly-purified water transmitters provide you with exact cell constant entry, temperature compensation to ASTM D 1125-95, and limit monitoring to USP (water conductivity <645>).

JUMO tecLine pH

pH-combination electrodes with liquid KCl filling, refillable
Type 201020



JUMO ecoTRANS pH/Lf 03

Microprocessor transmitter/switching device for pH-value/ORP, conductivity, and temperature
Types 202723, 202732



USP<645>



JUMO dTRANS pH/CR/AS 02

Transmitter/controller series for pH-value, ORP, chlorine, chlorine dioxide, ozone, conductive conductivity, and temperature
Types 202551, 202552, 202553



USP<645>



JUMO tecLine CR

Conductive conductivity cells in stainless steel or titanium
Type 202924



ASTM-Certificate

JUMO AQUIS touch S/P

Multichannel measuring device for liquid analysis
Types 202580, 202581



JUMO Process and Manual Quick-Change Fittings

In stainless steel
Types 202822, 202825, 202831



JUMO MIDAS C18 SW

OEM pressure transmitter – seawater
Type 401012



JUMO LOGOSCREEN fd

Paperless recorder for FDA-compliant data recording
Type 706585

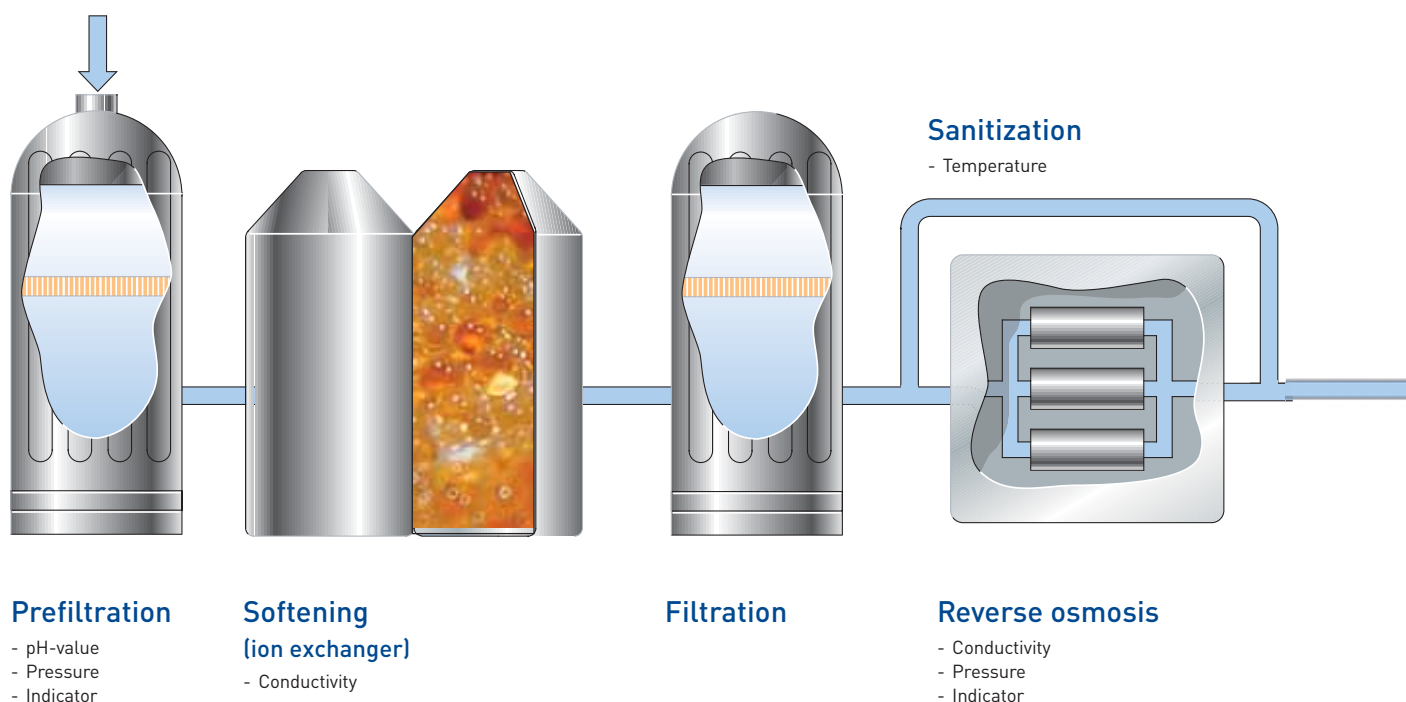




Highly-purified water in the pharmaceutical industry

The production of highly-purified water is one of the most important processes in the pharmaceutical industry. Without it, the manufacture of most substances would not be possible as highly-purified water quality is the prerequisite for a consistent high product quality. Monitoring the quality of highly-purified water through conductivity is the safest and most reliable method.

The quality of highly-purified water (pure water, highly-purified water, water for injection, etc.) is described in several standards and recommendations. These include ASTM International, EP (Pharmacopoea Europaea, Ph. Eur.), USP (United States Pharmacopeia), and DIN or ISO standards. Of course, JUMO tecLine Lf-VA conductive conductivity cells for use in highly-purified water meet all the requirements.





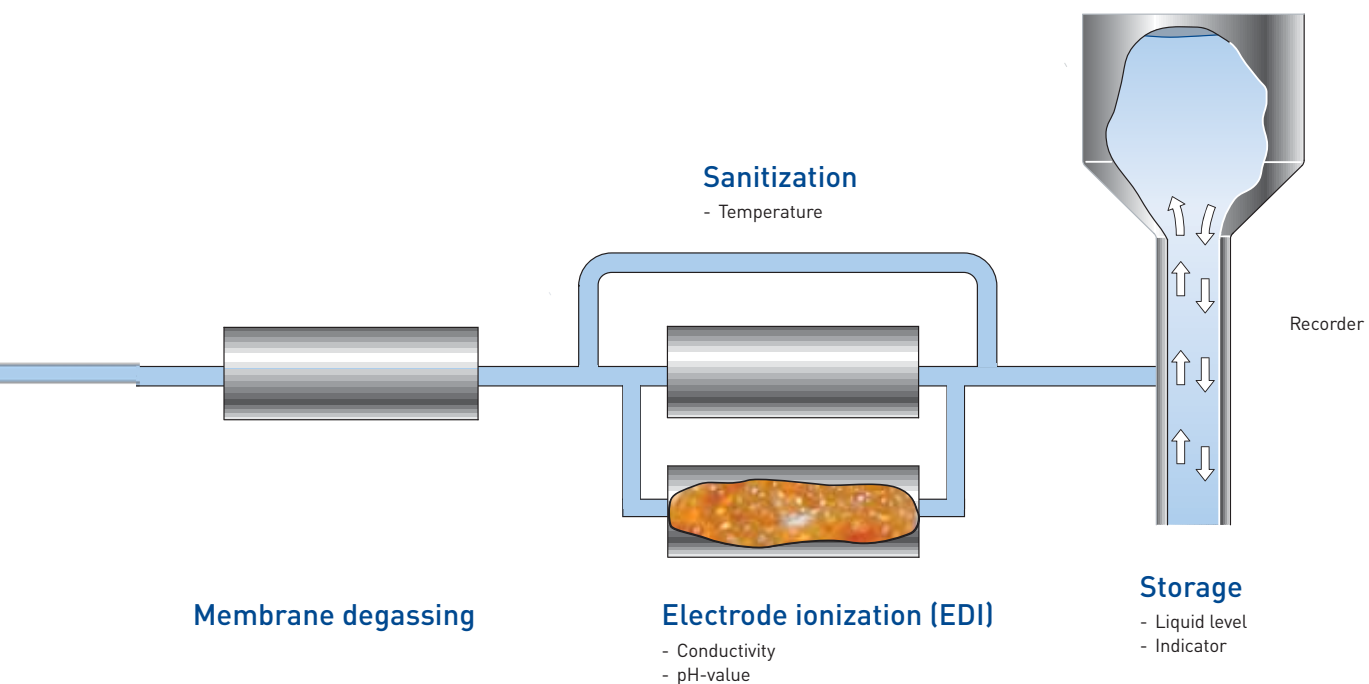
Highly-purified water production

Highly-purified water is required in a wide variety of production processes such as a cleaning agent in the semiconductor industry, as a cleaning operation after the actual washing with cleaning agents in the food industry, and for cleaning and dilution purposes in the pharmaceutical industry.

Different processing steps have to be incorporated both before and afterwards so that the demands being made on the highly-purified water are met. Common production processes include reverse osmosis, ion exchanger, ultrafiltration, and electro-chemical deionization.

Ion exchangers contain mobile ions. Their chemical structure enables them to exchange these ions for other ions charged in the same way (cation exchangers or anion exchangers).

Ultrafiltration is a typical membrane process. The pores are very large for ultrafiltration. Matter is excluded by size so that components larger than the membrane pores are retained. Electrochemical deionization is the latest technology in highly-purified production. When a voltage is applied across the anode and cathode, the anions and cations combine and the resulting ions are removed with ion exchangers from the water stream.





Cooling water

Heat has to be dissipated in many industrial undertakings. Here, cooling water is used as the heat carrier in technological processes. Monitoring water quality makes sense in all applications where water or aqueous solutions is used as the cooling medium or as a cooling additive. Inductive conductivity sensors by JUMO are the ideal solution for this task.



Dilution control in cooling tower

Monitoring water quality in all applications in which water or aqueous solutions are used as the cooling medium or as a cooling additive is useful. But the cooling capacity of the water can be reduced by evaporation or contamination. The salts and solids that are left increase conductivity. Relevant conductivity measurement is therefore important in cooling towers (dilution control). Suitable measuring devices can monitor a defined limit value. The inductive measurement method of the JUMO CTI-500 conductivity transmitter facilitates reliable monitoring of the cooling water in cooling towers. In addition, the separate sensor of the device version can be easily integrated into existing systems.

JUMO tecLine Rd

ORP combination electrodes
Type 201025



JUMO tecLine Cl2

For free chlorine
Type 202630



JUMO AQUIS 500 pH/CR/Ci/AS

Transmitter/controller series for pH-value, ORP, ammonia concentration, chlorine, chlorine dioxide, ozone, conductive and inductive conductivity, and temperature
Types 202560, 202565, 202566, 202568



JUMO dTRANS pH/CR/AS 02

Transmitter/controller series for pH-value, ORP, chlorine, chlorine dioxide, ozone, conductive conductivity, and temperature
Types 202551, 202552, 202553



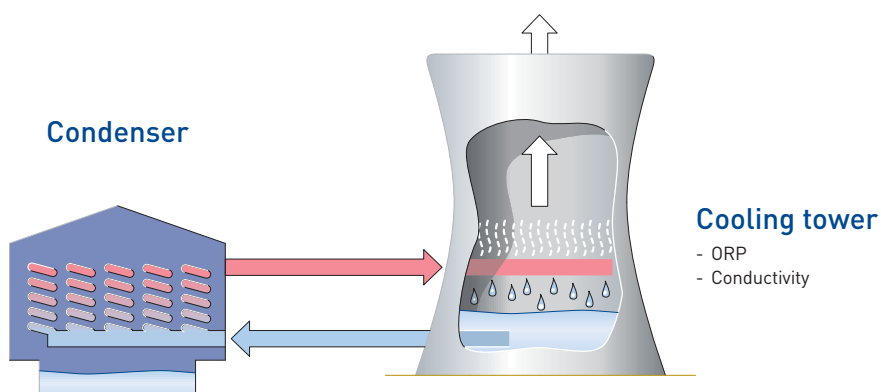
JUMO ecoTRANS pH/Lf 03

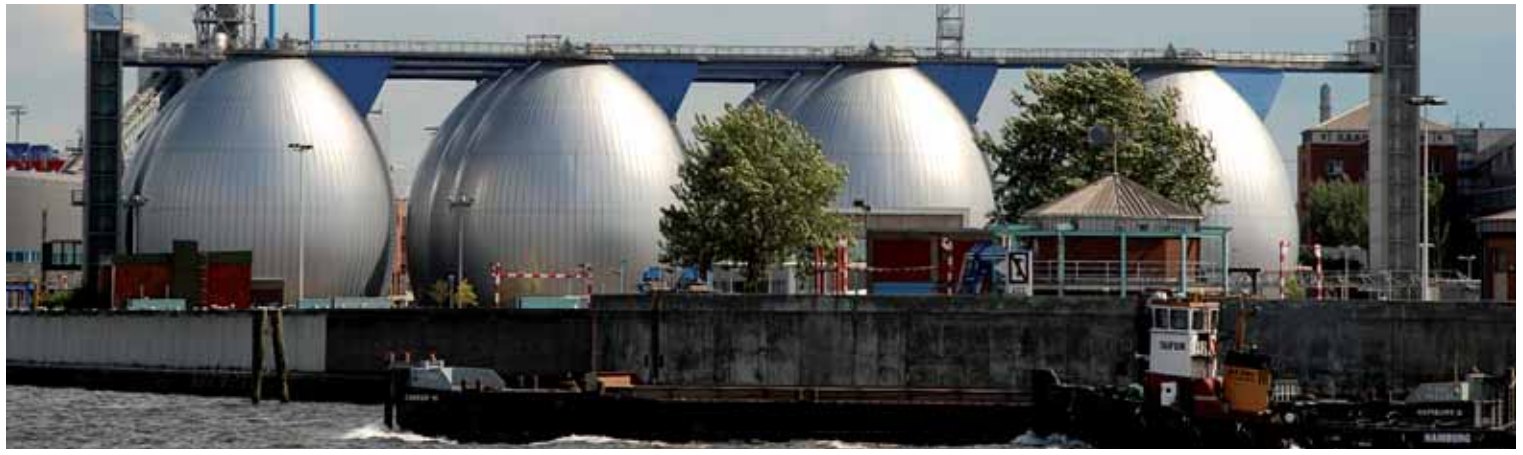
Microprocessor transmitter/switching device for pH-value/ORP, conductivity, and temperature
Types 202723, 202732



JUMO CTI-500

Inductive conductivity transmitter with plastic case
Types 202755, 202756





Wastewater

Wastewater is treated in sewage treatment plants. Biological and chemical processes are used here as well as mechanical ones.

JUMO products allow you to meet all your pressure, liquid level, or flow requirements. Our pressure measuring devices can be adapted to all wastewater engineering procedures.



Controlling the supply of oxygen in the aeration tank

To create optimum living conditions for the bacteria, the aeration tank must be continuously supplied with oxygen (O₂). As aeration is the major single energy user in a wastewater treatment plant with a power consumption of 50 to 80 %, the first and obvious starting point for saving energy is the oxygen content in the aeration tank. Determining and continuously regulating the oxygen content in the aeration tank is absolutely essential. The JUMO dTRANS 02 01 two-wire transmitter provides a sturdy and cost-effective measuring device.

Monitoring digestion

To survive in the digester, the bacteria need a constant temperature of 35 to 37 °C. As a result, monitoring the temperature in the digester is absolutely essential. The JUMO PROCESStemp RTD temperature probe with ATEX approval and the JUMO di 308 digital indicator are exactly the right products for this task. Additional measurement variables to monitor are the liquid level and the pressure in the digester. The JUMO dTRANS p20 pressure transmitter and the JUMO dTRANS p33 level measurement probe are the ideal solution for measuring the pressure and liquid level in areas with a risk of explosion. To monitor measurements the measuring points can be connected to the JUMO LOGOSCREEN nt recorder.

JUMO tecLine pH/JUMO tecLine Rd
pH and ORP combination electrodes
Type 201020/201025



JUMO ecoTRANS pH/Lf 03
Microprocessor transmitter/
switching device for pH value/ORP,
conductivity, and temperature
Type 202723, Type 202732



JUMO dTRANS 02 01
2-wire transmitter for
dissolved oxygen [DO]
Type 202610



JUMO ecoLine 0-D0
Modular multichannel measuring devices
for liquid analysis with integrated control-
ler and paperless recorder
Type 202569, Type 202613



JUMO AQUIS touch S/P
Multichannel measuring device
for liquid analysis
Type 202580, Type 202581



JUMO ecoLine NTU
Optical turbidity sensor with evaluation
unit JUMO AQUIS 500 RS
Type 202569, Type 202670



JUMO exTHERM-AT
Explosion-protected
surface-case
Type 605055



JUMO dTRANS p20
Process pressure trans-
mitter with display
Type 403025



JUMO dTRANS p33
Pressure transmitter and
level measurement probe
Type 404753

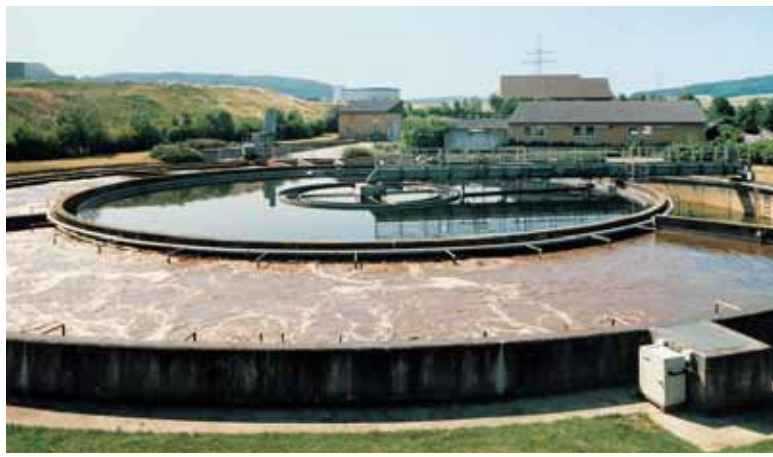


JUMO LOGOSCREEN nt
Paperless recorder with TFT display,
CF card, and USB interfaces
Type 706581



JUMO PROCESStemp
RTD temperature probe
for process technology
Type 902820





Industrial wastewater

Industrial wastewater refers to the wastewater that arises from industrial production processes (e.g. in the food, paper, chemical, textile, and metal industries). The composition of the industrial wastewater can vary greatly, depending on which branch of industry is involved. Wastewater in the paper industry contains organic substances that are not easily degradable. Oils, greases, and heavy metals are found in metalworking.

Industrial wastewater must be cleaned before disposal. The treated water can either be returned to the production process or discharged into the sewers.

Example: treating wastewater from electroplating

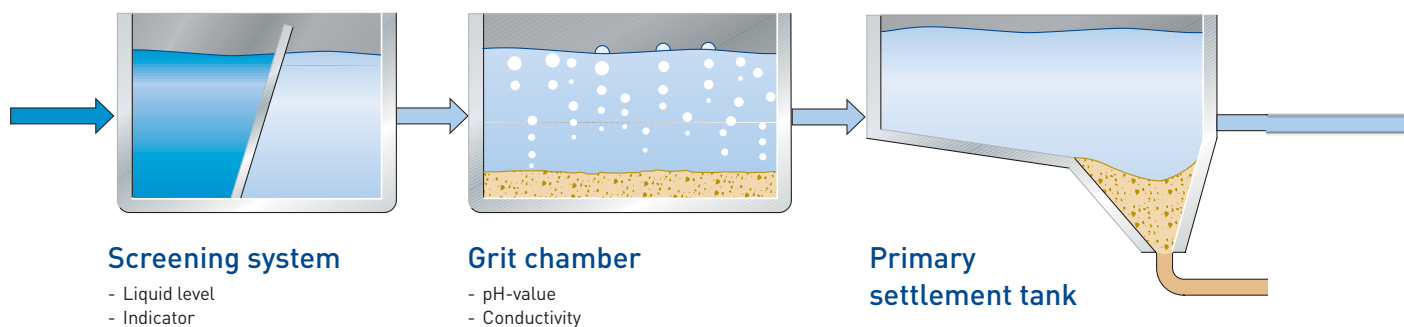
In a plating bath, objects made of base metals such as zinc or iron are given a protective finish. This coating can consist of chemical elements such as copper or nickel.

The first wastewater treatment stage for plating wastewater is cyanide and chromate detoxification. Detoxification is performed in continuous-flow systems. Once detoxification is complete the next stages take place: neutralization precipitation as well as removal of the precipitation products and disposal of the sludge. Now the cleaned wastewater is delivered to the sewer system.

Measuring pH in plating plants

A pH-value of at least 10 is necessary for cyanide detoxification. Chromate is removed from the wastewater in the acidic range. Here, pH-measurement is used to monitor the plating baths and the detoxification processes. The tecLine pH-electrodes with the JUMO AQUIS 500 pH transmitter/controller are exactly the right products for this task.

Sewer system





Municipal wastewater

Wastewater is treated in sewage treatment plants. Biological, chemical, and mechanical processes are used here. Most of the clogging material is caught by the screening system. Heavy matter, such as particles of sand that are being carried along, should settle here.

The final station of the mechanical treatment stage is the primary settlement tank. All the lighter matter that is still in the wastewater and which has not been removed in the grit chamber settles to the bottom of the tank and forms so-called raw sludge. While the pretreated water is forwarded to the aeration tank, the raw sludge is conveyed to the digesters.

The biological treatment of the wastewater takes place in the aeration tank. Before the wastewater gets to this tank, the wastewater is mixed with activated sludge. The sludge

contains countless microorganisms, such as bacteria, that are able to break down the colloidal, organic contaminants dissolved in the wastewater.

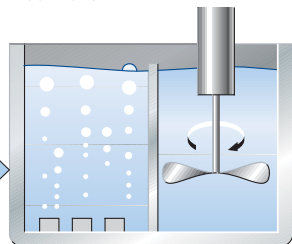
The activated sludge settles in the secondary settlement tank and collects at the bottom.

The collected sludge is either removed and taken back to the aeration tank as return activated sludge or the collected sludge is conveyed to the digesters as surplus activated sludge.

Digestion is the last station of the biological treatment stage. The sludge is stabilized in the digester. Stabilization refers to the most advanced anaerobic degradation of organic compounds with the aid of specific bacteria. These bacteria convert the organic components of the anaerobic digested sludge to biogas.

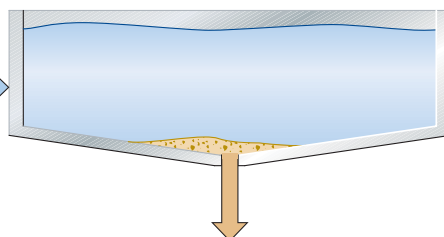
Aeration tank

- Dissolved oxygen
- pH-value
- Temperature
- Indicator
- Controller



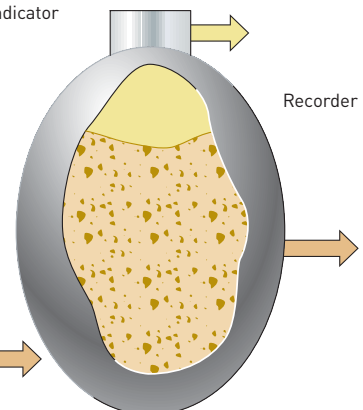
Secondary settlement tank

- pH-value
- Turbidity
- Temperature
- Indicator



Digester

- Liquid level
- Pressure
- Temperature
- pH-value
- Indicator





Services & Support

It is the quality of our products that is responsible for such a high level of customer satisfaction. But our reliable after-sales service and comprehensive support are also valued. Let us introduce you to the key services we provide for our innovative JUMO products. You can count on them – anytime, anywhere.

JUMO Services & Support – so that it all comes together!

Manufacturing Service



Are you looking for a competitive and efficient system or component supplier? Regardless of whether you seek electronic modules or perfectly fitting sensors – either for small batches or mass production – we are happy to be your partner. From development to production we can provide all the stages from a single source. In close cooperation with your business our experienced experts search for the optimum solution for your application and incorporate all engineering tasks. Then JUMO manufactures the product for you. As a result you profit from state-of-the-art manufacturing technologies and our uncompromising quality management systems.

Customer-specific sensor technology

- Development of temperature probes, pressure transmitters, conductivity sensors, or pH and redox electrodes according to your requirements
- A large number of testing facilities
- Incorporation of the qualifications into application
- Material management
- Mechanical testing
- Thermal test



Electronic modules

- Development
- Design
- Test concept
- Material management
- Production
- Logistics and distribution
- After-sales service



Metal technology

- Toolmaking
- Punching and forming technology
- Flexible sheet metal machining
- Production of floats
- Welding, jointing, and assembly technology
- Surface treatment technology
- Quality management for materials





Information & Training



Would you like to increase the process quality in your company or optimize a plant? Then use the offers available on the JUMO website and benefit from the know-how of a globally respected manufacturer. For example, under the menu item "Services and Support" you will find a broad range of seminars. Videos are available under the keyword "E-Learning" about topics specific to measurement and control technology. Under "Literature" you can learn valuable tips for beginners and professionals. And, of course, you can also download the current version of any JUMO software or technical documentation for both newer and older products.

Product Service



We have an efficient distribution network on all continents available to all of our customers so that we can offer professional support for everything concerning our product portfolio. Our team of professional JUMO employees is near you ready to help with consultations, product selection, engineering, or optimum use of our products. Even after our devices are commissioned you can count on us. Our telephone support line is available to give you answers quickly. If a malfunction needs to be repaired on site our Express Repair Service and our 24-hour replacement part service are available to you. That provides peace of mind.

Maintenance & Calibration



Our maintenance service helps you to maintain optimum availability of your devices and plants. This prevents malfunctions and downtime. Together with the responsible parties at your company we develop a future-oriented maintenance concept and are happy to create all required reports, documentation, and protocols. Because we know how important precise measurement and control results are for your processes we naturally also professionally calibrate your JUMO devices – on site at your company or in our accredited DAkkS calibration laboratory for temperature. We record the results for you in a calibration certificate according to EN 10 204.



OneTemp[®] pty ltd
MEASURE | CONTROL | RECORD
www.onetemp.com.au
1300 768 887

www.jumo.net