JUMO

Water and wastewater engineering

Innovative solutions for your success

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Dear Reader,

Water – man's most important food resource. As a manufacturer, you know that 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. It does not matter 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 sixty years, and consequently has been a competent partner to the water and wastewater engineering industry.

We place special importance on regular new development cycles, on continuous improvements in existing products and on continually making production methods more economical, because this is the only way to achieve the highest level of innovation for you.

Here at JUMO, we also provide only the best for your water and wastewater engineering, 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 also be willing to get together with you to develop individually customized solutions to meet your requirements.

With this in mind – here's to consistently good water quality!

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

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 take note of your needs and customize the pH electrodes during production to optimize them to your application.

Pressure, liquid level and flow rate

Whether pressure, liquid level or flow rate, with JUMO, you are ready for anything. Our pressure measuring instruments 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 (in a digester, for example).

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

JUMO tecLine Lf-VA
Conductive conductivity cells
Type 202924

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

JUMO measuring cells
for free chlorine, chlorine dioxide, ozone, peracetic acid and hydrogen peroxide
Type 202630

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

JUMO MID
Flow rate transmitter
Type 406010

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

JUMO MIDAS C08
Pressure transmitter basic
Type 401002

JUMO PROCESStemp
RTD temperature probe for process technology
Type 902820

Fittings

Simply safe

Whether 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

VA immersion process fitting
Type 202821

JUMO pneumatic retractable assembly
Type 202823

JUMO process fittings
Type 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 housing (JUMO AQUIS 500 pH) with a high protection rating (for example IP 67), or a DIN rail mounting (JUMO ecoTRANS pH 03).

Conductivity cells

Whether involved in desalination of seawater or monitoring the quality of high purity or cooling water, conductivity measurement has an important role to play throughout water and wastewater engineering. JUMO can provide measuring instruments to cover all the current measuring systems on the market – conductive conductivity measurement (2 and 4-electrode systems), and low-maintenance inductive measuring with JUMO CTI-500 and JUMO CTI-750.

JUMO dTRANS O2 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
Type 202560/202565/202566/202568

JUMO CTI-500 and CTI-750
Inductive conductivity transmitter
with plastic or stainless steel housing
Type 202755, Type 202756

JUMO ecoTRANS pH/Lf03
Microprocessor transmitter/switching device for pH value/ORP, conductivity and temperature
Type 202723, Type 202732

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

Indicators and recorders

Recording, archiving, 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 way. 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, etc. The software is quick and easy to configure, saving you from high application costs.

JUMO di 308
Digital temperature indicator
Type 701550

JUMO LOGOSCREEN 500 cf
Paperless recorder with CF card,
RS232/485, Ethernet
Type 706510

JUMO LOGOSCREEN es
Paperless recorder with CF card, RS232/485,
Ethernet, FDA 21 CFR Part 11 conform
Type 706560

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

JUMO SVS3000
Visualization software
Type 700755

Drinking water

Drinking water is man's most important food resource and nothing else can replace it.
Whichever method of water treatment you use, JUMO pH, conductivity and level sensors support the process, and ensure 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.

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. Particularly suitable is the level measuring probe of JUMO MAERA S28, a piezo-resistive sensor with a measuring cell. This has an integrated surge protection, the impact of the electronic components in a level measuring probe integrate lightning protection. With the additional high overload capacity and long-term stability it offers you a high level of security.

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

JUMO tecLine Lf-VA
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
Type 202560/202565/202566/202568

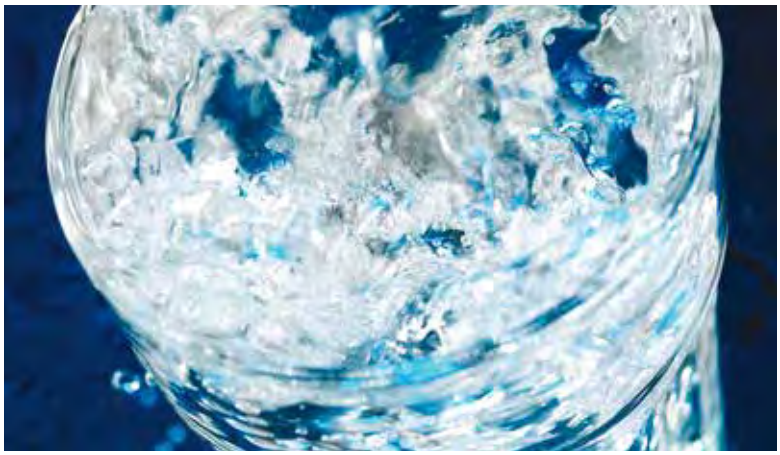
JUMO dTRANS pH/CR/AS/02
Transmitter/controller series for pH value, ORP, chlorine, chlorine dioxide, ozone, conductive conductivity and temperature
Type 202551/202552/202553

JUMO measuring cells
for free chlorine, chlorine dioxide, ozone, peracetic acid and hydrogen peroxide
Type 202630

JUMO MID
Flow rate transmitter
Type 406010

JUMO LOGOSCREEN 500 cf
Paperless recorder with CF card, RS232/485, Ethernet
Type 706510

JUMO MAERA S28
Level measurement probe
Type 404392



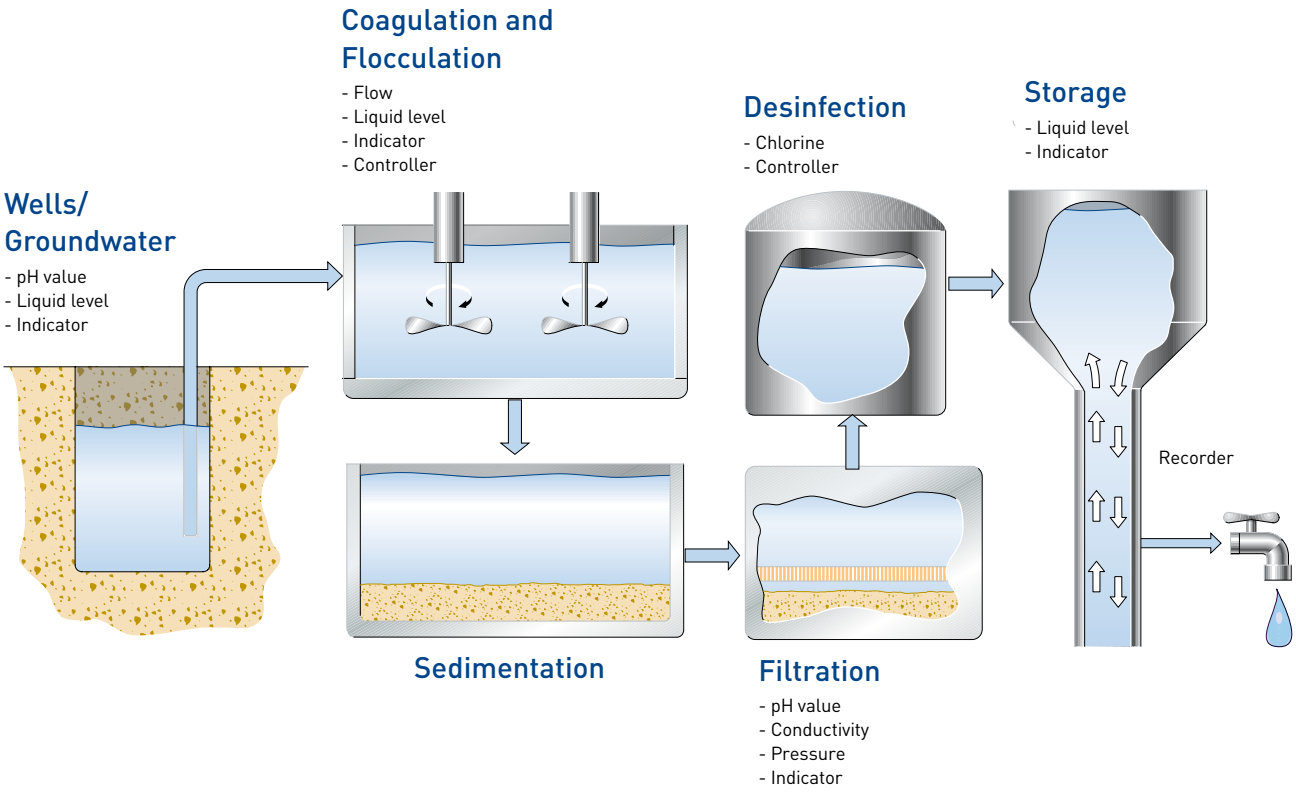
Groundwater

Where does our drinking water come from?

Drinking water is man's most important food resource and nothing else can replace it. Drinking water treatment is understood to mean the treatment of spring water, surface water or groundwater. The term spring water covers water naturally emerging from the earth in water sources. Surface water is taken from standing or flowing bodies of water above ground. Dam reservoir, lake 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 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. With the aid of disinfection, microorganisms are either removed from the water or killed, to obtain hygienically perfect water.



Brackish water and seawater

Brackish water and seawater desalination

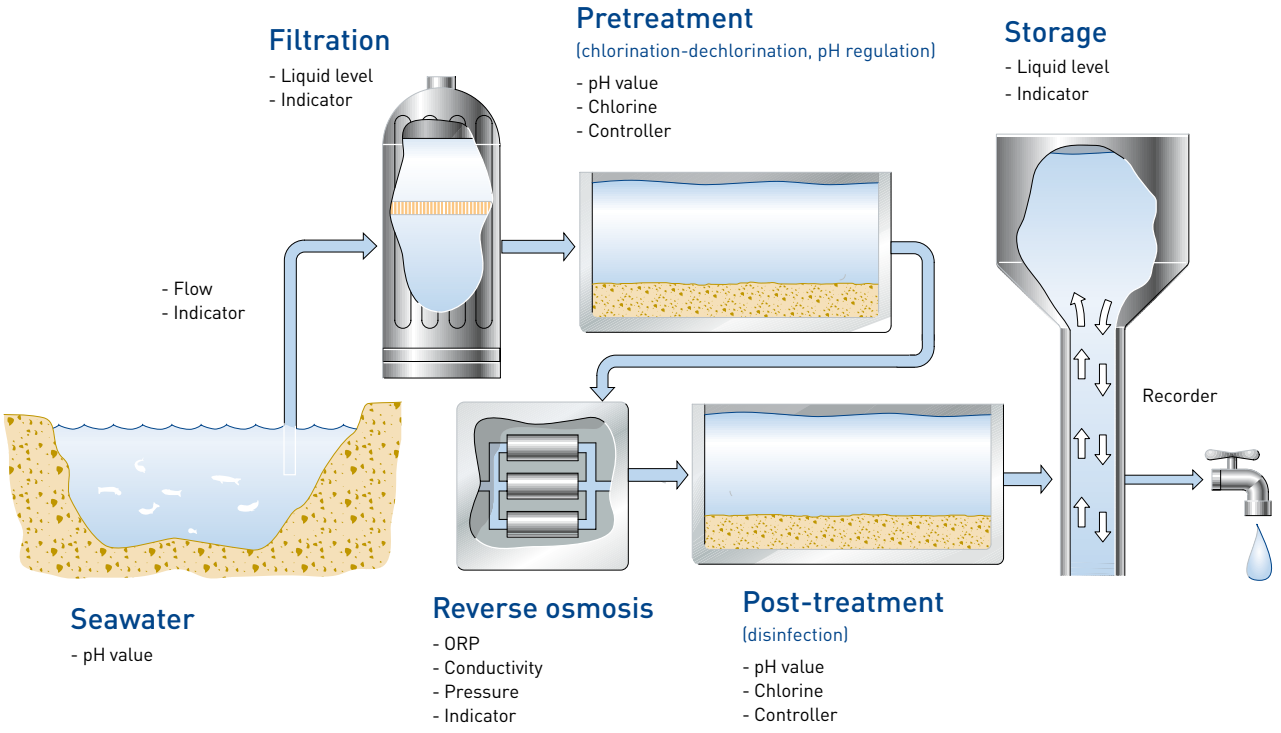
According to UNESCO, obtaining a supply of drinking water is highly problematic in many parts of the world. A limited amount of water is available on our planet and 97.5% of the water in the world is salty. Because the availability of drinking water is limited, seawater is an important source of drinking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

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 is the JUMO MIDAS C08 pressure transmitter.



Swimming pool water

Swimming is a popular and healthy leisure activity – as long as the water is of 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, as well as the risk of corrosion, and skin and 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

The disinfectant content must also be determined weekly. With chlorine, for example, this is ideally between 0.3 and 0.6mg/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.

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

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
Type 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
Type 202551/202552/202553

JUMO LOGOSCREEN 500 cf
Paperless recorder with CF card, RS232/485, Ethernet
Type 706510

JUMO measuring cells
for free chlorine, chlorine dioxide, ozone, peracetic acid and hydrogen peroxide
Type 202630

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

JUMO surface-mounting thermostat
Type 603026

JUMO ecoTRANS pH/Lf03
Microprocessor transmitter/switching device for pH value/ORP, conductivity and temperature
Type 202723, Type 202732

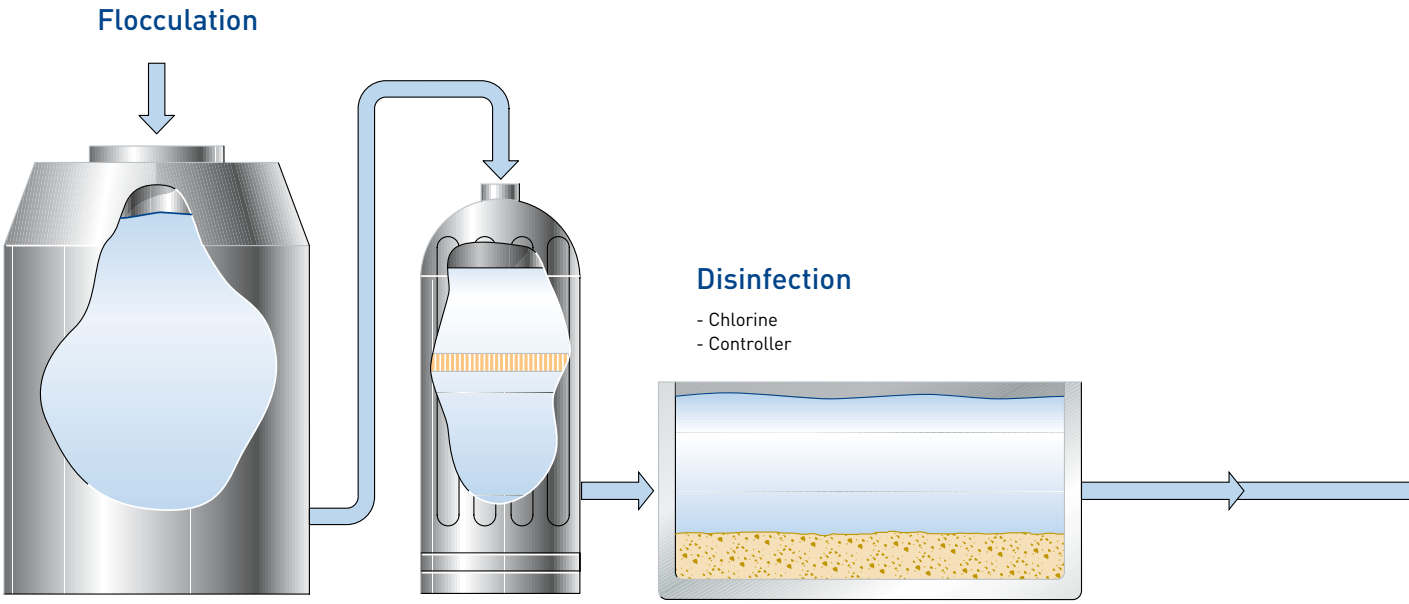
Swimming pool water production

Swimming is a popular and healthy leisure activity. As there are certain risks involved in swimming in swimming pools, such as infections, swimming pools must always be able to demonstrate a guaranteed water quality. So 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.

Chlorintion is the most commonly used method for water disinfection. The usual procedure applied in practice is to first prepare a chlorine gas or hypochlorite solution in water, and then to add an appropriate quantity of this to the water to be treated.

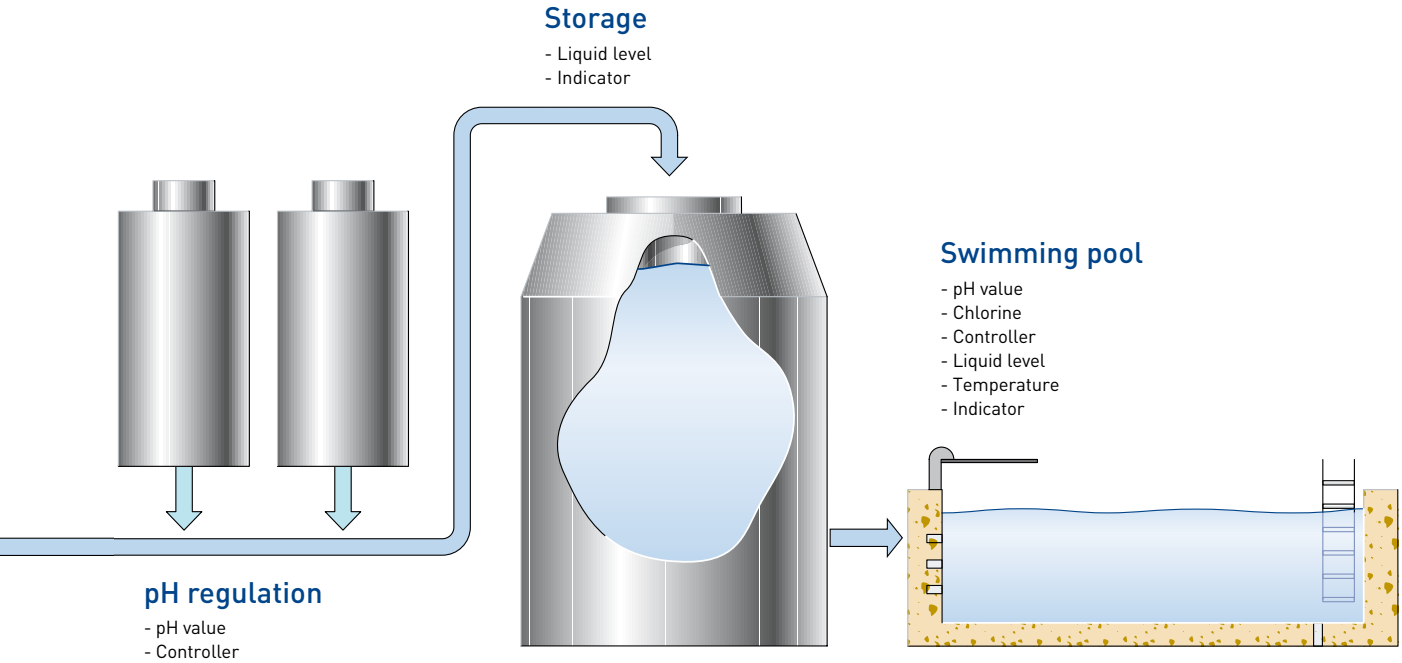
When the water is treated, the aim is for as few, undesirable by-products as possible to be formed by disinfection. To a certain extent, this can be controlled by the conditions (amount of chlorine, temperature, pH value) prevailing at the time of disinfection.



Level measurement

The term "pool hydraulics" is understood to mean 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 where it goes to a balance tank.
This tank is designed so that when the pool is being used, it can hold the volume of water that is displaced and when the pool is not being used, it has sufficient water stored for back washing.

If the water level is measured in the balance tank, the filter pump can be protected against dry-running because of insufficient water in the balance tank, fresh water can be admitted to the swimming pool if back washing has left too little water in the swimming pool and the pump can be switched back on if there is too much water in the balance tank/overflow tank.
The level of water can be measured hydrostatically. The level measurement probes available for unpressurised or open tanks are specifically designed measuring instruments for determining liquid levels. JUMO can provide you with a wide variety of level measurement probes geared to your technical requirements, with different materials such as stainless steel or plastic, with process and electrical connections and with different special cables.



High purity water

High purity water is required in a wide variety of production processes, for example, 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, with JUMO products, you get pure water of a quality that you can rely on.

pH measurement in high purity water

pH measurement in high purity water is a stipulation in many areas. But because of the low conductivity and low ionic strength of high purity water, there are technical problems associated with 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 high purity water by means of conductivity is the safest and most reliable method.
A complete measurement chain for conductivity in high purity water comprises a JUMO AQUIS 500 CR, JUMO dTRANS CR 02 or JUMO ecoTRANS Lf 03 high purity water transmitter/controller, a JUMO tecLine Lf-VA conductivity cell with integrated temperature probe and a connecting cable. JUMO high purity 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
Type 202723, Type 202732

USP<645>

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
Type 202560/202565/202566/202568

USP<645>

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

USP<645>

JUMO tecLine Lf-VA CR
Conductive conductivity cells
in stainless steel or titanium
Type 202924

ASTM-Certificate

JUMO process and manual quick-change fittings
in stainless steel
Type 202822/202825/202831

JUMO LOGOSCREEN es
Paperless recorder with CF card, RS232/485, Ethernet, FDA 21 CFR Part 11 conform
Type 706560

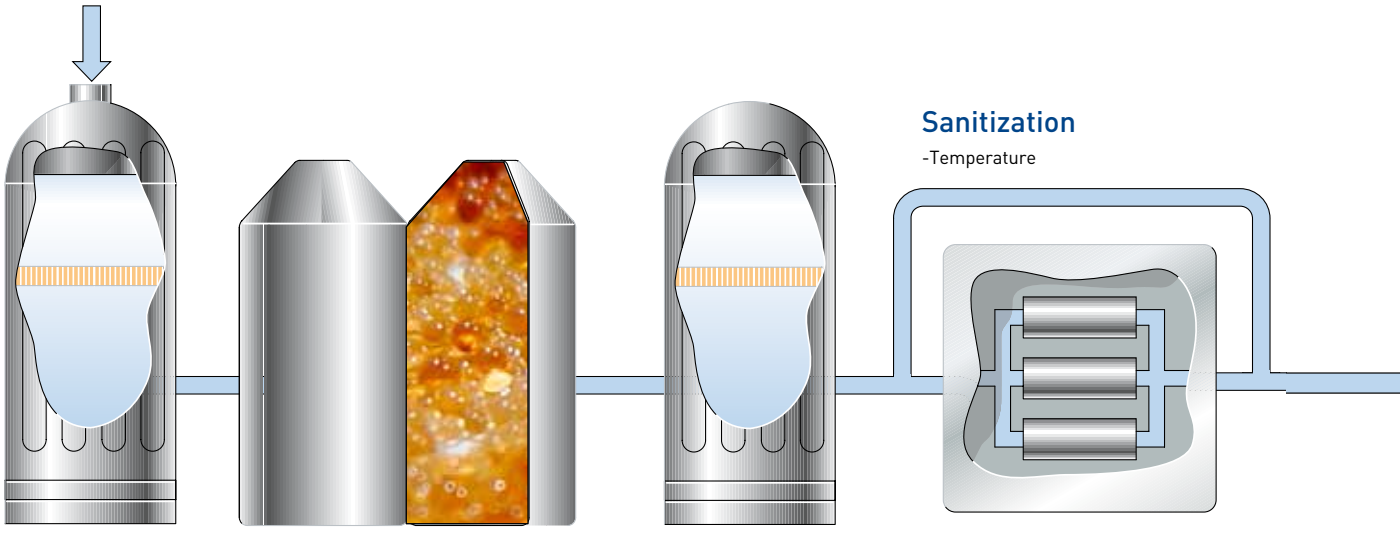
JUMO MIDAS C08
Pressure transmitter basic
Type 401002

High purity water in pharmaceutical industry

The production of high purity water is one of the most important processes in the pharmaceutical industry. Without it, it would not be possible to manufacture most active substances, because high purity water quality is a prerequisite for consistently high product quality. Monitoring the quality of high purity water by means of conductivity is the safest and most reliable method.

The quality of high purity water (pure water, high purity water, water for injection, etc.,) is described in several standards and recommendations, such as ASTM (American Society For Testing and Materials), 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 high purity water meet all the requirements.



Prefiltration
- pH value
- Pressure
- Indicator

Softening (ion exchanger)
- Conductivity

Filtration

Sanitization
-Temperature

Reverse osmosis
- Conductivity
- Pressure
- Indicator

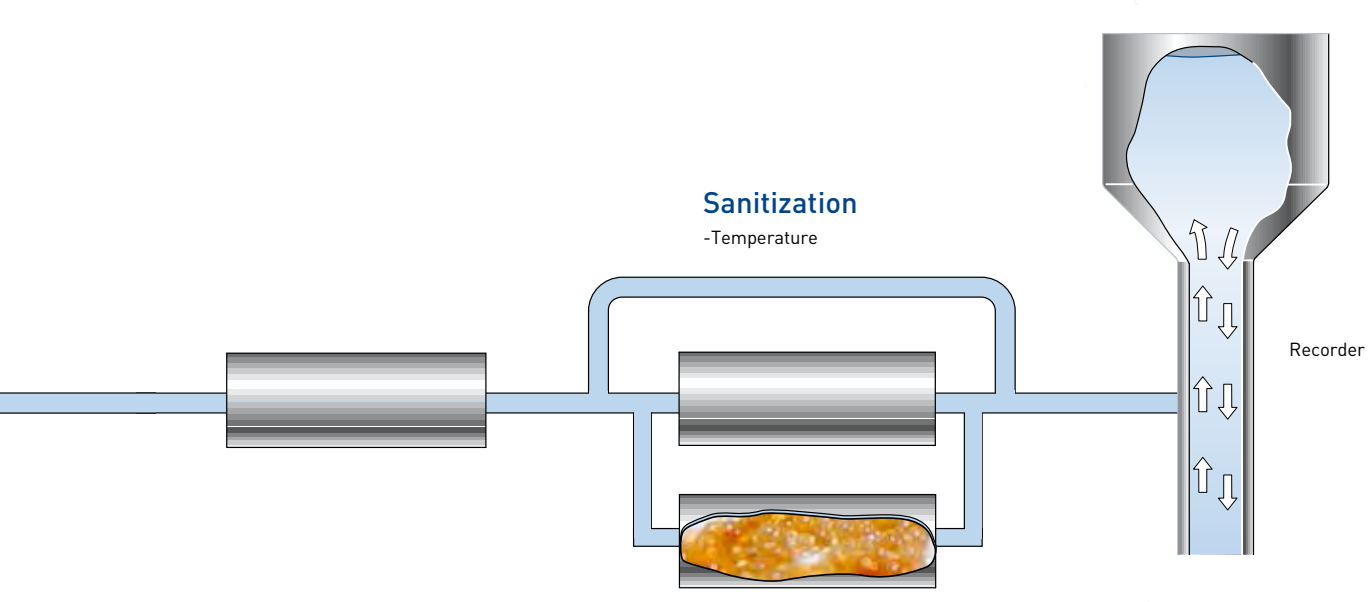
High purity water production

High purity water is required in a wide variety of production processes, for example, 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 fitted in both before and afterwards, to meet the demands being made on the high purity water. Common production processes include reverse osmosis, ion exchanger, ultrafiltration and electrochemical deionization.

Ion exchangers contain mobile ions. Because of their chemical structure, they are able 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 high purity water 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 plants. Cooling water is used as the heat carrier in technological processes. It is useful to monitor water quality everywhere that water or aqueous solutions are used as the cooling medium or as a cooling additive.
JUMO inductive conductivity sensors are the ideal solution for monitoring cooling water quality.

Dilution control in cooling tower

It is useful to monitor water quality everywhere that water or aqueous solutions are used as the cooling medium or as a cooling additive. 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 instruments 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 integrated into existing systems easily and with no problems.

JUMO tecLine Rd
ORP combination electrodes
Type 201025

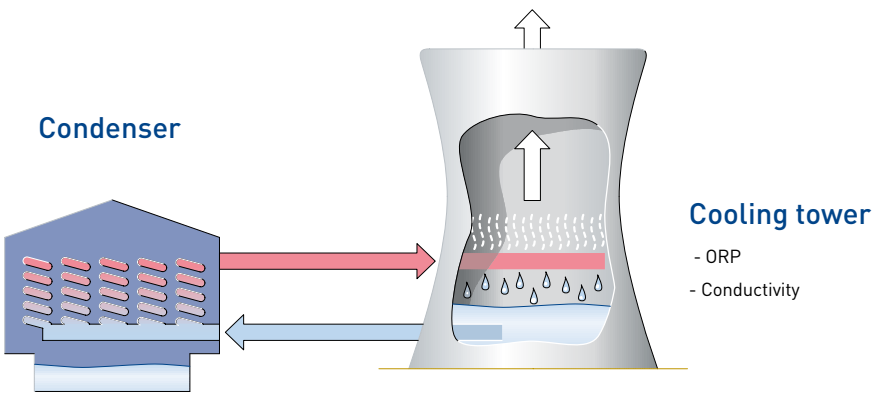
JUMO measuring cells
for free chlorine, chlorine dioxide, ozone, peracetic acid and hydrogen peroxide
Type 202630

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
Type 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
Type 202551/202552/202553

JUMO ecoTRANS pH/Lf03
Microprocessor transmitter/ switching device for pH value/ORP, conductivity and temperature
Type 202723, Type 202732

JUMO CTI-500
Inductive conductivity transmitter with plastic housing
Type 202755, Type 202756



Wastewater

Wastewater is treated in sewage treatment plants. Biological and chemical processes are used here, as well as mechanical ones.
Whether pressure, liquid level or flow rate, with JUMO, you are ready for anything. Our pressure measuring instruments 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 (O_2). 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. It is absolutely essential to determine and continuously regulate the oxygen content in the aeration tank. The JUMO dTRANS O2 01 two-wire transmitter provides you with a sturdy and cost-effective measuring instrument.

Monitoring digestion

To survive in the digester, the bacteria need a constant temperature of 35 to 37 °C. This means that it is absolutely essential to monitor the temperature in the digester. The JUMO PROCESStemp RTD temperature probe with ATEX approval and the JUMO di 308 digital indicator are exactly the right products for this.

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 explosion-risk areas.

To monitor measurements, you can connect your measuring points to the JUMO LOGOSCREEN nt recorder.

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

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
Type 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
Type 202551/202552/202553

Explosion-protected surface-mounting Thermostat ATH-Ex Series
Type 605041

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

JUMO dTRANS O2 01
2-wire transmitter for dissolved oxygen (DO)
Type 202610

JUMO ecoTRANS pH/Lf03
Microprocessor transmitter / switching device for pH value / ORP, conductivity and temperature
Type 202723, Type 202732

JUMO dTRANS p33
Pressure transmitter and level measurement probe
Type 404753

JUMO dTRANS p20
Process pressure transmitter with display
Type 403025

JUMO PROCESStemp
RTD temperature probe for process technology
Type 902820

Industrial wastewater

Industrial wastewater is understood to mean the wastewater that arises from industrial production processes (in the food, paper, chemical, textile and metal industries, for example). 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.

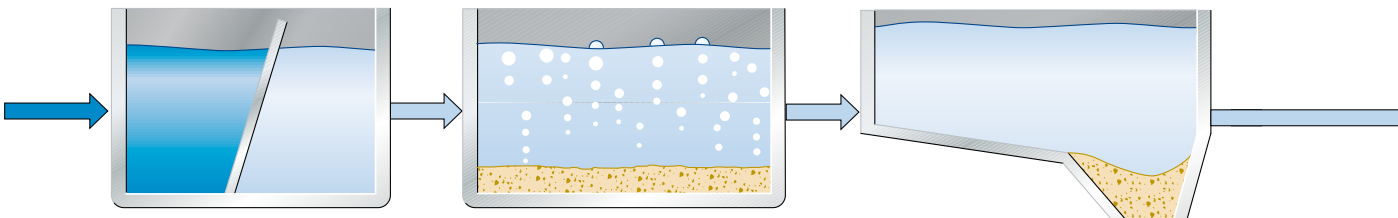
Example: Treating wastewater from electroplating

In a plating bath, objects made of base metals, such as zinc or iron, are given a protective finish. This can be, for example, a coating of 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, it is followed by the next stages of neutralization precipitation and removal of the precipitation products, and disposal of the sludge, before 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 product for this.

Sewer system



Screening system
- Liquid level
- Indicator

Grit chamber
- pH value
- Conductivity

Primary settlement tank

Domestic wastewater

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

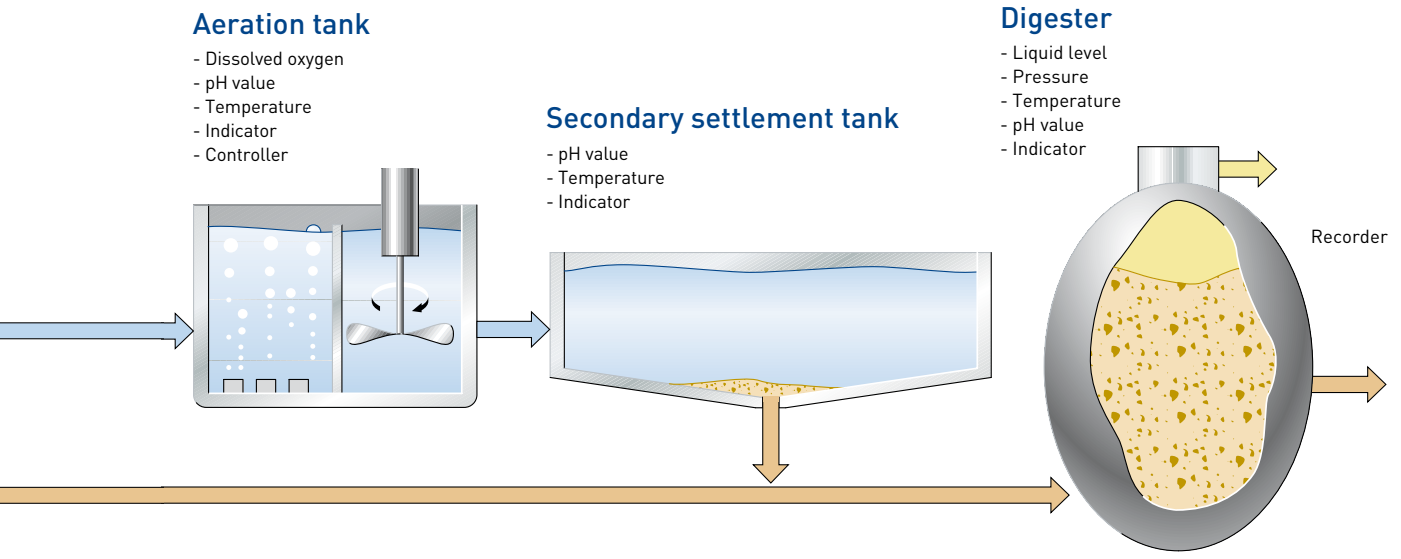
The final station of the mechanical treatment stage is the primary settlement tank. All the lighter matter that is still in the wastewater and which has not been removed in the grit chamber, settles to the bottom of the tank and forms so-called raw sludge. While the pretreated water is forwarded to the 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, it is mixed with activated sludge. This 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 removed and taken back to the aeration tank as return activated sludge, or 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 is understood to mean 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.



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 appreciated. Let us introduce you to the key services we provide around our innovative JUMO products. You can count on them – anytime, anywhere.

JUMO services & support – so that it all comes together!

Production Service

Are you looking for a competitive and efficient system or component supplier? Whether you seek metal technology, electronic modules or perfectly fitting sensors, whether small batches or mass production, – we will gladly be your partner. From development to production, we can provide all the stages from a single source. Our experts will work together in close collaboration with your company to find the optimum solution for your application, and will take on all the engineering. JUMO will then make the product for you. You will benefit from state-of-the-art production technologies, as well as our uncompromising quality assurance systems.

Customized Sensor Technology

- Development of temperature probes, pressure transmitters, conductivity sensors or pH and redox electrodes as per your requirements
- Numerous test and inspection systems
- Taking over qualification for the application
- Materials management
- Mechanical testing
- Thermal testing

Electronic modules

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

Metal production

- Tool manufacture
- Stamping and forming systems
- Flexible sheet metal working
- Float production
- Welding, jointing, and assembly systems
- Surface engineering
- Material testing service

Information & Training

Would you like to improve your process quality, or optimize one of your company plants? Then take us up on our offer on the JUMO homepage and participate in the know-how of a globally respected manufacturer. Under the "Services & Support" menu item, for example, you will find a highly diverse range of seminars. Available under the keyword "eLearning" are videos on specific measurement and control system topics, and under "Literature", you can find important information for beginners and practitioners. It goes without saying that you can also download the latest version of the JUMO software you require, as well as technical documentation for old and new products.

Product Service

For competent support right across our product portfolio, our customers have recourse at any time to the efficient sales network we maintain on all five continents. Whether you seek advice, a selection of products, engineering or making optimum use of our products, there is always a team of competent JUMO colleagues somewhere nearby, ready to answer your questions. You can count on us after commissioning, as well. You will get a fast response from our telephone support hotline. If an on-site fault has to be eliminated, our express repair service and our 24-hour spare part service are at your disposal. That is real security.

Maintenance & Calibration

Our maintenance service helps you to maintain optimum system and equipment availability. In this way you prevent failure and downtime. We will work out a far-sighted maintenance concept together with your company officers, and will willingly prepare all the requisite reports, documentation and protocols. Because we know how important precise measurement and control results are for your processes, we naturally also undertake the professional calibration of your JUMO instruments on site, at your company premises. We then record the result in a calibration certificate, as defined by EN 10204.

www.jumo.net

Photo credit: Norma-Werk Briey, France

PR 00059 EN/2011-12-08/00532752