LiberAqua

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# SOLUTIONS FOR PROCESS MEASUREMENT

## Instrumentation technologies


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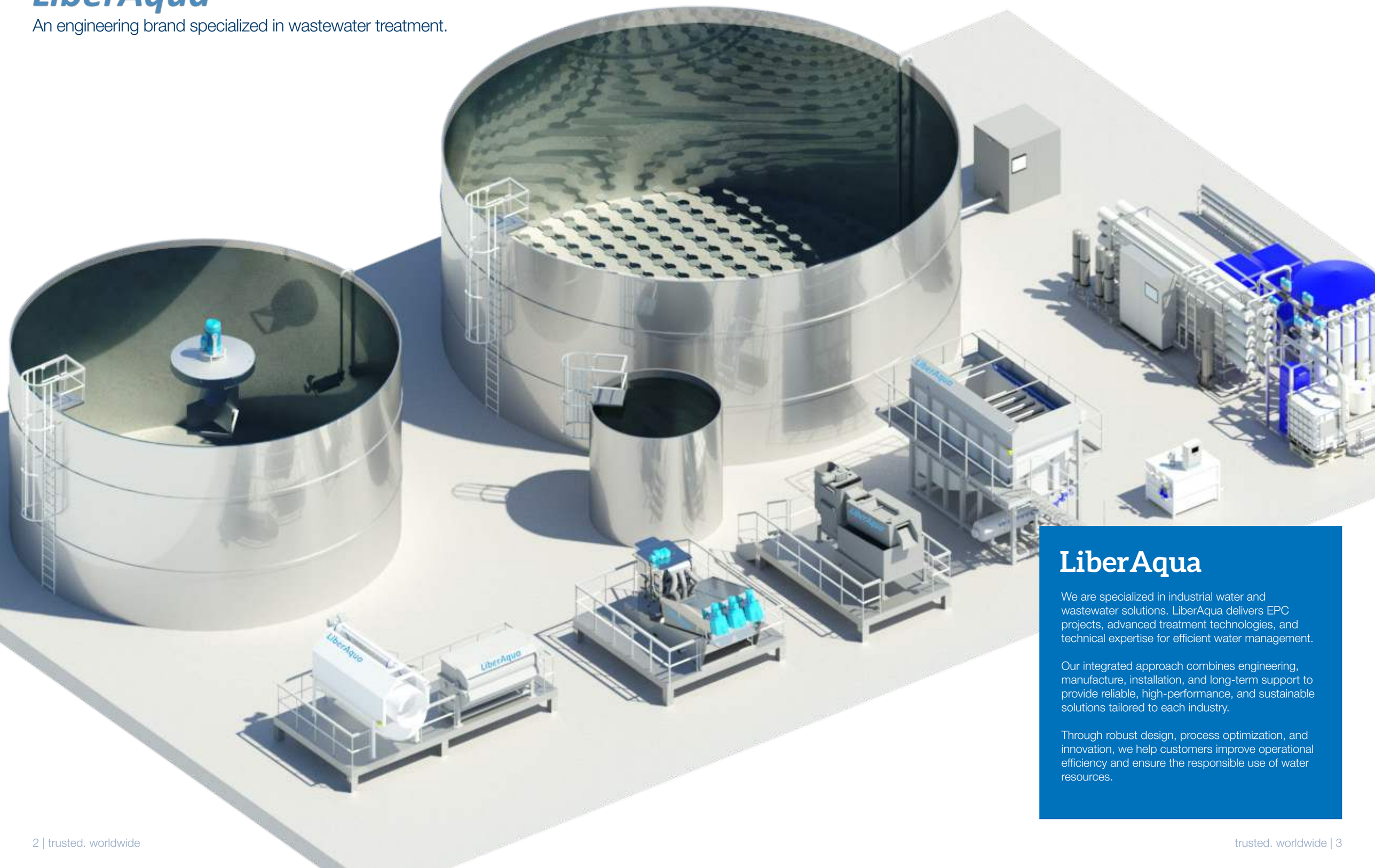
Our Solutions

# *LiberAqua*

An engineering brand specialized in wastewater treatment.




## LiberAqua

We are specialized in industrial water and wastewater solutions. LiberAqua delivers EPC projects, advanced treatment technologies, and technical expertise for efficient water management.

Our integrated approach combines engineering, manufacture, installation, and long-term support to provide reliable, high-performance, and sustainable solutions tailored to each industry.

Through robust design, process optimization, and innovation, we help customers improve operational efficiency and ensure the responsible use of water resources.

## ENHANCED SOLUTIONS

With extensive experience in engineering solutions, specialized services, and manufacturing, LiberAqua provides integrated solutions designed to improve the performance and reliability of water and industrial processes.

To complement its expertise, LiberAqua offers a dedicated range of instrumentation solutions, providing accurate measurement and real-time process information to support smarter control, optimization, and operational efficiency.



## OUR INSTRUMENTATION

Built on the same technical knowledge and commitment to quality, our Instrumentation delivers reliable measurement solutions for critical process parameters.

Our portfolio covers analytical, flow measurement, level, and pressure transmitters instrumentation, designed to meet the requirements of demanding industrial applications.

By combining engineering experience with advanced measurement technologies, LiberAqua enables customers to monitor, control, and optimize their processes with greater accuracy, safety, and confidence.



# RELIABLE PROCESS ANALYSIS

Probes and controllers for reliable process monitoring

## CONTROLLERS


### LMC3111

Multi-parameter controller capable of supporting up to two channels. The first channel's hybrid mode allows for a connection of either analog or digital sensors. The second channel connects digital sensors. This controller can measure a variety of parameters including pH, ORP, conductivity, dissolved oxygen, turbidity, sludge concentration, and more. Its continuous monitoring data can be transmitted to a DCS system via output transmission or communicated with a computer using the Modbus-RTU protocol, via RS485 interface for remote monitoring and logging.

**Specifications**

- IP66 ingress protection, suitable for more complex working conditions.
- High precision output circuit design.
- Storage up to 500,000 data records.
- Adjustable functions.
- Manual and automatic temperature compensation.

**Dual Channel Universal Controller**


### LRC1511

The residual chlorine meter has a built-in sensor, which has the characteristics of high measurement accuracy, fast response time and low maintenance cost. Outputs 4~20mA standard signal and RS485 signal, which can be connected to various regulators, two-position regulators, time proportional regulators, non-linear regulators and classic PID regulators.

**Specifications**

- Easy to use.
- Fast response time, good stability and strong anti-interference ability.
- Difficult to be polluted or blocked.
- Long service life.
- Built to cope with complex working conditions.

**Residual Chlorine Meter**

# RELIABLE PROCESS ANALYSIS

Probes and controllers for reliable process monitoring

## PROBES

### LPH9113

The pH digital electrode is equipped with a digital interface (RS485 × 1). Designed for measuring pH variations in aqueous solutions within the specified measurement range. Supports standard RS485 Modbus RTU communication protocol and enables remote communication with a supervisory system.

**Specifications**
- Power supply and output are isolated to ensure electrical safety.
- Built-in protection circuits for power and communication chips.
- Excellent environmental resistance.
- Easy installation and operation.
- Integrated internal memory retains calibration and configuration data.

**pH Digital Electrode**

### LORP9112

Designed with a digital interface (RS485*1), can be used to measure changes in the pH/ORP value of the aqueous system within the range. It has a standard RS485 Modbus RTU protocol interface function, which can communicate with the host computer remotely.

**Specifications**
- Compact structure, easy to install.
- Isolated power supply design.
- Data stability and anti-interference ability.
- Automatic/manual temperature compensation.
- RS485 interface, supports Modbus RTU protocol.

**ORP Digital Electrode**

### LTDS9112

Equipped with a two-polegraphite sensor, can be used to measure the conductivity and salinity value changes in the aqueous system within the range. Has a standard RS485 Modbus RTU protocol interface function and can communicate with the host computer remotely.

**Specifications**
- Isolated power supply design, data stability.
- Strong anti-interference ability.
- Two-pole graphite conductivity/salinity sensor.
- Corrosion resistance, high stability.
- Built-in temperature sensor.

**Conductivity Digital Electrode**

### LTU9122

Based on the combined infrared absorption scattering method. The infrared light emitted by the light source is scattered by the turbidity in the sample, and converted into an electrical signal by the photodetector. After analog and digital signal processing, the turbidity value of the sample is obtained. Can be widely used for turbidity monitoring in sewage treatment plants, water treatment plants, water stations, surface water, industrial and other fields.

**Specifications**
- Automatic cleaning function.
- Industrial design, protection, dustproof and waterproof.
- Dual-beam infrared scattered light photometer detection.
- Good repeatability and stability.
- RS485 communication.

**Turbidity Electrode**





### LSS10121

Based on the combined infrared absorption scattering method. The infrared light emitted by the light source is scattered by the turbidity in the sample, and converted into an electrical signal by the photodetector. After analog and digital signal processing, the turbidity value of the sample is obtained. Can be widely used for turbidity monitoring in sewage treatment plants, water treatment plants, water stations, surface water, industrial and other fields.

**Specifications**
- Self-developed optical path and receiving structure.
- Real-time Compensation Algorithm.
- Long-term stable online monitoring.
- Comes with cleaning brush.
- High accuracy turbidity measurement.

**MLSS Sensor**

### LSS10122

Suspended solids/sludge concentration sensor is based on the method of combination of infrared absorption scattered light. Infrared light which the photo source sends out scattered by suspended particles in the sample. Converted to electrical signals by the photoelectric detector obtaining a concentration of the sample after treatment by analog and digital signals.

**Specifications**
- Wide measuring range.
- Flexible resolution.
- Higher precision.
- For low flow rates.
- High level of protection.

**Sludge Concentration Electrode**

### LDO8123

The dissolved oxygen sensor measures oxygen concentration in water using fluorescence technology. This sensor contains a fluorescent layer that absorbs blue light and emits red light. Oxygen molecules reduce this fluorescence through a process called quenching. By analyzing the changes in the intensity and lifetime of the emitted light, the sensor can calculate the amount of dissolved oxygen in the water.

**Specifications**
- Multi-parameter measurement.
- Versatile and suitable materials.
- Universal communications protocol.
- Wide temperature storage and operation.
- High resolution.

**Dissolved Oxygen Electrode**

### LCE1511

The built-in chlorine sensor has the characteristics of high measurement accuracy, fast response time and low maintenance cost. The analyzer outputs one (4~20)mA standard signal and one RS485 signal. Can be connected with various regulators, such as two regulators, time-proportional regulators, nonlinear regulators and classical PID regulators according to customer requirements.

**Specifications**
- Accurate measurement and fast response.
- Range can be switched manually.
- Variety of calibration methods.
- Signal remote transmission.
- Automatic temperature compensation.

**Residual Chlorine Electrode**

# SMART FLOW MONITORING

Flow measurement you can trust

## FLOW METERS

### LEF1351

This electromagnetic flow meter does not contain any moving parts, rotating gears, turbines, or bearings. Instead, relies on two electrodes to measure the density of the induced magnetic field that results from an electrically conductive fluid. There is no susceptibility to bearing wear or other mechanical wear-and-tear issues. As for the electrodes and the liner used, these components can be fabricated from a variety of materials to make the magmeter compatible with various electrically conductive fluids.

**Specifications**
- 0.5% F.S measuring accuracy.
- Unaffected by the temperature, pressure, density of the liquid.
- No pressure loss.
- Readings that are unaffected by changes in density or viscosity.
- Flow of fluid can be measured in forward and reverse directions.

**Electromagnetic Flow Meter**

### LTF1351

Connected to the converter through the flow sensor, executes multiple functions such as pulse output, current output, and on-site display. High precision, wide measurement range, simple operation and maintenance. It can be widely used in food, medicine, petrochemical, metallurgy, paper making, and other industries. Suitable for liquids that do not corrode stainless steel 304, 2Cr13, corundum (Al2O3), hard alloy, etc., and are free of impurities such as fibers and particles.

**Specifications**
- High-accuracy.
- Easy to install and maintain.
- Can handle a wide range of flow rates, from low to high velocities.
- Digital and analog output signals.
- Can be constructed from various materials.

**Turbine Flow Meter**

### LCF1111

The ultrasonic open-channel flow meter is designed to measure flow rates in open channels. Its main applications include wastewater treatment plant outfalls, industrial wastewater discharge, municipal sewer systems, and irrigation channels. The instrument uses ultrasonic waves transmitted through the air, applying a non-contact measurement method. Offers high reliability and durability, especially in environments with sticky sludge, corrosive liquids, and other challenging operating conditions.

**Specifications**
- Level measurement.
- 4~20mA remote current output.
- SPDT Relay.
- High storage.
- Open channel flow measurement.

**Ultrasonic Open Channel Flow Meter**

### LVF1111

The vortex flow meter applies the Karman vortex principle. Its used to measure the flow of liquid, gas, steam, and can also measure turbid liquid containing tiny particles and impurities. It is widely used in petroleum, chemical, pharmaceutical, paper making, metallurgy, electric power, environmental protection, food, and other industries.

**Specifications**
- Ability to measure flow accurately and reliably.
- Low maintenance requirements.
- Easy to install and operate.
- Offer excellent long-term stability.
- Small pressure loss, wide range, high-accuracy.

**Vortex Flow Meter**





### LRF1111

This electromagnetic flow meter does not contain any moving parts, rotating gears, turbines, or bearings. Instead, relies on two electrodes to measure the density of the induced magnetic field that results from an electrically conductive fluid. There is no susceptibility to bearing wear or other mechanical wear-and-tear issues. As for the electrodes and the liner used, these components can be fabricated from a variety of materials to make the magmeter compatible with various electrically conductive fluids.

**Specifications**
- 0.5% F.S measuring accuracy.
- Unaffected by the temperature, pressure, density of the liquid.
- No pressure loss.
- Readings that are unaffected by changes in density or viscosity.
- Flow of fluid can be measured in forward and reverse directions.

**Remote Electromagnetic Flow Meter**

### LVAF1111

Measurement is based on the height of the metal float inside the conical tube. The pressure difference generated as the fluid passes through the gap between the float and the tube wall balances the weight of the float. As the flow rate increases, the float rises higher, resulting in a larger annular flow area. The metal tube rotameter features a 304/316 stainless steel construction and is suitable for measuring the flow of liquids, gases, and steam. It is particularly well suited for low-flow and micro-flow applications, as well as for high-temperature, high-pressure, corrosive, conductive, or non-conductive fluids.

**Specifications**
- Suitable for small diameter and low velocity medium flow measurement.
- Data recovery, data backup and power failure protection.
- Wide range ratio 10:1.
- Cumulative/instantaneous flow display.
- Two-wire with upper and lower limit relay alarm function.

**Variable Area Flow Meter**

### LCMF1411

Developed based on the principle of the Coriolis force. Can directly measure the mass flow rate, density, and temperature of the fluid in a closed pipeline. It can be widely applied in industries such as chemical engineering, petroleum, food, pharmaceuticals, and paper making.

**Specifications**
- Wide measuring range and high accuracy.
- Directly measures the mass flow of fluids.
- Wide range of applications.
- Reliable operation.
- Low maintenance.

**Coriolis Mass Flow Meter**

### LWU2269

The wall-mounted ultrasonic flow meter is designed to measure the fluid velocity of liquid within a closed conduit. The transducers are a non-contacting, clamp-on type, which will provide benefits of non-fouling operation and easy installation. Can be applied to a wide range of pipe flow measurements. Applicable liquids include pure liquids as well as liquid with small quantity of tiny particles.

**Specifications**
- Easy to operate.
- Low voltage, multi-pulse technology.
- Powerful recording function.
- Accuracy: ±1%.
- Linearity: 0.5%.

**Wall-Mounted Ultrasonic Flow Meter**

# PRECISION LEVEL MEASUREMENT

Solutions for continuous and point level measurement

## TRANSMITTERS

### LUL1411

The ultrasonic level transmitter is a non-contact and easy-to-install measurement device. Its able to meet the every-day needs of commercial production, as well serving a more specialized role in the technologically advanced industries. Unlike other level indicators with limited uses, the easy-to-install ultrasonic level indicator is a highly accurate device with enough specialized uses to ensure that the needs of the customer are met.

**Specifications**
- Easy installation and low operating costs.
- Not affected by material properties.
- Excellent environmental resistance.
- Integrated keypad with security code.
- Can be used in various applications.

**Ultrasonic Level Transmitter**

### LSL1371

The submersible liquid level transmitter uses a high-performance diffused silicon piezoresistive pressure sensor to accurately measure hydrostatic pressure and convert it into standard output signals (current, voltage, or RS485). With high accuracy, compact design, and easy installation, it is suitable for liquid level measurement and control in industries such as chemical processing, power generation, municipal water supply, and hydrological monitoring.

**Specifications**
- High performance.
- Submersible measurement, convenient for installation.
- Multiple protection structure design.
- Various types, suitable for different industrial fields.
- Anti-corrosive stainless steel material.

**Submersible Liquid Level Transmitter**

### LRL2013

The radar level meter adopts a 26 GHz high-frequency radar sensor, with a maximum measuring range of up to 70 meters. Featuring an optimized antenna design and advanced signal processing technology, it provides fast and accurate measurements. The instrument is suitable for challenging applications, including reactors, solid material silos, and complex industrial environments.

**Specifications**
- Small antenna size, easy to install.
- No corrosion or bubble effect.
- High signal noise ratio.
- High frequency measurement of solids.
- Beam angle is small, the energy is concentrated.

**Radar Level Transmitter**

### LSLM21371

The submersible level transmitter is designed for demanding applications involving sludge, slurry, and turbulent liquids. It provides continuous level measurement through hydrostatic pressure sensing with a 4~20 mA output signal. Featuring a 316 stainless steel construction and diaphragm seal design, it ensures reliable operation in harsh environments.

**Specifications**
- Non-clogging and damage resistant to floating solids.
- Durable construction for reliable, long life in harsh environments.
- Diaphragm is protected from physical damage and turbulence.
- Added weight helps hold transmitter in place.
- Excellent chemical compatibility for wide application use.

**Submersible Liquid Level Transmitter**





# ADVANCED PRESSURE CONTROL

Reliable instrumentation for precise pressure measurement

## TRANSMITTERS

### LPT1411

The pressure transmitter is a device based on a pressure sensor that integrates an electronic circuit to convert the sensor's millivolt signal into a standard current output signal for long-distance transmission. It can be easily connected to computers, control instruments, intelligent meters, PLCs, and other automation systems. Supports long-distance signal transmission and adopts a standard current output method for reliable measurement and control.

**Specifications**
- Compact structure and easy installation.
- High stability, high reliability.
- Anti-vibration, anti-radio frequency interference.
- High precision, all stainless steel structure.
- Micro amplifier, voltage, current, RS485 signal output.

**Pressure transmitter**

### LPT1461

The flush diaphragm pressure transmitter uses a corrugated diaphragm to directly sense pressure. Its flush diaphragm design prevents fouling, clogging, and the buildup of viscous or sanitary-sensitive media. Featuring a compact design, lightweight construction, and excellent long-term stability, it is widely used in the food, pharmaceutical, beverage, and sanitary process industries.

**Specifications**
- Compact structure and easy installation.
- Advanced diaphragm/oil-filled isolation technology.
- High stability and high reliability.
- Anti-vibration, anti-radio frequency interference.
- Micro amplifier, voltage, current, RS485 signal output.

**Flat Membrane Pressure Transmitter**

### LDPT1461

The differential pressure transmitter is designed to measure the flow of liquids, gases, and steam, as well as liquid level, density, and pressure. It provides a standard 4~20 mA DC output proportional to the measured differential pressure. Featuring a highly accurate and stable sensor, also measures static pressure, which can be displayed on the integrated indicator or monitored remotely via HART communication. Additional features include fast response, remote configuration, self-diagnostics, and optional high/low pressure alarm outputs.

**Specifications**
- Excellent static pressure measurement performance.
- High-precision monocrystalline silicon (Mono c-Si) sensing element.
- Optional multi-parameter output.
- Measuring range: 0–1 kPa to 3 MPa.
- Accuracy: ±0.075% of span.

**Differential Pressure Transmitter**

### LPT4111

The pressure transmitter features a high-precision silicon pressure sensor combined with a microprocessor for accurate measurement and advanced field communication. It is available in a wide range of configurations, including gauge pressure, absolute pressure, differential pressure, and high static pressure models, making it suitable for various industrial process applications.

**Specifications**
- High precision.
- Good stability.
- Wide measuring range.
- Fast response time.
- Compact and durable design.

**Monocrystalline Silicon Pressure Transmitter**

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