

# UR-MDC Universal Controller System

Smart Control for pH, Conductivity, and Beyond



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## Overview

The **UR-MDC Universal Controller** is a next-generation, multifunctional transmitter designed for precise monitoring and control of key water quality parameters such as **pH**, **conductivity**, **ORP**, and **TDS**.

It is engineered to accept multiple sensor types, allowing flexible configuration using our **UR-pH5016** pH electrode or **UR-TDS8001** conductivity probe — all within a single intelligent platform.

Designed for **industrial, laboratory, and environmental applications**, the **UR-MDC ensures accuracy, reliability, and simplicity** in one compact system.



## Applications:

- Water & wastewater treatment plants
- Chemical and pharmaceutical industries
- Food & beverage production
- Cooling towers and boilers
- Environmental & aquaculture monitoring
- Power generation and desalination systems

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## Key Features:

- **Dual Sensor Compatibility:** Works seamlessly with both pH/ORP and conductivity/TDS probes.
- **Universal Input Design:** Smart input recognition allows automatic detection of connected sensor type.
- **High Accuracy Measurement:**  $\pm 0.02$  pH,  $\pm 2$  mV (ORP),  $\pm 2.5\%$  of reading (Conductivity).
- **Temperature Compensation:** Integrated Pt100 / Pt1000 / NTC10K sensor for automatic correction.
- **Flexible Outputs:**
  - Dual isolated 0/4–20 mA analog outputs
  - RS-485 Modbus-RTU communication
  - Three programmable relay contacts for alarms and cleaning control
- **User-Friendly Interface:**
  - 3.5" high-contrast LCD display
  - Multi-language menus
  - Data logging with graphical trend display
- **Robust Design:** IP66-rated enclosure suitable for wall or panel mounting.

## UR-pH5016 Sensor:

### Precision pH and ORP Measurement

- Range: 0–14 pH
- Zero potential:  $7 \pm 0.5$  pH
- Slope:  $\geq 98\%$
- Low impedance glass membrane for stable signal
- Built-in temperature compensation
- Suitable for industrial wastewater, pure water, and process control



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## UR-TDS8001 Sensor:

### Reliable Conductivity and TDS Monitoring

- Measuring range: 0–20 mS/cm
- Accuracy:  $\pm 2.5\%$
- Material: PPS body with integrated temperature sensor
- Digital RS-485 Modbus output
- Excellent chemical resistance and anti-interference performance
- Ideal for industrial water, RO systems, and environmental monitoring



## Single Parameter Monitoring Panel (SPMP):

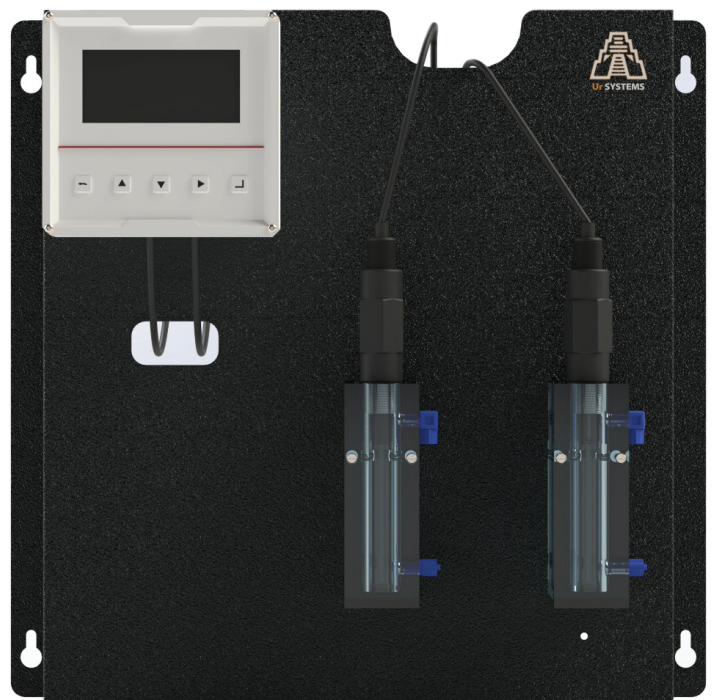
### Compact, Ready-to-Use Monitoring Solution

The **UR-SPMP** is a pre-assembled panel system built around the UR-MDC controller.

Each panel is configured to monitor a single parameter (pH, ORP, or Conductivity) and includes:

- Mounted controller and sensor
- Pre-wired power and signal lines
- Integrated display and output terminals

This plug-and-play design simplifies installation and reduces downtime — simply connect power and begin monitoring.



## Technical Specifications

Product	Function	Range	Output	Communication
<b>UR-MDC Controller</b>	Universal pH / Conductivity / ORP / TDS controller	pH: -2.00 – 16.00 • Cond: 0 – 20 mS/cm	0/4–20 mA × 2, 3 × Relay	RS-485 (Modbus-RTU), Optional NB-IoT
<b>UR-pH5016 Sensor</b>	pH / ORP probe	0 – 14 pH / –2000 – 2000 mV	Analog	Temperature compensation
<b>UR-TDS8001 Sensor</b>	Conductivity / TDS probe	0 – 20 mS/cm	RS-485 Digital	Built-in temperature sensor
<b>UR-SPMP Panel</b>	Single parameter system	Depends on configuration	Relay / Analog	Optional Modbus

### Why Choose the UR-Series:

- **Universal Compatibility** – One controller for multiple parameters
- **Industrial Reliability** – Built for harsh environments
- **Flexible Integration** – Compatible with most PLC / SCADA systems
- **Compact & Modern Design** – Sleek front interface, intuitive operation
- **Technical Support & Customization** – Panels and sensors tailored to your process

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