Integrated R&D & Manufacturing: Kacise Builds Water Quality Sensor Brand Moat with Multi-Parameter & Global Reach

Integrating R&D, manufacturing and sales, specializing in water quality monitoring sensors, ultrasonic level sensors, capacitive and radar level sensors.



XI'AN KACISE OPTRONICS TECH CO., LTD

CALIFORNIA, CA, UNITED STATES, September 15, 2026 / EINPresswire.com/ -- XI'AN, China — XI'AN KACISE OPTRONICS TECH CO., LTD. (Kacise), a manufacturer of water quality sensors and level measurement instruments founded in 2014, develops, manufactures and sells its product lines from a single operational base in Xi'an, Shaanxi Province, China. Company data records a 40,000 m² production facility with an annual capacity of 120,000 units and an export ratio of 70%, with the European Union and the United States identified as its main markets.

The catalogue covers dissolved oxygen, chemical oxygen demand, chlorophyll-a, ammonia nitrogen, nitrite, chloride, salinity, total dissolved solids, suspended solids, oil-in-water, ORP, pH, residual chlorine and turbidity, alongside multi-parameter analyzers and controllers that combine those measurements in one system. A second product family covers ultrasonic, capacitive and radar level measurement for tanks, reservoirs, open channels and wastewater pits.

Industry Context: Online Monitoring Reshapes Sensor Requirements

The expansion of water monitoring networks is measurable in third-party market data. Grand View Research valued the global water quality sensor market at USD 5.74 billion in 2024 and projects USD 9.10 billion by 2030, a compound annual growth rate of 8.1%. The same research house reports that Asia Pacific accounted for 46.5% of market revenue in 2023, with China identified as a major growth market.

A separate market estimate published by WaterTech, citing Grand View Research, put the global water quality monitoring systems market at USD 5.8 billion in 2024, with sensors the largest single segment at a 45% share. TechSci Research projects IoT-enabled water quality management to grow at a CAGR of 16.23% through 2030.

These figures matter to specification and procurement teams because they describe a shift in what a sensor is expected to do. Analogue, single-parameter instruments are increasingly replaced by digital probes that carry several measurements, transmit over standard industrial protocols and connect to remote data platforms. For buyers in the awareness and research phase, that changes the questions worth asking of any supplier: how many parameters a single platform can carry, whether the output protocol is standardized, and whether the manufacturing base behind the product can sustain supply across a multi-year monitoring programme.

Manufacturing and Development at One Site

Kacise's stated position in that supply landscape rests on a vertically integrated structure. The company, established in 2014 and headquartered in Xi'an, operates a 40,000 m² manufacturing facility with an annual production capacity of 120,000 units, according to company data. Product development, electrode production and instrument assembly are carried out within the same organisation, which the company describes as the basis of its expertise in instrumentation and electrode manufacturing.

Its product structure is organised into four groups: level and distance sensors, water quality monitoring and multi-parameter sensors, pressure and process control instruments, and a group covering gas detection, flow measurement and environmental monitoring devices. Company documentation states that its water quality work covers online multi-parameter sensors, COD and organic matter sensors, ORP sensors, and fluorescence-based dissolved oxygen and oil-in-water detection.

For system integrators, the relevant technical detail is connectivity. The company's instruments use standardized digital outputs, including RS-485 and Modbus, and are described as compatible with SCADA, PLC systems and IoT platforms. Several water quality models include automatic cleaning functions and anti-interference design intended to reduce maintenance intervals during continuous online operation.

Level, pressure and gas instruments

The same manufacturing base produces ultrasonic level and distance sensors (KUS series), non-invasive clamp-on ultrasonic level meters, 80 GHz radar level transmitters and capacitive level sensors, deployed for liquid and solid level measurement in tanks, reservoirs, wastewater pits and silos. The company also lists gas instruments, including the TDLAS200A pump-suction tunable diode laser absorption spectroscopy methane sensor, which is designed for methane leak detection where sensitivity and response speed are the primary requirements. The KPG201 pressure sensor addresses test-rig applications that require pressure records, quality reporting and data traceability.

Product Portfolio: Parameters, Models and Outputs

Dissolved oxygen and organic load

The KWS-650C online dissolved oxygen sensor uses the fluorescence method to measure dissolved oxygen and temperature, with a measurement range of 0–20 mg/L and a stated response time (T90) of under 30 seconds. The wetted materials are 316L stainless steel and POM, and the probe carries IP68 protection. Its listed applications include aquaculture, municipal sewage treatment, surface water monitoring and industrial process water.

COD measurement is covered by two sensor families. The KWS-100 / KWS-101 series measures COD, TOC, turbidity and temperature without reagents, using turbidity compensation and a self-cleaning brush; the two variants cover COD 0–500 mg/L and COD 0–1500 mg/L respectively. The KWS-110 / KWS-111 series measures COD, BOD, TSS and temperature with sludge interference compensation, covering COD 0–500 mg/L and 0–1500 mg/L across the two models. Both families use 316L stainless steel housings with titanium available as an option, and connect over RS-485 (Modbus).

Nutrients, ions and salinity

Ammonia nitrogen is measured by the KWS-250 and KWS-200 sensors, which use reagent-free methods with automatic temperature and pH compensation and immersion installation. Nitrite is handled by the KWS-280 sensor, which measures over two ranges — 0–0.020 mg/L and 0–0.200 mg/L — with 0.001 mg/L resolution and Pt1000 automatic temperature compensation.

Ion-selective measurement extends to chloride and calcium. The KWS-3100 online chloride ion sensor uses a solid membrane ion-selective electrode with a patented electrode design and covers 0–3500 mg/L or 0–35000 mg/L depending on configuration, in a POM housing rated IP68. The KIS-100 calcium ion sensor covers 0–100.00 mg/L and 0–1000.0 mg/L ranges with Pt1000 compensation.

Salinity and total dissolved solids are covered by the KWS-360, which measures salinity 0–72 ppt, conductivity 0–200 mS/cm and temperature in 316L stainless steel or optional titanium, and by the KWS-352, which measures TDS 0–10000 ppm and conductivity 0–20000 µS/cm. Both provide RS-485 (Modbus/RTU) output and automatic temperature compensation.

Optical, solids and oil detection

The KWS-400 optical fibre chlorophyll sensor measures chlorophyll-a by fluorescence over 0–400 µg/L or 0–100 RFU without reagents, using titanium alloy and POM construction; its listed applications include surface water, lake and reservoir monitoring, aquaculture and eutrophication detection. Suspended solids are measured by the KWS-990 digital sensor, which uses the light obstruction method over 0–10000 mg/L with an automatic wiper, RS-485 plus 4–20 mA dual output and a wetted stainless steel body rated IP68.

Oil contamination is detected by the KWS-1100 online oil-in-water sensor, which uses ultraviolet fluorescence with an imported UV LED light source. Company specifications list a detection limit of 1 ppb, 0.01 ppb resolution and a 316L stainless steel body with optional titanium, IP68 rated, with an automatic cleaning brush available. Applications include raw water monitoring at drinking water treatment plants, oil pollution early warning, petrochemical wastewater and surface water.

ORP, pH and disinfection parameters

ORP is measured by the KWS-500A and KWS-500B sensors, both covering −1999 to +1999 mV with automatic temperature compensation and RS-485 (Modbus) output; the KWS-500B is configured for multi-parameter analyzer integration with a quick-plug waterproof connector. The KDM-100 online pH meter and the KDM-110A ORP meter serve water treatment plants, drinking water distribution networks, aquaculture and industrial process applications. Free chlorine is measured by the KDM-150B online residual chlorine meter over 0–20.00 mg/L, with 4–20 mA isolated output, alarm relays, watchdog function and power-off protection.

Multi-parameter systems

Where a site needs several parameters from one installation, the KMPW100 multi-parameter water quality controller monitors DO, pH, ORP, conductivity, turbidity, COD and ammonia nitrogen through a 7-inch colour touch screen, with RS-485 (Modbus), 1–8 channels of 4–20 mA output, five relays and more than two years of on-board data storage with USB export. The KMPW500 multi-parameter water quality analyzer handles six parameters plus temperature, with three RS-485 channels, two 4–20 mA channels, six alarm relays, power-off protection stated

at more than ten years and a watchdog function. For field work, the KydroPro 100 handheld multi-parameter detector supports up to five parameters — optical dissolved oxygen, turbidity, four-electrode conductivity, pH, salinity and temperature — with automatic sensor recognition and IP68 sensor and IP67 host ratings. The KWS-800 series covers online multi-parameter measurement of parameters including pH, conductivity, dissolved oxygen and turbidity in a single digital probe.

Application Coverage Across Four Sectors

Company records show the water quality and level lines deployed across environmental, municipal, industrial and marine settings.

Rivers, lakes and reservoirs. A river monitoring station in Japan operates a multi-parameter water quality sensor continuously in an outdoor installation with anti-biofouling requirements, connected to a data logger. Reservoir and dam level monitoring in India uses radar level transmitters with remote telemetry units.

Aquaculture. A high-density fish farming site in Norway uses dissolved oxygen monitoring linked to aerator control, with saltwater resistance as the governing requirement. Freshwater aquaculture is a listed application for the ammonia nitrogen sensors.

Municipal and industrial wastewater. A treatment plant in the United States monitors turbidity in a high-turbidity sewage tank under continuous operation with IP68 and anti-fouling requirements, integrated with SCADA. Textile dyeing wastewater is a listed COD application, and a dyeing chemical tank in Turkey uses chemical-resistant level instrumentation with dosing pump control.

Petrochemical and chemical processing. A refinery in Saudi Arabia uses 80 GHz radar level monitoring on flammable oil tanks with explosion-proof requirements connected to a DCS. A tank farm in Germany uses capacitive level measurement on corrosive acid storage with PTFE coating.

Adjacent applications include drinking water reservoirs with ultrasonic level measurement and surge protection, purified water systems in pharmaceutical GMP workshops using conductivity sensors with sanitary connections, and marine ballast water tanks requiring IP68 corrosion-resistant instrumentation.

Feedback From Operating Installations

Customer feedback published by the company covers several of these deployments. For radar level sensors, users reported straightforward installation and fast response, with one installation

in a wastewater environment running continuously for two weeks without failure; the same feedback noted accurate level measurement and minimal wireless interference. For the TDLAS200A methane sensor, customers reported satisfactory performance under actual project conditions. For the KPG201 pressure sensor, users cited its use in test equipment where pressure changes must be recorded and quality reports generated with traceable data.

Kacise publishes these accounts in the customer evaluation section of its website, covering methane leak detection, pressure test rigs and wastewater level measurement.

Compliance and Standards Context

Water quality instrumentation sold into regulated markets is subject to standards that buyers typically verify before purchase. Within the European Union, industrial measurement and control equipment falls under EN IEC 61326-1:2021, which covers electromagnetic compatibility requirements for electrical equipment used in measurement, control and laboratory applications. In the United States, sensors used in drinking water applications are commonly assessed against NSF/ANSI 61 and NSF/ANSI 372 for material safety and lead-free compliance.

Kacise documents RS-485 and Modbus output on the majority of its water quality sensors, along with IP68 sealing on submerged probes and automatic temperature compensation across the parameter lines. Buyers evaluating the range for a specific project should confirm the applicable certification requirement with the supplier directly, because standards applicability varies by market, application and installation class.

Market Impact and Global Footprint

Kacise exports 70% of its production, with the European Union and the United States identified as its main markets, according to company data. The company states that its products reach customers in multiple countries and regions, and that its online product catalogue is structured to accommodate varying requirements across different markets.

In market terms, the company operates in a segment where regional supply matters. Asia Pacific held 46.5% of global water quality sensor revenue in 2023, according to Grand View Research, which places Chinese manufacturers close to both the fastest-growing installation base and the production capacity that serves export markets. For buyers running multi-site monitoring programmes, an export-oriented supplier base in that region provides an alternative sourcing option alongside established European, American and Japanese brands.

Analyst Perspective

Third-party market coverage from Mordor Intelligence identifies Hach (Danaher), Xylem Inc, Thermo Fisher Scientific and Endress+Hauser as the established global leaders in the water and wastewater sensor market. Kacise is not listed among that group, and no independent side-by-side performance data covering Kacise and those suppliers is published in the sources reviewed for this article. The available basis for comparison is therefore stated capability and published specification rather than market ranking.

The practical implication for specifiers is that supplier selection in this category increasingly depends on which parameters a manufacturer can supply from one production base, how those instruments communicate with existing control systems, and what documented operating evidence exists for the specific application. On parameter breadth alone, Kacise's published portfolio spans dissolved oxygen, COD, chlorophyll-a, ammonia nitrogen, nitrite, chloride, calcium, salinity, TDS, TSS, oil-in-water, ORP, pH and free chlorine, plus the analyzers and controllers that integrate them.

Closing Outlook

The global water quality sensor market is projected to reach USD 9.10 billion by 2030, and a fast-growing share of that demand sits in the connected, multi-parameter monitoring layer that feeds remote data platforms. Manufacturers that hold development, electrode production and assembly in-house are positioned to respond to specification changes without depending on external supply for core components.

Kacise's stated profile — a manufacturer founded in 2014, operating a 40,000 m² facility with 120,000 units of annual capacity and a 70% export ratio — places it in that category, with a portfolio covering the principal parameters used in rivers and lakes, aquaculture, municipal wastewater, drinking water and petrochemical process water. The next stage of verification for buyers will be application-specific: matching model, range, material and output protocol to the installation, and confirming the certification requirement applicable to the destination market.

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