

M10 Product series

The product platform offers state of the art electronics and detection technologies in an economical and advantaged series of Monitors.

Combining experience and innovation in the design and implementation of successful applications for on-line chemical analysis, ROEMS developed this product series as a fully continuous or on demand on-line monitors designed with greater simplicity than ever before using either ISE technology or colorimetric detection. The products feature a practically designed modular liquid handling fluidics to reduce routine maintenance to a minimum.

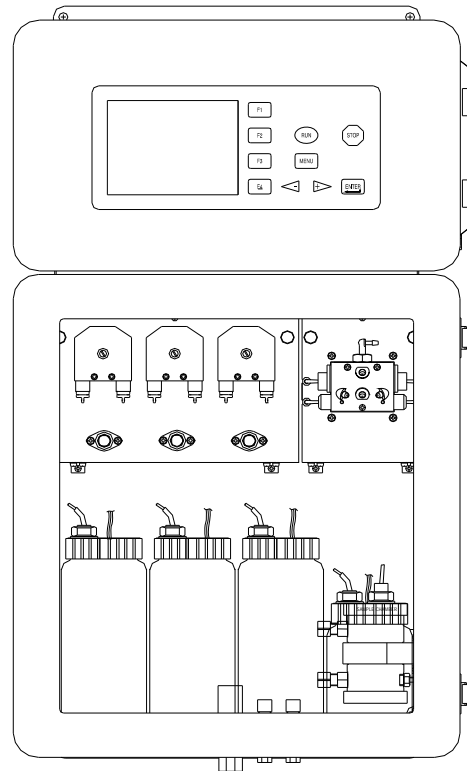
Advanced electronics allow features such as automatic calibration, continuous sample flow monitoring and diagnostics enabling the user to stay in control. The size of the instrument has been optimized to a compact, ergonomically designed, wall-mounted case with a clear see-thru door with fiberglass compartment housing all the fluidics components and a metallic Nema-12 electronics enclosure.

The ROEMS product series of monitors provide a robust, on-line wet chemistry analysis designed for reliable and continuous stream monitoring using ASTM proven detection principles.



Key features include

- Heated reaction cellblock assembly to maintain full temperature control over chemical reaction and stable optical measurement system.
- Preloaded analysis methods and the ability to customize operation and optimize performance with minimum chemistry background.
- Reduced reagent consumption.
- Programmable frequency of analysis and Automatic scheduled calibration.
- Large LCD graphical display with clear readability under different light conditions
- Data logging and trending: Statistics for up to 31 days, previous 7 days, or previous 24 hours are logged and can be viewed in graphical format.
- Auto blank feature to eliminate interference from sample background color fluctuations.
- Minimal maintenance requirements to maximize up time.
- Cost-effective, continuous-stream measurement of several discrete parameters for water treatment and environmental monitoring.
- Multi-language, available in Chinese
- Meets CE, UL, CSA and TUV regulatory standards



Easy to Maintain

Using pinch valves and peristaltic pumps, only the tubes come into contact with the sample, thus minimizing maintenance. All tubing, parts, and reagents are visible, accessible, and easy to replace when necessary. Minimal reagent consumption and user serviceability result in a low cost of ownership. Each monitor is pre-piped and pre-wired, requiring only field connection to service points. A clear layout of all liquid processing components allows for easy access and all controls are manageable from the front of the unit.

Software and Graphic Display

All functions are controlled with intuitive user interface software. The systems are operated with menu-driven convenience, and results can be displayed numerically or graphically on the LCD display.

User Interface

Easy access of all parameters is provided via a large backlit LCD graphics display module, which is easy to read in different light conditions. Under normal operating conditions the measured value is displayed. Units of measurement, alarm values and calibration standard solution values are examples of the many programmable functions. The operation of the monitor is made straightforward through tactile membrane keypad controlling the complete operation of the monitor. There are two isolated fully programmable current outputs provided as standard with a serial RS-232 interface.

Applications

The Monitor series applications potential is extensive. Specific applications may be further customized or converted in the field.

With phosphorus and phosphates becoming increasingly regulated parameters. The primary applications include phosphate monitoring and controlling of the phosphoric acid addition in drinking water; the monitoring and control of the de-phosphatization process in water treatment; monitoring phosphate in effluent discharges, rivers and lakes and controlling phosphate addition to boiler waters especially for power generation.



The Phosphate analyzer provides an affordable and reliable tool to monitor orthophosphate levels. Early detection of changing orthophosphate levels enables the operator to quickly implement process corrections, thus reducing the cost of plant operation and to ensure that limits are met.

Phosphate Method of Analysis

The chemistry is based on the Vanadomolybdophosphoric Acid Colorimetric Method as found in *standard ASTM Methods*. Mixing reagent with sample, a color change indicates the presence of orthophosphate. More specifically, orthophosphate (PO_4) under acidic conditions and in the presence of vanadate-molybdate reagent forms vanadomolybdophosphoric acid. This yellow compound is measured by the colorimeter.

Principle of operation

The sample is pumped into the reaction cell where a measurement of the sample is first recorded in order to compensate for any background color in the sample. Reagent is then pumped into the measuring cell; a change in color and intensity occurs. The color change of the solution is measured with a built-in colorimeter. Results are displayed on the LCD readout and transmitted on the digital and analog links.

The system is designed for both accuracy and economy. The analyzer typically consumes less than one liter of each reagent per month (Phosphate analysis). Reagents are easily replenished without interrupting operation. The system provides automatic reliable operation unattended. A menu-driven interface makes it easy to review or modify all functions.

Installation

The monitor series is designed for easy wall mounting, indoors. Adequate clearance must be allowed at the sides and bottom of the instrument case for plumbing and wiring connections. The monitors are constructed of low-weight, corrosion resistant materials and are modular in design for serviceability and ease of maintenance.

General Specification

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| Suspended solids | < 60 microns |
| Sample connections Inlet Outlet | 1/4 inch OD flexible tubing |
| Sample Inlet Pressure | 1 to 5 psi |
| Sample temperature | 5 to 50C (41 to 122F). |
| Sample Flow Rate | 20 to 1000 ml/min |
| Reproducibility and Accuracy | typically better than 2% (see specific application notes) |
| Relay outputs | Four programmable alarm relays rated at 5A @ 240 V, resistive load |
| Dimensions | 27" x 15" x 6 " (695 mm x 395 mm x 158 mm) H x W x D |
| Display | Backlit LCD Graphics |
| Power | 100-230 VAC, 50/60 Hz or optional 24V |
| Computer interface | Current output, RS232. |
| Cycle Time | Fully programmable (and selectable) |
| Fault indicator contact | Assignable to any of the four relays |
| Ambient temperature | 5 to 45C (41 to 113F) |
| Operating Maximum Humidity | 90% at 104° F (40 °C) non condensing |
| Drain Connection | 3/8 inch OD flexible tubing |
| Mounting | Wall |
| Shipping Weight | Approx. 40 lbs (18 kg) |
| Certification | CE, UL, TUV and CSA (cTUVus). |