

# 9211 Phosphamat



data sheet

## Applications

Monitoring of Total Dissolved Ortho-Phosphates in :

- Power plant boiler, feedwater
- Steam generation
- Water supply applications

## Features

- Multi-channel operation (1 to 6)
- Very low cost of ownership
- Minimal maintenance requirements
- Built-in remote control operations for automated water plants
- User-friendly menu-operated programming
- Built-in datalogger
- Automatic 2-point calibration (chemical zero and slope)

# The 9211 Phosphamat, user-friendly multi-channel silica analyser

## ■ Chemistry

All reagents used for the Phosphamat 9211 are available from the major chemical suppliers world-wide. Their unique composition means that their chemical stability is excellent, an essential factor for reliable and reproducible silica measurement.

The analytical section of the analyser has been designed to ensure minimal reagent consumption. The reagent canisters weighing a total of only 4 kg (9 lbs) when full, need replenishment every 45 days.

The integrated design of the Phosphamat (analyser and sequencer controlled by the same electronics) offers real operational advantages and, in addition, the sampling sequence is fully programmable. Analyser status (such as lack of sample on one of the channels or the unit being in its calibration cycle) is fully monitored by the 9211 microprocessor.

## ■ Calibration

Calibration can be performed manually or automatically by programming regular calibration intervals.

The 9211 uses a real two-point calibration method (zero+slope).

Polymetron has developed its own proprietary chemical zero method. The zero is performed automatically by the analyser itself without the need for calibration solutions or resin cartridge. Extensive laboratory tests have shown that, even if there are significant levels of phosphate present in the reagents or in the sample, the innovative method of zeroing the instrument leads to a negligible offset.

To perform the slope calibration, the analyser takes a standard solution in place of the sample.

## ■ Customer interface

Comprehensive information is available at a glance from the large display (i.e. phosphate concentration of up to 6 channels, alarm status or concentration trend curves).

Clear messages are displayed and the user is guided through menus and sub-menus with ease.

A built-in datalogger allows measurement values, calibration results and alarm information to be recorded (capacity = 3200 data).

The six freely-programmable 0/4-20 mA analogue outputs can be freely assigned to the different channels.

The six relays can be assigned to :

- phosphate high/low concentration limits,
- lack of sample,
- active channel information.

A serial RS 485 interface for digital data transmission is available as an option.

## ■ Alarms and diagnostics

As the phosphate analyser works continuously without manual intervention, receiving a warning in the case of an incident or change in status is critical. Therefore, on top of the 6 relays, the 9211 therefore offers two alarm contacts to report :

- lack of reagent or calibration solution,
- calibration parameter drift,
- system alarm.

## ■ Maintenance

- Every 45 days : replenish reagents,
- Change reagent tube annually,
- replenish calibration solution as required.

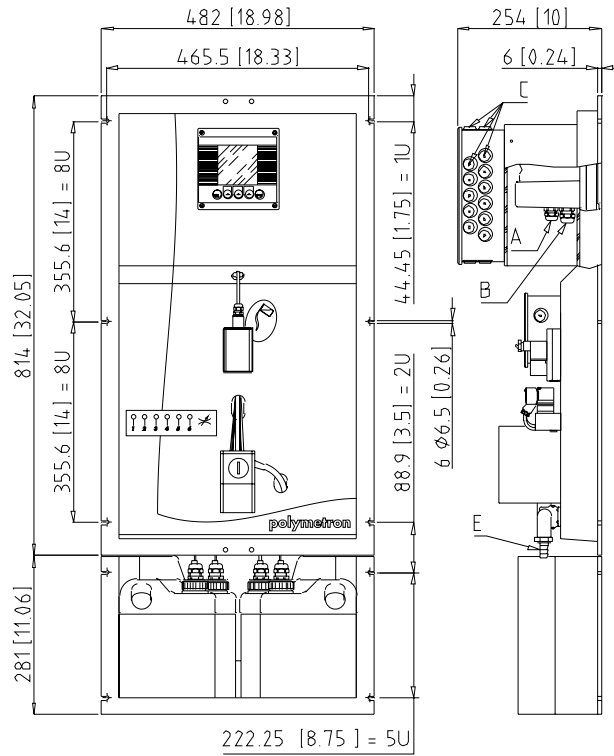
Clear step by step instructions are given by the analyser to simplify maintenance operations such as instrument start-up, long term stand-by, and reagent replenishment.

The analyser comes in 19" rack format as standard. A wall mounted cabinet is available as an option.

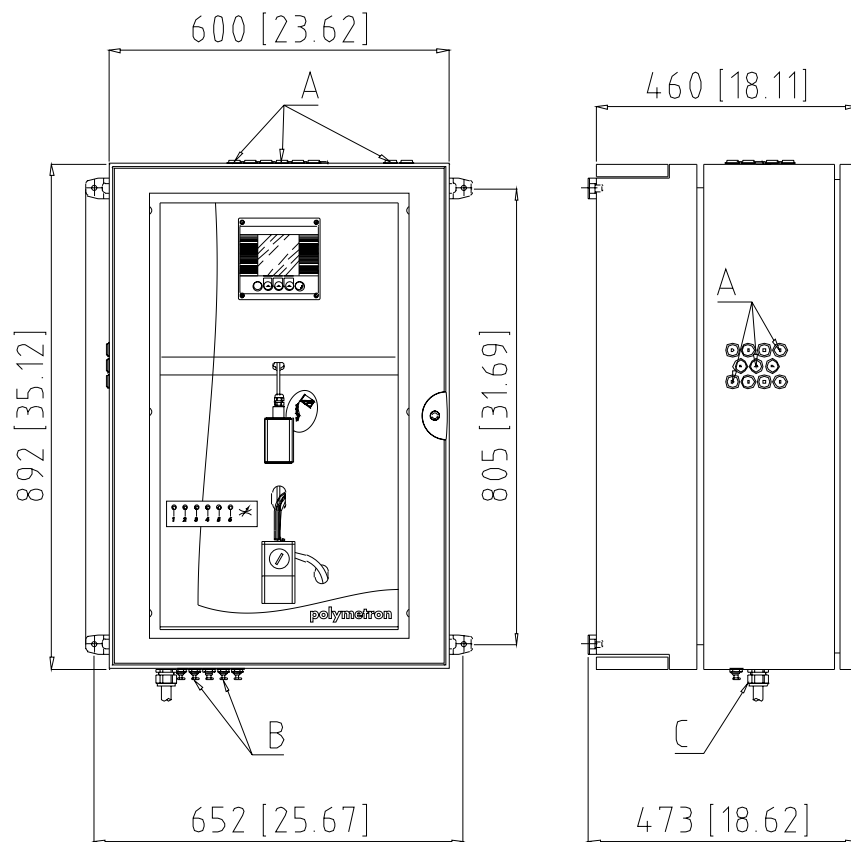
Both include :

- a start-up kit,
- an instruction manual in English (other languages available on request).

## Panel dimensions



## Cabinet dimensions



All dimensions are in mm (inches)

# polymetron

a Hach Ultra Analytics solution

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Distributor

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## Specifications

Sample	No. of sample streams Temperature Pressure/Flowrate	1-6, programmable sequence 5-50°C (41-122°F) 0.2-6 bar (3-87 psi), 15-20 l/h during the sampling phase
Connections	Sample line Drain Ambient temperature Power supply	Simple fittings for 6mm O.D. for PE/PTFE tubing Nipple for 12x10mm tubing 5-45°C (41-113°F) 100-240 VAC, ±10%, 50/60Hz, 50 VA
Analysis	Measuring range	0 - 5 ppm of PO <sub>4</sub> <sup>3-</sup> 0 - 30 ppm of PO <sub>4</sub> <sup>3-</sup> (extended trend up to 50 ppm)
	Repeatability	± 0.1 ppm or ± 3 % of the measured value whichever is greater
Analysis	Detection limit	< 0.2 ppm
	Response time	< 10 minutes per channel
Analysis	Calibration	Automatic two-point chemical zero and slope, Programmable frequency Automatic optical zero at each measurement
	Transmitter	Protection E.C regulations  U.L Digital backlit display  Programming Current output  Relay outputs  Remote control
Options	RS 485	300...9600 baud, 32 stations max., JBUS/MODBUS. Profibus, please consult us
Materials	Panel Cabinet Weight	Polystyrene Stove enamelled steel IP 54 Panel: 10 kg (22 lbs), cabinet: 50 kg (110 lbs)
Maintenance	Every 45 days	Refill reagents and calibration solution