

MICROMAC MP2 AMMONIA/PHOSPHATE

ON LINE ANALYZER FOR AMMONIA AND PHOSPHATE MONITORING IN WATER



MICROMAC C MP2 AMMONIA/PHOSPHATE

is a microprocessor controlled On Line analyzer specifically designed for sequential Phosphorous and Ammonia monitoring on several types of water matrix.

✓ ROBUST AND RELIABLE

Designed for industrial and Environmental On Line applications ensures the highest level of robustness in the electronics, mechanics and hydraulics components. Complete separation between electronics and hydraulics plus a simple and robust LFA * hydraulics allows easy maintenance and long terms reliable operations.

** LFA: Loop Flow Analysis patent pending*

✓ EASY TO INSTALL

The analyzer is delivered after a long and successful series of factory tests ready for installation and setup; it is provided with complete set of spares for start up. To start monitoring is enough to connect reagent, sample line, waste line and power supply.

✓ AUTOMATIC CALIBRATION

When the Calibration Time interval expires the analyzer performs a Calibration Cycle, storing and checking the new calibrant O. D. If new O.D. exceeds selected limits, an alarm contacts is closed.

✓ SAMPLE DILUTION

Sample can be analyzed as it is or after automatic dilution. Automatic dilution is factory adjusted for high range applications.

✓ MEASURING INTERVAL

User selectable; between two measurements the analyzer remains in stand by mode, without reagents consumption.

✓ FEATURES AND BENEFITS

- Fully automatic operation
- Long autonomy; low maintenance, low operating cost
- Low reagents consumption; short preparation time; low disposable costs
- Easy operation; plug in analyzer, no special training is required
- Electronics and hydraulics completely separated
- Serial interface for local o remote PC connection (option)

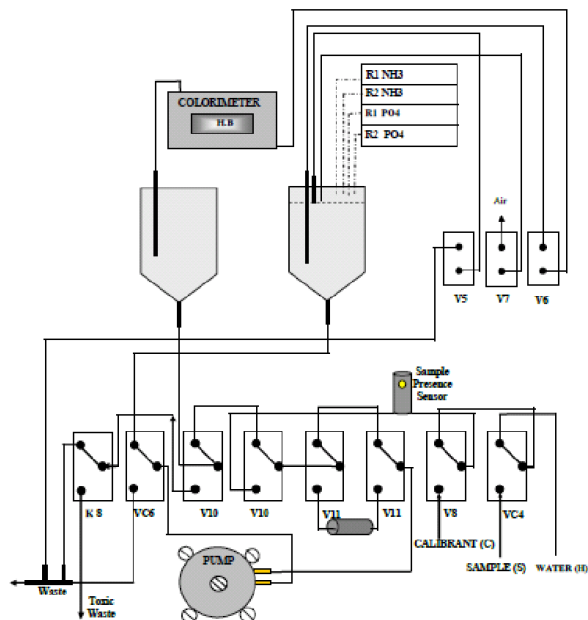
Measuring principle and hydraulic diagram

AMMONIA:

Methods: either Salicylate or Phenate. Measuring wavelength: 630nm for Phenate or 660nm for Salicylate. The sample is added first with a color reagent that includes a complexing reagent, to avoid precipitation of calcium and magnesium hydroxides. After a proper mixing time, the analyzer dispenses the Chlorine reagent that allow the development of the reaction color. After a further mixing step, the analyzer stops the reaction product inside the heated flow cell where the reaction takes place. Absorbance reading is taken at 630 or 660 nm. The sample concentration is calculated against the calibration factor stored in the analyzer.

PHOSPHATE:

Method: Molybdate and Ascorbic Acid, measuring wavelength: 660 or 880nm depending on the range. The sample is added first with the Acidic Molybdate, to form the phosphomolybdate complex. After a proper mixing time, the analyzer introduces the ascorbic acid reducing agent, necessary for the colorimetric reaction. After a further mixing step and reaction time the analyzer stops the reaction product inside the flow cell, where it measures the absorbance at 660 or 880 nm. The sample concentration is calculated against the calibration factor stored in the analyzer.



Technical Specifications

MEASURING PRINCIPLE: Colorimetric; **NH₃**: phenate or salicylate method, 2 reagents for water and waste water, 3 reagents for seawater.; **PO₄**: Molybdate/Ascorbic Acid. **NO₂**: NED+SAA.

COLORIMETER: dual beam, silicon detector

MEASUREMENT TYPE: Sequential

MEASURING INTERVAL: Programmable

MEASURING TIME: 15-20 minutes depending on the range

MEASURING RANGE: **N-NH₃**: 0-0.5/1.0/2.5/10/20/50mg/L; **P-PO₄**: 0-1/2/5/10/20; Alternative ranges available on request

DETECTION LIMIT: typically better 3-5% of the full scale, calculated as for EPA p. 136 appendix B

REPEATABILITY (SD%)/ACCURACY: better than 5% (7 replicates at 50% of the range)

OUTPUT SIGNAL: n. 2 set of 4-20 mA **INPUT SIGNALS:** 1 Analysis, n. 1 calibration; digital contacts

ALARMS: n. 2 sets of: n. 1 High Limit, n. 1 General, n. 1 Calibration; potential free contacts

SAMPLE AND WASTE DELIVERY: pressure free; **SAMPLE TEMPERATURE:** 10 °C - 30 °C

REAGENTS REPLACEMENT: 3/4 weeks depending on the operating temperature

PROTECTION: IP55

HARDWARE: PC104 industrial standard, Integrated keyboard and graphics display, RS232 option

POWER SUPPLY: 12 V DC external power supply included; 14W Standby; 50-60 W (mean) analysis

WEIGHT: 33 Kg without reagents; **DIMENSION:** 800x420x280 mm(hxwx d)

Subject to change without notice

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