

## MICROMAC MP2 NITRATE+NITRITE - AMMONIA

### ON LINE ANALYZER FOR NITRATE+NITRITE AND AMMONIA MONITORING IN WATER



MICROMAC C MP2 NO<sub>x</sub>/NH<sub>3</sub> is a microprocessor controlled On Line analyzer specifically designed for automatic Total 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 or remote PC connection (option)

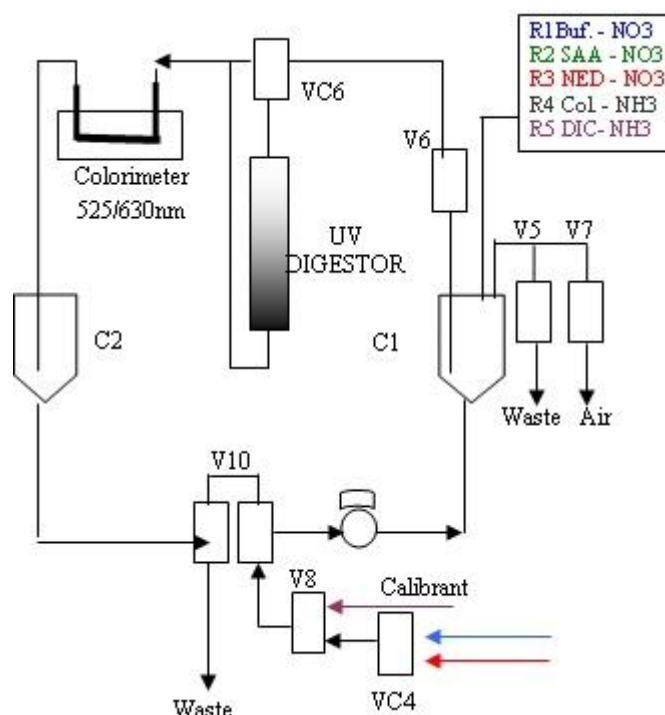
## Nitrate+Nitrite and Ammonia measuring principle and hydraulic diagram

### Nitrate+Nitrite:

In this automated method the sample is added with a solution of DTPA and TRIS buffer, then the mixture is passed in a teflon coil wrapped around a UV lamp to reduce the  $\text{NO}_3$  into  $\text{NO}_2$ ; the nitrites formed by the photoderivation then react with sulfanilamide and naphtylethylendiamine in acid solution to form a pink colored compound measurable at 525 nm.

### Ammonia:

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, when the reaction reaches the end point and the concentration is calculated against the calibration factor stored in the analyzer.



## Technical Specifications

**MEASURING PRINCIPLE:** **NO<sub>x</sub>:** Colorimetric, UV photoreduction NED+SAA colorimetric reaction, **NH<sub>3</sub>:** Colorimetric, phenate or salicylate method, 2 reagents for water and waste water, 3 reagents for seawater  
**COLORIMETER:** dual beam, silicon detector  
**MEASUREMENT TYPE:** Sequential  
**MEASURING INTERVAL:** programmable  
**MEASURING TIME:** -20-30 minutes depending on the range  
**MEASURING RANGE:** **N-NO<sub>x</sub>:** 0-10/20/50/100/200mg/L N<sub>2</sub>; **N-NH<sub>3</sub>:** 0-0.2/0.7/2/5/10/20/50/100/200 mg/L N-NH<sub>3</sub> or N-NH<sub>4</sub>; other ranges available on request  
**DETECTION LIMIT:** typically better 3-5% of the full scale, calculated as for EPA p. 136 appendix B  
**REPEATABILITY:** better than 3-5%  
**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:** 800x450x300 mm(hxwx d)

Subject to change without notice



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