

MICROMAC MP2 TP/TN

ON LINE ANALYZER FOR TOTAL PHOSPHORUS – TOTAL NITROGEN MONITORING IN WATER



MICROMAC MP2 TP/TN is a microprocessor controlled On Line analyzer specifically designed for automatic Total P/Total N continuous 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.

** μ LFR: μ Loop Flow Reactor - 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.

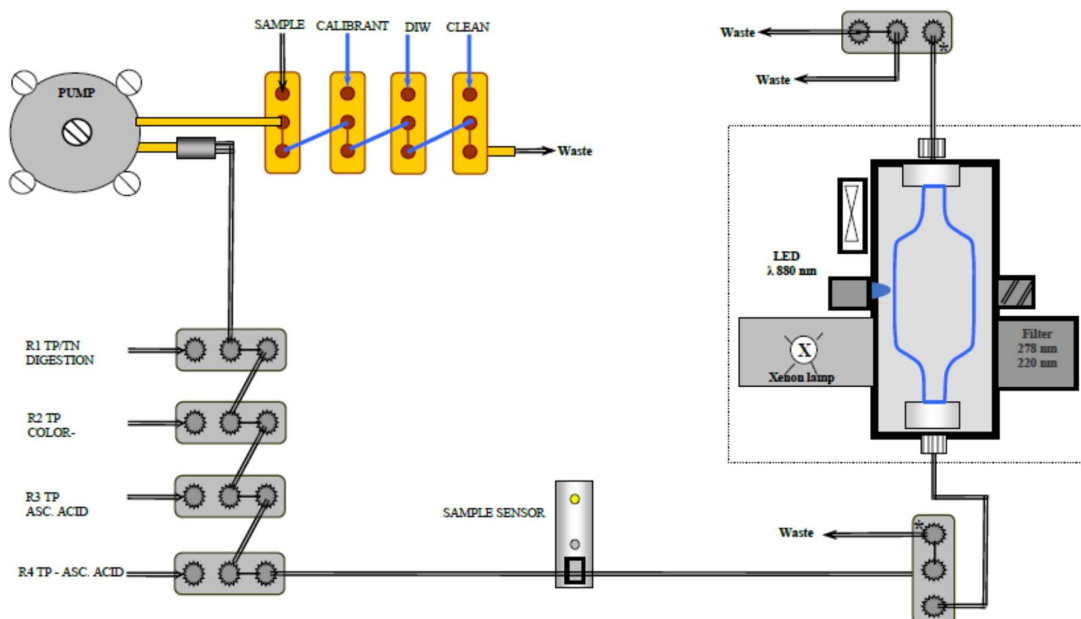
✓ MEASURING INTERVAL

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)

Total P/ Total N measuring principle and hydraulic diagram



SAMPLE DIGESTION: The sample is digested in presence of a proper oxidant solution to convert all organic and inorganic forms of Nitrogen and Phosphorous respectively to Nitrate and Phosphate.

TOTAL N: Nitrate formed plus the already present in the sample are then measured colorimetrically at UV direct reading, 220 nm

TOTAL P: Orthophosphate produced reacts with molybdate to form phosphomolybdate, which is then reduced to blue molybdenum by ascorbic acid. The complex is read at 880 nm. Antimony is used to increase the sensitivity. As alternative is also available the molybdovanadate method

Technical Specifications

MEASURING PRINCIPLE: TN/TP simultaneous digestion NO₃: direct reading at 220nm PO₄: colorimetric reaction with molybdate/ascorbic acid, reading at 880nm

DETECTOR: dual beam, silicon detector

MEASUREMENT TYPE: cyclic; **MEASURING INTERVAL:** programmable;

MEASURING TIME: TN & TP: ≤ 30 min (analysis time may change slightly depending on the range)

MEASURING RANGE: TP: 0-0,5 ppm/TN: 0-4 ppm, or TP: 0-3 ppm/TN: 0-10 ppm or TP: 0-20 ppm/TN: 0-50 ppm or TP: 0-20 ppm/TN: 0-100 ppm; alternative ranges combinations available on request

DETECTION LIMIT - TP: 0-0,5 PPM/TN: 0-4 PPM (SD of 7 replicates at 10% x 3,14):

TP: better than 0,003 ppm/TN: better than 0,1 ppm

REPEATABILITY - TP: 0-0,5 PPM/TN: 0-4 PPM: (SD% of 7 replicates at 50%):

TP: better than 0,5%/TN: better than 2%

ACCURACY - TP: 0-0,5 PPM/TN: 0-4 PPM (Average of 7 replicates at 50%):

TP: better than 2%/TN: better than 1,5

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

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

SAMPLE AND WASTES: pressure free; **SAMPLE TEMPERATURE:** 10 °C - 30 °C; **REAGENTS CHANGE:** 30 days

PROTECTION: IP55; **WEIGHT:** 33 Kg without reagents; **DIMENSION:** 800x420x280 mm(hxwx d)

POWER SUPPLY: 12 V DC external power supply included; 4W Standby; 50 W (mean) analysis

Subject to change without notice



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DOCUMENT ID: MICC_ULFR HT MP2 TP_TN220NM_02-E (20231012).DOCX