MICROMAC C
On line analyzer for potable, surface and waste water monitoring

MICROMAC C is a colorimetric microprocessor controlled On Line analyzer specifically designed for automatic monitoring on several type of waters 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 long and reliable operations.

• Easy to install

The analyzer is delivered only after a long and successful series of final tests. It is ready for installation, without any further adjustment and it is provided with a spares set for start up operations. To start monitoring, it is sufficient to connect sample line, waste line and power supply.

• Automatic Calibration

As soon as a user selectable Calibration Time expires the analyzer perform a Calibration Cycle, storing and checking the new calibrant O. D. If new O.D. exceeds selected limits, an alarm contacts is closed.

*LFA: Loop Flow Analysis patent pending

• SAMPLE DILUTION

Each sample can be analyzed as it is or in dilution mode. Dilution mode can be activated also on off scale samples with a dilution factor, factory selected, up to 100 times.

• MEASURING INTERVAL

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

• OFF SCALE REANALYZE

The analyzer identify off scale samples and starts the analysis in dilution mode automatically.

• FEATURES/BENEFITS

- Fully automatic operation
- Long autonomy; low maintenance, low operating cost
- Low reagents consumption; short preparation time & disposable costs
- Easy operation; fully documented plug in
- analyzer, no special training is required
- Electronics and hydraulics completely separated
- Serial interface for PC or printer connection (optional).

Multiparametric option

MICROMAC C NUTRIENTS:
To analyze sequentially on one unit NH3, NO2+NO3, NO2, PO4.

Sequential Multiparametric option allows to combine in one unit up to four parameters.

MICROMAC C TP&TN:
To analyze Total N & Total P in the same device.
The measurement is performed in a special combined mode, ensuring a combined measurement time of 1 hour.

Our application laboratory already developed several multiparametric configura-tions.

Please verify your needing with our specialists.

Standard application

APPLICATION OR MATRIX	METHOD	TYPICAL RANGE			
POTABLE, SURFACE, SEAWATER AND WASTE WATER	Aluminum	0-400 ppb as Al	0- 2 ppm	0-5 ppm	0 – 10 ppm
	Ammonia	0-200 ppb as N	0 – 5 ppm as N	0 – 5 ppm as N	0-20 ppm as N
	Chloride	0-100 ppm as Cl-	0 – 200 ppm as Cl-	0-300 ppm as Cl-	0-500 ppm as Cl-
	Cyanide	0-200 ppb	0-5 ppm	0-50 ppm	0-100 ppm
	Cyanide with sparging (ISO method)	0-200 ppb			
	Chromium 6+	0-100 ppb	0-1 ppm	0-5 ppm	0-10 ppm
	Iron Total dissolved (Fe2+ and Fe3+)	0-100 ppb as Fe	0 – 500 ppb as Fe	0 – 1 ppm as Fe	0 – 5 ppm as Fe
	Iron Total (acidic hydrolisis)	0-5 ppm as Fe	0 – 10 ppm as Fe	0 – 20 ppm as Fe	0 – 50 ppm as Fe
	Nickel	0 – 1 ppm as Ni	0 – 5 ppm as Ni	0 – 10 ppm as Ni	0 – 100 ppm as Ni
	Nitrate+Nitrite	0-150 ppb as N	0 – 500 ppb as N	0 –5 ppm as N	0 –50 ppm as N
	Nitrite	0-50 ppb as N	0 – 200 ppb as N	0 – 500 ppb as N	0 – 1 ppm as N
	Phenols (index)	0-100 ppb	0 – 500 ppb	0- 1 ppm	0-10 ppm
	Phosphate (Ortho)	0-200 ppb as P	0 – 500 ppb as P	0 – 1 ppm as P	0 – 10 ppm as P
	Total Nitrogen	0 – 5 ppm	0 – 10 ppm	0 – 50 ppm	0 –100 ppm
	Total Phosphate Acidic hydrolysis +UV digestion (organic + inorganic)	0 – 5 ppm	0-10 ppm	0-20 ppm	0-50 ppm
	COD (special version)	0-50 ppm	0-100 ppm	0 – 200 ppm	0 –500 ppm

Self cleaning filtration unit

For waste water or other dirty samples application a self cleaning filtration unit can be installed close to the analyzer. One filtration unit can be used to supply clean sample up to 10 analyzer.

SELF CLEANING

Thanks to an integrated PLC the filtration unit provides to run a self cleaning cycle, with compressed air.

EASY TO INSTALL

The filtration unit is delivered completely assembled on a stainless steel and PVC frame, ready for connection to a sample line. It is enough to connect sample line, waste line and analyzer sampling line.

LOW MAINTENANCE

Self cleaning cycle and long life pump tube really ensure low maintenance cost.

ANALYZER CONTROLLED

Micromac provides to run the filter only when the analytical cycle starts.

STAINLESS STEEL FILTER

A stainless steel filter ensure long operation and no corrosion with the most common matrix.
For special matrix special filters are available.

COD Analyzer

The sample after filtration, is pumped inside the digestion tube, heated by an integrated block digestor fully controlled by the analyzer. In the same tube are sequentially dispensed Potassium Dichromate, Sulfuric Acid with a proper catalyst; digestion at 150° C starts automatically after all reagents have been dispensed. Digestion time can be selected depending on the matrix, to digest completely all the substances that give a contribute to COD. After digestion and a proper cooling time the analyzer pump back the digested sample in a colorimeter; the absorbance measured at 460 nm is proportional to a COD concentration.

For further details, see specific COD leaflet

Technical data

MEASURING PRINCIPLE: Colorimetric
COLORIMETER: dual beam, silicon detector
MEASUREMENT TYPE: cyclic (cyclic and sequential if MP version)
MEASURING INTERVAL: programmable
MEASURING TIME: 6 to 30 minutes depending on the method
NUMBER OF MEASURING POINTS: up to 6
OUTPUT SIGNAL: 4-20 mA load 400 Ohm linear response (galvanic isolator available as option), or 0-5 V separated for each stream
INPUT SIGNALS:
•**Analysis:** 1 digital contact with fotocoupler, galvanically isolated
•**Calibration:** 1 digital contact with fotocoupler, galvanically isolated

ALARM SIGNALS
•**Limit Signal:** 1 potential free switch SPDT, max load 24 AC DC 0.5 A separated for each stream
•**Dilution mode:** 1 potential free switch SPDT, max load 24 AC DC 0.5 A
•**General alarm:** 1 potential free switch SPDT, max load 24 AC DC 0.5 A separated for each stream
ALARM MESSAGES: on LCD display

SAMPLE DELIVERY:
•**Pressure:** atmospheric
•**Temperature:** 10° - 30 °C
•**Volume:** 50 ml per analysis
Connection: Standard silicone 2x4 other on request

Waste: pressure free silicone 2x4 mm
REAGENTS REPLACEMENT: from 3 to 10 weeks depending on the method

ENVIRONMENTAL TEMPERATURE: 10 ° - 30 °C
REAGENTS COOLER: optional, Peltier cell
MOUNTING: wall
PROTECTION: IP55; IP65 on request
HARDWARE: PC104 industrial standard Integrated keyboard including a graphic parallel display
COMMUNICATION PORT: optional; RS 232
POWER SUPPLY: 12 Vcc; External power supply from local supply to 12 Vcc included.
ABSORPTION: 4W stand by, 10 W analysis
WEIGHT: 25 Kg without reagents
DIMENSION: 800x450x300 mm(hxwxd)

SELF CLEANING FILTRATION UNIT:
optional, recommended for dirty samples and waste water samples. Self cleaning stainless steel filter, PLC controlled. Mounted on stainless steel support ready for wall mounting and sample connection.

POWER SUPPLY: 12V DC
SAMPLE PRESSURE: min 0.3 bar
SAMPLE RATE: 30 l/h max 1 bar
COMPRESSED AIR FOR SELF CLEANING: max 2 bar

For further details see specific documentation

Subject to change without notice