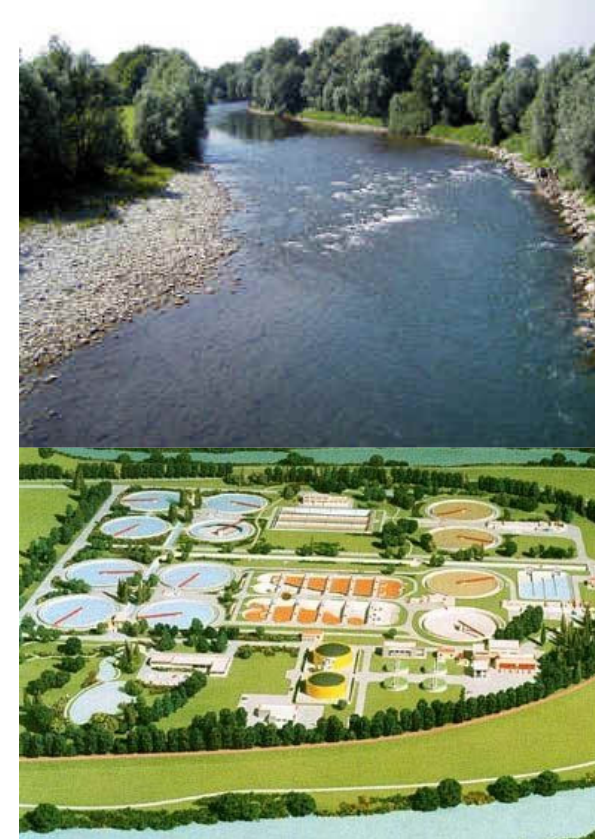


Technical Data	
<b>MEASURING PRINCIPLE</b>	Colorimetric -dual beam, ISE (Ion Selective Electrode), NDIR, UV
<b>MEASUREMENT TYPE</b>	Batch - Multi parametric version: batch, sequential & multi-wavelength
<b>MEASURING FREQUENCY</b>	Programmable
<b>MEASURING TIME</b>	From 5 minutes up to 60 minutes depending on the application
<b>MEASURING POINTS</b>	Up to 6
<b>OPERATOR INTERFACE</b>	Membrane keypad & Graphic display or colour graphic touch screen 8" (option)
<b>OUTPUT SIGNAL AND COMMUNICATIONS PORTS</b>	4-20mA separated per each method or stream, galvanic insulation option; RS232 output ; RS485 optional; RTU Modbus optional
<b>INPUT SIGNALS</b>	Analysis: 1 digital contact with photocoupler, galvanically isolated Calibration: 1 digital contact with photocoupler, galvanically isolated
<b>ALARM CONTACTS</b>	High Limit : 1 potential free switch SPDT, max load 24 AC DC 0.5 A separated for each stream Calibration: 1 potential free switch SPDT, max load 24 AC DC 0.5 A General: 1 potential free switch SPDT, max load 24 AC DC 0.5 A, separated for each stream
<b>ALARM MESSAGES</b>	On operator interface
<b>SAMPLE DELIVERY</b>	Pressure: atmospheric Temperature: 10° - 35 °C Volume: 50/80 mL per analysis depending on analyzer model Connection: Standard silicone 2x4, other on request Waste: pressure free silicone 2x4 mm
<b>REAGENTS REPLACEMENT</b>	From 3 to 5 weeks depending on the measurement frequency
<b>ENVIRONMENTAL TEMP.</b>	10-45°C (Reagents up to 25°C)
<b>MOUNTING</b>	Wall mounting
<b>STANDARD PROTECTION</b>	IP 55, IP 65 optional on request
<b>HARDWARE</b>	PC104 standard microcontroller, integrated 8" colour touch screen
<b>POWER SUPPLY</b>	12 Vcc; external power supply from 110/220 Vac to 12 Vcc included in the scope of delivery
<b>ABSORPTION</b>	4W stand by, 10 W analysis
<b>WEIGHT</b>	30 Kg without reagents
<b>DIMENSIONS</b>	800x420x280 mm (hxwxd)
<b>SELF CLEANING FILTER</b>	
<b>POWER SUPPLY</b>	12Vdc
<b>SAMPLE PRESSURE/RATE</b>	min 0.3 bar/30 l/h max 1 bar
<b>COMPRESSED AIR FOR SELF CLEANING</b>	max 2 bar

Subject to change without notice



## MICROMAC ON LINE ANALYZERS



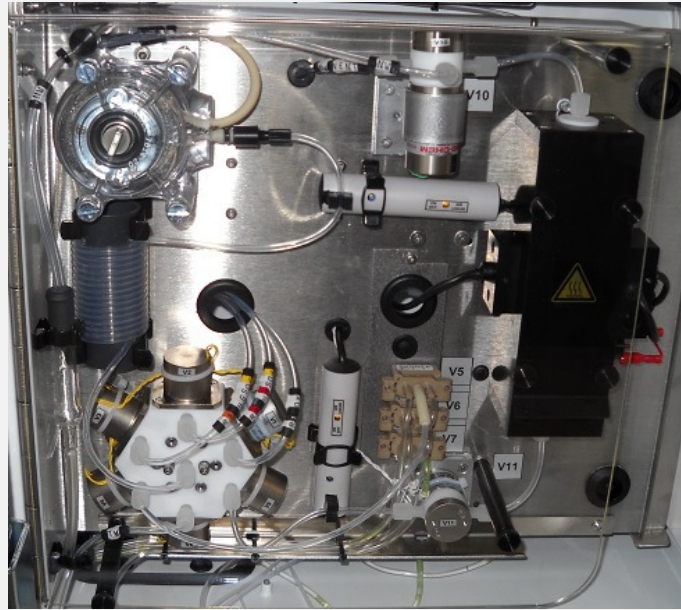
ON LINE ANALYZERS FOR  
POTABLE, SURFACE  
AND WASTE WATER  
MONITORING



### SYSTEVA SpA

Facilities : Via Paduni, 2/A - 03012 ANAGNI (FR) -  
Tel. (+39) 0775.776058 - Fax (+39) 0775.772204  
e mail: [info@systeva.it](mailto:info@systeva.it) Web site: <http://www.systeva.it>

# DEDICATED APPLICATIONS



## MICROMAC COD- Cr

Fully automated COD Analyzer

ISO/EPA METHOD (Dichromate/Sulfuric acid)

MEASURING TIME: 20 -60 min. depending on sample matrix

Standard ranges:  
0-50/100/200/500/1000/2000/5000/  
10000/20000 ppm COD

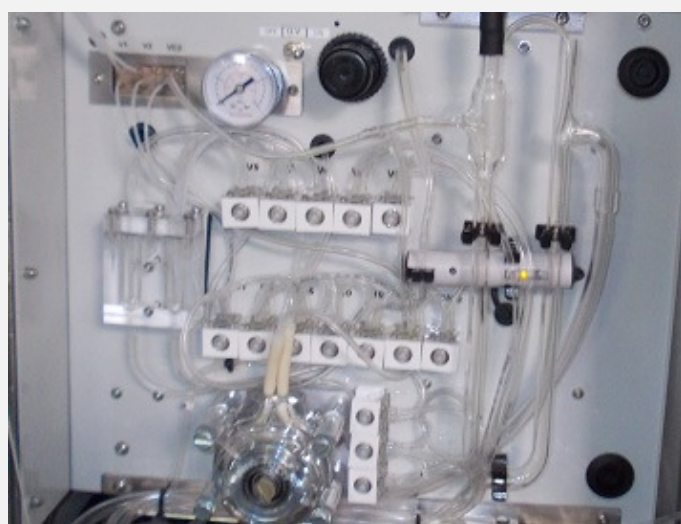
## MICROMAC TOC

Fully automated TOC Analyzer

ISO/EPA NDIR METHOD

MEASURING TIME: < 17- 25 min.  
depending on sample matrix

Standard ranges:  
0-5/20/50/100/150/500/1000 ppm C



## MICROMAC CFA - Applications

### Cyanide-Free & Total

(EPA n. 335.3 ISO-14403\_2002-03)  
Standard Range: 0-0,1/0,2/0,3/0,5/1,0/  
2,0ppm

MEASURING TIME: < 35 min.

### Volatile Phenols

(EPA n. 420.2; ISO/DIN 14402:1999)  
Standard Range: 0-0,3/0,5/1,0/ 2,0ppm

MEASURING TIME: < 30 min.

### Total Cadmium

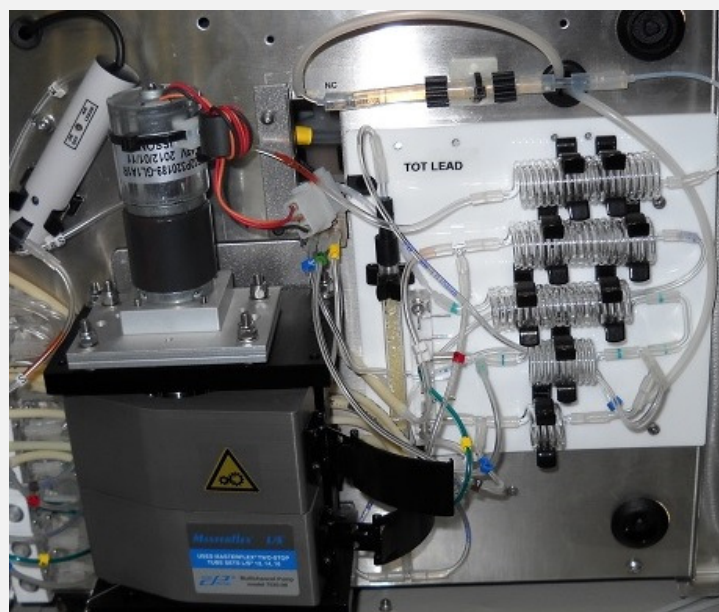
Standard Range: 0-0,1/0,3/0,5/ 1,0ppm

MEASURING TIME: < 40 min.

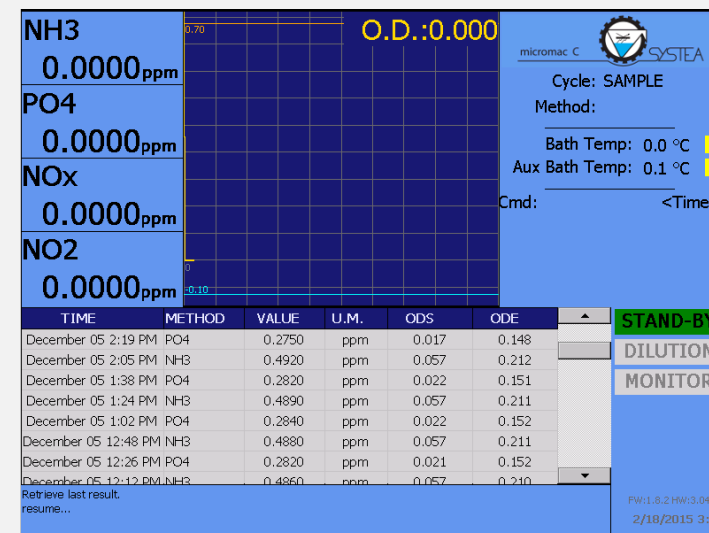
### Total Lead

Standard Range: 0-1.0/2.0/3,0ppm

MEASURING TIME: < 40 min



# MICROMAC ON LINE ANALYZERS



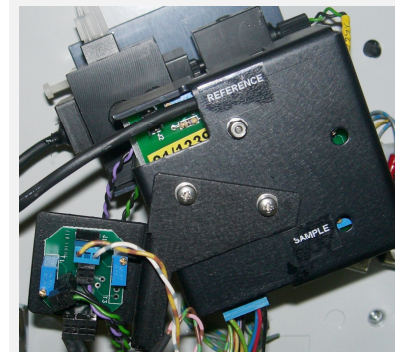
## TOUCH SCREEN OPTION

## ROBUST AND RELIABLE

Designed for industrial and environmental on-line applications, ensures the highest level of robustness in the electronics, mechanics and hydraulics components. With a complete separation between electronics and hydraulics and a simple and robust LFA\* hydraulics, it allows long term and reliable operations.

## EASY TO INSTALL

The analyzer is delivered only after a successful final tests. It is provided ready for installation, with a spares set for start-up operations.



MICROMAC C - COLORIMETRIC

## AUTOMATIC CALIBRATION

The analyzer performs automatic calibration, the new calibration factor is checked and accepted if inside acceptance limits.

## MEASUREMENT FREQUENCY

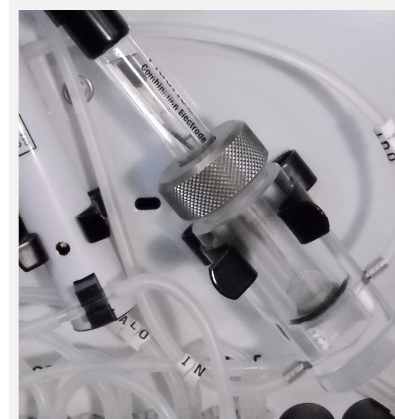
User selectable; between two measurements the analyzer remains in stand-by mode, without reagents consumption.

## OFF SCALE REANALYZE

The analyzer identifies off scale samples and reanalyze the sample after automatic dilution

## FEATURES/BENEFITS

- ❑ Easy and friendly operator interface
- ❑ Fully automatic operation
- ❑ Long autonomy; low maintenance, low operating cost
- ❑ Low reagent or nearly no consumption
- ❑ Easy operation; fully documented plug in analyzer, no special training is required
- ❑ Electronics and hydraulics completely separated
- ❑ RS232 bidirectional for remote control
- ❑ USB port for data download
- ❑ Yearly maintenance



MICROMAC E - ISE DETECTOR

# STANDARD APPLICATIONS

Application	Measuring range	WW	SFW	DW	SW
Alkalinity (methyl orange)	0-100ppm up to 20g/L CaCO <sub>3</sub>	☺	☺	☺	
Alluminum	0-0.4 up to 10 ppm Al <sup>2+</sup>	☺	☺	☺	☺
Ammonia (colorimetric)	0-0.2 up to 200 ppm N-NH <sub>3</sub>	☺	☺	☺	☺
Ammonia (fluorimetric)	0-0.2 up to 1.0 ppm N-NH <sub>3</sub>		☺	☺	☺
Arsenic Total dissolved	0- 0.02 up to 0.5 ppm	☺	☺	☺	
Arsenic Total	0-0.02 up to 0.5 ppm	☺	☺	☺	
Boron	0-2 up to 50 ppm B		☺	☺	☺
Cadmium Total/Dissolved	0-100 up to 500 ppb	☺	☺	☺	
Calcium	0-5 up to 200 ppm Ca <sup>2+</sup>	☺	☺	☺	
Chloride	0-100 up to 500 ppm Cl <sup>-</sup>	☺	☺	☺	
Chlorine Free/Total	0-0.5 up to 10 ppm Cl <sub>2</sub>	☺		☺	
Chromium 6 <sup>+</sup>	0-0.3 up to 30 ppm Cr <sup>6+</sup>	☺	☺	☺	☺
Chromium Total	0-1 up to 20 mg/L Cr <sup>6+</sup>	☺	☺	☺	
COD (Dichromate)	0-50 up to 500 ppm COD	☺	☺		
COD (Permanganate)	0-50 up to 500 ppm O		☺	☺	
COD (UV 254nm)	0-50 up to 500 ppm COD	☺	☺		
Color	0-100 up to 500 Pt/Co Units	☺	☺		
Copper	0-0.1 up to 20 ppm as Cu	☺	☺	☺	☺
Copper Total	0-0.4 up to 5 ppm as Cu	☺	☺		
Cyanide Tot/Free (UV,Dist)	0-0.2/0.5/10/20 ppm CN	☺	☺	☺	
Cyanide Index	0-0.3 up to 300 ppm as CN	☺	☺		
Ethylene glycol	0-15 up to 50 ppm EG	☺			
Fluoride	0.02-1/10/50/100 ppm F <sup>-</sup>			☺	
Hardness	0-10 up to 500 ppm CaCo <sub>3</sub>	☺	☺	☺	
Hydrazine	0-0.1 up to 5 ppm	☺	☺		
Iron Total dissolved	0-0.1 up to 1000 ppm Fe <sup>2+</sup>	☺	☺	☺	☺
Iron Total	0-0.1/0.5/1/2/5 ppm	☺	☺	☺	
Lead Total/Dissolved	0-1 ppm up to 20 ppm Pb <sup>2+</sup>	☺	☺		
Manganese	0-0.5/1/2.0/5.0/20 ppm Mn <sup>2+</sup>	☺	☺	☺	☺
Manganese Total	0-2 ppm Mn <sup>2</sup>	☺	☺		
Monochloram. & Total NH <sub>3</sub>	0-2 up to 5 ppm N		☺	☺	
Nickel	0-0.5 up to 30 ppm Ni	☺	☺	☺	☺
Nickel Total	0-1.0 up to 20 ppm Ni	☺	☺		
Nitrate+Nitrite Hydrazine	0-5 up to 1000 ppm N-NO <sub>3</sub>	☺	☺	☺	
Nitrate+Nitrite UV photored.	0-0.2 up to 1000 ppm N-NO <sub>3</sub>	☺	☺	☺	☺
Nitrate (UV 220nm)	0-5 up to 50 ppm N-NO <sub>3</sub>		☺	☺	
Nitrite	0-0.05 up to 20 ppm N-NO <sub>2</sub>	☺	☺	☺	☺
Nitrogen Total (Colorimetric)	0-5 up to 1000 ppm N	☺	☺	☺	☺
Total Nitrogen (UV)	0-5 up to 100 ppm N	☺	☺	☺	
Phenol Volatile	0-500 ppb	☺	☺		
Phenol Index	0-0.1 up to 0.50 ppm	☺	☺		
Ortophosphate	0-0.2 up to 200 ppm P-PO <sub>4</sub>	☺	☺	☺	☺
Silicates	0-0.2 up to 200 ppm SiO <sub>2</sub>		☺	☺	☺
Sucrose	0- 100 up 1000 ppm	☺			
Sulfide	0-2 ppm S <sup>2-</sup>	☺	☺	☺	☺
TOC	0-20 mg/l up to 1000 mg/l C	☺	☺	☺	☺
Total Phosphorous	0-1 up to 200 ppm P	☺	☺	☺	☺
Zinc	0-0.5 up to 1000 ppm Zn <sup>2+</sup>	☺	☺	☺	☺
Zinc Total	0-0.5 up to 0-1000 mg/L Zn <sup>2+</sup>	☺	☺		

WW = Waste Water; SFW = SurFace Water; DW = Drinking Water, SW = Sea Water

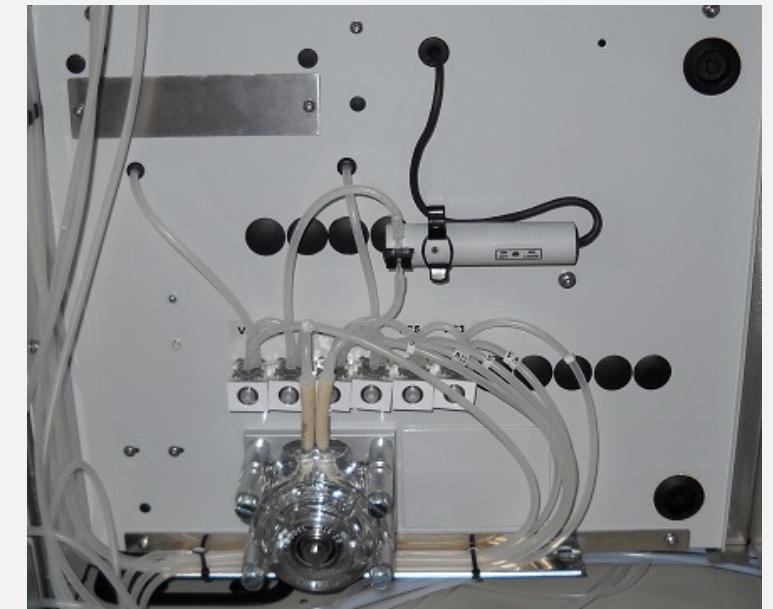
# UV APPLICATIONS

## MICROMAC UV

**COD/TOC** direct reading at 254nm, turbidity correction as per DIN 348404-3

**NITRATE:** direct reading at 220nm organic substances correction as per 4500-NO<sub>3</sub> B.

**TOTAL NITROGEN:** UV persulfate oxidation of nitrogen form to NO<sub>3</sub>, the direct measure at 220nm as per ISO 11905 1:1997(E) - Annex C; C4



# SAMPLE PRETREATMENT

## SELF CLEANING FILTRATION UNIT

Installed close to the analyzer allow to remove suspended solids. The filtration unit runs periodically a self cleaning cycle, using compressed air . One filtration unit can be used to supply a clean water sample up to 10 analyzers.

## EASY TO INSTALL

Delivered completely assembled on a stainless steel frame, ready for connections



## LOW MAINTENANCE

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

## ANALYZER CONTROLLED

Micromac activates the filtration unit only when the analytical cycle starts.

## STAINLESS STEEL FILTER

A stainless steel filter ensures long operation and no corrosion with the most common matrix.

## SAMPLE HOMOGENIZER

Installed close to the analyzer allow to homogenize samples before COD, TP, TN measurements.

Includes and ultrasonic homogenizer fully controlled by the analyzer hardware, the sample after homogenizing cycle is pumped inside the analyzer that starts the analysis cycle.

