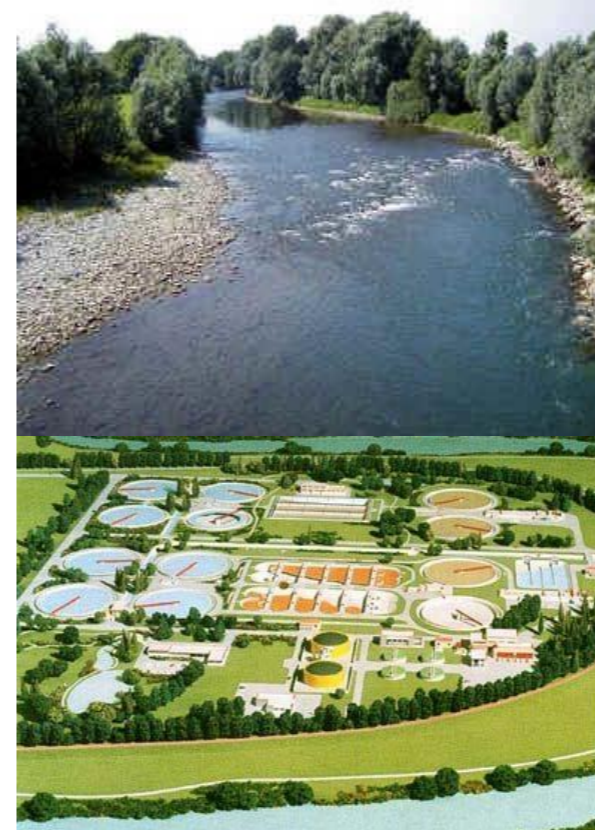


Technical Data	
<b>MEASURING PRINCIPLE</b>	Colorimetric dual beam, ISE (Ion Selective Electrode), NDIR, UV
<b>MEASUREMENT TYPE</b>	Batch - Multi parametric version: batch, sequential & multi-wavelength
<b>MEASURING FREQUENCY</b>	Programmable
<b>MEASURING TIME</b>	From 5 minutes up to 60 minutes depending on the application
<b>MEASURING POINTS</b>	Up to 4 single method
<b>OPERATOR INTERFACE</b>	Colour graphic touch screen 8" (option)
<b>OUTPUT SIGNAL AND COMMUNICATIONS PORTS</b>	4-20mA separated per each method or stream galvanically insulated; RS232 output ; RS485 optional; RTU or TCP Modbus optional
<b>INPUT SIGNALS</b>	Analysis: 1 digital contact with photocoupler, galvanically insulated Calibration: 1 digital contact with photocoupler, galvanically insulated
<b>ALARM CONTACTS</b>	Auxiliary Relay : 1 potential free switch SPDT, max load 110V AC/DC 1 A General Error : 1 potential free switch SPDT, max load 110V AC/DC 1 A Standby/Busy : 1 potential free switch SPDT, max load 110V AC/DC 1 A
<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
<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>	Bench top
<b>STANDARD PROTECTION</b>	IP 55 higher class on request
<b>HARDWARE</b>	PC104 standard microcontroller, integrated 8" colour touch screen
<b>POWER SUPPLY</b>	115/230 VAC 50/60 Hz - IEC SOCKET WITH EXTERNAL POWER BUTTON - On request 12/24 VDC
<b>ABSORPTION</b>	15W stand by, 40 W analysis
<b>WEIGHT</b>	14 Kg without reagents w/o reagent compartment
<b>DIMENSIONS</b>	430x260x540 mm (hxwxd) w/o Reagent Compartment
<b>REAGENT COMPARTMENT</b>	
<b>POWER SUPPLY</b>	12Vdc - 60W with external power supply module
<b>WEIGHT</b>	3 Kg without reagents
<b>DIMENSIONS</b>	130x260x540 mm (hxwxd)
<b>TEMPERATURE RANGE</b>	10°C < to the room temperature

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## MICROMAC COMPACT



BENCH TOP/PORTABLE  
ANALYZER FOR GROUND,  
SURFACE, WASTE AND SEA  
WATER ANALYSIS



**SYSTEA SpA**  
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e mail: [info@systea.it](mailto:info@systea.it) Web site: <http://www.systea.it>

# MICROMAC COMPACT



## EASILY RELOCATED

Micromac Compact is designed as bench top, on line and at line analyzer, easy to be transported and used.

It is ideal for waste water treatment plants, environmental stations, mobile laboratories and field measurements.

Can be equipped with optional 8 position sampler for 100 mL or 250 mL bottles.

## INTEGRATED TOUCH SCREEN

New software multilanguage option available.

User friendly, all main options can be reached with few touches.

Advanced diagnostic to follow all measurements steps



## INTEGRATED REAGENT COMPARTMENT

Reagents are located in a reagent compartment that can be cooled (option) to increase the reagent life in case of installation in hot environments.

Easy reagents access for replacement and checks, all reagent tubes are identified.

# MICROMAC COMPACT



Microprocessor controlled analyzer specifically designed for automatic analysis on several types of water matrices.

It can be used as Laboratory, On Line or Portable analyzer for field measurements in case of environmental emergencies

## AVAILABLE CONFIGURATIONS

**COMPACT C:** COLORIMETRIC

**COMPACT MP4 NUTRIENTS:** COLORIMETRIC

**COMPACT TN&TP:** UV/VIS COLORIMETRIC

**COMPACT E:** ISE

**COMPACT COCDcr:** COLORIMETRIC

**COMPACT TOC:** NDIR

**COMPACT UV:** COD/TOC/BOD at 254 nm

## ROBUST AND RELIABLE

Designed for industrial, environmental, laboratory and 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 hydraulics, allows long term and reliable operations.

## EASY TO INSTALL

The analyzer is delivered ready for start up only after a successful final test. It is provided with a set of spares for commissioning.

## AUTOMATIC CALIBRATION

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

## MEASUREMENT FREQUENCY

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

## RANGE SWITCH

The analyzer operates with an extended range, depending on the sample concentration the operating ranges are automatically selected.

## 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 or RTU Rs485 ModBus
- USB port for data download
- Yearly maintenance



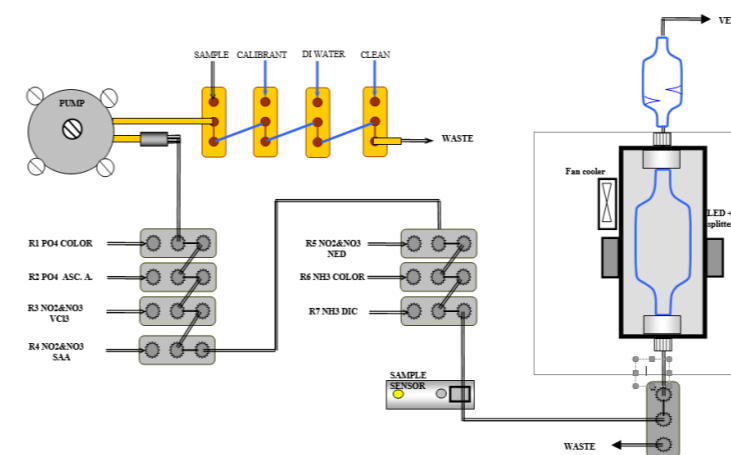
# STANDARD APPLICATIONS

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>		☺	☺	☺
Boron	0-2 up to 50 ppm B		☺	☺	☺
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>	☺	☺	☺	
CODCr (Dichromate)	0-50 up to 500 ppm COD	☺	☺		
CODMn (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 Amperometric	0-0.2/0.5/10/20 ppm 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	☺	☺	☺	
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+Nitrite (VCl <sub>3</sub> Reduc.)	0-0.2 up to 100 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 200nm)	0-5 up to 100 ppm N	☺	☺	☺	
Phenol Index (Distillation)	0-500 ppb	☺	☺		
Orthophosphate	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

# MICROMAC COMPACT APPLICATIONS

## MICROMAC COMPACT MP4 NUTRIENTS



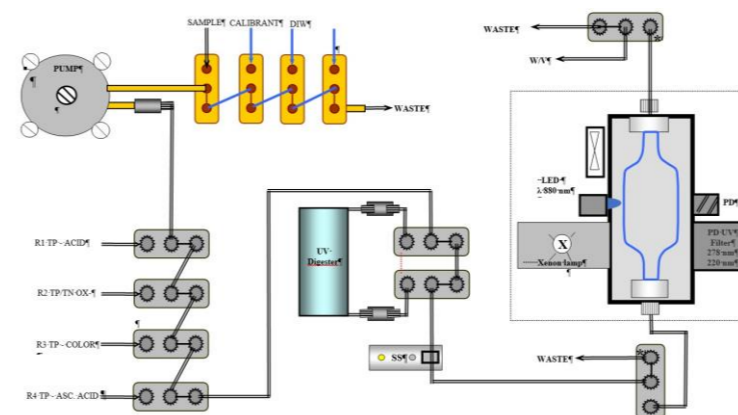
**AMMONIA** the sample reacts with salicylate in an alkaline medium pH 12, while nitroprusside acts as a catalyst. The blue color is measured at 660 nm. This method is not applicable to seawater analysis.

**PHOSPHATE:** the orthophosphate contained in the sample react with molybdate in an acid medium to form phosphomolybdate, and then with ascorbic acid to form molybdenum blue, which intensity is measured at 660/880 nm. The antimonium catalyzes the reaction.

**NITRATE:** the sample after addition of a solution of Vanadium Chloride is heated at about 40°C to convert all NO<sub>x</sub> species present in the sample to NO<sub>2</sub>. Nitrite reacts with sulphanilamide and N-(1-naphtyl) ethyldiamine in acid medium to give a diazonium salt, coloured, which is measured at 525 nm.

**NITRITE:** Nitrite contained in the sample react with sulphanilamide and N-(1-naphtyl) ethyldiamine in acid medium to give a diazonium salt, coloured, which is measured at 525 nm

## MICROMAC COMPACT MP2 TN & TP



**TOTAL PHOSPHORUS:** The sample is acidified and heated to hydrolyze all the inorganic complex forms of phosphorus, then it is oxidized by the double action of potassium persulfate and UV radiation in acid environment. The phosphate produced reacts in acid solution with molybdate to form phosphomolybdate, which is reduced to molybdenum blue by ascorbic acid. The complex is read at 880 nm. Antimonium is used to increase the sensitivity.

**TOTAL NITROGEN:** In this automated method the sample is digested in an on line UV digester where organic Nitrogen is converted to Nitrate by UV radiation and persulfate, in alkaline medium. The digestion is also performed with temperature. The nitrate formed plus the already present in the sample are then measured colorimetrically at UV direct reading, 220 nm.