

## Technical Data

<b>MEASURING PRINCIPLE</b>	COD UV: SAC at 254nm turbidity correction at 550nm as per DIN 348404-3; COD correlation against known calibrant BOD FLUO: Fluorimetric measurement (tryptophan like) excitation at 280nm, emission at 360nm; BOD correlation by Tryptophan calibrant to be adjusted and/or performed on site Turbidity: measurement at 850nm as per ISO 7027, option: correlation with TSS to be performed on site Nitrate UV: direct reading at 220 nm, correction at 275 nm Colorimetric methods: as per method description
<b>STANDARD RANGES:</b>	Ammonia: 0-0.3/0.5/1.0/2.0/5.0/10.0 mg/L N-NH <sub>3</sub> Nitrate+Nitrite Colorimetric: 0.3/0.5/1.0/2.0/5.0/10.0 mg/L N-NO <sub>x</sub> Nitrate UV: 0-10/120/30/50 mg/L N-NO <sub>3</sub> Nitrite: 0-0.05/0.1/0.2/0.3/0.5/1.0 mg/L N-NO <sub>2</sub> Phosphate: 0-0.3/0.5/1.0/2.0/5.0 mg/L P-PO <sub>4</sub> TN Colorimetric: 0-2.0/5.0/10.0/20.0 mg/L N TN UV: 0-10/20/30/50 mg/L N TP: 0-1.0/2.0/5.0/10.0 mg/L P COD: 0-50/100/200/1000/2000/3000 mg/L BOD: 0-20/50/100/500 mg/L Turbidity: 0-20/50/100/500/1000 NTU
<b>MEASUREMENT TYPE</b>	Batch, MP version batch and sequential
<b>MEASURING FREQUENCY</b>	Single measurement, MP4 measurement or continuous programmable
<b>MEASURING TIME</b>	MP4 Nutrients: 40/50 minutes, depending on ranges, for the complete set of 4 methods TN & TP: 40/60 minutes depending on ranges COD: 7-10 min / BOD: 7-10 min / Turbidity: 7-10 min; depending on range and sample temperature, for combined versions 10-15 min
<b>COMMUNICATIONS PORT:</b>	USB
<b>ALARM MESSAGES:</b>	On 8" color touch screen and on results buffer
<b>REAGENTS:</b>	Reagent kit available on request
<b>ENVIRONMENTAL TEMP.</b>	10-35 °C
<b>STANDARD PROTECTION:</b>	IP 65 with closed case
<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>	7.7 Kg without reagents
<b>DIMENSION:</b>	180x460x360 mm (H x W x D)

Subject to change without notice



## μMAC SMART

PORTABLE  
WATER ANALYZER  
FAST AND ACCURATE  
ON SITE ANALYSIS



### SYSTEVA SpA

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

## µMAC SMART Applications

More than 50 different applications are available on the µMAC SMART; the most important are: Ammonia, Phosphate, Nitrate+Nitrite, Nitrite, Silicates, Total Nitrogen, Total Phosphorous, COD (UV), BOD, Turbidity

µMAC SMART can be delivered as single method analyzer or multiple methods (MP versions) where the analyzer run in sequence up to 4 measurements on the same sample

## µMAC SMART STANDARD VERSIONS

### µMAC SMART MP4 Nutrients:

**Ammonia:** fluorimetric by OPA

**Phosphate:** colorimetric by Molybdate - Ascorbic acid

**Nitrate+Nitrite:** colorimetric by photoreduction to NO<sub>2</sub> followed by NED + SAA

**Nitrite:** Colorimetric NED + SAA

**µMAC SMART TN:** Total Nitrogen: UV oxidation to NO<sub>3</sub> and direct reading at 220 nm

**µMAC SMART TP:** Total Phosphorous: acidic hydrolysis & UV oxidation, orthophosphates measurement by Molybdate - Ascorbic acid

### µMAC SMART MP2 TN/TP:

**Total Nitrogen:** UV oxidation, colorimetric by photoreduction to NO<sub>2</sub> followed by NED + SAA

**Total Phosphorous:** acidic hydrolysis & UV oxidation, orthophosphates measurement by Molybdate - Ascorbic acid

### µMAC SMART MP2 TN/NO<sub>3</sub>:

**Total Nitrogen:** UV oxidation to NO<sub>3</sub> direct reading at 220nm

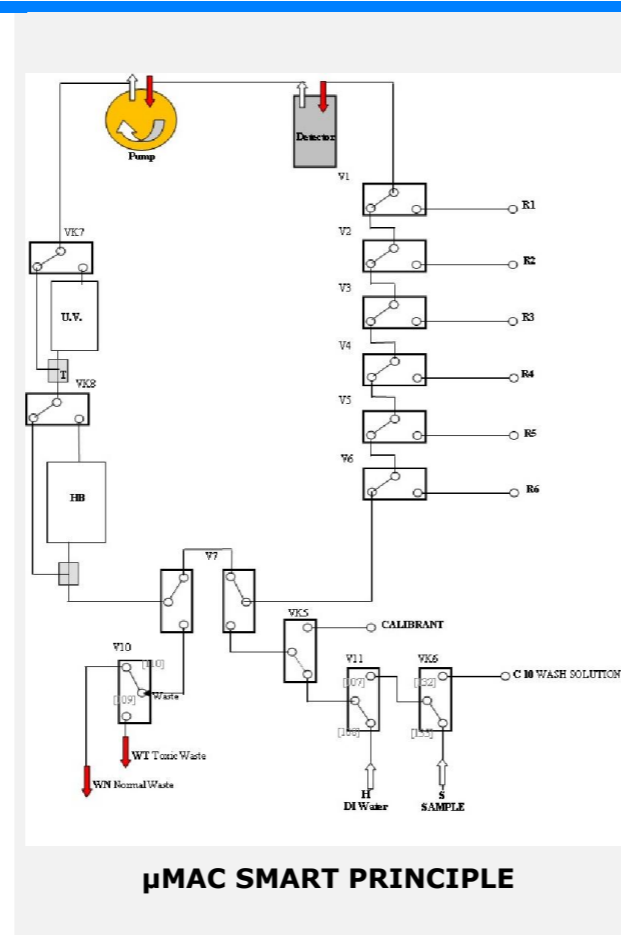
**Nitrate:** direct reading at 220 nm

### µMAC SMART MP3 TP/PO<sub>4</sub>/NH<sub>3</sub>:

**Total Phosphorous:** acidic hydrolysis & UV oxidation, orthophosphates measurement by Molybdate - Ascorbic acid

**Phosphate:** colorimetric by Molybdate - Ascorbic acid

**Ammonia:** fluorimetric by OPA



# µMAC SMART PORTABLE WATER ANALYZER



µMAC SMART is a portable analyzer fully controlled by an integrated PC with integrated colour Touch Screen, specifically designed for at site monitoring of all water resources

### ROBUST AND RELIABLE

The analyzer is mounted in a robust and easy-to-transport plastic case including room for reagents and all other accessories. A reagent frame holds all reagent bottles and required solutions.

### EASY TO INSTALL

Designed for easy operations, the analyzer can be used at site after a quick training. It is delivered from factory fully tested and ready to use; reagent kits are available for all standard measurements. Results are stored inside the analyzer memory and can be downloaded through USB port.

Analyzer start up and operations have never been easier! Just turn on and insert the reagents; a simple software will guide the operator through all necessary steps.

## µMAC SMART ECO VERSIONS

**µMAC SMART ECO - COD UV:** SAC direct reading at 254 nm, turbidity compensation at 550 nm as per DIN 348404-3, correlation with COD by known calibrant, this version can measure TOC as an alternative to COD

**µMAC SMART ECO - BOD (Tryptophan Like):** direct fluorimetric measurement (Tryptophan like), excitation at 280 nm and emission at 360 nm, correlation with BOD by a known Tryptophan calibrant, correlation factor to be confirmed / adjusted on site

**µMAC SMART - ECO MP3 :** COD (UV)/BOD/Turbidity, as per ISO 7027



Reagent frame

### AUTOMATED CALIBRATION

The analyzer calibration is fully automated; just use the calibration solution as specified in the manual and run calibration. The new calibration factor is checked and accepted if verified to be comprised within acceptance limits.

### MULTIPLE PARAMETERS

The analyzer can be delivered ready for multiple measurements (MP versions) on the same sample; several set ups are available as standard.

### MULTIPLE MEASUREMENTS

The analyzer offers the option for continuous operational mode; the operator can perform sequential measurements several times on the same sample or just leave the analyzer running while the sample flows.

### OFF SCALE REANALYSIS

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



Reagent kits