

## ON LINE ANALYSIS

**TOPAZ (CRISTAL Range) SERES environnement solution :**

- innovative concept and functionalities,
- designed to achieve the best quality / efficiency & cost / benefit ratios.

**Benefits for the user :**

- ✓ Reduced running costs
- ✓ Strict surveillance of water quality

**TOPAZ key assets :**

- ✓ Accuracy
- ✓ Reliability
- ✓ Flexibility

**TOPAZ, the obvious choice for automatic, on line monitoring of a large variety of chemical compounds in all types of water.**



## METHODS & PARAMETERS

Several measurement methods are available on the TOPAZ :

### COLORIMETRY

- Ammonium, Free and/or Total Chlorine, Hydrazine, Morpholine, Phenol, Sulphates
- Colour, Silica, Phosphates (Orthophosphates), Hardness
- Aluminium, Chromium VI, Copper, Iron, Nickel, Lead, Zinc

### TITRIMETRY

- TH, Alkalinity

### POTENTIOMETRY

- Ammonium, Chlorides, Cyanides, Fluorides, ...

Specific, customized methods can be adapted on TOPAZ for the surveillance of process water & brines :

- Peracetic acid, VFA, Ca Mg, NH<sub>4</sub>, etc...

*OTHER PARAMETERS : PLEASE CONSULT*

## ADVANTAGES & APPLICATIONS

Automatic, on line measurement

1 to 6 streams of analysis

Intuitive & efficient user interface

Data storage & communication

Lower reagents' consumption

Routine maintenance made easy

Drinking & surface water : alert stations

Waste water : sewage works

Urban & industrial wastes

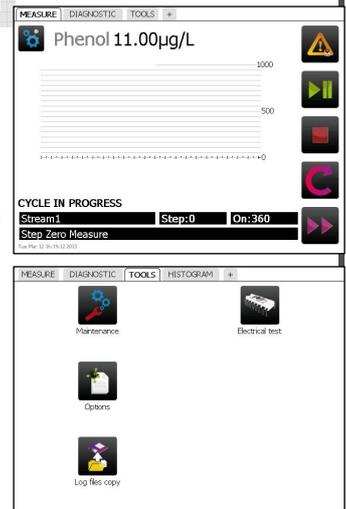
Boiler, cooling water

Process water & brines

## CONCEPTION & OPERATION OVERVIEW

### The essential design requisites of TOPAZ were :

- ✓ automatic, on line analysis
- ✓ easily configurable, modular, intuitive & user friendly, multifunctional
- ✓ multi-parameter, multi-stream (options)



Potentiometry



### The various modules and their features :

- **User interface** : smart & intuitive interface enabling all the analyser controls and status reports
- **Measurement** : emission & reception directly on the PCB gathering all programs driving the whole measurement process whatever the parameter. Increased accuracy resulting from the association of the measuring and its fiber optics system
- **JBus/ModBus module** : retrieval data / steering
- **Supervision** : management of data and JBus/ModBus « slave » protocole, , execution of cycles & measurement PCB control, data storage

Colorimetry / Titrimetry



## TECHNICAL SPECIFICATIONS

### CONSTRUCTION & ENVIRONMENT

Dimensions	Wall cabinet stainless steel 316L: 755 x 570 x 370 mm
Weight & Material	mm (W x H x D) 35 kg approx
Environment & Protection	Installation in safe and sheltered area, away from corrosive atmosphere. IP55.
Ambient T°	5 to 40°C (depend method)
Relative humidity	10 to 80%

### ELECTRICAL UTILITIES

Power supply	110 - 240 VAC 50 / 60 Hz
Consumption	Typical 150 VA - Maximum 300 VA

### ANALYSIS

Parameters	Refer to list on reverse page / Consult
Range	Depend on parameter / Consult
Method	Continuous, on line measurement Colorimetry, titrimetry, potentiometry or absorption Selection based on parameter and/or range
Reagents	Depend on parameter and method
Number of streams	1 to 6 on option (above, please consult)
Multi parameter	Single or multi parameter analyser (consult)
Cycle time	15 min on average
Accuracy	± 1 to 2% end of range (colo, titri, pot.)
Repeatability	± 1 to 2% end of range (colo, titri), ± 3 to 5% (pot.)

### CONNECTIVITY, ALARMS & COMMUNICATION

User interface	Colour LCD display, 5.7", 160 x 230 mm, touch-screen Windows interface
Data storage and retrieval	Data storage in analyser memory Transfer via USB port
Input / Output & Communication	4 - 20 mA, dry contacts—JBus/Modbus RS232 On option : support converter RS485
Alarms	Thresholds per stream (HI-LO), sample & analyser failure
Remote control	JBus/ModBus protocole or dry contact: end of cycle stop,

### SAMPLING

Preparation	Filtration if needed / Dilution, depending on application
Sample inlet	Flow : min 30 l/h - optimum 46 l/h (4 l/h with water saver) Pressure : 0.1 to 3 bar maximum Temperature : 5 to 45°C
Hydraulic connections	Sample : Inlet 1/4" BSP F / Outlet soft tubing D INT 9 Waste : soft tubing D INT 12
Volume of vessel	25 ml for potentiometry, otherwise 8 to 10 ml

### OPERATION

Zero	Automatic at end of each measurement cycle
Semi-automatic calibration	Required upon renewal of reagents Otherwise : depends on method
Cleaning	Mechanical wiper on option, if needed