

# BAMOPHOX 436 E - M

## Turbidity monitor and controller



## INSTRUCTION MANUAL

**BAMO** MESURES

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Turbidity monitor and controller  
**BAMOPHOX 436**

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436 M1 01 C

**MES**

**436-01/1**

# Turbidity monitor and controller

## BAMOPHOX 436 E & M

*(Technical information and Manual for LOGGER /RS422 version are on a specific document)*

### Table of contents

1. TECHNICAL SPECIFICATIONS	Page 3
2. CAUTION	3
3. DIMENSIONS	3
4. WIRING	4
5. FRONT PANEL	7
SCROLLING MENU	8
ABOUT BAMOPHOX	8
CONSULTING / MODIFYING	8
MEASUREMENT PARAMETERS	9
ADJUSTING THRESHOLD 1	10
ADJUSTING THRESHOLD 2	10
ADJUSTING THRESHOLD 3	11
ANALOG OUTPUT 4-20 mA FOR TURBIDITY	11
ANALOGUE OUTPUT 4-20 mA FOR TEMPERATURE	12
TESTING RELAY	12
LANGUAGE	12

# 1. TECHNICAL FEATURES

Displayed parameters:	Measurement values of Turbidity - Configuration Menu - Temperature value
Display:	Back lighted - 2 lines of 16 alphanumeric characters ; 9,2 mm high
Indication:	LED alarms status
Configuration:	8 push buttons keyboard on front face - Keyword protected
Units:	NTU, FAU, mg/L, g/L, FNU
Scale	Set up from 0.001 to 9999, adjustable decimal point
Turbidity measurement:	input 0/4-20 mA
Temperature:	input for a 3 wires Pt 100 $\Omega$ /0°C
Relay outputs:	4 closing contacts (Silver alloy), voltage free 3 programmable independent thresholds - with adjustable hysteresis 0...100% - and adjustable timer from 0 to 9999 sec 1 Output relay (S4) as a common alarm
Contact:	Switching capacity 250 V / 3A AC, 30 V / 3A DC, minimum 100 mA / 5 V DC
Measurement output:	0/4-20 mA (maxi 600 $\Omega$ ) proportional to measurement, galvanic insulated
Temperature output:	0/4-20 mA (max 600 $\Omega$ ), scaling 0...100°C, galvanic insulated
Main power supply:	230 V AC / 50-60 Hz [other on request] - Consumption 10 VA
Models:	Panel mounting, front IP65, 72 x 144 mm, connections on screw terminal IP40 Idem DIN Rail mounting, only for blind monitor, IP40 Wall mounting, IP65, cable glands, connections on screw terminal

## OPTION (RS 422 + Logger)

Communication:	RS422 output, J-BUS link, binary slave mode, 2400 to 9600 bauds
Data Logger:	Cycle average measurement record, with a programmable period, 150000 records on MMC (multi media card) / External driver necessary for reading

## CE label

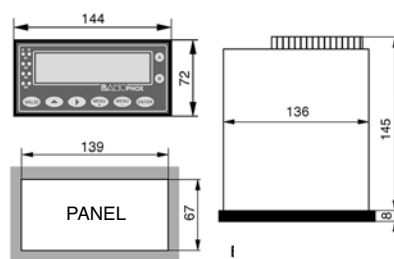
Labelized CE in conformity with 73/23/CEE low power and electromagnetic compatibility 89/336/CEE

# 2. CAUTION

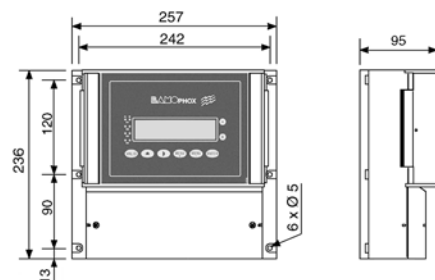
- The instrument may not be subject to vibrations and should be protected against direct sun shining.  
The ambient temperature should be between 0 and 50°C.
- Wiring have to be done by a specialist.
- Any error on electrical connection may cancel terms of warranty.
- Before to switch on your instrument, please check that the main power supply corresponds to the device requirement.

# 3. DIMENSIONS

**Extension terminal:**  
identical to the panel  
or wall mounting



Panel mounting instrument

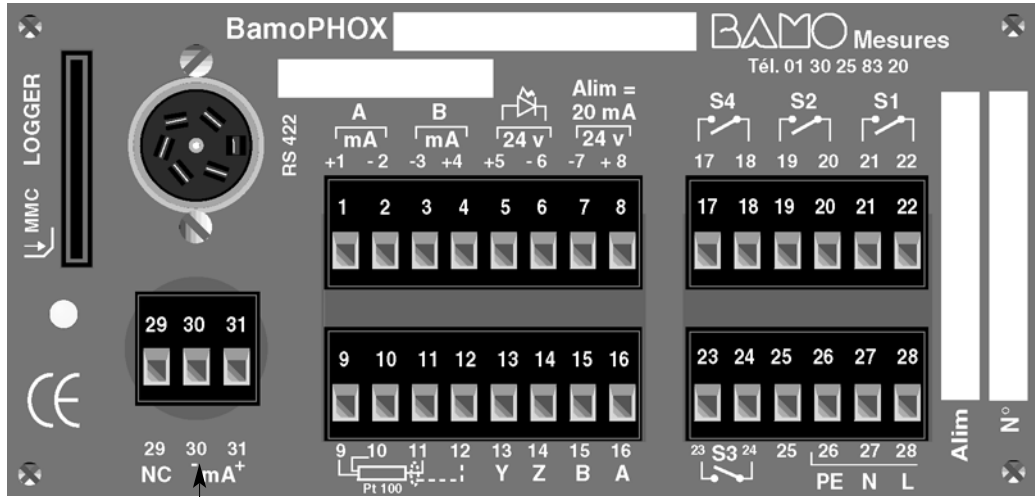


Wall mounting instrument

# 4. WIRING

## PANEL MOUNTING

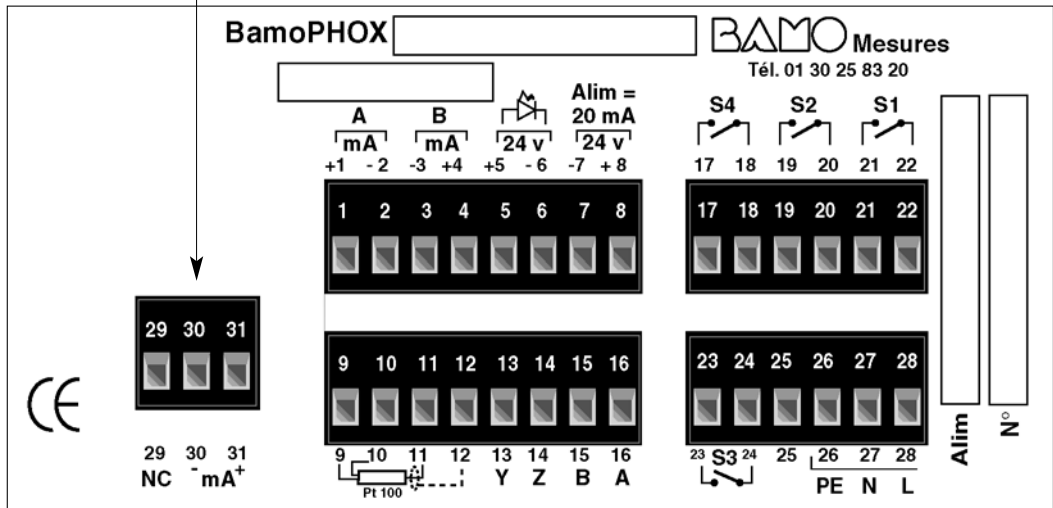
OPTION:  
LOGGER  
&  
RS 422



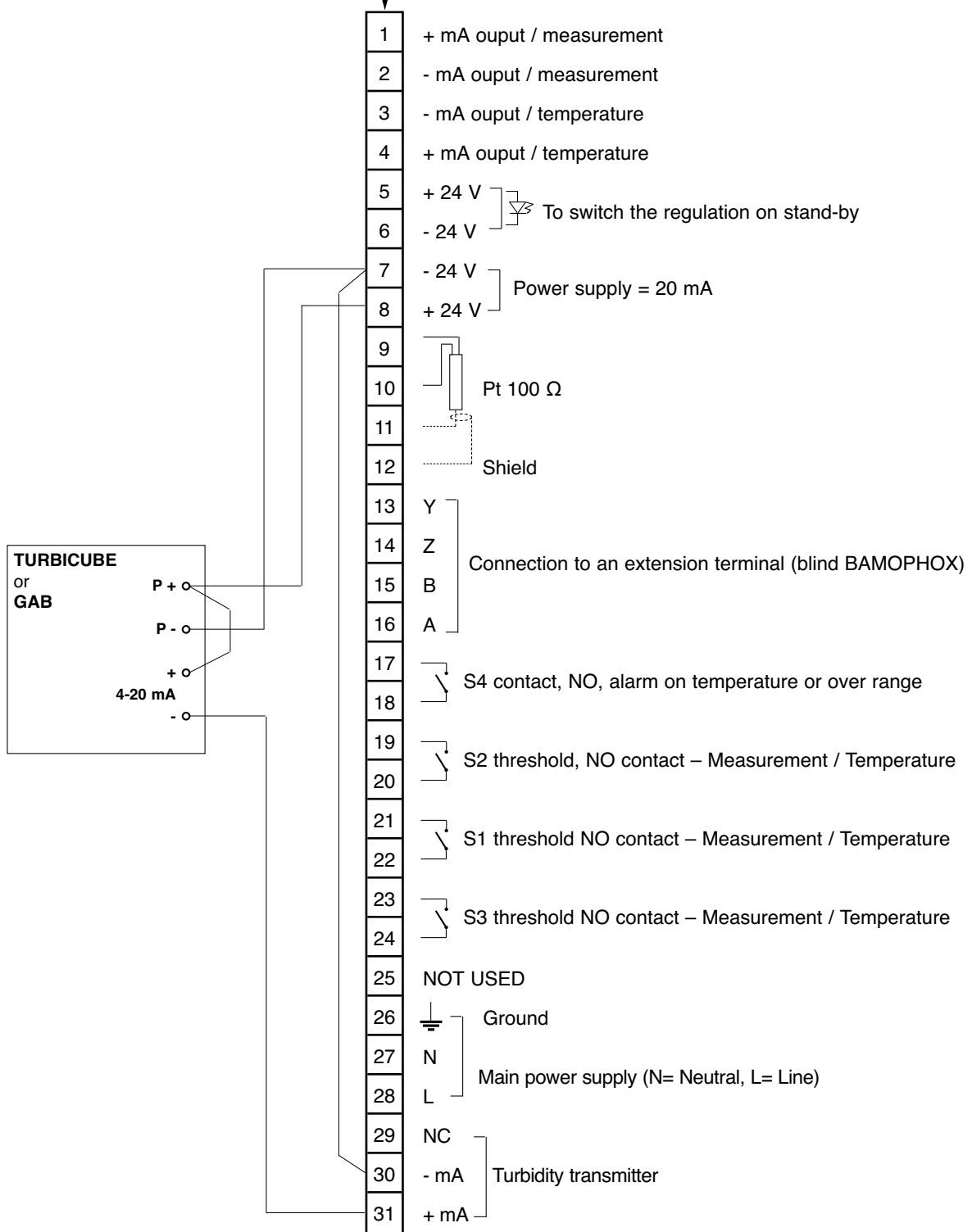
Measurement input

## WALL MOUNTING

OPTION:  
LOGGER  
(access by  
the upper cover)  
&  
RS 422

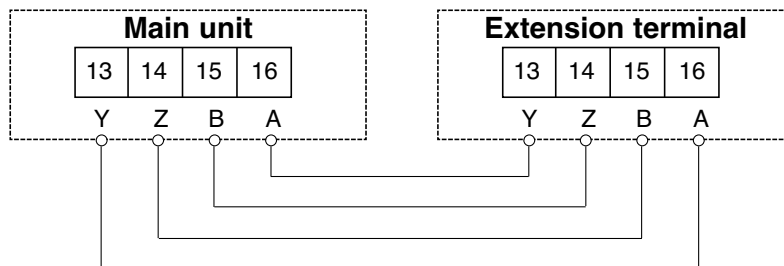


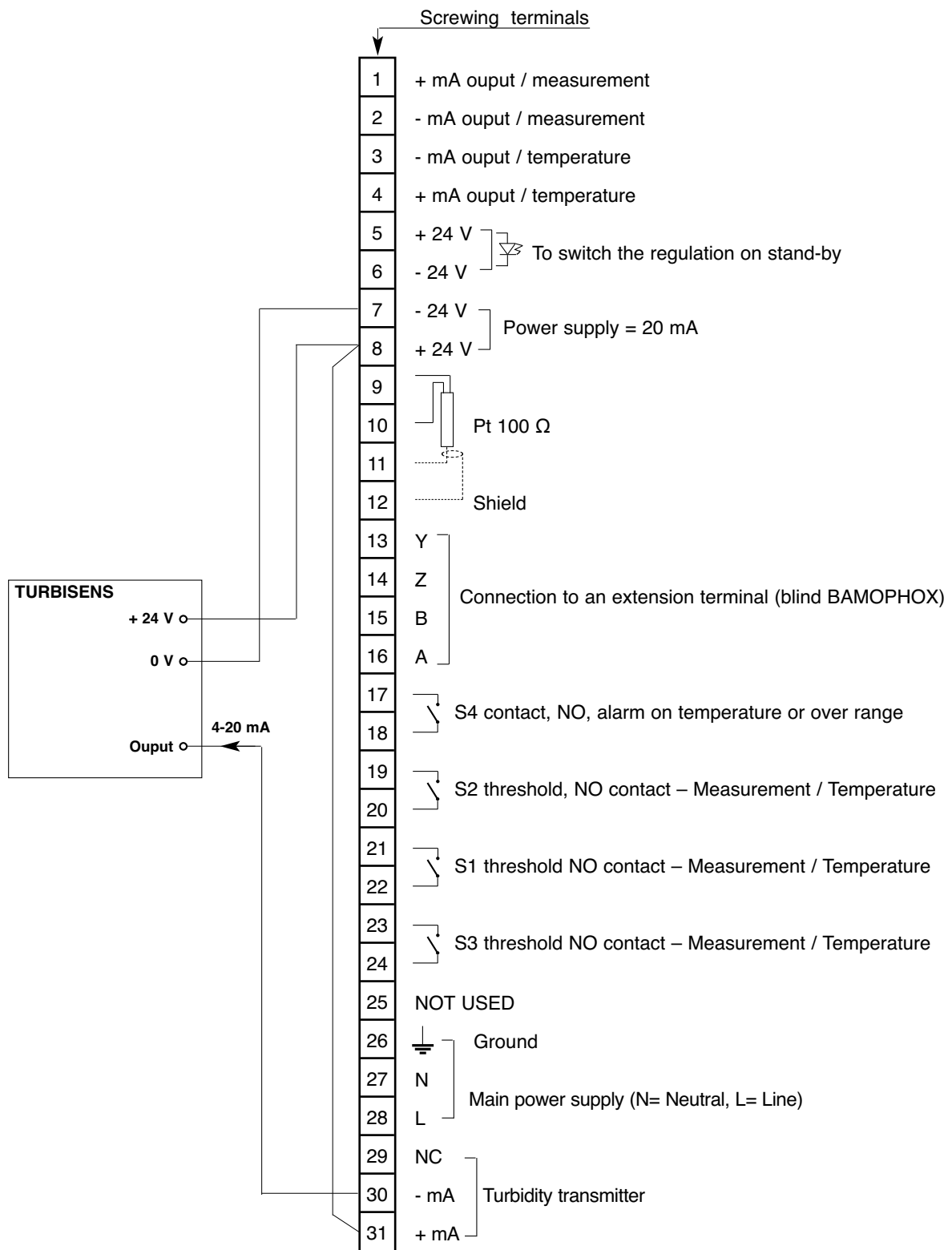
Screwing terminals



Wiring from wall or panel mounting BAMOPHOX to an Extension terminal BAMOPHOX

- Maximum length cable: 500 m
- Wire specifications: Mains cable or 4 wires shielded cable  $\geq 0,25 \text{ mm}^2$  cross section





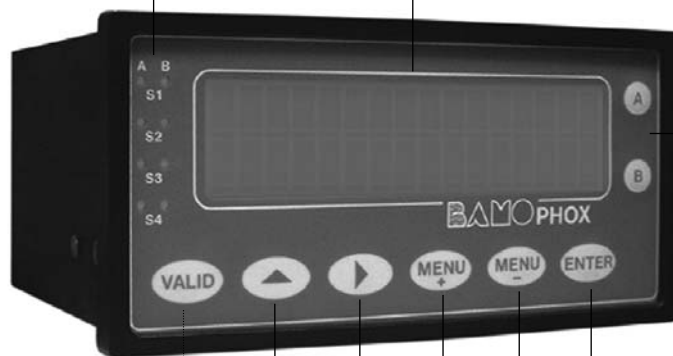
## 5. FRONT PANEL

**S1, S2, S3, and S4** indicate relays status:  
 LED lighting = contact ON  
 LED OFF = contact OFF  
 LED flashing = Timer in use

2 lines /16 alphanumeric characters  
 9.22 mm high - Back lighted

Key **"A"**  
 To display the parameters of upper line.  
 (main BAMOPHOX)

Key **"B"**  
 To display the parameters of lower line.  
 (Extension blind BAMOPHOX)



**"VALID"** key  
 To save the parameters on EPROM  
 when it asks:

**VALIDATION ?**

Caution, when you press this key,  
 all parameters are saved.  
 (previous data programmation  
 will be overwritten).  
 If you are not sure of any modification,  
 do not press the VALID key,

To change parameters of data capture:

Numeric input increase the  
 flashing digit (loop 0 after 9).  
 Reverse the choice Yes / No,  
 Up/Down, 0-20 mA / 4-20 mA etc.

To go to the next display or to change a value.

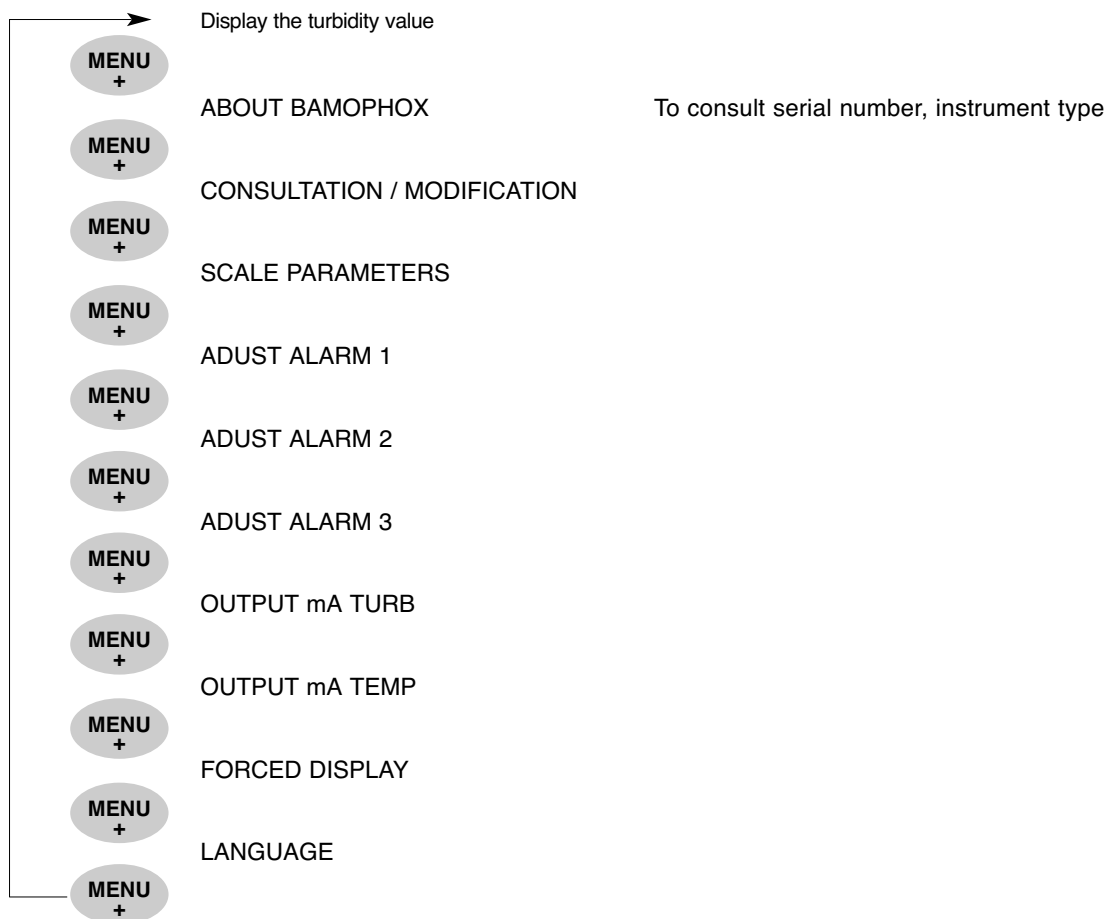
**"ENTER"** key  
 To change the step displayed menu.  
 At the last step, it comes back to the  
 first line.

**"MENU -"** key  
 To move the cursor during configuration.  
 At the last digit, comes back on the first one.

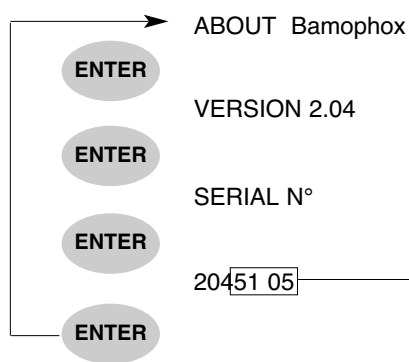
**"MENU +"** key  
 To go to the next menu.

Pushing simultaneously both keys  
**"MENU +"** and **"ENTER"**  
 allows a fast return to measurement display.

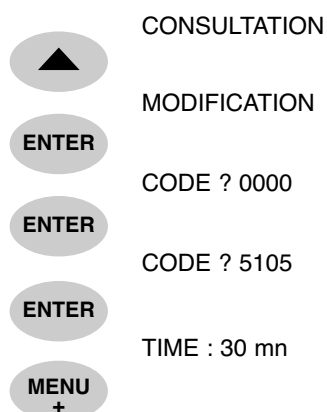
## SCROLLING MENU



### **ABOUT Bamophox**



### **CONSULTATION / MODIFICATION**



Last 4 digits (of serial number) are the key code to access the MODIFICATION menu. When wrong code is entered, the message “**ERROR**” appears during 3 seconds.

(After 30 minutes, the display returns automatically to the measurement mode.)



ENTER

UNIT



Choose between NTU FAU, mg/l, g/l, FNU

ENTER

x-x,xxx NTU



Decimal point selection

ENTER

SCALE

ENTER

MINI : 00,00 NTU



Minimal range value

ENTER

MAXI : 00,00 NTU



Maximal range value

ENTER

TRANSMITTER

ENTER

MINI : 04,00 mA



Minimal calculated value to display

ENTER

MAXI : 20,00 mA



Maximal calculated value to display.

ENTER

SAVING ?

VALID

## ADJUST ALARM 1

MENU  
+

ADJUST ALARM 2

ENTER

ALARM 1 ON/OFF



ENTER

ALARM 1 MEASURE/TEMP



**MEASURE**= Threshold against pH/mV measured value  
**TEMP**= Threshold against temperature measured value

ENTER

ALARM 1 LOW/HIGH



**HIGH**= Contact closes when value goes over the limit  
**LOW**= Contact closes when the value goes under the limit

ENTER

ON 0000 NTU / °C



To close the contact S1 at this value

ENTER

OFF 0000 NTU / °C



To open the contact S1 at this value

ENTER

DELAY UP ON/OFF



Delay (or no delay) before to close the contact S1

ENTER

TIME 0000 SEC



Delay time to close the contact S1

ENTER

DELAYDOWN ON/OFF



Delay (or no delay) before to open the contact S1

ENTER

TIME 0000 SEC



Delay time to open the contact S1

ENTER

SAVING ?

VALID

## ADJUST ALARM 2

MENU  
+

ADJUST ALARM 3 → page 11

ENTER

ALARM 2 ON/OFF



ENTER

ALARM 2 MEASURE/TEMP



**MEASURE**= Threshold against pH/mV measured value  
**TEMP**= Threshold against temperature measured value

ENTER

ALARM 2 LOW/HIGH



**HIGH**= Contact closes when value goes over the limit  
**LOW**= Contact closes when the value goes under the limit

ENTER

ON 0000 NTU / °C



To close the contact S2 at this value

ENTER

OFF 0000 NTU / °C



To open the contact S2 at this value

ENTER

DELAY UP ON/OFF



Delay (or no delay) before to close the contact S2

ENTER

TIME 0000 SEC



Delay time to close the contact S2

ENTER

DELAYDOWN ON/OFF



Delay (or no delay) before to open the contact S2

ENTER

TIME 0000 SEC



Delay time to open the contact S2

ENTER

SAVING ?

VALID

## ADJUST ALARM 3

MENU  
+

OUTPUT mA TURB

ENTER

ALARM 3 ON/OFF



ENTER

ALARM 3 MEASURE/TEMP



**MEASURE**= Threshold against pH/mV measured value  
**TEMP**= Threshold against temperature measured value

ENTER

ALARM 3 LOW/HIGH



**HIGH**= Contact closes when value goes over the limit  
**LOW**= Contact closes when the value goes under the limit

ENTER

ON 0000 NTU / °C



To close the contact S3 at this value

ENTER

OFF 0000 NTU / °C



To open the contact S3 at this value

ENTER

DELAY UP ON/OFF



Delay (or no delay) before to close the contact S3

ENTER

TIME 0000 SEC



Delay time to close the contact S3

ENTER

DELAYDOWN ON/OFF



Delay (or no delay) before to open the contact S3

ENTER

TIME 0000 SEC



Delay time to open the contact S3

ENTER

SAVING ?

VALID

## OUTPUT mA TURBIDITE

MENU  
+

OUTPUT mA TEMP → page 12

ENTER

HIGHER 0000 NTU



Value corresponding to 20,00 mA

ENTER

LOWER 0000 NTU



Value corresponding to 00,00 mA or 04,00 mA

ENTER

OUTPUT 4/20 mA / 0/20 mA



Output type

ENTER

SAVING ?

VALID

**OUTPUT mA TEMP.**

MENU +

MARCHE FORCEE

**Caution: If PID regulation is active, this step menu would not appears**

ENTER

HIGHER 0000 NTU



Value corresponding to 20,00 mA

ENTER

LOWER 0000 NTU



Value corresponding to 00,00 mA or 04,00 mA

ENTER

OUTPUT 4/20 mA / 0/20 mA



Output type

ENTER

SAVING ?

VALID

**FORCED RELAY**

MENU +

LANGUAGE

ENTER

ALARM 1 ON / OFF



ENTER

ALARM 2 ON / OFF



ENTER

ALARM 3 ON / OFF



ENTER

ALARM 4 ON / OFF



} Diagnostic mode to test the threshold configurations

VALID

**LANGUAGE**

MENU +

Back to measurement mode

ENTER

ENGLISH / GERMAN / FRENCH



ENTER

SAVING ?

VALID