

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 D

MES

436-01/1

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

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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 Ω /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 Ω) proportional to measurement, galvanic insulated
Temperature output:	0/4-20 mA (max 600 Ω), 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

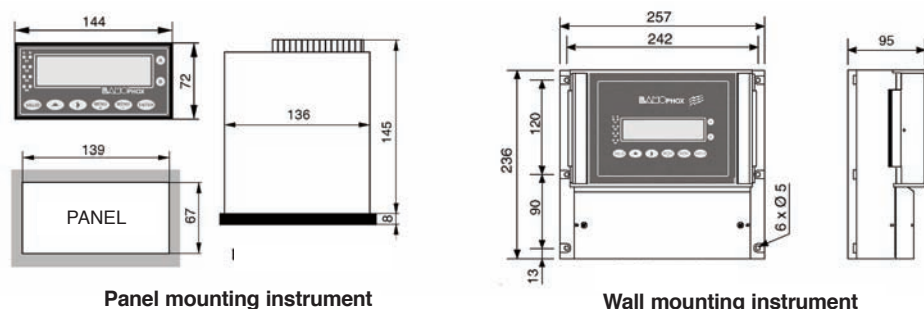
Labelized CE in conformity with 73/23/CEE low power and electromagnetic compatibility 89/336/CEE

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.

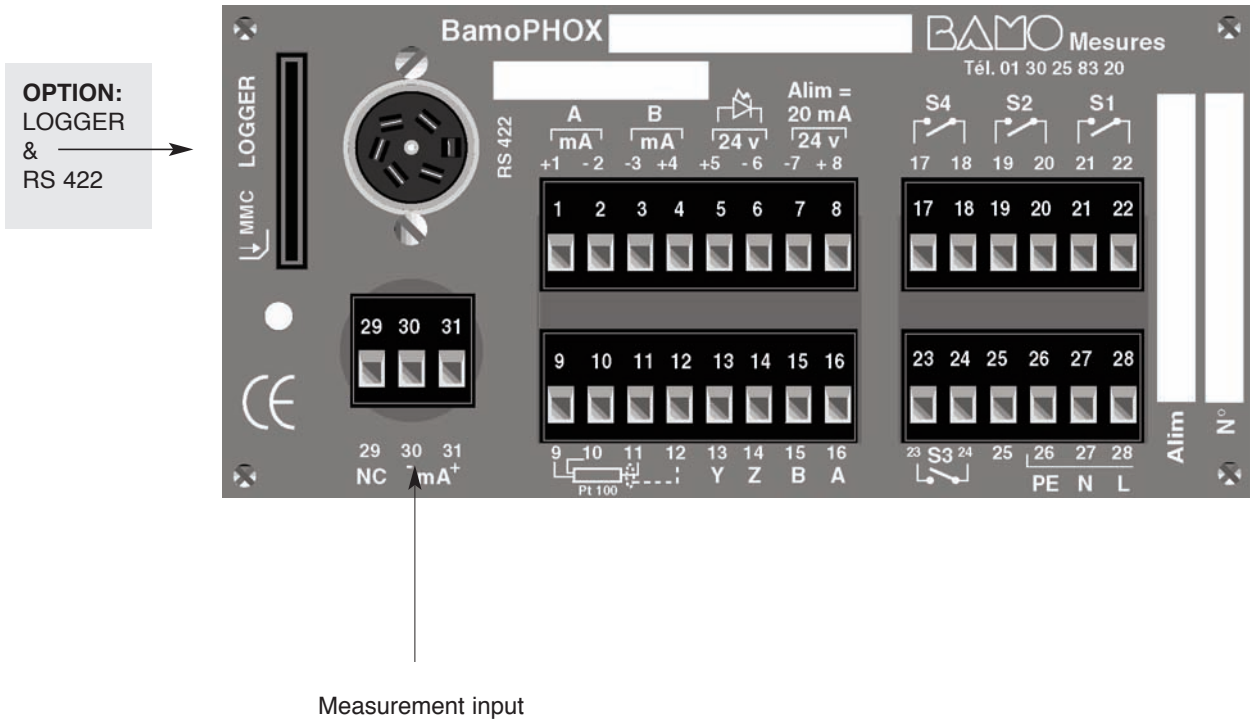
3. DIMENSIONS

Extension terminal:
identical to the panel
or wall mounting

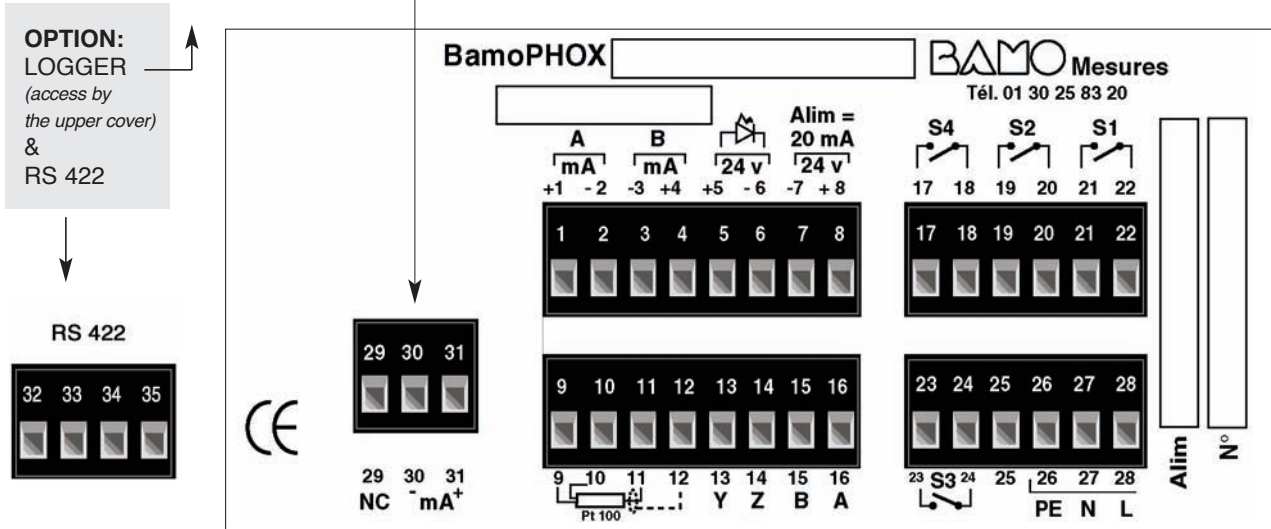


4. WIRING

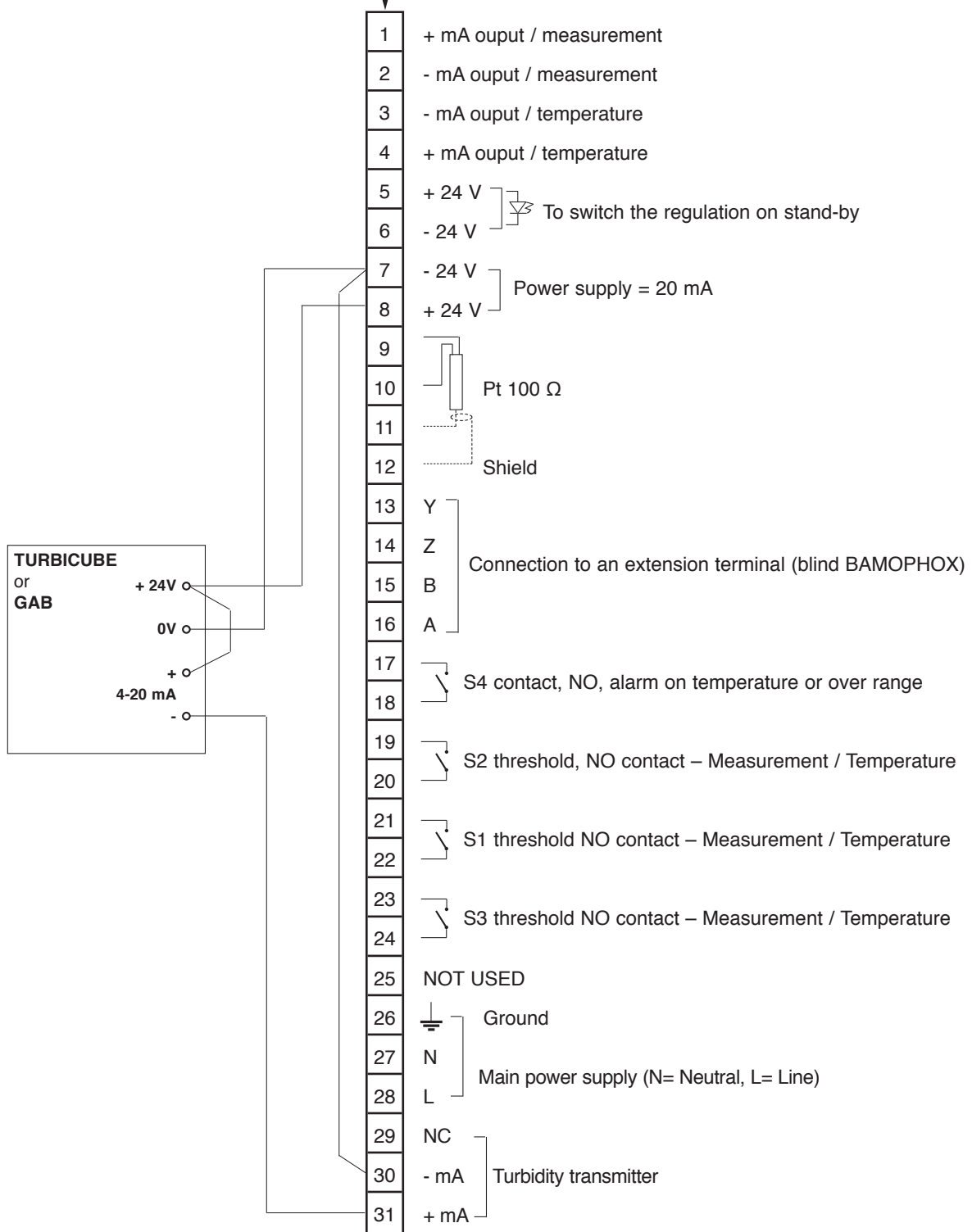
PANEL MOUNTING



WALL MOUNTING



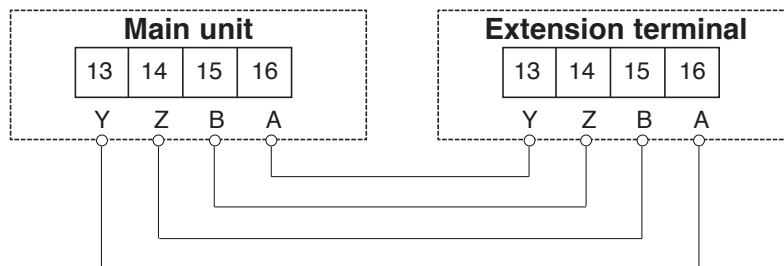
Screwing terminals

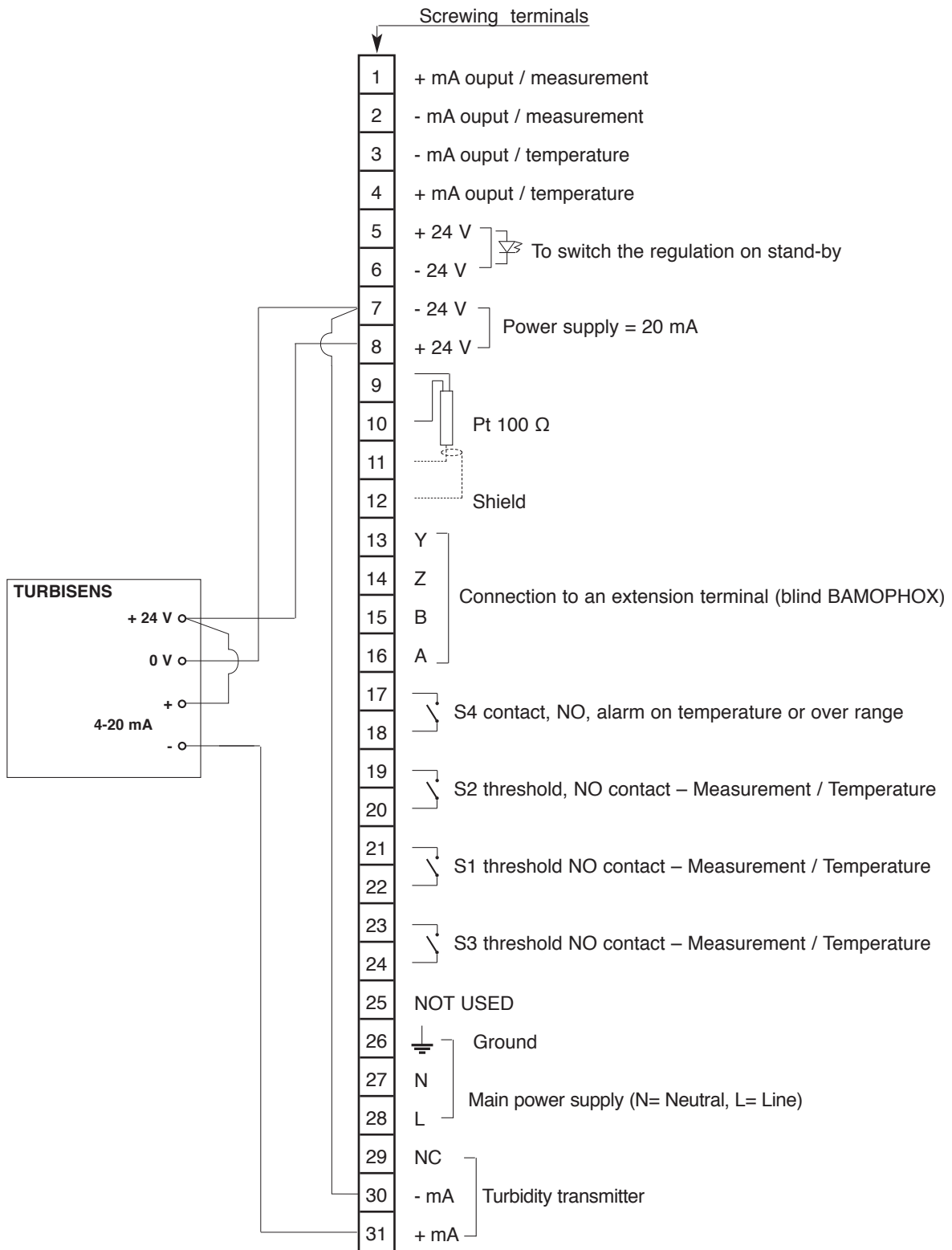


Wiring from wall or panel mounting BAMOPHOX to an Extension terminal BAMOPHOX

- Maximum length cable:
500 m

- Wire specifications:
Mains cable or 4 wires shielded cable
≥ 0,25 mm² 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.

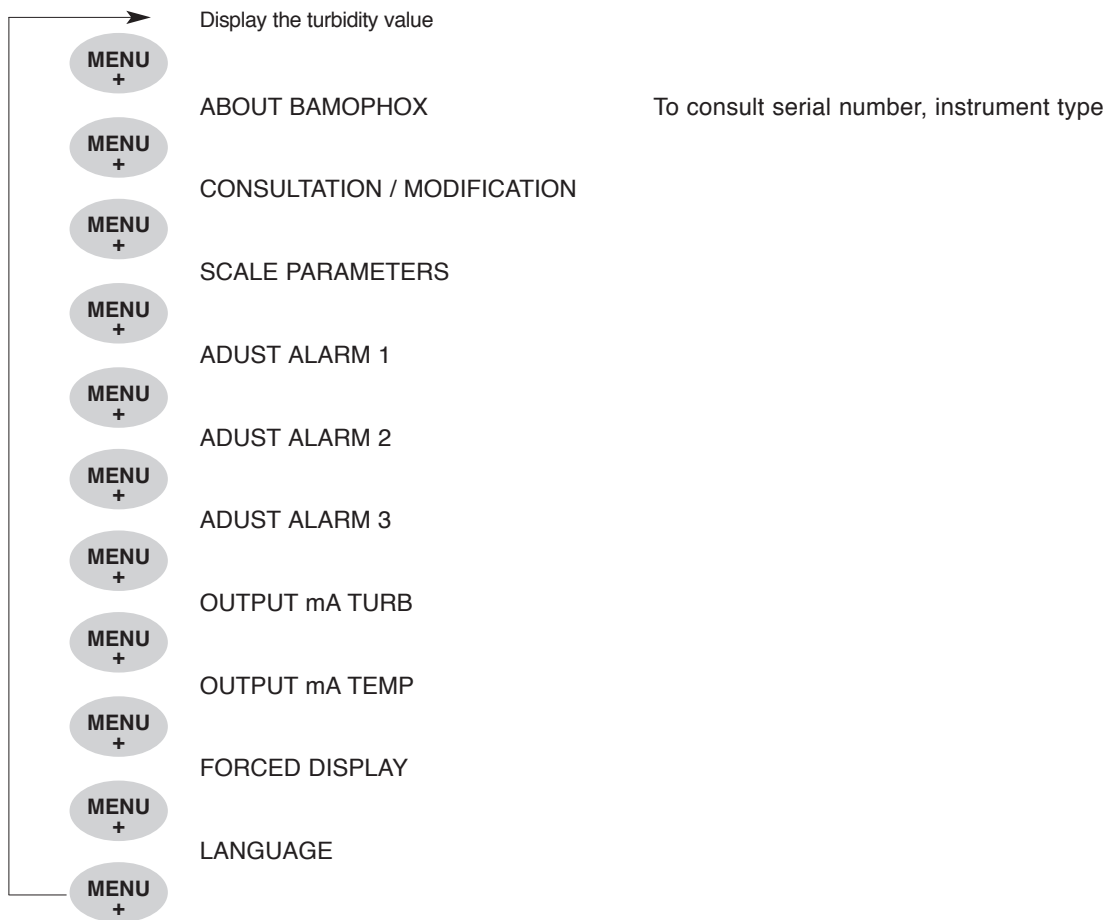
"ENTER" key
 To change the step displayed menu.
 At the last step, it comes back to the
 first line.

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

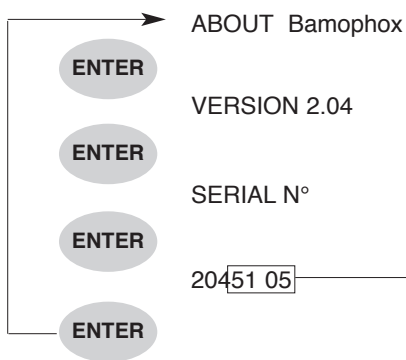
"MENU +" key
 To go to the next menu.

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

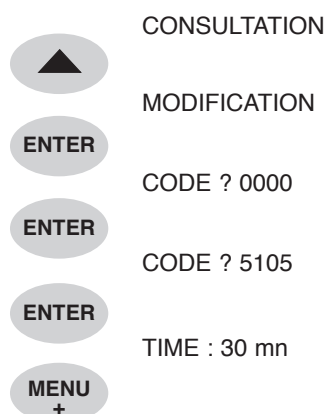
SCROLLING MENU



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 +** → MARCHÉ FORCÉE

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

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