

BAMOCOR 321 E - M

RESISTIVIMETER



STARTING UP NOTICE VERSION 4.00

This document is made up of 10 pages from 321/20 up to 321/30

BAMO MESURES

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RESISTIVIMETER
BAMOCOR 321 E/M

14/05/99

321 M1 01 A

MES

321/20

BAMOCOR 321 RE / RM

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1 - TECHNICAL SPECIFICATIONS

Main power supply	: 230 V \pm 10 % 50-60 Hz 10 VA single phase. Others on request
Enclosure box	: Dimensions : 72 x 144 x 185 : Weight : 1100 g : Protection : IP 40 / IP 65 for front face : Material : Noryl, front face polycarbonat : Connection: Pull off terminal screw
Wall mounting box	: Dimensions : 338 x 222 x 85 : Weight: 1900 g : Protection : IP 65 : Material : ABS, font face polycarbonat : Connection: Terminal screw, input by plastic cable gland.
Température	: Stock : -10 à 70 °C : Fonctionning :-5 à 50 °C
Measuring range	: 0-200 up to 20 M 0-2 μ S up to 0-20 mS Temperature : 0 up to 100 °C
Display	: Measure-Menu-Temperature
Displayer	: 16 alphanumeric characters - H = 9.22 mm - Back lighted
Programming	: Membrane switching push-button keyboard - Password protected
Measuring range	: 0-200 up to 20 M or 0-2 μ S up to 0-20 mS
Accuracy	: \pm 0,3 % and \pm 0,3 °C
Probe connection	: Coaxial connector type BNC
Probe	: Coaxial probe with K= 0,01 or K=0,1 or K=1 or K=10
Temperature compensation	: Automatic with Pt 100 probe, range 0 to 100 °C, Manual 0 to 100 °C
Output relays	: Volt free change over contact rated at 500 VA / 250 V / 2 A
Alarm sets	: 2 independent alarm sets, adjustable hysteresis from 0 to 100%, adjustable timer 0 to 9999 s Selectable on measure or temperature
Alarm of defect	: For too long injection, adjustable timer 0 to 9 999 s.
Measure analogic output	: 0/4 - 20 mA (max. 600), galvanic isolated.
Temperature output	: 0/4 - 20 mA (max. 600) proportional from 0 to 100°C. Galvanic isolated.
Simulation	: By menu, action on output measure, temperature and sets
OPTIONS	
Communication	: Connection J-BUS - Slave binary mode RS 485 2-wire output, 2400 to 9600 baud
Data logger	: Record of average measure in the meantime of the programming. (Example : meantime is 1mn = 6 month of Record) Maximum is 348 000 records. Auto-reset of memory after data recovery.

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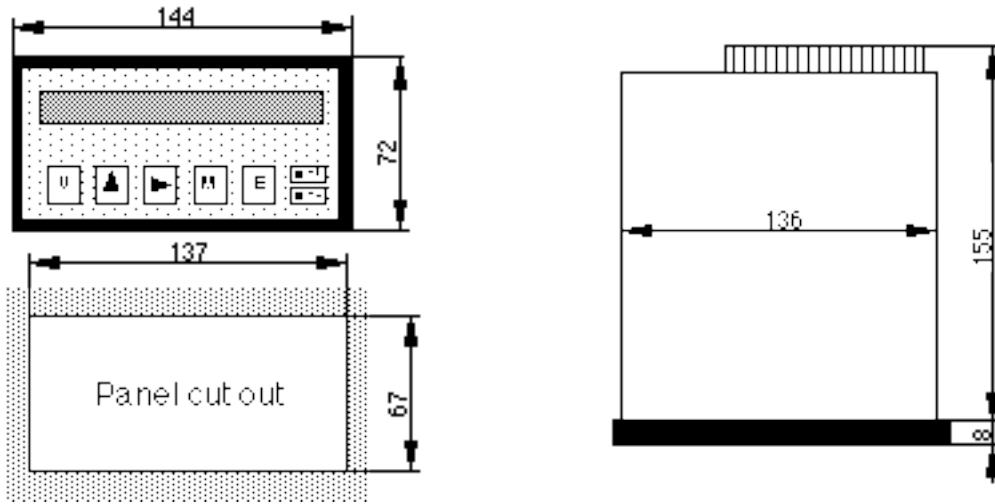
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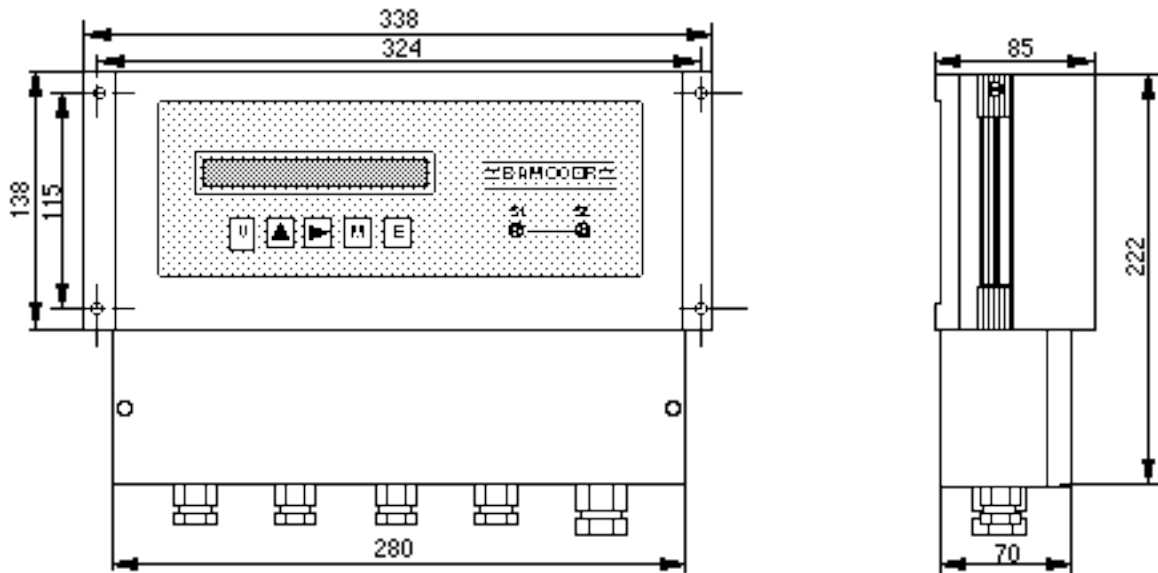
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2 - DIMENSIONS

ENCLOSURE BOX



WALL MOUNTING BOX



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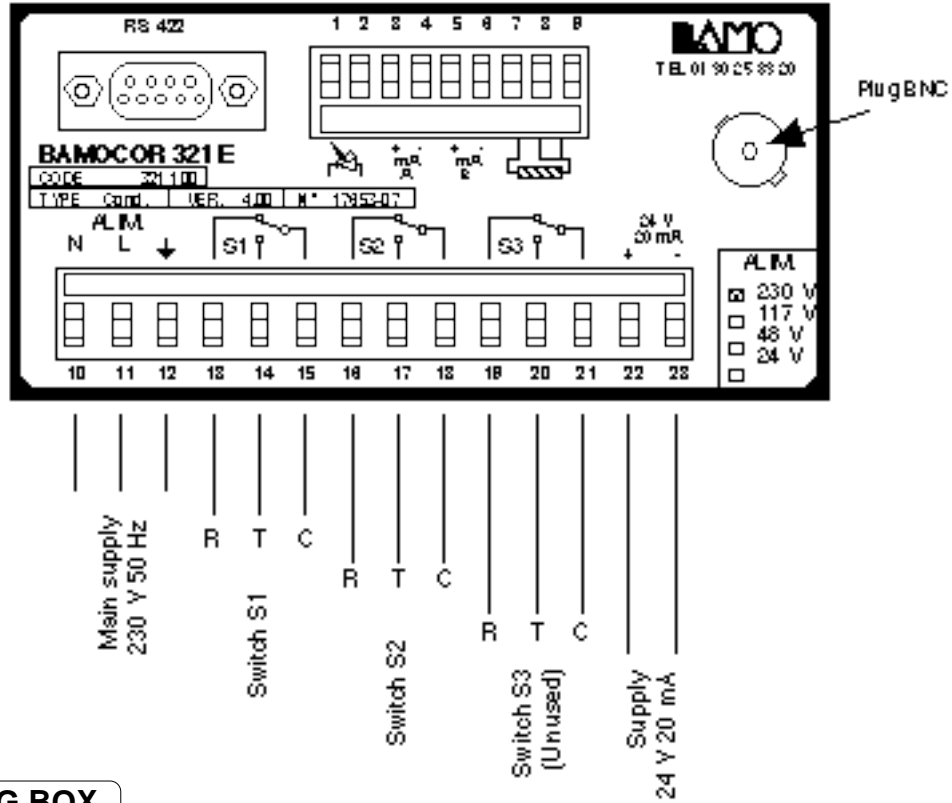
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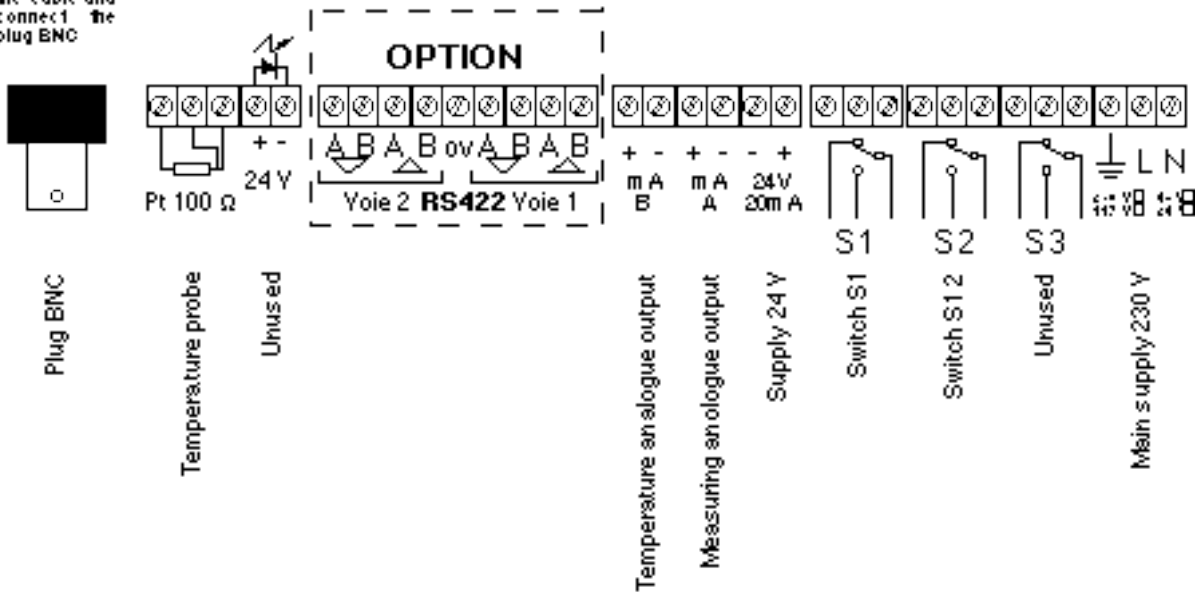
3 - WIRING CONNECTIONS

ENCLOSURE BOX



WALL MOUNTING BOX

cable-gland to introduce the cable and connect the plug BNC



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4 - FRONT FACE

PUSH-BUTTON AND LEDS

16 alphanumeric characters
H = 9.22 mm - Back lighted

Key **VALID** write parameters on the EPROM when the displayer ask you :


VALIDATION ?

Take care, when you press this push-button, all the parameters are memorised. So if you are not sure of our manipulation do not press.


Key **MENU** change the part of programming
At the last one, come back on the first.

Key **ENTER** change the step of one menu.
At the last step, come back to the first



Press  to change parameters of data capture :
- Numéric input :
increase the flashing digit (loop 0 after 9).
- Reverse the choose Yes / No, Up/ Down - 0 - 20 mA / 4 - 20 mA etc.

Leds **S1**, **S2** or **S3** display the output state of the relay. (Red : relay ON. No light : relay OFF, if flashing : temporisation).

Press  to flashing the next display to change the value.

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5 - MODE CONSULTATION / MODIFICATION

There is two mode to read the programmation :

- Consultation mode, all parameters can be read but can not be changed
- Modification mode, the user can adjust the most operationnal parameter (alarm, regulation, temperature ...), this mode is protected by a password come from the 4th last number of the serial number
(Ex : 12345-67. the password will be 4567)

6. LISTING of MENU

6.1 Consultation mode

6.1.1 Display / forcing measures

Display of measure and temperature in °C
Press "ENTER"

1,994 MΩ +21,6°C

if mode " MODIFICATION ", it is possible to forcing the PID regulation

* press " ENTER " : display

FORCAGE MESURE

* press " ENTER " : display

1,994 MΩ +21,6 °C

Change the measure value with and on the flashing display.

This modification is immediatly understand by the electronic and all other parameter.
(alarm, regulations, output mA...).

* come back on the right measure by pressing " ENTER "

6.1.2 About BAMOCOR : soft version and serial number

* press " ENTER " : display = VERSION : 4.00

* press " ENTER " : display = N° DE SERIE :

* press " ENTER " : display = 12345-67

Nota : the 4th last numbers are the password to come in the modification mode. (See §5).

6.1.3 - Choose consultation / modification, input password

Come in MODIFICATION mode

Press MENU, display

CONSULTATION

Press , display :

MODIFICATION

Press ENTER , display :

CODE ? 0000

Input the password (see § 5) with keys and

Press ENTER

If wrong password, display:
during 3 second

ERREUR

If it is the right password, display :

DUREE : 30 mn !

The CONSULTATION mode come back automatically after
30 minutes (Come back MEASURES menu).

Press MENU to choose the data to change.

Password : to know the password see § 5.

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6.1.4 - MEASURE SETING

This menu is to adjust the probe and the measure

Press ENTER : display

TYPE DE MESURE

Press ENTER : display

RESISTIVITE

Press ENTER : display

SONDE K = 0,1

To choose the coefficient of the measuring probe

(MODIFICATION mode : choose with)

Press ENTER : display

KR : 0,1000

Input the real value of the probe's coefficient (Only with the glass probe where the coefficient is write on the cable or in the glass or on the terminal box)

(MODIFICATION mode : choose with and)

Press ENTER : display

ECHELLE : 2 M

value of the maximum measure.

(MODIFICATION mode : choose with and)

Press ENTER, display de :

VALIDATION ?

Press **VALID** to save the data.

6.1.4.1 - RANGE AGAINST PROBE

With automatic temperature compensation				
CONDUCTIVITY				
Coefficient	0,01	0,1	1	10
Range 1	2,000 μ S	20,00 μ S	200,0 μ S	2,000 mS
Range 2	20,00 μ S	200,0 μ S	2,000 mS	20,00 mS
RESISTIVITY				
Coefficient	0,01	0,1	1	10
Range 1	20,00 MOhms	2,000 MOhms	200,0 KOhms	20,00 KOhms
Range 2	2,000 MOhms	200,0 KOhms	20,00 KOhms	2,000 KOhms
Without compensation				
CONDUCTIVITY				
Coefficient	0,01	0,1	1	10
Range 1	2,000 μ S	2,000 μ S	20,00 μ S	2 00,0 μ S
Range 2	20,00 μ S	20,00 μ S	200,0 μ S	2,000 mS
Range 3		200,0 μ S	2,000 mS	20 mS
RESISTIVITY				
Coefficient	0,01	0,1	1	10
Range 1	200,0 MOhms	20,00 MOhms	2,000 MOhms	200,0 KOhms
Range 2	20,00 MOhms	2,000 MOhms	200,0 KOhms	20,00 KOhms
Range 3	2,00 MOhms	200,0 KOhms	20,00 KOhms	2,000 KOhms
Range 4	200,0 KOhms	20,00 KOhms	2,000 KOhms	200,0 Ohms

6.1.4.2 - LENGTH OF MEASURING CABLES

Coefficient	0,01	0,1	1	10
Échelle				
200 M	10			
20 M	50	10		
2 M	100	100	50	10
200 K		100	50	10
20 K		100	100	50
2 K			100	100
200			100	100

Conductivity

Du to a specific electronic circuit to measure conductivity the cable can have a length of 100 m on all measuring ranges independent from the coefficient of probe.

Resistivity

According to the following table (max. length in meter).

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6.1.5 - ADJUST THE SET 1

To adjust the set 1

Press ENTER : display

(MODIFICATION mode : choose with)

Press ENTER : display

Montée = relay ON if the measure is upper the set

Descente = relay is ON if the measure is lower the set

(MODIFICATION mode : choose with)

Press ENTER : display

Value of the set S1 is ON

(MODIFICATION mode : choose with and)

Press ENTER : display

Value of the set S1 is OFF

(MODIFICATION mode : choose with and)

Press ENTER : display

With or without delay S1 for ON

(MODIFICATION mode : choose with)

Press ENTER : display

Time of the delay S1

(MODIFICATION mode : choose with and)

Press ENTER : display

With or without delay S1 for OFF

(MODIFICATION mode : choose with)

Press ENTER : display

Time of the delay S1

(MODIFICATION mode : choose with and)

Press ENTER, display de :

Press **VALID** to save all data.

SEUIL 1 MARCHE (ARRET)

SEUIL 1 MONTÉE (DESCENTE)

EXCITE 1,000 M Ω

REPOS 1,050 M Ω

TEMPO EXCITÉ OUI (NON)

DUREE 0010 Sec

TEMPO REPOS OUI (NON)

DURÉE 0060 Sec

VALIDATION ?

6.1.6 - ADJUST THE SET 2

same as before for set 1 (§ 6.1.4)

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6.1.7 - mA OUTPUT

Adjustement of the current output for remote controle.

Press ENTER : display

LIM.Hte 2,000 M

What value for the output 20,00 mA

(MODIFICATION mode : choose with and)

Press ENTER : display

LIM.Bse 0,000 M

What value for the output 0,00 mA or 4,00 mA

(MODIFICATION mode : choose with and)

Press ENTER : display

COURANT 0/20 mA (4/20 mA)

Choose of the starting current output 0,00 mA or 4,00 mA

(MODIFICATION mode : choose with)

Presser la touche ENTER, display :

VALIDATION ?

Presser la touche **VALID** pour confirmer les valeurs sélectionnées.

6.1.8 - Temperature, choose automatic / manual

Adjustement of the temperature measure and its correction.

Press ENTER : display

MESURE : AUTO (MANU)

MESURE AUTO : The temperature measure is done with a probe Pt 100

(MODIFICATION mode : choose with)

MESURE MANU : The temperature value is input manually.

Press ENTER : display

MESURE : T° DU BAIN 025,0 °C

This only appeared if the measure is manual "MESURE : MANU" :

Input the temperature value for caculation of the compensation

(MODIFICATION mode : choose with and)

Press ENTER, display:

C.T. AUTO : NON (OUI)

This only appeared if temperature mode is "C.T. AUTO :OUI" :

Press ENTER, display :

T. DE REF : 25°C

Enter the reference value of temperature for calculation.

You get choose between 20°C and 25°C

(MODIFICATION mode : choose with and)

Press ENTER, display :

VALIDATION ?

Save the change of data by pressing **VALID**

6.1.9 - J-BUS.

Tables for J-BUS are give if necessary.

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