ARPEGE MASTERK
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LOGIC 100 AND LOGIC 200 USER ADJUSTMENT MANUAL

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LOGIC 100 AND LOGIC 200 USER ADJUSTMENT MANUAL

Date	Revision number	Revision
10/04/2007	00	Original.
20/07/2007	01	Corrected specifications.
31/07/2007	02	Added description of measure cabling.
18/09/2007	03	Update. (warm-up time, power supply voltage, etc.)
02/10/2007	04	Corrected "**Er ref**" error message.
07/01/2008	05	Corrected cabling of the analog measuring channel.

CONTENTS

1. OVERVIEW.

1.1 Technical specifications.

Max. number of scale intervals (in "legal for trade" mode): 5000 (if the unit used is kg).
10,000 (if the unit used is lb).

Sensitivity	: 1 μV.
Load cell power supply voltage	: 5V alternative square wave.
Number of measurements / second	: from 10 to 90 m/s.
Load impedance (analog sensors)	: ≥ 58 ohms.

Zero displayed at ¼ scale interval.
Interactive digital adjustment on the front panel.
DC power supply: 12VDC (-12%) to 24VDC (+10%), or Mains power supply: 230VAC / 50Hz.
Power consumption: Max. 100mA to 300mA under 12 VDC, depending on the configuration.
Battery backup for internal clock and memory.

LOGIC 100 :
6-digit weight display using 20mm LEDs.
Keypad: - 3 metrological keys,
- 3 application keys,

LOGIC 200 :
6-digit weight display using 20mm LEDs.
Keypad: - 3 metrological keys,
- 17 application keys,

1.2 Peripherals.

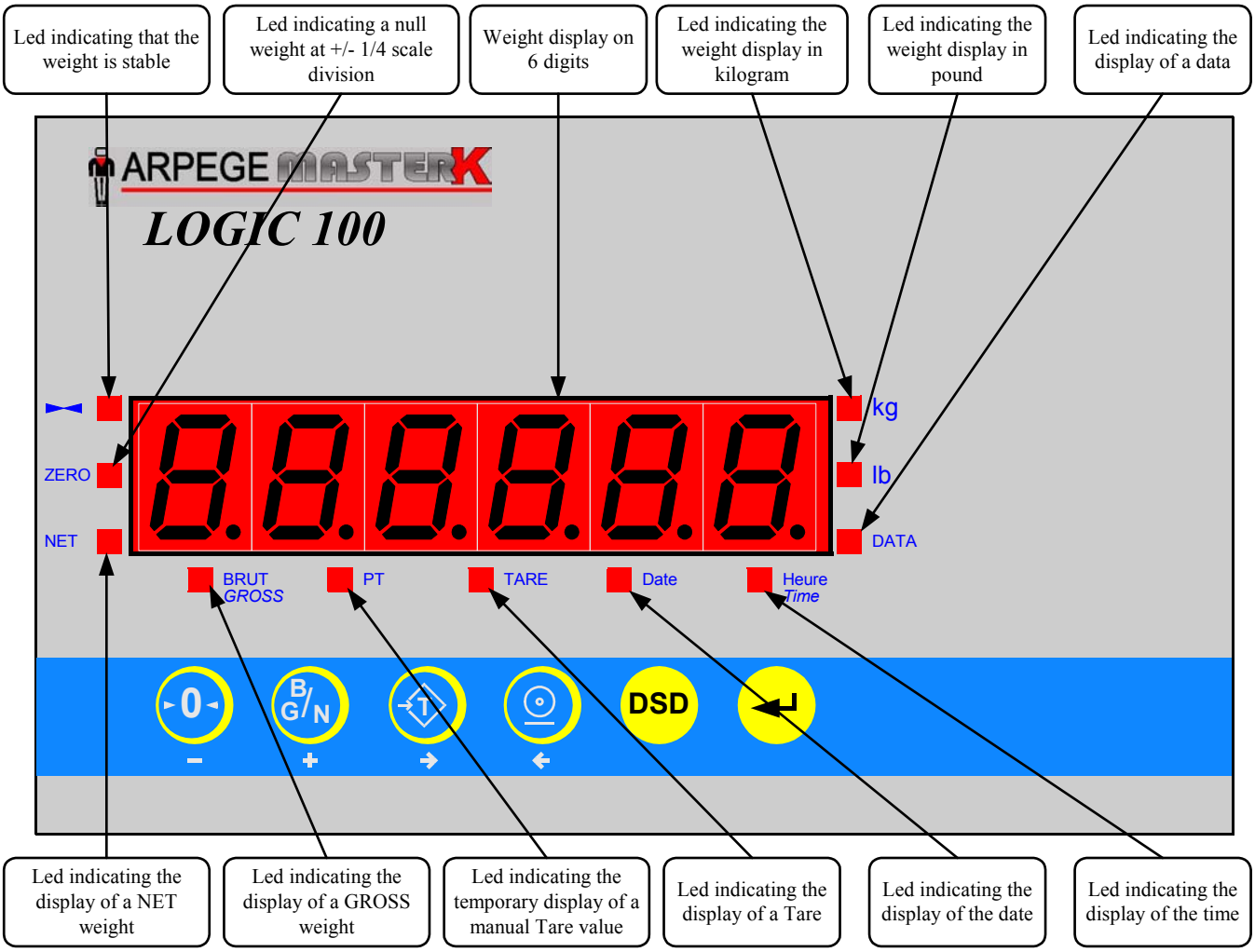
Standard "*LOGIC 100*" and "*LOGIC 200*" indicators include:
* 1 RS232 serial port on **COM1**.
* 1 2-wire RS485 serial port on **COM2**.
* 1 input port for analog sensors, 6 wires, on **M1**. (Max. length: 100m)

Remarks:
- Only one cable can be connected to **M1**. Parallel connection of sensors is done separately in a junction box.
- The sensor's braided shield must be connected to the indicator's chassis ground.

2. FRONT PANELS

2.1 Displays and LEDs.

LOGIC 100.

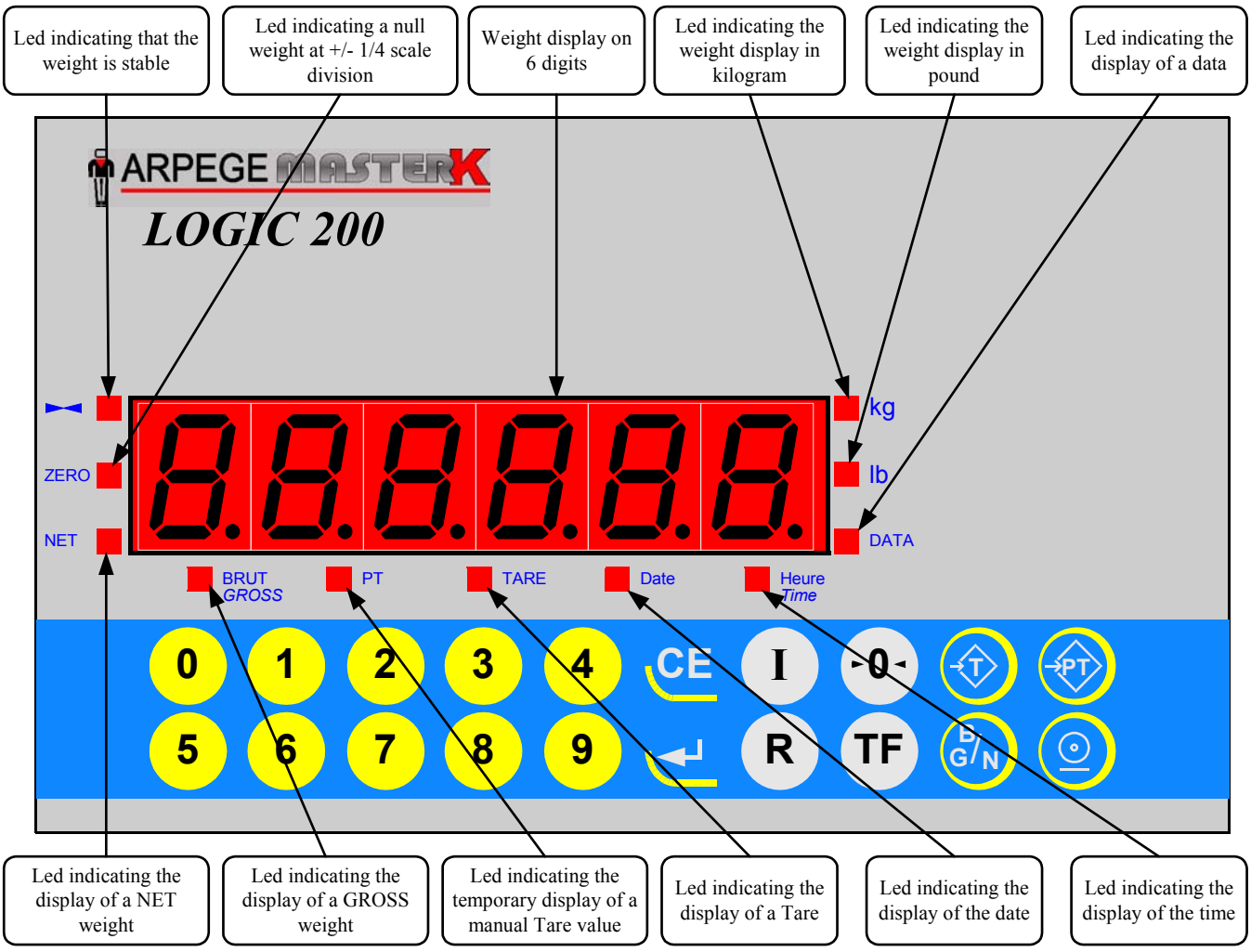


Remarks:

- Kilograms/pounds conversion: 1 kg ⇒ 2.204 lb,
  1 lb ⇒ 0.454 kg.

- When a weighing stored in the DSD is accessed:
  - The "**DATA**" indicator shows that stored data is being displayed,
  - The "**kg**" and "**lb**" LEDs show the units of the weighing stored in the DSD,
  - The "**BRUT/*GROSS***" LED lights when the gross weight of the weighing stored in the DSD is being displayed,
  - The "**NET**" LED lights when the net weight of the weighing stored in the DSD is being displayed,
  - The "**PT**" and "**TARE**" LEDs specify the tare type while the tare value for the weighing stored in the DSD is being displayed,
  - The "**Date**" LED lights when the date of the weighing stored in the DSD is being displayed,
  - The "**Heure/*Time***") LED lights when the time of the weighing stored in the DSD is being displayed,

LOGIC 200.



Remarks:

- Kilograms/pounds conversion: 1 kg ⇒ 2.204 lb,
  1 lb ⇒ 0.454 kg.

- When a weighing stored in the DSD is accessed:
  - The "**DATA**" indicator shows that stored data is being displayed,
  - The "**kg**" and "**lb**" LEDs show the units of the weighing stored in the DSD,
  - The "**BRUT/*GROSS***" LED lights when the gross weight of the weighing stored in the DSD is being displayed,
  - The "**NET**" LED lights when the net weight of the weighing stored in the DSD is being displayed,
  - The "**PT**" and "**TARE**" LEDs specify the tare type while the tare value for the weighing stored in the DSD is being displayed,
  - The "**Date**" LED lights when the date of the weighing stored in the DSD is being displayed,
  - The "**Heure/*Time***" LED lights when the time of the weighing stored in the DSD is being displayed,

2.2 Keypads.

LOGIC 100.

Metrological keys:

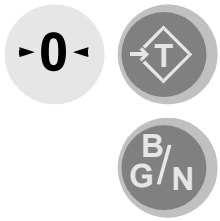
Application keys:

There are six keys available to move through the various menu options and enter data. (see above)

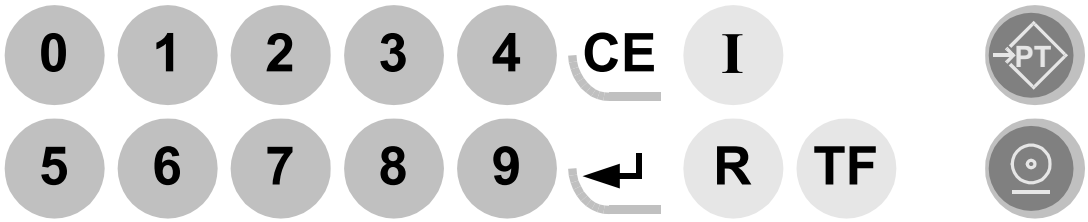
	0 (−)	B/G/N (+)	T (→)	←	DSD	↵
IN FUNCTIONS OR MENUS	Previous function / menu.	Next function / menu.	Not used.	Switches display from menu to weight and can change the type of weight displayed.	Switches display from weight to user adjustment menu.	Activate the function / menu. (**ENTER**)
DURING DATA ENTRY	Reduces flashing digit by one unit.	Increases flashing digit by one unit.	Resets value to zero or can change the sign of a value.	Shifts digit to the left.	Escape key (**ESC**).	Confirms an entry.

LOGIC 200.

Metrological keys:



Application keys:



Keys 0 to 9: Numerical keys used to enter data, weight, codes, etc.

CE key: "**C**orr**e**ction" key, used to erase numbers on the display, or when entering signed valued, will change the sign.

R key: "**R**esult" key, used to return to the previous function / menu.

I key: "**I**nformation" key, used to go to the next function / menu.

key: "Print" key, during display of weights, changes the type of weight displayed.

key: Confirms data entered or displayed on the indicator. (**ENTER**)
Activates the function / menu displayed.

key: "Calculated Weight" ("**P**oids **T**abulé") key, not used in user adjustment mode.

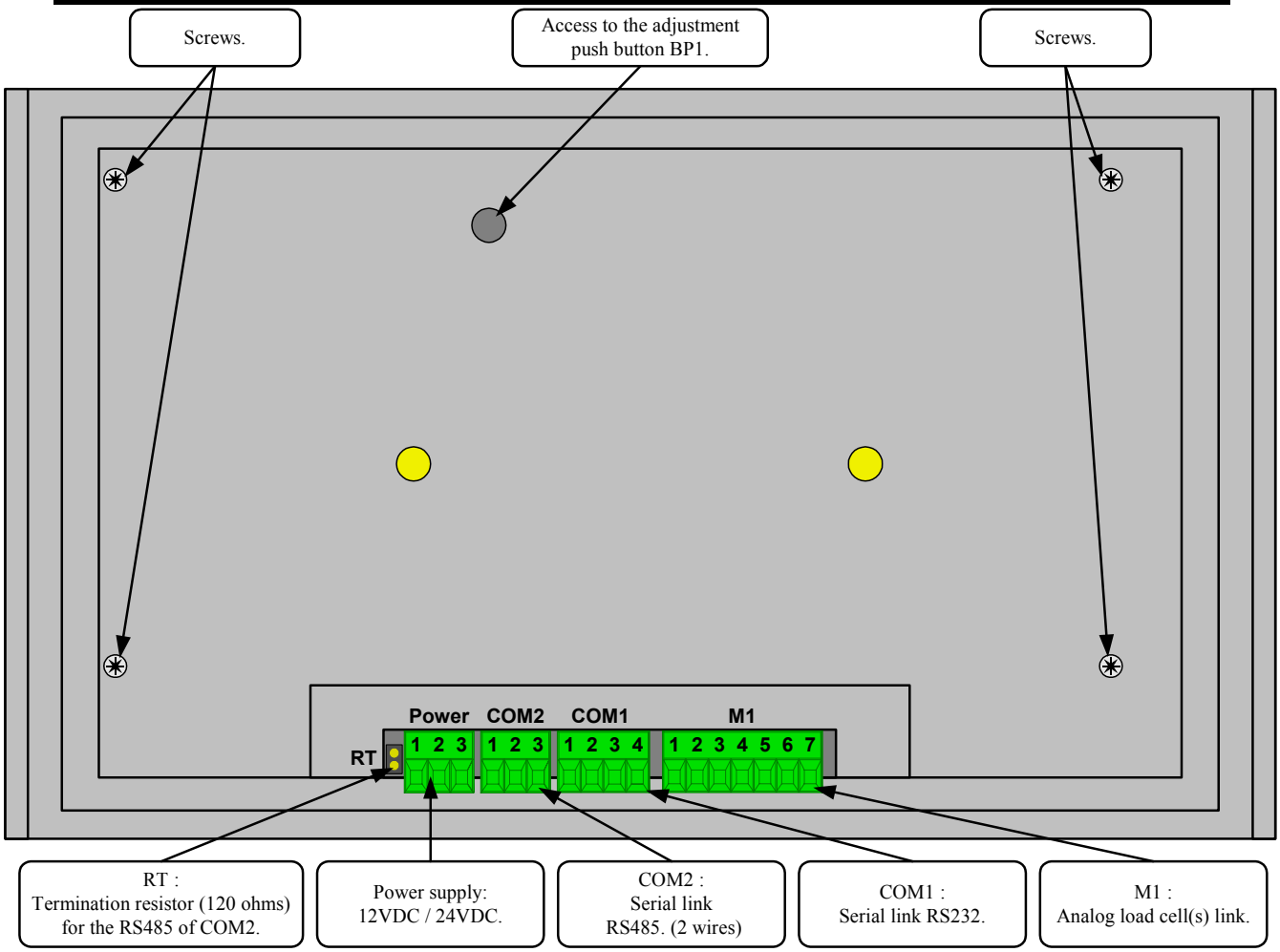
TF key: "**T**are **F**ile" key, switches from the menu to weight display and back.

key: "**T**arage" key, not used in user adjustment mode.

key: "**B**rut (**G**ross) / **N**et" key, not used in user adjustment mode.

key: "**Z**ero" key, not used in user adjustment mode.

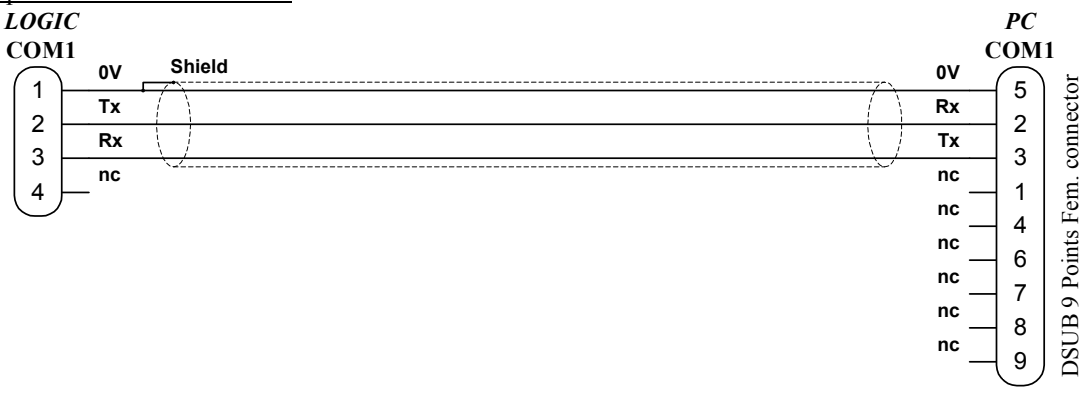
3. THE BACK PANEL OF THE LOGIC 100 AND LOGIC 200.



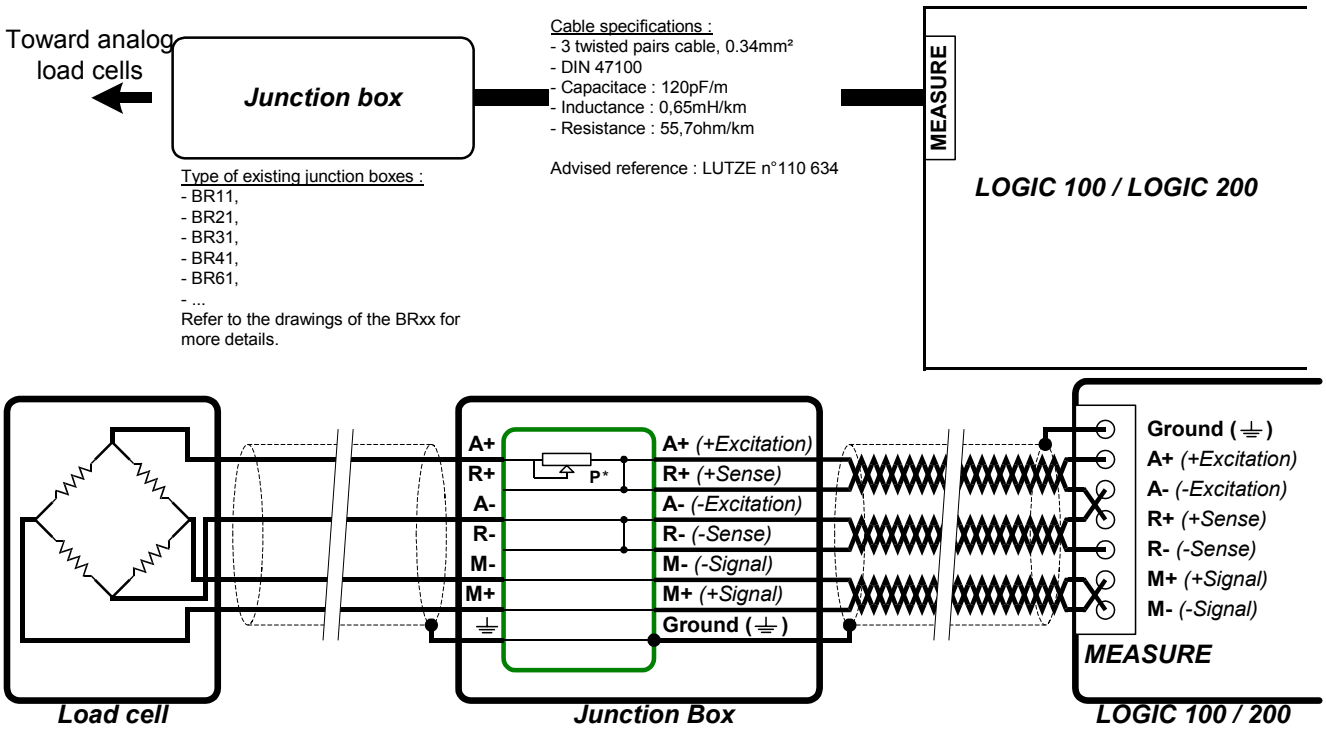
		PINOUTS						
		1	**2**	**3**	**4**	**5**	**6**	**7**
COM 1	**RS232**	**0V**	**Tx**	**Rx**	**DTR**			
COM 2	**2-wire RS485**	**0V**	**Tx/Rx-**	**Tx/Rx+**				
POWER	**Power supply**	**+VDC**	**Ground**	**0V**				
M1	**Analog sensor**	**M-** *(-Signal)*	**M+** *(+Signal)*	**R-** *(-Sense)*	**R+** *(+Sense)*	**A-** *(-Excitation)*	**A+** *(+Excitation)*	**Ground (Braid)**

Remark:
If the enclosure is stainless steel, the connectors are located inside the enclosure.

Sample "***LOGIC to PC***" cable:



Cabling of the analog measuring channel.



** : P ⇒ potentiometer to adjust the angle.*

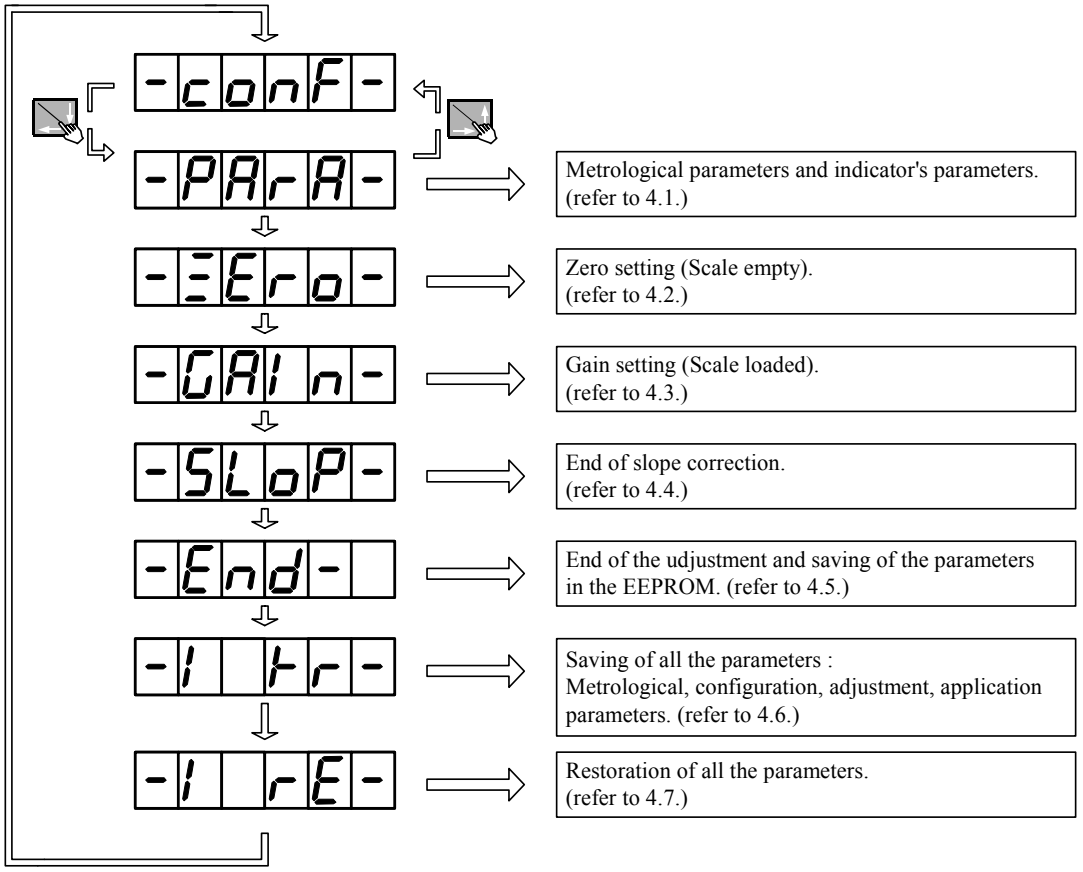
4. USER ADJUSTMENT MODE.

This procedure must be done by an accredited agent.
Switch from normal mode to adjustment mode:
Use the BP1 button which is found on the back of the indicator to switch from one mode to the other. (see section 3, page 9)

- With the indicator powered on, press the adjustment button until the following appears on the display: -------
- The indicator will go through its startup processes, then the following message appears: -conF-.
- Then the following menu will be available:

MAIN MENU :

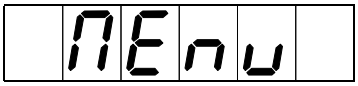
You access to the functions due to the key : 



Reminder: To move through the menu:

Key *LOGIC 100*	Key *LOGIC 200*	Result
B/G/N +	R	Go to the previous function / menu.
→0← −	I	Go to the next function / menu.

Remarks:
- After entering a function where data is to be entered. The display of the input alternates with its identifier.
- To indicate that you have gone through the entire menu or function, the indicator displays the message below before returning to the main menu.



Important : In user adjustment mode, if power is cut before your settings have been saved, all the settings and values you have entered will be lost.

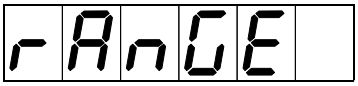
4.1. Metrological parameters and indicator configuration.

This function is used to enter all of the following parameters:

(Before moving from one setting to another, the current parameter must be confirmed with the key on the "*LOGIC 100*" or the key on the "*LOGIC 200*")

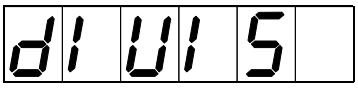
: X

Choosing the unit.
- 0/1 : kilograms are used as the unit of measure for both adjustment and normal modes. (Max. 5000 scale intervals)
- 2/3 : pounds are used as the unit of measure for both adjustment and normal modes. (Max. 10,000 scale intervals)



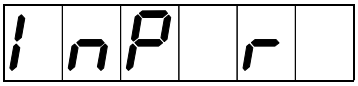
: XXXXXX

Measurement range, in six digits, from 1kg to 250,000kg.



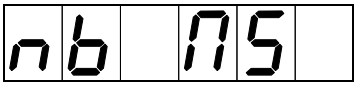
: XXX.XXX

Measurement scale interval (multiple of 1, 2, 5), in six digits, with three digits after the decimal point, from 0.001kg to 50kg.



: X

Input Range – the voltage range of the analog measuring chain can be modified.
- 1 : 10mV range.
- 2 : 20mV range. (⚠ DO NOT USE ⚠, except in special cases)



: XX

Number of measurements per second, from 10 to 90:
- from 10 to 14 = 10 measurements per second.
- from 15 to 24 = 20 measurements per second.
- from 25 to 34 = 30 measurements per second.
- …
- from 85 to 90 = 90 measurements per second.

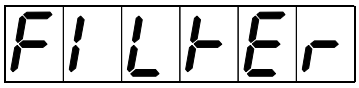
: X.X

Depending on the conditions where the scale is installed, it may be necessary to adjust the immobility zone. (from 0.5 to 3.0 scale intervals)

: XX

Sets how fast immobility is determined. (5 to 99: number of measurements required to determine immobility; min. value = Number of measurements per second / 2.)

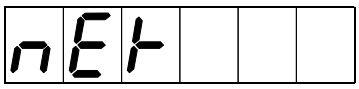
Example: with 50 measurements/second, the min. value of this parameter would be 25.



: XX

Filter value for the analog measuring chain, 00 to 99:

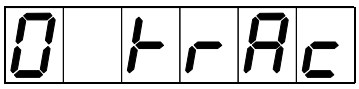
- 00 = filtering disabled.
- …
- 99 = max. filtering.



: X

NET weighing allowed or not allowed.

- 0 = No, NET weighing is not allowed; the TSA, PT and B/N keys are disabled. (Display is locked in gross mode)
- 1 = Yes, NET weighing is allowed. (TSA and PT keys are enabled)
- 2 = Yes, NET weighing is allowed but only with a calculated tare. (TSA key is disabled)



: X

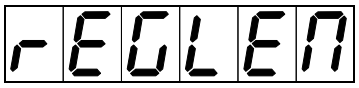
Zero tracking.

- 0 = no.
- 1 = yes.

: X

Scale resets when powered up within ± 10% of the max. range.

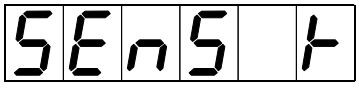
- 0 = no.
- 1 = yes.



: X

If the scale is intended for use under “legal for trade” conditions (commercial transactions, etc., in which case, it will have the CE-compliant seal), this parameter must be set to 1.
Otherwise, the security features will be disabled. (Limitation of max. number of scale intervals to 5000 and semiautomatic zero setting zone)

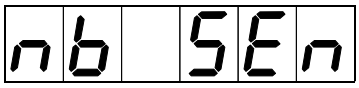
- 0 = no.
- 1 = yes.



: 0

Sensor type selection:

- 0 = analog sensor(s). This parameter must be imperatively set to “0”.



: X

Setting the number of sensors connected – this parameter is for information only.

4.2. Setting the zero.

Before setting the parameters in this menu, check sensor connections and the load receptor status. (Scale, weighbridge, hopper, etc.)
When the load receptor is empty and clean, you can confirm the zero setting.

The time required for this operation depends on how long it takes to get a stable measurement. There must be no vibration, and for outdoor scales, the weather must be calm.

4.3. Setting the gain.

You must complete zero setting before setting the gain.

Place the calibration weights on the load receptor, then confirm the gain setting. Use the indicator keypad to enter the total of the weights, then confirm.

The time required for this operation depends on how long it takes to get a stable measurement. There must be no vibration, and for outdoor scales, the weather must be calm.

Remarks:

- Proper adjustment requires the total of the calibration weights to be near the maximum of the scale's range.
- This operation can be redone several times without taking the weights off the scale.

4.4. End-of-slope correction.

This menu makes it possible to make minor slope corrections. (System gain)
In particular, this makes it possible to compensate for variations in the "g" factor depending on where the instrument is used. (g = gravity)

When checking the scale, if you notice a slight delay or advance when fully loaded, you can use this function to correct the error.

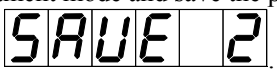
Confirm the menu, enter the value of the correction in intervals, then confirm again.
Verify the result of the correction by checking the weight display.

Remark:

If there is a minus sign in front of the number, the correction will be negative. No sign means the correction will be positive.

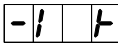
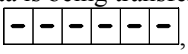
4.5. Finalizing adjustment and saving the data.

Confirm this menu to exit user adjustment mode and save the parameters and settings values.

While saving, the display will show:  . This operation takes several seconds.
Then the indicator will restart in application mode.

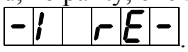
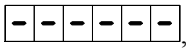
4.6. Saving the indicator's parameters as text.

Use this menu to save all of the indicator's parameters – metrology, settings, adjustments, application – as a text file (.TXT).

To save these parameters as text, you need to:
- Connect the PC (on COM1) with the LOGIC (on COM1) using a PC/Indicator link cable.
- Start the Hyperterminal program. (path to hyperterm.exe: **"C:\Program Files\Accessories\HyperTerminal\HYPERTRM.EXE"**)
- Give the connection a name and click "OK". (TERMINAL.LOG)
- Next, in the "Connect using" dropdown box, choose "COM1".
- Set the connection to 9600 baud, no parity, one stop bit and no flow control.
- Once back to the main screen, go to the "Transfer" menu and select "Capture text". Enter a name for the backup file and click on "Start". The PC is now waiting for data.
- On LOGIC, confirm the menu  .
- While the data is being transferred, the PC screen indicates the transfer is in progress, and the LOGIC display shows  , then returns to the main menu.
- After the transfer has completed, you will need to go to "Transfer", then to "Capture text" and click "Stop", on the PC.

4.7. Restoring the indicator's parameters from text.

Use this menu to restore all of the indicator's parameters – metrology, settings, adjustments, application – previously saved to a PC as a text file. (.TXT)

To restore these parameters from a text file, you need to:
- Connect the PC (on COM1) with the LOGIC (on COM1) using a PC/Indicator link cable.
- Start the Hyperterminal program. (path to hyperterm.exe: "C:\Program Files\Accessories\HyperTerminal\HYPERTRM.EXE")
- Give the connection a name and click "OK". (TERMINAL.LOG)
- Next, in the "Connect using" dropdown box, choose "COM1".
- Set the connection to 9600 baud, no parity, one stop bit and no flow control.
- On LOGIC, confirm the menu  . The LOGIC display shows  , indicating it is awaiting the data.
- on the PC, go to the "Transfer" menu and select "Send text". Select the backup file to transfer, then click on "Open". The PC transfers the data.
- Then return to the main menu.

4.8. Displaying the measured weight.

In user adjustment mode, a measured weight can be displayed in three forms:
- As a number of converter points,
- As a number of scale intervals to the nearest 1/10,
- Or in the adjustment unit selected. (kg, lb)

To do this, follow these steps:

- For the "*LOGIC 100*", once in the main user adjustment menu, press the key: 

Then choose the display format by pressing the key: 
The indicator cycles to the next format each time the key is pressed.

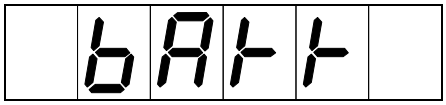
To exit this display and return to the user adjustment menu, just press the key: 

- For the "*LOGIC 200*" after entering the main user adjustment menu, press the key: 

Then choose the display format by pressing the key: 
The indicator cycles to the next format each time the key is pressed.

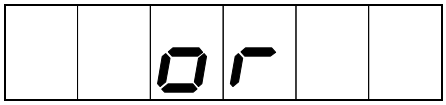
To exit this display and return to the user adjustment menu, just press the key: 

5. ERROR MESSAGES.

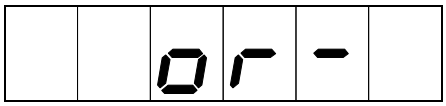


: Defective battery.

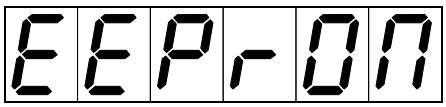
: Defective power supply. (Voltage too low)



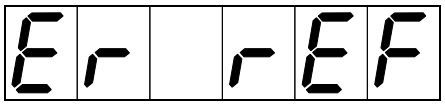
: Out of range, high. (Converter's capacity exceeded)



: Out of range, low. (Converter's capacity exceeded)



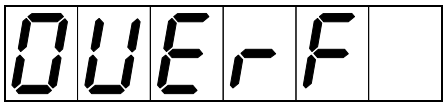
: CRC error in EEPROM memory.



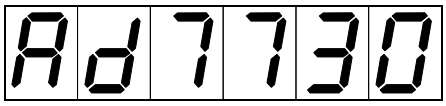
: Error on input M1. (Defective sensors or sensor connector).

: Not within scale, range exceeded. (+9 scale intervals)

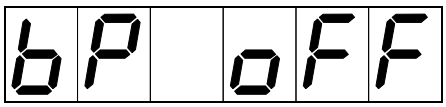
: Not within scale, weight below zero. (-9 scale intervals)



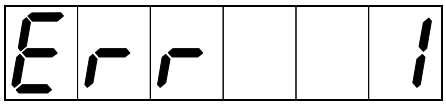
: Computation capacity exceeded.



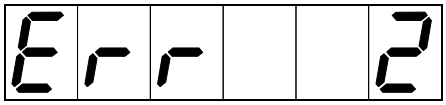
: The converter is not functioning.



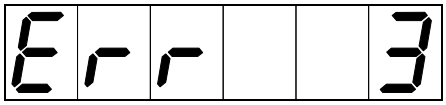
: The BP1 adjustment button is enabled.



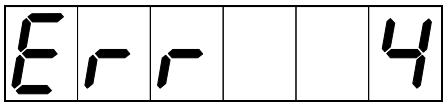
: Incorrect scale interval.



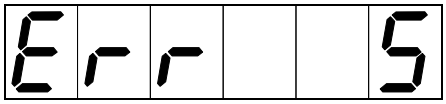
: Scale interval other than 1/2/5.



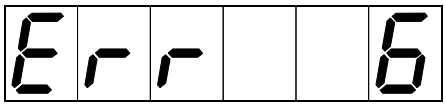
: Incorrect range value. (Enter a value between 1kg and 250,000kg)



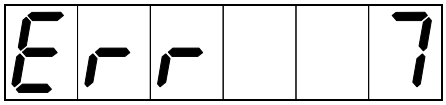
: Error in the “measures per second” value. (Enter a value between 10 and 99)



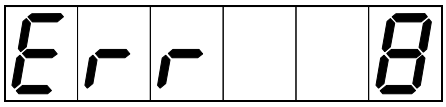
: More than 5000 scale intervals (for weights in kg) or more than 10,000 scale intervals (for weights in lb); in “legal for trade” mode, this figure can not be exceeded.

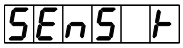


: Error in the immobility range. (Enter a value between 0.5 and 3.0 scale intervals)

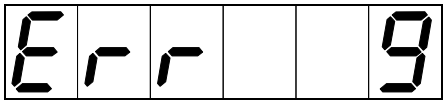


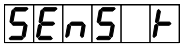
: Error in the value of the immobility number. (Enter a value greater than the number of measurements per second divided by 2)



: Error in the sensor type. The 

parameter must be set to “0”.



: Error in the sensor type. The 

parameter must be set to “0”.

6. TROUBLESHOOTING.

- If the indicator displays the following message: bAtt

Check the voltage of the indicator's battery. It must be greater than 2.9V_{DC} or it must be replaced.

- If the indicator displays the following message: SUPLY

Check the voltage of the power supply. It must be between 12V_{DC} and 24V_{DC}.

- If the indicator displays the following message: or

The signal supplied by the load cell is too strong to be measured by the indicator. (Overload, cabling, indicator not adjusted, etc.)

- If the indicator displays the following message: or-

The signal supplied by the load cell is too weak to be measured by the indicator. (Overload, cabling, indicator not adjusted, etc.)

- If the indicator displays the following message: EEPrON

Restart the indicator, and redo the adjustment of the indicator.

- If the indicator displays the following message: Er rEF

The analog sensor is not connected correctly. Check that the power supply ground wires (R+/R-) are connected correctly.

- If the indicator displays the following message: OUErF

Restart the indicator, and redo the adjustment of the indicator.

- If the indicator displays the following message: Ad7730

Check the sensor cabling (**M1**) and the indicator's settings.

- If the indicator displays the following message: bP oFF

The adjustment button is activated; check that nothing is keeping it pressed down.

- If the indicator displays one of the following messages: Err 1, Err 2

The scale interval value entered was not a multiple of 10 and 1, 2 or 5. Enter a new scale interval value.
("0.001", "0.002", "0.005", "0.010", "0.020", "0.050", "0.100", …, "50.000")

- If the indicator displays the following message: Err 5

The indicator is operating in "legal for trade" mode and the number of scale intervals exceeds 5000 (for weights in kg) or 10,000 (for weights in lb). Enter new values for the max. range and the scale interval.
(Number of scale intervals = max. range / scale interval)

- If the indicator displays the following message: Err 7

The indicator is operating in "legal for trade" mode and the immobility value is incorrect.
Enter a new value which is greater than or equal to the number of measurements per second divided by 2.
Example: If the number of measurements per second is 30, then this parameter must be set to at least 15.

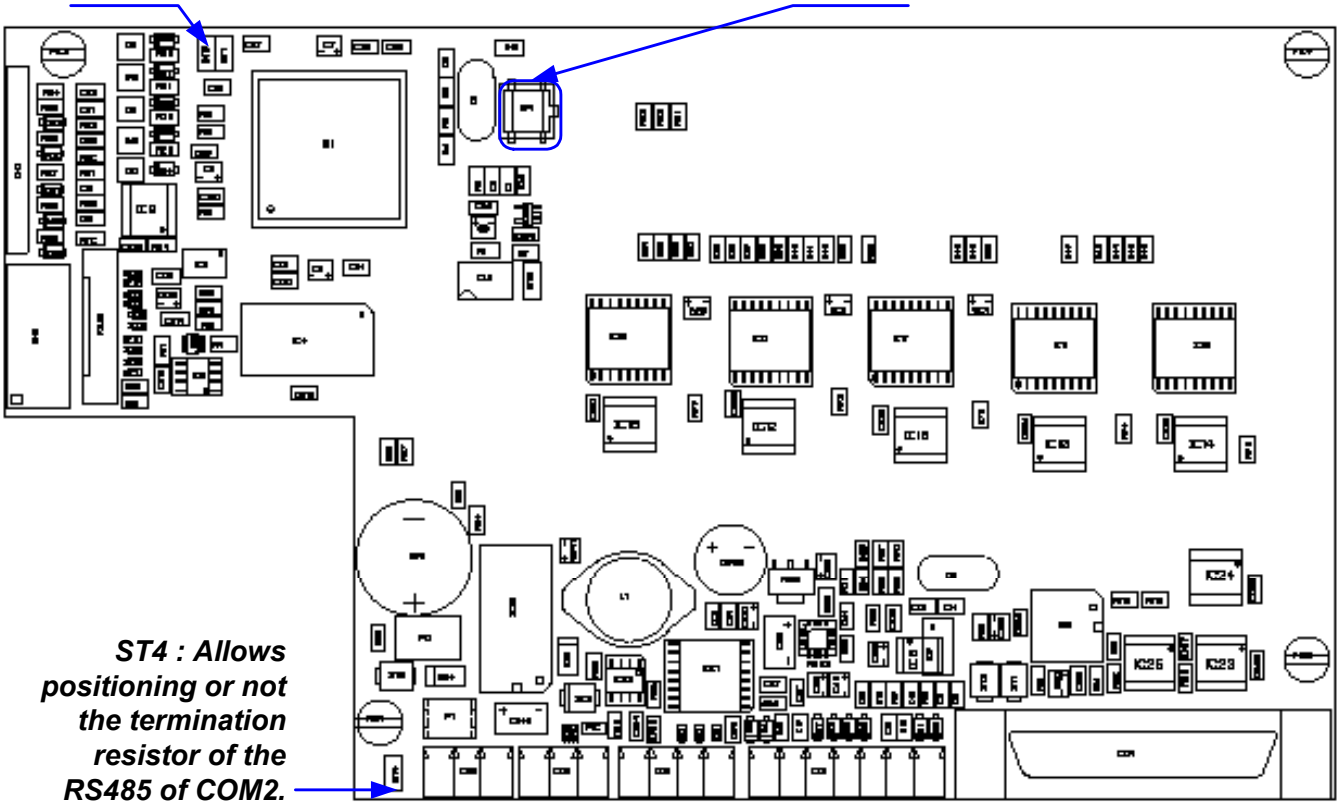
If you continue to have problems, please contact your nearest Arpege Master-K dealer, or our Customer Service Department.

7. APPENDICES.

-The keypads and BP1 adjustment button:

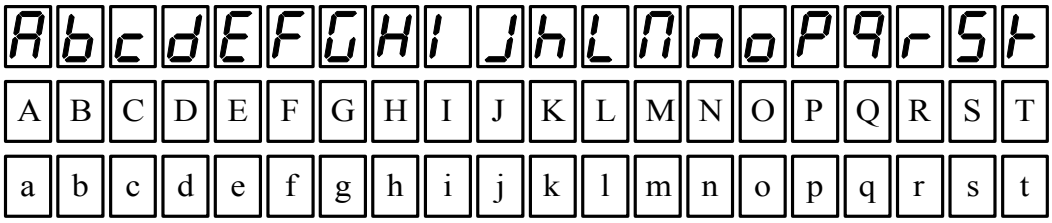
ST3 : Allowing to define if you have a LOGIC 100 (not mounted) or a LOGIC 200. (mounted)

Adjustment push button BP1 for the passage from the normal mode to the adjustment mode.



ST4 : Allows positioning or not the termination resistor of the RS485 of COM2.

-The pseudo-alphanumeric displays on the "*LOGIC 100*" and "*LOGIC 200*" indicators:



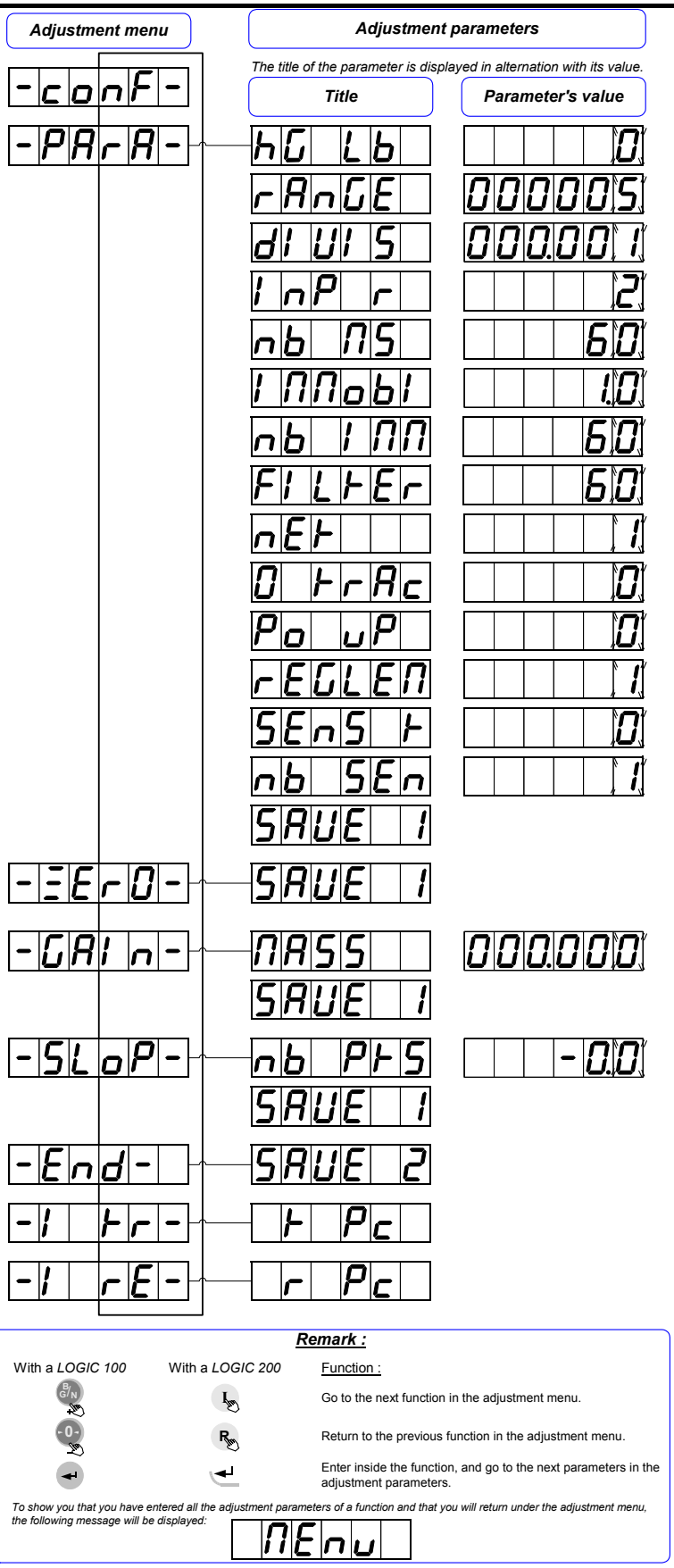
A B C D E F G H I J K L M N O P Q R S T

a b c d e f g h i j k l m n o p q r s t

U V W X Y Z 0 1 2 3 4 5 6 7 8 9

u v w x y z

8. USER ADJUSTMENT MENU SUMMARY.



Remark :

With a *LOGIC 100*	With a *LOGIC 200*	Function :
		Go to the next function in the adjustment menu.
		Return to the previous function in the adjustment menu.
		Enter inside the function, and go to the next parameters in the adjustment parameters.

To show you that you have entered all the adjustment parameters of a function and that you will return under the adjustment menu, the following message will be displayed: