ARPEGE MASTERK

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CALIBRATION MANUAL
IDL 55

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IDL V1.1	IDL_Gb_IDL 55 Reglage_rev04.docx	04

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CALIBRATION MANUAL IDL 55

Date	Edition number	Object of the modification
03/11/2011	00	Original
27/04/2012	01	Update after certification: Change CRC in 2DAD and suppression parameter operation of input I2.
10/07/2012	02	Update.
27/07/2015	03	Correction of the contrast adjustment.
06/03/2017	04	Addition information on the CAN bus baud rate for analog load cells use

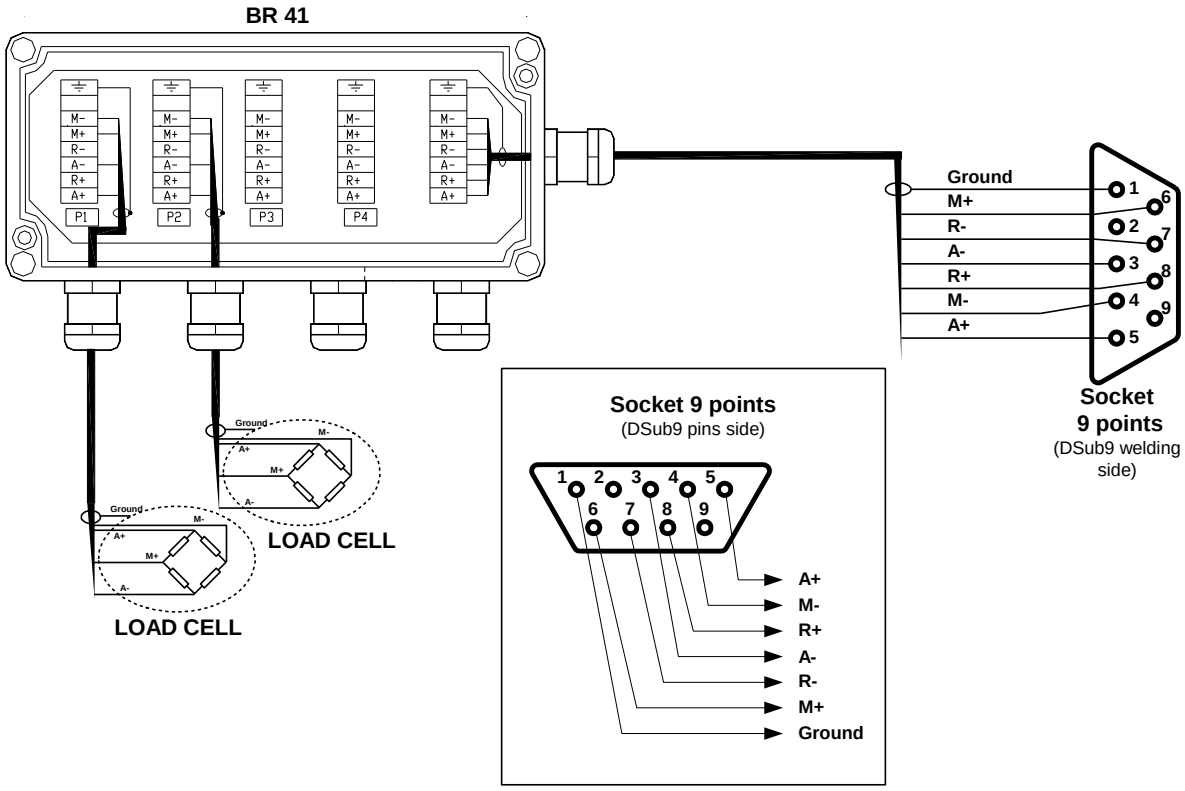
SUMMARY.

1 ⚠ WARNINGS. ⚠

⚠ PRINCIPLE OF THE CONNECTION OF ANALOG LOAD CELLS ON THE IDL INDICATOR. ⚠

1°/ Verify that the ***9 points DSUB socket is disconnected from the connector M1of the IDL indicator***.

2°/ Connect the load cells and the link cable inside the junction box, ***as shown below***. (Example given with a BR41 junction box and two load cells)



3°/ ***Before connecting the load cell cable on the M1 socket of the IDL, you must verify the following impedances on the DSUB 9 points connector:***

- Between the pins ***3 and 5 (A- and A+)*** : The impedance must be ***greater than 42 Ω.***
- Between the pins ***7 and 8 (R- and R+)*** : The impedance must be ***greater than 42 Ω.***
- Between the pins ***3 and 7 (A- and R-)*** : The impedance must be ***equal to 0 Ω.***
- Between the pins ***5 and 8 (A+ and R+)*** : The impedance must be ***equal to 0 Ω.***

Remark:

If the excitations of the load cell are in short circuit, this may cause the damage of the chip IC6, MIC4424.

2 MATERIAL PRESENTATION.

2.1 Technical characteristics.

Maximum number of scale divisions (legal for trade): 6000.
Sensitivity : 0.5 µV.
Power supply of the load cell : 5 V square wave.
Number of measurements / second, (fast) : 60, (180).
Load impedance (analog load cells) : > 45 ohms.

Zero visualized at 1/4 scale division.
Digital adjustment conversational by the front panel.
DC power supply 12 V_{DC}.
Power consumption: 20 VA max, according to the configuration.
Internal clock and memory backed up by a battery.
LCD screen 320 pixels by 240 pixels composed of the weight on 6 digits of 15 mm and of a complete operator guide.
PC keyboard.

2.2 The peripherals.

In standard version the IDL indicator disposes of:

* One serial link:

COM1 **:** RS232. (Short distances link: 10 meters max.)

* A parallel interface:

LPT **:** For the printing through a parallel printer. (Short distance link: 3 meters max.)

* An input for the analog load cells:

M1 **:** analog load cells(s) 6 wires. (Long distance link: 100 meters max.)
Reminder: Only one cable must be connected on M1. The parallel mounting of the load cells must be done separately in a junction box.

* A CAN bus interface:

MASTER CAN **:** Digital load cell(s), Terminals, Remote displays, CanMK gateways. (Long distance link: 1000 meters max.)

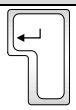
3 THE FRONT PANEL.

3.1 Displays and Indicator Lights.

Flowchart text:

- 1 ⇒ Application part. (Menu, parameters, ...)
- 2 ⇒ Indicates the weight type displayed: Gross (B/G) or Net. (Net)
- 3 ⇒ Indicates the actual measurement range: W1 or W2.
- 4 ⇒ Weight on 6 digits of 15 mm height.
- 5 ⇒ Indicates if the displayed weight is stable ( ) or not. (~)
- 6 ⇒ Indicates the weight unit: kg or t .
- 7 ⇒ Indicates if the weight is null at 1/4 scale division. (→0←) or not ( )
- 8 ⇒ Indicates that the data displayed is a DATA.
- 9 ⇒ Metrological part. (Weight, metrological indication, ...)
- 10 ⇒ Indicates if the displayed weight is a high precision display (HP) or not ( ).

3.2 PC keyboard of the IDL 55.

PC key	Name	In the menus	In the pages of the seizures	In the seizures
	Enter / Validate	Access to the pointed function in the menu.	Validate the seized data / go to the next seizure.	Validate the seized data.
	Escape	Quit the menu / Return to the previous menu.	Quit the page of the seizure.	Quit the seizure.
	Up arrow	Go to the previous function.	Go to the previous seizure.	
	Down arrow	Go to the next function.	Go to the next seizure.	
	Left arrow			Change the data value of a multiple choice seizure.
	Right arrow			Change the data value of a multiple choice seizure.
	Home / Beginning of page	Return to the first function.	Return to the first data to be seized.	
	End of page	Return to the last function.	Return to the last data to be seized.	
	Space			Change the data value of a multiple choice seizure.
	Back space			Erase the previous character of an alphanumeric seizure.
	Insert			Insert a space in an alphanumeric seizure.
	Delete			Delete completely the data of an alphanumeric seizure or reset the data of a numeric seizure.
	Tabulation	Used only for the «ar_SA» and «fa_IR» keyboard types, allows to pass from the standard characters mode (Latin characters) to the extended characters mode (Arabic characters,…) and vice-versa.		

Remark:
The Led «Scroll Lock» (On top at the right side of the keyboard) allows knowing in which character mode is the indicator:

- On → Extended character. (Arabic character for the keyboards «ar_SA» and «fa_IR»)
- Off → Standard character. (Latin character).

4 CALIBRATION MODE.

4.1 Access to the Calibration.

This manipulation must be executed by an accredited agent.

The DL1 LED located inside the indicator (see *7.2*) indicates the mode in progress:

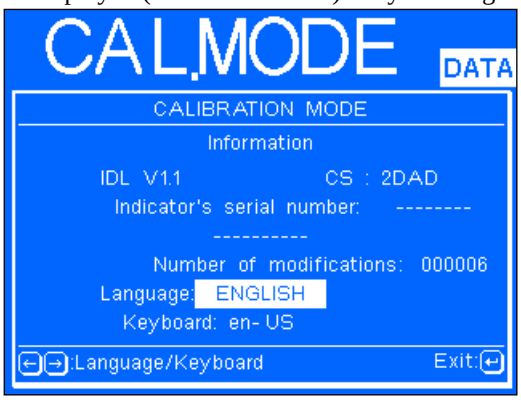
- Slow blinking → normal mode.
- Fast blinking → calibration mode.

Passage from normal to calibration mode:

The switching from one mode to the other is done due to the calibration jumper "**I1**", which is located inside the IDL. (Refer to the technical file)

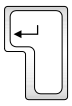
For this you must proceed as follows:

- Turn off the indicator, then toggle the calibration jumper, turn on the indicator.
- The start up phase will be displayed (« curtain effect ») the you will get the following screen :



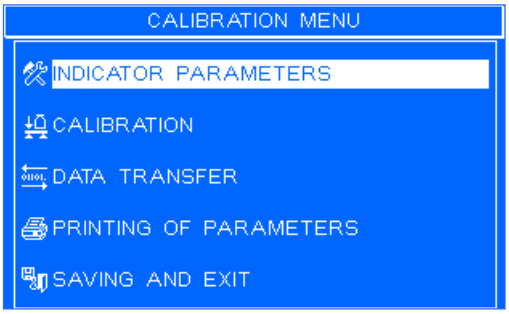
- On the operator guide display, you may choose the language for the calibration mode as well as the PC keyboard type used, as detailed below, you need to validate your choice :

Language :	Keyboard :
ENGLISH	en-US
FRANÇAIS	en-GB
DEUTSCH	fr-FR
FARSI "فارسي"	de-DE
ARABIC "عربي"	fa-IR
	ar-SA
	de-CH

- Once you have chosen the language, validate with the key  .

- The following calibration menu will be displayed on the operator guide :

Calibration menu:



⇒ = You enter inside the menus due to the key .

⇒ Operating mode and metrological parameters of the IDL.

⇒ Calibration of the indicator.

⇒ Saving/Restoration of the calibration and parameters.

⇒ Printing of the calibration parameters on LPT and / or COM1.

⇒ End of the calibration and saving of the parameters in the EEPROM.

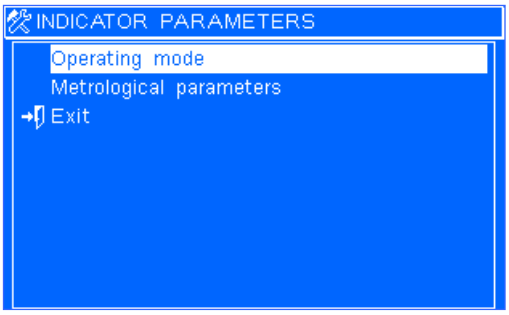
IMPORTANT: If there is a power failure during the calibration mode and before the saving is done, all the parameters and calibration values you have entered will be lost.

4.2 Indicator parameters.

This menu gives an access to the following parameters menu:

Indicator parameters menu:

⇒ = You enter inside the menus due to the key .

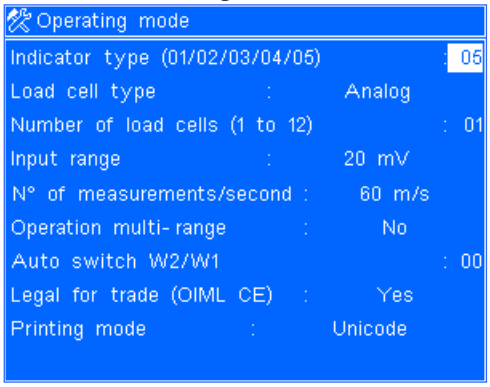


⇒ Operating mode of the IDL.

⇒ Metrological parameters.

4.2.1 Operating mode.

In this menu, you must enter all of the following information:



Indicator type (01/02/03/04/05) : *05*

Always put 05 in this parameter « **05** » (IDL 55).

Load cell type : *Analog*

- ✓ Analog: *Analog load cell.*
- ✓ Digital (125k): *AMK digital load cell operating at 125k.*
- ✓ CANDY (125k): *Transmitter operating at 125k.*
- ✓ Digital (62.5k): *AMK digital load cell operating at 62,5k.*
- ✓ CANDY (62.5k): *Transmitter operating at 62,5k.*
- ✓ Reserved: *Reserved load cell type, Do Not Use.*
- ✓ Analog (62.5k): *Analog load cell and CAN bus baud rate at 62,5k.*
- ✓ Analog (125k): *Analog load cell and CAN bus baud rate at 125k.*
- ✓ Analog (250k): *Analog load cell and CAN bus baud rate at 250k.*

Number of load cells (1 to 12) : *01*

Input range : *20mV*

Input range for the analog to digital converter,

- ✓ Default value (20mV)
- ✓ 10 mV.
- ✓ 20 mV.
- ✓ 40 mV.

N° of measurements/second : *60 m/s*

- ✓ 10 m/s.
- ✓ 20 m/s.
- ✓ 30 m/s.
- ✓ etc …
- ✓ 160 m/s.
- ✓ 170 m/s.
- ✓ 180 m/s.
- ✓ MAX.

Operation multi-range : *No*

If the instrument has a marking with two weighing ranges and two scale divisions, this parameter must be validated.

Auto switch W2/W1 : *00*

Automatic switching from W2 to W1 when returning to zero. This parameter is taken into account only if you have validated the «***Operation multi-range*** ».

- ✓ 00: *No automatic switching from W2 to W1* when returning to zero.
- ✓ 01: *Automatic switching from W2 to W1* when returning to zero.
- ✓ 02: *Automatic switching from W2 to W1* when returning in *W1 range. (⚠ Not legal for trade mode)*

Legal for trade (OIML CE) : *yes*

If the indicator is dedicated for a legal for trade use (commercial transactions..., the device has in this case a CE marking) this parameter must be obligatory validated.

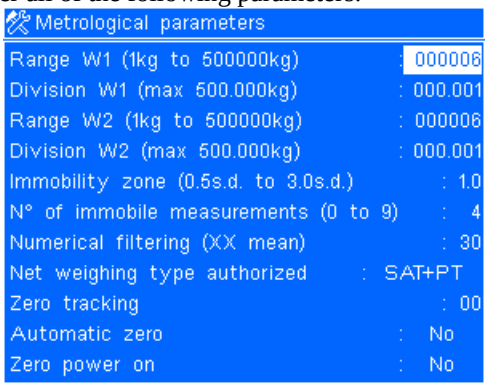
In the other case, the securities of 6000 scale divisions and the zone of the automatic zero setting will be disabled.

Printing mode : ***Unicode***

- ✓ Unicode.
- ✓ ASCII.
- ✓ ISO 8859-15. (For a printing in French)
- ✓ EPSON PCAR864. (For a printing in Arabic with an EPSON printer configured in the font character table PCAR864)
- ✓ ESC/P2 (FARSI). (For a printing in Farsi with a printer compatible with the protocol ESC/P2)

4.2.2 Metrological parameters.

In this menu, you must enter all of the following parameters:



Range W1 (1kg to 500000kg) : ***000006***

Range W1.

Division W1 (max. 500,000kg) : ***000.001***

Measurement verification scale division (multiple of 1, 2, 5) of the range W1.

Range W2 (1kg to 500000kg) : ***000006***

Range W2, used only if the multi-range parameter was enabled.

Division W2 (max. 500,000kg) : ***000.001***

Measurement verification scale division (multiple of 1, 2, 5) of the range W2, used only if the multi-range parameter was enabled.

Immobility zone (0,5s.d. to 3,0s.d.) : ***1,0***

According to the installation conditions of the scale, it will be sometimes necessary to adapt the immobility zone.

N° of immobile measurements (0 to 9) : ***Y***

Determines the speed of obtaining immobility according to the calculation: (Y x 8) + 8 (8 to 80 : number of measurements necessary to obtain the immobility)

Numerical filtering (XX mean) : ***XX***

Zero filter means that the measurement is not filtered, a value of 99 indicates a maximum filter.

Net weighing type authorized : ***SAT+PT***

- ✓ None = *The NET weighing is not authorized. (Always in Gross).*
- ✓ SAT+PT = *The NET weighing is authorized.*
- ✓ PT = *The NET weighing is authorized only with a manual tare. (SAT key disabled)*

Zero tracking : ***No***

Validation or not of the zero tracking.

- ✓ 00: *No zero tracking.*
- ✓ 01: *Zero tracking, area of 0,5 s.d.*
- ✓ 02: *Zero tracking, area of 1,0 s.d. (⚠ Not legal for trade mode)*
- ✓ 03: *Zero tracking, area of 1,5 s.d. (⚠ Not legal for trade mode)*
- ✓ 04: *Zero tracking, area of 2,0 s.d. (⚠ Not legal for trade mode)*
- ✓ 05: *Zero tracking, area of 2,5 s.d. (⚠ Not legal for trade mode)*
- ✓ 06: *Zero tracking, area of 3,0 s.d. (⚠ Not legal for trade mode)*
- ✓ 07: *Zero tracking, area of 3,5 s.d. (⚠ Not legal for trade mode)*
- ✓ 08: *Zero tracking, area of 4,0 s.d. (⚠ Not legal for trade mode)*
- ✓ 09: *Zero tracking, area of 4,5 s.d. (⚠ Not legal for trade mode)*

Automatic zero : ***No***

Validation or not of the automatic zero.

Zero power on : ***No***

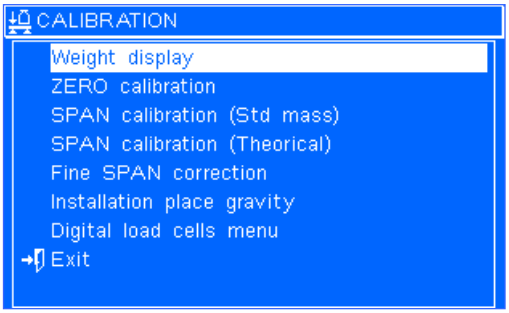
Re-zero of the scale under start up of the IDL indicator in the range of +/- 10% of the maximum range.

4.3 Calibration.

This menu gives an access to the following calibration menu:

Calibration menu:

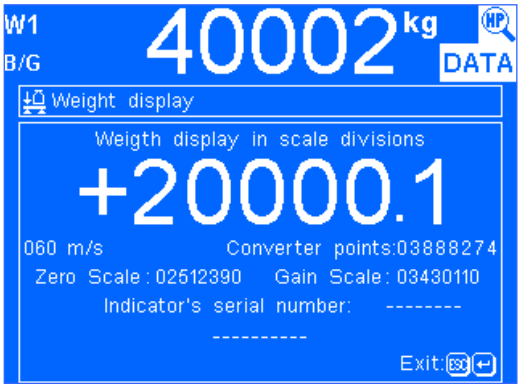
⇒ = You enter inside the menus due to the key  .



- ⇒ Weight display. (in 1/10th of the scale division)
- ⇒ Zero setting. (Scale empty)
- ⇒ Gain setting. (Scale loaded)
- ⇒ Theoretical gain setting.
- ⇒ End of span correction.
- ⇒ Calibration of the gravity of the installation site.
- ⇒ Calibration of the digital load cells. ***- If the "load cell type" validated is digital or CANDY -***

4.3.1 Weight display.

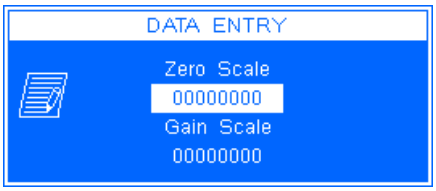
This function allows displaying the weight in scale divisions (at 1/10th precision) and in high precision: (Control of the scale)



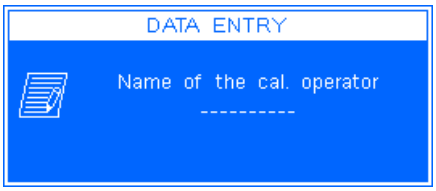
Validate to return to the calibration menu.

Remarks:

- It is possible to calibrate the zero and the gain directly by entering their values in converter points if these values are known. For this you must type the code «**7806**» when you are in the weight display window and the following window will appear asking to seize its parameters. Validate, a window indicates that the parameters are saved in the EEPROM.

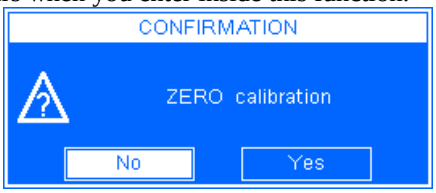


- It is possible to modify the name of the person who made the calibration. For this you must type the code «**0112**» when you are in the weight display window and the following window will be displayed asking to type the name of the calibration operator. Validate, a window indicates that this parameter is saved in the EEPROM.



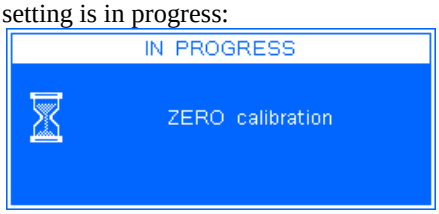
4.3.2 ZERO setting.

The following window appears when you enter inside this function:



Before validating this menu, verify the load cells connections, the state of the load receptor (Scale, weighbridge, hopper…).

The load receptor being empty and clean, you may validate the zero setting and the following window will appear saying that the zero setting is in progress:



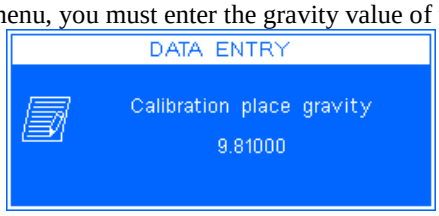
The lead time for this operation depends of the time necessary to obtain a stable measurement, so no vibration is allowed… and a calm weather is needed for the outside scales.

Once the zero setting is done, the following window indicates that the parameters are saved in the EEPROM:

4.3.3 GAIN setting (Real masses).

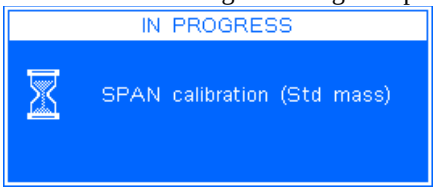
Before validating this menu, a zero setting must have been done already.

Put the standard masses on the load receptor then validate the gain setting. The following window will appear when you validate this menu, you must enter the gravity value of the calibration site:



Then enter the value of the standard masses already put on the load receptor in the following window:

Validate, the following window indicates that the gain setting is in progress:



The lead time for this operation depends of the time necessary to obtain a stable measurement, so no vibration is allowed… and a calm weather is needed for the outside scales.

Once the gain setting is done, the following window indicates that the parameters are saved in the EEPROM:

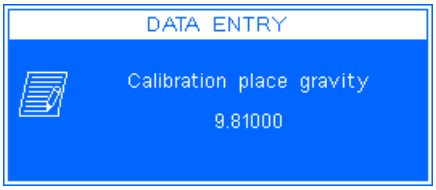
Remark:

- A high quality calibration requires standard masses values close to the maximum range of the scale.
- This operation may be repeated many times without the need of unloading the masses.

4.3.4 GAIN setting (Theoretical).

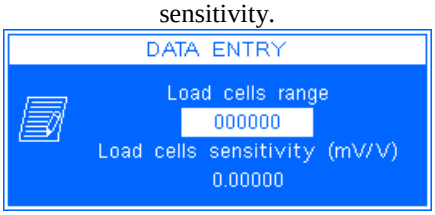
Before validating this menu, a zero setting must have been done already.

The following window will appear when you validate this menu, you must enter the gravity value of the calibration:

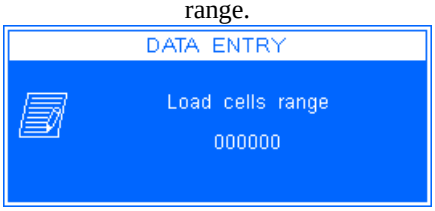


Then enter in the following window:

For the analog load cells, their range and their sensitivity.



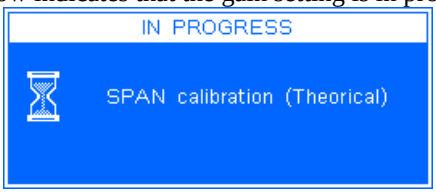
For the digital load cells and the CANDY, their range.



Remark :

The parameter «**Number of load cells (1 to 12**» should be setting to the correct value.

Validate, the following window indicates that the gain setting is in progress:



Once the gain setting is done, the following window indicates that the parameters are saved in the EEPROM:

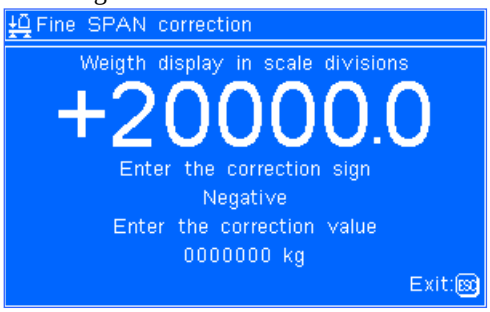
The theoretical gain setting is not enough. To get sure that the calibration is good, it is necessary to control it with standard masses.

4.3.5 End of span correction.

This menu allows doing a slight span correction (Gain of the system).

During the scale control, you may remark a slight delay or advance on full scale, you can correct this error due to this function.

Validate the menu, then enter the sign and the value of the correction in the following screen:



Validate, the following window indicates that the correction is in progress:

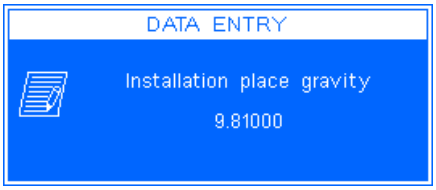
Once the correction is done, the following window indicates that the parameters are saved in the EEPROM:

Verify the result of the correction by visualizing the weight display.

Restart the operation as many times as it is necessary then quit this menu by pressing on the key ESC.

4.3.6 Gravity of the installation site.

This function allows entering the gravity value corresponding to the installation site of the device. Enter the value in the following window:



Remark:

This parameter is set at the value enter during the gain setting each time a gain setting is done.

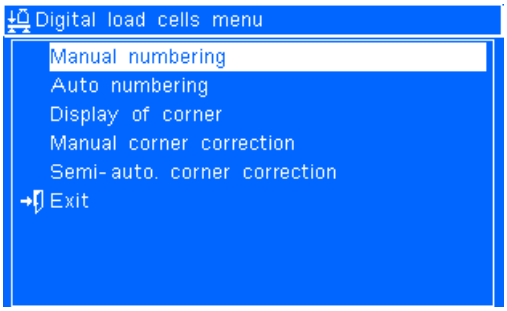
4.3.7 Digital load cells menu.

This menu is accessible only if «***Load cell type***» = Digital or CANDY. (Refer to paragraph *4.3.1*)

It allows the access to the following parameters menu of the digital load cells:

Digital load cells menu:

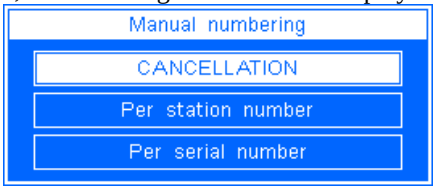
⇒ = You enter inside the menus due to the key .



⇒ Manual modification of the digital load cell number.
⇒ Automatic modification of the digital load cell number.
⇒ Display of the converter points of a corner.
⇒ Manual corner correction at full range.
⇒ Semi-auto. corner correction at a fixed weight.

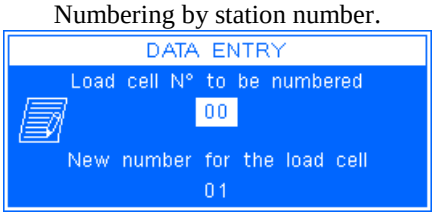
4.3.7.1 Manual numbering.

Once this function is validated, the following screen will be displayed:



Chose if you want to number the digital load cell by its station number or by its serial number and validate. Depending on the choice made one of the two following windows is displayed:

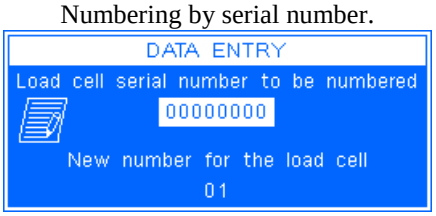
Numbering by station number.



This function allows changing the station number of a digital load cell or a transmitter. For this, you must:

- Give the station number of a load cell or a transmitter to be modified (ex: 53) and validate.
- Enter the new number to be affected (from 01 to 12) and validate.

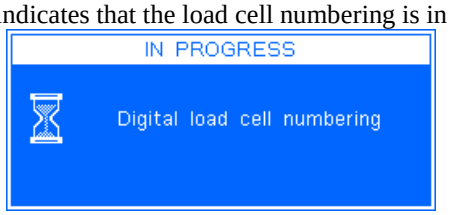
Numbering by serial number.



This function allows changing the station number of a digital load cell or a transmitter. For this, you must:

- Give the serial number of a load cell or a transmitter to be modified (ex: 09120001) and validate
- Enter the new number to be affected (from 01 to 12) and validate.

Then the following window indicates that the load cell numbering is in progress:



Once the numbering is done, the following window indicates that the parameters are saved in the EEPROM:

Remark:

- At delivery from factory, the digital load cells are numbered with the value 53. If the load cell or transmitter number is unknown, use the universal address number « 00 ».
- Do the numbering of one load cell or one transmitter at a time.
- ATTENTION: do not leave two load cells or two transmitters with the same number, this will cause operating problems.

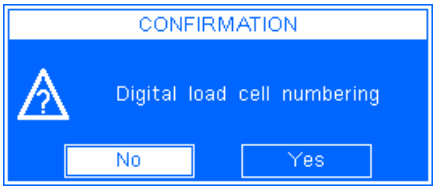
Then you may control the numbering on the screen display of the digital load cells that appears. (Idem *4.3.7.3*)

4.3.7.2 Automatic numbering.

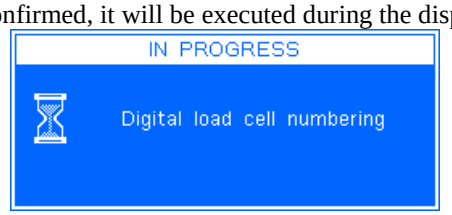
This function allows the automatic numbering of the digital load cells or transmitters present on the CAN bus of the indicator whatever their station number was.

The attribution of the station number is done in an ascending order of the serial numbers.

After the validation of this menu, the following window will ask for the confirmation of the automatic numbering:



If this numbering mode is confirmed, it will be executed during the display of the following window:

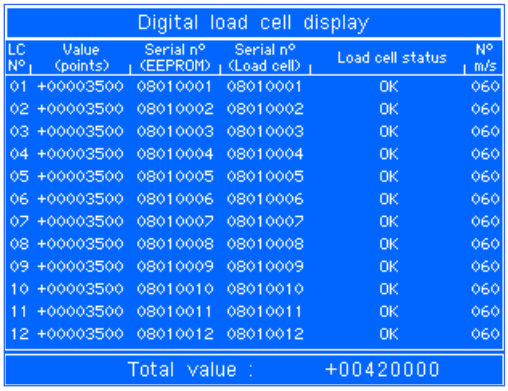


Once the numbering is done, the following window indicates that the parameters are saved in the EEPROM:

Then you may control the numbering on the screen display of the digital load cells that appears. (Idem *4.3.7.3*)

4.3.7.3 Corners display.

This menu is used only to verify that a digital load cell is well aligned or to know the load distribution on the load receptor:



Remark:

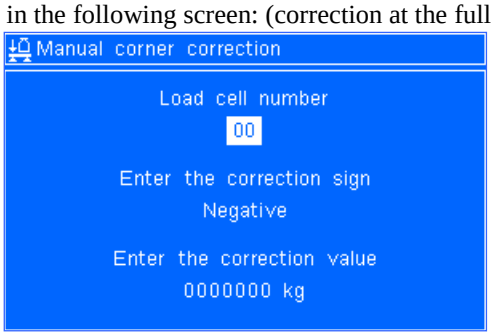
On the start up of the indicator, this screen will be displayed for two seconds if all the digital load cells are OK or during five seconds if there are any problems on one or more load cells.

By pressing on the key F1, you will keep this screen display then pressing on the key ESC allows the start up.

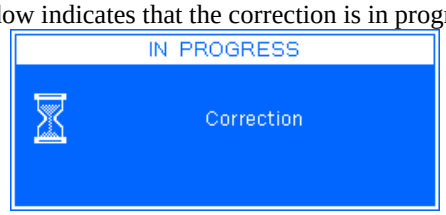
4.3.7.4 Manual corner correction.

This function allows executing a corner correction «too high» or «too low» at full range.

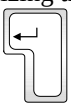
Enter the CAN station number of the load cell to be corrected then enter the sign and value of the correction in converter points in the following screen: (correction at the full scale of the indicator)



Validate, the following window indicates that the correction is in progress:



Once the correction is done, check the result of the correction by visualizing the weight display.

Restart this operation as much as it is necessary by pressing on the key  or quit this application by pressing on the key  .

Leaving this application, the following window indicates that the parameters are saved in the EEPROM:

Remark:

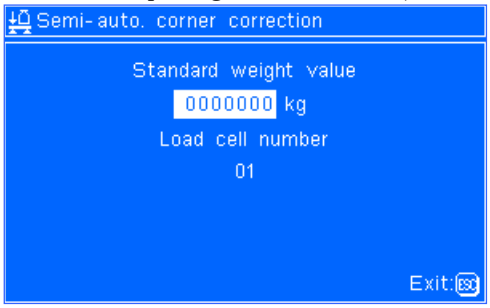
The MASTER-K digital load cells give 100 000 points for the full range of the load cell.

4.3.7.5 Semi-auto. corner correction.

This function allows executing a corner correction «too high» or «too low» at control mass value.

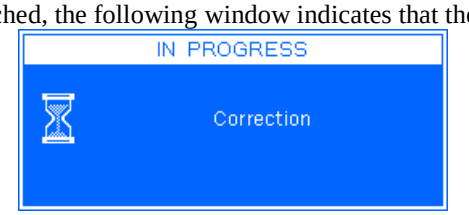
Put a control mass on a corner and launch the function.

In the following screen enter the control mass value in kilogram and the CAN station number of the load cell to be corrected: (Load cell on which is putting the control mass)



Validate it, the following confirmation windows appears, choice to modify or launch the correction:

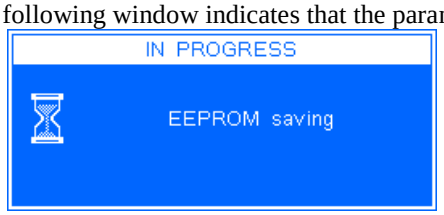
Once the correction is launched, the following window indicates that the correction is in progress:



Once the correction is done, it returns to the correction seizure page. Check the result of the correction by visualizing the weight display, restart this operation on the load cell if it's necessary or start it on anther load cell. (Put the control mass on this load cell)

To quit this application pressing on the key  .

Leaving this application, the following window indicates that the parameters are saved in the EEPROM:



Remarks:

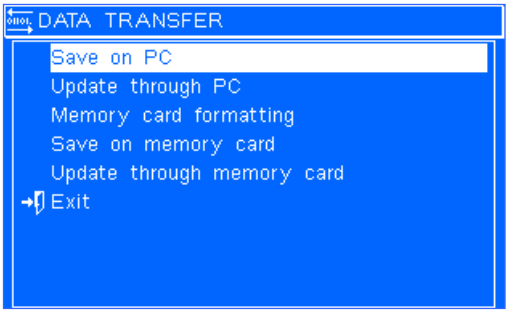
- This function could be done only for digital load cell not for CANDY transmitter.
- The MASTER-K digital load cells give 100 000 points for the full range of the load cell.

4.4 Data transfer.

This menu gives an access to the following data transfer menu:

Data transfer menu:

⇒ = You enter inside the menus due to the key  .



⇒ Saving of calibration and parameters on a PC.
⇒ Restoration of calibration and parameters from a PC.
⇒ Complete erasing of the memory card.
⇒ Saving of calibration and parameters on memory card.
⇒ Restoration of calibration and parameters from memory card.

4.4.1 Saving on a PC.

This menu allows the saving, in a text file (.TXT), all the calibrations and the parameters on a computer. For this you must:

- connect the computer (on Com1) with the IDL (on Com1), with the cable link PC/IDL.
- Start the Hyper terminal software. (Path of hyperterm.exe: "**C:\ProgramFiles\Accessories\HyperTerminal\HYPERTRM.EXE**")
- name the connection and validate (TERMINAL.IDL).
- then in the header "Connect using" you must validate "Send to Com1".
- then, configure the connection in 9600 Bauds, no parity, one stop bit, and no flow control.
- once you return to the main screen, go to "Transfer" then "Capture the text", enter the name of the back-up file and validate "start", the computer now waits for the information.
- on the IDL you must validate the menu "***Saving on a PC*** ".
- during the transmission, the saving will be displayed on the PC screen and the IDL displays the following window:

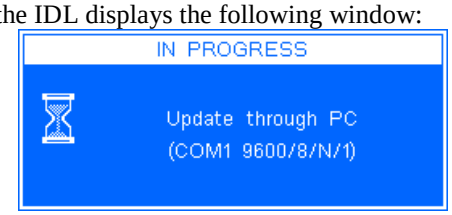
- To end the saving, you must go to "Transfer" then "Capture the text" and "Stop". The IDL comes back to the « Data transfer » menu.

4.4.2 Restoration through a PC.

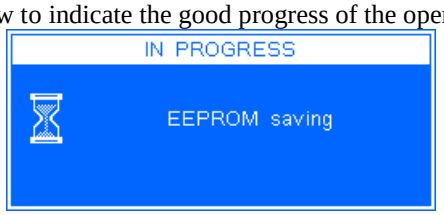
This menu allows restoring all of the calibrations and parameters saved before on a computer in a text file. (.TXT)

For this you must:

- connect the PC (on Com1) with the IDL (on Com1).
- start the Hyper terminal software. (Path of hyperterm.exe: **"C:\ProgramFiles\Accessories\HyperTerminal\HYPERTRM.EXE"**)
- name the connection and validate (TERMINAL.IDL).
- then in the header "Connect using" you must validate "Send to Com1".
- then, configure the connection in 9600 Bauds, no parity, one stop bit, and no flow control.
- the on the IDL, you must validate the menu "***Restoration trough a PC***", the IDL waits for the information.
- on the computer, go to "Transfer" then in "Send the text file", select the restoration file to be transferred and validate "Open", the computer transmits the information.
- during the transmission the IDL displays the following window:



- then the following window to indicate the good progress of the operation:



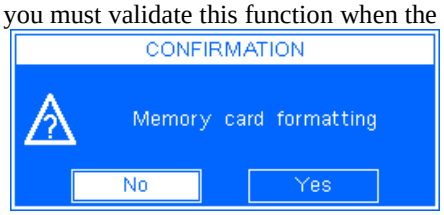
- you will return to the « Data transfer » menu.

4.4.3 Formatting of the memory card.

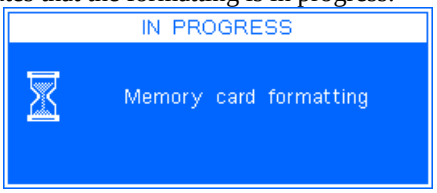
This function allows the re-initialization of the memory card. (Formatting of the memory card)

ATTENTION: THIS OPERATION MAKES THE MEMORY CARD COMPLETELY BLANK.

To format the memory card, you must validate this function when the following window appears:

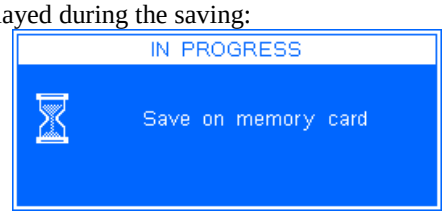


The following window indicates that the formatting is in progress:



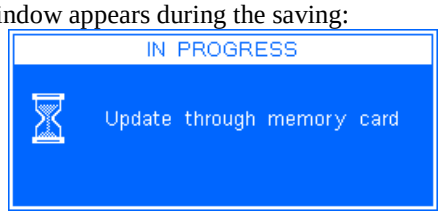
4.4.4 Saving on the memory card.

This function allows the saving of all the calibrations and the parameters on the memory card. The following window will be displayed during the saving:



4.4.5 Restoration through the memory card.

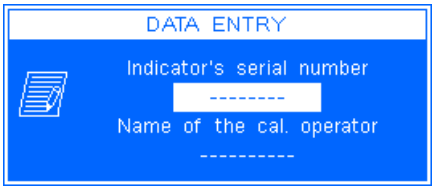
This function allows the restoration of all the calibrations and the parameters already saved on the memory card. The following window appears during the saving:



4.5 Printing of the parameters.

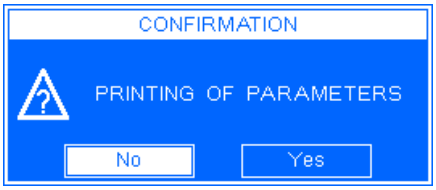
If a printer is connected on the LPT connector and/or on COM1, you may keep a paper traceability of the parameters and the calibration values and this by validating this menu.

If the serial number of the indicator is not registered yet, you may do it in this window as well as the name of the person who made the calibration:



Remarks :
- The seizure of the indicator serial number could be made with a « *QWERTY-US* » keyboard type, but the seizure of the name of the person who made the calibration must be done with the keyboard type entered in the parameters. (Refer to *4.2*)
- In the case where only the name of the calibration operator is to be seized, only the name must be seized.

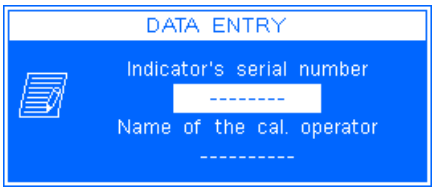
Then validate the following window:



4.6 Saving and End.

Validate this menu to quit the calibration mode and save the parameters and the calibration values.

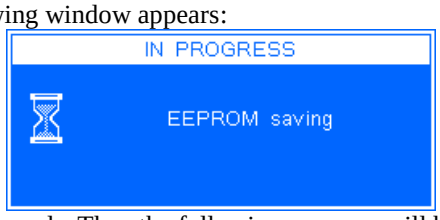
If the serial number of the indicator is not registered yet, you may do it in this window as well as the name of the person who made the calibration:



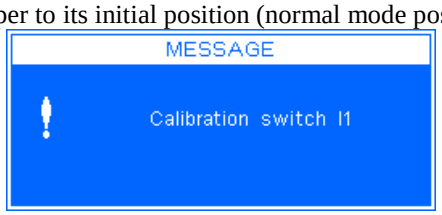
Remarks :
- The seizure of the indicator serial number could be made with a « *QWERTY-US* » keyboard type, but the seizure of the name of the person who made the calibration must be done with the keyboard type entered in the parameters. (Refer to *4.2*)
- In the case where only the name of the calibration operator is to be seized, only the name must be seized.

Then validate the following window:

During the saving, the following window appears:



This operation takes a few seconds. Then the following message will be displayed to indicate that you must toggle the calibration jumper to its initial position (normal mode position):



5 ERROR MESSAGES.

5.1 Error messages on the weight display.

BATT	: Battery default.
POWER	: Power supply default. (Voltage to low)
OR+	: Off range overflow. (Converter capacity overflow)
OR-	: Off range underflow. (Converter capacity underflow)
EEPROM	: CRC error of the EEPROM memory.
ER REF	: Error on the input M1. (Load cell default or load cell connection problem).
OS+	: Off scale overflow, Maximum weight overflow. (+9 scale division)
OS-	: Off scale underflow, Weight under zero. (-9 scale divisions)
OVERFL	: Calculation capacity overflow.
AD7730	: The A to D converter does not operate.
DLC x	: The digital load cell n° **X** does not answer anymore**.**
N SERI	: The serial number of a digital load cell is not valid, the calibration of the digital load cells is not valid.

5.2 Error messages in the "Pop-up" windows.

- Error message indicating a battery default, it will appear like in the window below on the start up of the indicator:

- Other error messages, they will appear like in the window below during the operation at the moment of an error detection:

The following table lists the different kind of errors:

Error code '??'	Designation
R1	Scale division not valid: Enter a new value for the scale division (1, 2, 5, 10, 20, 50,100…)
R2	Scale division different from 1/2/5: Enter a new value for the scale division (1, 2, 5, 10, 20, 50,100…)
R3	Maximum weighing range greater than 500 tons
R4	Display capacity overflow
R5	6000 < scale divisions < 100: Number of scale divisions = Maximum range/scale division
R6	Range W1 incompatible with W2 (it must be W1 < W2)
R7	Scale division W1 incompatible with W2 (s.d.2 must follow s.d.1)
Rj	Immobility parameter different from 0.5 s.d. to 3.0 s.d.
Rk	Zero tracking parameter different from 00 to 09.
RZ	Error during the calibration phase of the zero of the scale
RG	Error during the calibration phase of the gain
RR	Error during the calibration phase of the gain, the ADC input range is not enough
R !	Function not authorized
R ?	Saving not authorized
T1	Error during the restoration through the memory card, the file is false
CA	The memory card is locked (lock switch on its side)
CB	The memory card is not detected
CE	There is a communication problem with the memory card
CF	The memory card is not formatted, you must erase it
CL	There are no saving of the metrological parameters on the memory card
CM	There are no saving of the application parameters on the memory card
CN	There are no saving of the files on the memory card
CO	The data on the memory card is not compatible with the software
CP	Read/Write not authorized (Protected data)
CQ	The memory card is full
C x	There is a communication problem with the memory card

5.3 Debugging.

- The indicator displays the battery default error message on start up :

Verify the voltage of the indicator battery, it must be greater than 2,9V_{DC}, in the other case, it must be replaced.

- The indicator displays the following message : | | P | O | W | E | R |

Verify the voltage of the power supply of the indicator.

- The indicator displays the following message : | | | O | R | + | |

The signal delivered by the load cell is too high to be measured by the indicator. (Overload, cabling problem, indicator not calibrated…)

- The indicator displays the following message : | | | O | R | - | |

The signal delivered by the load cell is too high to be measured by the indicator. (Under load, cabling problem, indicator not calibrated,)

- The indicator displays the following message : | E | E | P | R | O | M |

Restart the indicator, and make a new calibration for the indicator.

- The indicator displays the following message : | E | R | | R | E | F |

The analog load cell is not connected properly, Verify that the returns of the power supply (R+/R-) are connected properly.

- The indicator displays the following message : | O | V | E | R | F | L |

Restart the indicator, and make a new calibration for the indicator.

- The indicator displays the following message : | A | D | 7 | 7 | 3 | 0 |

Verify the cabling of the load cell (**M1**) as well as the indicator parameters.

- The indicator displays the following message : | | D | L | C | | x |

Verify the power supply of the load cells and their cabling.

- The indicator displays the following message : | N | | S | E | R | I |

Remake a new zero calibration.

- The indicator displays on of the following messages : R1, R2

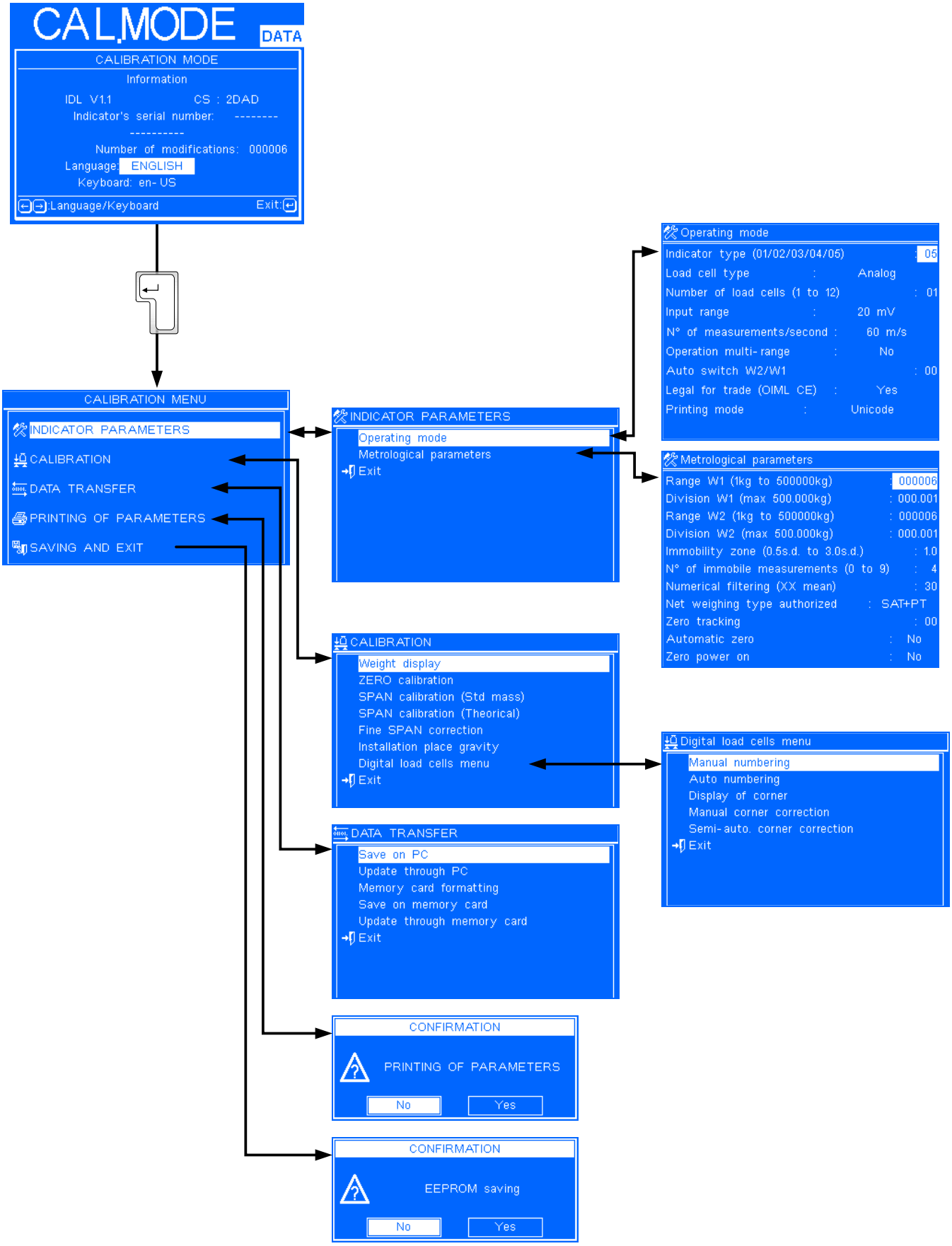
The entered value of the scale division was not a multiple of 10 or of 1 or 2 or 5. Enter a new value for the scale division. ("0,001", "0,002", "0,005", "0,010", "0,020", "0,050", "0,100", …, "50,000")

- The indicator displays the following message : R5

The indicator operates in the legal for trade mode and the number of scale divisions entered is greater than 6000 scale divisions. Enter new values for the maximum weighing range and for the scale division. (Number of scale divisions = Maximum weighing range / Scale division value)

If your problems persist, contact your nearest reseller or the technical support of ARPEGE MASTER-K Company.

6 SUMMARY OF THE CALIBRATION MENU.



7 APPENDIX.

7.1 Connection of the different kind of sockets.

Socket pinout / N° of The pin	M1	MASTER CAN	COM1 RS232	COM2 (Options) Current loop passive/active	COM2 (Options) RS232	COM2 (Options) RS485
1	⏚	⏚	⏚	⏚	⏚	⏚
2	*N.U.*	*N.U.*	**Rx**	*N.U.*	**Rx**	*N.U.*
3	**A-**	**CAN_H**	**Tx**	*N.U.*	**Tx**	*N.U.*
4	**M-**	**CAN_L**	*N.U.*	**R+**	*N.U.*	**Rx+**
5	**A+**	**V+**	*N.U.*	**R-**	*N.U.*	**Rx-**
6	**M+**	**0V**	**DTR**	*N.U.*	**DTR**	*N.U.*
7	**R-**		**0V**	**0V_Iso**	**0V_Iso**	**0V_Iso**
8	**R+**		*N.U.*	**T+**	*N.U.*	**Tx+**
9	*N.U.*		*N.U.*	**T-**	*N.U.*	**Tx-**

7.2 Positions and functions of the different jumpers of the board and contrast adjustement.