ARPEGE MASTERK

Saint PRIEST, Wednesday 20th March 2019,

CALIBRATION INSTRUCTIONS

IDE 150 / IDE 250

Software ref.	Manual ref.	Issue
IDe V1.1	IDE_Gb_Reglage IDe150-250_rev03.docx	03

Calibration instructions, IDé 150 / IDé 250

Date	Edition number	Objet of the modification
10/01/2011	00	Original
06/03/2012	01	Update
05/03/2018	02	Global update
20/03/2019	03	Update

CONTENTS

1. ⚠ WARNING ⚠

⚠ | **CONNECTING ANALOGUE SENSORS TO THE IDÉ READOUT UNIT** | ⚠

1/ Check that *the 9-pin socket is disconnected from connector M1 on the IDé readout unit*.

2/ Connect the sensors and link cable inside the connection box, *as shown below* (example given with one BR41 and two sensors).
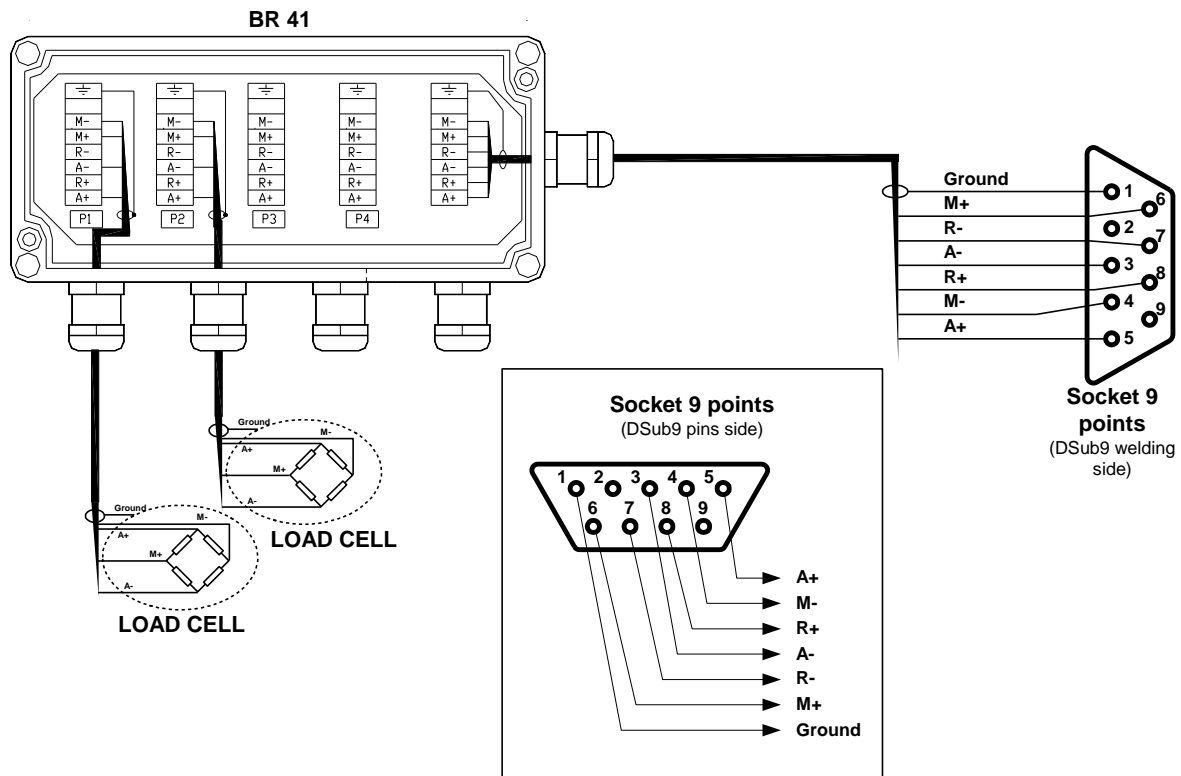
3/ *Before connecting the sensor cable to the **M1** connector on the IDé unit, check the impedances on the 9-pin connector, as follows:*

- between pins *3 and 5 (A- and A+)*:   the impedance must be *greater than 45 Ω*.
- between pins *7 and 8 (R- and R+)*:   the impedance must be *greater than 45 Ω*.
- between pins *3 and 7 (A- and R-)*:   the impedance must be *equal to 0 Ω*.
- between pins *5 and 8 (A+ and R+)*:   the impedance must be *equal to 0 Ω*.

Note: *If the sensor power supplies are short-circuited, the MIC4424 chip (IC13) may be destroyed.*

2.   PRESENTATION OF THE UNIT

2.1.   Technical characteristics

Maximum number of steps (in regulatory mode):   6000.
Minimum input step: 0.75 µV.
Weighing cell supply voltage: 7.5 V AC square.
Number of measurements / second (quick):   40 to 990
Load impedance (analogue sensors):   ≥ 45 Ohm.

Zero displayed at 1/4 scale.
Interactive digital calibration on front panel.
Mains power supply: 230 V / 50 Hz or 60 Hz + earth < 5 ohms.
DC power supply: 12 V (or optionally 24 V).
Consumption: 15 to 25 VA max, depending on configuration.
Battery-backed internal clock and memory.

320×240 pixel LCD screen, showing a 6-digit weight with 14 mm high digits, and an operator guide.
IDé 150 keypad (9 keys):   -   3 metrological keys
                                -   6 application keys.
IDé 250 keypad (20 keys):   -   3 metrological keys
                                -   17 application keys.

2.2.   Peripherals

The IDé readout unit features the following as standard:
❖ Two serial links:
COM1:   RS232 and/or RS485, 2 wires (Short distance link: max. 10 metres).
COM2:   Passive current loop, or optional[*] RS232, RS485, 0/10 V, 4/20 mA, active or passive current
                 loop, Ethernet Modbus TCP (XPort) (Long distance link: max. length depends on link type).
                 : How options are managed depends on the features of the application software.

❖ USB[*] slave interface:
USB: For communication with a PC (Short distance link: max. 3 metres).
                 : How the USB slave interface is managed depends on the features of the application software.

❖ Parallel interface:
LPT: For printing on a parallel printer (Short distance link: max. 3 metres).

❖ One input for analogue sensors: (For analogue version readout units)
M1:   6-wire analogue sensor(s) (Long distance link: max. 150 metres)

⚠️   **Reminder: Only one cable should be connected to M1. Sensors may be connected in parallel via a
             separate connection box.**

❖ One CAN bus interface:
MASTER CAN: Digital sensor(s), terminals, repeaters (Long distance link: max. 1,000 metres).

2.3.   Options

❖ Memory extension:
    EXT. MEM: Memory extension (USB stick)

❖ PS2 port for PC keyboard. Option available for IDé 250.

3. FRONT PANEL

3.1. Display and indicators
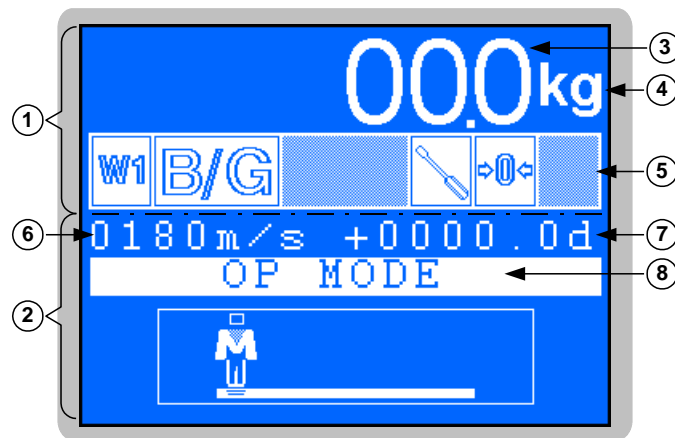
Key:

- 1 ⇒ Metrological section (weight, metrological status, etc.).
- 2 ⇒ Application section (menu, parameters, etc.).
- 3 ⇒ Weight: 6 digits, 14 mm high.
- 4 ⇒ Indicates the weight unit: **kg** or **t**.

- 5 ⇒ Six status indicators (detailed below).
- 6 ⇒ Number of measurements per second.
- 7 ⇒ Weight in tenths of a division.
- 8 ⇒ Parameters menu.

Status indicators:

Indicator	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6
Possibilities	W1	B/G				
	W2	Net	DATA	🔧	⇨0⇦	∼
			📊	HP		

➢ Indicator No. 1: **W1** ⇒ Indicates that the weight is displayed in measurement range 1.

   W2 ⇒ Indicates that the weight is displayed in measurement range 2.

➢ Indicator No. 2: **B/G** ⇒ Indicates that the weight displayed is a gross weight.

   Net ⇒ Indicates that the weight displayed is a net weight.

➢ Indicator No. 3: ▭ ⇒ Indicates weight display mode.

   DATA ⇒ Indicates data display mode.

   📊 ⇒ Indicates that the backup battery must be replaced.

➢ Indicator No. 4: ⬜ ⇒ Weight displayed in normal mode.

◻ ⇒ Weight displayed in metrological calibration mode.

🔲 ⇒ Weight displayed in high precision mode.

➢ Indicator No. 5: ⬜ ⇒ Gross weight not zero at 1/4 scale.

▣ ⇒ Gross weight is zero at 1/4 scale.

➢ Indicator No. 6: ⬜ ⇒ Weight displayed is stable.

≈ ⇒ Weight displayed is unstable.

3.2. IDé 150 keypad
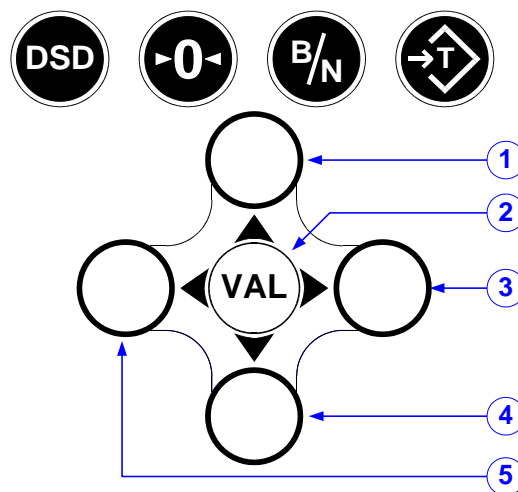
6 application keys and 3 metrological keys.

Key:
- 1 ⇒ "**Up**" key: Used to increment a flashing digit by one unit when entering data, or to return to the previous function in a menu.
- 2 ⇒ "**VAL**" key: Used to confirm (validate) data entered, or to access the function displayed.
- 3 ⇒ "**Right**" key: Used to reset the data item being entered, or to change the sign of signed data.
- 4 ⇒ "**Down**" key: Used to decrement a flashing digit by one unit when entering data, or to go to the next function in a menu.
- 5 ⇒ "**Left**" key: Used to move the digit being entered to the left.

(DSD) ⇒ Used to display the weight in high precision mode in the menus, or to quit or cancel when entering data.

Metrological keys:

⬦ ⇒ "**T**are" key, used to perform a semi-automatic tare on a gross weight.

(B/N) ⇒ "**B/N**" key, used to switch for four seconds from displaying gross weight to net weight and vice versa.

(•0•) ⇒ "Zero" key, used to reset the gross weight to zero (within the authorised range).

3.3. IDé 250 keypad
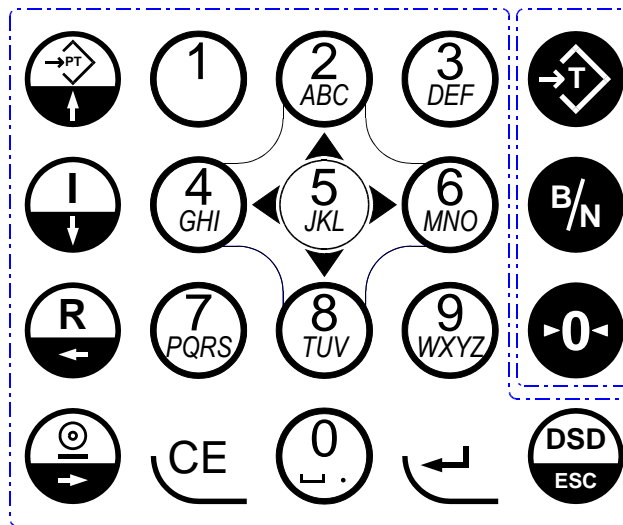
17 application keys and 3 metrological keys.

Metrological keys:

⇒ "**T**are" key, used to perform a semi-automatic tare on a gross weight.

⇒ "**B/N**" key, used to switch for four seconds from displaying gross weight to net weight and vice versa.

⇒ "Zero" key, used to reset the gross weight to zero (within the authorised range).

Application keys:

to ⇒ Number keys used to enter numerical data.

to ⇒ These keys form a pseudo mouse used to move around the various menus:

$$\boxed{2 \atop ABC} = \quad \uparrow$$

$$\boxed{8 \atop TUV} = \quad \downarrow$$

⇒ Return to the previous data item or the previous menu function.

⇒ Move to the next data item or the next menu function.

⇒ Return to the previous character in alphanumeric entry.

⇒ Move forward to the next character in alphanumeric entry.

CE ⇒ **C**orr**e**ction key, used to clear or reset the data being entered.

⇒ Confirm data entered or displayed and access a function.

DSD ESC ⇒ Display the weight in high precision mode in the menus, or to quit or cancel when entering data.

4. CALIBRATION MODE

⚠️ **The unit must only be adjusted by an authorised operator.** ⚠️

The "Mode" LED inside the unit, near the buzzer, shows the current mode: (see *6.2. IDé board layout*)
  ➢ LED lit   ⟹ Normal mode.
  ➢ LED off   ⟹ Calibration mode.

Changing between normal mode and calibration mode: An calibration switch inside the IDé unit, near the battery, is used to change from one mode to the other (see *6.2 IDé board layout*).
Proceed as follows:
  - Turn off the readout unit, toggle the calibration switch, then power the readout unit on.
  - The start-up phases are displayed "**4**", "**3**", "**2**" then "**1 REGL**". The language for calibration mode can be selected on the operator guide.
  - Use the ▲ / ②$_{ABC}$ and ∨ / ⑧$_{TUV}$ keys to select the desired language, then confirm by pressing (VAL) / ↵.
  - The operator guide displays the message "**CALIBRAT**". Press a key to display the calibration menu below.

⟹ Use the (VAL) / ↵ key to access the functions.

SENS No	⟹ Changing the number of a digital sensor (see *4.1*).
⑧$_{TUV}$ ②$_{ABC}$	
OP MODE	⟹ IDé operating mode (see *4.2*).
METR. PAR	⟹ Metrological parameters (see *4.3*).
SET ZERO	⟹ Zero calibration, scale empty (see *4.4*).
SET GAIN	⟹ Gain calibration, scale loaded (see *4.5*).
GRAVITY	⟹ Gravity adjustment (see *4.6*).
DisANGLE	⟹ Display angle converter points (see *4.7*).
ANGLEcor	⟹ Angle correction (see *4.8*).
EndSLOPE	⟹ End of slope correction (see *4.9*).
SERVICI.	⟹ Access to service menu (see *4.10*).
PRINTset	⟹ Print calibration parameters on LPT (see *4.11*).
END	⟹ End of calibration and backup calibration parameters to EEPROM (see *4.12*).

⬜ : *Functions not available if the selected sensor type is analogue.*

⚠️ **IMPORTANT: If a power failure occurs during calibration mode, before the backup is performed, all calibration parameters and values are lost.** ⚠️

4.1. Changing the number of a digital sensor

This function is not available if the parameter "**SENSOR TYPE 0=An 1=Dig 2=Candy**" is set to "**0**" (analogue sensor), see *4.2*.

When a sensor or transmitter is replaced, the CAN host number of the old sensor or transmitter must be assigned to the new sensor or transmitter, as follows:
- Confirm this function.
- Enter the CAN host number of the sensor or transmitter (**53**), confirm.
- Enter the CAN host number of the sensor or Transmitter to be replaced (number from 1 to 12), confirm.

If the sensor or transmitter number is not **53** (sensor or transmitter already used):
- Isolate the sensor or transmitter by disconnecting the CAN_H and CAN_L leads from the other sensors and transmitters.
- Confirm this function.
- Enter the CAN host number of the sensor or transmitter (**00**), confirm.
- Enter the CAN host number of the sensor or transmitter to be replaced (number from 1 to 12), confirm.
- Reconnect all the sensors and transmitters for a test.

Note: Digital sensors and transmitters are factory-set to the value **53**.

This function can also be used to automatically number all the digital sensors and transmitters present on the CAN bus of the readout unit, regardless of their host number, as follows:
- Confirm this function.
- Enter CAN host number 99, confirm.
- Automatic numbering is started, the message "**WAIT 15s**" is displayed.
- Once numbering is complete, the sensors and transmitters are displayed (see *4.7*) enabling the numbering to be checked.

Host numbers are assigned in increasing order of the serial numbers.

4.2. IDé operating mode

All the following parameters must be entered in this menu:

IDe TYPE   1=150   2=250   : *XX*   Readout unit type (2 digits).
                                                00 = Reserved.
                                                01 = IDé 150 front panel.
                                                02 = IDé 250 front panel.

SENSOR TYPE 0=An 1=Dig 2=Candy: *X*   Desired sensor type.
                                                0 = Analogue sensor(s).
                                                1 = ARPEGE MASTER-K digital sensor(s).
                                                2 = CANDY transmitter(s).

SENSOR NUMBER ... (1 to 12) : *XX*   Number of sensors and transmitters connected (1 to 12).

INPUT RANGE (mV) 1=10 2=20 3=40: *X*   Analogue / digital converter input rating.
                                                0 = Default rating (20 mV).
                                                1 = Rating 10 mV.
                                                2 = Rating 20 mV.
                                                3 = Rating 40 mV.

`MESUREMENT/SEC. XX*10 (1to99) :` *XX*   Number of measurements per second = "*XX*" x 10.

      06 = 60 measurements per second.

      18 = 180 measurements per second.

      Etc.

      90 = 900 measurements per second.

      99 = 990 measurements per second.

`MULTI. RANGE (0 = No 1 = Yes) :` *X*   If the instrument has a plate with two ranges and two scales, this parameter must be set to 1.

`AUTO SWITCH  W2/W1  (0=N 1=Y) :` *X*   Automatic switching from W2 to W1 on return to zero, this parameter is only taken into account if multi-scale mode was previously enabled.

`E2 1=ROMAINE 2=INCLINO 0=NOTH.:` *X*   Use of auxiliary input "**E2+**".

      0 = Auxiliary input "**E2+**" not used.

      1 = Dial scale switch connected to "**E2+**".

      2 = Inclinometer connected to "**E2+**".

`REGULATED MODE ( 0=No 1=Yes ) :` *X*   If the readout unit is intended for regulated use (commercial transactions, etc. and bears EC conformity markings) it is mandatory to set this parameter to 1. If this is not the case, the 6000 step and semi-automatic zeroing zone safety mechanisms are disabled.

`DSD Number                    :` *XXXXXX*   DSD number which will be used on the next DSD storage. (Only available on some software release)

4.3.   Metrological parameters

All the following parameters must be entered in this menu:

`RANGE W1 (1kg to 500000kg) :` *XXXXXX*   Range of weighing scale W1.

`DIVISION W1(max 500,000kg) :` *XXX,XXX*   Scale division (multiple of 1, 2, 5) of weighing scale W1.

`RANGE W2 (1kg to 500000kg) :` *XXXXXX*   Range of weighing scale W2. Parameter only available if multi-scale mode was enabled previously.

`DIVISION W2(max 500,000kg) :` *XXX,XXX*   Scale interval (multiple of 1, 2, 5) of weighing scale W2. Parameter only available if multi-scale mode was enabled previously.

`IMMOBILITY   (0,2d a 3,0d) :` *X,X*   Depending on the conditions in which the scale is installed, the immobility zone will need to be adjusted.

`NB OF IMMOBILE MEASM.(0..9):` *X*   Determines the speed at which immobility is reached according to the calculation = ("*X*" x 8) + 8   (8 to 80: number of measurements needed to achieve immobility).

LOW PASS FILTER (0 a 10hz): *XX* Determines the cutoff frequency of the digital low pass filter (Bessel filter).

00 = Filter disabled.
01 = Cutoff frequency 1 Hz (strong filtering).
Etc.
10 = Cutoff frequency 10 Hz (weak filtering).

NUMERIC FILTER (XX average): *XX* If the filter is set to zero the measurement is not filtered; if set to 99 the filter is at its highest.

NET WEIGHING (0=N 1=Y 2=PT): *X* NET weighing operation.

0 = NET weighing not permitted (GROSS only).
1 = NET weighing permitted.
2 = NET weighing only permitted with a tabulated tare (TSA key disabled).

FOLLOWING ZERO (0=No 1=Yes): *X* Zero follower enabled or disabled.

AUTOMAT. ZERO (0=No 1=Yes) : *X* Automatic zero enabled or disabled.

ZERO POWER ON (0=No 1=Yes) : *X* Zero on power up of readout unit (at +/- 10% of the range) enabled or disabled.

4.4.   Zero calibration

Before entering this menu, check the sensor connections and the condition of the load receiver (scale, weighbridge, chute, etc.).
If the load receiver is empty and clean, you may confirm zero calibration.

The duration of this operation depends on the time needed to obtain a stable measurement. Vibrations must be avoided.

4.5.   Gain calibration

Before entering this menu, the zero calibration must have been performed.
Place the calibration weights on the load receiver then confirm gain calibration. The operator guide displays "**Calibration weight value (kg):**". Enter the total weight using the IDé keypad, then confirm.

The duration of this operation depends on the time needed to obtain a stable measurement. Vibrations must be avoided.

Notes:
   - A good quality calibration requires calibration weights totalling close to the maximum range of the scale.
   - This operation may be repeated several times without removing the weights.

4.6.   Gravity adjustment

This function is used to enter the value of gravity in the calibration location and the gravity in the location where the unit is installed:

`Calibration gravity (G):`   *X.XXXXX*   Enter the gravity corresponding to the calibration location.

`Utilization gravity (G) :`   *X.XXXXX*   Enter the gravity corresponding to the installation location.

4.7.   Displaying the value of an angle

This function is not available if the parameter "`SENSOR TYPE 0=An 1=Dig 2=Candy`" is set to "`0`" (analogue sensor), see *4.2*.

When this function is confirmed, the screen below is displayed.
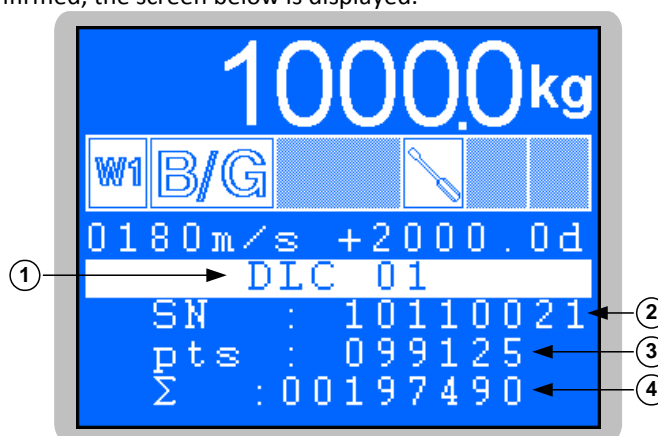
Key:
- 1   ⇒ CAN host number of selected sensor.
- 2   ⇒ Serial number of selected sensor.
- 3   ⇒ Number of points returned by the sensor.
- 4   ⇒ Total of points returned by all sensors.

Use the ▲ / ② and ⇨ keys to select the next sensor and the ▼ / ⑧ and ▼ keys to select the previous sensor.

This function is simply used to check that a sensor is online or to see the load distribution on the load receiver.

4.8.   Angle correction

This function is not available if the parameter "`SENSOR TYPE 0=An 1=Dig 2=Candy`" is set to "`0`" (analogue sensor), see *4.2*.

It enables a correction to be applied if an angle is too high or too low. Enter the CAN host number of the sensor to be corrected then the correction value in converter points.

Note: ARPEGE MASTER-K digital sensors give 100,000 points for the maximum range of the sensor.

4.9.   End of slope correction

This function can be used to apply a slight correction to the slope (system gain).
It may be used in particular to compensate for variation in the "g" factor for the location where the complete instrument is used.
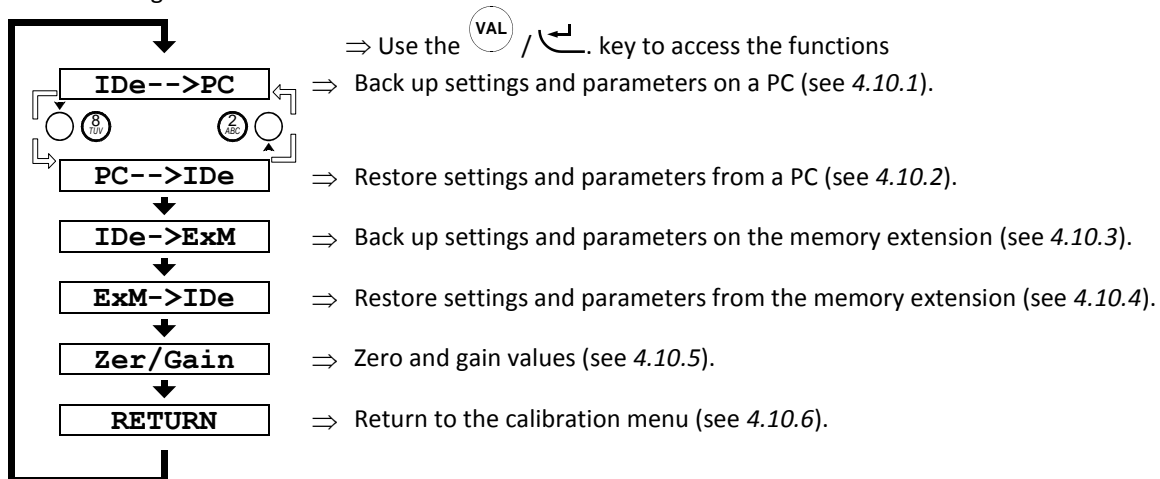
If a slight offset at full load is noted when the scale is checked, this function can be used to correct the error:
-    Confirm this function then enter the correction value and confirm again.
-    Check the result of the correction by viewing the weight on the display.

Note: The correction sign may be changed using the ▸◯ / ⤸CE key. If a minus sign is displayed before the value, a negative correction is applied; if the plus sign is displayed a positive correction is applied.

4.10. Service menu

This function gives access to the service menu shown below.

⇒ Use the (VAL) / ⤸. key to access the functions

```
  IDe-->PC   ⇐  ⇒  Back up settings and parameters on a PC (see 4.10.1).
  ◯⑧TUV    ②ABC◯
  PC-->IDe      ⇒  Restore settings and parameters from a PC (see 4.10.2).
  IDe->ExM      ⇒  Back up settings and parameters on the memory extension (see 4.10.3).
  ExM->IDe      ⇒  Restore settings and parameters from the memory extension (see 4.10.4).
  Zer/Gain      ⇒  Zero and gain values (see 4.10.5).
  RETURN        ⇒  Return to the calibration menu (see 4.10.6).
```

4.10.1. Backing up settings and parameters on a PC

This menu is used to save all the settings and parameters in a text file (.TXT) on a PC.

To transfer the settings:
-    Connect the PC (COM 1) to the IDé unit (COM 1) using a PC/IDé connection cable.
-    Run the *HyperTerminal* program (Access path to hypertrm.exe: **"C:\Program Files\Accessories\HyperTerminal\HYPERTRM.EXE"**)
-    Enter a name for the la connection then click OK (TERMINAL.IDE).
-    In the "*Connect using*" section, select "*Direct to COM1*".
-    Configure the connection at *9600 baud, no parity bits, one stop bit, no flow control*.
-    Return to the main screen, select "*Transfer*" then "*Capture Text*", define the backup file name and confirm by clicking "*Start*". The PC waits to receive data.
-    On the IDé unit, confirm the "**IDé-->PC**" function.
-    The operator guide displays "**Tr. Num zone (1/2/3/4/5):**". Use the IDé keypad to select the memory zone to transfer, then confirm.
-    During transmission, the backup is displayed on the PC screen; the IDé unit displays "**Tr**" followed by an animated cursor.
-    To stop the backup, select "*Transfer*", "*Capture Text*" and "*Stop*".
-    Once the backup is complete, return to the service menu.

Details of the memory zones that can be transferred:

     ZONE 1:   Metrology EEPROM   (Transfer lasts a few seconds).
     ZONE 2:   Application EEPROM   (Transfer lasts a few seconds).
     ZONE 3:   Includes all previous zones   (Transfer lasts a few seconds).
     ZONE 4:   Reserved.
     ZONE 5:   Reserved.

4.10.2. Restoring the settings and parameters via a PC

This menu is used to restore all settings and parameters saved previously on a PC, in a text file (.TXT).

To transfer the settings:
- PC (COM 1) to the IDé unit (COM 1) using a PC/IDé connection cable.
- Run the *HyperTerminal* program (Access path to hypertrm.exe: **"C:\Program Files\Accessories\HyperTerminal\HYPERTRM.EXE"**)
- Enter a name for the la connection then click OK (TERMINAL.IDE).
- In the "***Connect using***" section, select "***Direct to COM1***".
- Configure the connection at ***9600 baud, no parity bits, one stop bit, no flow control***.
- On the IDé unit, confirm the "`PC-->IDé`" function.
- The operator guide displays "`Re. Num zone (1/2/3/4/5):`". Use the IDé keypad to select the memory zone to restore, then confirm. The IDé unit waits for data.
- On the PC, select "***Transfer***" then in "***Send text file***", select the backup file to be transferred and click "***Open***". The PC transmits the data.
- During transmission, the IDé unit displays "`Re`" followed by an animated cursor.
- Once the restore is complete, return to the service menu.

4.10.3. Backing up settings and parameters to memory extension

This function is used to save all settings and parameters (EEPROM metrology zone) to the memory extension.

When you select this function, the message "`WRITE ..`" is displayed during the backup.
Once the backup is complete, return to the service menu.

4.10.4. Restoring settings and parameters from the memory extension

This function is used to restore all settings and parameters (EEPROM metrology zone) stored previously in the memory extension.

When you select this function, the message "`READ ...`" is displayed during the restore.
Once the restore is complete, return to the service menu.

4.10.5. Zero and gain values

This function is used to display and enter the zero calibration and gain values:

`Zero scale    (conv. pts) :`*XXXXXXX*   Display and/or enter the zero calibration value (empty tare) in converter points.

`Gain scale    (conv. pts) :`*XXXXXXX*   Display and/or enter the gain calibration value (pull) in converter points.

4.10.6. Return to the calibration menu

This function is used to return to the calibration menu.

4.11. Printing parameters and calibration settings

If a printer is connected to the LPT and/or COM1 port, you can keep a paper copy of the parameters and calibration settings by selecting this function.

4.12. End of calibration and storing data

Select this function to quit calibration mode and save the parameters and settings.

While the data is being stored, the operator guide displays "**SAVE**". This operation takes several seconds.
The message "**StrapOFF**" is then displayed as shown on the screen below.
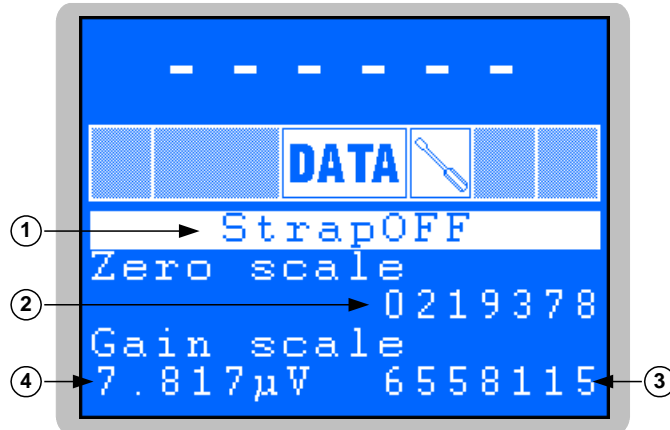
Key:
- 1 ⇒ Message indicating that the calibration switch must be toggled.
- 2 ⇒ Zero calibration value (empty tare) in converter points.
- 3 ⇒ Calibration sensitivity in µV per division (value given for information).
- 4 ⇒ Gain calibration (pull) in converter points.

Set the calibration switch back to its initial position (normal mode). The readout unit will restart in application mode.

5. ERROR MESSAGES

5.1. Error messages on the weight display

ALIM : Power supply fault (voltage too low).

HG : Out of range plus (converter capacity exceeded)

HG- : Out of range minus (converter capacity exceeded)

EEPROM : EEPROM CRC Error (message displayed continuously)

REF : Error on input M1 (sensor connection or sensors defective).

HE : Off scale, range exceeded (+9 divisions).

HE- : Off scale, weight below zero (-9 divisions).

OVERFL : Calculation capacity exceeded.

AD7730 : Converter failed.

CAPT : One or more digital sensor(s) are not responding (sensor power supply or connection(s) defective).

N SERI : The serial number of a digital sensor is not valid or the digital sensor setting is not valid.

5.2. Error messages during configuration or calibration (on the operator guide)

" **ERROR 1**" : Division incorrect.
" **ERROR 2**" : Division other than 1/2/5.
" **ERROR 3**" : Range greater than 500 tonnes.
" **ERROR 4**" : Display capacity exceeded.
" **ERROR 5**" : Over 6000 divisions.
" **ERROR 6**" : Range W1 incompatible with W2 (W1 must be less than W2)
" **ERROR 7**" : Division W1 incompatible with W2 (e2 must follow e1)

" **ERROR Z**" : Error during zero scale calibration phase.
" **ERROR G**" : Error during gain calibration phase
" **ERROR R**" : Error during gain calibration phase, input range too low.
" **ERROR U**" : Gravity adjustment incorrect.

"**ERROR a**": Type of readout unit other than IDé150/250.
"**ERROR b**": Type of sensor other than 0, 1 or 2.
"**ERROR c**": Number of sensors not 1 to 12.
"**ERROR d**": Number of measurements per second not 06 to 99.
"**ERROR e**": Multi-scale parameter not 0 or 1.
"**ERROR f**": Automatic W2/W1 switching parameter not 0 or 1.
"**ERROR h**": Dial scale or inclinometer parameter not 0 / 1 / 2.
"**ERROR i**": Legal metrology parameter not 0 or 1.
"**ERROR j**": Immobility parameter not 0,5E to 3,0E.
"**ERROR k**": Zero follower parameter not 0 or 1.
"**ERROR l**": NET weighing parameter not 0 / 1 / 2.
"**ERROR m**": Zero on power up parameter not 0 or 1.
"**ERROR n**": Automatic zero parameter not 0 or 1.

"**ERROR01**": Memory card locked (lock button on side).
"**ERROR02**": Memory card not detected.
"**ERROR03**": Communication problem with memory card.
"**ERROR04**": Communication problem with memory card.
"**ERROR05**": Communication problem with memory card.
"**ERROR06**": Memory card not formatted. Initialise it.
"**ERROR07**": Communication problem with memory card.
"**ERROR08**": Communication problem with memory card.
"**ERROR09**": Communication problem with memory card.
"**ERROR10**": Communication problem with memory card.
"**ERROR11**": Communication problem with memory card.
"**ERROR12**": Backup of metrological parameters not found on memory card.
"**ERROR13**": Backup of application parameters not found on memory card.
"**ERROR14**": Backup file not found on memory card.
"**ERROR15**": Data on memory card not compatible with the software
"**ERROR16**": Data protected.

6. APPENDIX

6.1. Connection pinouts

Connector ref. / Pin number	M1	MASTER CAN	COM1		COM2				AUX. connect.
			RS232	RS485	Passive bus	Passive / active bus	Options RS232	RS485	
1	⏚	⏚	⏚	⏚	⏚	⏚	⏚	⏚	0V
2	N.U.	N.U.	Rx	N.U.	N.U.	N.U.	Rx	N.U.	V Battery
3	A-	CAN_H	Tx	N.U.	N.U.	N.U.	Tx	N.U.	+12Vout
4	M-	CAN_L	N.U.	RxTx+	R+	R+	N.U.	Rx+	Common E
5	A+	V+	N.U.	RxTx -	R-	R-	N.U.	Rx-	E1+
6	M+	0V	DTR	N.U.	N.U.	N.U.	DTR	N.U.	E2+
7	R-		0V	0V	N.U.	0V_Iso	0V_Iso	0V_Iso	
8	R+		N.U.	N.U.	T+	T+	N.U.	Tx+	
9	N.U.		N.U.	N.U.	T-	T-	N.U.	Tx-	

6.2. IDé board layout
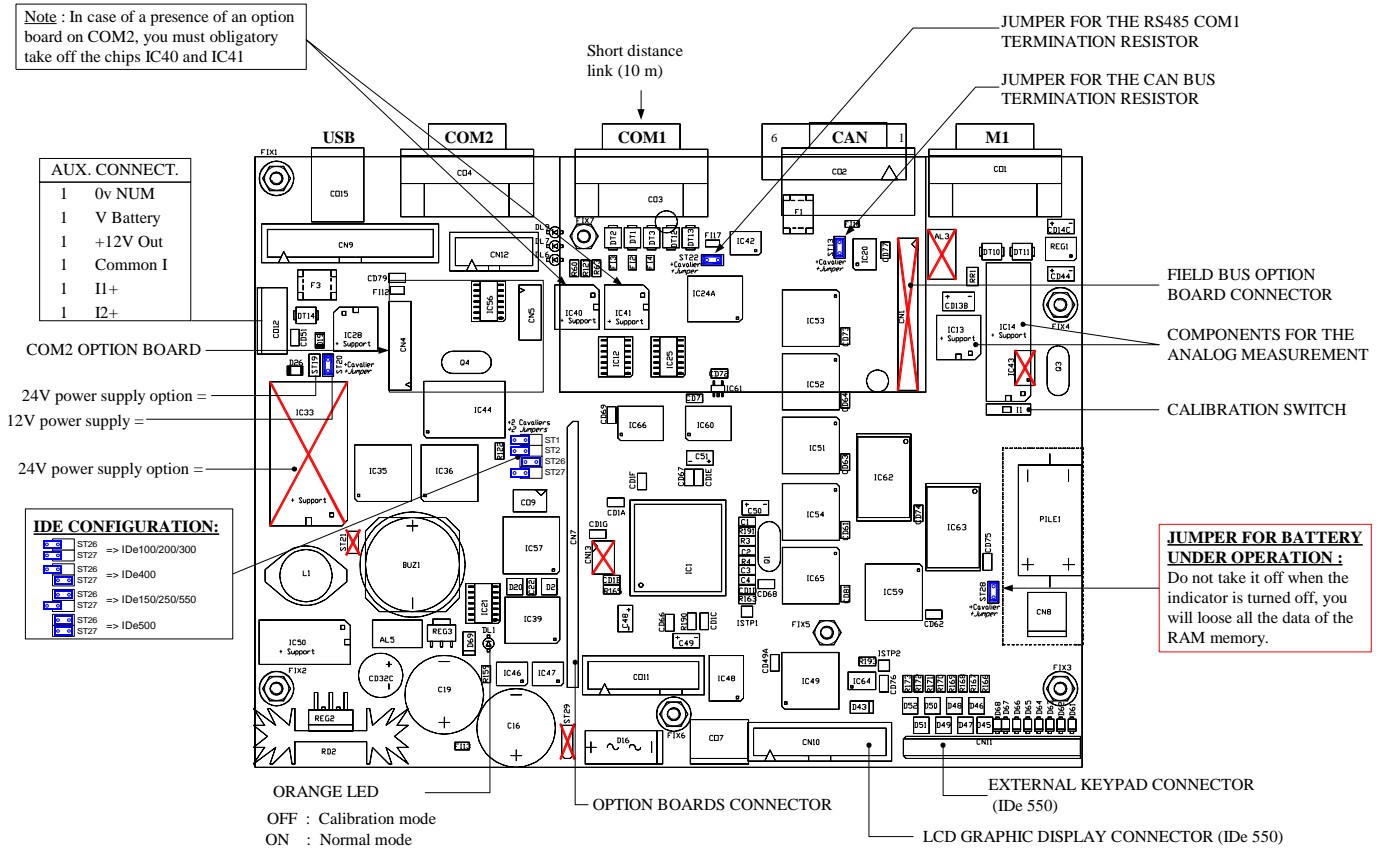
CONTRAST ADJUSTMENT

The contrast of the LCD display is adjusted using the blue potentiometer on the interface board, located on the front panel of the readout unit adjacent to the graphic display connector.

7.   SUMMARY OF SETTINGS MENU

Weight Display	Operator Guide	Default Values	Comments
1 Regl	`C : X`		The digital load cell N° X does not respond
1 Regl	`ENGLISH`		The messages of the menu are in english
	`DEUTSCH`		The messages of the menu are in german
	`FRANCAIS`		The messages of the menu are in french
1 Regl	`CALIBRAT`		
	`SENS No`		If digital load cells
	`LOAD CELL NUMBER (01 to 12)`	53	
	`NEW LOAD CELL NB (01 to 12)`	00	
	`Wait 15s`		
	`OP MODE`		
	`IDe TYPE      1=150  2=250  : XX`	02	
	`SENSOR TYPE 0=An 1=Dig 2=Candy: X`	0	
	`SENSOR NUMBER ... ( 1 to 12 ) : XX`	02	
	`INPUT RANGE (mV) 1=10 2=20 3=40: X`	2	
	`MESUREMENT/SEC. XX*10 (1to99) : XX`	18	
	`MULTI. RANGE (0 = No 1 = Yes) : X`	0	
	`AUTO SWITCH  W2/W1  (0=N 1=Y) : X`	0	
	`E2 1=ROMAINE 2=INCLINO 0=NOTH.: X`	0	
	`REGULATED MODE ( 0=No 1=Yes ) : X`	1	
	`DSD Number            : XXXXXX`	000001	
	`METR.PAR`		
	`RANGE W1 (1kg to 500000kg) : XXXXXX`	000003	
	`DIVISION W1(max 500,000kg) : XXX,XXX`	000.001	
	`RANGE W2 (1kg to 500000kg) : XXXXXX`	000003	If parameter "`MULTI. RANGE`" = 1
	`DIVISION W2(max 500,000kg) : XXX,XXX`	000.001	If parameter "`MULTI. RANGE`" = 1
	`IMMOBILITY   (0,2d a 3,0d) : X,X`	1.0	
	`NB OF IMMOBILE MEASM.(0..9): X`	4	
	`LOW PASS FILTER  (0 a 10hz): XX`	00	
	`NUMERIC FILTER (XX average): XX`	30	
	`NET WEIGHING (0=N 1=Y 2=PT): X`	1	
	`FOLLOWING ZERO (0=No 1=Yes): X`	0	
	`AUTOMAT. ZERO (0=No 1=Yes) : X`	0	
	`ZERO POWER ON (0=No 1=Yes) : X`	0	
	`SET ZERO`		
	`Calibrat`		
	`SET GAIN`		
	`Calibration weight value(kg): XXX,XX`	003,00	Enter the standard mass value (kg) ex : 3kg
	`GRAVITY`		
	`Calibration gravity (G): X,XXXXX`	9,81000	
	`Utilization gravity (G) : X,XXXXX`	9,81000	
	`DisANGLE`	: selection of another digital load cell		If digital load cells
	`ANGLEcor`		If digital load cells
	`LOAD CELL NUMBER (01 to 12): XX`	00	
	`Adjustment with number of pts : -XX`	-00	CE : passage from "+" to "-"
	`Wait 15s`		
	`EndSLOPE`		
	`Adjustment with tenth of div. : -XX`	-00	CE : passage from "+" to "-"

Weight Display	Operator Guide	Default Values	Comments

SERVICI.

IDe-->PC

| Tr. Num ZONE (1/2/3/4/5): X | 0 | |
| Tr / | | The slash rotates during the transfer. |

PC-->IDe

| Re. Num ZONE (1/2/3/4/5): X | 0 | |
| Re / | | The slash rotates during the transfer. |

IDe->ExM

| WRITE .. | |

ExM->IDe

| READ ... | |

Zer/Gain

| Zero scale (conv. pts) : XXXXXXX | 2512390 |
| Gain scale (conv. pts) : XXXXXXX | 3430110 |

RETOUR

PRINTset

| PRINTING | |

END

| SAVE | | if no parameter has been changed, the "SAVE" message does not appear. |
| StrapOFF | |

MEMO: