ARPEGE MASTERK

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# LOGIC 200 USER MANUAL SINGLE PRODUCT DOSING SOFTWARE

| Software N° | Manual N° | Edition |
|---|---|---|
| **Bl0IN37.07F** | **LOG_Gb_Dosage Mono LOGIC200_rev04.docx** | **04** |

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# LOGIC 200 USER MANUAL SINGLE PRODUCT DOSING SOFTWARE

| Date | Edition number | Object of the modification |
|---|---|---|
| 03/03/2008 | 00 | Original. |
| 22/12/2008 | 01 | Cabling correction of the 4E4S Logic option board<br>+ correction on the emptying mode (p18 ) |
| 27/08/2009 | 02 | Update of the user manual |
| 05/05/2011 | 03 | Correction the access to the menu « Modification of the dosing parameters ». (4.2.1.) |
| 01/02/2018 | 04 | Addition of the layout of the 4E4S_LOGIC board, detail of function High Precision displaying and driver for older weight remote display. |
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# 1. SOFTWARE DESCRIPTION

## 1.1. The software

The single product dosing software for the "*LOGIC 200*" was studied to resolve the conditioning problems on the bagging machines. It disposes respectively of the calculation power of a very efficient MCU and of the execution speed of an analog comparator. With its inputs and outputs, it is capable to manage a complete bagging cycle without the need of an external PLC.

## 1.2. The peripherals

The "*LOGIC 200*" indicator has in standard version:

- 1 RS232 serial link on **COM1**. (With or without DTR)
- 1 RS485 2 wires serial link on **COM2**. (With or without a termination resistor RT of 120 ohms)
- 1 input for the analog load cell(s), 6 wires, on **M1**. (Maximum length: 100m)

**Remarks:**

- Only one cable must be connected to **M1**. The parallel connection of the load cells must be done separately in a junction box.
- The shield of the analog load cell cable must be obligatory connected to the ground of the indicator.
  - 4 logic inputs **that do not need any external power supply (*)** on **INPUT**. (Maximum cable length: 3 m)
  - 4 outputs (dry contacts with a common) on **OUTPUT**.
    **Maximum electrical characteristics (*): V = 48V / I = 500mA.**

**(*) ATTENTION:**
**If you do not respect the last two items, you may cause the damage of the indicator.**

Description of the inputs / outputs:

- **I1** = Start cycle - resume cycle.
- **I2** = Suspend cycle / cancel cycle.
- **I3** = Dosing authorization. (*)
- **I4** = Emptying / filling authorization. (*)
- **O1** = High speed contact. (HS)
- **O2** = Low speed contact. (LS)
- **O3** = Contact for off tolerance default, rate default, dosing in progress, end of dosing. (*)
- **O4** = Contact for emptying, low threshold, high threshold, filling. (*)

*(*) : To determine the use of the contacts O3 / O4 and of the inputs I3 / I4, refer to the section 5.1.8.*

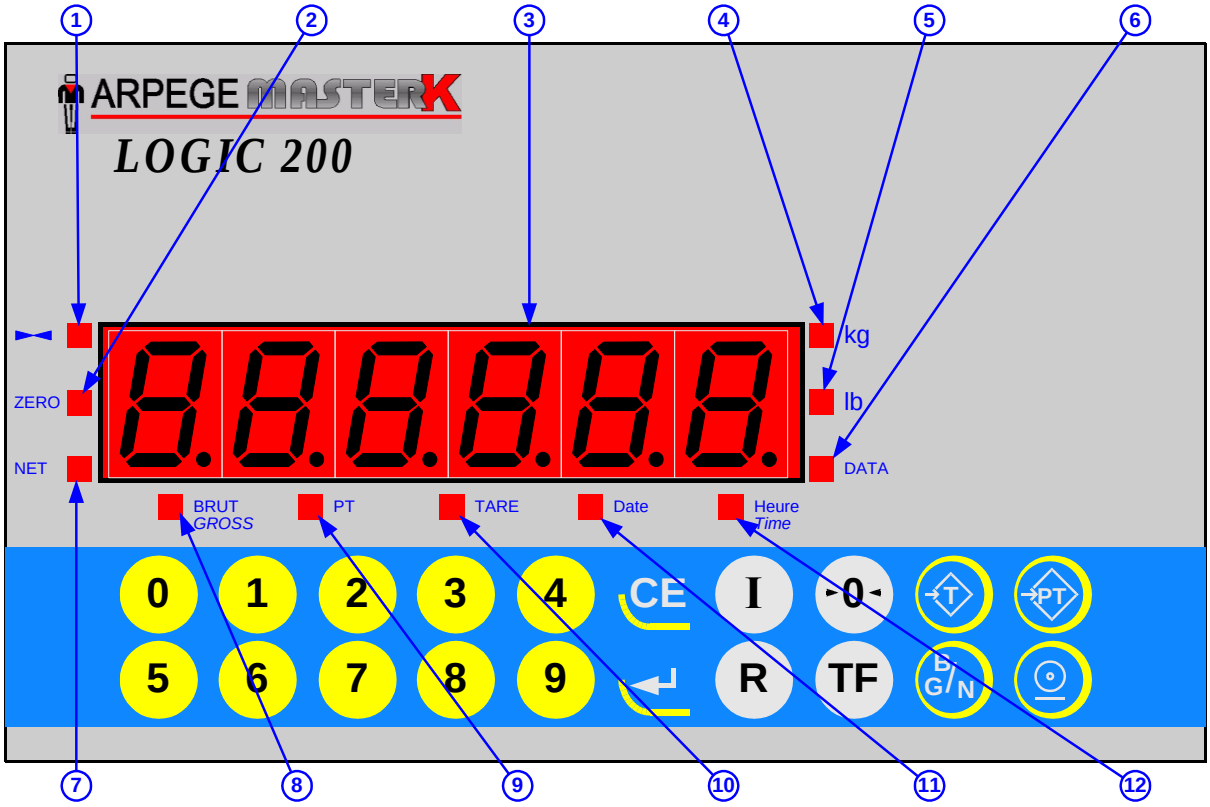
## 1.3. The options

The "*LOGIC 200*" indicator may have in option an analog output 0-10V or 4-20mA: ("*0-10V option board*" or "*4-20mA option board*")

- 1 analog output 0-10V or 4-20mA on **ANALOG OUTPUT**. (For more details, refer to the user manual named "SPECIFICATION DES CARTES ANALOGIQUES 0-10V ET 4-20mA ")

# 2. THE FRONT PANEL

## 2.1. Displays and LEDs




Legend:

1. Led indicating that the displayed weight is stable
2. Led indicating a center of zero gross weight at +/- 1/4 scale division
3. Weight display on 6 digits
4. Led indicating that the displayed weight is in kilogram
5. Led indicating that the displayed weight is in pound
6. Led indicating the display of a data
7. Led indicating the display of a Net weight
8. Led indicating the display of a gross weight
9. Led indicating the display of a manual tare
10. Led indicating the display of a tare
11. Led indicating the display of the date
12. Led indicating the display of the time

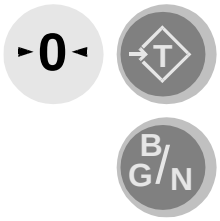
**Remarks:**

- Conversion from kilogram to pound: 1 kg ⇒ 2.204 lb,
  1 lb ⇒ 0.454 kg.

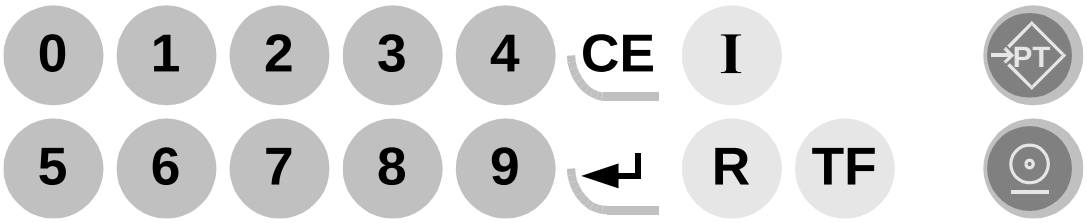
- In case of a weight inquiry in the DSD:
  - ❑ The LED "**DATA**" indicates the information displayed is a data,
  - ❑ The LEDs "**kg**" and "**lb**" indicate the weight unit of the memorized weight in the DSD,
  - ❑ The LED "**BRUT**" ("***GROSS***") indicates the display of the gross weight of the memorized weight in the DSD,
  - ❑ The LED "**NET**" indicates the display of the net weight of the memorized weight in the DSD,
  - ❑ The LEDs "**PT**" or "**TARE**" indicate the display of the value and the type of the tare of the memorized weight in the DSD,
  - ❑ The LED "**Date**" indicates the display of the date of the memorized weight in the DSD,
  - ❑ The LED "**Heure**" ("***Time***") indicates the display of the time of the memorized weight in the DSD.

## 2.2. The keypad

**Metrological keys:**




**Applications keys:**




Keys from 0 to 9 : Numerical keys allowing the seizure of the weights, the codes, etc.

Key CE : "Correction" key allows erasing a displayed numerical data or in case of a seizure of a signed value, allows changing the sign. It also allows suspending a cycle in progress or cancelling a cycle in progress if it was already suspended.

Key ↵ : Validation of a seized or a displayed data (**ENTER**), access to the displayed function/menu and acknowledge of an out of tolerance default during a cycle.

Key R : "**Re**sult" key, allows returning to the previous function/menu in the parameters menu and allows printing an end of dosing ticket.

Key I : "**I**nformation" key, allows going to the next function/menu in the parameters menu and allows accessing to the information functions.

Key : "Start cycle" key, allows starting a dosing cycle or resuming a suspended cycle.

Key : "**T**are" key, allows executing a tare with the present gross weight.

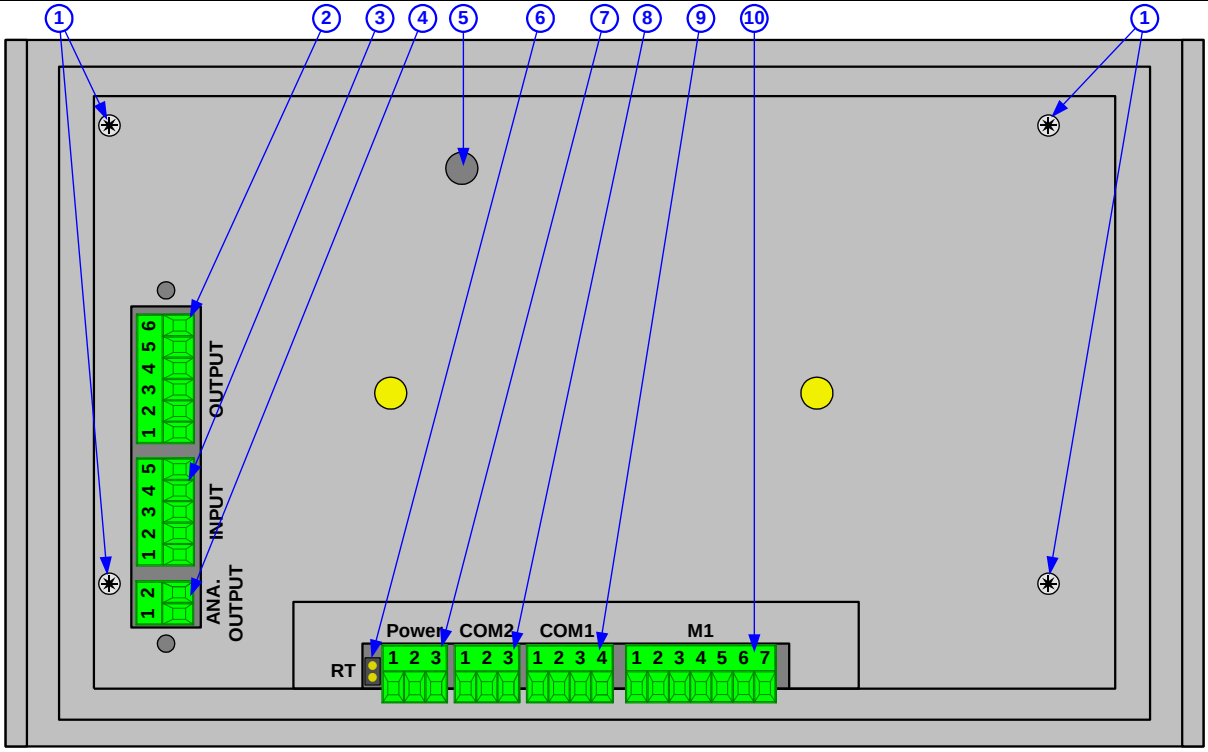
Key : "**PT**" key, allows entering a manual tare value. (Tare)

Key TF : "**TF**" key, not used.

Key : "**B**rut / **G**ross / **N**et" key, allows permuting for a few seconds the display of the gross weight in the net weight and vice versa.

Key -0- : "Zero" key, allows re-zeroing the weight.

# 3. THE REAR SIDE

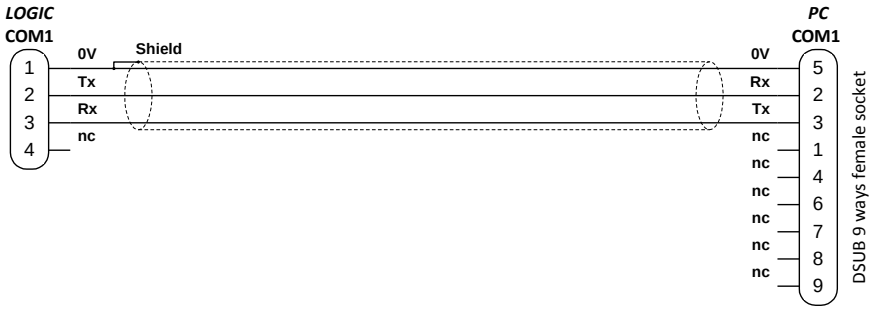



Legend:

1. Screws.
2. **OUTPUT**: 4 outputs.
3. **INPUT**: 4 inputs.
4. **ANA. OUTPUT**: 010V or 4-20mA analog output.
5. Access to the calibration push button **BP1**.
6. **RT**: Termination resistor (120 ohms) for the RS485 of **COM2**.
7. **Power**: 12VDC / 24VDC power supply.
8. **COM2**: RS485 serial link connector. (2 wires)
9. **COM1**: RS232 serial link connector.
10. **M1**: Load cell(s) connector.

| | | Pinout | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | **1** | **2** | **3** | **4** | **5** | **6** | **7** |
| **ANA. OUTPUT** | **Analog output 0-10V or 4-20mA** | **0V** | **0-10V / 4-20mA** | | | | | |
| **INPUT** | **Logic inputs** | **I1** | **I2** | **I3** | **I4** | **Com.** | | |
| **OUTPUT** | **Relay outputs** | **O1** | **O2** | **O3** | **O4** | **Com.** | **N.C.** | |
| **COM 1** | **RS232** | **0V** | **Tx** | **Rx** | **DTR** | | | |
| **COM 2** | **RS485 2 wires** | **0V** | **Tx/Rx-** | **Tx/Rx+** | | | | |
| **POWER** | **Power supply** | **+$V_{DC}$** | **Earth** | **0V** | | | | |
| **M1** | **Analog load cell** | **M-** *(-Meas.)* | **M+** *(+Meas.)* | **R-** *(-Sense)* | **R+** *(+Sense)* | **A-** *(-Excitation)* | **A+** *(+Excitation)* | **Ground (Shield)** |

Example of a "***LOGIC – PC***" cable:



# 4. APPLICATION

## 4.1. Dosing cycle

### 4.1.1. Start of a dosing cycle

To start a dosing cycle, you have two choices, either through the front panel of the indicator or by using the input "I**1**".

#### 4.1.1.1. Start of a dosing cycle through the front panel:

Press on the key , then enter the required dosing information:

| | | |
|---|---|---|
| rEF1 | : **XXXXXX** | Enter the value of the reference N°1 and validate. (6 digits) |
| ((**Refe***rence* **1**) | | |
| rEF2 | : **XXXXXX** | Enter the value of the reference N°2 and validate. (6 digits) |
| (**Refe***rence* **2**) | | |
| SEt U | : **XXXXXX** | Enter the value of the set value and validate. (6 digits) |
| (*dosing* **set** *value*) | | |
| nb cy | : **XXXX** | Enter the required number of cycles and validate. (4 digits) |
| (**n***umb***e***r of* **cyc***les*) | | *This parameter is required if* nb cy *= 1, refer to 5.1.3.* |

Then the indicator displays InP 3, and you must activate the input "I**3**", if Mod In = 1 or 3, refer to *5.1.8*. (Pulse of ≈ 1 second)

The printing of the beginning of the dosing is executed and the dosing is started.

Printing example:

```
      ARPEGE MASTER-K
  38, Avenue des Freres Montgolfier
              BP 186
        69 686 Chassieu Cedex

Date : 03/03/2008       Time: 14:55:37
      Batch number     : 001000
      Item code        : 000024
----------------------------------------
```

*Dosing ticket header:*

DSD N° ⇓ | Number of executed doses ⇓ | Dose weight ⇓

```
000044 14:30:28 0002 NET   :   3.076 kg
```

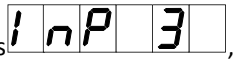
*One dose:*

Possible error:

Lo HI in alternation with the weight: the weight is higher than the low threshold, unload the scale so that the weight will be lower than the low threshold or disable the low threshold by setting its value to zero.

#### 4.1.1.2. Start of a dosing cycle through the input "I1"

You must activate the input "I**1**". (Pulse of ≈ 1 second)

Then the indicator displays  , and you must activate the input "I**3**", if  = 1 or 3, refer to *5.1.8*. (Pulse of ≈ 1 second)

The printing of the beginning of the dosing is executed and the dosing is started with the defined dosing parameters. (Refer to *4.2.1.*)

Printing example:

```
        ARPEGE MASTER-K
  38, Avenue des Freres Montgolfier
              BP 186
        69 686 Chassieu Cedex

Date : 03/03/2008       Time: 14:55:37
      Batch number    : 001000
      Item code       : 000024
----------------------------------------
```

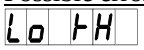
*Dosing ticket header:*

DSD N° ⇓ | Number of executed doses ⇓ | Dose weight ⇓

```
000044 14:30:28 0002 NET   :   3.076 kg
```

*One dose:*

Possible error:

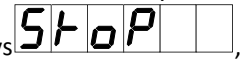
 in alternation with the weight: the weight is higher than the low threshold, unload the scale so that the weight will be lower than the low threshold or disable the low threshold by setting its value to zero.

### 4.1.2. Suspend/Cancel a dosing cycle

To suspend a cycle, you have two choices, either through the front panel of the indicator or by using the input "**I2**".

#### 4.1.2.1. Suspend/Cancel a dosing cycle through the front panel.

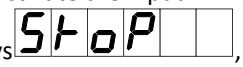
During a cycle, you must press on the key CE.

Then the indicator displays  , and you can have two possibilities:

- ❑ Either resume the cycle in progress by pressing on the key ,
- ❑ Or cancel the cycle in progress by pressing on the key CE.

#### 4.1.2.2. Suspend/Cancel a dosing cycle by using the inputs

During a cycle, you must activate the input "**I2**". (Pulse of ≈ 1 second)

Then the indicator displays  , and you can have two possibilities:

- ❑ Either resume the cycle in progress by activating the input "**I1**". (Pulse of ≈ 1 second)
- ❑ Or cancel the cycle in progress by activating the input "**I2**". (Pulse of ≈ 1 second)

**Remark:** It is possible to resume a cycle by pressing on the key .

### 4.1.3. End of dosing printing: R

To execute an end of dosing printing, you must press on the key R.

Example of a printing:

Total number of the cycle doses ⇒
Mean weight of the doses ⇒

```
---------------------------------------
NB     :     7       NET    :     22.064 kg
       AVERAGE              :     3.1520 kg
 Date : 03/03/2008      Time : 14:55:32

Tel.:04 72 22 92 22 Fax.:04 78 90 84 16
 www.masterk.com/marketing@masterk.com
```

⇐ Total weight of the executed doses

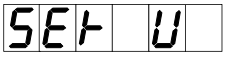
*End of dosing:*

## 4.2. Information functions: I

**Remark:** The information functions I6, I7 and I8 are not used.

### 4.2.1. I: Modification of the dosing parameters

To access to this menu, you must press on the key I and ↵.
The following menu will be available:




: **xxxxxx** Enter the dosing set value and validate (6 digits)

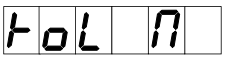
(*dosing* **set** *value*)


: **xxxxxx** Enter the low speed dosing value and validate. (6 digits)

(**Low s***peed dosing set value*)

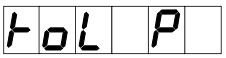

: **xxxxxx** Enter the feed error value and validate. (6 digits)

(**Feed e***rror*)




: **xxxxxx** Enter the value of the negative tolerance and validate. (6 digits)

(*Off* **tol***erance* **m***inus*)




: **xxxxxx** Enter the value of the positive tolerance and validate. (6 digits)

(*Off* **tol***erance* **p***lus*)

Then you will return to the application menu.

### 4.2.2. I0: DSD Inquiry

To search one of the last 14 000 weights recorded in the DSD, you must press on the keys I then 0.

The indicator asks that you enter the required DSD number:

dSd no : **XXXXX** Enter the required DSD weight number and validate with ↵.

(**DSD n***umber*)

The following information will be displayed successively:


The date of the required weight.


The time of the required weight.


The gross weight of the required weight.


The tare value of the required weight.


The net weight of the required weight.

Then you will return to the weighing menu.

**Remarks:**

- Each information will be displayed while flashing for 8 seconds,
- It is possible to go to the next information faster by pressing on the key ↵,
- During the display of the tare value, the tare type is indicated due to the LED ☐ TARE (tare through the indicator) or the LED ☐ PT. (Manual tare entry or tare loaded by protocol)

### 4.2.3. I1: Seizure of the reference n°1 value

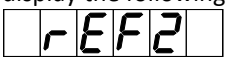
To enter the value of the reference N°1, you must press on the key I then 1. Then the indicator will display the following message:

rEF1 : **XXXXXX** Enter the value of the reference N°1 (6 digits) and validate with ↵.

(**Refe***rence* **1**)

### 4.2.4. I2: Seizure of the reference n°2 value

To enter the value of the reference N°2, you must press on the key 1 then 2. Then the indicator will display the following message:

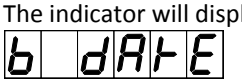



: **XXXXXX** Enter the value of the reference N°2 (6 digits) and validate with ↵.

(**Refe***rence* **2**)

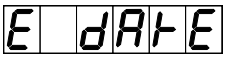
### 4.1.1. I3: Addition for the reference n°1 from date to date.

To execute an addition of the doses according to the reference n°1 you must press on the key 1 then 3.
The indicator will display the following messages:




: **XXXXXX** Enter the begin date of the addition and validate with ↵.

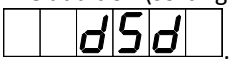
(**B***egin* **Date**) Example: 111207 for the 11th of December 2007.




: **XXXXXX** Enter the end date of the addition and validate with ↵.

(**E***nd* **Date**) Example: 030308 for the 3rd of March 2008.

The addition (sorting of the DSD) is launched, during this operation, the following message will be displayed



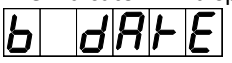

. Then the indicator will print the result of the addition.

Printing example:

```
 Date : 03/03/2008     Time: 15:52:24
 TOTAL  11/12/2007 --> 03/03/2008

:Batch number    :   NET TOTAL    :
-------------------------------------
:     000000     :      32.172 kg :
:     000001     :      50.488 kg :
:     000100     :       6.102 kg :
:     001000     :      24.494 kg :
-------------------------------------
     TOTAL       =     113.256 kg
```

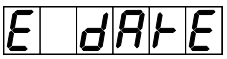
### 4.1.2. I4: Addition for the reference n°2 from date to date.

To execute an addition of the doses according to the reference n°1 you must press on the key 1 then 4.
The indicator will display the following messages:




: **XXXXXX** Enter the begin date of the addition and validate with ↵.

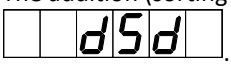
(**B***egin* **Date**) Example: 111207 for the 11th of December 2007.




: **XXXXXX** Enter the end date of the addition and validate with ↵.

(**E***nd* **Date**) Example: 030308 for the 3rd of March 2008.

The addition (sorting of the DSD) is launched, during this operation, the following message will be displayed



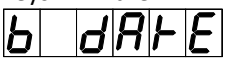

. Then the indicator will print the result of the addition.

Printing example:

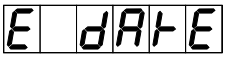
```
 Date : 03/03/2008     Time: 15:53:02
 TOTAL  11/12/2007 --> 03/03/2008

:Item code       :   NET TOTAL    :
-----------------------------------
:     000000     :      34.492 kg :
:     000002     :      23.896 kg :
:     000003     :       6.084 kg :
:     000024     :      48.784 kg :
-----------------------------------
     TOTAL       =     113.256 kg
```

### 4.1.3. I5: Crossed addition of the reference n°1 with reference n°2 from date to date.

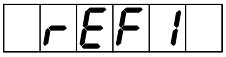
To execute a crossed addition of the doses of the reference n°1 with the reference n°2, you must press on the keys 1 then 5. The indicator will display the following messages:



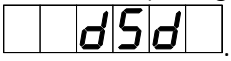
: **xxxxxx** Enter the begin date of the addition and validate with ↵.
(**B***egin* **Date**) Example: 111207 for the 11th of December 2007.



: **xxxxxx** Enter the end date of the addition and validate with ↵.
(**E***nd* **Date**) Example: 030308 for the 3rd of March 2008.



: **xxxxxx** Enter the reference N°1 to be totalized and validate with ↵.
(**Refe***rence* **1**) Example: 000001 for an addition of the reference N°1 having a value of 000001

The addition (sorting of the DSD) is launched, during this operation, the following message will be displayed 

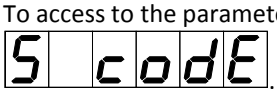
. Then the indicator will print the result of the addition.

**Remark:** If you enter the value "**000000**" for the reference N°1 to be totalized, you will get the crossed addition of all the weights of the different references N°1 with the references N°2.

Printing example:

```
 Date : 03/03/2008     Time: 15:54:50
 TOTAL  11/12/2007 --> 03/03/2008
 Batch number
       000001
:Item code       :   NET TOTAL    :
-----------------------------------
:     000000     :       2.320 kg :
:     000002     :      23.896 kg :
:     000003     :       6.084 kg :
:     000024     :      18.188 kg :
-----------------------------------
     TOTAL       =      50.488 kg
```

### 4.1.4. I9: Access to the parameters menu.

To access to the parameters menu, you must press on the key I then 9 and the indicator will display  . (**S***ecret* **code**)

You must press on the following keys successively 7, 8, 0, 6 then ↵ and then the parameters menu will be available.

Report to the chapter "*5. PARAMETERS MENU*" for the configuration details.

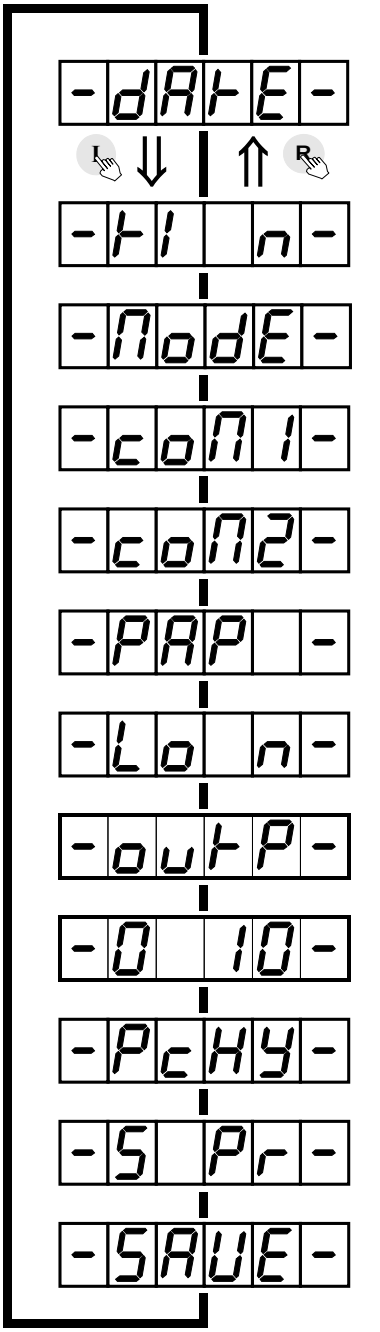
## 4.3. Display weight in High Precision using keys I then I

To activate the display weight in high resolution, you must press on the keys I then I.
The weight will be displayed in high resolution during 5 seconds, the LED "**DATA**" is set during operation.

# 5. PARAMETERS MENU

To access to this menu, you must press on the key I then 9, the indicator will display S CodE.
(**S***ecret* **code**)

You must press on the following keys successively 7, 8, 0, 6 then ↵ and then the parameters menu will be available:




You enter to the functions / menus due to the key: ↵

⇒ *Update of the date and time*, see *5.1.1*.

⇒ Update of the ticket number, see *5.1.2*.

⇒ Configuration of the operating mode of the indicator, see *5.1.3*.

⇒ Parameters of the COM1 serial link, see *5.1.4*.

⇒ Parameters of the COM2 serial link, see *5.1.5*.

⇒ Ticket length, see *5.1.6*.

⇒ Slave station number of the indicator, see *5.1.7*.

⇒ Inputs/Outputs parameters, see *5.1.8*.

⇒ Analog output parameters (0-10V / 4-20mA), see *5.1.9*.

⇒ Configuration through a computer, see *5.1.10*.

⇒ Saving and printing of the parameters then return to the application mode, see *5.1.11*.

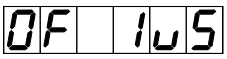
⇒ Saving of the parameters then return to the application mode, see *5.1.12*.

**Reminder:** To move inside the menu.

| Key | Effects |
|---|---|
| R | Returns to the previous function / menu. |
| I | Goes to the next function / menu. |

## 5.1. Configuration through the front panel of the indicator

### 5.1.1. Update of the date and time



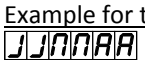
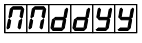
: **x**

(**0** = **F***r* , **1** = **US**)

Choose the required format for the date and validate.
0 French format: DD/MM/YY. (Day/Month/Year)
1 = American format: MM/DD/YY. (Month /Day/Year)
2 = English/European format: DD/MM/YY. (Day/Month/Year)

**Remark:** If the date format is set to 0 the printed texts are in French otherwise in English.

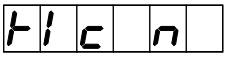
: **XXXXXX**

Enter the required date in the chosen format and validate.
Example for the 03rd of April 2007:
 : Entry with the French format: "**030407**".
 : Entry with the American format: "**040307**".
 : Entry with the English/European format: "**030407**".

: **XXXXXX**

Enter the required time and validate.
Example: "**151230**" for 15h12mn30s.

### 5.1.2. Update of the ticket number

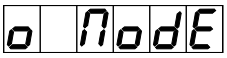


: **XXXXXX**

Ticket number on 6 digits. Enter the new ticket number and validate.
(This parameter is only used in the Gross/Tare/Net weighing mode)

(**tic***ket* **n***umber*)

### 5.1.3. Configuration of the operating mode of the indicator

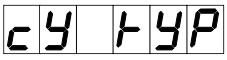


: **08**

Choose the operating mode of the indicator.

(**O***perating* **Mode**)

08 = Single product dosing. (Always keep this value for this parameter)



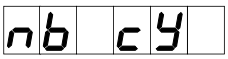
: **x**

Choose the required dosing type.

(**cy***cle* **typ***e*)

0 = Filling. (HS then LS)
1 = Filling. (HS then LS)
2 = Filling. (HS + LS then LS)
3 = Filling. (HS + LS then LS)
4 = Emptying. (HS then LS without automatic filling)
5 = Emptying. (HS then LS with automatic filling)
6 = Emptying. (HS + LS then LS without automatic filling)
7 = Emptying. (HS + LS then LS with automatic filling)

**Remark :** In emptying mode (4, 5, 6 or 7) the filling ("FILL") will be required if gross weight < set value + low threshold.

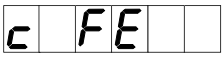


: **x**

Choose the required number of cycles.

(**n***umb***b***er of* **cy***cles*)

0 = Only one cycle is executed.
1 = You enter the number of cycles required at the beginning of the dosing.
2 = An infinite number of cycles will be executed.

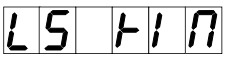


: **x**

Choose the operation of the feed error correction.

(**c***orrection of the* **f***eed* **e***rror*)

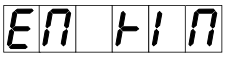
0 = No feed error correction.
1 = Feed error correction only if the weight is in between the tolerances.
2 = Feed error correction in all cases.



: **x.x**

Enter the time value in seconds during which the LS contact is closed and the system does not supervise the set values.
(Masking time for the starting of the LS)

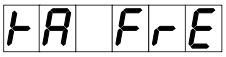
(**L**ow **s***peed start* **tim***e-out*)



: **x.x**

Enter the hold time value in seconds of the emptying output, when the weight will be lower than the low threshold.
(Final flow of the product)

(**Em**ptying **tim***e-out*)

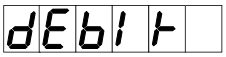


: **xx**

Indicate to the system the number of doses that must be done without executing a new tare for the scale.

(**Ta***re* **fre***quency*)

00 or 01 = Executes a tare for each cycle.
02 = Executes a tare for one cycle over two.
03 = Executes a tare for one cycle over three.
Etc.…
99 = No tare is executed. (Even on the starting of a cycle)

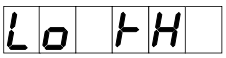


: **xy**

Choose the rate value for the rate supervision according to the following formula: Rate = Y scale divisions in X seconds.

(**Debit**/*Rate monitoring*)

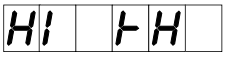
X : Time from 0 to 4 seconds.
Y : Number of scale divisions from 0 to 9.
00 = 0 scale divisions in 0 second ⇒ Rate supervision disabled.
12 = Rate supervision enabled for a minimum rate of 2 scale divisions per second.
42 = Rate supervision enabled for a minimum rate of 2 scale divisions in 4 seconds.



: **xxxxxx**

Choose the value of the low threshold. (On 6 digits)

(**Lo**w **th***reshold*)

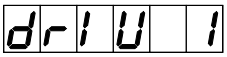


: **xxxxxx**

Choose the value of the high threshold. (On 6 digits)

(**Hi**gh **th***reshold*)

### 5.1.4. Parameters of the COM1 serial link

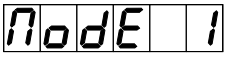



: **xx**

Enter the driver type of COM1.

(**driv***er com***1**)

00 = Nothing.
01 = Weight remote display. (Type RP75HL)
02 = Not used.
03 = Not used.
04 = Not used.
05 = MODEM Protocol. ("***TRANSFIC***" AMK software)
06 = Stream computer. (See "*6.1. The stream computer protocol*")
07 = IBA40 printer.
08 = ILA80 printer.
09 = Stream printer.
17 = Weight remote display. (Compatibility with older models)

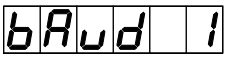



: **X**

Enter the serial link type.

(*communication* **mode** *com***1**)

0 = RS232 without DTR test.
1 = RS232 with DTR test.

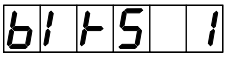



: **X**

Enter the communication rate.

(**baud** *rate com***1**)

1 = 1200 bauds.
2 = 2400 bauds.
4 = 4800 bauds.
9 = 9600 bauds.
0 = 19200 bauds.

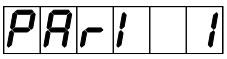



: **X**

Enter the number of bits.

(*number of* **bits** *com***1**)

7 = 7 bits.
8 = 8 bits.

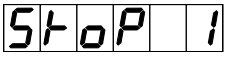



: **X**

Enter the parity type.

(**pari***ty type com***1**)

0 = No parity.
1 = Odd parity.
2 = Even parity.




: **X**

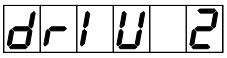
Enter the number of stop bits.

(*number* **stop** *bits com***1**)

1 = 1 stop bit.
2 = 2 stop bits.

**Remark:** Some combinations of number of bits, parity and number of stop bits are not available. Choose if it is possible: 8 bits, no parity, and 1 stop bit.

### 5.1.5. Parameters of the COM2 serial link

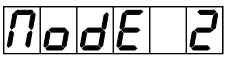



: **xx**

Enter the driver type of COM2.

(**driv***er com***2**)

00 = Nothing.
01 = Weight remote display. (Type RP75HL)
02 = Not used.
03 = Not used.
04 = Not used.
05 = MODEM Protocol. ("***TRANSFIC***" AMK software)
06 = Stream computer. (See "*6.1. The stream computer protocol*")
07 = IBA40 printer.
08 = ILA80 printer.
09 = Stream printer.
17 = Weight remote display. (Compatibility with older models)

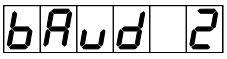



: **2**

Always set this parameter to 2.

(*communication* **mode** *com***2**)

2 = RS485 2 wires.

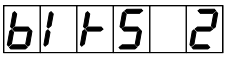



: **X**

Enter the communication rate.

(**baud** *rate com***2**)

1 = 1200 bauds.
2 = 2400 bauds.
4 = 4800 bauds.
9 = 9600 bauds.
0 = 19200 bauds.

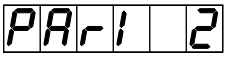



: **X**

Enter the number of bits.

(*number of* **bits** *com***2**)

7 = 7 bits.
8 = 8 bits.




: **X**

Enter the parity type.

(**pari***ty type com***2**)

0 = No parity.
1 = Odd parity.
2 = Even parity.


: **X**

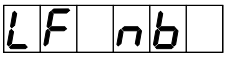
Enter the number of stop bits.

(*number* **stop** *bits com***2**)

1 = 1 stop bit.
2 = 2 stop bits.

**Remark:** Some combinations of number of bits, parity and number of stop bits are not available. Choose if it is possible: 8 bits, no parity, and 1 stop bit.

### 5.1.6. Ticket length

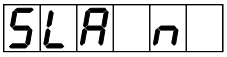


: **xx**

Paper length in number of line feed for the 80 columns printers. (ILA80)

(**l***ine* **f***eed* **n***um***b***er*)

### 5.1.7. Slave station number of the indicator



: **xx**

Enter the slave station number of the indicator (2 digits) then validate. This number is used in the communication protocols.

(**sla***ve* **n***umber*)

### 5.1.8. Inputs/Outputs parameters

: **x**

Choose the operating type of the Inputs/Outputs. (Option)

(**type** *of* **i***nput and* **o***utput*)

0 = Dosing application, always keep this parameter set to this value.

: **x**

Choose the operating mode of the output 3.

(*Operating* **mod***e of* **o***utput* **3**)

0 = Indicates the off tolerances.
1 = Indicates that the dosing is in progress.
2 = Indicates that the dosing is finished.
3 = Indicates that you have a rate default.

: **x**

Choose the operating mode of the output 4.

(*Operating* **mod***e of* **o***utput* **4**)

0 = Indicates that you are in emptying mode.
1 = Indicates that the low threshold is enabled. (Weight < low threshold value)
2 = Indicates that the high threshold is enabled. (Weight > high threshold value)
3 = Indicates that you are in filling mode.

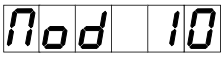
: **x**

Choose the inputs to be used.

(*Operating* **mod***e of* **in***put I3 / I4*)

0 = The inputs I3 and I4 are not used.
1 = Only the input I3 is used.
2 = Only the input I4 is used.
3 = Both the inputs I3 and I4 are used.

### 5.1.9. Analog output parameters (0-10V / 4-20mA)



: **x**

Choose the operating mode of the analog output. (0-10V / 4-20mA)

(**mod***e of 0-***10***V / 4-20mA*)

0 = Disable of the analog output.
1 = The analog output operates on the gross weight.
2 = The analog output operates on the net weight.
3 = The analog output operates in absolute value on the net weight.

To execute the two following adjustments, you need to connect a voltmeter or an ammeter depending of the used analog board.

| | | |
|---|---|---|
| Lo dAc | : **X** | Adjustment of the low point of the analog output. (0 V / 4 mA) |
| (**lo***w value of* **DAC**) | | - A first pressing on the key B/G/N + will increase the value, a second pressing on this key will stop the incrementation of the value.<br>- A first pressing on the key -0- – will decrease the value, a second pressing on this key will stop the decrementation of the value. |
| HI dAc | : **X** | Adjustment of the high point of the analog output. (10 V / 20 mA) |
| (**hi***gh value of* **DAC**) | | - A first pressing on the key B/G/N + will increase the value, a second pressing on this key will stop the incrementation of the value.<br>- A first pressing on the key -0- – will decrease the value, a second pressing on this key will stop the decrementation of the value. |

### 5.1.10. Configuration through a computer

For this you must proceed as follows:

- Connect the computer (on Com1) with the indicator. (On Com1)
- Launch the Hyper terminal software. (Access path of hyperterm.exe: **"C:\Program Files\Accessories\HyperTerminal\HYPERTRM.EXE"**).
- Give a name to the connection and validate.
- Then in the header "Connect using" you must validate "Direct to Com1".
- Then, configure the connection in 9600 Bauds, no parity, one stop bit, and no flow control.
- Validate the function -PcHy- on the indicator, the message "**PRESS [ENTER] ON THE PC**" will be displayed on the PC screen. Validate with the key ↵ .
- You will get the following menu:

```
0 : DSD RECEPTION .........
1 : COMPANY NAME ..........
2 : CONFIGURABLE W. TICKET.
3 : CONFIGURABLE B. TICKET.
4 : CONFIGURABLE E. TICKET.
9 : END AND RETURN ON LOGIC
```

(Refer below to the chapter "*5.2. Configuration through a computer*")

### 5.1.11. Saving and printing of the parameters then return to the application mode

Printing of the parameters and saving them in the EEPROM memory. This function may take several seconds. (**20 seconds**)
Then return to the application menu.

**Remark:** The printing of the parameters is executed only if you have a printer declared on **COM1** or **COM2**.

### 5.1.12. Saving of the parameters then return to the application mode

Saving of the parameters in the EEPROM memory without printing them. This function may take several seconds. (**20 seconds**)
Then return to the application menu.

**Attention! If a power cut occurs before or during the saving, the newly entered parameters will be lost.**

## 5.2. Configuration through a computer

### 5.2.1. DSD RECEPTION

This function allows saving the DSD in a text file (.TXT). For this you must press on the key 0 and the following information will appear on the PC screen:

"**BEGIN DATE (DDMMYY) : 010407**"

Enter the date from which you want to recuperate the DSD and validate with ↵.
The following information will appear on the PC screen:

"**END DATE (DDMMYY) : 030407**"

Enter the date to which you want to recuperate the DSD, and validate with ↵.

The following information will appear on the PC screen:

"**Configure HYPERTERMINAL in TEXT CAPTURE MODE and START**
**ENTER key to start transfer.**
**At the end of transfer STOP THE CAPTURE**
**ENTER key for return to MENU.**"

For this you must go to "Transfer" then in "Capture the text", you define the name of the file to be saved and validate "Start", the computer will be waiting for the information.
Press on the ENTER key to start the transfer of the DSD. Once the transfer is finished, you must go to "Transfer" then in "Capture the text" and "Stop".
Press on the ENTER key to return to the main menu.

Example of DSD recuperation:

| Station number of the indicator | DSD number | Date of the DSD weight | Time of the DSD weight | Gross weight | Tare value | Net weight | Reference n°1 | Reference n°2 |
|---|---|---|---|---|---|---|---|---|
| 00 | 000000 | 03/04/2007 | 09:32:12 | 0010.51 | 0000.00 | 0010.51 | 158742 | 120500 |
| 00 | 000001 | 03/04/2007 | 10:16:35 | 0012.02 | 0000.00 | 0012.02 | 154896 | 324578 |
| 00 | 000002 | 03/04/2007 | 10:46:37 | 0021.02 | 0000.00 | 0021.02 | 126873 | 584361 |
| 00 | 000003 | 03/04/2007 | 11:02:44 | 0018.03 | 0000.00 | 0018.03 | 265987 | 002584 |
| 00 | 000004 | 03/04/2007 | 11:32:45 | 0017.03 | 0000.00 | 0017.03 | 358000 | 654802 |
| 00 | 000005 | 03/04/2007 | 13:12:49 | 0020.35 | 0000.00 | 0020.35 | 125489 | 674230 |
| 00 | 000006 | 03/04/2007 | 13:32:52 | 0027.23 | 0000.00 | 0027.23 | 215800 | 002548 |

### 5.2.2. COMPANY NAME

Press on the key 1 and the following information will appear on the PC screen:

First line of the company name: 20 characters in double width.
" **COMPANY NAME: ********** "
Validate with ↵.
Second line of the company name: 39 characters.
" **>**---------- "
Validate with ↵.
Third line of the company name: 39 characters
" **>**---------- "
Validate with ↵.
Fourth line of the company name: 39 characters
" **>**---------- "
Validate with ↵.
First line of the end of ticket : 39 characters
" **>**---------- "
Validate with ↵.
Second line of the end of ticket: 39 characters
" **>**---------- "
Validate with ↵.
Name of the reference n°1 : 16 characters
" **NAME REF. 1 :Batch number** "
Validate with ↵.
Name of the reference n°2 : 16 characters
" **NAME REF. 2 :Item code** "
Validate with ↵, and you will return to the main menu.

### 5.2.3. CONFIGURABLE W. TICKET

Press on the key 2 and the following information will appear on the PC screen:
" **STD W. TICKET (0=n 1=y):1**"

If you choose "**1**" (yes), the printing of the Gross/Tare/Net ticket, the batch ticket and the stream printing ticket will be done according to a ticket type already fixed in the internal memory of the indicator.

If you choose "**0**" (no), the printing of the Gross/Tare/Net ticket, the batch ticket and the stream printing ticket will be done according to a configurable ticket.
Refer to chapter "*5.3. The configurable tickets*".

The standard tickets are always inside the memory of the indicator. They are realized in a format allowing its printing on an IBA40 printer (on 40 columns). They gather all the information collected during the weighing.

### 5.2.4. Configurable ticket of the beginning of a batch (CONFIGURABLE B. TICKET)

Press on the key 3 and the following information will appear on the PC screen:
" **STD B. TICKET (0=n 1=y):1**"

If you choose "**1**" (yes), the printing of the beginning of a batch weighing will be done according to a ticket type already fixed in the internal memory of the indicator.

If you choose "**0**" (no), the printing of the beginning of a batch weighing ticket will be done according to a configurable ticket.
Refer to chapter "*5.3. The configurable tickets*".

The standard tickets are always inside the memory of the indicator. They are realized in a format allowing its printing on an IBA40 printer (on 40 columns). They gather all the information collected during the weighing.

### 5.2.5. Configurable ticket of the end of a batch and the total (CONFIGURABLE E. TICKET)

Press on the key 4 and the following information will appear on the PC screen:
" **STD E. TICKET (0=n 1=y):1**"

If you choose "**1**" (yes), the printing of the end of batch weighing ticket and of the totals ticket will be done according to a ticket type already fixed in the internal memory of the indicator.

If you choose "**0**" (no), the printing of the end of batch weighing ticket and of the totals ticket will be done according to a configurable ticket.
Refer to chapter "*5.3. The configurable tickets*".

The standard tickets are always inside the memory of the indicator. They are realized in a format allowing its printing on an IBA40 printer (on 40 columns). They gather all the information collected during the weighing.

### 5.2.6. End and return to the main menu (END AND RETURN ON LOGIC)

Press on the key 9 and you will end the communication with the PC and you will return to the main menu of the indicator.

## 5.3. The configurable tickets

If you disable the standard tickets parameter, the system proposes the use of a configurable ticket. It allows a customized layout and allows choosing the data to be printed. This ticket is realized by programming with the help of simple commands.

**Remark:** It is recommended to create the ticket in a step-by-step method. Configure some commands only and print the ticket to verify the results and so on.

### 5.3.1. The commands for the configurable tickets

There are 8 different commands that allow driving the printer. A command is **always** composed of three characters **; 1 letter ;** . The semi-column ';' is the separator that must be **obligatory** present between each command. It can also serve to finish a line and can be replaced later by a command.

;A; = Number of line feed
;B; = Number of spaces
;G; = Passage in wide characters
;P; = Passage in standard characters
;T; = Text
;E; = System label
;C; = Control character
;?; = End of ticket (no data)

The syntax must be as follows:
The command ;A; is always followed by 2 digits (number of line feed) ex : ;A;02;
The command ;B; is always followed by 2 digits (number of spaces) ex : ;B;09;
The command ;G; is always alone
The command ;P; is always alone
The command ;C; is always followed by 2 characters (value in hexadecimal) ex : ;C;1B;
The command ;E; is always followed by 3 characters (name of one of the system labels) ex : ;E;RS1;
The command ;T; is always followed by the text to be printed (variable length) ex : ;T; HERE IS THE TEXTE ;
The command ;?; is always alone

### 5.3.2. The special keys for the text editor of the configurable tickets

CTR / E = deletes completely the line pointed by the cursor.
CTR / D = deletes the character pointed by the cursor.
CTR / I = inserts a space where the cursor is pointed.
CTR / A = moves the cursor forward by one character.
BACK SPACE = moves the cursor backward by one character.
↵ = passage to the next line.

### 5.3.3. The system labels

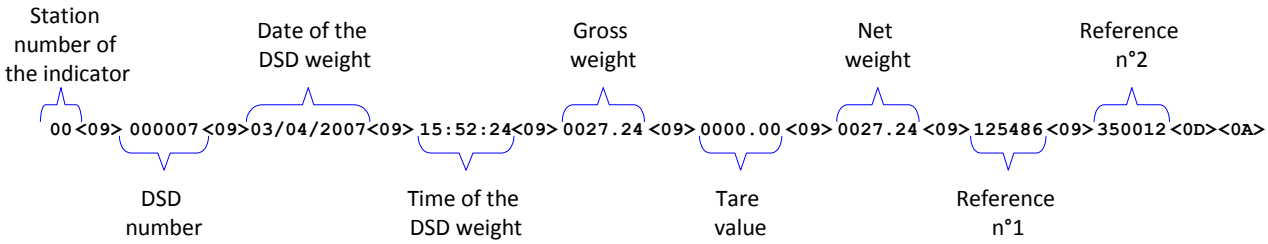
These labels allow printing the data saved in the memory of the system.
**RS1** : 1st line of the company name. (20 characters)
**RS2** : 2nd line of the company name. (39 characters)
**RS3** : 3rd line of the company name. (39 characters)
**RS4** : 4th line of the company name. (39 characters)
**FT1** : 1st line of the end of ticket. (39 characters)
**FT2** : 2nd line of the end of ticket. (39 characters)
**DNP** : Ticket number data. (6 digits)
**NDS** : DSD number data. (6 digits)
**DDA** : Date data. (Actual date on 8 characters in the chosen format during the configuration)
**DDD** : Day data. (Actual day on 2 characters)
**DDM** : Month data. (Actual month on 2 characters)
**DDY** : Year data. (Actual year on 2 characters)
**DHE** : Time data. (Actual time on 5 characters)
**DP1** : Gross weight data. (5 digits + weight unit and decimal point)
**DP2** : Tare weight data. (5 digits + weight unit and decimal point)
**DP3** : Net weight data. (5 digits + weight unit and decimal point)
**DR1** : Reference n°1 data. (6 digits)
**DR2** : Reference n°2 data. (6 digits)
**DC1** : Gross weight total data. (10 digits + weight unit and decimal point)
**DC2** : Tare weight total data. (10 digits + weight unit and decimal point)
**DC3** : Net weight total data. (10 digits + weight unit and decimal point)
**DC4** : Number of weights total data. (5 digits)
**DMO** : Net weight mean value data. (8 digits + weight unit and decimal point with 3 digits after the decimal point)
**DET** : Net weight standard deviation data. (8 digits + weight unit and decimal point with 3 digits after the decimal point)
**EP1** : Gross weight name. (6 characters)
**EP2** : Tare weight name. (6 characters)
**EP3** : Net weight name. (6 characters)
**ER1** : Reference n°1 name. (16 characters)
**ER2** : Reference n°2 name. (16 characters)
**ENP** : Ticket number label. (16 characters)
**EDS** : DSD number label. (16 characters)
**T39** : Sequence of 39 dashes. (Minus sign: "----------")

# 6. APPENDICES

## 6.1. The stream computer protocol

This functionality is activated if the driver type of **COM1** or **COM2** is "**06**", see "*5.1.4. Parameters of the COM1 serial link*" and "*5.1.5. Parameters of the COM2 serial link*".

For each weigh the following frame will be sent:

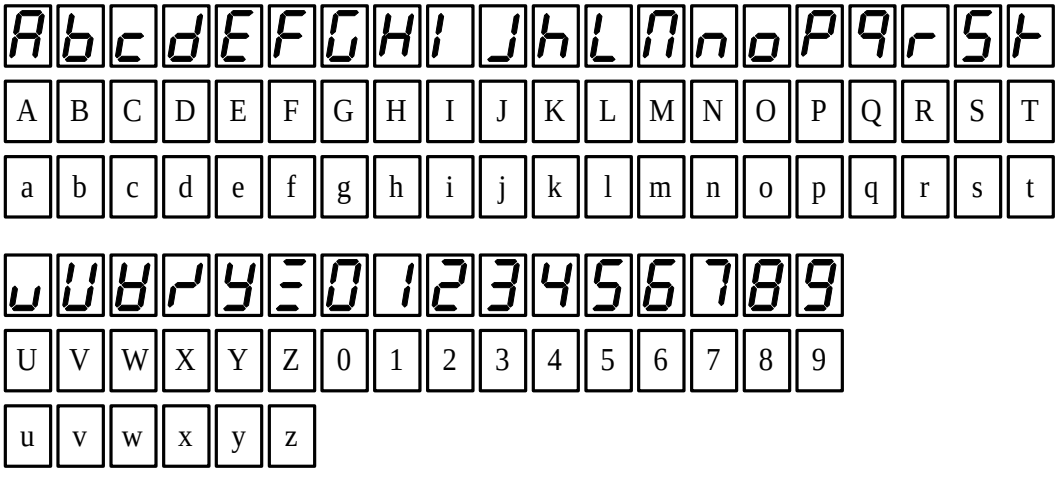



*Legend:*

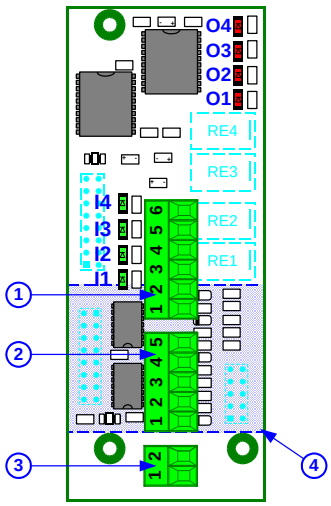
- The different fields are coded in ASCII.
- <09> ⇒ Field separator. (09 H, 09 d)
- <0D><0A> ⇒ CR/LF. (0D H, 13 d / 0A H, 10 d)

Once the frame is transmitted, the indicator will wait for the command acknowledge (<06> ⇒ ACK) from the target system.
The frame will be repeated automatically every 3 seconds until the target system acknowledges it, the other frames to be transmitted will be pending with a limit of 250 frames maximum.
Whenever you reach 250 frames pending, all new frames will be lost.

## 6.2. Pseudo-alphanumerical display of the indicator



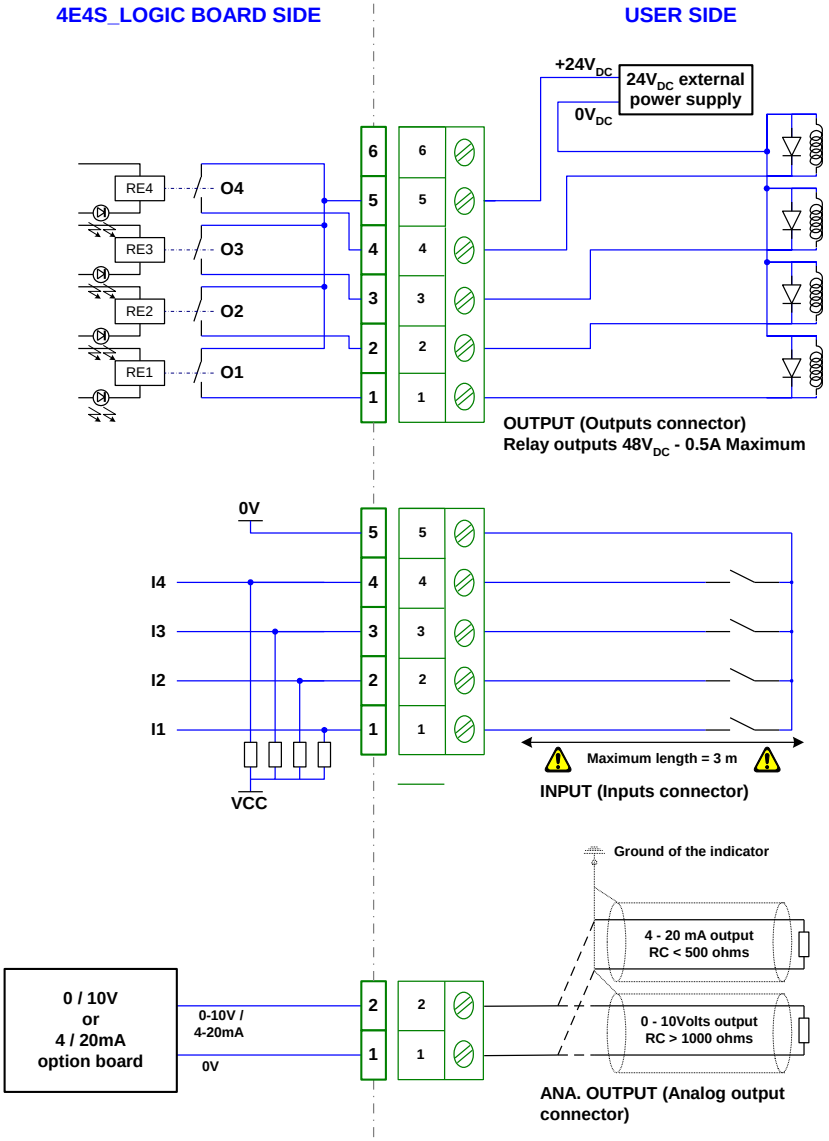
## 6.3. Layout of the 4E4S_LOGIC board



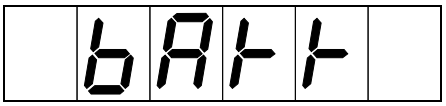

Legend:

1. **OUTPUT**, connector of outputs **O1**, **O2**, **O3** and **O4**.
2. **INPUT**, connector of inputs **I1**, **I2**, **I3** and **I4**.
3. **ANA. OUTPUT**, connector of the 0-10V or 4-20mA analog output option.
4. Analog output option board should be installed on the other side. (Side of the relays RE1 to RE4)

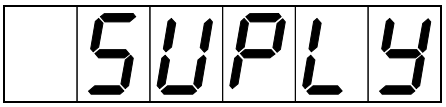
## 6.4. Cabling of the 4E4S_LOGIC option board with a 0-10V or 4-20mA option



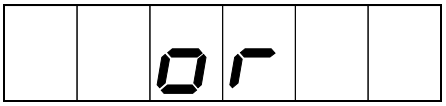
## 6.5. Error messages



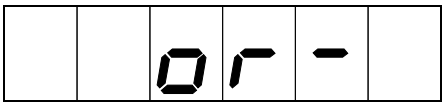
: Battery default.



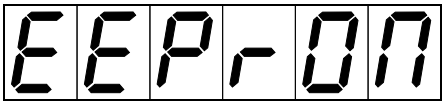
: Power supply default. (Voltage too low)



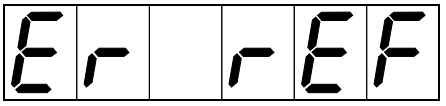
: Off range overflow. (Capacity of the A to D converter exceeded)



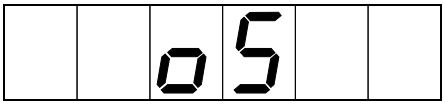
: Off range underflow. (Capacity of the A to D converter exceeded)



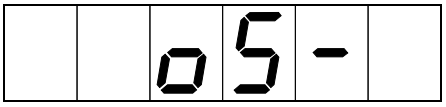
: CRC error on the EEPROM memory.



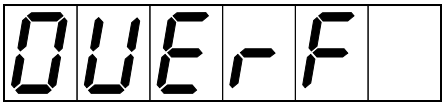
: Error on the M1 input. (Improper load cell connection or load cell broken).



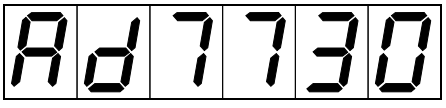
: Off scale overflow, maximum range exceeded. (+9 scale divisions)



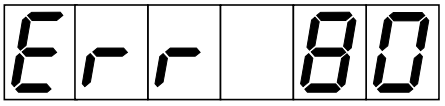
: Off scale underflow, weight below zero. (-9 scale divisions)



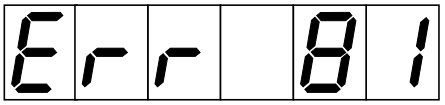
: Calculation capacity exceeded.



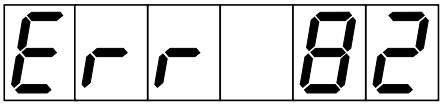
: The A to D converter is not operating properly.



: The dosing set value is set to 0.

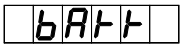


: The dosing set value is higher than the high threshold.



: The dosing set value is lower than the feed error.

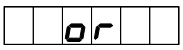
## 6.6. Breakdown

- The indicator displays the following message: 

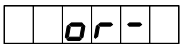

Verify the voltage of the indicator's battery, it must be greater than 2.9$V_{DC}$, otherwise it must be replaced.

- The indicator displays the following message: 

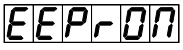
Verify the power supply voltage of the indicator, it must be in between $12V_{DC}$ and $24V_{DC}$.

- The indicator displays the following message: 

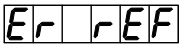
The signal delivered by the load cell is too high so that it can be measured by the indicator. (Overload, cabling, indicator not calibrated properly …)

- The indicator displays the following message: 

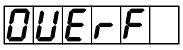
The signal delivered by the load cell is too low so that it can be measured by the indicator. (Under load, cabling, indicator not calibrated properly …)

- The indicator displays the following message: 

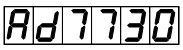
Restart the indicator and re-calibrate it again.

- The indicator displays the following message: 

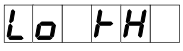
The analog load cell is not connected properly, verify that the excitation feedback (R+/R-) are connected properly.

- The indicator displays the following message: 

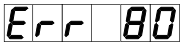
Restart the indicator and re-calibrate it again.

- The indicator displays the following message: 

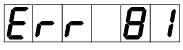
Verify the load cells cabling (**M1**) as well as the indicator parameters.

- The indicator displays the following message: 

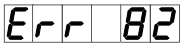
The weight is lower than the low threshold, you need to load the scale.

- The indicator displays the following message: 

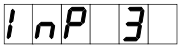
The dosing set value is set to 0, restart a dosing cycle with a correct set value.

- The indicator displays the following message: 

The weight is higher than the high threshold, restart a dosing cycle with a correct set value.

- The indicator displays the following message: 

The dosing set value is lower than the feed error value, restart a dosing cycle with a correct set value.

- The indicator displays the following message: 

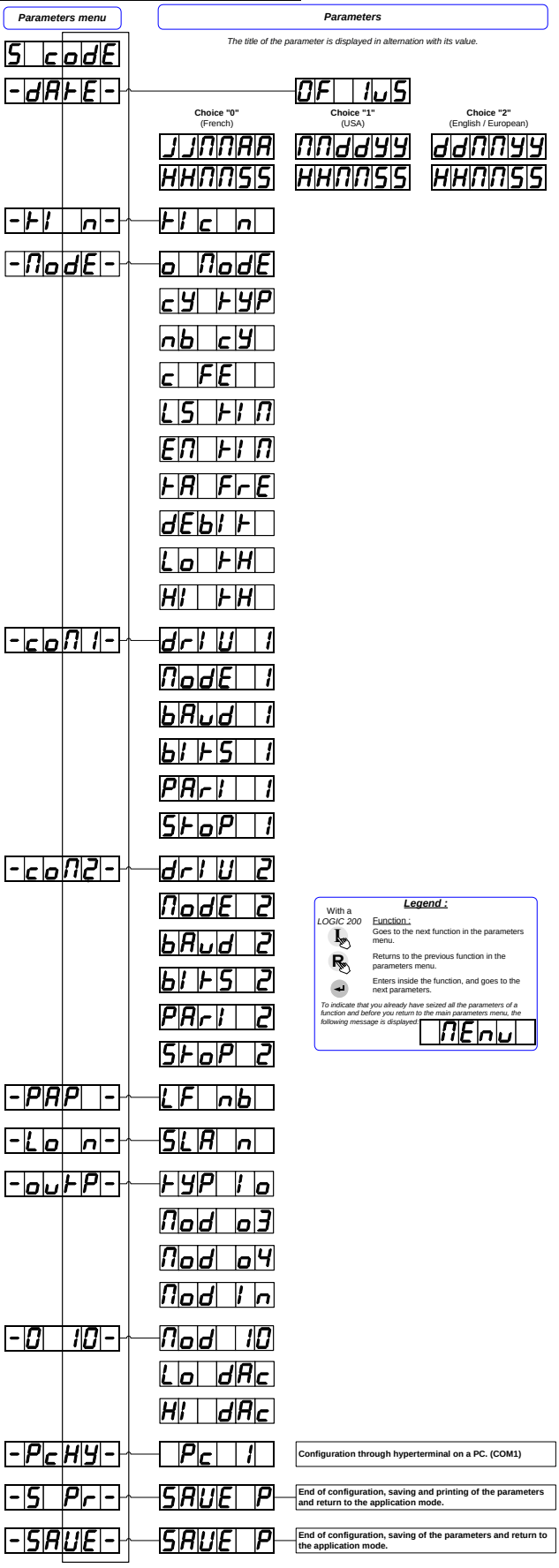
The indicator is waiting for the dosing authorization. (Input **I3**)

- The indicator displays the following message: 

The indicator is waiting for the emptying / filling authorization. (Input **I4**)

***Si vos problèmes persistent, contactez votre revendeur le plus proche ou le SAV de la société ARPEGE MASTER-K.***

## 6.7. Summary of the parameters menu



ARPEGE MASTERK

Saint PRIEST, Friday February 8th, 2019,

# LOGIC 100 USER MANUAL
# INDUSTRY SOFTWARE

| Software N° | Manual N° | Edition |
|---|---|---|
| **Bl0IN37.0F** | **LOG_Gb_Industrie LOGIC100_rev08.docx** | **08** |

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# LOGIC 100 USER MANUAL INDUSTRY SOFTWARE

| Date | Edition number | Object of the modification |
|---|---|---|
| 11/04/2007 | 00 | Original. |
| 20/07/2007 | 01 | Correction of the characteristics. |
| 02/10/2007 | 02 | Correction of the error message "**Er ref**". |
| 28/02/2008 | 03 | Added optional 4E4S_LOGIC board management and printing example. |
| 22/12/2008 | 04 | Correction of the cabling of the 4E4S_LOGIC option board |
| 14/04/2014 | 05 | Update of the manual. |
| 18/10/2017 | 06 | Addition of PT6S3 Protocol, displaying weight in high precision, function re-printing weighing ticket, driver for older weight remote display, driver for **CanMK-FB** gateway in RS485. |
| 31/01/2018 | 07 | Addition of the layout of the 4E4S_LOGIC board. |
| 08/02/2019 | 08 | Update of the flow for Fieldbus commands execution. (Refer to "*6.3.3. Command launch*") |
| | | |
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# 1. SOFTWARE DESCRIPTION

## 1.1. The software

The "LOGIC 100" industrial software application is intended for use with scales, platforms and weigh hoppers with DSDs and a computer link, or basic ticket-printing applications. (Customizable ticket header and footer, weighing number, date, time, gross, tare, net).

List of classic communication protocols through the serial link:

- ERIC.
- PT6S3.
- COMIDM.
- JBUS / MODBUS.
- **CanMK-FB** gateway management. Fieldbus gateway (PROFIBUS, DEVICENET, MODBUS TCP…) only for COM2, see "*5.1.4. Parameters of the COM2 serial link*" and "*6.3. Fieldbus with CanMK-FB gateway*"

## 1.2. The peripherals

The "*LOGIC 100*" indicator has in standard version:

- 1 RS232 serial link on **COM1**. (With or without DTR)
- 1 RS485 2 wires serial link on **COM2**. (With or without a termination resistor RT of 120 ohms)
- 1 input for the analog load cell(s), 6 wires, on **M1**. (Maximum length: 100m)

**Remarks:**

- Only one cable must be connected to **M1**. The parallel connection of the load cells must be done separately in a junction box.
- The shield of the analog load cell cable must be obligatory connected to the ground of the indicator.

## 1.3. The options

The "*LOGIC 100*" indicator may have in option a 4 inputs / 4 outputs board ("*4E4S_LOGIC*" board) with the possibility of adding a 0-10V or a 4-20mA analog output: ("*0-10V board*" or "*4-20mA board*")

- 4 logic inputs **that do not need any external power supply (*)** on **INPUT**. (Maximum cable length: 3 m)
- 4 outputs (dry contacts with a common) on **OUTPUT**.
  **Maximum electrical characteristics (*): V = 48V / I = 500mA.**
- 1 analog output 0-10V or 4-20mA on **ANALOG OUTPUT**. (For more details, refer to the user manual named "SPECIFICATION DES CARTES ANALOGIQUES 0-10V ET 4-20mA ")

**(*) ATTENTION:**
**If you do not respect the last two items, you may cause the damage of the indicator.**

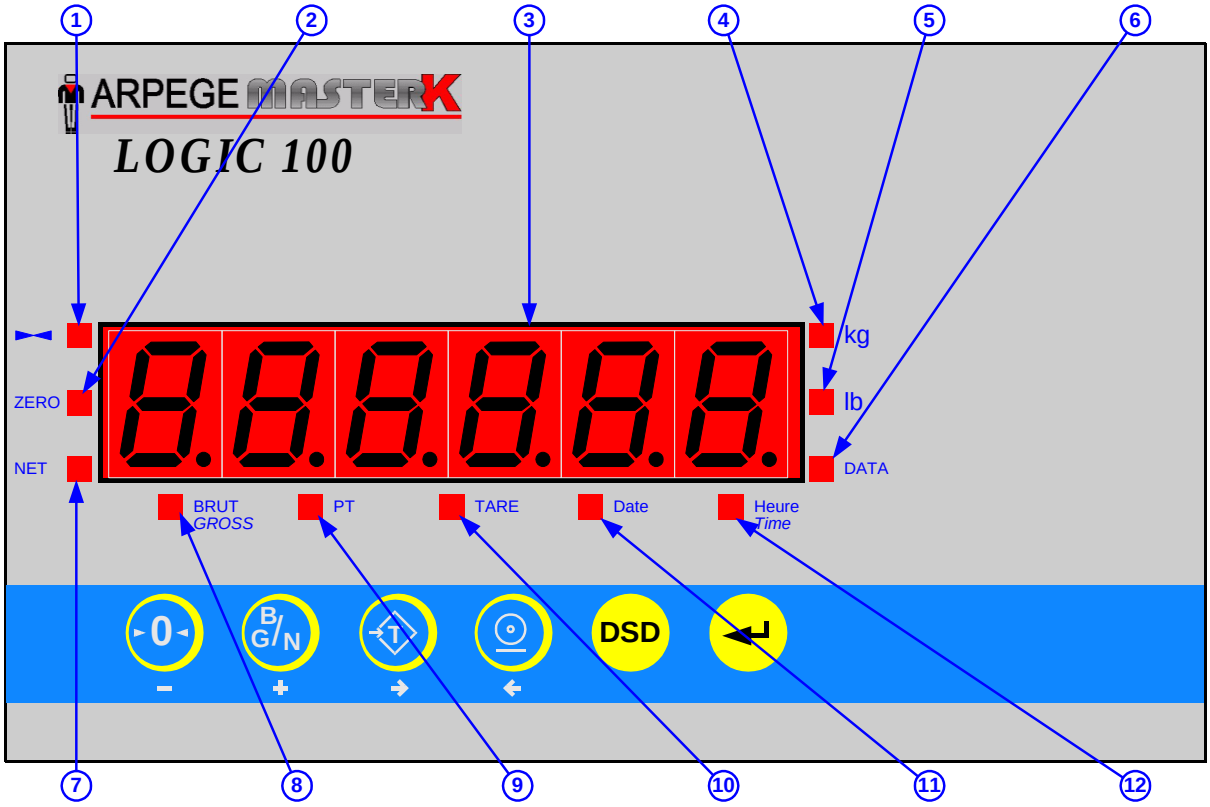
Description of the Inputs/Outputs in thresholds mode:

**I1** = Printing / Weighing.
**I2** = Reset of the gross weight.
**I3** = Tare Cancelling and return to the gross weight.
**I4** = Tare execution and passage to the Net weight. (TSA)

**O1** = Threshold 1.
**O2** = Threshold 2.
**O3** = Threshold 3.
**O4** = Function acknowledge. (**I1**, **I2**, **I3**, **I4**)

# 2. THE FRONT PANEL

## 2.1. Displays and LEDs




Legend:

1. Led indicating that the displayed weight is stable
2. Led indicating a center of zero gross weight at +/- 1/4 scale division
3. Weight display on 6 digits
4. Led indicating that the displayed weight is in kilogram
5. Led indicating that the displayed weight is in pound
6. Led indicating the display of a data
7. Led indicating the display of a Net weight
8. Led indicating the display of a gross weight
9. Led indicating the display of a manual tare
10. Led indicating the display of a tare
11. Led indicating the display of the date
12. Led indicating the display of the time

**Remarks:**

- Conversion from kilogram to pound: 1 kg ⇒ 2.204 lb,
  1 lb ⇒ 0.454 kg.

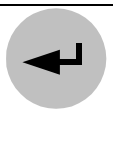
- In case of a weight inquiry in the DSD:
  - ❑ The LED "**DATA**" indicates the information displayed is a data,
  - ❑ The LEDs "**kg**" and "**lb**" indicate the weight unit of the memorized weight in the DSD,
  - ❑ The LED "**BRUT**" ("***GROSS***") indicates the display of the gross weight of the memorized weight in the DSD,
  - ❑ The LED "**NET**" indicates the display of the net weight of the memorized weight in the DSD,
  - ❑ The LEDs "**PT**" or "**TARE**" indicate the display of the value and the type of the tare of the memorized weight in the DSD,
  - ❑ The LED "**Date**" indicates the display of the date of the memorized weight in the DSD,
  - ❑ The LED "**Heure**" ("***Time***") indicates the display of the time of the memorized weight in the DSD.

## 2.2. The keypad

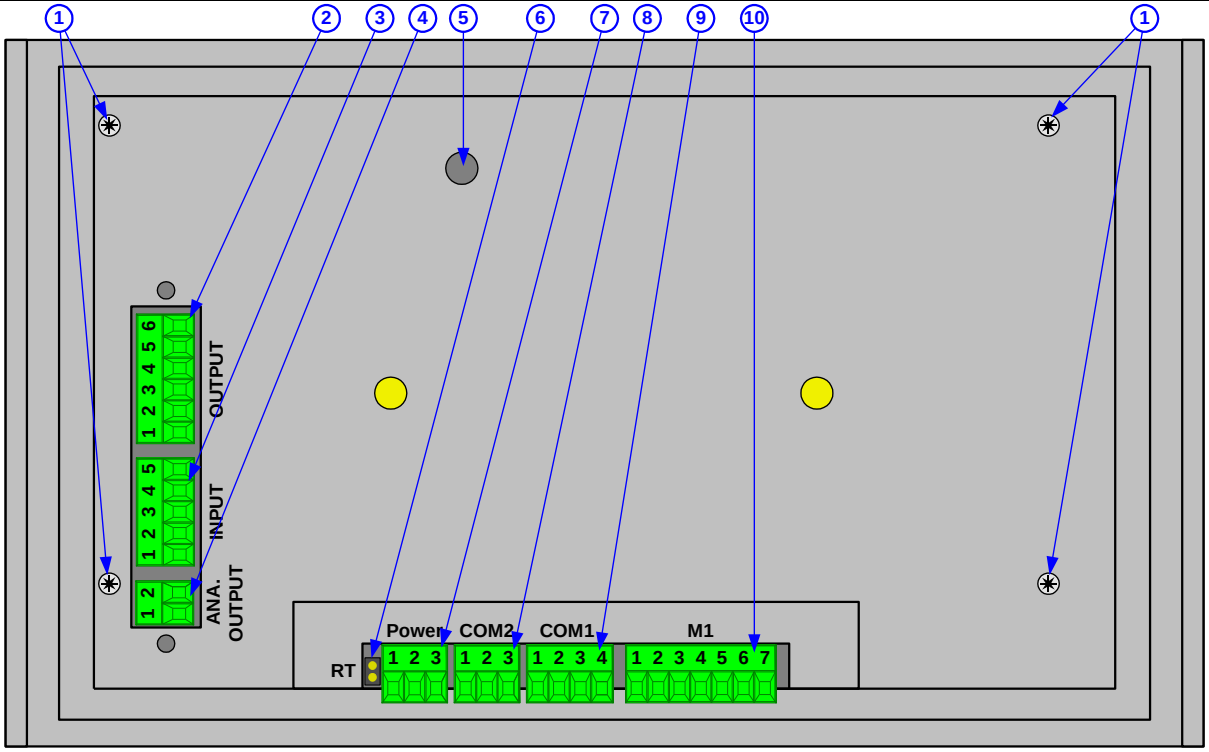
**Metrological keys:**


**Applications keys:**


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

| |  |  |  |  |  |  |
|---|---|---|---|---|---|---|
| **NAME OF KEY** | ***Zero*** | ***Brut Gross / Net*** | ***TSA*** | ***Print*** | ***DSD*** | ***ENTER*** |
| **IN MENUS** | Previous function / menu | Next function / menu | Not used | Not used | Not used | 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 |
| **DURING WEIGHING** | Resets weight to zero | Switches the display from gross to net (or net to gross) for a few seconds | Tares the indicator with the current gross weight | Prints ticket | Accesses DSD data lookup | Accesses settings menu |

# 3. THE REAR SIDE

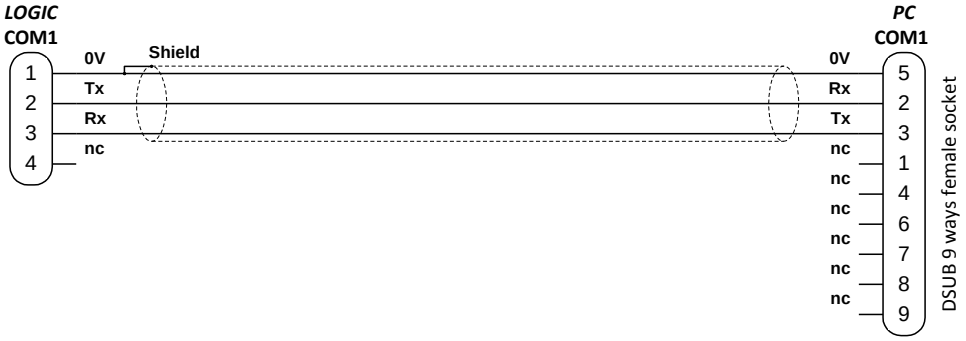



Legend:

1. Screws.
2. **OUTPUT**: 4 outputs.
3. **INPUT**: 4 inputs.
4. **ANA. OUTPUT**: 010V or 4-20mA analog output.
5. Access to the calibration push button **BP1**.
6. **RT**: Termination resistor (120 ohms) for the RS485 of **COM2**.
7. **Power**: 12VDC / 24VDC power supply.
8. **COM2**: RS485 serial link connector. (2 wires)
9. **COM1**: RS232 serial link connector.
10. **M1**: Load cell(s) connector.

| | | Pinout | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | **1** | **2** | **3** | **4** | **5** | **6** | **7** |
| **ANA. OUTPUT** | **Analog output 0-10V or 4-20mA** | **0V** | **0-10V / 4-20mA** | | | | | |
| **INPUT** | **Logic inputs** | **I1** | **I2** | **I3** | **I4** | **Com.** | | |
| **OUTPUT** | **Relay outputs** | **O1** | **O2** | **O3** | **O4** | **Com.** | **N.C.** | |
| **COM 1** | **RS232** | **0V** | **Tx** | **Rx** | **DTR** | | | |
| **COM 2** | **RS485 2 wires** | **0V** | **Tx/Rx-** | **Tx/Rx+** | | | | |
| **POWER** | **Power supply** | **+$V_{DC}$** | **Terre** | **0V** | | | | |
| **M1** | **Analog load cell** | **M-** *(-Meas.)* | **M+** *(+Meas.)* | **R-** *(-Sense)* | **R+** *(+Sense)* | **A-** *(-Excitation)* | **A+** *(+Excitation)* | **Ground (Shield)** |

Example of a "***LOGIC – PC***" cable:



# 4. APPLICATION

## 4.1. Print or memorize a weighing using the key

Put the load to be weighed on the scale.

Press on the key ; the indicator verifies the weight stability then the indicator print and/or memorize the weight in the DSD.

The message Good will be displayed for a few seconds to indicate that the weighing was good.

Printing example: (Driver No. 7 and 8)

```
        ARPEGE MASTER-K
   38, Avenue des Freres Montgolfier
              BP 186
         69 686 Chassieu Cedex

 Date : 28/02/2014     Time: 08:33:39

      Ticket number   : 000005
      DSD number      : 000022

 GROSS :   17.70 kg
 TARE  :    0.00 kg
 NET   :   17.70 kg

Tel.:04 72 22 92 22 Fax.:04 78 90 84 16
 www.masterk.com/marketing@masterk.com
```

Printing example: (Driver No. 9)

```
DSD:000008   000007  11/03/2014 00:00:02
G:  3.306 kg T :  0.000 kg N:   3.306 kg
```

## 4.2. DSD Inquiry

To search one of the last 14 000 weights recorded in the DSD, you must press on the key DSD.

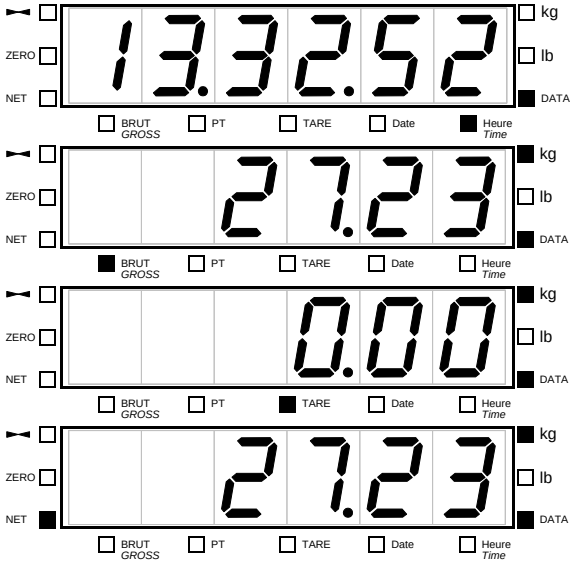
The indicator asks that you enter the required DSD number:

dSd no : **XXXXX** Enter the required DSD weight number and validate with .

(**DSD n***umber*)

The following information will be displayed successively:


The date of the required weight.




The time of the required weight.

The gross weight of the required weight.

The tare value of the required weight.

The net weight of the required weight.

Then return to the normal weighing function.

**Remarks:**

- Each information will be displayed while flashing for 8 seconds,
- It is possible to go to the next information faster by pressing on the key ↵,
- During the display of the tare value, the tare type is indicated due to the LED ☐ TARE (tare through the indicator) or the LED ☐ PT. (Tare value loaded by protocol)

## 4.3. Modification of the thresholds value

To access to this menu, you must press on the key ↵ ; then the indicator displays S codE. (**S***ecret* **code**)

Then press on the key ↵ and the following menu will be available:

SEt 1 : **XXXXXX** Enter the value of threshold 1 and validate. (6 digits)
(**set** *the value of threshold* **1**)

SEt 2 : **XXXXXX** Enter the value of threshold 2 and validate. (6 digits)
(**set** *the value of threshold* **2**)

SEt 3 : **XXXXXX** Enter the value of threshold 3 and validate. (6 digits)
(**set** *the value of threshold* **2**)

Then you will return to the application menu.

**Remark:** If the indicator is configured in comparison mode, the value of the threshold 2 cannot be modifiable.

## 4.4. Re-printing of the last weighing ticket using keys  then 

To re-print the latest weighing ticket, you must press on the keys  then  .
The ticket of the latest weighing done will be re-printed.

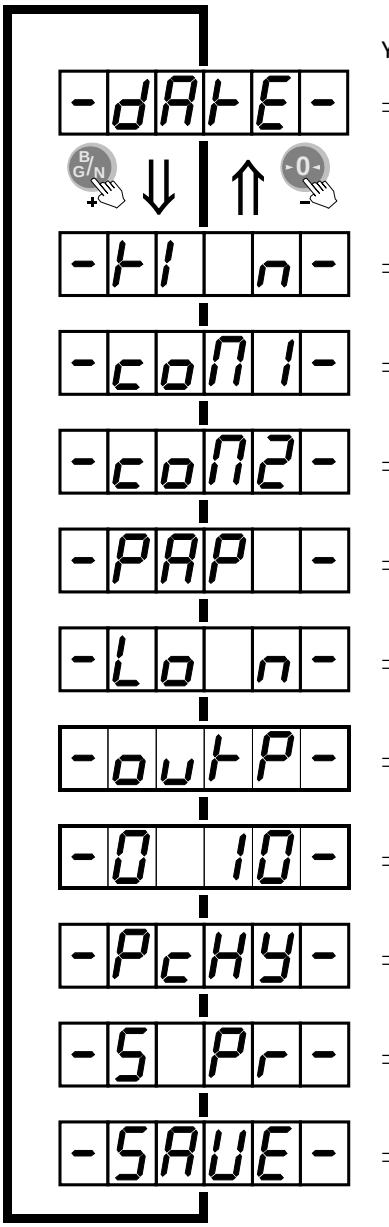
## 4.5. Display weight in High Precision using keys  then 

To activate the display weight in high resolution, you must press on the keys  then  .
The weight will be displayed in high resolution during 5 seconds, the LED "**DATA**" is set during operation.

# 5. PARAMETERS MENU

To access to the parameters menu, you must press on the key , the indicator will display S CodE.
(**S***ecret* **code)**

You must press on the following keys successively then , and then the parameters menu will be available:




You enter to the functions / menus due to the key:

⇒ Update of the date and time, see *5.1.1*.

⇒ Update of the ticket number, see *5.1.2*.

⇒ Parameters of the COM1 serial link, see *5.1.3*.

⇒ Parameters of the COM2 serial link, see *5.1.4*.

⇒ Ticket length, see *5.1.5*.

⇒ Slave station number of the indicator, see *5.1.6*.

⇒ Inputs/Outputs parameters, see *5.1.7*.

⇒ Analog output parameters (0-10V / 4-20mA), see *5.1.8*.

⇒ Configuration through a computer, see *5.1.9*.

⇒ Saving and printing of the parameters then return to the application mode, see *5.1.10*.

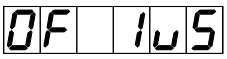
⇒ Saving of the parameters then return to the application mode, see *5.1.11*.

**Reminder:** To move inside the menu.

| Key | Effects |
|---|---|
| | Returns to the previous function / menu. |
| | Goes to the next function / menu. |

## 5.1. Configuration through the front panel of the indicator

### 5.1.1. Update of the date and time



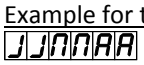
: **X**

(**0** = **F***r* , **1** = **US**)

Choose the required format for the date and validate.
0 = French format: DD/MM/YY. (Day/Month/Year)
1 = American format: MM/DD/YY. (Month /Day/Year)
2 = English/European format: DD/MM/YY. (Day/Month/Year)

**Remark:** If the date format is set to 0 the printed texts are in French otherwise in English.

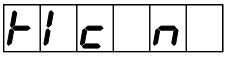
: **XXXXXX**

Enter the required date in the chosen format and validate.
Example for the 03rd of April 2007:
 : Entry with the French format: "**030407**".
 : Entry with the American format: "**040307**".
 : Entry with the English/European format: "**030407**".

: **XXXXXX**

Enter the required time and validate.
Example: "**151230**" for 15h12mn30s.

### 5.1.2. Update of the ticket number

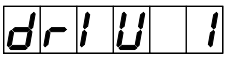


: **XXXXXX**

Ticket number on 6 digits. Enter the new ticket number and validate.
(This parameter is only used in the Gross/Tare/Net weighing mode)

(**tic***ket* **n***umber*)

### 5.1.3. Parameters of the COM1 serial link

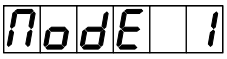


: **XX**

(**driv***er com***1**)

Enter the driver type of COM1.

00 = Nothing.
01 = Weight remote display. (Type RP75HL)
02 = JBUS / MODBUS Protocol. (See "*6.2. JBUS/MODBUS Protocol*")
03 = COMIDM Protocol.
04 = ERIC Protocol.
05 = MODEM Protocol. ("***TRANSFIC***" AMK software)
06 = Stream computer. (See "*6.1. The stream computer protocol*")
07 = IBA40 printer.
08 = ILA80 printer.
09 = Stream printer.
17 = Weight remote display. (Compatibility with older models)
36 = PT6S3 Protocol. (Additional parameters, see "*5.1.6. Slave station number of the indicator*")

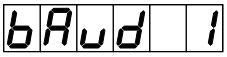


: **X**

(*communication* **mode** *com***1**)

Enter the serial link type.

0 = RS232 without DTR test.
1 = RS232 with DTR test.

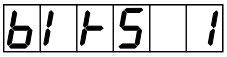



: **X**

Enter the communication rate.

(**baud** *rate com***1**)

1 = 1200 bauds.
2 = 2400 bauds.
4 = 4800 bauds.
9 = 9600 bauds.
0 = 19200 bauds.

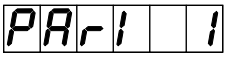



: **X**

Enter the number of bits.

(*number of* **bits** *com***1**)

7 = 7 bits.
8 = 8 bits.

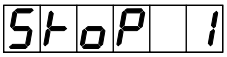



: **X**

Enter the parity type.

(**pari***ty type com***1**)

0 = No parity.
1 = Odd parity.
2 = Even parity.




: **X**

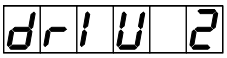
Enter the number of stop bits.

(*number* **stop** *bits com***1**)

1 = 1 stop bit.
2 = 2 stop bits.

**Remark:** Some combinations of number of bits, parity and number of stop bits are not available. Choose if it is possible: 8 bits, no parity, and 1 stop bit.

### 5.1.4. Parameters of the COM2 serial link

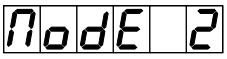



: **XX**

Enter the driver type of COM2.

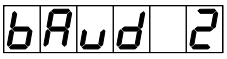
(**driv***er com***2**)

00 = Nothing.
01 = Weight remote display.
02 = JBUS / MODBUS Protocol. (See "*6.2. JBUS/MODBUS Protocol*")
03 = COMIDM Protocol.
04 = ERIC Protocol.
05 = MODEM Protocol. ("***TRANSFIC***" AMK software)
06 = Stream computer. (See "*6.1. The stream computer protocol*")
07 = IBA40 printer.
08 = ILA80 printer.
09 = Stream printer.
17 = Weight remote display. (Compatibility with older models)
34 = **CanMK-FB** gateway management, the communication parameters will be fixed at 19200 bauds/8 bits/No parity/1 stop bit. (See "*6.3. Fieldbus with CanMK-FB gateway*" and "*6.4. CanMK-FB gateway connection with weight remote display*")
36 = PT6S3 Protocol. (Additional parameters, see "*5.1.6. Slave station number of the indicator*")




: **2** Always set this parameter to 2.

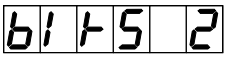
(*communication* **mode** *com***2**) 2 = RS485 2 wires.




: **X** Enter the communication rate.

(**baud** *rate com***2**)

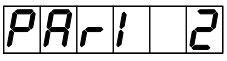
1 = 1200 bauds.
2 = 2400 bauds.
4 = 4800 bauds.
9 = 9600 bauds.
0 = 19200 bauds.




: **X** Enter the number of bits.

(*number of* **bits** *com***2**)

7 = 7 bits.
8 = 8 bits.




: **X** Enter the parity type.

(**pari***ty type com***2**)

0 = No parity.
1 = Odd parity.
2 = Even parity.


: **X** Enter the number of stop bits.

(*number* **stop** *bits com***2**)

1 = 1 stop bit.
2 = 2 stop bits.

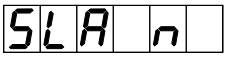
**Remark:** Some combinations of number of bits, parity and number of stop bits are not available. Choose if it is possible: 8 bits, no parity, and 1 stop bit.

### 5.1.5. Ticket length


: **XX** Paper length in number of line feed for the 80 columns printers. (ILA80)

(**l***ine* **f***eed* **n***um***b***er*)

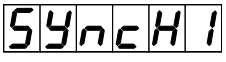
### 5.1.6. Slave station number of the indicator




: **XX** Enter the slave station number of the indicator (2 digits) then validate. This number is used in the communication protocols.

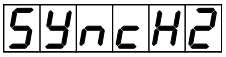
(**sla***ve* **n***umber*)

If the driver type of **COM1** or **COM2** is set to "**36**" you must enter the additional parameters for the PT6S3 protocol, see "*5.1.3. Parameters of the COM1 serial link*" and "*5.1.4. Parameters of the COM2 serial link*".




: **XX** Enter the decimal value of the synchronization character number 1 for the PT6S3 protocol (2 digits) then validate. (Default value **13** d/0D h)

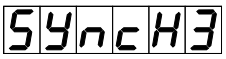
(**synch***ronization character number* **1**)



: **xx**

Enter the decimal value of the synchronization character number 2 for the PT6S3 protocol (2 digits) then validate. (Default value **00** d/00 h)

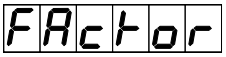
(**synch***ronization character number* **2**)



: **xx**

Enter the decimal value of the synchronization character number 3 for the PT6S3 protocol (2 digits) then validate. (Default value **00** d/00 h)

(**synch***ronization character number* **3**)

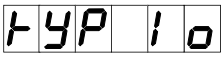


: **xx**

Enter the factor to be applied to the weight for the PT6S3 protocol (2 digits) then validate. (Default value 01)
00 = A coefficient 1 is applied to the transmitted weights.
10 = A coefficient 1/10 is applied to the transmitted weights.
20 = A coefficient 10 is applied to the transmitted weights.

(*weight* **factor**)

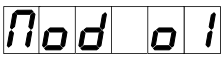
### 5.1.7. Inputs/Outputs parameters



: **X**

Choose the operating type of the Inputs/Outputs and the required application type. (Option)
0 = Industry type application, outputs in thresholds mode.
9 = Industry type application, outputs managed by protocol. (See "*6.3.2.1.* Definition of "Outputs Forcing"")

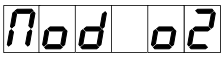
(**type** *of* **i***nput and* **o***utput*)



: **X**

Choose the operating mode of the output 1. (If the parameter "**type** *of* **i***nput and* **o***utput*" is set to 9, set this parameter to 0)
0 = Output 1 disabled.
1 = The output 1 operates in threshold mode on the gross weight.
2 = The output 1 operates in threshold mode on the net weight.

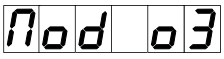
(*operating* **mod***e of* **o***utput* **1**)



: **X**

Choose the operating mode of the output 2. (If the parameter "**type** *of* **i***nput and* **o***utput*" is set to 9, set this parameter to 0)
0 = Output 2 disabled.
1 = The output 2 operates in threshold mode on the gross weight.
2 = The output 2 operates in threshold mode on the net weight.

(*operating* **mod***e of* **o***utput* **2**)

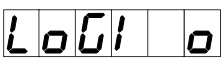


: **X**

Choose the operating mode of the output 3. (If the parameter "**type** *of* **i***nput and* **o***utput*" is set to 9, set this parameter to 0)
0 = Output 3 disabled.
1 = The output 3 operates in threshold mode on the gross weight.
2 = The output 3 operates in threshold mode on the net weight.

(*operating* **mod***e of* **o***utput* **3**)

**Remark:** If the last three parameters are set to zero, the menu will stop right here and the three outputs operate in comparison mode. (Only one of the three outputs is activated according to the measured net weight value)
If not, the three outputs operate in threshold mode, and you must enter the following parameters.



: **X**

Enter the choice of the contact logic.
0 = Normally open.
1 = Normally closed.

(**logi***c of the* **o***utputs*)

PuLS : **X** Enter the operating mode of the outputs.

(*operation into* **puls***e or level*) 0 = Normally open.
1 = Normally closed.

HYSTEr : **-X.XXX** Enter the value of the hysteresis. You may change the sign due to the key .

(*the value of* **hyster***esis*)

### 5.1.8. Analog output parameters (0-10V / 4-20mA)

Mod 10 : **X** Choose the operating mode of the analog output. (0-10V / 4-20mA)

(**mod***e of 0-***10***V / 4-20mA*) 0 = Disable of the analog output.
1 = The analog output operates on the gross weight.
2 = The analog output operates on the net weight.
3 = The analog output operates in absolute value on the net weight.

To execute the two following adjustments, you need to connect a voltmeter or an ammeter depending of the used analog board.

Lo dAc : **X** Adjustment of the low point of the analog output. (0 V / 4 mA)

(**lo***w value of* **DAC**) - A first pressing on the key B/G/N + will increase the value, a second pressing on this key will stop the incrementation of the value.

- A first pressing on the key →0← − will decrease the value, a second pressing on this key will stop the decrementation of the value.

HI dAc : **X** Adjustment of the high point of the analog output. (10 V / 20 mA)

(**hi***gh value of* **DAC**) - A first pressing on the key B/G/N + will increase the value, a second pressing on this key will stop the incrementation of the value.

- A first pressing on the key →0← − will decrease the value, a second pressing on this key will stop the decrementation of the value.

### 5.1.9. Configuration through a computer

For this you must proceed as follows:

- Connect the computer (on Com1) with the indicator. (On Com1)
- Launch the Hyper terminal software. (Access path of hyperterm.exe: **"C:\Program Files\Accessories\HyperTerminal\HYPERTRM.EXE"**).
- Give a name to the connection and validate.
- Then in the header "Connect using" you must validate "Direct to Com1".
- Then, configure the connection in 9600 Bauds, no parity, one stop bit, and no flow control.
- Validate the function -PcHY- on the indicator, the message "**PRESS [ENTER] ON THE PC**" will be displayed on the PC screen. Validate with the key ↵ .

- You will get the following menu:

**0 : DSD RECEPTION .....**
**1 : COMPANY NAME .....**
**2 : CONFIGURABLE W. TICKET.**
**9 : END AND RETURN ON LOGIC**

(Refer below to the chapter "*5.2. Configuration through a computer*")

### 5.1.10. Saving and printing of the parameters then return to the application mode

Printing of the parameters and saving them in the EEPROM memory. This function may take several seconds. (**20 seconds**)
Then return to the application menu.

**Remark:** The printing of the parameters is executed only if you have a printer declared on **COM1** or **COM2**.

### 5.1.11. Saving of the parameters then return to the application mode

Saving of the parameters in the EEPROM memory without printing them. This function may take several seconds. (**20 seconds**)
Then return to the application menu.

**Attention! If a power cut occurs before or during the saving, the newly entered parameters will be lost.**

## 5.2. Configuration through a computer

### 5.2.1. DSD RECEPTION

This function allows saving the DSD in a text file (.TXT). For this you must press on the key 0 and the following information will appear on the PC screen:

"**BEGIN DATE (DDMMYY) : 010407**"

Enter the date from which you want to recuperate the DSD and validate with ↵.
The following information will appear on the PC screen:

"**END DATE (DDMMYY) : 030407**"

Enter the date to which you want to recuperate the DSD, and validate with ↵.

The following information will appear on the PC screen:

"**Configure HYPERTERMINAL in TEXT CAPTURE MODE and START**
**ENTER key to start transfer.**
**At the end of transfer STOP THE CAPTURE**
**ENTER key for return to MENU.**"

For this you must go to "Transfer" then in "Capture the text", you define the name of the file to be saved and validate "Start", the computer will be waiting for the information.

Press on the ENTER key to start the transfer of the DSD. Once the transfer is finished, you must go to "Transfer" then in "Capture the text" and "Stop".

Press on the ENTER key to return to the main menu.

Example of DSD recuperation:

| Indicator's station number | DSD number | Date of the DSD weight | Time of the DSD weight | Gross weight | Tare value | Net weight | Not used | Not used |
|---|---|---|---|---|---|---|---|---|
| 00 | 000000 | 03/04/2014 | 09:32:12 | 0010.51 | 0000.00 | 0010.51 | 000000 | 000000 |
| 00 | 000001 | 03/04/2014 | 10:16:35 | 0012.02 | 0000.00 | 0012.02 | 000000 | 000000 |
| 00 | 000002 | 03/04/2014 | 10:46:37 | 0021.02 | 0000.00 | 0021.02 | 000000 | 000000 |
| 00 | 000003 | 03/04/2014 | 11:02:44 | 0018.03 | 0000.00 | 0018.03 | 000000 | 000000 |
| 00 | 000004 | 03/04/2014 | 11:32:45 | 0017.03 | 0000.00 | 0017.03 | 000000 | 000000 |
| 00 | 000005 | 03/04/2014 | 13:12:49 | 0020.35 | 0000.00 | 0020.35 | 000000 | 000000 |
| 00 | 000006 | 03/04/2014 | 13:32:52 | 0027.23 | 0000.00 | 0027.23 | 000000 | 000000 |

### 5.2.2. COMPANY NAME

Press on the key 1 and the following information will appear on the PC screen:

First line of the company name: 20 characters in double width.
" **COMPANY NAME: ********** **** "
Validate with ↵.
Second line of the company name: 39 characters.
" **>**---------- "
Validate with ↵.
Third line of the company name: 39 characters
" **>**---------- "
Validate with ↵.
Fourth line of the company name: 39 characters
" **>**---------- "
Validate with ↵.
First line of the end of ticket : 39 characters
" **>**---------- "
Validate with ↵.
Second line of the end of ticket: 39 characters
" **>**---------- "
Validate with ↵, and you will return to the main menu.

### 5.2.3. CONFIGURABLE WEIGHT TICKET

Press on the key 2 and the following information will appear on the PC screen:

" **STD W. TICKET (0=n 1=y):1**"

If you choose "**1**" (yes), the printing of the Gross/Tare/Net ticket, the batch ticket and the stream printing ticket will be done according to a ticket type already fixed in the internal memory of the indicator.

If you choose "**0**" (no), the printing of the Gross/Tare/Net ticket, the batch ticket and the stream printing ticket will be done according to a configurable ticket.
Refer to chapter "*5.3. The configurable tickets*".

The standard tickets are always inside the memory of the indicator. They are realized in a format allowing its printing on an IBA40 printer (on 40 columns). They gather all the information collected during the weighing.

### 5.2.4. End and return to the main menu (END AND RETURN ON LOGIC)

Press on the key 9 and you will end the communication with the PC and you will return to the main menu of the indicator.

## 5.3. The configurable tickets

If you disable the standard tickets parameter, the system proposes the use of a configurable ticket. It allows a customized layout and allows choosing the data to be printed. This ticket is realized by programming with the help of simple commands.

**Remark:** It is recommended to create the ticket in a step-by-step method. Configure some commands only and print the ticket to verify the results and so on.

### 5.3.1. The commands for the configurable tickets

There are 8 different commands that allow driving the printer. A command is **always** composed of three characters **; 1 letter ;** . The semi-column ';' is the separator that must be **obligatory** present between each command. It can also serve to finish a line and can be replaced later by a command.

;A; = Number of line feed
;B; = Number of spaces
;G; = Passage in wide characters
;P; = Passage in standard characters
;T; = Text
;E; = System label
;C; = Control character
;?; = End of ticket (no data)

The syntax must be as follows :
The command ;A; is always followed by 2 digits (number of line feed) ex : ;A;02;
The command ;B; is always followed by 2 digits (number of spaces) ex : ;B;09;
The command ;G; is always alone
The command ;P; is always alone
The command ;C; is always followed by 2 characters (value in hexadecimal) ex : ;C;1B;
The command ;E; is always followed by 3 characters (name of one of the system labels) ex : ;E;RS1;
The command ;T; is always followed by the text to be printed (variable length) ex : ;T; HERE IS THE TEXTE ;
The command ;?; is always alone

### 5.3.2. The special keys for the text editor of the configurable tickets

| | | |
|---|---|---|
| CTR / E | = | deletes completely the line pointed by the cursor. |
| CTR / D | = | deletes the character pointed by the cursor. |
| CTR / I | = | inserts a space where the cursor is pointed. |
| CTR / A | = | moves the cursor forward by one character. |
| BACK SPACE | = | moves the cursor backward by one character. |
| ↵ | = | passage to the next line. |

### 5.3.3. The system labels

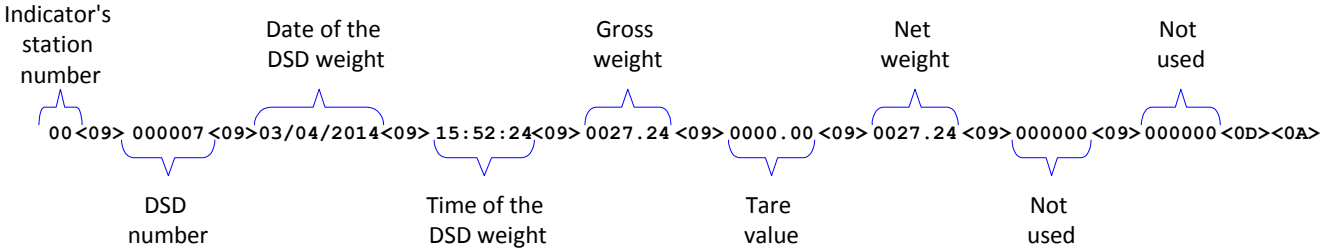
These labels allow printing the data saved in the memory of the system.
**RS1** : 1st line of the company name. (20 characters)
**RS2** : 2nd line of the company name. (39 characters)
**RS3** : 3rd line of the company name. (39 characters)
**RS4** : 4th line of the company name. (39 characters)
**FT1** : 1st line of the end of ticket. (39 characters)
**FT2** : 2nd line of the end of ticket. (39 characters)
**DNP** : Ticket number data. (6 digits)
**NDS** : DSD number data. (6 digits)
**DDA** : Date data. (Actual date on 8 characters in the chosen format during the configuration)

**DDD** : Day data. (Actual day on 2 characters)
**DDM** : Month data. (Actual month on 2 characters)
**DDY** : Year data. (Actual year on 2 characters)
**DHE** : Time data. (Actual time on 5 characters)
**DP1** : Gross weight data. (5 digits + weight unit and decimal point)
**DP2** : Tare weight data. (5 digits + weight unit and decimal point)
**DP3** : Net weight data. (5 digits + weight unit and decimal point)
**EP1** : Gross weight name. (6 characters)
**EP2** : Tare weight name. (6 characters)
**EP3** : Net weight name. (6 characters)
**ENP** : Ticket number label. (16 characters)
**EDS** : DSD number label. (16 characters)

# 6. APPENDICES

## 6.1. The stream computer protocol

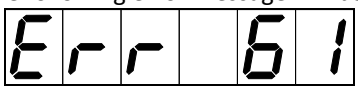
This functionality is activated if the driver type of **COM1** or **COM2** is "**06**", see "*5.1.3. Parameters of the COM1 serial link*" and "*5.1.4. Parameters of the COM2 serial link*".
For each weigh the following frame will be sent:




*Legend:*

- The different fields are coded in ASCII.
- <09> ⇒ Field separator. (09 H, 09 d)
- <0D><0A> ⇒ CR/LF. (0D H, 13 d / 0A H, 10 d)

Once the frame is transmitted, the indicator will wait for the command acknowledge (<06> ⇒ ACK) from the target system.
The frame will be repeated automatically every 3 seconds until the target system acknowledges it, the other frames to be transmitted will be pending with a limit of 250 frames maximum.
Whenever you reach 250 frames pending, it will become impossible to record a new weight in the temporary memory of the stream computer and the following error message will be displayed:




## 6.2. JBUS/MODBUS Protocol

An external system can communicate with the indicator by serial link. It can control the process or collect weight data in real time. This is transparent to the user as this function is run in multi-tasking by the indicator.

This functionality is activated if the driver type of **COM1** or **COM2** is "**02**", see "*5.1.3. Parameters of the COM1 serial link*" and "*5.1.4. Parameters of the COM2 serial link*".

For more information on the protocol refer to the manual "**JBUS PROTOCOL IMPLEMENTATION ON INDUSTRY SOFTWARE INDICATOR**".

## 6.3. Fieldbus with CanMK-FB gateway

An external system can communicate with the indicator by fieldbus link. It can control the process or collect weight data in real time. This is transparent to the user as this function is run in multi-tasking by the indicator.

This functionality is activated if the driver type of **COM2** is "**34**", see "*5.1.4. Parameters of the COM2 serial link*", the indicator can managed an CanMK-FB gateway using an ANYBUS CompactCOM fieldbus device Profibus-DP, DeviceNet, Ethernet Modbus TCP, ProfiNet or EtherNet/IP.

For more information on the "**CanMK-FB**" gateway and its ANYBUS CompactCOM fieldbus devices refer to the manual "**SPECIFICATION OF THE MASTERCAN GATEWAY CANMK-FB**".

### 6.3.1. Data issued from the indicator

The frame emitted by the indicator allows to the external system (PLC, PC) to read the supervision and weighing data.

| Designation | Size (bytes) | Encoding | Offset (bytes) |
|---|---|---|---|
| Life counter. (See *6.3.1.1.*) | 1 | Byte | 0 |
| Image of Inputs/Outputs. (See *6.3.1.2.*) | 1 | Bits | 1 |
| State response. (See *6.3.1.3.*) | 2 | - | 2 |
| Data response. (See *6.3.1.3.*) | 4 | Signed long integer | 4 |
| Gross. (See *6.3.1.4.*) | 4 | Signed long integer | 8 |
| Tare. (See *6.3.1.4.*) | 4 | Signed long integer | 12 |
| Net. (See *6.3.1.4.*) | 4 | Signed long integer | 16 |
| Channel state. (See *6.3.1.5.*) | 2 | Signed long integer | 20 |

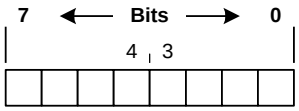
**Remarks:**
- The coma of weights is coded in the field "**Channel state**", see *6.3.1.5*.
- Frame length: 11 word / 22 bytes.

#### 6.3.1.1. Definition of "Life counter"

This field is incremented from **00** H to **FF** H at each new transmission.

#### 6.3.1.2. Definition of "Image of Inputs/Outputs"

This is the image of the Inputs/Outputs status of the "*4E4S_LOGIC*" board.




- Inputs status bits:
  - b0 ⇒ State of input I1.
  - b1 ⇒ State of input I2.
  - b2 ⇒ State of input I3.
  - b3 ⇒ State of input I4.

- Outputs status bits:
  - b4 ⇒ State of output O1.
  - b5 ⇒ State of output O2.
  - b6 ⇒ State of output O3.
  - b7 ⇒ State of output O4.

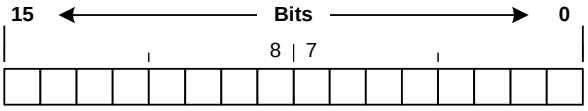
#### 6.3.1.3. Definition of "State response" and "Data response"

The field "**State response**" and "**Data response**" are the command results previously sending to the indicator, for more details refer to "*6.3.3. Command launch*" and "*6.3.2.2. List of commands*".

#### 6.3.1.4. Definition of "Gross" / "Tare" / "Net"

The gross / tare / net weights are transmitted in integer of 32 bits signed, the weights' comma is coded in the field "**Channel state**", see *6.3.1.5*.

#### 6.3.1.5. Definition of "Channel state"




- Unused bits: These bits are always 0.
  - b0 to b7.

- Decimal point position: Number of digits after the decimal point for weights.
  - b8 to b9.
    - **0** ⇒ No digit after the decimal point.
    - **1** ⇒ One digit after the decimal point.
    - **2** ⇒ Two digits after the decimal point.
    - **3** ⇒ Three digits after the decimal point.

- Status bits:
  - b10 ⇒ This bit indicates if the displayed weight is stable or not stable.
    - **0** ⇒ Unstable displayed weight.
    - 1 ⇒ Stable displayed weight. (According to the criteria defined during the instrument calibration)
  - b11 ⇒ This bit indicates whether the zero is correct. (At 1/4 scale division)
    - **0** ⇒ Zero not correct.
    - 1 ⇒ Zero correct
  - b12 ⇒ If this bit is set to 1, the weight is '**`Out of scale +`**'. (⚠ This is a fault!)
  - b13 ⇒ If this bit is set to 1, the weight is '**`Out of scale -`**'. (⚠ This is a fault!)
  - b14 ⇒ If this bit is set to 1, the converter is out of range. (⚠ This is a fault!)
  - b15 ⇒ Not used, always 1.

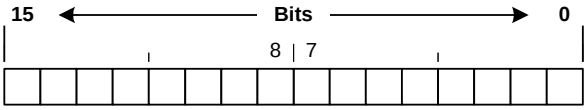
### 6.3.2. Data received by the indicator

The frame received by the indicator allows to the external system (PLC, PC) to control the process.

| Designation | Size (bytes) | Encoding | Offset (bytes) |
|---|---|---|---|
| Outputs Forcing. (See *6.3.2.1.*) | 2 | - | **0** |
| Command code. (See *6.3.2.2.*) | 2 | Integer | **2** |
| Data command. (See *6.3.2.2.*) | 4 | Long integer | **4** |

**Remark:** Frame length: 4 word / 8 bytes.

#### 6.3.2.1. Definition of "Outputs Forcing"




- Outputs forcing bits: (*Used only if the parameter "**type** of **i**nput and **o**utput" is set to "9", see "5.1.7. Inputs/Outputs parameters"*)
  - b0 ⇒ Forcing output O1.
  - b1 ⇒ Forcing output O2.
  - b2 ⇒ Forcing output O3.
  - b3 ⇒ Forcing output O4.

- Unused bits: These bits are always left at 0.
  - b4 to b15.

#### 6.3.2.2. List of commands

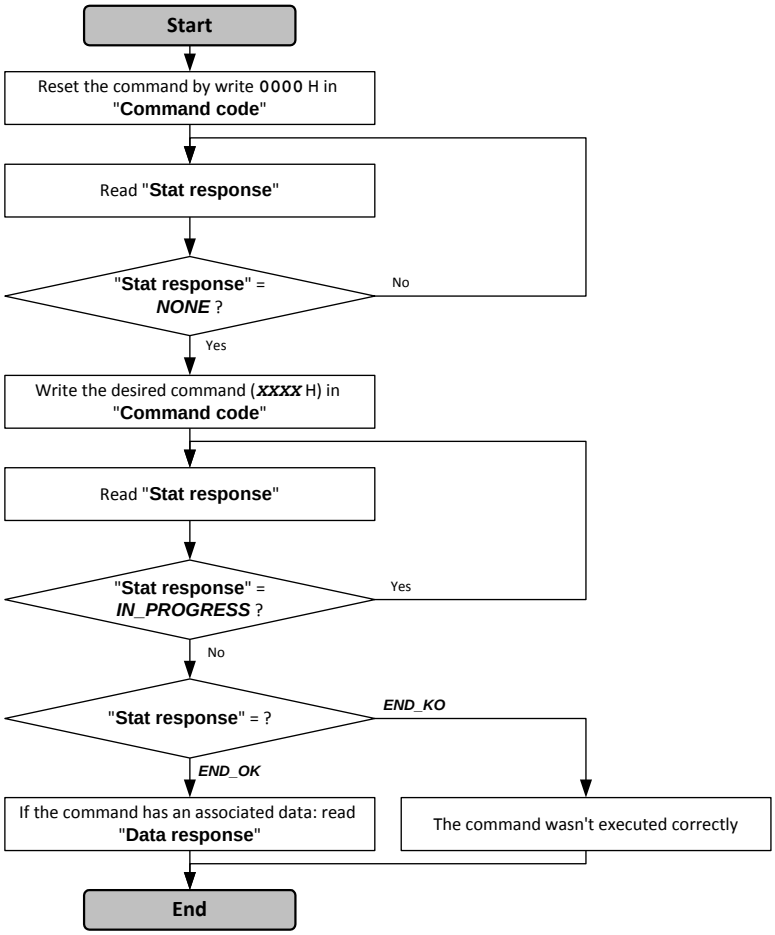
| Value | | Description | |
|---|---|---|---|
| Hex. | Decimal | | |
| 0000 H | 0 d | No command / Initialise command. | |
| 0001 H | 1 d | Semi-automatic zero command. | |
| 0002 H | 2 d | Semi-automatic tare command. | |
| 0003 H | 3 d | Programmable tare command. (PT) | |
| 0004 H | 4 d | Cancelation of the tare command. | |
| 0005 H | 5 d | Printing and storage of the weight in the DSD command. | |
| 0006 H | 6 d | Reading of the DSD number command. | |
| 0015 H | 21 d | Value of threshold 1 writing command. | *Commands only available if the parameter "**type** of **i**nput and **o**utput" is set to "**0**", see "5.1.7. Inputs/Outputs parameters"* |
| 0016 H | 22 d | Value of threshold 2 writing command. | |
| 0017 H | 23 d | Value of threshold 3 writing command. | |
| 0019 H | 25 d | Value of threshold 1 reading command. | |
| 001A H | 26 d | Value of threshold 2 reading command. | |
| 001B H | 27 d | Value of threshold 3 reading command. | |
| 001C H | 28 d | Value of hysteresis reading command. | |

**Remarks:**
- The command "**3**" requires to update the "**Data command**" field with the desired programmable tare value.
- The command "**5**" returns the DSD number in the "**Data response**" and the gross / tare / net weights are frozen during 1 second to be sure that the weights printed / stored in the DSD are the same that those received by the external system.
- The command "**6**" returns the DSD number in the "**Data response**".
- The commands "**21**" to "**23**" requires to update the "**Data command**" field with the desired threshold value.
- The commands "**25**" to "**27**" returns the threshold value in the "**Data response**".
- The commands "**28**" returns the hysteresis value in the "**Data response**".

### 6.3.3. Command launch

It's possible to send commands to the indicator by writing in the "**Data command**" field.

To be sure of the validity and the correct execution of command, it's important to manipulate it as described in the flow below.




Value of "**State response**":

- NONE = **00 H**,
- END_OK = **01 H**,
- END_KO = **02 H**,
- IN_PROGRESS = **03 H**.

"**State response**" and "**Data response**" are read in the frame emitted by the indicator.

## 6.3.4. Command launch examples

### 6.3.4.1. Semi-automatic tare command: 0002H

*External system frame to be sent to the indicator:*

| Output forcing | Command code | Data command |
|---|---|---|
| 00 H 00 H | 00 H 02 H | 00 H 00 H 00 H 00 H |
| 2 bytes | 2 bytes | 4 bytes |

### 6.3.4.2. Programmable tare command: 0003H

*External system frame to be sent to the indicator:*

| Output forcing | Command code | Data command |
|---|---|---|
| 00 H 00 H | 00 H 03 H | 00 H 00 H 03 H E8 H |
| 0 (d)<br>2 bytes | 3 (d)<br>2 bytes | 1 000 (d)<br>4 bytes |

The programmable tare value is **000003E8** H or 1 000 decimal.
If the channel is set:

- in kg with 2 digits after the decimal point this tare will be translated by 10.00kg,
- in kg with 3 digits after the decimal point this tare will be translated by 1.000kg,
- …

#### 6.3.4.3. Value of threshold 1 writing command: 0015H

*External system frame to be sent to the indicator:*

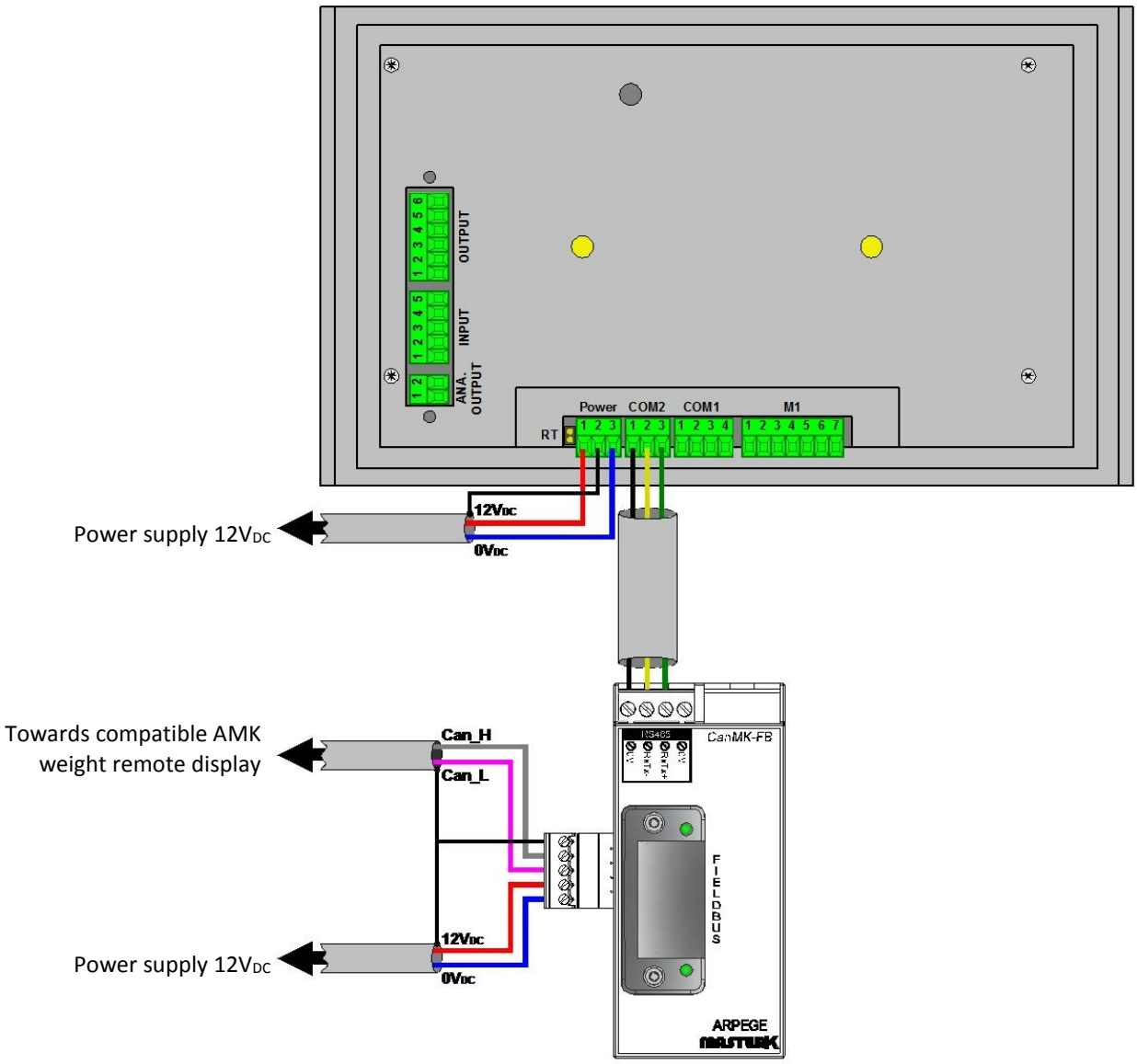
| Output forcing | Command code | Data command |
|---|---|---|
| 00 H 00 H | 00 H 15 H | 00 H 00 H 21 H 34 H |
| 0 (d) | 21 (d) | 8 500 (d) |
| 2 bytes | 2 bytes | 4 bytes |

The value of threshold 1 is **00002134** H or 8 500 decimal.

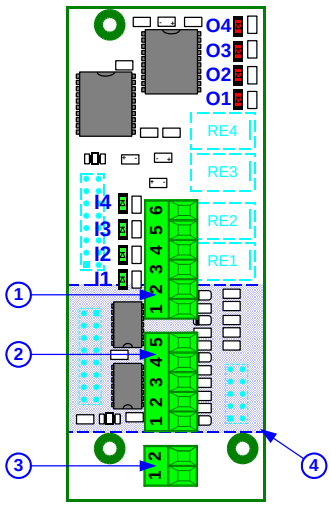
If the channel is set:

- in kg with 2 digits after the decimal point this value will be translated by 85.00kg,
- in kg with 3 digits after the decimal point this value will be translated by 8.500kg,
- …

## 6.4. CanMK-FB gateway connection with weight remote display



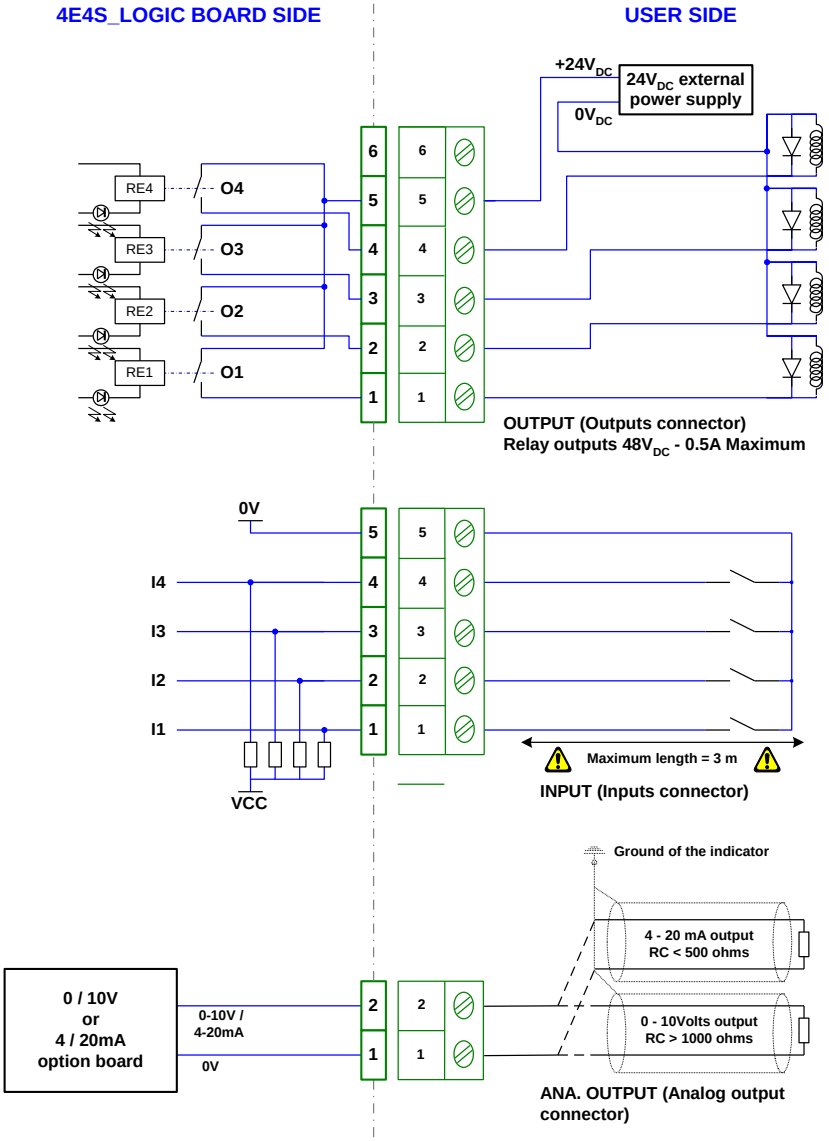
## 6.5. Layout of the 4E4S_LOGIC board



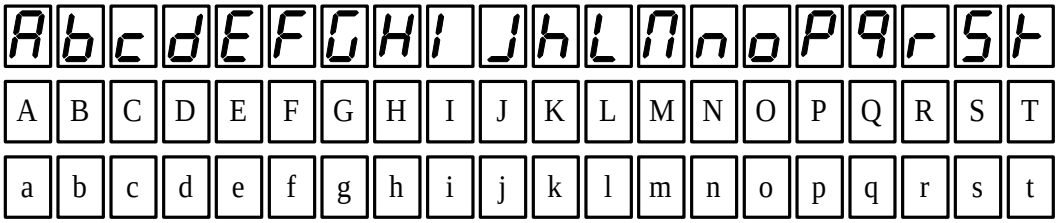

Legend:

1. **OUTPUT**, connector of outputs **O1**, **O2**, **O3** and **O4**.
2. **INPUT**, connector of inputs **I1**, **I2**, **I3** and **I4**.
3. **ANA. OUTPUT**, connector of the 0-10V or 4-20mA analog output option.
4. Analog output option board should be installed on the other side. (Side of the relays RE1 to RE4)

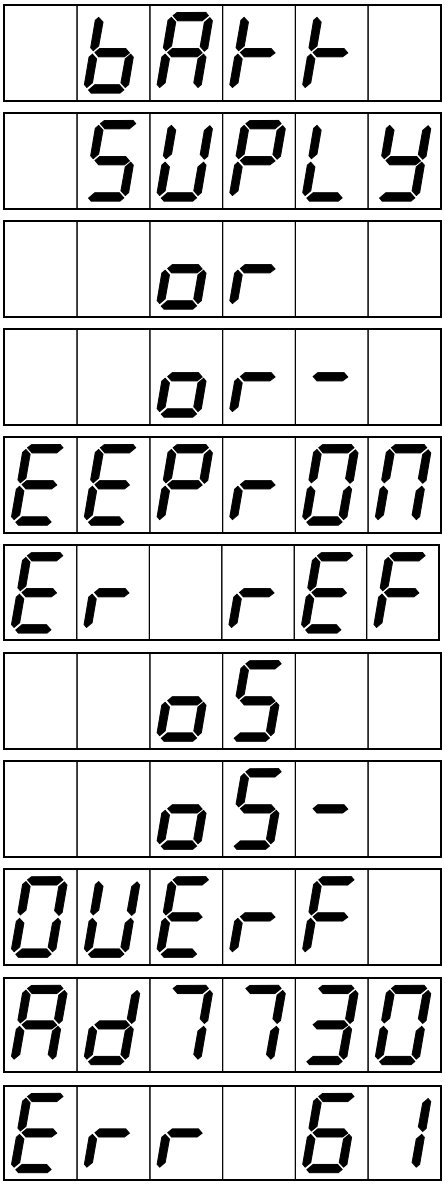
## 6.6. Cabling of the 4E4S_LOGIC option board with a 0-10V or 4-20mA option



## 6.7. Pseudo-alphanumerical display of the indicator




## 6.8. Error messages




: Battery default.

: Power supply default. (Voltage too low)

: Off range overflow. (Capacity of the A to D converter exceeded)

: Off range underflow. (Capacity of the A to D converter exceeded)

: CRC error on the EEPROM memory.

: Error on the M1 input. (Improper load cell connection or load cell broken).

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

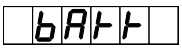
: Off scale underflow, weight below zero. (-9 scale divisions)

: Calculation capacity exceeded.

: The A to D converter is not operating properly.

: Impossible to record a weight, there is a lot of frames waiting to be sent on the stream computer link.

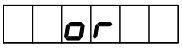
## 6.9. Breakdown

- The indicator displays the following message: 

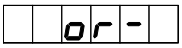
Verify the voltage of the indicator's battery, it must be greater than 2.9$V_{DC}$, otherwise it must be replaced.

- The indicator displays the following message: 

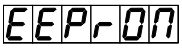
Verify the power supply voltage of the indicator, it must be in between 12$V_{DC}$ and 24$V_{DC}$.

- The indicator displays the following message: 

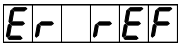
The signal delivered by the load cell is too high so that it can be measured by the indicator. (Overload, cabling, indicator not calibrated properly …)

- The indicator displays the following message: 

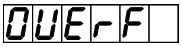
The signal delivered by the load cell is too low so that it can be measured by the indicator. (Under load, cabling, indicator not calibrated properly …)

- The indicator displays the following message: 

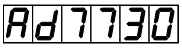
Restart the indicator and re-calibrate it again.

- The indicator displays the following message: 

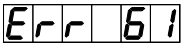
The analog load cell is not connected properly, verify that the excitation feedback (R+/R-) are connected properly.

- The indicator displays the following message: 

Restart the indicator and re-calibrate it again.

- The indicator displays the following message: 

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

- The indicator displays the following message: 

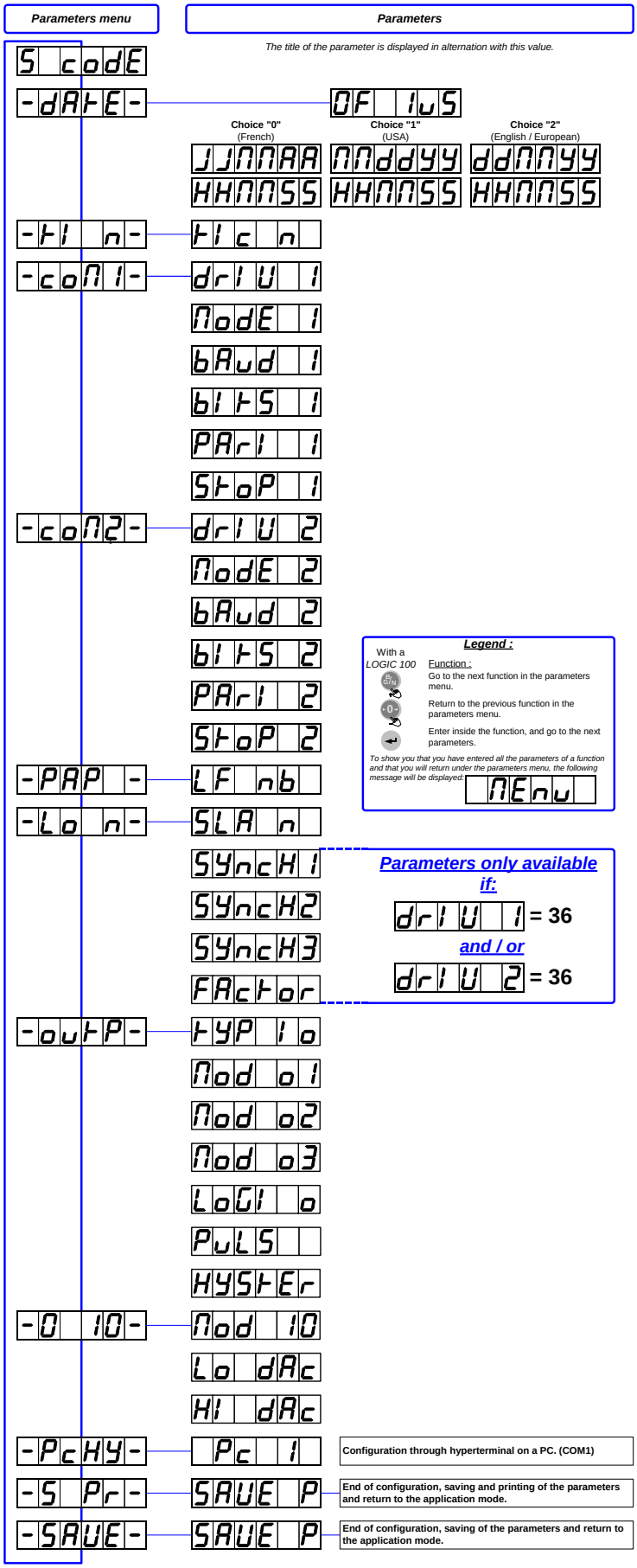
Acknowledge the frames of the stream computer link or disable the stream computer protocol.

- The indicator displays the following message: 

The weight is lower than the low threshold, load the scale.

***If your problems persist, contact your local seller or the technical support of the ARPEGE MASTER-K company.***

## 6.10. Summary of the parameters menu



ARPEGE MASTERK

Saint PRIEST, Tuesday February 1st, 2018,

# LOGIC 200 USER MANUAL SINGLE PRODUCT DOSING SOFTWARE

| Software N° | Manual N° | Edition |
|---|---|---|
| **Bl0IN37.07F** | **LOG_Gb_Dosage Mono LOGIC200_rev04.docx** | **04** |

Siège et usine : 15, Rue du Dauphiné – CS 40216 - 69808 SAINT-PRIEST Cedex – France
Tél. : 33 (0)4 72 22 92 22 – Fax : 33 (0)4 78 90 84 16 – www.masterk.com

# LOGIC 200 USER MANUAL SINGLE PRODUCT DOSING SOFTWARE

| Date | Edition number | Object of the modification |
|---|---|---|
| 03/03/2008 | 00 | Original. |
| 22/12/2008 | 01 | Cabling correction of the 4E4S Logic option board<br>+ correction on the emptying mode (p18 ) |
| 27/08/2009 | 02 | Update of the user manual |
| 05/05/2011 | 03 | Correction the access to the menu « Modification of the dosing parameters ». (4.2.1.) |
| 01/02/2018 | 04 | Addition of the layout of the 4E4S_LOGIC board, detail of function High Precision displaying and driver for older weight remote display. |
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# 1. SOFTWARE DESCRIPTION

## 1.1. The software

The single product dosing software for the "*LOGIC 200*" was studied to resolve the conditioning problems on the bagging machines. It disposes respectively of the calculation power of a very efficient MCU and of the execution speed of an analog comparator. With its inputs and outputs, it is capable to manage a complete bagging cycle without the need of an external PLC.

## 1.2. The peripherals

The "*LOGIC 200*" indicator has in standard version:

- 1 RS232 serial link on **COM1**. (With or without DTR)
- 1 RS485 2 wires serial link on **COM2**. (With or without a termination resistor RT of 120 ohms)
- 1 input for the analog load cell(s), 6 wires, on **M1**. (Maximum length: 100m)

**Remarks:**

- Only one cable must be connected to **M1**. The parallel connection of the load cells must be done separately in a junction box.
- The shield of the analog load cell cable must be obligatory connected to the ground of the indicator.
  - 4 logic inputs **that do not need any external power supply (*)** on **INPUT**. (Maximum cable length: 3 m)
  - 4 outputs (dry contacts with a common) on **OUTPUT**.
    **Maximum electrical characteristics (*): V = 48V / I = 500mA.**

**(*) ATTENTION:**
**If you do not respect the last two items, you may cause the damage of the indicator.**

Description of the inputs / outputs:

- **I1** = Start cycle - resume cycle.
- **I2** = Suspend cycle / cancel cycle.
- **I3** = Dosing authorization. (*)
- **I4** = Emptying / filling authorization. (*)
- **O1** = High speed contact. (HS)
- **O2** = Low speed contact. (LS)
- **O3** = Contact for off tolerance default, rate default, dosing in progress, end of dosing. (*)
- **O4** = Contact for emptying, low threshold, high threshold, filling. (*)

*(*) : To determine the use of the contacts O3 / O4 and of the inputs I3 / I4, refer to the section 5.1.8.*

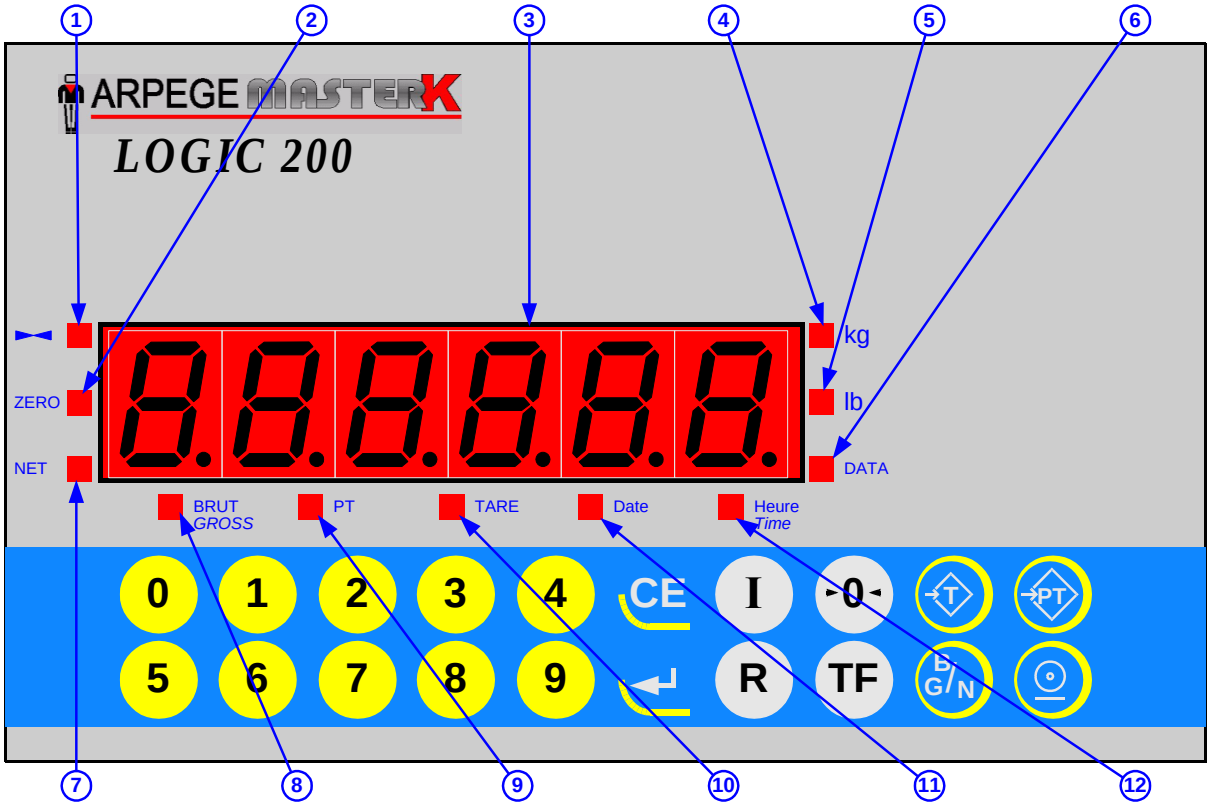
## 1.3. The options

The "*LOGIC 200*" indicator may have in option an analog output 0-10V or 4-20mA: ("*0-10V option board*" or "*4-20mA option board*")

- 1 analog output 0-10V or 4-20mA on **ANALOG OUTPUT**. (For more details, refer to the user manual named "SPECIFICATION DES CARTES ANALOGIQUES 0-10V ET 4-20mA ")

# 2. THE FRONT PANEL

## 2.1. Displays and LEDs




Legend:

1. Led indicating that the displayed weight is stable
2. Led indicating a center of zero gross weight at +/- 1/4 scale division
3. Weight display on 6 digits
4. Led indicating that the displayed weight is in kilogram
5. Led indicating that the displayed weight is in pound
6. Led indicating the display of a data
7. Led indicating the display of a Net weight
8. Led indicating the display of a gross weight
9. Led indicating the display of a manual tare
10. Led indicating the display of a tare
11. Led indicating the display of the date
12. Led indicating the display of the time

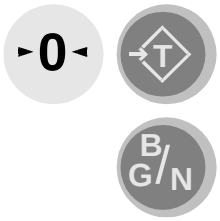
**Remarks:**

- Conversion from kilogram to pound: 1 kg ⇒ 2.204 lb,
  1 lb ⇒ 0.454 kg.

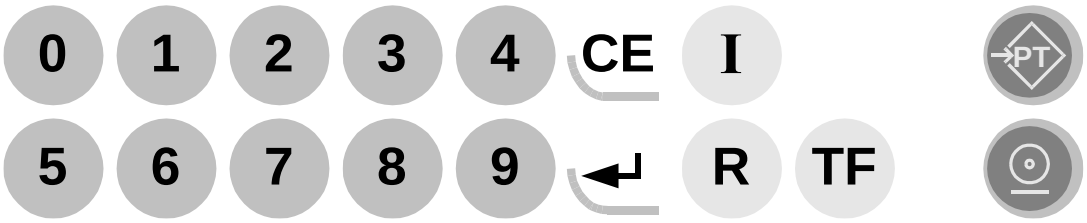
- In case of a weight inquiry in the DSD:
  - ❑ The LED "**DATA**" indicates the information displayed is a data,
  - ❑ The LEDs "**kg**" and "**lb**" indicate the weight unit of the memorized weight in the DSD,
  - ❑ The LED "**BRUT**" ("***GROSS***") indicates the display of the gross weight of the memorized weight in the DSD,
  - ❑ The LED "**NET**" indicates the display of the net weight of the memorized weight in the DSD,
  - ❑ The LEDs "**PT**" or "**TARE**" indicate the display of the value and the type of the tare of the memorized weight in the DSD,
  - ❑ The LED "**Date**" indicates the display of the date of the memorized weight in the DSD,
  - ❑ The LED "**Heure**" ("***Time***") indicates the display of the time of the memorized weight in the DSD.

## 2.2. The keypad

**Metrological keys:**




**Applications keys:**




Keys from 0 to 9 : Numerical keys allowing the seizure of the weights, the codes, etc.

Key CE : "Correction" key allows erasing a displayed numerical data or in case of a seizure of a signed value, allows changing the sign. It also allows suspending a cycle in progress or cancelling a cycle in progress if it was already suspended.

Key ↵ : Validation of a seized or a displayed data (**ENTER**), access to the displayed function/menu and acknowledge of an out of tolerance default during a cycle.

Key R : "**Re**sult" key, allows returning to the previous function/menu in the parameters menu and allows printing an end of dosing ticket.

Key I : "**I**nformation" key, allows going to the next function/menu in the parameters menu and allows accessing to the information functions.

Key : "Start cycle" key, allows starting a dosing cycle or resuming a suspended cycle.

Key : "**T**are" key, allows executing a tare with the present gross weight.

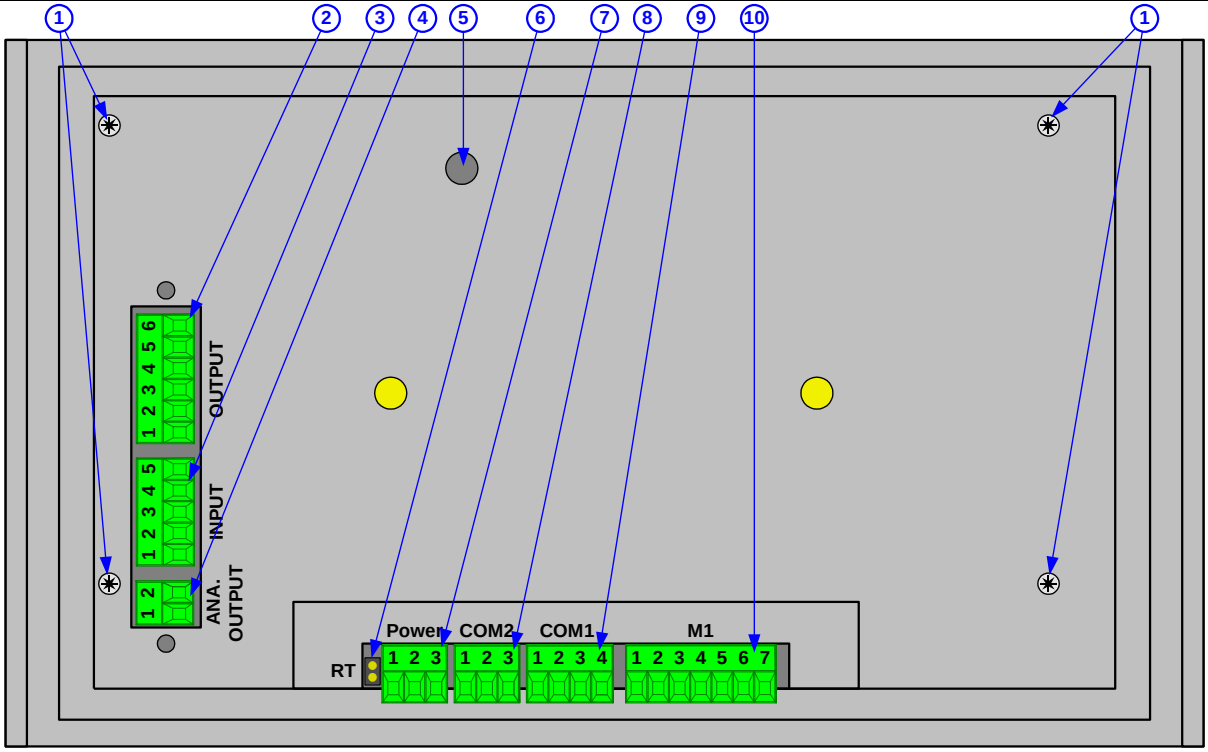
Key : "**PT**" key, allows entering a manual tare value. (Tare)

Key TF : "**TF**" key, not used.

Key : "**B**rut / **G**ross / **N**et" key, allows permuting for a few seconds the display of the gross weight in the net weight and vice versa.

Key -0- : "Zero" key, allows re-zeroing the weight.

# 3. THE REAR SIDE

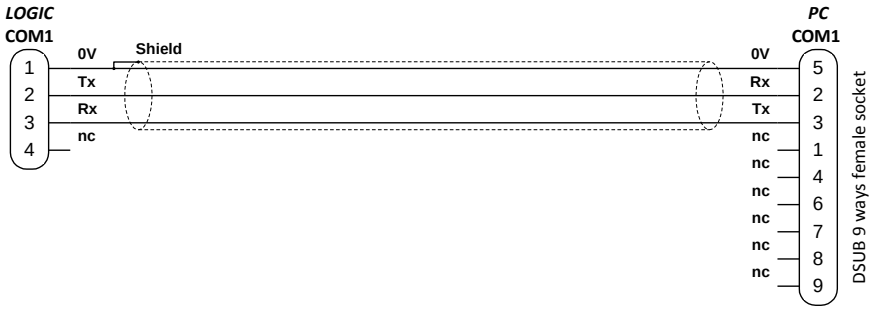



Legend:

1. Screws.
2. **OUTPUT**: 4 outputs.
3. **INPUT**: 4 inputs.
4. **ANA. OUTPUT**: 010V or 4-20mA analog output.
5. Access to the calibration push button **BP1**.
6. **RT**: Termination resistor (120 ohms) for the RS485 of **COM2**.
7. **Power**: 12VDC / 24VDC power supply.
8. **COM2**: RS485 serial link connector. (2 wires)
9. **COM1**: RS232 serial link connector.
10. **M1**: Load cell(s) connector.

| | | Pinout | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | **1** | **2** | **3** | **4** | **5** | **6** | **7** |
| **ANA. OUTPUT** | **Analog output 0-10V or 4-20mA** | **0V** | **0-10V / 4-20mA** | | | | | |
| **INPUT** | **Logic inputs** | **I1** | **I2** | **I3** | **I4** | **Com.** | | |
| **OUTPUT** | **Relay outputs** | **O1** | **O2** | **O3** | **O4** | **Com.** | **N.C.** | |
| **COM 1** | **RS232** | **0V** | **Tx** | **Rx** | **DTR** | | | |
| **COM 2** | **RS485 2 wires** | **0V** | **Tx/Rx-** | **Tx/Rx+** | | | | |
| **POWER** | **Power supply** | **+$V_{DC}$** | **Earth** | **0V** | | | | |
| **M1** | **Analog load cell** | **M-** *(-Meas.)* | **M+** *(+Meas.)* | **R-** *(-Sense)* | **R+** *(+Sense)* | **A-** *(-Excitation)* | **A+** *(+Excitation)* | **Ground (Shield)** |

Example of a "***LOGIC – PC***" cable:



# 4. APPLICATION

## 4.1. Dosing cycle

### 4.1.1. Start of a dosing cycle

To start a dosing cycle, you have two choices, either through the front panel of the indicator or by using the input "I**1**".

#### 4.1.1.1. Start of a dosing cycle through the front panel:

Press on the key , then enter the required dosing information:

| | | |
|---|---|---|
| rEF1 | : **XXXXXX** | Enter the value of the reference N°1 and validate. (6 digits) |
| ((**Refe***rence* **1**) | | |
| rEF2 | : **XXXXXX** | Enter the value of the reference N°2 and validate. (6 digits) |
| (**Refe***rence* **2**) | | |
| SEt U | : **XXXXXX** | Enter the value of the set value and validate. (6 digits) |
| (*dosing* **set** *value*) | | |
| nb cy | : **XXXX** | Enter the required number of cycles and validate. (4 digits) |
| (**n***umb***e***r of* **cyc***les*) | | *This parameter is required if* nb cy *= 1, refer to 5.1.3.* |

Then the indicator displays InP 3, and you must activate the input "I**3**", if Mod In = 1 or 3, refer to *5.1.8*. (Pulse of ≈ 1 second)

The printing of the beginning of the dosing is executed and the dosing is started.

Printing example:

```
      ARPEGE MASTER-K
  38, Avenue des Freres Montgolfier
              BP 186
        69 686 Chassieu Cedex

Date : 03/03/2008       Time: 14:55:37
      Batch number     : 001000
      Item code        : 000024
----------------------------------------
```

*Dosing ticket header:*

DSD N° ⇓ | Number of executed doses ⇓ | Dose weight ⇓

```
000044 14:30:28 0002 NET   :   3.076 kg
```

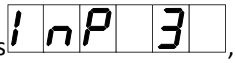
*One dose:*

Possible error:

Lo HI in alternation with the weight: the weight is higher than the low threshold, unload the scale so that the weight will be lower than the low threshold or disable the low threshold by setting its value to zero.

#### 4.1.1.2. Start of a dosing cycle through the input "I1"

You must activate the input "I**1**". (Pulse of ≈ 1 second)

Then the indicator displays  , and you must activate the input "I**3**", if  = 1 or 3, refer to *5.1.8*. (Pulse of ≈ 1 second)

The printing of the beginning of the dosing is executed and the dosing is started with the defined dosing parameters. (Refer to *4.2.1.*)

Printing example:

```
        ARPEGE MASTER-K
  38, Avenue des Freres Montgolfier
              BP 186
        69 686 Chassieu Cedex

Date : 03/03/2008       Time: 14:55:37
      Batch number    : 001000
      Item code       : 000024
----------------------------------------
```

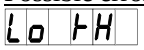
*Dosing ticket header:*

DSD N° ⇓ | Number of executed doses ⇓ | Dose weight ⇓

```
000044 14:30:28 0002 NET   :   3.076 kg
```

*One dose:*

Possible error:

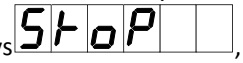
 in alternation with the weight: the weight is higher than the low threshold, unload the scale so that the weight will be lower than the low threshold or disable the low threshold by setting its value to zero.

### 4.1.2. Suspend/Cancel a dosing cycle

To suspend a cycle, you have two choices, either through the front panel of the indicator or by using the input "**I2**".

#### 4.1.2.1. Suspend/Cancel a dosing cycle through the front panel.

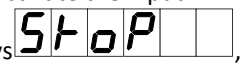
During a cycle, you must press on the key CE.

Then the indicator displays  , and you can have two possibilities:

- ❑ Either resume the cycle in progress by pressing on the key ,
- ❑ Or cancel the cycle in progress by pressing on the key CE.

#### 4.1.2.2. Suspend/Cancel a dosing cycle by using the inputs

During a cycle, you must activate the input "**I2**". (Pulse of ≈ 1 second)

Then the indicator displays  , and you can have two possibilities:

- ❑ Either resume the cycle in progress by activating the input "**I1**". (Pulse of ≈ 1 second)
- ❑ Or cancel the cycle in progress by activating the input "**I2**". (Pulse of ≈ 1 second)

**Remark:** It is possible to resume a cycle by pressing on the key .

### 4.1.3. End of dosing printing: R

To execute an end of dosing printing, you must press on the key R.

Example of a printing:

Total number of the cycle doses ⇒
Mean weight of the doses ⇒

```
---------------------------------------
NB     :     7       NET    :     22.064 kg
       AVERAGE              :     3.1520 kg
 Date : 03/03/2008      Time : 14:55:32

Tel.:04 72 22 92 22 Fax.:04 78 90 84 16
 www.masterk.com/marketing@masterk.com
```

⇐ Total weight of the executed doses

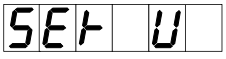
*End of dosing:*

## 4.2. Information functions: I

**Remark:** The information functions I6, I7 and I8 are not used.

### 4.2.1. I: Modification of the dosing parameters

To access to this menu, you must press on the key I and ↵.
The following menu will be available:




: **xxxxxx** Enter the dosing set value and validate (6 digits)

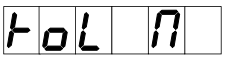
(*dosing* **set** *value*)


: **xxxxxx** Enter the low speed dosing value and validate. (6 digits)

(**Low s***peed dosing set value*)

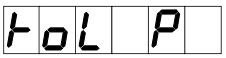

: **xxxxxx** Enter the feed error value and validate. (6 digits)

(**Feed e***rror*)




: **xxxxxx** Enter the value of the negative tolerance and validate. (6 digits)

(*Off* **tol***erance* **m***inus*)




: **xxxxxx** Enter the value of the positive tolerance and validate. (6 digits)

(*Off* **tol***erance* **p***lus*)

Then you will return to the application menu.

### 4.2.2. I0: DSD Inquiry

To search one of the last 14 000 weights recorded in the DSD, you must press on the keys I then 0.

The indicator asks that you enter the required DSD number:

dSd no : **XXXXX** Enter the required DSD weight number and validate with ↵.

(**DSD n***umber*)

The following information will be displayed successively:


The date of the required weight.


The time of the required weight.


The gross weight of the required weight.


The tare value of the required weight.


The net weight of the required weight.

Then you will return to the weighing menu.

**Remarks:**

- Each information will be displayed while flashing for 8 seconds,
- It is possible to go to the next information faster by pressing on the key ↵,
- During the display of the tare value, the tare type is indicated due to the LED ☐ TARE (tare through the indicator) or the LED ☐ PT. (Manual tare entry or tare loaded by protocol)

### 4.2.3. I1: Seizure of the reference n°1 value

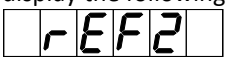
To enter the value of the reference N°1, you must press on the key I then 1. Then the indicator will display the following message:

rEF1 : **XXXXXX** Enter the value of the reference N°1 (6 digits) and validate with ↵.

(**Refe***rence* **1**)

### 4.2.4. I2: Seizure of the reference n°2 value

To enter the value of the reference N°2, you must press on the key 1 then 2. Then the indicator will display the following message:

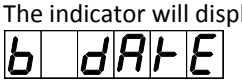



: **XXXXXX** Enter the value of the reference N°2 (6 digits) and validate with ↵.

(**Refe***rence* **2**)

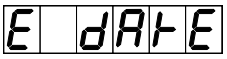
### 4.1.1. I3: Addition for the reference n°1 from date to date.

To execute an addition of the doses according to the reference n°1 you must press on the key 1 then 3.
The indicator will display the following messages:




: **XXXXXX** Enter the begin date of the addition and validate with ↵.

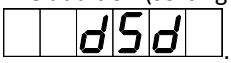
(**B***egin* **Date**) Example: 111207 for the 11th of December 2007.




: **XXXXXX** Enter the end date of the addition and validate with ↵.

(**E***nd* **Date**) Example: 030308 for the 3rd of March 2008.

The addition (sorting of the DSD) is launched, during this operation, the following message will be displayed



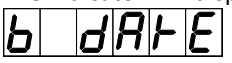

. Then the indicator will print the result of the addition.

Printing example:

```
 Date : 03/03/2008     Time: 15:52:24
 TOTAL  11/12/2007 --> 03/03/2008

:Batch number    :   NET TOTAL    :
-------------------------------------
:     000000     :      32.172 kg :
:     000001     :      50.488 kg :
:     000100     :       6.102 kg :
:     001000     :      24.494 kg :
-------------------------------------
     TOTAL       =     113.256 kg
```

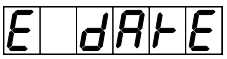
### 4.1.2. I4: Addition for the reference n°2 from date to date.

To execute an addition of the doses according to the reference n°1 you must press on the key 1 then 4.
The indicator will display the following messages:




: **XXXXXX** Enter the begin date of the addition and validate with ↵.

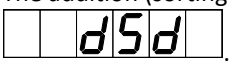
(**B***egin* **Date**) Example: 111207 for the 11th of December 2007.




: **XXXXXX** Enter the end date of the addition and validate with ↵.

(**E***nd* **Date**) Example: 030308 for the 3rd of March 2008.

The addition (sorting of the DSD) is launched, during this operation, the following message will be displayed



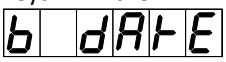

. Then the indicator will print the result of the addition.

Printing example:

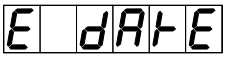
```
 Date : 03/03/2008     Time: 15:53:02
 TOTAL  11/12/2007 --> 03/03/2008

:Item code       :   NET TOTAL    :
-----------------------------------
:     000000     :      34.492 kg :
:     000002     :      23.896 kg :
:     000003     :       6.084 kg :
:     000024     :      48.784 kg :
-----------------------------------
     TOTAL       =     113.256 kg
```

### 4.1.3. I5: Crossed addition of the reference n°1 with reference n°2 from date to date.

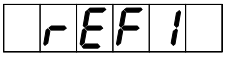
To execute a crossed addition of the doses of the reference n°1 with the reference n°2, you must press on the keys 1 then 5. The indicator will display the following messages:



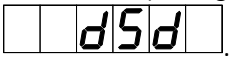
: **xxxxxx** Enter the begin date of the addition and validate with ↵.
(**B***egin* **Date**) Example: 111207 for the 11th of December 2007.



: **xxxxxx** Enter the end date of the addition and validate with ↵.
(**E***nd* **Date**) Example: 030308 for the 3rd of March 2008.



: **xxxxxx** Enter the reference N°1 to be totalized and validate with ↵.
(**Refe***rence* **1**) Example: 000001 for an addition of the reference N°1 having a value of 000001

The addition (sorting of the DSD) is launched, during this operation, the following message will be displayed 

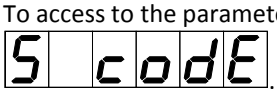
. Then the indicator will print the result of the addition.

**Remark:** If you enter the value "**000000**" for the reference N°1 to be totalized, you will get the crossed addition of all the weights of the different references N°1 with the references N°2.

Printing example:

```
 Date : 03/03/2008     Time: 15:54:50
 TOTAL  11/12/2007 --> 03/03/2008
 Batch number
       000001
:Item code       :   NET TOTAL    :
-----------------------------------
:     000000     :       2.320 kg :
:     000002     :      23.896 kg :
:     000003     :       6.084 kg :
:     000024     :      18.188 kg :
-----------------------------------
     TOTAL       =      50.488 kg
```

### 4.1.4. I9: Access to the parameters menu.

To access to the parameters menu, you must press on the key I then 9 and the indicator will display  . (**S***ecret* **code**)

You must press on the following keys successively 7, 8, 0, 6 then ↵ and then the parameters menu will be available.

Report to the chapter "*5. PARAMETERS MENU*" for the configuration details.

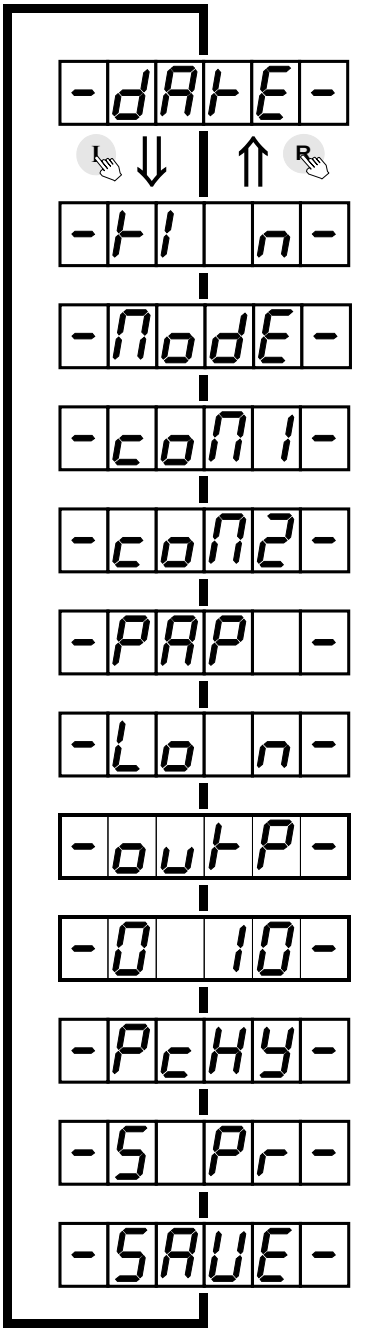
## 4.3. Display weight in High Precision using keys I then I

To activate the display weight in high resolution, you must press on the keys I then I.
The weight will be displayed in high resolution during 5 seconds, the LED "**DATA**" is set during operation.

# 5. PARAMETERS MENU

To access to this menu, you must press on the key I then 9, the indicator will display S CodE.
(**S***ecret* **code**)

You must press on the following keys successively 7, 8, 0, 6 then ↵ and then the parameters menu will be available:




You enter to the functions / menus due to the key: ↵

⇒ *Update of the date and time*, see *5.1.1*.

⇒ Update of the ticket number, see *5.1.2*.

⇒ Configuration of the operating mode of the indicator, see *5.1.3*.

⇒ Parameters of the COM1 serial link, see *5.1.4*.

⇒ Parameters of the COM2 serial link, see *5.1.5*.

⇒ Ticket length, see *5.1.6*.

⇒ Slave station number of the indicator, see *5.1.7*.

⇒ Inputs/Outputs parameters, see *5.1.8*.

⇒ Analog output parameters (0-10V / 4-20mA), see *5.1.9*.

⇒ Configuration through a computer, see *5.1.10*.

⇒ Saving and printing of the parameters then return to the application mode, see *5.1.11*.

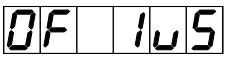
⇒ Saving of the parameters then return to the application mode, see *5.1.12*.

**Reminder:** To move inside the menu.

| Key | Effects |
|---|---|
| R | Returns to the previous function / menu. |
| I | Goes to the next function / menu. |

## 5.1. Configuration through the front panel of the indicator

### 5.1.1. Update of the date and time



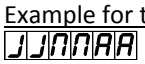
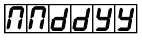
: **x**

(**0** = **F***r* , **1** = **US**)

Choose the required format for the date and validate.
0 French format: DD/MM/YY. (Day/Month/Year)
1 = American format: MM/DD/YY. (Month /Day/Year)
2 = English/European format: DD/MM/YY. (Day/Month/Year)

**Remark:** If the date format is set to 0 the printed texts are in French otherwise in English.

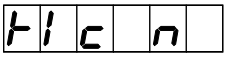
: **XXXXXX**

Enter the required date in the chosen format and validate.
Example for the 03rd of April 2007:
 : Entry with the French format: "**030407**".
 : Entry with the American format: "**040307**".
 : Entry with the English/European format: "**030407**".

: **XXXXXX**

Enter the required time and validate.
Example: "**151230**" for 15h12mn30s.

### 5.1.2. Update of the ticket number

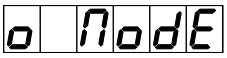


: **XXXXXX**

Ticket number on 6 digits. Enter the new ticket number and validate.
(This parameter is only used in the Gross/Tare/Net weighing mode)

(**tic***ket* **n***umber*)

### 5.1.3. Configuration of the operating mode of the indicator

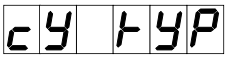


: **08**

Choose the operating mode of the indicator.

(**O***perating* **Mode**)

08 = Single product dosing. (Always keep this value for this parameter)



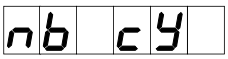
: **x**

Choose the required dosing type.

(**cy***cle* **typ***e*)

0 = Filling. (HS then LS)
1 = Filling. (HS then LS)
2 = Filling. (HS + LS then LS)
3 = Filling. (HS + LS then LS)
4 = Emptying. (HS then LS without automatic filling)
5 = Emptying. (HS then LS with automatic filling)
6 = Emptying. (HS + LS then LS without automatic filling)
7 = Emptying. (HS + LS then LS with automatic filling)

**Remark :** In emptying mode (4, 5, 6 or 7) the filling ("FILL") will be required if gross weight < set value + low threshold.

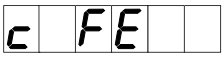


: **x**

Choose the required number of cycles.

(**n***umb***b***er of* **cy***cles*)

0 = Only one cycle is executed.
1 = You enter the number of cycles required at the beginning of the dosing.
2 = An infinite number of cycles will be executed.

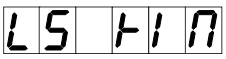


: **x**

Choose the operation of the feed error correction.

(**c***orrection of the* **f***eed* **e***rror*)

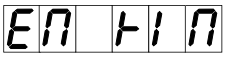
0 = No feed error correction.
1 = Feed error correction only if the weight is in between the tolerances.
2 = Feed error correction in all cases.



: **x.x**

Enter the time value in seconds during which the LS contact is closed and the system does not supervise the set values.
(Masking time for the starting of the LS)

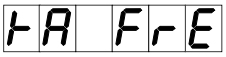
(**L**ow **s***peed start* **tim***e-out*)



: **x.x**

Enter the hold time value in seconds of the emptying output, when the weight will be lower than the low threshold.
(Final flow of the product)

(**Em**ptying **tim***e-out*)

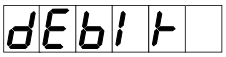


: **xx**

Indicate to the system the number of doses that must be done without executing a new tare for the scale.

(**Ta***re* **fre***quency*)

00 or 01 = Executes a tare for each cycle.
02 = Executes a tare for one cycle over two.
03 = Executes a tare for one cycle over three.
Etc.…
99 = No tare is executed. (Even on the starting of a cycle)

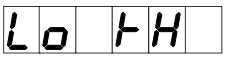


: **xy**

Choose the rate value for the rate supervision according to the following formula: Rate = Y scale divisions in X seconds.

(**Debit**/*Rate monitoring*)

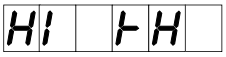
X : Time from 0 to 4 seconds.
Y : Number of scale divisions from 0 to 9.
00 = 0 scale divisions in 0 second ⇒ Rate supervision disabled.
12 = Rate supervision enabled for a minimum rate of 2 scale divisions per second.
42 = Rate supervision enabled for a minimum rate of 2 scale divisions in 4 seconds.



: **xxxxxx**

Choose the value of the low threshold. (On 6 digits)

(**Lo**w **th***reshold*)

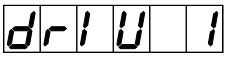


: **xxxxxx**

Choose the value of the high threshold. (On 6 digits)

(**Hi**gh **th***reshold*)

### 5.1.4. Parameters of the COM1 serial link

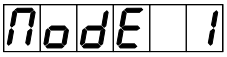



: **xx**

Enter the driver type of COM1.

(**driv***er com***1**)

00 = Nothing.
01 = Weight remote display. (Type RP75HL)
02 = Not used.
03 = Not used.
04 = Not used.
05 = MODEM Protocol. ("***TRANSFIC***" AMK software)
06 = Stream computer. (See "*6.1. The stream computer protocol*")
07 = IBA40 printer.
08 = ILA80 printer.
09 = Stream printer.
17 = Weight remote display. (Compatibility with older models)

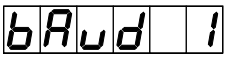



: **X**

Enter the serial link type.

(*communication* **mode** *com***1**)

0 = RS232 without DTR test.
1 = RS232 with DTR test.

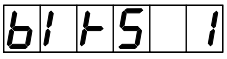



: **X**

Enter the communication rate.

(**baud** *rate com***1**)

1 = 1200 bauds.
2 = 2400 bauds.
4 = 4800 bauds.
9 = 9600 bauds.
0 = 19200 bauds.

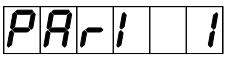



: **X**

Enter the number of bits.

(*number of* **bits** *com***1**)

7 = 7 bits.
8 = 8 bits.

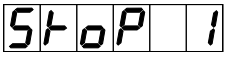



: **X**

Enter the parity type.

(**pari***ty type com***1**)

0 = No parity.
1 = Odd parity.
2 = Even parity.




: **X**

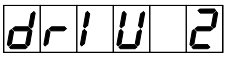
Enter the number of stop bits.

(*number* **stop** *bits com***1**)

1 = 1 stop bit.
2 = 2 stop bits.

**Remark:** Some combinations of number of bits, parity and number of stop bits are not available. Choose if it is possible: 8 bits, no parity, and 1 stop bit.

### 5.1.5. Parameters of the COM2 serial link

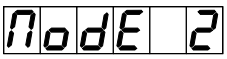



: **xx**

Enter the driver type of COM2.

(**driv***er com***2**)

00 = Nothing.
01 = Weight remote display. (Type RP75HL)
02 = Not used.
03 = Not used.
04 = Not used.
05 = MODEM Protocol. ("***TRANSFIC***" AMK software)
06 = Stream computer. (See "*6.1. The stream computer protocol*")
07 = IBA40 printer.
08 = ILA80 printer.
09 = Stream printer.
17 = Weight remote display. (Compatibility with older models)

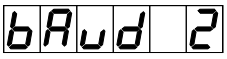



: **2**

Always set this parameter to 2.

(*communication* **mode** *com***2**)

2 = RS485 2 wires.

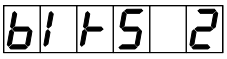



: **X**

Enter the communication rate.

(**baud** *rate com***2**)

1 = 1200 bauds.
2 = 2400 bauds.
4 = 4800 bauds.
9 = 9600 bauds.
0 = 19200 bauds.

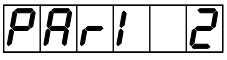



: **X**

Enter the number of bits.

(*number of* **bits** *com***2**)

7 = 7 bits.
8 = 8 bits.




: **X**

Enter the parity type.

(**pari***ty type com***2**)

0 = No parity.
1 = Odd parity.
2 = Even parity.


: **X**

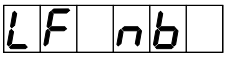
Enter the number of stop bits.

(*number* **stop** *bits com***2**)

1 = 1 stop bit.
2 = 2 stop bits.

**Remark:** Some combinations of number of bits, parity and number of stop bits are not available. Choose if it is possible: 8 bits, no parity, and 1 stop bit.

### 5.1.6. Ticket length

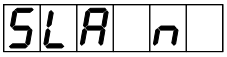


: **xx**

Paper length in number of line feed for the 80 columns printers. (ILA80)

(**l***ine* **f***eed* **n***um***b***er*)

### 5.1.7. Slave station number of the indicator



: **xx**

Enter the slave station number of the indicator (2 digits) then validate. This number is used in the communication protocols.

(**sla***ve* **n***umber*)

### 5.1.8. Inputs/Outputs parameters

: **x**

Choose the operating type of the Inputs/Outputs. (Option)

(**type** *of* **i***nput and* **o***utput*)

0 = Dosing application, always keep this parameter set to this value.

: **x**

Choose the operating mode of the output 3.

(*Operating* **mod***e of* **o***utput* **3**)

0 = Indicates the off tolerances.
1 = Indicates that the dosing is in progress.
2 = Indicates that the dosing is finished.
3 = Indicates that you have a rate default.

: **x**

Choose the operating mode of the output 4.

(*Operating* **mod***e of* **o***utput* **4**)

0 = Indicates that you are in emptying mode.
1 = Indicates that the low threshold is enabled. (Weight < low threshold value)
2 = Indicates that the high threshold is enabled. (Weight > high threshold value)
3 = Indicates that you are in filling mode.

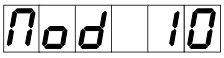
: **x**

Choose the inputs to be used.

(*Operating* **mod***e of* **in***put I3 / I4*)

0 = The inputs I3 and I4 are not used.
1 = Only the input I3 is used.
2 = Only the input I4 is used.
3 = Both the inputs I3 and I4 are used.

### 5.1.9. Analog output parameters (0-10V / 4-20mA)



: **x**

Choose the operating mode of the analog output. (0-10V / 4-20mA)

(**mod***e of 0-***10***V / 4-20mA*)

0 = Disable of the analog output.
1 = The analog output operates on the gross weight.
2 = The analog output operates on the net weight.
3 = The analog output operates in absolute value on the net weight.

To execute the two following adjustments, you need to connect a voltmeter or an ammeter depending of the used analog board.

| | | |
|---|---|---|
| Lo dAc | : **X** | Adjustment of the low point of the analog output. (0 V / 4 mA) |
| (**lo***w value of* **DAC**) | | - A first pressing on the key B/G/N + will increase the value, a second pressing on this key will stop the incrementation of the value.<br>- A first pressing on the key -0- – will decrease the value, a second pressing on this key will stop the decrementation of the value. |
| HI dAc | : **X** | Adjustment of the high point of the analog output. (10 V / 20 mA) |
| (**hi***gh value of* **DAC**) | | - A first pressing on the key B/G/N + will increase the value, a second pressing on this key will stop the incrementation of the value.<br>- A first pressing on the key -0- – will decrease the value, a second pressing on this key will stop the decrementation of the value. |

### 5.1.10. Configuration through a computer

For this you must proceed as follows:

- Connect the computer (on Com1) with the indicator. (On Com1)
- Launch the Hyper terminal software. (Access path of hyperterm.exe: **"C:\Program Files\Accessories\HyperTerminal\HYPERTRM.EXE"**).
- Give a name to the connection and validate.
- Then in the header "Connect using" you must validate "Direct to Com1".
- Then, configure the connection in 9600 Bauds, no parity, one stop bit, and no flow control.
- Validate the function -PcHy- on the indicator, the message "**PRESS [ENTER] ON THE PC**" will be displayed on the PC screen. Validate with the key ↵ .
- You will get the following menu:

```
0 : DSD RECEPTION .........
1 : COMPANY NAME ..........
2 : CONFIGURABLE W. TICKET.
3 : CONFIGURABLE B. TICKET.
4 : CONFIGURABLE E. TICKET.
9 : END AND RETURN ON LOGIC
```

(Refer below to the chapter "*5.2. Configuration through a computer*")

### 5.1.11. Saving and printing of the parameters then return to the application mode

Printing of the parameters and saving them in the EEPROM memory. This function may take several seconds. (**20 seconds**)
Then return to the application menu.

**Remark:** The printing of the parameters is executed only if you have a printer declared on **COM1** or **COM2**.

### 5.1.12. Saving of the parameters then return to the application mode

Saving of the parameters in the EEPROM memory without printing them. This function may take several seconds. (**20 seconds**)
Then return to the application menu.

**Attention! If a power cut occurs before or during the saving, the newly entered parameters will be lost.**

## 5.2. Configuration through a computer

### 5.2.1. DSD RECEPTION

This function allows saving the DSD in a text file (.TXT). For this you must press on the key 0 and the following information will appear on the PC screen:

"**BEGIN DATE (DDMMYY) : 010407**"

Enter the date from which you want to recuperate the DSD and validate with ↵.
The following information will appear on the PC screen:

"**END DATE (DDMMYY) : 030407**"

Enter the date to which you want to recuperate the DSD, and validate with ↵.

The following information will appear on the PC screen:

"**Configure HYPERTERMINAL in TEXT CAPTURE MODE and START**
**ENTER key to start transfer.**
**At the end of transfer STOP THE CAPTURE**
**ENTER key for return to MENU.**"

For this you must go to "Transfer" then in "Capture the text", you define the name of the file to be saved and validate "Start", the computer will be waiting for the information.
Press on the ENTER key to start the transfer of the DSD. Once the transfer is finished, you must go to "Transfer" then in "Capture the text" and "Stop".
Press on the ENTER key to return to the main menu.

Example of DSD recuperation:

| Station number of the indicator | DSD number | Date of the DSD weight | Time of the DSD weight | Gross weight | Tare value | Net weight | Reference n°1 | Reference n°2 |
|---|---|---|---|---|---|---|---|---|
| 00 | 000000 | 03/04/2007 | 09:32:12 | 0010.51 | 0000.00 | 0010.51 | 158742 | 120500 |
| 00 | 000001 | 03/04/2007 | 10:16:35 | 0012.02 | 0000.00 | 0012.02 | 154896 | 324578 |
| 00 | 000002 | 03/04/2007 | 10:46:37 | 0021.02 | 0000.00 | 0021.02 | 126873 | 584361 |
| 00 | 000003 | 03/04/2007 | 11:02:44 | 0018.03 | 0000.00 | 0018.03 | 265987 | 002584 |
| 00 | 000004 | 03/04/2007 | 11:32:45 | 0017.03 | 0000.00 | 0017.03 | 358000 | 654802 |
| 00 | 000005 | 03/04/2007 | 13:12:49 | 0020.35 | 0000.00 | 0020.35 | 125489 | 674230 |
| 00 | 000006 | 03/04/2007 | 13:32:52 | 0027.23 | 0000.00 | 0027.23 | 215800 | 002548 |

### 5.2.2. COMPANY NAME

Press on the key 1 and the following information will appear on the PC screen:

First line of the company name: 20 characters in double width.
" **COMPANY NAME: ********** "
Validate with ↵.
Second line of the company name: 39 characters.
" **>**---------- "
Validate with ↵.
Third line of the company name: 39 characters
" **>**---------- "
Validate with ↵.
Fourth line of the company name: 39 characters
" **>**---------- "
Validate with ↵.
First line of the end of ticket : 39 characters
" **>**---------- "
Validate with ↵.
Second line of the end of ticket: 39 characters
" **>**---------- "
Validate with ↵.
Name of the reference n°1 : 16 characters
" **NAME REF. 1 :Batch number** "
Validate with ↵.
Name of the reference n°2 : 16 characters
" **NAME REF. 2 :Item code** "
Validate with ↵, and you will return to the main menu.

### 5.2.3. CONFIGURABLE W. TICKET

Press on the key 2 and the following information will appear on the PC screen:
" **STD W. TICKET (0=n 1=y):1**"

If you choose "**1**" (yes), the printing of the Gross/Tare/Net ticket, the batch ticket and the stream printing ticket will be done according to a ticket type already fixed in the internal memory of the indicator.

If you choose "**0**" (no), the printing of the Gross/Tare/Net ticket, the batch ticket and the stream printing ticket will be done according to a configurable ticket.
Refer to chapter "*5.3. The configurable tickets*".

The standard tickets are always inside the memory of the indicator. They are realized in a format allowing its printing on an IBA40 printer (on 40 columns). They gather all the information collected during the weighing.

### 5.2.4. Configurable ticket of the beginning of a batch (CONFIGURABLE B. TICKET)

Press on the key 3 and the following information will appear on the PC screen:
" **STD B. TICKET (0=n 1=y):1**"

If you choose "**1**" (yes), the printing of the beginning of a batch weighing will be done according to a ticket type already fixed in the internal memory of the indicator.

If you choose "**0**" (no), the printing of the beginning of a batch weighing ticket will be done according to a configurable ticket.
Refer to chapter "*5.3. The configurable tickets*".

The standard tickets are always inside the memory of the indicator. They are realized in a format allowing its printing on an IBA40 printer (on 40 columns). They gather all the information collected during the weighing.

### 5.2.5. Configurable ticket of the end of a batch and the total (CONFIGURABLE E. TICKET)

Press on the key 4 and the following information will appear on the PC screen:
" **STD E. TICKET (0=n 1=y):1**"

If you choose "**1**" (yes), the printing of the end of batch weighing ticket and of the totals ticket will be done according to a ticket type already fixed in the internal memory of the indicator.

If you choose "**0**" (no), the printing of the end of batch weighing ticket and of the totals ticket will be done according to a configurable ticket.
Refer to chapter "*5.3. The configurable tickets*".

The standard tickets are always inside the memory of the indicator. They are realized in a format allowing its printing on an IBA40 printer (on 40 columns). They gather all the information collected during the weighing.

### 5.2.6. End and return to the main menu (END AND RETURN ON LOGIC)

Press on the key 9 and you will end the communication with the PC and you will return to the main menu of the indicator.

## 5.3. The configurable tickets

If you disable the standard tickets parameter, the system proposes the use of a configurable ticket. It allows a customized layout and allows choosing the data to be printed. This ticket is realized by programming with the help of simple commands.

**Remark:** It is recommended to create the ticket in a step-by-step method. Configure some commands only and print the ticket to verify the results and so on.

### 5.3.1. The commands for the configurable tickets

There are 8 different commands that allow driving the printer. A command is **always** composed of three characters **; 1 letter ;** . The semi-column ';' is the separator that must be **obligatory** present between each command. It can also serve to finish a line and can be replaced later by a command.

;A; = Number of line feed
;B; = Number of spaces
;G; = Passage in wide characters
;P; = Passage in standard characters
;T; = Text
;E; = System label
;C; = Control character
;?; = End of ticket (no data)

The syntax must be as follows:
The command ;A; is always followed by 2 digits (number of line feed) ex : ;A;02;
The command ;B; is always followed by 2 digits (number of spaces) ex : ;B;09;
The command ;G; is always alone
The command ;P; is always alone
The command ;C; is always followed by 2 characters (value in hexadecimal) ex : ;C;1B;
The command ;E; is always followed by 3 characters (name of one of the system labels) ex : ;E;RS1;
The command ;T; is always followed by the text to be printed (variable length) ex : ;T; HERE IS THE TEXTE ;
The command ;?; is always alone

### 5.3.2. The special keys for the text editor of the configurable tickets

CTR / E = deletes completely the line pointed by the cursor.
CTR / D = deletes the character pointed by the cursor.
CTR / I = inserts a space where the cursor is pointed.
CTR / A = moves the cursor forward by one character.
BACK SPACE = moves the cursor backward by one character.
↵ = passage to the next line.

### 5.3.3. The system labels

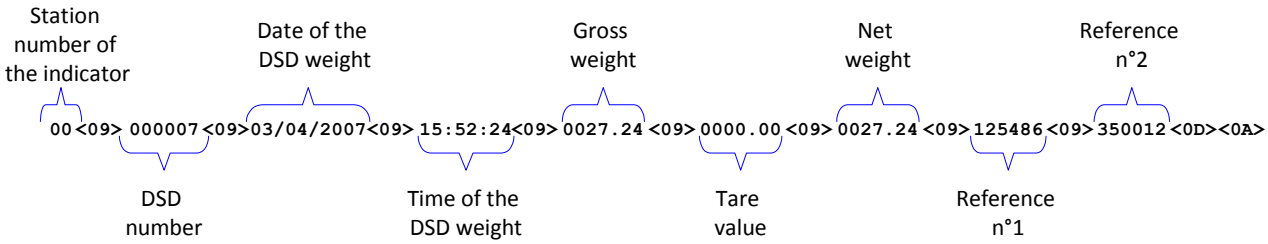
These labels allow printing the data saved in the memory of the system.
**RS1** : 1st line of the company name. (20 characters)
**RS2** : 2nd line of the company name. (39 characters)
**RS3** : 3rd line of the company name. (39 characters)
**RS4** : 4th line of the company name. (39 characters)
**FT1** : 1st line of the end of ticket. (39 characters)
**FT2** : 2nd line of the end of ticket. (39 characters)
**DNP** : Ticket number data. (6 digits)
**NDS** : DSD number data. (6 digits)
**DDA** : Date data. (Actual date on 8 characters in the chosen format during the configuration)
**DDD** : Day data. (Actual day on 2 characters)
**DDM** : Month data. (Actual month on 2 characters)
**DDY** : Year data. (Actual year on 2 characters)
**DHE** : Time data. (Actual time on 5 characters)
**DP1** : Gross weight data. (5 digits + weight unit and decimal point)
**DP2** : Tare weight data. (5 digits + weight unit and decimal point)
**DP3** : Net weight data. (5 digits + weight unit and decimal point)
**DR1** : Reference n°1 data. (6 digits)
**DR2** : Reference n°2 data. (6 digits)
**DC1** : Gross weight total data. (10 digits + weight unit and decimal point)
**DC2** : Tare weight total data. (10 digits + weight unit and decimal point)
**DC3** : Net weight total data. (10 digits + weight unit and decimal point)
**DC4** : Number of weights total data. (5 digits)
**DMO** : Net weight mean value data. (8 digits + weight unit and decimal point with 3 digits after the decimal point)
**DET** : Net weight standard deviation data. (8 digits + weight unit and decimal point with 3 digits after the decimal point)
**EP1** : Gross weight name. (6 characters)
**EP2** : Tare weight name. (6 characters)
**EP3** : Net weight name. (6 characters)
**ER1** : Reference n°1 name. (16 characters)
**ER2** : Reference n°2 name. (16 characters)
**ENP** : Ticket number label. (16 characters)
**EDS** : DSD number label. (16 characters)
**T39** : Sequence of 39 dashes. (Minus sign: "----------")

# 6. APPENDICES

## 6.1. The stream computer protocol

This functionality is activated if the driver type of **COM1** or **COM2** is "**06**", see "*5.1.4. Parameters of the COM1 serial link*" and "*5.1.5. Parameters of the COM2 serial link*".

For each weigh the following frame will be sent:

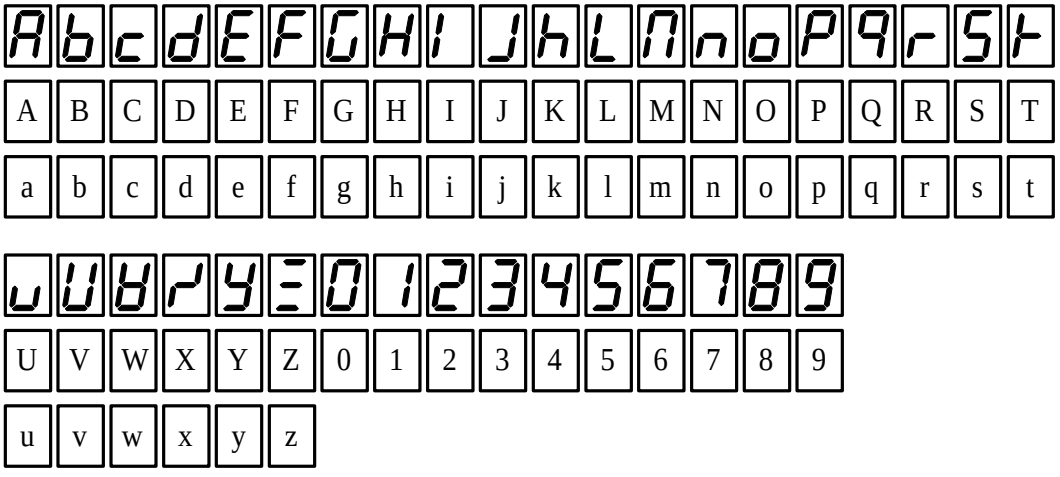



*Legend:*

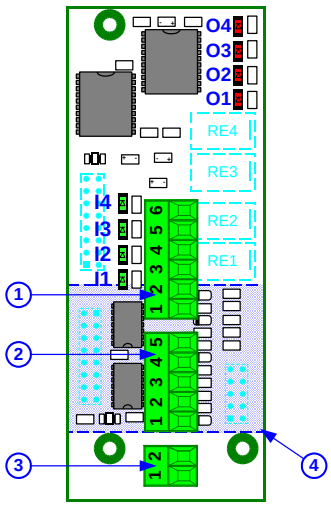
- The different fields are coded in ASCII.
- <09> ⇒ Field separator. (09 H, 09 d)
- <0D><0A> ⇒ CR/LF. (0D H, 13 d / 0A H, 10 d)

Once the frame is transmitted, the indicator will wait for the command acknowledge (<06> ⇒ ACK) from the target system.
The frame will be repeated automatically every 3 seconds until the target system acknowledges it, the other frames to be transmitted will be pending with a limit of 250 frames maximum.
Whenever you reach 250 frames pending, all new frames will be lost.

## 6.2. Pseudo-alphanumerical display of the indicator



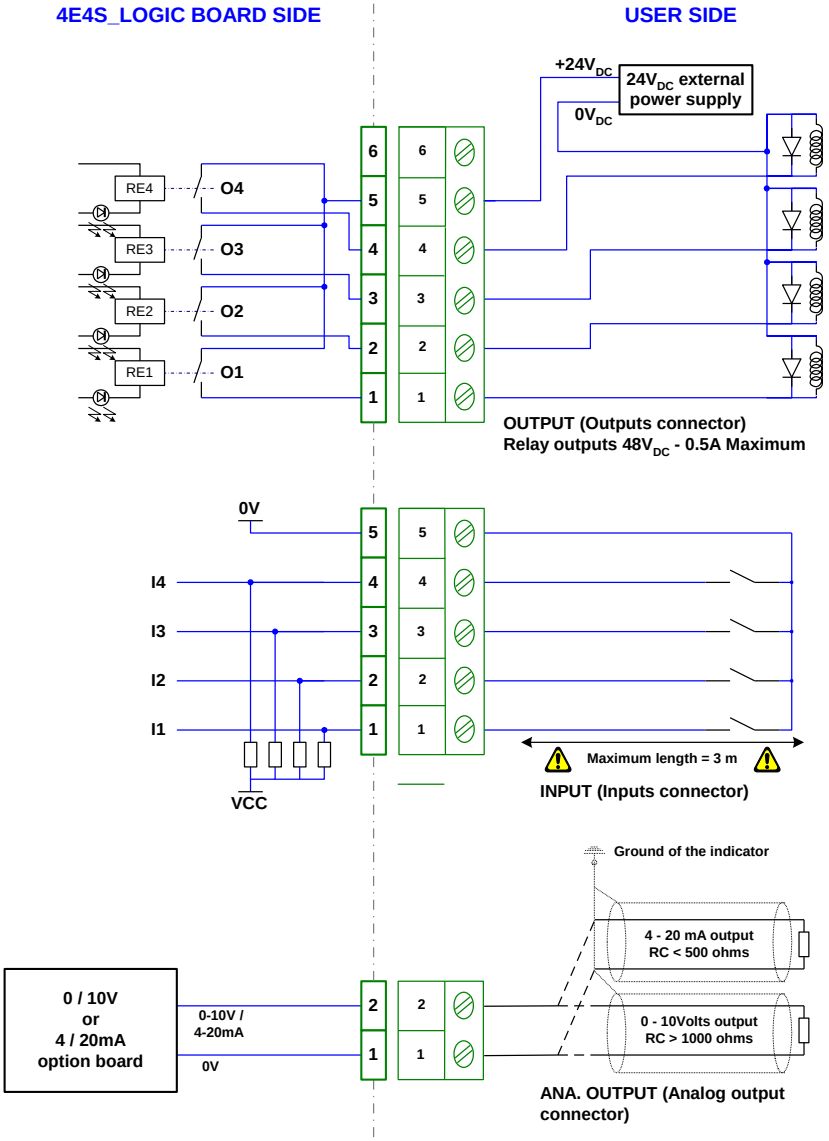
## 6.3. Layout of the 4E4S_LOGIC board



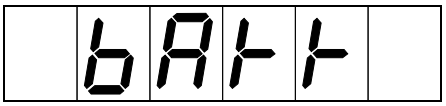

Legend:

1. **OUTPUT**, connector of outputs **O1**, **O2**, **O3** and **O4**.
2. **INPUT**, connector of inputs **I1**, **I2**, **I3** and **I4**.
3. **ANA. OUTPUT**, connector of the 0-10V or 4-20mA analog output option.
4. Analog output option board should be installed on the other side. (Side of the relays RE1 to RE4)

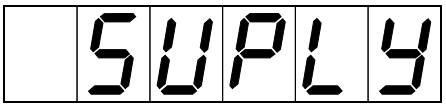
## 6.4. Cabling of the 4E4S_LOGIC option board with a 0-10V or 4-20mA option



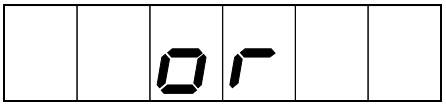
## 6.5. Error messages



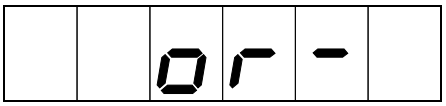
: Battery default.



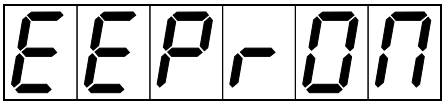
: Power supply default. (Voltage too low)



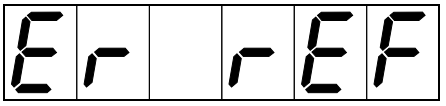
: Off range overflow. (Capacity of the A to D converter exceeded)



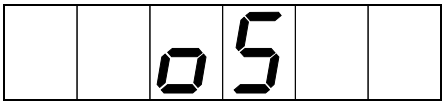
: Off range underflow. (Capacity of the A to D converter exceeded)



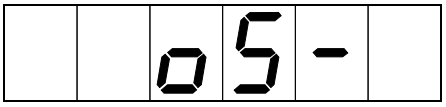
: CRC error on the EEPROM memory.



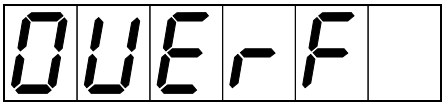
: Error on the M1 input. (Improper load cell connection or load cell broken).



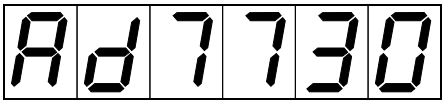
: Off scale overflow, maximum range exceeded. (+9 scale divisions)



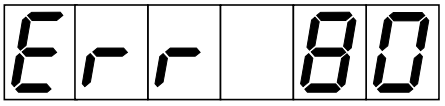
: Off scale underflow, weight below zero. (-9 scale divisions)



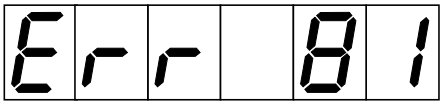
: Calculation capacity exceeded.



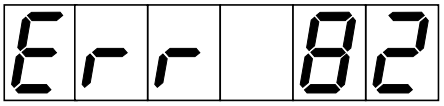
: The A to D converter is not operating properly.



: The dosing set value is set to 0.

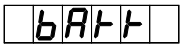


: The dosing set value is higher than the high threshold.



: The dosing set value is lower than the feed error.

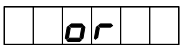
## 6.6. Breakdown

- The indicator displays the following message: 

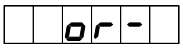

Verify the voltage of the indicator's battery, it must be greater than 2.9$V_{DC}$, otherwise it must be replaced.

- The indicator displays the following message: 

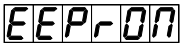
Verify the power supply voltage of the indicator, it must be in between $12V_{DC}$ and $24V_{DC}$.

- The indicator displays the following message: 

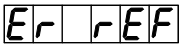
The signal delivered by the load cell is too high so that it can be measured by the indicator. (Overload, cabling, indicator not calibrated properly …)

- The indicator displays the following message: 

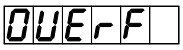
The signal delivered by the load cell is too low so that it can be measured by the indicator. (Under load, cabling, indicator not calibrated properly …)

- The indicator displays the following message: 

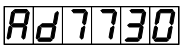
Restart the indicator and re-calibrate it again.

- The indicator displays the following message: 

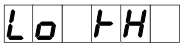
The analog load cell is not connected properly, verify that the excitation feedback (R+/R-) are connected properly.

- The indicator displays the following message: 

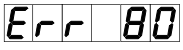
Restart the indicator and re-calibrate it again.

- The indicator displays the following message: 

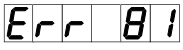
Verify the load cells cabling (**M1**) as well as the indicator parameters.

- The indicator displays the following message: 

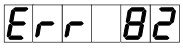
The weight is lower than the low threshold, you need to load the scale.

- The indicator displays the following message: 

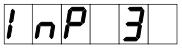
The dosing set value is set to 0, restart a dosing cycle with a correct set value.

- The indicator displays the following message: 

The weight is higher than the high threshold, restart a dosing cycle with a correct set value.

- The indicator displays the following message: 

The dosing set value is lower than the feed error value, restart a dosing cycle with a correct set value.

- The indicator displays the following message: 

The indicator is waiting for the dosing authorization. (Input **I3**)

- The indicator displays the following message: 

The indicator is waiting for the emptying / filling authorization. (Input **I4**)

***Si vos problèmes persistent, contactez votre revendeur le plus proche ou le SAV de la société ARPEGE MASTER-K.***

## 6.7. Summary of the parameters menu