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CONFIGURATION AND UTILIZATION IDe 200 MULTI-PRODUCTS DOSING 8E/24S OR 16E/24S

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CONFIGURATION AND UTILIZATION IDe 200 MULTI-PRODUCTS DOSING 8E/24S OR 16E/24S

Date	Revision number	Object of the modification
11.04.02	00	Original without the Jbus/Modbus part
17.10.02	01	Addition of the power up and modification of the option boards drawings
16.05.03	02	Addition of the cabling of the relay rack option, and displacement of the commands 1.3.4 in 5.4
16/06/03	03	Suppression of the pins equivalence 8E/24S + addition of the outputs drawings of the 16E /24S (p30),
30/10/2003	04	Correction S20 to S24 chart of the board 8E / 24S + Addition of the affectation (page 31) + commentary 4.1.11 N° station (Page 19)

SUMMARY

1. PRESENTATION

1.1. Generalities.

The IDe 200 weight indicator with its "Multi-Products dosing" software, was studied to command the weighing/dosing of a scale executing mixture typesetting from a 64 formulas, 15 products file.

With its inputs and outputs, it is capable to manage a complete dosing cycle without the need of any external automatism.

The computer link allows the control of the whole process through an external data processing system.

1.2. Features.

1.2.1. Technical characteristics.

Maximum number of scale divisions (in legal for trade mode) : 6000.
Minimum input scale division : 0.75 µv
Power supply voltage of the weighing cell : 7,5V square wave.
Number measurements / second, (fast) : 60, (180)
Load impedance (analogue load cells) : > 45 ohms

Zero displayed at 1/4 scale division
Interactive digital setting on front panel.

Mains voltage 230 V / 50 Hz or 60 Hz + earth < 5 ohms
DC power supply 12 V (or 24 V option).
Power consumption: max 15 to 25 VA, depending on the configuration.

Internal clock and memory backed up by battery.

6-digit weight display by 14 mm LED.
Operator guide via 8 alphanumeric characters of 5 mm.

1.2.2. The Peripherals

In multi-product dosing version the IDe indicator has the following peripherals:

* An 8E / 24S board or a 16E / 24S board.

Definition of inputs/outputs:

E1: Start cycle - resume cycle.
E2: Cancel cycle.
E3: Suspend cycle.
E4: Off tolerance acknowledgment.
E5: Manual dosing acknowledgment.
E6: Dosing authorization.
E7: Emptying authorization.
E8: Pump pulse input.
E9:
E10:
E11:
E12:
E13:
E14:
E15:
E16:

Formula number coding in binary*

*** If 16E/24S board.**

S1: Product silo 1 / 16.
S2: Product silo 2 / 17.
S3: Product silo 3 / 18.
S4: Product silo 4 / 19.
S5: Product silo 5 / 20.
S6: Product silo 6 / 21.
S7: Product silo 7 / 22.
S8: Product silo 8 / 23.
S9: Product silo 9 / 24.
S10: Product silo 10 / 25.
S11: Product silo 11 / 26.
S12: Product silo 12 / 27.
S13: Product silo 13 / 28.
S14: Product silo 14 / 29.
S15: Product silo 15 or decoding 28.
S16: 1/ End of dosing or 2/Dose ready.
S17: Rate default.
S18: Off tolerance default.
S19: 1/ Scale default or 2/ Agitation.
S20: Scale low threshold.
S21: Scale high threshold.
S22: Emptying.
S23: HS (High Speed)
S24: LS (Low Speed)

* 2 Serial links :

COM1: RS232 (or on option active / passive current loop).
COM2: Passive current loop (or on option RS232 / RS485).

* A parallel interface:

LPT: Printer.

* An input for analog load cells:

M1: analog load cell (s)

Reminder: Only one cable must be connected to M1. Load cells are wired up in parallel separately in a junction box.

* A CAN interface (option):

MASTER CAN: Digital load cell(s).

1.2.3. The options.

* 2 types of printers are available:

- ILA 80 : MASTER-K 80-column listing printer.
- IBA 40 : MASTER-K 40-column band printer.

* 3 types of weight repeaters can be connected:

- RP 15 : 15 mm weight repeater
- RP 50 : 50 mm weight repeater
- OP 80 : Display of 2 lines of 40 characters.

1.3. Software description.

1.3.1. The main files.

You have three main files :

- 1 product file, of 100 products.
- 1 formula file, of 64 formulas.
- 1 pump file, of 8 pumps. (Pulse/kg)

1.3.2. The dosing results.

The dosing results which could be printed are:

- 1 ticket at each mixture.
- Daily and monthly totals by produced formula.
- Daily and monthly totals by consumed product.
- State of the products stocks.

1.3.3. Key codes.

Some submenus or functions are protected by a key code. It is a 4-digit code that the operator must enter to access the required function. There are 2 key codes, which correspond to different degrees of protection.

- Key code number 1 : 7806
- Key code number 2 : 2110

Key code number 1 provides protection for:

- Access to functions
- File modifications
- Partial erasing in a file

key code number 2 provides protection for:

- Complete erasing of a file
- Complete erasing of the results

1.4. The power sequencing of the IDE indicator with a parallel printer.

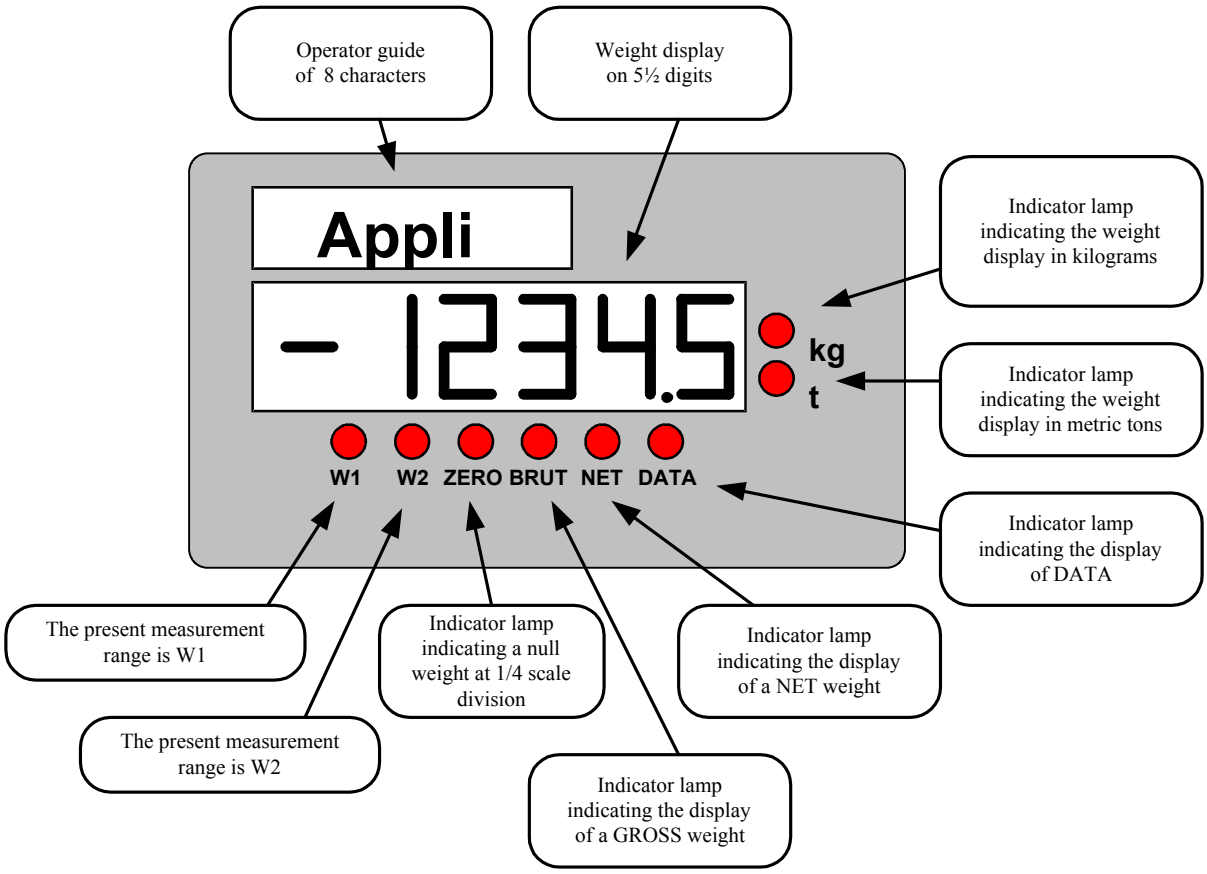
To put the IDE indicator under power, you must respect the following steps :

- **Verify that the printer is turned off.**
- **Put the IDE indicator under power.**
- **Then put the printer under power.**

If this power sequencing process is not respected, it is possible that the IDE indicator does not start properly, or does not start at all. (Blockage on step "AFF 1.2")

2. THE FRONT PANEL

2.1. Display and leds.



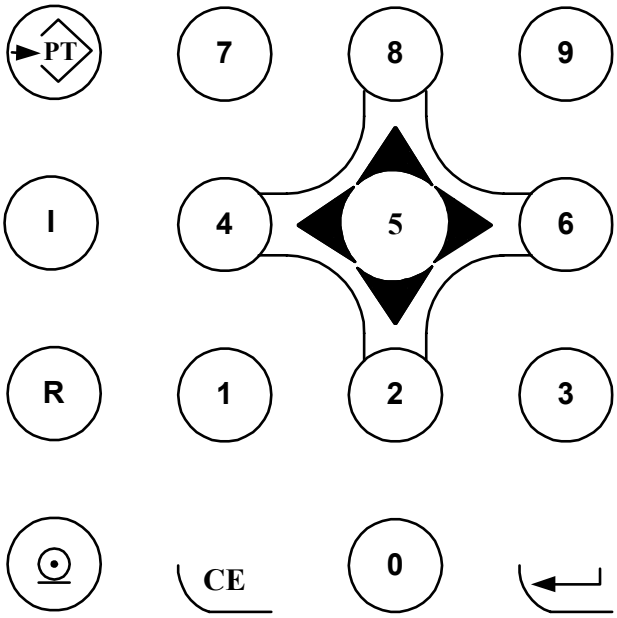
Remark:

The indicator Led **kg** or **t** also indicates whether the weight is stable:

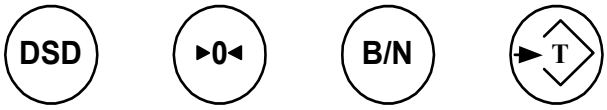
Led flashing — weight unstable.
Led steady — weight stable.

2.2. The IDe 200 keypad.

Application keys:



Metrological keys:



Keys 0 to 9: Numeric keys to enter weight, codes, the number of cycles, etc.

Keys 2 and 8: These numeric keys form a pseudo-mouse to move through the various menus:
2 = ↓
8 = ↑

CE Key "Correction" key to delete a numeric data item displayed.
Pause a dosing cycle.

R Key "Result" key followed by a numeric key to print the results. It also allows quitting some menus and canceling a dosing cycle in progress. So that this function to be active, the "CE" command (Pause cycle) must be done already.

I Key "Information" key followed by a numeric key to access to the various configuration menus.

Key Start cycle command.
Resume cycle command.

Key	Validation of a data entered or displayed on the IDE. Default Acknowledgement or off tolerance default. Resume present cycle after a power failure.
Key	Allows the modification of the set values of a formula.
Key	Used to tare the indicator with the present gross weight.
Key	Used to toggle the display for a few seconds from gross to net weight, and vice-versa.
Key	Used to reset the weight.
Key	Not used.

3. FUNCTIONS INFORMATIONS

3.1. Diary transmission of the doses on a computer : -I0-

This function allows recuperating completely or partially the weights diary in a text file (.TXT).
For this you must :

- connect the PC (on Com1) with the IDe (on Com1).
- run the program Hyperterminal. (path of Hyperterm.exe: **"C:\Program Files\Accessories\HyperTerminal\HYPERTRM.EXE"**).
- name the connection and validate (TERMINAL.IDE).
- then in the header "Connect using" choose "Send to Com1".
- configure the connection as follows: 9600 Bauds, no parity, one stop bit, no flow control.
- On the IDE, press on the key "**I**", then on the key "**0**", the operator guide displays : " KEY ". Enter the key code n°1 (7806) on the IDE keypad, the operator guide displays: " PC COM1 "
- on hyperterminal, the following information will be visualized on the screen :

"PRESS [ENTER] ON THE PC"

Validate with the ↵ key on the PC and the following information will be visualized on the PC screen :

" START DATE (DDMMYY) : XXXXXX "

Give the date from which you want to recuperate the weights diary (example: 231001 for the 23rd of October 2001), and validate with the enter key (↵) of the PC.

" END DATE (DDMMYY) : XXXXXX "

Give the date to which you want to recuperate the weights diary (example: 231101 for the 23rd of November 2001), and validate with the enter key (↵) of the PC.

The following information will be visualized on the PC screen :

" Put HyperTerminal in TEXT CAPTURE mode then START
Press on the ENTER key to start the transfer
At the end of the transfer put HyperTerminal in CAPTURE mode then STOP
Press on the ENTER key to return to the main MENU "

For this, always under HyperTerminal, you must go to "Transfer" then in "Text Capture", define the file name of the weights diary record and validate "Start".

Start the transfer by pressing on the key (↵) of the PC. The required weights diary will be shown on the screen.

Once the transfer is finished, you must close the capture. For this you must go in "Transfer" then "Text Capture" and "Stop".

The IDe returns to the weighing/dosing mode.

Remark:

- The file .TXT is directly exploitable under EXCEL.

3.2. Modification of the product file : -I1-

Press on the key "**I**", then on the key "**1**", the operator guide displays " KEY ", enter the key code n°1 (7806). Then the operator guide displays " PRODUCT CODE ", enter the product code (from 00 to 99) to be modified or created and validate.

Then the operator guide displays " No SILO ", enter the desired silo number (from 00 to 99), and validate.

Then the operator guide displays " RATE (kg/min) ", Enter the required rate in kilograms per minute (on 6 digits), and validate.

The IDe returns to the weighing/dosing mode.

3.3. Modification of the Formula file : -I2-

Press on the key "**I**", then on the key "**2**", the operator guide displays " KEY ", enter the key code n°1 (7806). Then the operator guide displays " FORMULA CODE ", enter the formula code (from 00 to 99) to be modified or created and validate. (**ATTENTION** this file is limited to 64 formulas of 15 products each maximum)

Then the operator guide displays " 01 PRODUCT ", enter the required product number (from 00 to 99) , and validate.

Then the operator guide displays " 01 SET VALUE ", enter the set value to be dosed for the first product in kilogram (on 8 digits), and validate.

Then the operator guide displays " 01 LS ", enter the set value to be dosed in low speed in kilogram (on 7 digits), and validate.

Then the operator guide displays " 01 FE ", enter the desired value of feed error in kilogram (on 6 digits), and validate.

Then the operator guide displays " 01 TOLERANCE ", enter the desired value of the tolerance in percentage (on 3 digits), and validate.

Then the operator guide displays " 01 COMMAND ", enter the desired command number (on 3 digits), and validate. (See "5.4. Command codes")

Then the operator guide displays " 01 SCALE No ", enter the number of the scale (from 0 to 9), and validate.

Then the operator guide displays " 02 PRODUCT ", enter the information for the second product of the formula as written above.

After entering the number of the scale for the 15th product, the IDe returns to the weighing/dosing mode.

If the number of products of the formula is less than 15, you can quit this menu by pressing on the key "R". The IDe returns to the weighing/dosing mode.

3.4. Modification of the Pump file : -I3-

Press on the key "**I**", then on the key "**3**", the operator guide displays " KEY ", enter the key code n°1 (7806). Then the operator guide displays " PRODUCT CODE ", enter the desired product code (from 00 to 99) and validate.

Then the operator guide displays " PULSE (g) ", Enter the pulse value in en gram (on 6 digits), and validate.

The IDe returns to the weighing/dosing mode.

3.5. Modification of the quantity during the dosing : -CE + I4-

During the dosing, press on the key "**CE**" to suspend the cycle, then press on the key "**I**", then on the key "**4**", the operator guide displays " BATCH NUMBER", enter the desired batch number (on 6 digits), and validate.

The IDe returns to the dosing suspension.

3.6. Modification of a batch number during the dosing : -CE + I5-

You have many cases possible :

The dosing mode parameter is set to '**0**': the function has no effect.

The dosing mode parameter is set to '**1**' or to '**3**':

During the dosing, press on the key "**CE**" to suspend the cycle, then press on the key "**I**", then on the key "**5**", the operator guide displays " KEY ", enter the key code n°1 (7806). The operator guide displays " No OF CYCLES TO DO ?", enter the remaining number of cycles to be done (on 4 digits), and validate.

The IDe returns to the dosing suspension.

The dosing mode parameter is set to '**2**':

During the dosing, press on the key "**CE**" to suspend the cycle, then press on the key "**I**", then on the key "**5**", the operator guide displays " KEY ", enter the key code n°1 (7806). The operator guide displays " WEIGHT TO PRODUCE? XXXXX,XXXkg ", enter the remaining weight to be produced (on 8 digits), and validate.

The IDe returns to the dosing suspension.

3.7. Modification of the silo number during the dosing : -CE + I6-

During the dosing, press on the key "**CE**" to suspend the cycle, then press on the key "**I**", then on the key "**6**", the operator guide displays " No SILO", enter the desired silo number (on 2 digits), and validate.

The IDe returns to the dosing suspension.

3.8. Increase of a stock of a product : -I7-

Press on the key "**I**", then on the key "**7**", the operator guide displays " KEY ", enter the key code n°1 (7806). Then the operator guide displays " PRODUCT CODE ", enter the desired product code (from 00 to 99) and validate.

Then the operator guide displays " + CODE XX (yZZZZZZZ,ZZZkg) " :

- XX : corresponds to the product code.
- y : corresponds to the sign of the product stock.
- ZZZZZZZ,ZZZ : corresponds to the value of the product stock.

Enter the value to be added to the stock in kilogram (on 6 digits), and validate.

The IDe returns to the weighing/dosing menu.

3.8. Decrease of a stock of a product : -I8-

Press on the key "**I**", then on the key "**8**", the operator guide displays " KEY ", enter the key code n°1 (7806). Then the operator guide displays " PRODUCT CODE ", enter the desired product code (from 00 to 99) and validate.

Then the operator guide displays " - CODE XX (yZZZZZZZ,ZZZkg) " :

- XX : corresponds to the product code.
- y : corresponds to the sign of the product stock.
- ZZZZZZZ,ZZZ : corresponds to the value of the product stock.

Enter the value to be removed from the stock in kilogram (on 6 digits), and validate.

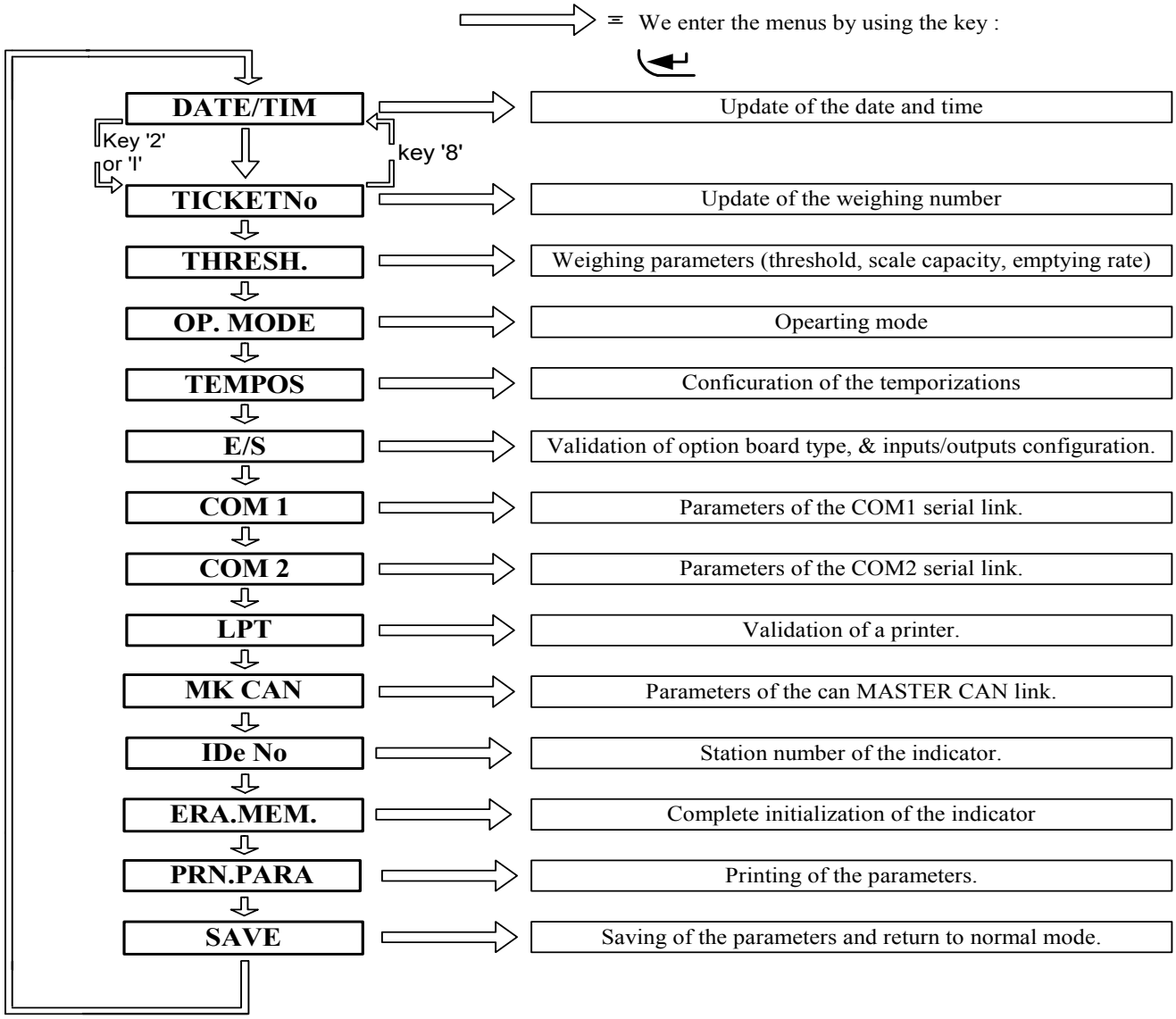
The IDe returns to the weighing/dosing menu.

3.9. Passage to the parameters mode : -I9-

Press on the key "**I**", then on the key "**9**", the operator guide displays " KEY ", enter the key code n°1 (7806). The main display displays "PArAME". (See 4. PARAMETERS MENU)

4. PARAMETERS MENU

4.1. Configuration through the keypad of the indicator.



4.1.1. Update of the date and time.

DATE (DDMMYY)	: 240401	for the 24/04/2001.	Enter the new date and validate.
TIME (HHMM)	: 1512	for 15h12mn00s.	Enter the new time and validate.

4.1.2. Update of the ticket number.

TICKET No	: XXXXXX	Ticket number on 6 digits. Enter the new ticket number and validate.

4.1.3. Weighing parameters (Thresholds, scale capacity, emptying rate).

LOW THRES. VALUE	: XXXXX,XXXkg	Low threshold value, in kg, on 8 digits.
HIGH THRES. VALUE	: XXXXX,XXXkg	High threshold value, in kg, on 8 digits.
SCALE CAPACITY	: XXXXX,XXXkg	Maximum weight accepted by the scale, in kg, on 8 digits.
EMPTYING RATE	: XXX,XXXkg	Emptying rate value, in kg, on 6 digits.

4.1.4. Operating mode.

DOSING MODE (0 / 1 / 2 / 3) : X Enter the required dosing mode number.

0 = "bit by bit" operation (only one cycle is launched) with a printing of the dosing results before the final emptying.
1 = "number of cycles" operation (1 to 9999 cycles) with a printing of the accumulated results at the end of n cycles.
2 = Operation with a "weight to produce", the system calculates automatically the number of cycles to be done.
3 = Same as mode 1, but with a printing of the results after each emptying.

TYPE OF RESULTS (0 / 1 / 2 / 3) : X Enter the required number of the type of results.

0 = Nothing.
1 = Automatic printing of the doses after the dosing.
2 = FDE. (Stream printer).
3 = automatic printing of the doses after the dosing + FDE.

POWER FAILURE (0 / 1 / 2) : X Indicate to the system what it has to do in case of a power failure.

0 = The system does not memorize the state of the cycle before the power failure and the indicator restarts normally.
1 = The system memorizes the state of the cycle before the power failure, and after restarting, waits the validation of an operator. (Key ↵) to resume the cycle in progress.
2= The system memorizes the state of the cycle before the power failure, and after restarting, waits for 5 seconds before resuming the cycle in progress.

F.E. CORRECTION (0 to 2) : X Corrects automatically the feed error.

0 = The function is disabled.
1 = The function is executed only if the dose is within the tolerances.
2= The function is executed in all the cases.

KEY CODE ON PT KEY (0/1) : X Protects the function "modification of the set values of a formula" ("**PT**" key)

0 = The function is not protected by the key code n°1.
1 = The function is protected by the key code n°1. (7806)

4.1.5. Function of the dosing temporizations configuration.

EMPTY TEMPO (0 to 99): XXs Hold time of the emptying output, when the weight of the hopper becomes less than the low threshold. (Final flow of the product)

PRODUCT TEMPO (0 to 99): XXs Time to delay the memorization of the weight at the end of a product dosing.

4.1.6. Function of the inputs/outputs parameters.

OPTION BOARD TYPE (0 to 2) : X Enter the number of the option board installed in your IDE.

0 = No option board.
1 = 8E/24S board.
2 = 16E/24S board.

EMPTYING AUTHORIZATION (0 / 1) : X Validation of the test of the input E7. (0 = no, 1 = yes)

DOSING AUTHORIZATION (0 / 1) : X Validation of the test of the input E6. (0 = no, 1 = yes)

FORM CODE ON INPUTS(0 / 1) : X Validation of the inputs E9 to E16, if 16E/24S board. (0 = no, 1 = yes)

FCT. S16 0 = ED 1 = DR : X Validation of the operation of the output S16.

0 = S16 is enabled when the system idle (dosing and emptying are finish), "End of dosing".
1 = S16 is enabled when the system requires an emptying, "Dose Ready". (The output is disabled when the information "Dosing Authorization" appears)

FCT. S19 0 = DR 1 = AGIT. : X Validation of the operation of the output S19.

0 = S19 is enabled when the indicator is off range, scale default. (Overweight, un-tare)
1 = S19 commands a mixer located inside the hopper during a pre-programmed time.

LS DURING HS (0 = No / 1 = Yes) : X Validation of the low speed during the dosing in high speed.

0 = No.
1 = Yes.

4.1.7. Function of the parameters of the COM1 serial link.

COM1 TYPE (0/1/2/3/4) : X Enter the type of the serial link.

0 = RS232 without DTR test.
1 = RS232 with DTR test.
2 = RS485 2 wires.
3 = Current loop
4 = RS485 4 wires.

COM1 DRIVER (0/1 .... /9) : X Enter the type of the COM1 driver.

0 = Nothing.
1 = Weight remote display.
2 = JBUS / MODBUS Protocol.
3 = Reserved.
4 = Reserved.
5 = Reserved.
6 = OP80.
7 = IBA40 printer.
8 = ILA410 or ILA800 printer.
9 = Stream printer. (FDE)

COM1 SPEED (1/2/4/9/0) :X Enter the communication speed.

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

No BITS COM1 (7/8) : X Enter 7 = 7 bits and 8 = 8 bits.

PARITY COM1 (0/1/2) : X Enter 0 = no parity 1 = odd parity 2 = even parity.

No STOP COM1 (1/2) : X Enter 1 = 1 stop bit 2 = 2 stops bits.

Remark: Some combinations of number of bits and parity do not work properly. Choose, if possible, 8 bits, no parity, and 1 stop.

4.1.8. Function of the parameters of the COM2 serial link.

This function has the same parameters as COM1 but it is on the link COM2.

4.1.9. Function validation of an LPT printer.

LPT 7= 40c (40 characters) 8 = 80c (80 characters) 9 = FDE : X (stream printer)

7 = 40 columns printer (IBA40)
8 = 80 columns printer (ILA410).
9 = Stream printer.

PAPER LF No (00 to 99) : XX Paper length in number of line feed
For the 80 columns printers.

4.1.10. Function of the parameters of the can MASTER CAN link.

MK CAN DRIVER (0/1) : X Enter the serial link type.

0 = nothing.
1 = weight remote display. (RP50, RP15)

4.1.11. Function of the IDE station number.

IDe STATION No : XX Enter a number of 2 digits then validate.

This number is used as the scale number and it is used to identify the scale which is executing the dosing (see formula file " SCALE No : ? " the 2 numbers must be identical in case of a single scale installation.

This number is used also to the JBUS / MODBUS communication protocol.

4.1.12. Erasing of the memories function.

Erases all the memories of the indicator. (Key code n°2: 2110)

4.1.13. Printing parameters function.

Printing of the list of the parameters. (The printing is done if there is a printer declared on COM1, COM2 or LPT)

4.1.14. Saving of the parameters and return to main menu.

Saving of the parameters in the EEPROM memory.
This function may take a few seconds (**20 seconds**).
Then return to the main menu.

Attention ! If there is a power cut before or during the saving, the new parameters will be lost.

4.2. The Configuration on PC.

The front panel is unsuitable for use when configuration requires alphanumeric characters. A second configuration menu is therefore available, where we have the configuration with alphanumeric characters.

4.2.1. Passage into configuration mode.

Proceed as follows:

- connect the PC (on Com1) with the IDe (on Com1).
- run the program Hyperterminal. (path of Hyperterm.exe: **"C:\Program Files\Accessories\HyperTerminal\HYPERTRM.EXE"**)
- name the connection and validate (TERMINAL.IDE) .
- then in the header "Connect using" choose "Send to Com1".
- configure the connection as follows: 9600 Baud, 8 bits, no parity, one stop bit, no flow control.
- Press on the key "**I**", the key "**9**", the operator guide displays " KEY ", Enter the key code n°1 (7806). Then the main display displays "PArAME", and the message " PRESS [ENTER] ON THE PC " will be displayed on the PC screen. Validate with the ↵ key.
- the main configuration menu will be displayed:

0 : DIARY DOSES RECEPTION
1 : PRODUCT FILE MANAGEMENT
2 : FORMULA FILE MANAGEMENT
3 : PUMP FILE MANAGEMENT
4 : GENERAL PARAMETERS
5 : COMPANY NAME
6 : ERASE ALL THE MEMORY
7 : END AND SAVE PARAMETERS
Your choice ? :

The IDe displays "PC COM1", on the secondary screen, to indicate that the configuration will be carried out from the PC.

- to select one of the functions proposed, simply validate the corresponding digit.

4.2.2. DIARY DOSES RECEPTION.

This function allows recuperating partially or entirely the diary of the doses, in a text file (.TXT). Press on the key '0' the following information will be visualized on the screen :

" START DATE (DDMMYY) : XXXXXX "

Give the date from which you want to recuperate the diary of the doses (example: 231001 for the 23rd of October 2001), and validate with 'ENTER'.

" END DTAE (DDMMYY) : XXXXXX "

Give the date to which you want to recuperate the diary of the doses (example: 231101 for the 23rd of November 2001), and validate with 'ENTER'.

The following information will be visualized on the screen :

" Put HyperTerminal in TEXT CAPTURE mode then START
Press on the ENTER key to start the transfer
At the end of the transfer, put HyperTerminal in CAPTURE mode then STOP
Press on the ENTER key to return to the MENU "

For this, always under HyperTerminal, you must go to "Transfer" then "Text Capture", define the file name of the diary doses records and validate "Start".

Start the transfer by pressing on the 'ENTER' key. The diary of the required weights will be displayed on the screen.

Once the transfer is finished, you must close the capture. For this, go to "Transfer" then "Text Capture" and "Stop".

To return to the configuration menu, press on the 'ENTER' key.

Remark:
- The file .TXT is directly exploitable under EXCEL.
- To execute this function, you must configure the COM1 of the IDE with the suitable driver.

4.2.3. PRODUCT FILE MANAGEMENT.

Press on the key '1' and the following information will be displayed on the screen :

1 : PRINTING FILE PRODUCT
2 : MODIFICATION FILE PRODUCT
3 : VISU/ERASE A PRODUCT
4 : ERASE THE FILE PRODUCT
5 : TRANSMISSION → PC PRODUCT
6 : RECEPTION ← PC PRODUCT
7 : RETURN TO MAIN MENU
Your choice ? :

4.2.3.1. PRODUCT FILE PRINTING.

Press on the key '1', the printing will be launched and you will return to the main menu.
Remark : The printing will be done in the order of the product codes.

4.2.3.2. PRODUCT FILE MODIFICATION.

Press on the key '2', the following information will be displayed on the screen:
First line, give a code to the product (number from 00 to 99) :
" PRODUCT CODE ? : ...XX "
Validate with ↵.
Second line, give a name to the product (15 characters maximums) :
" PRODUCT NAME : ..XX..XX "
Validate with ↵.
Third line, Give the silo number (number from 00 to 99) :
" SILO No : XX "
Validate with ↵.
Fourth line, Give the dosing rate in kg/min (6 digits) :
" RATE (kg/min) :XXX,XXX "
Validate with ↵.
Fifth line, give the stock sign (1 character +/-) :
" STOCK SIGN :X "
Validate with ↵.
Sixth line, give the stock value (10 digits) :
" STOCK (kg) : XXXXXXX,XXX "
Validate with ↵, and return to the main menu.

4.2.3.3. VISU/ERASE A PRODUCT.

Press on the key '4', enter the product code (2 digits) to be visualized :
" PRODUCT CODE? : ...XX"
Validate with ↵, the required information will be displayed:

PRODUCT NAME : XXX...XXX
SILO No : XX
RATE (kg/min) : XXX,XXX
STOCK SIGN : X
STOCK (kg) : XXXXX,XXX

Validate with ↵ and answer the following question by 'y' (yes) or 'n' (no):
" ERASE THIS RECORD ? (Y/N) : X "
Return to the main menu.

4.2.3.4. ERASE THE PRODUCT FILE.

Press on the key '4' and enter the key code n°2 (2110), Validate with ↵.

4.2.3.5. TRANSMISSION → PC PRODUCT.

This function allows recuperating entirely the content of the product file in a text file (.TXT).
Press on the key '5', the following information will be visualized on the screen:

" Put HyperTerminal in TEXT CAPTURE mode then START
Press ENTER to start the transfer
At the end of the transfer, Put HyperTerminal in CAPTURE mode then STOP
Press ENTER to return to the MENU "

For this, always under HyperTerminal, you must go to "Transfer" then "Text Capture", define the file name of the diary doses records and validate "Start".

Start the transfer by pressing on the 'ENTER' key. The required product file will be displayed on the screen

Once the transfer is finished, you must close the capture. For this, go to "Transfer" then "Text Capture" and "Stop".

To return to the configuration menu, press on the 'ENTER' key.

Remark:
The .TXT file is directly exploitable under EXCEL.

4.2.3.6. RECEPTION ← PC PRODUCT.

This menu allows restoring a product file, previously saved on a PC in a text file (.TXT).
Press on the key '6' the following information will be visualized on the screen:

" - Put HyperTerminal in Flow control mode Xon/Xoff
then Transfer and SEND THE TEXT FILE "

- For this, always under HyperTerminal, you must go to "File", "Properties"
then click on "Configure" and choose " Xon/Xoff" in the flow control.
Click "OK", then click "OK" again.
- On the PC, go to "Transfer" then "Send the text file", choose the file record to be transferred and validate "Open", the PC transmits the information.
- Once the transmission is done, return to the menu.
- In the flow control, put again "nothing"

4.2.3.7. RETURN TO THE MAIN MENU.

Press on the key '7' to return to the main menu.

4.2.4. FOMULA FILE MANAGEMENT.

Press on the key '2' and the following information will be visualized on the screen :

1 : PRINTING FILE FORMULA
2 : MODIFICATION FILE FORMULA
3 : VISU/ERASE A FORMULA
4 : ERASE THE FILE FORMULA
5 : TRANSMISSION → PC FORMULA
6 : RECEPTION ← PC FORMULA
7 : RETURN TO MAIN MENU
Your choice ? :

4.2.4.1. FORMULA FILE MODIFICATION.

Press on the key '2', the following information will be visualized on the screen:
First line, give a code for the formula (number from 00 to 99) :
" FORMULA CODE : XX "
Validate with ↵.
Second line, give a name for the formula (15 characters maximum) :
" FORMULA NAME : XXX...XXX"
Validate with ↵.
Third line, give the code of the first product to be dosed (number from 00 to 99) :
" 01 PRODUCT CODE : XX"
Validate with ↵.
Fourth line, give the set value in kg/min (8 digits) :
" SET VALUE : XXXXX,XXXkg"
Validate with ↵.
Fifth line, give the set value to be dosed in low speed (7 digits) :
" LS : XXXX,XXXkg "
Validate with ↵.
Sixth line, Give the value of the feed error (6 digits) :
" FE : XXX,XXXkg "
Validate with ↵.
Seventh line, give the value of the tolerance in percentage (3 digits)
" TOLERANCE : XX,X% "
Validate with ↵.
Eighth, Give the number of the command (from 0 to 255, see "5.4. Command codes ")
" COMMAND : XXX "
Validate with ↵.
Ninth line, give the number of the scale (1 digit)(See 4.1.11)
" SCALE No : 1 "
Validate with ↵.
Tenth line, Give the code of the second product to be dosed (number from 00 to 99) :
" 02 PRODUCT CODE : XX "
Inter the necessary information for the second product of the formula as written above.

After entering the scale number for the 15th product, the following information will be visualized on the screen :
" FORMULA CODE : XX "
Enter the desired formula code and enter the information as written above.
To return to the menu, you must press on the "ESCAPE" key.

4.2.4.2. VISU/ERASE A FORMULA.

Press on the key '4', enter the formula code (2 digits) to be visualized :
" PRODUCT CODE ? : ...XX"
Validate with ↵, the desired information will be displayed. The 15 products will be displayed even if the formula contains fewer products; to visualize the formula you must use the scroll bar on the right.
Answer to the following question by 'y' (yes), or 'n' (no):
" ERASE THIS RECORD ? (Y/N) : X "
And return to the main menu.

For the other functions, refer to "4.2.4. FORMULA FILE MANAGEMENT."

4.2.5. PUMP FILE MANAGEMENT.

Press on the key '3' and the following information will be visualized on the screen:

1 : PRINTING FILE PUMP
2 : MODIFICATION FILE PUMP
3 : VISU/ERASE A PUMP
4 : ERASE THE FILE PUMP
5 : TRANSMISSION → PC PUMP
6 : RECEPTION ← PC PUMP
7 : RETURN TO MAN MENU
Your choice ? :

4.2.5.1. PUMP FILE MODIFICATION.

Press on the key '2', the following information will be visualized on the screen:
First line, enter a product code (number from 00 to 99) :
" PRODUCT CODE : XX "
Validate with ↵.
Second line, enter the value of a pulse in grams for the validated product (6 digits) :
" PULSE (g) : XXXX,XX"
Validate with ↵.
Third line, the following information will be visualized on the screen:
" PRODUCT CODE : XX "
Enter the required product code and enter the information as written above.
To return to the menu, you must press on the "ESCAPE" key.

4.2.5.2. VISU/ERASE A PUMP.

Press on the key '4', enter the product code (2 digits) to be visualized :
"PRODUCT : ...XX"
Validate with ↵, the required information will be displayed.
Answer the following question by 'y' (yes) or 'n' (no):
" ERASE THIS RECORD ? (Y/N) : X "
Return to the main menu.

For the other functions, refer to "4.2.4. FORMULA FILE MANAGEMENT."

4.2.6. GENERAL PARAMETERS.

Press on the key '4' and enter the required data. Refer to section " 4.1. Configuration through the keypad of the indicator ".

4.2.7. COMPANY NAME.

Press on the key '5', the following information will be visualized on the screen:
First line of the company name : 20 double width characters.
" 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
" >Observations: Signature "
Validate with ↵.
Second line of the end of ticket: 39 characters
" > "
Validate with ↵, and return to the main menu.

4.2.8. ERASE ALL THE MEMORY.

Refer to the section " 4.1.12. erase of the memories function ".

4.2.9. END AND SAVING OF THE PARAMETERS.

Press on the key '7', the following information will be visualized on the screen:
" PRINTING OF THE PARAMETERS ON LPT ? (Y, N): "
This function allows printing the list of the parameters, validate with Y = yes, or N = no.
(The printing is done if a printer is declared on COM1, COM2, or LPT)
Then you will have :
" SAVING OF THE PARAMETERS IN EEPROM (Y, N): "
This function allows saving the parameters in the EEPROM memory, validate with Y = yes, or N = no.
(This may take a few seconds ≈ 20 seconds)
And then you will leave the configuration on PC.

5. THE APPLICATION

5.1. Manual management.

5.1.1. Start a dosing cycle.

Press on the key ⊙. The display indicates the code of the formula to be dosed. Press on the key "CE" to erase the old code then enter the new formula code.
Validate with "↵".

Then you have three possibilities, according to the value of the dosing mode parameter: (Refer to "4.1.4. Operating mode")

- Dosing mode = 0 :

You will pass directly to the batch number.

- Dosing mode = 1 or 3 :

The old number of cycles is displayed. Press on the key "CE" to erase it, then enter the number 'n' of cycles desired.

Validate with "↵".

- Dosing mode = 2 :

The old weight to be produced is displayed. Press on the key "CE" to erase it, then enter the desired weight to be produced.

Validate with "↵".

The old batch number will be displayed. Press on the key "CE" to erase it, then enter the desired batch number.

Validate with "↵".

Confirm the start cycle. (0 = no, 1 = yes)

Validate with "↵".

Le dosing is launched.

Remarks :
* If the required number of cycles is equal to 9999, the cycles will be repeated indefinitely. (This number will not be decreased). The stoppage must be done with the cancellation command.
* If the weight indicator is out of range, the start cycle command will be cancelled automatically.
* The program will do an automatic tare and close the HS contact once the scale is stable.

5.1.2. Suspend, Cancel a cycle.

A cycle in progress could be interrupted at any moment by the "CE" key. All the output contacts will be disabled.

Press on the key ⊙ to resume the cycle, or on the key "R" o cancel cycle.

Remark :
* If there is a power cut during a suspended cycle, the cycle will be cancelled automatically.

5.1.3. Acknowledgment of an off tolerance.

At the end of each dosing, the system waits for the stability of the scale, then verifies if the net weight dosed is in between the programmed tolerances.

In the case of an off tolerance, the cycle is suspended automatically and the default contact will get closed. The operator can add or remove from the product then acknowledge the default with the help of the "↵" key. The weight will be memorized, the default contact will open and the cycle will resume.

5.2. Automatic management.

5.2.1. Start a dosing cycle.

A pulse on the input E1 'Start cycle' cause the starting of the cycle. The dosing is launched for the formula "x", for "n" cycles or 'n' kg to be produced (according to the configuration, refer to "4.1.4. Operating mode") and for the batch number "l". "x", "n" and "l" that has being entered before with the help of the ⊙ function.

The dosing is started.

Remarks :
* Identical management for the number of cycles as the manual operation.

5.2.2. Suspend, cancel a cycle.

A cycle in progress could be interrupted at any moment due to the input E3 'Suspend cycle'. All the output contacts will be disabled.

The input E1 'Start/Resume cycle' allows to resume the cycle.

A second pulse on the input E2 allows canceling the cycle.

Remark :
* If there is a power cut during a suspended cycle, the cycle will be cancelled automatically.

5.2.3. Acknowledgment of an off tolerance.

At the end of each cycle, the system waits for the stability of the scale then verifies that the net weight dosed is in between the programmed tolerances.

In the case of an off tolerance, the cycle is suspended automatically and the default contact will get closed.The operator can add or remove from the product then acknowledge the default with the help of the input E1 'Start/Resume cycle'. The weight will be memorized, the default contact will open and the cycle will resume.

5.3. The error codes.

The error codes are displayed on the operator guide during a few seconds or until the acknowledgment of the operator.

"Er01 Val" :	Required code unknown by the system (Formula code not existing in the file)
"Er02 Val" :	The dosing operating mode is incorrect.
"Er03 Val" :	Product code unknown by the system (Product code not existing in the file)
"Er04 Val" :	The scale number is incorrect.
"Er05 Val" :	Pump code unknown by the system (Pump code not existing in the file)
"Er06 Val" :	The feed error is greater than the set value.
"Er07 Val" :	The capacity of the hopper is exceeded.
"Er08 Val" :	Critical situation after a power cut . The system cannot resume the cycle in progress. (Press on the key "↵")

5.4. Command codes.

The command codes are used during the creation or the modification of a formula; there is a command code per product. It is a 3-digit number :

- 001 : Emptying after the dosing of this product.
- 002 : Agitation during the HS dosing of this product.
- 004 : Manual dosing of this product.

- 008 : Pump dosing of this product.
- 003 : Command 001 + 002.
- 005 : Command 001 + 004.
- 006 : Command 002 + 004.
- 007 : Command 001 + 002 + 004.
- 009 : Command 001 + 002 + 008.

- 1XX : Agitation after the dosing of this component during XX times 10s.
- 2XX : Command reserved for future use.

5.5. Information accessible in dosing mode.

During the dosing, many information on this dosing scrolls on the operator guide :

- During the dosing of a product :

" - - X X - - " : Dosing stage (HS, LS).
"XXXXXXXX " : Name of the product actually dosed.
"XXXXX,XXX" : Name of the product to be dosed.

- During the emptying :

" VIDANGE " : Dosing stage.
"XXXXXXXX" : Name of the formula.

Remark :
* If the formula has no name during the emptying, the operator guide will display " X X CODE ", the XX corresponds to the formula code.

5.6. Modification of the set values of a formula by the "PT" key.

Outside the dosing, press on the key "**PT**", the operator guide displays " KEY ", enter the key code n°1 (7806). Then the operator guide displays " FORMULA CODE ", enter the desired formula code (from 00 to 99) and validate.

Then the operator guide displays " SET VALUE CODE XX YYY...YYY" :

- XX = The product code. (2 digits)
- YYY...YYY = The product name. (15 characters)

Enter the value of the set value of the first product of the dosing (on 8 digits), and validate.

You must repeat this operation as many times as the number of products in the formula, then the IDe returns to the weighing/dosing mode.

6. RESULTS FUNCTION

6.1. Printing of the files.

6.1.1. Printing of the product file -R1-

Press on '**R**' then '**1**', the operator guide displays 'PRINT', and a printing is executed.

6.1.2. Printing of the formula file -R2-

Press on '**R**' then '**2**', the operator guide displays 'PRINT', and a printing is executed.

6.1.3. Printing of the pump file -R3-

Press on '**R**' then '**3**', the operator guide displays 'PRINT', and a printing is executed.

6.2. Daily totals.

6.2.1. Products totals -R4-

Press on '**R**' then '**4**', the operator guide displays 'PRINT', and the printing of the products totals is executed.

Then the operator guide displays 'RES ? (0=No 1=yes)', answer '0' to avoid erasing the daily totals or '1' to erase the daily totals.

6.2.2. Formulas totals -R5-

Press on '**R**' then '**5**', the operator guide displays 'PRINT', and the printing of the formulas totals is executed.

Then the operator guide displays 'RES ? (0=No 1=yes)', answer '0' to avoid erasing the daily totals or '1' to erase the daily totals.

6.3. Daily and monthly totals.

6.3.1. Products totals -R6-

Press on '**R**' then '**6**', the operator guide displays 'PRINT', and the printing of the products totals is executed.

Then the operator guide displays 'RES ? (0=No 1=yes)', answer '0' to avoid erasing the daily and monthly totals or '1' to erase the daily and monthly totals.

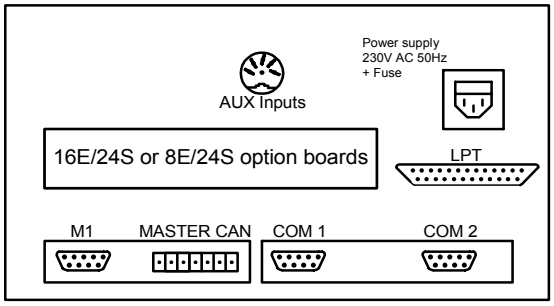
6.3.2. Formulas totals-R7-

Press on '**R**' then '**7**', the operator guide displays 'PRINT', and the printing of the formulas totals is executed.

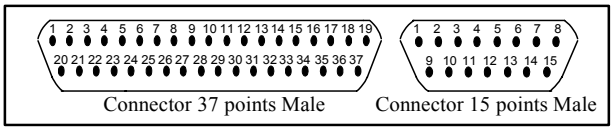
Then the operator guide displays 'RES ? (0=No 1=yes)', answer '0' to avoid erasing the daily and monthly totals or '1' to erase the daily and monthly totals.

7. APPENDICES

7.1. Connection of the 16E/24S option board



16E/24S Option :



Connector 37 points female

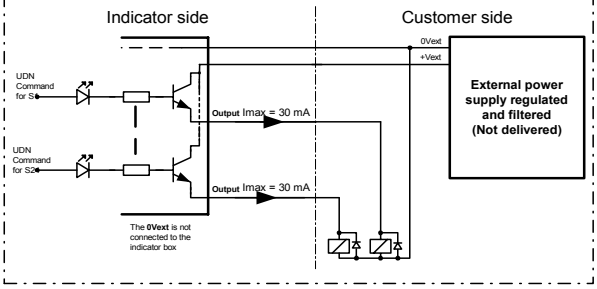
PINOUT 16E/24S	E / S	DEFINITION
3	S1	Product silo 1 / 16
22	S2	Product silo 2 / 17
4	S3	Product silo 3 / 18
23	S4	Product silo 4 / 19
5	S5	Product silo 5 / 20
24	S6	Product silo 6 / 21
6	S7	Product silo 7 / 22
25	S8	Product silo 8 / 23
7	S9	Product silo 9 / 24
26	S10	Product silo 10 / 25
8	S11	Product silo 11 / 26
27	S12	Product silo 12 / 27
9	S13	Product silo 13 / 28
28	S14	Product silo 14 / 29
10	S15	Product silo 15 or decoding 28
29	S16	1/ End of dosing 2/ Dose ready (*)
11	S17	Rate default
30	S18	Off tolerance default
12	S19	1/ Scale default 2/ Agitation (*)
31	S20	Scale low threshold
13	E1	Start cycle / Resume cycle
32	E2	Cancel
14	E3	Suspend
33	E4	Off tolerance acknowledgment
15	E5	Manual product acknowledgment
34	E6	Dosing authorization
16	E7	Emptying authorization
35	E8	Pump pulse input
18 - 19 - 37	INP	+V ext. power.
1 - 2 - 20	INP	0V ext. power.
17 - 21 - 36	-	Not connected

(*) : According to the configuration

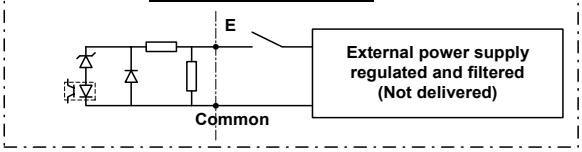
Connector 15 points female

PINOUT 16E/24S	E / S	DEFINITION
2	S21	Scale high threshold
15	S22	Emptying
3	S23	HS (High Speed)
14	S24	LS (Low Speed)
13		
4	E9	Formula code 1
12	E10	Formula code2
5	E11	Formula code 3
11	E12	Formula code 4
6	E13	Formula code 5
10	E14	Formula code 6
7	E15	Formula code 7
9	E16	Formula code 8
8	Out	+V ext. power. (Not used)
1	Out	0V ext. power. (Not used)

Outputs 30 mA Max under 24 V



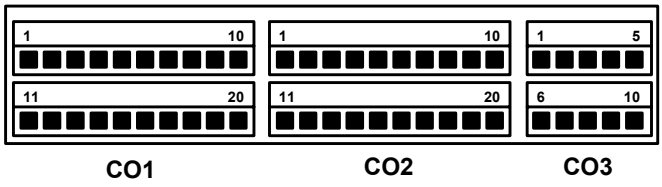
Inputs 10 mA under 24 V



7.2. Connection of the 8E/24S option board.

	Pins	E / S	DEFINITION	
24 Relays Outputs	CO1-11	C1	COMMON 1	CO1
	CO1-12	S1	Product silo 1 / 16	
	CO1-13	S2	Product silo 2 / 17	
	CO1-14	S3	Product silo 3 / 18	
	CO1-15	S4	Product silo 4 / 19	
	CO1-16	C2	COMMON 2	
	CO1-17	S5	Product silo 5 / 20	
	CO1-18	S6	Product silo 6 / 21	
	CO1-19	S7	Product silo 7 / 22	
	CO1-20	S8	Product silo 8 / 23	
	CO1-1	C3	COMMON 3	
	CO1-2	S9	Product silo 9 / 24	
	CO1-3	S10	Product silo 10 / 25	
	CO1-4	S11	Product silo 11 / 26	
	CO1-5	S12	Product silo 12 / 27	
	CO1-6	C4	COMMON 4	
	CO1-7	S13	Product silo 13 / 28	
	CO1-8	S14	Product silo 14 / 29	
	CO1-9	S15	Prod. silo 15 /decod.	
	CO1-10	S16	1/ F. Dos./2 D. ready	
	CO2-1	C5	COMMUN 5	CO2
	CO2-2	S17	Rate default	
	CO2-3	S18	Off tolerance default	
	CO2-4	S19	1/ Scale Def./ 2 Agit.	
	CO2-5	S20	Scale low threshold	
	CO2-6	C6	COMMON 6	
	CO2-7	S21	Scale hifh threshold	
	CO2-8	S22	Emptying	
	CO2-9	S23	HS (High Speed)	
	CO2-10	S24	LS (Low Speed)	
8 Isolated Inputs	CO2-11	C1	COMMON 1	CO2
	CO2-12	E1	Start cy. /Resume cy.	
	CO2-13	E2	Cancel	
	CO2-14	E3	Suspend	
	CO2-15	E4	Off tolerance ack.	
	CO2-16	C2	COMMON 2	
	CO2-17	E5	Manual product ack.	
	CO2-18	E6	Dosing authorization	
	CO2-19	E7	Emptying author.	
	CO2-20	E8	Pump pulse inputs	

8E/24S option :

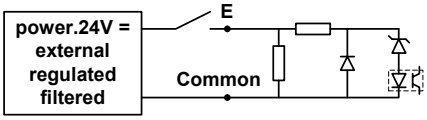


	Pin	E /S	Definition	
	CO3-1	+V	RESERVED USE	CO3
	CO3-2	+V	RESERVED USE	
	CO3-3	0V	RESERVED USE	
	CO3-4	-V	RESERVED USE	
	CO3-5	-V	RESERVED USE	
	CO3-6	+V	RESERVED USE	
	CO3-7	0V	RESERVED USE	
	CO3-8	1	Watch dog	
	CO3-9	2	Watch dog	
	CO3-10	-V	RESERVED USE	

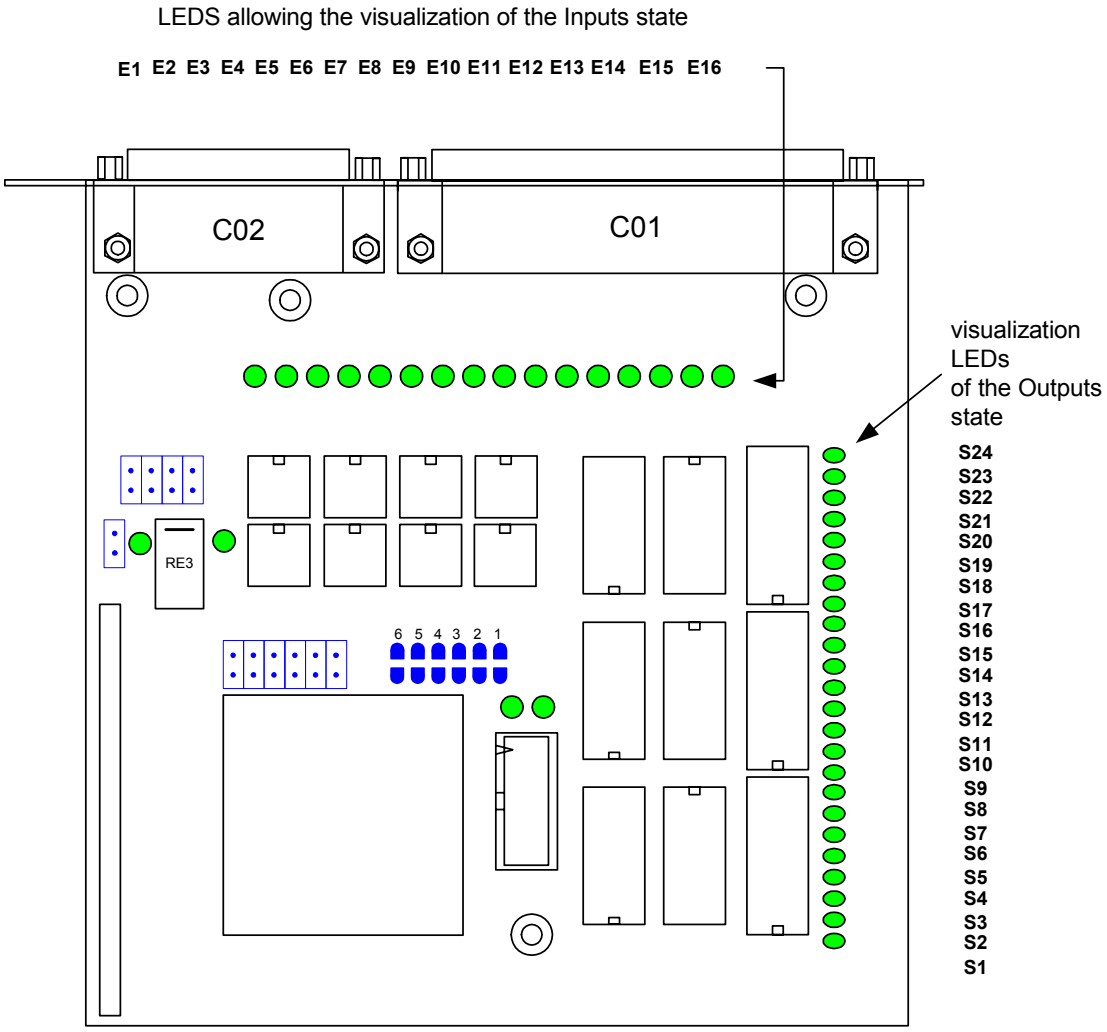
Rated power of the relays

	AC	DC
- Max. voltage :	48V	48V
- Max. current :	1A	0.5A

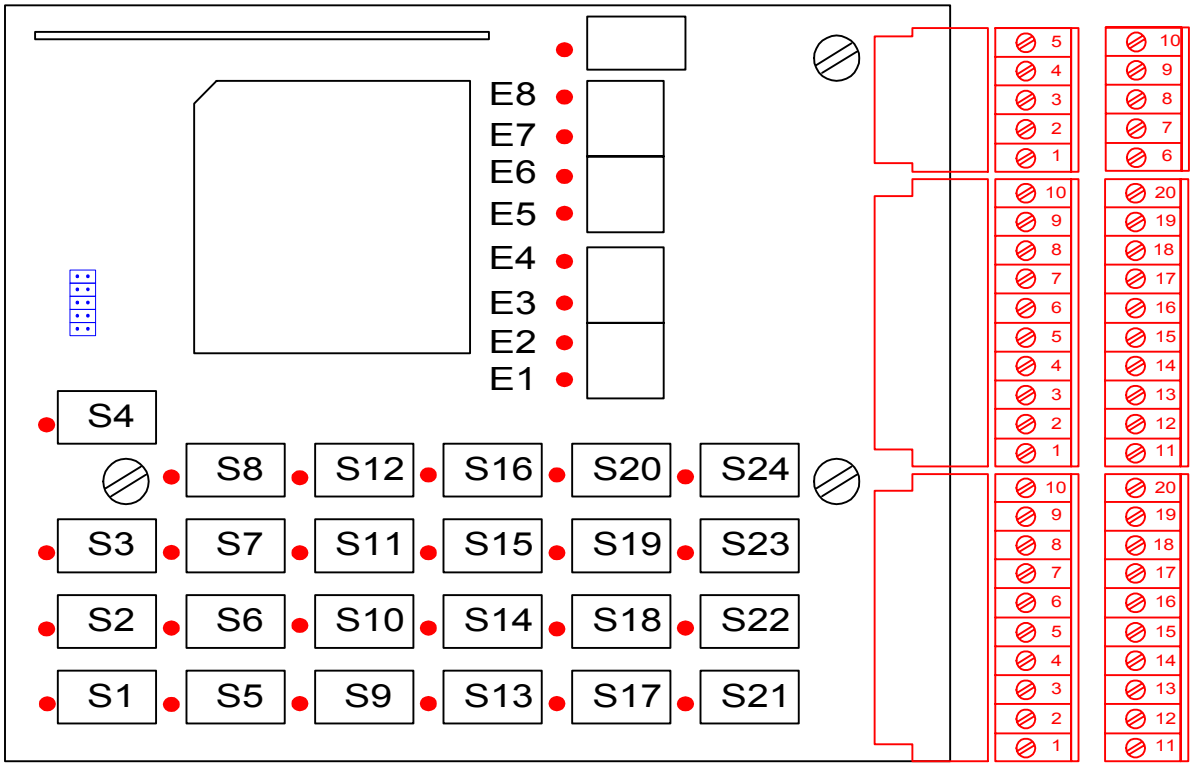
Inputs 10 mA under 24 V



7.3. Layout of the 16E/24S board.



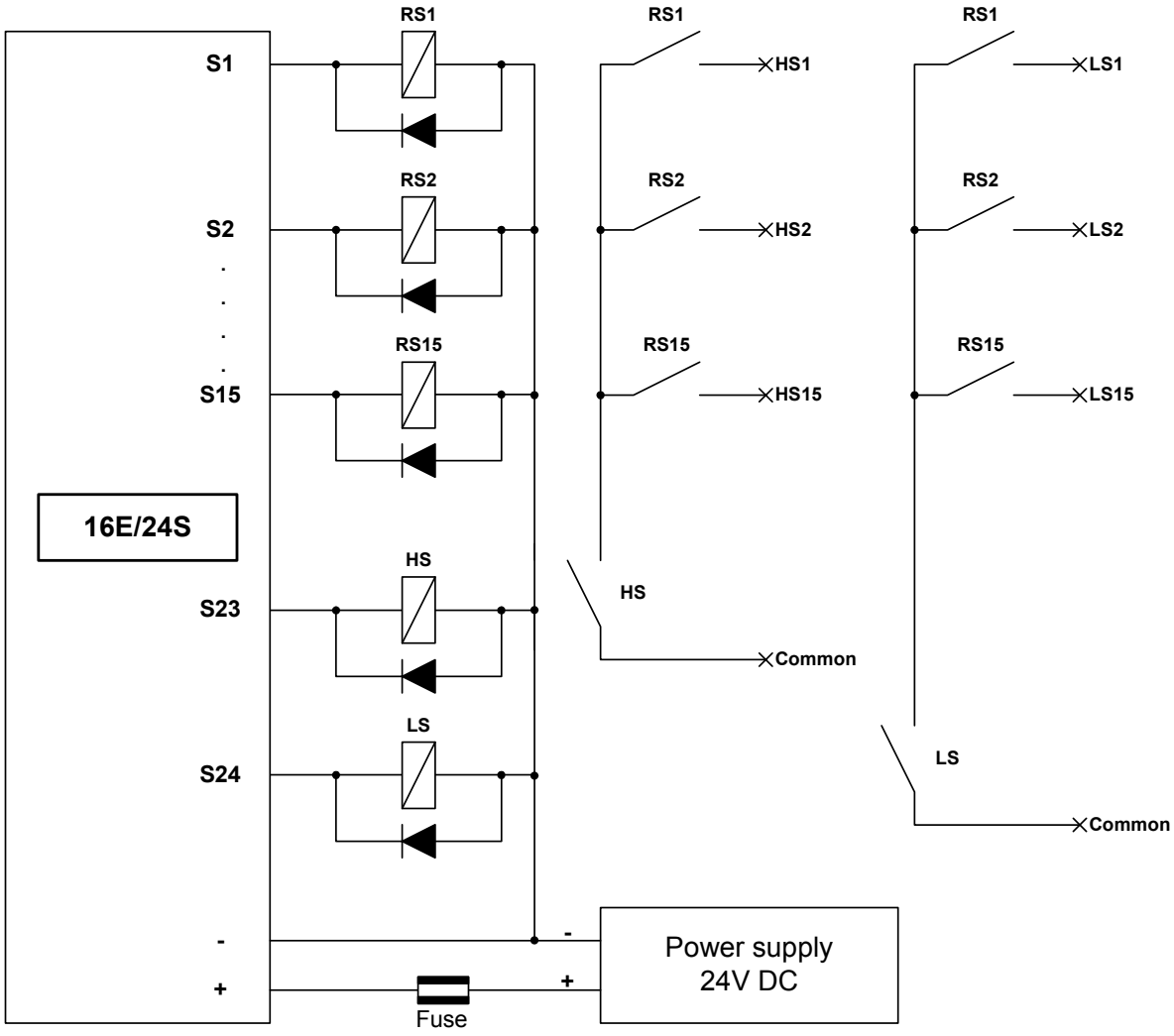
7.4. Layout of the 8E/24S board.



7.5. Correspondence 16E/24S board → Rack relays (option).

	16E/24S board			Rack relays (option)			
	Designation	I/O	Pins	Pins	I/O	Terminal	Designation
DSUB 37 pts	Start cycle / Resume cycle	E1	13	7	ER1	41 / 42	Start cycle / Resume cycle
	Cancel	E2	32	25	ER2	1 / 2	Cancel
	Suspend	E3	14	6	ER3	43 / 44	Suspend
	Off tolerance aknowledgment	E4	33	24	ER4	3 / 4	Off tolerance aknowledgment
	Manual product aknowledgment	E5	15	5	ER10	9 / 10	Manual product aknowledgment
	Dosing authorization	E6	34	23	ER9	49 / 50	Dosing authorization
	Emptying authorization	E7	16	4	ER8	7 / 8	Emptying authorization
	Pump pulse input	E8	35	22	ER7	47 / 48	Pump pulse input
	Product silo 1 / 16 or pump 1	S1	3	17	SR1	57 / 58	Product silo 1 / 16 or pump 1
	Product silo 2 / 17 or pump 2	S2	22	35	SR2	17 / 18	Product silo 2 / 17 or pump 2
	Product silo 3 / 18 or pump 3	S3	4	16	SR3	59 / 60	Product silo 3 / 18 or pump 3
	Product silo 4 / 19 or pump 4	S4	23	34	SR4	19 / 20	Product silo 4 / 19 or pump 4
	Product silo 5 / 20 or pump 5	S5	5	15	SR5	61 / 62	Product silo 5 / 20 or pump 5
	Product silo 6 / 21 or pump 6	S6	24	33	SR6	21 / 22	Product silo 6 / 21 or pump 6
	Product silo 7 / 22 or pump 7	S7	6	14	SR7	63 / 64	Product silo 7 / 22 or pump 7
	Product silo 8 / 23 or pump 8	S8	25	32	SR8	23 / 24	Product silo 8 / 23 or pump 8
	Product silo 9 / 24	S9	7	13	SR9	65 / 66	Product silo 9 / 24
	Product silo 10 / 25	S10	26	31	SR10	25 / 26	Product silo 10 / 25
	Product silo 11 / 26	S11	8	12	SR11	67 / 68	Product silo 11 / 26
	Product silo 12 / 27	S12	27	30	SR12	27 / 28	Product silo 12 / 27
	Product silo 13 / 28	S13	9	11	SR13	69 / 70	Product silo 13 / 28
	Product silo 14 / 29	S14	28	29	SR14	29 / 30	Product silo 14 / 29
	Product silo 15 or decoding 28	S15	10	10	SR15	71 / 72	Product silo 15 or decoding 28
	1/ End of dosing 2/ Dose ready	S16	29	28	SR16	31 / 32	1/ End of dosing 2/ Dose ready
	Rate default	S17	11	9	SR17	73 / 74	Rate default
	Off tolerance default	S18	30	27	SR18	33 / 34	Off tolerance default
	1/ Scale default 2/ Agitation	S19	12	8	SR19	75 / 76	1/ Scale default 2/ Agitation
	Scale low threshold	S20	31	26	SR20	35 / 36	Scale low threshold
	+V ext. power	-	18 - 19 - 37	1 - 2 - 20	-	-	+V ext. power
	0V ext. power	-	1 - 2 - 20	18 - 19 - 37	-	-	0V ext. power
DSUB 15 pts	Scale high threshold	S21	2	7	SR21	77 / 78	Scale high threshold
	Emptying	S22	15	9	SR22	37 /38	Emptying
	HS (High Speed)	S23	3	6	SR23	79 / 80	HS (High Speed)
	LS (Low Speed)	S24	14	10	SR24	39 / 40	LS (Low Speed)
	Formula code 1	E9	4	5	ER6	5 / 6	Formula code 1
	Formula code 2	E10	12	11	ER5	45 / 46	Formula code 2
	Formula code 3	E11	5	4	ER11	51 / 52	Formula code 3
	Formula code 4	E12	11	12	ER12	11 / 12	Formula code 4
	Formula code 5	E13	6	3	ER13	53 / 54	Formula code 5
	Formula code 6	E14	10	14	ER14	13 / 14	Formula code 6
	Formula code 7	E15	7	2	ER15	55 / 56	Formula code 7
	Formula code 8	E16	9	15	ER16	15 / 16	Formula code 8
	+V ext. power (Not used)	-	8	8	-	-	+V ext. power (Not used)
	0V ext. power (Not used)	-	1	1	-	-	0V ext. power (Not used)

7.6. Connection example for 15 silos at 2 speeds.



Remarks : - Maximum output current of the 16E/24S board : 25 mA.
- Maximum distance between the 16E/24S board and the relays : < 2 m. connection through a shielded cable.
- Separate the cabling of the coil from the one of the contacts.
- Foresee a protection (RC circuit in AC or reversed diode in DC) on the load.

7.7. Codification chart in case of a number of silos greater than 15.

Outputs	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Silo 1	1														
Silo 2		1													
Silo 3			1												
Silo 4				1											
Silo 5					1										
Silo 6						1									
Silo 7							1								
Silo 8								1							
Silo 9									1						
Silo 10										1					
Silo 11											1				
Silo 12												1			
Silo 13													1		
Silo 14														1	
Silo 15															1
Silo 16	1														1
Silo 17		1													1
Silo 18			1												1
Silo 19				1											1
Silo 20					1										1
Silo 21						1									1
Silo 22							1								1
Silo 23								1							1
Silo 24									1						1
Silo 25										1					1
Silo 26											1				1
Silo 27												1			1
Silo 28													1		1
Silo 29														1	1

* Silo 15 not used in the codification through relays. (Utilization possible with a decoding through a PLC).

ARPEGE MASTERK
LES MAÎTRES DU PESAGE INDUSTRIEL

LES MAITRES DU PESAGE INDUSTRIEL

Chassieu, Friday May 29th, 2009,

CONFIGURATION AND USE IDe 200

MONO-PRODUCT DOSING 4I/4O, 8I/24O OR 16I/24O

Software No.	Manual Reference	Edition
JeDO02.01J	**IDE_Gb_Mono-produit_rev11.doc**	**11**

ARPEGE AIMO MILLIER pesage L'INFORMATIQUE PONDERALE PESAGE PROMOTION

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CONFIGURATION AND USE IDe 200 MONO-PRODUCT DOSING 4I/4O, 8I/24O OR 16I/24O

Date	Edition No.	Subject of the modification
09.10.01	00	Original
10.04.02	01	Update
27.05.02	02	Update (orthography + diagram + Word 2000)
31.05.02	03	Addition of the general parameter LS during HS
16.10.02	04	"Results type" modification, Addition of the DET label, addition of the power up explanation and of the option boards details.
14.11.02	05	Formatting.
28.11.02	06	Correction paragraph. 5.1.6, 5.1.4, 8E24S connection.
15.10.03	07	Addition of the 16E/24S board.
12.11.03	08	Addition of the 4I4O board.
14.02.08	09	Addition of two parameters "DOSING FILTER" / "CUTOFF TYPE" and of 3 functions "ZE" / "TA" / "ET" for the tracking of the dosing by JBUS.
25.03.09	10	Addition of DRIVER 6 on COM1 (DOSAGRAPH software)
20.05.09	11	Addition of the cabling principle for 6 outputs on 4I4O

CONTENTS

1. PRESENTATION

1.1. General

The IDe 200 indicator equipped with a "Mono-product Dosing" program was designed to solve packaging problems on weigher-baggers. It offers both the computation power of a powerful microprocessor and the execution speed of an analogue comparator.

With its inputs and outputs, it can manage a complete bagging or barrelling cycle without the need for an external process control system.
The entire process can be controlled via the computer link by an external computer system.

1.2. Hardware description

1.2.1. Technical characteristics

Maximum number of scale divisions (in regulated mode) : 6000.
Minimum input scale division : 0.75 µv
Power supply voltage of the weighing cell : 7.5V square wave alternating.
Number measurements / second, (fast) : 60, (180)
Load impedance (analogue load cells) : > 45 ohms

Zero displayed at 1/4 scale division
Interactive digital setting on front panel.
Mains voltage 230 V / 50 Hz or 60 Hz + earth < 5 ohms
DC power supply 12 V (or 24 V option).
Power consumption: max 15 to 25 VA, depending on the configuration.
Internal clock and memory backed up by battery
6-digit weight display by 14 mm LED
Operator guide via 8 alphanumeric characters of 5 mm.

1.2.2. Peripherals

In mono-product version the IDe indicator has the following peripherals:

* a galvanically insulated 4I / 4O board, or an 8I / 24O board.

Definition of inputs/outputs

- 4I/4O board:

I1: Start cycle - resume cycle.
I2: Pause cycle/cancel.
I3: Dosing authorisation.
I4: Emptying authorisation.

O1: Dosing in progress contact.
O2: Fault contact. (off tolerance or no product)
O3: Low speed (LS) / Zero area.
O4: High speed (HS) / Emptying or filling

- 8I / 24O board:

I1: Start cycle - resume cycle.
I2: Pause cycle/cancel.
I3: Dosing authorisation.
I4: Emptying authorisation.
I5: **I6**: **I7**: **I8**: Binary coding the product code to be dosed with start **I1** (If 8I/24O Board)
I9: **I10**: **I11**: **I12**: **I13**: **I14**: **I15**: **I16**: BCD coding the product code to be dosed with start **I1** (If 16I/24O Board

O1: Dosing in progress contact.
O2: Fault contact. (off tolerance or no product)
O3: Low speed (LS) / Zero area.
O4: High speed (HS) / Emptying or filling.
O5: Nothing in progress.
O6: Waiting for dosing authorisation.
O7: Waiting for emptying / filling authorisation.
O8: Low speed (LS) complement.
O9: Cycle Paused.
O10: Off tolerance fault.
O11: Rate fault.
O12: Low threshold.
O13: High threshold.
O14: High speed (HS)
O15: Low speed (LS).
O16: Emptying or filling.
O17: Reserved.
O18: **O19**: **O20**: **O21**: **O22**: **O23**: **O24**: Code of product being dosed encoded in binary.

* 2 Serial links:

COM1: RS232 (or on option active / passive current loop).
COM2: Passive current loop (or on option RS232 / RS485).

* A parallel interface:

LPT: Printer.

* An input for analogue load cells:

M1: analogue load cell(s)

Reminder: Only one cable must be connected to M1. Load cells are wired up in parallel separately in a connection box.

* A CAN interface (option):

MASTER CAN: Digital load cell(s) .

1.2.3. Options

* 2 types of printer are available:

- ILA 80: MASTER-K 80-column listing printer
- IBA 40: MASTER-K 40-column band printer

* 2 types of weight repeater can be connected:

- RP 15 : 15 mm weight repeater
- RP 50 : 50 mm weight repeater

* 1 analogue output 0 - 10V / 4 - 20 mA. (if 4I/4O board)

1.3. Software description

1.3.1. The product file

The files produce a simple and structured coding, which can be used to recall a set of information by using a code (call code or reference)

Capacity: maximum 100 products
Call code: 2 digits
Data: product name ..... (15 characters)
HS + LS dosing during HS... (1 character Y/N)
set value..... (5 digits)
low speed..... (5 digits)
feed error ..... (5 digits)
off tolerance + ... (5 digits)
off tolerance - ..... (5 digits)
stock sign ..... (1 character +/-)
stock value ..... (8 digits)

Remark: Stop high speed (HS) = set value - (LS + FE)
Stop low speed (LS) = set value - FE

1.3.2. Totals

The indicator manages two total files providing for example a daily total and a monthly total of weights, with the following characteristics:

Capacity: maximum 100 products
Data: Product code..... (2 digits)
Product name..... (15 characters)
Number of weighings made. (8 digits)
Number of times off tolerance (4 digits)
Net total dosed..... (8 digits)
Average.....(6 digits)

Remark:
The daily and monthly totals and printouts concern in fact the period since the last clear. It is therefore possible to make them weekly, yearly, etc. by clearing them at suitable intervals.

Key codes

Some submenus or functions are protected by a key. It is a 4-digit code that the operator must enter to access the required function. There are 2 key codes, which correspond to different degrees of protection.

- Key code number 1: 7806
- Key code number 2: 2110

***NOTE:** You have 4 seconds between each key to enter the code.*

Key code number 1 provides protection for:

- Access to functions
- File modifications
- Partial deletion in a file

key code number 2 provides protection for:

- Complete deletion of a file
- Complete clearing of the results

Power up of the indicator with parallel printer

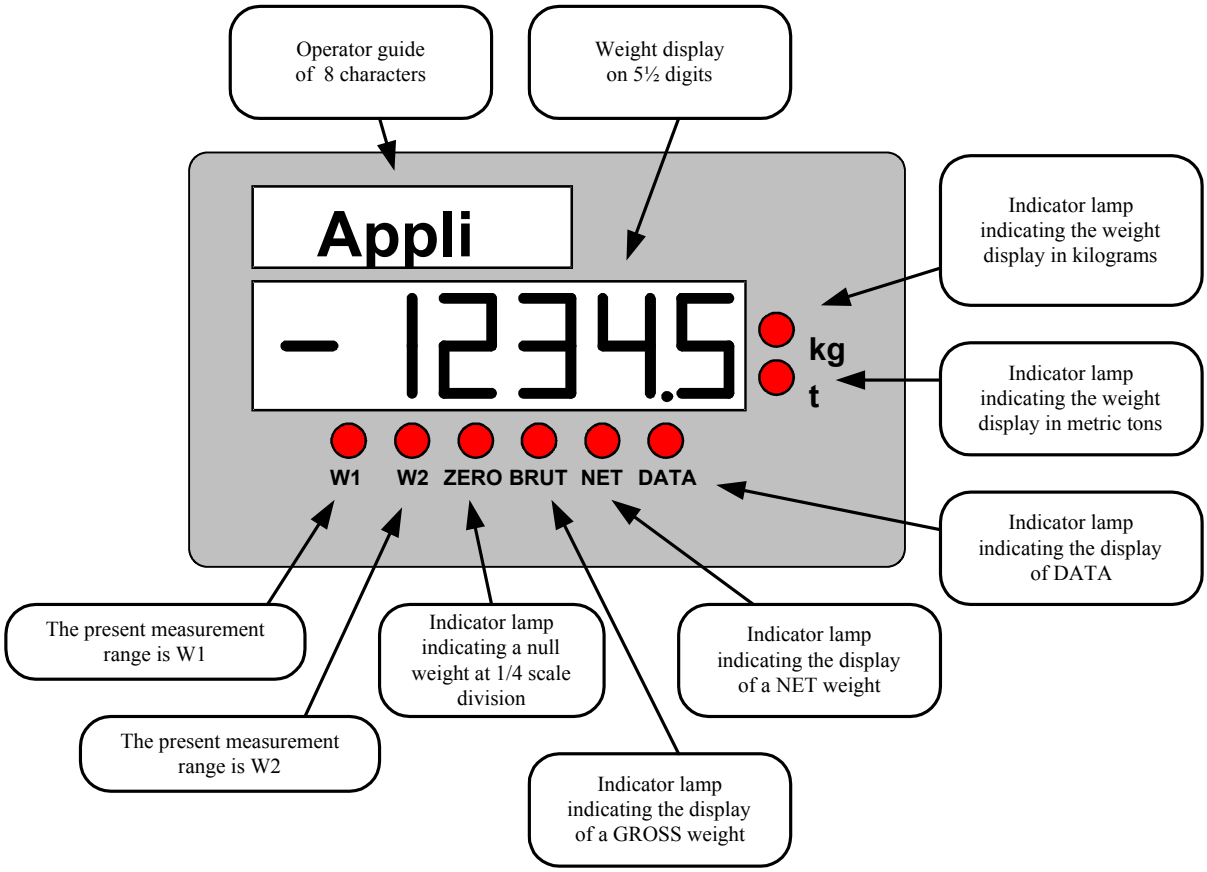
To power up the indicator IDE , it is necessary to respect this order

Verify that the printer is power down Power Up the indicator Ide Power Up the printer

If this order is not respected, it is possible that the indicator IDE doesn't start correctly, or doesn't start (Displayed "AFF1.2")

2. THE FRONT PANEL

2.1. Display and indicator lamps

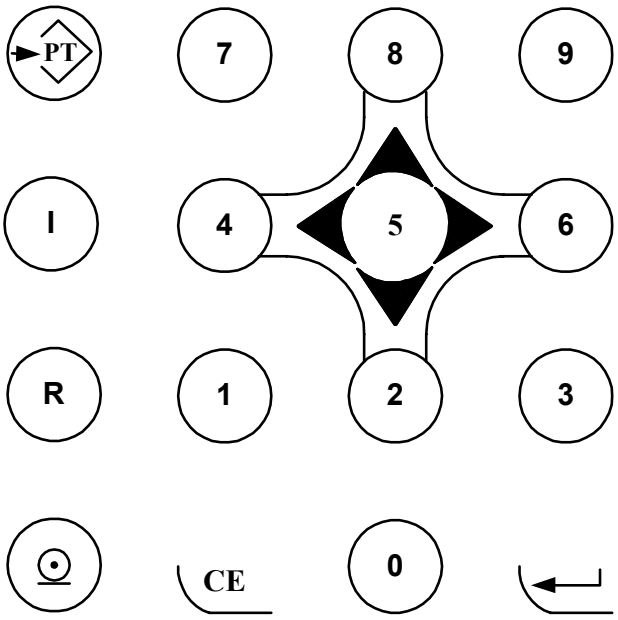


Remark:

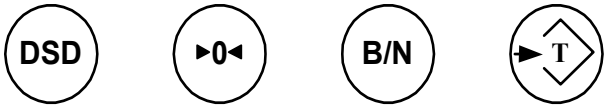
The indicator lamp **kg** or **t** also indicates whether the weight is stable:
Indicator lamp flashing = weight unstable.
Indicator lamp steady = weight stable.

2.2. IDe 200 keypad

Application keys:



Metrological keys:



Keys 0 to 9: Numeric keys to enter weight, codes, the number of cycles, etc.

Keys 2 to 8: menus: These numeric keys form a pseudo-mouse to move through the various
2 = ↓
8 = ↑

CE key "Correction" key to delete a numeric data item displayed.
Pause dosing cycle

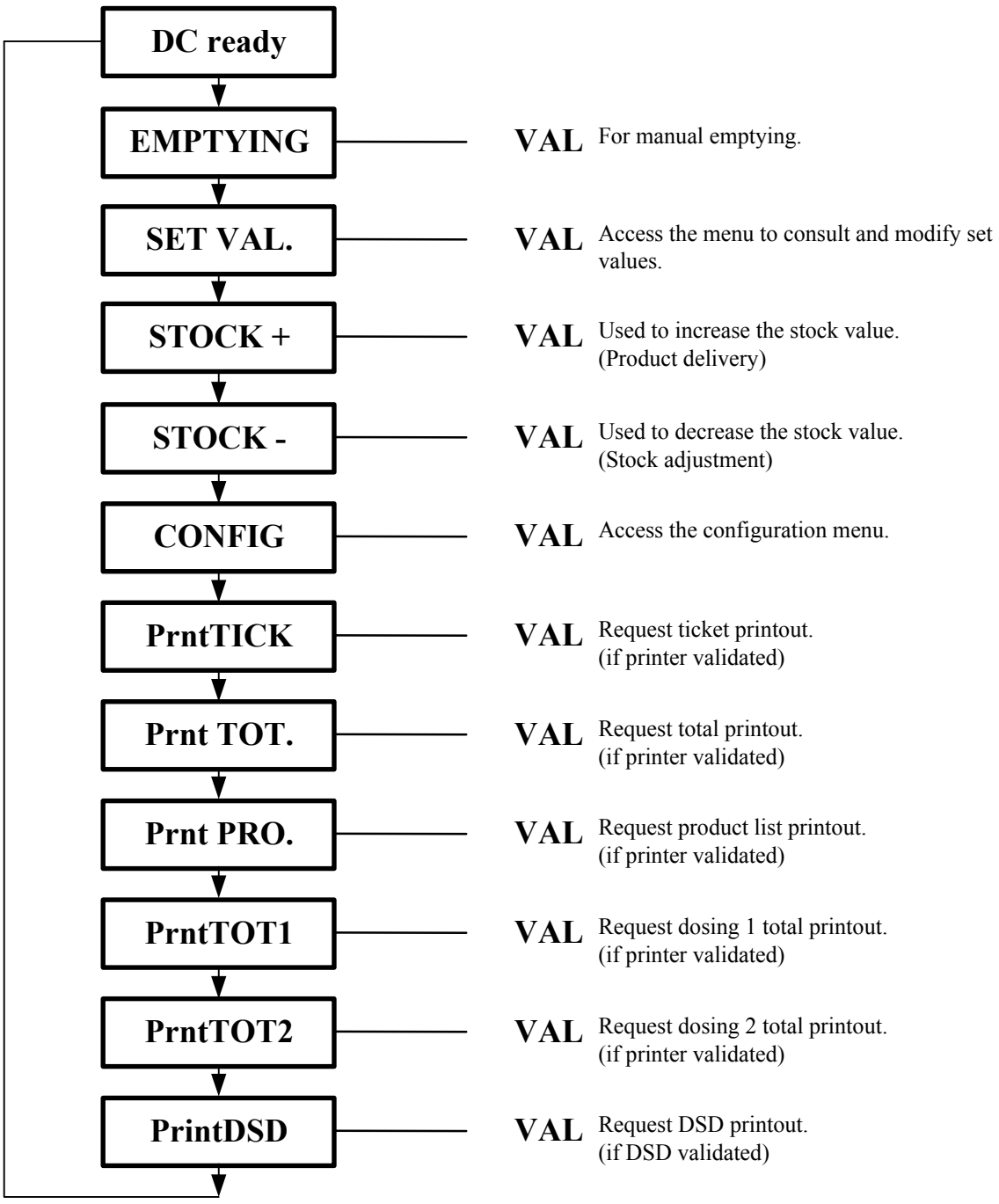
R key Key used to cancel the dosing cycle in progress. For this function to be active, the "CE" command (pause cycle) must first be carried out.

I key "Information" key, scrolls the various menus.

key Start cycle command
Resume cycle command

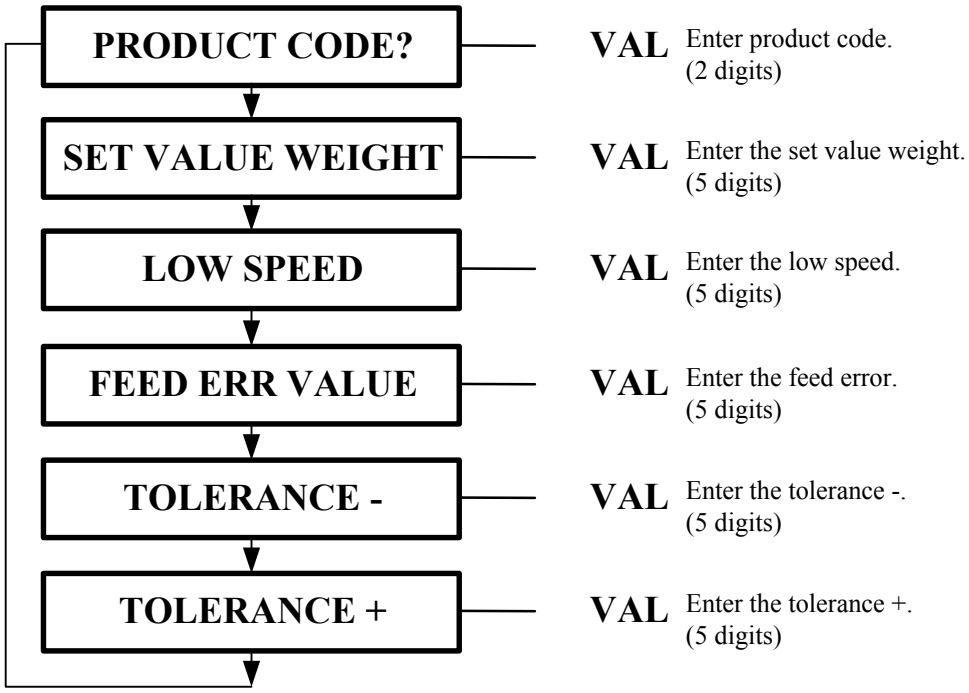
 key	Validate a data item entered or displayed on the IDe Acknowledge or off tolerance fault Resume present cycle after a power failure
 key	Used to enter an "**E**ntered **W**eight" (Not used).
 key	Used to tare the indicator with the gross weight present (Not used)
 key	Used to toggle the display for a few seconds from gross to net weight, and vice- versa.
 key	Used to reset the weight.
 key	Starts a program to search for a weighing by its DSD number.

3. MAIN MENU



Remark: The functions proposed in this menu vary depending on the configuration .

4. SET VALUE MENU

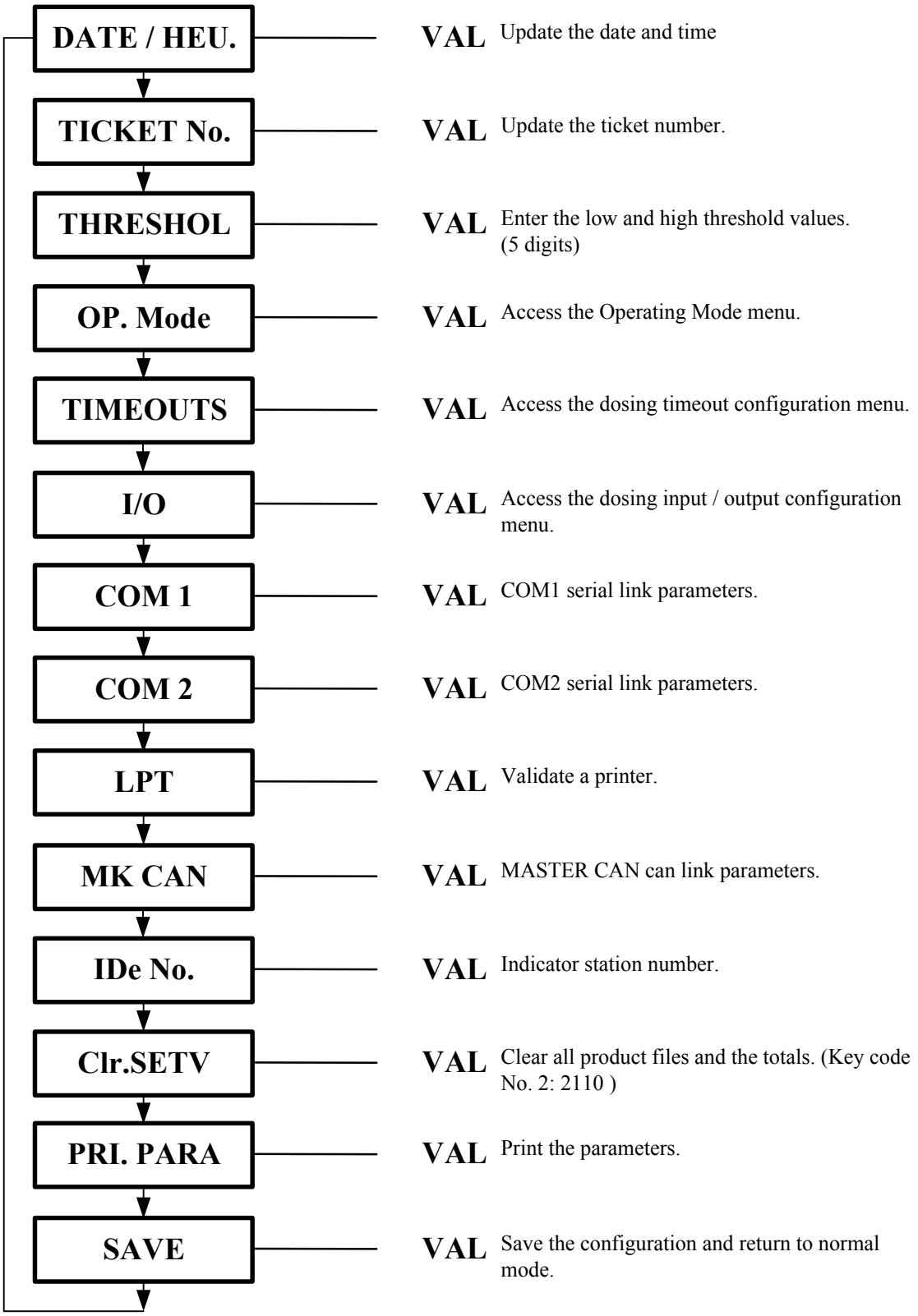


Remark:

You can also access the parameters of this function when configuring from PC, in submenu '3: PRODUCT FILE MODIFICATION'.

5. CONFIGURATION MENU

5.1. Configuration by the front panel of the indicator



5.1.1 . Date and time update.

DATE (DDMMYY) : 240401 for the 24/04/2001. Enter the new date and validate.
TIME (HHMM) : 1512 For 15h12min.00s. Enter the new time and validate.

5.1.2 . Ticket number update.

TICKET NUMBER : XXXXXX 6-digit ticket number. Enter the new ticket number and validate.

5.1.3 . Enter the low and high threshold values.

LOW THRESHOLD VALUE : XXXXXkg Low threshold value in kg, 5 digits.
HIGH THRESHOLD VALUE : XXXXXkg High threshold value in kg, 5 digits.

5.1.4 . Operating mode.

DOSING MODE (0 / 1): X
Enter the number of the required dosing mode.
0 = Dosing when filling.
1 = Dosing when tapping off.

TYPE OF RESULTS (0 to 3): X
Enter the number of the option board installed in your IDe.
0 = None.
1 = Automatic printout of doses after dosing.
2= DSD validation.
3 = Automatic printout of doses after dosing + DSD validation.
4 = Automatic printout of total after end of x dosing
5 = Automatic printout of total after end of x dosing + Automatic printout of doses after dosing
6 = Automatic printout of total after end of x dosing + DSD validation
7 = Automatic printout of total after end of x dosing + Automatic printout of doses after dosing + DSD validation

IMMOBILITY CHOICE (0 to 9): Y
Determines the speed of obtaining immobility according to the calculation (Y x 8) + 8. (8 to 80)

LS FILTER(00to 60):00
Configuration of the measure filter during Low Speed. The value represents the number of mean measures.

INTERPOLATION (0/1/2) : 0
Validation or not of the function interpolation
0 = No interpolation, standard dosing with the weight
1 = No interpolation, reflex dosing with converter points.
2 = Interpolation , dosing with timer stop (calculation of the rate)
Use interpolation only with product and machine with regular rate .

TARING FREQUENCY (00 to 99): XX
Indicates to the system the number of doses to be made without re-tare the weighbridge:
00 = Tare on each cycle.
01 = Tare one cycle out of two.
02 = Tare one cycle out of three.
etc.
99 = No tare carried out (even when starting the cycle)

MAINS FAILURE (0 to 2): X Indicates to the system the procedure required after a mains failure.

0 = The system does not store the cycle status before the power failure, the indicator restarts normally
1 = The system stores the cycle status before the power failure and after restarting waits for validation by an operator (↵ key) to resume the current cycle.
2 = The system stores the cycle status before the power failure and after restarting waits for 5 seconds before resuming the current cycle.

FEED ERROR CORRECTION (0 to 2): X Correct feed error automatically.

0 = The function is disabled
1 = The function is only executed if the dose is within the tolerance.
2= The function is always executed.

MAX NR OF COMPLEMENTS OT- (00 to 99): XX

00 = No complement if dose OT-.
01 = 1 complement test if dose OT-.
02 = 2 complement tests if dose OT-.
etc.
99 = 99 complement tests if dose OT-.

END OF DOSING FILLING (0 / 1): X (This parameter is only used in tapping off mode)

0 = Filling at start of cycle if gross < set value + high threshold.
1 = Systematic filling at end of dosing up to high threshold.

5.1.5. Dosing time-out parameters.

EMPTYING TIME-OUT (0 / 9.9): X.Xs Maintains the emptying output when the hopper weight becomes less than the low threshold. (final product flow)

HS START TIME-OUT (0 / 9.9): X.Xs Gives the time during which the HS contact is closed and during which the system does not monitor the set values.

LS START TIME-OUT (0 / 9.9): X.Xs Gives the time during which the LS contact is closed and during which the system does not monitor the set values. Also used by the OT- complement pulses.

FEED ERROR END TIME-OUT (0 / 9.9): X.Xs Gives the time taken into account at the end of the feed error. The weight of the hopper is stored on immobility at the end of the time-out.

CYCLE END TIME-OUT (0 / 9.9): X.Xs Gives the time taken into account between the end of one cycle and the start of the next.

RATE TIME-OUT (0 / 9.9): X.Xs
RATE VALUE: XXXXXkg
Gives the time used to monitor the rate during a dosing.

5.1.6. Input/output parameter.

OPTION BOARD TYPE (0 to 3): X Enter the number of the option board installed in your IDe.

0 = No option board.
1 = 4I/4O board.
2 = 4I/4O board 0/10 V - 4/20 mA.
3 = 8I/24O board.
4 = 8I/8O
5 = 16I/24O (BCE Board)

EMPTYING AUTHORISATION (0 / 1): X Validation of the I4 input test. (0 = no, 1 = yes):

DOSING AUTHORISATION (0 / 1): X Validation of the I3 input test. (0 = no, 1 = yes):

PROD CODE ON INPUTS (0 / 1): X Validation of inputs I5 to I8, if 8I/24O board. (0 = no, 1 = yes)

LOW THRESHOLD CONTACT (0/1): X Validation of the low threshold information on O3. (0 = no, 1 = yes)

EMPTYING/FILL CONTACT (0 / 1): X Validation of the emptying/filling information on O4. (0 = no, 1 = yes)

LS DURING HS (0=No/1=Yes) : X Automatic validation Low Speed during High Speed. (***Warning:*** *The modification of this parameter implies the erasure of all the product files. The modification of this parameter acts only on the files created after the modification.*)

5.1.7 . COM 1 serial link parameters.

COM1 TYPE (0/1/2/3/4): X Enter the type of serial link.

0 = RS232 without DTR test
1 = RS232 with DTR test.
2 = RS485 2 wire.
3 = Current loop
4 = RS485 4 wire.

COM1 DRIVER (0/1 .... /9) : X Enter the type of COM1 driver

0 = None.
1 = Weight repeater.
2 = JBUS / MODBUS protocol.
3 = DSD protocol on COM1.
4 = Reserved.
5 = Reserved.
6 = Computer with the DOSAGRAPH software.
7 = IBA40 printer
8 = ILA410 or ILA800 printer.
9 = Stream printer (real time printer).

COM1 SPEED (1/2/4/9/0): X Enter the communication speed.

1 = 1200 baud
2 = 2400 baud
4 = 4800 baud

9 = 9600 baud
0 = 19200 baud

NR COM1 BITS (7/8): X Enter 7 = 7 bits and 8 = 8 bits.

COM1 PARITY (0/1/2): X Enter 0 = no parity 1 = Odd parity 2 = even parity.

NR STOP COM1 (1/2): X Enter 1 = 1 stop bit and 2 = 2 stop bits.

Remark: Some combinations of number of bits and parity do not operate. If possible, choose 8 bits, no parity, and 1 stop bit.

5.1.8 . COM 2 serial link parameters.

This function takes the same parameters as COM1 but on the serial link COM2.

5.1.9. LPT printer validation.

LPT 7= 40c (40 characters) 8 = 80c (80 characters) 9 = Stream: X (real time)

7 = 40 column printer (IBA40)
8 = 80 column printer (ILA410).
9 = Stream printer.

NR LF PAPER (00 to 99) : XX Page length in number of line feeds for the 80 column printers.

5.1.10 . MASTER CAN can link parameters.

MK CAN DRIVER (0/1): X Enter the type of serial link.

0 = None.
1 = Weight repeater. (RP50, RP15) - NOT AVAILABLE -

5.1.11 . IDe station number.

IDe STATION No.: XX Enter a 2-digit number then validate.

This number is used by the JBUS / MODBUS communication protocol.

5.1.12 . Clear product file.

Clears all product files and totals stored in the indicator. (key code No. 2: 2110)

5.1.13 . Print parameters.

The list of parameters is printed out (output if a printer is declared on COM1, COM2 or LPT.)

5.1.14 . Save the configuration and return to main menu.

The configuration is saved in EEPROM.
This operation takes a few seconds (**20 seconds**).
The return to the main menu

Warning! If there is a power cut before or during the save, the new parameters will be lost.

5.2. Configuring on PC

The front panel is unsuitable for use when configuration requires alphanumeric characters. A second configuration menu is therefore available, with only configuration functions involving alphanumeric characters.

5.2.1. Transfer into configuration mode

Proceed as follows:

- connect the PC (on Com1) with the IDe (on Com1).
- run the program Hyperterminal. (path of Hyperterm.exe: **"C:\Program Files\Accessories\HyperTerminal\HYPERTRM.EXE"**)
- name the connection and validate (TERMINAL.IDE).
- then in the header "Connect using" choose "Send to Com1".
- configure the connection as follows: 9600 Baud, 8 bits, no parity, one stop bit, no flow control.
- validate the "**PARAMETER**" function on the IDe, after entering the key code. The message "PRESS [ENTER] ON THE PC" is displayed on the PC screen. Validate with the ↵ key.
- the main configuration menu is displayed:

0 : DSD receipt
1 : COMPANY NAME
2 : CLEAR PRODUCT FILE
3 : MODIFY PRODUCT FILE
4 : DISPLAY / CLEAR A PRODUCT
5 : PRINT PRODUCT FILE
6 : CONFIGURABLE WEIGHING TICKET
7 : CONFIGURABLE TOTAL TICKET
8 : CONFIGURABLE STREAM TICKET
9 : END AND SAVE CONFIGURATION
Your choice? :

The IDe displays "PC COM1", on the secondary screen, to indicate that the configuration will be carried out from the PC.

- to select one of the functions proposed, simply validate the corresponding digit.

5.2.2. WEIGHING LOG RECEPTION

This function can be used to save the DSD in a text file (extension .TXT).

Press key 0. The following information is displayed on screen:
"START DATE (DDMMYY): XXXXXX"
Enter the date from which the DSD is to be retrieved (example: 231001 for 23 October 2001) and validate with 'ENTER'.
"END DATE (DDMMYY): XXXXXX"
Enter the date up to which the the DSD is to be retrieved (example: 231101 for 23 November 2001) and validate with 'ENTER'.
The following information is displayed on screen:
"Set HyperTerminal into CAPTURE TEXT mode then click START
ENTER key to start the transfer"
After the transfer set into CAPTURE mode then STOP
ENTER key, to return to the MENU"
To do this, still in HyperTerminal, go to "Transfer" then "Capture text". Enter the name of the weighing log backup file and click "Start".
Start the transfer with the 'ENTER' key. The requested weighing log scrolls on screen.
When the transfer is finished close the capture. Go to "Transfer" then "Capture text" and "Stop".
To return to the configuration menu, press 'ENTER'.
Remark:

- The .TXT file can be processed directly in EXCEL software .

5.2.3. COMPANY NAME.

Press key 1. The following information is displayed on screen:

First line of the company name: 20 double width characters.
"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
" >---------- "

First line of the end of ticket: 39 characters
" >Observations: Signature"
Validate with ↵.
Validate with ↵.
Second line of the end of ticket: 39 characters
" > "
Validate with ↵ then return to the main menu.

5.2.4. Clear product file

Press key 2 and enter key code No. 2 (2110), validate the function with ↵.

5.2.5. Modify product file

Press key 3. The following information is displayed on screen:

First line, give a code for the product (number from 00 to 99):
"PRODUCT CODE? : ...XX"
Validate with ↵.

Second line, give a name for the product (maximum 15 characters):
"PRODUCT NAME: ..XX..XX"
Validate with ↵.

Third line, the system asks whether LS must be activated during HS (0 = no, 1 = yes):
"HS+LS during HS (0/1):X"
Validate with ↵.

Fourth line, give the dosing set value (5 digits):
"SET VALUE WEIGHT: XXXXX"
Validate with ↵.

Fifth line, give the dosing set value in LS (5 digits):
"LOW SPEED: ..XXXXX"
Validate with ↵.

Sixth line, give the feed error value (5 digits):
"FEED ERROR VALUE: ...XXXXX"
Validate with ↵.

Seventh line, give the value of the negative dosing tolerance (5 digits):
"TOLERANCE -: .....XXXXX"
Validate with ↵.

Eight line, give the value of the positive dosing tolerance (5 digits):
"TOLERANCE +: .....XXXXX"
Validate with ↵.

Ninth line, give the stock sign (1 character +/-):
"STOCK SIGN (+/-):X"
Validate with ↵.

Tenth line, give the stock value (10 digits):
"STOCK VALUE: .XXXXXXXXXX"
Validate with ↵ then return to the main menu.

5.2.6. Display : Clear a product.

Press key 4. Give the product code (2 digits) to be displayed:
"PRODUCT CODE? : ...XX"
Validate with ↵, the required information is displayed:

PRODUCT NAME: ..XXX..XXX
HS+LS during HS (0/1):X
SET VALUE WEIGHT: XXXXX
LOW SPEED: .. XXXXX
FEED ERROR VALUE: ... XXXXX
TOLERANCE -: XXXXX
TOLERANCE +: XXXXX
STOCK SIGN (+/-):X
STOCK VALUE: . XX...XX

Validate with ↵, answer the next question with 'y' (yes), or 'n' (no):
"CLEAR THIS PRODUCT? (Y/N): X"
And return to the main menu.

5.2.7. Print Product File.

Press key 5. Printing starts, then return to the main menu.

Printout example:

PRODUCT LIST
Date: XX/XX/XXXX Time: XXhXX

Product Code Stock HS+LS
00 XX..XX X XX..XX X
Set val. LS FE Tol- Tol+
X...X X...X X...X X...X X...X

Product Code Stock HS+LS
01 XX..XX X XX..XX X
Set val. LS FE Tol- Tol+
X...X X...X X...X X...X X...X

etc.

Remark: printing occurs in the order of the product codes.

5.2.8. Configurable weighing ticket.

Press key 6. The following information is displayed on screen:

"Std weighing ticket (0=N / 1=Y) :1"

If you answer "1" (yes), the weighing ticket will be printed according to a standard ticket type fixed in the indicator memory
If you answer "0" (no), the weighing ticket will be printed according to the ticket configuration.
See chapter 5.3. Configurable tickets.
Validate with ↵, return to the main menu.

5.2.9. Configurable total ticket.

Press key 7. The following information is displayed on screen:

"Std total ticket (0=N / 1=Y): 1 "

If you answer "1" (yes), the weighing ticket will be printed according to a standard ticket type fixed in the indicator memory
If you answer "0" (no), the total ticket will be printed according to the ticket configuration.
See chapter 5.3. Configurable tickets.
Validate with ↵, return to the main menu.

5.2.10. Configurable stream ticket.

Press key 8. The following information is displayed on screen:

"Std stream ticket (0=N / 1=Y): 1 "

If you answer "1" (yes), the weighing ticket will be printed according to a standard ticket type fixed in the indicator memory
If you answer "0" (no), the stream ticket will be printed according to the ticket configuration.
See chapter 5.3. Configurable tickets.
Validate with ↵, return to the main menu.

5.2.11. End and save configuration.

Press key 9. The following information is displayed on screen:

"PRINT PARAMETERS ON LPT? (Y,N):"

This function is used to print the list of parameters. Validate with Y = yes, or N = no.
(Printing is carried out if a printer is declared on COM1, COM2 or LPT.)

Then:
"SAVE PARAMETERS IN EEPROM (Y,N): "
This function is used to save the configuration in the EEPROM memory. Validate with Y = yes, or N = no. (This may take several seconds ≈ 20 seconds)

Then exit the PC configuration.

5.3. CONFIGURABLE TICKETS.

The standard tickets are always in memory in the indicator. They are produced in a format which must be printed on an IBA40 printer (40-column). They include all information collected during the weighing.

If you devalidate the standard ticket, the system then proposes the configurable ticket. It offer customised page layout and the choice of printed data. This ticket is produced by programming using simple commands.

Remark:

You are recommended to create the ticket in successive steps. Configure just a few commands and print the ticket to see the result, and so on.

5.3.1. Ticket configuration commands.

8 commands are available to control the printer. A command **always** consists of three characters...**; 1 letter ;** .The semi-colon ';' separator **must** follow each command. It may also be used to finish a line and be replaced later by a command.

;A; = Nr of line feeds
;B; = Nr of spaces
;G; = Switch to large characters
;P; = Switch to standard characters
;T; = Text
;E; = System label
;C; = Control character
;?; = End of ticket (no data)

The syntax must be as follows:

the command ;A; always followed by 2 digits (nr of line feeds) e.g.: ;A;02;
The command ;B; always followed by 2 digits (nr of spaces) e.g.: ;B;09;
The command ;G; always alone
The command ;P; always alone
The command ;C; always followed by 2 characters (value in hexadecimal) e.g.: ;C;1B;
The command ;E; always followed by 3 characters (name of one of the system labels) e.g.: ;E;RS1;
The command ;T; always followed by the text to be printed (variable length) e.g.: ;T; THIS IS THE TEXT ;
The command ;?; always alone

5.3.2. The special keys for the configurable ticket editor.

CTR / E	=	completely delete the line the cursor is on.
CTR / D	=	delete the character at the cursor position.
CTR / I	=	insert a space at the cursor position.
CTR / A	=	move the cursor forward one character.
BACK SPACE	=	move the cursor backward one character.
↵	=	move to the next line.

5.3.3. System labels.

These labels are used to print the data stored in the system memory.
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 (6 digits)
DDA: Date (present date, 8 characters)
DHE: Time (present time, 5 characters)
DNL: Batch number (6 digits)
DF1: Product code (2 digits)
DF2: Product name (15 digits)
DPN: Net weight (5 digits + weight unit and decimal point)
DNB: Number of doses (6 digits)
DCN: Net total (8 digits + weight unit and decimal point)
DMO: Dosing average (5 digits + weight unit and decimal point)
DET: Dosing Standard deviation (5 digits + weight unit and decimal point)

6. THE APPLICATION

6.1. Manual management

6.1.1. Starting the dosing cycle

Press the ⊙ key. The display indicates the number of the product to be dosed. Press the "CE" key to clear the old code then enter the new product code.
Validate with the "⇩" key.
The old number of cycles is displayed. Press the "CE" key to clear it then enter the number 'n' of cycles required.
Validate with the "⇩" key.
The old batch number is displayed. Press the "CE" key to clear it then enter the required batch number.
Validate with the "⇩" key.
Confirm the start cycle. (0 = no, 1 = yes):
Validate with the "⇩" key.
Dosing is started for "n" cycles.

Remarks:
* If the number of cycles requested is 9999, the cycles will be repeated indefinitely. (This number is not decreased). A cancel command is required to stop.
* If the weight indicator is off range the start cycle command is automatically cancelled.
* The program will execute automatic tare and close the HS contact only if the weighbridge is stable.

6.1.2. Pause, cancel cycle

A cycle in progress can be interrupted at any time with the "CE" key. All the output contacts are deactivated
Press the ⊙ key to resume the cycle or the "R" key to cancel the cycle.
Remark:
* If a power failure occurs during a pause cycle. The cycle will be cancelled automatically.

6.1.3. Acknowledging an off tolerance

At the end of each dosing, the system waits until the weighbridge is stable, then checks that the dosed net weight lies within the range of programmed tolerances.
In case of off tolerance, the cycle is automatically paused and the fault contact closes. The operator can add or remove product, then acknowledge the fault with the "⇩" key. The weight is stored, the fault contact opens and the cycle continues.

6.2. Automatic management

6.2.1. Starting the dosing cycle

A pulse on input I1 'Start cycle' starts the cycle. The dosing starts for product "x", for "n" cycles and for batch number "I". "x", "n" and "I" have been entered beforehand with the ⊙ function.
Dosing starts.

Remarks:
* Management of number of cycles identical to manual operation.

6.2.2. Pause, cancel cycle

A cycle in progress can be interrupted at any time by the input I2 'Pause cycle'. All the output contacts are deactivated
The input I1 'Start/Resume cycle' is used to resume the cycle.
A second pulse on input I2 cancels the cycle.

Remark:
* If a power failure occurs during a pause cycle. The cycle will be cancelled automatically.

6.2.3. Acknowledging an off tolerance

At the end of each dosing, the system waits until the weighbridge is stable, then checks that the dosed net weight lies within the range of programmed tolerances.
In case of off tolerance, the cycle is automatically paused and the fault contact closes. The operator can add or remove product, then acknowledge the fault with the input I1 'Start/Resume cycle'. The weight is stored, the fault contact opens and the cycle continues.

6.3. Error codes

The error codes are displayed on the weight display for several seconds or until acknowledged by the operator.

"NoProd!" : Code requested not known by the system (Product code does not exist in the file)
"Err. TIC": Configurable ticket error
"Er SETV!": The feed error is greater than the set value or the set value exceeds the hopper high threshold.
"Err.POWF": Critical situation after a power failure. The system cannot resume the current cycle. (Press the "⇩" key)
"Nr Cy=0!": The number of cycles is zero.

6.4. Information accessible in dosing mode:

During dosing, certain information concerning the dosing can be displayed by using the 'I' key. The following menu is displayed:

"HS XXXXX " : Dosing step (HS, LS, etc.), and set value to be dosed.
"Prod: 1" : Product code.
"NrR 1" : Number of cycles remaining.
"NrRq 1" : Number of cycles requested.
" D+ XXXXX" : Difference between dosing n - 1 and the set value.
"M XXXXX.X" : Mean of the product dosed.
"SD XXXXX.X" : Standard deviation of the product dosed.

7. COMPUTER LINK

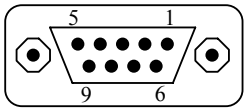
An external system can communicate with the indicator by serial link. It can control the process or be informed of the dosing status in real time. This function is transparent for the user (function carried out in multitasking by the indicator).
The function is validated by the parameter "JBUS link (Y/N)".

7.1. Link specification

7.1.1. Format:

The JBUS protocol requires transmission on 8 bits

7.1.2. Connection:



SUB D 9-pin female on the rear of the indicator.

Pins	COM 2 RS485 2 wire	COM2 RS485 4 wire	COM2/COM1 RS232	COM2/COM1 Current loop
1	Earth	Earth	Earth	Earth
2			RxD	
3			TxD	
4	RxTx+	Rx+		Rx+
5	RxTx-	Rx-		Rx-
6				
7	Ground (frame)	Ground	Ground	Ground
8		Tx+		Tx+
9		Tx-		Tx-

7.1.3. Memory space

Information exchange using the JBUS protocol is carried out in memory areas called tables, accessible by the indicator and the external system.

A first table is reserved for monitoring the dosing. The external system can only access it in read only.

The second table is reserved for controlling the process. The external system can access it in read and write.

7.2. Monitoring the dosing

7.2.1. Definition of the table

The start address is 2200H, the end address is 2217H. The data is refreshed in real time.

Address	Nr of words	Nr of bytes	Corresponding data
2200H	2	4	Gross weight in BCD
2204H	2	4	Tare weight in BCD
2208H	2	4	Net weight in BCD
220CH	2	4	Weight dosed in BCD
2210H	2	4	Weighing number
2214H	1	2	Status of the weight and Status of outputs O1 to O4
2216H	3	6	Status of the 8I/24O board

7.2.2. Data definition

* Example of positioning in the table of a gross weight of 1200.5kg:

2200H	0001
2202H	2005

* The weight dosed is stored after stability at end of dosing and cleared at the start of the next cycle.

* The 6-digit weighing number is increased after storage of the weight dosed..
Example of number in the table:

2210H	0012
2212H	3456

* Definition of statuses:

2214	16 bits

weight and output statuses:

bit 15	bit 14	bit 13	bit 12	bit 11	bit 10	bit 9	bit 8	bit 7	bit 6	bit 5	bit 4	bit 3	bit 2	bit 1	bit 0
0	1	1	0	A	B	C	D	0	1	1	0	E	F	G	H

A = S4 status
B = S3 status
C = S2 status
D = S1 status
E = 1 if outside range,
0 if weight correct
F = 1 if immobile,
0 if not immobile
G = 1 if gross weight,
0 if net weight
H = 1 if zero correct,
0 if no zero

status of the 8I/24O board at 2216H on 3 words:

bit 15	bit 14	bit 13	bit 12	bit 11	bit 10	bit 9	bit 8	bit 7	bit 6	bit 5	bit 4	bit 3	bit 2	bit 1	bit 0
0	0	0	0	0	0	0	0	I8	I7	I6	I5	I4	I3	I2	I1

bit 15	bit 14	bit 13	bit 12	bit 11	bit 10	bit 9	bit 8	bit 7	bit 6	bit 5	bit 4	bit 3	bit 2	bit 1	bit 0
0	0	0	0	0	0	0	0	O24	O23	O22	O21	O20	O19	O18	O17

bit 15	bit 14	bit 13	bit 12	bit 11	bit 10	bit 9	bit 8	bit 7	bit 6	bit 5	bit 4	bit 3	bit 2	bit 1	bit 0
O16	O15	O14	O13	O12	O11	O10	O9	O8	O7	O6	O5	O4	O3	O2	O1

7.3. Process control

7.3.1. Definition of the table

The start address is 2300H, the end address is 23FCH.
Various functions can be carried out by writing a 2-byte word followed by the necessary parameters at the start of the table, at address 2300H. The system replaces the word by FFFFH as soon as the function has been executed.
The following functions can be carried out when dosing is not in progress:

P R	create or modify a record in the product file.
S C	initialise the high and low thresholds.
N P	initialise the weighing number.
D C	start a dosing cycle.

And the following during the dosing cycles:

S U	pause dosing cycle.
R E	resume dosing cycle.
A N	cancel dosing cycle.
H T	acknowledge a positive or negative off tolerance.
ZE	Zero of the scale.
TA	Tare of the scale
ET	Delete tare.

For the Command ZE /TA / ET , it is necessary to read the value of the GROSS / Net or Tare weight to be sure that the command is good.

7.3.2. Product file management

A frame of 23 words and 46 bytes for the function and its data can be used to modify or add a product. It is broken down as follows:

P R	00 11	00 X	X X	X X	X X	X X	X X	X X	X X	A B

8 words: 1+15 characters for the product description
1 word: product code on 2 digits
1 word: function code
1 word: 2 characters
A = "Y" if activation of HS + LS during dosing
A = "N" if activation of HS only during dosing
B = "+" if stock sign = +
B = "-" if stock sign = -

00 02	22 22	00 03	33 33	00 04	44 44	00 05	55 55	00 06	66 66

2 words: 5 digits - tolerance
2 words: 5 digits + tolerance
2 words: 5 digits feed error
2 words: 5 digits low speed
2 words: 5 digits set value

77 77	77 77

2 words: 8 digits stock value

7.3.3. Threshold management

A frame of 5 words and 10 bytes for the function and its data can be used to modify the thresholds. It is broken down as follows:

T H	00 01	11 11	00 02	22 22

2 words: high threshold on 5 digits
2 words: low threshold on 5 digits
1 word: function code

7.3.4. Weighing number management

A frame of 3 words and 6 bytes for the function and its data can be used to modify the weighing number. It is broken down as follows:

W N	00 12	34 56

2 words: weighing number on 6 digits

7.3.5. Start cycle

A frame of 3 words and 6 bytes for the function and its data can be used to start a dosing operation. It is broken down as follows:

S C	00 11	22 22

1 word: number of cycles on 4 digits
1 word: product code on 2 digits
1 word: function code

7.3.6. Pause cycle

A word can be used to pause a cycle. During the pause, all outputs are deactivated.

P C

7.3.7. Resume cycle

A word can be used to resume a cycle after a pause.

R C

7.3.8. Cancel cycle

A word can be used to cancel a cycle after a pause.

C C

7.3.9. Acknowledge an off toerance

A word can be used to acknowledge a positive or negative off tolerance.

O T

7.3.10. Re-zero of the weight

A word can be used to re-zero the weight if the weight is between +/-2% of the range of the scale .

ZE

7.3.11. Tare

A word can be used to tare the scale.

TA

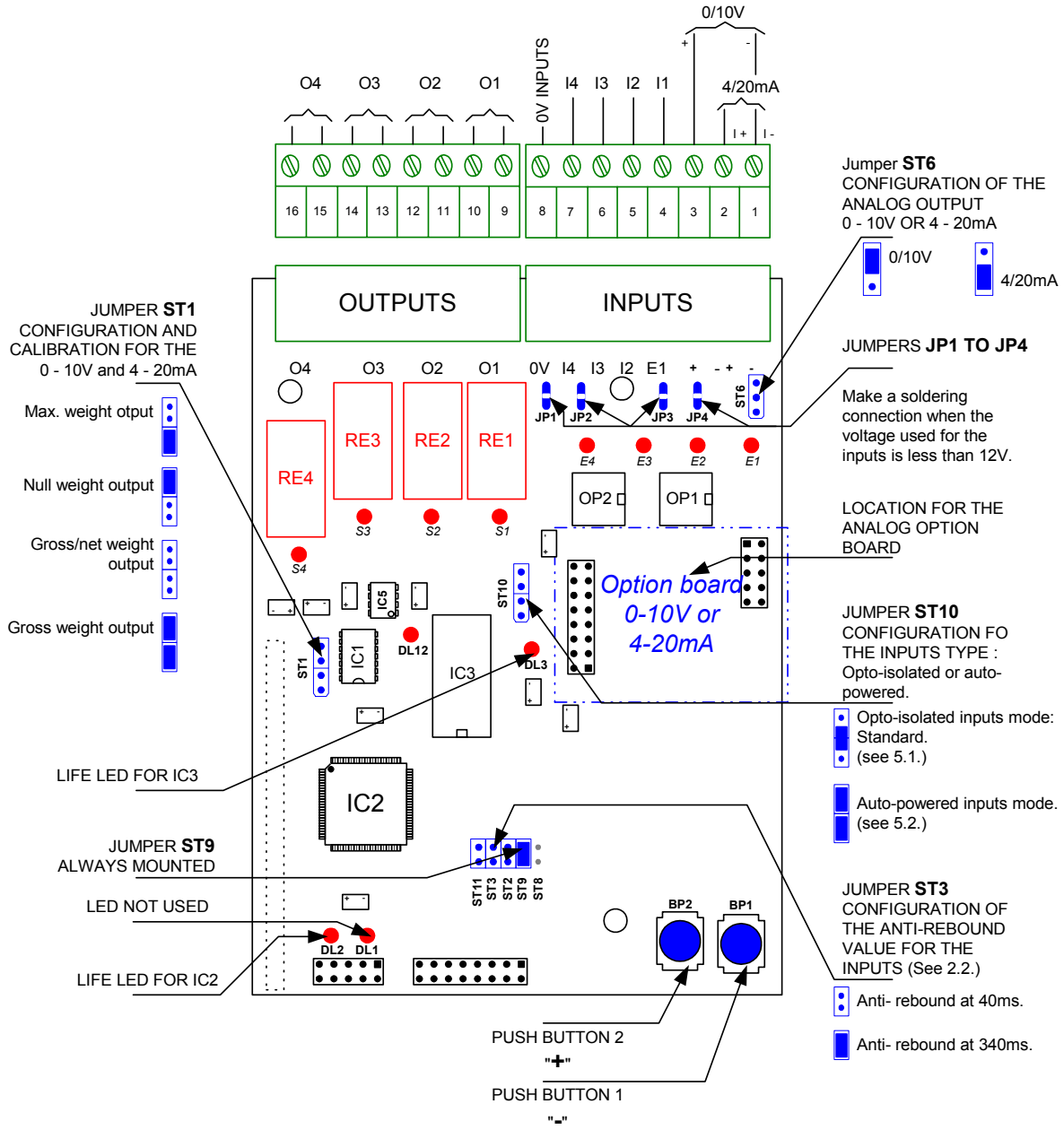
7.3.12. Tare Deleting

A word can be used to delete the tare

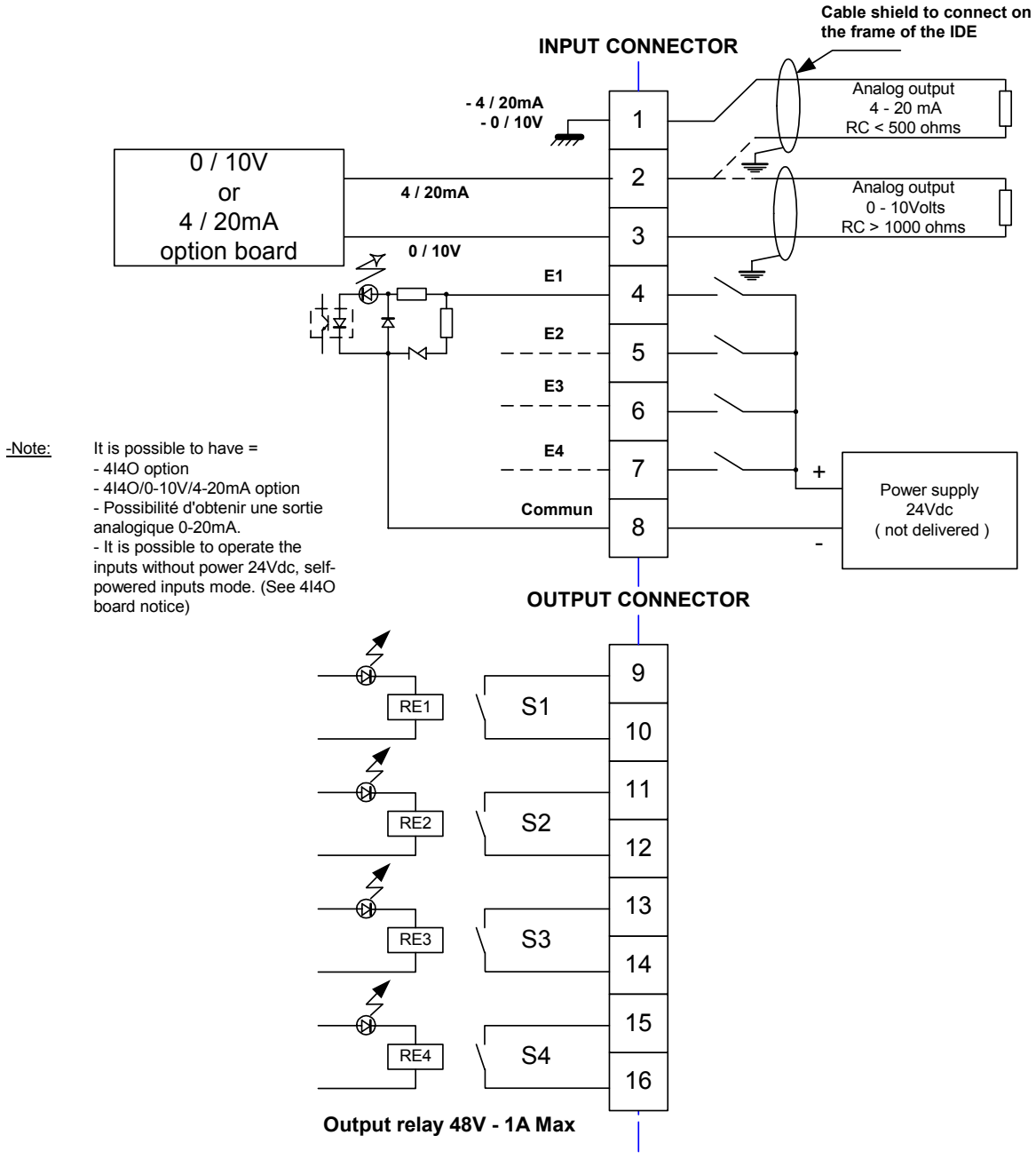
ET

8. ANNEXES

8.1. Layout of the 4I4O board.



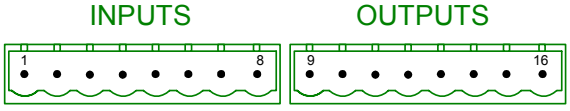
8.2. Connection of the 4I/4O option board.



-Note: It is possible to have =
- 4I4O option
- 4I4O/0-10V/4-20mA option
- Possibilité d'obtenir une sortie analogique 0-20mA.
- It is possible to operate the inputs without power 24Vdc, self-powered inputs mode. (See 4I4O board notice)

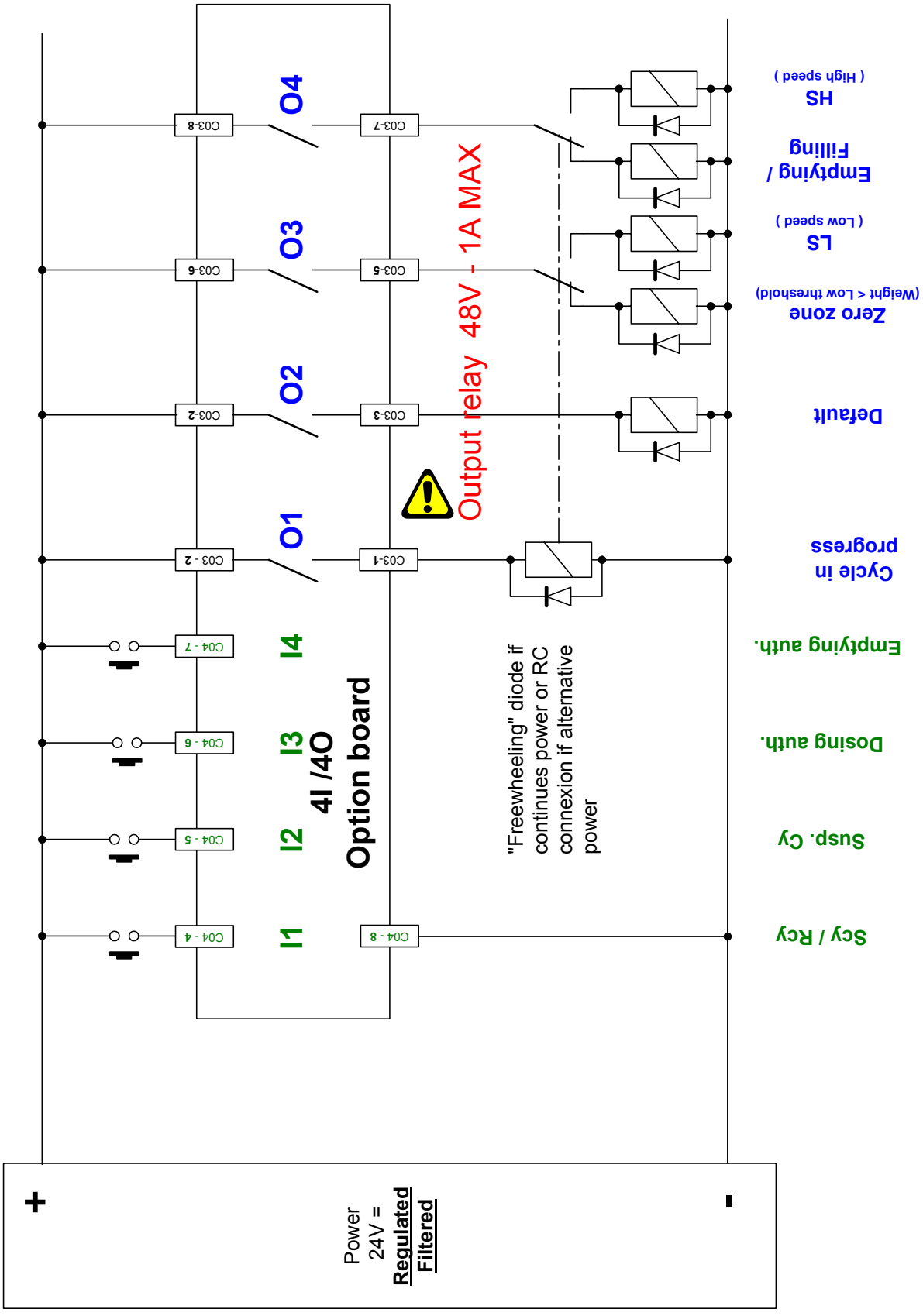
Inputs	Outputs
I1 : Start cycle - resume cycle	O1 : Cycle in progress
I2 : Suspend cycle / cancel	O2 : Default contact (HT or lack of product)
I3 : Dosing authorization	O3 : Low speed (LS) / Zero zone
I4 : Emptying authorization	O4 : High speed (HS) / Emptying or filling

Backside of the IDE : 4I4O option



2 header connectors (8 pins Male)

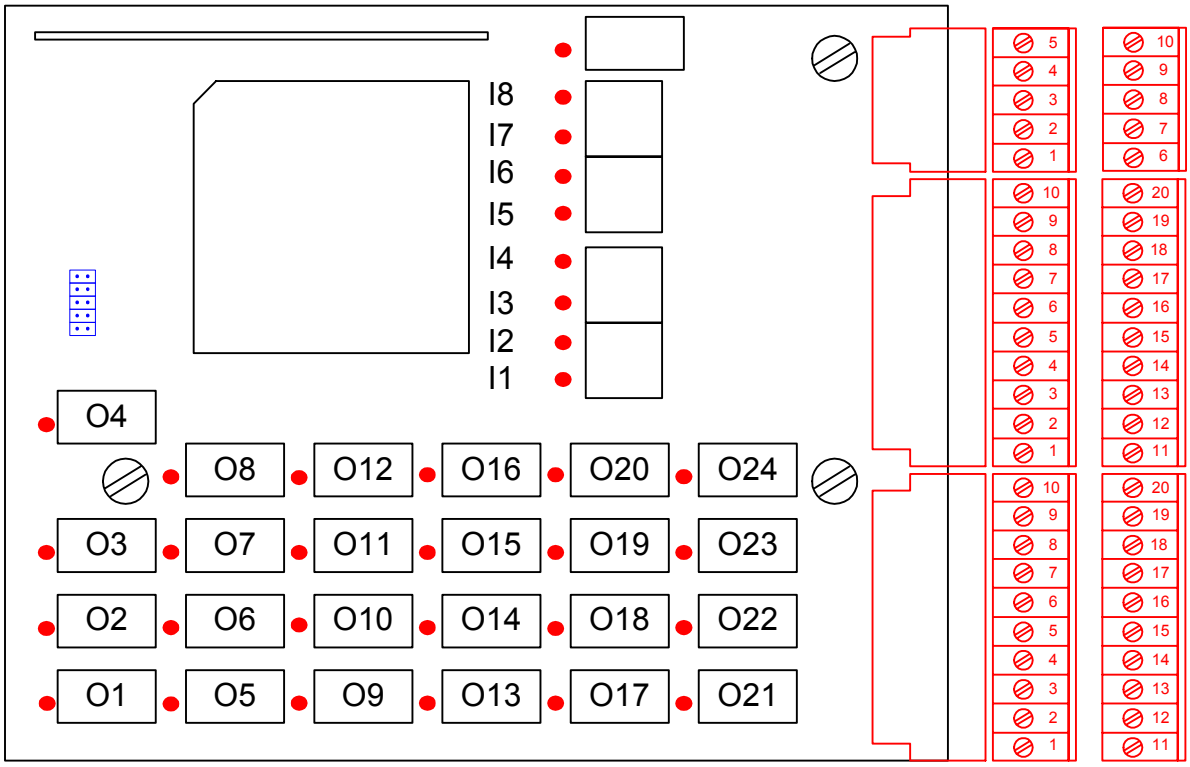
8.3. Wiring principle of 6 outputs on 4I4O option board.



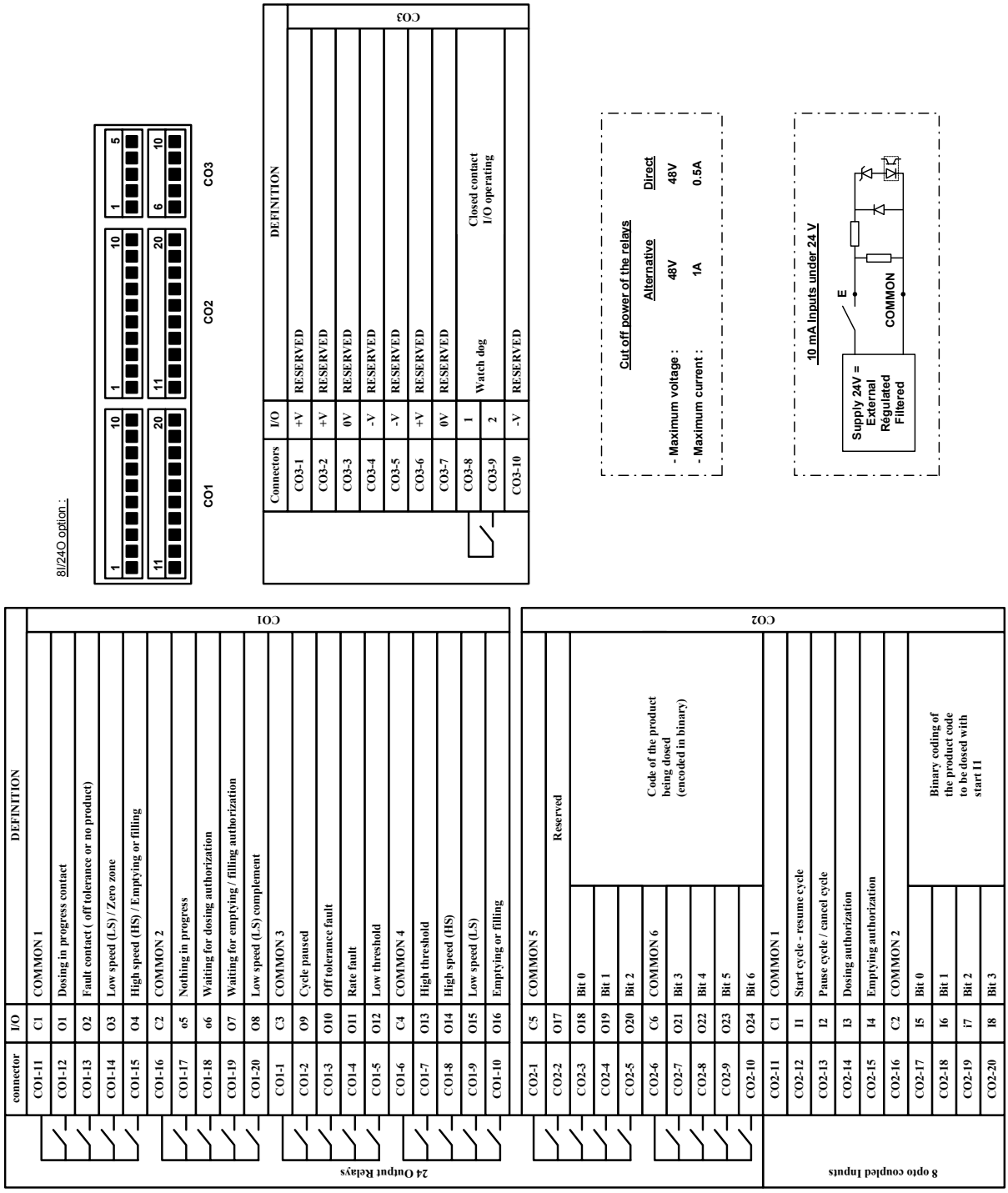
8.4. Connection of the 4E /4S option Board.

Old version of option board, replaced by 4I / 4O option board

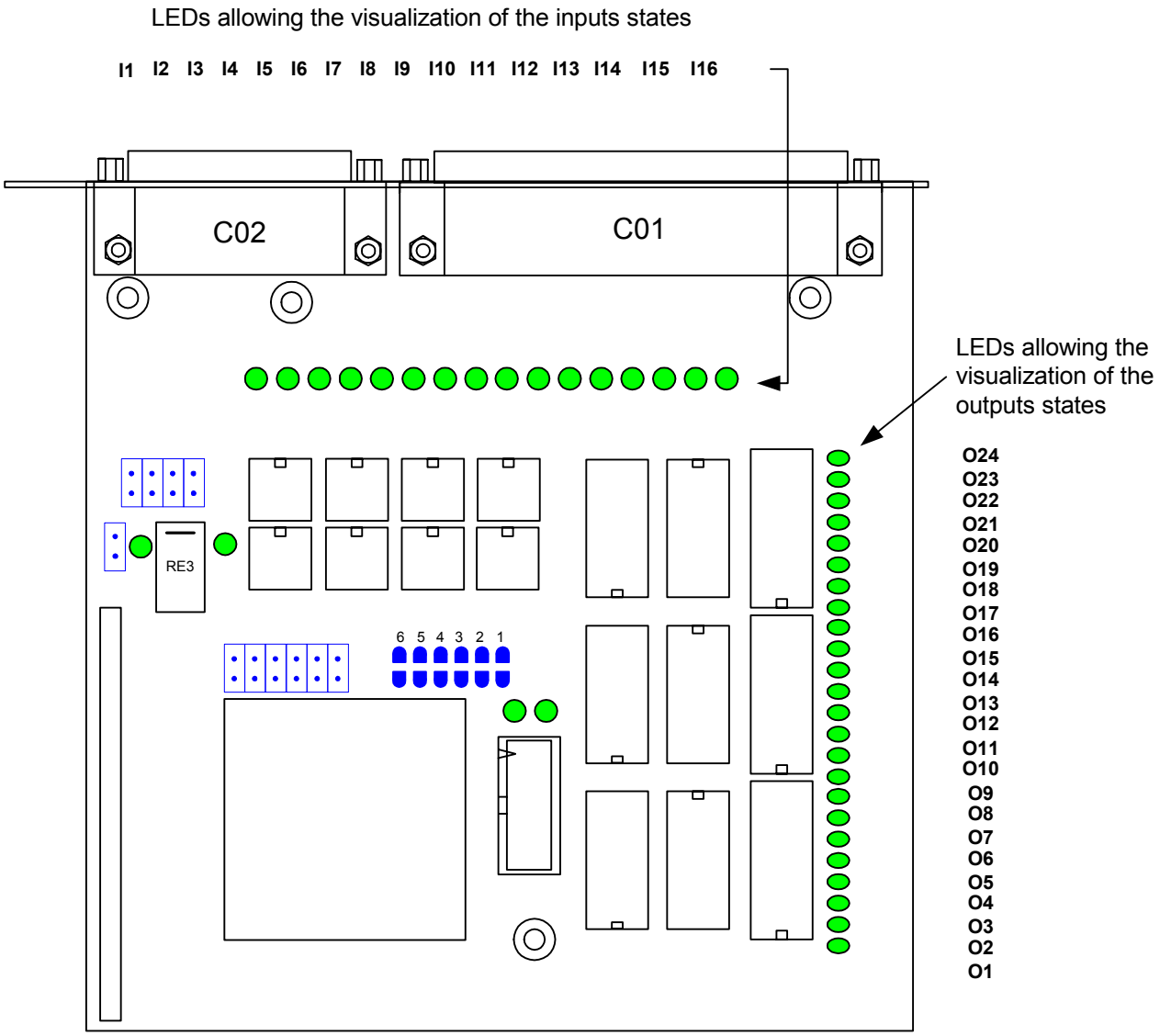
8.5. Layout of the 8I/24O board.



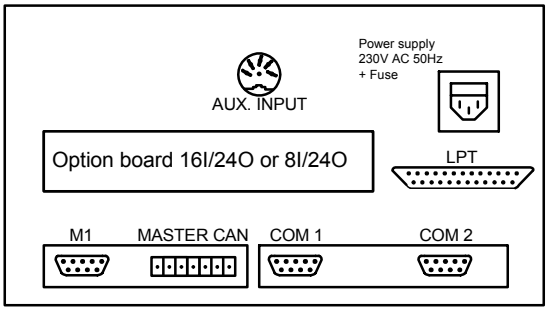
8.6. Connection of the 8I/24O option board.



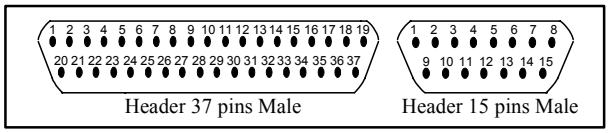
8.7. Layout of the 16I/24O board.



8.8. Connection of the 16I/24O option board.



16I/24O Option:



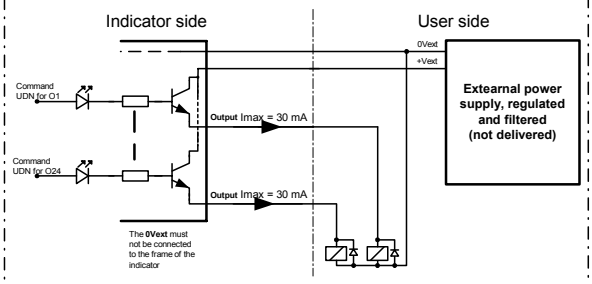
Connector 37 pins

Pinout 16I/24O	I / O	DEFINITION	
3	O1	Dosing in progress contact	
22	O2	Default contact (OT or lack of product)	
4	O3	Low speed (LS) / Zero Zone	
23	O4	High speed (HS) Emptying or filling	
5	O5	Nothing in progress	
24	O6	Wait for dosing authorization	
6	O7	Wait for the emptying/filling authorization	
25	O8	Low speed (LS) complement	
7	O9	Cycle suspended	
26	O10	Off tolerance default	
8	O11	Speed default	
27	O12	Low threshold	
9	O13	High threshold	
28	O14	High speed (HS)	
10	O15	Low speed (LS)	
29	O16	Emptying or filling	
11	O17	Reserved	
30	O18	Bit 0	Product code under dosing (code in binairy, first part)
12	O19	Bit 1	
31	O20	Bit 2	
13	I1	Start cycle - Resume cycle	
32	I2	Suspend cycle /Cancel	
14	I3	Dosing authorization	
33	I4	Emptying authorization	
15	I5	Bit 0	Binary coding of the product code to be dosed with the start cycle I1. (If 8I/24O or 8I/8O board)
34	I6	Bit 1	
16	I7	Bit 2	
35	I8	Bit 3	
18 - 19 - 37	ENT	+V ext. power supply	
1 - 2 - 20	ENT	0V ext.	
17 - 21 - 36	-	Not connected	

Connector 15 pins

Pinout 16I/24O	I / O	DEFINITION	
2	O21	Bit 3	Product code under dosing (code in binary, second part)
15	O22	Bit 4	
3	O23	Bit 5	
14	O24	Bit 6	
13			
4	I9	Bit 0	Coding in BCD of the product code to be dosed with a start cycle I1. (If 16I/24O board)
12	I10	Bit 1	
5	I11	Bit 2	
11	I12	Bit 3	
6	I13	Bit 4	
10	I14	Bit 5	
7	I15	Bit 6	
9	I16	Cancellation of a suspended cycle	
8	Out.	+V ext. power supply. (Not used)	
1	Out.	0V ext. (Not used)	

Output 30 mA Max under 24 V



Inputs 10 mA under 24 V