# WEIGH INDICATOR

# 3590E-AF08

# WHEELS WEIGHING – AXLES WEIGHING

## TECHNICAL MANUAL

E-AF08_02.00_10.10_EN_T

# INDEX

# 1. REQUIREMENTS FOR AN OPTIMAL INSTALLATION

To obtain the best results it is recommended to install the indicator and the platform (or transducer) in a place with the following conditions:

**A flat, level surface on which to rest**

**Stable and vibration free**

**No dust or strong vapours**

**No draughts**

**Make sure the platform is level or that the loading cells are resting evenly**

**Moderate temperature and humidity (15-30°C and 40-70%)**

**Do not install anywhere where there is the risk of explosion**

**All the indicator connections have to be made respecting the rules applicable in the zone and in the installing environment. Respect the recommended electrical precautionary measures described in section 1.1.**

**Make sure that the grounding is made correctly, see section 1.2.**

**Everything not expressly described in this manual has to be considered as improper use of the equipment.**

**Avoid welding with load cells installed.**

**Use waterproof sheaths and couplings in order to protect the load cell cables.**

**Use a waterproof junction box to connect the cells**.

## 1.1 ELECTRICAL PRECAUTIONARY MEASURES

**Mains power supply is restricted to within ± 10% of the rated voltage**

**Electric protections (fuses etc.) are provided by the technician installing the instrument.**

**Respect the recommended minimal distances that are mentioned for the various cable categories, see sections 1.1.1 and 1.1.2.**

**The extension leads of the load cells or signal amplifiers, used for the connection of the serial ports and analogue output must be within the allowed maximum lengths, see section 1.1.3.**

**The extension leads of the load cells or signal amplifiers must be screened. In addition they must be laid on their own in a raceway or metal pipe as far away as possible from the power supply cables.**

**Install "RC" filters on the contactor coils, on the solenoid valves and on all devices producing electric disturbances.**

**If it is possible that condensation could form inside the weight transmitter it is advisable to leave the instrument powered at all times.**

**Every shielded cable or not (for instance PC cable, cell cable, power supply cable) connected to the indicator should be as shorter as possible, then you have to come out of the shield the minimum length of cable, then connect to the terminal box;**

**If the indicator is situated inside an electric panel, the power supply cable should be a shielded cable as shorter as possible, distant from every coil supply cable, inverter, electromotive force, etc. and in addition dedicate an uncoupler transformer in order to feed the indicator only.**

### 1.1.1 CABLE CLASSIFICATION

The various cables are classified depending on the transmitted signals:

**Category I**
- Field bus, LAN (PROFIBUS, Ethernet, Devicenet…)
- Shielded data cables (RS232 …)
- Shielded cables for analogue/digital signals < 25V (sensors, load cells…)
- Low tension power supply cables (< 60V)
- Coaxial cables

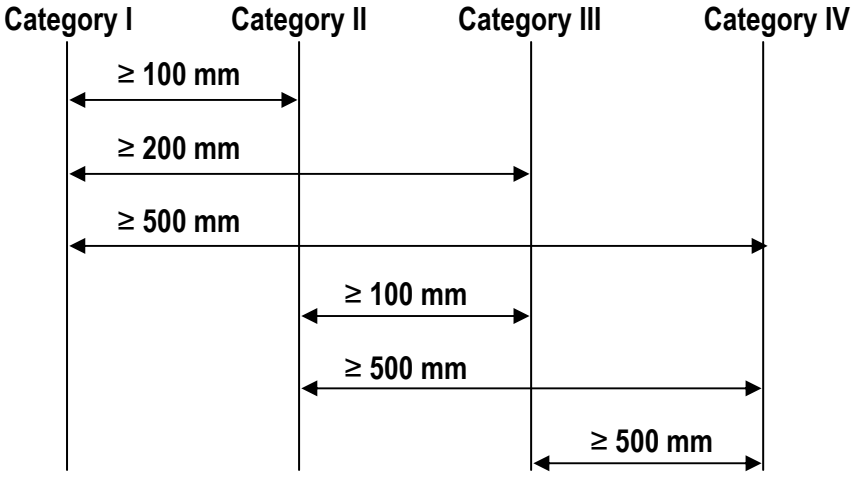
**Category II**
- DC supply cables with tension > 60V and < 400V
- AC supply cables with tension > 25V and < 400V

**Category III**
- Power supply cables with tension > 400V
- Telephone cables

**Category IV**
- Any cable subject to lightning

### 1.1.2 RECOMMENDED DISTANCES AMONG CABLES

- When the cables are laid next to each other, these must be at the distances in the table below
- These distances are valid if in the air; these are reduced if the raceways are separated by grounded metallic shields.
- Different category cables can cross each other (90°)




### 1.1.3 MAXIMUM CABLE LENGTH

**LOAD CELL CABLE**

The maximum reachable length from the line using the appropriate load cell cable is:
- 50 m with cable 6 x 0,25 $mm^2$
- 100 m with cable 6 x 0,5 $mm^2$

**RS232 CABLE**

The maximum reachable length from the line using the RS232 cable with a maximum baud rate of 19200, is about 15 m.

**RS485 CABLE**

The maximum reachable length from the line with the use of the appropriate cable for RS 485 connections (see section 5.1), is about 1200 meters.

**ANALOG OUTPUT CABLE**

The maximum length of the analogue output cable in current is:
- 100 m with cable 2 x 0,25 $mm^2$
- 150 m with cable 2 x 0,5 $mm^2$
- 300 m with cable 2 x 1 $mm^2$

The maximum length of the analogue output cable in voltage is:
- 50 m with cable 2 x 0,25 $mm^2$
- 75 m with cable 2 x 0,5 $mm^2$
- 150 m with cable 2 x 1 $mm^2$

## 1.2 EARTHING SYSTEM

For the right earthing and the optimal functioning of the system, it is necessary to connect the indicator, the load cells, the possible junction box and the weighing structure to the earth.
All earthing cables must have the shortest possible length in order to minimize their resistance.

## INDICATOR

Connect the external earthing of the indicator to the earth through copper cables having at least a 16 $mm^2$ cross-section.

## LOAD CELLS AND JUNCTION BOX

The earthing must be done by connecting the earthing cables to a ground bar with cables having a cross-section of at least 16 $mm^2$ and by connecting the ground bar to a ground pole with a cable having a cross-section of at least 50 $mm^2$.

- In the case the load cells are connected to the indicator through a junction box, it is necessary to connect the sheathing both of cells cables and of indicator cable to the earthing of the junction box (refer to the junction box manual) and connect this to the earth through copper cables having at least a 16 $mm^2$ cross-section.
- If the load cells are connected directly to the indicator (without the use of the junction box), one should connect the shieldings of the load cell cables to the grounding point (or earthing bar) inside the container.
- If the weighing system concerns large and/or outdoor structures, like weighbridges, and the junction box is connected to the indicator in a distance that is greater than 10 m, or in the presence of noise, the cable shield must be earthed both in the junction box and in the indicator, and the two ground leads must be connected with an earth cable having a cross-section of at least 16 $mm^2$.

## WEIGHING STRUCTURE

Connect the weighing structure and the possible connected structures (for example silos that release material on the weighing structure) to the earth through copper cables having at least a 16 $mm^2$ cross-section.

Furthermore it is necessary that for each cell, one connects the upper part with the lower part of the load cell through a copper braid section not less than 16 mm2; the upper part must be short-circuited with the surface of the weighing structure and the lower part must be grounded through a copper braid section not less than 16 mm2.

## CONNECTED SERIAL CABLES AND INSTRUMENTS

Connect the shield of the serial cable at the grounding point (or grounding bar) inside the container (on the end of the cable toward the indicator) and at the earth connection of the connected instrument (on the end of the cable toward the indicator), and ground the earth connection of the connected instrument, through a copper cable section not less than 16 $mm^2$.
To avoid possible side effects, the earth references of the connection and power supply cable of the indicator and of the connected instrument **must be at the same potential**.

## GENERAL NOTES:

- All the grounding cables must have an adequate length, in order to obtain **an overall resistance of grounding system less than 1 Ω.**

- In the case the weighing system regards great and/or outdoor structures, like weighbridges:

  - The grounding connection is to be made by connecting the grounding cables to a grounding bar and the grounding bar to the grounding pole with a cable section not less than 50 mm2.

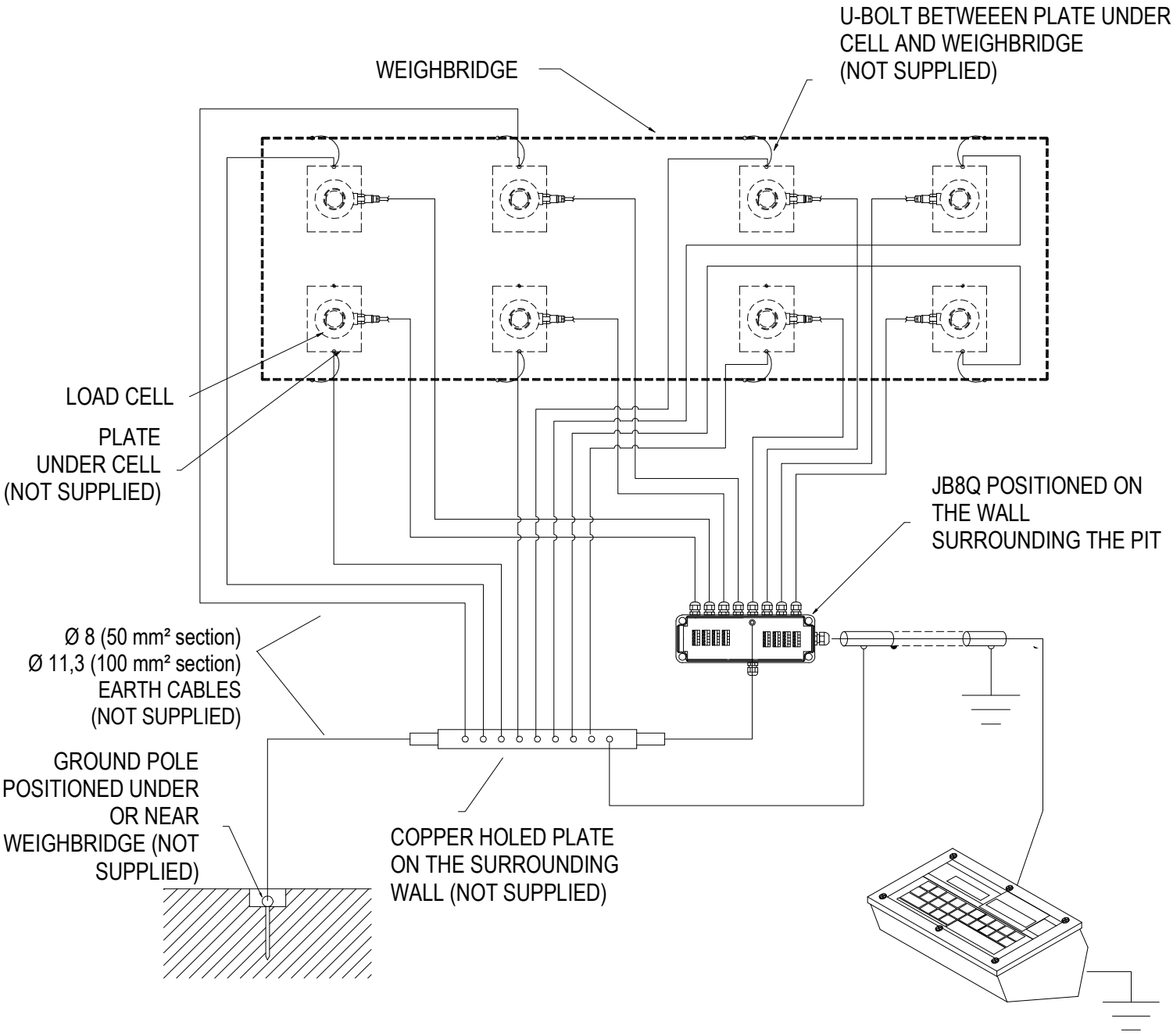
  - the cable cross-section must be greater (for example 50 $mm^2$ instead of 16 $mm^2$ and 100 $mm^2$ instead of 50 $mm^2$), because the voltage into play is greater (for example thunderbolts);

  - the ground pole must be positioned at a distance of at least 10 metres from the weighbridge structure;

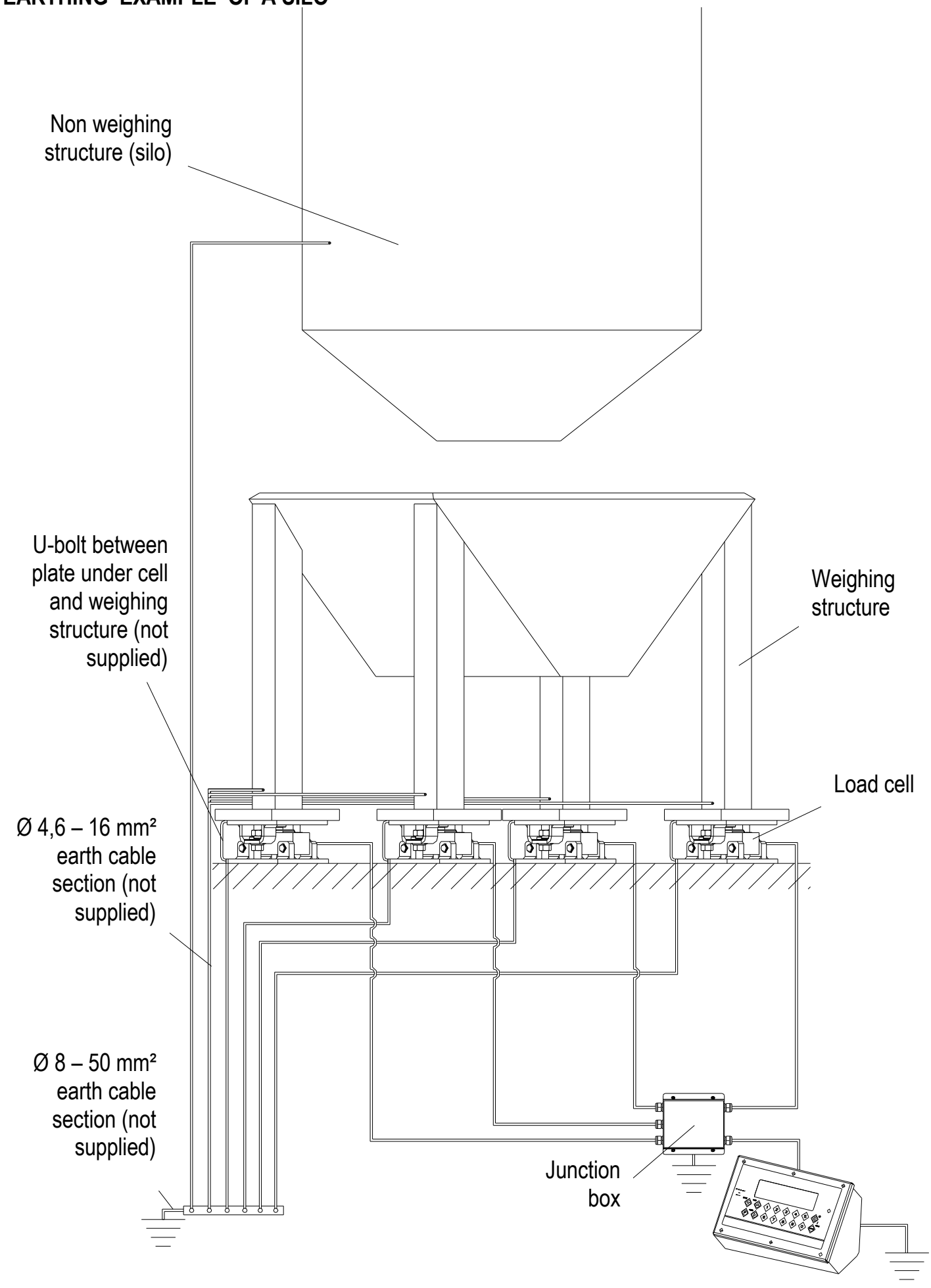
  - one needs to open the SENSE inside the indicator in order to offset the drifts due to the increase in temperature.

- One should check and remove, if necessary, the connection between the earth and the neutral wire of the electrical installation.

## EARTHING EXAMPLE WEIGHBRIDGE



## EARTHING EXAMPLE OF A SILO



# 2. CONNECTION TO THE LOAD RECEIVER
## 2.1 ANOLOG LOAD CELLS

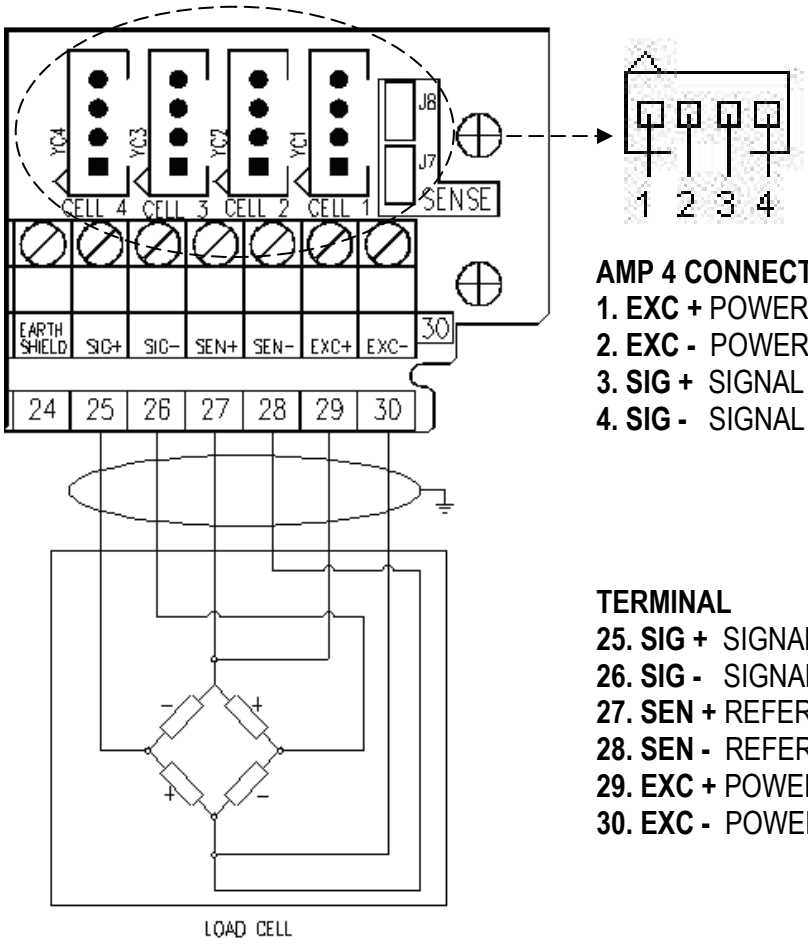
### IMPORTANT: Respect the electrical precautionary measures indicated in section 1.

After having followed the instructions regarding the platform or the load receiver, the screened cable leading from the load cell(s) must be connected to the instrument through the CELL1 terminal board and the CELL1, CELL2, CELL3, CELL4 connectors; see section 8.
The terminal board of the instrument may be connected to the 6-wire load receiver (with use of SENSE), or simply 4-wire; for this, through jumper J7 and J8 it is possible to choose whether to short-circuit the SENSE with the POWER SUPPLY (jumpers closed) or not (jumpers open).
The SENSE allows compensating for any drops in voltage in the part of the cable that connects the instrument to the transducer. It is useful when the distance between the indicator and the transducer is greater than 10 m.
The 4-pin connectors instead allow just the 4-wire connection.
To make the connection qualified personnel must open the instrument (see terminal board connections section 8).

**TAKE NOTE: if there is just one LOAD RECEIVER, it is possible to make a 6-wire connection (use of sense) directly with the terminal board, removing the J7 and J8 jumpers.**

**If there are two or more LOAD RECEIVERS, one should close the J7 and J8 jumpers (sense and power supply are short-circuited) and make the 4-wire connection.**

**Normally the indicator comes already connected to the platform and is ready to use.** If this is a LEGAL version instrument, access to the connection will be subject to a legal SEAL.
Follow the instructions for preparing the platform for use.







**AMP 4 CONNECTOR**
**1. EXC +** POWER SUPPLY +
**2. EXC -** POWER SUPPLY -
**3. SIG +** SIGNAL +
**4. SIG -** SIGNAL -

**TERMINAL**
**25. SIG +** SIGNAL +
**26. SIG -** SIGNAL -
**27. SEN +** REFERENCE +
**28. SEN -** REFERENCE -
**29. EXC +** POWER SUPPLY +
**30. EXC -** POWER SUPPLY -

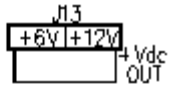
**See section 8 for further information.**

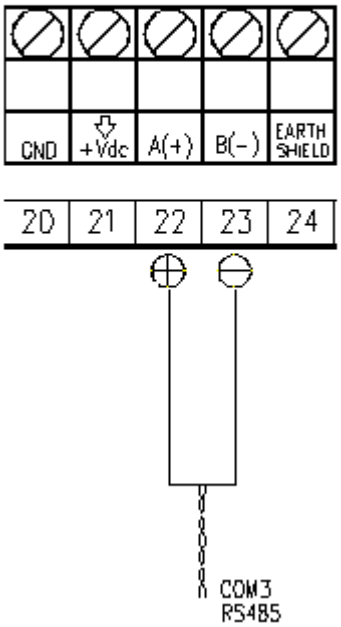
## 2.2 DIGITAL LOAD CELLS

**IMPORTANT:**

- **Respect the electrical precautionary measures indicated in section 1.**
- **Read carefully and apply what is described in chapter 5.3**

After having followed the instructions regarding the platform or the load receivers, the screened cable leading from the load cell(s) must be connected to the instrument through the COM3 RS485 terminal board.
**Below is the RS485 connection for digital load cells in the CoM3 of the indicator:**




| **TERMINAL** | **MEANING** |
|---|---|
| **20. GND** | POWER SUPPLY - |
| **21. +Vdc** | POWER SUPPLY + |
| **22. TX+/RX+** | Line 485 A(+) |
| **23. TX-/RX-** | Line 485 B(-) |

The voltage value of terminal 21 can be selected through J13 jumper, according to the required load cells power supply.
The possible selections are 6V or 12V, working if the relative power supply is connected to the indicator (respectively battery or external power supply, see J13 jumper description in section 8.1).
Consequently, the functioning with only the battery doesn't allow the connection of those digital load cells that require 12V power supply.

In the case of digital load cells connected to a digital junction board, connect the COM3 RS 485 terminal board of the indicator to the RS485 port of the junction board, by following the relative manual and the section 5.3.

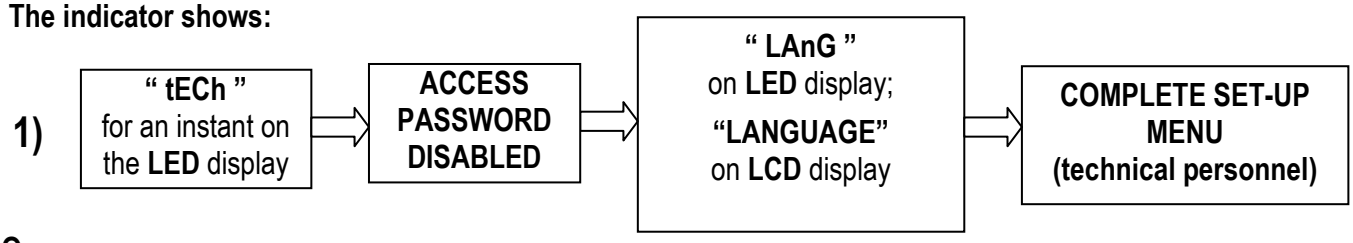
In the case of ring connection of more digital junction boards or DGX, connect the COM3 RS 485 terminal board of the indicator to the RS485 port of the first junction board/DGX, by following the relative manual and the section 5.3.

**Part reserved for the Authorised Technical Personnel**

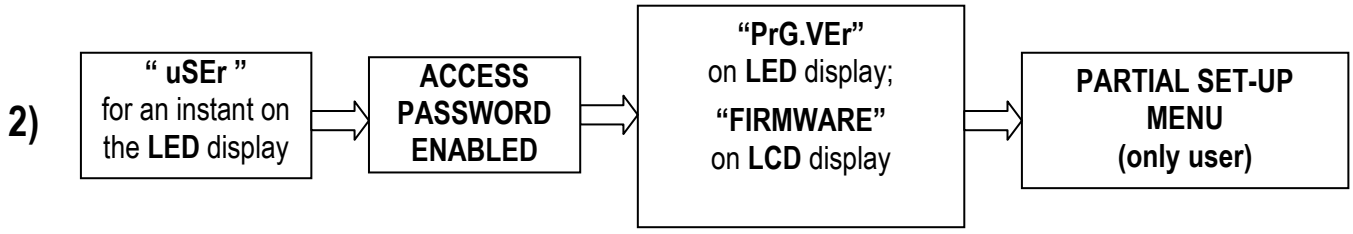
# 3. SETUP ENVIRONMENT

By "SETUP environment" we mean a certain menu inside which all the indicator operating parameters can be set.
**To enter it, turn on the instrument and, while the firmware version is displayed, press the TARE key for an instant.**

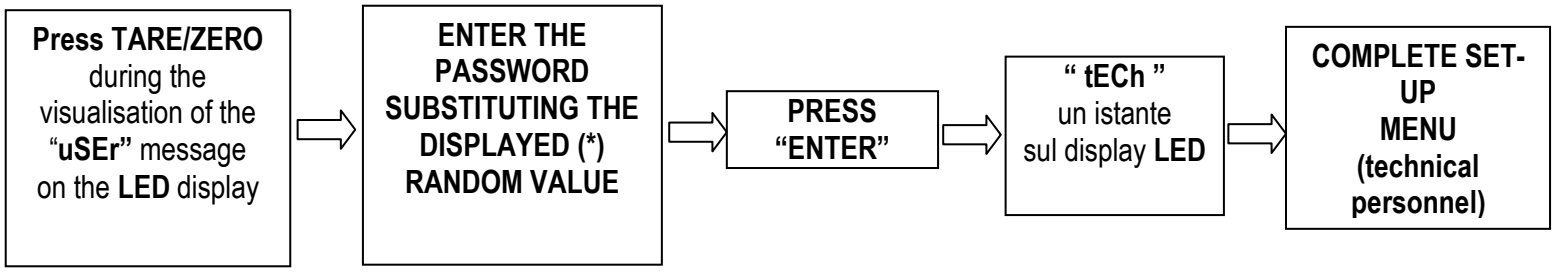
**The indicator shows:**




**Or**




If you are in choice **2)** and you want to access the complete set-up menu one should:




**(*)** If one has forgotten the password, one should communicate the display number to the manufacturer, who will supply a valid password JUST FOR THAT SPECIFIC NUMBER.

In the parameter description and in the block diagram:

- The **METRIC** parameters are shown with the **(*)** symbol**, and, with approved instrument, these may not be visible or read only. See the explanation of the parameter for the details.**
  **NOTE: The indicator is approved when the J1 jumper of the motherboard is closed (see the electrical scheme in the final chapter).**
- The **CONDITIONAL STEPS** are shown with the **(§)** symbol, **and are not accessible or displayed in specific conditions, shown in the step description**.
- The **DEFAULT VALUES** are shown with the **(!)** symbol placed next to the step and at the end of it.

**FUNCTION OF THE KEYS IN THE SET-UP ENVIRONMENT**

| KEY | FUNCTION |
|---|---|
| **F6, F7** | Allow to scroll forwards and backwards in the menu steps or in the parameters inside a step. |
| **Fn / ENTER** | Allows to enter a step or confirm a parameter inside a step. |
| **C / DEL** | Allows to exit a step without confirming any changes made and to go to the previous level.<br>While entering a code, it quickly zeros the displayed value. |
| **F5** | Allow print all configuration in the set-up environment (when in the main menu), or allow print only one step to the se-up environment (when in the single step desired).<br>The display show this message “PRINT”, press ENTER to confirm or C to cancel. |
| **NUMERIC KEYBOARD** | Allows entering digits or characters. |

The LED and LCD displays show respectively the current parameter and its description; generally, when one exits a step the instrument places itself on the following step.

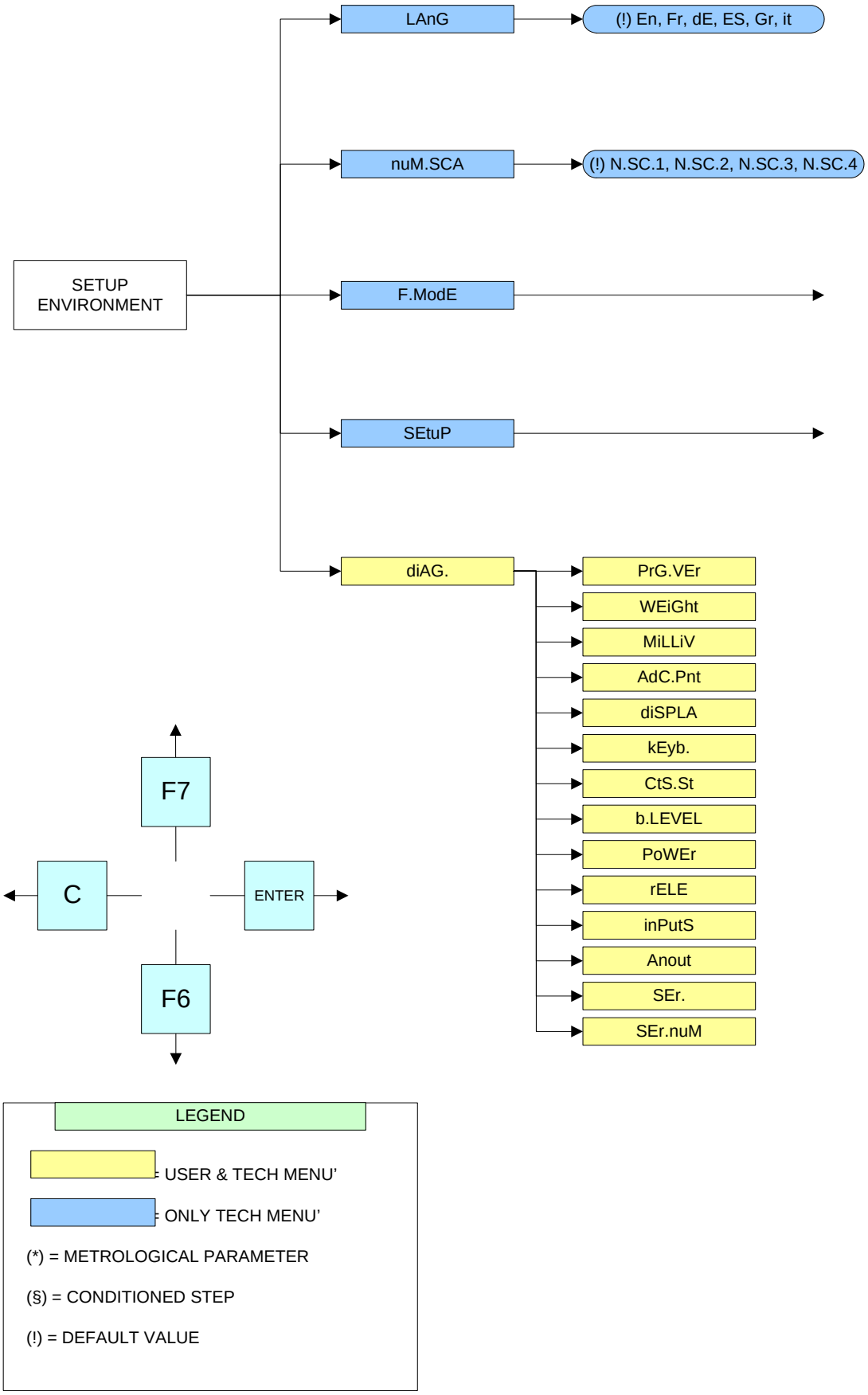
**TO EXIT THE SET-UP ENVIRONMENT, PRESS THE C KEY MANY TIMES UNTIL THE INDICATOR SHOWS:**

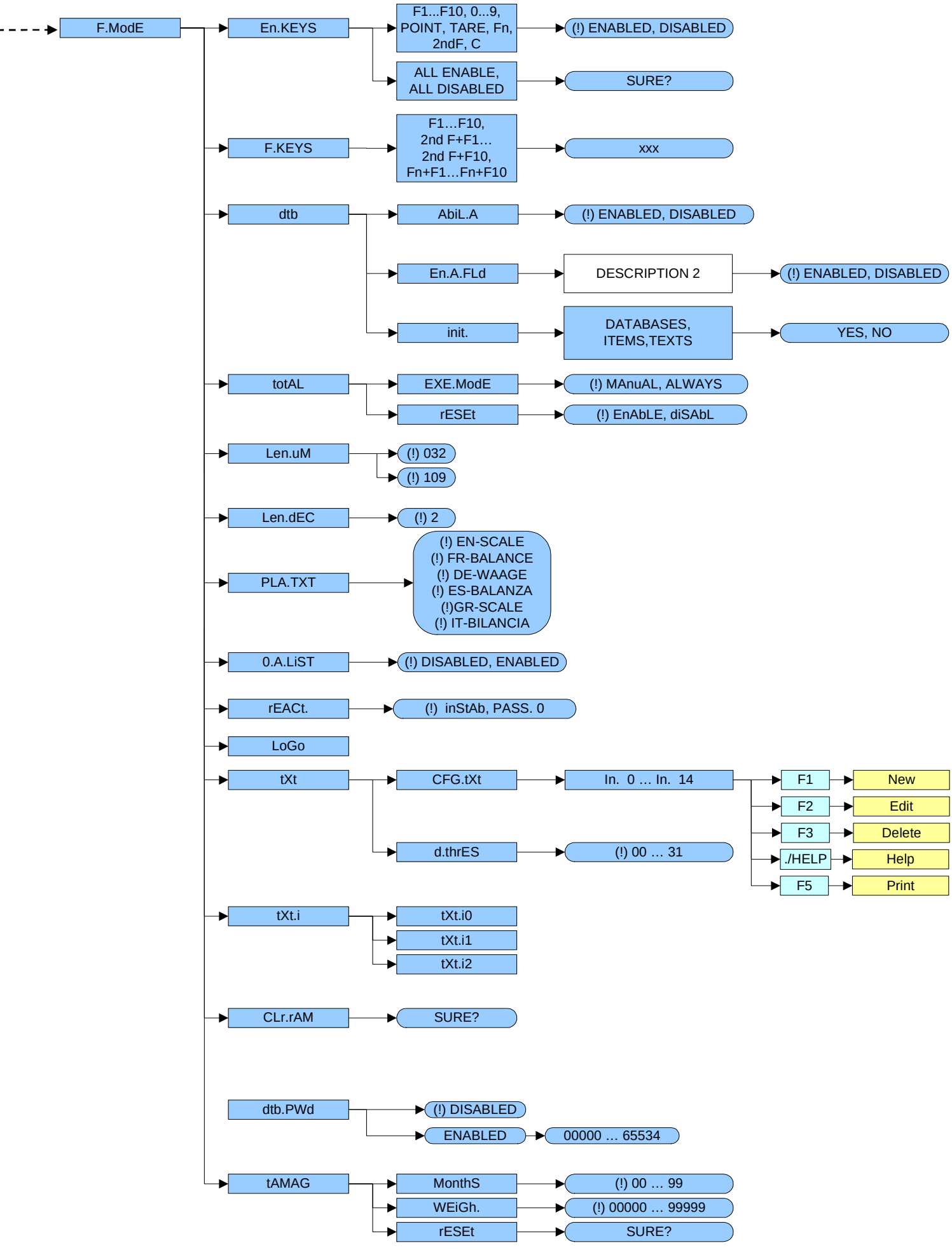
| | |
|---|---|
| SAVE? | **EXITING SETUP:**<br>**SAVE ?** |

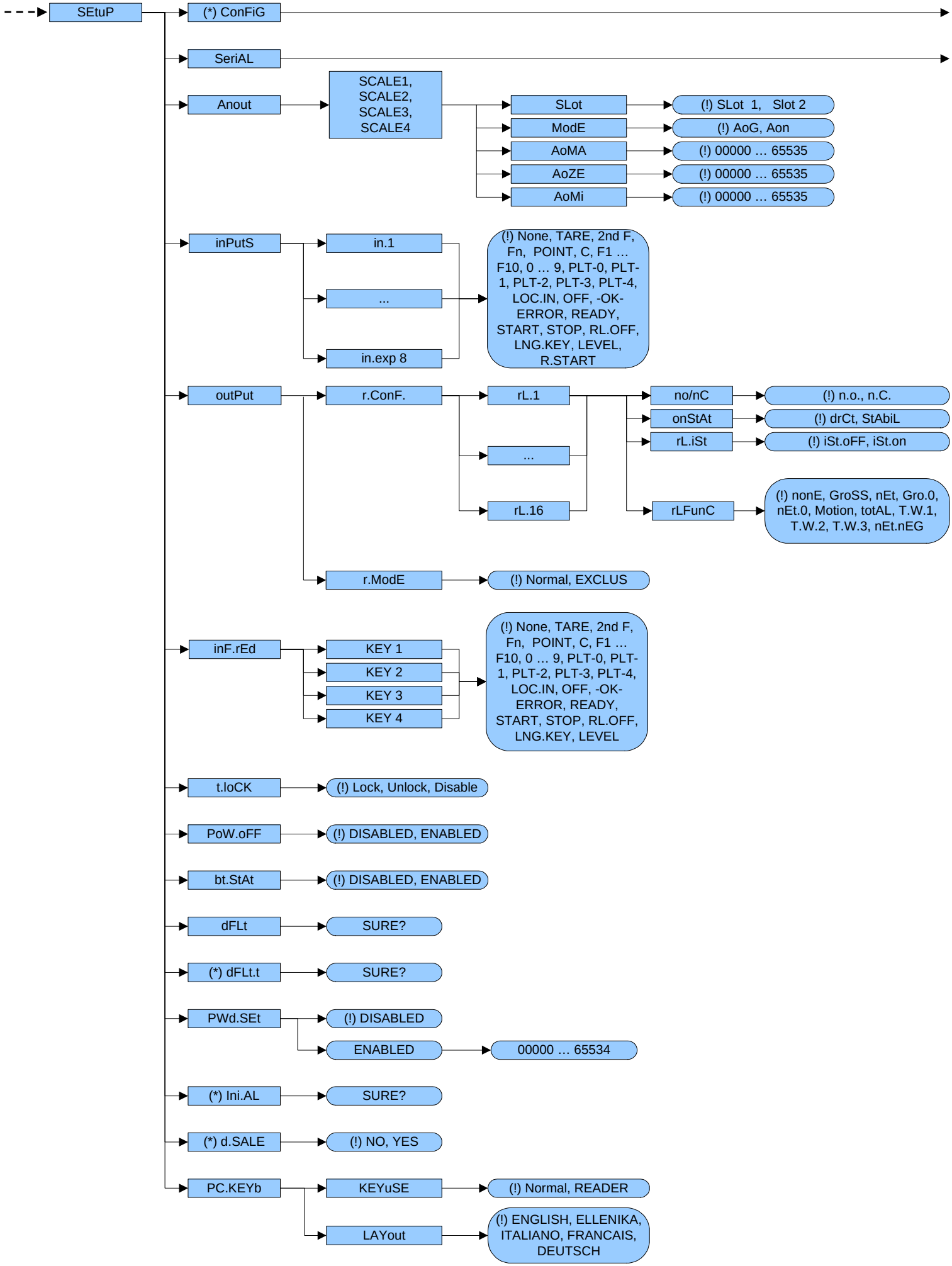
**CONFIRM WITH ENTER TO SAVE CHANGES MADE OR PRESS ANOTHER KEY TO NOT SAVE.**

## 3.1 SET-UP ENVIRONMENT BLOCK DIAGRAM

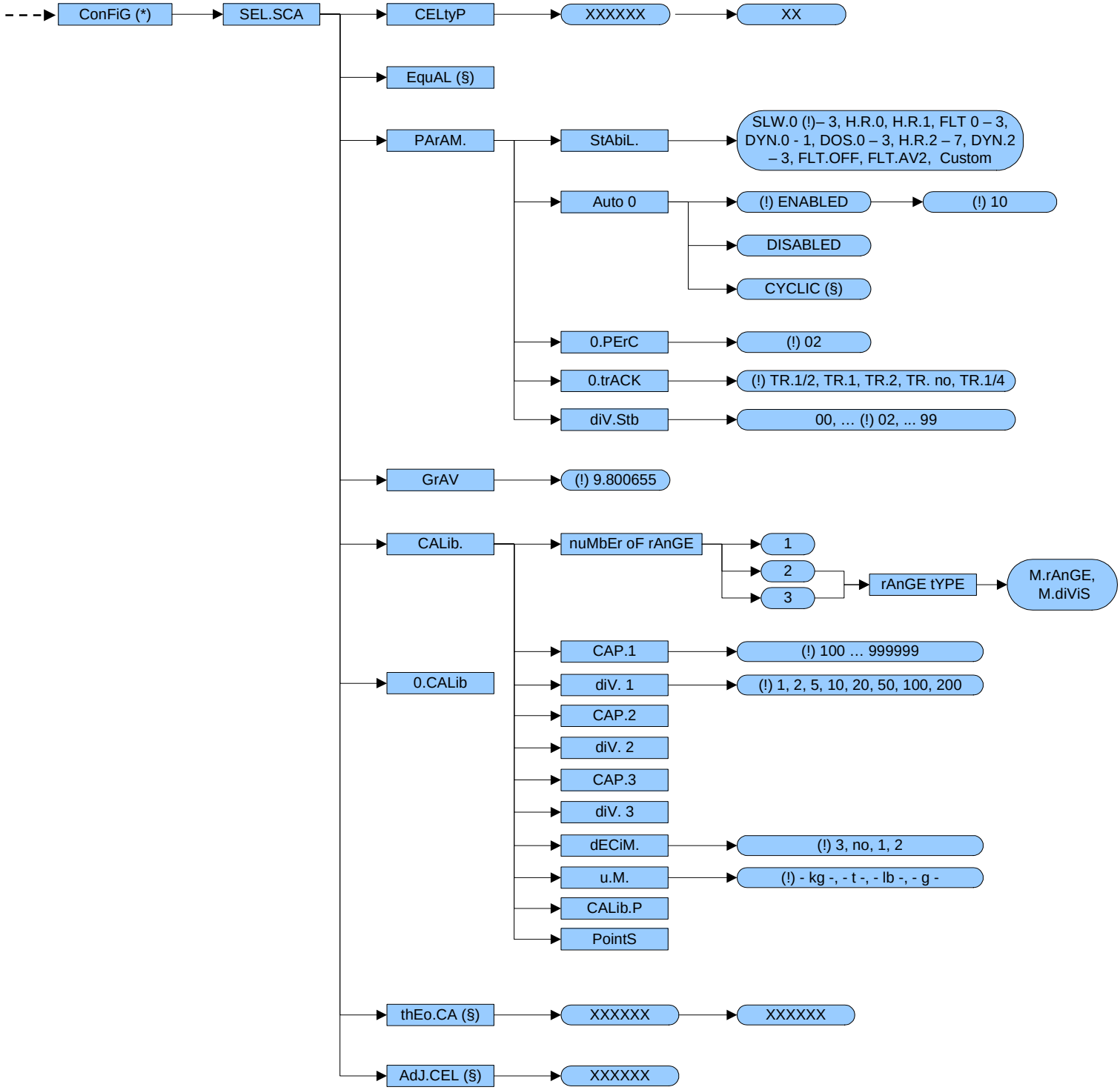
The following diagram represents the structure of the indicator's set-up environment; each step has been described in detail in the paragraph 3.2.




F.ModE
En.KEYS
F1...F10, 0...9, POINT, TARE, Fn, 2ndF, C
(!) ENABLED, DISABLED
ALL ENABLE, ALL DISABLED
SURE?
F.KEYS
F1…F10, 2nd F+F1… 2nd F+F10, Fn+F1…Fn+F10
xxx
dtb
AbiL.A
(!) ENABLED, DISABLED
En.A.FLd
DESCRIPTION 2
(!) ENABLED, DISABLED
init.
DATABASES, ITEMS,TEXTS
YES, NO
totAL
EXE.ModE
(!) MAnuAL, ALWAYS
rESEt
(!) EnAbLE, diSAbL
Len.uM
(!) 032
(!) 109
Len.dEC
(!) 2
PLA.TXT
(!) EN-SCALE
(!) FR-BALANCE
(!) DE-WAAGE
(!) ES-BALANZA
(!)GR-SCALE
(!) IT-BILANCIA
0.A.LiST
(!) DISABLED, ENABLED
rEACt.
(!) inStAb, PASS. 0
LoGo
tXt
CFG.tXt
In. 0 … In. 14
F1
New
F2
Edit
F3
Delete
./HELP
Help
F5
Print
d.thrES
(!) 00 … 31
tXt.i
tXt.i0
tXt.i1
tXt.i2
CLr.rAM
SURE?
dtb.PWd
(!) DISABLED
ENABLED
00000 … 65534
tAMAG
MonthS
(!) 00 … 99
WEiGh.
(!) 00000 … 99999
rESEt
SURE?


SEtuP
(*) ConFiG
SeriAL
Anout
SCALE1, SCALE2, SCALE3, SCALE4
SLot
(!) SLot 1, Slot 2
ModE
(!) AoG, Aon
AoMA
(!) 00000 ... 65535
AoZE
(!) 00000 ... 65535
AoMi
(!) 00000 ... 65535
inPutS
in.1
...
in.exp 8
(!) None, TARE, 2nd F, Fn, POINT, C, F1 ... F10, 0 ... 9, PLT-0, PLT-1, PLT-2, PLT-3, PLT-4, LOC.IN, OFF, -OK-ERROR, READY, START, STOP, RL.OFF, LNG.KEY, LEVEL, R.START
outPut
r.ConF.
rL.1
...
rL.16
no/nC
(!) n.o., n.C.
onStAt
(!) drCt, StAbiL
rL.iSt
(!) iSt.oFF, iSt.on
rLFunC
(!) nonE, GroSS, nEt, Gro.0, nEt.0, Motion, totAL, T.W.1, T.W.2, T.W.3, nEt.nEG
r.ModE
(!) Normal, EXCLUS
inF.rEd
KEY 1
KEY 2
KEY 3
KEY 4
(!) None, TARE, 2nd F, Fn, POINT, C, F1 ... F10, 0 ... 9, PLT-0, PLT-1, PLT-2, PLT-3, PLT-4, LOC.IN, OFF, -OK-ERROR, READY, START, STOP, RL.OFF, LNG.KEY, LEVEL
t.loCK
(!) Lock, Unlock, Disable
PoW.oFF
(!) DISABLED, ENABLED
bt.StAt
(!) DISABLED, ENABLED
dFLt
SURE?
(*) dFLt.t
SURE?
PWd.SEt
(!) DISABLED
ENABLED
00000 ... 65534
(*) Ini.AL
SURE?
(*) d.SALE
(!) NO, YES
PC.KEYb
KEYuSE
(!) Normal, READER
LAYout
(!) ENGLISH, ELLENIKA, ITALIANO, FRANCAIS, DEUTSCH


SEriAL
PortS
(!) PC.Pr.AX, PC.AX.Pr, Pr.PC.AX, Pr.AX.PC, AX.PC.Pr, AX.Pr.PC
CoMPrn
bAud
(!) 9600, 1200, 2400, 4800, 19200, 38400, 57600, 115200
PAritY
(!) None, Odd, Even
Word
(!) 8 bit, 7 bit
StoP b
(!) 1 bit, 2 bit
CtS.St.
(!) LOW, HIGH, EMUCTS, NO.CTS
PWrPrn
(!) PWrint, EXtoFF, PWrEXt
ProtoC
(!) norMAL, riPE 6, ALibi, Cont, MUL.RIP
CoM PC
bAud
(!) 9600, 1200, 2400, 4800, 19200, 38400, 57600, 115200
PAritY
(!) None, Odd, Even
Word
(!) 8 bit, 7 bit
StoP b
(!) 1 bit, 2 bit
CtS.St.
(!) NO.CTS, LOW, HIGH, EMUCTS
Add.485
(!) 00 … 99
ProtoC
(!) StAnd, AFXX, riPE 6, riPLCd, Mondir, ALibi, MUL.RIP
PC.ModE
(!) rEquE., Cont., StAbiL, - 485 -
CoMAuX
bAud
(!) 9600, 1200, 2400, 4800, 19200, 38400, 57600, 115200
PAritY
(!) None, Odd, Even
Word
(!) 8 bit, 7 bit
StoP b
(!) 1 bit, 2 bit
CtS.St.
(!) NO.CTS, LOW, HIGH, EMUCTS
ProtoC
(!) nonE, Cont., riPE 6, ripeDC
CEL.Add
XX
XXXXXX
rEAdEr
(!) DISABLE, COM.PRN, COM.AUX
r71.rEP
(!) DISABLED, ENABLED
Prn.FMt
C.F.01 … 30
tErMin
(!) LF, NO.TERM, CR, CR LF
dEF.Prn


ConFiG (*)
SEL.SCA
CELtyP
XXXXXX
XX
EquAL (§)
PArAM.
StAbiL.
SLW.0 (!)– 3, H.R.0, H.R.1, FLT 0 – 3, DYN.0 - 1, DOS.0 – 3, H.R.2 – 7, DYN.2 – 3, FLT.OFF, FLT.AV2, Custom
Auto 0
(!) ENABLED
(!) 10
DISABLED
CYCLIC (§)
0.PErC
(!) 02
0.trACK
(!) TR.1/2, TR.1, TR.2, TR. no, TR.1/4
diV.Stb
00, … (!) 02, ... 99
GrAV
(!) 9.800655
CALib.
nuMbEr oF rAnGE
1
2
3
rAnGE tYPE
M.rAnGE, M.diViS
0.CALib
CAP.1
(!) 100 … 999999
diV. 1
(!) 1, 2, 5, 10, 20, 50, 100, 200
CAP.2
diV. 2
CAP.3
diV. 3
dECiM.
(!) 3, no, 1, 2
u.M.
(!) - kg -, - t -, - lb -, - g -
CALib.P
PointS
thEo.CA (§)
XXXXXX
XXXXXX
AdJ.CEL (§)
XXXXXX

## 3.2 DESCRIPTION OF THE STEPS

### << LAnG >> FIRMWARE LANGUAGE

| Parameter | Language | Used Codepage (see section 7.2) |
|---|---|---|
| - **En** | English | 1252 Windows Latin 1 |
| - **Fr** | FranÇais | 1252 Windows Latin 1 |
| - **dE** | Deutsch | 1252 Windows Latin 1 |
| - **ES** | Español | 1252 Windows Latin 1 |
| - **Gr** | Ellenika | 1253 Windows Greek |
| - **It** | Italiano | 1252 Windows Latin 1 |

**(!) En**

### << nuM.SCA >> NUMBER OF CONNECTED SCALES (*)

- n.SC. 1 (1 scale).
- n.SC. 2 (2 scales).
- n.SC. 3 (3 scales).
- n.SC. 4 (4 scales).

**(!) n.SC. 1**

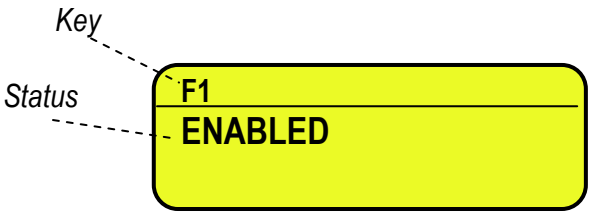
**(*)** In case of approved instrument the parameter is read only.

### << F.ModE >> SCALE FUNCTIONING

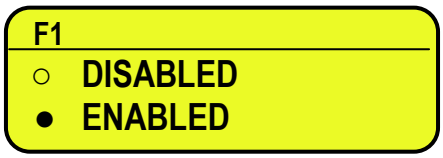
#### << En.kEyS >> KEYS ENABLING

It is possible to enable/disable each single key of the keyboard:

- select the desired key with **F6**/**F7**:




- press **ENTER** to modify the setting:




- Press **F6**/**F7** to select “ENABLED” (enabled) or “DISABLED” (disabled) and **ENTER** to confirm.

**NOTES:**

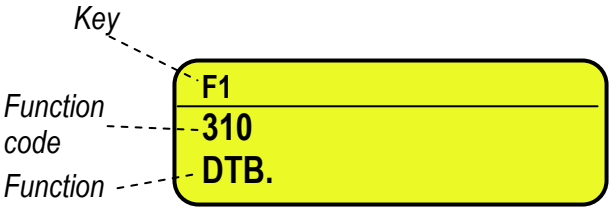
- It’s possible to enable/disable all the keys together, by selecting “ENABLE ALL” or “DISABLE ALL” (the confirmation will be requested with the message “SURE?”).
- The disabling of the keys will have effect only the WEIGHING PHASE, in other words, not inside the menus, databases, etc…
- The turning off of the instrument (long pressing of the **C** key) will always be enabled.
- The disabling of the keys will be applied also on the PC keyboard, if connected.

**(!) ENABLE ALL**

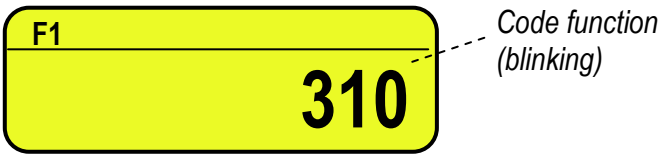
## << F.kEyS >> FUNCTION KEYS COUPLING

It's possible to modify the function of the F1, F2…..F10 keys, and the combination of these with the **2nd F** or **Fn** keys (i.e. "2nd F + F1", "Fn + F2", etc...).

- select the desired key with F6/F7:




- press ENTER to modify the setting:




- Enter the desired code and confirm with ENTER.

| CODE | BASIC FUNCTION | DEFAULT KEY/S |
|---|---|---|
| 100 | Scale Zero (ZERO) | ZERO |
| 101 | Cyclic Zero (0.CYCLE) | 2ndF + ZERO |
| 102 | Tare Execution (TARE) | TARE |
| 103 | Activate printer (PRN-ON) | Fn + 0 |
| 104 | Simple printout (PRINT) | F5 |
| 105 | Repetition of the last executed printout (CPY.PRN) | 2ndF + F5 |
| 106 | Change weight visualization (WEI.VIS) | 2ndF + F8 |
| 107 | Change visualizationLCD display (LCD.VIS) | 2ndF + F9 |
| 108 | Lock/Unlock the keyboard (L. KEYB) | F1 pressed at length |
| 109 | Display of Net Weight with sensitivity x 10 (Disp.10) | F2 pressed at length |
| 110 | Setting Date/Time (CLOCK) | F3 pressed at length |
| 111 | Diagnostic Menu (Diag.) | F4 pressed at length |
| 112 | Lock/Unlock Tare (L. TARE) | F5 pressed at length |
| 113 | Input Texts Configuration (txt) | F4 |
| 114 | Calculator (CALC) | |
| 115 | Printout and Reset Partial Total (Prn.0.t0) | F8 |
| 116 | Printout and Reset General Total (Prn.0.t1) | F9 |
| 117 | Printout and Reset Grand Total (Prn.0.t2) | F10 |
| 118 | Diagnostics peripheral units (P.DIAG) | |
| 119 | Com data diagnostics (COM.DAT) | |
| **OTHER FUNCTIONS** | | |
| 200 | Linking Print Formats (Prn.Fmt) | |
| 201 | Linking Second Print Format (SND.FMT) | |
| 202 | Setpoint configuration (SETPNT) | |
| 204 | Channel 1 selection (PLT-1) | 2ndF + 1 |
| 205 | Channel 2 selection (PLT-2) | 2ndF + 2 |
| 206 | Channel 3 selection (PLT-3) | 2ndF + 3 |
| 207 | Channel 4 selection (PLT-4) | 2ndF + 4 |
| **SPECIAL FUNCTIONS** | | |
| 300 | Nr of scales used (USED.CH) | 2ndF + F2 |
| 301 | Selection sum (Sum) | 2ndF + 0 |
| 302 | Platform coordinates (P.COORD) | F2 |
| 303 | Select weighing mode (WEI.MOD) | 2ndF + F3 |
| 304 | Totalisation (totAL) | F6 |
| 305 | Automatic print partial total (Aut.prn) | F3 |
| 306 | Visualize weighs list (WEI.LIS) | |
| 307 | Print weighs list (Prn.W.L.) | 2ndF + F6 |
| 308 | Cancel last weigh (CAnC. 1) | 2ndF + F7 |
| 309 | Cancel last vehicle (CAnC. 2) | |
| 310 | Databese (DTB.) | F1 |
| 311 | Item alpha-betic search (SEL.ITM) | |
| 312 | Switching sum visualization (CHG.VIS) | F7 |

| VISUALISATION / PRINTOUT MENU | | |
|---|---|---|
| 400 | Number of Ticket Copies (CoPiES) | |
| 401 | Set progressive digits (Prg.1) | |
| 402 | Set progressive ticket (Prg.2) | |
| 403 | Reset progressive lot (0.Prg) | |
| 404 | Visualize partial total (V.t.Cus) | |
| 405 | Print partial total (Prn.Cus) | 2ndF + F1 |
| 406 | Reset partial total (0.Cus) | |
| 407 | Visualize general total (0.CusS) | |
| 408 | Print general total (V.t.Mat) | |
| 409 | Reset general total (Prn.Mat) | 2ndF + F2 |
| 410 | Visualize grand toal (0.Mat) | |
| 411 | Print grand total (0.MatS) | |
| 412 | Reset grand total (V.t.VEh) | |
| 413 | Reset scale totals (Prn.VEh) | |
| 414 | Reading alibi memory (0.VEh) | |
| **WEIGHING THRESHOLDS** | | |
| 500 | Set maximum threshold (tr.HI) | |
| 501 | Set minimum threshold (tr.LO) | |

## **<< dtb >>** DATABASES

### **<< AbiL.A >>** ITEMS DATABASE ENABLING

It's possible to enable or disable the DATABASE:
**ENABLED:** databases enabled.
**DISABLED:** databases disabled.
- Press **F6**/**F7** to select "ENABLED" or "DISABLED", and **ENTER** to confirm.

**(!) ENABLED**

### **<< En.A.FLd >>** DATABASE FIELD ENABLING

It's possible to enable one by one the fields required for the DATABASE.


- Press **F6**/**F7** to select "ENABLED" or "DISABLED", and **ENTER** to confirm.
- Proceed up to the last suggested field, after which it automatically exits the step.

**(!) ENABLED**

**NOTE: The first customer description is always enabled.**

### **<< init. >>** INITIALIZE DATABASES and INPUT TEXTS

By pressing **ENTER** one initialises the DATABASES (with the total values) and the INPUT TEXTS: in this way all their contents will be cancelled.
The cancellation is not immediate; the indicator requests a further confirmation (the LCD display shows "RESET DATABASES ? ENTER=YES C=NO").
By pressing **ENTER** one confirms the operation, by pressing **C**, the indicator gives the possibility to cancel all the databases **individually** in this order: INPUT TEXTS, ITEMS.

## << totAL >> TOTALIZER

### << t.ModE >> TYPE OF TOTALISATION

It is possible to select the type of totalisation:
- **MAnuAL** manual totalisation with reenabling according to how the **rEACt** "REENABLINGS" step is set.
- **ALWAYS** manual totalisation is always active.

**(!) MAnuAL**

### << rESEt >> CONFIRM RESET

It is possible to select the automatic resetting of the totals when these are printed (**diSAbL**) or the resetting upon request (**EnAbLE**).

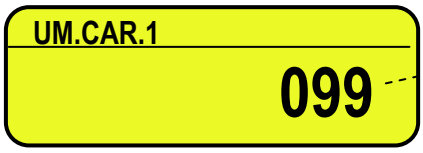
**(!) EnAbLE**

## <<LEn.uM >> UNIT OF MEASURE COORDINATES

In this step is possible to set the unit of measure of the barycentre coordinates.
The unit of measure is set through the insertion of 2 ascii codes corresponding to the two characters in the text unit of measure.

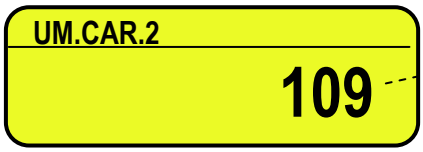
**EXAMPLE**
If you want set "cm" as unit of measure you have to insert the 2 ascii codes, corresponding to the character "c" and the "m":

**INSERTION FIRST CHARACTER**




Insertion ascii code corresponding to "c" character

**INSERTION SECOND CHARACTER**




Insertion ascii code corresponding to "m" character

This way the unit of measure that will be displayed on weighing (wheels weighs type) will be "cm".

You set through numeric keyboard the desidered ascii code and press the **ENTER** key for confirm.

If the value inserted is false, is possible delete fast this value through the **C** key.
For set the charactres that correspond to text of the unit of measure see the paragraph 7.2 "TABLE ASCII CODE"

**(!)" m"**

## <<LEn.dEC >> NUMBER OF DECIMALS COORDINATES

In this step you can set the number of decimal places which will see the units, the coordinates of the barycentre.
The range of value runs from 0 to 3.You can set through numeric keyboard the desired value and press **ENTER** key for confirm.

**(!) 2**

## <<PLA.txt >> PRINTOUT TEXT FOR THE PLATFORM

In this step one sets the text (up to 10 characters) of the platform which you want to weigh; this description will be shown in the relative printouts.

**(!) SCALE**

## << 0.A.LIST >> AUTOMATIC CLEAR OF WEIGH LIST

Is possible enabled or disable the automatic clear of the weigh list.
**ENABLED:** reached the max number of totalisation (3500), automatic clear the weigh list.
**DISABLED:** reached the max number of totalisation (3500), the LCD display show:"full list clear?".Press ENTER key for confirm.

**NOTE**
With step set on "DISABLED", reached the max number of totalisation, if don't be to clear the weigh list, each next totalisation the instrument show on LCD display the text of the clear weigh list.
**(!) DISABLED**

## << rEACt. >> REACTIVATIONS

It is possible to set whether to reactivate the printout and the weighing:
- PASSAGE BY ZERO OF THE NET WEIGHT **(PASS. 0)**
- WEIGHT INSTABILITY **(inStAb)**

**(!) inStAb**

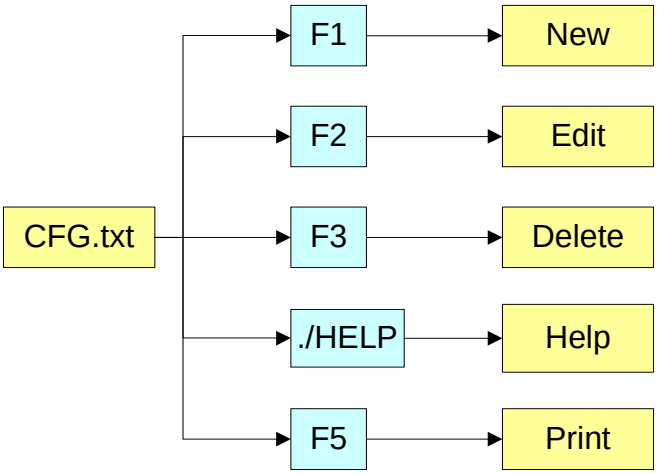
## << LoGo >> TEXT UPON START-UP

At the start-up of the indicator, the LCD display shows a message of 2 lines of 16 characters, which is set in this step, or a 160x32 pixel photo uploadable from Dinitools™ (" *.bmp "monochromatic format is accepted).
**(!)** DINI ARGEO

## << tXt >> INPUT TEXTS

### << CFG.tXt >> INPUT TEXT CONFIGURATION

Through this step one can enter, modify or cancel the heading of the input texts which will be filled in during the weighing through the **F4** key of the indicator; refer to the user manual for further specifications. **(USER MAN.REF.).**




### ENTRY

- Press **ENTER** to enter in the step.
- Select the eventual desired position through the arrow ▲ ▼ keys (or with the keyboard digit the position number).
- Press **F1** to enter the text in the desired position, or the first free position, if an already occupied position has been selected.
- The display shows "DESCRIPTION" and one can now enter the heading of the input text (up to 16 characters); press **ENTER** to confirm.
- The display shows "TEXT" and one can enter the contents of the input text (up to 32 characters); press **ENTER** to confirm.
- **NOTE**: The text entered here defines also the field length for the compilation through the **F4** key in the weighing phase; if no text is inserted, the length is set at 32 characters.

## MODIFICATION

- Press **ENTER** to enter in the step.
- Select the storage to be modified through the arrow ▲ ▼ keys (or with the keyboard digit the position number) and press **F2**.
- Modify the desired fields, listed in the previous section.
- **NOTE**: The text entered here defines also the field length for the compilation through the **F4** key in the weighing phase; if no text is inserted, the length is set at 32 characters.

## CANCELLATION

- Press **ENTER** to enter in the step.
- Select the storage to be cancelled through the arrow ▲ ▼ keys (or with the keyboard digit the position number) and press **F3**.
- The indicator requests a further confirmation: press **ENTER** to confirm or another key to cancel.

## PRINTING

- Press **ENTER** to enter in the step.

Once inside it, press the **F5** key to print all the input texts. The LCD display shows the message "**PRINT ?**": confirm with the **ENTER** key to print the whole input texts' database.

## HELP

By pressing the **./HELP** key, it's possible to see the keys list used in the menu.
The key list is automatically. If you want to see the keys list, in manual mode, use the arrow key (F6 ▼ e F7 ▲).

The keys displayed:
- **F1**: entry
- **F2**: modification
- **F3**: cancellation
- **F5**: database printing

### **<< d.thrES >>** DATA LENGTH THRESHOLD FROM READER

By pressing **ENTER** one can define a length (from 00 to 31) which conditions the storage of data ready by the third serial line (optional), for example through the bar code reader. If the datum has a length less or equal to the predefined one; it is stored in the first input text; otherwise it is stored in the second one.
**NOTE:** the function has been enabled on the serial port selected in the **SEtuP >> SEriAL >> rEAdEr** step, or on the PC KEYBOARD input, by selecting the "Reader" parameter in the **SEtuP >> PC.KEYb >> KEY.uSE** step.

### **<< tXt.i >>** ENTRY OF HEADINGS

Up to 3 lines x 24 characters of text can be entered that will be printed if programmed in the printout formats (see blocks 369, 370, 371). The text entered will remain stored and printed until it is either cancelled or substituted.

### **<< CLr.rAM >>** CANCELLATION OF THE BUFFERED RAM

The indicator has a buffered RAM memory (not volatile when power is removed) inside which is the database data, the input texts, the print formats, the heading.
The cancellation is not immediate; the indicator requests a further confirmation (the LED display shows "SURE?"): press **ENTER** to confirm; press another key to cancel.
**NOTE:** CALIBRATION DATA ARE NOT CANCELLED.

### **<< dtb.PWd >>** SET DATABASE ACCESS PASSWORD

By confirming the **ENABLED** setting one may insert a password of up to 5 digits, which will inhibit some parameters of the **ENTER** key menu and the entry/modification/cancellation of the databases; by setting **DISABLED**, this password is disabled.
See the section 12 in the user manual.
**NOTE:** The maximum enterable value is **65534**.
**(!) DISABLED**

## **<< tAMAG >>** TAMAGOTCHI

One enters the "NUMBER of MONTHS" passed (2 digits, **MonthS** parameters), or the "NUMBER of the WEIGHS" made (5 digits, **WEiGh.** parameter) **since the last calibration**; after this, one is advised to recalibrate the instrument.
By pressing **ENTER** one passes to a submenu:

- **MonthS** >>> Setting of Months
- **WEiGh.** >>> Setting of Weighs
- **rESEt** >>> Clearing of Months and Weighs from the last calibrations

If you set the number of months and the weighing to zero, this function will be disabled; in any case it is possible to activate a choice of the number of months (MAX 99) or the number of weighs (MAX 99999).
By confirming with **ENTER** on the "rESEt" step one sets at zero the number of months and weighs taken place since the last calibration made.
At start-up and every day at 11:00 o'clock, the indicator will be checking for the number of weighing and the number of months that have passed since the last calibration. If one of the values or both are equal or higher than the previously set values, the message **ALArM** will appear on the LED display, while "WE ADVISE TO RECALIB. SCALE" appears in the LCD display and an intermitting sound is emitted. By pressing any key, the indicator will enter in the normal scale functioning mode.

**NOTE:** The number of weighs is increased when, after passing by instability, there is a stable weight and greater than 4 divisions on the scale.
**(!) MonthS 00; WEiGh. 00000.**

# << SEtuP >> SCALE CONFIGURATION

## **<< ConFiG >>** METRIC PARAMETERS

If various scales are connected, the scale number to be configured will be requested; the configurations inside this menu must be made for each connected scale.

### **<< CELtyP >>** CELL TYPE

This menu allows setting the type of cells used (analogue or digital):

- in case of digital cells it will be possible to enter the number of cells;
- in case of analogue cells it will be possible to enter the number of channels.

**NOTE**: The instrument is able to manage up to 4 analogue channels or 16 digital cells / DGX.
Only load cells of the same model and the same capacity can compose two digital platforms.
**(!) AnALoG**

### **<< EquAL >>** EQUALIZATION **(§)**

See section "3.3 SCALE CALIBRATION"
**(§)** This step is visible only in case of more cells/channels in use.

### **<< PArAM. >>** PARAMETERS

**<< *StAbiL* >>** *FILTERING INTEGRATION*

By pressing the **ENTER** key one accesses the selection of the type and degree of filter intervention for the stability of the weight indication:

| | |
|---|---|
| **FLT 0 – 3** | simple weighing |
| **H.R.0 – 1** | high resolution and for "A+B" mode |
| **DYN.0 – 1** | weight in motion (i.e. weighing animals) |
| **DOS.0 – 3** | dosage |
| **SLW.0 – 3** | rather unstable weight |
| **H.R.2 – 7** | high resolution and for "A+B" mode |
| **DYN.2 – 3** | weight in motion (i.e. weighing animals) |
| **FLT.OFF** | disabled (i.e. digital load cell already filtered) |
| **FLT.AV2** | digital load cell |
| **CuStoM** | diagnostic to be used by the manufacturer |

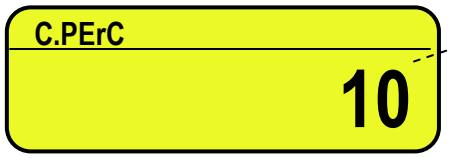
The higher the filter value, and greater is its intervention relative to the type of filter used.
**(!) SLW.0** for analogue cell type
**(!) FLT 0** for digital cell type
**(*)**In case of approved instrument, one can select only **FLt 0…3**, **h.r.0, h.r.1, dYn.0**, **dYn.1.**

**<< (*) Auto-0 >>** AUTOZERO AT START-UP

Automatic acquisition of the gross zero at start-up.


- Disabled


ENTER

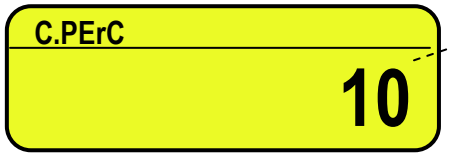



*Clearing percentage (blinking)*

- Enabled

Set the clearing percentage in relation to the capacity (in between +/-1 and +/- 50 %).


ENTER




*Clearing percentage (blinking)*

- Executed cyclically on all the present scales. This value is not visible if there is just one scale (see the **nuM.SCA** parameter**)**.

Set the clearing percentage in relation to the capacity (in between +/-1 and +/- 50 %).

See section 6 (**USER MAN.REF.**) for details on the functioning.

**(*)** with approved instrument:
- it's possible to set only the EnAbLE, CYCLiC values. If diSAbL has been set, it's not possible to change it.
- by confirming the setting of EnAbLE or CYCLIC it is possible to modify the clearing percentage between +/-1 and +/-10 %.

**(!) ENABLED, +/-10 %**

**(*) << 0.PErC >>** ZERO FUNCTIONS IN WEIGHING PHASE

Acquisition of the gross zero through the ZERO key.


*Clearing percentage (blinking)*

Set the clearing percentage in relation to the capacity (in between +/-1 and +/- 50 %).
By entering the 0 value, it's possible to disable the ZERO functions in the weighing phase.

See section 6 **(USER MAN.REF.)** for functioning details.

**(*)** In case of approved instrument, the settable values are between 0 and 2.
**(!) +/-2 %**

**(*) << 0.trACk >>** *ZERO TRACKING*

This menu allows setting the zero tracking, in other words, the compensation parameter of the scale's thermal drift; the set value corresponds to the number of divisions that is reset in the fixed time of 1 second:

**TR. ½** +/- half division.
**TR. ¼** +/- one fourth of a division.
**TR. 1** +/- one division.
**TR. 2** +/- two divisions.
**TR. no** tracking disabled.
**(!) TR. ½**
**(*)** with APPROVED instrument it is possible to select just the **TR. no**, **TR. ½** , **TR. ¼** parameters.

**(*) << diV.Stb >>** *DIVISIONS BY STABILITY*

In this step one enters the number of divisions by which the instrument detects the weight stability; the higher the number of divisions, less is the sensitivity, and consequently the stability is more easily detected. The possible values are 0…99. By setting the 0 value, the check is disabled.

**(!) 02**
**(*)** with APPROVED instrument, the parameter is read-only.

**<< GrAV >>** GRAVITY ZONE AND ZONE OF USE

In this step one selects the gravitational acceleration value **of calibration and of use** of the instrument:
Manual entry of the g value: the instrument is ready for the manual entry of the gravitational acceleration value.
If one enters a wrong g value: the minimum decimal value is proposed (9,75001); by a wrong g value one intends a decimal number not including between 9,75001 and 9,84999 (included).

**(!) g = 9,80655**
**(*)** with APPROVED instrument the parameter is read only.

**(*) << CALib.>>** SCALE CALIBRATION

See section "3.3 SCALE CALIBRATION".
**(*)** with APPROVED instrument the parameters inside of this step are read only.

**(*) << 0.CALib. >>** CALIBRATION OF ZERO

See section "3.3 SCALE CALIBRATION".
**(*)** In case of approved instrument the parameter is not displayed.

**(*) << thEo.CA >>** THEORETICAL CALIBRATION

See section "3.3.7 THEORETICAL CALIBRATION".
**(*)** In case of approved instrument the parameter is not displayed.

**(*) << AdJ.CEL >>** MANUAL ADJUSTMENT CELLS

See section "3.3.5 ADJUSTMENT OF EQUALIZATION COEFFICIENT".
**(*)** In case of approved instrument the parameter is not displayed.
**(*)**This parameter is visible only in case of various cells / channels forming the scale.

## << SEriAL >> SERIALS, PRINTOUTS, ETC…

### << PortS >> SERIAL CONFIGURATION

By pressing **ENTER** it is possible to select the more suitable combination for the use of the three serial ports in the indicator hardware (**COM1**, **COM2**, **COM3**):

| Parameter | COM 1 | COM 2 | COM 3 |
|---|---|---|---|
| **PC.Pr.AX** | ComPC | ComPrn | ComAux |
| **PC.AX.Pr** | ComPC | ComAux | ComPrn |
| **Pr.PC.AX** | ComPrn | ComPC | ComAux |
| **Pr.AX.PC** | ComPrn | ComAux | ComPC |
| **AX.PC.Pr** | ComAux | ComPC | ComPrn |
| **AX.Pr.PC** | ComAux | ComPrn | ComPC |

**(!) PC.Pr.AX**

### << CoMPrn >> CONFIGURATION OF PRINTER SERIAL

#### << bAud >> SET BAUD RATE

By pressing the **ENTER** key one accesses the selection of the data transmission speed (measured in Baud = bit/second). The possible values are: 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200.
**(!) 9600**

#### << PAritY >> SET PARITY

By pressing the **ENTER** key one accesses the selection of the parity bit type. The possible values are: None (absent parity bits), Odd (uneven parity bits) e Even (even parity bits).
**(!) None**

#### << Word >> SET WORD

By pressing the **ENTER** key one accesses the selection of the number of data bits. The possible values are: 8 (8 data bits) and 7 (7 data bits).
**(!) 8 bit**

#### << StoP b >> SET STOP BIT

By pressing the **ENTER** key one can then select the number of stop bits. The possible values are: 1 (1 stop bit) and 2 (2 stop bits).
**(!) 1 bit**

#### << CtS.St. >> SYNCHRONISM SIGNAL

On the serial line set as COM.PRN the indicator can manage a synchronism signal.
- by using the dedicated CTS (Clear To Send) signal, if one uses the COM2 port, or
- by using the RX input, if one uses the COM1 or COM3 port (in this case, by enabling the function, this input will be no longer managed for other reception functions).

A device (like a printer) that is slow in processing the data received, can interrupt the transmission temporarily using this signal.
With synchronism signal active for a time greater than 10 seconds the indicator cancel the printing, it shows the message “PRINTER ERROR: CHECK THE CTS!” for a few seconds and returns to the weighing phase.
It is possible to select:

| | | |
|---|---|---|
| **NO.CTS** | Disable | (ITALORA WITTY280 and SMT280) |
| **LOW** | CTS active low | (LP522/542, EPSON LX300, TM295, TPR) |
| **HIGH** | CTS active high | (DP190) |
| **EMUCTS** | Emulation of CTS signal: one is asked to enter the number of characters (nChrS) using 3 digits, which will be transmitted upon each transmission; then one should enter the wait time in milliseconds (tiME), using 4 digits, from a transmission and the next one. | |

**(!) LOW**

**<< Err.CtS >>** CTS STATUS ERROR

By enabling this error, it is possible to block in advance the print or totalisation function, if recalled with an already active synchronism signal (see previous step): the indicator display will shows the message "PRINTER ERROR: CHECK THE CTS!" for a few seconds and return to the weighing phase without carrying out the function.

Press F6/F7 to Enable (enabled) or Disable (disabled), and ENTER to confirm.
**(!) DISABLED**

**<< PWrPrn >>** PRINTER POWER SUPPLY

This step regulates the "AUX" output voltage which is on the board (see the electrical scheme in section 8); one may select:

| | |
|---|---|
| **PWrEXt** | External power supply (AUX output active). |
| **EXtoFF** | External auto-off power supply (AUX output always active; at the beginning of each printout some CR are sent as start-up characters, for a printer in energy saving mode). |
| **PWrint** | Internal power supply (AUX output active just when printing). |

**(!) PWrint**

**<< ProtoC >>** SELECTS PROTOCOL

| | |
|---|---|
| **norMAL** | standard protocol |
| **riPE 6** | Dini Argeo repeater |
| **Alibi** | alibi memory protocol |
| **Cont.** | continuous transmission protocol |
| **MuL.riP** | Multi-repeater |

For the protocol specifications, see section 5.4.
**(!) norMAL**

**<< CoM PC >>** PC SERIAL CONFIGURATION

**<< bAud >>** SET BAUD RATE

By pressing the **ENTER** key one accesses the selection of the data transmission speed (measured in Baud = bit/second). The possible values are: 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200.
**(!) 9600**

**<< PAritY >>** SET PARITY

By pressing the **ENTER** key one accesses the selection of the parity bit type. The possible values are: None (absent parity bits), Odd (uneven parity bits) e Even (even parity bits).
**(!) None**

**<< Word >>** SET WORD

By pressing the **ENTER** key one accesses the selection of the number of data bits. The possible values are: 8 (8 data bits) and 7 (7 data bits).
**(!) 8 bit**

**<< StoP b >>** SET STOP BIT

By pressing the **ENTER** key one can then select the number of stop bits. The possible values are: 1 (1 stop bit) and 2 (2 stop bits).

**(!) 1 bit**

**<< CtS.St. >>** SYNCHRONISM SIGNAL

On the serial line set as COM.PRN the indicator can manage a synchronism signal CTS (Clear To Send). A device (like a printer) that is slow in processing the data received, can interrupt the transmission temporarily using this signal.

It is possible to select:

| | |
|---|---|
| **NO.CTS** | Disable |
| **LOW** | CTS active low |
| **HIGH** | CTS active high |
| **EMUCTS** | Emulation of CTS signal: one is asked to enter the number of characters (nChrS) using 3 digits, which will be transmitted upon each transmission; then one should enter the wait time in milliseconds (tiME), using 4 digits, from a transmission and the next one. |

**(!) NO.CTS**

**<< Add.485 >>** 485 ADDRESS

By pressing **ENTER** it is possible to enter a 2 digit code (from 00 to 98) which identifies the instrument from the ones connected in the RS485 transmission mode.

**NOTE:** the 99 code is used as a broadcast address.

**(!) 00**

**<< ProtoC >>** SELECTS PROTOCOL

| | |
|---|---|
| **StAnd** | Standard |
| **AFXX** | AF0X |
| **riPE 6** | Dini Argeo 6-digit repeater |
| **riPLCd** | lcd repeater |
| **Mondir** | Uni-directional |
| **ALibi** | Alibi memory |
| **MuL.riP** | Multi-repeater |

For the protocol specifications, see section 5.4

**(!) StAnd**

**<< PC.ModE >>** TRANSMISSION TYPE

| | |
|---|---|
| **rEquE.** | On request |
| **Cont.** | Continuous |
| **StAbiL** | On stability |
| **- 485 -** | 485 mode |

For the transmission mode specifics, see section 5.5

**(!) rEquE.**

**<< CoMAuX >>** AUX SERIAL CONFIGURATION

**<< bAud >>** SET BAUD RATE

By pressing **ENTER** one can select the data transmission speed (measured in Baud = bit/second). The possible values are: 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200.

**(!) 9600**

**<< PAritY >>** SET PARITY

By pressing **ENTER** one can select the parity bit type. The possible values are: None (absent parity bit), Odd (uneven parity bit) and Even (even parity bit).

**(!) None**

**<< Word >>** SET WORD

By pressing **ENTER** one can select the number of data bits. The possible values are: 8 (8 data bits) and 7 (7 data bits).

**(!) 8 bit**

**<< StoP b >>** SET STOP BIT

By pressing the **ENTER** key one can then select the number of stop bits. The possible values are: 1 (1 stop bit) and 2 (2 stop bits).

**(!) 1 bit**

**<< CtS.St. >>** SYNCHRONISM SIGNAL

Not used in this application.

**<< ProtoC >>** SELECTS PROTOCOL

| | |
|---|---|
| **nonE** | no protocol |
| **Cont.** | continuous transmission |
| **riPE 6** | Dini Argeo 6-digit repeater. |
| **ripeDC** | Dini Argeo repeater DC |

**(!) nonE**

**<< CEL.Add >>** SET 485 CELLS ADDRESS

See section "3.4 SETTING COMMUNICATION WITH THE DIGITAL CELLS".

**<< rEAdEr >>** READER PROTOCOL

Enabling data reception from external reader (See relative manual)

| | |
|---|---|
| **DISABLE** | data reception disabled |
| **COM.AUX** | protocol enabled on the ComAux |
| **COM.PRN** | protocol enabled on the ComPrn |

**(!) DISABLE**

**<< r71.rEP >>** R71 REPEATER

If the R71620 is connected to the indicator, through this step it is possible to enable the dedicated protocol, for the serial ports set with the "**riPE 6**" protocol.

| | |
|---|---|
| **DISABLED** | Disabled |
| **ENABLED** | Abilitato |

**(!) DISABLED**

**<< Prn.FMt >>** PRINT CONFIGURATION

Through this step one can configure up to 30 print formats directly from the indicator.

In this step it is possible to choose the number of format to be configured; therefore enter, modify or eliminate the print blocks following the instructions shown in section **7 PROGRAMMING THE PRINTOUTS**.

**<< tErMin >>** SET TERMINATOR TYPE

When connecting a printer it is possible to define the end of the print line, in the print blocks provides the terminator print (indication +T, see 7.3 section)

| | |
|---|---|
| **Cr** | TERMINATOR CR (character 13 from ASCII table) |
| **Cr LF** | TERMINATOR CR LF (character 13 and character 10 from ASCII table) |
| **LF** | TERMINATOR LF (character 10 from ASCII table) |
| **no.tErM** | NO TERMINATOR (for Dini Argeo printiers, with standard print by Dinitools TM) |

**(!) LF**

**<< dEF.Prn >>** PRINTOUT DEFAULT

By pressing **ENTER** one is asked to confirm the activation of the default printouts: the LED display shows “SurE?”: press **ENTER** again to confirm or another key to cancel the operation.

**The printout default is valid only for TPR printer.**

**WARNING:** By enabling the printouts, all the formatted print formats will be CANCELLED and the first 11 will be SUBSTITUTED by the default formats which automatically will be linked to the 11 print functions.

## **<< Anout >>** ANALOGUE OUTPUT (OPTIONAL)

If various scales are connected (see **nuM.SCA** parameter), the scale number to be configured will be requested; the configurations inside this menu must be made for each connected scale.

**<< SLot >>** SLOT SELECTION

One selects the SLOT to be used with the analogue output: SLOT 1 or SLOT2.

**<< ModE >>** OPERATING MODE

AO G = analogue output on the gross weight
AO n = analogue output on the net weight

**<< AoMA >>** MAXIMUM VALUE

Setting of the maximum value of the analogue output.

**<< AoZE >>** VALORE ZERO BILANCIA

Setting of the analogue output value when the scale displays zero weight.

**<< AoMi >>** MINIMUM VALUE

Setting of the minimum value of the analogue output.

**See the “6. ANALOGUE OUTPUT” for configuring.**

## << inPutS >> INPUT CONFIGURATION

The indicator has 2 inputs on the main board, 6 on the optional expansion board, which may take on the meaning of a specific function key or of any scale function key, among those available; it is therefore possible to emulate a few keys through the corresponding input.

**in. 1** INPUT 1

| | |
|---|---|
| **None** | NO INPUT |
| **TARE** | TARE KEY |
| **2nd F** | 2nd F KEY |
| **Fn** | Fn KEY |
| **POINT** | POINT KEY |
| **C** | C KEY |
| **F1** | F1 KEY |
| **F2** | F2 KEY |
| **F3** | F3 KEY |
| **F4** | F4 KEY |
| **F5** | F5 KEY |
| **F6** | F6 KEY |
| **F7** | F7 KEY |
| **F8** | F8 KEY |
| **F9** | F9 KEY |
| **F10** | F10 KEY |
| **- 0 -** | NUMERICAL ZERO KEY |
| **- 1 -** | ONE KEY |
| **- 2 -** | TWO KEY |
| **- 3 -** | THREE KEY |
| **- 4 -** | FOUR KEY |
| **- 5 -** | FIVE KEY |
| **- 6 -** | SIX KEY |
| **- 7 -** | SEVEN KEY |
| **- 8 -** | EIGHT KEY |
| **- 9 -** | NINE KEY |
| **PLt – 0** | ENABLE REMOTE SCALE |
| **PLt – 1** | ENABLE SCALE 1 |
| **PLt – 2** | ENABLE SCALE 2 |
| **PLt – 3** | ENABLE SCALE 3 |
| **PLt – 4** | ENABLE SCALE 4 |
| **LOC.IN** | KEYBOARD LOCK |
| **OFF** | TURNING OFF THE INDICATOR |
| **-OK-** | OK MESSAGE |
| **ERROR** | ERROR MESSAGE |
| **READY** | READY MESSAGE |
| **START** | START MESSAGE |
| **STOP** | STOP MESSAGE |
| **RL.OFF** | SETS ALL THE RELAYS AT OFF |
| **LNG.KEY** | SETS KEY PRESSED AT LENGTH |
| **LEVEL** | SETS LEVEL CHECK |
| **R.START** | CYCLE MANAGEMENT ON THE RELAYS (dosage) |

**(!) nonE**

The same configurations are valid for:

**in. 2** INPUT 2
**in. 3** EXPANSION BOARD (OPTIONAL)
**in. 4** EXPANSION BOARD (OPTIONAL)
**in. 5** EXPANSION BOARD (OPTIONAL)
**in. 6** EXPANSION BOARD (OPTIONAL)

**in. 7** EXPANSION BOARD (OPTIONAL)
**in. 8** EXPANSION BOARD (OPTIONAL)

**r.StArt - Dosage cycle management through outputs**
Premise: The functioning provides for an input to be set on R.START.

The involved relays are OUT1 and OUT2: in order to function correctly these must be configured with the NC contact on a weight function, for example Set point on the Net or Gross weight.

Upon enabling the input linked to the R.START both relays are enabled; the dosage automatically ends upon reaching the set point linked to OUT2.

Notes:
1) if an input is linked to R.START, OUT1 and OUT2 are managed in "dosage" even if these are configured in their exclusive functioning;
2) it's possible to execute also dosages in unloading (negative set points) as long as the zeroing or the tare at cycle start is executed (through the input or the key);
3) if input1 is linked to the tare or to the zero, the dosage starts only if the net weight is zero (this allows to execute an initial compulsory zeroing);
4) it's possible to interrupt at any moment the dosage cycle by enabling an input set on RL.OFF.

**for example**:
rL.1=100 rL.2= 200 in.1=rL.oFF in.2=r.StArt
- enabling in.2: one enables OUT1 and OUT2 and the dosage cycle starts.
- upon reaching 100g the OUT1 disables.
- upon reaching 200g the OUT2 disables and the dosage cycle ends.
- by enabling in.1 the dosage cycle resets at any point.

## << outPut >> OUTPUT CONFIGURATION

The indicator has 4 outputs on the main board and 12 outputs on the optional expansion board; through this step one configures the functioning of each relay.
See the "15.5 SET POINT FUNCTION" section in the user manual for the functioning mode specifications.

**<< r.ConF >>** OUTPUTS' CONFIGURATION
In this step it is possible to configure the normal status, the switching condition and the functioning mode for each output.

**<< rL. 1 >>** OUTPUT 1 (OUT1)
**<< no/nC >>** *NO/NC CONTACTS*
By pressing **ENTER** one sets the status of the output after the instrument start-up: normally open **(n.o.)** or normally closed **(n.C.).**
**NOTE**: with indicator turned off, the status of the output is normally open.
**(!) n.o.**

**<< onStAt >>** SWITCHING CONDITION
By pressing **ENTER** one sets the output activation condition:
**drCt** DIRECT: it is activated as soon as the weight reaches the set threshold, (independently from the stability), and it is deactivated as soon as it goes under the disabling threshold.
**StbL** UPON STABILITY: it is activated in the moment in which the weight, after reaching the set activation threshold, becomes stable, and it is deactivated in the moment in which the weight goes below the set disabling threshold, it becomes stable.
**(!) drCt**

**<< rL.iSt >>** HYSTERESIS

This step allows selecting the outputs functioning mode with or without hysteresis:

**iSt.on** functioning with hysteresis
**iSt.oFF** functioning without hysteresis
**(!) iSt.oFF**

**<< rLFunC >>** FUNCTION

This step allows selecting the output functioning mode:

**nonE** NO FUNCTIONING (disabled).
**GroSS** GROSS SET POINT (activation of the on the gross weight).
**nEt** NET SET POINT (activation of the on the net weight).
**Gro.0** 0 GROSS (activation of the on the gross weight at 0).
**nEt.0** 0 NET (activation of the on the net weight at 0).
**Motion** INSTABILITY (activation of the upon weight instability).
**totAL** TOTALISATION (activation of the input/output cycle end or single weigh).
**t.W.1** PARTIAL TOTAL (activation of the on the partial total + net weight on the scale).
**t.W.2** GENERAL TOTAL (activation of the on the general total + net weight on the scale).
**t.W.3** GRAND TOTAL (activation of the on the grand total + net weight on the scale).
**nEt.nEG** FUNCTIONING ON THE NEGATIVE WEIGHT (activation on the net negative weight).
**(!) nonE**

The same configurations are valid for:

**rL. 2** OUTPUT 2 (OUT2)
**rL. 3** OUTPUT 3 (OUT3)
**rL. 4** OUTPUT 4 (OUT4)
**rL..5** OUTPUT 5 (OUT5), EXPANSION BOARD (OPTIONAL)
**rL..6** OUTPUT 6 (OUT6), EXPANSION BOARD (OPTIONAL)
**rL..7** OUTPUT 7 (OUT7), EXPANSION BOARD (OPTIONAL)
**rL..8** OUTPUT 8 (OUT8), EXPANSION BOARD (OPTIONAL)
**rL..9** OUTPUT 9 (OUT9), EXPANSION BOARD (OPTIONAL)
**rL..10** OUTPUT 10 (OUT10), EXPANSION BOARD (OPTIONAL)
**rL..11** OUTPUT 11 (OUT11), EXPANSION BOARD (OPTIONAL)
**rL..12** OUTPUT 12 (OUT12), EXPANSION BOARD (OPTIONAL)
**rL..13** OUTPUT 13 (OUT13), EXPANSION BOARD (OPTIONAL)
**rL..14** OUTPUT 14 (OUT14), EXPANSION BOARD (OPTIONAL)
**rL..15** OUTPUT 15 (OUT15), EXPANSION BOARD (OPTIONAL)
**rL..16** OUTPUT 16 (OUT16), EXPANSION BOARD (OPTIONAL)

**<< r.ModE >>** OUTPUTS' CONFIGURATION

**Normal** The check is always made on all the configured outputs; therefore each output is independently (its enabling does not provoke the disabling of the others).
**EXCLUS** Starting from the last output up to the first its activation excludes the check on the previous ones (the activation provokes the disabling of the previous out puts) and its disabling reenables it.
**(!) Normal**

## << inF.rEd >> REMOTE CONTROL CONFIGURATION

**If the model is provided for the remote control**, it is possible to customise the configuration of the keys of the infrared ray remote control, as shown by the following details

**KEY 1 key 1 ("Zero" on the remote control)**

| | |
|---|---|
| **None** | NO INPUT |
| **TARE** | TARE KEY |
| **2nd F** | 2nd F KEY |
| **Fn** | Fn KEY |
| **POINT** | POINT KEY |
| **C** | C KEY |
| **F1** | F1 KEY |
| **F2** | F2 KEY |
| **F3** | F3 KEY |
| **F4** | F4 KEY |
| **F5** | F5 KEY |
| **F6** | F6 KEY |
| **F7** | F7 KEY |
| **F8** | F8 KEY |
| **F9** | F9 KEY |
| **F10** | F10 KEY |
| **- 0 -** | NUMERICAL ZERO KEY |
| **- 1 -** | ONE KEY |
| **- 2 -** | TWO KEY |
| **- 3 -** | THREE KEY |
| **- 4 -** | FOUR KEY |
| **- 5 -** | FIVE KEY |
| **- 6 -** | SIX KEY |
| **- 7 -** | SEVEN KEY |
| **- 8 -** | EIGHT KEY |
| **- 9 -** | NINE KEY |
| **PLt – 0** | ENABLE REMOTE SCALE |
| **PLt – 1** | ENABLE SCALE 1 |
| **PLt – 2** | ENABLE SCALE 2 |
| **PLt – 3** | ENABLE SCALE 3 |
| **PLt – 4** | ENABLE SCALE 4 |
| **LOC.IN** | KEYBOARD LOCK |
| **OFF** | TURNING OFF THE INDICATOR |
| **-OK-** | OK MESSAGE |
| **ERROR** | ERROR MESSAGE |
| **READY** | READY MESSAGE |
| **START** | START MESSAGE |
| **STOP** | STOP MESSAGE |
| **RL.OFF** | SETS ALL THE RELAYS AT OFF |
| **LNG.KEY** | SETS KEY PRESSED AT LENGTH |
| **LEVEL** | SETS LEVEL CHECK |

**(!) nonE**

The same configurations are valid for:

**KEY 2 key 2 ("Tare" on the remote control)**

**KEY 3 key 3 ("F1 Mode" on the remote control)**

**KEY 4 key 4 ("F2 Print" on the remote control)**

**NOTE:** The function of the prolonged pressure of the keys is not repeatable on the remote control.

## << tArE t >> TARE LOCK/UNLOCK

**Unlock** LOCKED TARE
**Lock** UNLOCKED TARE
**Disable** DISABLED TARE
See the section 7.5"TARE LOCKED/UNLOCKED" in the user manual for the functioning specifics.
**NOTE:** during the weighing it is possible to lock / unlock the tare by pressing at length the **F5** key.
**(!) LocK**

## << PoW.oFF >> AUTO SWITCH OFF

One enables/disables the auto switch-off after the scale is not used for 5 minutes, with plate unloaded.
**ENABLED**
**DISABLED**
**(!) DISABLED**

## << bt.StAt >> BATTERY LEVEL INDICATION

One selects whether to enable or disable the software check of the battery charge level: each time that the charge goes down of a level, it is notified through the symbols on the LCD display (battery icon). See section 4.2.2 **USER MAN.REF.**
**ENABLED**
**DISABLED**
**NOTE**: by enabling the indication of the battery level, the backlight is automatically managed.
**(!) DISABLED**

## << dFLt >> DEFAULT STANDARD

By pressing **ENTER** the indicator activates the default parameters (shown in bold and preceded by the exclamation point at the end of each step) and the standard printouts; the LED display shows **SURE?**: press **ENTER** to confirm or **C** to cancel the operation.
**NOTE: THE CALIBRATION, THE DATABASES, THE INPUT TEXTS AND THE HEADINGS ARE NOT DELETED.**

## << dFLt.t >> TECHNICAL DEFAULT (*)

By pressing **ENTER** the indicator activates the default parameters (shown in bold and preceded by an exclamation point at the end of each step), the default printouts, initialises the database, cancels the input texts, the heading and **THE CALIBRATION**; the LED display shows **SurE?**: press the **ENTER** key to confirm or **C** to cancel the operation.
**(*)** In case of approved instrument the step is not accessible.

## << PWd.SEt >> SET ACCESS PASSWORD TO SET-UP ENVIRONMENT

One configures whether to enable or disable the access password to the technical menu:
**ENABLED**
**DISABLED**
By selecting **ENABLED**, the instrument predisposes itself for the password entry, made up of up to 5 digits; when finished entering confirm with **ENTER**.
The settable values go from 0 to 65534.
See section 3 for the functioning specifics.
**(!) DISABLED**

## << ini.AL >> INITIALIZES ALIBI MEMORY (*)

The initialisation cancels all the data stored in the Alibi memory; by pressing **ENTER** one is asked to confirm the operation. The LED display shows **SURE?**; press **ENTER** again to confirm or another key to cancel.
At the end the "oK" message appears if the operation is made with success; otherwise the "Err" message is displayed.
**NOTE**: It is not possible to make the initialisation on an approved instrument
**(*)** In case of approved instrument the parameter is not accessible.

## << dSALE >> DIRECT SALE (*)

- **NO** limitations disabled
- **YES** limitations enabled

Refer to the user manual for the functioning description **(USER MAN.REF.).**
**(!) NO**
**(*)** In case of approved instrument the parameter is not accessible.

## << PC.KEYb >> PC KEYBOARD CONFIGURATION

### << KEY.uSE >> USE OF PC KEYBOARD INPUT

**Normal** Use of the external PC keyboard (see in the user manual section 4.1.5).
**READER** Enabling data reception from external reader (See relative manual)
**(!) Normal**

### << LAYout >> EXTERNAL PC KEYBOARD LANGUAGE

| | |
|---|---|
| **ENGLISH** | American / English |
| **DEUTSCH** | German |
| **FRANCAIS** | French |
| **ITALIANO** | Italian |
| **ELLENIKA** | Greek |

**(!) ENGLISH**

# << diAG. >> DIAGNOSTICS MENU

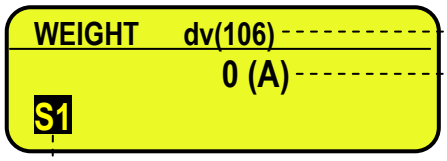
It's a submenu inside of which it is possible to check the software and hardware components of the scale, accessible also during the weighing, keeping the **F4** key pressed at length.

## << PrG.UEr >> FIRMWARE

Software version check.

## << WEiGht >> WEGHT

By pressing **ENTER** the display shows:

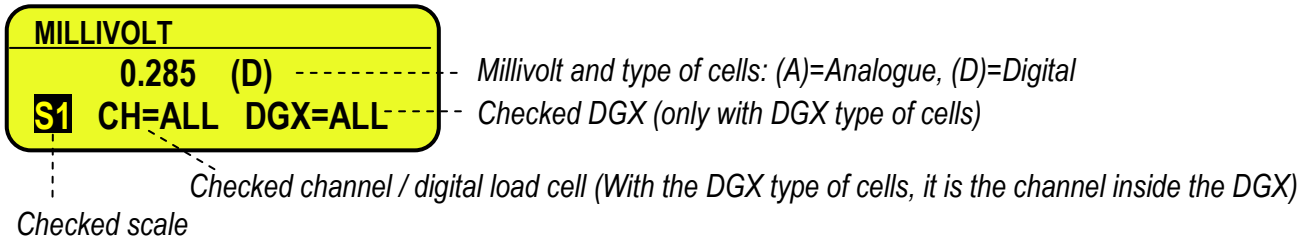



If various scales are connected independently by pressing the F6 / F7 keys it is possible to select the scale to be checked.

## << MiLLiV >> MILLIVOLT

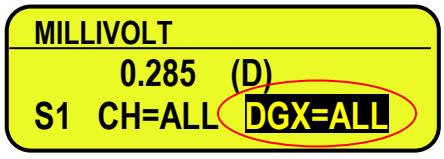
Check of the load cell signal in millivolts, in three decimals.

By pressing **ENTER** the display shows:




If various scales are connected independently by pressing the F6 / F7 keys it is possible to select the scale to be checked.

By pressing the F8 / F9 keys it is possible to move on the selection of the channel or the DGX (only with DGX type of cells); the display indicates always the active selection:

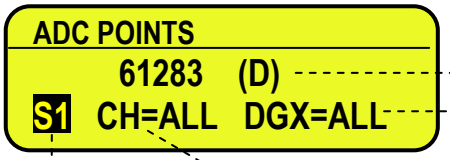



By pressing always the F6 / F7 keys it is possible to select the value of the active selection.
In the case the load cell is not connected or faulty, or the A/D converter is faulty, it is possible that floating values are shown, or the message "Err.C.XX" appears (in which XX is the number of channel / digital load cell on which the faulty is detected), if the signal exceed the underload / overload value of the converter.
To check if the A/D converter is faulty, disconnect the channel on which the faulty is detected and make a short between SIG+ and SIG-; with non faulty A/D converter a mV value proxime to 0.000 will be displayed.

## << AdC.Pnt >> ADC POINTS

Check of the A/D converter points.

By pressing **ENTER** the display shows:




A/D converter points *and type of cells: (A)=Analogue, (D)=Digital*

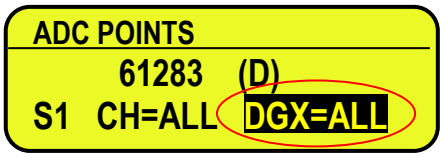
*Checked DGX (only with DGX type of cells)*

*Checked channel / digital load cell (With the DGX type of cells, it is the channel inside the DGX)*

*Checked scale*

If various scales are connected independently by pressing the F6 / F7 keys it is possible to select the scale to be checked.

By pressing the F8 / F9 keys it is possible to move on the selection of the channel or the DGX (only with DGX type of cells); the display indicates always the active selection:




By pressing always the F6 / F7 keys it is possible to select the value of the active selection.
In the case the load cell is not connected or faulty, or the A/D converter is faulty, it is possible that floating values are shown, or the message "Err.C.XX" appears (in which XX is the number of channel / digital load cell on which the faulty is detected), if the signal exceed the underload / overload value of the converter.
To check if the A/D converter is faulty, disconnect the channel on which the faulty is detected and make a short between SIG+ and SIG-; with non faulty A/D converter a number of point proxime to 0 will be displayed.

## << diSPLA >> DISPLAY

By pressing **ENTER** the instrument shows the display version and the led turns on.
By pressing a key all the leds (in the 3590E version) and LCD display pixels turn on for some seconds, after that the indicator exit automatically from the step.

## << kEyb. >> KEYBOARD

By pressing **ENTER** the instrument displays 0; by pressing the keys one at a time, the relative codes are rebrought to the display. One exits pressing the same key three times.

## <<CtS.St. >> CTS STATUS

By pressing **ENTER** the CTS signal type of the connected printer is shown on the display.

## << bt.LEVE >> BATTERY LEVEL

By pressing **ENTER** one views on the display the value of the battery input on the motherboard, read by the analog-digital converter.

## << Power >> POWER SUPPLY VOLTAGE

By pressing **ENTER** the display shows the value of the power adapter input on the motherboard, read by the analogue-digital converter.

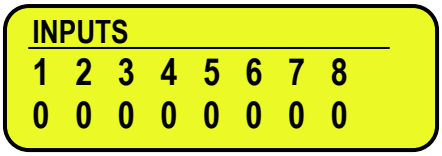
## << rELE >> RELAY TEST

By pressing **ENTER** it is possible to test all the available relays; by selecting these one at a time with the ▲ ▼ arrow keys, these are activated:

| | | |
|---|---|---|
| RL.01 | OUT1 | |
| … | | Relay of the main board. |
| RL.04 | OUT4 | |
| RL.05 | OUT5 | |
| … | | Relay of the expansion board (optional). |
| RL.16 | OUT16 | |

## << inPutS >> INPUT TEST

By pressing **ENTER** it's possible to test the status of the inputs; the display will show:




in which the number on the first line identifies the input:

| | | |
|---|---|---|
| 1 | IN1 | |
| | | Inputs of the motherboard |
| 2 | IN2 | |
| 3 | IN3 | |
| … | | Inputs of the expansion board |
| 8 | IN8 | |

and the number each input corresponds to its status:

0 = disabled;
1 = enabled.

## << Anout >> ANALOGUE OUTPUT

If the instrument is fitted with the analogue output, through this step one can test if the values of the D/A converter (to be entered at time of calibration) correspond with the relative values of the analogue output (in voltage or in current), see section 6.
By pressing **ENTER** the display shows 0; enter a value between 0 and 65535 and confirm with **ENTER**; the instrument will supply the corresponding analogue value in output.
To exit the test confirm twice with **ENTER** the same entered value.

## << SEr. >> SERIAL PORTS TEST

By pressing **ENTER** it's possible to redirect the data received by any serial port, on other serial ports.

## << SEr.nuM >> SERIAL NUMBER

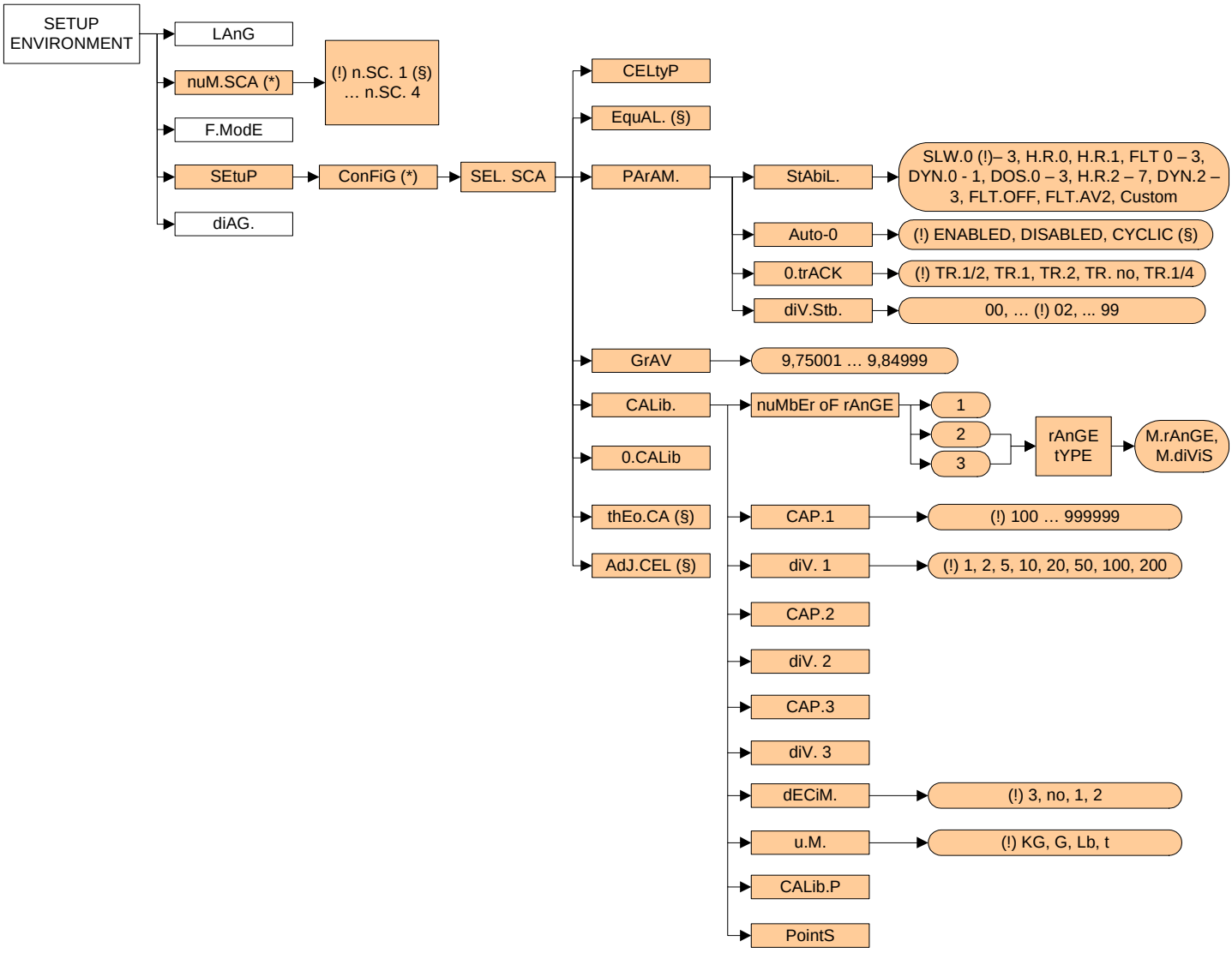
Diagnostics check for use of the manufacturer.

## 3.3 CALIBRATION OF THE SCALE

In case of various connected scales, each of them must be calibrated on its own, with its own capacity, division and unit of measure.

In case of various digital cells / channels, in addition to the calibration, one must carry out the equalisation.

### 3.3.1 CALIBRATION PROCEDURE



1) Enter the Setup of the instrument;
(upon start-up, press for an instant the **TARE** key while the instrument version is displayed)

2) Set the number of used channels; enter in the **nuM.SCA** step and select with the ▼ ▲ arrow keys:
- **N.SC. 1**
- **N.SC. 2**
- **N.SC. 3**
- **N.SC. 4**

and select the type of cells used and the number of digital cells / analogue channels connected for each scale.

3) Enter in the configuration menu of the calibration, in other words **SEtuP >> ConFiG>> CALib.** and press **ENTER**.

4) Select the scale to be configured with the ▼ ▲ keys (only if **nuM.SCA** > **1**) and press **ENTER**.

5) Execute the equalisation (only in case of more digital cells / channels connected to the scale), like described in section 3.3.5.

6) Select the calibration menu, in other words **CALib.** and press **ENTER**;

7) Select the number of calibration range (the LCD display shows in sequence the "SELECT THE NUMBER OF RANGES" message): if there is only one measuring range, select 1 and confirm with **ENTER;** with various fields (up to 3), the type of functioning will be requested (the display shows in sequence the message RANGE.T): select "M.Range" (if a multirange scale) or "M.Divis" (if a multidivisional scale) and confirm with **ENTER**.

8) Set the capacity of the scale or the first range: select the **CAP.1** step and press **ENTER**, set the value (minimum 100 maximum 999999) and press **ENTER**.
**TAKE NOTE:** enter the whole value including the decimal digits; for example if the capacity should be over 6 kg and the division 0.001kg (= 1 g), set 6000, or if the capacity should be 1500 kg and the division 0.5 kg, set 15000.
**(!) 100**

9) Set the division of the scale or the division of the first range: select the **diV. 1** step and press **ENTER**,
with the ▼ ▲ keys select the value (1, 2, 5, 10, 20, 50, 100, 200) and press **ENTER**.
**(!) 1**
**NOTE: if the range number** set in step 9) **is equal to 1, pass directly to point** 16)

10) Set the second range: select step **CAP.2** and press **ENTER**, set the value (minimum 100 maximum 999999) and press **ENTER**.

11) Set the division of the second range: select step **diV. 2** and press **ENTER**, with the ▼ ▲ keys select the value (1, 2, 5, 10, 20, 50, 100, 200) and press **ENTER**.
**(!) 1**
**NOTE: if the range number** set in step 9) **is equal to 2, pass directly to point** 16)

12) Set the third range: select step **CAP.2** and press **ENTER**, set the value (minimum 100 maximum 999999) and press **ENTER**.

13) Set the division of the third range: select step **diV. 3** and press **ENTER**, with the ▼ ▲ keys select the value (1, 2, 5, 10, 20, 50, 100, 200) and press **ENTER**.
**(!) 1**

14) Set the number of calibration decimals: select the **dECiM.** step and press **ENTER**, with the ▼ ▲ keys move the decimal point in the desired position and press **ENTER**.
**(!) 100**

15) Set the unit of measure: select the **u.M.** step and press **ENTER**, with the ▼ ▲ keys select the unit of measure: grams (- g -), kilograms (- kg -), tons (- t -) or pounds (- lb -) and press **ENTER**.
**(!) kg**

16) Carry out the acquisition of the calibration points: select the **CALib.P** step and press **ENTER**.
The instrument will request the following in this order:

Number of signal linearization points: the "CALIBRATION POINTS" message will appear followed by " 1 "; enter the value (from 1 to 8 points, besides ZERO) and press **ENTER**.

ZERO point: the message "UNLOAD THE SCALE AND PRESS ENTER" appears; unload the scale and press **ENTER**.

First linearization point: "Point 1" message will appear followed by the request to enter the value of the calibration weight; enter the value with the numeric keyboard and press **ENTER**. It will be requested to put the calibration weight on the scale (display LCD) and to press **ENTER**.

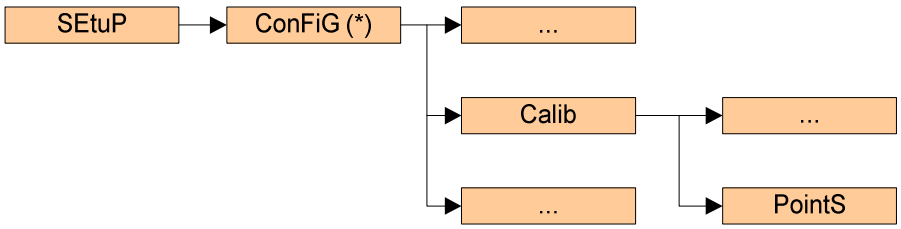
Following calibration points: as the above.

17) if various scales need to be calibrated, press the **C** key twice until the display show “SEL.SCA”, select the following scale to be calibrated and repeat all the operations from point 4).

If, on the other hand, the calibration is finished, press various times the **C** key until the instrument asks for saving and confirming with **ENTER**.

### 3.3.2 LINEARISATION POINTS

By entering in the **SEtuP >> ConFiG >> CALib >>** PointS step it's possible to access a menu which allows to view/modify the linearization points of the last calibration made:




| POINT | ADC.POINT | WEIGHT |
|---|---|---|
| 0 | 1293884 | 0.00 |
| ACT.1 | 2938827 | 10.20 |

The second line shows the point value (or mV value) of the selected point and the corresponding weight.
The third line shows the actual point value, to witch is referred the actual weight.
Is possible switch from mV to points by pressing **2ndF** key.

**KEYS' FUNCTIONS**

| | |
|---|---|
| ▲ | scrolls forward the points inside the menu. |
| ▼ | scrolls backward the points inside the menu. |
| **F1** | enters a linearization point. |
| **F2** | cancels a linearization point. |
| **F3** | copies the mV and weigh data in the current line (waits for stability like in the calibration). |
| **F4** | copies only the points or mV in the current line (waits for stability like in the calibration). |
| **F5** | copies only the points or mV in the current line (without waiting for stability). |
| **ENTER** | modifies a point (weight and converter points); while entering it confirm the values. |
| **C** | exits the programming; one is asked to save (the display shows "ACTIVATE NEW CALIBATION ?"): with **ENTER** one confirms, with another key one exits without saving. While entering a code, it quickly zeros the present value. |
| **2nd F** | switches from points to mV or vice versa. |
| **HELP** | shows the keys function. |

### 3.3.3 ZONE OF USE DIFFERENT THAN THE ZONE OF CALIBRATION:

If the zone of use is different than the calibration zone, one should:

1) Enter in the Set-up of the instrument;
   (upon start-up, press for an instant the **TARE** key while the instrument version is displayed)

2) Enter in the configuration menu of the metric parameters, in other words, **SEtuP >> ConFiG** and press **ENTER**.

3) Set the calibration zone: enter in the **GrAV** step and set the gravitational acceleration value of the CALIBRATION ZONE.

4) Execute the calibration, following the procedure shown in section 3.3.1.

5) Set the zone of use: enter in the **GrAV** step and set the gravity acceleration value of the ZONE OF USE.

6) Press various times the C key until the instrument asks to save and confirm with **ENTER**.

7) The weight error caused by a different gravity attraction value between the zone of calibration and the zone of use is automatically corrected.

### 3.3.4 QUICK ZERO CALIBRATION

Useful for calibrating only the ZERO point when a permanent tare weight is put on a platform (for example a roller unit).

1) Enter in the instrument set-up;
   (upon start-up, press for an instant the **TARE/ZERO** key while the instrument version is displayed)

2) Enter in the configuration menu of the metric parameters, in other words, **SEtuP >> ConFiG** and press **ENTER**

3) Select the scale to be configured with the ▼ ▲ keys (only if **nuM.SCA** > **1**) and press **ENTER**.

4) Select the **0.CALib** step and press **ENTER**; the message "UNLOAD THE SCALE AND PRESS ENTER" appears."

5) Put the preset tare to be cleared on the scale or unload the scale and press **ENTER**.

6) Once the calibration has taken place, the scale automatically returns to the **PArAM** step; if one needs to calibrate other scales, press the **C** key, select the next scale to be calibrated and repeat all the operations from point 2.

   If, on the other hand, the calibration is done, press various times the **C** key until the instrument asks to save and confirm with **ENTER**

### 3.3.5 CELL EQUALISATION PROCEDURE

**NOTE**: - this procedure may be selected only if various digital cells / channels are connected to the scale.
- for this procedure it is advisable to use a weight of at least 1/3 of the capacity.

1) Enter in the instrument set-up;
   (upon start-up, press for an instant the **TARE** key while the instrument version is displayed).

2) Enter in the configuration menu of the metric parameters, in other words **SEtuP >> ConFiG** and press **ENTER**.

3) Enter in the equalisation step: select the **EquAL** step and press **ENTER**. The display shows "SurE?": confirm with **ENTER** in order to reset the previous memorised equalisation and proceed with the **cell equalization**. By pressing the **C** key one can exit the equalisation.

4) The message "UNLOAD THE SCALE AND PRESS ENTER" will appear (zero equalization): unload the weighing system and press **ENTER**.

5) The message "LOAD CELL 1" will appear (first cell equalization): put a calibration weight on the connected cell and press **ENTER**.

6) The message "LOAD CELL 2" will appear (second cell equalization): put **the same calibration weight** on the connected cell and press **ENTER**.

7) Repeat the previous operation, if requested, on each connected cell.

8) Return to step 8) of section 3.3.1.

**NOTA**: in case of equalisation error, one will be required to repeat the entire procedure.

### 3.3.6 ADJUSTMENT OF EQUALIZATION COEFFICIENT

It's possible to adjust the equalization coefficients in order to correct a possible weight error.

1) Select the **SEtuP >> ConFiG >> AdJ.CEL** step and press **ENTER**;

2) One will be requested to execute the new equalisation ("SURE?"). Press **ENTER** to confirm or **C** to exit.

3) With the **F8** and **F9** keys choose the cell for which one wants to correct the coefficient: the LCD display shows the cell number and the selected coefficient, next to it; on the other hand, the LED display shows the total weight on the scale.

4) Put one calibration weight on the connected scale;

5) With the **F6** and **F7** keys it's possible to increase / decrease the suggested coefficient; the weight in the LCD display will be modified consequently;

6) Return to step 3) to modify another cell coefficient.

At the end of all the operations:

a) Press **ENTER** to exit and save all the changes (the LCD display will show the "EXIT & SAVE?"message: press **ENTER** to exit and confirm the changes; press **C** to stay in this step); or:
b) Press **C** to cancel all the changes (the LCD display will show the "EXIT & ABORT?" message: press **ENTER** to exit and cancel all the changes; press **C** to stay in this step).

### 3.3.7 SETTING THE COMMUNICATION WITH DIGITAL CELLS

**Premise**: Only load cells of the same model and the same capacity can compose two digital platforms.
In the case in which one chooses a digital cell type in the **CELtyP** step, the following operations are required:

1) Follow the step described in the section 3.3.1 up to point 6;

2) Check the correct matching of the ComAuX in the step **SEtuP >> SEriAL >> PortS**;

3) Enter in the serial AUX configuration step, i.e. **SEtuP >> SEriAL >> CoM.AuX** and check the correct configuration of the communication parameters with the cells. Moreover, step **ProtoC** must be set as **nonE**.

**NOTE**: The next step will be shown only if the digital cell type allows it. Otherwise, every digital cell connected to the indicator must be set previously with a 485 increasing address, different from the one of all the other cells.

4) Enter in **SEtuP >> SEriAL >> CoM.AuX >> CEL.Add** and press **ENTER** to assign the 485 address of each cell to its relative serial number:

   a. Set the 485 address (on the basis of the number of digital cells entered in the **CELtyP** step);
   b. Enter the cell serial number. The last entered serial number is proposed for that address. If the assignment is correct, the LCD display shows "nEXt?". Press **ENTER** to choose the next address and repeat the operations starting from step “a” , or **C** to exit the step.
   c. Once all the connected cells have been assigned, press **C** till one exits the step.

   The indicator informs with an acoustic signal and the text "Error" if:

   a. One tries to enter an address with a value greater than the cell number set in the **CELtyP** step;
   b. The serial number is wrong or not corresponding to the ones of the connected cells;
   c. The entered serial number is the same of the one of a cell already connected to the indicator with another 485 code. Correct the serial numbers till all of them are confirmed with "- oK -".
   d. The serial number is correct but:
      - The type of cell set is wrong;
      - The assignment of the indicator ports is wrong;
      - The cell communication parameters are wrong;
      - There are some problems with the physical connection of the cells (expecially check the terminal connections and the cell power supply);
   e. The remote scale is enabled in the CoM.AuX.

   In case of error, the LED display shows the "rEtry?" message and it’s possible to press **ENTER** in order to repeat the operation; otherwise, press **C** to exit the step.

5) Return to step 7) of section 3.3.1.

### 3.3.8 THEORETICAL CALIBRATION

**Premise:** it's possible to use this procedure if one does not have a sample weight available for carrying out a real calibration.

1) Follow the steps described in section 3.3.1 up to point 17;
2) Select the **SEtuP >> ConFiG >> thEo.CA** step and press **ENTER**;
3) It twill be requested if proceed with the new calibration ("SurE?"). Press **ENTER** to confirm, or **C** to cancel.
4) Set the cell capacity
   Enter the cell capacity (the unit of measure is the one configured for the scale: minimum value scale capacity, maximum value 999999) and confirm with **ENTER**.
5) **In case of analogue cells:**
   Set the cell sensivity in mV/V :
   Enter the cell sensivity in mV/V (max 99.99999 mV/V) and confirm with **ENTER**.
   In case of various connected cells through the junction box, enter the average of the value; in case of dependent channels, enter the sum of the value.
   **In case of digital cells:**
   Set the cell points at the full range capacity :
   Enter the full range capacity digital value (see the load cell datasheet:
   minimum value is double the scale capacity, maximum value 9999999) and confirm with **ENTER**.

At the end of the calibration, the display shows the message "CALIBRATION EXECUTED" and automatically exits the step, applying the new calibration.

# 4. DISPLAY OF THE GEOGRAPHICAL UTILISATION AND CORRECTION ZONE OF THE WEIGHING ERROR DUE TO THE DIFFERENT GRAVITATIONAL ATTRACTION BETWEEN THE CALIBRATION AND UTILISATION ZONE

## 4.1 INDICATION AND/OR DISPLAY OF THE GEOGRAPHICAL UTILISATION ZONE

**(compulsory for the legal type instruments)**

This instrument conforms to the laws currently in force regarding non-automatic weighing instruments.
Such g-sensitive instruments are influenced by the gravitational acceleration value "**g**" of the utilisation zone hence it is compulsory to indicate, with a label or on the display, the coded name of the utilisation zone where the weighing machine can be used.
The approved instrument displays, upon start-up, the "g" value relative to the gravitational zone of use for a few seconds, after the name and the installed software version.

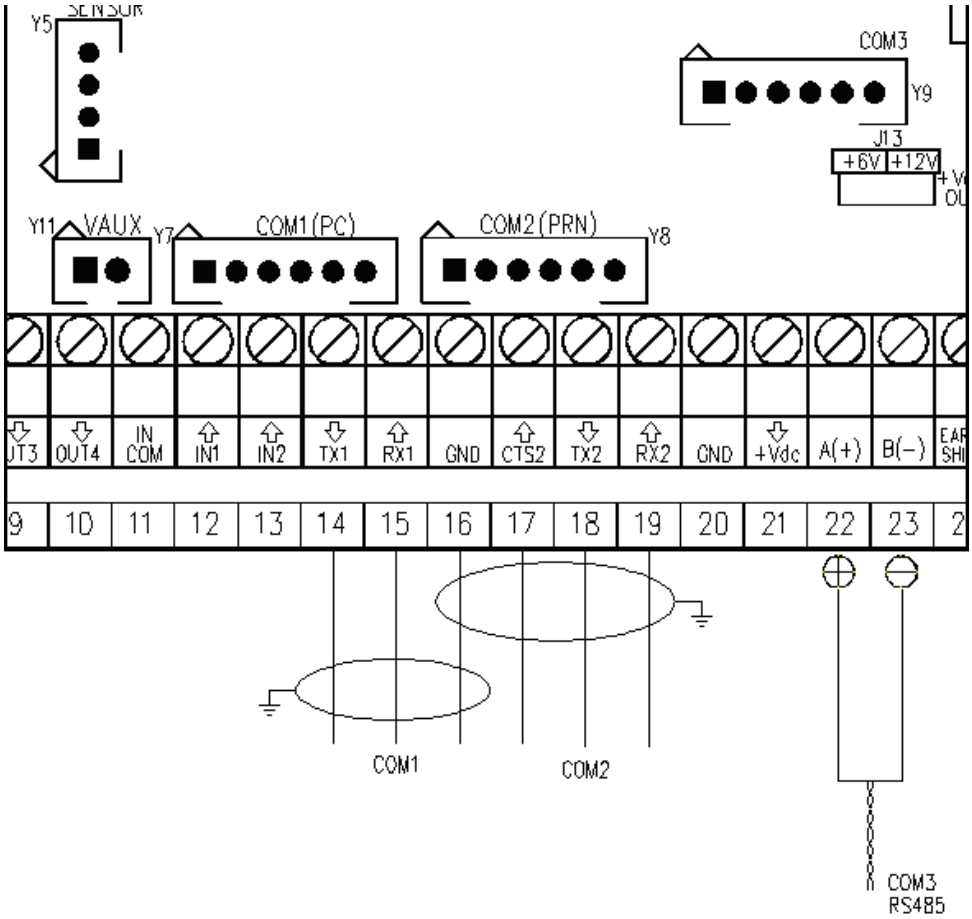
## 4.2 CORRECTION OF THE WEIGHING ERROR INTRODUCED BY A DIFFERENT GRAVITATIONAL ATTRACTION VALUE BETWEEN THE CALIBRATION AND UTILIZATION ZONE

**(compulsory for the legal type instruments)**

This instrument conforms to the laws currently in force regarding non-automatic weighing instruments. Such g-sensitive instruments are influenced by the gravitational acceleration value "**g**" of the utilisation zone so a special programme has been created to compensate for any differences in the gravitational attraction between the place where the weighing machine is calibrated and the place of utilisation.
During configuration the "**g**" values relative to the utilisation zone and to the zone of calibration are entered at a certain programming step which eliminates the weight error introduced by the different gravitational attraction value.
The approved instrument displays, upon start-up, the "g" value relative to the gravitational zone of use for a few seconds, after the name and the installed software version.

# 5. SERIAL OUTPUTS

The indicator is fitted with three serial ports, both having the output in ASCII code compatible with a wide range of printers, remote displays, PCs and other devices; in the SET-UP ENVIRONMENT one is allowed to match these ports with any available configuration (“ComPC”, “ComPrn” and “ComAux”), in order to satisfy the most varied applications.




| | AMP Connector | | Terminal board | | |
|---|---|---|---|---|---|
| **Signal** | **COM1/COM3 (RS232)** | **COM2 (RS232)** | **COM1 (RS232)** | **COM2 (RS232)** | **COM3 (RS485)** |
| **TX** | 1 | 1 | 14 | 18 | 22 A(+) |
| **RX** | 2 | 2 | 15 | 19 | 23 B(-) |
| **GND** | 6 | 6 | 16 | 16 | - |
| **CTS** | 2 | 3 | 15 | 17 | - |

By the step **SEtuP >> SEriAL >> PortS** it is possible select the function of the serial ports:

| **Parameter** | **COM 1** | **COM 2** | **COM 3** |
|---|---|---|---|
| **PC.Pr.AX (!)** | ComPC | ComPrn | ComAux |
| **PC.AX.Pr** | ComPC | ComAux | ComPrn |
| **Pr.PC.AX** | ComPrn | ComPC | ComAux |
| **Pr.AX.PC** | ComPrn | ComAux | ComPC |
| **AX.PC.Pr** | ComAux | ComPC | ComPrn |
| **AX.Pr.PC** | ComAux | ComPrn | ComPC |

ComPC: data transmission/reception to PC/PLC, printer, repeater.

ComPrn: data transmission to printer, repeater.

ComAux: data transmission/reception to printer, repeater, remote scale, barcode reader, digital cells.

**!! IMPORTANT !!**

**THE CONNECTION AND THE SOFTWARE CONFIGURATION OF THE SERIAL PORTS MUST BE MADE BY TECHNICAL PERSONNEL WHO KNOWS THE PROCEDURES ON THE BASIS OF THE USER'S NEEDS.**

**The data transmission cable must be kept away from the AC power supply lines.**

**!! REMOVE VOLTAGE BEFORE OPENING THE INSTRUMENT !!**

**THE STANDARD CONFIGURATION OF THE SERIAL PORTS IS THE FOLLOWING:**

Baud rate = 9600, Parity = None, Data word = 8, Stop bit = 1, CTS signal = No Cts. The configuration may be modified in the SET-UP environment in the **<< SERIAL >>** step.

## 5.1 PC CONNECTION

## 9 PIN CONNECTOR

| INDICATOR | 9 pin Collector | Color |
|---|---|---|
| TX | 3 | Yellow |
| RX | 2 | Pink |
| GND | 5 | Grey |

## RJ45 CONNECTOR

| INDICATOR (RJ45 connector) | 9 pin Collector | Color |
|---|---|---|
| TX 6 | 3 | Orange |
| RX 3 | 2 | Blue/White |
| GND 5 | 5 | Green/White |

## 5.2 PRINTER CONNECTION

| | WTY280 /SMT80 9pin (female) | TMU295 /LX300 25pin (female) | LP542 Plus /TTP243/SMTPLUS 9pin (female) | Standard cable |
|---|---|---|---|---|
| TX | 3 | 3 | 3 | Pink |
| CTS | 4 | 20 | 8 | Brown |
| GND | 7 | 7 | 5 | Grey |

| TPR | STANDARD CABLE |
|---|---|
| GND | Black |
| CTS | Yellow |
| RX | Grey |

| TPR printer power supply | | |
|---|---|---|
| | STANDARD CABLE | Terminal box |
| +VP e +VC | Red and Orange | 5 Vaux |
| GND e GND | Black and Black | 16 GND |

## 5.3 RS 485 CONNECTION

**IMPORTANT:**

- **Respect the electrical precautionary measures indicated in section 1.**
- **In the case of digital load cells connection read carefully and apply what is described in chapter 2.2**

**Below is the RS485 connection of the indicator in the CoM3:**

| Meaning | Indicator Serial line |
|---|---|
| TX+/RX+ | 22 A(+) |
| TX-/RX- | 23 B(-) |

On the same RS 485 line it's possibile to connect up to 32 devices, among indicators, digital load cells, 485/232 signal converter.

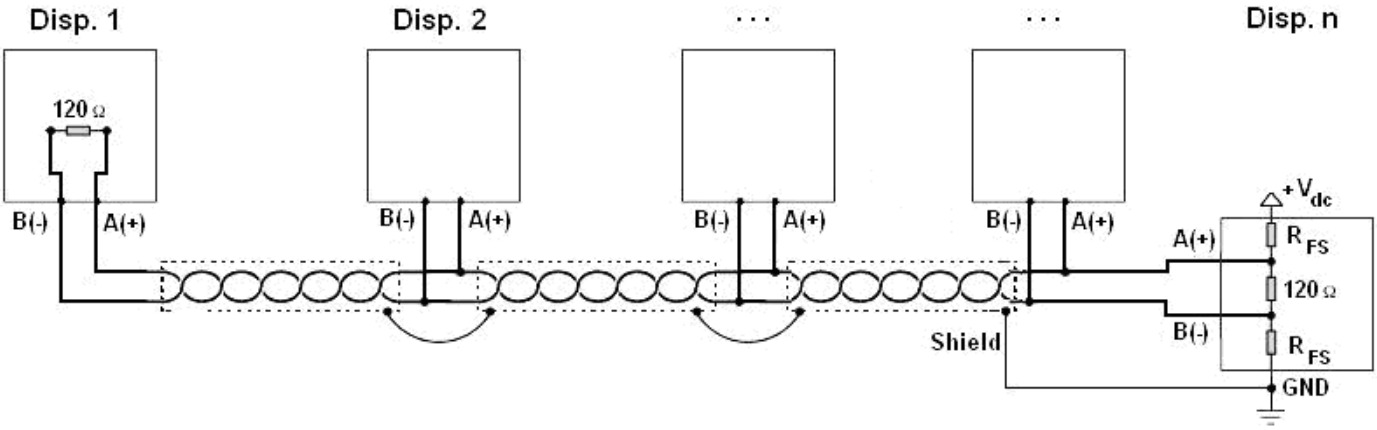



Figura 1: electrical diagram of RS485 connections.

- Use a **STP** (Shielded Twisted Pair) cable in order to make the connection (twisted and shielded pair/s with single shielding for each pair through aluminium band and total shielding through external sheathing).

- The maximum reachable length from the line with the use of the appropriate cable for RS 485 connections, the twisted 2x24 AWG duplex cable, shielded with external sheathing + aluminium band, is of about 1200 meters (see section 1.1.3)

- With very long cables, the cable capacity (normally near 50pF/m) starts being a dominant factor in the power consumption and increases with the increase of speed.
  This implies that **the maximum distance can not be covered with the maximum possible speed**. For an approximate value, one can consult the following table:

| Baud rate | Total capacity of the cable (pF) |
|---|---|
| 1200 | 400000 |
| 2400 | 200000 |
| 4800 | 100000 |
| 9600 | 50000 |
| 19200 | 25000 |
| 38400 | 12000 |
| 57600 | 8000 |
| 115200 | 4000 |

  As a general rule, if one has any doubts, it is always preferable to **choose the cable with a greater section.**

- Verify that the grounding satisfies the requirements of section 1.2. Especially, all the digital masses, as well as the analogue masses, and the power circuits, must be connected to the grounding bar and this last one must be connected to the grounding pole.

- The shielding can be connected into a single point of the entire network (as shown in Figure 1) or both its ends, however it's important that **all the masses have the same potential**, in order to avoid the forming of current rings.

- On the RS485 network normally one connects 2 **termination resistances** equal to the characteristic impedance of the cable (tipically 120 Ω, see Figure 1), **ONLY** on the 2 devices **which are at the 2 ends of the cable**. The terminal resistance is not supplied with the ports of the indicator.

- The difference of potential between the A(+) and B(-) terminals in rest conditions (for example with instrument in set-up phase), **must be of at least 0,2 V**.
  To create a resistive divider which maintains this difference of potential also when all the transmitters are disabled, inert in the RS485 port of the indicator where there are the termination resistances, the **polarisation** or **fail-safe resistences** ($R_{FS}$ in Figure 1). The value of these resistances is between 390 Ω and 2,2 kΩ.

  NOTE: in particular, the value of each of these resistances must be greater than the value calculable through the formula:

$$R_{FS} = \frac{R_{eq}}{2} \times \left( \frac{V_{dc}}{0,2} - 1 \right)$$

  in which:
  - $V_{dc}$ is the power supply voltage of the line
  - $R_{eq}$ is the overall resistance to the A(+) a B(-) heads, supplied by the parallel of the 2 termination resistances and all the input resistances of the devices connected to the bus.

  FOR EXAMPLE:
  Presuming that a connection has 120 Ω as termination resistance and 32 connected devices, each having an input impedance of 12 kΩ. The $V_{dc}$ power supply is 5 V.
  One calculates $R_{eq}$ , equal to about 52 Ω, and $R_{FS}$ which must be at least equal to 624 Ω.

- **The connection between the indicator and the digital load cells is made with RS485 protocol in the COM3 configured as CoMAuX.** The indicator can be connected with up to 16 digital load cells.

- It's possible to connect the indicator to digital load cells with 485 4-wire protocol through 422/232 converter. In this case one is required to connect the double TX of RS422 cable to TX+ and TX- converter's pins and the double RX of RS422 cable to RX+ and RX- converter's pins

- In case of connection with non Dini Argeo devices, there may be different ways of line marking: generally one presumes that the A/B indication corresponds to the +/- and HI/LO markings, but this is not always true. Therefore, if the device does not function, one should try inverting the connections even if everything seems to be correct.

- For the correct functioning of the digital load cells, one should, in any case respect all the rules given in the relatvive specific manuals.

## 5.4 TRANSMISSION PROTOCOLS

STANDARD [available in ComPc, ComPrn, ComAux]

The weight data transmission on the serial port happens in the following format:
**[CC]HH,KK,PPPPPPPP,UM<CR LF>**

In which: **[CC]** = instrument code, es.00 (only with RS485 protocol)

**HH** = UL Underload
OL Overload
ST Weight stability
US Weight instability

**,** Comma character

**KK** = NT Net Weight
GS Gross Weight

**,** Comma character

**PPPPPPPP** = Weight (8 digits including the possible sign and decimal point).

**,** Comma character

**UM** = Unit of measure (Kg, g, t, lb)

**<CR LF>** Carriage Return + Line Feed
(ASCII Characters 13 and 10)

AF STRING [available in ComPc]

The weight data transmission on the serial port happens in the following format:
**[CC]SS,B,LLLLLLLLLLUM,YYTTTTTTUM<CR LF>**

in which: **[CC]** = instrument code, es.00 (only with RS485 protocol)

**SS** UL Underload
OL Overload
ST Weight stability
US Weight instability

**,** Comma character

**B** Scale Number

**,** Comma character

**LLLLLLLLLL** Gross weight (10 digits including the possible sign and decimal point).

**UM** = Unit of measure (Kg, g, t, lb)

**,** Comma character

**YY** 2 spaces if the tare is automatic
PT if a tare is pre-set or set manually

**TTTTTTTTTT** Tare weight (10 digits including the possible sign and decimal point).

**UM** = Unit of measure (Kg, g, t, lb)

**<CR LF>** Carriage Return + Line Feed
(ASCII Characters 13 and 10)

DINI ARGEO REPEATER [available for ComPc, ComPrn, ComAux]

Transmission protocol for connection to a Dini Argeo weight repeater. It transmits the weight value shown on the LED display to the Dini Argeo weight display.

**NOTE:** In this case, the setting of the **SEtuP >> SEriAL >> CoM PC >> PC.ModE** parameter has no relevance.

LCD REPEATER [available in ComPc]

With this transmission protocol, it is possible to repeat the messages shown on the LCD display.
The data is transmitted in the following format:

**XXXXXXXXXXXXXXXXYYYYYYYYYYYYYYYY + CR + LF**

| | | | |
|---|---|---|---|
| in which: | **XXXXXXXXXXXXXXXX** | = | Data shown on the first line of the LCD display |
| | **YYYYYYYYYYYYYYYY** | = | Data shown on the second line of the LCD display |
| | **CR** | = | Carriage Return |
| | **LF** | = | Line Feed |

MONODIRECTIONAL [available for ComPc]

Through this communication protocol the serial command management is excluded, in order to avoid possible responses to data received from the port in case of use of the 485 serial line; it can be useful when one uses the port for transmitting a printout, and various devices are connected on the same 485 line. With this protocol the data and serial command reception is disabled.

ALIBI MEMORY [available in ComPc, ComPrn]

If the indicator is fitted with the alibi memory, one should set this parameter in order to store the weighs using the print key and transmitting the string through the PC serial port; see the protocol specifications in the “ALIBI MEMORY” section in the user manual.
Furthermore, by enabling the protocol on the ComPC, a string containing the weighing data memorized, will be transmitted.
**NOTE:** in the ComPrn the string will not be transmitted.

MULTI – REPEATER [available in ComPc, ComPrn]

Through this communication protocol is possible to configure up to five weight repeater so that each they shows differt information.
Transmit string:

01PPPPPPP + CR + LF
02SSSSSSS + CR + LF
03XXXXXXX + CR + LF
04YYYYYYY + CR + LF
05ZZZZZZZ + CR + LF

in which:

| | |
|---|---|
| 01,02,03,04,05 | repeater address |
| PPPPPPP | gross weight on 7 digits (including sign and decimal point) of the scale 1 |
| XXXXXXX | gross weight on 7 digits (including sign and decimal point) of the scale 2 |
| SSSSSSS | gross weight on 7 digits (including sign and decimal point) of the scale 3 |
| YYYYYYY | gross weight on 7 digits (including sign and decimal point) of the scale 4 |
| ZZZZZZZ | data display on 7 digits on LED display (including sign and decimal point) |

If the number of scales used is less than the balance of the string that needs to be transmitted are transmitted dashes.

REPEATER DC [available in ComAux]

This protocol can coexist with the communication with digital cell and only match with AUX serial line; selected the protocol, one is asked to set configuration of each connected platform, selectable parameters are:

| | |
|---|---|
| **NO** | the relative data is never sent |
| **ONLY IF SELECTED** | the relative data is sent only if select the platform |
| **ALWAYS** | the data is sent independently from the selection |

In this way it's possible to have **N** displays which can be used for the current data on a platform or the sum of data on all platforms.

**Example:** if one wants to use 5 displays, one for each platform, and one for the continuous display of the sum, one has to set the display code at 1 (for platform 1), 2 (for platform 2), 3 (for platform 3), 4 (for platform 4) and 5 (for the platforms' sum). Depending on the selection made in the setup it will be possible to view the weight: always, never, or only when the platform is selected.

## 5.5 TRANSMISSION MODES

Data transmission from PC Serial Port can be done in 5 different ways:

TRANSMISSION ON REQUEST [available in ComPC]

It requires an external command from the PC to send the data requested. Transmission can take place at any time requested.

CONTINUOUS TRANSMISSION [available in ComPC, ComPrn, ComAux]

- ComPC: Continuous transmission of the standard string (**ProtoC** = **StAnd** step), or of the extended AF0X string (**ProtoC** = **AF0X** step) or continuous transmission of the personalised string.
  This mode is used for interfacing with computers, remote displays and other devices that require a constant update of data regardless of weight stability (10 transmissions per second with Baud rate at 9600 and stable weight).
- ComPrn: The indicator transmits continuously the data configured in the 01 print format.
  Alternatively, by setting only the"300"block in the 01 print format, it is possible to transmit the STANDARD STRING (or the AF0X STRING, if configured for the PC port).
  For configuration details of the print formats, see section 7.
- ComAux: The weight transmission on the serial port takes place with the STANDARD protocol.

TRANSMISSION ON STABILITY [available in ComPC]

Transmission is automatic each time the weight put on the platform reaches stability ("~" pilot light off); the minimum transmission limit is of 10 divisions with a NON APPROVED instrument and 20 divisions with an APPROVED instrument. The reactivation of the transmission takes place depending on how the **F.modE >> rEACt** "REACTIVATIONS" parameter of the SET-UP environment has been set (passage by zero of the net weight or weight instability).

RS485 TRANSMISSION [available in ComPC]

On Com3 is available a RS485 Half Duplex serial output, enabling the possibility of bi-directional communication up to 63 indicators to just one computer.
The transmission protocol is the same as that of transmission upon request, with the adding of a code that identifies the weight indicator (i.e. "00READ <CR LF>")

## 5.6 SERIAL COMMANDS FORMAT

| LEGEND | |
|---|---|
| **[CC] o <II>** | instrument code, e.g. 00 (only with RS485 protocol) |
| **<CR LF>** | Carriage Return + Line Feed (ASCII characters 13 and 10) |
| **<ESC>** | ASCII character ASCII 27 |
| **<STX>** | ASCII character ASCII 02 |
| **b** | space character, ASCII 32. |

| **SERIAL ERRORS**<br>Upon each serial command received the instrument transmits a string containing the answer (see the command description) or it transmits one of the following indications: | |
|---|---|
| **OK<CR LF>** | it is shown when a correct command is transmitted from the PC to the indicator. The OK answer does not imply that the instrument executes the zero. |
| **ERR01<CR LF>** | it is shown when a correct command is transmitted from the PC to the indicator however it is followed by letters inserted involuntarily (I.E.: READF, TARES…). |
| **ERR02<CR LF>** | it is shown when a correct command is transmitted from the PC to the indicator, but containing wrong data. |
| **ERR03<CR LF>** | it is shown when a non allowed command is transmitted. It may be a command not used in the selected functioning mode or the command reaches the indicator in the instant in which the keyboard buffer is already occupied by another command |
| **ERR04<CR LF>** | it is shown when an inexistent command is transmitted. |
| **NOTE**: The instrument doesn't transmit any indication with the short commands, like the ones made up of only one letter and then the possible parameter. | |

**Version reading:** **[CC]VER<CR LF>**
Instrument's answer: [CC]VER,vvv,E-AF03**bb**<CR LF>
in which: vvv is the firmware version

**Data reading:** **[CC]READ<CR LF>** or: **[CC]R<CR LF>**
Instrument's answer: see section 5.4.

**Semiautomatic tare:** **[CC]TARE<CR LF>** or: **[CC]T<CR LF>**

**Preset tare:** **[CC]TMANTTTTTT<CR LF>** or: **[CC]WTTTTTT<CR LF>** (short command)
in which: W= command
TTTTTT = tare in ASCII, max 6 characters
Example: W10.0 <CR LF>

**Zero:** **[CC]ZERO<CR LF>** or: **[CC]Z<CR LF>**

**Zero condition:** **[CC]ZEROB<CR LF>**
Instrument's answer: [CC]OK<CR LF>: the zero execution can be correctly done.
[CC]KO<CR LF>: zero is not permitted (weight instability, weight in overload, etc)

**Tare:** **[CC]TARE<CR LF>** or: **[CC]T<CR LF>**

**Tare condition:** **[CC]TAREB<CR LF>**
Instrument's answer: [CC]OK<CR LF>: the tare execution can be correctly done.
[CC]KO<CR LF>: tare is not permitted (tare disabled, weight instability, weight in overload, etc)

**Clear:** **[CC]CLEAR<CR LF>** or: **[CC]C<CR LF>**

**Reading of extended weight string:** **[CC]REXT<CR LF>**
Instrument's answer:

[CC]B,hh,NNNNNNNNNN,YYTTTTTTTTTT,PPPPPPPPPP,MMMMMMMMMM,uu<CR LF>

in which:
- [CC] = INSTRUMENT CODE IN THE FORMAT OF TWO ASCII DECIMAL DIGITS ONLY WHEN THE 485 PROTOCOL IS SELECTED (FOR EXAMPLE 00)
- B = scale number (zero for the remote scale)
- hh = UL Underload; OL Overload; ST Stability of the display; US Instability of the display
- NNNNNNNNNN = net weight on 10 characters including sign and decimal point
- YY = "PT" if the tare weight is entered with the keyboard, otherwise YY = " " (two space characters) if the tare weight is weighed
- TTTTTTTTTT = tare weight on 10 characters including sign and decimal point
- PPPPPPPPPP = always 0
- MMMMMMMMMM = always 0
- uu = Unit of measure "Kg" "**b**g" "**b**t" "lb
- CR = Carriage Return (ascii character decimal code 13)
- LF = Line Feed (ascii character decimal code 10)

**Net/Gross change:** **[CC]NTGS<CR LF>**
Instrument's answer: [CC]OK<CR LF> if the command NTGS has been RECEIVED.
[CC]ERR04<CR LF> if the entire command is wrong.

**Print:** **[CC]PRNT<CR LF>** or: **[CC]P<CR LF>**

**Print condition:** **[CC]PRNTB<CR LF>**
Instrument's answer: [CC]OK<CR LF>: the print execution can be correctly done.
[CC]KO<CR LF>: print is not permitted (weight instability, print not reactivation, cts error, etc)

**Scale switch:** **[CC]CGCHn<CR LF> or[CC]Qn<CR LF>**
in which: n = scale number (from 1 to 4)
Example:Q1+CR

**Reading the number of entered articles and total articles:** **[CC]NREC00<CR LF>**
Instrument response: [CC]NREC,0,0003,0100<CR LF>
In which : 0= article index
0003= the number of entered articles
0100= the number of total articles

**Reading the content of entered article:** **[CC]RREC,0,0001<CR LF>**
Instrument response: [CC]RREC,0,0001 + content<CR LF>
In which : 0= article index
0001= the content of article 1

**Reading the selected article number:** **[CC]GREC00<CR LF>**
Instrument response: [CC]GREC,0,0003<CR LF>
In which : 0= article index
0003= the article 3 has been selected

**Selecting / deselecting a entered article:** **[CC]SREC,0,0003<CR LF>**
Instrument response: [CC]SREC,0,0003,OK<CR LF>
In which : 0= article index
0003= selecting / deselecting article 3 (premise: article 3 has been entered)

**Reading text sections of custom language tool:** **[CC]TSECT<CR LF>**
Instrument response: [CC]12<CR LF>
in which: 12 = the indicator have 12 text sections.

If "TSECT" is followed by 2 digits (from 00 to 11), it will show index name of each text section.

**Temporary view of message on the display:**

**[CC]DISPNNVVVVVV<CR LF>**
in which: NN: display number of the indicator, standard 00 (ASCII hex)
V: character to be displayed (at least 1, cut off at the number of characters which may be viewed by the indicated display)

The message remains for the time configured through the DINT command; if one selects to view the message permanently on a display and one wants to cancel the operation, transmit the DISPNN command without any message: the display, specified in the command (NN) goes back to view the usual information relative to the selected functioning mode.

**Setting a display viewing interval:**

**[CC]DINTXXNNNN<CR LF>**
in which: XX: code which identifies the display (00 for LED, 01 for LCD)
NNNN: visualisation interval (in milliseconds), N is an ASCII hex character; for example, to set a visualisation time of 2 seconds (therefore 2000 milliseconds), which converted into hex become 07D0, the command becomes DINT0007D0<CR><LF>.

By setting NNNN = 0000, the transmitted message with the DISP command (see above) remains permanently viewed on the selected display.

**With approved instrument**
- for the display 00 (LED display), the maximum settable time is 5 seconds (5000 milliseconds, HEX 1388).

one should wait for the end of an eventual current visualisation before viewing a following one.

**Reading of converter points relative to the weight:** **[CC]RAZF<CR LF>**

Instrument's answer: [CC]SS,RZ,RRRRRRRRRR,vv<CR LF>

In which:
- SS UL Underload
- OL Overload
- ST Stability of the weight
- US Instability of the weight
- RRRRRRRRRR Value of converter points (10 characters)

**Reading of microvolts relative to the weight:** **[CC]MVOL<CR LF>**

Instrument's answer: [CC]SS,VL,MMMMMMMMMM,uv<CR LF>

In which:
- SS UL Underload
- OL Overload
- ST Stability of the weight
- US Instability of the weight
- MMMMMMMMMM Value of microvolts (10 characters)

**Reading of net weight with sensitivity times 10:** **[CC]GR10<CR LF>**

Instrument's answer: [CC]SS,GX,VVVVVVVVVV,UM<CR LF>

In which:
- SS UL Underload
- OL Overload
- ST Stability of the weight
- US Instability of the weight
- GX Weighing times 10 status
- VVVVVVVVVV Value of net weight times 10 (10 characters)
- UM Unit of measure (Kg, g, t, lb)

**NOTE**: The instrument does not transmit the OK answer to the short commands (R, T, Z, P….).

**Modification of GR10 command response:** **[CC]GR10X<CR LF>**

in which:
- GR10= command
- X→ **E** enabled
- X→ **D** disabled
- Example: GR10E<CR LF>

If enabled, it modifies the format of the GR10 command response string: it responds to the GR10 command with the number of the active scale in the place of the "GX – weighing status x 10" ).

The setting is valid when the indicator is turned off. To save it permanently in the instrument one should transmit the command in the set-up status.

**Setpoint command:** **[CC]STPTnFxxxxxxOyyyyyy<CR LF>**

in which:
- n, expressed in hexadecimals, indicates the number of SETPOINTS (1, 2, 3, 8, 9, A, B, C, D, E, F).
- **F** : the following weight value indicates the DISABLING of the relays (OFF).
- **O** : the following weight value indicates the ENABLING of the relays (ON).
- xxxxxx e yyyyyy take on the enabling or disabling setpoint value: the digits must be entered WITHOUT decimal point, omitting the NON significant zeros.

**Example in case of instrument with 10,000 kg capacity and 1 g division:**

Command : **STPT1F5000O6500** (Disabling of first relay at 5 kg and enabling at 6,5 kg)

Answer: **OK**

**NOTE**: Negative answer in the following conditions:
- one of the two entered values surpasses the capacity.
- one of the two entered values has a minimum division which is incongruent with the one set in the instrument.
- the disabling value surpasses the enabling one.

**AFXX type string reading and scale information**: **[CC]RALL<CR LF>**

Instrument's answer:

[AFXX string] B,NNNNNNNUM,LLLLLLLUM,SSS,AAA,CCC,TTT,XXXXX-YYYYYY<CR LF>

dove:

| | | |
|---|---|---|
| B | Number of platform on which the totalisation has been made. | |
| NNNNNNNUM | Last net weight totalized with unit of measure. | |
| LLLLLLLUM | Last gross weight totalized with unit of measure. | |
| SSS | Scale status: | 000 start-up |
| | | 001 weighing |
| | | 002 selection of functioning mode |
| | | 003 generic menu |
| | | 004 set-up menu |
| | | 005 user menu |
| | | 006 exit from set-up |
| | | 007 Update Firmware status |
| | | 008 setting of user default |
| | | 009 setting of technical default |
| | | 010 switch channel |
| | | 011 setting of technical default |
| | | 012 Test of the PC serial ports |
| | | 013 Test of the PRN serial ports |
| AAA | Counter of pressed keys. | |
| CCC | Code of last key pressed. | |
| TTT | Counter of totalisations. | |
| XXXXX | Last rewriting number stored in the Alibi memory. | |
| YYYYYY | Last weigh number stored in the Alibi memory. | |

## 5.7 ADVANCED COMMANDS

**[GKBB] Reading of the data in the keyboard buffer:**
This following command allows for **the reading of the data in the keyboard buffer (max 20 keys)** (only if the transmission of the pressed keys code is disabled):

**Syntax**

| | |
|---|---|
| **Format** | **<ESC><II>GKBB<STX>** |
| **Parameters** | **-** |
| **Answer** | **- <ESC><II>OK<STX> if the buffer is empty**<br>**- If the buffer is not empty, two hexadecimal characters for each key, in the order in which these have been pressed, from left to right.** |
| **Example** | **<ESC>01GKBB<STX>** |
| **Result** | **If for example, with empty keyboard buffer, the 1, 2, 3, 4, 5, 6 keys have been pressed, the instrument answer will be the following**:<br>**<ESC>0B**0C**0D**0E**0F**10**<STX>** |

**NOTE:** the reading of the keyboard buffer causes the cancellation.

**[EKBB] Cancellation of the data inside in the keyboard buffer:**
With this command it is possible to **cancel the contents of the keyboard buffer** (only in the case in which the transmission of the pressed keys' code is disabled):

**Syntax**

| | |
|---|---|
| **Format** | **<ESC><II>EKBB<STX>** |
| **Parameters** | **-** |
| **Answer** | **<ESC><II>OK<STX>** |
| **Example** | **<ESC>01EKBB<STX>** |
| **Result** | **Cancellation of the keyboard buffer** |

**[OUTP] Enabling/disabling of the relay output:**

**Syntax**

| | |
|---|---|
| **Format** | **<ESC><II> OUTPNVVVV <STX> or <ESC><II> OUTPNNVVVV <STX>** |
| **Parameters** | **- N = output number (expressed in hexadecimals)**<br>**- 0 to enable simultaneously all the outputs**<br>**- from 1 to 4 to identify the single output of the motherboard from 8 to F to identify the same output of the expansion board**<br>**- NN= output number (expressed in hexadecimals)**<br>**- 00 to enable simultaneously all the outputs**<br>**- from 01 to 04 to identify the single output of the motherboard and from 08 to 0F to identify the single output of the expansion board**<br>**- 10 to enable the 12 output (OUT12) of the expansion board.**<br>**- VVVV = enabling/disabling code**;<br>**- for the single output, V = 0000 disabled, while V = 0001 enabled.**<br>**- all the outputs (in other words, N = 0), the value identifies the outputs to be enabled**<br>**(expressed in hexadecimals);** |
| **Response** | **<ESC><II>OK<STX>**<br>**The response does not imply that the command has been made.** |
| **Example** | **<ESC>01OUTP00412<STX> or <ESC>01OUTP000412<STX>** |
| **Result** | **Configuration of the outputs (see below the suggested explanation)** |

A bit is ascribed to each relay:

| Expansion board outputs **(optional)** | | | | | | | | | | | | | Motherboard outputs | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OUT 16 | OUT 15 | OUT 14 | OUT 13 | OUT 12 | OUT 11 | OUT 10 | OUT 9 | OUT 8 | OUT 7 | OUT 6 | OUT 5 | OUT 4 | OUT 3 | OUT 2 | OUT 1 |
| 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 |

The bit at 1 is interpreted as active output, while the bit at 0 as disabled relay.

If, for example, one wants to enable the **OUT5, OUT11** outputs of the Expansion board and **OUT2** relay of the Motherboard relays, the binary combination will be:

| Expansion board outputs **(optional)** | | | | | | | | | | | | Motherboard outputs | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OUT 16 | OUT 15 | OUT 14 | OUT 13 | OUT 12 | OUT 11 | OUT 10 | OUT 9 | OUT 8 | OUT 7 | OUT 6 | OUT 5 | OUT 4 | OUT 3 | OUT 2 | OUT 1 |
| Bit 15<br><br>0 | Bit 14<br><br>0 | Bit 13<br><br>0 | Bit 12<br><br>0 | Bit 11<br><br>0 | **Bit 10**<br><br>**1** | Bit 9<br><br>0 | Bit 8<br><br>0 | Bit 7<br><br>0 | Bit 6<br><br>0 | Bit 5<br><br>0 | **Bit 4**<br><br>**1** | Bit 3<br><br>0 | Bit 2<br><br>0 | **Bit 1**<br><br>**1** | Bit 0<br><br>0 |

Which, in hexadecimals, corresponds to the number 0412; therefore the command will be OUTP00412 + CR + LF or OUTP000412 + CR + LF.

**NOTES:**
- The set point enabling command does not work neither in the set-up environment nor in the weighing phase; if the output function is different than "nonE". (**SEtuP >> outPut >> r.COnF.** step, **rLFunC** parameter).

**[INPU] Optoisolated input reading**

**Syntax**

| | |
|---|---|
| **Format** | **<ESC><II>INPU<N><STX>** |
| **Parameters** | **N = input number (expressed in hexadecimals):**<br>**- 0 to simultaneously read all the inputs.**<br>**- from 1 to 2 to identify the single input of the Motherboard and from 3 to 8 to identify the single input of the Expansion board.** |
| **Answer** | **<ESC><II>INPUNVVVV <STX>**<br>**N = input number (expressed in hexadecimals), described previously**<br>**VVVV = input \ inputs status:**<br>**- for the single input, V = 0000 means input not active, while V = 0001 active input**<br>**- for all the inputs (in other words N = 0), the returned value corresponds to the hexadecimal codification of the status of the inputs** |
| **Example** | **<ESC>01INPU0 <STX>** |
| **Result** | **Reading of indicator's inputs' status (see the following explanation).** |

A bit is ascribed to each input:

| **Not managed bits** | | | | | | | | Expansion board inputs **(optional)** | | | | | | Motherboard inputs | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | in.8 | in.7 | in.6 | In.5 | in.4 | in.3 | in. 2 | in. 1 |
| 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 |

Therefore if the INPU00026 string is received, the hexadecimal value, converted into binary, indicates that the status of the inputs is the following:

| **Not managed bits** | | | | | | | | Expansion board inputs **(optional)** | | | | | | Motherboard inputs | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | in.8 | in.7 | **in.6** | In.5 | in.4 | **in.3** | **in. 2** | in. 1 |
| 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 | 0 | 0 | **1** | 0 | 0 | **1** | **1** | 0 |

The active inputs are therefore **in.6**, **in.3** of the Expansion board and **in.2** of the motherboard

**NOTES:**
- With the bits 8 to 15, no input is assigned, and are fixed at zero
- The reading command of the inputs works also in the set-up environment

**[INUN] Request of a numeric value entry on the LED display:**

**Syntax**

| | |
|---|---|
| **Format** | **<ESC><II>INUN<X><M>,<H>,< I >,<L>,<D>,<P><STX>** |
| **Parameters** | **X = numeric or alphanumeric character (0 – 9 ; A – Z ; a – z) displayable in the digit on the extreme left of the LED display (not modifiable);**<br>**M = minimum enterable value in decimals (0 ≤ M ≤ H)**<br>**H = maximum enterable value in decimals (0 ≤ H ≤ 999'999'999'999'999'999,18 digits).**<br>**I = value displayed initially in decimals, substituted then by the entered one (M ≤ I ≤ H); if the entered value is less than the enterable minimum value (M), the minimum value will initially be displayed (M).**<br>**L = maximum number of enterable characters in decimals ( 0 ≤ L ≤ 18)**<br>**D = number of decimal digits (in decimals)**<br>**P = initial position in decimals of the blinking digit (in other words the position of the first value to be modified).**<br>**- if P = 0, the blinking digit is the least significant one**<br>**- if P = 1, the blinking digit is the most significant one** |
| **Answer** | **<ESC><II>OK<STX>** |
| **Example** | **<ESC>01INUNt,0,10000,0,5,3,0<STX>** |
| **Result** | **The t 00.000 message appears on the LED display with the least significant digit blinking (underlined), while waiting for the entry of a numeric value** |

If the entered value is greater or less respectively to the maximum or minimum set value, the instrument will emit an error sound signal.

**[INUA] Request of a numeric value entry on the LCD display:**

**Syntax**

| | |
|---|---|
| **Format** | **<ESC><ll>INUA<CC><LL><I><STX>** |
| **Parameters** | **CC = decimal position from which the entry of the numeric data starts, from left to right.**<br>**LL = number of characters in decimals which make up the numeric data to be entered**<br>**I = selection/unselection of the display of an initial value, previously entered in the user buffer (using the WUBU command described later on):**<br>**- I = 0 not displayed**<br>**- I = 1 displayed** |
| **Answer** | **<ESC><ll>OK<STX>** |
| **Example** | **<ESC>01INUA08071<STX>** |
| **Result** | **If preceded by the <ESC>01WUBU1234567<STX> command, it causes the 1234567 message to be shown on the LCD display, with the character 1 blinking, starting from the position 08 of the LCD display (in other words the digit 8). At this point it is possible to set 8 numerical digits which will substitute the displayed ones.** |

**NOTE**: If an alphanumeric string is in the buffer, a number of blank spaces corresponding to the number of digits set in LL will be shown on the display, starting from the set cursor position.

**[IALA] Request of alphanumeric text entry on the LCD display:**

**Syntax**

| | |
|---|---|
| **Format** | **<ESC><ll>IALA<CC><LL><I><STX>** |
| **Parameters** | **CC = decimal position from which the entry of the numeric data starts, from left to right.**<br>**LL = number of characters in decimals which make up the alphanumeric data to be entered**<br>**I = selection/unselection of the display of an initial value, previously entered in the user buffer (using the WUBU command described later on):**<br>**- I = 0 not displayed**<br>**- I = 1 displayed** |
| **Answer** | **<ESC><ll>OK<STX>** |
| **Example** | **<ESC>01IALA08071<STX>** |
| **Result** | **If preceded by the <ESC>01WUBUABCDEFG<STX> command, it causes the ABCDEFG message to be shown on the LCD display, with the character 1 blinking, starting from the position 08 of the LCD display (in other words the digit 8). At this point it is possible to set 8 numerical digits which will substitute the displayed ones.** |

**When exiting the entry phase, the displayed data is frozen on the LCD display and it remains until a new serial command does not switch the visualisations (for example a DISP command or a new visualisation entered with the INUA or IALA commands, previously described).**
The turning off causes the restoration of the standard weight data.

**[GINR] Reading of entered data:**
GINR + CR + LF

**Syntax**

| | |
|---|---|
| **Format** | **<ESC><II>GINR<STX>** |
| **Parameters** | **-** |
| **Answer** | **Entry of value on the LED display case:**<br>**- - 1 if one exits from the entry phase with the C key;**<br>**- Entered value in decimals and confirmed with ENTER;**<br>**Entry of value on LCD display case:**<br>**- 2 if one exits from the entry phase with the C key;**<br>**- 1 if the value has been entered and confirmed with ENTER**<br>**To read the entered string, use the <ESC>RUBU<STX> command described later on** |
| **Example** | **<ESC> 01GINR<STX>** |
| **Result** | **Reading of the user buffer and transmission of the data read on the PC** |

**Reading and writing of the user buffer:**
**Premise:** the user buffer is the memory area in which the temporary storage of entered data is used (using the indicator keyboard) by the user or made visible by the user.
The previous request commands on the display of data entry, taking advantage of this buffer.

**[WUBU] Reading of the user buffer:**

**Syntax**

| | |
|---|---|
| **Format** | **<ESC><II>WUBU<AAA…A><STX>** |
| **Parameters** | **AAA…A is the numeric and/or alphanumeric string (UP TO 32 characters) which are entered in the user buffer** |
| **Answer** | **<ESC><II>OK<STX>** |
| **Example** | **<ESC>01WUBU<ABCDE><STX>** |
| **Result** | **The ABCDE string is stored in the user buffer** |

**IMPORTANT: do not modify the user buffer while the instrument is waiting for the data entry: this operation can cause system malfunctioning, which are eliminated only when the instrument is turned off.**

**[RUBU] Reading of the user buffer:**

**Syntax**

| | |
|---|---|
| **Format** | **<ESC><II>RUBU<STX>** |
| **Parameters** | **-** |
| **Answer** | **<ESC><II>AAA…A <STX>**<br>**In which AAA…A is the numeric and/or alphanumeric string (UP TO 32 Characters), read in the user buffer. If the number of characters is less than 32, blank spaces will be added in order to complete the 32 transmitted characters.** |
| **Example** | **<ESC>01RUBU<STX>** |
| **Result** | **<ESC>01STRING <STX>** |

**[TOPR] Transmission of numeric and/or alphanumeric string to printer:**

**Syntax**

| | |
|---|---|
| **Format** | **<ESC><II>TOPR<XXX…X> <STX>** |
| **Parameters** | **XXX…X = numeric and/or alphanumeric string which one wants to print** |
| **Answer** | **<ESC><II>OK<STX>**<br>**The answer does not imply that the command has been made.** |
| **Example** | **<ESC>01TOPRABCDE<STX>** |
| **Result** | **The ABCDE string will be printed** |

**TECHNICAL NOTE**: The reception and transmission buffers of the indicator are of 256 bytes; knowing that each transmitted character is equal to one byte, the maximum number of characters which can be transmitted is 248. This value changes depending on the transmitted data.

**NOTES:**

- It is possible to print numeric and alphanumeric characters ( A…Z, a…z, 0…9), for example TOPRABCabc123 + CR + LF
- It is possible to print ASCII characters by entering the corresponding decimal code (on three digits) preceded by the \ character; for example, if one wants to print the message <!!ATTENTION!!>, the command will be the following: TOPR\060\033\033ATTENTION\033\033\062+ CR + LF;
- It is possible to print the print blocks by entering the block number preceded by the \M abbreviation; for example, if one wants to print the block 301 NET WEIGHT (see section **7.3 LIST OF PRINT BLOCKS**), 302 GROSS WEIGHT, 303 TARE, the command will be the following:
  TOPR\M301\M302\M303 + CR + LF
- The command is not enabled if the instrument is approved.

**[OIN] Key with which one has exit from the user input**

With this command it is possible to know which key the user used to exit the input (ENTER or C).

**Syntax**

| | |
|---|---|
| **Format** | **<ESC><II>OIN<STX>** |
| **Parameters** | **-** |
| **Answer** | **<ESC><II>OIN[<KEY> \| NO]<STX>** |
| **Key** | **ENT Exited with the Enter key**<br>**CLR Exited with the Clear key** |
| **Example** | **<ESC>01OIN<STX>** |
| **Result** | **<ESC>01OINENT<STX>** |

If the command is wrong one will have the <ESC><II>OINNO<STX> message.

**Simulation of key pressing**:
**[CC]KEYPXX<CR LF>**
in which XX is the code of the pressed key:

| CODE | PRESSED KEY |
|---|---|
| **00** | **F1** key |
| **01** | **F2** key |
| **02** | **F3** key |
| **03** | **F4** key |
| **04** | **F5** key |
| **05** | **F6** key |
| **06** | **F7** key |
| **07** | **F8** key |
| **08** | **F9** key |
| **09** | **F10** key |
| **0A** | **'0'** numeric key |
| **0B** | **'1'** numeric key |
| **0C** | **'2'** numeric key |
| **0D** | **'3'** numeric key |
| **0E** | **'4'** numeric key |
| **0F** | **'5'** numeric key |
| **10** | **'6'** numeric key |
| **11** | **'7'** numeric key |
| **12** | **'8'** numeric key |
| **13** | **'9'** numeric key |
| **14** | **(.)** point key |
| **15** | **ZERO** key |
| **16** | **ENTER/Fn** key |
| **17** | **2ndF** key |
| **18** | **C** key |

Response of the instrument: OK<CR LF>: command accepted
If the simulated key has two linked functions (key pressed briefly or at length, like the TARE key), if the KEYP command is followed by the key release command (KEYR) within a maximum time of 1,5 seconds, the simple function will be executed (key pressed briefly); otherwise the second function will be executed (key pressed at length).

**Command for key release simulation:**
**[CC]KEYR<CR LF>**
Response: [CC]OK<CR LF>

## 5.8 CUSTOMISATION OF THE STRING[available in ComPC e ComPrn]

Personalise string configuration on the ComPC:
The instrument is able to transmit in a continuous manner or as a response to the READ command on the port linked with ComPC a data string configurable in the 100 print format through Dinitools™. To restore the transmission of the instrument strings, one should configure only block "300".
**NOTE:** format #100 contains up to 50 macros.

Personalise string configuration on the ComPrn:
The instrument is able to transmit in a continuous manner on the port linked with ComPrn a string of data configurable in the 01 print format.

For further details in regards to configuring the print formats through Dinitools ™ see the relative manual.

# 6. ANALOGUE OUTPUT (OPTIONAL)

Through an optional interface, it is possible to use an analogue output a 16 bit configurable at 0 – 10V, 0 – 20 mA or 4 – 20 mA.
The voltage and the output current from the interface are proportional to the gross weight or net weight present on the scale. In regards to the electrical connection scheme, see section 8.

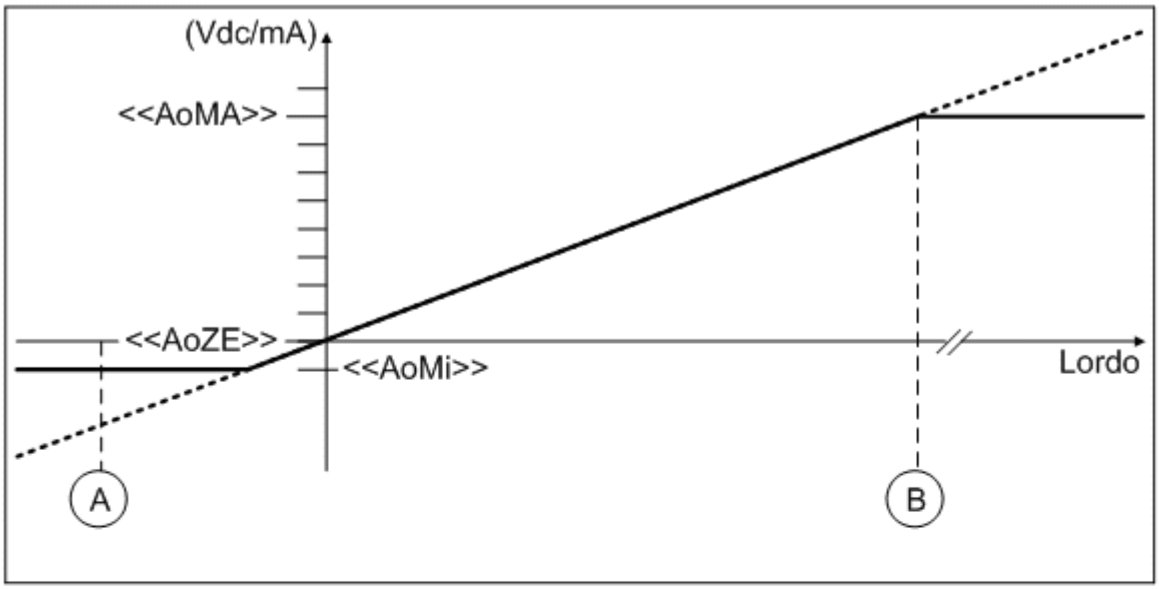
## 6.1 OPERATING MODES

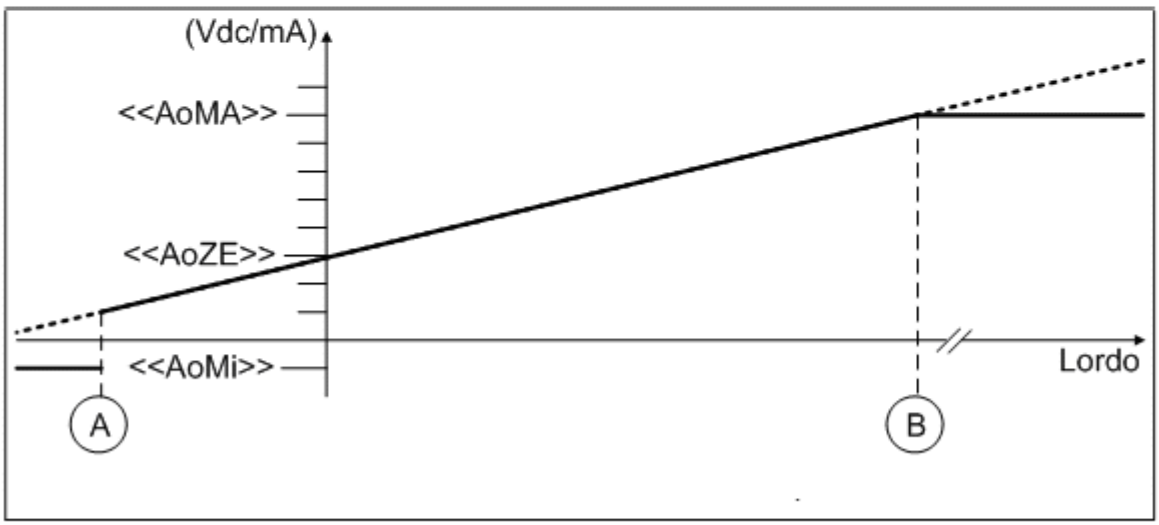
### 6.1.1 OUTPUT ON THE GROSS WEIGHT

The value of the analogue output grows proportionally to the gross weight on the scale in relation to the configured value for the gross weight at 0 (AO ZE), and the one configured for the gross weight equal to the capacity (AO MA).

When the gross weight is equal or greater than the capacity, the output takes on the value set for AO MA, while in the underload condition (gross weight <= -100d with approved instrument) the output takes on the value set for AO MI.

**Trend examples (approved instrument)**




A Lordo = -100d

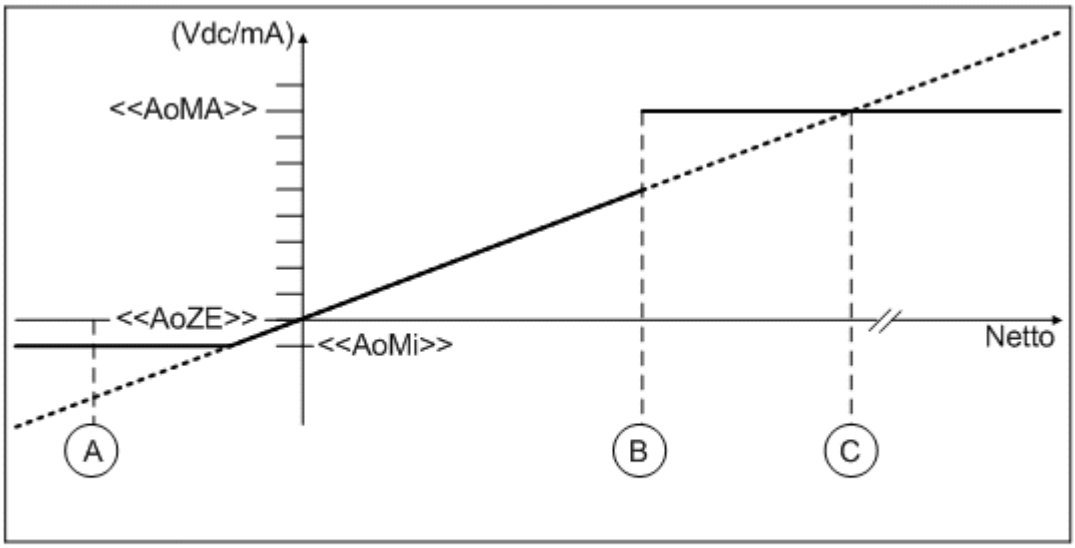
B Lordo = Portata

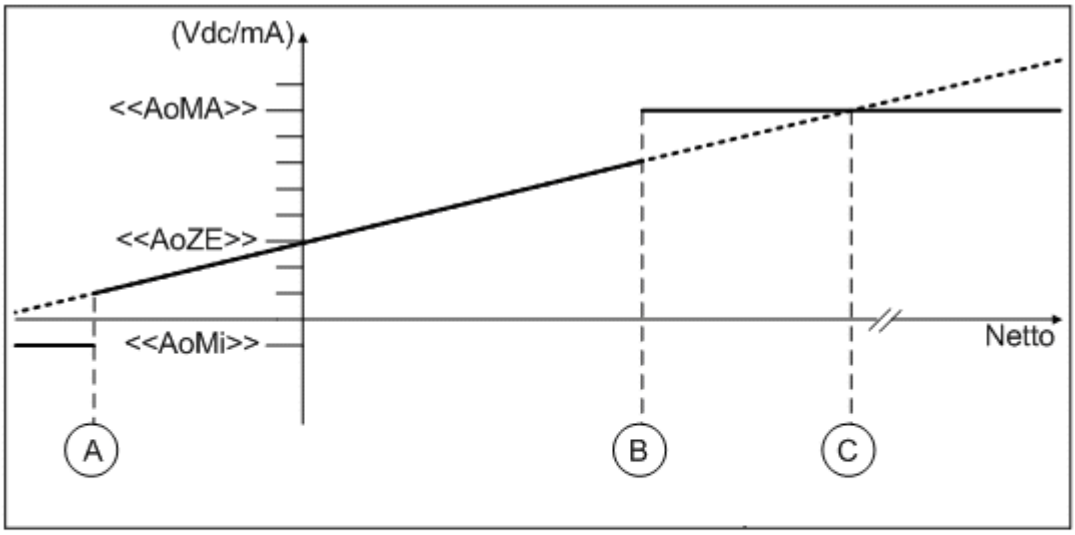
### 6.1.2 OUTPUT ON THE NET WEIGHT

The value of the analogue output grows proportionally to the net weight on the scale in relation to the value configured for the net weight at 0 (AO ZE), and the one configured fo the net weight equal to the capacity (AO MA).

When the gross weight is equal or greater than the capacity + 9e, the output takes on the value set for AO MA, while in the underload condition (gross weight <= -100d with approved instrument) the output takes on the value set for AO MI.

**Trend examples (approved instrument)**




(A) Lordo = -100d

(B) Lordo = Portata + 9e

(C) Netto = Portata

## 6.2 CONFIGURATION

In order to configure the parameters, one needs to enter the SET-UP environment in the **Anout** step inside the **SEtuP** menu:

If various scales are connected (see the **nuM.SCA** parameter), the number of the scale to be configured, will be requested; the configurations within this menu must be carried out for each connected scale.

**SLot** SLOT SELECTION
One selects the SLOT to be used with the analogue output: SLOT 1 or SLOT2; it is possible to indifferently use either SLOT.

**ModE** OPERATING MODE
*A*O G = analogue output on gross weight
AO n = analogue output on net weight

Once the functioning mode is confirmed, one sets the values of the analogue output useful for the calculation in the weighing phase, of the value that the output must take on proportionally; in other words, the digital/analogue converter values are entered (between 0 and 65535) to which corresponds a certain output value in voltage or in current.
In this configuration the instrument keys take on the following meanings (functions):

| | |
|---|---|
| **ENTER** | By pressing once after a value is entered, it activates the corresponding output analogue value, (allowing the check) but the step still remains inside in case of a new modification. By pressing a second time (on the same entered value) it confirms and exits the step. |
| **C** | Allows to quickly zero the present value. |
| **NUMERICAL KEYS** | Allow entering values, from right to left. |

**AoMA** MAXIMUM VALUE
By entering this step, one sets the maximum value of the analogue output, in other words the corresponding value of the full scale capacity. This value can be anywhere between 0 and 65535 (values of the digital/analogue converter); if a higher digit is entered, the instrument emits a prolonged sound, after which it zeros the value just entered.

**AoZE** SCALE ZERO VALUE
By entering this step, one sets the analogue output value when the scale displays zero weight. This value can be anywhere between 0 and 65535 (values of the digital/analogue converter); if a higher digit is entered, the instrument emits a prolonged sound, after which it zeros the value just entered.

**AoMi** MINIMUM VALUE
By entering this step, one sets the minimum value of the analogue output. This value can be anywhere between 0 and 65535 (values of the digital/analogue converter); if a higher digit is entered, the instrument emits a prolonged sound, after which it zeros the value just entered.

**<u>APPROXIMATE</u> VALUES BETWEEN THE D/A CONVERTER AND ANALOGUE OUTPUT**

| D/A CONVERTER VALUES | VOLTAGE VALUE (V) | CURRENT VALUE (mA) |
|---|---|---|
| 1070 | 0 | |
| 1375 | | 0 |
| 11500 | | 4 |
| 52010 | | 20 |
| 62450 | 10 | |

# 7. PROGRAMMING THE PRINTOUTS

It is possible to programme 30 different formats to be linked to 11 print functions:
- "S.F.01" function >> print key
- "S.F.02" function >> partial total
- "S.F.03" function >> general total
- …

For the complete list of the functions and the linking of the formats, see the 14 "PRINTOUTS" section of the **USER MANUAL**.

During the printing, the indicator uses the format linked to that printout.

It is possible to configure the formats:
- **through the Dinitools™ software** for PC, and transmitted to the indicator through the serial line; it is necessary that the print format number ("Print Format Number") is a value between 1 and 30 to indicate the format to be overwritten. Once the formats are configured one should carry out the linkages of the interested functions **(USER MAN.REF.)**.
- **manually from the indicator** by entering in the **SEtuP** >> **SEriAL** >> **Prn.FMt** step inside the SET-UP environment.

## MANUAL CONFIGURATION OF THE PRINT FORMATS

Each format is made up of a maximum of 2048 memory storages (only the first 1000 are manually modifiable from the indicator), which, when programmed, these will produce the desired printout; in each line one can enter (through a 3-digit code, from 300 onwards) a command named "print block", which will produce a certain type of printout, for example:
PRINT NET WEIGHT (code 301), which will print the net weight value, the unit of measure and the CR or CR LF to go to the next line.
Or it is possible to print a single alphanumeric character, entering the relative ASCII code in the line (from 0 to 255).
To configure a print format:
- Enter in the **SEtuP** >> **SEriAL** >> **Prn.FMt** parameter.
- The display shows:

**C.F. XX** in which:

**XX** indicates the number of the format to be modified (from 01 to 30)

- Select the print format to be configured using the arrow keys ▲ ▼ and press the **ENTER** key
- Once entered in a format (for example C.F. 01), the display shows:

**XXX.YYY** in which:

**XXX** is number of the line which one is programming.
**YYY** is the entered code (from 0 to 255 the ASCII code is printed, from 300 onwards the relative block is printed).

- Select the line to be programmed using the arrow keys ▲ ▼ and press the **ENTER** key
- The display shows "CHANGE" for an instant and onwards:

**XXX** in which:

**XXX** is the value to be modified.

- Enter a value and press the **ENTER** key to confirm; the **C** key clears the entered value and if pressed again it cancels the operation.

- If a print block with parameters from 600 onwards has been entered, after having pressed the **ENTER** key the displays shows:

  **XXX** in which:

  **XXX** is the value to be modified.

- Enter a valid value and press the **ENTER** key to confirm.
- Once programmed all the desired lines one should enter in the last line block 300 (PRINT END);
- Press the **C** key to exit; the display will show the saving request; press the **ENTER** key to confirm or another key to cancel.

**KEYS' FUNCTIONS**

| | |
|---|---|
| ▲ | scrolls forward inside the lines of the print format. |
| ▼ | scrolls backward inside the lines of the print format. |
| **F1** | enters a print block or an ASCII character in the selected line moving the consecutive blocks of one place. |
| **F2** | cancels the current line compacting the blocks that follow. |
| **F3** | enters a print end in the current line. |
| **ENTER** | modifies the code in the current line; while entering it confirms the entered code. |
| **C** | exits the programming; one is asked to save (the display shows "SAVE?"): with **ENTER** one confirms, with another key one exits without saving. While entering a code, it quickly zeros the present value. |
| **NUMERICAL KEYBOARD** | allows entering a code inside of the selected printing line. |

**NOTES**

- For the complete list of the ASCII codes and the print blocks, see the sections "ASCII CODE TABLE" and "LIST OF PRINT BLOCKS".
- To terminate the programming of a format, it is necessary that the last command be "Print end": one should enter the code 300 (or press the **F3** key) in the last line of the format.

**PRINTING ON THE PC SERIAL PORT**

By programming correctly a format, it is possible to direct the printing on the PC serial port, and then bring it back onto the printer port; the blocks to be used are:
315 (PRINTING ON PC PORT), 316 (PRINTING ON SERIAL PORT), 317 (FORCES THE PRINTING).
The correct syntax in the format is the following:

- **315 PRINTS ON PC PORT**
- prints block or ASCII character
- …
- **317 FORCES PRINTING**
- **316 PRINTS ON PRINTER PORT**
- prints block or ASCII character
- …
- **317 FORCES PRINTING**
- 300 PRINT END

→ The "Forces print" block executes the transmission of all the blocks or ASCII characters entered BEFORE the same block; reading block 315, the printout is directed onto the PC port.

→ All the blocks or ASCII characters entered here are instead transmitted through the printer serial port.

## 7.1 PROGRAMMING EXAMPLE

One programmes a format to be linked to a PRINT key function (**S.F.01** function) in this way:

MARIO ROSSI SRL
Date – time
Gross weight
Tare weight
Net weight
3 blank lines
Print end

| | |
|---|---|
| MARIO ROSSI SRL | |
| 1/02/2005 – 19:00:00 | |
| GROSS | 2.000kg |
| TARE | 0.000kg |
| NET | 2.000kg |

After having entered in the SET-UP environment, follow the procedures below:

- Enter in the **SEtuP** >> **SEriAL** >> **Prn.FMt** parameter.
- Select the print format to be configured through the arrow keys ▲ ▼ and press the **ENTER** key.
- Select the line to be programmed through the arrow keys ▲ ▼ and press the **ENTER** key.
- The display shows the first line to be programmed; enter the 077 code (ASCII relative to the letter “M”); confirm with **ENTER**.
- The display shows the following line; enter the 065 code (ASCII relative to the letter “A”); confirm with ENTER.
- Repeat the operations by entering the following codes:

082 (letter “R”)
073 (letter “I”)
079 (letter “O”)
032 (space)
082 (letter “R”)
079 (letter “O”)
083 (letter “S”)
083 (letter “S”)
073 (letter “I”)
013 (terminator CR)
032 (space)
013 (terminator CR)
450 (prints date – time)
013 (terminator CR)
032 (space)
013 (terminator CR)
302 (prints gross weight)
013 (terminator CR)
303 (prints tare weight)
013 (terminator CR)
301 (prints net weight)
013 (terminator CR)
032 (space)
013 (terminator CR)
032 (space)
013 (terminator CR)
032 (space)
013 (terminator CR)
300 (print end) **** It is possible to enter the print end also with the F3 key ****

- Press the **C** key to exit the programming: the display shows “SAVE?”, confirm with **ENTER** (one goes back into the “SERIAL” parameter).
- Exit the SETUP environment of the instrument by pressing the **C** key various times: the display shows “SAVE?”, confirm the changes made with **ENTER** (the instrument returns to weighing).

## 7.2 ASCII CODE TABLE

### 7.2.1 CODE PAGE 1252 WINDOWS LATIN 1

| | 00 | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 0A | 0B | 0C | 0D | 0E | 0F |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00 | NUL 0000 | STX 0001 | SOT 0002 | ETX 0003 | EOT 0004 | ENQ 0005 | ACK 0006 | BEL 0007 | BS 0008 | HT 0009 | LF 000A | VT 000B | FF 000C | CR 000D | SO 000E | SI 000F |
| 10 | DLE 0010 | DC1 0011 | DC2 0012 | DC3 0013 | DC4 0014 | NAK 0015 | SYN 0016 | ETB 0017 | CAN 0018 | EM 0019 | SUB 001A | ESC 001B | FS 001C | GS 001D | RS 001E | US 001F |
| 20 | SP 0020 | ! 0021 | " 0022 | # 0023 | $ 0024 | % 0025 | & 0026 | ' 0027 | ( 0028 | ) 0029 | * 002A | + 002B | , 002C | - 002D | . 002E | / 002F |
| 30 | 0 0030 | 1 0031 | 2 0032 | 3 0033 | 4 0034 | 5 0035 | 6 0036 | 7 0037 | 8 0038 | 9 0039 | : 003A | ; 003B | < 003C | = 003D | > 003E | ? 003F |
| 40 | @ 0040 | A 0041 | B 0042 | C 0043 | D 0044 | E 0045 | F 0046 | G 0047 | H 0048 | I 0049 | J 004A | K 004B | L 004C | M 004D | N 004E | O 004F |
| 50 | P 0050 | Q 0051 | R 0052 | S 0053 | T 0054 | U 0055 | V 0056 | W 0057 | X 0058 | Y 0059 | Z 005A | [ 005B | \ 005C | ] 005D | ^ 005E | _ 005F |
| 60 | ` 0060 | a 0061 | b 0062 | c 0063 | d 0064 | e 0065 | f 0066 | g 0067 | h 0068 | i 0069 | j 006A | k 006B | l 006C | m 006D | n 006E | o 006F |
| 70 | p 0070 | q 0071 | r 0072 | s 0073 | t 0074 | u 0075 | v 0076 | w 0077 | x 0078 | y 0079 | z 007A | { 007B | \| 007C | } 007D | ~ 007E | DEL 007F |
| 80 | € 20AC | | ‚ 201A | ƒ 0192 | „ 201E | … 2026 | † 2020 | ‡ 2021 | ˆ 02C6 | ‰ 2030 | Š 0160 | ‹ 2039 | Œ 0152 | | Ž 017D | |
| 90 | | ‘ 2018 | ’ 2019 | “ 201C | ” 201D | • 2022 | – 2013 | — 2014 | ˜ 02DC | ™ 2122 | š 0161 | › 203A | œ 0153 | | ž 017E | Ÿ 0178 |
| A0 | NBSP 00A0 | ¡ 00A1 | ¢ 00A2 | £ 00A3 | ¤ 00A4 | ¥ 00A5 | ¦ 00A6 | § 00A7 | ¨ 00A8 | © 00A9 | ª 00AA | « 00AB | ¬ 00AC | - 00AD | ® 00AE | ¯ 00AF |
| B0 | ° 00B0 | ± 00B1 | ² 00B2 | ³ 00B3 | ´ 00B4 | µ 00B5 | ¶ 00B6 | · 00B7 | ¸ 00B8 | ¹ 00B9 | º 00BA | » 00BB | ¼ 00BC | ½ 00BD | ¾ 00BE | ¿ 00BF |
| C0 | À 00C0 | Á 00C1 | Â 00C2 | Ã 00C3 | Ä 00C4 | Å 00C5 | Æ 00C6 | Ç 00C7 | È 00C8 | É 00C9 | Ê 00CA | Ë 00CB | Ì 00CC | Í 00CD | Î 00CE | Ï 00CF |
| D0 | Ð 00D0 | Ñ 00D1 | Ò 00D2 | Ó 00D3 | Ô 00D4 | Õ 00D5 | Ö 00D6 | × 00D7 | Ø 00D8 | Ù 00D9 | Ú 00DA | Û 00DB | Ü 00DC | Ý 00DD | Þ 00DE | ß 00DF |
| E0 | à 00E0 | á 00E1 | â 00E2 | ã 00E3 | ä 00E4 | å 00E5 | æ 00E6 | ç 00E7 | è 00E8 | é 00E9 | ê 00EA | ë 00EB | ì 00EC | í 00ED | î 00EE | ï 00EF |
| F0 | ð 00F0 | ñ 00F1 | ò 00F2 | ó 00F3 | ô 00F4 | õ 00F5 | ö 00F6 | ÷ 00F7 | ø 00F8 | ù 00F9 | ú 00FA | û 00FB | ü 00FC | ý 00FD | þ 00FE | ÿ 00FF |

### 7.2.2 CODE PAGE 1251 WINDOWS CYRILLIC

| | 00 | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 0A | 0B | 0C | 0D | 0E | 0F |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00 | NUL 0000 | STX 0001 | SOT 0002 | ETX 0003 | EOT 0004 | ENQ 0005 | ACK 0006 | BEL 0007 | BS 0008 | HT 0009 | LF 000A | VT 000B | FF 000C | CR 000D | SO 000E | SI 000F |
| 10 | DLE 0010 | DC1 0011 | DC2 0012 | DC3 0013 | DC4 0014 | NAK 0015 | SYN 0016 | ETB 0017 | CAN 0018 | EM 0019 | SUB 001A | ESC 001B | FS 001C | GS 001D | RS 001E | US 001F |
| 20 | SP 0020 | ! 0021 | " 0022 | # 0023 | $ 0024 | % 0025 | & 0026 | ' 0027 | ( 0028 | ) 0029 | * 002A | + 002B | , 002C | - 002D | . 002E | / 002F |
| 30 | 0 0030 | 1 0031 | 2 0032 | 3 0033 | 4 0034 | 5 0035 | 6 0036 | 7 0037 | 8 0038 | 9 0039 | : 003A | ; 003B | < 003C | = 003D | > 003E | ? 003F |
| 40 | @ 0040 | A 0041 | B 0042 | C 0043 | D 0044 | E 0045 | F 0046 | G 0047 | H 0048 | I 0049 | J 004A | K 004B | L 004C | M 004D | N 004E | O 004F |
| 50 | P 0050 | Q 0051 | R 0052 | S 0053 | T 0054 | U 0055 | V 0056 | W 0057 | X 0058 | Y 0059 | Z 005A | [ 005B | \ 005C | ] 005D | ^ 005E | _ 005F |
| 60 | ` 0060 | a 0061 | b 0062 | c 0063 | d 0064 | e 0065 | f 0066 | g 0067 | h 0068 | i 0069 | j 006A | k 006B | l 006C | m 006D | n 006E | o 006F |
| 70 | p 0070 | q 0071 | r 0072 | s 0073 | t 0074 | u 0075 | v 0076 | w 0077 | x 0078 | y 0079 | z 007A | { 007B | \| 007C | } 007D | ~ 007E | DEL 007F |
| 80 | Ђ 0402 | Ѓ 0403 | ‚ 201A | ѓ 0453 | „ 201E | … 2026 | † 2020 | ‡ 2021 | € 20AC | ‰ 2030 | Љ 0409 | ‹ 2039 | Њ 040A | Ќ 040C | Ћ 040B | Џ 040F |
| 90 | ђ 0452 | ‘ 2018 | ’ 2019 | “ 201C | ” 201D | • 2022 | – 2013 | — 2014 | | ™ 2122 | љ 0459 | › 203A | њ 045A | ќ 045C | ћ 045B | џ 045F |
| A0 | NBSP 00A0 | Ў 040E | ў 045E | Ј 0408 | ¤ 00A4 | Ґ 0490 | ¦ 00A6 | § 00A7 | Ё 0401 | © 00A9 | Є 0404 | « 00AB | ¬ 00AC | - 00AD | ® 00AE | Ї 0407 |
| B0 | ° 00B0 | ± 00B1 | І 0406 | і 0456 | ґ 0491 | µ 00B5 | ¶ 00B6 | · 00B7 | ё 0451 | № 2116 | є 0454 | » 00BB | ј 0458 | Ѕ 0405 | ѕ 0455 | ї 0457 |
| C0 | А 0410 | Б 0411 | В 0412 | Г 0413 | Д 0414 | Е 0415 | Ж 0416 | З 0417 | И 0418 | Й 0419 | К 041A | Л 041B | М 041C | Н 041D | О 041E | П 041F |
| D0 | Р 0420 | С 0421 | Т 0422 | У 0423 | Ф 0424 | Х 0425 | Ц 0426 | Ч 0427 | Ш 0428 | Щ 0429 | Ъ 042A | Ы 042B | Ь 042C | Э 042D | Ю 042E | Я 042F |
| E0 | а 0430 | б 0431 | в 0432 | г 0433 | д 0434 | е 0435 | ж 0436 | з 0437 | и 0438 | й 0439 | к 043A | л 043B | м 043C | н 043D | о 043E | п 043F |
| F0 | р 0440 | с 0441 | т 0442 | у 0443 | ф 0444 | х 0445 | ц 0446 | ч 0447 | ш 0448 | щ 0449 | ъ 044A | ы 044B | ь 044C | э 044D | ю 044E | я 044F |

### 7.2.3 CODE PAGE 1253 WINDOWS GREEK

| | 00 | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 0A | 0B | 0C | 0D | 0E | 0F |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 00 | NUL 0000 | STX 0001 | SOT 0002 | ETX 0003 | EOT 0004 | ENQ 0005 | ACK 0006 | BEL 0007 | BS 0008 | HT 0009 | LF 000A | VT 000B | FF 000C | CR 000D | SO 000E | SI 000F |
| 10 | DLE 0010 | DC1 0011 | DC2 0012 | DC3 0013 | DC4 0014 | NAK 0015 | SYN 0016 | ETB 0017 | CAN 0018 | EM 0019 | SUB 001A | ESC 001B | FS 001C | GS 001D | RS 001E | US 001F |
| 20 | SP 0020 | ! 0021 | " 0022 | # 0023 | $ 0024 | % 0025 | & 0026 | ' 0027 | ( 0028 | ) 0029 | * 002A | + 002B | , 002C | - 002D | . 002E | / 002F |
| 30 | 0 0030 | 1 0031 | 2 0032 | 3 0033 | 4 0034 | 5 0035 | 6 0036 | 7 0037 | 8 0038 | 9 0039 | : 003A | ; 003B | < 003C | = 003D | > 003E | ? 003F |
| 40 | @ 0040 | A 0041 | B 0042 | C 0043 | D 0044 | E 0045 | F 0046 | G 0047 | H 0048 | I 0049 | J 004A | K 004B | L 004C | M 004D | N 004E | O 004F |
| 50 | P 0050 | Q 0051 | R 0052 | S 0053 | T 0054 | U 0055 | V 0056 | W 0057 | X 0058 | Y 0059 | Z 005A | [ 005B | \ 005C | ] 005D | ^ 005E | _ 005F |
| 60 | ` 0060 | a 0061 | b 0062 | c 0063 | d 0064 | e 0065 | f 0066 | g 0067 | h 0068 | i 0069 | j 006A | k 006B | l 006C | m 006D | n 006E | o 006F |
| 70 | p 0070 | q 0071 | r 0072 | s 0073 | t 0074 | u 0075 | v 0076 | w 0077 | x 0078 | y 0079 | z 007A | { 007B | \| 007C | } 007D | ~ 007E | DEL 007F |
| 80 | € 20AC | | ‚ 201A | ƒ 0192 | „ 201E | … 2026 | † 2020 | ‡ 2021 | | ‰ 2030 | | ‹ 2039 | | | | |
| 90 | | ' 2018 | ' 2019 | " 201C | " 201D | • 2022 | – 2013 | — 2014 | | ™ 2122 | | › 203A | | | | |
| A0 | NBSP 00A0 | ΅ 0385 | Ά 0386 | £ 00A3 | ¤ 00A4 | ¥ 00A5 | ¦ 00A6 | § 00A7 | ¨ 00A8 | © 00A9 | | « 00AB | ¬ 00AC | - 00AD | ® 00AE | ― 2015 |
| B0 | ° 00B0 | ± 00B1 | ² 00B2 | ³ 00B3 | ΄ 0384 | µ 00B5 | ¶ 00B6 | · 00B7 | Έ 0388 | Ή 0389 | Ί 038A | » 00BB | Ό 038C | ½ 00BD | Ύ 038E | Ώ 038F |
| C0 | ΐ 0390 | Α 0391 | Β 0392 | Γ 0393 | Δ 0394 | Ε 0395 | Ζ 0396 | Η 0397 | Θ 0398 | Ι 0399 | Κ 039A | Λ 039B | Μ 039C | Ν 039D | Ξ 039E | Ο 039F |
| D0 | Π 03A0 | Ρ 03A1 | | Σ 03A3 | Τ 03A4 | Υ 03A5 | Φ 03A6 | Χ 03A7 | Ψ 03A8 | Ω 03A9 | Ϊ 03AA | Ϋ 03AB | ά 03AC | έ 03AD | ή 03AE | ί 03AF |
| E0 | ΰ 03B0 | α 03B1 | β 03B2 | γ 03B3 | δ 03B4 | ε 03B5 | ζ 03B6 | η 03B7 | θ 03B8 | ι 03B9 | κ 03BA | λ 03BB | μ 03BC | ν 03BD | ξ 03BE | ο 03BF |
| F0 | π 03C0 | ρ 03C1 | ς 03C2 | σ 03C3 | τ 03C4 | υ 03C5 | φ 03C6 | χ 03C7 | ψ 03C8 | ω 03C9 | ϊ 03CA | ϋ 03CB | ό 03CC | ύ 03CD | ώ 03CE | |

## 7.3 LIST OF PRINT BLOCKS

**LEGEND:**

**b** indicates a space character (ASCII 32 decimal character).
**UM** unit of measure of the active scale (kg, **b**g, **b**t, lb).
**UMD** unit of measure of the database (kg, **b**g, **b**t, lb).
**+ T** terminator: depending on the setting of the **SEtuP** >> **SEriAL** >> **tErMin** "SET TERMINATOR TYPE" step of the SET-UP environment, a CR or CRLF,LF or no terminator is added.
**XXX*** These blocks do not work without the alibi memory (optional).

The weight field expands from right to left, with many spaces (ASCII 32 decimal character) for completing the field length.

**NOTE**

- The weight and weighing values expand from from right to left, with the necessary spaces in order to complete the field length.
- The weighing numbers are increased with each input/output weighing cycle or with each single weigh.

### 7.3.1 ORDER BY KIND

| CODE | | PRINT FORMAT |
|---|---|---|
| | **GENERIC** | |
| 300 | PRINT END | |
| 307 | LINE | **********+ T |
| 308 | PRINTS 3 CRLF | |
| 309 | DATE / TIME FOR DP24/DP190 | **b**HH:MM**b**DD/MM/YY + T |
| 315 | PRINTS ON PC PORT | |
| 316 | PRINTS ON PRINTER PORT | |
| 317 | FORCES PRINTOUT | |
| 363 | DATE | DD/MM/YY + T |
| 364 | TIME | HH:MM + T |
| 365 | DATE TIME | DD/MM/YY**b**HH:MM + T |
| 366 | FOLLOWING MACRO TERMINATOR SKIPS | |
| 369 | HEADING 1 | XXXXXXXXXXXXXXXXXXXXXXX |
| | in which XXXXXXXXXXXXXXX are the 24 characters of the first line of the heading; just the entered characters are printed, from left to right. | |
| 370 | HEADING 2 | XXXXXXXXXXXXXXXXXXXXXXX |
| 371 | HEADING 3 | XXXXXXXXXXXXXXXXXXXXXXX |
| 374 | PRINT EMPTY LINE | + T |
| 375 | PRINTS A SPACE | **b** |
| 376 | SCALE UNIT OF MEASURE | UM + T |
| 377 | DATABASE UNIT OF MEASURE | UM + T |
| 385 | STANDARD KD PROTOCOL STRING | |
| 386 | AF0X PROTOCOL STRING | |
| | Through the blocks 385 and 386 it is possible to print the STANDARD or AFXX serial string (see section 5.4 TRANSMISSION PROTOCOLS for the description); the terminator of the string depends on the setting of the **SEtuP >> SEriAL >>tErMin** step of the SET-UP environment (CR or CRLF or no terminator). | |
| 387 | PRINTS SET TERMINATOR | CR or CRLF or NO TERMINATOR |
| 388 | RELEASES PAPER FOR TM295 | |
| 389 | ACTIVATES PAPER PRESENT SENSOR FOR TM295 | |
| 390 | ACTIVATES TIMEOUT FOR TM295 | |
| 391 | END PAGE UPSIDE DOWN FOR TM295 | |
| | This command causes the ticket to be expelled in the insertion area. | |

| | | |
|---|---|---|
| 392 | ACTIVE SCALE NUMBER | SCALE**b**NUMBER**b**X + T |
| | in which X is the active scale number. | |
| 393 | JUST ACTIVE SCALE NUMBER | X |
| | in which X is the active scale number. | |
| 402 | PRINTS TERMINATOR | CR or CRLF or NO TERMINATOR |
| 403 | PRINT CALCULATED DATA | XXXXXXXXXX |
| 404 | PRINT FIRST ENTERED DATA | XXXXXXX |
| 405 | PRINTS SECOND ENTERED DATA | XXXXXXX |
| 406 | PRINTS OPERATION SYMBOL | X |
| | In which X is "+" in case of addition, "-" in case of subtraction, "x" in case of multiplication.. | |
| | The 403, 404, 405 and 406 blocks refer to the operation executed with the "calculator" function described in section **15.1**, **USER MAN.REF.** | |

## WEIGHT

| | | |
|---|---|---|
| 301 | NET WEIGHT | NET**bbb**XXXXXXXXXXUM + T |
| | in which XXXXXXXXXX is the weight value on 10 digits including the comma; the field expands from right to left. | |
| 302 | GROSS WEIGHT | GROSS**b**XXXXXXXXXXUM + T |
| 303 | TARE WEIGHT | PT**bbbb**XXXXXXXXXXUM + T |
| 372 | JUST GROSS ON 10 DIGITS | XXXXXXXXXX |
| 373 | JUST NET ON 10 DIGITS | XXXXXXXXXX |
| 384 | ONLY TARE VALUE | XXXXXXXXXX |
| 407 | SCALE 1 WEIGHT | SCALE **b**1XXXXXXXXUM + T |
| | The macro is printed if scale 1 or the sum of scales is displayed. | |
| | The text of defalt display on the print will be "SCALE".For to set the description of the platforms that will be display on the print see the **PLA.txt** step. | |
| 408 | ONLY SCALE 1 WEIGHT | XXXXXXXX |
| 409 | SCALE 2 WEIGHT | SCALE **b**2XXXXXXXXUM + T |
| | The macro is printed if scale 2 or the sum of scales is displayed. | |
| | The text of defalt display on the print will be "SCALE".For to set the description of the platforms that will be display on the print see the **PLA.txt** step. | |
| 410 | ONLY SCALE 2 WEIGHT | XXXXXXXX |
| 411 | SCALE 3 WEIGHT | SCALE **b**3XXXXXXXXUM |
| | The macro is printed if scale 3 or the sum of scales is displayed. | |
| | The text of defalt display on the print will be "SCALE".For to set the description of the platforms that will be display on the print see the **PLA.txt** step. | |
| 412 | ONLY SCALE 3 WEIGHT | XXXXXXXX |
| 413 | SCALE 4 WEIGHT | SCALE **b**4XXXXXXXXUM |
| | The macro is printed if scale 4 or the sum of scales is displayed. | |
| | The text of defalt display on the print will be "SCALE".For to set the description of the platforms that will be display on the print see the **PLA.txt** step. | |
| 414 | ONLY SCALE 4 WEIGHT | XXXXXXXX |
| 415 | WEIGHT SUM ACTIVE SCALE | SUM **b**XXXXXXXXUM |
| | The macro is printed if the sum of the scales is displayed. | |
| 416 | ONLY WEIGHT SUM FOR ACTIVE SCALES | XXXXXXXX |
| 470 | TARE WEIGHT ON PARTIAL TOTAL | PT**bbbbbbbb**XXXXXXXXXXUM+T |
| 481 | ONLY VALUE TARE ON PARTIAL TOTAL | XXXXXXXXXX |

## PARTIAL TOTAL

| | | |
|---|---|---|
| 304 | NET PARTIAL TOTAL | N.YYY**b**T1.N.XXXXXXX**b**UM |
| | in which YYY shows the number of weighs, XXXXXXX the weight value in 8 digits including the comma. | |
| 380 | JUST WEIGHS PARTIAL TOTAL | XXXXX |
| 381 | JUST NET PARTIAL TOTAL | XX…X |
| 469 | JUST GROSS PARTIAL TOTAL | XXXXXXXXXX |

## GENERAL TOTAL

| | | |
|---|---|---|
| 305 | NET GENERAL TOTAL | N.YYY**b**T2.N.**b**XXXXXXXX**b**UM + T |
| 367 | JUST GENERAL TOTAL WEIGHS<br>the field expands from right to left with many spaces for completing the field length. | XXXXXX |
| 368 | JUST NET GENERAL TOTAL | XXXXXXXXXX |

## GRAND TOTAL

| | | |
|---|---|---|
| 306 | NET GRAND TOTAL | N.YYY**b**T3.N.**b**XXXXXXXX**b**UM + T |
| 382 | JUST WEIGHS GRAND TOTAL | XXXXXXXX |
| 383 | JUST NET GRAND TOTAL | XX…X |

## DATABASE

| | | |
|---|---|---|
| 310 | JUST 1st DATABASE CONDITIONED DESCRIPTION<br>in which XXXXXXXXXXXXXXXXXXX are the 20 description characters; just the entered characters are printed, expanding from left to right. This block can be printed only once, in input or in output. | XXXXXXXXXXXXXXXXXXX + T |
| 311 | JUST 2nd DATABASE CONDITIONED DESCRIPTION<br>in which XXXXXXXXXXXXXXXXXXX are the 20 description characters; just the entered characters are printed, expanding from left to right. This block can be printed only once, in input or in output. | XXXXXXXXXXXXXXXXXXX + T |
| 312 | JUST 3rd DATABASE CONDITIONED DESCRIPTION<br>in which XXXXXXXXXXXXXXXXXXX are the 20 description characters; just the entered characters are printed, expanding from left to right. This block can be printed only once, in input or in output. | XXXXXXXXXXXXXXXXXXX + T |
| 313 | JUST 4th DATABASE CONDITIONED DESCRIPTION<br>in which XXXXXXXXXXXXXXXXXXX are the 20 description characters; just the entered characters are printed, expanding from left to right. This block can be printed only once, in input or in output. | XXXXXXXXXXXXXXXXXXX + T |
| 314 | JUST 5th DATABASE CONDITIONED DESCRIPTION<br>in which XXXXXXXXXXXXXXXXXXX are the 20 description characters; just the entered characters are printed, expanding from left to right. This block can be printed only once, in input or in output. | XXXXXXXXXXXXXXXXXXX + T |

## WEIGHS LIST

| | | |
|---|---|---|
| 450 | PRINT DATE AND TIME WEIGHS ON THE WEIGHS LIST<br>The date and the time of the acquired weight is printed in the weighing list. | HH:MM**b**GG/MM/AA + T |
| 451 | CURRENT LIST WEIGHS' COUNTER<br>The field is expressed in four digits, with some zeros to complete the field's length. | XXXX |
| 452 | AXLE COUNTER CURRENT LIST<br>the field is espresse on four digits, with the zeros for complete the field length. | XXXX |
| 453 | PRINT AXLE WEIGHT ON THE WEIGHS LIST<br>In which XXXX indicates the axle number and YYYYYYYY the axle weight value weighed.<br>This block is printed on the list, only if there is an axle weigh. | AXLE**bbbb**XXXXYYYYYYYY+UM |
| 454 | PRINT WEIGHT SCALE 1 ON THE WEIGHS LIST<br>In which XX indicate the number of the scale and YYYYYYYY the weight value current. | SCALE**bbbbb**XXYYYYYYYY+UM |
| 455 | PRINT WEIGHT SCALE 2 ON THE WEIGHS LIST<br>In which XX indicate the number of the scale and YYYYYYYY the weight value current. | SCALE**bbbbb**XXYYYYYYYY+UM |
| 456 | PRINT WEIGHT SCALE 3 ON THE WEIGHS LIST<br>In which XX indicate the number of the scale and YYYYYYYY the weight value current. | SCALE**bbbbb**XXYYYYYYYY+UM |
| 457 | PRINT WEIGHT SCALE 4 ON THE WEIGHS LIST<br>In which XX indicate the number of the scale and YYYYYYYY the weight value current. | SCALE**bbbbb**XXYYYYYYYY+UM |
| 458 | NET PARTIAL TOTAL LIST | XXXXXXXXX |
| 459 | GROSS PARTIAL TOTAL LIST | XXXXXXXXX |
| 460 | TARE PARTIAL TOTAL LIST | XXXXXXXXX |
| 461 | NET TOTAL LIST | XXXXXXXXX |
| 462 | GROSS TOTAL LIST | XXXXXXXXX |

| | | |
|---|---|---|
| 463 | TARE TOTAL LIST | XXXXXXXXXX |
| 464 | 1st DATABASE DESCRIPTION ON THE WEIGHS LIST<br>in which XXXXXXXXXXXXXXXXXXX are the 20 description characters; just the entered characters are printed, which expand from left to right. | XXXXXXXXXXXXXXXXXXX + T |
| 465 | 2nd DATABASE DESCRIPTION ON THE WEIGHS LIST<br>in which XXXXXXXXXXXXXXXXXXX are the 20 description characters; just the entered characters are printed, which expand from left to right. | XXXXXXXXXXXXXXXXXXX + T |
| 466 | 3rd DATABASE DESCRIPTION ON THE WEIGHS LIST<br>in which XXXXXXXXXXXXXXXXXXX are the 20 description characters; just the entered characters are printed, which expand from left to right. | XXXXXXXXXXXXXXXXXXX + T |
| 467 | 4th DATABASE DESCRIPTION ON THE WEIGHS LIST<br>in which XXXXXXXXXXXXXXXXXXX are the 20 description characters; just the entered characters are printed, which expand from left to right. | XXXXXXXXXXXXXXXXXXX + T |
| 468 | 5th DATABASE DESCRIPTION ON THE WEIGHS LIST<br>in which XXXXXXXXXXXXXXXXXXX are the 20 description characters; just the entered characters are printed, which expand from left to right. | XXXXXXXXXXXXXXXXXXX + T |
| 471 | ONLY THE INPUT 0 TEXT CONTENTS ON THE WEIGHS LIST<br>Is print just the input 0 text contents; Are printed only the firsts 10 characters inserted. | XXXXXXXXXX |
| 472 | ONLY THE INPUT 1 TEXT CONTENTS ON THE WEIGHS LIST<br>Is print just the input 1 text contents; Are printed only the firsts 10 characters inserted. | XXXXXXXXXX |
| 473 | ONLY THE INPUT 2 TEXT CONTENTS ON THE WEIGHS LIST<br>Is print just the input 2 text contents; Are printed only the firsts 10 characters inserted. | XXXXXXXXXX |
| 474 | ONLY THE INPUT 3 TEXT CONTENTS ON THE WEIGHS LIST<br>Is print just the input 3 text contents; Are printed only the firsts 10 characters inserted. | XXXXXXXXXX |
| 476 | ONLY SUM WEIGHT ON THE WEIGHS LIST | XXXXXXXX |
| 477 | ONLY WEIGHT SCALE 1 ON THE WEIGHS LIST | XXXXXXXX |
| 478 | ONLY WEIGHT SCALE 2 ON THE WEIGHS LIST | XXXXXXXX |
| 479 | ONLY WEIGHT SCALE 3 ON THE WEIGHS LIST | XXXXXXXX |
| 480 | ONLY WEIGHT SCALE 4 ON THE WEIGHS LIST | XXXXXXXX |

## BARYCENTRE

| | | |
|---|---|---|
| 430 | PRINT X COORDINATE SCALE 1 | X1XXXXXXXXX+UM |
| 431 | ONLY X COORDINATE VALUE SCALE 1 | XXXXXXXX |
| 432 | PRINT Y COORDINATE SCALE 1 | Y1XXXXXXXXX+UM |
| 433 | ONLY Y COORDINATE VALUE SCALE 1 | XXXXXXXX |
| 434 | PRINT X COORDINATE SCALE 2 | X2XXXXXXXXX+UM |
| 435 | ONLY X COORDINATE VALUE SCALE 2 | XXXXXXXX |
| 436 | PRINT Y COORDINATE SCALE 2 | Y2XXXXXXXXX+UM |
| 437 | ONLY Y COORDINATE VALUE SCALE 2 | XXXXXXXX |
| 438 | PRINT X COORDINATE SCALE 3 | X3XXXXXXXXX+UM |
| 439 | ONLY X COORDINATE VALUE SCALE 3 | XXXXXXXX |
| 440 | PRINT Y COORDINATE SCALE 3 | Y3XXXXXXXXX+UM |
| 441 | ONLY Y COORDINATE VALUE SCALE 3 | XXXXXXXX |
| 442 | PRINT X COORDINATE SCALE 4 | X4XXXXXXXXX+UM |
| 443 | ONLY X COORDINATE VALUE SCALE 4 | XXXXXXXX |
| 444 | PRINT Y COORDINATE SCALE 4 | Y4XXXXXXXXX+UM |
| 445 | ONLY Y COORDINATE VALUE SCALE 4 | XXXXXXXX |
| 446 | PRINY X COORDINATE BARYCENTRE | XgXXXXXXXXX+UM |
| 447 | ONLY X COORDINATE VALUE BARYCENTRE | XXXXXXXX |
| 448 | PRINT Y COORDINATE BARYCENTRE | YgXXXXXXXXX+UM |
| 449 | ONLY Y COORDINATE VALUE BARYCENTRE | XXXXXXXX |

## JUST TEXTS

| | | |
|---|---|---|
| 417 | ONLY WEIGH TEXT | "WEIGH**bbbbb**" |
| 418 | ONLY WEIGHS TEXT | "WEIGHS**bbbb**" |
| 419 | ONLY PARTIAL TOTAL TEXT | "PARTIAL TOTAL" |
| 420 | ONLY GENERAL TOTAL TEXT | "GENERAL TOTAL" |
| 421 | ONLY GRAND TOTAL TEXT | "GRAND TOTAL" |
| 422 | ONLY TOTAL TEXT | "TOTAL**bbbbb**" |
| 423 | ONLY GROSS TEXT | "GROSS**bbbbb**" |
| 424 | ONLY NET TEXT | "NET**bbbbbbb**" |
| 425 | ONLY TARE TEXT | "TARE**bbbbbb**" |
| 426 | ONLT PT TEXT | "PT**bbbbbbbb**" |
| 427 | ONLY AXLE TEXT | "AXLE**bbbb**" |
| 428 | "PLA.TXT" CONDITIONED DESCRIPTION | XXXXXXXXXX |
| | It is printed the description that has been inserted on step **PLA.txt**. Only the characters inserted from left to right are printed | |
| 429 | ONLY VEHICLE TEXT | "VEHICLE**b**" |
| 475 | ONLY SUM TEXT | XXXXXXXXXXX |

## FREE TEXTS

| | | |
|---|---|---|
| 318 | JUST INPUT 0 TEXT HEADING | XXXXXXXXXXXXXXX |
| | in which XXXXXXXXXXXXXXX are 16 characters of the input 0 text heading; just the entered characters are printed, from left to right. | |
| 319 | JUST INPUT 1 TEXT HEADING | XXXXXXXXXXXXXXX |
| 320 | JUST INPUT 2 TEXT HEADING | XXXXXXXXXXXXXXX |
| 321 | JUST INPUT 3 TEXT HEADING | XXXXXXXXXXXXXXX |
| 322 | JUST INPUT 4 TEXT HEADING | XXXXXXXXXXXXXXX |
| 323 | JUST INPUT 5 TEXT HEADING | XXXXXXXXXXXXXXX |
| 324 | JUST INPUT 6 TEXT HEADING | XXXXXXXXXXXXXXX |
| 325 | JUST INPUT 7 TEXT HEADING | XXXXXXXXXXXXXXX |
| 326 | JUST INPUT 8 TEXT HEADING | XXXXXXXXXXXXXXX |
| 327 | JUST INPUT 9 TEXT HEADING | XXXXXXXXXXXXXXX |
| 328 | JUST INPUT 10TEXT HEADING | XXXXXXXXXXXXXXX |
| 329 | JUST INPUT 11TEXT HEADING | XXXXXXXXXXXXXXX |
| 330 | JUST INPUT 12 TEXT HEADING | XXXXXXXXXXXXXXX |
| 331 | JUST INPUT 13 TEXT HEADING | XXXXXXXXXXXXXXX |
| 332 | JUST INPUT 14 TEXT HEADING | XXXXXXXXXXXXXXX |
| 333 | JUST THE INPUT 0 TEXT CONTENTS | YYYYYYYYYYYYYYYYYYYYYYYYYYYYYY |
| | in which YYYYYYYYYYYYYYYYYYYYYYYYYYYYYY are 32 characters of the input 0 text contents; just the entered characters are printed, from left to right. | |
| 334 | JUST THE INPUT 1 TEXT CONTENTS | YYYYYYYYYYYYYYYYYYYYYYYYYYYYYY |
| 335 | JUST THE INPUT 2 TEXT CONTENTS | YYYYYYYYYYYYYYYYYYYYYYYYYYYYYY |
| 336 | JUST THE INPUT 3 TEXT CONTENTS | YYYYYYYYYYYYYYYYYYYYYYYYYYYYYY |
| 337 | JUST THE INPUT 4 TEXT CONTENTS | YYYYYYYYYYYYYYYYYYYYYYYYYYYYYY |
| 338 | JUST THE INPUT 5 TEXT CONTENTS | YYYYYYYYYYYYYYYYYYYYYYYYYYYYYY |
| 339 | JUST THE INPUT 6 TEXT CONTENTS | YYYYYYYYYYYYYYYYYYYYYYYYYYYYYY |
| 340 | JUST THE INPUT 7 TEXT CONTENTS | YYYYYYYYYYYYYYYYYYYYYYYYYYYYYY |
| 341 | JUST THE INPUT 8 TEXT CONTENTS | YYYYYYYYYYYYYYYYYYYYYYYYYYYYYY |
| 342 | JUST THE INPUT 9 TEXT CONTENTS | YYYYYYYYYYYYYYYYYYYYYYYYYYYYYY |
| 343 | JUST THE INPUT 10 TEXT CONTENTS | YYYYYYYYYYYYYYYYYYYYYYYYYYYYYY |
| 344 | JUST THE INPUT 11 TEXT CONTENTS | YYYYYYYYYYYYYYYYYYYYYYYYYYYYYY |
| 345 | JUST THE INPUT 12 TEXT CONTENTS | YYYYYYYYYYYYYYYYYYYYYYYYYYYYYY |
| 346 | JUST THE INPUT 13 TEXT CONTENTS | YYYYYYYYYYYYYYYYYYYYYYYYYYYYYY |
| 347 | JUST THE INPUT 14 TEXT CONTENTS | YYYYYYYYYYYYYYYYYYYYYYYYYYYYYY |
| 348 | INPUT 0 TEXT | XXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYYYY + T |

in which XXXXXXXXXXXXXXXX are 16 characters of the heading and YYYYYYYYYYYYYYY are 32 characters of the input 0 text contents, just the entered characters are printed, from left to right.

| | | |
|---|---|---|
| 349 | INPUT 1 TEXT | XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYYYY + T |
| 350 | INPUT 2 TEXT | XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYYYY + T |
| 351 | INPUT 3 TEXT | XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYYYY + T |
| 352 | INPUT 4 TEXT | XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYYYY + T |
| 353 | INPUT 5 TEXT | XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYYYY + T |
| 354 | INPUT 6 TEXT | XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYYYY + T |
| 355 | INPUT 7 TEXT | XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYYYY + T |
| 356 | INPUT 8 TEXT | XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYYYY + T |
| 357 | INPUT 9 TEXT | XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYYYY + T |
| 358 | INPUT 10 TEXT | XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYYYY + T |
| 359 | INPUT 11 TEXT | XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYYYY + T |
| 360 | INPUT 12 TEXT | XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYYYY + T |
| 361 | INPUT 13 TEXT | XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYYYY + T |
| 362 | INPUT 14 TEXT | XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYYYY + T |
| 400 | CANCELLATION OF FREE TEXT CONTENTS | |

After their printing, ALL the contents of the free texts present are cancelled.

## PROGRESSIVE NUMBERING

| | | |
|---|---|---|
| 378 | TICKET PROGRESSIVE | XXXXX |
| | (progressive number that is increased with each input/output weighing cycle and upon each single weigh) | |
| 379 | LOT PROGRESSIVE | XXXXXX |
| | (number of general total resettings) | |

## ALIBI MEMORY

| | | |
|---|---|---|
| 394 | JUST NUMBER OF ALIBI MEMORY REWRITINGS | XXXXX |
| | the field expands from right to left; the non significant zeros will be printed anyways. | |
| 395 | LAST NET WEIGHT ON ALIBI MEMORY | XXXXXXXXXX |
| 396 | ACTIVE SCALE NUMBER WITH ALIBI MEMORY | XX |
| 397 | PRINTS WEIGH ID | ID**b**:XXX + T |
| | In which XXXXXX is the ID weighing on 6 digits; expanding from left to right. | |
| 398 | ALIBI MEMORY UNIT OF MEASURE | UM+T |
| | this block prints the unit of measure of the weigh saved in the alibi memory. | |
| 399 | LAST GROSS WEIGHT ON ALIBI MEMORY | XXXXXXXXXX |
| | in which XXXXXXXXXX indicates the weight value in 10 digits including the comma. | |
| 401 | LAST TARE ON ALIBI MEMORY | PTXXXXXXXXXX |

## 7.3.2 NUMERICAL ORDER

| CODE | | PRINT FORMAT |
|---|---|---|
| 300 | PRINT END | |
| 301 | NET WEIGHT | NET**bbb**XXXXXXXXXXUM + T |
| | in which XXXXXXXXXX is the weight value on 10 digits including the comma; the field expands from right to left. | |
| 302 | GROSS WEIGHT | GROSS**b**XXXXXXXXXXUM + T |
| 303 | TARE WEIGHT | PT**bbbb**XXXXXXXXXXUM + T |
| 304 | NET PARTIAL TOTAL | N.YYY**b**T1.N.XXXXXXXX**b**UM |
| | in which YYY shows the number of weighs, XXXXXXXX the weight value in 8 digits including the comma. | |
| 305 | NET GENERAL TOTAL | N.YYY**b**T2.N.**b**XXXXXXXX**b**UM + T |
| 306 | NET GRAND TOTAL | N.YYY**b**T3.N.**b**XXXXXXXX**b**UM + T |
| 307 | DOTTED LINE | **********+ T |
| 308 | PRINTS 3 CRLF | |
| 309 | DATE / TIME FOR DP24/DP190 | **b**HH:MM**b**DD/MM/YY + T |
| 310 | JUST 1st DATABASE CONDITIONED DESCRIPTION | XXXXXXXXXXXXXXXXXXXX + T |
| | in which XXXXXXXXXXXXXXXXXXXX are the 20 description characters; just the entered characters are printed, expanding from left to right. This block can be printed only once, in input or in output. | |
| 311 | JUST 2nd DATABASE CONDITIONED DESCRIPTION | XXXXXXXXXXXXXXXXXXXX + T |
| | in which XXXXXXXXXXXXXXXXXXXX are the 20 description characters; just the entered characters are printed, expanding from left to right. This block can be printed only once, in input or in output. | |
| 312 | JUST 3rd DATABASE CONDITIONED DESCRIPTION | XXXXXXXXXXXXXXXXXXXX + T |
| | in which XXXXXXXXXXXXXXXXXXXX are the 20 description characters; just the entered characters are printed, expanding from left to right. This block can be printed only once, in input or in output. | |
| 313 | JUST 4th DATABASE CONDITIONED DESCRIPTION | XXXXXXXXXXXXXXXXXXXX + T |
| | in which XXXXXXXXXXXXXXXXXXXX are the 20 description characters; just the entered characters are printed, expanding from left to right. This block can be printed only once, in input or in output. | |
| 314 | JUST 5th DATABASE CONDITIONED DESCRIPTION | XXXXXXXXXXXXXXXXXXXX + T |
| | in which XXXXXXXXXXXXXXXXXXXX are the 20 description characters; just the entered characters are printed, expanding from left to right. This block can be printed only once, in input or in output. | |
| 315 | PRINTS ON PC PORT | |
| 316 | PRINTS ON PRINTER PORT | |
| 317 | FORCES PRINTOUT | |
| 318 | JUST INPUT 0 TEXT HEADING | XXXXXXXXXXXXXXXX |
| | in which XXXXXXXXXXXXXXXX are 16 characters of the input 0 text heading; just the entered characters are printed, from left to right. | |
| 319 | JUST INPUT 1 TEXT HEADING | XXXXXXXXXXXXXXXX |
| 320 | JUST INPUT 2 TEXT HEADING | XXXXXXXXXXXXXXXX |
| 321 | JUST INPUT 3 TEXT HEADING | XXXXXXXXXXXXXXXX |
| 322 | JUST INPUT 4 TEXT HEADING | XXXXXXXXXXXXXXXX |
| 323 | JUST INPUT 5 TEXT HEADING | XXXXXXXXXXXXXXXX |
| 324 | JUST INPUT 6 TEXT HEADING | XXXXXXXXXXXXXXXX |
| 325 | JUST INPUT 7 TEXT HEADING | XXXXXXXXXXXXXXXX |
| 326 | JUST INPUT 8 TEXT HEADING | XXXXXXXXXXXXXXXX |
| 327 | JUST INPUT 9 TEXT HEADING | XXXXXXXXXXXXXXXX |
| 328 | JUST INPUT 10TEXT HEADING | XXXXXXXXXXXXXXXX |
| 329 | JUST INPUT 11TEXT HEADING | XXXXXXXXXXXXXXXX |
| 330 | JUST INPUT 12 TEXT HEADING | XXXXXXXXXXXXXXXX |
| 331 | JUST INPUT 13 TEXT HEADING | XXXXXXXXXXXXXXXX |
| 332 | JUST INPUT 14 TEXT HEADING | XXXXXXXXXXXXXXXX |
| 333 | JUST THE INPUT 0 TEXT CONTENTS | YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY |
| | in which YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY are 32 characters of the input 0 text contents; just the entered characters are printed, from left to right. | |
| 334 | JUST THE INPUT 1 TEXT CONTENTS | YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYY |

335 JUST THE INPUT 2 TEXT CONTENTS YYYYYYYYYYYYYYYYYYYYYYYYYYYY
336 JUST THE INPUT 3 TEXT CONTENTS YYYYYYYYYYYYYYYYYYYYYYYYYYYY
337 JUST THE INPUT 4 TEXT CONTENTS YYYYYYYYYYYYYYYYYYYYYYYYYYYY
338 JUST THE INPUT 5 TEXT CONTENTS YYYYYYYYYYYYYYYYYYYYYYYYYYYY
339 JUST THE INPUT 6 TEXT CONTENTS YYYYYYYYYYYYYYYYYYYYYYYYYYYY
340 JUST THE INPUT 7 TEXT CONTENTS YYYYYYYYYYYYYYYYYYYYYYYYYYYY
341 JUST THE INPUT 8 TEXT CONTENTS YYYYYYYYYYYYYYYYYYYYYYYYYYYY
342 JUST THE INPUT 9 TEXT CONTENTS YYYYYYYYYYYYYYYYYYYYYYYYYYYY
343 JUST THE INPUT 10 TEXT CONTENTS YYYYYYYYYYYYYYYYYYYYYYYYYYYY
344 JUST THE INPUT 11 TEXT CONTENTS YYYYYYYYYYYYYYYYYYYYYYYYYYYY
345 JUST THE INPUT 12 TEXT CONTENTS YYYYYYYYYYYYYYYYYYYYYYYYYYYY
346 JUST THE INPUT 13 TEXT CONTENTS YYYYYYYYYYYYYYYYYYYYYYYYYYYY
347 JUST THE INPUT 14 TEXT CONTENTS YYYYYYYYYYYYYYYYYYYYYYYYYYYY
348 INPUT 0 TEXT XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYY + T
in which XXXXXXXXXXXXXXXX are 16 characters of the heading and YYYYYYYYYYYYYYY are 32 characters of the input 0 text contents, just the entered characters are printed, from left to right.
349 INPUT 1 TEXT XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYY + T
350 INPUT 2 TEXT XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYY + T
351 INPUT 3 TEXT XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYY + T
352 INPUT 4 TEXT XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYY + T
353 INPUT 5 TEXT XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYY + T
354 INPUT 6 TEXT XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYY + T
355 INPUT 7 TEXT XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYY + T
356 INPUT 8 TEXT XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYY + T
357 INPUT 9 TEXT XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYY + T
358 INPUT 10 TEXT XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYY + T
359 INPUT 11 TEXT XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYY + T
360 INPUT 12 TEXT XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYY + T
361 INPUT 13 TEXT XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYY + T
362 INPUT 14 TEXT XXXXXXXXXXXXXXXX**b**YYYYYYYYYYYYYYYYYYYYYYYYYYYY + T
363 DATE DD/MM/YY + T
364 TIME HH:MM + T
365 DATE TIME DD/MM/YY**b**HH:MM + T
366 FOLLOWING MACRO TERMINATOR SKIPS
367 JUST GENERAL TOTAL WEIGHS XXXXXX
the field expands from right to left with many spaces for completing the field length.
368 JUST NET GENERAL TOTAL XXXXXXXXXX
369 HEADING 1 XXXXXXXXXXXXXXXXXXXXXXXX
in which XXXXXXXXXXXXXXXX are the 24 characters of the first line of the heading; just the entered characters are printed, from left to right.
370 HEADING 2 XXXXXXXXXXXXXXXXXXXXXXXX
371 HEADING 3 XXXXXXXXXXXXXXXXXXXXXXXX
372 JUST GROSS ON 10 DIGITS XXXXXXXXXX
373 JUST NET ON 10 DIGITS XXXXXXXXXX
374 PRINT EMPTY LINE + T
375 PRINTS A SPACE **b**
376 SCALE UNIT OF MEASURE UM + T
377 DATABASE UNIT OF MEASURE UM + T
378 TICKET PROGRESSIVE XXXXX
(progressive number that is increased with each input/output weighing cycle and upon each single weigh)
379 LOT PROGRESSIVE XXXXXX
(number of general total resettings)
380 JUST WEIGHS PARTIAL TOTAL XXXXX
381 JUST NET PARTIAL TOTAL XX…X

382 JUST WEIGHS GRAND TOTAL XXXXXXXX
383 JUST NET GRAND TOTAL XX…X
384 ONLY TARE VALUE XXXXXXXXXX
385 STANDARD KD PROTOCOL STRING
386 AF0X PROTOCOL STRING
Through the blocks 385 and 386 it is possible to print the STANDARD or AFXX serial string (see section 5.4 TRANSMISSION PROTOCOLS for the description); the terminator of the string depends on the setting of the **SEtuP >> SEriAL >>tErMin** step of the SET-UP environment (CR or CRLF or no terminator).
387 PRINTS SET TERMINATOR CR or CRLF or NO TERMINATOR
388 RELEASES PAPER FOR TM295
389 ACTIVATES PAPER PRESENT SENSOR FOR TM295
390 ACTIVATES TIMEOUT FOR TM295
391 END PAGE UPSIDE DOWN FOR TM295
This command causes the ticket to be expelled in the insertion area.
392 ACTIVE SCALE NUMBER SCALE**b**NUMBER**b**X + T
in which X is the active scale number.
393 JUST ACTIVE SCALE NUMBER X
in which X is the active scale number.
394 JUST NUMBER OF ALIBI MEMORY REWRITINGS XXXXX
the field expands from right to left; the non significant zeros will be printed anyways.
395 LAST NET WEIGHT ON ALIBI MEMORY XXXXXXXXXX
396 ACTIVE SCALE NUMBER WITH ALIBI MEMORY XX
397 PRINTS WEIGH ID ID**b**:XXX + T
In which XXXXXX is the ID weighing on 6 digits; expanding from left to right.
398 ALIBI MEMORY UNIT OF MEASURE UM+T
this block prints the unit of measure of the weigh saved in the alibi memory.
399 LAST GROSS WEIGHT ON ALIBI MEMORY XXXXXXXXXX
in which XXXXXXXXXX indicates the weight value in 10 digits including the comma.
400 CANCELLATION OF FREE TEXT CONTENTS
After their printing, ALL the contents of the free texts present are cancelled.
401 LAST TARE ON ALIBI MEMORY PTXXXXXXXXXX
402 PRINTS TERMINATOR CR or CRLF or NO TERMINATOR
403 PRINT CALCULATED DATA XXXXXXXXXX
404 PRINT FIRST ENTERED DATA XXXXXXX
405 PRINTS SECOND ENTERED DATA XXXXXXX
406 PRINTS OPERATION SYMBOL X
In which X is "+" in case of addition, "-" in case of subtraction, "x" in case of multiplication..
The 403, 404, 405 and 406 blocks refer to the operation executed with the "calculator" function described in section **15.1**, **USER MAN.REF.**
407 SCALE 1 WEIGHT SCALE **b**1XXXXXXXXUM + T
The macro is printed if scale 1 or the sum of scales is displayed.
The text of defalt display on the print will be "SCALE".For to set the description of the platforms that will be display on the print see the **PLA.txt** step.
408 ONLY SCALE 1 WEIGHT XXXXXXXX
409 SCALE 2 WEIGHT SCALE **b**2XXXXXXXXUM + T
The macro is printed if scale 2 or the sum of scales is displayed.
The text of defalt display on the print will be "SCALE".For to set the description of the platforms that will be display on the print see the **PLA.txt** step.
410 ONLY SCALE 2 WEIGHT XXXXXXXX
411 SCALE 3 WEIGHT SCALE **b**3XXXXXXXXUM
The macro is printed if scale 3 or the sum of scales is displayed.
The text of defalt display on the print will be "SCALE".For to set the description of the platforms that will be display on the print see the **PLA.txt** step.
412 ONLY SCALE 3 WEIGHT XXXXXXXX
413 SCALE 4 WEIGHT SCALE **b**4XXXXXXXXUM
The macro is printed if scale 4 or the sum of scales is displayed.

The text of defalt display on the print will be “SCALE”.For to set the description of the platforms that will be display on the print see the **PLA.txt** step.

414 ONLY SCALE 4 WEIGHT XXXXXXXX

415 WEIGHT SUM ACTIVE SCALE SUM **b**XXXXXXXXUM

The macro is printed if the sum of the scales is displayed.

416 ONLY WEIGHT SUM FOR ACTIVE SCALES XXXXXXXX

417 ONLY WEIGH TEXT “WEIGH**bbbbb**”

418 ONLY WEIGHS TEXT “WEIGHS**bbbb**”

419 ONLY PARTIAL TOTAL TEXT “PARTIAL TOTAL”

420 ONLY GENERAL TOTAL TEXT “GENERAL TOTAL”

421 ONLY GRAND TOTAL TEXT “GRAND TOTAL”

422 ONLY TOTAL TEXT “TOTAL**bbbbb**”

423 ONLY GROSS TEXT “GROSS**bbbbb**”

424 ONLY NET TEXT “NET**bbbbbbb**”

425 ONLY TARE TEXT “TARE**bbbbbb**”

426 ONLT PT TEXT “PT**bbbbbbbb**”

427 ONLY AXLE TEXT “AXLE**bbbb**”

428 “PLA.TXT” CONDITIONED DESCRIPTION XXXXXXXXXX

It is printed the description that has been inserted on step **PLA.txt**. Only the characters inserted from left to right are printed

429 ONLY VEHICLE TEXT “VEHICLE**b**”

430 PRINT X COORDINATE SCALE 1 X1XXXXXXXXX+UM

431 ONLY X COORDINATE VALUE SCALE 1 XXXXXXX

432 PRINT Y COORDINATE SCALE 1 Y1XXXXXXXXX+UM

433 ONLY Y COORDINATE VALUE SCALE 1 XXXXXXX

434 PRINT X COORDINATE SCALE 2 X2XXXXXXXXX+UM

435 ONLY X COORDINATE VALUE SCALE 2 XXXXXXX

436 PRINT Y COORDINATE SCALE 2 Y2XXXXXXXXX+UM

437 ONLY Y COORDINATE VALUE SCALE 2 XXXXXXX

438 PRINT X COORDINATE SCALE 3 X3XXXXXXXXX+UM

439 ONLY X COORDINATE VALUE SCALE 3 XXXXXXX

440 PRINT Y COORDINATE SCALE 3 Y3XXXXXXXXX+UM

441 ONLY Y COORDINATE VALUE SCALE 3 XXXXXXX

442 PRINT X COORDINATE SCALE 4 X4XXXXXXXXX+UM

443 ONLY X COORDINATE VALUE SCALE 4 XXXXXXX

444 PRINT Y COORDINATE SCALE 4 Y4XXXXXXXXX+UM

445 ONLY Y COORDINATE VALUE SCALE 4 XXXXXXX

446 PRINY X COORDINATE BARYCENTRE XgXXXXXXXXX+UM

447 ONLY X COORDINATE VALUE BARYCENTRE XXXXXXX

448 PRINT Y COORDINATE BARYCENTRE YgXXXXXXXXX+UM

449 ONLY Y COORDINATE VALUE BARYCENTRE XXXXXXX

450 PRINT DATE AND TIME WEIGHS ON THE WEIGHS LIST HH:MM**b**GG/MM/AA + T

The date and the time of the acquired weight is printed in the weighing list.

451 CURRENT LIST WEIGHS’ COUNTER XXXX

The field is expressed in four digits, with some zeros to complete the field’s length.

452 AXLE COUNTER CURRENT LIST XXXX

the field is espresse on four digits, with the zeros for complete the field length.

453 PRINT AXLE WEIGHT ON THE WEIGHS LIST AXLE**bbbb**XXXXYYYYYYYY+UM

In which XXXX indicates the axle number and YYYYYYYY the axle weight value weighed.
This block is printed on the list, only if there is an axle weigh.

454 PRINT WEIGHT SCALE 1 ON THE WEIGHS LIST SCALE**bbbbb**XXYYYYYYYY+UM

In which XX indicate the number of the scale and YYYYYYYY the weight value current.

455 PRINT WEIGHT SCALE 2 ON THE WEIGHS LIST SCALE**bbbbb**XXYYYYYYYY+UM

In which XX indicate the number of the scale and YYYYYYYY the weight value current.

456 PRINT WEIGHT SCALE 3 ON THE WEIGHS LIST SCALE**bbbbb**XXYYYYYYYY+UM

In which XX indicate the number of the scale and YYYYYYYY the weight value current.

457 PRINT WEIGHT SCALE 4 ON THE WEIGHS LIST SCALE**bbbbb**XXYYYYYYYY+UM
In which XX indicate the number of the scale and YYYYYYYY the weight value current.
458 NET PARTIAL TOTAL LIST XXXXXXXXXX
459 GROSS PARTIAL TOTAL LIST XXXXXXXXXX
460 TARE PARTIAL TOTAL LIST XXXXXXXXXX
461 NET TOTAL LIST XXXXXXXXXX
462 GROSS TOTAL LIST XXXXXXXXXX
463 TARE TOTAL LIST XXXXXXXXXX
464 1st DATABASE DESCRIPTION ON THE WEIGHS LIST XXXXXXXXXXXXXXXXXXX + T
in which XXXXXXXXXXXXXXXXXXX are the 20 description characters; just the entered characters are printed, which expand from left to right.
465 2nd DATABASE DESCRIPTION ON THE WEIGHS LIST XXXXXXXXXXXXXXXXXXX + T
in which XXXXXXXXXXXXXXXXXXX are the 20 description characters; just the entered characters are printed, which expand from left to right.
466 3rd DATABASE DESCRIPTION ON THE WEIGHS LIST XXXXXXXXXXXXXXXXXXX + T
in which XXXXXXXXXXXXXXXXXXX are the 20 description characters; just the entered characters are printed, which expand from left to right.
467 4th DATABASE DESCRIPTION ON THE WEIGHS LIST XXXXXXXXXXXXXXXXXXX + T
in which XXXXXXXXXXXXXXXXXXX are the 20 description characters; just the entered characters are printed, which expand from left to right.
468 5th DATABASE DESCRIPTION ON THE WEIGHS LIST XXXXXXXXXXXXXXXXXXX + T
in which XXXXXXXXXXXXXXXXXXX are the 20 description characters; just the entered characters are printed, which expand from left to right.
469 JUST GROSS PARTIAL TOTAL XXXXXXXXXX
470 TARE WEIGHT ON PARTIAL TOTAL PT**bbbbbbbb**XXXXXXXXXUM+T
471 ONLY THE INPUT 0 TEXT CONTENTS ON THE WEIGHS LIST XXXXXXXXXX
Is print just the input 0 text contents; Are printed only the firsts 10 characters inserted.
472 ONLY THE INPUT 1 TEXT CONTENTS ON THE WEIGHS LIST XXXXXXXXXX
Is print just the input 1 text contents; Are printed only the firsts 10 characters inserted.
473 ONLY THE INPUT 2 TEXT CONTENTS ON THE WEIGHS LIST XXXXXXXXXX
Is print just the input 2 text contents; Are printed only the firsts 10 characters inserted.
474 ONLY THE INPUT 3 TEXT CONTENTS ON THE WEIGHS LIST XXXXXXXXXX
Is print just the input 3 text contents; Are printed only the firsts 10 characters inserted.
475 ONLY SUM TEXT XXXXXXXXXXX
476 ONLY SUM WEIGHT ON THE WEIGHS LIST XXXXXXX
477 ONLY WEIGHT SCALE 1 ON THE WEIGHS LIST XXXXXXX
478 ONLY WEIGHT SCALE 2 ON THE WEIGHS LIST XXXXXXX
479 ONLY WEIGHT SCALE 3 ON THE WEIGHS LIST XXXXXXX
480 ONLY WEIGHT SCALE 4 ON THE WEIGHS LIST XXXXXXX
481 ONLY VALUE TARE ON PARTIAL TOTAL XXXXXXXXXX

## 7.4 BLOCKS WITH PARAMETERS

When entering the following blocks manually in a print ticket, these require that an additional numeric value be entered (specified in detail in the block's description) in order to define the print ticket which one wants to obtain.

**EXAMPLE**

Entry of the 600 "PRINT n TERMINATORS" block:

- Enter the 600 block in a ticket and confirm with OK/menu.
- The indicator does not pass by the block present in the following line, but shows "P 000".
- Enter a value between 001 and 050; for values outside this interval the indicator shows "-Error-", restoring the block before entering the block 600.
- By entering a valid value, the block will print a number of terminators equal to the one previously entered.

| | | |
|---|---|---|
| 600 | PRINTS n TERMINATORS | Values valid from 001 to 050 |
| 601 | PRINTS n LF CHARACTERS | Values valid from 001 to 050 |
| 602 | PRINTS n TAB CHARACTERS | Values valid from 001 to 050 |
| 603 | PRINTS n SPACE CHARACTERS | Values valid from 001 to 050 |
| 604 | PRINTS n "_" CHARACTERS | Values valid from 001 to 050 |
| 605 | LEFT MARGIN FOR LX300 | Values valid from 001 to 255 |
| 606 | NET WEIGHT ON X DIGITS | Valid values in the **nXX** format |
| 607 | GROSS WEIGHT ON X DIGITS | Valid values in the **nXX** format |
| 608 | TARE WEIGHT ON X DIGITS | Valid values in the **nXX** format |

in which **n** can be:

0 Value with decimal point and spaces
1 Value with decimal point and zeros in the place of spaces
2 Value without decimal point and zeros in the place of spaces

**XX** is the field length (maximum enterable value is 20); if the weight value is greater than the number of entered digits, the complete value is printed anyways.

################

**EXAMPLE**

With a weight value of 100.01, if one wants a length of 10 characters, in the three cases one will have:

| Parameter | Result |
|---|---|
| 010 | 100.01 |
| 110 | 0000100.01 |
| 210 | 0000010001 |

################

609 PRINT DIRECTION FOR MASTER / SLAVE SYSTEM Valid values **000, 001, 002**

000 → Prints only on the SLAVE.
001 → Prints only on the MASTER.
002 → Prints only on the indicator which is being used.

610 SETTING THE THRESHOLD OF PRINT START OR THE NUMBER OF CHARACTERS TO BE PRINTED FOR THE INPUT TEXT CONTENTS OR MEMORY OR AI CODE DESCRIPTION Values valid in the **nXX** format

This macro allows to define which part of the contents of an input text which is to be printed in the macro 616 or the part of AI code description on the block 611.

**n** can be:

0 for setting the threshold beginning;
1 for setting the characters to be printed.

**XX** is the threshold beginning if **n** = 0 or the characters to be printed if **n** = 1.

611 PRINTING OR CLEARING AI CODE DESCRIPTION Values valid in the **nXX** format

This macro allows to print a part of AI code description defined in the 610 macro or to clear the AI code description.

**n** can be:
0 to print;
1 to clear.

**XX** is the number of AI code (XX = 01 to print or clear the description of the AI code 0, XX=05 to print or clear the description of the AI code 4, XX=00 to clear all the desriptions of the AI codes).

613 SET FORMAT NUMBER OF COPIES Values valid in the **XXX** format

This macro allows to print the format and a number of its copies equal to **XXX** parameter. The initial format macro is the macro following this.

################
**EXAMPLE**
If one wants to print Net Weight, Gross and Tare and then 11 copies.

613 >>> enter parameter 011
301 (Net weight)
302 (Gross weight)
303 (Tare weight)
….
################

614 SET RELAY FUNCTIONING Values valid in the **nXX** format

In which **n** is the relay status:
0 OFF
1 or 2 ON

**XX** is the number of the relay to be enabled, from 00 to 10.

If one needs to manage various printers using the available relays (connecting the transmission of the printer port on the common of the relays), follow the example below:

PRINTING OF THE NET WEIGHT ON RELAY 1, GROSS ON RELAY 2, TARE ON RELAY' 3.

…
614 >>> enter parameter 100 (Relay 1 ON)
614 >>> enter parameter 001 (Relay 2 OFF)
614 >>> enter parameter 002 (Relay 3 OFF)
301 (Net weight)
317 (Forces printing)
614 >>> enter parameter 000 (Relay 1 OFF)
614 >>> enter parameter 101 (Relay 2 ON)
614 >>> enter parameter 002 (Relay 3 OFF)
302 (Gross weight)
317 (Forces printing)
614 >>> enter parameter 000 (Relay 1 OFF)
614 >>> enter parameter 001 (Relay 2 OFF)
614 >>> enter parameter 102 (Relay 3 ON)
303 (Tare weight)
317 (Forces printing)
…

615 CONVERSION OF THE "." (POINT) CHARACTER IN THE "," (COMMA) CHARACTER IN THE PREVIOUS X DIGITS Values valid in the **XX** format

**NOTE: if one uses the 615 block, one should enter the block 317 "FORCES PRINTING" before the blocks that need to be converted.**

################
**EXAMPLE**
…
317 (Forces printing)
301 (Net weight)
615 >>> parameter 20 (Conversion of the "." (point) character in the "," (comma)
….
The net weight value will be printed with the comma instead of with the point.
################

616 PRINTING OR CLEARING INPUT TEXT CONTENTS Values valid in the **nXX** format
This macro allows to print a part of an input text content defined in the 610 macro or to clear the contents of the input text content.

**n** can be:
0 to print;
1 to clear.

**XX** is the number of the input text (XX = 01 to print or clear 0 text contents of input 0, XX=05 to print or clear the contents of the text of input 14, XX=00 to clear all the contentx of the input texts).

617 SETTING THE ALIGNMENT AND NUMBER OF FORMATTING CHARACTERS Values valid in the **nXX** format
This macro, followed by 618, allows to align to the right or to the left, the contents of the following macro in regards to the defined number of characters.

**n** can be:
0 to set the alignment to the right
1 to set the alignment to the left

**XX** is the number of formatting characters.

See the example in the 618 macro.

618 SETTING THE FILLING CHARACTER OF THE FOLLOWING MACRO Values valid in the **XXX** format
This macro allows to set the filling character of the following macro.

**XXX** corresponds to the ASCII decimal character (from 001 to 255).

################
**EXAMPLE**
If one wants to print on the right the contents of the 392 macro (NUMBER OF ACTIVE SCALE) one puts the "-" character (ASCII decimal 045) as filling on the left.

The macro contains 17 characters; therefore if the print line is 24 one should set the following macros:
…
617 >>> enter parameter 024
618 >>> enter parameter 045
392 (Active scale number)
….
################

619 CONFIRMATION “WAIT” FROM PC OR BY PRESSING OF **C** KEY Values valid in the **XXX** format

This macro allows to block the indicator and view the message “WAIT” on the LED display, after having forced the printing of the previous macros, and waiting for the character confirming that the reception has been made by the PC. In any case it’s possible to unlock the indicator by pressing the **C** key.
Once unlocked, the indicator will print the eventual following macros.

**XXX** corresponds to the ASCII decimal character to be received in order to unlock the indicator (from 001 to 255, or 000 in case one wants to wait for the “PCOK” command).

**NOTE**: It’s possible to enter more than one confirmation “wait” in the same print format.

################
**EXAMPLE**
One wants to lock the indicator after printing a series of data; then one waits for the “-“ confirmation character (ASCII decimal 045) and, once received, transmit other data.

One should set the following macros:
…
301
302
303
619 >>> enter parameter 045 Setting the wait of the “-“ character (ASCII decimal 045)
304
305
306
…
################

620 SET VALUE Values valid in the **XXX** format

in which **XXX** can be:

000 Net weight.
001 Gross weight.
002 Tare weight.
003 Not used
004 Net partial total
005 Net general total
006 Net grand total
007 Not used
008 Partial gross total
009 General gross total
010 Gross grand total
011 Not used
012 Partial tare total
013 Tare general total
014 Tare grand total
015 Weighs’ material total
016 Weighs’ partial total
017 Weighs’ general total
018 Weighs’ grand total
019 Not used
020 Additional partial total
021 Additional general total
022 Additional grand total
023 Weight scale 1
024 Weight scale 2

025 Weight scale 3
026 Weight scale 4
027 Sum weight active scale
028 X Coordinate scale 1
029 Y Coordinate scale 1
030 X Coordinate scale 2
031 Y Coordinate scale 2
032 X Coordinate scale 3
033 Y Coordinate scale 3
034 X Coordinate scale 4
035 Y Coordinate scale 4
036 X Coordinate barycentre
037 Y Coordinate barycentre
038 Tare on total
039 Switch the set value with the comparison one (see Attached Macro)

621 SETS VALUE DECIMALS Values valid in the **XXX** format

in which **XXX** can be:
000 No decimal
001 1 decimal
002 2 decimals
003 3 decimals
004 4 decimals

**NOTE: if no decimals are set, the ones of the scale are used.**

622 SETS CONVERSION VALUE UNIT OF MEASURE Values valid in the **XXX** format

in which **XXX** can be:
000 g
001 kg
002 t
003 lb

**NOTE: if no unit of measure has been set, the one of the scale is used.**

623 PRINTS VALUE LOADED Values valid in the **nXX** format

In which **n** canbe:
0 Value with decimal point and spaces
1 Value with decimal point and zeros in the place of spaces
2 Value without decimal point and zeros in the place of spaces

**XX** is the length of the field (maximum enterable value is 20); if the weight value is greater than the number of entered digits, the complete value is printed anyways.

##################
**EXAMPLE**
The scale is with three decimals and the unit of measure is the kg; one wants to print the net weight with two decimals converted in pounds, expressed in 7 digits without decimal points, with non significant zeros filling in the eventual spaces present.
One should set the following macros:
…
620 >>> enter parameter 000
621 >>> enter parameter 002
622 >>> enter parameter 003
623 >>> enter parameter 207
….
If the net weight of the scale corresponds to 2,480 kg, the printed value will be **0000547**
################

624 SETS THE VALUE OF THE SETPOINT IN THE MACRO 620 Values valid in the **XXX** format

| Parameter | ON Threshold (setpoint) |
|---|---|
| ========= | ================== |
| 000 ~ 003 | rL.1 ~ 4 |
| 004 ~ 015 | rL.5 ~ 16 |

| Parameter | OFF Threshold (setpoint) |
|---|---|
| ========= | ================== |
| 016 ~ 019 | rL.1 ~ 4 |
| 020 ~ 031 | rL.5 ~ 16 |

627 FORCES PRINTOUT AND TIME WAIT Values valid in the **XXX** format
Besides the force printout function, it waits also a period of time.

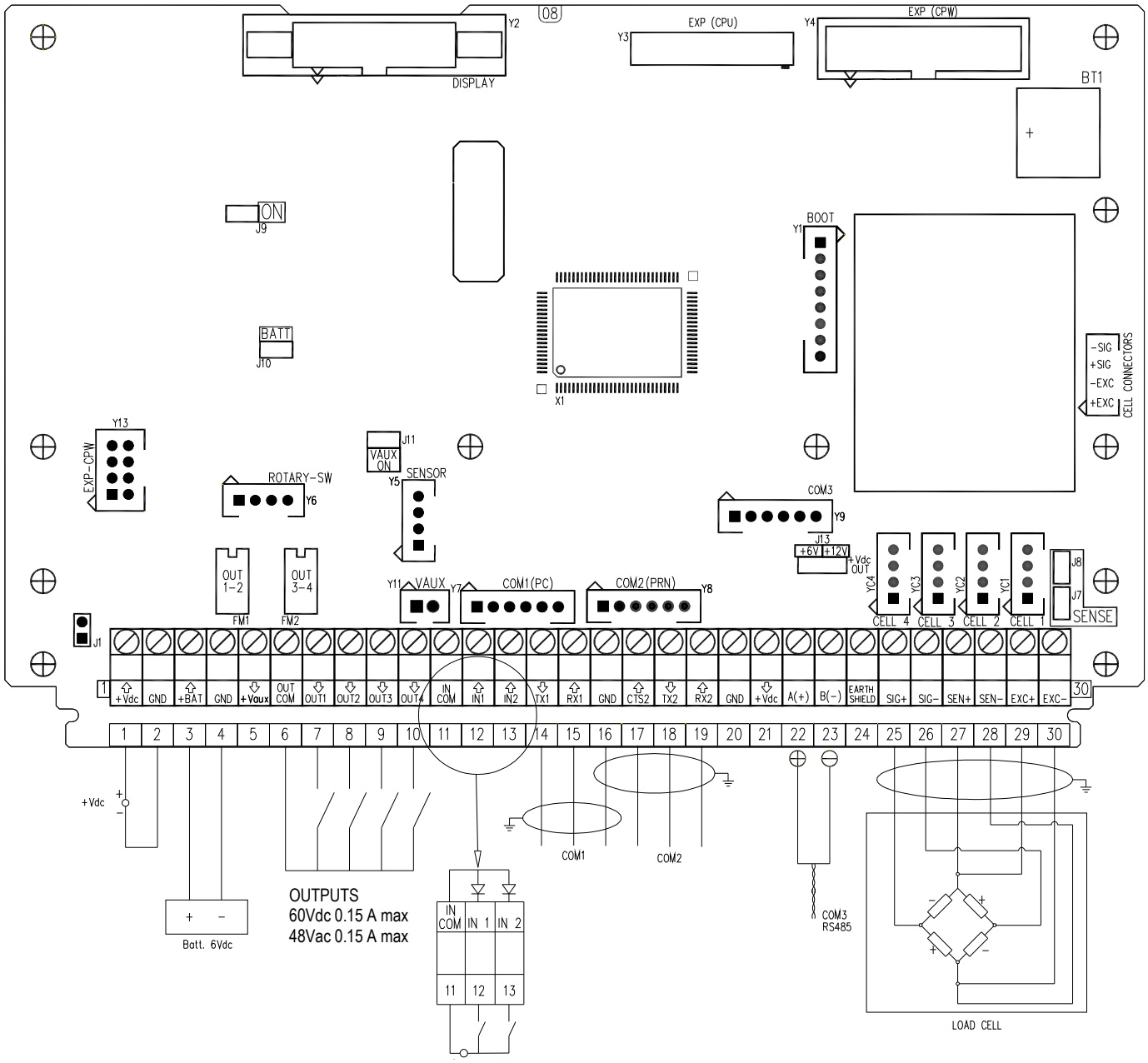
**XXX** Wait time (max 200dsec); for example “001” is equal to 0,1 seconds; “010” equals to 1 second.

640 EAN/UCC CHECKDIGIT ON X PREVIOUS DIGITS Values valid in the **XX** format

641 SETS THE VALUE FOR ENABLE OR DISABLE PRINT TERMINATOR Values valid **000 or 001**
000→ Enable print Terminator
001→ Disable print Terminator

# 8. ELECTRICAL SCHEMES

## 8.1 MOTHER BOARD



**J9 (ON)**: - If closed, one can automatically turn on the instrument as soon as the power voltage is supplied; one must also turn off the instrument by removing the mains voltage.
- If open, one can turn the instrument on and off by just pressing the ON key.

**J7, J8 (SENSE)**: if closed, REFERENCE + and POWER SUPPLY +, REFERENCE - and POWER SUPPLY – are jumpered on the board

**J1:** if open, it enables the access to the metrological parameters, when configuring.

**J11 (VAUX ON)**: if closed, the Vaux is always powered, independently of the "PWr.Prn" parameter of the SET-UP ENVIRONMENT.

**J13(+VdcOUT)**: allow selecting the power voltage (+6V, +12V) of terminal board **21**(**+Vdc**) output.
By selecting **+6V** the battery must be connected on terminal 3 and 4
By selecting **+12V** the external power supply must be connected on terminal 1 and 2

Therefore one has to verify if the battery or the external power supply is necessary for the required output, otherwise no voltage will be supplied on the terminal 21.

In any case, one must verify if the battery or the external power supply is necessary for the output request, otherwise the voltage at terminal 21 won't be given.

**SERIAL PORTS (refer to section 5)**

| **COM 1** | **COM 2** | **COM 3** |
|---|---|---|
| Y7 AMP Connector: 232 serial<br>14-15-16 Terminal: 232 serial | Y8 AMP Connector: 232 serial<br>16-17-18-19 Terminal: 232 serial | Y9 AMP Connector: 232 serial<br>22-23 Terminal: 485 serial |

**IMPORTANT:**
In the case of RS485 connection, read carefully and apply what is described in chapter 5.3.
In the case of digital load cells connection, read carefully and apply what is described in chapter 2.2.

**POWER SUPPLY**

| **6 Vdc BATTERY POWER SUPPLY** | **+Vdc (IN) POWER SUPPLY** | **V-AUX AUXILIARY POWER SUPPLY** | **+Vdc (OUT) POWER SUPPLY** |
|---|---|---|---|
| 4 GND (0 Vdc)<br>3 +BAT (+ 6 Vdc) | 2 GND (0 V)<br>1 +Vdc (+12V, 8 ÷ 24 Vdc with I/O expansion board connected ) | 4 GND (0 V)<br>5 +Vaux (5,3 – 8 Vdc 400 mA max) | 20 GND (0 V)<br>21 +Vdc (+6V or +12V, see J13 jumper description above) |

**IMPORTANT:**
In the case of digital load cells connection, read carefully and apply what is described in chapter 2.2

**CELL: LOAD RECEIVER (terminal board connection)**

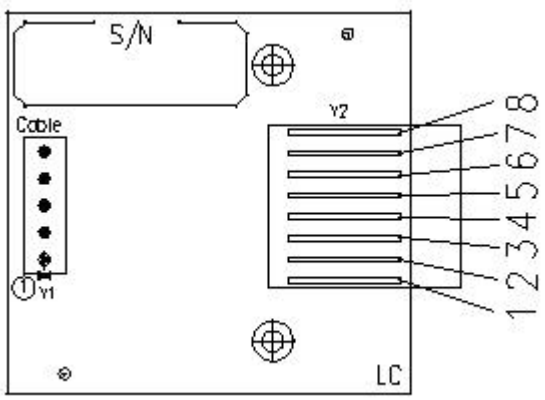
| | | |
|---|---|---|
| **25** | **SIG +** | SIGNAL + |
| **26** | **SIG -** | SIGNAL - |
| **27** | **SEN +** | SENSE + |
| **28** | **SEN -** | SENSE - |
| **29** | **EXC +** | EXCITATION + |
| **30** | **EXC -** | EXCITATION - |

**INPUTS (OPTOISOLATOR PHOTOCOUPLERS)**
Power supply: 12 Vdc ÷ 24 Vdc, max 20 mA.
**OUTPUTS (OPTOISOLATOR PHOTOMOSFET)**
Maximum power: 48 Vac or 60 Vdc, 150 mA max, 10 Ω max.

**!! IMPORTANT !!**

The input/output optoisolation is obtained by feeding the input and/or output common using a voltage external the instrument.

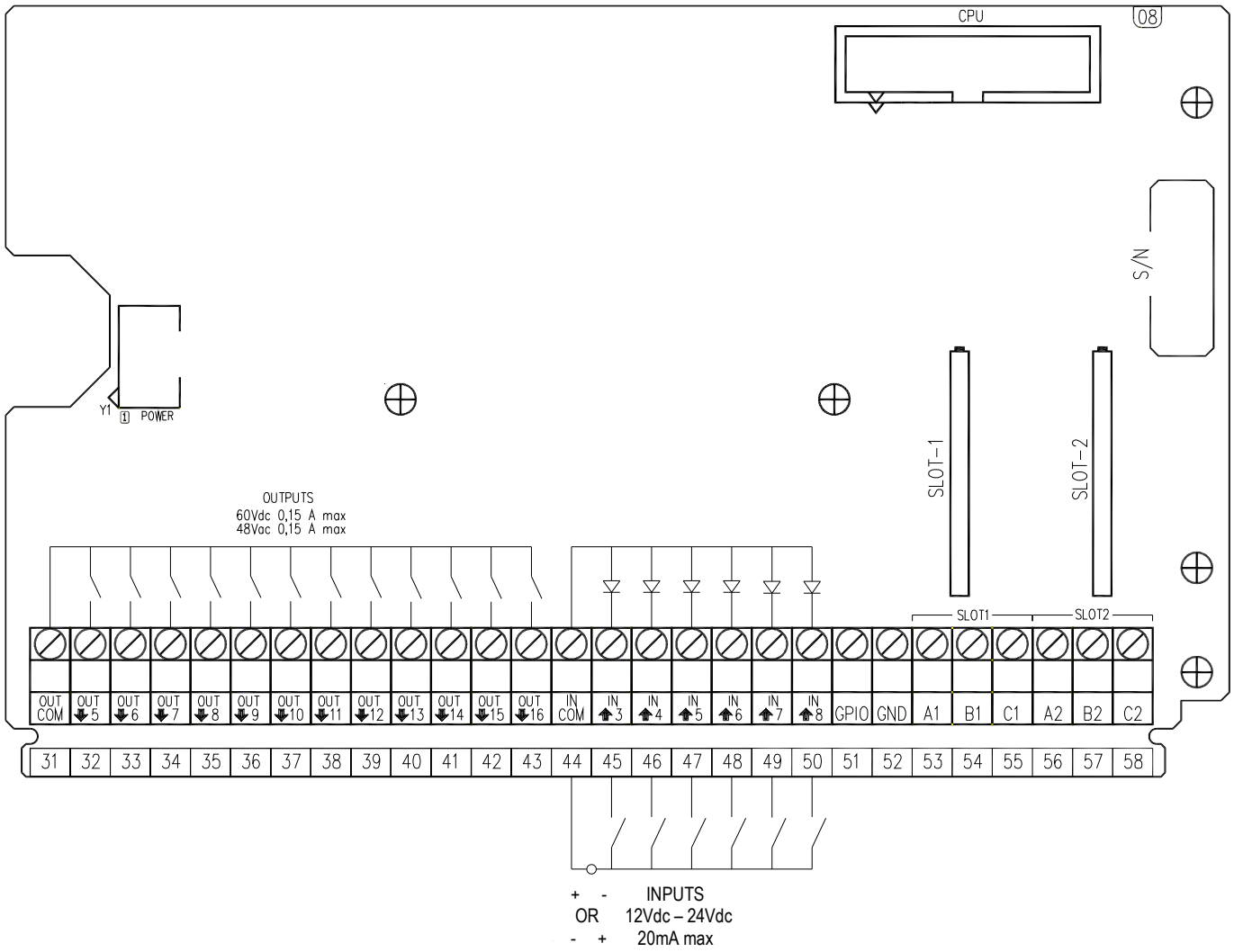
**RS232 SERIAL PORT (RJ45 CONNECTOR) (*)**




**6 TX** TRANSMISSION
**3 RX** RECEPTION
**5 GND**

**(*) May be present depending on the model.**

## 8.2 I/O EXPANSION BOARD (optional)




**ANALOGUE OUTPUT**

| **I/O1 (SLOT 1):** | | | **I/O2 (SLOT 2):** | | |
|---|---|---|---|---|---|
| 53 | I+ (A1) | + 20 mA | 56 | I+ (A2) | + 20 mA |
| 54 | COM- (B1) | 0 mA / V | 57 | COM- (B2) | 0 mA / V |
| 55 | V+ (C1) | + 10 V | 58 | V+ (C2) | + 10 V |

**Note**: the maximum resistance applicable on the analogue output configured in current is 350 Ω and the minimum resistance applicable on the analogue output configured in voltage is 10 kΩ.

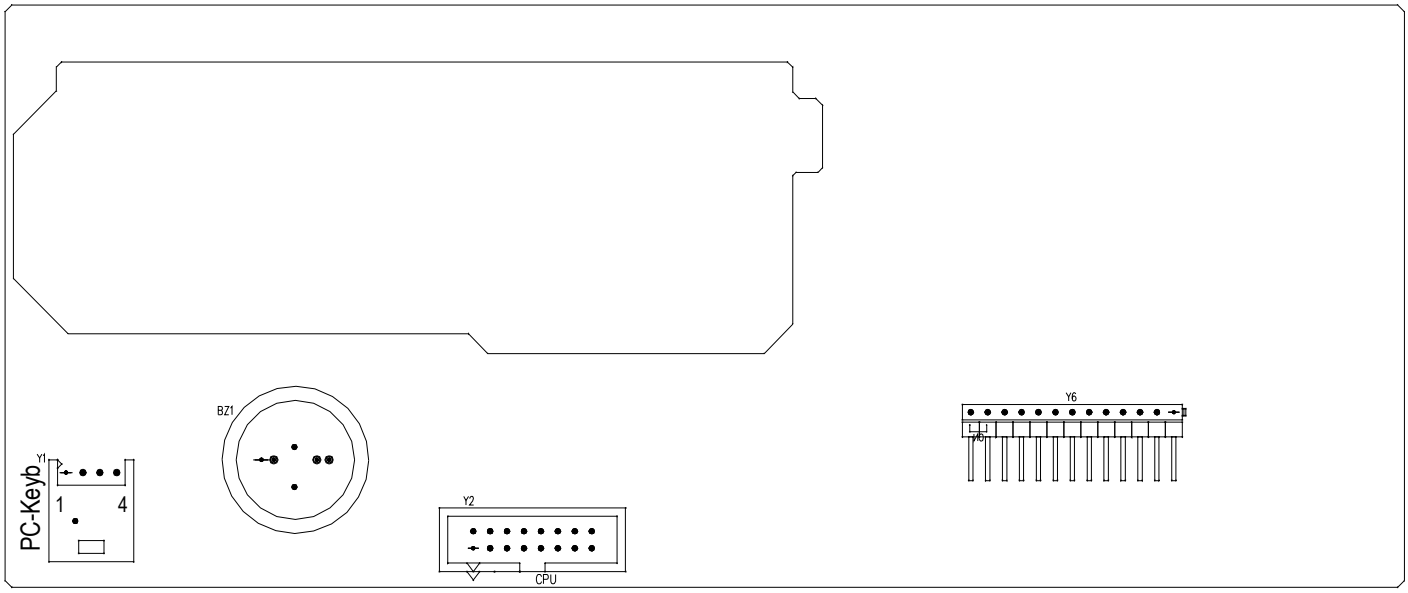
**INPUTS (OPTOISOLATOR PHOTOCOUPLERS)**
Power supply: 12 Vdc ÷ 24 Vdc, max 20 mA.

**OUTPUTS (OPTOISOLATOR PHOTOMOSFET)**
Maximum power: 48 Vac or 60 Vdc, 150 mA max, 10 Ω max.

**!! IMPORTANT !!**

The input/output optoisolation is obtained by feeding the input and/or output common using a voltage external the instrument.

## 8.3 DISPLAY BOARD




**PC-Keyb – PC KEYBOARD CONNECTOR**

Keyboard emulation input, usable for the connection of the instrument to the PC keyboard or the badge/bar code reader.

| PC-KEYB | | PS/2 |
|---|---|---|
| 1 | +5V | 4 |
| 2 | GND | 3 |
| 3 | DATA | 1 |
| 4 | CLK | 5 |