3590EGT TECHNICAL GUIDE

TOUCH SCREEN WEIGHT INDICATOR

Revision	1.04	
Last update	01/02/2013	
Available versions	AF01	TOTALIZATIONS AND SIMPLE DOSAGES SYSTEMS
	AF02	QUANTITY (PIECES, LITRES, ETC.) COUNTING SYSTEMS
	AF03	VEHICLE WEIGHING SYSTEMS WITH INPUT/OUTPUT FUNCTION
	AF04	STATISTICAL CHECK OF PREPACKAGED GOODS
	AF05	INDUSTRIAL PRICE COMPUTING
	AF08	WHEEL WEIGHING SYSTEMS WITH VARIOUS PLATFORMS
	BATCH1	SINGLE PRODUCT DOSAGE SYSTEMS, IN LOADING OR UNLOADING

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REVISION HISTORY OF DOCUMENTATION

Revision	Software versions	Description
01.00	EGT-AF01	• Supported version: AF01
	EGT-AF03	• Supported version: AF03
01.01	EGT-AF01	• Supported version: AF05
	EGT-AF03	• Preamble description for the functions that accept it
	EGT-AF05	• Network remote scale description (with example) for the AF03 software version
01.02	EGT-AF01	• Supported version: AF02
	EGT-AF02	• Supported version: AF04
	EGT-AF03	• German language available for the AF01 software version
	EGT-AF04	
	EGT-AF05	
01.03	EGT-AF01	• German language available for the AF03, AF04, AF05 software versions
	EGT-AF02	
	EGT-AF03	• Modified activation delay time of the zoom function from minutes to seconds
	EGT-AF04	
	EGT-AF05	• Modified the number of objects per screen from 20 to 30 in the main screen customization
01.04	**EGT-AF01**	• Supported version: AF08
	EGT-AF02	• Supported version: BATCH1
	EGT-AF03	• German language available for the AF02 software version
	EGT-AF04	• Modified the number of objects per screen from 30 to 50 in the main screen customization (30 touchable objects only)
	EGT-AF05	
	EGT-AF08	• New commands for the main screen customization (Progress bar and Skip commands)
	EGT-BTC1	• New function for digital inputs and remote control keys: Show "-------" on the display and disable the keyboard

1 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

Please follow the listed precautions:

- 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;
- 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 1.2;
- 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.

1.2   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.

1.2.1   Indicator

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

1.2.2   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 shielding 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.

1.2.3   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 mm^2; 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 mm^2.

1.2.4   General Notes

- All the grounding cables must have an adequate length, in order to obtain an overall resistance of grounding system less than 1Ω.
- 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 mm^2;
    - 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 meters 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.

1.3   Connection to the load receiver

1.3.1   Analog load cells

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 12.1.

The CELL1 terminal board of the indicator 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 12.1).

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 FOR TRADE instrument, access to the connection will be subject to a legal SEAL.

Follow the instructions for preparing the platform for use.
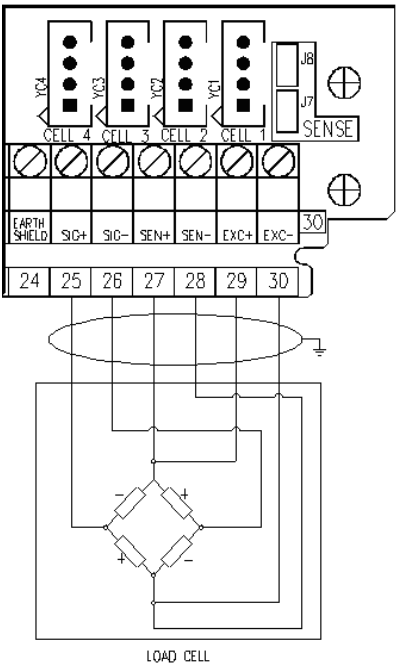
Figure 1. Analog 6 wires load cell connection
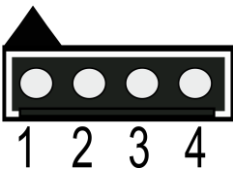
Figure 2. Analog 4 wires load cell connection

AMP4 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 -

1.3.2   Digital load cells

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. The RS485 connection is illustrated in the figure below.
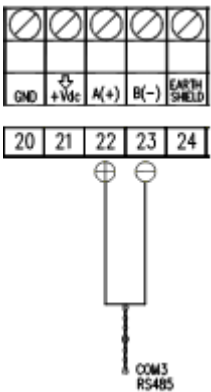
Figure 3. Digital cell connection

TERMINAL		
20	GND	Power supply -
21	+Vdc	Power supply +
22	TX+/RX+	Line 485 A(+)
23	TX-/RX-	Line 485 B(-)

Figure 4. Power voltage jumper

The voltage value of terminal 21 can be selected through J13 jumper, according to the required load cells power supply (the possible values are 6V or 12V).

TAKE NOTE: In the case of digital load cells connected to a digital junction board, connect the COM3 RS485 terminal board of the indicator to the RS485 port of the junction board, by following the relative manual and the 1.4.1 section.

In the case of ring connection of more digital junction boards or DGX load cell, connect the COM3 RS485 terminal board of the indicator to the RS485 port of the first junction board/DGX, by following the relative manual the 1.4.1 section.

The indicator (AF03 and AF08 software versions only) manages the following digital cell types:
- DGX
- RCD
- CCI AD
- RCD3D
- C16i

In most cases in order to avoid to make a jumper connection between the cells one uses a junction box which is connected to the indicator on the terminals dedicated to the 485 port. In between the terminals one needs to apply 2 Pull Up resistances and a termination one in order to have a minimum 0,2 V voltage between A(+) and B(-) (terminals 22 and 23), how it's illustrated in the figure:
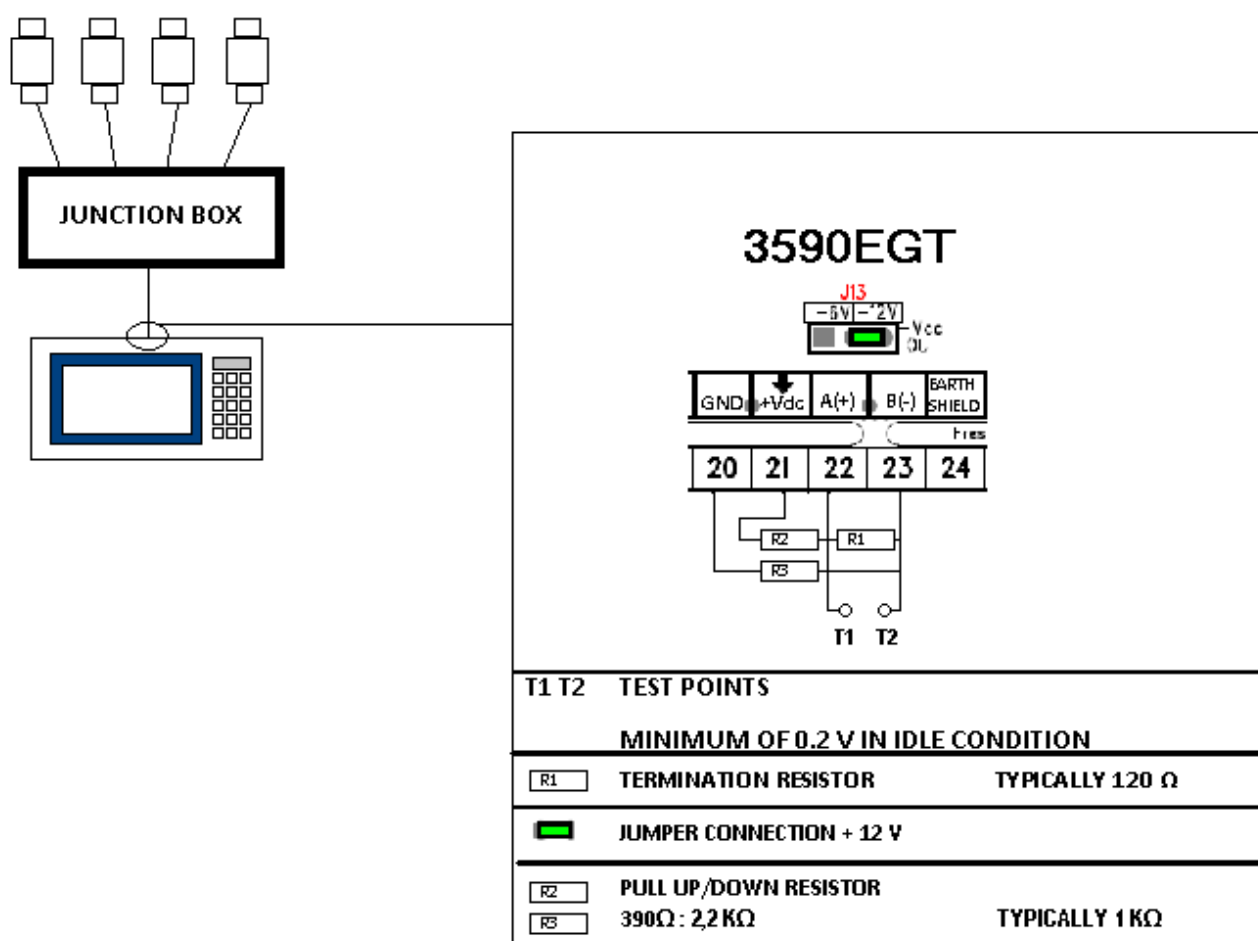
Figure 5. Digital cell connection to junction box

In the Figure 6 it's illustrated the connection of the C16i load cells to the indicator. In this case it's necessary a SC232/422B converter to connect it directly to the pc serial port pins (the **Serial ports function mode** must be set equal to "1=Aux 2=Printer 3=Pc").

The connection of the cells to the converter must be made through the junction box or in parallel mode (as described in the scheme).
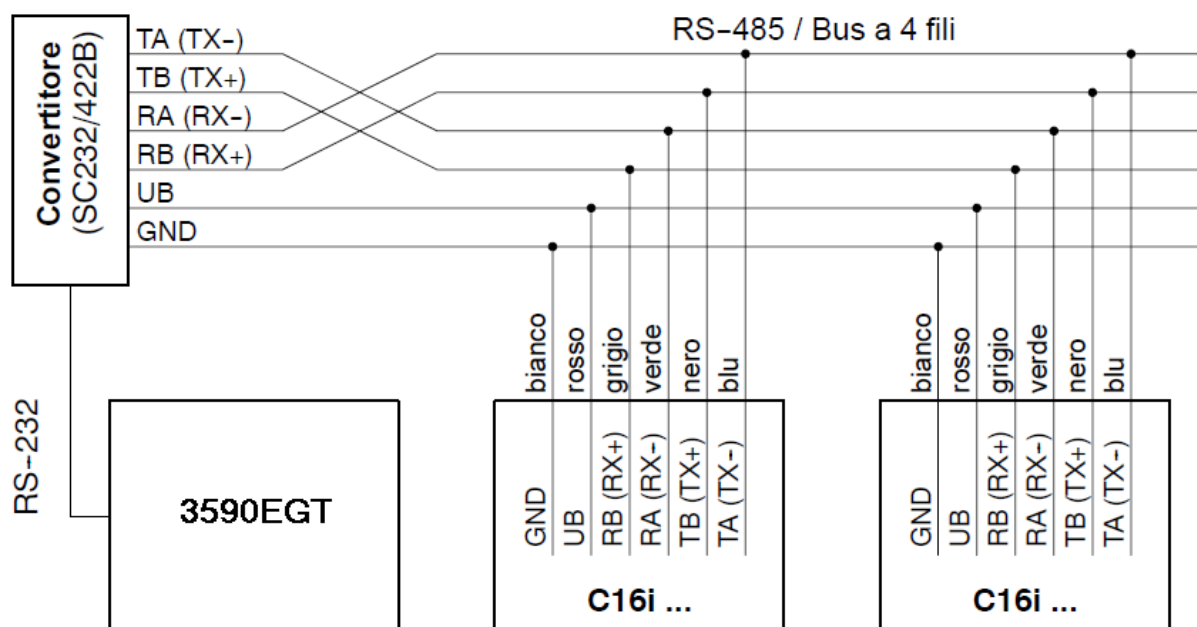
Figure 6. C16i Digital cell connection

For these cells it is necessary to programme a few parameters of the configuration programme of the C16i cell, which may be accessed by connecting the converter to the PC.

By entering in **Parameters → Basic settings** one sets the type of filter one wants to use and the check sum is enabled:

By entering in **Parameters → Communication** it is necessary to insert the COF format and the ASCII delimitation as shown in figure:

1.4   Serial line connection

The connection 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 !!

1.4.1   RS485 connection

Below is the RS485 connection of the indicator in the COM3:

TERMINAL		
22 (A+)	TX+/RX+	Signal +
23 (B-)	TX-/RX-	Signal -

On the same RS485 line it's possible to connect up to 32 devices, among indicators, digital load cells, DGX conversion cards or 485/232 signal converter.
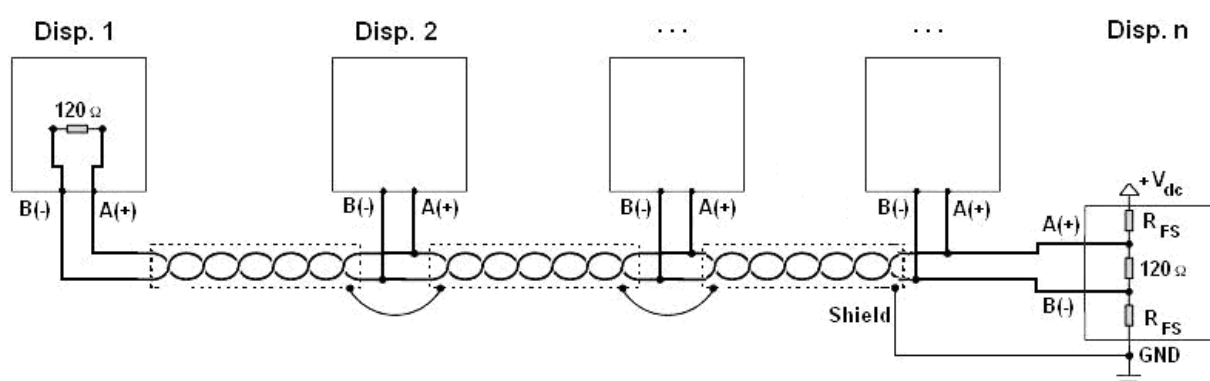
Figure 7. Electrical diagram of RS485 connection

- 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 aluminum 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.

- 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 cannot 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 (typically 120 Ω, see Figure 7), ONLY on the 2 devices which are at the 2 ends of the ring connection (for example indicator and last device). 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 resistances (R_{FS} in Figure 7). 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 Auxiliary port. 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 relative specific manuals.

1.4.2 PC connection

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

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

1.4.3 Printer connection

INDICATOR	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
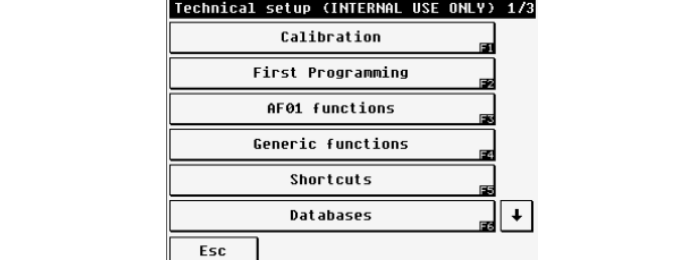
INDICATOR	TPR	Standard cable
GND	GND	Black
CTS	CTS	Yellow
TX	RX	Grey

TPR power supply		
INDICATOR	**TPR**	**Terminal box**
+VP e +VC	Red and Orange	5 Vaux
GND e GND	Black and Black	16 GND
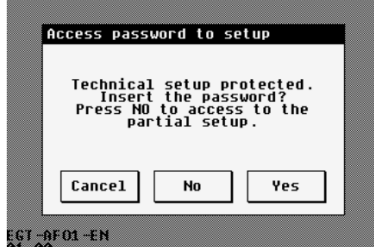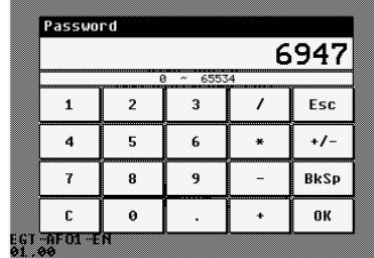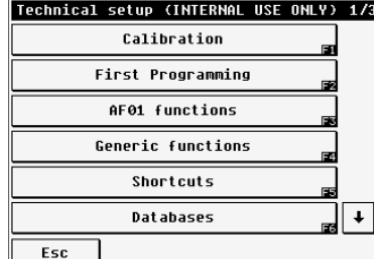
2 TECHNICAL SETUP
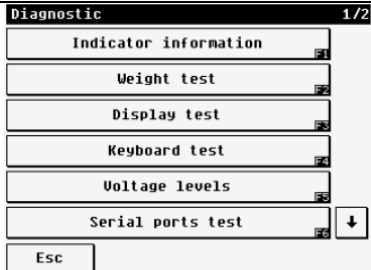
By "Technical setup" environment we mean a certain menu inside which all the indicator operating parameters can be set.

To enter it, if the access password is disabled (**Access password to setup enabling**), follow these steps:
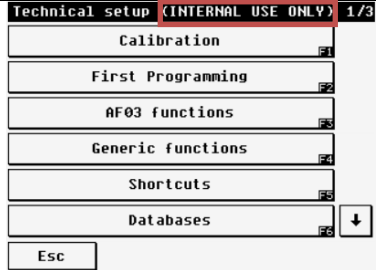
Step	Description	Screen
1	Connect the power cord of the indicator to the power socket and press the [CLEAR] key until the instrument powers on	
2	While the scale logo is displayed touch the top right corner of the screen or press the [ESC] key	
3	The scale sets the setup menu environment and displays the screen of the figure	

If the password is enabled follow these steps:

Step	Description	Screen
1	Connect the power cord of the indicator to the power socket and press the [CLEAR] key until the instrument powers on	
2	While the scale logo is displayed touch the top right corner of the screen or press the [ESC] key	
3	If one wants to access to the complete setup press **Yes** button to insert the password	
4	Insert the password substituting the displayed value and press **OK**. If one has forgotten the password, one should communicate the displayed number to the manufacturer, who will supply a valid password JUST FOR THAT SPECIFIC NUMBER	
5	The scale sets the setup menu environment and displays the screen of the figure	
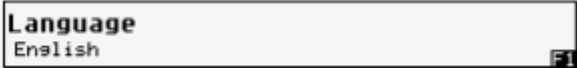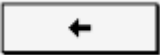
6	If the password value is not valid the scale sets the partial setup menu environment	

In the first level of the technical menu, in the upper part of the display, can appear the following texts in parentheses:
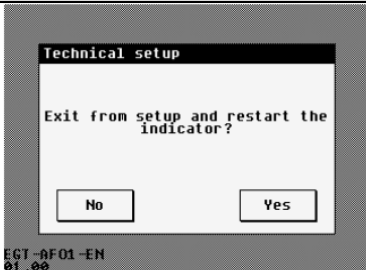
Text	Description	Screen
INTERNAL USE ONLY	In case of instrument for internal use only: when the jumper **J1** of the motherboard is opened	
LEGAL FOR TRADE	In case of approved instrument (M): when the jumper **J1** of the motherboard is closed	

NOTE: If the contrast of the screen is too low or high we have a possibility to adjust this contrast with a LCD contrast trimmer - see section 12.3, drawing display board.

2.1   Menu navigation

Button	Function
	Scroll the menu pages
	Enters into the parameter setting / next menu level. The text in bold is the name of the parameter / menu level, the bottom text is the configuration value
	Returns to the last menu level
	Exit from the setup environment
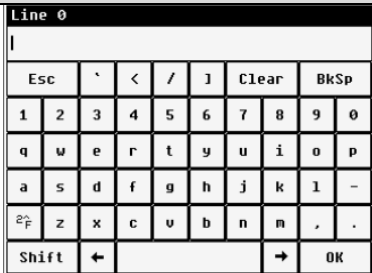
When you exit from the setup, a message appears on the display as described in the table:

Condition	Description	Screen
Setup not changed	If one press **Yes** button, the indicator restarts. If one press **No** button, the indicator remains in the setup menu environment.	 Technical setup Exit from setup and restart the indicator? No Yes EGT-AF01-EN 01.00
Setup changed	If one press **Yes** button, the setup is stored and the indicator restarts. If one press **No** button, the indicator restarts without saving the changes. If one press **Cancel** button, the indicator remains in the setup menu environment.	 Technical setup Setup changed. Save changes before restart the indicator? Cancel No Yes EGT-AF01-EN 01.00

2.1.1   Numeric input

Screen	Function
Safety password Password 0 0 ~ 65534 1 2 3 / Esc 4 5 6 * +/- 7 8 9 - BkSp C 0 . + OK Esc ←	Allows to insert a numeric value within the range **0…9:** numbers **.:** decimal point **+/-**: positive or negative sign **/ * - +:** arithmetic operations **C**: clears all the value **BkSp**: backspace **OK:** exit saving the value **Esc**: exit without saving the value

2.1.2   Alphanumeric input

Screen	Function
Line 0 I Esc ` < /] Clear BkSp 1 2 3 4 5 6 7 8 9 0 q w e r t y u i o p a s d f g h j k l - 2^F z x c v b n m , . Shift ← → OK	Allows to insert a alphanumeric text. ← →: scroll left or right **Clear**: clears all the text **BkSp**: backspace **2^F**: switches to special characters **Shift**: changes the character case and switches between letter and number modes **OK:** exit saving the text **Esc**: exit without saving the text NOTE: on the first pressed key all the field is replaced

2.1.3 Only one choice selection

Screen	Function
Serial ports function mode ⦿ 1=Pc 2=Printer 3=Aux ○ 1=Pc 2=Aux 3=Printer ○ 1=Printer 2=Pc 3=Aux ○ 1=Printer 2=Aux 3=Pc ○ 1=Aux 2=Pc 3=Printer ○ 1=Aux 2=Printer 3=Pc Cancel OK	Allows to select only one value of the parameter **OK**: confirm the selection and exit **Cancel**: exit without confirming

2.1.4 Multiple selections

Screen	Function
Article dtb customization 1/2 ☑ Description 2 ☑ Description 3 ☑ Linked tare ☑ Linked customer ☑ Setpoint 1 ☑ Setpoint 2 ↓ Cancel OK	Allows to select more values of the parameter **OK**: confirm the selection and exit **Cancel**: exit without confirming

2.2 Description of the steps

In the parameter description the used symbols are:

⚠	Attention: Limitation of the parameter
M	With approved instrument (when the **J1** jumper of the motherboard is closed), the parameter could be read only or not displayed or set with some values only
CE-M	It identifies the available value only for the parameter when the instrument is approved
📁	Full path in the setup environment
☞	Description
🔧	Available values
🌂®	Default value
📖	It identifies an advanced function explained in the user manual

2.2.1 Calibration

Number of scales/channels

⚠   M

📁   Calibration → Scale selection → Number of scales/channels

☞   • AF03 and AF08 software versions: Number of connected scales
          • Other software versions: Number of connected scales if the **Converter channels mode** is set equal to <u>Independent mode</u> or the number of channels if the **Converter**

channels mode is set equal to <u>Dependent mode</u>

Remote scale[(1)]	Remote scale only
1[(2)]	1 scale
...	
4[(3)]	4 scales

[(1)] *Not available in the AF08 and BATCH1 software versions or when one sets the **Barcode reader serial port** equal to Auxiliary port*

[(2)] *Not available when one sets the **Converter channels mode** equal to Dependent mode*

[(3)] *Exception:*

2	AF03 software version
8	AF08 software version

1

Converter channels mode

- M
- *Not displayed in the AF03 and AF08 software versions*

Calibration → Scale selection → Converter channels mode

Converter channels mode: independent or dependent

Independent mode	Instrument connected to independent channels
Dependent mode	Instrument connected to dependent channels

Independent mode

Load cells type

- M
- *Displayed just in the AF03 and AF08 software versions*

Calibration → Scale selection → Load cells type

Type of used cells: analog or digital

Analog	Analog cells
Digital DGX	
Digital RCD	
Digital CCI AD	
Digital RCD3D	
Digital C16i	
Digital WWS	

⌧® **Analog**

Load cell DGX mode

⚠️
- M
- *Displayed just in the AF03 and AF08 software versions*
- *Displayed just when one sets the **Load cells type** equal to Digital DGX*

📁 Calibration → Scale selection → Load cell DGX mode

☞ Load cell DGX mode

🔧

Junction box mode	For use of the manufacturer
Multi-cells mode	Conversion into digital of each single analog load cell

⌧® **Junction box mode**

Number of cells (Scale x)

⚠️
- M
- *Displayed just in the AF03 and AF08 software versions*

📁 Calibration → Scale selection → Number of cells (Scale x)

☞ Number of the connected analog channels or digital cells for each scale

🔧

1 ~ 16$^{(1)}$	

$^{(1)}$ *Exception:*

4	*Analog*
24	*Digital DGX*
8	*Digital CCI AD*

⌧® **1**

Number of DGX

⚠️
- M
- *Displayed just in the AF03 and AF08 software versions*
- *Displayed just when one set the **Load cells type** equal to Digital DGX and the **Load cell DGX mode** equal to Multi-cells mode*

📁 Calibration → Scale selection → Multi-cells mode configuration → Number of DGX

☞ Number of DGX cards that are used to convert the total load cells composing all the scales

1 ~ 24	

1

Number of cells (DGXx)

- *M*
- *Displayed just in the AF03 and AF08 software versions*
- *Displayed just when one set the **Load cells type** equal to Digital DGX and the **Load cell DGX mode** equal to Multi-cells mode*

Calibration → Scale selection → Multi-cells mode configuration → Number of cells (DGXx)

Number of channels composing each DGX

1 ~ 4	

1

WWS communication mode

- *Displayed just in the AF03 and AF08 software versions*
- *Displayed just when one set the **Load cells type** equal to Digital WWS*

Calibration → Scale selection → Digital cell configuration → WWS communication mode

Communication mode between instrument and WWS digital cells

RS485 mode	Connection by wire
With radio module	Connection by radio

RS485 mode

Radio channel configuration

- *Displayed just in the AF03 and AF08 software versions*
- *Displayed just when one set the **Load cells type** equal to Digital WWS and the **WWS communication mode** equal to With radio module*

Calibration → Scale selection → Digital cell configuration → Radio channel configuration

Radio channel of the module connected to the instrument for the communication with the WWS digital cells

| 🔧 | 0 ~ 7 | |

🔰 0

WWS remote configuration

⚠️
- *Displayed just in the AF03 and AF08 software versions*
- *Displayed just when one set the **Load cells type** equal to Digital WWS*

📁 Calibration → Scale selection → Digital cell configuration → WWS remote configuration

👉 This step allows to enter in the setup environment of a connected WWS and modify the configuration.

🔧

🔰

Get WWS configuration

⚠️
- M
- *Displayed just in the AF03 and AF08 software versions*
- *Displayed just when one set the **Load cells type** equal to Digital WWS*

📁 Calibration → Scale selection → Digital cell configuration → Get WWS configuration

👉 This step allows to receive the calibration data from each WWS connected to the instrument.

🔧

🔰

Number of decimals

⚠️ M

📁 Calibration → Scale x → Parameters → Number of decimals

👉 Position of the decimal point

🔧

0	No decimals
0.0	1 decimal
0.00	2 decimals
0.000	3 decimals

0	For AF03, AF04 and AF08 software versions
0.000	For other

Unit of measure

M

Calibration → Scale x → Parameters → Unit of measure

Unit of measure

g	Grams
kg	Kilograms
t	Tons
lb	Pounds

g	For AF04 software version
kg	For other

Number of range

M

Calibration → Scale x → Parameters → Number of range

Number of calibration range

1	If there's only one measuring range
2	2 ranges
3	3 ranges

1

Multi range type

- M
- *Not displayed when one sets the **Number of range** less than 2*

Calibration → Scale x → Parameters → Multi range type

Type of the scale: multi range or multidivisional

Multi range	
Multi division	

Multi range

Division of range x

- M
- *Not displayed when one sets the **Number of range** less than 2*

Calibration → Scale x → Parameters → Division of range x

Division of the scale or the range x. The values are displayed with the decimals of the scale.

0.001	
0.002	
0.005	
0.010	
0.020	
0.050	
0.100	
0.200	

0.001

Capacity/Range x

M

Calibration → Scale x → Parameters → Capacity/Range x

Capacity of the scale or the range x

0.100 ~ 999.999	

0.100

Filtering type

M

Calibration → Scale x → Parameters → Filtering type

☞ Type and degree of filter intervention for the stability of the weight indication

🔧

FLT 0 (CE-M)	Simple weighing
FLT 1 (CE-M)	Simple weighing
FLT 2 (CE-M)	Simple weighing
FLT 3 (CE-M)	Simple weighing
H.R. 0 (CE-M)	High resolution and "A+B" mode
H.R. 1 (CE-M)	High resolution and "A+B" mode
DYN.0 (CE-M)	Weight in motion (i.e. animals weighing)
DYN.1 (CE-M)	Weight in motion (i.e. animals weighing)
DOS.0	Dosage
DOS.1	Dosage
DOS.2	Dosage
DOS.3	Dosage
SLW.0	Rather unstable weight
SLW.1	Rather unstable weight
SLW.2	Rather unstable weight
SLW.3	Rather unstable weight
H.R.2	High resolution and "A+B" mode
H.R.3	High resolution and "A+B" mode
H.R.4	High resolution and "A+B" mode
H.R.5	High resolution and "A+B" mode
H.R.6	High resolution and "A+B" mode
H.R.7	High resolution and "A+B" mode
DYN.2	Weight in motion (i.e. animals weighing)
DYN.3	Weight in motion (i.e. animals weighing)
FLT.OFF[1]	Disabled (i.e. digital load cell already filtered)
FLT.AV2[1]	Digital load cell
R.ADC D[1]	Digital load cell (with radio module)
R.ADC S[1]	Digital load cell (with radio module)
Custom	Diagnostic to be used by the manufacturer

[1] *Available just in the AF03 and AF08 software versions*

▨

H.R.1	For AF03 software version
FLT 0	For AF05 software version
SLW.0	For AF08 software version
FLT 3	For other

Division for test of stability

⚠

📁 Calibration → Scale x → Parameters → Division for test of stability

☞ Number of divisions by which the instrument detects the weight stability; the higher the number of divisions, less is sensitivity, and consequently the stability is more easily detected.

🔧

0 ~ 99	The value 0 disables the test

⚖ **2**

Zero tracking division

⚠ M

📁 Calibration → Scale x → Parameters → Zero tracking division

☞ 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.

🔧

No division (CE-M)	Tracking disabled
¼ (CE-M)	One fourth of a division
½ (CE-M)	Half division
1	1 division
2	2 divisions

⚖ **½**

Gravity value setting

⚠ M

📁 Calibration → Gravity value setting

☞ Gravity acceleration value of calibration and of use of the instrument

🔧

9.75001 ~ 9.84999	

⚖ **9.80655**

Zeroing percentage with ZERO key

⚠ M

📁 Calibration → Zeroing percentage with ZERO key

☞ Acquisition of the gross zero through the ZERO key in the weighing environment. The zeroing percentage is in relation to the capacity (± 1% ~ ± 50%).

🔧

0 ~ 50 0 ~ 2 (CE-M)	The value 0 disables the zero function

⬛® **2%**

Automatic zeroing at start up

⚠️

📁 Calibration → Automatic zeroing at start up → Type

☞ Automatic acquisition of the gross zero at start up

🔧

Disabled	
Enabled on the scale 1	Executed on the first scale only
Cyclic on all the scales	Executed cyclically on all the present scales

⬛®

Cyclic on all the scales	For AF08 software version
Enabled on the scale 1	For other

Zeroing percentage at start up

⚠️
- M
- *Displayed just when you set the **Automatic zeroing at start up** different from Disabled*

📁 Calibration → Automatic zeroing at start up → Percentage of zeroing

☞ Acquisition of the gross zero at start up. The zeroing percentage is in relation to the capacity (± 1% ~ ± 50%).

🔧

0 ~ 50 0 ~ 10 (CE-M)	

⬛® **10**

Equalisation procedure

⚠️
- M
- *Not displayed when one sets the **Number of scales/channels** than 2 or the **Converter channels mode** equal to Independent mode*
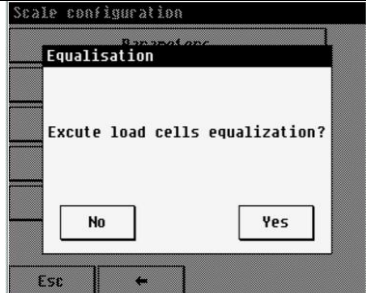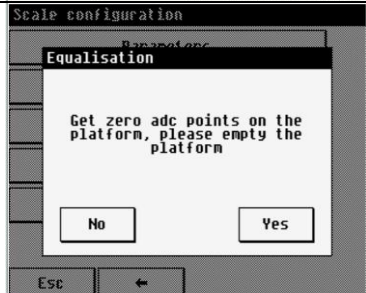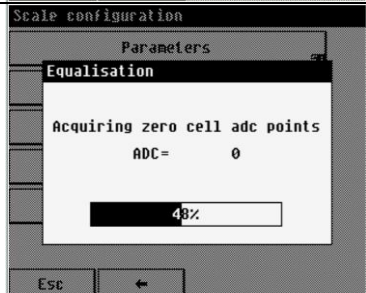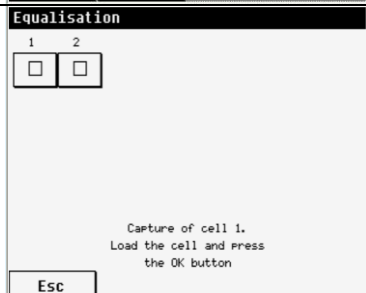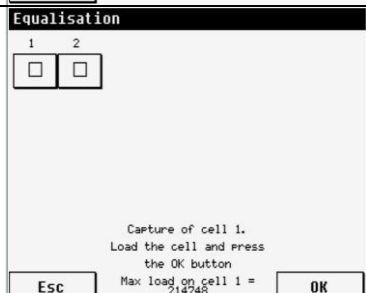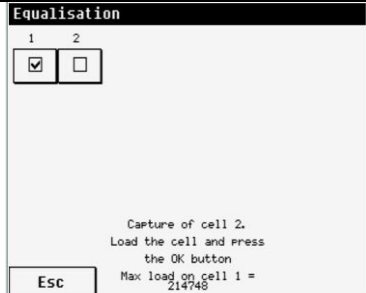
📁 Calibration → Scale x → Equalisation

👉 Cells equalisation procedure description

🔧

Step	Description	Screen
1	Press **Yes** to reset the previous equalization and start with the new equalization	
2	Unload the weighing system and press **Yes**	
3	The instrument is acquiring the unloaded system value	
4	The □ symbol appears for each cell to equalize (2 cells only in the example of figure)	
5	Load the cell 1 with a sample weight and press **OK**. NOTE: The **OK** button appears just when the cell 1 is most loaded cell	

6	The instrument is acquiring the converter points value of the cell 1	
7	If the acquisition is terminated successfully, it appears the ☑ symbol	
8	Unload the cell 1 and repeat the step 5 for the other cells	
9	If the equalization is terminated successfully, it appears the message of figure	

Calibration procedure

⚠️ **M**
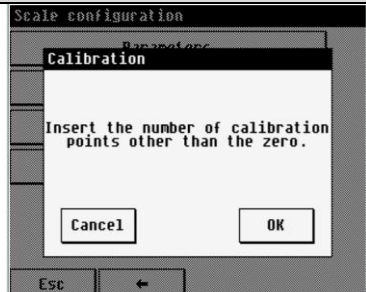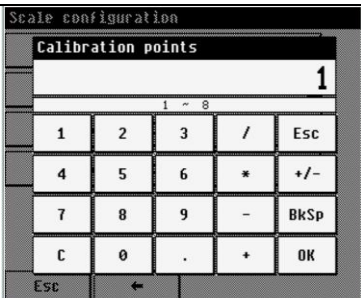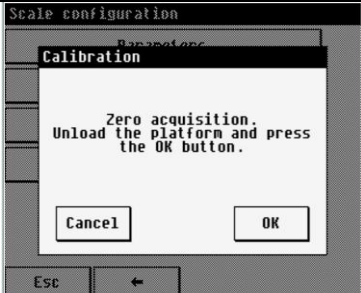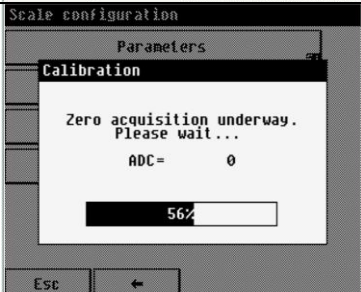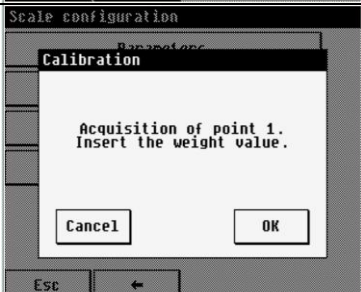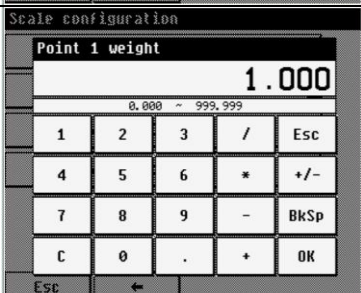
📁 Calibration → Scale x → Calibration

👉 Calibration procedure description

🔧
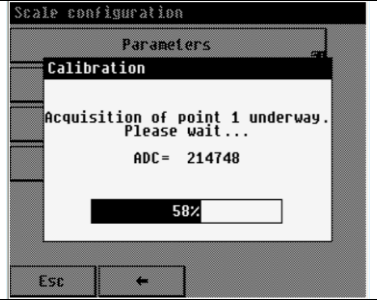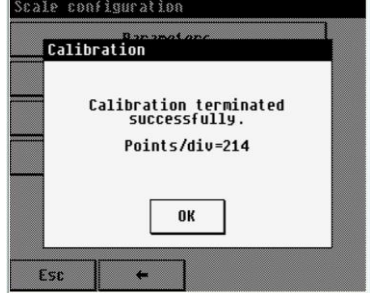
Step	Description	Screen
1	Press **OK** to insert the linearization points	

2	Insert the desired points number (from 1 to 8, besides zero) and press **OK**	
3	Unload the scale and press **OK**	
4	The instrument is acquiring the unloaded platform value	
5	Press **OK** to insert the weight of the first linearization point	
6	Insert the weight value	
7	Load the scale with a sample weight equal to entered value and press **OK**	

8	The instrument is acquiring the converter points value	
9	Repeat the step 5 for the other linearization points. In the end, if the calibration is terminated successfully, it appears the message of figure	

Zero calibration

⚠ M
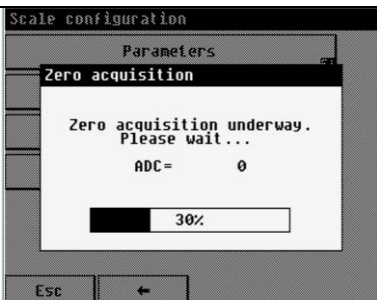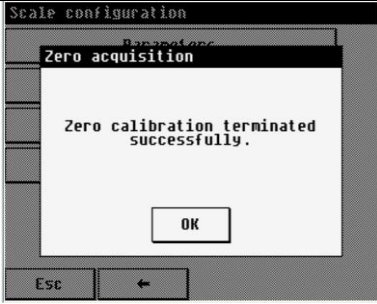
📁 Calibration → Scale x → Zero calibration

☞ Zero calibration procedure description

Step	Description	Screen
1	Unload the scale and press **OK**	
2	The instrument is acquiring the unloaded platform value	

3	If the calibration is terminated successfully, it appears the message of figure	

Calibration points

⚠️ **M**

📁 Calibration → Scale x → Calibration points

☞ Linearization points of the last calibration

🔧

Screen	Function
	Allow to insert/update the converter points and the weight of a linearization point **ADC-mV**: converts from converter points to mV and vice versa **Ins**: inserts a new point in the selected point position **Del**: Deletes the selected point **Get**: acquires the converter points of the selected point

Example: Calibration of 2 scales (independent channels mode)

	Scale 1	Scale 2
Max 1	30.0kg	1000g
e 1	0.5kg	1g
Max 2		2000g
e 2		2g
Max 3		5000g
e 3		5

Procedure to follow:
1. Calibration → Scale selection → Number of scale channels: **2**
2. Calibration → Scale selection → Converter channels mode: **Independent mode**
3. Calibration →Scale 1 → Parameters → Number of decimals: **1**

4. Calibration →Scale 1 → Parameters → Unit of measure: **kg**
5. Calibration →Scale 1 → Parameters → Number of ranges: **1**
6. Calibration →Scale 1 → Parameters → Division of range 1: **0.5**
7. Calibration →Scale 1 → Parameters → Capacity/Range 1: **30.0**
8. Calibration →Scale 1 → Calibration (See **Calibration procedure**)
9. Calibration →Scale 2 → Parameters → Number of decimals: **0**
10. Calibration →Scale 2 → Parameters → Unit of measure: **g**
11. Calibration →Scale 2 → Parameters → Number of ranges: **3**
12. Calibration →Scale 2 → Parameters → Division of range 1: **1**
13. Calibration →Scale 2 → Parameters → Capacity/Range 1: **1000**
14. Calibration →Scale 2 → Parameters → Division of range 2: **2**
15. Calibration →Scale 2 → Parameters → Capacity/Range 2: **2000**
16. Calibration →Scale 2 → Parameters → Division of range 3: **5**
17. Calibration →Scale 2 → Parameters → Capacity/Range 3: **5000**
18. Calibration →Scale 2 → Calibration (See **Calibration procedure**)

Example: Calibration of 1 scale with 2 dependent analog channels

	Scale 1
Max	30.0kg
e	0.5kg

Procedure to follow:
1. Calibration → Scale selection → Number of scale/channels: **2**
2. Calibration → Scale selection → Converter channels mode: **Dependent mode**
3. Calibration →Scale 1 → Parameters → Number of decimals: **1**
4. Calibration →Scale 1 → Parameters → Unit of measure: **kg**
5. Calibration →Scale 1 → Parameters → Number of ranges: **1**
6. Calibration →Scale 1 → Parameters → Division of range 1: **0.5**
7. Calibration →Scale 1 → Parameters → Capacity/Range 1: **30.0**
8. Calibration →Scale 1 → Equalisation (See **Equalisation procedure**)
9. Calibration →Scale 1 → Calibration (See **Calibration procedure**)

Example: Calibration of 1 scale with 4 RCD digital cells

	Scale 1
Max	30000kg
e	10kg

Procedure to follow:
1. Calibration → Scale selection → Number of scale/channels: **1**
2. Calibration → Scale selection → Load cells type: **Digital RCD**
3. Calibration → Scale selection → Number of cells (Scale 1): **4**
4. Calibration → Scale selection → Serial Number configuration → 1st load cell address: **1000**
5. Calibration → Scale selection → Serial Number configuration → 2nd load cell address: **1001**

6. Calibration → Scale selection → Serial Number configuration → 3rd load cell address: **1002**
7. Calibration → Scale selection → Serial Number configuration → 4th load cell address: **1003**
   The steps from 4 to 7 allow to configure the serial number of each digital cell (in the example the entered values are 1000, 1001, 1002 and 1003 for the first 4 cells respectively)
8. Calibration → Scale selection → Serial Number configuration → Digital cell configuration
   This step allows to send the serial number to each digital cell
9. Calibration →Scale 1 → Parameters → Number of decimals: **0**
10. Calibration →Scale 1 → Parameters → Unit of measure: **kg**
11. Calibration →Scale 1 → Parameters → Number of ranges: **1**
12. Calibration →Scale 1 → Parameters → Division of range 1: **10**
13. Calibration →Scale 1 → Parameters → Capacity/Range 1: **30000**
14. Calibration →Scale 1 → Equalisation (See **Equalisation procedure**)
15. Calibration →Scale 1 → Calibration (See **Calibration procedure**)

Example: Calibration of 1 scale with 2 DGX digital cells (4 channels for each DGX)

	Scale 1
Max	30000kg
e	10kg

Procedure to follow:
1. Calibration → Scale selection → Number of scale/channels: **1**
2. Calibration → Scale selection → Load cells type: **Digital DGX**
3. Calibration → Scale selection → Load cell DGX mode: **Multi-cells mode**
   In the multi-cells mode, it's necessary to configure the total number of cells (step 4), the number of DGX (step 5) and the number of channels for each DGX (step 6 and 7).
   In this example: 8 cells = 1 DGX x 4 channels + 1 DGX x 4 channels
4. Calibration → Scale selection → Number of cells (Scale 1): **8**
5. Calibration → Scale selection →Multi-cells mode configuration → Number of DGX: **2**
6. Calibration → Scale selection →Multi-cells mode configuration → Number of cells (DGX1): **4**
7. Calibration → Scale selection →Multi-cells mode configuration → Number of cells (DGX2): **4**
8. Calibration → Scale selection → Serial Number configuration → 1st load cell address: **1000**
9. Calibration → Scale selection → Serial Number configuration → 2nd load cell address: **1001**
10. Calibration → Scale selection → Serial Number configuration → 3rd load cell address: **1002**
11. Calibration → Scale selection → Serial Number configuration → 4th load cell address: **1003**
12. Calibration → Scale selection → Serial Number configuration → 5th load cell address: **1004**
13. Calibration → Scale selection → Serial Number configuration → 6th load cell address: **1005**
14. Calibration → Scale selection → Serial Number configuration → 7th load cell address: **1006**
15. Calibration → Scale selection → Serial Number configuration → 8th load cell address: **1007**
    The steps from 8 to 15 allow to configure the serial number of each digital cell
16. Calibration → Scale selection → Serial Number configuration → Digital cell configuration
    This step allows to send the serial number to each digital cell
17. Calibration →Scale 1 → Parameters → Number of decimals: **0**
18. Calibration →Scale 1 → Parameters → Unit of measure: **kg**

19. Calibration →Scale 1 → Parameters → Number of ranges: **1**
20. Calibration →Scale 1 → Parameters → Division of range 1: **10**
21. Calibration →Scale 1 → Parameters → Capacity/Range 1: **30000**
22. Calibration →Scale 1 → Equalisation (See **Equalisation procedure**)
23. Calibration →Scale 1 → Calibration (See **Calibration procedure**)

Example: Calibration of 4 scales with 1 radio WWS digital cell each

	Scale 1	Scale 2	Scale 3	Scale 4
Max	30000kg	30000kg	30000kg	30000kg
e	10kg	10kg	10kg	10kg

Procedure to follow:
1. Calibration → Scale selection → Number of scales/channels: **4**
2. Calibration → Scale selection → Load cells type: **Digital WWS**
3. Calibration → Scale selection → Digital cell configuration → WWS communication mode: **With radio module**

This step enables the communication with the radio module connected to the instrument
4. Calibration → Scale selection → Digital cell configuration → Radio channel configuration: **2**

This step sets the channel of the radio module connected to the instrument for the communication with the other modules connected to the WWS. In the example, the communication is on the channel 2.
5. Calibration → Scale selection → Digital cell configuration → Get WWS configuration

This step allows to receive the calibration data from each WWS (illustrated in the Table above). If the data is successfully received, it's not necessary to calibrate the instrument.

2.2.2 First programming

Language

⚠️

📁   First programming → Language

☞   Language of the instrument
NOTE: if the language is changed, on exit from setup, the instrument will ask to restore the printout formats to the factory values with the texts in the new language

🔧

Italiano	Italian (codepage 1252 Windows Latin 1)
English	English (codepage 1252 Windows Latin 1)
Français	French (codepage 1252 Windows Latin 1)
Deutsch[1]	German (codepage 1252 Windows Latin 1)
Custom[2]	Customised language

(1) *Not available in the AF01, AF03, AF05 software version with release less than 02.00, and AF02, AF04 software versions with release less than 01.01*
(2) *Available just when the texts of customised language are present*

English

Access password to setup enabling

⚠️

📁 First programming → Access password to setup → Enabling

☞ Password enabling to access to the technical menu

🔧
Disabled	
Enabled	

Disabled

Access password to setup

⚠️ *Not displayed when the **Access password to setup** is disabled*

📁 First programming → Access password to setup → Password

☞ Password value to access to the technical menu

🔧
0 ~ 65534	

0

Message to show at the start up

⚠️

📁 First programming → Message to show at the start up

☞ At the start up, the instrument shows a logo (if this parameter is empty) or a text up to 32 characters. Use the "|" character to separate the lines of the message.
See the section 4 to know how customize the logo.

🔧
Max 32 characters	

"Empty"

Touch screen calibration

⚠

📁   First programming → Touch screen calibration

👉   Allows to calibrate the touch screen following the displayed instructions (3 calibration points and 1 verify point)

🔧

🏷®

2.2.3   AF0x functions

AF01 and AF05 functions

Totalisation type

⚠

📁   AF0x functions → Totalisation function mode → Totalisation type

👉   Type of the totaliser

🔧

Loading	Totaliser in charge
Unloading	Totaliser in discharge
Both	Totaliser in charge as well as in discharge

🏷®   **Loading**

Totalisation mode

⚠

📁   AF0x functions → Totalisation function mode → Totalisation mode

👉   Mode of the totaliser: manual or automatic

🔧

Manual	Manual totaliser dependently from the Weighing mode reactivation
Automatic	Automatic totaliser upon weight stability

🏷®   **Manual**

Totalisation delay

⚠

📁 AF0x functions → Totalisation function mode → Totalisation delay

☞ Time delay (in seconds) which runs between the weight stability and the totalisation (valid only for the automatic totalisation)

🔧

0.0 ~ 999.9	

✉ 0.0

Condition of totalisation

⚠

📁 AF0x functions → Totalisation function mode → Only if output cond. is verified

☞ Number of digital output to check: only if the output is active it's possible to totalize

🔧

0 ~ 16	Number of digital output from 1 to 16, the value 0 disables the condition

✉ 0

Restore tare at the start up

⚠

📁 AF0x functions → Tare function → Restore tare at the start up

☞ Restoring of the first tare and the active tare before turning off the instrument; furthermore, if the current gross weight and the last stored gross weight before turning off the instrument are greater than zero, the stored zero is restored, otherwise the automatic zero is carried out.

🔧

Disabled	
Enabled	

✉ Disabled

Tare before the totalisation

⚠️

📁 AF0x functions → Tare function → Tare before the totalisation

👉 Tare before the totalisation

🔧

Disabled	
Enabled	
Mandatory	Compulsory execution before totalisation
Automatic mandatory	Automatic execution upon weight stability, compulsory before totalisation

✉️ **Enabled**

Tare after the totalisation

⚠️

📁 AF0x functions → Tare function → Tare after the totalisation

👉 Tare after the totalisation

🔧

Manual	
Automatic	Automatic execution after each totalisation

✉️ **Manual**

Add the database tare to the actual tare

⚠️

📁 AF0x functions → Tare function → Add dtb tare to the actual tare

👉 When an article with a linked tare is selected, the tare value is added to the actual scale tare

🔧

Disabled	
Enabled	

✉️ **Disabled**

Full weighs list warning

⚠️ Displayed just in the AF01 software version

📁 AF01 functions → Full weighs list warning

☞ Activation of a warning message when the weighs list is full (after 1000 totalisations)

🔧

Disabled	The weighs are overwritten in the list
Enabled	It's necessary to clear the list before to continue

✉ **Disabled**

AF02 functions

Minimum percentage for sampling

⚠

📁 AF02 functions → Minimum percentage for sampling

☞ Minimum weight which must be put on the scale in order to make the reference operation

🔧

Disabled	No checks
0.1% of the capacity	Greater than 0.1% of the capacity
0.3% of the capacity	Greater than 0.3% of the capacity
0.5% of the capacity	Greater than 0.5% of the capacity
1.0% of the capacity	Greater than 1.0% of the capacity

✉ **Disabled**

Type of the average piece weight update

⚠

📁 AF02 functions → Type of the APW update

☞ Update mode of the average piece weight: manual or automatic

🔧

Manual	The update is made through function 706 (See section 2.3)
Automatic	The update is made automatically

✉ **Manual**

Unit of measure of the average piece weight

⚠

📁   AF02 functions → APW unit of measure

👉   Unit of measure of the APW

🔧

g	Grams
kg	Kilograms
t	Tons
lb	Pounds

✉   **g**

Number of decimals of the average piece weight

⚠

📁   AF02 functions → APW number of decimals

👉   Number of decimals with which the APW is calculated; the indicator automatically rounds off the APW, which will influence the calculation of the number of pieces

🔧

2 ~ 6	Higher the value and greater is the accuracy in calculating the number of pieces

✉   **4**

Quantity description

⚠

📁   AF02 functions → Quantity description

👉   Description of the quantity which you want to count; this description will be shown in the display (when the pieces are displayed) and in the printouts

🔧

Max 10 characters	

✉   **PCS**

Number of decimals of the quantity

⚠

📁   AF02 functions → Quantity number of decimals

👉 Number of decimals of the quantity which you want to count

🔧

0 ~ 3	

®️ **0**

Output function quantity/weight

⚠️

📁 AF02 functions → Output function quantity/weight

👉 It's possible to select how to manage the outputs linked to a quantity setpoint function, when the indicator is out of the counting mode (APW equal to zero)

🔧

Disabled	The outputs are disabled out of the counting mode
Enabled	The outputs are managed on the NET weight, therefore the activation value are entered as weight

®️ **Disabled**

Automatic zeroing before sampling

⚠️

📁 AF02 functions → Auto zeroing before sampling

👉 By enabling this function it's performed the zeroing before make the reference

🔧

Disabled	
Enabled	

®️ **Disabled**

Scale of sampling

⚠️ It works just when you have more than one scale

📁 AF02 functions → Scale of sampling

👉 It allows to set the scale on which you want make the reference. The instrument switches automatically on the selected scale before to introduce the pieces for the reference.

🔧

Active Scale	

Remote scale	
Scale 1	
Scale 2	
Scale 3	
Scale 4	

⌧® **Disabled**

AF03 functions

Weighing mode

⚠️

📁 AF03 functions → Weighing mode

☞ Type of weighing which one wants to carry out

🔧

Entire vehicle	Simple input/output
Truck plus trailer	Input/output with trailer weighing

⌧® **Entire vehicle**

Enabling A+B function mode

⚠️ *Displayed just when the **Number of scales/channels** is greater than 1 and one sets the **Weighing mode** equal to Entire vehicle*

📁 AF03 functions → Enabling A+B function mode

☞ Enabling Weigh scale 1 + Weigh scale 2 function: it allows to perform the weighing operations on each scale or on their sum

🔧

Disabled	
Enabled	

⌧® **Disabled**

Memorisation type of input weigh

⚠️

📁 AF03 functions → Memorisation type of input weigh

☞ Memorisation type of the input weigh

🔧
By ID code	
By license plate	

Ⓩ **By ID code**

ID code generation

⚠️

📁 AF03 functions → ID code generation

☞ ID code generation for the memorization by ID code

🔧
Using the first free ID code	Each input weigh is linked to the lowest ID code available
Always a next ID code	Each input weigh is linked to the ID code following the last input weigh

Ⓩ **Using the first free ID code**

Scale management in input/output

⚠️

📁 AF03 functions → Scale management in input/output

☞ Working mode of the scales

🔧
Input / Output on both scale	You can freely use the two scales as: INPUT in the first / OUTPUT in the second and vice versa, or INPUT/OUTPUT in the first or INPUT/OUTPUT in the second
Input: scale 1 / Output: scale 2	You set the first scale as INPUT, and the second as OUTPUT
Input: scale 1 / Output: scale 1	The first scale as INPUT as well as OUTPUT

Ⓩ **Input / Output on both scale**

AF04 functions

Check type

⚠️

📁 AF04 functions → Check type

☞ Type of check which you want to make

🔧
Personalized	
Legal not destructive	According to the law, not destructive
Legal destructive	According to the law, destructive

✉ **Legal not destructive**

Production lines number

⚠

📁 AF04 functions → Production lines → Lines number

☞ Number of production lines which you want to manage: from 1 to 10

🔧
1 ~ 10	

✉ **1**

Automatic print of the sampling report

⚠ *Displayed just when the **Production lines number** is greater than 1*

📁 AF04 functions → Production lines → Automatic print of the report

☞ Automatic printing of the weighs report at the end of the sampling

🔧
Disabled	
Enabled	

✉ **Disabled**

Ask lot description before the sampling

⚠ *Displayed just when the **Check type** is equal to Personalized*

📁 AF04 functions → Lot description before sampling

☞ Insertion of the lot description and the number of pieces to check at the beginning of the sampling

	Disabled	The number of pieces to check will be set automatically to 0 and you can make a simple tolerance check with article
	Enabled	

Disabled

Lot judgement at each sample

⚠️

📁 AF04 functions → Lot judgement at each lot

☞ Check of the lot after each weigh: if the pieces to be checked are not finished but the lot is already refused, the sampling will be terminated automatically

	Disabled	You can obtain the judgement only at the end of the sampling
	Enabled	

Enabled

Tare acquisition before the sampling

⚠️

📁 AF04 functions → Tare acquisition before sampling

☞ This parameter sets the default value of the field Tare acquisition before sampling of every new article. When the field is enabled, the indicator acquires the tare for each sample of the lot at the beginning of the sampling (in other words it acquires the empty package weight)
NOTE: if you change the parameter, it's necessary to initialize the article database (See section Databases initialization) to make it effective.

	Disabled	
	Enabled	

Disabled

Totalisation only in tolerance

⚠️ *Displayed just when the Check type is equal to Personalized*

📁 AF04 functions → Totalisation only in tolerance

☞ Totalisation take place only if the weight is within the range defined in the parameter Tolerance range. If the weight is out of the range, for an instant the "OUT OF TOLERANCE"

message will be shown in the status bar

Disabled	Each weight will be totalised
Enabled	Only a weight within the range will be totalised

Disabled

Tolerance range and weigh intervals

*Displayed just when the **Check type** is equal to Personalized. For the other checks the range is fixed to TARGET-T1 ~ TARGET+T1.*

AF04 functions → Tolerance range

Range in which the weight will be considered as in tolerance. Through this step it's possible to define also the weight intervals where the weighs number will be increased.

WGH. OVER T1:
- if WGH. OVER T2 is enabled it enables the counter of the weighs from TARGET+T1 to TARGET+T2
- if WGH. OVER T2 is disabled and WGH. OVER T3 is enabled: it enables the counter of the weighs from TARGET+T1 to TARGT+T3
- if WGH. OVER T2 and WGH. OVER T3 are disabled: it enables the counter of the weighs over TARGET+T1

WGH. OVER T2:
- if WGH. OVER T3 is enabled: it enables the counter of the weighs from TARGET+T2 to TARGT+T3
- if WGH. OVER T3 is disabled: it enables the counter of the weighs over TARGET+T2

WGH. OVER T3: it enables the counter of the weighs over TARGET+T3

WGH. UNDER T1:
- if WGH. UNDER T2 is enabled it enables the counter of the weighs from TARGET-T2 to TARGET-T1
- if WGH. UNDER T2 is disabled and WGH. UNDER T3 is enabled: it enables the counter of the weighs from TARGT-T3 to TARGET-T1
- if WGH. UNDER T2 and WGH. UNDER T3 are disabled: it enables the counter of the weighs under TARGET-T1

WGH. UNDER T2:
- if WGH. UNDER T3 is enabled: it enables the counter of the weighs from TARGT-T3 to TARGET-T2
- if WGH. UNDER T3 is disabled: it enables the counter of the weighs under TARGET-T2

WGH. UNDER T3: it enables the counter of the weighs under TARGET-T3

The tolerance range has a lower bound and a upper bound.

The lower bound is equal to:
- TARGET-T1 if WGH. UNDER T1 is enabled
- TARGET-T2 if WGH. UNDER T2 is enabled and WGH. UNDER T1 is disabled
- TARGET-T3 if WGH. UNDER T3 is enabled and WGH. UNDER T1 and WGH. UNDER T2 are disabled
- 10e (20e if legal for trade) if WGH. UNDER T3, WGH. UNDER T2 and WGH. UNDER T1 are disabled

The upper bound is equal to:
- TARGET+T1 if WGH. OVER T1 is enabled
- TARGET+T2 if WGH. OVER T2 is enabled and WGH. OVER T1 is disabled
- TARGET+T3 if WGH. OVER T3 is enabled and WGH. OVER T1 and WGH. OVER T2 are disabled
- Scale capacity - tare value if WGH. OVER T3, WGH. OVER T2 and WGH. OVER T1 are disabled

NOTE: the tolerance range is shown below the table with the black colour

(TARGET-T1) ~ (Scale capacity - tare value)

AF08 functions

Printout text for WHEEL

⚠️

📁 AF08 functions → Printout text for WHEEL

☞ Text for the scale which you want to weigh; this description will be shown in the relative printouts

🔧
Max 10 characters	

WHEEL

Printout text for AXLE

⚠️

📁   AF08 functions → Printout text for AXLE

☞   Text for the scales couple which you want to weigh; this description will be shown in the relative printouts

🔧
Max 10 characters	

🔷®   **AXLE**

Automatic zeroing of weighs list

⚠

📁   AF08 functions → Automatic zeroing of weighs list

☞   Manual or automatic zeroing of the weighs list on the reaching of the maximum number of weighs

🔧
Disabled	Reached the maximum number of totalisation (3500), the instrument asks to confirm the zeroing of the list before to continue
Enabled	Reached the maximum number of totalisation (3500), the list of all the weighs is automatically cleared

🔷®   **Disabled**

Number of decimals of the coordinates

⚠

📁   AF08 functions → Gravity centre calculation → Coordinates number of decimals

☞   Number of decimals of the coordinates of each scale and the centre of gravity

🔧
0	No decimals
0.0	1 decimal
0.00	2 decimals
0.000	3 decimals

🔷®   **2**

Unit of measure of the coordinates

⚠

📁 AF08 functions → Gravity centre calculation → Coordinates unit of measure

👉 Unit of measure of the coordinates of each scale and the centre of gravity

🔧
Max 2 characters	

✒ **m**

BATCH1 functions

Dosage type selection

⚠️

📁 BATCH1 functions → Dosage type selection

👉 Type of the dosage

🔧
Loading dosage	Dosage in loading mode
Unloading dosage	Dosage in unloading mode

✒ **Loading dosage**

Configured scale

⚠️ *Displayed just when the **Number of scales/channels** is greater than 1*

📁 BATCH1 functions → Main settings → Configured scale

👉 Selection of the scale to configure for the dosage. The following steps are related to the scale configured in this step.

🔧
Scale 1	
Scale 2	
Scale 3	
Scale 4	

✒ **Scale 1**

Maximum dosable weight

⚠️

📁   BATCH1 functions → Main settings → Maximum dosable weight

☞   In dosages in loading this is the maximum weight value which can be loaded onto the scale when executing a formula, which is normally programmed as the full scale value. The indicator, when checking whether the weight on the scale is greater than the maximum weight, it takes into consideration also the weight zeroed when the dosage is started.
In dosages in unloading with setting of the total weight to be dosed, this is the value that will be considered, along with the ZERO TOLERANCE WEIGHT step, in order to recalculate the weight to be dosed for each cycle.

🔧
0.000 ~ SCALE CAPACITY	From 0 to the scale capacity

📖   **6.000**

Flight waiting time

⚠️

📁   BATCH1 functions → Main settings → Flight waiting time

☞   The dosage is interrupted (and relay 1 is also disabled) in the moment in which the TARGET minus the MATERIAL WEIGHT IN FLIGHT is reached; after this, a wait time (in seconds) starts equal to the FLIGHT WAITING TIME in which one presumes that there is still material on the scale and the FINAL WEIGHT is reached.

🔧
0.0 ~ 99999.9	

📖   **5.0**

Zero tolerance weight

⚠️

📁   BATCH1 functions → Main settings → Zero tolerance weight

☞   In dosages in loading if the minimum and maximum tare weights have not been entered for the selected formula (📖) the zero tolerance weight is the maximum weight which can be on the scale when the dosage is begun: if the weight of the material is less than the value set in this parameter; upon the dosage START this material is automatically zeroed and the operations can start; otherwise an "OUT OF ZERO" error is signaled.
During the unloading phase the ZERO TOLERANCE WEIGHT represents the disabling threshold of the discharge relay; in fact, when the weight reaches or goes below this threshold, the indicator waits for the WAIT FOR DISCHARGE END and disables the discharge

relay (R3).

In dosages in unloading with setting of the total weight to be dosed, this is the value that will be considered, along with the MAXIMUM WEIGHT, in order to recalculate the weight to be dosed for each cycle.

🔧	0.000 ~ SCALE CAPACITY	

🖾 **0.000**

Start threshold for silo filling

⚠️ *Displayed just when the Dosage type selection is equal to Unloading dosage*

📁 BATCH1 functions → Main settings → Start threshold for silo filling

👉 Set the minimum weight of the material, which, once added to the target of the selected formula, determines the threshold of the silo's filling beginning.

🔧	0.000 ~ MAXIMUM DOSABLE WEIGHT	

🖾 **0.000**

End threshold for silo filling

⚠️ *Displayed just when the Dosage type selection is equal to Unloading dosage*

📁 BATCH1 functions → Main settings → End threshold for silo filling

👉 Set the filling end weight, in other words, the threshold which must be exceeded by the weight of the material in the silo, in order to end the filling activity and pass to the dosage activity in unloading.

🔧	FILLING START WEIGHT ~ MAXIMUM DOSABLE WEIGHT	

🖾 **0.000**

Filling duration time

⚠️ *Displayed just when the Dosage type selection is equal to Unloading dosage*

📁 BATCH1 functions → Main settings → Filling duration time

👉 Set the maximum time in seconds which must be used for the silo filling activity. Once this time has passed from the beginning of the filling of the silo, if this operation does not end within the set time, the system goes into the dosage out of time error.

0 ~ 99999.9	

0.0

Filling start-up

*Displayed just when the **Dosage type selection** is equal to Unloading dosage*

BATCH1 functions → Main settings → Filling start-up

The check for enabling the automatic loading of the silo takes place with the start of the new dosage cycle, therefore after giving a restart impulse.

At dosage beginning	
At dosage end	

At dosage beginning

Total unloading end threshold

*Displayed just when the **Dosage type selection** is equal to Loading dosage*

BATCH1 functions → Main settings → Total unloading end threshold

Set the threshold which defines the end of the total unloading. For filling drums more consecutive set its value = the maximum weight the scale.

0.000 ~ SCALE CAPACITY	

0.000

Wait for discharge end

*Displayed just when the **Dosage type selection** is equal to Loading dosage*

BATCH1 functions → Main settings → Wait for discharge end

Wait time in seconds for terminating a discharge activity from when the weight value on the scale goes below the TOTAL UNLOADING END THRESHOLD value (see the description of the dosage cycle). The discharge relay, during this time, remains active.

	0.0 ~ 99999.9	

🔧 0.0

Wait time for manual dosage end

⚠️ *Displayed just when the **Dosage type selection** is equal to Unloading dosage*

📁 BATCH1 functions → Main settings → Wait time for manual dosage end

👉 Waiting time in seconds during the loading phase which goes from the reaching of the target and the automatic ending of a manual activity. Therefore if in the loading phase, once the set target is reached, a START IMPULSE is not given within this time period (to pass to the following activity), the indicator automatically passes to the complete unloading activity. For the functioning specifics see section **"MANUAL DOSAGE OF A PRODUCT IN LOADING"**📖.

🔧

0.0	The activity is ended only by giving a START impulse. The weight is accepted even if it is out of tolerance by giving a START impulse.
0.1 ~ 99999.8	The system goes into out of dosage time error if the **MAXIMUM TIME FOR THE DOSAGE** has been reached before the accurate dosage time is reached. The weight is accepted even if it is out of tolerance by giving a START impulse.
99999.9	The system goes into out of dosage time error although the **MAXIMUM TIME FOR THE DOSAGE** has been set. The weight is accepted only if it is within tolerance; the START impulse does not end the activity until the weight returns within tolerance.

⬛ 0.0

Maximum dosage duration

⚠️

📁 BATCH1 functions → Main settings → Maximum dosage duration

👉 Maximum time in seconds for executing of the formula. Once this time has

passed from the beginning of the dosage, if the formula is not ended, the system has a dosage out of time error. Programmed at 0, it has no effect.

🔧

0.0 ~ 99999.9	

📇 **0.0**

Maximum weight variation in time

⚠️

📁 BATCH1 functions → Main settings → Maximum weight variation in time

☞ This step allows to configure the number of divisions corresponding to the maximum weight variation allowed in the time window **BATCHING PEAK ELIMINATION TIME** during the dosages in loading, which once exceeded, enables the peak filter function (See section Peaks filter).
By setting the value 0, the control will be disabled.

🔧

0 ~ SCALE CAPACITY	

📇 **0**

Batching peak elimination time

⚠️

📁 BATCH1 functions → Main settings → Batching peak elimination time

☞ This step allow to configure the time in seconds that the instrument takes into consideration to check if the weight variation is greater than the value set in the previous step, and to enable the peak filter function (See section Peaks filter). The 0 value disables the checking.

🔧

0.0 ~ 99999.9	

📇 **0.0**

Peaks filter

☞ It may occur that the material falling onto the load receiver causes peak values, in such a manner that for a few fractions of a second the shown weight is incorrect. To avoid the occurrence of undesirable situations created by the difference between real weight and detected weight such as the activation of a batching output, the programme is able to eliminate the peak values by

averaging the detected weights on the basis of the BATCHING-PEAK ELIMINATION TIME and the MAXIMUM WEIGHT VARIATION IN TIME: if the detected weights average exceeds the MAXIMUM WEIGHT VARIATION, during the dosages in loading, the weight is frozen at the window start value until the variation is cancelled or returns within the limits.

Wait stability time

⚠

📁 BATCH1 functions → Time settings →Wait stability time

☞ This check functions in the single dosage in unloading as well as in the automatic repetition of the dosage cycles.
The signal coming from the scale's load cell must be stable when the START command is given (or in the moment in which a dosage must start in a repetition of cycles), or in any case it must become stable within the time set here; if it's not like this, the "INSTABILITY ERROR" error message is displayed, and the dosage does not begin. If one sets a time value equal to zero, the check becomes instantaneous in the moment in which a start impulse is given.

🔧
0.0 ~ 99999.9	

🔖 **5.0**

Data reading wait

⚠

📁 BATCH1 functions → Time settings → Data reading wait

☞ The instrument waits for this time (in seconds) before passing to the following phase in order to allow the reading of the data relative to the phase made.
The function is enabled after the possible tolerance test at the end of the activity (both load and unload).
Programmed at 0, it has no effect.

🔧
0.0 ~ 99999.9	

🔖 **0.0**

Filtering time

⚠

📁 BATCH1 functions → Time settings → Filtering time

☞ Wait time in seconds which elapses:
- In the automatic dosages, from the reaching of the TARGET – FLIGHT WEIGHT threshold (end of the fine dosage) and the beginning of the FLIGHT WAIT TIME;
- In the total unloads, between the reaching of the TOTAL UNLOADING END THRESHOLD and the beginning of the WAIT TIME FOR THE THRESHOLD END.

🔧

0.0 ~ 99999.9	

⊠ **0.0**

Weight display on unloading

⚠

📁 BATCH1 functions → Visualisation → Weight display on unloading

☞ It's possible to select whether to view the gross weight or the net weight on the scale during the unloading activity.

🔧

Gross	
Net	

⊠ **Gross**

Manual dosage display screen

⚠

📁 BATCH1 functions → Visualisation → Manual dosage display screen

☞ It's possible to select whether to view the special display for manual dosage to notice the tolerance with the huge weight display.

🔧

Disabled	
Enabled	

⊠ **Enabled**

Slow execution mode

⚠

📁 BATCH1 functions → Slow execution mode

👉 In this parameter one decides when the slow dosage will be performed.

🔧

Every cycle	On every dosage cycle
End cycle	only at the last cycle (if the cycles are plus one)

🖾 **Every cycle**

Relay tapping on of slow mode

⚠️

📁 BATCH1 functions → Relay blinking function → Relay tapping on of slow mode

👉 When the target weight minus the slow weight and the flight weight is reached, the R2 (to default) fine dosage output can be opened and closed according to the "on" phase (in seconds) set in this step (TAPPING), until the flight weight is reached.
By setting a value equal to 0 the tapping function is disabled.

🔧

0.00 ~ 2.50	

🖾 **0.00**

Relay tapping off of slow mode

⚠️

📁 BATCH1 functions → Relay blinking function → Relay tapping off of slow mode

👉 When the target weight minus the slow weight and the flight weight is reached, the R2 (to default) fine dosage output can be opened and closed according to the "off" phase (in seconds) set in this step (TAPPING), until the flight weight is reached.
By setting a value equal to 0 the tapping function is disabled.

🔧

0.00 ~ 2.50	

🖾 **0.00**

Flight correction percentage

⚠️

📁 BATCH1 functions → Weight in flight → Flight correction percentage

👉 In this parameter one decides whether (and in what percentage) one wants to carry out an automatic correction of the material weight in flight depending on the one stored in the dosage previously carried out.
This function implies that the tolerance test has been enabled in the ENABLING TOLERANCE TEST step.
The 0 value disables the automatic flight correction.
If one sets a number between 1 and 100 one will have the automatic correction of the material weight which was obtained in the previous dosage, in the percentage set here.
The setting carried out in this parameter is valid for all the automatic programmed dosage activities.

🔧
0 ~ 100	

🔏 **0%**

Flight correction range

⚠️

📁 BATCH1 functions → Weight in flight → Flight correction range

👉 In this parameter one decides within which range, as a percentage, of the ACTIVITY target one wants to perform the fly correction set on **FLIGHT CORRECTION PERCENTAGE** parameter.
If one sets a number between 1 and 100, the correction range set in **FLIGHT CORRECTION PERCENTAGE** parameter takes effect within this range (even if it's out of tolerance).
NOTE: the 0 value disables the function.

🔧
0 ~ 100	

🔏 **0%**

Production programme enabling

⚠️

📁 BATCH1 functions → Production programme enabling

☞ The production program is a dosage of more formulas executed sequentially.
This step allows enabling the production program function.

🔧

Disabled	Disabling production program
Enabled	Enabling production program

Disabled

Formula weight setting mode

⚠️

📁 BATCH1 functions → Formula → Formula weight setting mode

☞ This function allows to decide the execution mode of the stored formula.

🔧

Formula weighs	The dosage is carried out as set in the formula. It is possible to set the repetition of various consecutive dosage cycles
Setting of the total weight	Here one sets the total weight which one wants to dose with the selected formula; the instrument automatically recalculates the weight to be dosed for each formula on the basis of the percentage which each activity occupies in respect to the formula total.(see section "FORMULA EXECUTION MODE" 📖).

Formula weighs

Print formula on total weight

⚠️ *Displayed just when the* **Dosage type selection** *is equal to Setting of the total weight*

📁 BATCH1 functions → Formula → Print formula on total weight

☞ This function allows to print formula data on total weight mode.

🔧

Disabled	
Enabled	

Disabled

Formula selection mode

⚠

📁 BATCH1 functions → Formula → Formula selection mode

☞ The selection of the formula to be carried out takes place in one of the modes.

🔧

Keyboard	Selection from keyboard
4 inputs binary combination	Selection through the binary combination of 4 external inputs
2 inputs	Selection of previous/following formula through 2 external inputs
Encoder	Selection of previous/following formula through 2 external inputs
Rotary switch	Selection of previous/following formula through rotary switch

Keyboard

Enabling tolerance test

⚠

📁 BATCH1 functions → Tolerance check → Enabling tolerance test

☞ This step allows enabling the tolerance test, in other words the check on the dosage accuracy (see section "TOLERANCE CHECK MODE" 📖)

🔧

Disabled	The function is disabled
Test on weight	The function is enabled and the tolerance value is expressed in weight
Test on target percentage	The function is enabled and the tolerance value is expressed in percentage with respect the target

Test on weight

On time of tolerance relay

⚠

📁 BATCH1 functions → Tolerance check → On time of tolerance relay

👉 The R6 and R7 relays are used to signal whether the contents are within the tolerance range (R7) or not (R6), forecasting an automatic discharge. During the dosage error or correct dosage indication, the R6 and R7 relays will remain active (contact closed) for this time period (in seconds).

🔧

0.0 ~ 99999.9	

0.5

Pulses per litre

⚠️

📁 BATCH1 functions → Volume counter → Pulses per litre

👉 The volume counter allows the dosage of a liquid. This dosage is executed concurrently at the weight dosage cycle and 3 outputs are managed: dosage enabling, speed and flow-rate alarm.

🔧

0 ~ 200	

0

Flight wait time

⚠️

📁 BATCH1 functions → Volume counter → Flight wait time

👉 The volume dosage stops when it reaches the TARGET – FLIGHT VOLUME, then start a wait equal to the flight waiting time in seconds where it is assumed that the liquid still flows.

🔧

0.0 ~ 25.0	

5.0

Target volume

⚠️

📁 BATCH1 functions → Volume counter → Target volume

☞ Insert the liquid quantity to dose in liters.

🔧

0.0 ~ 99999.9	

🖾 **0.0**

Slow volume

⚠️

📁 BATCH1 functions → Volume counter → Slow volume

☞ Insert the slow liquid quantity. When the dosed volume reaches the value of TARGET – SLOW VOLUME – FLIGHT VOLUME, the fast dosage terminates and the slow dosage starts

🔧

0.0 ~ 99999.9	0.0 < SLOW < (TARGET – FLIGHT)

🖾 **0.0**

Flight volume

⚠️

📁 BATCH1 functions → Volume counter → Flight volume

☞ Insert the flight liquid quantity, the liquid that still flows when the volume dosage enabling output is disabled.

🔧

0.0 ~ 99999.9	0.0 < FLIGHT < TARGET

🖾 **0.0**

Minimum flow rate

⚠️

📁 BATCH1 functions → Volume counter → Minimum flow rate

☞ In the volume dosage cycle, the flow-rate of liquid is calculated (in l/min). If the flow-rate is less than the value set in this step for a time equal to the ALARM TIME(see next step), the dosage is stopped and the flow-rate alarm output is enabled.

0.0 ~ 99999.9	

0.0

Alarm time

BATCH1 functions → Volume counter → Alarm time

The alarm time is the time in seconds where the flow rate must remain below the minimum value to stop the dosage. The value 0 disables the function.

0.0 ~ 25.0	

0.0

Speed relay on time

BATCH1 functions → Volume counter → Speed relay on time

When the target volume minus the slow volume and the flight volume is reached, the dosage output can be opened and closed according to the "on" phase set (in seconds) in this step (TAPPING), until the flight volume is reached.
By setting a value equal to 0 the tapping function is disabled.

0.00 ~ 2.50	

0.00

Speed relay off time

BATCH1 functions → Volume counter → Speed relay off time

When the target volume minus the slow volume and the flight volume is reached, the dosage output can be opened and closed according to the "off" phase (in seconds) set in this step (TAPPING), until the flight volume is reached.
By setting a value equal to 0 the tapping function is disabled.

0.00 ~ 2.50	

⊗®   **0.00**

2.2.4   Generic functions

⚠ For the AF02 software version, the description of the Totalisation type parameter, Totalisation mode parameter, Totalisation delay parameter, Condition of totalisation parameter, Restore tare at the start up parameter, Tare before the totalisation parameter, Tare after the totalisation parameter, Add the database tare to the actual tare parameter is inserted in the AF01 and AF05 functions section but the path of each parameter is different.

Totalisation mode

⚠   *Displayed just in the AF03, AF04 and AF08 software versions*

📁   Generic functions → Totalisation function mode → Totalisation mode

☞   Mode of the totaliser

🔧

Manual	Manual totaliser dependently from the Weighing mode reactivation
Automatic[(1)]	Automatic totaliser upon weight stability
Manual independently from react.	Manual totaliser always active
Automatic with tare execution[(1)]	Automatic totaliser upon weight stability with tare execution after each totalisation

[(1)]*Available just in the AF04 software version*

⊗®

Automatic	For AF04 software version
Manual	For other

Ask before reset the total

⚠   *Not displayed in the BATCH1 software version*

📁   Generic functions → Totalisation function mode → Ask before reset the total[(1)]
       [(1)] *For AF01 and AF05 software versions the path is: AF0x functions → Totalisation function mode → Ask before reset the total*

☞   It's possible to select the automatic resetting of the totals when these are printed or the resetting upon request

🔧

Disabled	
Enabled	

⊗®   **Disabled**

Tare type

⚠️

📁 Generic functions → Tare function → Tare type[1]

[1] For AF01 and AF05 software versions the path is: AF0x functions → Tare function → Tare type

☞ Type of the tare

🔧

Unlocked	The tare value is cancelled automatically when the scale is unloaded
Locked	The tare value is cancelled manually only
Disabled[2]	All the tare functions are disabled

[2] Available just in the AF03, AF04 and AF08 software versions

🔒® **Locked**

Additional tare before output weigh

⚠️ *Displayed just in the AF03 software version*

📁 Generic functions → Tare function → Add. Tare before output weigh

☞ Enabling of the request to insert an additional tare, at the moment of the output weigh execution

🔧

Disabled	
Enabled	

🔒® **Disabled**

Tare limitations for direct sale

⚠️ M

📁 Generic functions → Tare function → Tare limitations for direct sale[1]

[1] For AF01 and AF05 software versions the path is: AF0x functions → Tare function → Tare limitations for direct sale

☞ It's possible to limit the functions of the tare with approved instrument:
- the semiautomatic tare cannot be modified with a manual or calculated tare, or one from database;
- the manual or calculated tare, or one from database must be entered or modified only with unloaded scale

🔧

Disabled	

Enabled	

Disabled

Enabling of automatic tare

Displayed just in the BATCH1 software version

Generic functions → Tare function → Enabling of automatic tare

It is possible to select whether the gross weight on the scale is tared or not at the dosage start.

Disabled	If no tare value has been entered, the entire weight on the scale is zeroed; while if a semiautomatic or manual tare is entered, the net weight is considered to be the dosage weight start.
Enabled	The gross weight on the scale is entirely tared; therefore the dosage always starts with the net weight at zero.

Disabled

Weighing mode reactivation

Generic functions → Weighing mode reactivation

Reactivation mode of the printout and the totalisation function

Weight instability	
Complete scale unloading	
Always active[1]	

[1]Not available in the AF03, AF04 and AF08 software versions

Weight instability	For AF03 and AF08 software versions
Complete scale unloading	For other

Automatic calibration warning (months)

Generic functions → Automatic calibration warning → Number of months

Number of months passed since the last calibration; after this, one is advised to recalibrate the instrument

🔧	0 ~ 99	

⮺ **0**

Automatic calibration warning (weighs)

⚠️

📁   Generic functions → Automatic calibration warning → Number of weighs

👉   Number of weighs made since the last calibration; after this, one is advised to recalibrate the instrument

🔧	0 ~ 99999	

⮺ **0**

Motherboard warming time

⚠️

📁   Generic functions → Motherboard warming time

👉   Warming time of the motherboard in seconds

🔧	0 ~ 60	

⮺ **0**

Weight window zoom enabling

⚠️

📁   Generic functions → Weight window zoom → Enabling

👉   Screen saver function enabling: the weight is displayed with a bigger font like in the figure below.
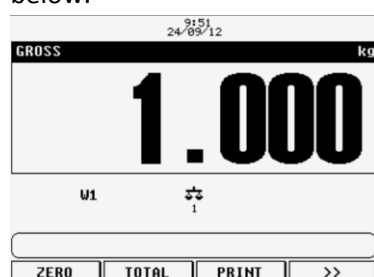
	Disabled	
	Enabled	

 Disabled

Weight window zoom activation time

⚠ *Displayed just when the **Weight window zoom enabling** is Enabled*

📁 Generic functions → Weight window zoom → Activation delay time

☞ Activation delay time (in seconds[1]) of the screen saver in the weighing environment. When a key is pressed, the visualization switches to the standard main screen

[1] For the AF01, AF03, AF05 software versions with release less than 02.00 and AF02, AF04 software versions with release less than 01.01, the time is in minutes.

🔧

0 ~ 255	The value 0 enables the screen saver permanently

 5

2.2.5 Shortcuts

Keyboard customisation (Function keys: F1, …, F10)

⚠

📁 Shortcuts → Keyboard customisation → Fx

☞ Each function key can be:
- Disabled
- Linked to a function executed when the key is pressed
- Linked to a sequence of functions (max 10) executed when the key is pressed

🔧

Disabled	The key is disabled
Single function	See section 2.3 for the functions list
Sequence 1	See **Functions sequence**
…	
Sequence 10	

 Single function (104. Preset tare) for all the function keys

Keyboard customisation (Other keys: TARE/ESC, …)

⚠

📁 Shortcuts → Keyboard customisation → TARE/ESC (SCALE/HELP, ON-OFF/CLEAR, ...)

☞ The other keys with fixed function (,,, and) can be disabled or enabled only

🔧
Disabled	The key is disabled
Enabled	The key is enabled and its function is described in the user guide ( )

Ⓡ **Enabled for all the other keys**

Toolbar customization (Button title)

⚠️

📁 Shortcuts → Toolbar customisation → Button x → Title

☞ The toolbar in the bottom part of the display in the weighing environment has 4 buttons: each button can be customized by setting the title.

🔧
Max 8 characters	

Ⓡ
Button 1	Button 2	Button 3	Button 4	
ZERO	M+[(1)]	PRINT	>>	For AF01 and AF05 software versions
SAMPLE	M+	PRINT	>>	For AF02 software version
ENTRY	EXIT	PRINT	>>	For AF03 software version
START	CHECK	CANCEL	>>	For AF04 software version
ZERO	M+	TOTAL	>>	For AF08 software version
START	PAUSE	TOTAL	>>	For BATCH1 software version

[(1)] For the AF01, AF05 software versions with release less than 02.00, the title is TOTAL.

Toolbar customization (Button function)

⚠️

📁 Shortcuts → Toolbar customisation → Button x → Button function

☞ The toolbar in the bottom part of the display in the weighing environment has 4 buttons: each button can be customized by setting the linked function executed when the button is pressed.

🔧
Disabled	The button is disabled

Single function	See section 2.3 for the functions list
Sequence 1	See **Functions sequence**
...	
Sequence 10	

Button 1	Button 2	Button 3	Button 4	
Single function (101)	**Single function (702)**	**Single function (202)**	**Single function (301)**	For AF01 and AF05 software versions
Single function (704)	**Single function (701)**	**Single function (202)**	**Single function (301)**	For AF02 software version
Single function (701)	**Single function (702)**	**Single function (202)**	**Single function (301)**	For AF03 software version
Single function (704)	**Single function (701)**	**Single function (705)**	**Single function (301)**	For AF04 software version
Single function (102)	**Single function (701)**	**Single function (704)**	**Single function (301)**	For AF08 software version
Single function (701)	**Single function (702)**	**Single function (801)**	**Single function (301)**	For BATCH1 software version

Functions sequence

⚠️

📁 Shortcuts → Functions sequence → Sequence x

☞ The indicator has 10 functions sequences, each sequence may have 1 to 10 functions: every sequence can be linked to a function key, to a toolbar button or to a button in the customizable display area (See section 5).
When you enter into the step, it appears the following screen:

🔧

	Preamble	Function
1	**0 ~ 32767** **and** **-1 for the standard functioning**	See section 2.3 for the functions list 0 to disable the function
...	""	""

10	""	""

Sequence 1:
  1. **Preamble=1 Function=502**
  2. **Preamble=-1 Function=504**
  3. **Preamble=13 Function=205**
The other sequences are empty
	For AF04 software version
	The sequence 1 is configured to delete the 2nd input text content, insert the 2nd input text content and send to print serial port the print format 13 sequentially

All sequences are empty	For other
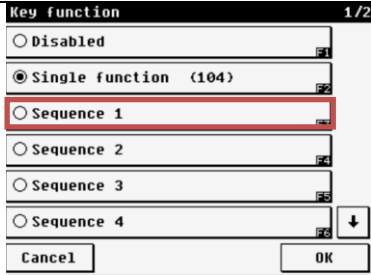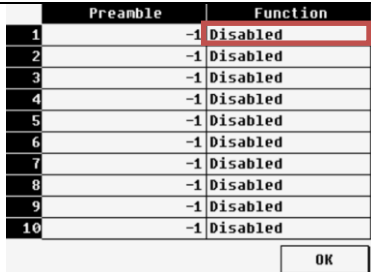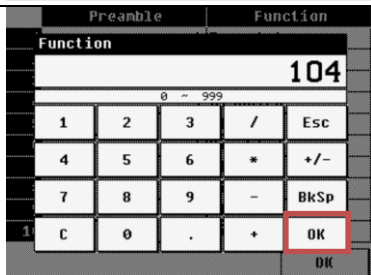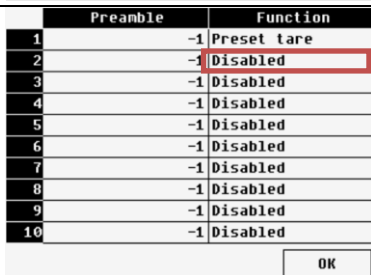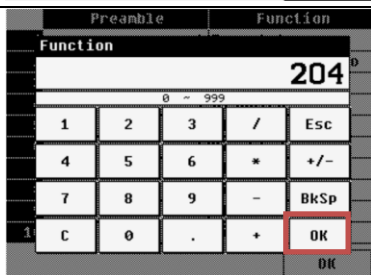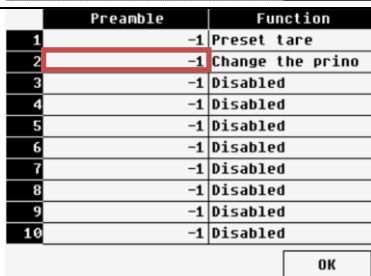
Example: Sequence 1 linked to the F1 key
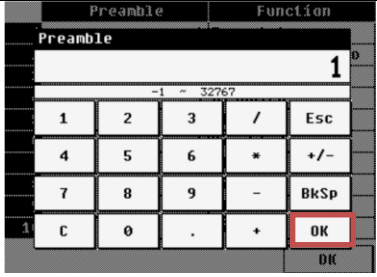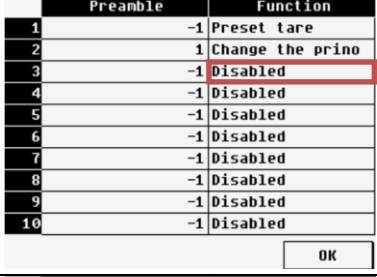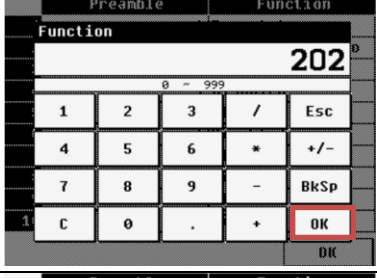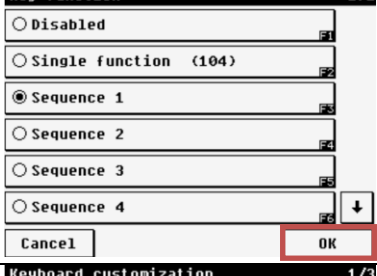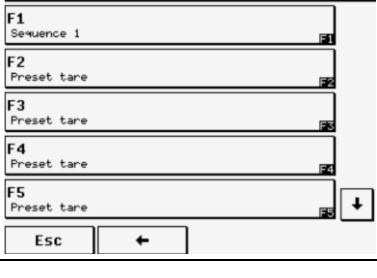
This example shows the procedure to configure the F1 key to execute the following functions when it's pressed:
-   Insert a preset tare
-   Change the print format of the 1st print function
-   Execute the simple printout

Procedure to follow:

Step	Description	Screen
1	Press the **Shortcuts** button	
2	Press the **Keyboard customization** button	
3	Press the **F1** button	

4	Select the **Sequence 1** to link it to the key	
5	Press the field of the Function 1	
6	Insert the code of the 1st function (104. Preset tare) and press **OK**	
7	Press the field of the Function 2	
8	Insert the code of the 2nd function (204. Change the printout format) and press **OK**	
9	Press the preamble field of the Function 2	

10	Insert the parameter of the 2nd function (1 to change the format of the first print function directly)	
11	Press the field of the Function 3	
12	Insert the code of the 3rd function (202. Simple printout) and press OK	
13	Press **OK**	
14	Press **OK**	
15	Now the Sequence 1 is linked to the F1 key	

2.2.6   Databases

Enabling database

⚠️

📁   Databases → Main configuration → Enabling database[1]
[1] *For AF03 software version the path is: Databases → Enabling database*

☞   It's possible to enable or disable the management of all the databases[2]
[2] *For AF03 software version it's possible to select which databases to enable*

🔧

Disabled	The access functions to the database are disabled
Enabled	The access functions to the database are enabled

✉️   **Enabled**

Number of decimals

⚠️   *Not displayed in the AF03 software version*

📁   Databases → Main configuration → Number of decimals

☞   Number of decimals of each database, in relation to the total values: if the number of decimals is less than the one of the active scale, the displayed or printed total value will be automatically rounded off.
NOTE: the number of decimals should be set as the decimals in calibration

🔧

0	No decimals
0.0	1 decimal
0.00	2 decimals
0.000	3 decimals

✉️

0	For AF04 and AF08 software versions
0.000	For other

Unit of measure

⚠️   *Not displayed in the AF03 software version*

📁   Databases → Main configuration → Unit of measure

☞   Unit of measure of each database, in relation to the total values: if the number of decimals is less than the one of the active scale, the displayed or printed total value will be automatically

rounded off.

NOTE: the unit of measure should be set as the unit in calibration

g	Grams
kg	Kilograms
t	Tons
lb	Pounds

g	For AF04 software version
kg	For other

Safety password enabling

Databases → Safety password → Enabling

Password enabling to access to the databases: the functions to insert, update or delete an element in the database will be protected from password. Only the selection will not be protected.

Disabled	
Enabled	

Disabled

Safety password

*Not displayed when the **Safety password enabling** is equal to Disabled*

Databases → Safety password → Password

Password value to access to the databases

0 ~ 65534	

0

AF01 Databases customisation

Article dtb customization

📁   Databases → Article dtb customisation

👉   It's possible to enable or disable the fields of the article database. The first field (Description 1: 1st description line, max 20 characters) is always enabled.

🔧

☑ **Description 2**	2nd description line, max 20 characters
☑ **Description 3**	3rd description line, max 20 characters
☑ **Linked tare**	Linking of a tare in the database
☑ **Linked customer**	Linking of a customer in the database
☑ **Setpoint 1**	Activation value of the 1st digital output
☑ **Setpoint 2**	Activation value of the 2nd digital output
☑ **Setpoint 3**	Activation value of the 3rd digital output

📧   **All enabled**

Customer dtb customization

⚠️

📁   Databases → Customer dtb customisation

👉   It's possible to enable or disable the fields of the customer database. The first field (Description 1: 1st description line, max 30 characters) is always enabled.

🔧

☑ **Description 2**	2nd description line, max 30 characters
☑ **Description 3**	3rd description line, max 30 characters
☑ **Description 4**	4th description line, max 30 characters
☑ **Description 5**	5th description line, max 30 characters

📧   **All enabled**

AF02 Databases customisation

Article dtb customization

⚠️

📁   Databases → Article dtb customisation

👉   It's possible to enable or disable the fields of the article database. The first field (Description 1: 1st description line, max 20 characters) is always enabled.

🔧

☑ **Description 2**	2nd description line, max 20 characters

☑ **Description 3**	3rd description line, max 20 characters
☑ **Average piece weight**	Average piece weight
☑ **Linked tare**	Linking of a tare in the database
☑ **Setpoint 1**	Activation value of the 1st digital output
☑ **Setpoint 2**	Activation value of the 2nd digital output
☑ **Setpoint 3**	Activation value of the 3rd digital output
☑ **Linked customer**	Linking of a customer in the database

All enabled

Customer dtb customization

⚠

📁 Databases → Customer dtb customisation

☞ It's possible to enable or disable the fields of the customer database. The first field (Description 1: 1st description line, max 30 characters) is always enabled.

☑ **Description 2**	2nd description line, max 30 characters
☑ **Description 3**	3rd description line, max 30 characters
☑ **Description 4**	4th description line, max 30 characters
☑ **Description 5**	5th description line, max 30 characters

All enabled

AF03 Databases customisation

Customer dtb customization

⚠

📁 Databases → Customer dtb customisation

☞ It's possible to enable or disable the fields of the customer database. The first field (Description 1: 1st description line, max 30 characters) is always enabled.

☑ **Description 2**	2nd description line, max 30 characters
☑ **Description 3**	3rd description line, max 30 characters

All enabled

Material dtb customization

⚠️

📁 Databases → Material dtb customisation

👉 It's possible to enable or disable the fields of the material database. The first field (Description 1: 1st description line, max 20 characters) is always enabled.

🔧

| ☑ Description 2 | 2nd description line, max 20 characters |

📧 **All enabled**

Vehicle dtb customization

⚠️

📁 Databases → Vehicle dtb customisation

👉 It's possible to enable or disable the fields of the vehicle database. The first field (Plate: plate value, max 10 characters) is always enabled.

🔧

☑ Description	Description line, max 20 characters
☑ Tare	Tare value

📧 **All enabled**

AF04 Databases customisation

Article dtb customization

⚠️

📁 Databases → Article dtb customisation

👉 It's possible to enable or disable the fields of the article database. The first field (Description 1: 1st description line, max 20 characters) is always enabled.

🔧

☑ Description 2	2nd description line, max 20 characters
☑ Description 3	3rd description line, max 20 characters
☑ Density	Density value in g/ml: a value different than 1.0000 it enables the functioning in volume
☑ Target	Target weight value: the value can be insert manually or by confirming the displayed value in the message box
☑ Threshold T1[1]	First tolerance value
☑ Threshold T2[1]	Second tolerance value

☑ **Threshold T3**[(1)]	Third tolerance value
☑ **Preset tare**	Value of the known tare
☑ **Number of samples**[(1)]	Number of pieces to be checked (from 0 to 9999)
☑ **Tare acquisition before sampling**	Field to enable the tare acquisition for each sample of the lot at the beginning of the sampling

[(1)] *In the legal check, the field is not available because this is automatically calculated by the indicator*

All enabled

AF05 Databases customisation

Products dtb customization

⚠️

📁 Databases → Products dtb customisation

☞ It's possible to enable or disable the fields of the products database. The first field (Description 1: 1st description line, max 30 characters) is always enabled.

🔧

☑ **Description 2**	2nd description line, max 30 characters
☑ **Description 3**	3rd description line, max 30 characters
☑ **Description 4**	4th description line, max 30 characters
☑ **EAN code**	EAN code (6 numeric characters)
☑ **Check digit**	Check digit from 0 to 9 (if you want the check digit to be fixed) or C (if you want it to be calculated automatically)
☑ **Linked tare**	Linking of a tare in the database
☑ **Print format**	Number of the print format linked to the product which will be used for the totalisation Note: 0 for the standard print format of totalisation
☑ **Weight/price**	Functioning mode by weight or by price
☑ **Price**	Price of the product Note: the decimals are those set for the main currency
☑ **Seasoning days**	
☑ **Expiry days**	
☑ **Ingredients**	Linking of one or more ingredients in the database (up to 50)
☑ **Linked customer**	Linking of a customer in the database

All enabled

Customer dtb customization

⚠️

📂   Databases → Customer dtb customisation

☞   It's possible to enable or disable the fields of the customer database. The first field (Description 1: 1st description line, max 30 characters) is always enabled.

🔧

☑ **Description 2**	2nd description line, max 30 characters
☑ **Description 3**	3rd description line, max 30 characters
☑ **Description 4**	4th description line, max 30 characters
☑ **Description 5**	5th description line, max 30 characters

📧®   **All enabled**

AF08 Databases customisation

Vehicle dtb customization

⚠️

📂   Databases → Vehicle dtb customisation

☞   It's possible to enable or disable the fields of the products database. The first field (Description 1: 1st description line, max 20 characters) is always enabled.

🔧

☑ **Description 2**	2nd description line, max 20 characters
☑ **Description 3**	3rd description line, max 20 characters
☑ **Description 4**	4th description line, max 20 characters
☑ **Description 5**	5th description line, max 20 characters
☑ **Tare**	Tare value
☑ **Maximum allowed weight**	Maximum allowed weight of the vehicle. Note: The value is automatically copied, when a vehicle is selected, into setpoint with output function equal to setpoint on the partial total
☑ **Weighs to auto print partial t.**	Number of weighs after which the weighing of a vehicle is automatically terminated. Note: The value 0 disables the function.
☑ **Number of connected scales**	Number of scales to be activated for the vehicle weighing. Notes: - The value 0 disables the function - The following fields are configurable just for the scales set in this field
☑ **Scale 1 coordinate x**	
☑ **Scale 1 coordinate y**	
☑ **Scale 2 coordinate x**	

☑ **Scale 2 coordinate y**	
☑ **Scale 3 coordinate x**	
☑ **Scale 3 coordinate y**	
☑ **Scale 4 coordinate x**	
☑ **Scale 4 coordinate y**	
☑ **Scale 5 coordinate x**	
☑ **Scale 5 coordinate y**	
☑ **Scale 6 coordinate x**	
☑ **Scale 6 coordinate y**	
☑ **Scale 7 coordinate x**	
☑ **Scale 7 coordinate y**	
☑ **Scale 8 coordinate x**	
☑ **Scale 8 coordinate y**	

All enabled

BATCH1 Databases customisation

Formula dtb customization

⚠

Databases → Formula dtb customisation

☞ It's possible to enable or disable the fields of the article database. The first field (Description : description line, max 20 characters) is always enabled.
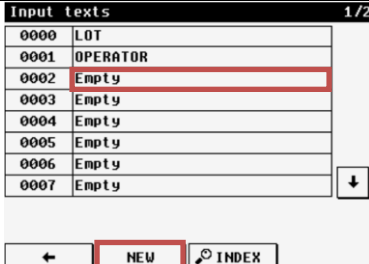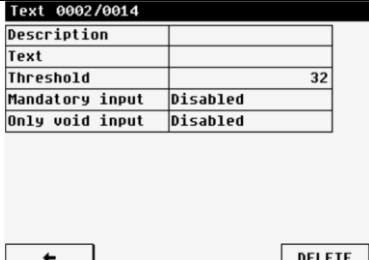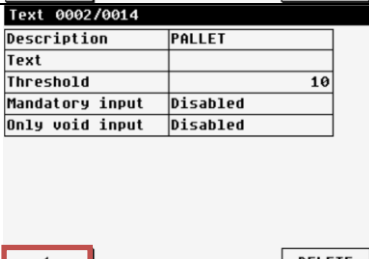
☑ **Scale**	Dosage scale, maximum is 4
☑ **Type**	Dosage type(Auto load or manual load)
☑ **Target**	Target weight value: the value can be insert manually or by confirming the displayed value in the message box
☑ **Fly weight**	Flight weight value
☑ **Slow weight**	Slow weight value
☑ **Tolerance**	Tolerance weight value
☑ **Parameter**	The parameter for unloading procedure(Direct unload, wait for confirmation)
☑ **Minimum tare**	Minimum tare value when dosage start
☑ **Maximum tare**	Maximum tare value when dosage start
☐ **Setpoint1**	First setpoint weight value for definite output
☐ **Setpoint2**	Second setpoint weight value for definite output

All enabled except Setpoint1 and Setpoint2

2.2.7 Input texts

Through this step, you can insert, modify or cancel the heading of the input texts which will be filled in during the weighing through the "INPUT TEXTS" button in the second main screen (📖).

Step	Description	Screen
1	Select the desired position by touching the element or by touching the **NEW** button to insert an element in the first empty position	
2	Touch the fields to be changed	
3	Press the ← button to confirm or the **DELETE** button to cancel	

The fields of each input text are:

Field	Description
Description	Heading of the input text (up to 16 characters)
Text	Content of the input text (up to 32 characters)
Threshold	Maximum length of the input text content (1 ~ 32)
Mandatory input	To exit from the alphanumeric input of the content it's not possible to confirm a null text (Disabled or Enabled)
Only void input	You can enter in the alphanumeric input of the content only if the content is null (Disabled or Enabled)

0	1	2	3	4..14	
OPERATOR	LOT	"Empty"	"Empty"	"Empty"	For AF02 software version
"Empty"	"Empty"	"Empty"	"Empty"	"Empty"	
32	32	32	32	32	
Disabled	Disabled	Disabled	Disabled	Disabled	
Disabled	Disabled	Disabled	Disabled	Disabled	

0	1	2	3	4..14	
OPERATOR	COMMENT	"Empty"	"Empty"	"Empty"	For AF04 software version
"Empty"	"Empty"	"Empty"	"Empty"	"Empty"	
32	32	32	32	32	
Disabled	Disabled	Disabled	Disabled	Disabled	
Disabled	Disabled	Disabled	Disabled	Disabled	
0	1	2	3	4..14	
TRUCK PLATE	TRAILER PLATE	TOWN	DRIVER NAME	"Empty"	For AF08 software version
"Empty"	"Empty"	"Empty"	"Empty"	"Empty"	
32	32	32	32	32	
Disabled	Disabled	Disabled	Disabled	Disabled	
Disabled	Disabled	Disabled	Disabled	Disabled	
0	1	2	3	4..14	
LOT	OPERATOR	"Empty"	"Empty"	"Empty"	For other
"Empty"	"Empty"	"Empty"	"Empty"	"Empty"	
32	32	32	32	32	
Disabled	Disabled	Disabled	Disabled	Disabled	
Disabled	Disabled	Disabled	Disabled	Disabled	

2.2.8 Serial ports

Serial ports function mode

⚠️

📁 Serial ports → Serial ports function mode

☞ Function mode of the 3 serial ports on the indicator hardware (COM1, COM2, COM3): Pc, Printer or Auxiliary

🔧

1=Pc 2=Printer 3=Aux	
1=Pc 2=Aux 3=Printer	
1=Printer 2=Pc 3=Aux	
1=Printer 2=Aux 3=Pc	
1=Aux 2=Pc 3=Printer	
1=Aux 2=Printer 3=Pc	

🔖® **1=Pc 2=Printer 3=Aux**

Printer port configuration

Baud rate

⚠️

📁   Serial ports → Printer port configuration → Baud rate

☞   Data transmission speed in bit/s

🔧
1200	
2400	
4800	
9600	
19200	
38400	
115200	

📧   **9600**

Parity type

⚠️

📁   Serial ports → Printer port configuration → Parity type

☞   Parity bit type

🔧
None	Absent parity bits
Odd	Uneven parity bits
Even	Even parity bits

📧   **None**

Word length

⚠️

📁   Serial ports → Printer port configuration → Word length

☞   Number of data bits

🔧
7 bits	
8 bits	

📧   **8 bits**

Stop bit

⚠️

📁 Serial ports → Printer port configuration → Stop bit

👉 Number of stop bits

🔧

1 bit	
2 bits	

🔏 **1 bit**

CTS status

⚠️

📁 Serial ports → Printer port configuration → CTS status

👉 With the printer serial port the indicator can manage a synchronism signal:
- by using the dedicated CTS (Clear To Send) signal, if one uses the COM2 port;
- by using the RX input, if one uses the COM1 or COM3 port.

A device (like a printer) that is slow in processing the data received, can interrupt the transmission temporarily using this signal.

🔧

Disabled	No signal (ITALORA WITTY280 and SMT280)
Low	Active low (LP522/542, EPSON LX300, TM295, TPR)
High	Active high (DP190)
Emulated	Emulation of the signal
XON/XOFF	XON/XOFF handshaking

🔏

Disabled	For BATCH1 software version
Low	For other

CTS Emulation Chars Number

⚠️ *Displayed just when one sets the **CTS status** equal to Emulated*

📁 Serial ports → Printer port configuration → CTS Emulation Chars Number

👉 Number of characters, which will be transmitted upon each transmission

🔧

1 ~ 999	

🖂 **0**

CTS Emulation Interval

⚠ *Displayed just when one sets the CTS status equal to Emulated*

📁 Serial ports → Printer port configuration → CTS Emulation Interval

☞ Wait time in milliseconds from a transmission and the next one

🔧
1 ~ 9999	

🖂 **0**

XON Character

⚠ *Displayed just when one sets the CTS status equal to XON/XOFF*

📁 Serial ports → Printer port configuration → XON Character

☞ Character sent to from the printer to enable the data sending from the instrument

🔧
1 ~ 255	

🖂 **17**

XOFF Character

⚠ *Displayed just when one sets the CTS status equal to XON/XOFF*

📁 Serial ports → Printer port configuration → XOFF Character

☞ Character sent to from the printer to disable the data sending from the instrument

🔧
1 ~ 255	

🖂 **19**

1st Reset command byte

⚠ *Displayed just when one sets the CTS status equal to XON/XOFF*

📁 Serial ports → Printer port configuration → 1st Reset command byte

☞ First reset command byte (ASCII decimal code) to send to the printer to reset it

	0 ~ 255	

0

2nd Reset command byte

⚠️ *Displayed just when one sets the **CTS status** equal to XON/XOFF*

📁 Serial ports → Printer port configuration 2nd Reset command byte

👉 Second reset command byte (ASCII decimal code) to send to the printer to reset it

	0 ~ 255	

0

3rd Reset command byte

⚠️ *Displayed just when one sets the **CTS status** equal to XON/XOFF*

📁 Serial ports → Printer port configuration → 3rd Reset command byte

👉 Third reset command byte (ASCII decimal code) to send to the printer to reset it

	0 ~ 255	

0

4th Reset command byte

⚠️ *Displayed just when one sets the **CTS status** equal to XON/XOFF*

📁 Serial ports → Printer port configuration → 4th Reset command byte

👉 Fourth reset command byte (ASCII decimal code) to send to the printer to reset it

	0 ~ 255	

0

Second CTS status

⚠️ *Displayed just when one sets the **CTS status** equal to Low or High*

📁 Serial ports → Printer port configuration → Second CTS status

☞ Second synchronism signal used eventually for another device

🔧

Disabled	
Enabled	

✉® Disabled

Show the CTS error

⚠️

📁 Serial ports → Printer port configuration → Show the CTS error

☞ By enabling this parameter, it is possible to block in advance a print function, if recalled with an already active synchronism signal: the indicator display will show the message "PRINTER ERROR: CHECK THE CTS!" for a few seconds and return to the weighing phase without carrying out the function.

🔧

Disabled	
Enabled	

✉® Enabled

Printer power supply

⚠️

📁 Serial ports → Printer port configuration → Printer power supply

☞ This parameter regulates the "AUX" output voltage which is on the board

🔧

External	External power supply (AUX output active)
Internal	Internal power supply (AUX output active just when printing)

✉® Internal

Protocol

⚠️

📁 Serial ports → Printer port configuration → Protocol

☞ Printer port protocol (See section 6.1 for the detail of the protocols)

🔧
Standard	For connection to a printer
Repeater 6 digits	For connection to the Dini Argeo Repeater
For alibi memory[1]	Storage of the weight in the alibi memory when the simple printout function is executed
Continuous	Continuous transmission of the data configured in the print format 1
Multi-Repeater[2]	

[1] Not available in the BATCH1 software version
[2] Available just in the AF08 software version

◈ **Standard**

Pc port configuration

Baud rate

⚠

📁 Serial ports → Pc port configuration → Baud rate

☞ Data transmission speed in bit/s

🔧
1200	
2400	
4800	
9600	
19200	
38400	
115200	

◈ **9600**

Parity type

⚠

📁 Serial ports → Pc port configuration → Parity type

☞ Parity bit type

🔧
None	Absent parity bits

Odd	Uneven parity bits
Even	Even parity bits

None

Word length

⚠

Serial ports → Pc port configuration → Word length

☞   Number of data bits

7 bits	
8 bits	

8 bits

Stop bit

⚠

Serial ports → Pc port configuration → Stop bit

☞   Number of stop bits

1 bit	
2 bits	

1 bit

CTS status

⚠

Serial ports → Pc port configuration → CTS status

☞   With the pc serial port the indicator can manage a synchronism signal:
- by using the dedicated CTS (Clear To Send) signal, if one uses the COM2 port;
- by using the RX input, if one uses the COM1 or COM3 port.

Disabled	No signal
Low	Active low
High	Active high

Emulated	Emulation of the signal

Disabled

CTS Emulation Chars Number

*Displayed just when one sets the **CTS status** equal to Emulated*

Serial ports → Pc port configuration → CTS Emulation Chars Number

Number of characters, which will be transmitted upon each transmission

1 ~ 999	

0

CTS Emulation Interval

*Displayed just when one sets the **CTS status** equal to Emulated*

Serial ports → Pc port configuration → CTS Emulation Interval

Wait time in milliseconds from a transmission and the next one

1 ~ 9999	

0

Protocol

Serial ports → Pc port configuration → Protocol

Pc port protocol (See section 6.1 for the detail of the protocols)

Standard	
Extended	
Repeater 6 Digits	For connection to the Dini Argeo Repeater
Mono directional	
For alibi memory[1]	Storage of the weight in the alibi memory
SMA	
Modbus	
Profibus	Needs **"PROFI232" EXTERNAL PROFIBUS INTERFACE**

B Type(2)	
Repeater B(2)	
B3 Type(2)	
B4 Type(2)	
Ethernet(2)	Needs "SETHNET" Integrated RS232/Ethernet interface To use this protocol set the related serial port baud rate equal to 115200
Multi-Repeater(3)	

(1) *Not available in the BATCH1 software version*
(2) *Available just in the AF03 software version*
(3) *Available just in the AF08 software version*

⊠®   **Standard**

Communication mode

⚠

📁   Serial ports → Pc port configuration → Communication mode

👉   Transmission type

🔧

On demand	It requires an external command to send the data requested. Transmission can take place at any time requested.
Continuous	Continuous transmission
Stability	At stable weight
RS485 mode	485 address enabling
Upon end cycle(1)	At the end of the in/out weighing cycle or of the single weigh

(1) *Available just in the AF03 software version*

⊠®   **On demand**

485 address

⚠

📁   Serial ports → Pc port configuration → 485 address

👉   Code which identifies the instrument from the other ones connected in the RS485 network.

🔧

0 ~ 99	The 99 code is used as a broadcast address

⊠®   **0**

Auxiliary port configuration

Baud rate

⚠️

📁 Serial ports → Auxiliary port configuration → Baud rate

☞ Data transmission speed in bit/s

🔧

1200	
2400	
4800	
9600	
19200	
38400	
115200	

9600

Parity type

⚠️

📁 Serial ports → Auxiliary port configuration → Parity type

☞ Parity bit type

🔧

None	Absent parity bits
Odd	Uneven parity bits
Even	Even parity bits

None

Word length

⚠️

📁 Serial ports → Auxiliary port configuration → Word length

☞ Number of data bits

🔧

7 bits	

8 bits	

8 bits

Stop bit

⚠

📁 Serial ports → Auxiliary port configuration → Stop bit

☞ Number of stop bits

🔧
1 bit	
2 bits	

1 bit

CTS status

⚠

📁 Serial ports → Auxiliary port configuration → CTS status

☞ With the auxiliary serial port the indicator can manage a synchronism signal:
- by using the dedicated CTS (Clear To Send) signal, if one uses the COM2 port;
- by using the RX input, if one uses the COM1 or COM3 port.

🔧
Disabled	No signal
Low	Active low
High	Active high
Emulated	Emulation of the signal

Disabled

CTS Emulation Chars Number

⚠ *Displayed just when one sets the **CTS status** equal to Emulated*

📁 Serial ports → Auxiliary port configuration → CTS Emulation Chars Number

☞ Number of characters, which will be transmitted upon each transmission

🔧
1 ~ 999	

0

CTS Emulation Interval

⚠️ *Displayed just when one sets the **CTS status** equal to Emulated*

📁 Serial ports → Auxiliary port configuration → CTS Emulation Interval

👉 Wait time in milliseconds from a transmission and the next one

🔧
1 ~ 9999	

0

Protocol

⚠️

📁 Serial ports → Auxiliary port configuration → Protocol

👉 Auxiliary port protocol (See section 6.1 for the detail of the protocols)

🔧
Disabled	In case of connection to remote scale or badge / bar code reader
Standard	Continuous transmission of the standard string
Repeater 6 Digits	For connection to the Dini Argeo Repeater
Repeater DC[1]	
Ethernet[2]	Needs "SETHNET" Integrated RS232/Ethernet interface To use this protocol set the related serial port baud rate equal to 115200

[1] *Available just in the AF03 and AF08 software versions*
[2] *Available just in the AF03 software version*

Disabled

Send data for Repeater DC

⚠️ *Displayed just in the AF03 and AF08 software versions and when one sets the **Protocol of the auxiliary port** equal to Repeater DC*

📁 Serial ports → Auxiliary port configuration → Send data for Repeater DC → Scale x (or Sum)

👉 This parameter allows to the definite which scale weight send

🔧
Disabled	

Only if active	Only the scale x is active
Always	Also the scale x is not active

Disabled

Network configuration

Node group

⚠️ *Displayed just in the AF03 software version and when one sets the **auxiliary port Protocol** or the **pc port Protocol** equal to Ethernet*

📁 Serial ports → Network configuration → Node group

👉 ID of the network group

1 ~ 8	

1

Node ID

⚠️ *Displayed just in the AF03 software version and when one sets the **auxiliary port Protocol** or the **pc port Protocol** equal to Ethernet*

📁 Serial ports → Network configuration → Node ID

👉 ID of the instrument in the network group

1 ~ 32	

1

IP mode

⚠️ *Displayed just in the AF03 software version and when one sets the **auxiliary port Protocol** or the **pc port Protocol** equal to Ethernet*

📁 Serial ports → Network configuration → IP mode

👉 "SETHNET" IP address: static or dynamic

Static IP address	Fixed address
Dynamic IP address	The "SETHNET" is connected to a switch/router/server with

	DHCP enabled

Static IP address

IP address

⚠️ *Displayed just in the AF03 software version and when one sets the **auxiliary port Protocol** or the **pc port Protocol** equal to Ethernet and the IP mode equal to Static IP address*

📁 Serial ports → Network configuration → IP address

👉 "SETHNET" IP address

🔧

0.0.0.0 ~ 255.255.255.255	

0.0.0.0

Subnet mask

⚠️ *Displayed just in the AF03 software version and when one sets the **auxiliary port Protocol** or the **pc port Protocol** equal to Ethernet and the IP mode equal to Static IP address*

📁 Serial ports → Network configuration → Subnet mask

👉 "SETHNET" net mask

🔧

0.0.0.0 ~ 255.255.255.255	

255.255.255.0

Automatic db alignment

⚠️ *Displayed just in the AF03 software version and when one sets the **auxiliary port Protocol** or the **pc port Protocol** equal to Ethernet*

📁 Serial ports → Network configuration → Automatic db alignment

👉 Databases automatic synchronization enabling

🔧

Disabled	
Enabled	

Enabled

Network name

⚠️   *Displayed just in the AF03 software version and when one sets the **auxiliary port Protocol** or the **pc port Protocol** equal to Ethernet*

📁   Serial ports → Network configuration → Network name

👉   Node name

🔧
Max 15 characters	

✉️   **"Empty"**

Send network configuration

⚠️   *Displayed just in the AF03 software version and when one sets the **auxiliary port Protocol** or the **pc port Protocol** equal to Ethernet*

📁   Serial ports → Network configuration → Send network configuration

👉   Allows to send the configuration to the "SETHNET" device

🔧

✉️

2.2.9 Printout

Printout headings

⚠️

📁   Printout → Printout headings → Line x

👉   Allows to insert the printout headings content (3 lines of 24 characters) that will be printed if programmed in the printout formats

🔧
Max 24 characters	

✉️   **"Empty"**

2.2.10 External keyboard – Barcode reader

Keyboard port use

⚠️   *Not displayed in the BATCH1 software version*

📁   Ext. keyboard – Barcode reader → Keyboard port use

☞   Use of keyboard port: connected to a pc keyboard or a external reader

🔧

Connected to a pc keyboard	
Connected to a barcode reader	Data reception from a external reader

✉️   **Connected to a pc keyboard**

External pc keyboard type

⚠️

📁   Ext. keyboard – Barcode reader → External pc keyboard type

☞   Language of the external pc keyboard and the on-screen keyboard

🔧

Italiano	Italian
Français	French
Deutsch	German
English	English

✉️   **English**

Barcode reader serial port

⚠️   *Not displayed in the BATCH1 software version*

📁   Ext. keyboard – Barcode reader → Barcode reader serial port

☞   Serial port for the barcode reader

🔧

Not connected	External reader not connected
Printer port	External reader connected to printer port
Auxiliary port	External reader connected to auxiliary port

✉️   **Not connected**

2.2.11 Remote scale

⚠️ All the steps for the Remote scale are not displayed in the AF08 and BATCH1 software versions.

Management enabling

⚠️   M

📁   Remote scale → Management enabling

👉   Remote scale enabling

🔧
Disabled	
Enabled	

🔳   **Disabled**

Network remote scales

⚠️
- M
- Displayed just in the AF03 software version and when you set the *pc port Protocol* or the *auxiliary port Protocol* equal to Ethernet

📁   Remote scale → Network remote scale x ID

👉   If the remote scale management is enabled, the indicator can work with up to 4 remote scales: in this step, you enter the node ID of the instruments in the network which will act as a remote scale.
Note: the remote scale can be activated through the function 1009 (see section 2.3). The instrument transmits the keys to the active remote scale when the same key (with linked function 1007) is pressed.

🔧
0 ~ 9	The value 0 identifies the remote scale x not active

🔳   **0**

Example: 2 instruments with one weighing system only

The network remote scale functioning can be used in the AF03 software version when you want to have 2 stations (connected through Ethernet):

1. The first station with a instrument connected to the weighbridge which act as remote scale for the second station
2. The second station with a instrument that uses the first station as remote scale

In this way, the operations can be made on both the instruments.
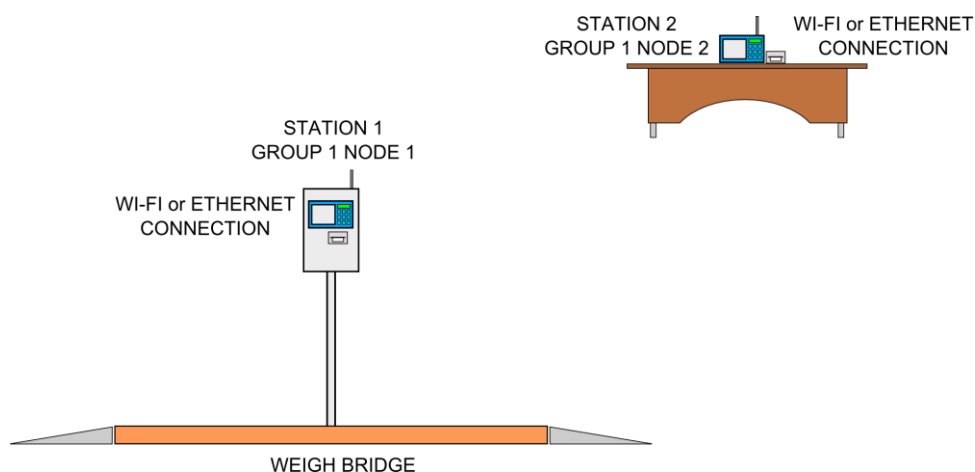
Figure 8. Multi – station system

Configuration for the station 1:
1. Calibration → Scale Selection → Number of scales/channels: **1**
2. Serial ports → Auxiliary port configuration → Protocol: **Ethernet**
3. Serial ports → Network configuration → Node group: **1**
4. Serial ports → Network configuration → Node ID: **1**
5. Shortcuts → Toolbar customization → Button 1 → Title: **ENTRY**
6. Shortcuts → Toolbar customization → Button 1 → Function: **701 (Input weigh)**
7. Shortcuts → Toolbar customization → Button 2 → Title: **EXIT**
8. Shortcuts → Toolbar customization → Button 2 → Function: **702 (Output weigh)**

Configuration for the station 2:
1. Calibration → Scale Selection → Number of scales/channels: **Remote scale**
2. Serial ports → Auxiliary port configuration → Protocol: **Ethernet**
3. Serial ports → Network configuration → Node group: **1**
4. Serial ports → Network configuration → Node ID: **2**
5. Remote scale → Management enabling: **Enabled**
6. Remote scale → Network remote scale 1 ID: **1**
7. Shortcuts → Toolbar customization → Button 1 → Title: **ENTRY**
8. Shortcuts → Toolbar customization → Button 1 → Function: **1007**
    This step allow to execute the input weigh in the first station when the toolbar button 1 of the second station is pressed
9. Shortcuts → Toolbar customization → Button 2 → Title: **EXIT**
10. Shortcuts → Toolbar customization → Button 2 → Function: **1007**
    This step allow to execute the output weigh in the first station when the toolbar button 2 of the second station is pressed

⚠ All the next parameters are not available in the AF03 software version when you set the **pc port Protocol** or the **auxiliary port Protocol** equal to Ethernet!!!

String terminator

⚠   **M**

📁 Remote scale → Protocol → String terminator

☞ Decimal ASCII code of the terminator character of the string

0 ~ 255	i.e. 13 for CR or 10 for LF

0

Weight start position

⚠ M

📁 Remote scale → Protocol → Weight start position

☞ Position of the first character of the weight value in the string. The sign character is part of the weight value.

0 ~ 99	

0

Weight length

⚠ M

📁 Remote scale → Protocol → Weight length

☞ Number of digits which make up the weight value, including the sign and the non significant digits

1 ~ 99	

0

Type of the weight

⚠ M

📁 Remote scale → Protocol → Type of the weight

☞ Type of weight in the string: gross or net

Gross	Gross weight

Net	Net weight

Gross

Tare start position

⚠️ **M**

📁 Remote scale → Protocol → Tare start position

☞ Position of the first character of the tare value in the string

🔧

0 ~ 100	
255	The value 255 disables the tare in the string

255

Tare length

⚠️ **M**

📁 Remote scale → Protocol → Tare length

☞ Number of digits which make up the tare value, including the non significant digits and the decimal point

🔧

1 ~ 99	

0

Tare type start position

⚠️ **M**

📁 Remote scale → Protocol → Tare type start position

☞ Position of the first character of the tare type indication in the string

🔧

0 ~ 100	The value 255 disables the tare type indication in the string
255	

255

Total length of the string

⚠️   M

📁   Remote scale → Protocol → Total length of the string

👉   Number of digits which make up the entire string trasmitted from the auxiliary serial port, minus the terminator character

🔧

0 ~ 99	Set 0 in case of variable string length

🔰   0

Stability readings

⚠️   M

📁   Remote scale → Protocol → Stability readings

👉   Number of consecutive readings which the indicator must take into consider in order to obtain stability

🔧

0 ~ 20	The value 0 enables the reading of the stability/instability in the string

🔰   3

Stability weight difference

⚠️   M

📁   Remote scale → Protocol → Stability weight difference

👉   Maximum value which can be taken on by the difference between the weights of consecutive readings which are set in the Stability readings parameter.
If the weight difference between the tested readings is equal or less than the set value, the weight is considered stable, otherwise the weight is considered unstable.

🔧

0 ~ 20	

🔰   2

Stability type

⚠️
- M
- *Displayed just when the **Stability readings** is equal to 0*

📁   Remote scale → Protocol → Stability type

👉   Stability type indication in the string

🔧

Ignore stability	
Stability string	
Instability string	

📧   **255**

Stability start position

⚠️

- M
- *Displayed just when the Stability readings is equal to 0*

📁   Remote scale → Protocol → Stability start position

👉   Position of the stability/instability indication in the string

🔧

0 ~ 100	
255	The value 255 disables the stability/instability reading and the weight is considered as stable

📧   **255**

Stability/Instability string

⚠️

- M
- *Displayed just when the Stability readings is equal to 0 and the Stability start position is not equal to 255*

📁   Remote scale → Protocol → Stability/Instability string

👉   Characters transmitted from the remote scale when the weight is unstable (if the Stability type is equal to Instability string). If the value in the instability indication corresponds to the set value, the weight is considerate to be unstable; otherwise, it's considered as stable.

🔧

Max 3 characters	

📧   **"Empty"**

Rounding function on the weight

⚠️   M

📁 Remote scale → Protocol → Rounding function on the weight

☞ Rounding function on the received weight value

🔧
Disabled	
Enabled	

®🔱 **0**

Number of decimals

⚠️ M

📁 Remote scale → Metrological data → Number of decimals

☞ Position of the decimal point

🔧
0	No decimals
0.0	1 decimal
0.00	2 decimals
0.000	3 decimals
0.0000	4 decimals
0.00000	5 decimals

®🔱 **0.000**

Unit of measure

⚠️ M

📁 Remote scale → Metrological data → Unit of measure

☞ Unit of measure

🔧
g	Grams
kg	Kilograms
t	Tons
lb	Pounds

®🔱 **g**

Division

⚠️   **M**

📁   Remote scale → Metrological data → Minimum division

☞   Minimum division. If the remote scale is in dual or triple range, insert the division of the lower range

🔧

1 ~ 200	

Ⓩ   **0**

Capacity

⚠️   **M**

📁   Remote scale → Metrological data → Capacity

☞   Maximum capacity

🔧

0 ~ 999999	

Ⓩ   **0**

Zero function

⚠️   **M**

📁   Remote scale → Functions enabling → Zero function

☞   Transmission of the zero command enabling: "Z" command

🔧

Disabled	
Enabled	

Ⓩ   **Disabled**

Tare function

⚠️   **M**

📁   Remote scale → Functions enabling → Tare function

☞   Transmission of the tare command enabling

Disabled	
Enabled	

Disabled

Preset tare function

⚠️ M

📁 Remote scale → Functions enabling → Preset tare function

☞ Transmission of the preset tare command enabling

Disabled	
Enabled command+value	Enabled with the command before the value
Enabled value+command	Enabled with the command after the value

Disabled

Tare command

⚠️
- M
- *Displayed just when the **Tare function** is enabled*

📁 Remote scale → Commands → Tare command

☞ Tare command to send to the remote scale

Max 3 characters	

"Empty"

Preset tare command

⚠️
- M
- *Displayed just when the **Preset tare function** is enabled*

📁 Remote scale → Commands → Preset tare command

☞ Preset tare command to send to the remote scale

Max 3 characters	

"Empty"

Weight request interval

⚠️   M

📁   Remote scale → Commands → Weight request interval

☞   Interval between the weight request commands sent to the remote scale

🔧

0 ~ 255	The value 0 disables the weight request

⬚   0

Weight request command

⚠️
- M
- *Displayed just when the **Weight request interval** is not equal to 0*

📁   Remote scale → Commands → Weight request command

☞

🔧

Max 4 characters	

⬚   "Empty"

Command terminator

⚠️   M

📁   Remote scale → Commands → Command terminator

☞   Terminator character for the commands

🔧

CR	
CR LF	
LF	
Nothing	

⬚   CR

Example: Configuration with a DFW06 as remote scale set with extended string

"REXT" command answer of a DFW06 (Max=30.0kg, e=0.2kg):

Format	[CC]B ,SS,NNNNNNNNNN,(PT|bb)TTTTTTTTTT,PPPPPPPPPP,UU,(dd/mm/yybbhh:mm:ss|NO DATE TIME)<CR><LF>	
Where	*Characters*	*Description*
	[CC]	Instrument code, just in the case the 485 protocol is enabled
	B	Number of active scale
	SS	Scale status US — Unstable weight ST — Stable weight OL — Weight over load (out of range) UL — Weight under load (out of range) TL — Scale not at level
	NNNNNNNN	Net weight on 10 digits
	(PT|bb)	PT if the tare is manual or bb (two empty spaces) if the tare is semiautomatic
	TTTTTTTTTT	Tare weight on 10 digits
	PPPPPPPPPP	Number of pieces on 10 digits
	UU	Unit of measure: kg, g, t or lb
	dd/mm/yy	Date
	hh:mm:ss	Time
Example	1,ST, 90.6, 20.8, 0,kg,21/09/12 12:44:50<CR><LF>	

The SS cell detail as a table:

Scale status	
US	Unstable weight
ST	Stable weight
OL	Weight over load (out of range)
UL	Weight under load (out of range)
TL	Scale not at level
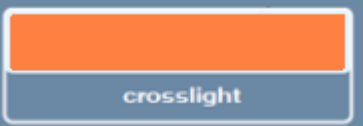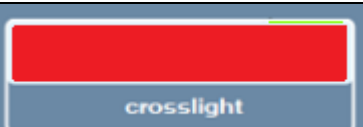
Procedure to follow:
1. Remote Scale → Management enabling: **Enabled**
2. Remote Scale → Protocol → String terminator: **10**
3. Remote Scale → Protocol → Weight start position: **5**
4. Remote Scale → Protocol → Weight length: **10**
5. Remote Scale → Protocol → Type of the weight: **Net**
6. Remote Scale → Protocol → Tare start position: **18**
7. Remote Scale → Protocol → Tare length: **10**
8. Remote Scale → Protocol → Tare type start position: **16**
9. Remote Scale → Protocol → Total length of the string: **43**
10. Remote Scale → Protocol → Stability readings: **0**
11. Remote Scale → Protocol → Stability weight difference: **2**
12. Remote Scale → Protocol → Stability type: **Instability string**
13. Remote Scale → Protocol → Stability start position: **US**
14. Remote Scale → Protocol → Rounding function on the weight: **Disabled**
15. Remote Scale → Metrological data → Number of decimals: **1**
16. Remote Scale → Metrological data → Unit of measure: **kg**
17. Remote Scale → Metrological data → Minimum division: **0.2**
18. Remote Scale → Metrological data → Capacity: **30.0**
19. Remote Scale → Functions enabling → Zero function: **Enabled**

20. Remote Scale → Functions enabling → Tare function: **Enabled**
21. Remote Scale → Functions enabling → Preset tare function: **Enabled command+value**
22. Remote Scale → Commands → Tare command: **T**
23. Remote Scale → Commands → Preset tare command: **W**
24. Remote Scale → Commands → Weight request interval: **50**
25. Remote Scale → Commands → Weight request command: **REXT**
26. Remote Scale → Commands → Command terminator: **CR LF**

2.2.12 Digital outputs and Cross light

The indicator has 4 digital outputs on the mother board and 12 outputs on the optional expansion board, the following parameters allow to set the functioning of each output.
The cross light present in the front panel of the indicator has 3 lights (yellow light, green light and red light), these lights are managed in according with the first 3 digital outputs in the following way:

Light	Description
crosslight	The yellow light turns on when the digital output 1 contact is closed
crosslight	The green light turns on when the digital output 2 contact is closed
crosslight	The red light turns on when the digital output 3 contact is closed

⚠ For BATCH1 software version, the cross light management is different and described in 📖.

Function mode

⚠ *Not displayed in the BATCH1 software version*

📁 Digital outputs → Function mode

☞ Outputs function mode: normal or exclusive

🔧

Normal	The check is always made on all the configured outputs; therefore each output is independent (its enabling does not provoke the disabling of the others)
Exclusive	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 outputs) and its disabling reenables it

Normal	For AF03 and AF04 software versions

Exclusive	For other

Function

⚠️

📁   Digital outputs → Output configuration → Output x → Function

☞   Output functioning mode

🔧

For BATCH1 software version	
Disabled	
Gross weight[(*)]	Activation on the gross weight
Net weight[(*)]	Activation on the net weight
Dosage active	Activation in the dosage cycle
Fast speed	Activation at the maximum dosage speed
Total unload/filling	Activation on dosage in unload procedure
Zero error	Activation on scale zero error
Maximum dosage time error	Activation when maximum dosage time has been passed in dosage
Out of tolerance error	Activation when the dosage is terminated out of tolerance
In tolerance	Activation when dosed weight is in tolerance
Generic alarm	Activation when dosage is in error status
Out tolerance	Activation when dosed weight is out tolerance
Over target	Activation when dosed weight is over target
Dosage setpoint	Activation when selected formula setpoint value is reached
Volume counter active	Activation on volume counter start
Volume counter fast	Activation on maximum speed of volume counter
Volume counter flow rate error	Activation on volume counter flow rate error
Dosage active on scale 1	Activation when first scale dosage starts
Dosage active on scale 2	Activation when second scale dosage starts
Dosage active on scale 3	Activation when third scale dosage starts
Dosage active on scale 4	Activation when forth scale dosage starts
Total unload/filling on scale 1	Activation when first scale total unload or filling starts
Total unload/filling on scale 2	Activation when second scale total unload or filling starts
Total unload/filling on scale 3	Activation when third scale total unload or filling starts
Total unload/filling on scale 4	Activation when forth scale total unload or filling starts

Dosage cycle active	Activation when the dosage cycle is active

For other	
Disabled	
Gross weight[(*)]	Activation on the gross weight
Net weight[(*)]	Activation on the net weight
Gross weight = 0	Activation on the gross weight at 0
Net weight = 0	Activation on the net weight at 0
Instability	Activation upon weight instability
Totalisation done	Activation when totalisation is made
Setpoint on the partial total[(*)]	Activation on the net partial total + net weight on the scale
Sepoint on the general total[(*)]	Activation on the net general total + net weight on the scale
Setpoint on the grand total[(*)]	Activation on the net grand total + net weight on the scale
Negative net weight[(1) (*)]	Activation on the negative net weight
Setpoint on the quantity[(2) (*)]	Activation on the displayed quantity
Setpoint on the negative quantity[(2) (*)]	Activation on the displayed negative quantity
Setpoint on the total quantity[(2) (*)]	Activation on the quantity partial total + quantity present on the scale
Cycle IN/OUT or single weigh[(3)]	Activation at the end of each input or output weigh
Weight acquisition[(3)]	Activation upon each weight acquisition
Traffic light[(3) (*)]	Traffic light for scale 1
Traffic light scale 2[(3) (*)]	Traffic light for scale 2
Weight under threshold T3[(4)]	Activation when the weight is under TARGET-T3
Weight under threshold T2[(4)]	Activation when the weight is under TARGET-T2
Weight under threshold T1[(4)]	Activation when the weight is under TARGET-T1
Target weight[(4)]	Activation when the weight is within the tolerance range
Weight over threshold T1[(4)]	Activation when the weight is over TARGET+T1
Weight over threshold T2[(4)]	Activation when the weight is over TARGET+T2
Weight over threshold T3[(4)]	Activation when the weight is over TARGET+T3
Weight under target[(4)]	Activation when the weight is within the range TARGET-T1 ~ TARGET
Weight over target[(4)]	Activation when the weight is within the range TARGET ~ TARGET+T1

[(1)] Not available in the AF04 software version

[(2)] Available just in the AF02 software version

[(3)] Available just in the AF03 software version

[(4)] Available just in the AF04 software version

[(*)] This function requires the introduction of a value of activation (and deactivation for the functioning mode with hysteresis)through the function 305 (See section 2.3)

Output 1	Output 2	Output 3	Output 4	
Setpoint on the quantity	Setpoint on the quantity	Setpoint on the quantity	Disabled	For AF02 software version
Disabled	Traffic light	Traffic light	Disabled	For AF03 software version
Weight under threshold T1	Target weight	Weight over threshold T1	Disabled	For AF04 software version
Disabled	Instability	Instability	Disabled	For AF08 software version
Dosage active	Fast speed	Total unload/filling	Zero error	For BATCH1 software version
Net weight	Net weight	Net weight	Disabled	For other
Output 5	**Output 6**	**Output 7**	**Output 8**	
Maximum dosage time error	Out of tolerance error	In tolerance	Generic alarm	For BATCH1 software version
Disabled	Disabled	Disabled	Disabled	For other
Output 9	**Output 10**	**Output 11**	**Output 12..16**	
Out tolerance	Over target	Disabled	Disabled	For BATCH1 software version
Disabled	Disabled	Disabled	Disabled	For other

Contact status

Digital outputs → Output configuration → Output x → Contact status

Status of the output after the instrument start up. When the instrument is turned off, the status is normally opened.

Normally opened (NO)	
Normally closed (NC)	

Output 1	Output 2	Output 3	Output 4..16	
NO	NO	NC	NO	For AF03 software version
NO	NC	NO	NO	For AF08 software version
NO	NO	NO	NO	For other

Condition for activation

Not displayed in the BATCH1 software version

Digital outputs → Output configuration → Output x → Condition for activation

👉 Output activation condition

🔧
Direct	Activation as soon as the weight reaches the set threshold (independently from the stability), and deactivation as soon as it goes under the disabling threshold
At weight stability	Activation in the moment in which the weight, after reaching the set activation threshold, becomes stable, and deactivation in the moment in which the weight goes below the set disabling threshold, it becomes stable

⬙
Output 1	Output 2	Output 3	Output 4..16	
Direct	Direct	Direct	Direct	For AF03 and AF08 software versions
At weight stability	At weight stability	At weight stability	Direct	For other

Hysteresis

⚠️

📁 Digital outputs → Output configuration → Output x → Hysteresis

👉 Output functioning mode with or without hysteresis

🔧
Disabled	Activation value only required
Enabled	Activation and deactivation values required

⬙ **Disabled for all the outputs**

Associated scale

⚠️ *Displayed just in the AF08 software version and when the **Number of scales/channels** is greater than 1*

📁 Digital outputs → Output configuration → Output x → Associated scale

👉 Association of a digital output to a scale: in this way, the activation of the output happens by checking the weight of the scale set in this step.

🔧
| Disabled	It works on the weight of the active scale / sum displayed in the area at the top of display
Sum	It works on the weight sum of the active scales
Scale 1	It works on the weight of the scale 1
Scale 2	It works on the weight of the scale 2

Scale 3	It works on the weight of the scale 3
Scale 4	It works on the weight of the scale 4
Scale 5	It works on the weight of the scale 5
Scale 6	It works on the weight of the scale 6
Scale 7	It works on the weight of the scale 7
Scale 8	It works on the weight of the scale 8

Disabled

Example: Activation on the gross weight and functioning with hysteresis

By selecting this functioning mode and the output function on the gross weight; one enters two SETPOINTS for each output: a deactivation value, which, when the gross weight is lower than it, disables the appropriate output; an activation value, which, when the gross weight is greater or equal than it, it enables the appropriate output. Through function 305 (See section 2.3.1) the SETPOINT values are entered (activation and deactivation) for each configured output.
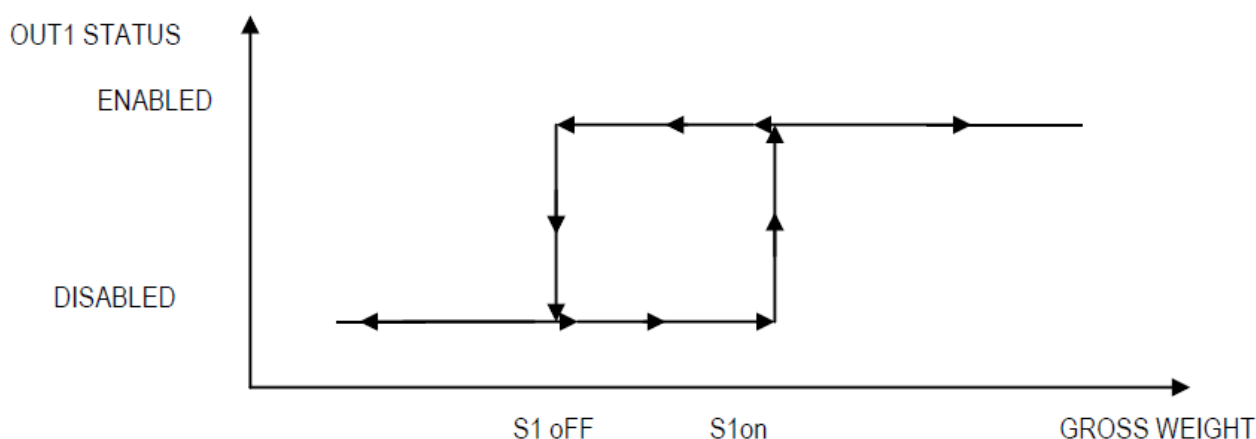
NOTES:
- For the functioning without hysteresis, the operating mode is the same as the previous one, except that just one SETPOINT is entered for each output; for this purpose the access to the deactivation value parameter is inhibited.
- The deactivation value must be less or equal to the activation value; if a value greater than the activation value is entered and confirmed in the deactivation value, the indicator will set at 0 the SETPOINT, until a correct value is entered.
  If a value lower than the deactivation value is entered and confirmed in the activation value, that value is accepted, but the deactivation value is put at 0.
- The 0 value is valid on both the SETPOINT values.
- The SETPOINT check of the weight remains active on the present value even during the modification of the SETPOINT, until the new value is confirmed.
- At start-up, the outputs are managed from when the weight is displayed and these take on the configuration set in the set-up environment. These are not managed inside the technical set-up.
- In case of weight not valid (local or from remote scale) all the outputs will be disabled.

Example: Activation on the negative net weight and functioning with hysteresis

By selecting this functioning mode and the output function on the NEGATIVE NET; one enters two NEGATIVE SETPOINTS for each output: a DISABLING one, which, when the NET weight is greater than it,

disables the appropriate output; an ENABLING one, which, when the NET weight is lower or equal than it, it enables the appropriate output.

The entry and specifications are the same for the previous example.
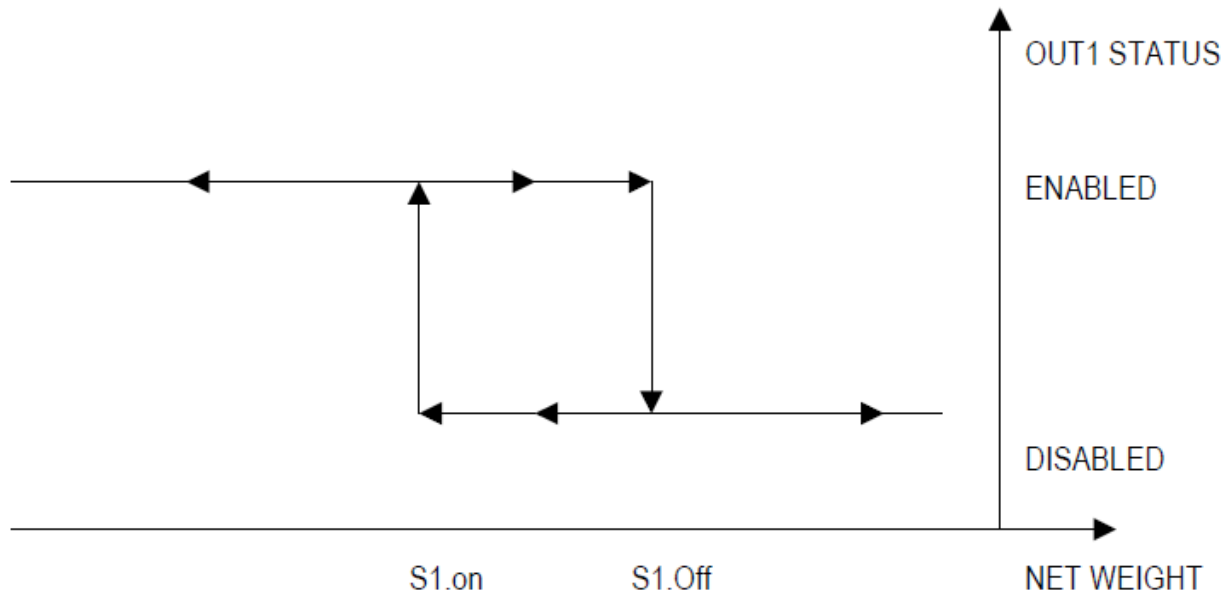
2.2.13 Digital inputs

The indicator has 2 digital inputs on the mother board and 6 inputs on the optional expansion board, the following parameter allows to set the functioning of each input.

⚠ All the steps for the Digital inputs are not displayed in the BATCH1 software version because the function of each input is fixed ( ).

Function

⚠

📁   Digital inputs → Input x

☞   Input functioning mode

🔧

Disabled	
Key	Emulation of a indicator key
Single function	See section 2.3 for the functions list
Select the remote scale	
Select the scale 1	
Select the scale 2	
Select the scale 3	
Select the scale 4	

Lock/Unlock keyboard	
Indicator turning off	
Show "-------" on the display and disable the keyboard[1]	
Disable all the digital outputs	
Simulation of key pressed at length	
Connection to a level controller	
OUT1 and OUT2 for dosage	

[1] *Not available in the AF01, AF03, AF05 software version with release less than 02.01, and AF02 software version with release less than 01.01 and AF04 software version with release less than 02.00*

⬛®   **Disabled for all the inputs**

Example: Input on "OUT1 and OUT2 for dosage" function

The involved outputs are digital output 1 (OUT1) and digital output 2 (OUT2): in order to function correctly these must be configured with the normally closed contact on a weight function, for example on the Net or Gross weight.

By enabling the input, both outputs are enabled; the dosage automatically ends upon reaching the setpoint linked to OUT2.

Notes:
- if an input is linked to "OUT1 and OUT2 for dosage", OUT1 and OUT2 are managed in "dosage" even if these are configured in their exclusive functioning;
- it's possible to execute also dosages in unloading (negative setpoint) as long as the zeroing or the tare at cycle start is executed (through the input or the key);
- if IN1 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);
- it's possible to interrupt at any moment the dosage cycle by enabling an input set on "Disable all the digital outputs".

Configuration example:

Output	Function	Activation value
1	Gross weight	100g
2	Gross weight	200g

Input	Function
1	Disable all the digital outputs
2	OUT1 and OUT2 for dosage

Result:
- enabling IN2: one enables OUT1 and OUT2 and the dosage cycle starts;
- upon reaching 100g the OUT1 is disabled;
- upon reaching 200g the OUT2 is disabled and the dosage cycle ends;
- by enabling IN1 the dosage cycle resets at any point.

2.2.14 Remote control
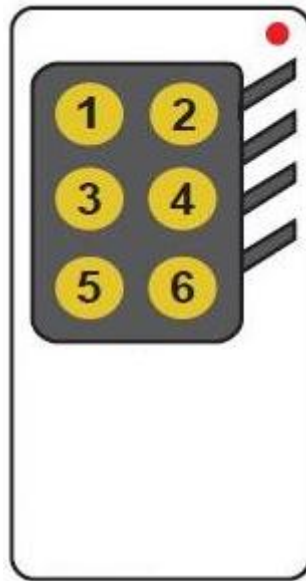
The indicator can be used with a radio remote control with 6 keys (whose function can be configured) in two different ways:

1. use of various remote controls with only one indicator: if you work with only an indicator, it is possible to use any remote control, without combining it to the indicator, therefore without limiting the number of usable remote controls.
2. use of various remote controls with several indicators in the same area: if you need to use several indicators in the same area, it is possible to combine each remote control to the desired indicator, in order to execute the function only on it and therefore avoid emulating the function on all indicators in use.

   It will be possible to combine (up to 3 different remote controls for each indicator) by pressing **1** and **2** keys all together for 3 seconds.

The following parameters allow to set the remote control type and the functioning of each key.

⚠ All the steps for the Remote control are not displayed in the BATCH1 software version.

Type

⚠

📁   Remote control → Type

☞   Type of remote control

🔧

Disabled	
Radio 6 keys	To use various remote controls with several indicators in the same area
Radio 6 keys in broadcast mode	To use various remote controls with only one indicator

     Disabled

Function

⚠

📁   Remote control → Key x

☞   Remote control key functioning mode

🔧

Disabled	
Key	Emulation of a indicator key
Single function	See section 2.3 for the functions list
Select the remote scale	
Select the scale 1	
Select the scale 2	
Select the scale 3	
Select the scale 4	
Lock/Unlock keyboard	
Indicator turning off	
Show "-------" on the display and disable the keyboard[1]	
Disable all the digital outputs	
Simulation of key pressed at length	
Connection to a level controller	

[1] *Not available in the AF01, AF03, AF05 software version with release less than 02.01, and AF02 software version with release less than 01.01 and AF04 software version with release less than 02.00*

⬙   **Disabled for all the keys**

2.2.15 Analog output

Through an optional interface, to be connected to the expansion board, 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

  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 (AoZE: Value related to unloaded scale), and the one configured for the gross weight equal to the capacity (AoMA: Value related to full capacity).

  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 AoMI: Value related to underload.
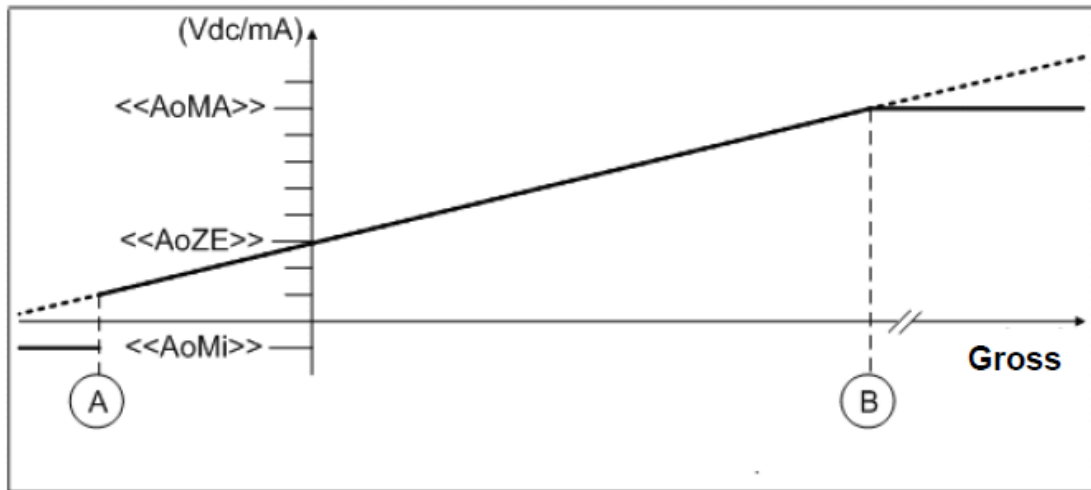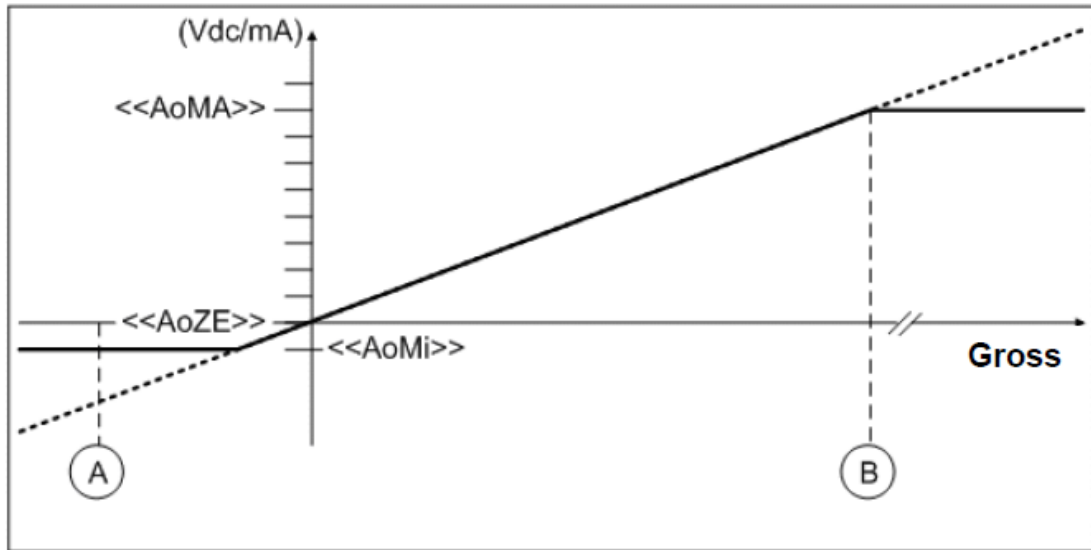
(A) **Gross = -100d**

(B) **Gross =Max. Scale Capacity**

- Proportional to 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 (AoZE: Value related to unloaded scale), and the one configured fo the net weight equal to the capacity (AoMA: Value related to full capacity).

    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 AoMI: Value related to underload.

Ⓐ **Gross = -100d**

Ⓑ **Gross =Max. Scale Capacity + 9e**

Ⓒ **Net = Max. Scale Capacity**

Expansion board slot

⚠

📁   Analog output → General settings → Expansion board slot

👉   Slot of expansion board to be used with the analog output

🔧
Slot 1	
Slot 2	

📭   Slot 1

Function

⚠️

📁   Analog output → General settings → Function

👉   Functioning mode

🔧

Proportional to the gross weight	Analog output on the gross weight
Proportional to the net weight	Analog output on the net weight

®   **Proportional to the gross weight**

Value related to full capacity

⚠️

📁   Analog output → Scale x → Value related to full capacity

👉   Maximum value of the analog output

🔧

0 ~ 65535	Digital/analog converter value to which corresponds a certain value in voltage or in current

®   **63250**

Value related to unloaded scale

⚠️

📁   Analog output → Scale x → Value related to unloaded scale

👉   Analog output value when the weight on the scale is 0

🔧

0 ~ 65535	Digital/analog converter value to which corresponds a certain value in voltage or in current

®   **1300**

Value related to underload

⚠️

📁   Analog output → Scale x → Value related to underload

☞   Minimum value of the analog output

🔧

0 ~ 65535	Digital/analog converter value to which corresponds a certain value in voltage or in current

1300

2.2.16 Backup & Restore

Backup of the configuration

⚠️

📁   Backup and Restore → Backup of the configuration

☞   It allows to execute a backup of all the data of the indicator. It's possible to enable a safety password to protect a new backup and the restore to the factory data.
NOTE: If a backup is present, there is the (*) symbol near the name of the parameter.

Clearing of automatic calibration warning

⚠️

📁   Backup and Restore → Clearing of ACW counters

☞   It allows to reset the counters (months and weighs) of the automatic calibration warning.

Restore keys

⚠️

📁   Backup and Restore → Restore keys

☞   It allows to restore the function of the keys and toolbar settings to the factory values (or to the backup data if a backup has been executed).

Databases initialization

⚠️

📁   Backup and Restore → Databases initialization

☞   It allows to reset the databases and restore the unit of measure and the decimals to the factory values (it's possible to select the databases to reset).

Restore printouts

⚠️

📁   Backup and Restore → Restore printouts

👉   It allows to restore the print formats and the linking to the print functions to the factory data (or to the backup data if a backup has been executed).

Alibi memory initialization

⚠️   • M
                  • *Not displayed in the BATCH1 software version*

📁   Backup and Restore → Alibi memory initialization

👉   It allows to initialize the alibi memory.

Cancellation of the buffered RAM

⚠️

📁   Backup and Restore → Cancellation of the buffered RAM

👉   It allows to restore the buffered RAM data to the factory data (or to the backup data if a backup has been executed).

Restore functioning settings

⚠️

📁   Backup and Restore → Restore functioning settings

👉   It allows to restore the functioning settings to the factory values (or to the backup data if a backup has been executed).
NOTE: The calibration data, the databases, the input texts and the printout heading are not restored.

Restore all settings

⚠️   M

📁   Backup and Restore → Restore all settings

👉   It allows to restore all the data of the indicator to the factory values (or to the backup data if

a backup has been executed).

2.2.17 Diagnostic

In this menu there are the functions to test the hardware and software status.

2.3   Functions list

In this section, there is the list of all the functions that can be linked to a function key (F1, ..., F10) or to a toolbar button or to an object of the customizable area or that can be executed from the MENU in the weighing environment (User setup) directly.

Note: in the function description, if it appears the preamble, it means that the function, inserted in a sequence, can accept a parameter (greater than 0) to the direct execution of the function.

2.3.1   Available functions for all software versions

Code	Name	Description
98	User setup	Access to the user menu
99	User setup function by index	It allows to insert the code of the function to execute
100	Scale functions	Access to the functions concerning the weight (zeroing, tare, ...)
101	Zeroing	Zeroing of the weight on the active scale
102	Zeroing cycle	Zeroing cycle of the weight on each connected scale (available just when you set the **Automatic zeroing at start up** equal to Cyclic)
103	Tare	Semiautomatic tare: it allows to tare the weight on the active scale
104	Preset tare	It allows to insert a tare manually Preamble: direct tare value, the numeric input will not be displayed
105	Lock/Unlock Tare	It changes the type of tare: from locked to unlocked and vice versa
106	Weight switching	It changes the type of displayed weight: net or gross
107	Weight in high resolution	It switches the displayed weight into high resolution (sensitivity x 10: addition of one decimal)
108	Scale switching	It switches the active scale (from the 1st to the 2nd and consequently) Preamble: direct scale number to be activated (0=remote scale, 1=scale 1, ...)
109	WWS remote configuration	It allows to enter in the setup environment of a connected WWS and modify the configuration ⚠ *Available just in the AF03 software version from release 02.01 and AF08 software version*
200	Printout	Access to the functions concerning the printout
201	Printer turning on	It turns on the connected printer
202	Simple printout	It sends the linked format to the 1st print function to the printer serial port
203	Last printout copy	It repeats the last printout

204	Change the printout format	It allows to change the linked format to each print function Preamble: direct print function number to which change the linked format, the table with all the print functions will not displayed
205	Printout format sending	It allows to send a format to the printer serial port Preamble: format to send
206	Ticket copies number	It allows to change the number of the copies to be printed Preamble: copies number to be set
300	Generic functions	Access to the generic functions
301	Screen switching	It moves consequently from one screen to another in the weighing environment Preamble: direct screen number to be activated (from 0 to 2)
302	Lock keyboard	It locks the keyboard and the touch screen as well
303	Date and time setting	It allows to update the date and time of the indicator
304	Calculator	It appears on the display the calculator. The calculation result is printed
305	Outputs setpoint setting	It allows to set the activation and deactivation value of each digital output Preamble: direct output number to which change the activation and deactivation values
306	Alibi memory reading	It allows to read the stored weighs in the alibi memory
400	Diagnostic	Access to the functions to verify the correct hardware and software functioning
401	Indicator information	It displays the information concerning the instrument (software version, serial number, …)
402	Weight test	It allows to check the weight value on each scale in converter points or mV
403	Display test	It turns on all the display dots in order to verify the correct functioning of the display
404	Keyboard test	It allows to test the keyboard and the touch screen
405	Voltage levels	It displays the voltage level of the power supply
406	Serial ports test	It allows to put into communication the three serial ports
407	Cts test	It shows the CTS signal level of the connected printer
408	Printout test	It allows to send a format to the printer serial port
409	Outputs and Inputs test	Test function to verify the correct functioning of the digital inputs, digital outputs and cross light
410	Analog output test	It allows to check if D/A converter value correspond to the relative value of the analog output (in voltage or in current)
413	Event log viewer	It shows the list of the instrument events
450	Metric information	It displays the metric information of each scale
451	Serial Com test (runtime)	It allows to check the received and transmitted data from a serial port during the weighing
452	Peripheral units test (runtime)	It allows to check the status of the digital inputs and digital outputs during the weighing

500	Input texts	Access to the functions to modify or delete the content of the input texts
501	Input texts configuration	Access to the table to modify the content of each input text
502	Input texts resetting	It allows to delete the content of a input text automatically
503	Input text 0	It allows to update the content of the input text 0 directly
504	Input text 1	It allows to update the content of the input text 1 directly
505	Input text 2	It allows to update the content of the input text 2 directly
506	Input text 3	It allows to update the content of the input text 3 directly
507	Input text 4	It allows to update the content of the input text 4 directly
508	Input text 5	It allows to update the content of the input text 5 directly
509	Input text 6	It allows to update the content of the input text 6 directly
510	Input text 7	It allows to update the content of the input text 7 directly
511	Input text 8	It allows to update the content of the input text 8 directly
512	Input text 9	It allows to update the content of the input text 9 directly
600	Databases	Access to the functions to manage all the databases
800	Totals	Access to the functions to print or reset the totals
801	View all totals	It displays a table with all the totals value ⚠ *Not available in the BATCH1 software version*
802	Reset all totals	It allows to reset all the totals of the instrument ⚠ *Not available in the BATCH1 software version*
803	Weighs to auto print partial t.	It allows to set the number of consecutive totalisations after which the partial total is printed and cleared automatically ⚠ *Not available in the BATCH1 software version*
804	Print partial total	It prints the linked format to the print function of the partial total ⚠ *Not available in the BATCH1 software version*
805	Reset partial total	It allows to clear the partial total ⚠ *Not available in the BATCH1 software version*
806	Print general total	It prints the linked format to the print function of the general total
807	Reset general total	It allows to clear the general total
808	Print grand total	It prints the linked format to the print function of the grand total ⚠ *Not available in the BATCH1 software version*
809	Reset grand total	It allows to clear the grand total ⚠ *Not available in the BATCH1 software version*
900	Progressives	Access to the functions to manage the counters of the totals resetting
901	Additional value	It allows to set the value which is summed to each totalisation
901	Progressive digit	It allows to set the number of digits of each progressive in the printout
903	Ticket progressive	It allows to modify the counter of the partial total resetting (which increments upon the first totalisation subsequent to the clearing)

Code	Name	Description
904	Lot progressive	It allows to clear the counter of the general total resetting (which increments upon the first totalisation subsequent to the clearing)

2.3.2 Available functions for AF0x software version only

AF01 functions list

Code	Name	Description
601	Article database	Access to the articles database
602	Article selection	Selection of a article Preamble: number of article to be selected, 9999 to deselect
603	Customer database	Access to the customers database
604	Customer selection	Selection of a customer Preamble: number of customer to be selected, 9999 to deselect
605	Tare database	Access to the tares database
606	Tare selection	Activation of a stored tare
700	AF01 functions	Access to the functions present in the AF01 software version
701	Weight conversion in lb	Conversion of the unit of the displayed weight to pounds
702	Totalisation	It allows to totalize the weight on the active scale
703	Minimum threshold	It allows to set the lower totalisation threshold
704	Maximum threshold	It allows to set the upper totalisation threshold
705	Print weighs list	It prints the list of all the weighs
706	Reset weighs list	It allows to clear all the weighs in the list
707	Print article list	It prints the list of weighs conditioned by the article
708	Reset article list	It allows to clear the weighs conditioned by article in the list
709	Print customer list	It prints the list of weighs conditioned by the customer
710	Reset customer list	It allows to clear the weighs conditioned by customer in the list
711	Cancel last weigh	It allows to cancel from all the totals the last totalisation made and decrease the counters
850	Print article total	It prints the linked format to the print function of the selected article
851	Reset article total	It allows to clear the total of the selected article total
852	Print articles total	It prints the total of each article
853	Reset articles total	It allows to clear the total of each article in the database
854	Print customer total	It prints the linked format to the print function of the selected customer total
855	Reset customer total	It allows to clear the total of the selected customer
856	Print customer s total	It prints the total of each customer
857	Reset customer s total	It allows to clear the total of each customer in the database

AF02 functions list

Code	Name	Description
601	Article database	Access to the articles database

602	Article selection	Selection of a article
		Preamble: number of article to be selected, 9999 to deselect
603	Customer database	Access to the customers database
604	Customer selection	Selection of a customer
		Preamble: number of customer to be selected, 9999 to deselect
605	Tare database	Access to the tares database
606	Tare selection	Activation of a stored tare
700	AF02 functions	Access to the functions present in the AF01 software version
701	Totalisation	It allows to totalize the weight on the active scale
702	Minimum threshold	It allows to set the lower totalisation threshold
703	Maximum threshold	It allows to set the upper totalisation threshold
704	Sampling	It allows to insert the pieces number for the reference and executes the sampling procedure
		Preamble: pieces number for the reference, the value 32767 execute the sampling with the last pieces number
705	Insertion of APW	It allows to insert a known average piece weight
		Preamble: average piece weight value
706	Manual APW optimization	It allows to improve the accuracy of the APW manually
707	Set the pieces for the sampling	It allows to insert the pieces number for the next reference
		Preamble: number of pieces to be set
708	Print weighs report	It prints the list of all the weighs
709	Reset weighs list	It allows to clear all the weighs in the list
710	Weighs list net	It prints the last 50 totalisations subdivided by net weight
711	Weighs list gross	It prints the last 50 totalisations subdivided by gross weight
712	Weighs list tare	It prints the last 50 totalisations subdivided by tare weight
713	Cancel last weigh	It allows to cancel from all the totals the last totalisation made and decrease the counters
850	Print article total	It prints the linked format to the print function of the selected article
851	Reset article total	It allows to clear the total of the selected article total
852	Print articles total	It prints the total of each article
853	Reset articles total	It allows to clear the total of each article in the database

AF03 functions list

Code	Name	Description
601	Customer database	Access to the customers database
602	Customer selection	Selection of a customer
		Preamble: number of customer to be selected, 9999 to deselect
603	Material database	Access to the materials database
604	Material selection	Selection of a material
		Preamble: number of material to be selected, 9999 to deselect
605	Vehicle database	Access to the vehicles database
606	Vehicle selection	Selection of a vehicle

		Preamble: number of vehicle to be selected, 9999 to deselect
607	Progressives database	Access to the progressives database
700	AF03 functions	Access to the functions present in the AF03 software version
701	Input weigh	It executes a input weigh
702	Output weigh	It executes a output weigh Preamble: ID number of corresponding input weigh
703	Minimum threshold	It allows to set the lower threshold for the input/output weigh
704	Maximum threshold	It allows to set the upper threshold for the input/output weigh
705	Reset weighs list	It allows to clear all the stored input weighs
850	Print customer total	It prints the linked format to the print function of the selected customer total
851	Reset customer total	It allows to clear the total of the selected customer
852	Print customers total	It prints the total of each customer
853	Reset customers total	It allows to clear the total of each customer in the database
854	Print material total	It prints the linked format to the print function of the selected material total
855	Reset material total	It allows to clear the total of the selected material
856	Print materials total	It prints the total of each material
857	Reset materials total	It allows to clear the total of each material in the database
858	Print vehicle total	It prints the linked format to the print function of the selected vehicle total
859	Reset vehicle total	It allows to clear the total of the selected vehicle
860	Print vehicles total	It prints the total of each vehicle
861	Reset vehicles total	It allows to clear the total of each vehicle in the database
1000	Network functions	Access to the functions of the network
1001	Network state	It displays the information about the network
1002	Network monitor	It allows to check the instruments connected to the network
1003	Network archive alignment	It aligns the databases of the instruments connected to the network
1004	Unlock weighing list records	It allows to unlock the records of the weighing list in the "network server" instrument
1005	Connect network	It connects the instrument to the network
1006	Disconnect network	It disconnects the instrument from the network
1007	Send remote key	When this function is linked to a function key (F1, ..., F10) or to a toolbar button, the pressed key code is sent to the active "remote scale" instrument
1009	Remote scale change	To switch the active remote scale (from the 1st to the 2nd and consequently) Preamble: direct remote scale number to be activated (0=remote scale 1, 1=remote scale 2, …)

AF04 functions list

Code	Name	Description

601	Article database	Access to the articles database
602	Reset article database	It initializes the article database except the decimals and the unit of measure
700	AF04 functions	Access to the functions present in the AF01 software version
701	Totalisation	It allows to totalize the weight on the active scale
702	Minimum threshold	It allows to set the lower totalisation threshold
703	Maximum threshold	It allows to set the upper totalisation threshold
704	Sampling start	It allows to begin the check of a lot
705	Sampling cancellation	It allows to cancel the sampling underway
706	Production line selection	It allows to change the line by inserting a number from 1 to 10 Preamble: line number to be selected
707	Weight/Volume conversion	It allows to switch the displayed value in the main screen from weight to volume and vice versa (during the sampling if the article density is different than 1.0000 g/ml)
708	Print last sampling report	It prints the weighs report of the sampling without the heading (if the production lines are more than 1, the indicator will ask to insert the line of which you want the report)
709	Print report (with heading)	It prints the weighs report of the sampling with the heading (if the production lines are more than 1, the indicator will ask to insert the line of which you want the report)
710	Print article report	It prints the article spot check
850	Print article total	It prints the linked format to the print function of the selected article
851	Reset article total	It allows to clear the total of the selected article total
852	Print articles total	It prints the total of each article
853	Reset articles total	It allows to clear the total of each article in the database

AF05 functions list

Code	Name	Description
601	Product database	Access to the products database
602	Product selection	Selection of a product Preamble: number of product to be selected, 9999 to deselect
603	Ingredients database	Access to the ingredients database
604	Customer database	Access to the customers database
605	Customer selection	Selection of a customer Preamble: number of customer to be selected, 9999 to deselect
606	Tare database	Access to the tares database
607	Tare selection	Activation of a stored tare
700	AF05 functions	Access to the functions present in the AF05 software version
701	Totalisation	It allows to totalize the weight on the active scale
702	Minimum threshold	It allows to set the lower totalisation threshold
703	Maximum threshold	It allows to set the upper totalisation threshold
704	Change seasoning and expiry	It allows to modify the seasoning days and the expiry days of the

	days	active product
705	Change price	It allows to modify the current price
		Note: the modification is not applied to the database
706	Selection of price/weight	It allows to set the price computing functioning mode (it determines the functioning of the conditioned print blocks)
		Note: the modification is not applied to the database
707	Set fixed weight/0 = cancel	It allows to set a fixed weight (which corresponds to the net weight) with which the indicator calculates the price amount
		Note: The value 0 disables the function
708	Currency minimum division	It allows to set the minimum division of the main and secondary currency
709	Decimals currency	It allows to set the number of decimals of the main and secondary currency
710	Symbol currency	It allows to set the symbol of the main currency and that of the secondary one in the printout and in the display visualization
711	Set conversion factor	It allows to set the number of decimals and the factor for the conversion from the main currency to the secondary currency
		Note: Secondary currency = Main currency x conversion factor
712	Print weighs total	It prints a list which shows date and time, description, number of executed weighs, and the net weight total of each article. At the end of the list, the TOTAL NUMBER of the executed weighs and the net total weight are printed.
713	Reset weighs total	It allows to clear
714	Weighs list net	It prints the last 50 totalisations executed, subdivided by net weight
715	Weighs list gross	It prints the last 50 totalisations executed, subdivided by gross weight
716	Weighs list tare	It prints the last 50 totalisations executed, subdivided by tare weight
717	Cancel last weigh	It allows to cancel from all the totals the last totalisation made and decrease the counters
718	Cancel weight on scale	It allows to subtract from all the totals the weight on the scale and the relative price amount, and decrease the counters
850	Print product total	It prints the linked format to the print function of the selected product
851	Reset product total	It allows to clear the total of the selected product total
852	Print products total	It prints the total of each product
853	Reset products total	It allows to clear the total of each product in the database
950	Set total progressive	It allows to set this progressive number, which increases upon each totalisation
951	Set boxes progressive	It allows to set the initial progressive number, which increases upon the first totalistion following the clearing of the partial total, if this is preceded by at least one totalisation and is reset upon the first totalistion following the clearing of the general total, if

		this is preceded by at least one totalisation
952	Set pallet progressive	It allows to set the initial progressive number, which increases upon the first totalistion following the clearing of the general total, if this is preceded by at least one totalisation and is reset upon the first totalistion following the clearing of the grand total, if this is preceded by at least one totalisation
953	Set partial progressive	It allows to set the initial progressive number, which increases of one upon the first totalistion following the clearing of the partial total, if this is preceded by at least one totalisation
954	Set general progressive	It allows to set the initial progressive number, which increases of one upon the first totalistion following the clearing of the general total, if this is preceded by at least one totalisation
955	Set grand progressive	It allows to set the initial progressive number, which increases of one upon the first totalistion following the clearing of the grand total, if this is preceded by at least one totalisation
956	Set product progressive	It allows to set the initial progressive number which increases of one upon the first totalistion following the clearing of the product total, if this is preceded by at least one totalisation
957	Set customer progressive	It allows to set this progressive number, which increases of one upon each totalisation, and is reset after the cancellation or the activation of a customer other than the active one

AF08 functions list

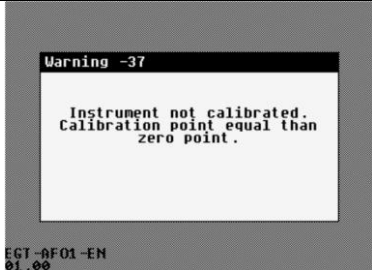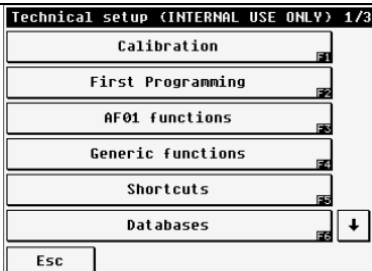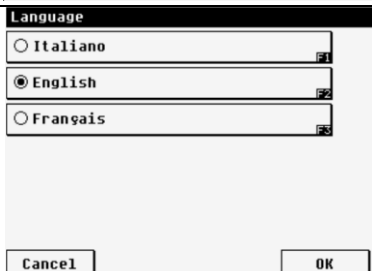| Code	Name	Description
601	Vehicle database	Access to the vehicles database
602	Vehicle selection	Selection of a vehicle Preamble: number of vehicle to be selected, 9999 to deselect
700	AF08 functions	Access to the functions present in the AF08 software version
701	Totalisation	It allows to totalize the weight on the active scales
702	Minimum threshold	It allows to set the lower totalisation threshold
703	Maximum threshold	It allows to set the upper totalisation threshold
704	Weighing end cycle	It allows to terminate the weighing of a vehicle and print the total weight
705	Number of connected scales	It allows to set the number of active scale for the weighing Preamble: number of scales to be activated
706	Scales coordinates programming	It allows to set the value of the coordinates of each scale for the centre of gravity calculation
707	Print weighs list	It prints the list of all the weighs
708	Cancel last weigh	It allows to cancel from the partial total the last totalisation made and decrease the counters
709	Cancel last vehicle	It allows to cancel from all the totals the last vehicle weight and decrease the counters
850	Print vehicle total	It prints the linked format to the print function of the selected

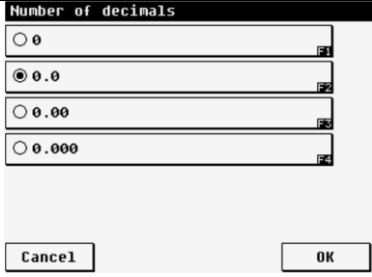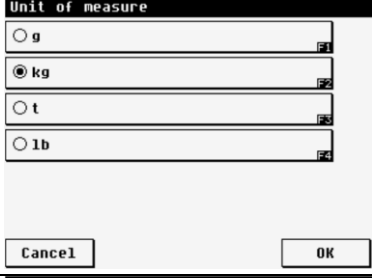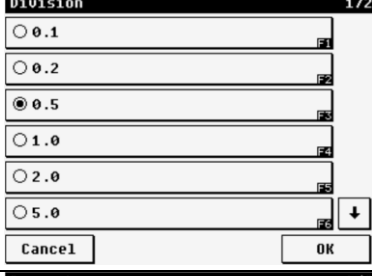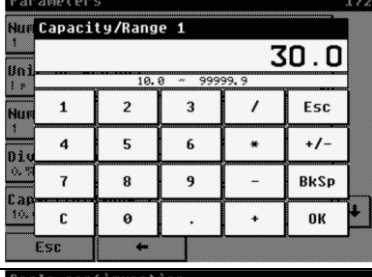|		vehicle
851	Reset vehicle total	It allows to clear the total of the selected vehicle total
852	Print vehicles total	It prints the total of each vehicle
853	Reset vehicles total	It allows to clear the total of each vehicle in the database
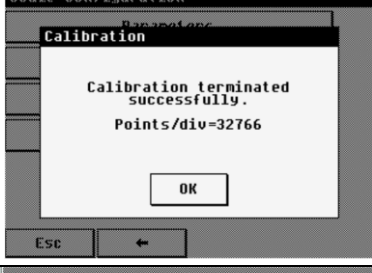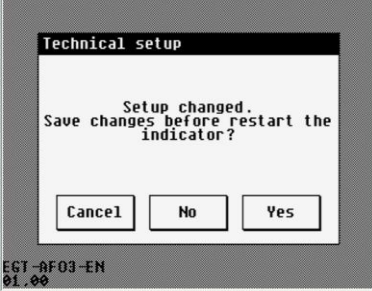
BATCH1 functions list
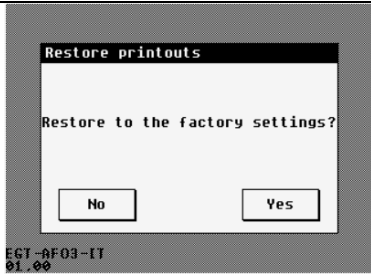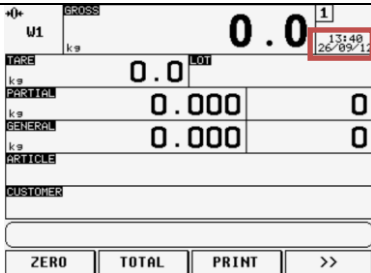
Code	Name	Description
601	Formula database	Access to the formulae database
602	Formula selection	Selection of a formula Preamble: number of formula to be selected, 9999 to deselect
700	BATCH1 functions	Access to the functions present in the BATCH1 software version
701	Start dosage	It allows to start the dosage
702	Stop dosage	It allows to pause or stop the dosage
703	Set target weight	It allows to set the formula or production or total target
704	Repeat dosage cycles	It allows to set the dosage cycles
705	Select and print a formula	It allows to select one formula and print this formula detail data
706	Reset a formula dosage	It allows to reset one formula accumulated dosage data
707	Reset all the formulae dosage	It allows to reset all formulae accumulated dosage data
708	Enable production	It allows to enable the dosage production
709	Manage production	It allows to manage the dosage production content
710	Print last production	It allows to print last terminated dosage production data
711	Set target volume	It allows to set the volume target
712	Set slow volume	It allows to set the volume slow
713	Set fly volume	It allows to set the volume fly
714	Print volume counter	It allows to print the volume counter data

3 FIRST USE

This chapter explains how to start to use a brand new indicator step by step. In the following procedure it is assumed that one scale only is connected to the instrument (Max=30.0kg, e=0.5Kg).

Step	Description	Screen
1	Connect the power cord of the indicator to the power socket and press the ⏻ CLEAR key until the instrument powers on	
2	The indicator displays the screen of the figure. Touch the centre of the display to access to the technical menu	
3	The scale sets the setup menu environment and displays the screen of the figure	
4	In First programming → Language, select the desired language	

5	In Calibration → Scale 1 → Parameters → Number of decimals, select the position of the decimal point	
6	In Calibration → Scale 1 → Parameters → Unit of measure, select the unit of measure	
7	In Calibration → Scale 1 → Parameters → Division, select the division of the scale	
8	In Calibration → Scale 1 → Parameters → Capacity/Range 1, set the capacity of the scale	
9	In Calibration → Scale 1 → Calibration, carry out the acquisition of the calibration points (See Calibration procedure). In the end it appears the screen of the figure	
10	Exit from the setup environment and press **Yes** when the message of figure appears on the display (the changes made will be saved)	

FIRST USE

| 11 | If the language is changed, it appears the message of the figure. Press **Yes** to restore the printout formats to the factory values with the texts in the new language | |
| 12 | The instrument restarts and after the zeroing of the weight, it's ready to weigh. Touch on the date and time to set it | |

4 LOGO CUSTOMISATION

The logo at start up can be replaced by a custom one. The logo properties are:

Property	Value
File name	logo0000.bmp
Format	bmp
Max Width	320
Max Height	160
Colors	2 black and white

The logo file must be stored into the folder **LOGO** of a micro SD card that will be inserted into micro SD socket on the back of the display border (See section 12.3).

At start up, the indicator will check the micro SD content, if the file LOGO\logo0000.bmp exists and is valid and the **Message to show at the start up** parameter is empty the customized logo image will be displayed.

5 MAIN SCREEN CUSTOMIZATION

The scale main screen can be customized to adapt it to the user need. Up to 50 objects per screen (30 touchable objects only)[1] and 3 different screens can be stored in the scale memory. The 3 screens can be switched either with the touch button [>>] or with the physical key [>> OK].

[1] *Exception:*

| 20 | 20 | *AF01, AF03, AF05 software versions with release less than 02.00 and AF02, AF04 software versions with release less than 01.01* |
| 30 | 30 | *AF01, AF03, AF05 software versions with release equal to 02.00 and AF04 software version with release equal to than 01.01* |

5.1 Customizable area

Figure 9 shows the display area customizable by user. The top weight area and the bottom area with system messages and toolbar are always visible.
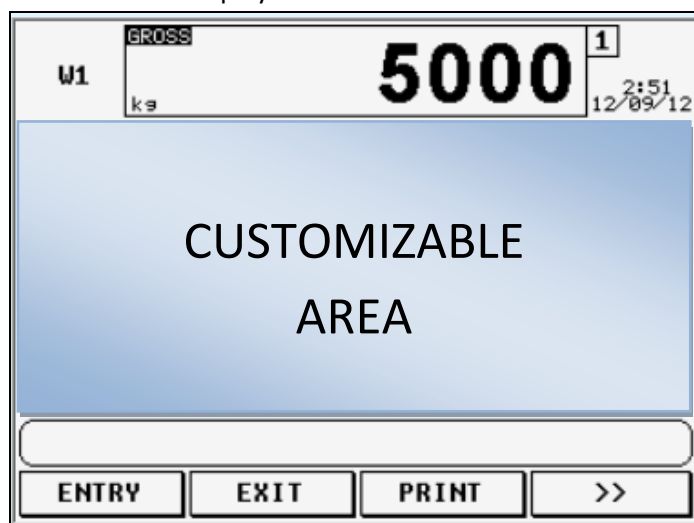
The customizable area size is 320 x 149 display dots.
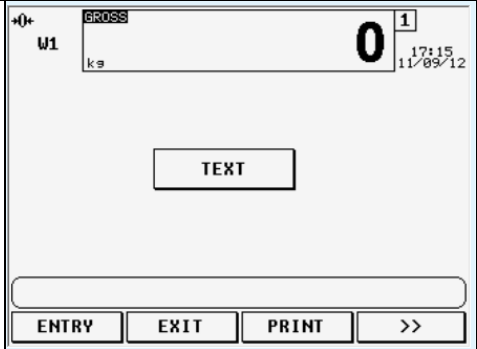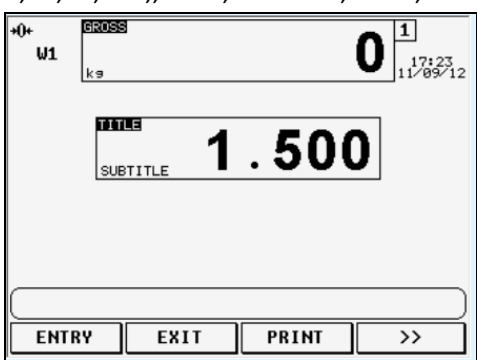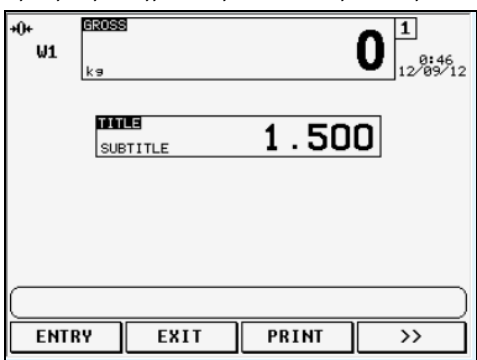
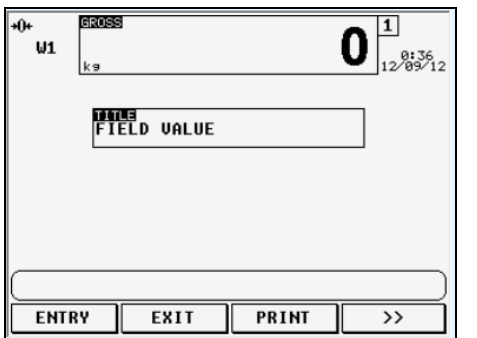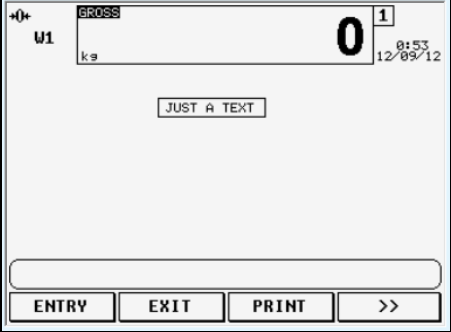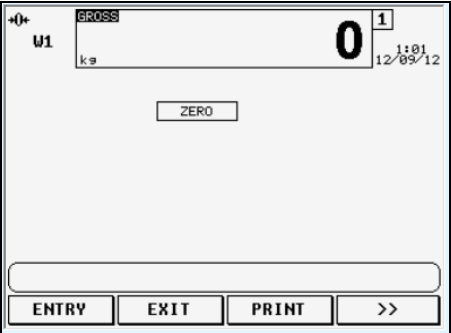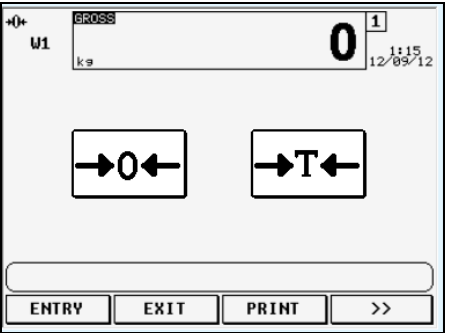**Figure 9. Customizable display area**

5.2 Screen commands

The screen customization objects are stored in the print format number 99. In this format special commands are to be used to get the desired screen layout. Table 1 lists the available commands for screen customization. Every line of the format is related to a screen object.

Between the commands of a screen and the commands of the next one a blank line is to be left.

For variable data see section 5.3.

OBJECT	COMMAND	EXAMPLE
Button	1,X,Y,WIDTH,HEIGHT,TEXT,,,FUNCTION **X**: horizontal location (0-319) **Y**: vertical location (44-192) **WIDTH**: button width in display dots (max 320) **HEIGHT**: button height in display dots (max 148)	1,100,100,100,30,TEXT,,,0

	TEXT: button text (can be a variable data) **FUNCTION**: function to execute when the button is pusher (See section 2.3)	
Numeric field	2,X,Y,WIDTH,,TITLE,SUBTITLE,VALUE,FUNCTION **X**: horizontal location (0-319) **Y**: vertical location (44-192) **WIDTH**: field width in display dots (max 320) **TITLE**: top left corner text (can be a variable data) **SUBTITLE**: bottom left corner text (can be a variable data) **VALUE**: numeric value of the field (can be a variable data) **FUNCTION**: function to execute when the field is pushed (See section 2.3) NOTE: fixed height of 45 dots	2,60,70,200,,TITLE,SUBTITLE,1.500,0
Secondary numeric field	3,X,Y,WIDTH,,TITLE,SUBTITLE,VALUE,FUNCTION **X**: horizontal location (0-319) **Y**: vertical <u>location</u> (44-192) **WIDTH**: field width in display dots (max 320) **TITLE**: top left corner text (can be a variable data) **SUBTITLE**: bottom left corner text (can be a variable data) **VALUE**: numeric value of the field (can be a variable data) **FUNCTION**: function to execute when the field is pushed (See section 2.3) NOTE: fixed height of 30 dots	3,60,70,200,,TITLE,SUBTITLE,1.500,0
Alphanumeric field	4,X,Y,WIDTH,,TITLE,,VALUE,FUNCTION **X**: horizontal location (0-319) **Y**: vertical location (44-192) **WIDTH**: field width in display dots (max 320) **TITLE**: top left corner text (can be a variable data) **VALUE**: value of the field (can be a variable data) **FUNCTION**: function to execute when the field is pushed (See section 2.3) NOTE: fixed height of 30 dots	4,60,70,200,,TITLE,,FIELD VALUE,0
Non touchable	5,X,Y,WIDTH,HEIGHT,FRAME,FONT,VALUE,0	5,110,70,80,15,1,1,JUST A TEXT,0

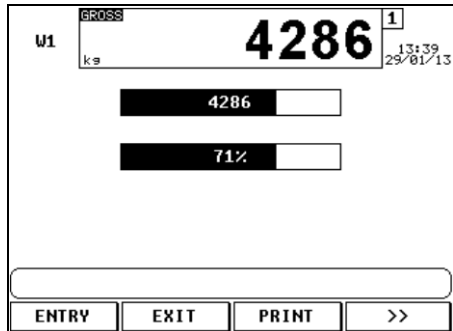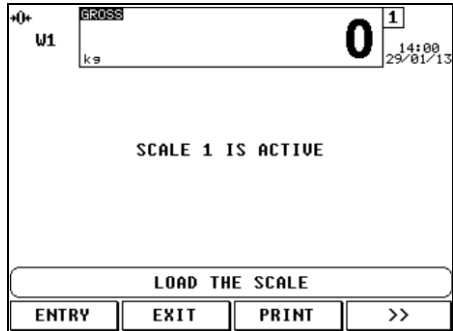| alphanumeric field | **X**: horizontal location (0-319)
Y: vertical location (44-192)
WIDTH: field width in display dots (max 320)
HEIGHT: field height in display dots (max 148)
FRAME: in the form xy [(1)]
• x is the horizontal alignment type
    o 0: left
    o 1: centre
    o 2: right
• y is the frame
    o 0: without frame
    o 1: with frame
FONT: field font (0-4)
VALUE: value of the field (can be a variable data)

NOTE: fonts 2, 3, 4 are numeric only

Fonts size in display dots:
• 0: 8 x 11
• 1: 6 x 8
• 2: 16 x 19
• 3: 24 x 32
• 4: 42 x 84 | |
| Touchable area | 6,X,Y,WIDTH,HEIGHT,,,,FUNCTION
X: horizontal location (0-319)
Y: vertical location (44-192)
WIDTH: field width in display dots (max 320)
HEIGHT: field height in display dots (max 148)
FUNCTION: function to execute when the area is pushed (See section 2.3) | 5,110,70,60,15,1,1, ZERO,0
6,110,70,60,15,,,,101
 |
| Bitmap image | 7,X,Y,WIDTH,HEIGHT,FILE,,,0
X: horizontal location (0-319)
Y: vertical location (44-192)
WIDTH: field width in display dots (max 320)
HEIGHT: field height in display dots (max 148)
FILE: bitmap file to load in the form x:\<path>
• x can be
    o 0 to load the file from USB drive
    o 1 to load the file from micro SD card | 7,50,90,100,60,1:\zero.bmp,,,0
7,180,90,100,60,1:\tare.bmp,,,0
 |

	• <path> is the .bmp file path in the selected drive (ex. 1:\images\im1.bmp)	

Progress bar [2]	8,X,Y,WIDTH,,MIN,MAX,VALUE,STYLE
	X: horizontal location (0-319)
	Y: vertical location (44-192)
	WIDTH: field width in display dots (max 320)
	MIN: minimum value (can be a variable data)
	MAX: maximum value (can be a variable data)
	VALUE: progress bar value (can be a variable data)
	STYLE: progress bar style, allowed values:
	  • 0: bar with no inner value
	  • 1: bar with numerical inner value
	  • 2: bar with percentage inner value
		8,80,60,160,,0,6000,@[301;0],1
		8,80,100,160,,0,6000,@[301;0],2

Skip commands [2]	9,,,,,PARAM1,PARAM2,OPERATOR,COMMANDS TO SKIP
	PARAM1: first value to compare
	PARAM2: second value to compare
	OPERATOR: operator
	COMMANDS TO SKIP: number of following commands to skip
	
	Operators:
	  • 1: operator equal to
	  • 2: operator different to
	  • 3: operator less than
	  • 4: operator less or equal than
	  • 5: operator greater than
	  • 6: operator greater or equal than
		9,,,,,@[301;3],1,2,1
		5,0,100,320,11,10,0,SCALE 1 IS ACTIVE,0
		9,,,,,@[301;3],1,1,1
		5,0,100,320,11,10,0,SCALE 2 IS ACTIVE,0

Table 1. Main screen customization commands

[1] *For the AF01, AF03, AF05 software versions with release less or equal than 02.00 and AF02 software version with release equal to 01.00 and AF04 software version with release less or equal than 01.01, the form is y (frame only)*

[2] *Not available in the AF01, AF03, AF05 software versions with release less or equal than 02.00 and AF02 software version with release equal to 01.00 and AF04 software version with release less or equal than 01.01*

5.3   Variable data parameters

It is possible to insert variable data in the command parameters. To do this insert print blocks in the text parameters of the display commands.

Figure 10 shows an example of a button, with tare function, with the present gross weight in the text. The command to get the screen of Figure 10 is the following one:

```
1,100,50,140,40,TARE (@[301;1]@[312;0]),,,103
```
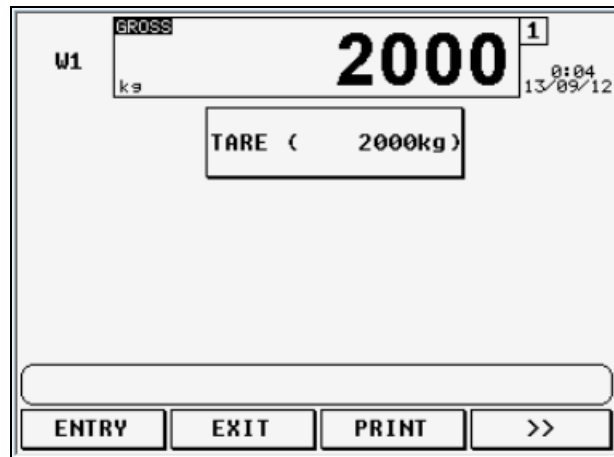
Figure 10. Display object with variable data

The print blocks are described in the Dinitools™ help window directly.

5.4   Format errors

If some errors occur in the print format 99 the display processor stops to work at the line before the first wrong one and an error message appears in the system messages area. The error is related to the first wrong line. Figure 11 shows and example of the error message. The error message has the following syntax:

<p align="center"><code>SCREEN:x OBJECT:y PARAMETER:z</code></p>

where:

- x: number of the screen related to the format block of the wrong line
- y: number of the line inside the format block x where the error is
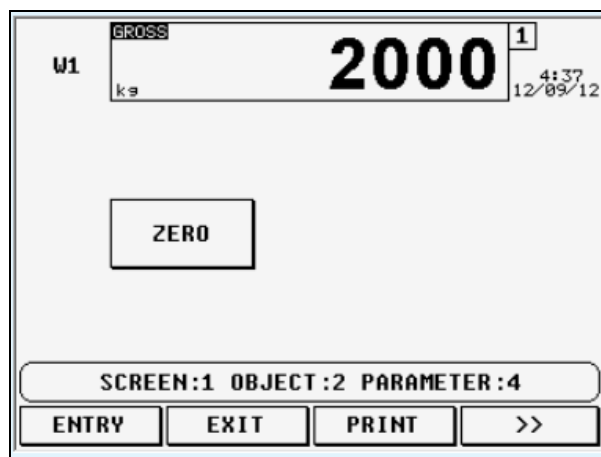- z: number of the parameter that has generated the error

Figure 11. Display format error message

Format that has generated the error of Figure 11:

Object 1   `1,50,100,80,40,ZERO,,,101`
Object 2   `1,250,100,80,40,TARE,,,103`

The parameter 4 (80) of object 2 has generated the error because the sum of X parameter (250) and WIDTH parameter (80) minus 1, that is 329, is greater than the maximum allowed horizontal location, that is 319.
To remove the error it is necessary either decrease the X parameters or decrease the WIDTH parameter.

5.5   Display customization example

In this section will be shown how to get the 2 screens of Figure 12 and Figure 13.

In the first screen there are 2 buttons, one to zero and one to tare the scale. In the second screen there are 2 buttons that allow to print and insert a preset tare.
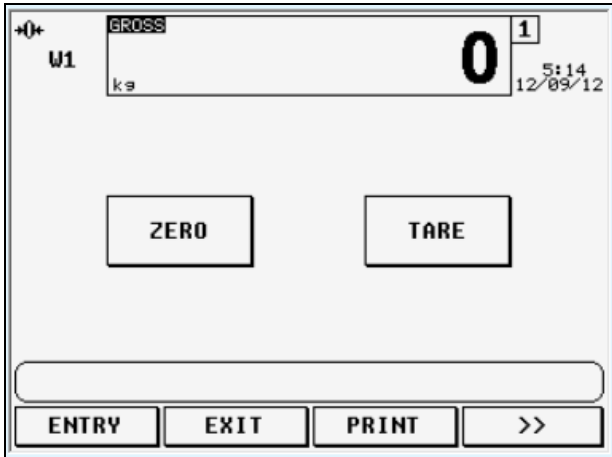

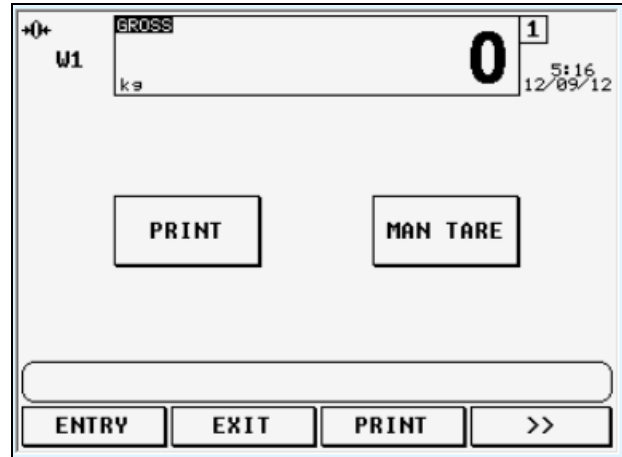Figure 12. Screen 1   Figure 13. Screen 2

In the Dinitools™ application create a new print format related to the scale to customize and set the print format number equal 99, insert a format name and set print terminator equal CR, like in Figure 14.

Write the custom display commands in the format text area.

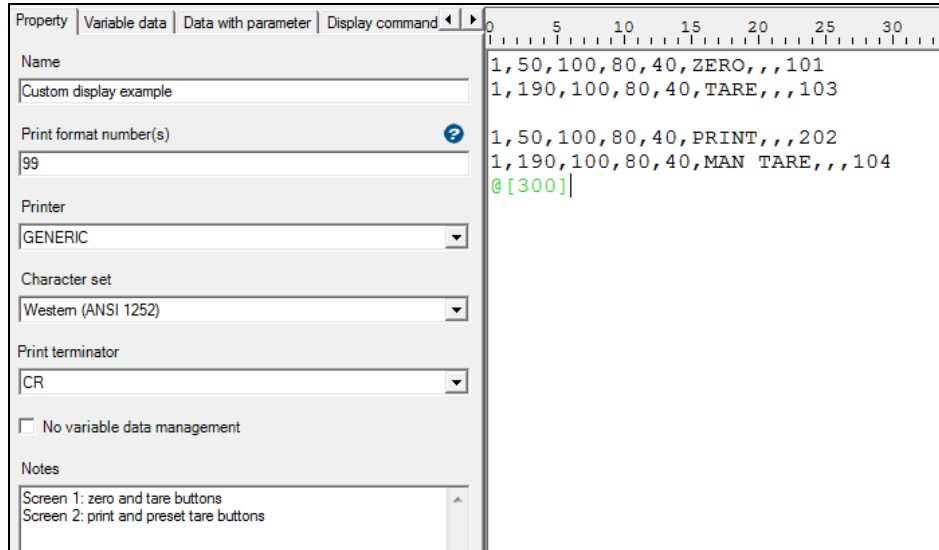Finally send the format to the connected scale.

Figure 14. Display customization example

The format is the following one:

Screen 1

Object 1   `1,50,100,80,40,ZERO,,,101`

Object 2   `1,190,100,80,40,TARE,,,103`

Screen 2

Object 1   `1,50,100,80,40,PRINT,,,202`

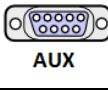Object 2   `1,190,100,80,40,MAN TARE,,,104`

6 SERIAL COMMUNICATION

!! IMPORTANT NOTE !!

- The character between < > is a single byte character
- The characters between [ ] are optional, depending from the setting
- The characters between ( ) are different alternatives separated by the vertical bar character "|"
- The comma character "," is used as fields separator
- The point character "." is used as decimal separator
- The character "*b*" identifies a blank space
- The terminator characters are <CR><LF> where:

<CR>	ASCII decimal code 013
<LF>	ASCII decimal code 010

Used symbols:

PC	Available for the pc serial port
PRINTER	Available for the printer serial port
AUX	Available for the auxiliary serial port

6.1 Transmission protocols

Standard

Format	[CC]SS,KK,PPPPPPPP,UU<CR><LF>	
	Characters	**Description**
	[CC]	Instrument code, just in the case the 485 protocol is enabled
Where	SS	Scale status US — Unstable weight ST — Stable weight OL — Weight over load (out of range) UL — Weight under load (out of range) TL — Scale not at level
	KK	

		Weight Type	
		NT	Net Weight
		GS	Gross Weight
	PPPPPPPP	Weight on 8 digits	
	UU	Unit of measure: kg, g, t or lb	
Example	ST,GS, 90.6kg<CR><LF>		

NOTE: Alternatively, for the pc serial port, by setting the print format 100, it is possible to transmit the data configured in this format.

Extended

Format	[CC]SS,B,LLLLLLLLLLUU,(PT|*bb*)TTTTTTTTTTUU<CR><LF>	
	Characters	*Description*
	[CC]	Instrument code, just in the case the 485 protocol is enabled
Where	SS	Scale status US Unstable weight ST Stable weight OL Weight over load (out of range) UL Weight under load (out of range) TL Scale not at level
	B	Number of active scale
	LLLLLLLLLL	Gross weight on 10 digits
	UU	Unit of measure: kg, g, t or lb
	(PT|*bb*)	PT if the tare is manual or *bb* if the tare is semiautomatic
	TTTTTTTTTT	Tare weight on 10 digits
	UU	Unit of measure: kg, g, t or lb
Example	ST,1, 90.6kg, 20.8kg<CR><LF>	

Repeater 6 digits

Transmission protocol for the connection to the Dini Argeo weight repeater. The transmitted weight is the one displayed in the top of the display.
NOTE: For this protocol, the communication mode is always continuous (independent from the parameter Communication mode in the Technical setup).

Monodirectional

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.

For alibi memory

This protocol allows to store the weighs in the integrated alibi memory when the simple printout or the totalisation/input weight/output weigh is executed.
If the protocol is set on the pc serial port, the indicator transmits from the same port the following string:

Format	[CC]PIDSS,B,LLLLLLLLLLUU, (PT|*bb*)TTTTTTTTTTUU,(RRRRR-WWWWWW|NO)<CR><LF>	
Where	*Characters*	*Description*
	[CC]	Instrument code, just in the case the 485 protocol is enabled
	SS	Scale status US — Unstable weight ST — Stable weight OL — Weight over load (out of range) UL — Weight under load (out of range) TL — Scale not at level
	B	Number of active scale
	LLLLLLLLLL	Gross weight on 10 digits
	UU	Unit of measure: kg, g, t or lb
	(PT|*bb*)	PT if the tare is manual or *bb* if the tare is semiautomatic
	TTTTTTTTTT	Tare weight on 10 digits
	UU	Unit of measure: kg, g, t or lb
	(RRRRR-WWWWWW|NO)	Rewriting number on 5 digits (RRRRR) and Weigh number on 6 digits (WWWWWW) or NO for the weigh not stored in the alibi memory
Example	PIDST,1, 1.000kg, 1.000kg,00000-000001<CR><LF>	

SMA

Serial communication protocol of the Scale Manufacturers Associations (SMA): see relative manual.

Modbus

Standard protocol: see relative manual.

Profibus

Standard protocol: see relative manual.

Continuous

The indicator transmits continuously the data configured in the print format 1. Alternatively, by setting only the "300" block in the print format 1, it is possible to transmit the STANDARD STRING (or the EXTENDED STRING, it depends on the Protocol parameter of the pc serial port).
For configuration details of the print formats, see section 7.

Disabled
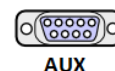
In case of auxiliary serial port connected to remote scale or badge/barcode reader.

Multi-Repeater

Transmission protocol for the connection to more Dini Argeo weight repeaters. The indicator transmits continuously the weight of each scale preceded from a address from 1 to 8 and the sum weight of the active scales preceded from the address 9.
NOTE: For this protocol, the communication mode is always continuous (independent from the parameter Communication mode in the Technical setup).

6.2   Communication modes

For the printer and auxiliary serial ports, the communication mode depends on the protocol.

For the pc serial port, the data transmission can be done in the following ways:
- **On demand**: It requires an external command from the PC to send the data requested. Transmission can take place at any time requested.

- **Continuous**: Continuous transmission of the standard string (Standard protocol) or of the extended string (Extended protocol) or of the customised string (if the print format 100 is configured).

- **Stability**: 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 Weighing mode reactivation parameter of the SET-UP environment has been set (passage by zero of the net weight or weight instability).

- **RS485 mode**: On request an RS485 Half Duplex serial output can be installed, 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>").

The relationship between protocol and communication for the pc serial port is schemed in the table:

	COMMUNICATION MODE			
PROTOCOL	**On demand**	**Continuous**	**Stability**	**RS485 mode**
Standard	✓ Standard answer to "READ" serial command	✓ Standard string	✓ Standard string	✓ Standard answer to "[CC]READ" serial command
Extended	✓ Extended answer to "READ" serial command	✓ Extended string	✓ Extended string	✓ Extended answer to "[CC]READ" serial command
Repeater 6 Digits	✘	✘	✘	✘
Monodirectional	✘	✘	✘	✘
For alibi memory	✓ Extended answer to "READ" serial command	✓ Extended string	✓ Extended string	✓ Extended answer to "[CC]READ" serial command
SMA	✘	✘	✘	✘
Modbus	✘	✘	✘	✘
Profibus	✘	✘	✘	✘

✓ = Available communication mode for the protocol, ✘ = Communication mode ignored

7 PRINTOUT FORMATTING

It's possible to program 30 different formats[(1)] to be linked to the print functions of the indicator. For the complete list of the print functions see 📖 .

Furthermore, all the software versions have other 3 formats:

- Format **99** to customize the main screen in the weighing environment (See section 5)
- Format **100** to customize the answer to the "READ" serial command (See section 6)
- Format **200** to program freely through a BASIC interpreter integrated in the instrument (See relative manual)

Each format can be configured through the Dinitools™ software for PC, see relative manual.

Example of the 1st format configured through Dinitools™:

Print block	Description
@[334;0]@[13]	1st Printout heading
@[334;1]@[13]	2nd Printout heading
@[334;2]@[13]	3rd Printout heading
@[13]	Leave the blank line
@[321;0]@[13]	Print date and time
GROSS	Print the "GROSS" text
@[301;1]	Print the gross weight value
@[312;0]@[13]	Print the unit of measure
TARE	Print the "TARE" text
@[301;2]	Print the tare weight value
@[312;0]@[13]	Print the unit of measure
NET	Print the "NET" text
@[301;0]	Print the net weight value
@[312;0]@[13]	Print the unit of measure
@[13]	Leave the blank line
@[13]	Leave the blank line
@[13]	Leave the blank line
@[300]	Print end

@[13] is the print terminator of the printer TPR

[(1)] Exception: 50 for AF05 software version

The format produces the following printout when the simple printout is executed:

1st heading	```
2nd heading	DINI ARGEO SRL
3rd heading	VIA DELLA FISICA 20
	SPEZZANO (MO) – ITALY
Date – time	
Gross weight	24/09/2012 – 14:53
Tare weight	GROSS 2.000kg
Net weight	TARE 0.000kg
3 blank lines	NET 2.000kg

```
DINI ARGEO SRL
VIA DELLA FISICA 20
SPEZZANO (MO) – ITALY

24/09/2012 – 14:53
GROSS          2.000kg
TARE           0.000kg
NET            2.000kg


```

8 ALIBI MEMORY

⚠ Not available in the BATCH1 software version.

The integrated alibi memory allows to store the executed weighs or the weights transmitted to the PC, to the printers and to all the non approved devices.
The stored values can then be recalled by the PC serial line or directly on the indicator's display for a following check (through the function 306, see section 2.3).

The data filed with each weigh or upon each weight transmission are:
- Gross weight
- Tare
- Unit of measure
- Number of active scale

The memorisation of a weigh takes place:
- Following the reception of a command through the serial line.
  See serial commands manual.
- Upon the printing made with the simple printout function or upon totalisation/input weigh/ouput weigh (by setting the printer serial port Protocol equal to "For alibi memory").
  It's possible also to transmit the string (weigh/ID) on the PC port, by setting the pc serial port Protocol equal to "For alibi memory" (See section 6.1).

The identification of the weigh takes place through the ID code; a code is given to each weigh, allowing to find the weigh in the database.
The ID has the following format:
< Rewriting number > — < Weigh number >
The rewriting number is a number of 5 digits which may go from 0 to 00255; it indicates the number of complete rewritings of the alibi memory.
The weigh number is a number of 6 digits which may go from 0 to 131071; it indicates the weigh number in the current rewriting of the alibi memory.

With each storage the weigh number is increased of 000001; when this reaches the value 131071, it restarts from 000000 and the rewriting number increases of 00001.
If the weigh cannot be saved in the alibi, the numeric ID will be substituted with the message "NO".

9 AVAILABLE EXPANSION BOARDS

To the scales of the 3590EGT series can be connected the expansion boards listed in Table .

Board	Features
I/O expansion	6 digital inputs 12 digital outputs Analog output socket
Analog output	

Table 2. Expansion boards

10 AVAILABLE OPTIONS

To the scales of the 3590EGT series can be connected the options listed in Table .

Option	Features
Attached thermal printer option box	
Attached control light option box	
External radio modem 868MHz option box	
USB / Ethernet / Wi-Fi / Bluetooth interface	
433MHz radiofrequency remote control	6 keys with customizable function

Table 3. Options

11 AVAILABLE PC TOOLS

The scales of the 3590EGT series can be connected to the PC tools listed in Table and downloadable from Dini Argeo web site www.diniargeo.com.

Tool	Features
DiniTools	Management of setup, print formats and archives
WeighConsole	Stores weights in documents, excel files
Custom language tool	Customization of the scale texts
Serial Test	Serial and net communication terminal

Table 4. PC tools

12 ELECTRICAL SCHEMES

12.1 MOTHERBOARD
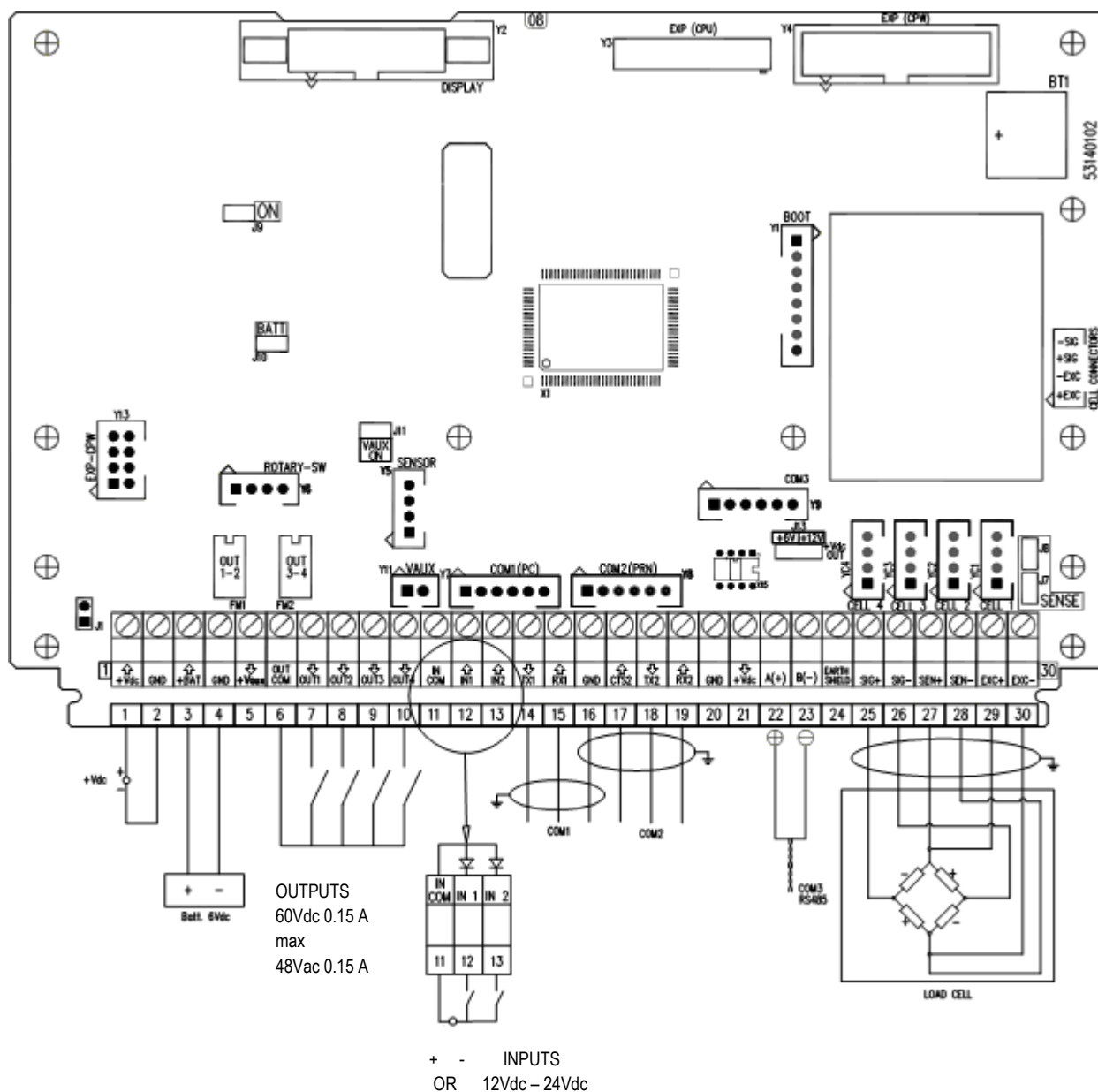
J9 (ON):

- 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 Printer Power supply parameter of the SET-UP ENVIRONMENT.

J13 (+Vdc OUT): It allows to select 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.

SERIAL PORTS

COM 1	COM 2	COM 3
Y7 AMP Connector: 232 serial 14-15-16 Terminal: 232 serial	Y8 AMP Connector: 232 serial 16-17-18-19 Terminal: 232 serial	Y9 AMP Connector: 232 serial 22-23 Terminal: 485 serial (with X15 integrated circuit)

!! IMPORTANT !!

In the case of RS485 connection, read carefully and apply what is described in section 1.

In the case of digital load cells connection, read carefully and apply what is described in section 1.

POWER SUPPLY

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

CELL: LOAD RECEIVER (terminal board connection)

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

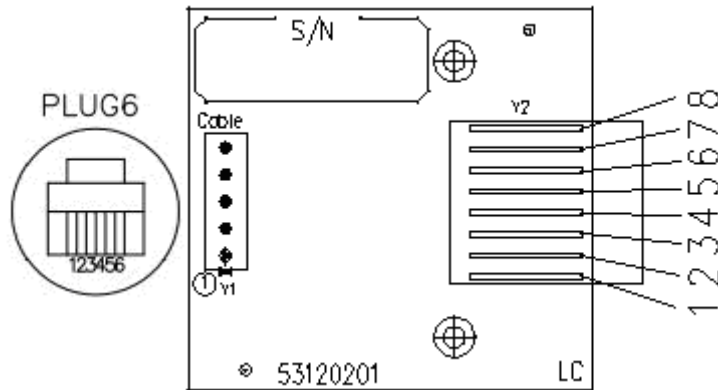**INPUTS (OPTOISOLATOR PHOTOCOUPLERS)**

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) (*)

PLUG6 CONNECTIONS:

Y2	PLUG6	DB9	COLOUR	MEANING
1				
2	1		ORANGE-WHITE	
3	2	3	BLUE-WHITE	RX
4	3		BROWN	
5	4	5	GREEN-WHITE	GND
6	5	2	ORANGE	TX
7	6		WHITE-BROWN	
8				

(*) May be present depending on the model.

12.2 I/O EXPANSION BOARD
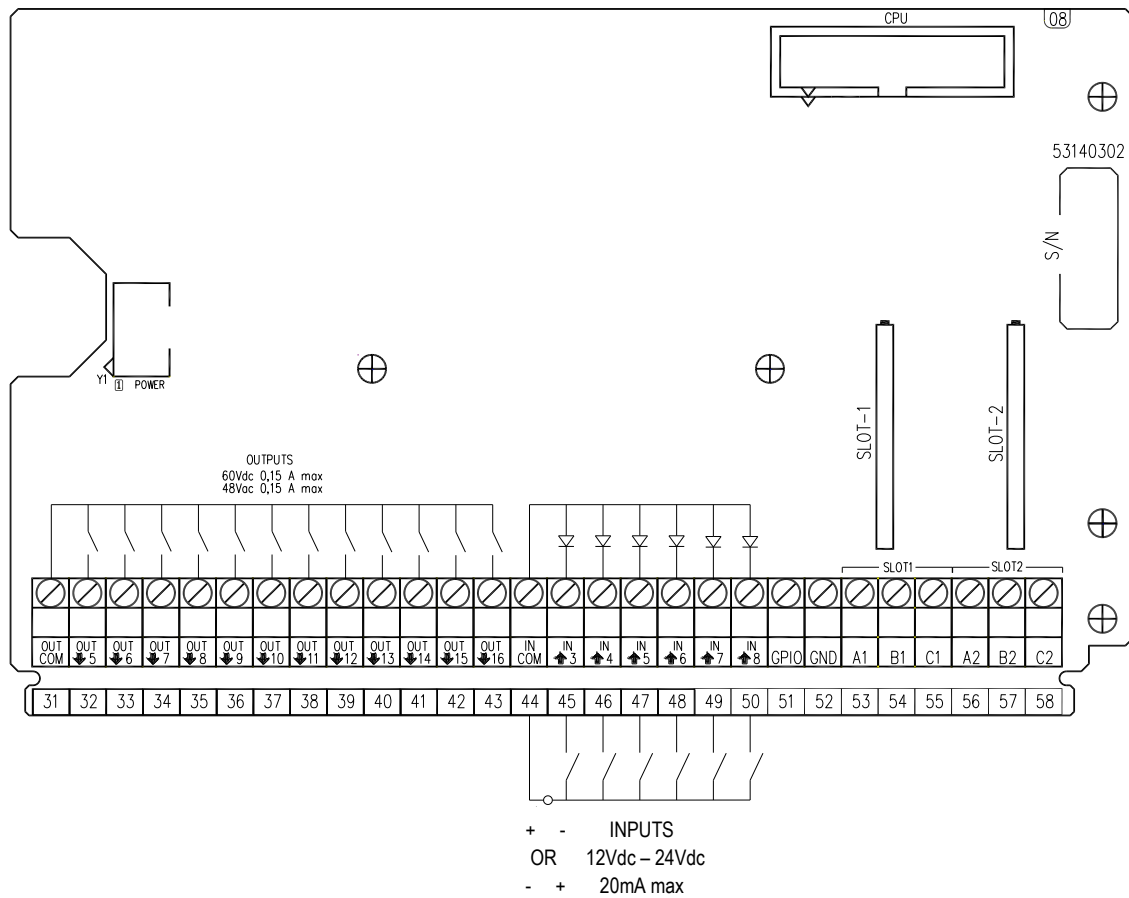
ANALOGUE OUTPUT

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)
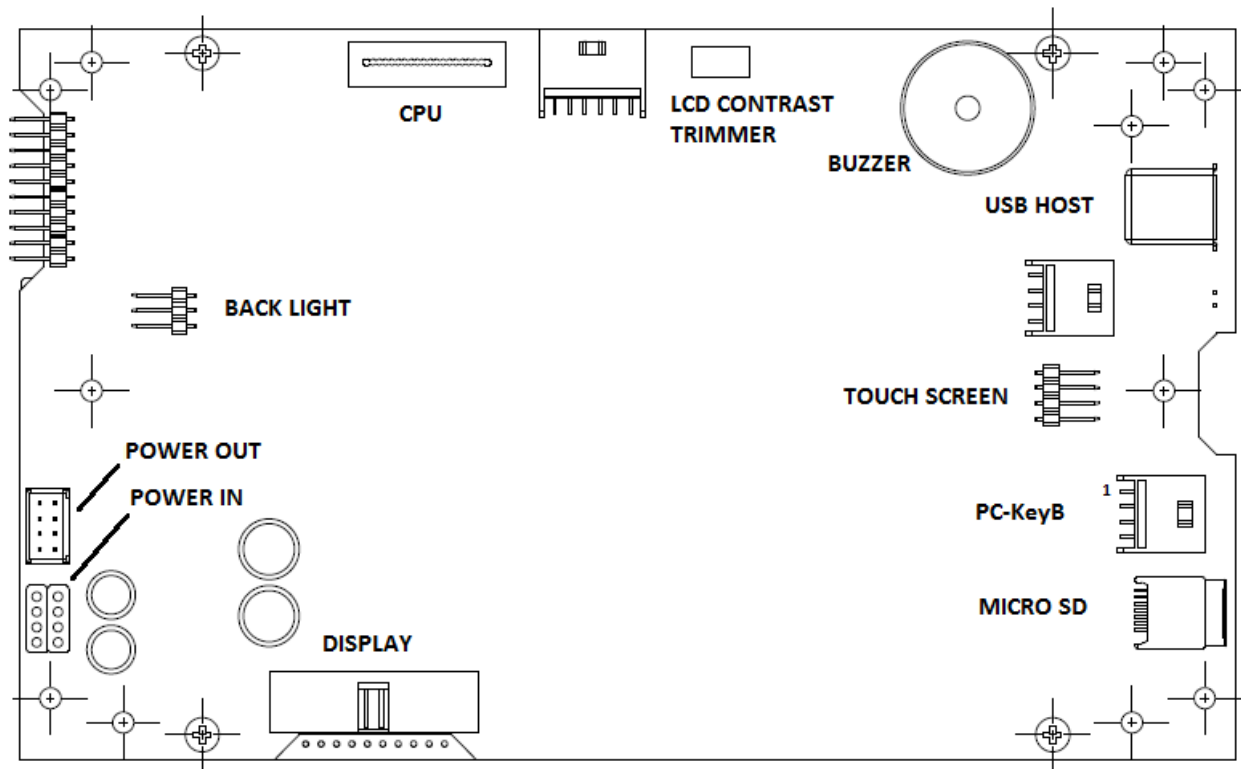
Power supply: 12 Vdc ÷ 24 Vdc, max 20 mA.

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.

12.3 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

DECLARATION OF CONFORMITY

This device conforms to the essential standards and norms relative to the applicable European regulations. The Declaration of conformity is available in the web site www.diniargeo.com.

WARRANTY

The TWO-YEAR warranty period begins on the day the instrument is delivered. It includes spare parts and labour for repairs at no charge if the INSTRUMENTS ARE RETURNED prepaid to the DEALER'S PLACE OF BUSINESS. Warranty covers all defects NOT attributable to the Customer (so are not included in the warranty, failures resulting from improper use) and NOT caused during transport.

If on site service is requested (or necessary), for any reason, where the instrument is used, the Customer will pay for all of the service technician's costs: travel time and expenses plus room and board (if any).

The customer pays for shipping costs (both ways), if the instrument is shipped to the DEALER or manufacturer for repair.

The WARRANTY is VOIDED if faults occur due to work done by unauthorized personnel or due to connections to equipment installed by others or incorrect connection to the power supply.

This warranty DOES NOT provide for any compensation for losses or damages, direct or indirect, incurred by the Customer due to complete or partial failure of instruments or systems sold, even during the warranty period.

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