ARPEGE MASTERK

OPERATING MANUAL AIPORT INDICATOR (AWI-P & AWI-K MODELS)

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Date	Version Number	Records of modifications
22/01/2020	00	Original
04/11/2020	01	Addition of the AWI-K model

<div style="border:1px solid black; text-align:center;">

SUMMARY

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1. OVERVIEW

1.1. Example of configuration overview

ASD-2 remote display

AWI-P/K Indicator

CO1   **CO2**   **M1/CO1**

PASSENGER side   *OPEARTOR side*

Scale Receptor

1.2. AWI-P/K Indicator

1.2.1. Technical characteristics

Maximum number of scale divisions (legal for trade)	: 6000.
Sensitivity	: 0.5 µV.
Power supply of the load cell	: 5 V square wave.
Number of measurements / second	: 50 to 990.
Load impedance (analog load cells)	: > 58 ohms.

Zero visualized at 1/4 scale division.
Digital adjustment conversational by the front panel.
DC power supply 12 V_{DC}.
Power consumption: 1A max, according to the configuration.
LCD screen 240 pixels by 160 pixels composed of the weight on 5 digits of 15 mm and of application additional information.

1.2.2. The peripherals

In standard version, the indicator features:
❖ One serial link:
COM1   : RS232. (Short distance link: 10 meters max.)

❖ One input for the analog load cells:
M1   : Analog load cell(s) 6 wires. (Short distance link: 30 meters max.)
Reminder: Only one cable must be connected on **M1**. The parallel mounting of the load cells must be done separately in a junction box.

❖ A MASTER CAN (CAN bus) / RS485 interface:
CO1   : Digital load cell(s).

❖ A MASTER CAN (CAN bus) interface:
CO2   : Remote display unit.

❖ 4 logic input interfaces:
CO6   : Isolated DC inputs. (See *5.1.*)
          Input voltage 12 or 24V_{DC} / Maximum current consumed per input 5 mA max.

❖ 4 logic output interfaces:

CO7 : Isolated AC/DC outputs. (See *5.1.*)

Output voltage 12 or 24V$_{DC \text{ or } AC}$ / Maximum current per output 250 mA max.

In optional version, the indicator features:
❖ One Ethernet interface:

ETHERNET : Communication with Host system.

1.2.3. Displays and Indicator lights
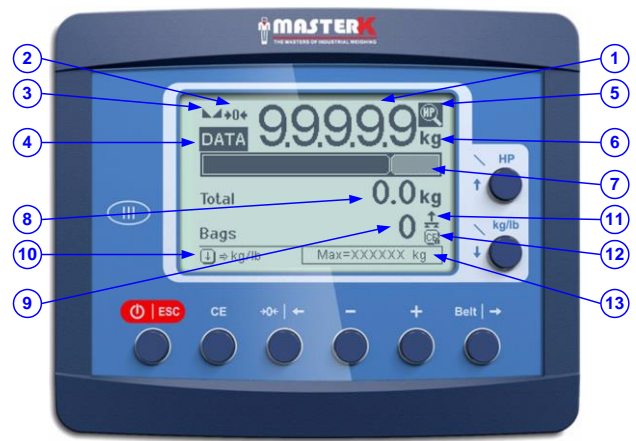
AWI-P model:

AWI-K model:

Legend:

- 1 ⇒ Weight on 5 digits of 15 mm height.
- 2 ⇒ ⁺0⁺ indicates if the weight is null at 1/4 scale division.
- 3 ⇒ ◣◢ indicates if the weight is stable.
- 4 ⇒ **DATA** indicates that the 5 digits are displaying a data and not a weight.
- 5 ⇒ 🔳 indicates if the displayed weight is in high resolution.
- 6 ⇒ Indicates the weight unit **kg** or **lb**.
- 7 ⇒ Bar graph shows the weight progression with the **Heavy Bag detection**.

- 8 ⇒ Total weight on 6 digits of 10 mm height with its unit **kg** or **lb**.
- 9 ⇒ Bags counting on 3 digits of 10 mm.
- 10 ⇒ **Application information area**.
- 11 ⇒ ⬆ indicates that the **Add function** is done.
- 12 ⇒ 🔳 indicates that the **Clear function** is locked.
- 13 ⇒ **Metrological information area**.

1.2.4. Keyboard

AWI-P	AWI-K	In menus	In numeric or alphanumeric seizures	In multiple choice seizures	Application functions
ON/OFF ESC	⏻|ESC	Return to the previous menu	Exit of the seizure		-
		Press this key for 2 seconds to switch OFF the indicator, press it again for 2 seconds to restart the indicator			
CE	CE	-	Clear the seizure	-	**Clear function** (see *2.1.3.*)
⁺0⁺←	⁺0⁺|←	-	Move the cursor to the left	Select the previous value	Reset the weight to zero (within the authorised range)
−	−	-	Decrease the character selected by the cursor	Select the previous value	**Remove function** (see *2.1.2.*)

AWI-P	AWI-K	In menus	In numeric or alphanumeric seizures	In multiple choice seizures	Application functions
➕	➕	-	Increase the character selected by the cursor	Select the next value	**Add function** (see *2.1.1.*)
Belt →	Belt | →	Access to the current pointed function	Move the cursor to the right	Select the next value	Toggle the **Command of Belt** (see *2.1.4.*)
HP ↑	↖ HP ↑	Selecting the previous function	Selecting the previous seizure		Switch to the **H**igh **P**recision weight display
kg/lb ↓	↖ kg/lb ↓	Selecting the next function	Selecting the next seizure		Toggle the weight unit between kg and lb (*)

*: Function available according the Calibration parameter, the **Application information area** indicates if this feature is available. (See *2.2.*)

1.3.   ASD-2 Remote display

1.3.1.   Technical characteristics

Zero visualized at 1/4 scale division.
DC power supply 12 V_{DC}.
Power consumption: 0.15A max.
WEIGHT display: 5 digits of 14 mm red high-brightness LED.
TOTAL display: 6 digits of 14 mm red high-brightness LED.
BAG display: 3 digits of 14 mm red high-brightness LED.

1.3.2.   The peripherals

The remote display features:
❖ A MASTER CAN (CAN bus) interface:
CO1   : Indicator unit.

1.3.3.   Displays and Indicator lights
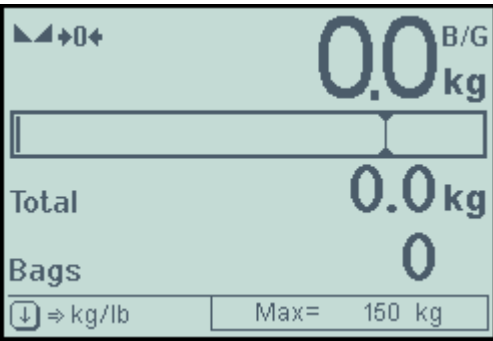
Legend:
- 1 ⟹ Weight on 5 digits of 14 mm height.
- 2 ⟹ ◢◣ indicates if the weight is stable.
- 3 ⟹ →0← indicates if the weight is null at 1/4 scale division.
- 4 ⟹ Indicates the weight unit **kg** or **lb**.
- 5 ⟹ Total weight on 6 digits of 14 mm height with its unit **kg** or **lb**.
- 6 ⟹ Bags counting on 3 digits of 14 mm.

2.   NORMAL APPLICATION MODE

Once the indicator is started in **Normal Application Mode** the following screen is shown:

◣◢ = Weight is stable ⇒

⇐ Scale is empty

⇐ Total is null

⇐ Bag count is null

Application information area ⇒
(see *2.2.*)

Metrological information area ⇐
(see *2.3.*)

Place one bag on the scale, the following screen is displayed:

According an "**Heavy Bag limit**" set to 30.0kg (see *3.4.*), the bar graph is at 30% ⇒
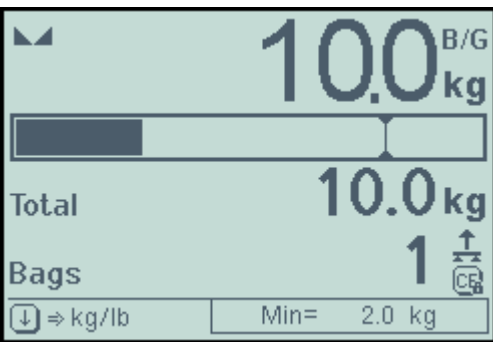
⇐ Weight of bag is 10.0kg

Metrological information area ⇐
(see *2.3.*)

At this step the **Add function** can be done. (See *2.1.1.*)

After launch the **Add function**, the following screen is displayed:

According the "**Required event before new Adding**" parameter set to "**Significant weight change**" (see *3.4.*), conditions status are updated

The weight of bag is added the Total value ⇒

Bags number is increased by one unit ⇒

Metrological information area ⇐
(see *2.3.*)

At this step two conditions status can be displayed:

- ⬆: indicates that the **Add function** (see *2.1.1.*) is done and another one **Add function** is locked until the "**Required event before new Adding**" (see *3.4.*) is not reached.
  If the **Remove function** (see *2.1.2.*) can be done, the launch of **Remove function** will clear this status.

- ⬚: indicates that the **Clear function** (see *2.1.3.*) is locked until the "**Required event before new Adding**" (see *3.4.*) is not reached or until a significant weight change.

Remark: The **Remove function** (see *2.1.2.*) can be done until no significant weight change.

The bag can be removed from the scale using the **Command of Belt** (see 2.1.4), the following screen is displayed:

⟸ Weight is in motion

Application information area ⟹
(see *2.2.*)

Metrological information area ⟸
(see *2.3.*)
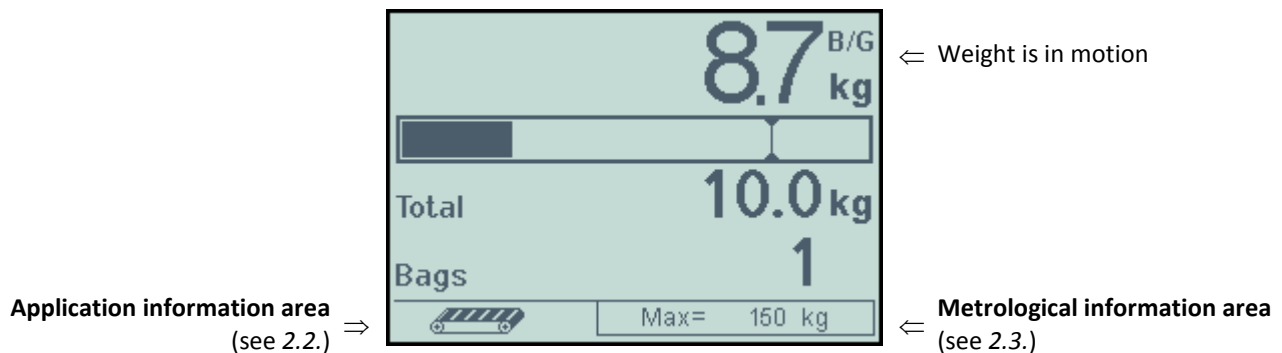
At this step the animated Belt icon of the **Application information area** (see *2.2.*) indicates that the Belt is running to evacuate the bag.

When the "`Low threshold value`" (see *3.4.*) is reached the Belt is stopped after a holding time of 1 second.

2.1.   Software features

2.1.1. Add function

- Function description:
  This function adds the Weight to the Total and increase the Bags number by one unit.
  If an appropriate printer is set (driver "`Printer`" or "`Printer (ADD key)`", see *3.5.*), the printing operation is done, see *2.4.1. Print on the* ***Add function***.
  Remark: Cancel this add using the **Remove function**. (See *2.1.2.*)

- Required conditions:
  Several conditions must be met for using this function: (If this is not the case the message "`-----`" will be displayed)

  - Weight must be correct. (No weight default, stable weight ◣◢, weight greater than two scale divisions)
  - Function allowed according the "`Required event before new Adding`" (see *3.4.*), the icon ⬆⤭ must not be displayed.
  - If an appropriate printer is set (driver "`Printer`" or "`Printer (ADD key)`", see *3.5.*) the printing must not cause a **Printing error**. (See *2.4.5.*)

- How to run it:
  This function can be launched using the key [+] or according the `Inputs` parameters using the inputs set to the "`Add new bag`" function, see *3.4. Operating mode*.
  This function can also be launched using **Communication Protocol** (see *4.1.4.2.* and *4.2.3.5.*), in this case the only one required condition is 'Weight must be correct'. No print output is done.

2.1.2. Remove function

- Function description:
  This function removes the latest added weight from the Total and decreases the Bags number by one unit.
  If an appropriate printer is set (driver "`Printer`" or "`Printer (ADD key)`", see *3.5.*), the printing operation is done, see *2.4.2. Print on the* ***Remove function***.

- Required conditions:
  Several conditions must be met for using this function: (If this is not the case the message "`-----`" will be displayed)
  - Weight must not have a significant change since the latest **Add function**.
  - No **Remove function** have be done since the latest **Add function**. (Or time-use function)
  - If an appropriate printer is set (driver "`Printer`", see *3.5.*) the printing must not cause a **Printing error**. (See *2.4.5.*)

- How to run it:

This function can be launched using the key [−].
This function can also be launched using **Communication Protocol** (see *4.1.4.3.* and *4.2.3.6.*), in this case the only one required condition is ' No **Remove function** have be done since the latest **Add function**'. No print output is done.

2.1.3. Clear function

- Function description:
This function clears the Total and Bags number values.
If an appropriate printer is set (driver "**Printer**" or "**Printer (CE key)**", see *3.5.*), the printing operation is done. (See *2.4.1.*)

- Required conditions:
Several conditions must be met for using this function: (If this is not the case the message "**-----**" will be displayed)
  - Function allowed according the "**Required event before new Adding**" (see *3.4.*) and a significant weight change, the icon [CE] must not be displayed.
  - If an appropriate printer is set (driver "**Printer**" or "**Printer (CE key)**", see *3.5.*) the printing must not cause a **Printing error**. (See *2.4.5.*)

- How to run it:

This function can be launched using the key [CE].
This function can also be launched using **Communication Protocol** (see *4.1.4.4.* and *4.2.3.7.*), in this case there is no required conditions. No print output is done.

2.1.4. Command of Belt

This software status allows to control the Belt, for this at least one of the **Outputs** parameters must be set to "**Belt start**" function, see *3.4. Operating mode*.

To start the Belt using the key [Belt →] or according the **Inputs** parameters using the inputs set to the "**Belt ON/OFF**" function, see *3.4. Operating mode*.

At this step the animated Belt icon [belt icon] of the **Application information area** (see *2.2.*) indicates that the Belt is running.

The Belt may be stopped by using the key [Belt →] r according the **Inputs** parameters using the inputs set to the "**Belt ON/OFF**" function (see *3.4.*) or if when the weight gets lower than the "**Low threshold value**" (see *3.4.*), the Belt is stopped after a holding time of 1 second.

2.1.5. Heavy Bag detection

This software status allows to have an alarm signal when the weight of bag is greater than the parameter value "**Heavy Bag limit**", see *3.4. Operating mode*.

The alarm signal is available in two ways:
- Visual signal: Under the weight display, the bar graph shows the weight progression with a cursor of **Heavy Bag detection** as shown below, when the weight is greater than the "**Heavy Bag limit**" the message "⚠**Heavy Bag**⚠" is display.

Cursor of **Heavy Bag detection**
⇓

⇐ Empty scale

⇐ Weight on scale is half of "**Heavy Bag limit**"

⇐ Weight on scale equal to "**Heavy Bag limit**"

⚠Heavy Bag⚠ ⇐ Weight on scale greater than "**Heavy Bag limit**"
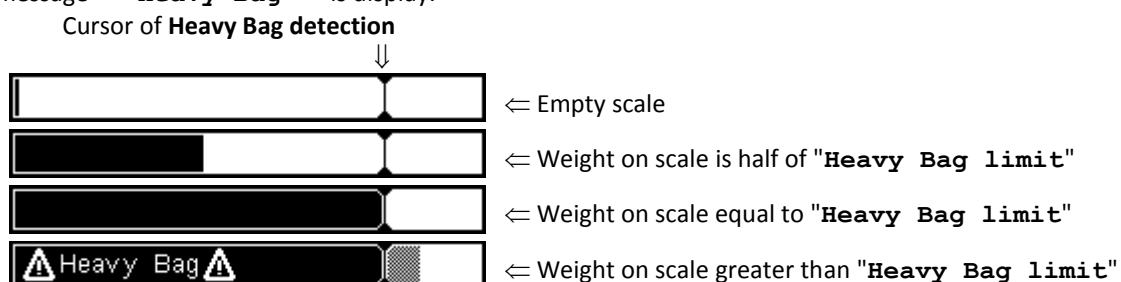
- Electric signal: Almost one of the **Outputs** parameters must be set to "**Heavy bag**" function. (See *3.4.*)
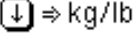
  Remark: If the "**Heavy Bag limit**" is set to 0.0kg the full range value is used as "**Heavy Bag limit**", in this case the output functions "**Heavy bag**" and "**Scale overload**" are fully identical.

2.1.6. Total and Bags counting overflow display

As the number of digits that can be displayed is fixed (6 digits for Totals and 3 digits for Bags counting, see *1.2.3.* and *1.3.3.*) if one of these values requires more digits to be displayed, it will be replaced by dashes.

2.2. Application information area

In this area the following information is available:

Display	Descriptions
⬇ ⇒ kg/lb	Indicates that the toggle weight unit (kg/lb) feature is available according the Calibration parameter. (Key 🔲)
///////	This animated Belt icon indicates the Belt is running. (Key 🔲)

2.3. Metrological information area

In this area the metrological information "Max", "e" and "Min" are successively displayed.

2.4. Examples of Print

According the **Communication** parameters (see *3.5.*) and following the launched function a print operation can be done.

2.4.1. Print on the Add function

On the **Add function** the following print is done:

```
Gross :   24.8 kg
Total :   24.8 kg
Bags  :      1
```
⟸ Gross weight value which is been added to the Total weight
⟸ New Total weight value
⟸ New Bags number value after the **Add function**
⟸ Empty line

So on the next **Add function** the following print is done:

```
Gross :   25.3 kg
Total :   50.1 kg
Bags  :      2
```

2.4.2. Print on the Remove function

On the **Remove function** the following print is done:

```
Gross :   25.3 kg
Total :   24.8 kg
Bags  :      1
```
⟸ Gross weight value which is been removed from the Total weight
⟸ New Total weight value
⟸ New Bags number value after the **Remove function**
⟸ Empty line

2.4.3. **Print on the** Clear function

On the **Clear function** the following print is done:

```
Gross :    0.0 kg
Total :   24.8 kg
Bags  :      1
```

⇐ Gross weight value
⇐ Total weight value before the **Clear function**
⇐ Bags number value before the **Clear function**
⇐ Empty line

2.4.4. **Print on an Input request**

On the activation of the input, which is setting to "**Print**" function (see *3.4.*), the following print is done:

```
Gross :    0.0 kg
Total :    0.0 kg
Bags  :      0
```

⇐ Current Gross weight value
⇐ Current Total weight value
⇐ Current Bags number value
⇐ Empty line

2.4.5. **Printing error**

An error (paper empty, off line…) on a printer used on **COM1** (setting with DTR test, see *3.5.*) will cause a printing error, in this case the following pop-up appears:
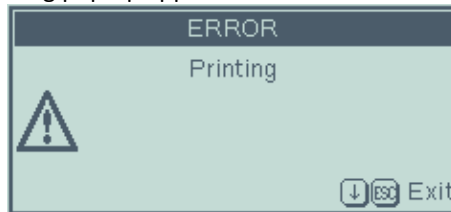
Close this window with keys [kg/lb ↓] or [ON/OFF ESC].

Remark: In case of **Print on an Input request** the display of the previous window is skipped.

3.   SETTING

3.1.   Access to the PARAMETERS menu

To access to the indicator parameters you must proceed as follows:

- When the indicator is turned on press key [ON/OFF ESC] until the indicator restart. (If the indicator is off just turn on it)
- The start-up phase will be displayed (« curtain effect »).

- When the MASTERK logo is fully displayed (as shown below) press on key: [+0+ ←].

- Then the following "Pop-up" will be displayed:
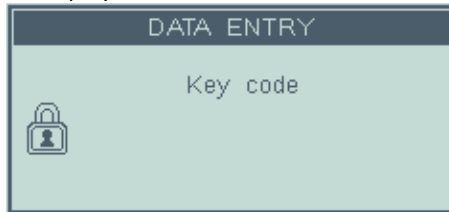
- Enter the key code [+] [−] [HP ↑] [kg/lb ↓] and the following **PARAMETERS** menu will be displayed:
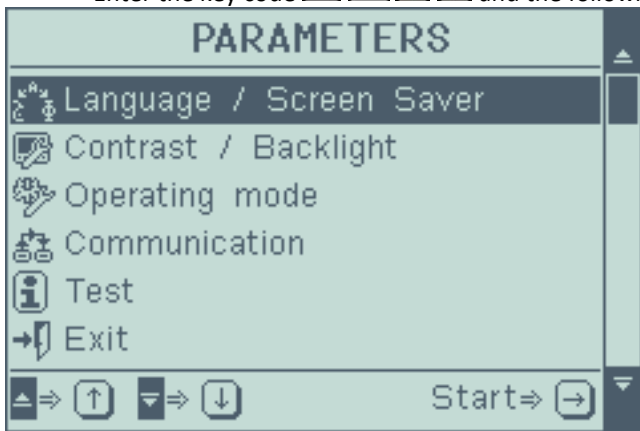
⇒ = *use the key* [Belt →] *to access to the selected function.*

⇒ Access to the settings of **Language / Screen Saver** (see *3.2.*)

⇒ Access to the settings of **Contrast / Backlight** (see *3.3.*)

⇒ Access to the settings of **Operating mode** (see *3.4.*)

⇒ Access the settings of **Communication** (see *3.5.*)

⇒ Launch the **Test** function (see *3.6.*)

⇒ Launch the **Exit** to save and return in **Normal Application Mode** (see *3.7.*)

← *Indications of usable keys.*

3.2.   Language / Screen Saver

The following window appears when you enter this function:

← **Details of usable keys** (see *3.8.*)

Enter the following parameters.

Language   **: ENGLISH**

Enter the requested language in the application.

- ➢ **ENGLISH**   : English.
- ➢ **FRANCAIS**   : French.
- ➢ **中文**   : Chinese.

Screen Saver time   **: 00 minutes**

Enter the time before the screen saver mode is launched. When the screen saver mode starts, the indicator backlight is switched off and the remote display will enter in energy saving mode.

- ➢ **00 minutes**   : Screen saver mode disabled.
- ➢ **01 minutes**   : Screen saver mode is launched after 1 minute of non-use. [*]

  …
- ➢ **99 minutes**   : Screen saver mode is launched after 99 minutes of non-use. [*]

: Non-use state is when the weight is stable, no key's tabulation and no levels change on inputs.

3.3.   Contrast / Backlight

The following window appears when you enter this function:
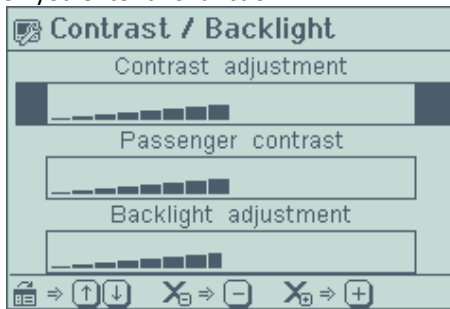
← **Details of usable keys** (see *3.8.*)

Adjust contrasts and backlight as follow.

Contrast adjustment   :

Adjust the contrast of the indicator display, the change is directly applied on the display.

Passenger contrast   :

Adjust the contrast for the remote display, the change is directly applied on the remote display.

Backlight adjustment   :

Adjust the brightness of the indicator display, the change is directly applied on the display.

3.4.   Operating mode

The following window appears when you enter this function:
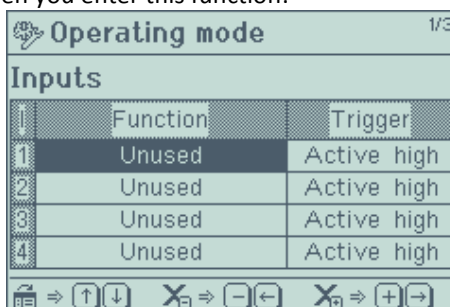
← **Details of usable keys** (see *3.8.*)

For each **Inputs I1 / I2 / I3 / I4**, enter parameters as follow.

Function   : Unused
Enter the function to assign for the input.
- ➢ **Unused**   : Unused input.
- ➢ **Zero Scale (>0<)**   : Request of resetting the weight to zero. (Same as key ▨)
- ➢ **Add new bag**   : Request of **Add function**. (Same as key ▨, see *2.1.1.*)
- ➢ **Belt ON/OFF**   : Request the start/stop of Belt. (Same as key ▨, see *2.1.4.*)
- ➢ **Print**   : Request a Print (see *2.4.4.*), required one enable printer port. (See *3.5.*)
- ➢ **Remote ON/OFF**   : Request the switch ON/OFF of the indicator. (Same as 2 seconds on key ▨)
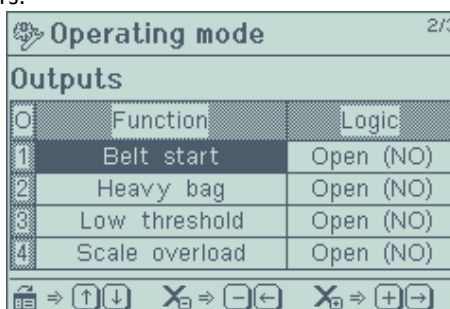
Trigger   : Active high
Enter the trigger level for the input.
- ➢ **Active high**   : Input active on high level.
- ➢ **Active low**   : Input active on low level.

Then the following window appears:

 ← **Details of usable keys** (see *3.8.*)

For each **Outputs O1 / O2 / O3 / O4**, enter parameters as follow.

Function   : (Default values according the previous window)
Enter the function to assign for the output.
- ➢ **Unused**   : Unused output.
- ➢ **Low threshold**   : Output used as state of low threshold. (See the next window below)
- ➢ **Heavy bag**   : Output used as state of heavy bag detection. (See the next window below)
- ➢ **Scale overload**   : Output used as state of scale overload according the full range value.
- ➢ **Belt start**   : Output used for Belt control. (See *2.1.4. Command of Belt*)
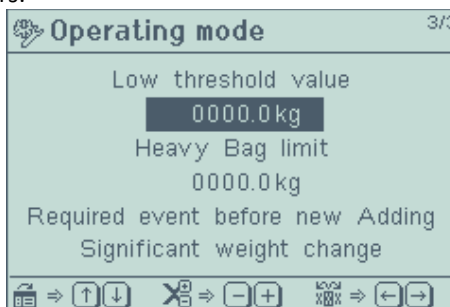
Logic   : Open (NO)
Enter the operating logic of the output.
- ➢ **Open (NO)**   : Normally Open output.
- ➢ **Close (NC)**   : Normally Closed output.

Then the following window appears:

 ← **Details of usable keys** (see *3.8.*)

Enter the following parameters.

```
Low threshold value                    :  0000.0 kg
```
Enter the low threshold value. (Weight format and unit is done according to the calibration parameters)

```
Heavy Bag limit                        :  0000.0 kg
```
Enter the value for **Heavy Bag detection**, see *2.1.5*. (Weight format and unit is done according to the calibration parameters)

```
Required event before new Adding      :  Significant weight change
```
Enter the end of **Add function** condition. (Which allows to run a new **Add function**, see *2.1.1.*)
- ➢ **No required event**   : **Add function** always available.
- ➢ **Belt started**   : **Add function** available on the start of belt.
- ➢ **Weight returned to Zero**   : **Add function** available when weight returned to zero.
- ➢ **Significant weight change** : **Add function** available when there is a significant weight change.

3.5. Communication

The following window appears when you enter this function:
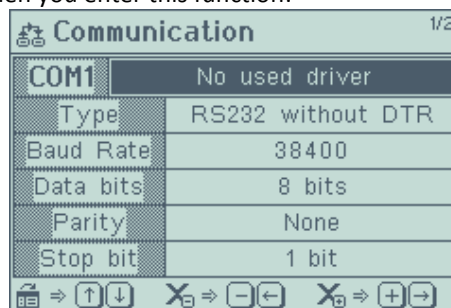
← **Details of usable keys** (see *3.8.*)

Enter **COM1** parameters as follow.

```
COM1                                   :  No used driver
```
Enter the driver used on **COM1** port.
- ➢ **No used driver**   : Unused port.
- ➢ **Continuous Stream (MK)**   : **MK Protocol** in continuous stream mode. (See *4.1.1.*)
- ➢ **Continuous Stream (ATX)**   : **ATX Protocol** in continuous stream mode. (See *4.2.1.*)
- ➢ **MK Protocol**   : **MK Protocol**. (See *4.1.2.*)
- ➢ **ATX Protocol**   : **ATX Protocol**. (See *4.2.2.*)
- ➢ **Printer**   : Port used as print output. (See *2.4.*)
- ➢ **Printer (ADD key)**   : Port used as print output, only on an **Add function**. (See *2.4.*)
- ➢ **Printer (CE key)**   : Port used as print output, only on a **Clear function**. (See *2.4.*)

```
Type                                   :  RS232 without DTR
```
Choose if the RS232 DTR is used. (Only for printer driver)
- ➢ **RS232 without DTR**   : No DTR test.
- ➢ **RS232 with DTR**   : DTR is tested.

```
Baud Rate                              :  38400
```
Choose the communication baud rate.
- ➢ **1200**   : 1200 bauds.
- ➢ **2400**   : 2400 bauds.
- ➢ **4800**   : 4800 bauds.
- ➢ **9600**   : 9600 bauds.
- ➢ **19200**   : 19200 bauds.
- ➢ **38400**   : 38400 bauds.
- ➢ **57600**   : 57600 bauds.
- ➢ **115200**   : 115200 bauds.

```
Data bits                              :  8 bits
```
Choose the number of bits.
  - ➢ **7 bits**
  - ➢ **8 bits**

```
Parity                                 :  None
```
Choose the parity type.
  - ➢ **None**   : No parity.
  - ➢ **Odd**   : Odd parity.
  - ➢ **Even**   : Even parity.

```
Stop bit                               :  1 bit
```
Choose the number of stop bits.
  - ➢ **1 bit**   : 1 stop bit.
  - ➢ **2 bits**   : 2 stop bits.

Then the indicator starts to communicate with the optional **ETHERNET** module to get the current parameters, the following window appears during this step:
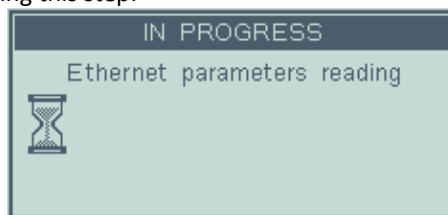
If there is no optional **ETHERNET** module or if the module is in default this step can last up to 20 seconds, then an error pop-up appears. After closing it with keys [kg/lb ↓] or [ON/OFF ESC] , the display gets back to **PARAMETERS** menu. Otherwise the following window appears:
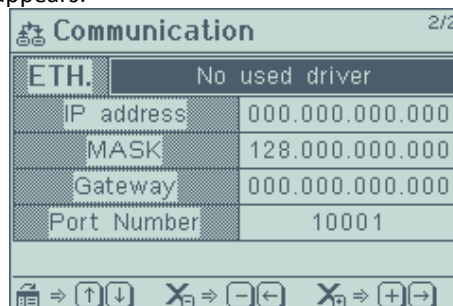
← **Details of usable keys** (see *3.8.*)

Enter **ETHERNET** parameters as follow.

```
ETH.                                   :  No used driver
```
Enter the driver used on the **ETHERNET** port.
  - ➢ **No used driver**   : Unused port.
  - ➢ **Continuous Stream (MK)**   : **MK Protocol** in continuous stream mode. (See *4.1.1.*)
  - ➢ **Continuous Stream (ATX)**   : **ATX Protocol** in continuous stream mode. (See *4.2.1.*)
  - ➢ **MK Protocol**   : **MK Protocol**. (See *4.1.2.*)
  - ➢ **ATX Protocol**   : **ATX Protocol**. (See *4.2.2.*)
  - ➢ **Printer**   : Port used as print output. (See *2.4.*)
  - ➢ **Printer (ADD key)**   : Port used as print output, only on an **Add function**. (See *2.4.*)
  - ➢ **Printer (CE key)**   : Port used as print output, only on a **Clear function**. (See *2.4.*)

```
IP address                             :  000.000.000.000
```
Choose the IP address for the **ETHERNET** port. (If a null address is set the **ETHERNET** port will run in DHCP mode)

```
MASK                                   :  128.000.000.000
```
Choose the network subnet mask for the **ETHERNET** port.

```
Gateway                                      : 000.000.000.000
```
Choose the network gateway address for the **ETHERNET** port.

```
Port Number                                  : 10001
```
Choose the network port number for the **ETHERNET** port.

Then the indicator sends these parameters to the **ETHERNET** module.

3.6.   Test

The following window appears when you enter this function:
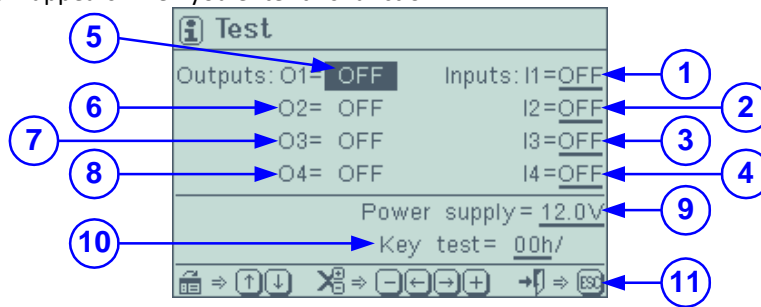
Legend:
- 1 ⇒ State of the input **I1**.
- 2 ⇒ State of the input **I2**.
- 3 ⇒ State of the input **I3**.
- 4 ⇒ State of the input **I4**.
- 9 ⇒ Power supply monitoring.
- 10 ⇒ Keyboard test, indicates the code and the icon of the latest tabulated key.
- 11 ⇒ **Details of usable keys** (see *3.8.*)

- 5 ⇒ State of the output **O1**.
- 6 ⇒ State of the output **O2**.
- 7 ⇒ State of the output **O3**.
- 8 ⇒ State of the output **O4**.

Test outputs command one by one as follow.

```
O1 / O2 / O3 / O4                            : OFF
```
Change output status.
- ➢ **OFF**   : Output status at rest.
- ➢ **ON**   : Activated output.

Control the power supply level.

Control that the keyboard works correctly, each key will give this following result:

Key	Code	/	Icon
ON/OFF ESC	1Bh	/	ESC
CE	7Fh	/	CE
+0+ ←	08h	/	←
–	2Dh	/	–
+	2Bh	/	+
Belt →	0Bh	/	→
HP ↑	0Ah	/	↑
kg/lb ↓	1Dh	/	↓

To exit this function press twice key .

If the "**Load cell type**" is set to "**Digital**" or "**CANDY**", the following window appears when you exit this function.

Use the key [ON/OFF ESC] for return to **PARAMETERS** menu.

3.7. Exit

This function saves the indicator parameters and then restarts the indicator in **Normal Application Mode**.
The following window appears during the saving when you enter this function:
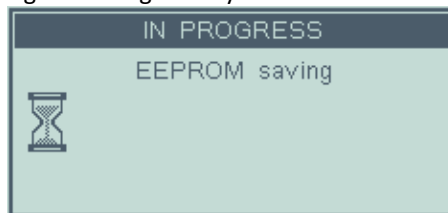
This operation takes a few seconds.
Then the indicator will restart in **Normal Application Mode**. (See *2.*)

3.8. Details of usable keys

At the bottom of the parameters display there is a reminder of the usable keys according the current seizure type:

Reminders	Seizure type	Keys function
⮐ ⇒ (↑)(↓)	All	Selecting the previous seizure [HP ↑] or the next seizure [kg/lb ↓].
⬚ ⇒ (←)(→)	Numeric and alphanumeric seizures	Move the cursor to the left [+0+ ←] or to right [Belt →].
⬚ ⇒ (+)(−)		Decrease [−] or increase [+] the character selected by the cursor.
⬚ ⇒ (−)(←)	Multiple choice seizures	Select the previous value [−] / [+0+ ←].
⬚ ⇒ (+)(→)		Select the next value [+] / [Belt →].
⬚ ⇒ (−)(←)(→)(+)		Select the previous value [−] / [+0+ ←] or the next value [+] / [Belt →].
⬚ ⇒ (−)	Bar graph seizures	Decrease [−] the bar graph value.
⬚ ⇒ (+)		Increase [+] the bar graph value.

4.   COMMUNICATION PROTOCOL

According the **Communication** parameters (see *3.5.*) there are two available ASCII protocols, each one can be used in continuous stream mode or in request/answer mode.

4.1.   MK Protocol & Continuous Stream

4.1.1.   Continuous Stream (MK)

In this mode the indicator sends continuously the **Answer frame** (see *4.1.3.*), every 200ms.
Remark: In case of using this mode on **COM1** with "**Baud Rate**" (see *3.5.*) lesser than 4800 bauds, the inter-frame time will be greater than 200ms.

The **Answer frame** format changes when the indicator receives a **Command request**. (See *4.1.4.*)

4.1.2.   MK Protocol

In this mode the indicator sends the **Answer frame** (see *4.1.3.*) only to reply to a **Command request**. (See *4.1.4.*)

4.1.3.   Answer frame

The **Answer frame** is composed of 47 ASCII characters as shown below:

```
 1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47
 =  W  Y  ;  k  g  ;  +  0  0  0  0  .  0  ;  0  0  0  0  0  .  0  ;  0  0  0  ;  I  Z  G  G  ;  0  0  0  0  ;  0  0  0  1  ;  B  7 <cr><lf>
```

Detail of frame:

Position	Value	Description
1	'=' (**0x3D**)	**Start of frame**, 1 character
2-3	-	**Protocol status**, 2 characters (see *4.1.3.1.*)
4	';' (**0x3B**)	**Field delimiter**, 1 character
5-6	-	**Current weight unit**, 2 characters (see *4.1.3.2.*)
7	';' (**0x3B**)	**Field delimiter**, 1 character
8-14	-	**Current Gross weight value**, 7 characters (see *4.1.3.3.*)
15	';' (**0x3B**)	**Field delimiter**, 1 character
16-22	-	**Current Total weight value**, 7 characters (see *4.1.3.4.*)
23	';' (**0x3B**)	**Field delimiter**, 1 character
24-26	-	**Current Bags number value**, 3 characters (see *4.1.3.5.*)
27	';' (**0x3B**)	**Field delimiter**, 1 character
28-32	-	**Weight and Data status**, 5 characters (see *4.1.3.6.*)
33	';' (**0x3B**)	**Field delimiter**, 1 character
34-37	-	**Inputs status**, 4 characters (see *4.1.3.7.*)
38	';' (**0x3B**)	**Field delimiter**, 1 character
39-42	-	**Outputs status**, 4 characters (see *4.1.3.8.*)
43	';' (**0x3B**)	**Field delimiter**, 1 character
44-45	-	**Checksum**, 2 characters (see *4.1.3.9.*)
46	'<cr>' (**0x0D**)	**End of frame**, 2 characters
47	'<lf>' (**0x0A**)	

4.1.3.1. _Protocol status_

This field is composed of two characters:

- The first one (at position 2) indicates for which command the frame answers:
  - `'W'` (`0x57`) $\Rightarrow$ Request of **Weight frame** answer. (Used frame in **Continuous Stream (MK)** mode)
  - `'A'` (`0x41`) $\Rightarrow$ Request of **Add function** answer.
  - `'S'` (`0x53`) $\Rightarrow$ Request of **Remove function** answer.
  - `'C'` (`0x43`) $\Rightarrow$ Request of **Clear function** answer.
  - `'Z'` (`0x5A`) $\Rightarrow$ Request of **Reset the weight to zero** answer.
  - `'U'` (`0x55`) $\Rightarrow$ Request of **Toggle the weight unit** answer.
  - `'1'` (`0x31`) $\Rightarrow$ Request of **Clear Output O1** or Request of **Set Output O1** answer.
  - `'2'` (`0x32`) $\Rightarrow$ Request of **Clear Output O2** or Request of **Set Output O2** answer.
  - `'3'` (`0x33`) $\Rightarrow$ Request of **Clear Output O3** or Request of **Set Output O3** answer.
  - `'4'` (`0x34`) $\Rightarrow$ Request of **Clear Output O4** or Request of **Set Output O4** answer.
- The second one (at position 3) indicates if the command has been done:
  - `'Y'` (`0x59`) $\Rightarrow$ for yes, the request of command has been done.
  - `'N'` (`0x4E`) $\Rightarrow$ for no, the request of command has been rejected.

4.1.3.2. _Current weight unit_

This field is composed of two characters which indicate the current unit kg or lb:

- `'kg'` (`0x6B 0x67`)
- `'lb'` (`0x6B 0x67`)

4.1.3.3. _Current Gross weight value_

This field is composed of seven characters: five digits for the current gross weight, one character for the sign (+/-) and one character for the decimal point.

The four available formats: `'+00000.'` / `'+0000.0'` / `'+000.00'` / `'+00.000'`

4.1.3.4. _Current Total weight value_

This field is composed of seven characters: six digits for the current total weight and one character for the decimal point.

The four available formats: `'000000.'` / `'00000.0'` / `'0000.00'` / `'000.000'`

4.1.3.5. _Current Bags number value_

This field is composed of three characters: three digits for the current bags number.

4.1.3.6. _Weight and Data status_

This field is composed of five characters:

- The first one (at position 28) indicates if the weight is stable: (Same as indicator light ▙◢)
  - `'I'` (`0x49`) $\Rightarrow$ for immobility, the Gross Weight is stable.
  - `'M'` (`0x4D`) $\Rightarrow$ for motion, the Gross Weight is not stable.
- The second one (at position 29) indicates if the weight is null at 1/4 scale division: (Same as indicator light ➔0◀)
  - `'Z'` (`0x5A`) $\Rightarrow$ for zero, the weight is null at 1/4 scale division.
  - `'L'` (`0x4C`) $\Rightarrow$ for loaded, the weight is not null at 1/4 scale division.
- The third one (at position 30) indicates if the weight is in default:
  - `'G'` (`0x47`) $\Rightarrow$ for good, no defaults on weight.
  - `'E'` (`0x45`) $\Rightarrow$ for error, the weight is in default.
- The fourth one (at position 31) indicates if the Total weight is in overflow:
  - `'G'` (`0x47`) $\Rightarrow$ for good, Total weight is correct.
  - `'O'` (`0x4F`) $\Rightarrow$ for overflow, Total weight is in overflow, **DO NOT USE THE TOTAL WEIGHT VALUE** ⚠.
- The fifth one (at position 32) indicates if the Bags number is in overflow:
  - `'G'` (`0x47`) $\Rightarrow$ for good, Bags number is correct.
  - `'O'` (`0x4F`) $\Rightarrow$ for overflow, Bags number is in overflow, **DO NOT USE THE BAGS NUMBER VALUE** ⚠.

4.1.3.7.　Inputs status

This field is composed of four characters:

- The first one (at position 34) indicates the Input **I4** status:
  - '**1**' (**0x31**) ⇒ Input **I4** is activated.
  - '**0**' (**0x30**) ⇒ Input **I4** is not activated.
- The second one (at position 35) indicates the Input **I3** status:
  - '**1**' (**0x31**) ⇒ Input **I3** is activated.
  - '**0**' (**0x30**) ⇒ Input **I3** is not activated.
- The third one (at position 36) indicates the Input **I2** status:
  - '**1**' (**0x31**) ⇒ Input **I2** is activated.
  - '**0**' (**0x30**) ⇒ Input **I2** is not activated.
- The fourth one (at position 37) indicates the Input **I1** status:
  - '**1**' (**0x31**) ⇒ Input **I1** is activated.
  - '**0**' (**0x30**) ⇒ Input **I1** is not activated.

4.1.3.8.　Outputs status

This field is composed of four characters:

- The first one (at position 39) indicates the Output **O4** status:
  - '**1**' (**0x31**) ⇒ Output **O4** is activated.
  - '**0**' (**0x30**) ⇒ Output **O4** is not activated.
- The second one (at position 40) indicates the Output **O3** status:
  - '**1**' (**0x31**) ⇒ Output **O3** is activated.
  - '**0**' (**0x30**) ⇒ Output **O3** is not activated.
- The third one (at position 41) indicates the Output **O2** status:
  - '**1**' (**0x31**) ⇒ Output **O2** is activated.
  - '**0**' (**0x30**) ⇒ Output **O2** is not activated.
- The fourth one (at position 42) indicates the Output **O1** status:
  - '**1**' (**0x31**) ⇒ Output **O1** is activated.
  - '**0**' (**0x30**) ⇒ Output **O1** is not activated.

4.1.3.9.　Checksum

This field is composed of two Checksum characters.
To control the frame integrity:

- Make the addition of first forty-three characters.
- Keep only the low byte. (Make a binary AND on the result with mask 0x00FF)
- Convert the Hexadecimal value of the result in two ASCII characters.
- These two characters must be the same as the two Checksum characters.

Checksum evaluation example: (According the **Answer frame** giving example, see *4.1.3.*)

- Addition of first forty-three characters = **0x09B7**.
- **0x09B7** AND **0x00FF** = **0x00B7**.
- First ASCII character = '**B**' (**0x42**), second ASCII character = '**7**' (**0x37**).
- According the frame Checksum value (at the position 44-45) is the same as the Checksum evaluation value, there is no error on frame integrity.

4.1.4.　Command request

Format of a **Command request** frame: One or two **Command** characters and two **End of frame** characters which are always '**<cr>**' (**0x0D**) and '**<lf>**' (**0x0A**).
Remark:　Possibility of using only one **End of frame** character, character '**<lf>**' (**0x0A**) is optional.

The good execution of the **Command request** is available in the **Protocol status** of the **Answer frame**. (See *4.1.3.1.*)

Command list:

Command request frame	Description	
'W', '\<cr\>', '\<lf\>'	Request of **Weight frame**, see *4.1.4.1*.	
'A', '\<cr\>', '\<lf\>'	Request of **Add function**, see *4.1.4.2*.	
'S', '\<cr\>', '\<lf\>'	Request of **Remove function**, see *4.1.4.3*.	
'C', '\<cr\>', '\<lf\>'	Request of **Clear function**, see *4.1.4.4*.	
'Z', '\<cr\>', '\<lf\>'	Request of **Reset the weight to zero**, see *4.1.4.5*.	
'U', '\<cr\>', '\<lf\>'	Request of **Toggle the weight unit**, see *4.1.4.6*.	
'1', '0', '\<cr\>', '\<lf\>'	Request of **Clear Output** O1, see *4.1.4.7*.	
'2', '0', '\<cr\>', '\<lf\>'	Request of **Clear Output** O2, see *4.1.4.8*.	
'3', '0', '\<cr\>', '\<lf\>'	Request of **Clear Output** O3, see *4.1.4.9*.	**Remark:** These **Command request** can be done only if the associated Output "**Function**" is set to "**Unused**" function, see *3.4. Operating mode*.
'4', '0', '\<cr\>', '\<lf\>'	Request of **Clear Output** O4, see *4.1.4.10*.	
'1', '1', '\<cr\>', '\<lf\>'	Request of **Set Output** O1, see *4.1.4.11*.	
'2', '1', '\<cr\>', '\<lf\>'	Request of **Set Output** O2, see *4.1.4.12*.	
'3', '1', '\<cr\>', '\<lf\>'	Request of **Set Output** O3, see *4.1.4.13*.	
'4', '1', '\<cr\>', '\<lf\>'	Request of **Set Output** O4, see *4.1.4.14*.	
'D', '\<cr\>', '\<lf\>'	Request of **Diagnostic frame**, see *4.1.4.15*.	

4.1.4.1.   *Request of Weight frame*
The **Answer frame** (see *4.1.3.*) will be returned, this command is useless in **Continuous Stream (MK)** mode.

4.1.4.2.   *Request of Add function*
The **Protocol Add function** will be launched. (See *2.1.1.*)

4.1.4.3.   *Request of Remove function*
The **Protocol Remove function** will be launched. (See *2.1.2.*)

4.1.4.4.   *Request of Clear function*
The **Protocol Clear function** will be launched. (See *2.1.3.*)

4.1.4.5.   *Request of Reset the weight to zero*
Reset the weight to zero request will be launched, same as key .

4.1.4.6.   *Request of Toggle the weight unit*
The **Toggle the weight unit** request will be launched (between kg and lb [*]), same as key .
*: Function available according the Calibration parameter, the **Application information area** indicates if this feature is available. (See *2.2.*)

4.1.4.7.   *Request of Clear Output O1*
If the Output O1 "**Function**" is set to "**Unused**", the output will be set OFF.

4.1.4.8.   *Request of Clear Output O2*
If the Output O2 "**Function**" is set to "**Unused**", the output will be set OFF.

4.1.4.9.   *Request of Clear Output O3*
If the Output O3 "**Function**" is set to "**Unused**", the output will be set OFF.

4.1.4.10.   *Request of Clear Output O4*
If the Output O4 "**Function**" is set to "**Unused**", the output will be set OFF.

4.1.4.11. *Request of* *Set Output O1*

If the Output **O1** "**Function**" is set to "**Unused**", the output will be set ON.

4.1.4.12. *Request of* *Set Output O2*

If the Output **O2** "**Function**" is set to "**Unused**", the output will be set ON.

4.1.4.13. *Request of* *Set Output O3*

If the Output **O3** "**Function**" is set to "**Unused**", the output will be set ON.

4.1.4.14. *Request of* *Set Output O4*

If the Output **O4** "**Function**" is set to "**Unused**", the output will be set ON.

4.1.4.15. *Request of* *Diagnostic frame*

The **Answer frame** (see *4.1.3.*) will be returned, if the request of command has been done it will be followed by the **Diagnostic frame**. (See *4.3.*)

Remark: Time between two requests of **Diagnostic frame** must be greater than 5 seconds, otherwise this request will be rejected.

4.2.   ATX Protocol & Continuous Stream

4.2.1. Continuous Stream (ATX)

In this mode the indicator sends continuously the following **Continuous Stream (ATX)** frame, every 200ms.

Remark: In case of using this mode on **COM1** with "**Baud Rate**" (see *3.5.*) lesser than 4800 bauds, the inter-frame time will be greater than 200ms.

Detail of **Continuous Stream (ATX)** frame: (26 ASCII characters as shown below)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
>	A	1	2	3	4	.	5		1	2	3	4	.	5		1	2	3		k	l	z	m	<cr>	<lf>

Position	Value	Description
1	'>' (**0x3E**)	**Start of frame**, 1 character
2	'A' (**0x41**)	1 fixed character
3-8	-	**Current Gross weight value**, 6 characters (see *4.2.1.1.*)
9	' ' (**0x20**)	**Field delimiter**, 1 character
10-15	-	**Current Total weight value**, 6 characters (see *4.2.1.2.*)
16	' ' (**0x20**)	**Field delimiter**, 1 character
17-19	-	**Current Bags number value**, 3 characters (see *4.2.1.3.*)
20	' ' (**0x20**)	**Field delimiter**, 1 character
21-24	-	**Weight status**, 4 characters (see *4.2.1.4.*)
25	'<cr>' (**0x0D**)	**End of frame**, 2 characters
26	'<lf>' (**0x0A**)	

On a **Command request** received, see *4.2.3.*, the command reply is returned and then the continuous sending will be active.

4.2.1.1. *Current Gross weight value*

This field is composed of 6 characters: digits for the current gross weight padded with space characters, if required one character for the sign '**-**' (**0x2D**) and one character for the decimal point '**.**' (**0x2E**).

If the weight is in default the following message replaces the **Current Gross weight value**:

- "**^^^^.^**" ⇒ Weight overflow.
- "**_____._**" ⇒ Weight underflow.

4.2.1.2. *Current Total weight value*

This field is composed of 6 characters: digits for the current total weight padded with space characters, if required one character for the decimal point '**.**' (**0x2E**).

4.2.1.3. *Current Bags number value*

This field is composed of three characters: three digits for the current bags number.

4.2.1.4. *Weight status*

This field is composed of four characters:
- The first one (at position 21) indicates if the weight unit is kg:
  - '**k**' (**0x6B**) ⇒ Weight unit is kg.
  - ' ' (**0x20**) ⇒ Weight unit is not kg.
- The second one (at position 22) indicates if the weight unit is lb:
  - '**l**' (**0x6B**) ⇒ Weight unit is lb.
  - ' ' (**0x20**) ⇒ Weight unit is not lb.
- The third one (at position 23) indicates if the weight is null at 1/4 scale division:
  - '**z**' (**0x7A**) ⇒ Weight is null.
  - ' ' (**0x20**) ⇒ Weight is not null.
- The fourth one (at position 24) indicates if the weight is stable:
  - ' ' (**0x20**) ⇒ Weight is stable.
  - '**m**' (**0x6D**) ⇒ Weight is not stable.

4.2.2. ATX Protocol

In this mode on a **Command request** received, see *4.2.3.*, the command reply is returned.

4.2.3. Command request

Format of a **Command request** frame: One **Command** characters and two **End of frame** characters which are always '**<cr>**' (**0x0D**) and '**<lf>**' (**0x0A**).

Remark: Possibility of using only one **End of frame** character, character '**<lf>**' (**0x0A**) is optional.

Command list:

Command request frame	Description
'**G**', '**<cr>**', '**<lf>**'	Request of **Weight frame**, see *4.2.3.4.*
'**M**', '**<cr>**', '**<lf>**'	Request of **Add function**, see *4.2.3.5.*
'**S**', '**<cr>**', '**<lf>**'	Request of **Remove function**, see *4.2.3.6.*
'**C**', '**<cr>**', '**<lf>**'	Request of **Clear function**, see *4.2.3.7.*
'**P**', '**<cr>**', '**<lf>**'	Request of **Print**, see *4.2.3.8.*
'**V**', '**<cr>**', '**<lf>**'	Request of **Firmware version**, see *4.2.3.9.*
'**N**', '**<cr>**', '**<lf>**'	Request of **Serial number**, see *4.2.3.10.*
'**D**', '**<cr>**', '**<lf>**'	Request of **Diagnostic frame**, see *4.2.3.11.*

4.2.3.1. *Unsupported command reply*

If the **Command request** received is not supported (not listed above), the following reply (three characters) will be returned:

```
 1    2    3
 ?  <cr> <lf>
```

Position	Value	Description
1	'**?**' (**0x3F**)	**Unsupported command**, 1 character
2	'**<cr>**' (**0x0D**)	**End of frame**, 2 characters
3	'**<lf>**' (**0x0A**)	

4.2.3.2. *Accepted command reply*

If the **Command request** received is accepted the following reply (three characters) will be returned:

```
   1      2     3
<Ack> <cr> <lf>
```

Position	Value	Description
1	'`<Ack>`' (`0x06`)	**Accepted command**, 1 character
2	'`<cr>`' (`0x0D`)	**End of frame**, 2 characters
3	'`<lf>`' (`0x0A`)	

4.2.3.3. *Rejected command reply*

If the **Command request** received is rejected the following reply (three characters) will be returned:

```
   1      2     3
<Nak> <cr> <lf>
```

Position	Value	Description
1	'`<Nak>`' (`0x15`)	**Rejected command**, 1 character
2	'`<cr>`' (`0x0D`)	**End of frame**, 2 characters
3	'`<lf>`' (`0x0A`)	

4.2.3.4. *Request of Weight frame*

On this request the following command reply is sending: (25 ASCII characters as shown below)

```
  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18 19 20 21 22 23  24   25
  >  A  1  2  3  4  .  5     1  2  3  4  .  5     1  2  3     u  z  m <cr> <lf>
```

This command reply is based on the **Continuous Stream (ATX)** with a different **Weight status** field:

Position	Value	Description
1	'`>`' (`0x3E`)	**Start of frame**, 1 character
2	'`A`' (`0x41`)	1 fixed character
3-8	-	**Current Gross weight value**, 6 characters (see *4.2.1.1.*)
9	' ' (`0x20`)	**Field delimiter**, 1 character
10-15	-	**Current Total weight value**, 6 characters (see *4.2.1.2.*)
16	' ' (`0x20`)	**Field delimiter**, 1 character
17-19	-	**Current Bags number value**, 6 characters (see *4.2.1.3.*)
20	' ' (`0x20`)	**Field delimiter**, 1 character
21-23	-	**Weight status**, 3 characters (see below)
24	'`<cr>`' (`0x0D`)	**End of frame**, 2 characters
25	'`<lf>`' (`0x0A`)	

The 3 characters of the **Weight status** field:
- The first one (at position 21) indicates the weight unit:
  - '`k`' (`0x6B`) ⟹ Weight unit is kg.
  - '`l`' (`0x6C`) ⟹ Weight unit is lb.
- The second one (at position 22) indicates if the weight is null at 1/4 scale division:
  - '`z`' (`0x7A`) ⟹ Weight is null.
  - ' ' (`0x20`) ⟹ Weight is not null.
- The third one (at position 23) indicates if the weight is stable:
  - ' ' (`0x20`) ⟹ Weight is stable.
  - '`m`' (`0x6D`) ⟹ Weight is not stable.

4.2.3.5.   *Request of Add function*

The **Protocol Add function** will be launched. (See *2.1.1.*)
If the **Add function** is done the indicator returns the **Accepted command reply** (see *4.2.3.2.*) if not it returns the **Rejected command reply**. (See *4.2.3.3.*)

4.2.3.6.   *Request of Remove function*

The **Protocol Remove function** will be launched. (See *2.1.2.*)
If the **Remove function** is done the indicator returns the **Accepted command reply** (see *4.2.3.2.*) if not it returns the **Rejected command reply**. (See *4.2.3.3.*)

4.2.3.7.   *Request of Clear function*

The **Protocol Clear function** will be launched. (See *2.1.3.*)
The **Clear function** is always done the indicator returns the **Accepted command reply**. (See *4.2.3.2.*)

4.2.3.8.   *Request of Print*

Request of **Print** will be launched.
If there is some weight defaults the indicator returns the **Rejected command reply** (see *4.2.3.3.*) if not it returns the following reply: (Three lines of 53 ASCII characters as shown below)

```
  1   2   3   4   5   6   7   8   9  10  11  12  13  14    15    16    17    18
  G   r   o   s   s       :   1   2   3   4   .   5         k     g   <cr> <lf>
  T   o   t   a   l       :   1   2   3   4   .   5         k     g   <cr> <lf>
  B   a   g   s           :               1   2   3 <cr> <lf> <cr> <lf>
```

Position	Value	Description	
1-7	-	Text "**Gross :**", 7 characters	
8-13	-	**Current Gross weight value**, 6 characters (see *4.2.1.1.*)	
14	' ' (**0x20**)	**Field delimiter**, 1 character	First line
15-16	-	**Current unit**, 2 characters (see below)	
17	'**<cr>**' (**0x0D**)	**End of line**, 2 characters	
18	'**<lf>**' (**0x0A**)		
1-7	-	Text "**Total :**", 7 characters	
8-13	-	**Current Total weight value**, 6 characters (see *4.2.1.2.*)	
14	' ' (**0x20**)	**Field delimiter**, 1 character	Second line
15-16	-	**Current unit**, 2 characters (see below)	
17	'**<cr>**' (**0x0D**)	**End of line**, 2 characters	
18	'**<lf>**' (**0x0A**)		
1-10	-	Text "**Bags : **", 10 characters	
11-13	-	**Current Bags number value**, 6 characters (see *4.2.1.3.*)	
14	'**<cr>**' (**0x0D**)	**End of line**, 2 characters	Third line
15	'**<lf>**' (**0x0A**)		
16	'**<cr>**' (**0x0D**)	**End of frame**, 2 characters	
17	'**<lf>**' (**0x0A**)		

The **Current unit** fields:
   - '**kg**' (**0x6B, 0x67**) ⇒ Weight unit is kg.
   - '**lb**' (**0x6C, 0x62**) ⇒ Weight unit is lb.

4.2.3.9. *Request of Firmware version*

Request of **Firmware version** will be launched.

The indicator sends the following reply: (15 ASCII characters as shown below)

```
1  2  3  4  5  6  7  8  9  10 11 12 13   14   15
V  :  S  a  0  D  K  0  1  .  1  9  3  <cr> <lf>
```

Position	Value	Description
1-2	-	Text "**V:**", 2 characters
3-13	-	**Firmware version**, 11 characters
14	'**<cr>**' (**0x0D**)	**End of frame**, 2 characters
15	'**<lf>**' (**0x0A**)	

4.2.3.10. *Request of Serial number*

Request of **Serial number** will be launched.

The indicator sends the following reply: (12 ASCII characters as shown below)

```
1  2  3  4  5  6  7  8  9  10   11   12
N  :  2  0  1  9  0  0  0  1  <cr> <lf>
```

Position	Value	Description
1-2	-	Text "**N:**", 2 characters
3-10	-	**Serial number**, 8 characters
11	'**<cr>**' (**0x0D**)	**End of frame**, 2 characters
12	'**<lf>**' (**0x0A**)	

4.2.3.11. *Request of Diagnostic frame*

If the Request of **Diagnostic frame** is accepted the indicator returns the **Diagnostic frame** reply (see *4.3.*) if not it returns the **Rejected command reply**. (See *4.2.3.3.*)

Remark: Time between two requests of **Diagnostic frame** must be greater than 5 seconds, otherwise this request will be rejected.

4.3. Diagnostic frame

Detail of **Diagnostic frame**: 20 or 26 lines of ASCII characters as shown below. In the following example 24 lines, in grey lines available according the four digital load cells configuration.

```
     1  2  3  4  5  6  7  8  9  10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43
<stx> S  t  a  r  t     D  i  a  g  n  o  s  t  i  c  . <cr><lf>                                                                      S
   v  1  .  0  #  4  1  E  C  #  ?  ?  ?  ?  ?  ?  ?  ?  #  0  0  0  0  1  #  S  a  0  D  K  0  1  .  1  9  3 <cr><lf>                I1
   I  N  D     #     O  K  #              0  .  0  k  g  #  0  6  0  m  /  s  #  1  2  .  0  V <cr><lf>                              I2
   D  L  C  1  #     O  K  #  1  8  0  4  0  0  1  4  #  1  .  0  0  0  0  0  #  0  6  0  m  /  s  #     0  0  0  0  0  1  7 <cr><lf> D1
   D  L  C  2  #     O  K  #  1  8  0  4  0  0  1  9  #  1  .  0  0  0  0  0  #  0  6  0  m  /  s  #     0  0  0  0  0  1  2 <cr><lf> D2
   D  L  C  3  #     O  K  #  1  8  0  4  0  0  2  2  #  1  .  0  0  0  0  0  #  0  6  0  m  /  s  #     0  0  0  0  0  1  3 <cr><lf> D3
   D  L  C  4  #     O  K  #  1  8  0  4  0  0  4  8  #  1  .  0  0  0  0  0  #  0  6  0  m  /  s  #     0  0  0  0  0  1  1 <cr><lf> D4
   M  A  I  N     U  N  I  T     (  0  =  k  g     1  =  l  b  )                          :  0 <cr><lf>                             M1
   S  W  I  T  C  H  I  N  G     U  N  I  T     k  g  /  l  b  (  0  =  N     1  =  Y  )  :  0 <cr><lf>                             M2
   L  E  G  A  L     F  O  R     T  R  A  D  E              (  0  =  N     1  =  Y  )     :  1 <cr><lf>                             M3
   R  A  N  G  E     (  1  k  g     t  o     2  0  0  0  0  k  g  )              :  0  0  1  5  0 <cr><lf>                          M4
   D  I  V  I  S  I  O  N     (  m  a  x     2  0  .  0  0  0  k  g  )           :  0  0  .  1  0  0 <cr><lf>                       M5
   M  E  A  S  U  R  E  S  /  S  E  C  O  N  D     (  5  0     t  o     9  9  0  )  :  0  6  0 <cr><lf>                            M6
   L  O  A  D     C  E  L  L     T  Y  P  E     0  =  A  N  A     1  /  6  =  D  I  G  I  :  1 <cr><lf>                             M7
   N  U  M  B  E  R     O  F     L  O  A  D     C  E  L  L  S     (  1     t  o     6  )  :  0  4 <cr><lf>                          M8
   I  N  P  U  T     R  A  N  G  E        (  1  =  1  0  m  V     2  =  2  0  m  V  )     :  1 <cr><lf>                             M9
   N  U  M  E  R  I  C  A  L     F  I  L  T  E  R  I  N  G     (  X  X     m  e  a  n  )  :  3  0 <cr><lf>                          M10
   I  M  M  O  B  I  L  I  T  Y     Z  O  N  E     (  0  .  5  e  .  .  3  .  0  e  )     :  1  .  0 <cr><lf>                       M11
   N     O  F     I  M  M  O  B  I  L  E     M  E  A  S  U  R  .  (  2  0  t  O  9  9  )  :  4  0 <cr><lf>                          M12
   Z  E  R  O     T  R  A  C  K  I  N  G                                      :  1 <cr><lf>                                        M13
   Z  E  R  O     P  O  W  E  R     O  N                                      :  0 <cr><lf>                                        M14
   Z  E  R  O     S  C  A  L  E                                     :  0  0  0  0  0  5  3 <cr><lf>                                 M15
   G  A  I  N     S  C  A  L  E                                     :  0  0  3  0  0  0  0 <cr><lf>                                 M16
   E  n  d     D  i  a  g  n  o  s  t  i  c  . <etx><cr><lf>                                                                        E
```

Position	Value	Description	
1	'`<stx>`' (`0x02`)	**Start of text**, 1 characters	Line "`s`": Start of frame
2-18	-	Text "`Start Diagnostic.`", 17 characters	
19	'`<cr>`' (`0x0D`)	**End of line**, 2 characters	
20	'`<lf>`' (`0x0A`)		
1-4	-	**Metrological release**, 4 characters	Line "`I1`": Indicator information
5	'`#`' (`0x23`)	**Field delimiter**, 1 character	
6-9	-	**Metrological checksum**, 4 characters	
10	'`#`' (`0x23`)	**Field delimiter**, 1 character	
11-18	-	**Serial number**, 8 characters	
19	'`#`' (`0x23`)	**Field delimiter**, 1 character	
20-24	-	**Counter of calibration**, 5 characters	
25	'`#`' (`0x23`)	**Field delimiter**, 1 character	
26-36	-	**Firmware version**, 11 characters	
37	'`<cr>`' (`0x0D`)	**End of line**, 2 characters	
38	'`<lf>`' (`0x0A`)		
1-4	-	Text "`IND `", 4 characters	Line "`I2`": Indicator information
5	'`#`' (`0x23`)	**Field delimiter**, 1 character	
6-8	-	**Weight status**, 3 characters: " `OK`" or "`ERR`" if weight defaults	
9	'`#`' (`0x23`)	**Field delimiter**, 1 character	
10-19	-	**Current display weight with unit**, 10 characters	
20	'`#`' (`0x23`)	**Field delimiter**, 1 character	
21-23	-	**Indicator measurements per second**, 3 characters	
24-26	-	Text "`m/s`", 3 characters	
27	'`#`' (`0x23`)	**Field delimiter**, 1 character	
28-32	-	**Current Power supply value with unit**, 5 characters	
33	'`<cr>`' (`0x0D`)	**End of line**, 2 characters	
34	'`<lf>`' (`0x0A`)		
1-4	-	Text "`DLC1`", 4 characters	Line "`D1`": Digital load cell n°1 information (available according load cell type and number)
5	'`#`' (`0x23`)	**Field delimiter**, 1 character	
6-8	-	**Load cell status**, 3 characters: " `OK`" if no defaults	
9	'`#`' (`0x23`)	**Field delimiter**, 1 character	
10-17	-	**Load cell serial number**, 8 characters	
18	'`#`' (`0x23`)	**Field delimiter**, 1 character	
19-25	-	**Load cell correction factor**, 7 characters	
26	'`#`' (`0x23`)	**Field delimiter**, 1 character	
27-29	-	**Load cell measurements per second**, 3 characters	
30-32	-	Text "`m/s`", 3 characters	
33	'`#`' (`0x23`)	**Field delimiter**, 1 character	
34-41	-	**Current load cell value**, 8 characters	
42	'`<cr>`' (`0x0D`)	**End of line**, 2 characters	
43	'`<lf>`' (`0x0A`)		
⇓	⇓	⇓	⇓

Position	Value	Description	
1-4	-	Text "**DLC2**", 4 characters	Line "**D2**": Digital load cell n°2 information (available according load cell type and number)
5	'**#**' (**0x23**)	**Field delimiter**, 1 character	
6-8	-	**Load cell status**, 3 characters: " **OK**" if no defaults	
9	'**#**' (**0x23**)	**Field delimiter**, 1 character	
10-17	-	**Load cell serial number**, 8 characters	
18	'**#**' (**0x23**)	**Field delimiter**, 1 character	
19-25	-	**Load cell correction factor**, 7 characters	
26	'**#**' (**0x23**)	**Field delimiter**, 1 character	
27-29	-	**Load cell measurements per second**, 3 characters	
30-32	-	Text "**m/s**", 3 characters	
33	'**#**' (**0x23**)	**Field delimiter**, 1 character	
34-41	-	**Current load cell value**, 8 characters	
42	'**<cr>**' (**0x0D**)	**End of line**, 2 characters	
43	'**<lf>**' (**0x0A**)		
1-4	-	Text "**DLC3**", 4 characters	Line "**D3**": Digital load cell n°3 information (available according load cell type and number)
5	'**#**' (**0x23**)	**Field delimiter**, 1 character	
6-8	-	**Load cell status**, 3 characters: " **OK**" if no defaults	
9	'**#**' (**0x23**)	**Field delimiter**, 1 character	
10-17	-	**Load cell serial number**, 8 characters	
18	'**#**' (**0x23**)	**Field delimiter**, 1 character	
19-25	-	**Load cell correction factor**, 7 characters	
26	'**#**' (**0x23**)	**Field delimiter**, 1 character	
27-29	-	**Load cell measurements per second**, 3 characters	
30-32	-	Text "**m/s**", 3 characters	
33	'**#**' (**0x23**)	**Field delimiter**, 1 character	
34-41	-	**Current load cell value**, 8 characters	
42	'**<cr>**' (**0x0D**)	**End of line**, 2 characters	
43	'**<lf>**' (**0x0A**)		
1-4	-	Text "**DLC4**", 4 characters	Line "**D4**": Digital load cell n°4 information (available according load cell type and number)
5	'**#**' (**0x23**)	**Field delimiter**, 1 character	
6-8	-	**Load cell status**, 3 characters: " **OK**" if no defaults	
9	'**#**' (**0x23**)	**Field delimiter**, 1 character	
10-17	-	**Load cell serial number**, 8 characters	
18	'**#**' (**0x23**)	**Field delimiter**, 1 character	
19-25	-	**Load cell correction factor**, 7 characters	
26	'**#**' (**0x23**)	**Field delimiter**, 1 character	
27-29	-	**Load cell measurements per second**, 3 characters	
30-32	-	Text "**m/s**", 3 characters	
33	'**#**' (**0x23**)	**Field delimiter**, 1 character	
34-41	-	**Current load cell value**, 8 characters	
42	'**<cr>**' (**0x0D**)	**End of line**, 2 characters	
43	'**<lf>**' (**0x0A**)		
⇓	⇓	⇓	⇓

Position	Value	Description	
1-4	-	Text "**DLC5**", 4 characters	Line "**D5**": Digital load cell n°5 information (available according to load cell type and number)
5	'**#**' (**0x23**)	**Field delimiter**, 1 character	
6-8	-	**Load cell status**, 3 characters: " OK" if no defaults	
9	'**#**' (**0x23**)	**Field delimiter**, 1 character	
10-17	-	**Load cell serial number**, 8 characters	
18	'**#**' (**0x23**)	**Field delimiter**, 1 character	
19-25	-	**Load cell correction factor**, 7 characters	
26	'**#**' (**0x23**)	**Field delimiter**, 1 character	
27-29	-	**Load cell measurements per second**, 3 characters	
30-32	-	Text "**m/s**", 3 characters	
33	'**#**' (**0x23**)	**Field delimiter**, 1 character	
34-41	-	**Current load cell value**, 8 characters	
42	'**<cr>**' (**0x0D**)	**End of line**, 2 characters	
43	'**<lf>**' (**0x0A**)		
1-4	-	Text "**DLC6**", 4 characters	Line "**D6**": Digital load cell n°6 information (available according to load cell type and number)
5	'**#**' (**0x23**)	**Field delimiter**, 1 character	
6-8	-	**Load cell status**, 3 characters: " OK" if no defaults	
9	'**#**' (**0x23**)	**Field delimiter**, 1 character	
10-17	-	**Load cell serial number**, 8 characters	
18	'**#**' (**0x23**)	**Field delimiter**, 1 character	
19-25	-	**Load cell correction factor**, 7 characters	
26	'**#**' (**0x23**)	**Field delimiter**, 1 character	
27-29	-	**Load cell measurements per second**, 3 characters	
30-32	-	Text "**m/s**", 3 characters	
33	'**#**' (**0x23**)	**Field delimiter**, 1 character	
34-41	-	**Current load cell value**, 8 characters	
42	'**<cr>**' (**0x0D**)	**End of line**, 2 characters	
43	'**<lf>**' (**0x0A**)		
1-29	-	Text of the first parameter, 29 characters	Line "**M1**": Metrological parameters
30	'**:**' (**0x3A**)	**Field delimiter**, 1 character	
31	-	Value of the first parameter, 1 characters	
32	'**<cr>**' (**0x0D**)	**End of line**, 2 characters	
33	'**<lf>**' (**0x0A**)		
1-29	-	Text of the second parameter, 29 characters	Line "**M2**": Metrological parameters
30	'**:**' (**0x3A**)	**Field delimiter**, 1 character	
31	-	Value of the second parameter, 1 characters	
32	'**<cr>**' (**0x0D**)	**End of line**, 2 characters	
33	'**<lf>**' (**0x0A**)		
⇓	⇓	⇓	⇓

Position	Value	Description		
1-29	-	Text of the third parameter, 29 characters	Line "M3":	Metrolgical parameters
30	':' (0x3A)	**Field delimiter**, 1 character		
31	-	Value of the third parameter, 1 characters		
32	'<cr>' (0x0D)	**End of line**, 2 characters		
33	'<lf>' (0x0A)			
1-29	-	Text of the fourth parameter, 29 characters	Line "M4":	Metrolgical parameters
30	':' (0x3A)	**Field delimiter**, 1 character		
31-35	-	Value of the fourth parameter, 5 characters		
36	'<cr>' (0x0D)	**End of line**, 2 characters		
37	'<lf>' (0x0A)			
1-29	-	Text of the fifth parameter, 29 characters	Line "M5":	Metrolgical parameters
30	':' (0x3A)	**Field delimiter**, 1 character		
31-36	-	Value of the fifth parameter, 6 characters		
37	'<cr>' (0x0D)	**End of line**, 2 characters		
38	'<lf>' (0x0A)			
1-29	-	Text of the sixth parameter, 29 characters	Line "M6":	Metrolgical parameters
30	':' (0x3A)	**Field delimiter**, 1 character		
31-33	-	Value of the sixth parameter, 3 characters		
34	'<cr>' (0x0D)	**End of line**, 2 characters		
35	'<lf>' (0x0A)			
1-29	-	Text of the seventh parameter, 29 characters	Line "M7":	Metrolgical parameters
30	':' (0x3A)	**Field delimiter**, 1 character		
31	-	Value of the seventh parameter, 1 characters		
32	'<cr>' (0x0D)	**End of line**, 2 characters		
33	'<lf>' (0x0A)			
1-29	-	Text of the eighth parameter, 29 characters	Line "M8":	Metrolgical parameters
30	':' (0x3A)	**Field delimiter**, 1 character		
31-32	-	Value of the eighth parameter, 2 characters		
33	'<cr>' (0x0D)	**End of line**, 2 characters		
34	'<lf>' (0x0A)			
1-29	-	Text of the ninth parameter, 29 characters	Line "M9":	Metrolgical parameters
30	':' (0x3A)	**Field delimiter**, 1 character		
31	-	Value of the ninth parameter, 1 characters		
32	'<cr>' (0x0D)	**End of line**, 2 characters		
33	'<lf>' (0x0A)			
1-29	-	Text of the tenth parameter, 29 characters	Line "M10":	Metrolgical parameters
30	':' (0x3A)	**Field delimiter**, 1 character		
31-32	-	Value of the tenth parameter, 2 characters		
33	'<cr>' (0x0D)	**End of line**, 2 characters		
34	'<lf>' (0x0A)			
⇓	⇓	⇓		⇓

Position	Value	Description		
1-29	-	Text of the eleventh parameter, 29 characters		Line "**M11**": Metrological parameters
30	':' (**0x3A**)	**Field delimiter**, 1 character		
31-33	-	Value of the eleventh parameter, 3 characters		
34	'**<cr>**' (**0x0D**)	**End of line**, 2 characters		
35	'**<lf>**' (**0x0A**)			
1-29	-	Text of the twelfth parameter, 29 characters		Line "**M12**": Metrological parameters
30	':' (**0x3A**)	**Field delimiter**, 1 character		
31-32	-	Value of the twelfth parameter, 2 characters		
33	'**<cr>**' (**0x0D**)	**End of line**, 2 characters		
34	'**<lf>**' (**0x0A**)			
1-29	-	Text of the thirteenth parameter, 29 characters		Line "**M13**": Metrological parameters
30	':' (**0x3A**)	**Field delimiter**, 1 character		
31	-	Value of the thirteenth parameter, 1 characters		
32	'**<cr>**' (**0x0D**)	**End of line**, 2 characters		
33	'**<lf>**' (**0x0A**)			
1-29	-	Text of the fourteenth parameter, 29 characters		Line "**M14**": Metrological parameters
30	':' (**0x3A**)	**Field delimiter**, 1 character		
31	-	Value of the fourteenth parameter, 1 characters		
32	'**<cr>**' (**0x0D**)	**End of line**, 2 characters		
33	'**<lf>**' (**0x0A**)			
1-29	-	Text of the fifteenth parameter, 29 characters		Line "**M15**": Metrological parameters
30	':' (**0x3A**)	**Field delimiter**, 1 character		
31-37	-	Value of the fifteenth parameter, 7 characters		
38	'**<cr>**' (**0x0D**)	**End of line**, 2 characters		
39	'**<lf>**' (**0x0A**)			
1-29	-	Text of the sixteenth parameter, 29 characters		Line "**M16**": Metrological parameters
30	':' (**0x3A**)	**Field delimiter**, 1 character		
31-37	-	Value of the sixteenth parameter, 7 characters		
38	'**<cr>**' (**0x0D**)	**End of line**, 2 characters		
39	'**<lf>**' (**0x0A**)			
1-15	-	Text "**End Diagnostic.**", 15 characters		Line "**E**": End of frame
16	'**<etx>**' (**0x03**)	**End of text**, 1 characters		
17	'**<cr>**' (**0x0D**)	**End of line**, 2 characters		
18	'**<lf>**' (**0x0A**)			

5.   REAR PANEL OVERVIEW AND CONNECTIONS

5.1.   AWI-P/K Indicator
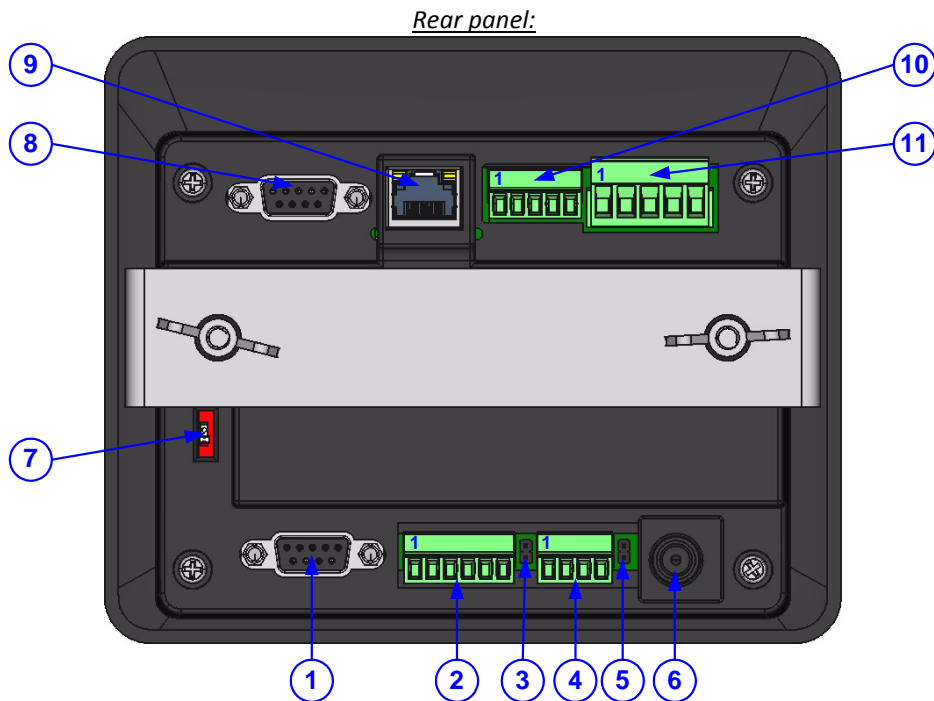
Rear panel:

Legend:

- 1 ⟹ **M1** (Input for the analog load cells)
- 2 ⟹ **CO1** (MASTER CAN / RS485)
- 3 ⟹ RS485 termination jumper
- 4 ⟹ **CO2** (MASTER CAN)
- 5 ⟹ MASTER CAN termination jumper
- 6 ⟹ 12V$_{DC}$ Power Supply input

- 7 ⟹ **CALIBRATION Jumper** "I1"
- 8 ⟹ **COM1** (RS232)
- 9 ⟹ **ETHERNET**
- 10 ⟹ **CO6** (Inputs)
- 11 ⟹ **CO7** (Outputs)

Connection pinouts:

Connector ref. / Pin number	M1 Analog load cells	CO1 MASTER CAN / RS485 Digital load cells	CO2 MASTER CAN Peripherals	COM1 RS232	CO6 INPUTS	CO7 OUTPUTS
1	⏚	0V	0V	N.U.	Input I1	Output O1
2	N.U.	V$_{OUT}$	V$_{OUT}$	Tx	Input I2	Output O2
3	Exc-	CAN_L	CAN_L	Rx	Input I3	Output O3
4	Sig-	CAN_H	CAN_H	DTR	Input I4	Output O4
5	Exc+	RxTx- (RS485)		0V	In. common (GND)	Out. common
6	Sig+	RxTx+ (RS485)		N.U.		
7	Sen-			N.U.		
8	Sen+			N.U.		
9	N.U.			N.U.		

Jack connection (2.1x5.5mm) of the 12V$_{DC}$ adaptor:

Inputs using under 12V$_{DC}$ or 24V$_{DC}$:   *Outputs using under 12V$_{DC/AC}$ or 24V$_{DC/AC}$:*
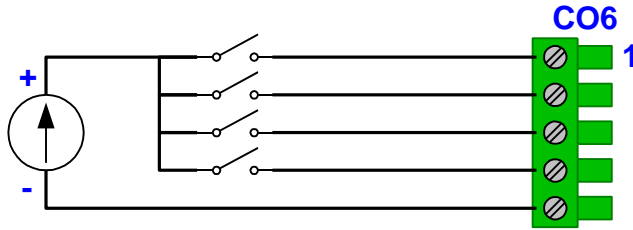
CO6   **CO7**
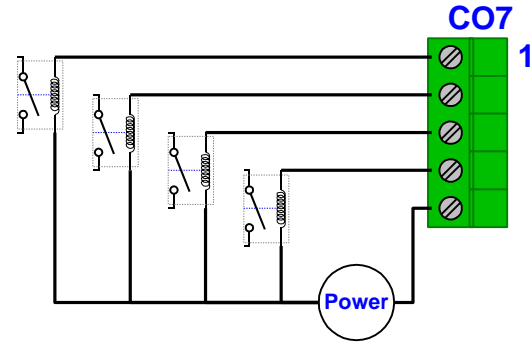
5.2.   ASD-2 Remote display
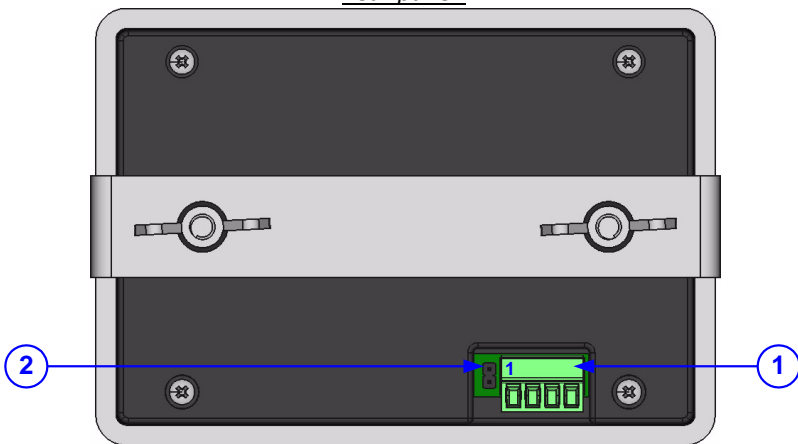
Rear panel:

Connection pinouts:

Connector ref. / Pin number	CO1 MASTER CAN
1	0V
2	V$_{SUPPLY}$
3	CAN_L
4	CAN_H

Legend:
- 1 $\Rightarrow$ **CO1** (MASTER CAN)
- 2 $\Rightarrow$ MASTER CAN termination jumper

5.3.   Indicator / Remote display communication link

Indicator side   **Remote display side**

0V	1		1	0V
V$_{OUT}$	2		2	V$_{SUPPLY}$
CAN_L	3		3	CAN_L
CAN_H	4		4	CAN_H

CO2   **CO1**

5.4.   Indicator RS232 link

Indicator side   **Computer side**
DSUB 9pt Male   **DSUB 9pt Female**

Tx	2		2	Rx
Rx	3		3	Tx
Gnd	5		5	Gnd

COM1
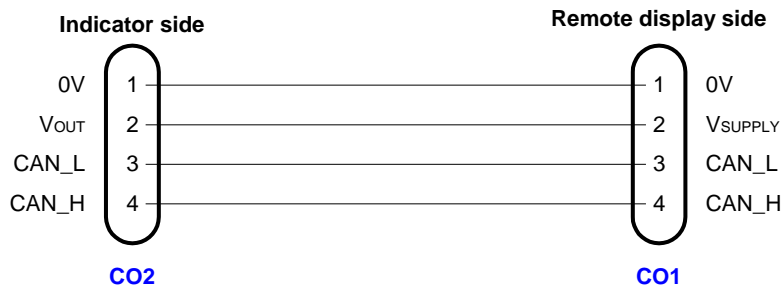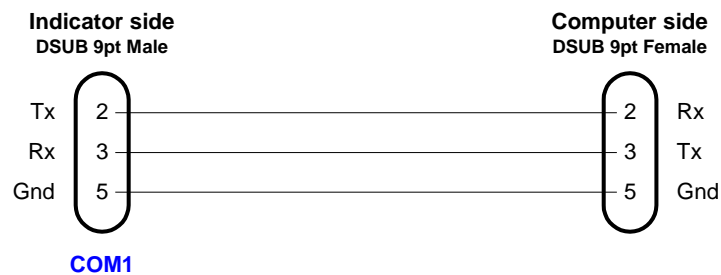
6.   ERROR MESSAGES

6.1.   Error messages on the weight display

POWER : Power supply default. (Voltage too low or too high)

EEP : CRC error of the EEPROM memory.

REF : Error on the input **M1**. (Load cell default or load cell connection problem)

OR+ : Off range overflow. (Converter capacity overflow)

OR- : Off range underflow. (Converter capacity underflow)

OS+ : Off scale overflow, Maximum weight overflow. (+9 scale division)

OS- : Off scale underflow, Weight under zero. (-18 scale divisions)

OVER : Calculation capacity overflow.

----- : Function unexecuted. (Not available, forbidden, …)

!!! : Display capacity overflow.

AD773 : The Analog to Digital converter does not operate.

DLC X : The digital load cell n° X does not communicate anymore.

SER X : The serial number (and the calibration) of a digital load cell n° X is not valid.

I SLA : The indicator is used in slave mode but no communication with master indicator.

MAS C : The indicator is used in slave mode but the master indicator is in **CALIBRATION MODE**.

6.2.   Error messages on the digital load cell status

Short form *(Diagnostic frame)*	/	Long form *(Digital load cell display)*	Digital load cell status
OK	/	OK	: No default on the digital load cell.
COM	/	COMM.Err	: Digital load cell does not communicate anymore.
PW+	/	Power>16V	: Power supply default. (Voltage too high)
PW-	/	Power< 6V	: Power supply default. (Voltage too low)
SeN	/	N.S. Err	: The serial number is not valid.
REF	/	AD ErRef	: Analog input default.
OR+	/	OR +	: Off range overflow default.
OR-	/	OR -	: Off range underflow default.

NOTA :

ARPEGE MASTERK

CALIBRATION MANUAL AIPORT INDICATOR (AWI-P & AWI-K MODELS)

Core N°	Manual N°	Edition
AWI-P/K V1.0	**AER_Gb_AWI-P_K Calibration_rev02.docx**	**02**

CALIBRATION MANUAL AIPORT INDICATOR (AWI-P & AWI-K MODELS)

Date	Version Number	Records of modifications
28/01/2020	00	Original
04/11/2020	01	Addition of the AWI-K model
11/12/2020	02	Update

SOMMARY

1.   PRESENTATION

1.1.   Technical characteristics

Maximum number of scale divisions (legal for trade)   : 6000.
Sensitivity   : 0.5 µV.
Power supply of the load cell   : 5 V square wave.
Number of measurements / second   : 50 to 990.
Load impedance (analog load cells)   : > 58 ohms.

Zero visualized at 1/4 scale division.
Digital adjustment conversational by the front panel.
DC power supply 12 V_{DC}.
Power consumption: 1A max, according to the configuration.
LCD screen 240 pixels by 160 pixels composed of the weight on 5 digits of 15 mm and of application additional information.
Indicator weight ≤ 0.4 kg.

1.2.   The peripherals

In standard version, the indicator features:
❖ One serial link:
COM1   : RS232. (Short distance link: 10 meters max.)

❖ One input for the analog load cells:
M1   : Analog load cell(s) 6 wires. (Short distance link: 30 meters max.)
Reminder: Only one cable must be connected on **M1**. The parallel mounting of the load cells must be done separately in a junction box.

❖ A MASTER CAN (CAN bus) / RS485 interface:
CO1   : Digital load cell(s).

❖ A MASTER CAN (CAN bus) interface:
CO2   : Remote display unit. (ASD-1, ASD-2…)

❖ 4 logic input interfaces:
CO6   : Isolated DC inputs.
                Input voltage 12 or 24V_{DC} / Maximum current consumed per input 5 mA max.

❖ 4 logic output interfaces:
CO7   : Isolated AC/DC outputs.
                Output voltage 12 or 24$V_{DC\ or\ AC}$ / Maximum current per output 250 mA max.

In optional version, the indicator features:
❖ One Ethernet interface:
ETHERNET : Communication with Host system.

2. THE FRONT PANEL

2.1. Displays and Indicator lights

AWI-P model:

AWI-K model:

Legend:

- $1 \Rightarrow$ Weight on 5 digits of 15 mm height.
- $2 \Rightarrow$ ⁺0⁺ indicates if the weight is null at 1/4 scale division.
- $3 \Rightarrow$ ◣ indicates if the weight is stable.
- $4 \Rightarrow$ **DATA** indicates that the 5 digits are displaying a data and not a weight.

- $5 \Rightarrow$ HP indicates if the displayed weight is in high resolution.
- $6 \Rightarrow$ Indicates the weight unit **kg** or **lb** .
- $7 \Rightarrow$ Application area.

2.2. Keyboard

AWI-P	AWI-K	In menus	In numeric or alphanumeric seizures	In multiple choice seizures	Additional functions
ON/OFF ESC	⏻ | ESC	Return to the previous menu	Exit of the seizure		-
		Press this key for 2 seconds to switch OFF the indicator, press it again for 2 seconds to restart the indicator			
CE	CE	-	Clear the seizure	-	-
→0← ←	→0← | ←	-	Move the cursor to the left	Select the previous value	Reset the weight to zero (within the authorised range)
−	−	-	Decrease the character selected by the cursor	Select the previous value	-
+	+	-	Increase the character selected by the cursor	Select the next value	-
Belt →	Belt | →	Access to the current pointed function	Move the cursor to the right	Select the next value	Toggle the command of belt
HP ↑	HP ↑	Selecting the previous function	Selecting the previous seizure		Switch to the **H**igh **P**recision weight display
kg/lb ↓	kg/lb ↓	Selecting the next function	Selecting the next seizure		Toggle the weight unit between kg and lb

3.   CALIBRATION MODE

3.1.   Access to the Calibration

⚠️   **THIS MANIPULATION MUST BE EXECUTED BY AN ACCREDITED AGENT**   ⚠️

The DL1 LED located inside the indicator (see *4.1.1.*) indicates the mode in progress:
- ➢ Fast blinking   ⟹ **CALIBRATION MODE**.
- ➢ Slow blinking   ⟹ **NORMAL APPLICATION MODE**.

Switch from normal application mode to calibration mode:

The switching from one mode to the other is done by setting the **CALIBRATION Jumper** "**I1**" accordingly, which is located on the rear panel of the indicator. (See *4.1.1.*)

For this you must proceed as follows:
- Turn off the indicator, then toggle the **CALIBRATION Jumper**, turn on the indicator.
- The start-up phase will be displayed (« curtain effect ») then you will get the following screen :

```
            Information
 AWI- P/K v1.0      CS: 41EC
 Number of modifications:00001
         Indicator's number:
             ????????
        ⟵   ENGLISH   ⟶
    ⊕ ⊖ ⟹ Contrast adjustment
                        ⟱ Exit
```
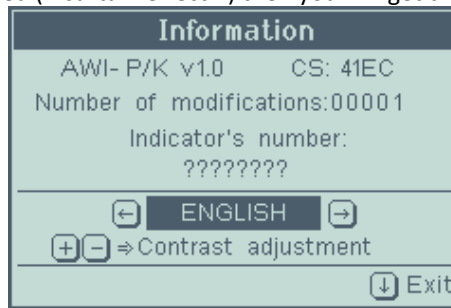
At this step adjust the LCD display contrast (with keys 🔲 / 🔲) and choose the language for the **CALIBRATION MODE** (with keys 🔲 / 🔲), then validate with 🔲 to access to the **CALIBRATION MODE**.
- The following menu will be displayed:

```
CALIBRATION MODE               ▲

🛠 Metrological parameters
⬇ Calibration
🔬 Weight display
📊 Data Transfer
🖨 Printing of Parameters
📇 Saving and Exit

▲⟹ ⬆  ▼⟹ ⬇      Start⟹ ⟶     ▼
```
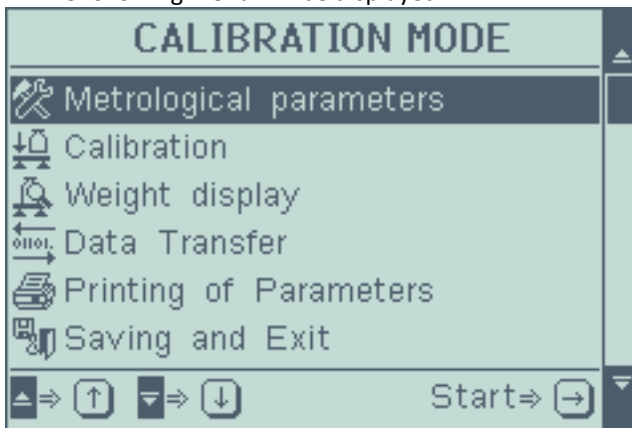
⟹ = *use the key* 🔲 *to access to the selected function.*

⟹ Access to the **Metrological parameters** (see *3.2.*)

⟹ Access to the **Calibration menu** (see *3.3.*)

⟹ Access to the **Weight display** (see *3.4.*)

⟹ Access the **Data Transfer** (see *3.5.*)

⟹ Launch the **Printing of Parameters** (see *3.6.*)

⟹ Access the **Saving and Exit** to return in normal application mode (see *3.7.*)
⟵ *Indications of usable keys.*

⚠️   **IMPORTANT: In case of a power failure during the calibration mode and before the saving is done, all the parameters and calibration values you have entered will be lost**   ⚠️

3.2. Metrological parameters

In this menu, enter the following parameters. (Five screens)

```
Main unit                            :  kg
```
Choose the calibration unit "**kg**" or "**lb**".

```
Switching unit (kg/lb)               :  No
```
Choose if the switching of unit is authorized "**Yes**" or not "**No**". (Switching unit is performed with key)

```
Legal for trade (OIML CE)            :  Yes
```
Choose if the indicator is dedicated for a legal for trade use "**Yes**" (commercial transactions..., the device has in this case a CE marking) or not "**No**" (the securities of 6000 scale divisions and the zone of the automatic zero setting will be disabled).

If "**Main unit**" is set to "**kg**":	If "**Main unit**" is set to "**lb**":
`Range (1kg to 20000kg)    :00150`	`Range (2lb to 500001b)    :00330`
Enter the range value.	Enter the range value.
`Division (max 20.000kg)  :00.100`	`Division (max 50.000lb)  :00.200`
Enter the scale division value.	Enter the scale division value.

```
N° of measurements/second            :  60 m/s
```
Enter the number of measurements per second: **50 m/s**, **60 m/s**, **70 m/s**… or **990 m/s**.

```
Load cell type                       :  Analog
```
Enter the load cell type.
  ➢ **Analog**   : For using analog load cells.
  ➢ **Digital (RS485)**   : For using digital load cells on RS485.
  ➢ **Digital (CAN)**   : For using digital load cells on CAN bus.
  ➢ **CANDY (CAN)**   : For using an A/D transmitter on CAN bus.
  ➢ **Slave Operator**   : For use in slave mode (the indicator should then be connected to a master AWI-P indicator)

```
Number of load cells (1 to 6)        :  4
```
Enter the number of load cells.

```
Input range                          :  10 mV
```
Select the input range used for analog load cells.
  ➢ **Default (20 mV)**
  ➢ **10 mV**
  ➢ **20 mV**
  ➢ **40 mV**

```
Numerical filtering (XX mean)        :  30
```
Adjust the numerical filter effect applied on the measurement.
  ➢ **00**   : No filter on the measurement.
  …
  ➢ **99**   : Maximum filter effect on the measurement.

```
Immobility zone (0.5s.d. to 3.0s.d.)  :  1.0
```
According to the installation conditions of the scale, it may be necessary to adapt the immobility zone.

```
N° of immobile measurements          :  40
```
Adjust the speed to obtain immobility by setting the number of stationary measurements necessary to obtain immobility.

```
Zero tracking                        :  Yes
```
Select if the zero tracking feature is requested (**Yes**) or not (**No**).

```
Zero power on                        :  No
```
Select if the zero power on feature is requested (**Yes**) or not (**No**).

3.3. Calibration menu

The following menu will be displayed:
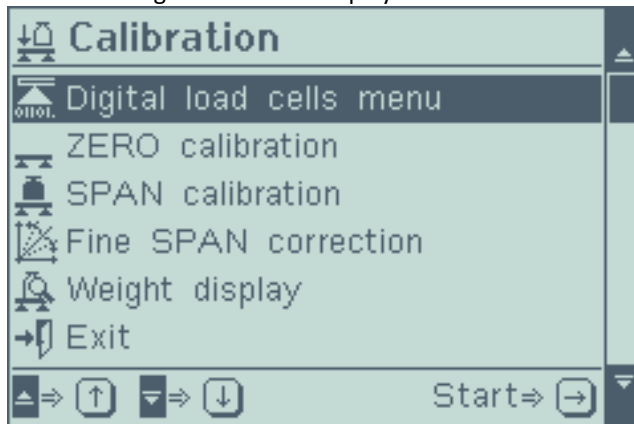
⇒ = *use the key* 🔲 *to access to the selected function.*

⇒ Access to the **Digital load cells menu**[*] (see *3.3.1.*)

⇒ Launch the **ZERO calibration** (see *3.3.2.*)

⇒ Launch the **SPAN calibration** (see *3.3.3.*)

⇒ Launch the **Fine SPAN correction** (see *3.3.4.*)

⇒ Access to the **Weight display** (see *3.3.5.*)

⇒ **Return to the CALIBRATION MODE menu** (see *3.3.6.*)

← *Indications of usable keys.*

*: Only available if the "**Load cell type**" validated is "**Digital**" or "**CANDY**", see "*3.2. Metrological parameters*".

3.3.1. Digital load cells menu

The following menu will be displayed:
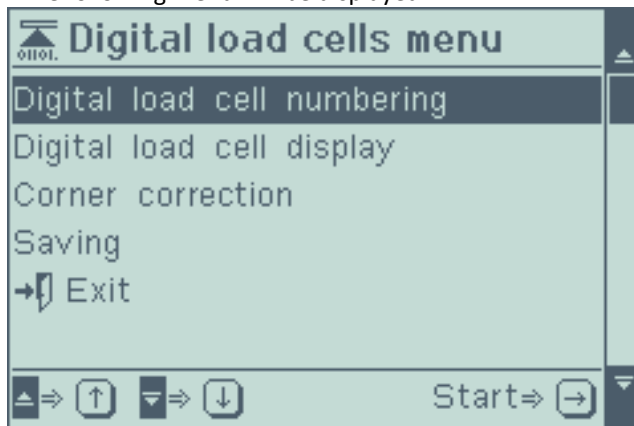
⇒ = *use the key* 🔲 *to access to the selected function.*

⇒ Launch the **Digital load cell numbering** (see *3.3.1.1.*)

⇒ Access to the **Digital load cell display** (see *3.3.1.2.*)

⇒ Launch the **Corner correction** (see *3.3.1.3.*)

⇒ Launch the **Saving** (see *3.3.1.4.*)

⇒ **Return to the Calibration menu** (see *3.3.1.5.*)

← *Indications of usable keys.*

3.3.1.1. Digital load cell numbering

If only one digital load cell is declared in the parameter "**Number of load cells (1 to 6)**" (see the "*3.2. Metrological parameters*") the numbering function is immediately launched and the following window will appear during the operation:
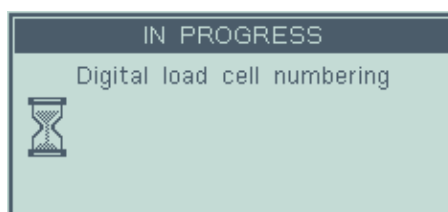
Then you may control the numbering on the **Digital load cell display** that appears. (See *3.3.1.2.*)

Otherwise the following window appears when you enter this function:

```
            DATA  ENTRY
Load cells serial numbers          ▲
00000000 ⇒ numbering  to  1
00000000 ⇒ numbering  to  2
00000000 ⇒ numbering  to  3
00000000 ⇒ numbering  to  4


�ⒺⓈⒸ Exit            �Ⓔ ⇒ ▤          ▼
```
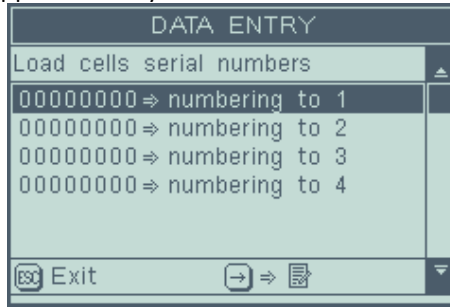
Use key [ON/OFF ESC] to abort the function and return to the **Digital load cells menu**.

Use keys [HP ↑] / [kg/lb ↓] to select one of the available serial number.

Use key [Belt →] to access to the seizure window of the selected serial number, the following window appears:

```
            DATA  ENTRY

         Load  cell  serial  number
                 00000000
              numbering  to  1
```
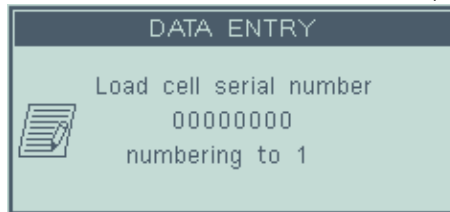
Enter the serial number for the digital load cell and confirm with key [kg/lb ↓].

When all serial numbers of the digital load cells are confirmed, the following window appears:

```
            DATA  ENTRY
Load cells serial numbers          ▲
18040014 ⇒ numbering  to  1
18040019 ⇒ numbering  to  2
18040022 ⇒ numbering  to  3
18040048 ⇒ numbering  to  4


ⒺⓈⒸ Exit       �Ⓔ ⇒ ▤   ⎣+⎤ ⇒ ☑         ▼
```
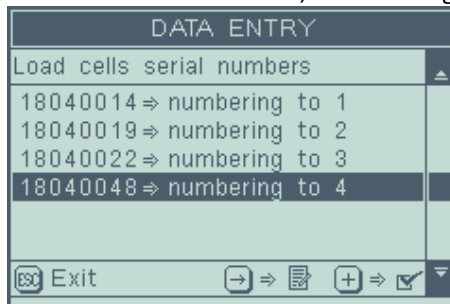
Use key [+] to launch the numbering of all digital load cells, the following window will appear during the operation:

```
            IN  PROGRESS
       Digital  load  cell  numbering

          ⧖
```
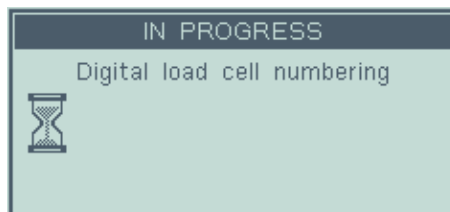
Then you may control the numbering on the **Digital load cell display** that appears. (See *3.3.1.2.*)

Remark: **The point to point numbering could be performed by connecting digital load cells one by one.**
          If the confirmed serial number is "**00000000**" the point to point numbering can be done. The
          following window appears to confirm that only one digital load cell is connected on the indicator:

```
            CONFIRMATION
       Only  one  load  cell  connected

   ⚠?      ┌─────────┐   ┌─────────┐
           │   No    │   │   Yes   │
           └─────────┘   └─────────┘
```
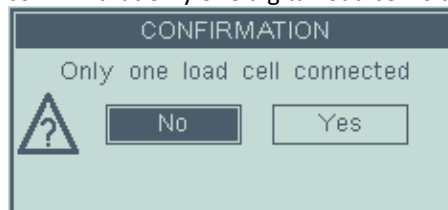
Enter the new number for the load cell in the following window, then launch the numbering with key [kg/lb ↓].

```
         DATA ENTRY

    New number for the load cell
                 0
```
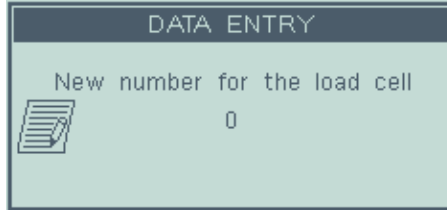
Then you may control the numbering on the **Digital load cell display** that appears. (See *3.3.1.2.*)

3.3.1.2.   Digital load cell display

The following window appears when you enter this function:

```
         Digital load cell display
LC   Value     Serial nº  Serial nº  Load cell  Nº
Nº   (points)  (EEPROM)   (Load cell) status    m/s
1  +00000017  18040014   18040014    OK        60
2  +00000012  18040019   18040019    OK        60
3  +00000013  18040022   18040022    OK        60
4  +00000011  18040048   18040048    OK        60


         Total value:+00000053
```

Use the key [ON/OFF ESC] to return to the **Digital load cells menu**.

Remarks:
- This function is used only to check that a digital load cell is well aligned or to know the load distribution on the load receptor.
- On the start-up of the indicator, this screen will be displayed for two seconds if all the digital load cells are OK or during five seconds if there are problems on one or more load cells

3.3.1.3.   Corner correction

This function allows executing a corner correction «too high» or «too low» at full range.
The following window will appear when you select this function:

```
◄◄        50.01 (HP) kg
DATA
Corner correction
LC   Serial nº    Correction          [ESC] Exit
Nº   (Load cell)  factor
1 18040014  1.000000   ⇐ [+][−][CE] ▲
2 18040019  1.000000
3 18040022  1.000000
4 18040048  1.000000           ▼
```

Use keys [+] / [−] to adjust the correction factor of the selected digital load cell.

Use key [CE] to set the correction factor to 1.000000.

Use keys [HP ↑] / [kg/lb ↓] to select one of the available correction factors.

Use key [ON/OFF ESC] to return to the **Digital load cells menu**.

3.3.1.4.   *Saving*

This function allows executing an EEPROM saving, the following window indicates that the calibration is saved in the EEPROM before returning to the **Digital load cells menu**.
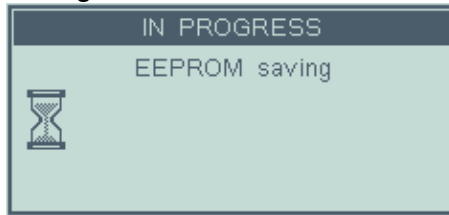
3.3.1.5.   *Return to the Calibration menu*

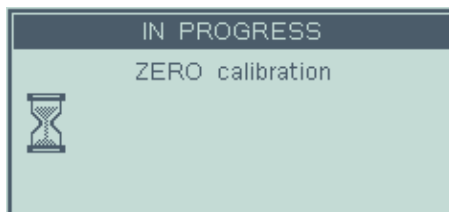This function allows to leave the **Digital load cells menu** and return to the **Calibration menu**.

3.3.2. ZERO calibration

The following window appears when you enter this function:
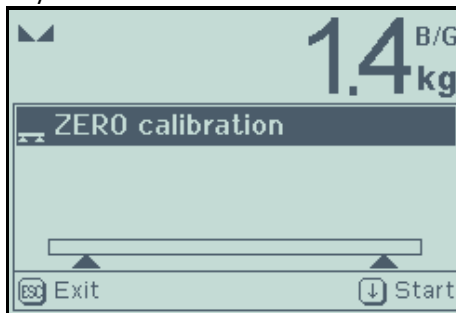
Before launching this function, please verify the load cells connections and the state of the load receptor. The load receptor should be empty and clean.

Use key [kg/lb] to launch the **ZERO calibration** function and the following window will appear during the operation:

The lead time for this operation depends on the necessary time to obtain a stable measurement, so no vibration is allowed…

Once the **ZERO calibration** is done, the following window appears:
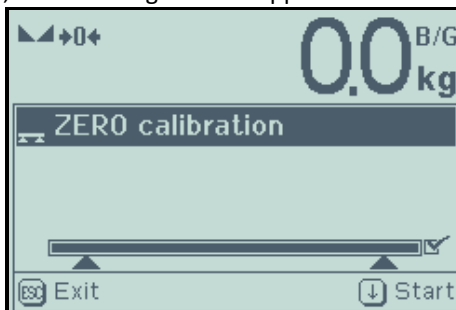
If required, launch the function again with the key [kg/lb].

Otherwise use key [ON/OFF ESC] to return to the **Calibration menu**, a window will indicate that the calibration is saved in the EEPROM before getting back to the **Calibration menu**.
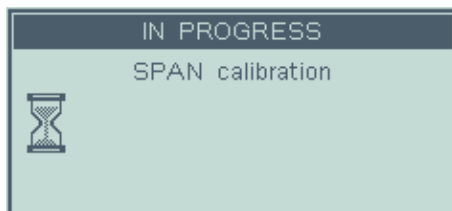
3.3.3. SPAN calibration

Before launching this function, a **ZERO calibration** must have been done.
Put the standard masses on the load receptor then validate the **SPAN calibration**. The following window will appear when you enter this function:
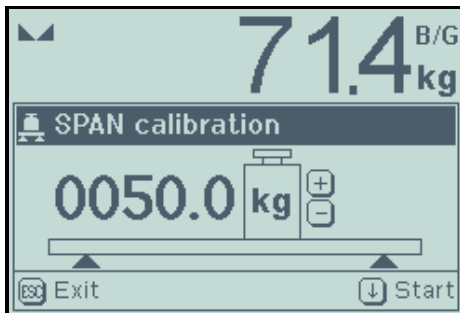

Use keys ![+] / ![-] to adjust the value of the standard masses already put on the load receptor. (By default the value of the standard masses is set to 500 scale divisions)

Then use key ![kg/lb] to launch the **SPAN calibration** function and the following window will appear during the operation:

The lead time for this operation depends of the necessary time to obtain a stable measurement, so no vibration is allowed…
Once the **SPAN calibration** is done the following window appears:
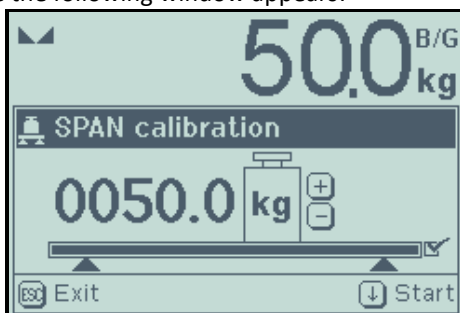
If required, launch the function again with the key ![kg/lb].

Otherwise use key ![ON/OFF ESC] to return to the **Calibration menu**, a window will indicate that the calibration is saved in the EEPROM before getting back to the **Calibration menu**.

Remark:
- A high quality calibration requires standard masses values close to the maximum range of the scale.
- This operation may be repeated many times without the need of unloading the masses.

3.3.4. Fine SPAN correction

This function allows doing a slight span correction (Gain of the system).
During the scale control, you may remark a slight delay or advance on full scale, you can correct this error due to this function.

The following window will appear when you enter inside this function:
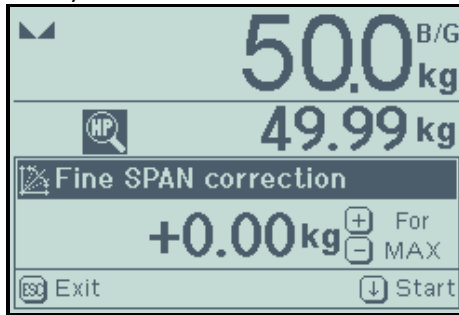
Use keys [+] / [-] to adjust the value of the correction. (The required value of the correction is for the full range, so if the full scale range is 150kg, a correction of +0.01kg at 50kg will be done by entering a +0.03kg correction)

Use key [CE] to set the correction value to zero.

Use key [HP ↑] to toggle the unit correction between High Precision weight and scale division.

Then use key [kg/lb ↓] to launch the **Fine SPAN correction** function and the following window will appear during the operation:
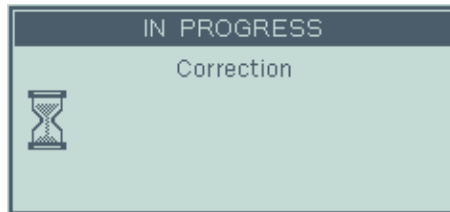
Restart the operation as many times as it is necessary with the key [kg/lb ↓].

Then use key [ON/OFF ESC] to return to the **Calibration menu**, a window will indicate that the calibration is saved in the EEPROM before getting back to the **Calibration menu**.

3.3.5.   Weight display

This function allows displaying the weight with additional formats: scale divisions (at 1/10th precision) and in high precision. (Control of the scale)

Use the key [ON/OFF ESC] to return to the **Calibration menu**.

Remark: For more detail on this function see "*3.4. Weight display*".

3.3.6.   Return to the CALIBRATION MODE menu

This function allows to leave the **Calibration menu** and return to the **CALIBRATION MODE menu**.

3.4.   Weight display

This function allows displaying the weight with additional formats: scale divisions (at 1/10th precision) and in high precision. (Control of the scale)

⇐ Weight display with status

⇐ High Precision weight display

⇐ Scale division display

⇐ Additional information (number measurement per second, converter value, …)

← *Indications of usable keys.*

Use the key .$\boxed{\text{ON/OFF ESC}}$ to return to the **CALIBRATION MODE menu**.

Remark: The switching of unit ($\boxed{\downarrow}$ ⇒ kg/lb) is available according the setting of parameter "`Switching unit (kg/lb)`", see the "*3.2. Metrological parameters*".

3.5.   Data Transfer

If this function is selected, the following window will appear:
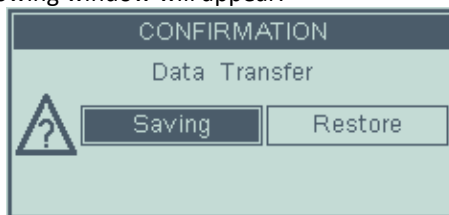
Select which **Data Transfer** is required:
- "`Saving`"   ⇒ see "*3.5.1. Saving Calibration & Parameters on a PC*"
- "`Restore`"   ⇒ see "*3.5.2. Restore Calibration & Parameters from a PC*"

3.5.1.   Saving Calibration & Parameters on a PC

This function allows the saving, in a text file format (.TXT), of all the calibrations and the parameters on a personal computer, according the following steps:
- Connect the computer (on **COM1** for example) to the indicator (on **COM1**), with the cable link PC/Indicator.
- Start the Hyper terminal software. (When available on the PC, path of hyperterm.exe is:
  "C:\ProgramFiles\Accessories\HyperTerminal\HYPERTRM.EXE")
- Name the connection and validate (TERMINAL.AER), in the header "Co<u>n</u>nect using" validate "COM1".
- Then, configure the connection in 38400 Bauds, no parity, one stop bit, and no flow control.
- Once back to the main screen, go to "<u>T</u>ransfer" then "<u>C</u>apture the text", enter the name of the back-up file and confirm by "start", the computer is now waiting for the data.
  On the indicator after validating "`Saving`" in **Data Transfer** the following window will appear, then confirm the data transfer with "`Yes`".
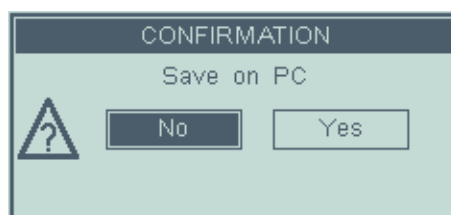
- During the transmission, the saving will be displayed on the PC screen and the indicator displays the following window:


- At the end of transmission the Indicator returns to the **CALIBRATION MODE menu**, on the PC go to "Transfer" then "Capture the text" and "Stop".

3.5.2. Restore Calibration & Parameters from a PC

This function allows to restore all of the calibrations and parameters previously saved on a personal computer in a text file format. (.TXT) according the following steps:
- Connect the computer (on **COM1** for example) to the indicator (on **COM1**), with the cable link PC/Indicator.
- Start the Hyper terminal software. (When available on the PC, path of hyperterm.exe is:
  "C:\ProgramFiles\Accessories\HyperTerminal\HYPERTRM.EXE")
- Name the connection and validate (TERMINAL.AER), in the header "Connect using" validate "COM1".
- Then, configure the connection in 38400 Bauds, no parity, one stop bit, and no flow control.
- On the indicator after validate "**Restore**" in **Data Transfer** the following window will appear, launch the restoration with "**Yes**", the indicator is now waiting for the data.
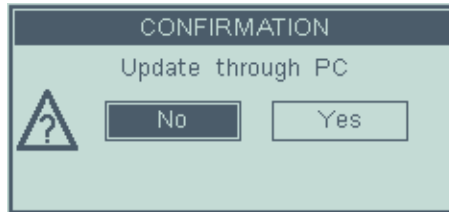
- On the computer, go to "Transfer" then "Send the text file", select the restoration file to be transferred and validate "Open", then the computer will start the data transmission.
- During the transmission the indicator displays the following window:
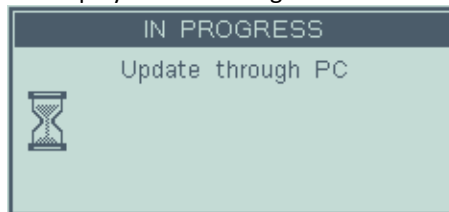

- Then a window will indicate that the data are saved in the EEPROM, it also indicates the good progress of the operation before getting back to the **CALIBRATION MODE menu**.
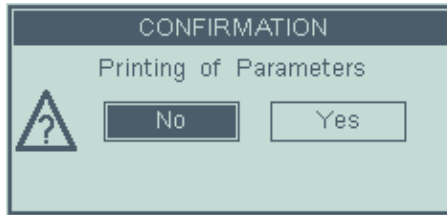
3.6.   Printing of Parameters

If a printer is connected on **COM1**, you may keep a hard copy of the parameters and the calibration values by validating this function.
If the serial number of the indicator is not registered yet, you may do it in this window:
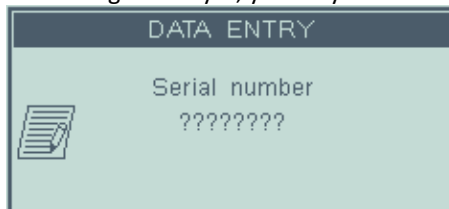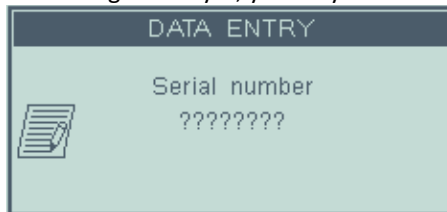
Then following window appears:

Validate "**Yes**" to launch the printing on **COM1** (38400 Bauds, no parity, one stop bit, and no flow control), the following window will appear during the operation before getting back to the **CALIBRATION MODE menu**.

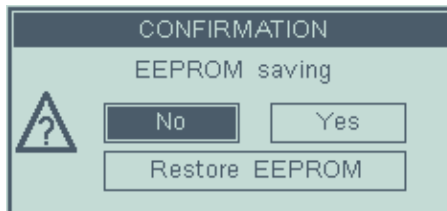## 3.7.   Saving and Exit

Validate this function to quit the **CALIBRATION MODE** and save the parameters and the calibration values.
If the serial number of the indicator is not registered yet, you may do it in this window:

Then following window appears:

Select which operation is required:
- "**No**"   ⇒ Return to the **CALIBRATION MODE menu**
- "**Yes**"   ⇒ Launch the **Saving Calibration/Parameters and Exit**, see *3.7.1*.
- "**Restore EEPROM**"   ⇒ Launch the **Restore previous Calibration/Parameters**, see *3.7.2*.

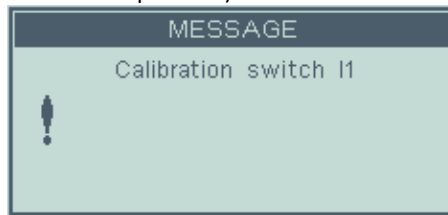### 3.7.1.   Saving Calibration/Parameters and Exit

This function allows to save the calibration and parameters and then quit the **CALIBRATION MODE** to the **NORMAL APPLICATION MODE**.

After validating "**Yes**" in the **Saving and Exit** function the following window will appear during the saving.

This operation takes a few seconds.

Then a message, as shown below, indicates that you must toggle the **CALIBRATION Jumper** "**I1**" back to its initial position (**NORMAL APPLICATION MODE** position).

```
┌─────────────────────────────┐
│          MESSAGE            │
│      Calibration switch I1  │
│   ▲                         │
│   █                         │
│   ▼                         │
│                             │
└─────────────────────────────┘
```

After toggling the **CALIBRATION Jumper** "**I1**" the indicator will restart in **NORMAL APPLICATION MODE**.

3.7.2. Restore previous Calibration/Parameters

This function allows to restore the previous calibration and parameters.

After validating "`Restore EEPROM`" in the **Saving and Exit** function, the following window will appear during the restoration.

```
┌─────────────────────────────┐
│        IN PROGRESS          │
│      Restore EEPROM         │
│   ⧗                         │
│                             │
│                             │
└─────────────────────────────┘
```
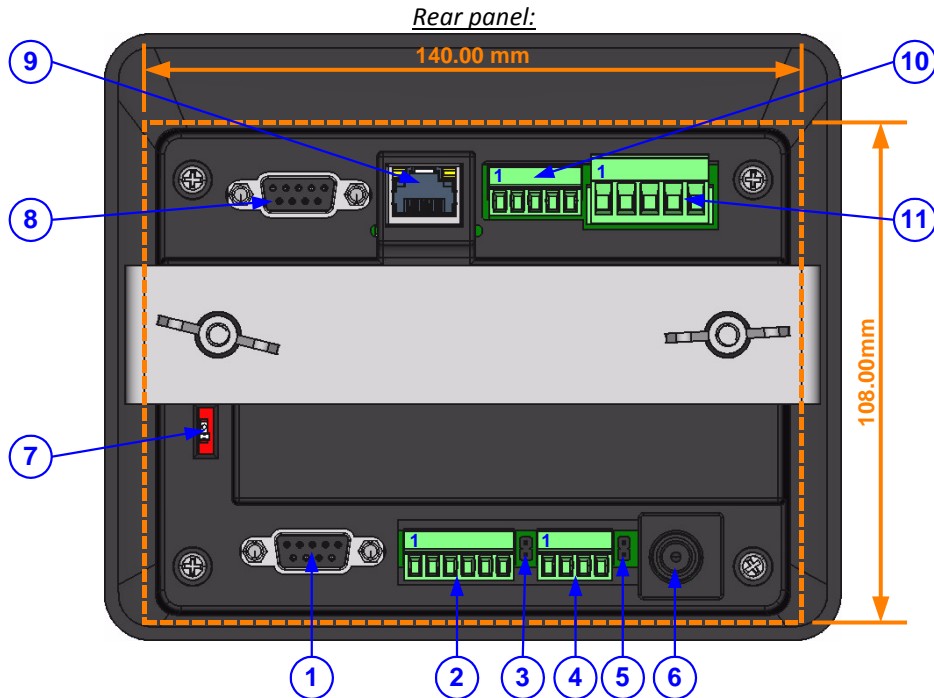
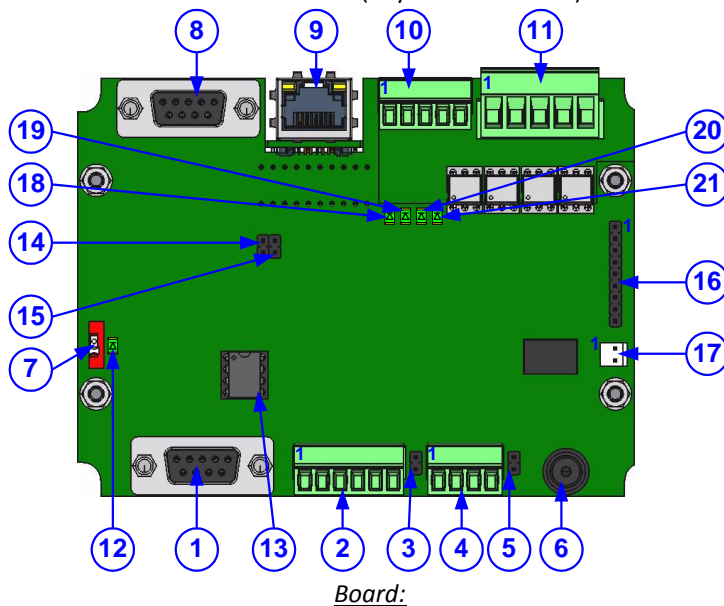Before getting back to the **CALIBRATION MODE menu**.

4.   APPENDIX

4.1.   Rear panel & board overview and Connections

4.1.1.   AWI-P/K Indicator & ASD-1 Remote Display

Rear panel:

Legend:

- 1 ⇒ **M1** (Input for the analog load cells)
- 2 ⇒ **CO1** (MASTER CAN / RS485)
- 3 ⇒ RS485 termination jumper
- 4 ⇒ **CO2** (MASTER CAN)
- 5 ⇒ MASTER CAN termination jumper
- 6 ⇒ 12V$_{DC}$ Power Supply input
- 7 ⇒ **CALIBRATION Jumper** "I1"
- 8 ⇒ **COM1** (RS232)

- 9 ⇒ **ETHERNET**
- 10 ⇒ **CO6** (Inputs)
- 11 ⇒ **CO7** (Outputs)
- 12 ⇒ **DL1** LED
- 13 ⇒ **IC8** MIC4424
- 14 ⇒ **ST1** (Configuration jumper)
- 15 ⇒ **ST2** (Configuration jumper)
- 16 ⇒ **CN2** (Keyboard interface)

- 17 ⇒ **CN5** (LCD backlight interface)
- 18 ⇒ LED of status input **I1**
- 19 ⇒ LED of status input **I2**
- 20 ⇒ LED of status input **I3**
- 21 ⇒ LED of status input **I4**
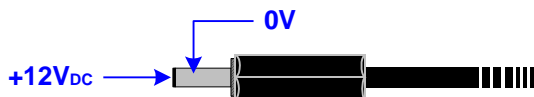- ⬚ ⇒ Cut-out for installation (Tolerances: -0/+3mm)

Board:

Connection pinouts:

Connector ref. / Pin number	M1 Analog load cells	CO1 MASTER CAN / RS485 Digital load cells	CO2 MASTER CAN Peripherals	COM1 RS232	CO6 INPUTS	CO7 OUTPUTS
1	⏚	0V	0V	*N.U.*	Input I1	Output O1
2	*N.U.*	V$_{OUT}$	V$_{OUT}$	Tx	Input I2	Output O2
3	Exc-	CAN_L	CAN_L	Rx	Input I3	Output O3
4	Sig-	CAN_H	CAN_H	DTR	Input I4	Output O4
5	Exc+	RxTx- (RS485)		0V	In. common (GND)	Out. common
6	Sig+	RxTx+ (RS485)		*N.U.*		
7	Sen-			*N.U.*		
8	Sen+			*N.U.*		
9	*N.U.*			*N.U.*		

Jack connection (2.1x5.5mm) of the 12V$_{DC}$ adaptor:

0V
+12V$_{DC}$

Jumper configuration:

ST1	ST2	Operating mode
		⇒ AWI-P Indicator mode
		⇒ ASD-1 Remote Display mode (Station n°1)
		⇒ ASD-1 Remote Display mode (Station n°2)
		⇒ Reserved for Factory operation

4.1.2. ASD-2 Remote Display
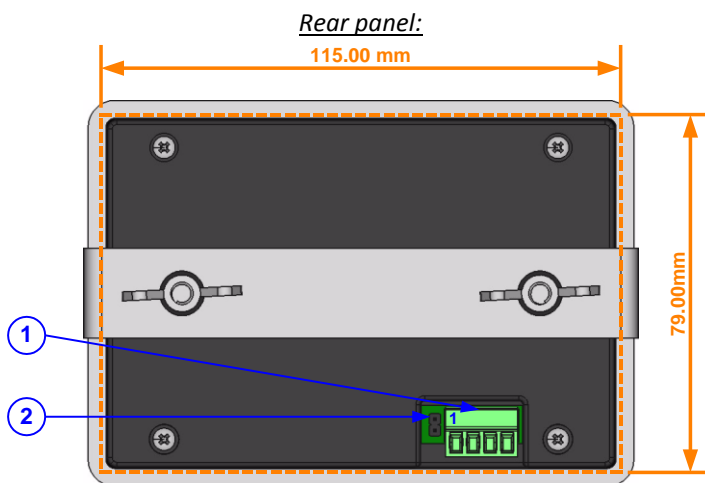
Rear panel:

115.00 mm
79.00mm

Connection pinouts:

Connector ref. / Pin number	CO1 MASTER CAN
1	0V
2	V$_{SUPPLY}$
3	CAN_L
4	CAN_H

Legend:
- 1 ⇒ **CO1** (MASTER CAN)
- 2 ⇒ MASTER CAN termination jumper
- 3 ⇒ **ST2** (Configuration jumper)
- 4 ⇒ **ST3** (Configuration jumper)
- ⇒ Cut-out for installation (Tolerances: -0/+3mm)

Board:
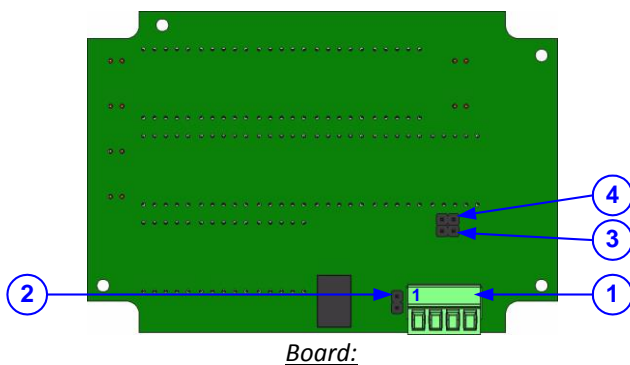
Jumper configuration:

ST2	ST3	Operating mode
		⇒ Remote Display mode (Station n°1)
		⇒ Remote Display mode (Station n°1)
		⇒ Remote Display mode (Station n°2)
		⇒ Reserved for Factory operation

4.1. Example of the maximum configuration

ASD-1 remote display

ST1　ST2

Station n°1

CO2

PASSENGER side

ST3
ST2

Station n°1

CO1

or

ASD-2 remote display

CO2

AWI-P/K Indicator (Master mode)

M1/CO1

OPERATOR side

Scale Receptor

Optional dual scale use

ASD-1 remote display

ST1　ST2

Station n°2

CO2

PASSENGER side

ST3
ST2

Station n°2

CO1

or

CO2

ASD-2 remote display

CO1

CO2

OPERATOR side
**AWI-P/K Indicator (Slave mode : Load
cell type = Slave Operator)**

4.2. Error messages on the weight display

POWER : Power supply default. (Voltage too low or too high)

EEP : CRC error of the EEPROM memory.

REF : Error on the input **M1**. (Load cell default or load cell connection problem)

OR+ : Off range overflow. (Converter capacity overflow)

OR- : Off range underflow. (Converter capacity underflow)

OS+ : Off scale overflow, Maximum weight overflow. (+9 scale division)

OS- : Off scale underflow, Weight under zero. (-18 scale divisions)

OVER : Calculation capacity overflow.

----- : Function unexecuted. (Not available, forbidden, …)

!!! : Display capacity overflow.

AD773 : The Analog to Digital converter does not operate.

DLC X : The digital load cell n° X does not communicate anymore.

SER X : The serial number (and the calibration) of a digital load cell n° X is not valid.

I SLA : The indicator is used in slave mode (see "*3.2. Metrological parameters*") but no communication with master indicator.

MAS C : The indicator is used in slave mode (see "*3.2. Metrological parameters*") but the master indicator is in **CALIBRATION MODE**.

4.3. Error messages on the digital load cell status

Short form (*Diagnostic frame*)	/	Long form (*Digital load cell display*)	Digital load cell status
OK	/	**OK**	: No default on the digital load cell.
COM	/	**COMM.Err**	: Digital load cell does not communicate anymore.
PW+	/	**Power>16V**	: Power supply default. (Voltage too high)
PW-	/	**Power< 6V**	: Power supply default. (Voltage too low)
SeN	/	**N.S. Err**	: The serial number is not valid.
REF	/	**AD ErRef**	: Analog input default.
OR+	/	**OR +**	: Off range overflow default.
OR-	/	**OR -**	: Off range underflow default.

4.4. Error messages in the "Pop-up" windows

Other error messages will "pop-up" on the screen in case of error detection according the following table

The following table lists the different kind of errors:

Error code '??'	Designation
R1	Scale division not valid: Enter a new value for the scale division (1, 2, 5, 10, 20, 50,100…)
R2	Scale division different from 1/2/5: Enter a new value for the scale division (1, 2, 5, 10, 20, 50,100…)
R3	Maximum weighing range greater than 20000kg / 50000lb
R4	Display capacity overflow
R5	6000 < scale divisions < 500: Number of scale divisions = Maximum range/scale division
R7	Scale division incompatible to use the switching of unit kg/lb
Rj	Immobility parameter different from 0.5 s.d. to 3.0 s.d.
Rk	Zero tracking parameter different from 00 to 09.
RZ	Error during the calibration phase of the zero of the scale
RG	Error during the calibration phase of the gain
RR	Error during the calibration phase of the gain, the ADC input range is not enough
R!	Function not authorized
R?	Saving not authorized
T1	Error during the restoration of the calibrations and parameters through the PC

4.5. Debugging

- The indicator displays the following message: **POWER**
  Verify the voltage of the power supply of the indicator.
  <u>Warning:</u> High voltage could make damage on the indicator.

- The indicator displays the following message: **OR+**
  The signal delivered by the load cell is too high to be measured by the indicator. (Overload, cabling problem, indicator not calibrated…)

- The indicator displays the following message: **OR-**
  The signal delivered by the load cell is not enough to be measured by the indicator. (Under load, cabling problem, indicator not calibrated…)

- The indicator displays the following message: **EEP**
  Restart the indicator, and make a new calibration for the indicator.

- The indicator displays the following message: **REF**
  The analog load cell is not connected properly, check the returns of the power supply (R+/R-) to be properly connected.

- The indicator displays the following message: **OVER**
  Restart the indicator, and make a new calibration for the indicator.

- The indicator displays the following message: **AD773**
  Verify the cabling of the load cell (**M1**) as well as the indicator parameters.

- The indicator displays the following message: **DLC X**
  Verify the power supply of the load cells and their cabling.

- The indicator displays the following message: **SER X**
  Proceed to a new zero calibration.

- The indicator displays the following error codes : **R1**, **R2**, **R7**
  The entered value of the scale division was not a mandatory multiple of 10 or 1 or 2 or 5. Enter a new value for the scale division. ("**0.001**", "**0.002**", "**0.005**", "**0.010**", "**0.020**", "**0.050**", "**0.100**", …, "**20.000**")

- The indicator displays the following error code: **R5**
  The indicator operates in the legal for trade mode and the number of scale divisions entered is greater than 6000 scale divisions. Enter new values for the maximum weighing range and for the scale division. (Number of scale divisions = Maximum weighing range / Scale division value)

If your problems remain, contact your local technical support.