i 25 Touch indicator

PRECIA MOLEN™
WORLDWIDE WEIGHING

WWW.PRECIAMOLEN.COM

i 25 touch

Installation manual

04-60-01-1 MI / 03/2017

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Foreword 1

Document conventions

Present on the equipment, it states to refer to the present manual for further information on the nature of potential dangers and all the precautions to take to prevent such dangers.

Important warning concerning people safety.

Note concerning the preservation and proper equipment maintenance.

Note aiming to facilitate reading the manual and/or optimally implement the equipment.

CE marking stating that the product is compliant with the main requirements of applicable directives. It authorizes free circulation throughout all the European economic area.

Alternative current.

Recycling

In compliance with the European Directive concerning electric and electronic equipment waste disposal, this device, including its accessories and batteries must not be disposed of as normal waste. Please dispose of this device according to your local prescriptions in a separate unit specifically aimed at electric and electronic equipment.

Safety

The CEI 61010-1 norm indicates that for devices connected through a power outlet, said outlet must be installed close to the equipment and easily accessible. The mains cable is used as cut-off device.

Mains voltage must not fluctuate over 10% of its nominal voltage.

Make sure mains connection and the cable type are compliant with the country safety specifications. If the mains voltage and the type of mains cable plug do not meet the current requirements of the country, please contact your PRECIA MOLEN agency.

Any non conventional use of the device can cause damages and represent a danger for the user.

No damage due to the non compliance with safety rules can be attributed to the manufacturer.

Electromagnetic compatibility

This equipment has been tested and declared compliant with the limits for Class A digital devices, according to European regulations, to Section 15 of FCC rules (U.S. Federal Communication Commission) and to Canadian ICES-003 rules.

These limits aim at providing sufficient protection from interferences when the equipment is used in a commercial environment. If the equipment is used in a residential area, it can cause interferences. Should this happen in these circumstances, the user will have to correct the situation at their own expenses.

Maintenance

The indicator must be off for maintenance and cleaning operations and if the housing is opened.

Never use solvents or abrasive cleaning products.

Only components accredited by PRECIA-MOLEN can be used to replace faulty components, particularly batteries, so as to ensure the proper functioning of the machine and the user's safety.

There is an explosion hazard if the battery is replaced by a wrong model. Discard used batteries in compliance with instructions.

In most cases, repair operations are likely to generate hazardous situations.

Such operations must be asked from PRECIA MOLEN's services, or one of its representatives.

Environment characteristics

- Temperature range in operation ..... – 20°C / + 50°C (– 4°F / + 122°F)
- Relative humidity without condensation ..... 10% / 85%*
- Transitory high voltage category** II
- Maximum atmospheric pressure ..... 795 hPA***
- Indoors use ..... Yes with pollution degree 2
- Protection index ..... IP 66 according to EN 60529
- Power supply:
  - Tension ..... 100 - 240 V**** ac
  - Frequency ..... 50 / 60 Hz
  - Maximum consumption ..... 0.7 A

* *For temperatures up to 31°C and linear decrease down to 50% of relative humidity at 40°C.*
** *Accepts temporary high voltage on the power network.*
*** *Equivalent to a 2 000 m altitude.*
**** *240 V only for Saudi Arabia.*

Hardware installation 2

Housing opening

The housing must be opened to perform the cabling of the indicator. To do so, unfasten the 6 fitting screws (1) on the front (2) of the base (3) and remove the whole front set.

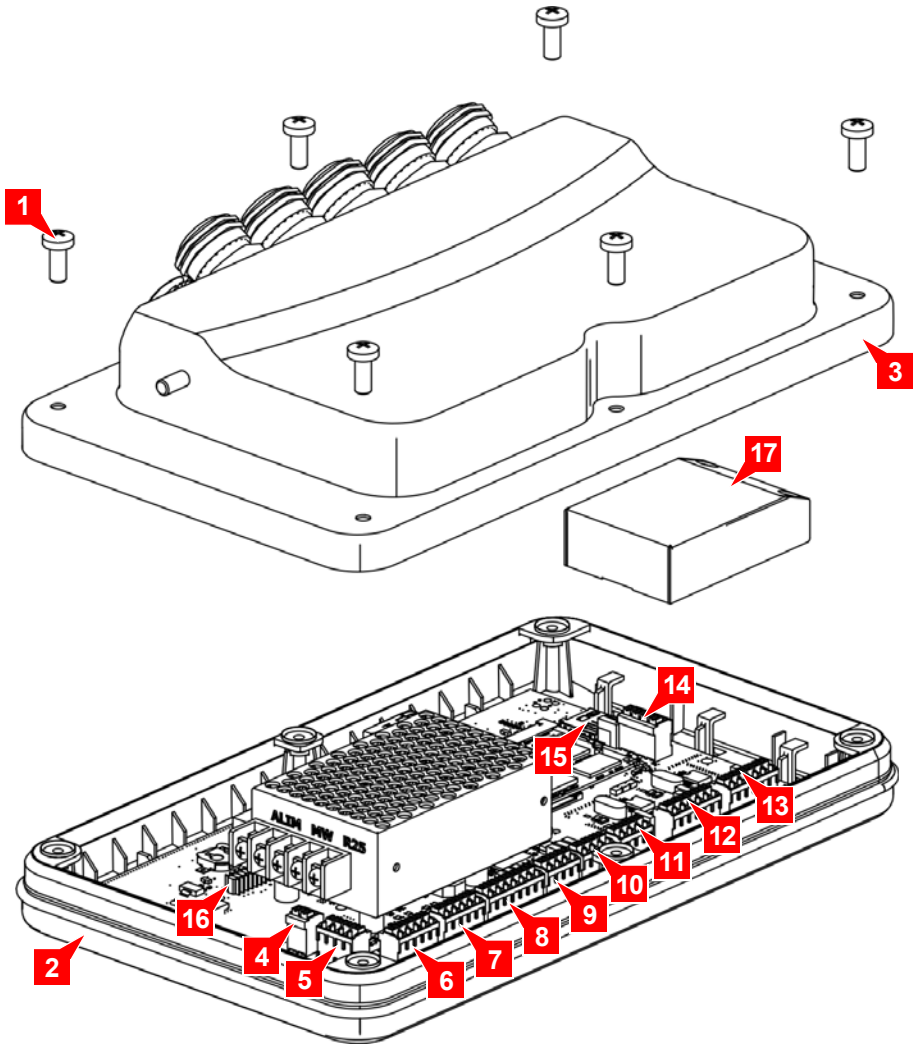
The various connection terminals of the indicator are then accessible:

- 24 V power supply (4).
- Digital inputs (5).
- Digital outputs (6).
- RS 232 COM 2 serial link (7).
- RS 232/485 COM 1 serial link (8).
- Output CAN bus (9).
- Input CAN bus (10)(i).
- USB Serial link (11).
- Measurement 2 (12).
- Measurement 1 (13).
- Host USB link (14).
- Slot for µSD board (15).
- Slot for Bluetooth (16).

(i) Reserved for later use.

All cables must be of VW-1 fire class or equivalent. They must be maintained by the gland that ensures shielding continuation for the measurement and serial connections.

In the case of Legal for Trade use, the connection to measurement is protected by a cover (17) fitted onto the electronic board with 2 screws and sealed by a label.



Connection

For the connections to the various peripherals, see the cabling diagram ref. 04-60-01-0 DD. The connection cables must pass through the glands and be connected to the electronic board terminals.

In legal for trade use (such as sales transactions), the indicator must be delivered cabled to the weighing infrastructure must be sealed. Sealings must not be broken.

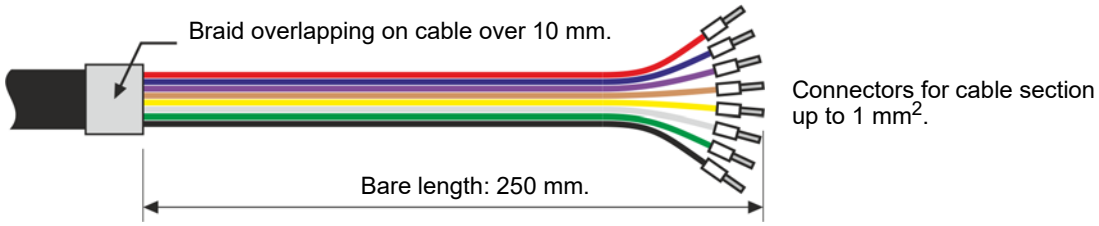


Figure 1 - Preparation of cable

The cables are connected through glands that also ensure shielding continuation.

- Place the gland (**1**) and its O-ring (**2**) on the housing wall (**3**) and tighten the nut (**4**) inside the housing.
- Pass the cable through the pin (**5**), the watertight ring (**6**) and the ring claws (**7**) into the body of the gland making sure that the mass braid (**8**) is in contact with the claws.
- Tighten the pin (**5**) on the gland (**1**).

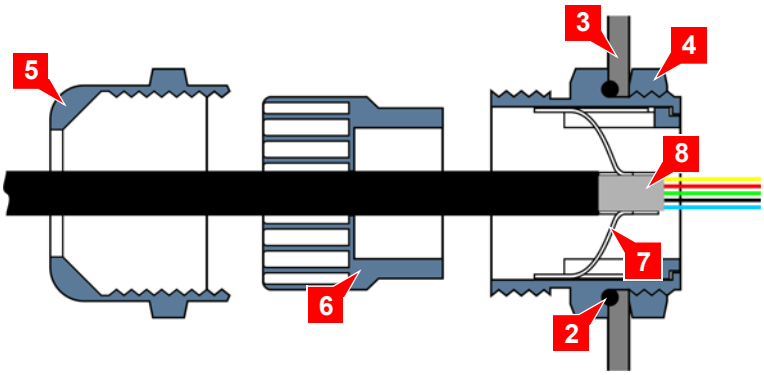
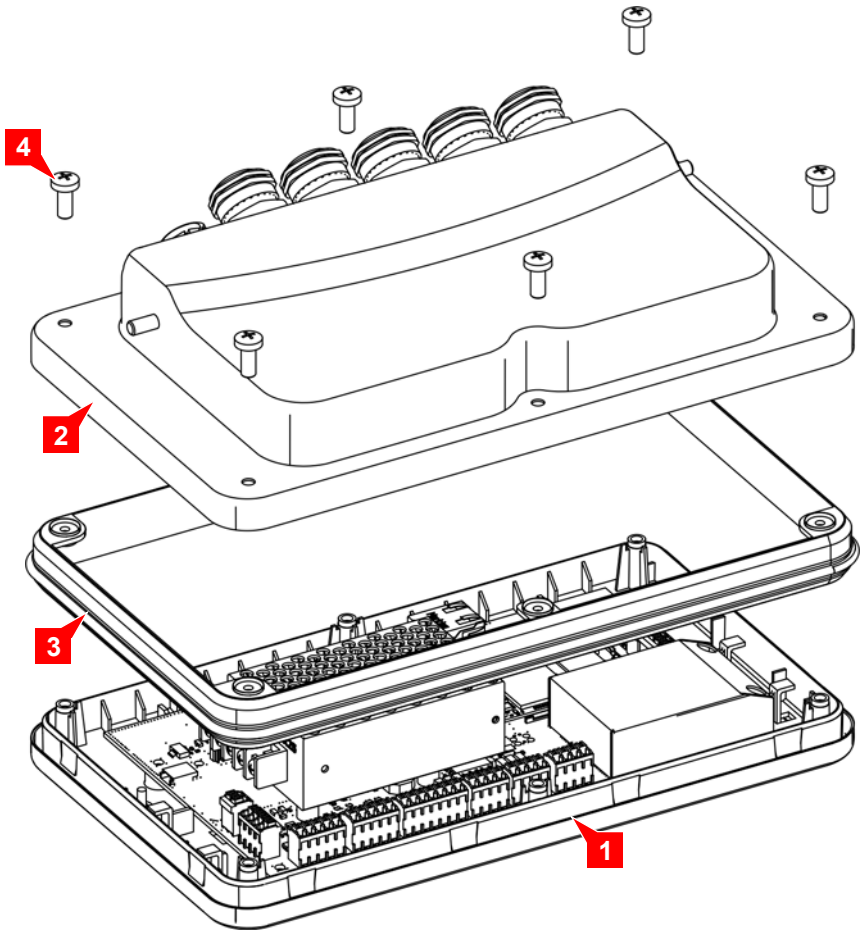


Figure 2 - Glands

Housing closing

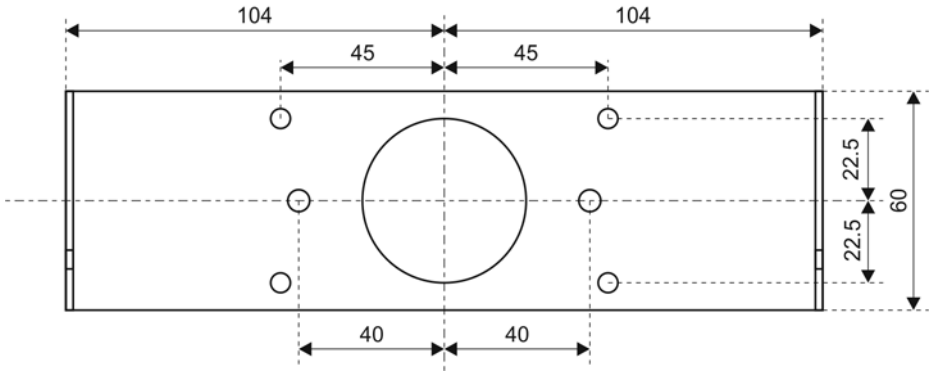
Put back in place the front set (**1**) on the housing base (**2**) making sure that the watertight ring (**3**) is correctly positioned and tighten the 6 fitting screws (**4**).



Be careful with the positioning of the watertight ring.

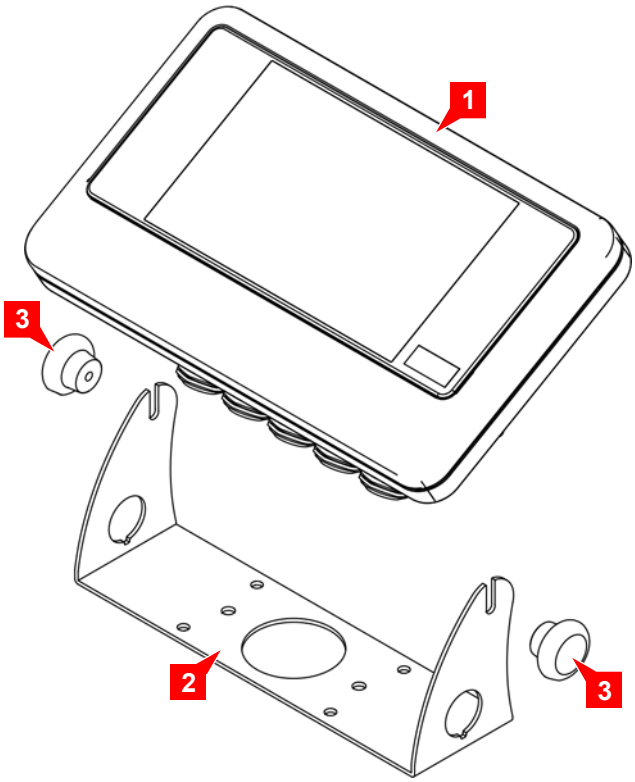
Setting up the indicator

The i 25 Touch indicator is delivered with a swivelling support for tabletop or wall mounting. This accessory has 6 holes for stainless steel screws Ø 5 mm x 30 to fix the support and a central opening for the possible passing through of cables.



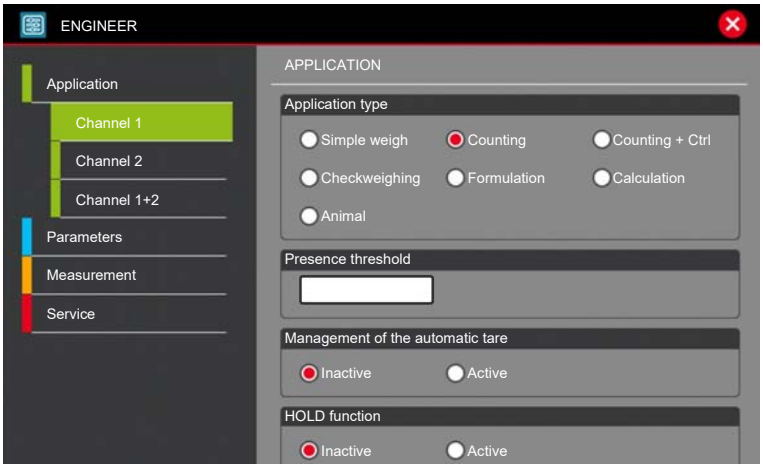
Once the support fixed:

- Screw the two knurled buttons (**3**) on the side of the indicator (**1**).
- Set up the set on the support (**2**).
- Position the indicator and tighten the two knurled buttons.



Access to ENGINEER mode

1. Open the upper banner by touching the upper part of the screen and sliding down while in contact with the screen.
2. Press  and then  .
   A password request pops up.
3. Enter the password (12345) and validate by pressing  . Please note that by pressing  , you can access the password modification procedure.
   The ENGINEER menu opens up.



In all the ENGINEER part, the screen is made up of the MENU (1) and the Configuration (2) relative to the section selected in the menu.

General presentation of the ENGINEER mode

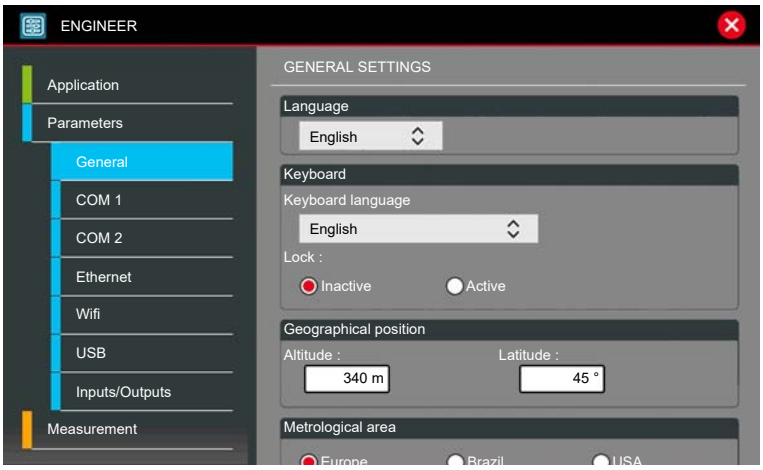
The ENGINEER mode includes all the sections required for the adjustment and configuration of the instrument:

1. **Application**
   Definition of the application to set up and configure. These sections are described in the user manual ref. 04-60-00-1 MU.
2. **Parameters**
   Definition of functional parameters of the indicator, configuration of the various communication connections and installed inputs/outputs.
3. **Measurement**
   Metrological definition, adjustment and use parameters for the instrument.
4. **Service**
   Diverse functions mainly used for maintenance.

Parameters menu 4

Presentation of the *Parameters* menu

Press **Parameters**. The first section of the menu is displayed.



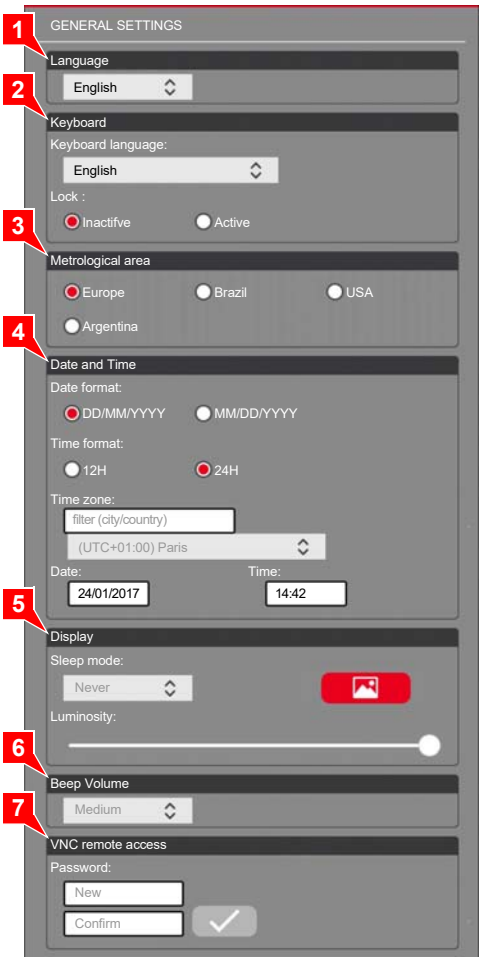
It includes the following sections:

1. **General**
   Functional parameters of the indicators, such as the language, date, time, luminosity, etc.
2. **COM1**
   Use and configuration of the COM1 serial link.
3. **COM2**
   Use and configuration of the COM2 serial link.
4. **Ethernet**
   Use and configuration of the Ethernet link.
5. **Wifi**
   Use and configuration of the Wifi connection.
6. **USB**
   Use and configuration of USB port.
7. **Inputs/Outputs**
   Use and configuration of inputs/outputs.

General settings

1. Language — Choice of language to display the messages in use, configuration and adjustment.
2. Keyboard language — Type of keyboard to use to enter texts (file management especially).
3. Metrological zone — Application of metrological rules specific to the concerned zone.
4. Date and time
   - Date format: day/month/year or month/day/year
   - Time format: 12 or 24 h
   - Time zone
   - Day and time adjustment
5. Display
   - Indicator sleep mode when inactive: no sleep mode or after 1 to 10 mn inactive.
   - Screen luminosity adjustment depending on the ambient light conditions.

   Pressing  to choose the sleep mode screen to use.
6. Beep volume
   - Sound volume available by pressing: from mute to strong.
7. VNC remote access
   - Password management for remote control (Ethernet or Wifi).

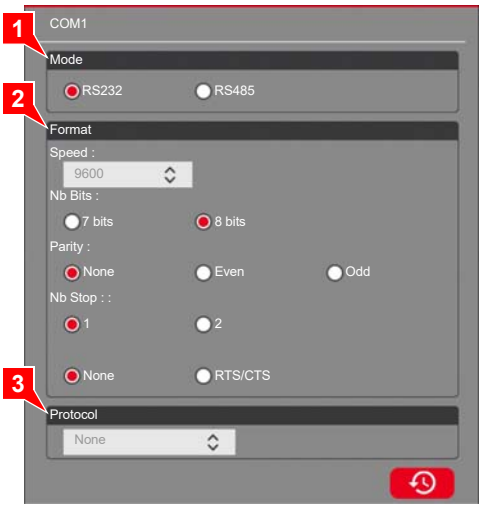


COM1

Introduction

This section allows configuring the COM1 serial link depending on the peripheral to which it is linked.

1. Mode — Connection type: RS 232 or RS 485
2. Format — Data transmission format.
   - Speed: 1 200 bauds at 115 200 bauds
   - Number of data bits: 7 or 8 bits
   - Parity: none, even or odd
   - Number of stop bits: 1 or 2 stop bits
   - Flow control: none or RTS/CTS
3. Protocol — The type of protocol to use. This parameter offers using a serial connection:
   - None
   - Slave A
   - Master A
   - Master D
   - Modbus
   - Printer
   - Sample scale

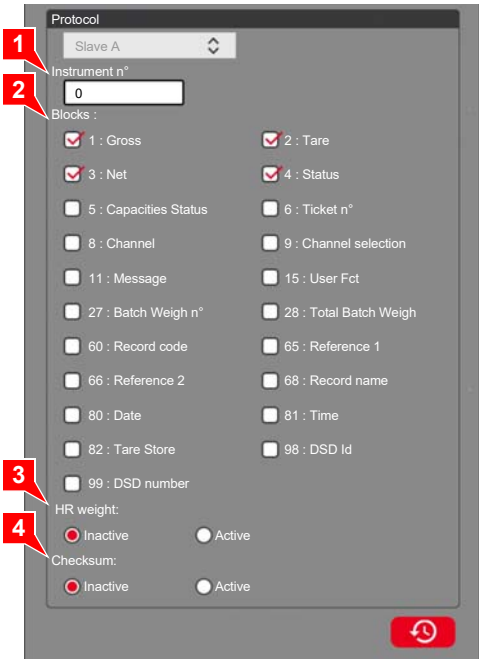


Slave A protocol

The Slave A protocol enables sending the frame of the message that is configured at the Master peripheral request associated to the indicator.

1. Instrument nb — Instrument identification number to include at the request of the master peripheral to get the configured frame.
2. Blocks — Composition of message to be sent by selecting the various available blocks.

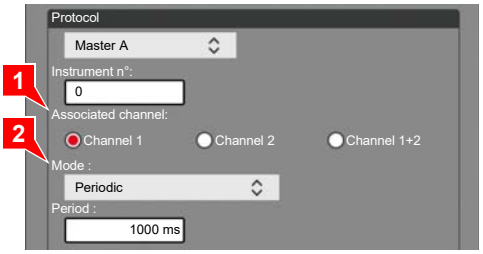
   For more details, please see the Reference Manual 04-60-00-1 MR.
3. HR weight — Weight type to transfer (weight displayed or in High Resolution)
4. Checksum — Sending the message validity control checksum.



Master A protocol

The Master A protocol enables sending the configured message to the associated peripheral at the indicator's initiative. The configuration is the same as the previous one except for two extra parameters.

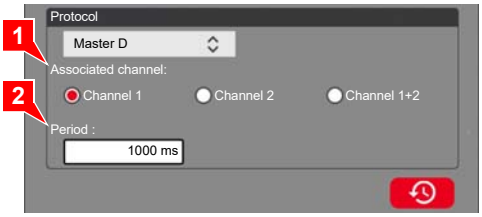
1. Associated channel — Measurement channel associated to the weight to send (1, 2 or summation).
2. Mode — Sending conditions for the configured message:
   - Periodic.
     Periodic sending of the message in the frequency defined by *Period* parameter value defined in ms.
   - Stability: sending of a message at stability.
     Sending a message when the measurement is stable and above the value defined by the *Threshold* parameter.
   - Periodic & Stability.
     Periodic sending of the message when the measurement is stable and above the value defined by the *Threshold* parameter.
   - On printing.
     Message sending on ticket print command.



Master D protocol

The Master D protocol ensures the permanent emission of a standard frame for the slave PC. However, this protocol enables the PC to send two commands to the indicator: reset and taring.

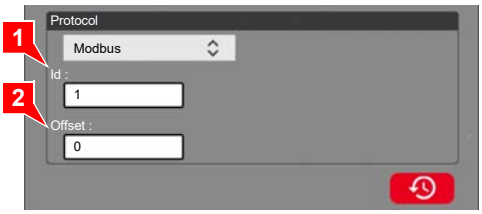
1. Associated channel — Measurement channel associated to the weight to transfer (1, 2 or summation).
2. Period — Message sending frequency in ms.



MODBUS protocol

The MODBUS protocol is a standardized protocol. For more information, see the documents about this protocol.

1. Identifier — Indicator identifier.
2. Offset — Address field.



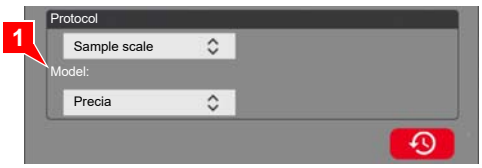
"POSTE" protocol

Reserved for specific use.

Sample scale

This procedure defines the sample scale model connected to the indicator.

1. Model — Choice of sample scale model associated to the indicator.



Printer

1. Model — Choice of printer model associated to the indicator.

2. Printing type — Choice of printing type: manual, automatic or periodic.

In the case of an automatic choice, two extra parameters are required:

- Batch start: manual on the user's demand or automatic at stability.
- Associated channel: measurement channel to use to print the weight (1, 2 or summation).

In the case of a periodic choice, two extra parameters are also required:

- Period: frequency in seconds for ticket printing.
- Associated channel: measurement channel to use for weight printing (1, 2 or summation).

3. Configuration of simple ticket

- Ticket length in character number.
- Ticket number printing.

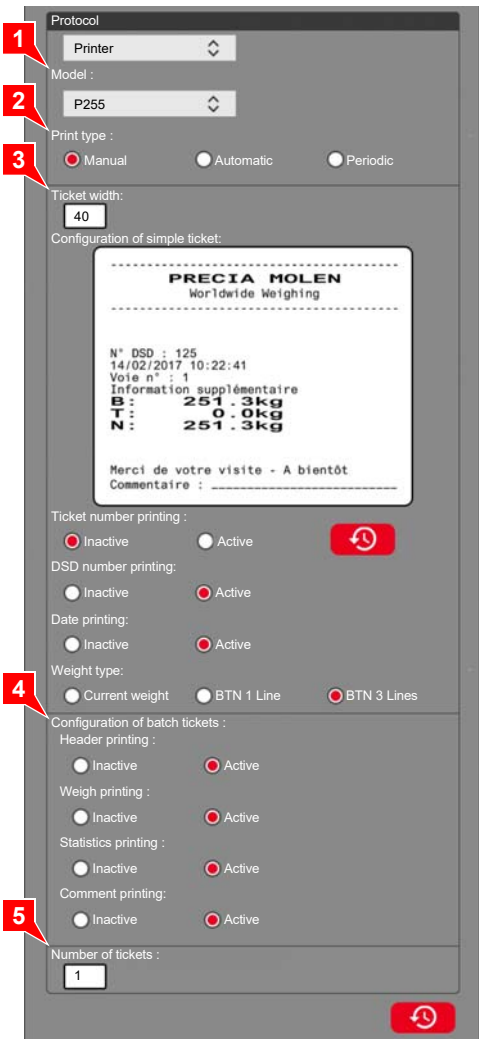
  Pressing the key enables resetting the ticket counter.
- DSD number printing.
- Date and time printing.
- Weigh type: weight displayed, Gross/Tare/Net on 1 line or Gross/Tare/Net on 3 lines.

4. Configuration of batch ticket

- Header print
- Weigh print
- Statistics print
- Comment print

5. Number of ticket

- Number of tickets to print



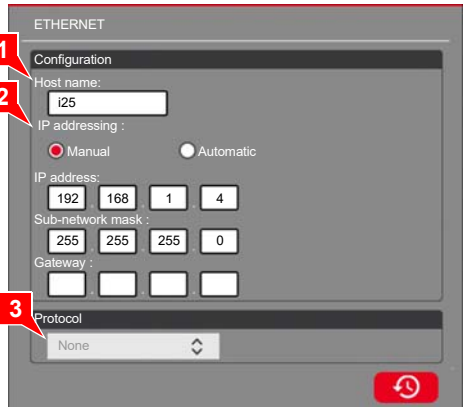
By pressing on the header or bottom of the ticket the keyboard is displayed and enables modifying the ticket header or bottom texts. The window (1) allows selecting for the line that is being edited the text alignment (on the left, centred or on the right) and for the selected text, the type of characters (simple width, double width, underlined).

COM2

This section allows configuring the serial link COM2 in relation with the peripheral to which it is connected. The various parameters are identical to the ones presented for the serial link COM1, except the parameter of connection type (RS 232 only).

ETHERNET

This section allows configuring the ETHERNET link.



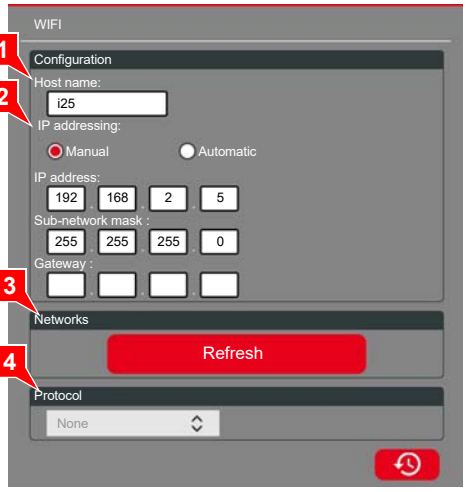
1. Host name — Indicator identification name.
2. IP address — Choice of manual or automatic mode for the IP address.

   In the case of the manual mode, you need to fill in the parameters:
   - IP address
   - Sub-network mask
   - Gateway
3. Protocol — Type of protocol to use.
   - None
   - Slave A
   - Master A
   - Master D
   - Modbus

   The configuration of these protocols is identical to the one described for the COM1 serial link.

Wifi

This section allows configuring the Wifi connection.



1. Host name — Indicator identification name.
2. IP address — Choice of manual or automatic mode for the IP address.

   In the case of the manual mode, you need to fill in the parameters:
   - IP address
   - Sub-network mask
   - Gateway
3. Networks — List of Wifi networks nearby. The list appears by pressing on Refresh.
4. Protocol — Type of protocol to use.
   - None
   - Slave A
   - Master A
   - Master D
   - Modbus

   The configuration of these protocols is identical to the one described for the COM1 serial link.

USB

This section allows configuring the USB serial port.

1. Protocol

Type of protocol to use.

- None
- Slave A
- Master A
- Master D
- Modbus

The configuration of these protocols is identical to the one described for the COM1 serial link.

I/O

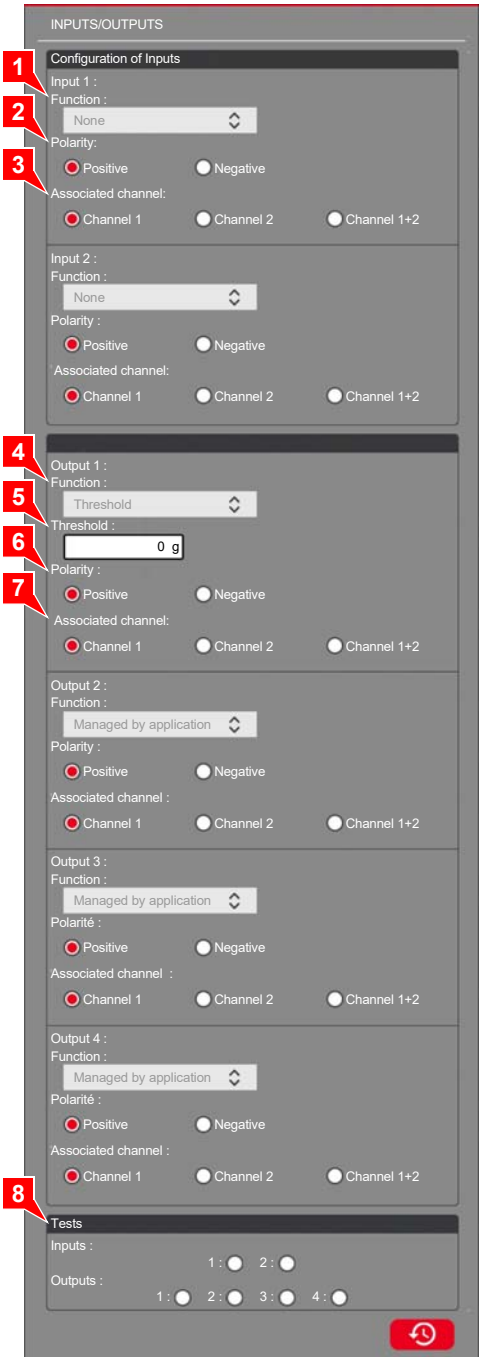
This section allows configuring the use and the operation mode of logical inputs and outputs.

For each of the 2 inputs:

1. Function — Choice of function associated to the input:
   - Weigh authorization
   - Zero
   - Tare
   - Priting
   - Batch weigh
   - End of batch
2. Polarity — Polarity of input: positive or negative.
3. Associated channel — Associated measurement channel: 1, 2 or summation channel (1+2)

For each of the 4 outputs:

4. Function — Type function associated to the output:
   - Managed by the application
   - Managed by the exterior
   - Threshold
5. Threshold — In the case when the function *Threshold* has been selected, the output will not be activated except when the weight will be above the value defined by the *Threshold* parameter.
6. Polarity — Input polarity: positive or negative.
7. Associated channel — Associated measurement channel: 1, 2 or summation channel (1+2)



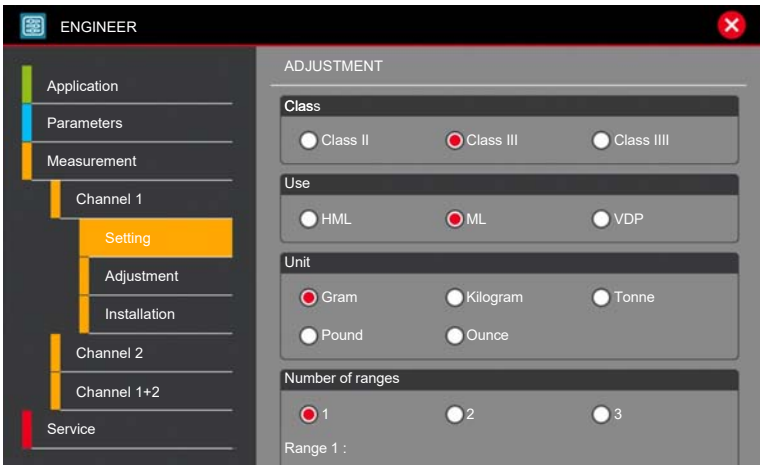
To define an output, if the threshold function has been selected, the weight value that is the triggering threshold for this output is requested.

The section Tests (8) allows displaying the status of inputs and to simulate the activation of outputs to perform tests without weighing operations.

Measurement menu 5

Presentation of *Measurement* menu

Press **Measurement**. The first section of the menu is displayed.



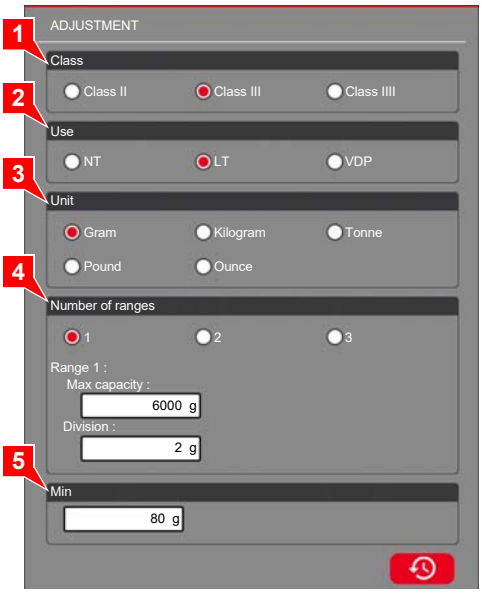
This section offers to perform the metrological adjustment of the instrument. In standard, the indicator has one measurement channel. It can optionally be equipped with a second measurement channel and a summation channel (channel 1 + 2).

The principal described in this chapter is identical for all measurement channels. It unfolds in X successive phases as follows:

- definition of parameters (adjustment),
- calibration of the measurement channel (adjustment),
- configuration of the measurement channel (installation).

Adjustment of a measurement channel

Press the key **Adjustment**.



1. Class — Instrument accuracy class:

- Class II
- Class III
- Class IIII

2. Usage — Metrological use of the instrument:

- Non Trade Use (Outside Legal Metrology).
  Non regulated use.
- Legal for Trade Use (Legal Metrology)
  This choice is compulsory if the use of the instrument corresponds to one of these regulated uses: sales transaction, medical weighing, etc.
  The implications are various in terms of metrological adjustment and zero devices.
- DPS (Direct Public Sales).
  Regulated use that implies some limits, especially as for peripherals.

3. Unit — Weigh unit of the indicator's system. All weight values that are displayed or entered are expressed in this unit.

- Gramme
- Kilogramme
- Tonne
- Pound
- Once

4. Number of ranges — Definition of the number of measurement ranges (1 to 3). For each measurement range:

- Max. capacity: maximal weight (limited to 15 t).
- Division: elementary weight measurement unit.

5. Min. — Minimum weight measurement by the instrument.

Instrument adjustment

Access

Press the key Adjustment.

Calibration

- Select the function CALIBRATION.
- The request for the number of ascending and descending segments is displayed.
  Most of the time, it is not necessary to adjust a weighing instrument on several segments. Leave the default value (1). Similarly, the adjustment in descending weight is not essential.
  If the load receptor supplies a little linear signal and requires an adjustment on several segments, enter the number of segments, for example: NB SEG = 3.
  Maximum number of segments: 6.
- Press START.
  The zero request is displayed.
- In the case of the first segment, unload the scale and press ZERO.
  The scale performs a zero. Press › to move on to the next step.
- Enter the weight value that corresponds to Segment 1, place the standard weight on the receptor and press CALIBRATE.
  The calibration has been performed. Press › to move on to the next step.

Proceed similarly for all segments. Once the last segment validated, the indicator goes into verification mode. Without leaving the configuration mode, this option allows instantly evaluating the weigh function, particularly the quality of the metrological adjustment. To finish, press ›. The home screen is displayed again.

Adjustment without standard weight

The adjustment without standard weight can be employed by default in various unfavourable conditions. It is the case of a weighing instrument impossible to unload to proceed to the adjustment (for example, a silo loaded with several tonnes of product to keep). This method leads to an accuracy of 1 to 2%.

Select the function CALIBRATION W/T WEIGHT. 3 methods to calibrate without weights are available:

- theoretical calibration: calibration by entering theoretical metrological characteristics,
- downweighing: evaluation of slope by measuring the weight difference,
- zero by a point: entering the zero value in one point.

This operation completes the downweighing operation. It can be used as a complement of the *downweighing method,* and it can be used as a complement to the *theoretical calibration*, when the empty tare is not known.

Theoretical calibration

1. Select the function THEORETICAL CALIBRATION.

   Fill in the fields:
   - sensitivity of the load cell (by default 2 mV/V),
   - nominal capacity of the load cell,
   - empty tare value (weight of mechanical elements in direct contact with the load cell).

2. Press >. The calibration is finished.

   Place the first standard weight on the load receptor and press REFERENCE. Once this value acknowledged, press >.

The procedure is finished and the indicator goes into verification mode.

Downweighing

1. Select the function DOWNWEIGHING.

   Fill in the fields Sensitivity of the load cell, Nominal capacity of the load cell, and Value of the dead load (weight of mechanical elements in direct contact with the load cell).

2. Press REFERENCE to acknowledge the load present on the receptor as standard weight.

   Once this value acknowledged, press >.

3. Remove (or add) a part of the load from the receptor.

   Measure it on another scale and enter this value in the zone Weight difference then press CALIBRATE. Once this value acknowledged, press >.

The procedure is finished and the indicator goes into verification mode.

Zero per one point

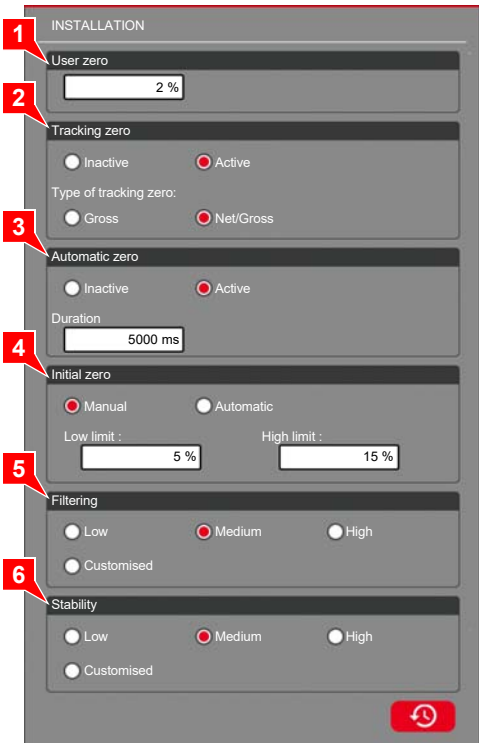
1. Select the function ZERO PER POINT.

   Enter the ***Load present*** field that corresponds to the load on the receptor then press CALIBRATE. Once the measurement done, press ✓.

2. Press REFERENCE to acknowledge the load on the receptor as reference weight.

Installation

Press Installation.



1. User zero — Definition of the action zone of the reset action Range. This reset is performed when the user presses →0←.

The action range of this device can be included between 0 and 99% of the instrument capacity within the ± 2% limit of the capacity in trade use.

2. Tracking zero — This device holds the weight to maintain the weight at zero when the scale is unloaded for light and slow weight variations.

The action of this device is limited at ± 2 % of the maximum capacity from the initial zero.

3. Automatic zero — Automatic zero device of the instrument when the gross weight is included between 0 and - 2% of the capacity during the predefined period.

4. Initial zero — Manual or automatic zero of the instrument when powered on.

Active device when the weight is negative, between 0 and *Low limit* or positive between 0 and *High limit*.

The manual zero is obtained by pressing when powering on the indicator.

5. Filtering — Definition of the filtering criteria.

6. Stability — Definition of the stability criteria.

Filtering

This function allows reducing the disturbances of the signal supplied by the load cell. A strong filtering causes a longer response time after placing or adding a load. 3 predefined values are offered, *Low*, *Medium* and *Strong*. The filtering rage implements three successive filters defined below:

Code	*Number of measurements / second*	*Filter 1*		*Filter 2*		*Filter 3*	
		Type	*Number of measurements*	*Type*	*Number of measurements*	*Type*	*Number of measurements*
Low	100	Average	10	Average	10	Tri	9
Medium	50	Average	10	Average	10	Tri	9
Fort	25	Average	20	Sorting	11	Tri	11

In special conditions, it is possible to customise the filtering criteria by defining the number of measurements/second (1 to 100), and for each filter the type (average or sorting) and the number of measurements (1 to 100).

Stability

This function allows adjusting the measurement instability range in which it is declared unstable (symbol ~ present). This has no consequence, apart on added devices that are triggered only at stability (printing or storage in alibi memory, for example).

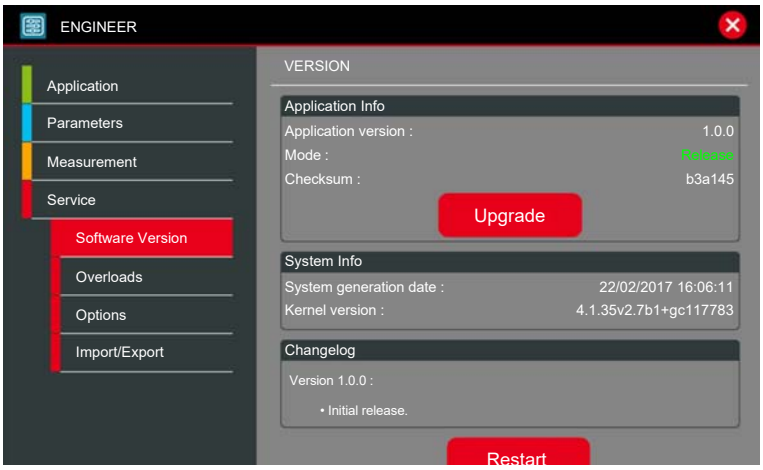
3 predefined values are offered, *Low*, *Medium* and *Strong.* The stability criteria implements 2 parameters: the number of measurements to take into account and the maximum gap tolerated in internal measurement points.

- Low Number of measurements: 4 gap max.: 10 pts
- Medium Number of measurements: 4 gap max.: 5 pts
- Strong Number of measurements: 8 gap max.: 5 pts

In special conditions, it is possible to customise the stability criteria by defining the number of measurements (1 to 99) and the maximum gap (1 to 9 999 999 internal measurement points).

Presentation of *Service* menu

Press **Service** .



1. **Software Version**

   Application upgrade and consultation of system information.

2. **Overloads**

   Consultation of weighs in overload performed on the instrument.

3. **Options**

   Installation and display of installed options.

4. **Import/Export**

   Import and export of installation parameters on USB stick.

Software version

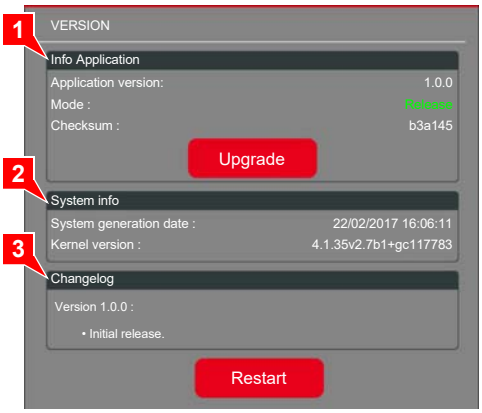
1. Application Info — Includes all information relative to the application.

   Pressing **Upgrade** allows accessing the application upgrade procedure with a USB stick.

2. System Info — Includes all information relative to the operation system.

3. Changelog — Version notes (modifications made)

Pressing **Restart** allows stopping and restarting the indicator after an upgrade.



Overloads

Detailed list of weighs in overload performed on the instrument with, for each weigh:

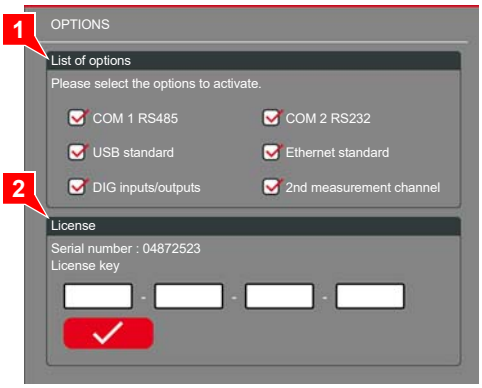
- date,
- measurement channel,
- registered weight.

Pressing [🗑] deletes the file.

Options

Allows installing one or several options using a supplied µSD board or license key.

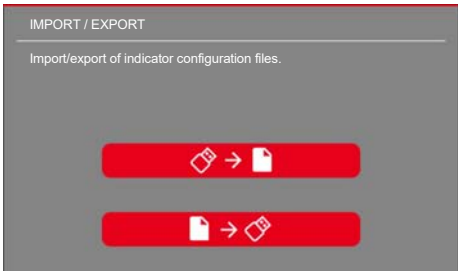
1. List of options — To install these options:
   - Set up the microSD board (See *Hardware installation*, page 5)
   - Activate the wanted options available on the microSD board.
2. Licence — Installation of one of several options available on the PRECIA MOLEN license server validated by the license key.



Import/Export

To import/export on USB stick the indicator configuration.

- [🏷 → 📄] : Import.
- [📄 → 🏷] : Export.



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