USER MANUAL

MU 7034 EN I

CMA TRONIQUE

Document applicable for software from version 341+v9.13 and 446v1.0.1

I	18/03/2019	Major change *[PJA120]*: Scheduling of the multi-compartment delivery, Loading plan, Control of hose pollution, Purge operation	DSM	XS
H	2018/02/01	Connected MICROCOMPT+ *[PJV139]*	DSM	XS
G	2017/11/27	Purge operation with DSPGI *[MDV570]*	DSM	AH
A	2009/08/27	Creation	DSM	XS
Issue	Date	Modifications	Written by	Approved by

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1 GENERAL PRESENTATION AND DESCRIPTION

The CMA TRONIQUE measuring system must be fitted on road tankers to measure liquids other than water such as fuel, diesel, off-road diesel (GNR), ethanol and ad-blue. It is designed to operate without any gas elimination device.

It performs the following functions:

- ⇨ Measure products when they are delivered to the station
- ⇨ Monitor the reception of products (lorry/wagon)
- ⇨ Split compartments
- ⇨ Measure product returns.

Le CMA TRONIQUE is designed to measure volumes of liquid (pre-set or not).

It controls up to nine compartments (according to hardware configuration). You can configure 16 different products.

It can be connected to anti-contamination systems – DSPGI. DSPGI devices provide product identification for each compartment and update the MICROCOMPT+. This eliminates any mixture of product. Each compartment is equipped with a DSPGI.

Depending on the configuration, the CMA TRONIQUE can control one or two distribution ways.

The CMA TRONIQUE can be equipped with an additive injection device. This injection has to occur upstream the meter.

The volume displayed by the CMA TRONIQUE depends on the METROLOGICAL configuration. On the right side of the display screen, the pictogram ‘Vm’ indicates a volume at temperature whereas the pictogram ‘Vb’ indicates a converted volume.

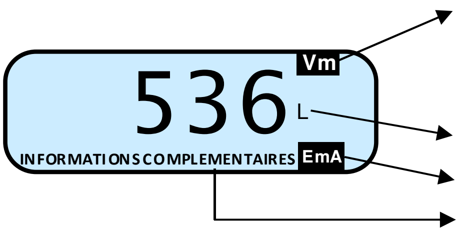
In option, the CMA TRONIQUE controls the product temperature. In addition, it may be connected to a printer for delivery tickets, internal totalisers, parameters or diary printings.

NOTE: The information printed by the printer has no metrological value. Only the indications displayed by the indicator shall be considered legally valid.

The CMA TRONIQUE measuring system comprises:

- ⇨ A turbine meter
- ⇨ A MICROCOMPT+ electronic calculator-indicator
- ⇨ A pump (rotary vane pump for example)
- ⇨ A relative pressure sensor with its associated hydraulic shock absorber
- ⇨ A sight glass just downstream the meter
- ⇨ A temperature probe (option)
- ⇨ A printer (option).
- ⇨ *Either one or two full hoses, an empty hose or a combination of a full hose and an empty hose*
- ⇨ *A pneumatic valve in case of double delivery*
- ⇨ *If required, overfill probes*

The CMA TRONIQUE has one display:



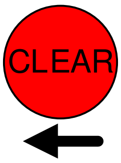
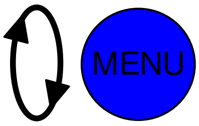
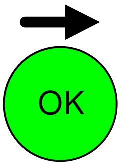
Volume indication
- Vm: volume in metering conditions
- Vb: volume converted to the reference temperature

Volume unit

Distribution way

On the prompter: Additional information
- During measurement: delivery mode, compartment, and product
- Out of measurement: delivery mode, product

The CMA TRONIQUE has three pushbuttons:

	Increment a blinking figure or letter Come back to the previous step Stop the measurement Specific case: automatic scheduling (see §4.2)
	Select a figure, a letter or a menu Specific case: automatic scheduling (see §4.2)
	Validate the data Specific case: automatic scheduling (see §4.2)

2 OPERATING RECOMMENDATIONS

For a use of the CMA TRONIQUE, make sure to meet the conditions that follow:

⇨ The operator must remain beside the metering system during delivery to stop the flow, if necessary, by closing the API valve on the outlet of the tank compartment.

Specifically for gravity measurements:

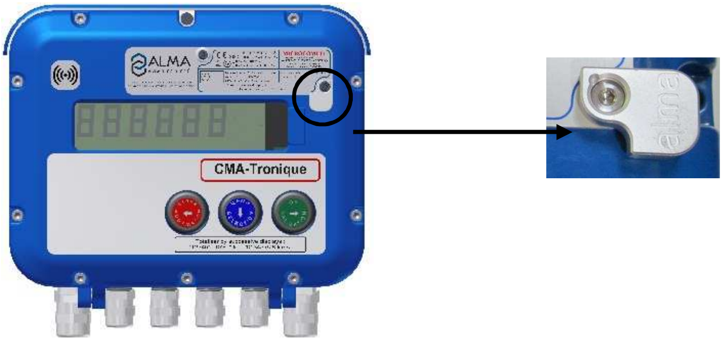
⇨ The tank operating position does not differ by ± 2% from the horizontal reference position (to avoid product retention)

⇨ The unloading hose must be installed to ensure an easy outflow during delivery; the maximum length of the discharge DN80 hose, is 12 meters.

3 CONFIGURE, SET AND CALIBRATE THE CMA TRONIQUE

3.1 Configure the CMA TRONIQUE

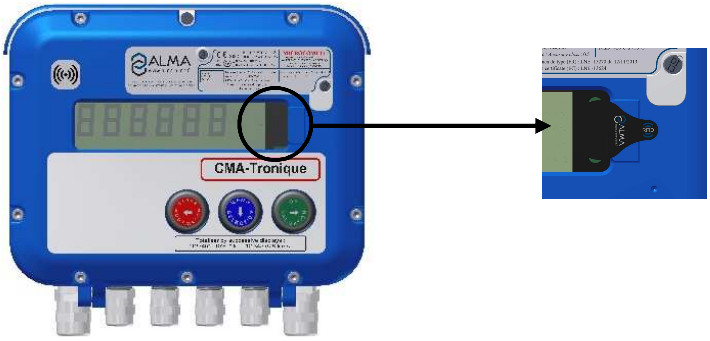
You must configure the CMA TRONIQUE during commissioning and sometimes during metrological controls. You must remove the seal as shown below. **NOTE**: Only approved persons are permitted to remove the seal.



Then you enter the METROLOGICAL mode. Details are available in the section CONFIGURE THE CMA TRONIQUE: METROLOGICAL MODE. See the verification manual MV5010 for further information.

3.2 Set the CMA TRONIQUE

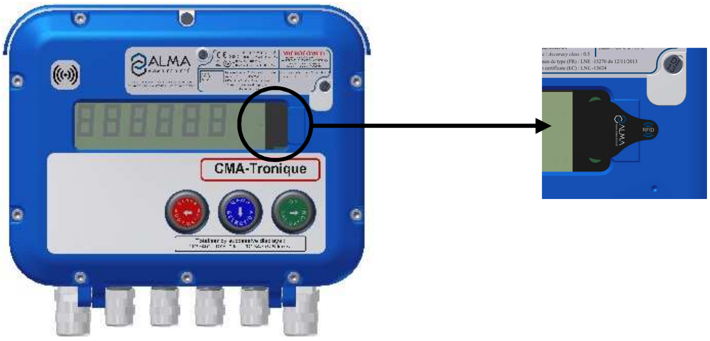
You must set the CMA TRONIQUE before any operation. To set the CMA TRONIQUE, you need an ALMA RFID key that you put on the display as shown below:



Then you enter the SUPERVISOR mode. Details are available in the section SET THE CMA TRONIQUE: SUPERVISOR MODE and annex 1. See the verification manual MV5010 for further information

3.3 Calibrate the CMA TRONIQUE

To calibrate the CMA TRONIQUE, you need an ALMA RFID key that you put on the display as shown below:



Then you enter the SUPERVISOR mode. Details are available in the section SET THE CMA TRONIQUE: SUPERVISOR MODE.

Having made the proving of the metering, this menu CALIBRATION/GAUGE allows calculating the error and the new coefficient

See the verification manual MV5010 for details on the gauging procedure

4 SPECIFIC FEATURES

4.1 Use with DSPGI device:

If compartments are equipped with DSPGI devices, the DSPGI code associated to the product quality must be set (menu SUPERVISOR>PRODUCT SETTINGS>DSPGI CODE).

The name of the product that is supposed to be in the hose, is displayed in brackets at the right hand of DELIVERY, for example: DELIVERY (GO+). The product's name given by the DSPGI device is also displayed at the compartment selection (origin or return) or in case of contamination.

In case of communication failure with the DSPGI device, you can switch in manual mode without DSPGI by pressing the red CLEAR BUTTON.

The product's name is replaced by warning messages in the following cases (refer to the alarms table):

- DSPGI FAIL: : The DSPGI is ON and there is a communication problem
- ?????: The DSPGI is ON and its drum is located between two positions
- UNDEF: The DSPGI is ON and the product has not been set in SUPERVISOR mode.

To start the measuring system with the option DSPGI→ON>BLOCKING, it may be required to make a purge in an empty compartment to define the contents of the hose.

According to the metrological configuration there are two different ways for operation:

With SUPERVISOR>DSPGI→ON>BLOCKING: a delivery, occurring after a hose purge (product movement), should start on condition that the purge has been completed.

With SUPERVISOR>DSPGI→ON>BLOCKING OFF: a delivery, occurring after a hose purge (product movement), should start regardless of whether the purge is completed or not. In that case, the MICROCOMPT+ will display the message 'PURGE NOT FINISHED' and will give the user the possibility to end the purge or to start a new delivery by pressing the red pushbutton.

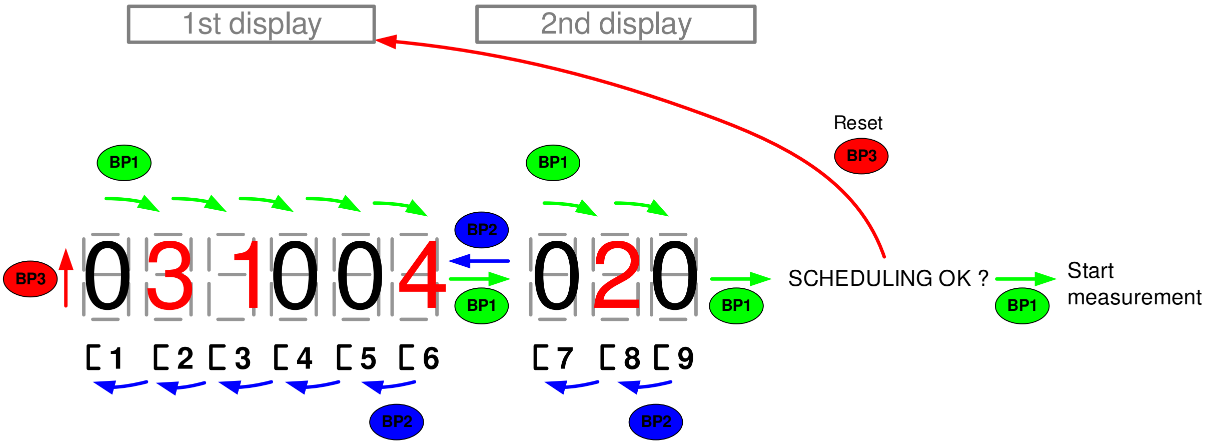
4.2 Scheduling of the delivery

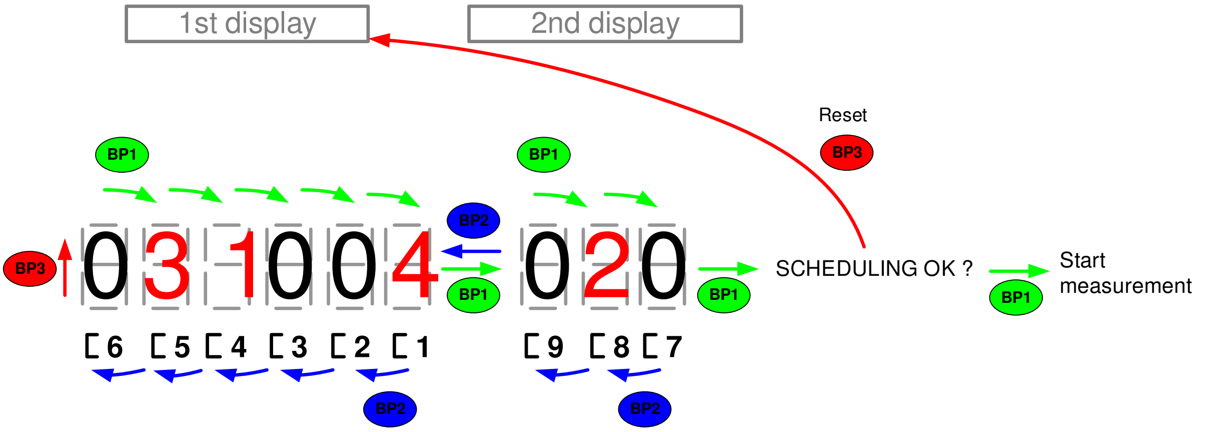
If the scheduling of the delivery is activated in SUPERVISOR MODE (CONFIGURATION>SCHEDULING→ON), you can use several compartments to make the delivery. These compartments are filled with the same product.

The compartments are used in the definite sequence. When the use compartment is empty before the end of measurement, the CMA TRONIQUE waits for 5 seconds and then orders to close the flap. It waits 5 seconds more and then orders to open the flap of the next compartment according to the definite sequence. Delivery starts again when the product height is enough, and so on until the measurement end.

The user can choose which compartment will be used for the delivery and in which order. If the option DSPGI or loading plan are ON, the compartments proposed for scheduling are those containing the selected product.

The ergonomics of the scheduling menu is as follows. It changes according to the array set in SUPERVISOR mode: increasing or decreasing order (menu >CONFIGURATION>SCHEDULING→ON>ARRAY):


1st display
2nd display
Reset
BP3
BP1
BP1
BP2
BP3
031004
BP1
020
BP1
SCHEDULING OK ?
BP1
Start measurement
C1 C2 C3 C4 C5 C6
C7 C8 C9
BP2
BP2


1st display
2nd display
Reset
BP3
BP1
BP1
BP2
BP3
031004
BP1
020
BP1
SCHEDULING OK ?
BP1
Start measurement
C6 C5 C4 C3 C2 C1
C9 C8 C7
BP2
BP2

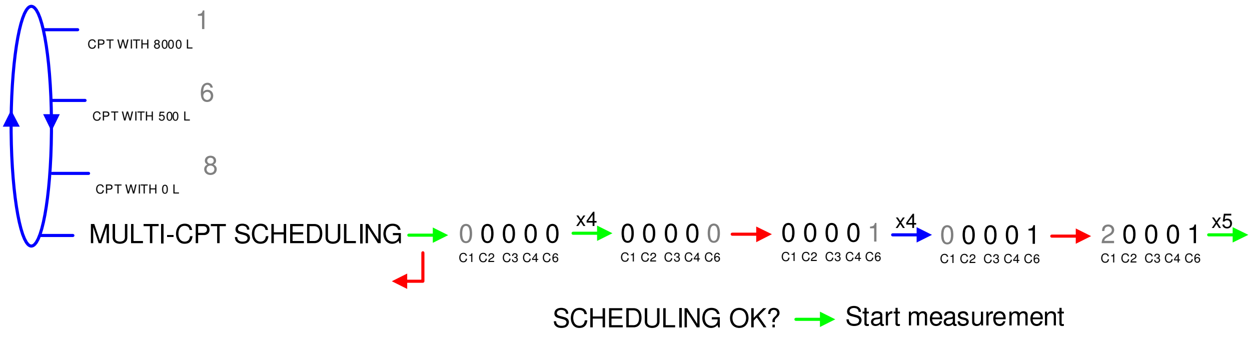
To include a compartment into the delivery, move on to the digit related to the compartment with BP1 (to the right) or BP2 (to the left), then validate with BP3. When you validate, the value 0 becomes the order number. When you validate again with BP3, the compartment is removed from the delivery, then the order numbers of the previous compartments are all decremented by one.

Select the right-hand digit and use BP1 to:

- Access the scheduling validation menu if there's no other compartment
- Access the second display. This display is used to include the other compartments into the delivery Select the left-hand digit and use BP2 to reach the first display. When the last compartment digit is selected, use BP1 to access the scheduling validation menu.

When you see the scheduling validation message SCHEDULING OK?, use BP3 to clear the scheduling and return to the first display.

Example: Delivery of 800 liters of FOD+. Compartment 6: 500 liters of FOD+ and compartment 1: 8000. Sequence: compartment 6 then compartment 1. The menu is as follows:


1
CPT WITH 8000 L
6
CPT WITH 500 L
8
CPT WITH 0 L
MULTI-CPT SCHEDULING
0 0 0 0 0
C1 C2 C3 C4 C6
x4
0 0 0 0 0
C1 C2 C3 C4 C6
0 0 0 0 1
C1 C2 C3 C4 C6
x4
0 0 0 0 1
C1 C2 C3 C4 C6
2 0 0 0 1
C1 C2 C3 C4 C6
x5
SCHEDULING OK?
Start measurement

Loading plan

```
X.TRONIQUE 341+.001  CARD REV8
VERSION 09.13.03 DATED 17.01.19
PRINTED ON THE 18.01.19 AT 15:30
VEHICULE  :  AA-215-EL
INDICATOR :  03201


********** LOADING PLAN **********

CPT         PROD.      VOLUME (L)

1           FOD+              8000
2           GO                8000
3           GO                5000
4           GO                1000
6           FOD+               500
8                                0
```

Cargo after delivery of FOD+

```
X.TRONIQUE 341+.001  CARD REV8
VERSION 09.13.03 DATED 17.01.19
PRINTED ON THE 18.01.19 AT 15:30
VEHICULE  :  AA-215-EL
INDICATOR :  03201


********** LOADING PLAN **********

CPT         PROD.      VOLUME (L)

1           FOD+              7700
2           GO                8000
3           GO                5000
4           GO                1000
6           FOD+                 0
8                                0
```

4.3 Pollution control on both full hoses

The CMA TRONIQUE memorizes permanently the quality in hose 1, hose 2 and the common pipe. It always displays the product contained in the common pipe and in the selected hose. When the quality is not defined, in case of mixture for example, it displays the most downgraded quality.

The CMA TRONIQUE declares if a risk of pollution can occur. There's a mismatch between the selected product and the quality contained in the common pipe and hose selected for delivery. This alert does not prevent the product selection.

4.4 Distribution mode PRESET+PURGE

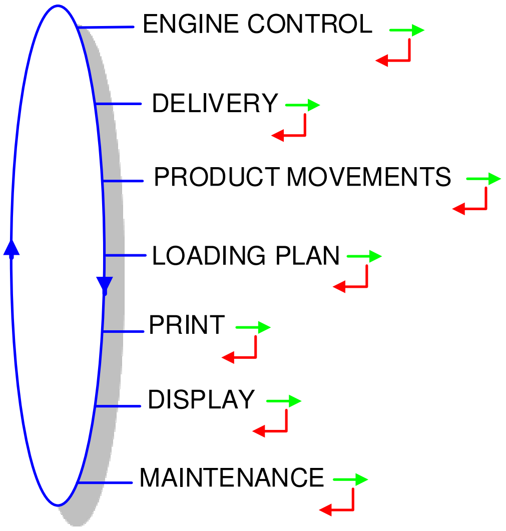
The distribution mode PRESET+PURGE includes a step that forces to select the hose for the next delivery. It is used to determine the volume of purge.

If the delivery has not been completed and if the purge has begun, you must complete the purge before starting the next delivery (menu PRODUCT MOVEMENTS>HOSE PURGE).

The delivery mode PRESET + PURGE is not available:

- If the CMA TRONIQUE doesn't control the compartment flap
- For a delivery with an empty hose or for uncounted pumped or gravity distribution modes
- In case of pollution of the hose

5 USE THE CMA TRONIQUE: USER MODE



The use of the CMA TRONIQUE depends on the hardware configuration of the truck, the features and the configuration of the equipment carried out during commissioning:

Therefore, the user menu depends on several items:

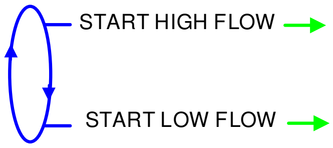
⇨ The number of distribution ways (one or two)
⇨ The remote control
⇨ The number of compartments
⇨ The control of the compartments flaps
⇨ The control of the return product system (SRP)
⇨ The delivery mode (counted pumped, uncounted pumped, gravity)
⇨ The temperature control (conversion of the volume).

In USER mode, the CMA TRONIQUE displays a blinking volume which is the latest delivered volume and the name of the latest product, in brackets.

There are several delivery modes:

- PRESET of the volume
- PRESET of the volume + hose PURGE.
- FREE mode (in low or high flow rate)
- BARRELS mode (only in low flow rate).

Delivery can be performed in high or low flow (except with BARRELS mode). This choice is made for pumped deliveries at the display of the message START HIGH FLOW. The blue MENU BUTTON switches on the display START LOW FLOW.

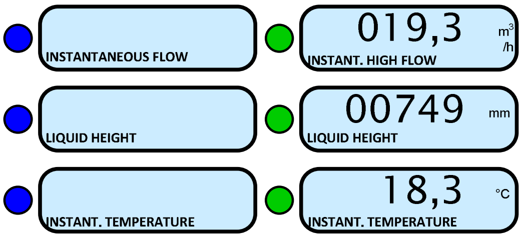


The choice is made by pressing the green OK BUTTON. Switching is possible during the delivery by pressing the blue MENU BUTTON.

During measurement, the following information may be displayed:

- The instantaneous flow rate in high or low flowrate (m^3/h or L/min; depending on the display unit set)
- The level of liquid in the compartment is use
- The temperature (°C) if it is taken into account.

Simply follow the indications below:



Change flowrate (high or low flow).
Unit: m^3/h or L/min

⚠ With active option

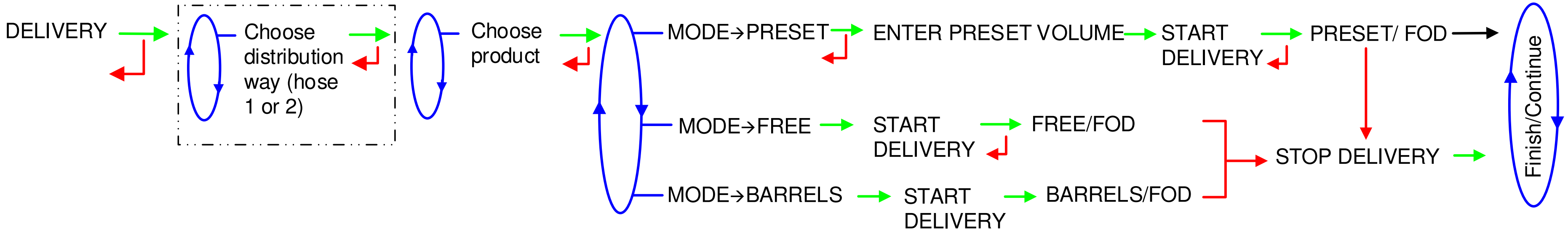
Back to normal display is automatic: DO NOT PRESS RED CLEAR BUTTON TO KEEP FROM INTERRUPTING DELIVERY.

5.1 Menu DELIVERY

Configuration	Paragraph
One or two distribution ways	5.1.1
One or two distribution ways +compartment selection	5.1.2
One or two distribution ways + engine control	5.1.3
One or two distribution ways + compartment selection + engine control	5.1.4
Pumped counted/not counted rule	5.1.5
Pumped counted/not counted rule + compartment selection	5.1.6
Pumped counted/not counted rule + engine control	5.1.7
Pumped counted/not counted rule + compartment selection + engine control	5.1.8

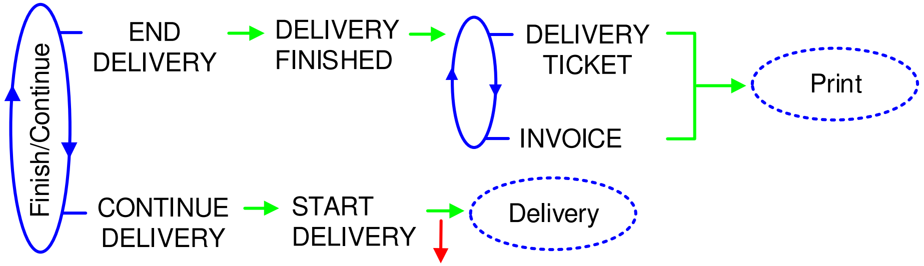
5.1.1 One or two distribution ways

5.1.1.1 Delivery


DELIVERY
Choose distribution way (hose 1 or 2)
Choose product
MODE→PRESET
ENTER PRESET VOLUME
START DELIVERY
PRESET/ FOD
MODE→FREE
START DELIVERY
FREE/FOD
STOP DELIVERY
MODE→BARRELS
START DELIVERY
BARRELS/FOD
Finish/Continue

Non-systematic phase: Only with two distribution ways

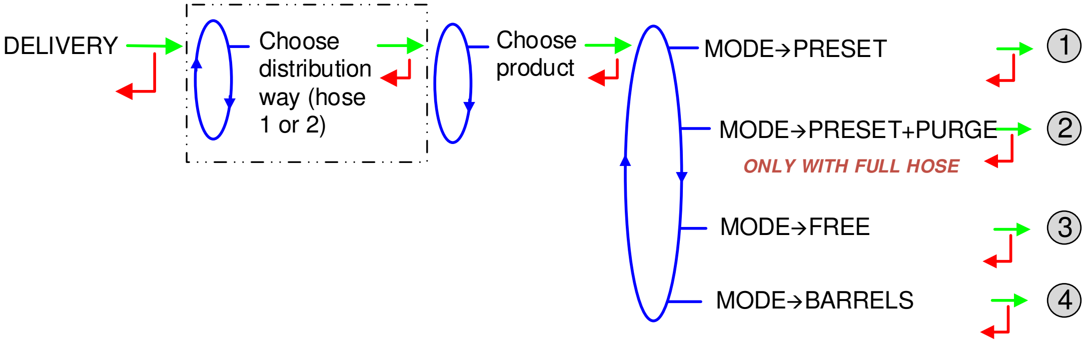
5.1.1.2 Finish/Continue


Finish/Continue
END DELIVERY
DELIVERY FINISHED
DELIVERY TICKET
INVOICE
Print
CONTINUE DELIVERY
START DELIVERY
Delivery

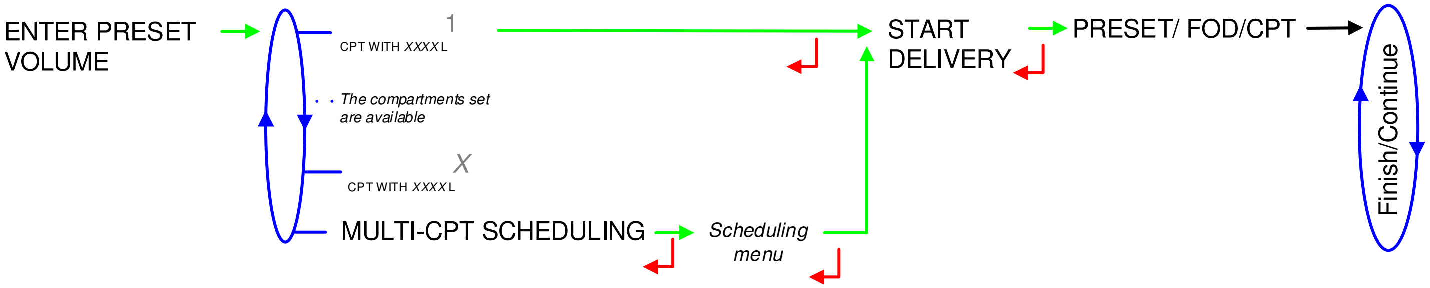
You can change the criteria: *press the red pushbutton when START DELIVERY is displayed with the volume already discharged.*

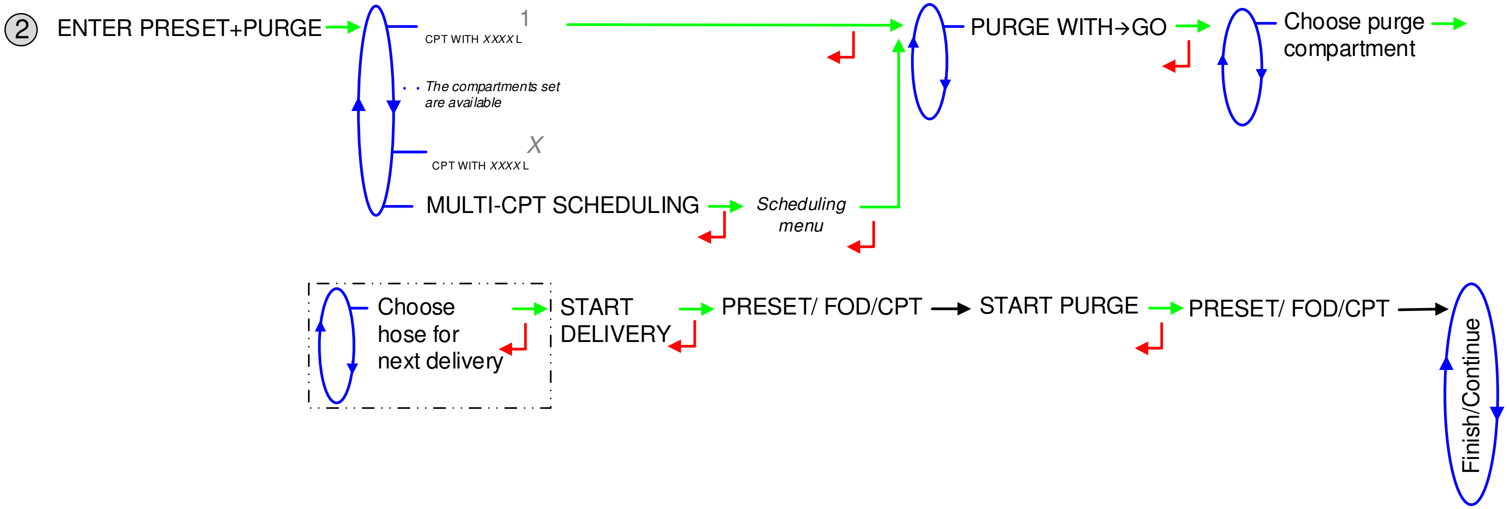
5.1.2 One or two distribution ways +compartment selection

5.1.2.1 Delivery

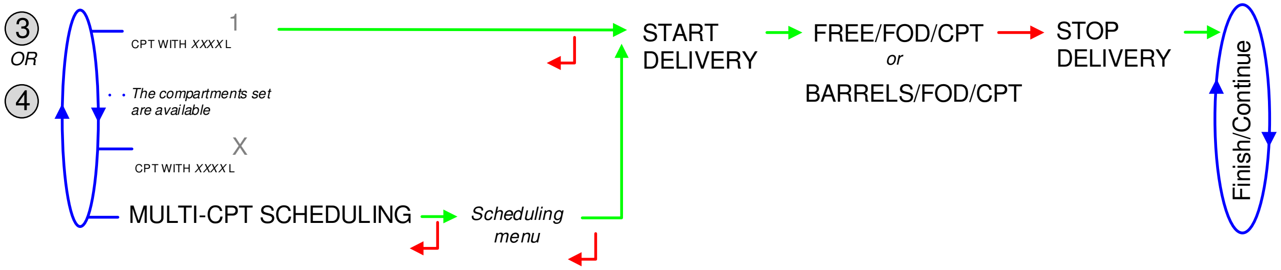

DELIVERY
Choose distribution way (hose 1 or 2)
Choose product
MODE→PRESET
MODE→PRESET+PURGE
ONLY WITH FULL HOSE
MODE→FREE
MODE→BARRELS
①
②
③
④

Non-systematic phase: Only with two distribution ways

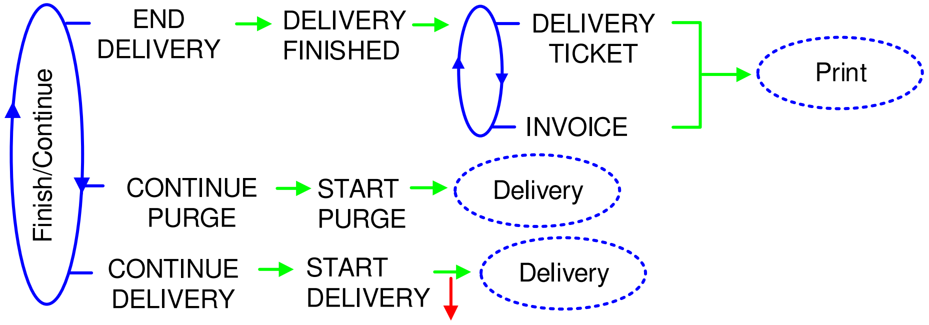

ENTER PRESET VOLUME
1
CPT WITH XXXX L
The compartments set are available
X
CPT WITH XXXX L
MULTI-CPT SCHEDULING
Scheduling menu
START DELIVERY
PRESET/ FOD/CPT
Finish/Continue


②
ENTER PRESET+PURGE
CPT WITH XXXX L
1
The compartments set are available
CPT WITH XXXX L
X
MULTI-CPT SCHEDULING
Scheduling menu
PURGE WITH→GO
Choose purge compartment
Choose hose for next delivery
START DELIVERY
PRESET/ FOD/CPT
START PURGE
PRESET/ FOD/CPT
Finish/Continue

Non-systematic phase: Only with two distribution ways


③
OR
④
CPT WITH XXXX L
1
The compartments set are available
CPT WITH XXXX L
X
MULTI-CPT SCHEDULING
Scheduling menu
START DELIVERY
FREE/FOD/CPT
or
BARRELS/FOD/CPT
STOP DELIVERY
Finish/Continue

5.1.2.2 Finish/Continue

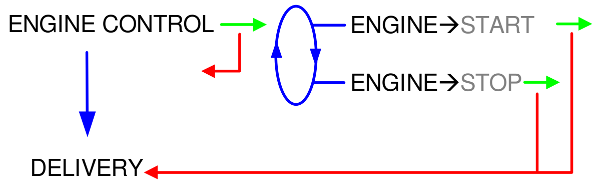

Finish/Continue
END DELIVERY
DELIVERY FINISHED
DELIVERY TICKET
INVOICE
Print
CONTINUE PURGE
START PURGE
Delivery
CONTINUE DELIVERY
START DELIVERY
Delivery

You can change the criteria: *press the red pushbutton when START DELIVERY is displayed with the volume already discharged.*

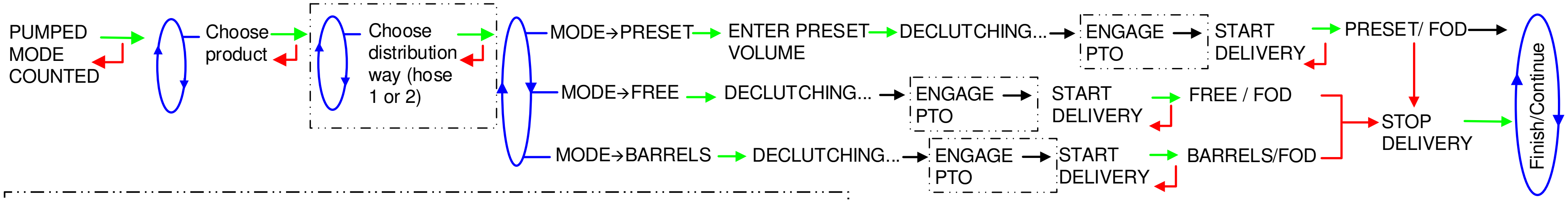
5.1.3 One or two distribution ways + engine control

To access a pumped or a gravity delivery, the distribution mode must have been set in METROLOGICAL mode: CONFIGURATION>MODE>TRONIQUE+GRAVITY

The commands for the pump clutching/declutching and for the power take-off control are realized by the CMA TRONIQUE at the beginning and at the end of distribution.


ENGINE CONTROL
ENGINE→START
ENGINE→STOP
DELIVERY

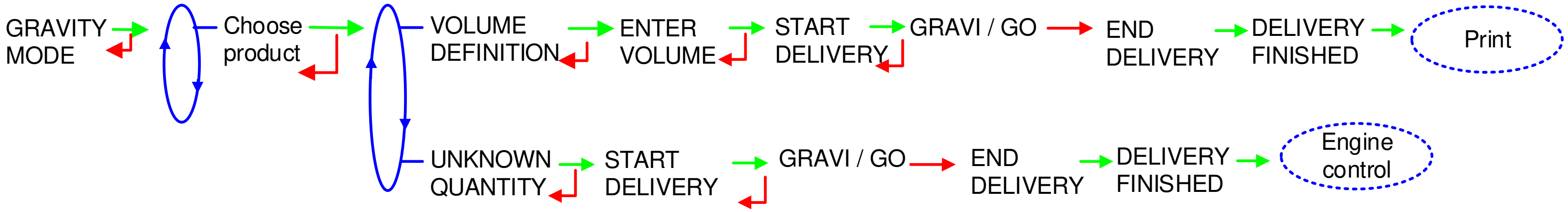
5.1.3.1 Pumped mode counted


PUMPED MODE COUNTED
Choose product
Choose distribution way (hose 1 or 2)
MODE→PRESET
ENTER PRESET VOLUME
DECLUTCHING...
ENGAGE PTO
START DELIVERY
PRESET/ FOD
MODE→FREE
DECLUTCHING...
ENGAGE PTO
START DELIVERY
FREE / FOD
MODE→BARRELS
DECLUTCHING...
ENGAGE PTO
START DELIVERY
BARRELS/FOD
STOP DELIVERY
Finish/Continue

Non-systematic phase: Only with two distribution ways
Non-systematic phase: The message is not displayed if PTO is continuous

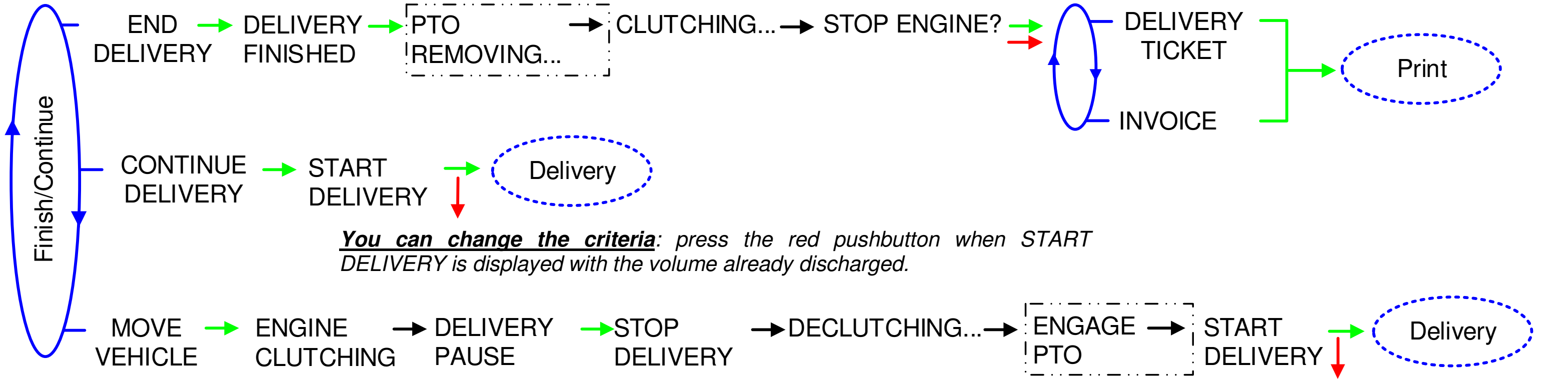
5.1.3.2 Gravity mode

To use the not counted distribution way, it requires an additional line valve.


GRAVITY MODE
Choose product
VOLUME DEFINITION
ENTER VOLUME
START DELIVERY
GRAVI / GO
END DELIVERY
DELIVERY FINISHED
Print
UNKNOWN QUANTITY
START DELIVERY
GRAVI / GO
END DELIVERY
DELIVERY FINISHED
Engine control

5.1.3.3 Finish/Continue

If it's necessary to move the vehicle, the distribution has to be stopped for a moment, then choose the MOVE VEHICLE item. The CMA TRONIQUE switches off the power take-off, clutches the engine and freezes the MICROCOMPT+ on DELIVERY PAUSE. Press green OK BUTTON to continue distribution.


Finish/Continue
END DELIVERY
DELIVERY FINISHED
PTO REMOVING...
CLUTCHING...
STOP ENGINE?
DELIVERY TICKET
INVOICE
Print
CONTINUE DELIVERY
START DELIVERY
Delivery
MOVE VEHICLE
ENGINE CLUTCHING
DELIVERY PAUSE
STOP DELIVERY
DECLUTCHING...
ENGAGE PTO
START DELIVERY
Delivery

You can change the criteria: *press the red pushbutton when START DELIVERY is displayed with the volume already discharged.*

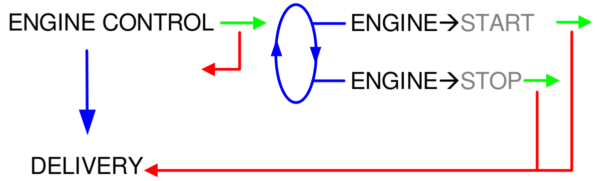
You can change the criteria: *press the red pushbutton when START DELIVERY is displayed with the volume already discharged.*

Non-systematic phase: The message is not displayed if PTO is continuous

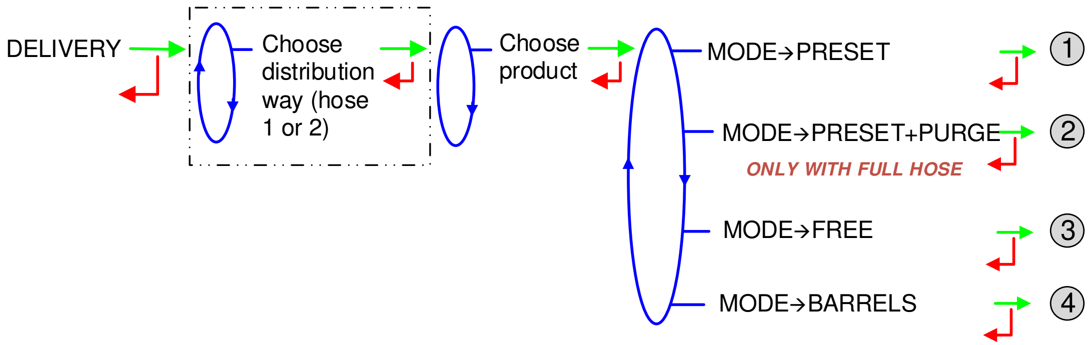
5.1.4 One or two distribution ways +compartment selection + engine control

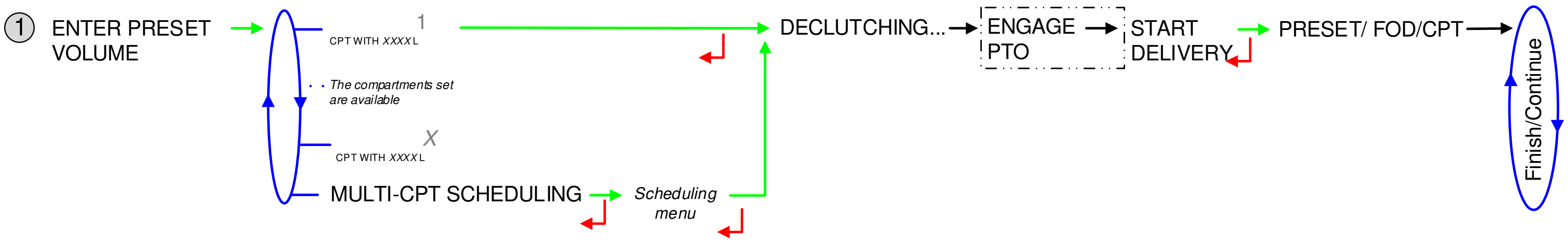
To access a pumped or a gravity delivery, the distribution mode must have been set in METROLOGICAL mode: CONFIGURATION>MODE>TRONIQUE+GRAVITY

The commands for the pump clutching/declutching and for the power take-off control are realized by the CMA TRONIQUE at the beginning and at the end of distribution.

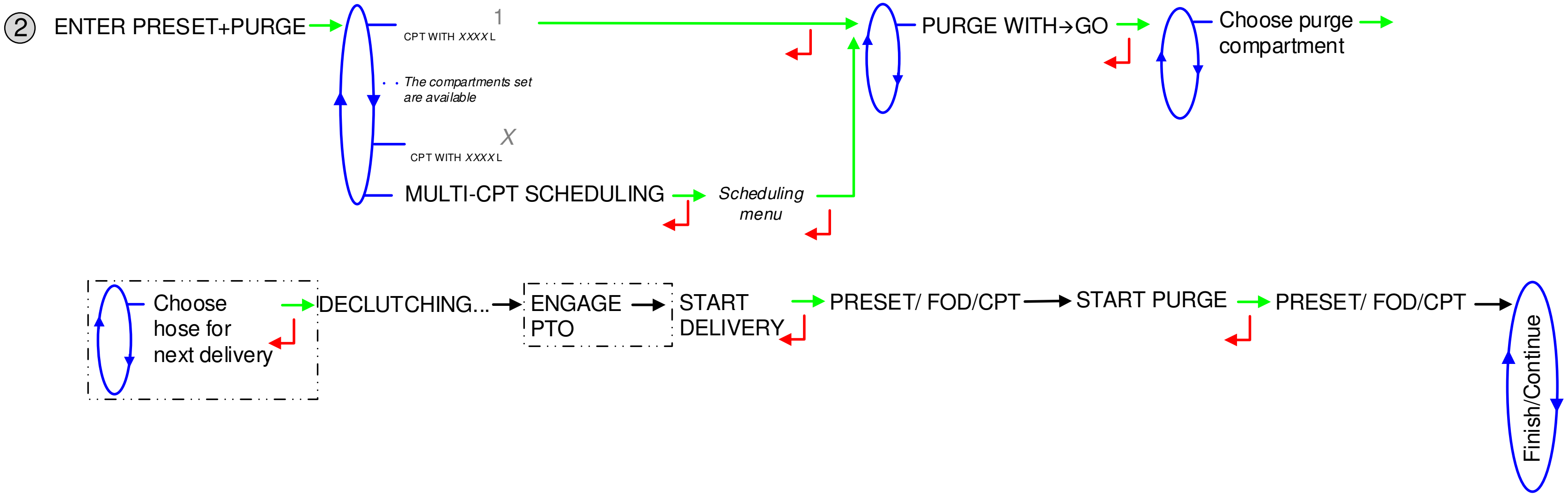

ENGINE CONTROL
ENGINE→START
ENGINE→STOP
DELIVERY

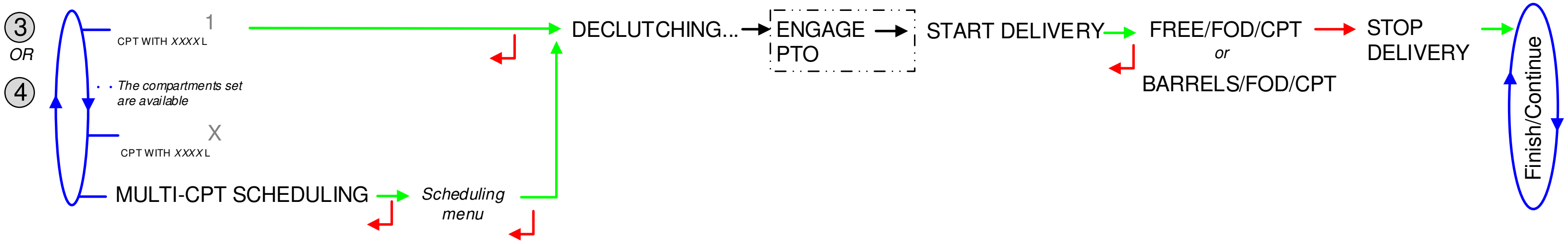
5.1.4.1 Pumped mode counted


DELIVERY
Choose distribution way (hose 1 or 2)
Choose product
MODE→PRESET
①
MODE→PRESET+PURGE
ONLY WITH FULL HOSE
②
MODE→FREE
③
MODE→BARRELS
④


①
ENTER PRESET VOLUME
1
CPT WITH XXXX L
The compartments set are available
X
CPT WITH XXXX L
MULTI-CPT SCHEDULING
Scheduling menu
DECLUTCHING...
ENGAGE PTO
START DELIVERY
PRESET/ FOD/CPT
Finish/Continue

Non-systematic phase: Only with two distribution ways
Non-systematic phase: The message is not displayed if PTO is continuous

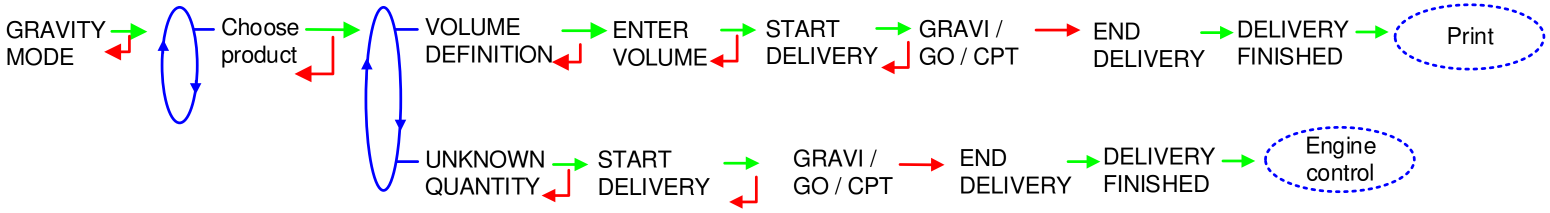

②
ENTER PRESET+PURGE
1
CPT WITH XXXX L
The compartments set are available
X
CPT WITH XXXX L
MULTI-CPT SCHEDULING
Scheduling menu
PURGE WITH→GO
Choose purge compartment
Choose hose for next delivery
DECLUTCHING...
ENGAGE PTO
START DELIVERY
PRESET/ FOD/CPT
START PURGE
PRESET/ FOD/CPT
Finish/Continue


③
OR
④
1
CPT WITH XXXX L
The compartments set are available
X
CPT WITH XXXX L
MULTI-CPT SCHEDULING
Scheduling menu
DECLUTCHING...
ENGAGE PTO
START DELIVERY
FREE/FOD/CPT
or
BARRELS/FOD/CPT
STOP DELIVERY
Finish/Continue

Non-systematic phase: Only with two distribution ways
Non-systematic phase: The message is not displayed if PTO is continuous

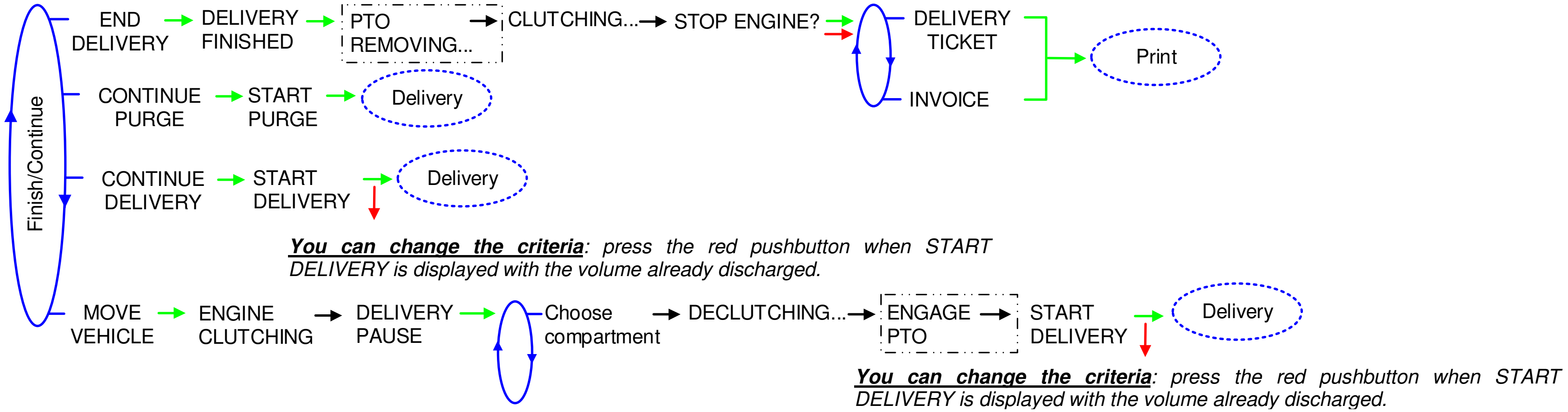
5.1.4.2 Gravity mode

To use the not counted distribution way, it requires an additional line valve.


GRAVITY MODE
Choose product
VOLUME DEFINITION
ENTER VOLUME
START DELIVERY
GRAVI / GO / CPT
END DELIVERY
DELIVERY FINISHED
Print
UNKNOWN QUANTITY
START DELIVERY
GRAVI / GO / CPT
END DELIVERY
DELIVERY FINISHED
Engine control

5.1.4.3 Finish/Continue

If it's necessary to move the vehicle, the distribution has to be stopped for a moment, then choose the MOVE VEHICLE item. The CMA TRONIQUE switches off the power take-off, clutches the engine and freezes the MICROCOMPT+ on DELIVERY PAUSE. Press green OK BUTTON to continue distribution.


Finish/Continue
END DELIVERY
DELIVERY FINISHED
PTO REMOVING...
CLUTCHING...
STOP ENGINE?
DELIVERY TICKET
INVOICE
Print
CONTINUE PURGE
START PURGE
Delivery
CONTINUE DELIVERY
START DELIVERY
Delivery
MOVE VEHICLE
ENGINE CLUTCHING
DELIVERY PAUSE
Choose compartment
DECLUTCHING...
ENGAGE PTO
START DELIVERY
Delivery

***You can change the criteria**: press the red pushbutton when START DELIVERY is displayed with the volume already discharged.*

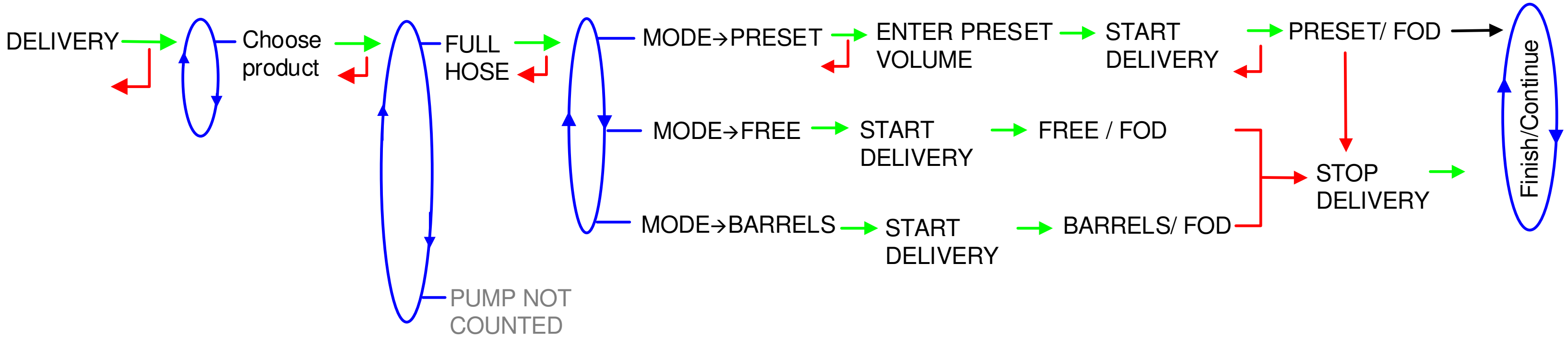
***You can change the criteria**: press the red pushbutton when START DELIVERY is displayed with the volume already discharged.*

Non-systematic phase: The message is not displayed if PTO is continuous

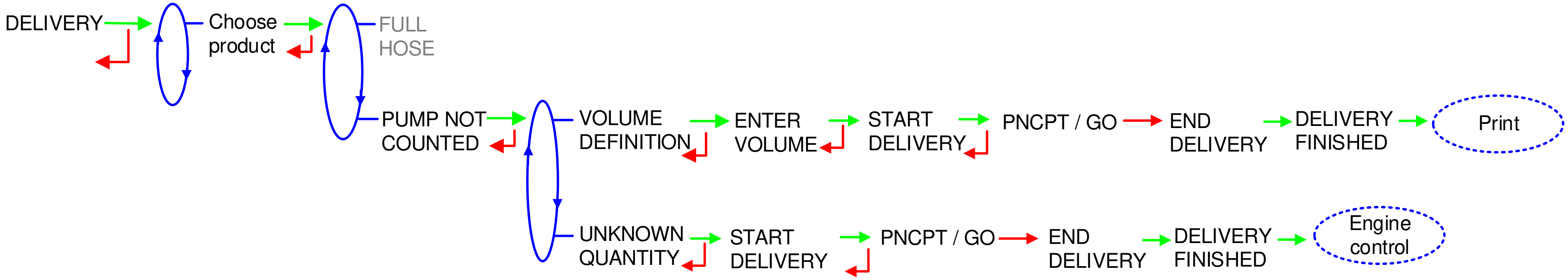
5.1.5 Pumped counted/not counted rule

This delivery mode is used with two distribution outlets: upstream and downstream the meter. The menu must have been set to CONFIGURATION>DISTRIBUTION LINE>PUMPED NC RULE in METROLOGICAL mode.

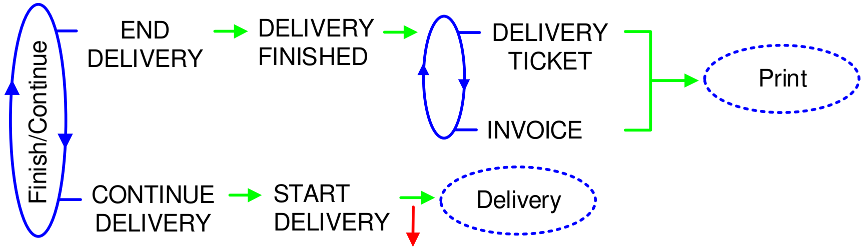
5.1.5.1 Full hose (pumped counted)


DELIVERY
Choose product
FULL HOSE
PUMP NOT COUNTED
MODE→PRESET
ENTER PRESET VOLUME
START DELIVERY
PRESET/ FOD
MODE→FREE
START DELIVERY
FREE / FOD
MODE→BARRELS
START DELIVERY
BARRELS/ FOD
STOP DELIVERY
Finish/Continue

5.1.5.2 Pumped not counted


DELIVERY
Choose product
FULL HOSE
PUMP NOT COUNTED
VOLUME DEFINITION
ENTER VOLUME
START DELIVERY
PNCPT / GO
END DELIVERY
DELIVERY FINISHED
Print
UNKNOWN QUANTITY
START DELIVERY
PNCPT / GO
END DELIVERY
DELIVERY FINISHED
Engine control

5.1.5.3 Finish/Continue

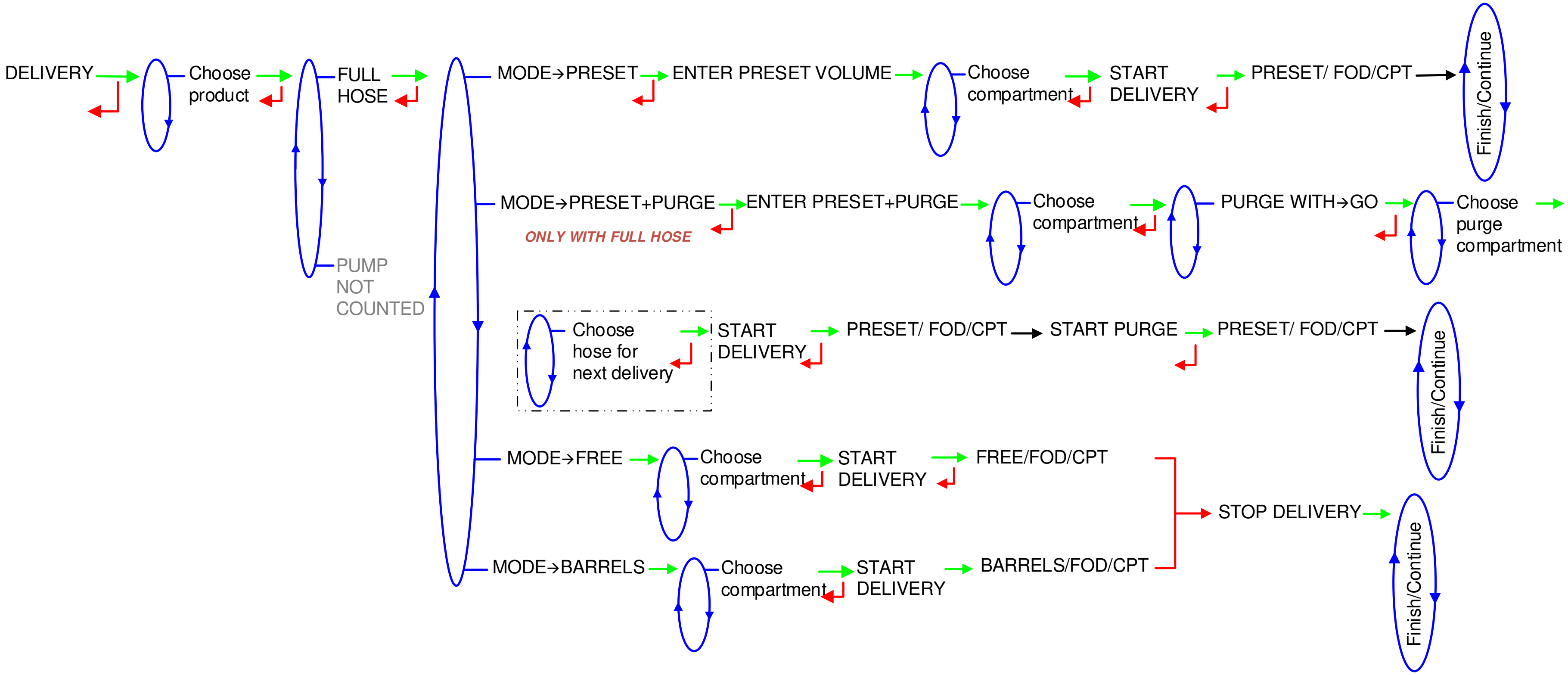

Finish/Continue
END DELIVERY
DELIVERY FINISHED
DELIVERY TICKET
INVOICE
Print
CONTINUE DELIVERY
START DELIVERY
Delivery

__You can change the criteria__: *press the red pushbutton when START DELIVERY is displayed with the volume already discharged.*

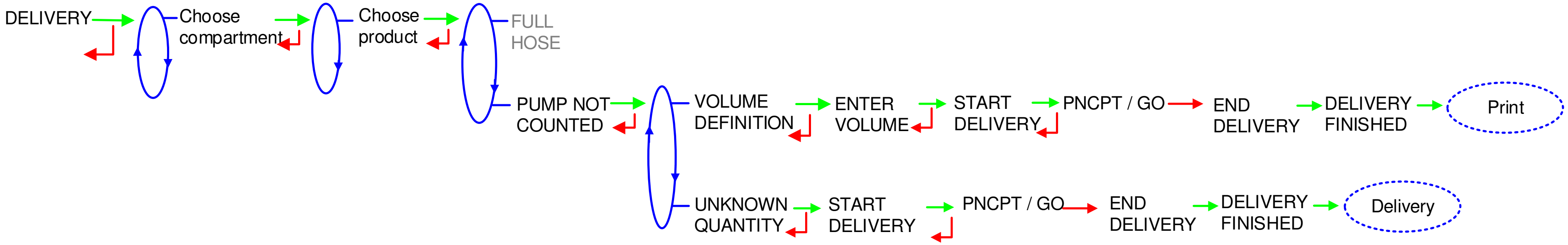
5.1.6 Pumped counted/not counted rule + compartment selection

This delivery mode is used with two distribution outlets: upstream and downstream the meter. The menu must have been set to CONFIGURATION>DISTRIBUTION LINE>PUMPED NC RULE in METROLOGICAL mode.

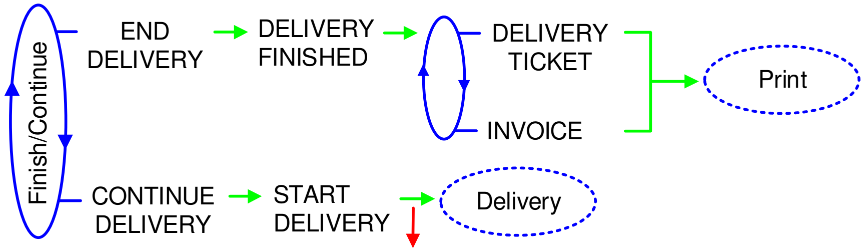
5.1.6.1 Full hose (pumped counted)


DELIVERY
Choose product
FULL HOSE
PUMP NOT COUNTED
MODE→PRESET
ENTER PRESET VOLUME
Choose compartment
START DELIVERY
PRESET/ FOD/CPT
Finish/Continue
MODE→PRESET+PURGE
ONLY WITH FULL HOSE
ENTER PRESET+PURGE
Choose compartment
PURGE WITH→GO
Choose purge compartment
Choose hose for next delivery
START DELIVERY
PRESET/ FOD/CPT
START PURGE
PRESET/ FOD/CPT
Finish/Continue
MODE→FREE
Choose compartment
START DELIVERY
FREE/FOD/CPT
STOP DELIVERY
Finish/Continue
MODE→BARRELS
Choose compartment
START DELIVERY
BARRELS/FOD/CPT

5.1.6.2 Pumped not counted


DELIVERY
Choose compartment
Choose product
FULL HOSE
PUMP NOT COUNTED
VOLUME DEFINITION
ENTER VOLUME
START DELIVERY
PNCPT / GO
END DELIVERY
DELIVERY FINISHED
Print
UNKNOWN QUANTITY
START DELIVERY
PNCPT / GO
END DELIVERY
DELIVERY FINISHED
Delivery

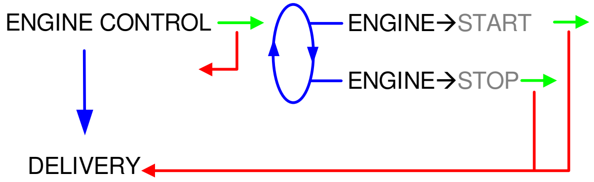
5.1.6.3 Finish/Continue


Finish/Continue
END DELIVERY
DELIVERY FINISHED
DELIVERY TICKET
INVOICE
Print
CONTINUE DELIVERY
START DELIVERY
Delivery

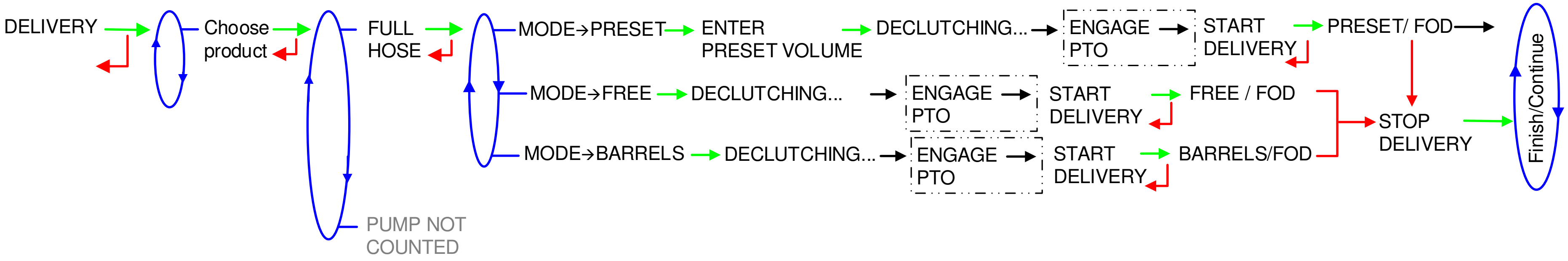
You can change the criteria*: press the red pushbutton when START DELIVERY is displayed with the volume already discharged.*

5.1.7 Pumped counted/not counted rule + engine control

This delivery mode is used with two distribution outlets: upstream and downstream the meter. The menu must have been set to CONFIGURATION>DISTRIBUTION LINE>PUMPED NC RULE in METROLOGICAL mode. The CMA TRONIQUE switches off the power take-off, clutches the engine and freezes the MICROCOMPT+ on DELIVERY PAUSE. Press green OK BUTTON to continue distribution.

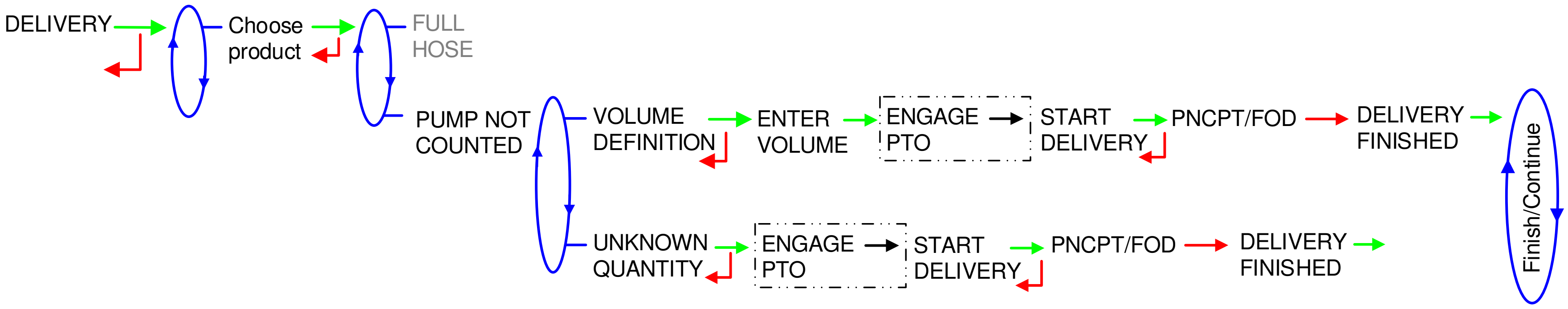

ENGINE CONTROL
ENGINE→START
ENGINE→STOP
DELIVERY

5.1.7.1 Full hose (pumped counted)


DELIVERY
Choose product
FULL HOSE
PUMP NOT COUNTED
MODE→PRESET
ENTER PRESET VOLUME
DECLUTCHING...
ENGAGE PTO
START DELIVERY
PRESET/ FOD
MODE→FREE
DECLUTCHING...
ENGAGE PTO
START DELIVERY
FREE / FOD
MODE→BARRELS
DECLUTCHING...
ENGAGE PTO
START DELIVERY
BARRELS/FOD
STOP DELIVERY
Finish/Continue

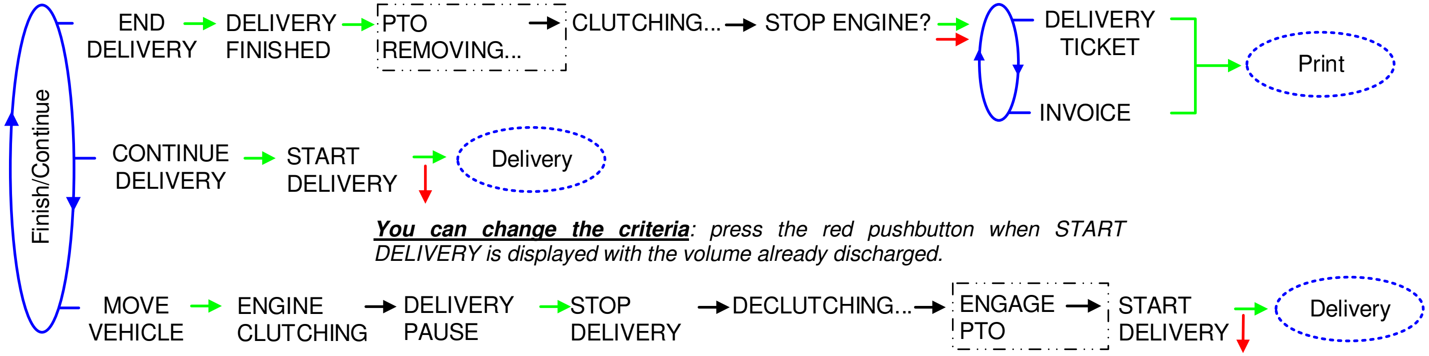
Non-systematic phase: The message is not displayed if PTO is continuous

5.1.7.2 Pumped not counted


DELIVERY
Choose product
FULL HOSE
PUMP NOT COUNTED
VOLUME DEFINITION
ENTER VOLUME
ENGAGE PTO
START DELIVERY
PNCPT/FOD
DELIVERY FINISHED
UNKNOWN QUANTITY
ENGAGE PTO
START DELIVERY
PNCPT/FOD
DELIVERY FINISHED
Finish/Continue

5.1.7.3 Finish/Continue

If it's necessary to move the vehicle, the distribution has to be stopped for a moment, then choose the MOVE VEHICLE item. The CMA TRONIQUE switches off the power take-off, clutches the engine and freezes the MICROCOMPT+ on DELIVERY PAUSE. Press green OK BUTTON to continue distribution.


Finish/Continue
END DELIVERY
DELIVERY FINISHED
PTO REMOVING...
CLUTCHING...
STOP ENGINE?
DELIVERY TICKET
INVOICE
Print
CONTINUE DELIVERY
START DELIVERY
Delivery
MOVE VEHICLE
ENGINE CLUTCHING
DELIVERY PAUSE
STOP DELIVERY
DECLUTCHING...
ENGAGE PTO
START DELIVERY
Delivery

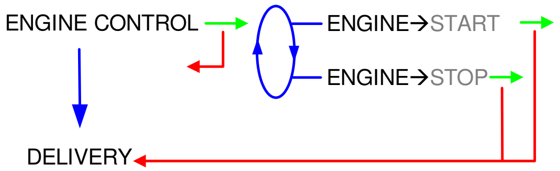
***You can change the criteria*: *press the red pushbutton when START DELIVERY is displayed with the volume already discharged.*

***You can change the criteria*: *press the red pushbutton when START DELIVERY is displayed with the volume already discharged.*

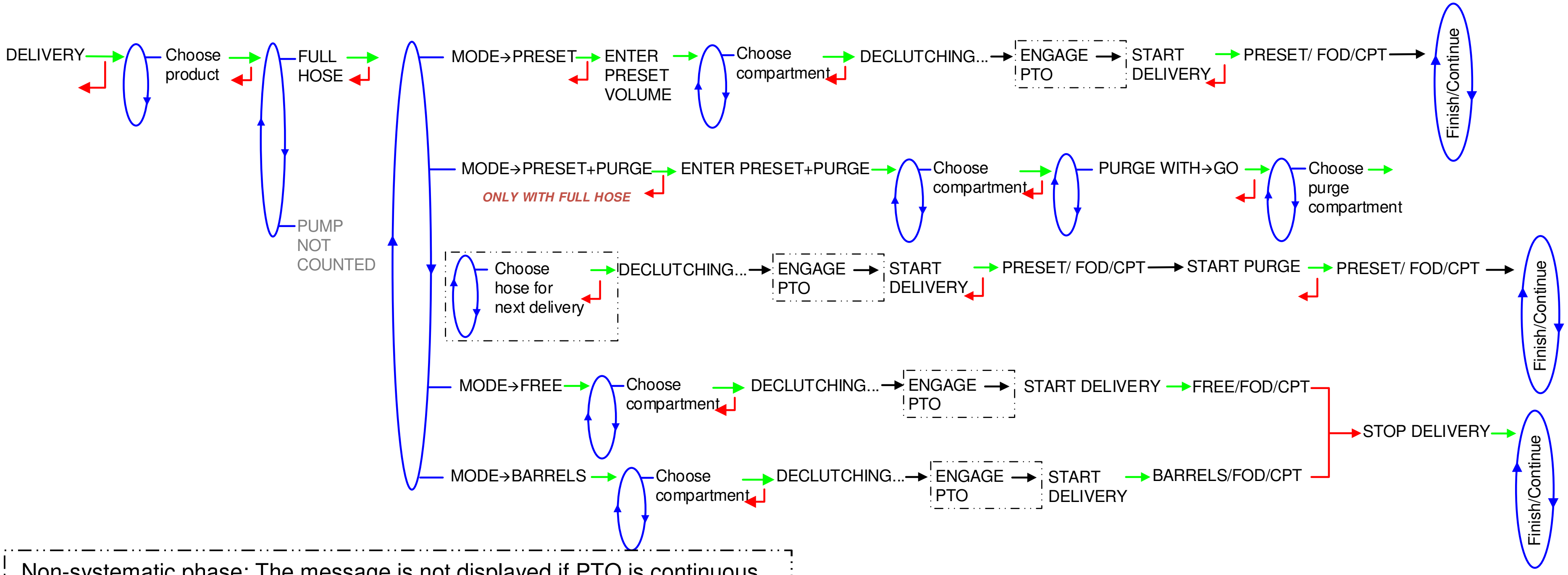
Non-systematic phase: The message is not displayed if PTO is continuous

5.1.8 Pumped counted/not counted rule + compartment selection + engine control

This delivery mode is used with two distribution outlets: upstream and downstream the meter. The menu must have been set to CONFIGURATION>DISTRIBUTION LINE>PUMPED NC RULE in METROLOGICAL mode. The CMA TRONIQUE switches off the power take-off, clutches the engine and freezes the MICROCOMPT+ on DELIVERY PAUSE. Press green OK BUTTON to continue distribution.

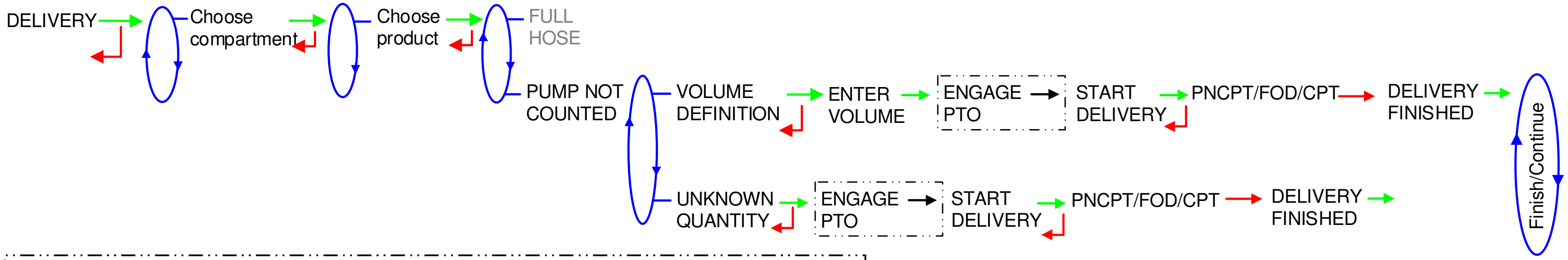

ENGINE CONTROL
ENGINE→START
ENGINE→STOP
DELIVERY

5.1.8.1 Full hose (pumped counted)


DELIVERY
Choose product
FULL HOSE
PUMP NOT COUNTED
MODE→PRESET
ENTER PRESET VOLUME
Choose compartment
DECLUTCHING...
ENGAGE PTO
START DELIVERY
PRESET/ FOD/CPT
Finish/Continue
MODE→PRESET+PURGE
ONLY WITH FULL HOSE
ENTER PRESET+PURGE
Choose compartment
PURGE WITH→GO
Choose purge compartment
Choose hose for next delivery
DECLUTCHING...
ENGAGE PTO
START DELIVERY
PRESET/ FOD/CPT
START PURGE
PRESET/ FOD/CPT
Finish/Continue
MODE→FREE
Choose compartment
DECLUTCHING...
ENGAGE PTO
START DELIVERY
FREE/FOD/CPT
STOP DELIVERY
Finish/Continue
MODE→BARRELS
Choose compartment
DECLUTCHING...
ENGAGE PTO
START DELIVERY
BARRELS/FOD/CPT

Non-systematic phase: The message is not displayed if PTO is continuous

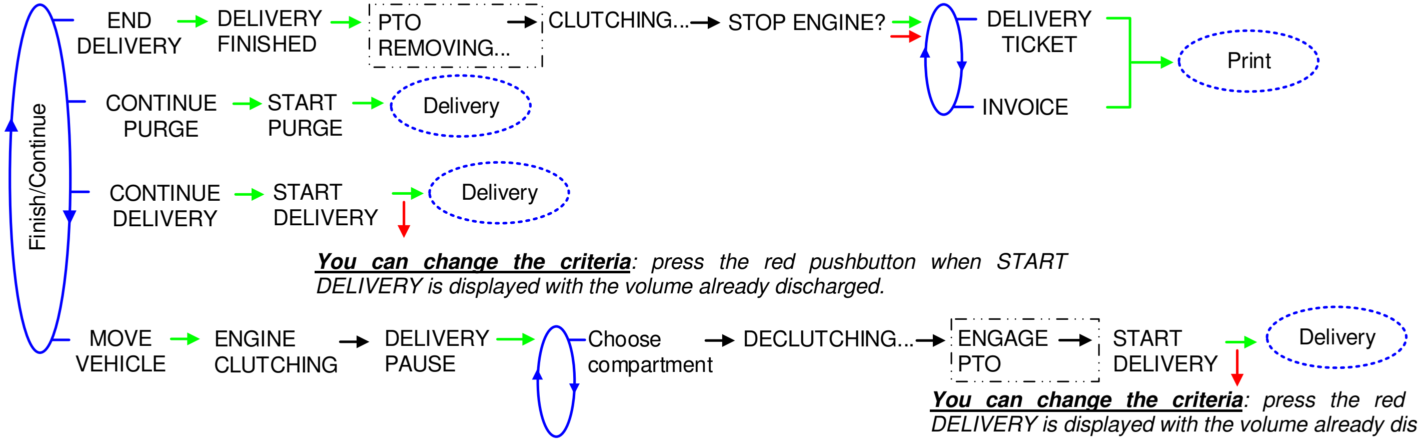
5.1.8.2 Pumped not counted


DELIVERY
Choose compartment
Choose product
FULL HOSE
PUMP NOT COUNTED
VOLUME DEFINITION
ENTER VOLUME
ENGAGE PTO
START DELIVERY
PNCPT/FOD/CPT
DELIVERY FINISHED
UNKNOWN QUANTITY
ENGAGE PTO
START DELIVERY
PNCPT/FOD/CPT
DELIVERY FINISHED
Finish/Continue

Non-systematic phase: The message is not displayed if PTO is continuous

5.1.8.3 Finish/Continue

If it's necessary to move the vehicle, the distribution has to be stopped for a moment, then choose the MOVE VEHICLE item. The CMA TRONIQUE switches off the power take-off, clutches the engine and freezes the MICROCOMPT+ on DELIVERY PAUSE. Press green OK BUTTON to continue distribution.

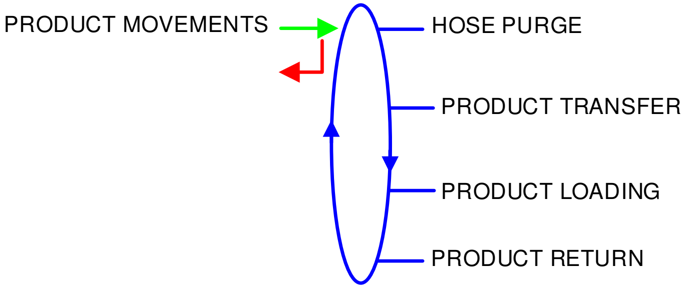

Finish/Continue
END DELIVERY
DELIVERY FINISHED
PTO REMOVING...
CLUTCHING...
STOP ENGINE?
DELIVERY TICKET
INVOICE
Print
CONTINUE PURGE
START PURGE
Delivery
CONTINUE DELIVERY
START DELIVERY
Delivery
MOVE VEHICLE
ENGINE CLUTCHING
DELIVERY PAUSE
Choose compartment
DECLUTCHING...
ENGAGE PTO
START DELIVERY
Delivery

You can change the criteria: *press the red pushbutton when START DELIVERY is displayed with the volume already discharged.*

You can change the criteria: *press the red pushbutton when START DELIVERY is displayed with the volume already discharged.*

5.2 Menu PRODUCT MOVEMENTS

Product movements PRODUCT TRANSFER, PRODUCT LOADING, and PRODUCT RETURN are performed in low flow rate. They are available when at least one product return with overfill probe is set in METROLOGICAL mode: CONFIGURATION>COMPARTIMENT OPTIONS>RETURN→ON>PROBE→ON.



5.2.1 Sub-menu HOSE PURGE

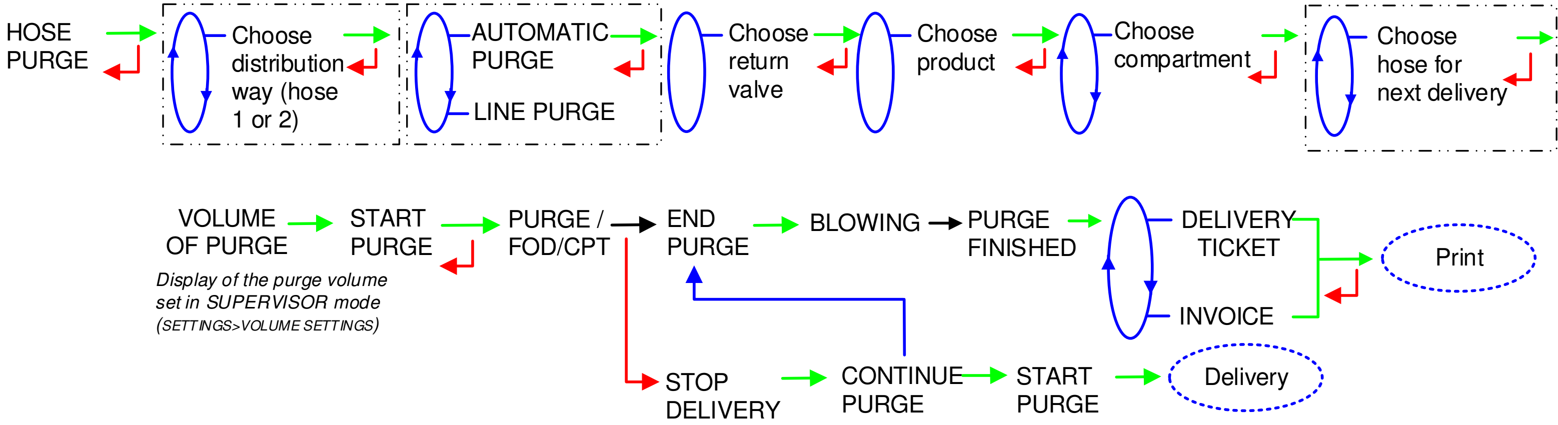
This menu allows purging the hose in order to change the quality of the product. It is available when at least one product return with overfill probe is set in METROLOGICAL mode.

The purge volume can be: the complete purge volume or the short purge volume, of hose 1, hose 2 or of the common pipe (configuration SUPERVISOR>SETTINGS>VOLUME SETTINGS).

According to configuration, if the product in the common pipe is not the same as the product in the hose used for the purge, the user can choose the purge type he wants to do (configuration SUPERVISOR>SETTINGS>VOLUME SETTINGS>PURGE TYPE).

Operating with blocking DSPGI (configuration SUPERVISOR>DSPGI→ON>BLOCKING), the hose purge must have been completed before starting a new delivery.

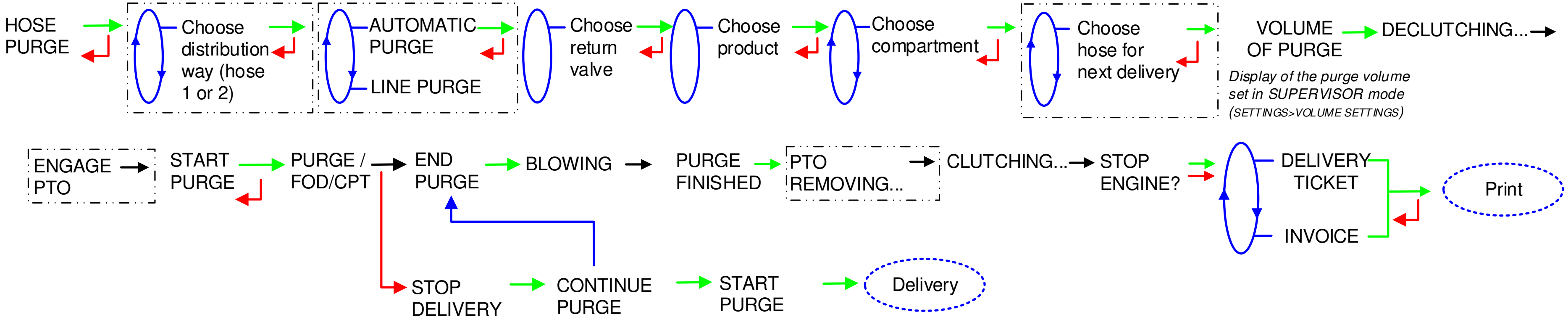
5.2.1.1 Without engine control


HOSE
PURGE
Choose
distribution
way (hose
1 or 2)
AUTOMATIC
PURGE
LINE PURGE
Choose
return
valve
Choose
product
Choose
compartment
Choose
hose for
next delivery
VOLUME
OF PURGE
START
PURGE
PURGE /
FOD/CPT
END
PURGE
BLOWING
PURGE
FINISHED
DELIVERY
TICKET
INVOICE
Print
STOP
DELIVERY
CONTINUE
PURGE
START
PURGE
Delivery

Display of the purge volume set in SUPERVISOR mode (SETTINGS>VOLUME SETTINGS)

Non-systematic phases.

5.2.1.2 With engine control

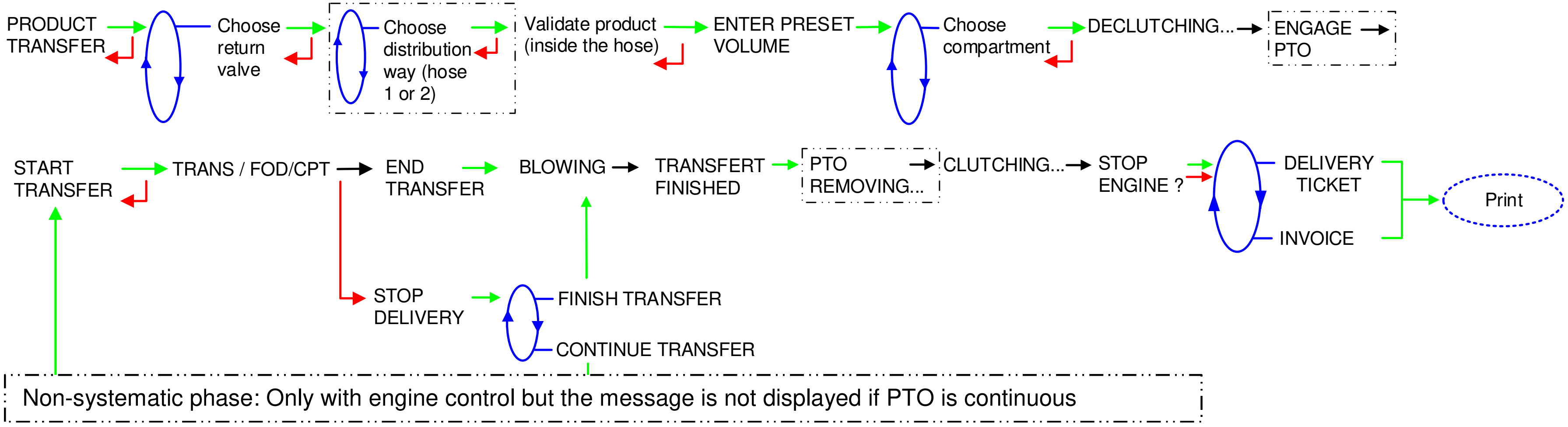

HOSE
PURGE
Choose
distribution
way (hose
1 or 2)
AUTOMATIC
PURGE
LINE PURGE
Choose
return
valve
Choose
product
Choose
compartment
Choose
hose for
next delivery
VOLUME
OF PURGE
DECLUTCHING...
ENGAGE
PTO
START
PURGE
PURGE /
FOD/CPT
END
PURGE
BLOWING
PURGE
FINISHED
PTO
REMOVING...
CLUTCHING...
STOP
ENGINE?
DELIVERY
TICKET
INVOICE
Print
STOP
DELIVERY
CONTINUE
PURGE
START
PURGE
Delivery

Display of the purge volume set in SUPERVISOR mode (SETTINGS>VOLUME SETTINGS)

Non-systematic phases.

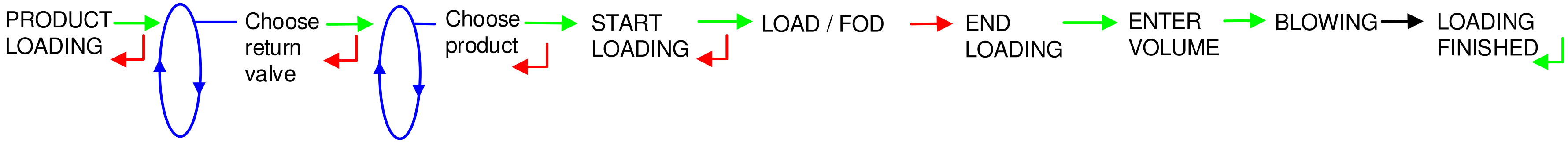
5.2.2 Sub-menu PRODUCT TRANSFER

This menu allows unloading the product from one compartment either to another compartment or to a compartment of another truck or to a loading terminal; transfer is performed in low flow rate. It is available when at least one product return with overfill probe is set in METROLOGICAL mode.


PRODUCT TRANSFER
Choose return valve
Choose distribution way (hose 1 or 2)
Validate product (inside the hose)
ENTER PRESET VOLUME
Choose compartment
DECLUTCHING...
ENGAGE PTO
START TRANSFER
TRANS / FOD/CPT
END TRANSFER
BLOWING
TRANSFERT FINISHED
PTO REMOVING...
CLUTCHING...
STOP ENGINE ?
DELIVERY TICKET
INVOICE
Print
STOP DELIVERY
FINISH TRANSFER
CONTINUE TRANSFER
Non-systematic phase: Only with engine control but the message is not displayed if PTO is continuous

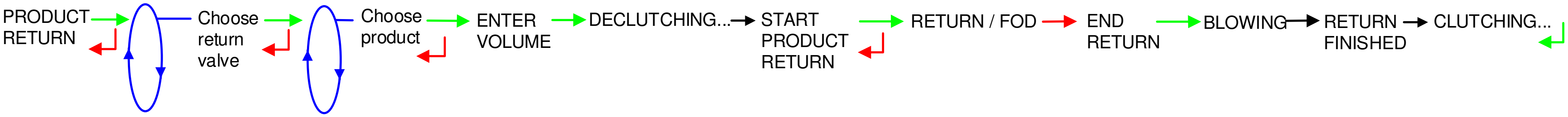
5.2.3 Sub-menu PRODUCT LOADING

This menu allows shifting product from one truck to another truck; loading is performed in low flow rate. It is available when at least one product return with overfill probe is set in METROLOGICAL mode.


PRODUCT LOADING
Choose return valve
Choose product
START LOADING
LOAD / FOD
END LOADING
ENTER VOLUME
BLOWING
LOADING FINISHED

5.2.4 Sub-menu PRODUCT RETURN

Product return is performed in low flow rate. It is available when at least one product return with overfill probe is set in METROLOGICAL mode.


PRODUCT RETURN
Choose return valve
Choose product
ENTER VOLUME
DECLUTCHING...
START PRODUCT RETURN
RETURN / FOD
END RETURN
BLOWING
RETURN FINISHED
CLUTCHING...

5.3 Menu LOADING PLAN

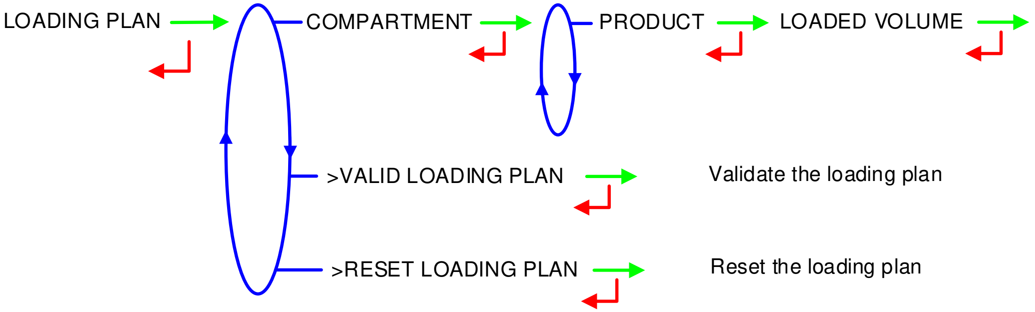
Depends on METROLOGICAL configuration. Not used if the function has not been activated.

The LOADING PLAN menu is used to determine the quality and the quantity of the products available in each compartment. The volumes per compartment will be updated as the deliveries and product movements continue. They will be displayed at the compartment selection. In case of a blocking function, an empty compartment won't be available for a delivery until you enter a new product quality via this menu. A compartment is considered as empty if the end height is reached and if CPT X EMPTY is displayed during the delivery.

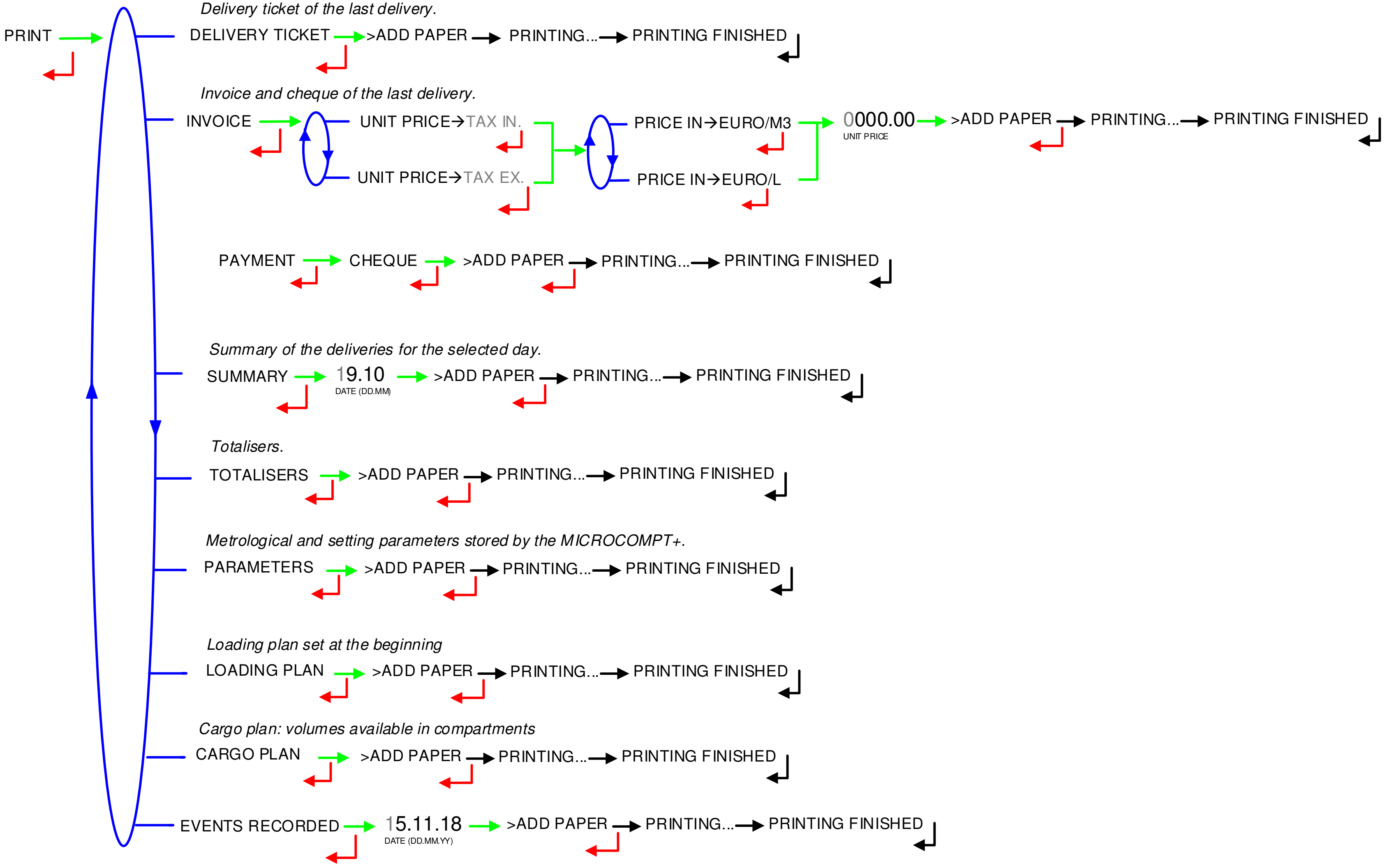
COMPARTMENT SELECTION: For each compartment, select the product name and set the loaded volume. With DSPGI, the product name is blank.

>VALID LOADING PLAN: Record the loading plan.

>RESET LOADING PLAN: The loading plan can be cancelled by this menu.


LOADING PLAN
COMPARTMENT
PRODUCT
LOADED VOLUME
>VALID LOADING PLAN
Validate the loading plan
>RESET LOADING PLAN
Reset the loading plan

5.4 Menu PRINT



Delivery ticket of the last delivery.

Invoice and cheque of the last delivery.

Summary of the deliveries for the selected day.

Totalisers.

Metrological and setting parameters stored by the MICROCOMPT+.

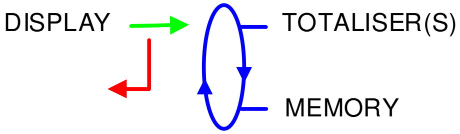
Loading plan set at the beginning

Cargo plan: volumes available in compartments

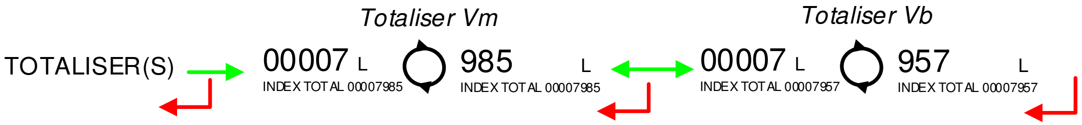
PRINT
DELIVERY TICKET
>ADD PAPER
PRINTING...
PRINTING FINISHED
INVOICE
UNIT PRICE→TAX IN.
UNIT PRICE→TAX EX.
PRICE IN→EURO/M3
PRICE IN→EURO/L
0000.00
UNIT PRICE
>ADD PAPER
PRINTING...
PRINTING FINISHED
PAYMENT
CHEQUE
>ADD PAPER
PRINTING...
PRINTING FINISHED
SUMMARY
19.10
DATE (DD.MM)
>ADD PAPER
PRINTING...
PRINTING FINISHED
TOTALISERS
>ADD PAPER
PRINTING...
PRINTING FINISHED
PARAMETERS
>ADD PAPER
PRINTING...
PRINTING FINISHED
LOADING PLAN
>ADD PAPER
PRINTING...
PRINTING FINISHED
CARGO PLAN
>ADD PAPER
PRINTING...
PRINTING FINISHED
EVENTS RECORDED
15.11.18
DATE (DD.MM.YY)
>ADD PAPER
PRINTING...
PRINTING FINISHED

5.5 Menu DISPLAY

This menu is available in standby mode or when you stop temporarily the measurement. You can see the totaliser value and the measurement results.


DISPLAY
TOTALISER(S)
MEMORY

5.5.1 Sub-menu TOTALISER(S)


Totaliser Vm
Totaliser Vb
TOTALISER(S)
00007 L
INDEX TOTAL 00007985
985 L
INDEX TOTAL 00007985
00007 L
INDEX TOTAL 00007957
957 L
INDEX TOTAL 00007957

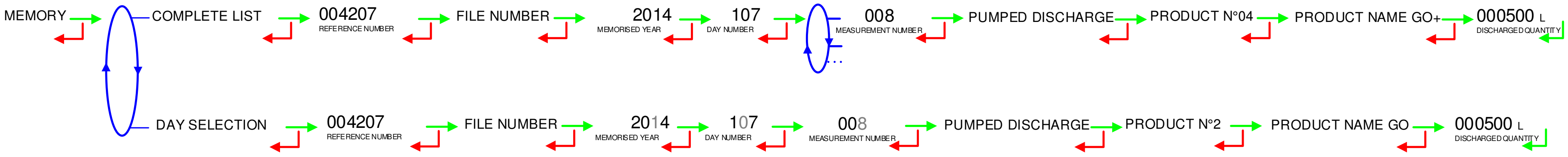
5.5.2 Sub-menu MEMORY

You can read all the measurement results stored by the CMA TRONIQUE. That can be done in two ways:

COMPLETE LIST: Display all the measurement details recorded, from the newest to the oldest, sorted by day then by measurement number.

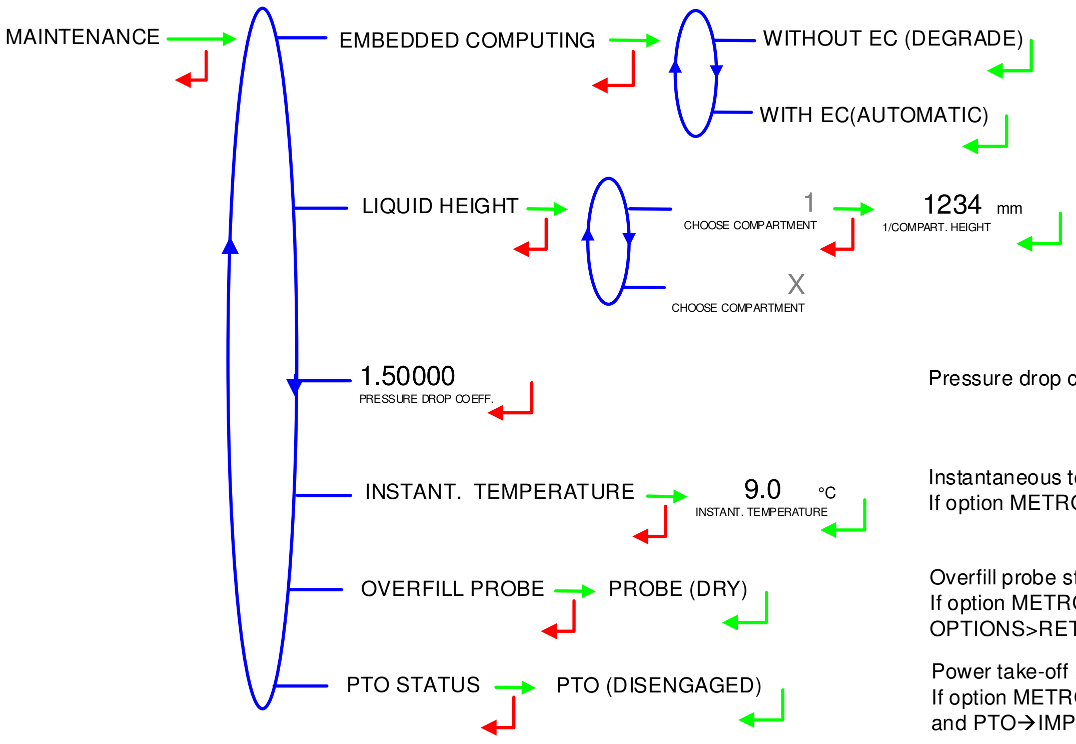
DAY SELECTION: Display a specific measurement by selecting the day number.

For each measurement, are displayed: the product number, the name of the product, the measured quantity.


MEMORY
COMPLETE LIST
004207
REFERENCE NUMBER
FILE NUMBER
2014
MEMORISED YEAR
107
DAY NUMBER
008
MEASUREMENT NUMBER
...
PUMPED DISCHARGE
PRODUCT N°04
PRODUCT NAME GO+
000500 L
DISCHARGED QUANTITY
DAY SELECTION
004207
REFERENCE NUMBER
FILE NUMBER
2014
MEMORISED YEAR
107
DAY NUMBER
008
MEASUREMENT NUMBER
PUMPED DISCHARGE
PRODUCT N°2
PRODUCT NAME GO
000500 L
DISCHARGED QUANTITY

5.6 Menu MAINTENANCE

This menu depends on the configuration of the measuring system.


MAINTENANCE
EMBEDDED COMPUTING
WITHOUT EC (DEGRADE)
WITH EC(AUTOMATIC)
LIQUID HEIGHT
1
CHOOSE COMPARTMENT
1234 mm
1/COMPART. HEIGHT
X
CHOOSE COMPARTMENT
1.50000
PRESSURE DROP COEFF.
INSTANT. TEMPERATURE
9.0 °C
INSTANT. TEMPERATURE
OVERFILL PROBE
PROBE (DRY)
PTO STATUS
PTO (DISENGAGED)

If option METROLOGICAL>EMBEDDED COMPUTING>EC→WITH PRINTER has been set in METROLOGICAL mode.
In case of failure of the embedded computing, choose 'WITHOUT EC'.

Give the product height in the compartments controlled by the calculator-indicator.

Pressure drop coefficient

Instantaneous temperature if controlled by the calculator-indicator.
If option METROLOGICAL>EMA>TEMPERATURE is set to ON

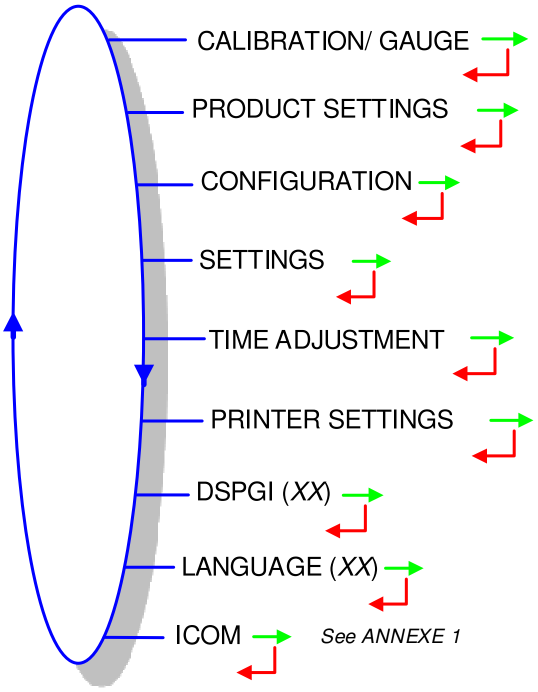
Overfill probe status
If option METROLOGICAL>CONFIGURATION>COMPARTMENT OPTIONS>RETURN>PROBE is set to ON

Power take-off status
If option METROLOGICAL>EMBEDDED COMPUTING is set to ON and PTO→IMPULSION.

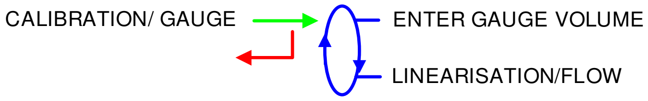
5.7 List of alarms

		DISPLAY	MEANING	ACTION
USER	ALL	STOP DISCHARGE	Intentional interruption of discharge	Continue, stop or finish the discharge
		PRINTER FAILURE	Communication with the printer lost	Check the connection cable, on-off switch and fuse
			Jammed paper in the printer	Use the RELEASE button to eject the paper
		POWER SUPPLY PROBLEM	Power outage during discharge	Check the cause / Restore power supply
		ZERO FLOW DEFAULT	Zero flow	Check if the pulse transmitter is powered (red indicators)
		LOW FLOW DEFAULT	Low flowrate (less than 4m^3/h)	Check the parameters / Check the hydraulic system (valve, strainer, nozzle…)
		HIGH FLOW DEFAULT	High flowrate (greater than maximum flowrate)	Check the parameters / Reduce flowrate
		DIARY DEFAULT	Reset of the events diary	Acknowledge the alarm, check the date in supervisor mode (supervisor key)
		Three tricolour LED on the MICROCOMPT+ front face are showing the wireless connection status as described in the annexe to operating manual MU 7034		
	PUMPED	INCOHERENT SIGNAL	Coherence failure in metering lines	Check the position of the manual selection valves
		EMA METERING PROBLEM	Metering problem with the measuring device	Check if the pulse transmitter is powered (red indicators), if not check the wiring / Change the sensor if required
		PTO DEFAULT	Coherence failure with power take-off	Check the power take-off status in driver's cab
		OVERFILL DEFAULT	Overfilling during a product movement	Transfer product in another compartment
		RUPTURE DG DEFAULT	Rupture detector failure	Use the maintenance mode to check the status of the detector
		PURGE NOT FINISHED	Purge of manifold (and/or hose) not finished	Finish the purge
		FAIL	DSPGI ON, communication failure	Check the DSPGI device
		?????	DSPGI ON, drum located between 2 positions	Check the drum position of the related compartment
		UNDEF	DSPGI ON, product not set in SUPERVISOR mode	Check the products setting
	FLEXI TRONIQUE	EMB METERING PROBLEM	Metering problem with the measuring device	Check if the pulse transmitter is powered (red indicators), if not check the wiring / Change the sensor if required
		GAS DETECTOR DEFAULT	Gas detector failure	Use the maintenance mode to check the status of the detector
REPARATOR	ALL	DISPLAY DEFAULT	Problem with display card	If steady alarm, substitution of the display card
		WATCHDOG DEFAULT	Fault with display or power card or AFSEC+ card	Switch on-off the Microcompt+ / If steady alarm, substitution of the faulty card
		VOLUME CONVER DEFAULT	Problem during conversion of volume	If steady alarm, substitution of the AFSEC+ electronic card
	PUMPED	TOTALISER 1 LOST	Loss of totalizer	Substitution of the backup battery
		PRESSURE DEFAULT	Pressure determination failure	If steady alarm, see a reparator for trouble shooting
		TEMPERATURE 1 DEFAULT	Temperature determination failure	If steady alarm, see a reparator for trouble shooting
	FLEXI TRONIQUE	TOTALISER 2 LOST	Loss of totalizer	Substitution of the backup battery
		TEMPERATURE 2 DEFAULT	Temperature determination failure	If steady alarm, see a reparator for trouble shooting
	BLOCKING	MEMORY LOST (PILE)	Loss of saved memory	Substitution of the backup battery
		MEMORY LOST	Error on SIM memorization	Enter and exit the METRO mode / If steady alarm, substitution of the backup battery
		DATE AND TIME LOST	Loss of date and time	Set date and time in supervisor mode (supervisor key)
		COEFFICIENTS DEFAULT	Deviation between coefficient LF/HF greater than 0.5%	Modification of the low flow coefficient (K1)
		PROM DEFAULT	Loss of software or resident integrity	Substitution of the AFSEC+ electronic card
		RAM DEFAULT	Saved memory fault	Substitution of the AFSEC+ electronic card
		EEPROM MEMORY LOST	Loss of metrological configuration	Substitution of the AFSEC+ electronic card
		MEMORY OVER LOADED	SIM memory full	Substitution of the AFSEC+ electronic card

6 SET THE CMA TRONIQUE: SUPERVISOR MODE


CALIBRATION/ GAUGE
PRODUCT SETTINGS
CONFIGURATION
SETTINGS
TIME ADJUSTMENT
PRINTER SETTINGS
DSPGI (XX)
LANGUAGE (XX)
ICOM
See ANNEXE 1

6.1 Menu CALIBRATION/ GAUGE


CALIBRATION/ GAUGE
ENTER GAUGE VOLUME
LINEARISATION/FLOW

6.1.1 Sub-menu ENTER GAUGE VOLUME

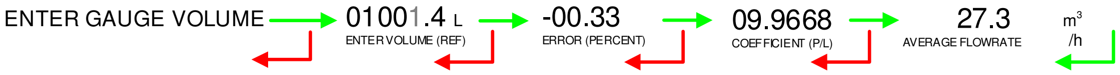
This menu is used to do a check of the accuracy of the measuring system. The MICROCOMPT+ calculates the measuring device error, the new corrected coefficient and the average flow.

First, make a discharge (USER mode) in high or low flow with predetermination of the volume to fill a tank prover or through a master meter.

Switch to SUPERVISOR mode, choose CALIBRATION/GAUGE>ENTER GAUGE VOLUME and validate.

Enter the volume read on the reference meter (tank prover or master meter) and validate. The MICROCOMPT+ displays the information that follows:

- The signed error in %
- The coefficient revised as a function of the error
- The average flow of the delivery.


ENTER GAUGE VOLUME
01001.4 L
ENTER VOLUME (REF)
-00.33
ERROR (PERCENT)
09.9668
COEFFICIENT (P/L)
27.3
AVERAGE FLOWRATE
m3/h

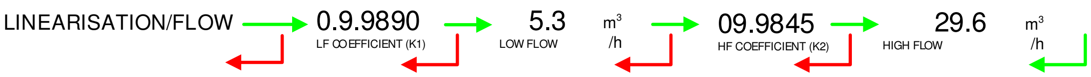
6.1.2 Sub-menu LINEARISATION/FLOW

This menu is used to make a flow-correction for two measuring points (at low and high flowrate). The MICROCOMPT+ stores flowrate and coefficient calibrated values in order to define both correction points: at low and high flowrate.

When you validate the menu LINEARISATION/FLOW, the calibrated values are displayed; you need to unseal the MICROCOMPT+ to switch in METROLOGICAL mode and enter the values via the EMA>METER COEFFICIENT menu.

To linearize the curve, two tests are necessary:

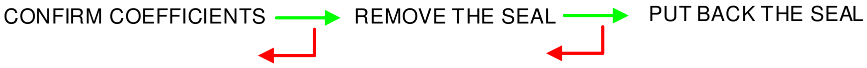
- Fill the gauge in high flow [flowmin3]≤high flow<[flowmax], and enter the volume read on the gauge (or use a master meter) in the menu CALIBRATION/GAUGE>ENTER GAUGE VOLUME as described above
- Fill the gauge in low flow [flowmin]≤flow<[flowmin2], and enter the volume read on the gauge in the menu CALIBRATION/GAUGE>ENTER GAUGE VOLUME
- Select CALIBRATION/GAUGE>LINEARISATION/FLOW and validate. It is then possible to see the coefficients and the flow rates data for the two tests carried out.



If the procedure failed, the MICROCOMPT+ can display the information that follows:

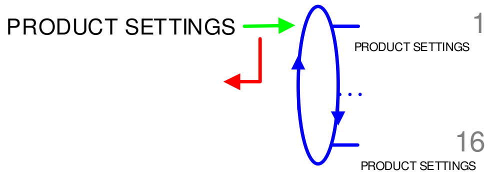
- LARGE GAP K1/K2: correction between both measuring points >0.5%
- FLOWS TOO CLOSE: High flowrate value is out of range. It needs to be: [flowmin´3]≤high flow<[flowmax].
- LO-FLOW OUT OF RANGE: Low flowrate value is out of range. It needs to be: [flowmin]≤low flow≤[flowmin´2]
- ONLY ONE GAUGE: One of the tests has not been done (at low or high flowrate).
- NO VALID GAUGE: Both tests have not been done (at low and high flowrate).

When the procedure is completed, the MICROCOMPT+ displays the sequence that follows:



The new coefficient and flow rates values are taken into account.

6.2 Menu PRODUCT SETTINGS



You can configure the parameters that follow for a maximum of 16 products:

NAME: Record or enter the name of the product. Default names of the first six products: FOD, FOD+, GO, GO+, GNR, GNR+

PROD TYPE: Select the product quality:

- **COLORATION**: Product with coloration or not
- **ADDITIVE**: Product with additive or not
- **10 PPM**:

UNIT PRICE: Select if the price includes taxes or not.

PRICE IN: Select the unit. This menu depends on the currency set in menu CONFIGURATION>CURRENCY

UNIT PRICE/DEFAULT: Record the default value of the price.

VAT RATE: Record the tax rate (in %).

ADDITIVE SETTINGS: If the CMA TRONIQUE controls an additive injection device, you must configure the parameters that follow:

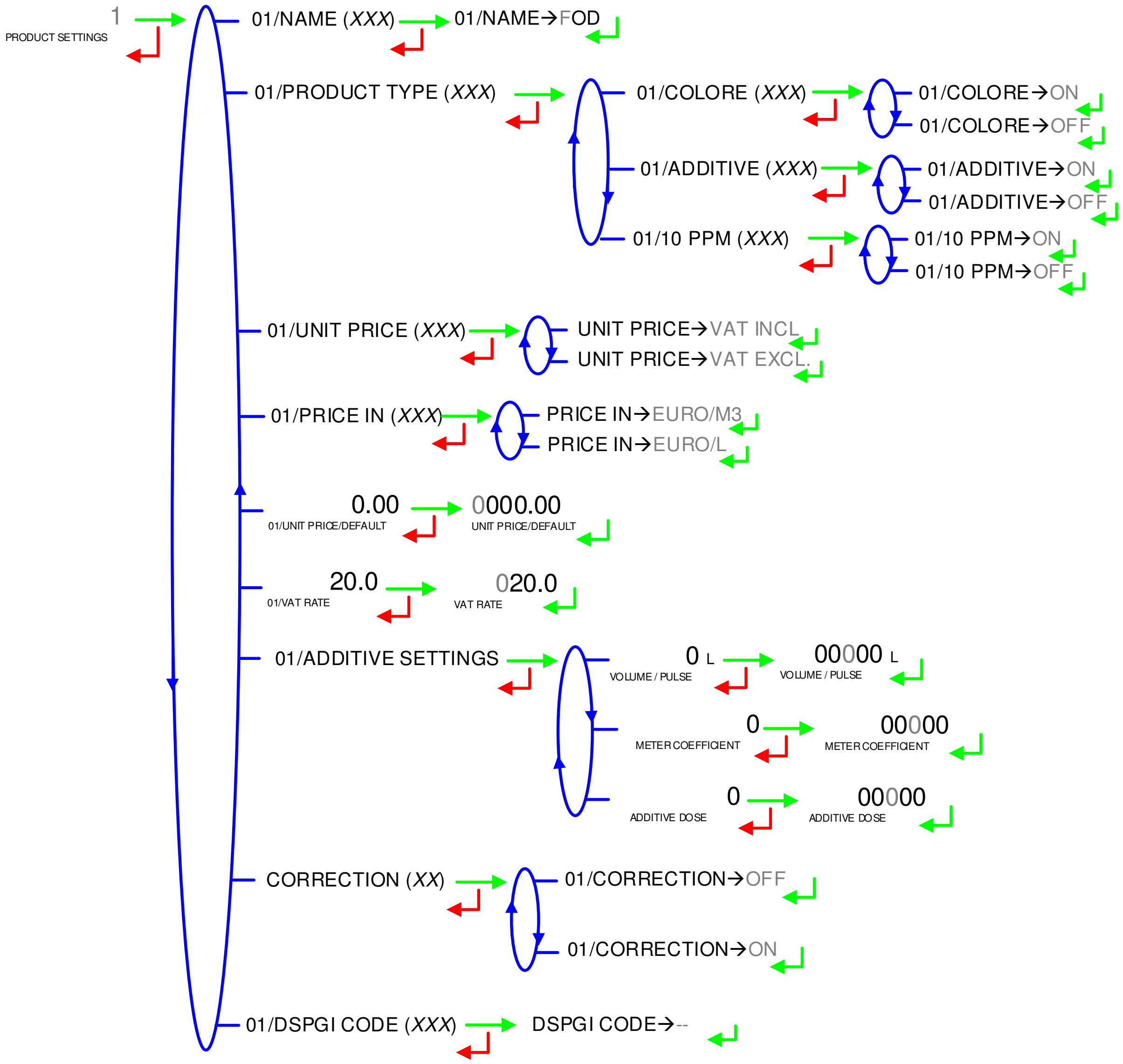
- **VOLUME/PULSE**: Record the volume of primary product. For example “00200”: the CMA TRONIQUE puts a dose of additive every 200 liters of primary product (minimum value: 10L).
- **METER COEFFICIENT**: Record the coefficient of the additive injection device.
- **ADDITIVE DOSE**: Record the volume of the additive dose in liter.

CORRECTION: Select if the correction is “ON” or “OFF” for the product (see METROLOGICAL>EMA>CORRECTION).

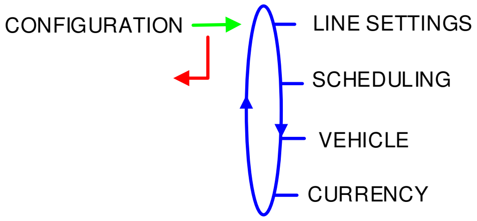
DSPGI CODE: Assign the DSPGI code to each product quality (with active option: SUPERVISOR>DSPGI→ON).

NOTE: One of the product must be assigned with the name EMPTY and the DSPGI code related to the position of the DSPGI device named ‘empty’.

Example for product 1:

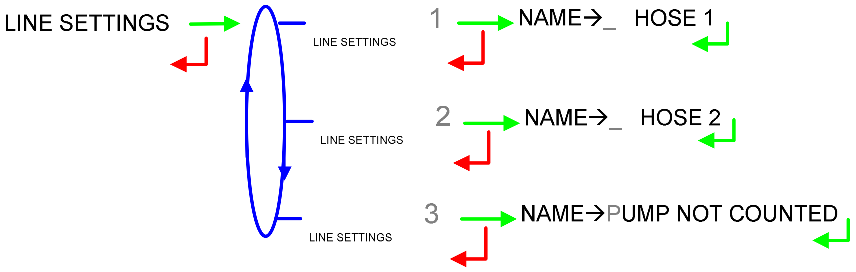

1
PRODUCT SETTINGS
01/NAME (XXX)
01/NAME→FOD
01/PRODUCT TYPE (XXX)
01/COLORE (XXX)
01/COLORE→ON
01/COLORE→OFF
01/ADDITIVE (XXX)
01/ADDITIVE→ON
01/ADDITIVE→OFF
01/10 PPM (XXX)
01/10 PPM→ON
01/10 PPM→OFF
01/UNIT PRICE (XXX)
UNIT PRICE→VAT INCL.
UNIT PRICE→VAT EXCL.
01/PRICE IN (XXX)
PRICE IN→EURO/M3
PRICE IN→EURO/L
0.00
01/UNIT PRICE/DEFAULT
0000.00
UNIT PRICE/DEFAULT
20.0
01/VAT RATE
020.0
VAT RATE
01/ADDITIVE SETTINGS
0 L
VOLUME / PULSE
00000 L
VOLUME / PULSE
0
METER COEFFICIENT
00000
METER COEFFICIENT
0
ADDITIVE DOSE
00000
ADDITIVE DOSE
CORRECTION (XX)
01/CORRECTION→OFF
01/CORRECTION→ON
01/DSPGI CODE (XXX)
DSPGI CODE→--

6.3 Menu CONFIGURATION


CONFIGURATION
LINE SETTINGS
SCHEDULING
VEHICLE
CURRENCY

6.3.1 Sub-Menu LINE SETTINGS

Definition of the distribution lines: acknowledge or enter the line name. Maximum number of characters: 11. The number of distribution ways depends on the hydraulic configuration of the installation (see METROLOGICAL mode: menu CONFIGURATION>DISTRIBUTION LINE).


LINE SETTINGS
LINE SETTINGS
1
NAME→_ HOSE 1
LINE SETTINGS
2
NAME→_ HOSE 2
LINE SETTINGS
3
NAME→PUMP NOT COUNTED

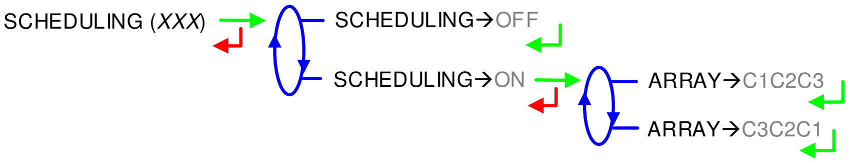
6.3.2 Sub-menu SCHEDULING

This menu is used to make the automatic scheduling of multi-compartment delivery. It is available if the CMA TRONIQUE controls at least two compartment flaps.

If scheduling is ON, select the array that will be proposed to the user:

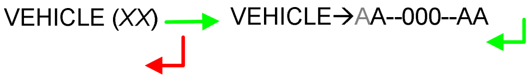
ARRAY→C1C2C3: The compartments are displayed in increasing order.

ARRAY→C3C2C1: The compartments are displayed in decreasing order.


SCHEDULING (XXX)
SCHEDULING→OFF
SCHEDULING→ON
ARRAY→C1C2C3
ARRAY→C3C2C1

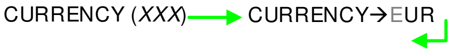
6.3.3 Sub-menu VEHICLE

Enter vehicle identification: set the vehicle registry number on which the measuring system is installed. This number will be printed on delivery tickets, invoices…

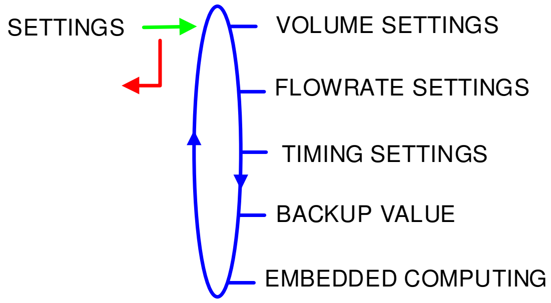

VEHICLE (XX)
VEHICLE→AA--000--AA

6.3.4 Sub-menu CURRENCY

Record the currency of the price. Set the three-character currency used to edit invoices (according to ISO 4217)


CURRENCY (XXX)
CURRENCY→EUR

6.4 Menu SETTINGS



6.4.1 Sub-menu VOLUME SETTINGS

You can set the volume parameters that follow: The volumes of purge COMPLETE PURGE and SHORT PURGE depend on the truck (manifold, hose...), they are set at commissioning and prevent from product pollution.

The other two parameters are:

END LOW FLOW VOLUME: Set the volume (in liters) delivered in low flowrate to finish the delivery

PURGE TYPE: Choose the purge operation (USER>PRODUCT MOVEMENTS→HOSE PURGE)

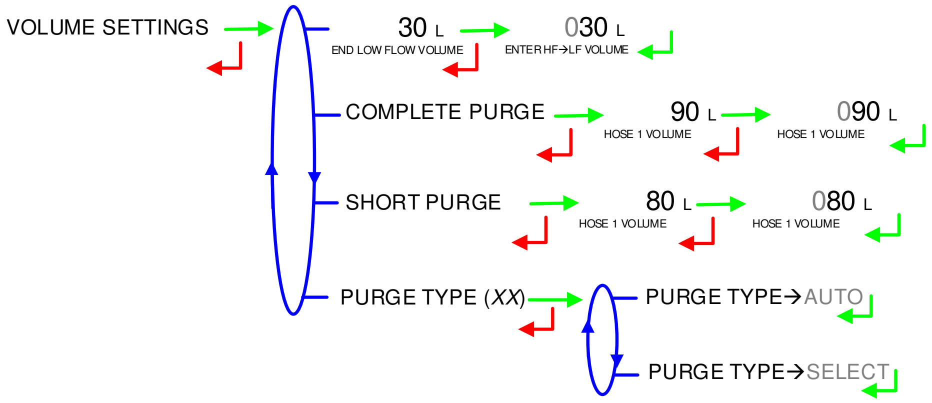
- **PURGE TYPE→AUTO**: If the product in the common pipe is the same as the product in the hose used for the purge, the purge is running in a single phase. Otherwise, the purge is running in two phases. This process is used to recycle the products in two different compartments (purge V_{hose}-V_{common} then purge V_{common}).
- **PURGE TYPE→SELECT**: If the product in the common pipe is the same as the product in the hose used for the purge, the purge is running in a single phase. Otherwise, the user can choose:
  - AUTOMATIC PURGE: The purge is running in two phases as described previously
  - LINE PURGE: The purge is running in a single phase. The products are loaded in a single compartment.

    This feature can cause product contamination.

6.4.1.1 One distribution way full hose

COMPLETE PURGE: Complete purge of the full hose (delivery of FOD then GO)

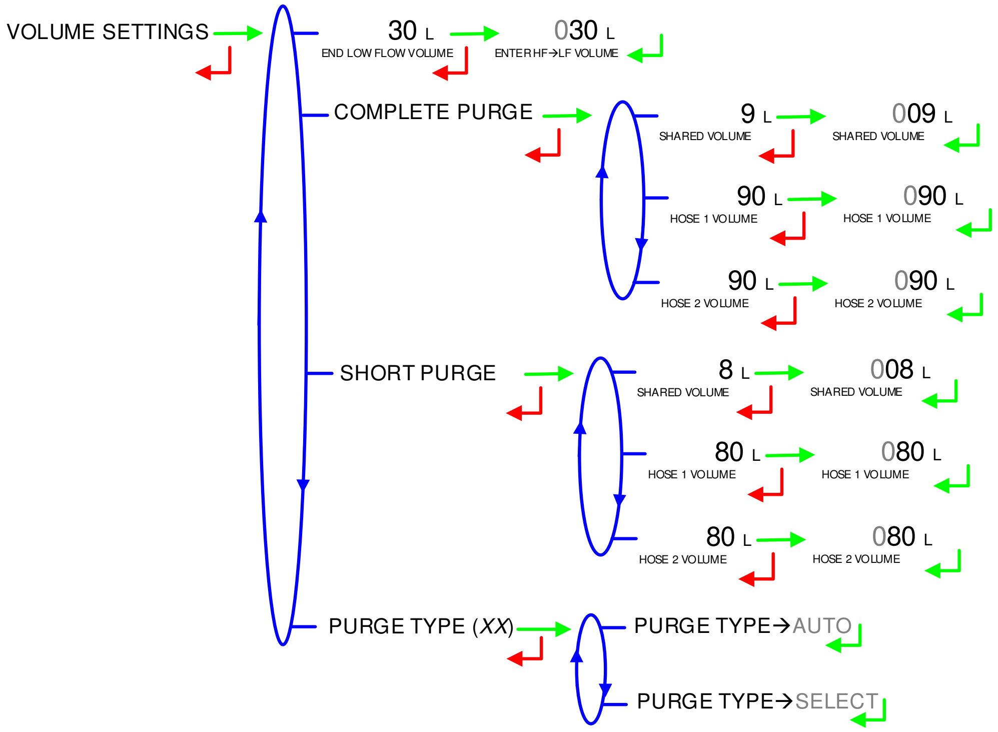
SHORT PURGE: To prevent from pollution of the line (delivery of GO then FOD). This volume must be between 80 and 95% of the complete purge volume.


VOLUME SETTINGS
30 L
END LOW FLOW VOLUME
030 L
ENTER HF→LF VOLUME
COMPLETE PURGE
90 L
HOSE 1 VOLUME
090 L
HOSE 1 VOLUME
SHORT PURGE
80 L
HOSE 1 VOLUME
080 L
HOSE 1 VOLUME
PURGE TYPE (XX)
PURGE TYPE→AUTO
PURGE TYPE→SELECT

6.4.1.2 Two delivery ways hoses 1 and 2 full

COMPLETE PURGE: This menu is used to set the complete purge volume: shared volume, hose 1 and then hose 2 (delivery of FOD the GO).

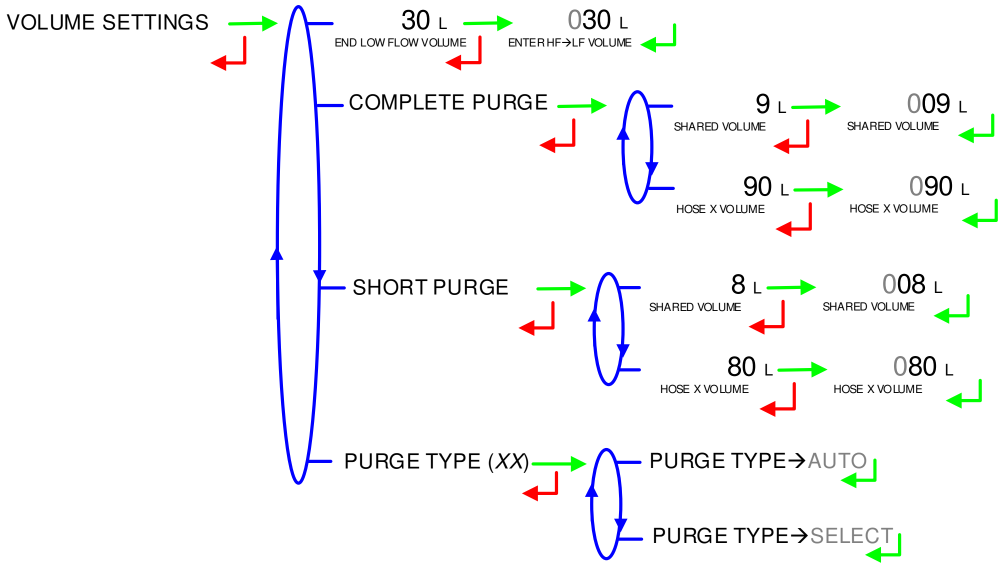
SHORT PURGE: This menu is used to set the short purge volume shared volume, hose 1 and then hose 2 (delivery of GO then FOD). This volume must be between 80 and 95% of the complete purge volume.


VOLUME SETTINGS
30 L
END LOW FLOW VOLUME
030 L
ENTER HF→LF VOLUME
COMPLETE PURGE
9 L
SHARED VOLUME
009 L
SHARED VOLUME
90 L
HOSE 1 VOLUME
090 L
HOSE 1 VOLUME
90 L
HOSE 2 VOLUME
090 L
HOSE 2 VOLUME
SHORT PURGE
8 L
SHARED VOLUME
008 L
SHARED VOLUME
80 L
HOSE 1 VOLUME
080 L
HOSE 1 VOLUME
80 L
HOSE 2 VOLUME
080 L
HOSE 2 VOLUME
PURGE TYPE (XX)
PURGE TYPE→AUTO
PURGE TYPE→SELECT

6.4.1.3 Two delivery ways one full hose and one empty hose

COMPLETE PURGE: This menu is used to set the complete purge volume: shared volume and full hose (delivery of FOD the GO).

SHORT PURGE: This menu is used to set the short purge volume shared volume and full hose (delivery of GO then FOD). This volume must be between 80 and 95% of the complete purge volume.

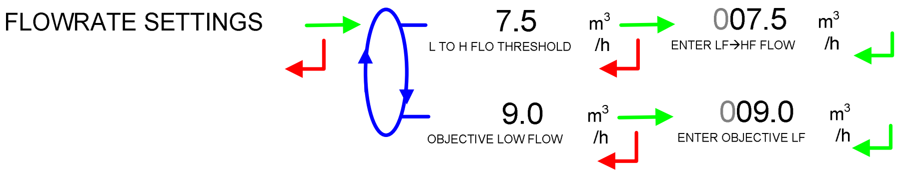

VOLUME SETTINGS
30 L
END LOW FLOW VOLUME
030 L
ENTER HF→LF VOLUME
COMPLETE PURGE
9 L
SHARED VOLUME
009 L
SHARED VOLUME
90 L
HOSE X VOLUME
090 L
HOSE X VOLUME
SHORT PURGE
8 L
SHARED VOLUME
008 L
SHARED VOLUME
80 L
HOSE X VOLUME
080 L
HOSE X VOLUME
PURGE TYPE (XX)
PURGE TYPE→AUTO
PURGE TYPE→SELECT

6.4.2 Sub-menu FLOWRATE SETTINGS

You can set the flowrate parameters that follow:

L TO H FLO THRESHOLD: Set the flowrate beyond which the MICROCOMPT (running in low flowrate) controls the high flowrate.

OBJECTIVE LOW FLOW: Set the objective flowrate to regulate the low flowrate. Enter 80 if the measuring system regulates the flowrate with an ALL or NOTHING device.


FLOWRATE SETTINGS
7.5
L TO H FLO THRESHOLD
m³/h
007.5
ENTER LF→HF FLOW
m³/h
9.0
OBJECTIVE LOW FLOW
m³/h
009.0
ENTER OBJECTIVE LF
m³/h

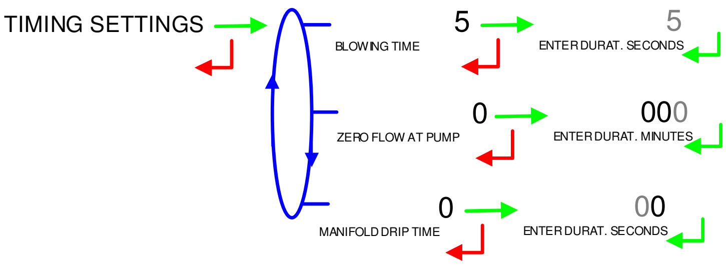
6.4.3 Sub-menu TIMING SETTINGS

This menu allows setting the duration parameters:

BLOWING TIME: Set the blowing time (in seconds).

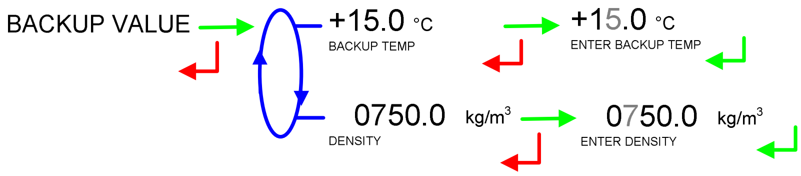
ZERO FLOW AT PUMP: Enter the maximum time before starting of flow (in seconds). Recorded on the parameters printing as: Flow timing

MANIFOLD DRIP TIME: Set the manifold drip time (in seconds).


TIMING SETTINGS
BLOWING TIME
5
5
ENTER DURAT. SECONDS
ZERO FLOW AT PUMP
0
000
ENTER DURAT. MINUTES
MANIFOLD DRIP TIME
0
00
ENTER DURAT. SECONDS

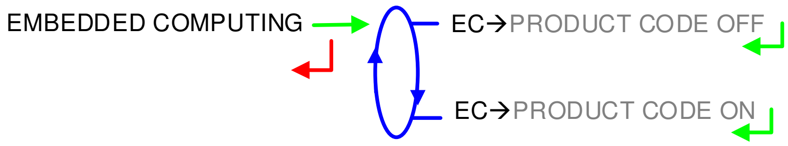
6.4.4 Sub-menu BACKUP VALUE

This menu allows setting the backup values for temperature and density. This menu is available when the conversion is ON in METROLOGICAL mode: CONFIGURATION>CONVERSION→ON.


BACKUP VALUE
+15.0 °C
BACKUP TEMP
+15.0 °C
ENTER BACKUP TEMP
0750.0 kg/m³
DENSITY
0750.0 kg/m³
ENTER DENSITY

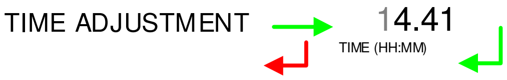
6.4.5 Sub-menu EMBEDDED COMPUTING

This menu allows activating or not the control of the product codes by the embedded computing. This menu is available with active option: EMBEDDED COMPUTING>PRINTER (XXX)>EC→WITH PRINTER.


EMBEDDED COMPUTING
EC→PRODUCT CODE OFF
EC→PRODUCT CODE ON

6.5 Menu TIME ADJUSTMENT

Date and time are set in METROLOGICAL mode. You can adjust time (±2h) one time a day. Use French format, for example: 14.41 means 2.41 pm.


TIME ADJUSTMENT
14.41
TIME (HH:MM)

6.6 Menu PRINTER SETTINGS

This menu is used to configure printing options.

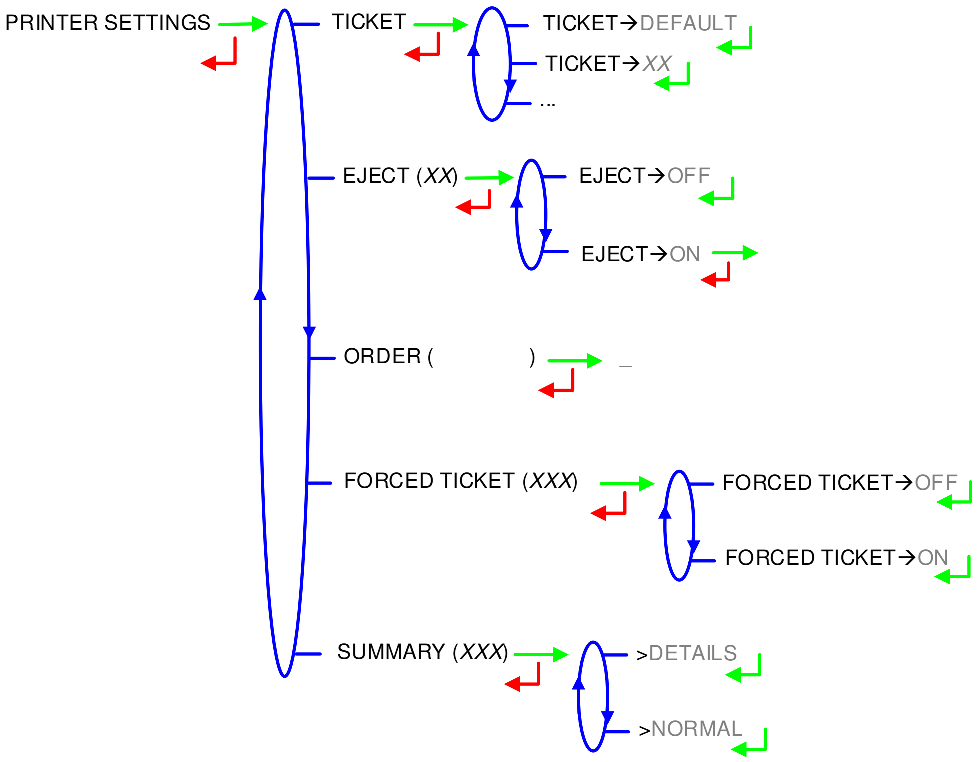
TICKET: Choose the ticket format for printing the delivery ticket.

EJECT: Choose to eject or not the sheet of paper at the end of printing (allowing the embedded computing to print its part). In case of printing default, use the 'RELEASE' button of the printer device to eject the sheet manually.

ORDER: Set the order for payment with a maximum of 20 characters. If you record this field, you can print the invoice and the payment at the end of the measuring operation. Set the order for payment with a maximum of 20 characters. You can print the delivery ticket later with the menu: DRIVER>PRINT>DELIVERY TICKET.

FORCED TICKET: At the end of delivery the printing of the delivery ticket or invoice printing is proposed. It is possible to force the printing by choosing FORCED TICKET→ON.

SUMMARY: Choose to make appear or not details of the deliveries when printing the summary.

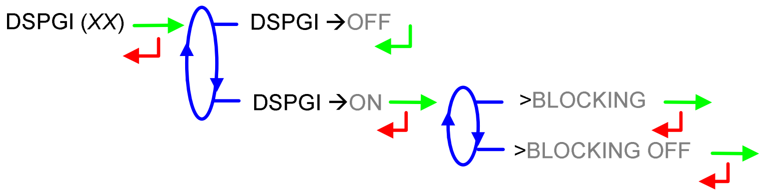

PRINTER SETTINGS
TICKET
TICKET→DEFAULT
TICKET→XX
...
EJECT (XX)
EJECT→OFF
EJECT→ON
ORDER ( )
_
FORCED TICKET (XXX)
FORCED TICKET→OFF
FORCED TICKET→ON
SUMMARY (XXX)
>DETAILS
>NORMAL

6.7 Menu DSPGI

This menu is used when the MICROCOMPT+ is connected to a DSPGI device.

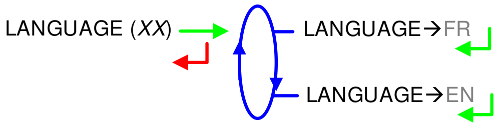
DSPGI→ON: The option is activated. The product name is given by the DSPGI device to the MICROCOMPT+ which will display it after the selection of the compartment at the beginning of a DELIVERY

- **BLOCKING:** Make this choice to make any mixture of product impossible. Requires to complete the hose purge before starting a new delivery.
- **BLOCKING OFF:** Make this choice to allow the user to discharge a product different from those in the pipe. Allows to start a new delivery regardless of whether the purge is completed or not.


DSPGI (XX)
DSPGI →OFF
DSPGI →ON
>BLOCKING
>BLOCKING OFF

6.8 Menu LANGUAGE

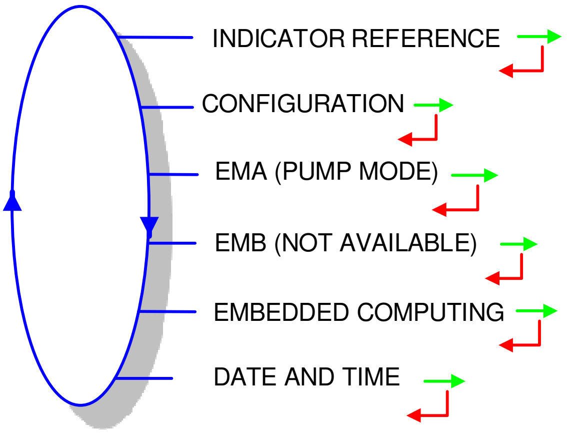
Select the display language. This menu is available if a translation catalogue is uploaded in the MICROCOMPT+.


LANGUAGE (XX)
LANGUAGE→FR
LANGUAGE→EN

6.9 Menu ICOM MENUS

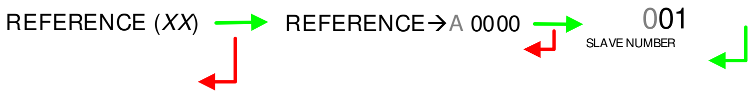
See the ANNEX 1: Features of the connected MICROCOMPT+.

7 CONFIGURE THE CMA TRONIQUE: METROLOGICAL MODE

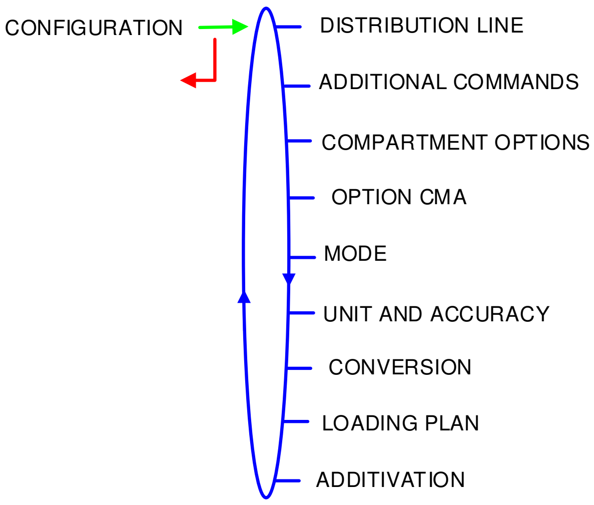

INDICATOR REFERENCE
CONFIGURATION
EMA (PUMP MODE)
EMB (NOT AVAILABLE)
EMBEDDED COMPUTING
DATE AND TIME

7.1 Menu INDICATOR REFERENCE

Record the MICROCOMPT+ serial number and then the slave number. It is useful for commissioning and maintenance operations with the µConfig tool.


REFERENCE (XX)
REFERENCE→A 0000
001
SLAVE NUMBER

7.2 Menu CONFIGURATION


CONFIGURATION
DISTRIBUTION LINE
ADDITIONAL COMMANDS
COMPARTMENT OPTIONS
OPTION CMA
MODE
UNIT AND ACCURACY
CONVERSION
LOADING PLAN
ADDITIVATION

7.2.1 Sub-menu DISTRIBUTION LINE

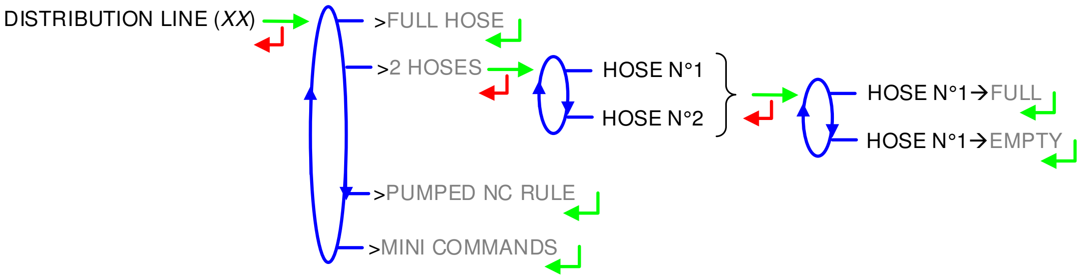
This menu allows the distribution ways:

FULL HOSE: Full hose with authorization valve operation

2 HOSES: Operation with two hoses. Each may be full or empty hose

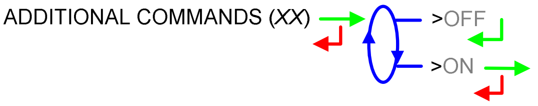
PUMPED NC RULE: Operation with distribution ways, upstream and downstream the meter

MINI COMMANDS: Operation with power take-off and clutch as an authorization device. Available for old versions of the calculator-indicator.


DISTRIBUTION LINE (XX)
>FULL HOSE
>2 HOSES
HOSE N°1
HOSE N°2
HOSE N°1→FULL
HOSE N°1→EMPTY
>PUMPED NC RULE
>MINI COMMANDS

7.2.2 Sub-menu ADDITIONAL COMMANDS

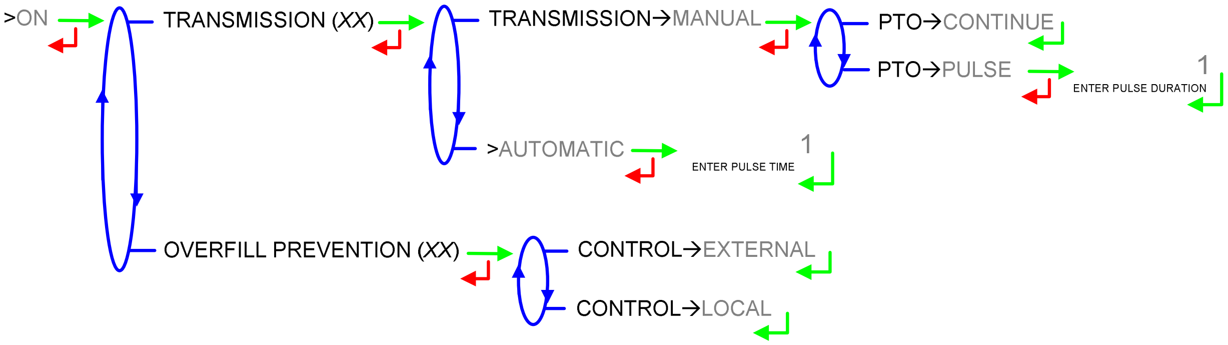
Operation with or without a remote control.


ADDITIONAL COMMANDS (XX)
>OFF
>ON

If additional commands is active, this menu allows to choose the transmission type. It is used to take into account the engine start and stop, clutching and power take off.

TRANSMISSION: Choose the type of transmission (automatic or manual) and the type of command: non-stop command or by pulse

OVERFILL PREVENTION: Control of the overfill protection.


>ON
TRANSMISSION (XX)
TRANSMISSION→MANUAL
PTO→CONTINUE
PTO→PULSE
1
ENTER PULSE DURATION
>AUTOMATIC
1
ENTER PULSE TIME
OVERFILL PREVENTION (XX)
CONTROL→EXTERNAL
CONTROL→LOCAL

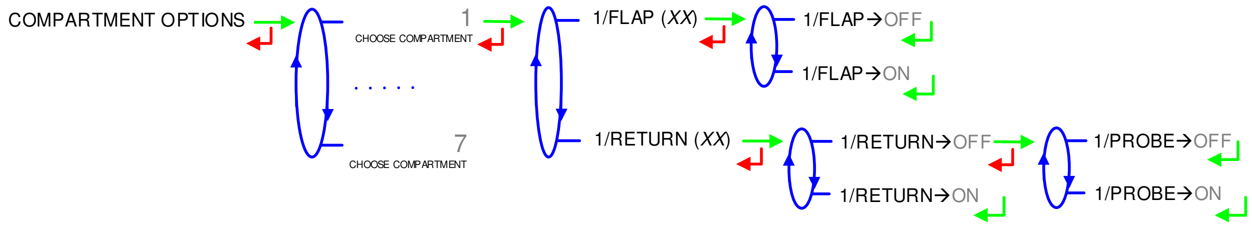
7.2.3 Sub-menu COMPARTMENT OPTIONS

This menu is used to set the configuration of up to nine compartments and nine product return:

FLAP: Operation with or without flap control

RETURN: Operation with or without product return

PROBE: Overfill protection probe of the compartment


COMPARTMENT OPTIONS
1
CHOOSE COMPARTMENT
. . . . .
7
CHOOSE COMPARTMENT
1/FLAP (XX)
1/FLAP→OFF
1/FLAP→ON
1/RETURN (XX)
1/RETURN→OFF
1/RETURN→ON
1/PROBE→OFF
1/PROBE→ON

7.2.4 Sub-menu CMA OPTION

Specific operating mode of a CMA TRONIQUE. Choose **CMA OPTION→ON**

LOW FLOW HEIGHT: Geometric height to command low flow (mm)

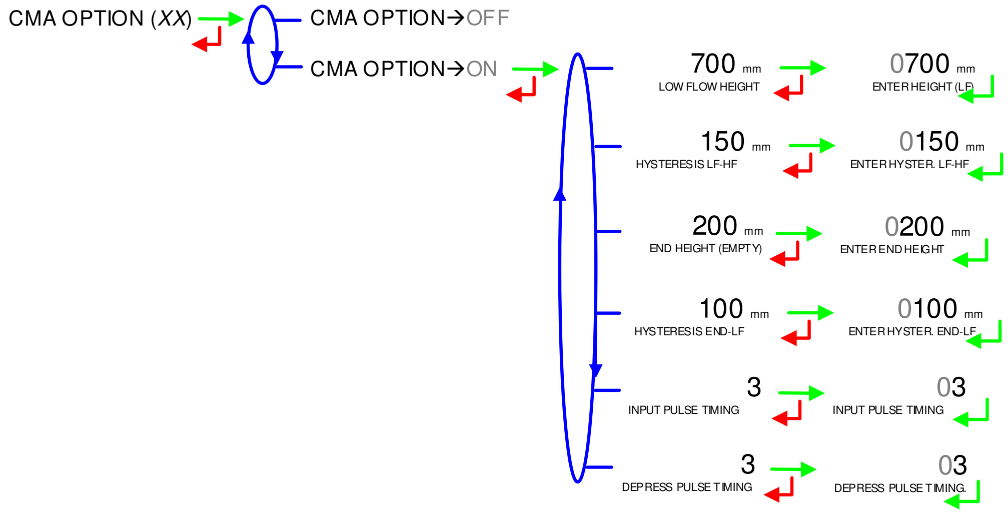
HYSTERESIS LF-HF: At the beginning of a measurement or following an intermediate stop. Before switching again from low to high flowrate, the calculator-indicator checks both parameters LOW FLOW HEIGHT and HYSTERIS LF-HF

END HEIGHT: Height for which the compartment is considered as empty (mm)

HYSTERESIS END-LF: Always applied. To allow pouring, the product height shall be equal to or greater than the sum of parameters END HEIGHT and HYSTERIS END-LF

INPUT PULSE TIMING: Set the increment of air admission to bypass. Integer number of 32ms, ranging between 1 and 9

DEPRESS PULSE TIMING: Set the increment of air exhaust to bypass. Integer number of 32ms, ranging between 1 and 9.

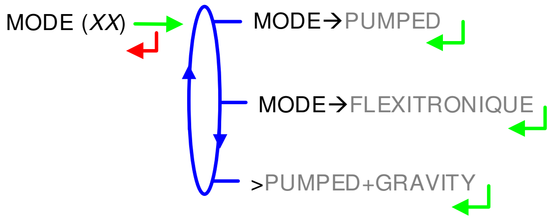

CMA OPTION (XX)
CMA OPTION→OFF
CMA OPTION→ON
700 mm
LOW FLOW HEIGHT
0700 mm
ENTER HEIGHT (LF)
150 mm
HYSTERESIS LF-HF
0150 mm
ENTER HYSTER. LF-HF
200 mm
END HEIGHT (EMPTY)
0200 mm
ENTER END HEIGHT
100 mm
HYSTERESIS END-LF
0100 mm
ENTER HYSTER. END-LF
3
INPUT PULSE TIMING
03
INPUT PULSE TIMING
3
DEPRESS PULSE TIMING
03
DEPRESS PULSE TIMING.

7.2.5 Sub-menu MODE

MODE→PUMPED: Operation for pumped distribution

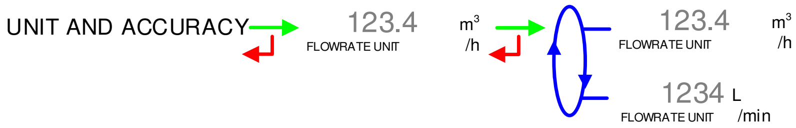
MODE→FLEXITRONIQUE: Operation with FLEXITRONIQUE measuring system

>PUMPED+GRAVITY: Operation for pumped counted distribution and gravity not counted distribution.


MODE (XX)
MODE→PUMPED
MODE→FLEXITRONIQUE
>PUMPED+GRAVITY

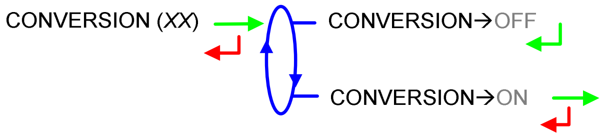
7.2.6 Sub-menu UNIT AND ACCURACY

Choose the unit of the flow rate that will be displayed and printed.


UNIT AND ACCURACY
123.4
FLOWRATE UNIT
m³
/h
123.4
FLOWRATE UNIT
m³
/h
1234
L
FLOWRATE UNIT
/min

7.2.7 Sub-menu CONVERSION

The CMA TRONIQUE can operate with conversion or without conversion.


CONVERSION (XX)
CONVERSION→OFF
CONVERSION→ON

When conversion is active, the following parameters must be set:

MAIN DISPLAY: Select the type for displayed quantity

- **VM**: volume in metering conditions
- **VB**: volume converted to the reference temperature

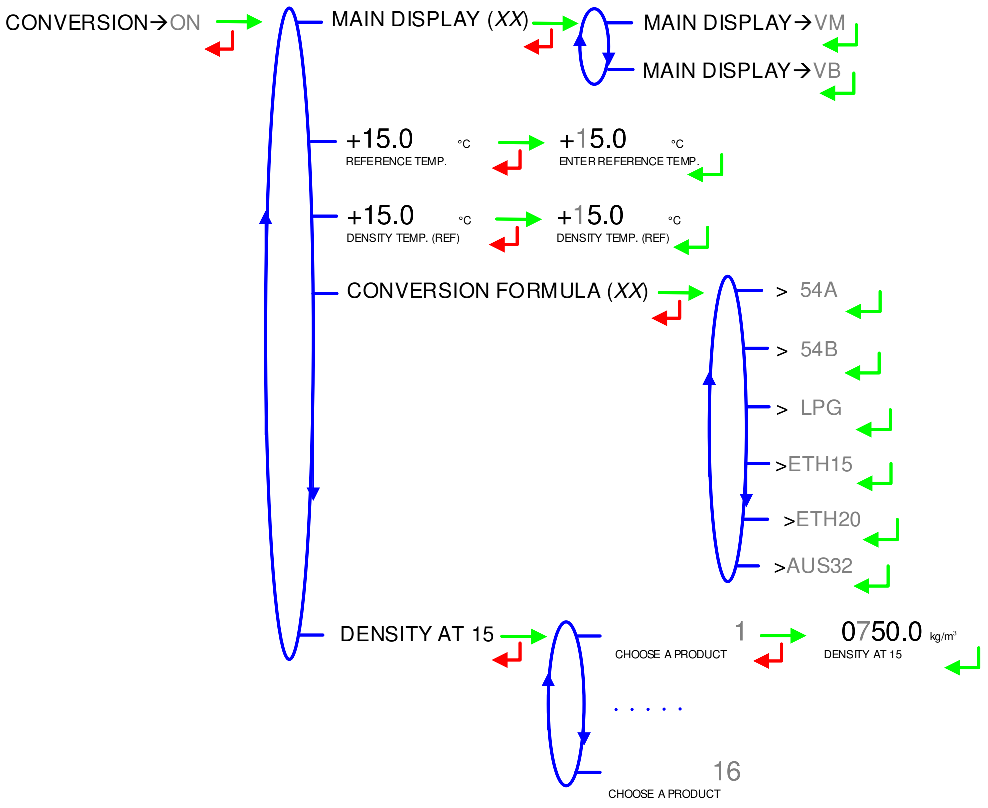
REFERENCE TEMP.: Record the reference temperature for conversion. Default value: 15°C for the most common conversion.

DENSITY TEMP (REF): Record the reference temperature for set up densities. Default value: 15°C for density at 15°C (MV15).

CONVERSION FORMULA: The choice of the conversion formula causes an implicit definition of valid density and temperature ranges to guarantee the conversion result. See the table below to select the conversion table that corresponds to type of fuel used:

Product	Conversion formula
Crude products	54A
Refined products	54B
LPG and bitumen	LPG
Ethanol at 15°C	ETH15
Ethanol at 20°C	ETH20
Ad-Blue	AUS32

DENSITY AT 15: For each product, record the product density at 15°C in Kg/m^3.

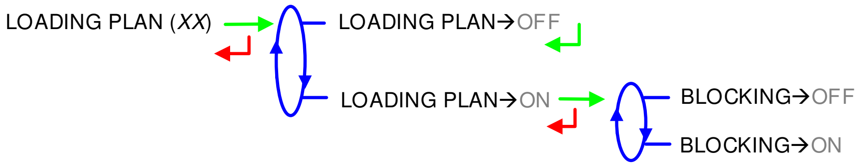

CONVERSION→ON
MAIN DISPLAY (XX)
MAIN DISPLAY→VM
MAIN DISPLAY→VB
+15.0 °C
REFERENCE TEMP.
+15.0 °C
ENTER REFERENCE TEMP.
+15.0 °C
DENSITY TEMP. (REF)
+15.0 °C
DENSITY TEMP. (REF)
CONVERSION FORMULA (XX)
> 54A
> 54B
> LPG
>ETH15
>ETH20
>AUS32
DENSITY AT 15
1
CHOOSE A PRODUCT
0750.0 kg/m³
DENSITY AT 15
. . . . . .
16
CHOOSE A PRODUCT

7.2.8 Sub-menu LOADING PLAN

The CMA TRONIQUE can operate with loading plan or without loading plan.

LOADING PLAN→ON: When the function is active, a specific menu allows the user to determine the product quality and quantity for each compartment.

BLOCKING: When a compartment is empty, it won’t be available for a delivery until the user enters a new product quality via the menu LOADING PLAN of the USER mode.

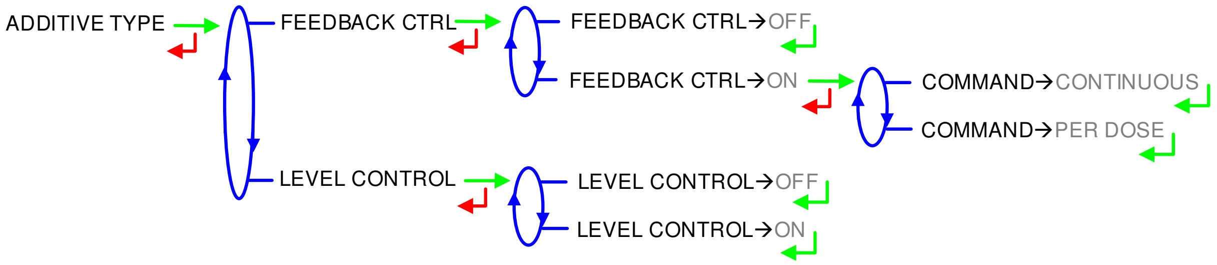

LOADING PLAN (XX)
LOADING PLAN→OFF
LOADING PLAN→ON
BLOCKING→OFF
BLOCKING→ON

7.2.9 Sub-menu ADDITIVE TYPE

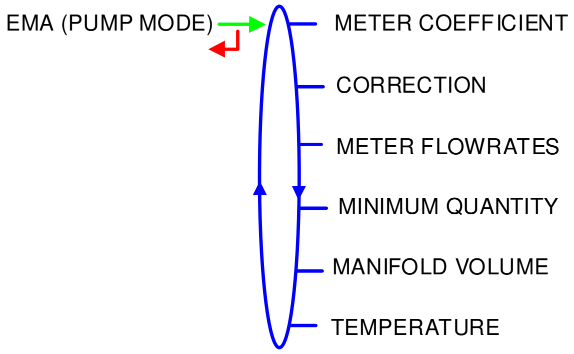
FEEDBACK CTRL: If this function is ON, the CMA TRONIQUE makes sure that the injector piston moves.

- **COMMAND→CONTINUOUS**: The control is done throughout the measurement
- **COMMAND→PER DOSE**: The control is done each time a dose is injected

LEVEL CONTROL: If this function is ON, the CMA TRONIQUE controls the low level of the additive tank. Low level triggers an alarm.


ADDITIVE TYPE
FEEDBACK CTRL
FEEDBACK CTRL→OFF
FEEDBACK CTRL→ON
COMMAND→CONTINUOUS
COMMAND→PER DOSE
LEVEL CONTROL
LEVEL CONTROL→OFF
LEVEL CONTROL→ON

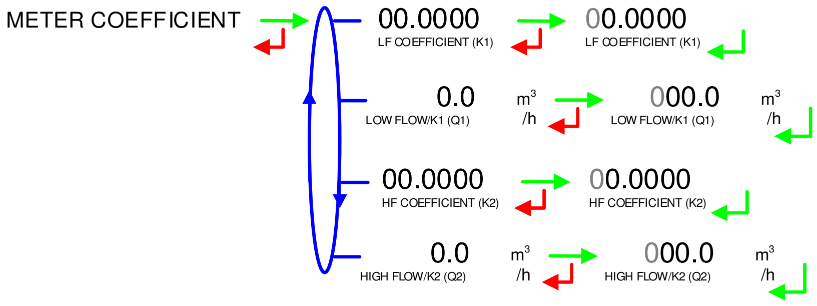
7.3 Menu measuring system EMA (PUMP MODE)


EMA (PUMP MODE)
METER COEFFICIENT
CORRECTION
METER FLOWRATES
MINIMUM QUANTITY
MANIFOLD VOLUME
TEMPERATURE

7.3.1 Sub-menu METER COEFFICIENT

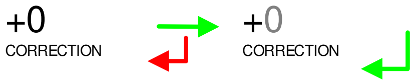
Enter the coefficient of the measuring system meter (pulses/liter).

LF COEFFICIENT (K1): Coefficient for low flow (pulses/liter)
LOW FLOW/K1 (Q1): Low flow reference (m^3/h)
HF COEFFICIENT (K2): Coefficient for high flow (pulses/liter)
HIGH FLOW/K2 (Q2): High flow reference (m^3/h)


METER COEFFICIENT
00.0000
LF COEFFICIENT (K1)
00.0000
LF COEFFICIENT (K1)
0.0
LOW FLOW/K1 (Q1)
m³/h
000.0
LOW FLOW/K1 (Q1)
m³/h
00.0000
HF COEFFICIENT (K2)
00.0000
HF COEFFICIENT (K2)
0.0
HIGH FLOW/K2 (Q2)
m³/h
000.0
HIGH FLOW/K2 (Q2)
m³/h

7.3.2 Sub-menu CORRECTION

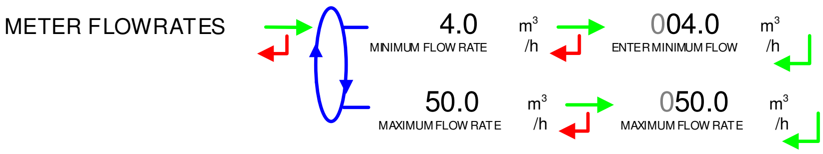
Set the correction factor per thousand (‰) of the measuring system for a measurement with low viscosity products. See the marking of the turbine meter or see the ALMA calibration certificate. Refer to the verification manual MV5010 for any further information.


+0
CORRECTION
+0
CORRECTION

7.3.3 Sub-menu METER FLOWRATES

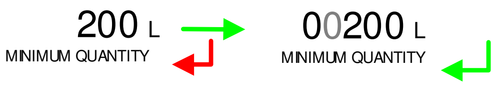
MINIMUM FLOWRATE: Set the metrological minimum flowrate of the measuring system in m³/h or l/min, depending on the configured flow unit

MAXIMUM FLOWRATE: Set the metrological maximum flowrate of the measuring system in m³/h or l/min, depending on the configured flow unit


METER FLOWRATES
4.0
MINIMUM FLOW RATE
m³/h
004.0
ENTER MINIMUM FLOW
m³/h
50.0
MAXIMUM FLOW RATE
m³/h
050.0
MAXIMUM FLOW RATE
m³/h

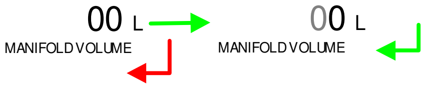
7.3.4 Sub-menu MINIMUM QUANTITY

Record the minimum quantity of the CMA TRONIQUE in liters. This value is given by the association of the turbine meter, the MICROCOMPT+ and other parts of the measuring system.


200 L
MINIMUM QUANTITY
00200 L
MINIMUM QUANTITY

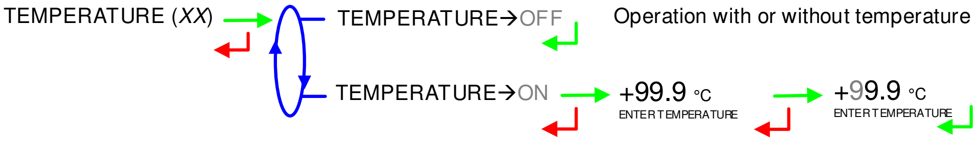
7.3.5 Sub-menu MANIFOLD VOLUME

This menu is used to set the manifold volume (in liters) that guarantees the emptiness of a compartment. If this volume is set to zero, there's no manifold drain, the flap is directly opened. Maximum value: 29 liters


00 L
MANIFOLD VOLUME
00 L
MANIFOLD VOLUME

7.3.6 Sub-menu TEMPERATURE

This menu is an option. It is used to calibrate the temperature into the MICROCOMPT+. See maintenance sheet FM 8510 for temperature calibration.

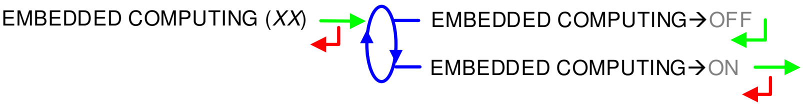

TEMPERATURE (XX)
TEMPERATURE→OFF
TEMPERATURE→ON
+99.9 °C
ENTER TEMPERATURE
+99.9 °C
ENTER TEMPERATURE

Operation with or without temperature

Calibration of the temperature,

7.4 Menu EMBEDDED COMPUTING

Operation with or without a embedded computing (EC).


EMBEDDED COMPUTING (XX)
EMBEDDED COMPUTING→OFF
EMBEDDED COMPUTING→ON

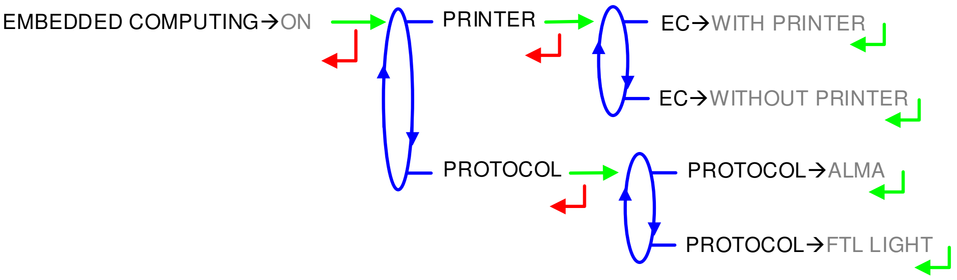
Operating with embedded computing allows to choose the printing and the communication protocol:

PRINTER:

- **EC→WITH PRINTER:** The delivery ticket and the invoice must be printed via the embedded computing. They cannot be printed via the MICROCOMPT+ device.
- **EC→WITHOUT PRINTER:** The delivery ticket and the invoice can be printed via the MICROCOMPT+ device

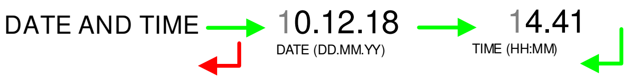
PROTOCOL: Select the communication protocol of the embedded computing

- **PROTOCOL→ALMA:** Embedded computing with protocol ALMA v1.10
- **PROTOCOL→FTL LIGHT:** Embedded computing with protocol FTL Light (a limited version of the Fuel Truck Link protocol).


EMBEDDED COMPUTING→ON
PRINTER
EC→WITH PRINTER
EC→WITHOUT PRINTER
PROTOCOL
PROTOCOL→ALMA
PROTOCOL→FTL LIGHT

7.5 Menu DATE AND TIME

Record the date. Then record the time at French format and validate (e.g. 14.41 means 2.41 pm).


DATE AND TIME
10.12.18
DATE (DD.MM.YY)
14.41
TIME (HH:MM)

ANNEX 1: FEATURES OF THE CONNECTED MICROCOMPT+

1. GENERAL PRESENTATION

The connected functions of the MICROCOMPT+ are:

- ⇨ Incoming data flow processing
- ⇨ Management of the communication modules below
- ⇨ Updating of the app, tickets and language catalogues as far as the MICROCOMPT+ has been switched into METROLOGICAL mode.

Communication modules are listed below:

- ⇨ Wi-Fi (IEEE 802.11 b/g/n (2.4GHz) **OR** Bluetooth Low Energy 4.1
- ⇨ GSM (2G, 3G, 4G) / GPS
- ⇨ RFID NFC allowing the reading of an RFID key to switch in SUPERVISOR mode
- ⇨ Ethernet Base 10/100

The wireless connection enables the MICROCOMPT+ to communicate with an embedded computer or with a PC/tablet/portable device, in hazardous area (ATEX).

The GSM module associated to the GPS navigation system allows the device tracking. Two antennas are located outside the MICROCOMPT box.

Three tricolor LED on the MICROCOMPT+ front face are showing the wireless connection status as described in the table below:

Left-hand LED: ***Wi-Fi or Bluetooth***	***Middle LED:*** ***GSM / GPS***	***Right-hand LED:*** ***NFC (RFID)***
Steady light: • Blue* / Cyan*: Connection OK • Red: Waiting for initialization *Flashing light:* • Blue / Cyan slow flashing: Waiting for connection • Blue / Cyan rapid flashing: Communication in progress • Red: Initialization error	*Steady light:* • Purple: Waiting for internet connection • White: Internet connection OK • Red: Waiting for initialization *Flashing light:* • White: Transfer in progress • Red every 2 seconds: Coordinates not found • Green every 2 seconds: GPS OK • Red: Initialization error	*Flashing light:* • Green: Authentication of the RFID key OK • Red: Authentication error of the RFID key • Green/ Red: RFID key not accepted, but authentication is ok

(*): Blue: Bluetooth; Cyan: Wi-Fi

2. MENU SUPERVISOR>ICOM

User RFID key – Blue – Level 1

This key is associated to a single MICROCOMPT+. It is used to switch into SUPERVISOR mode to access the ICOM menu.

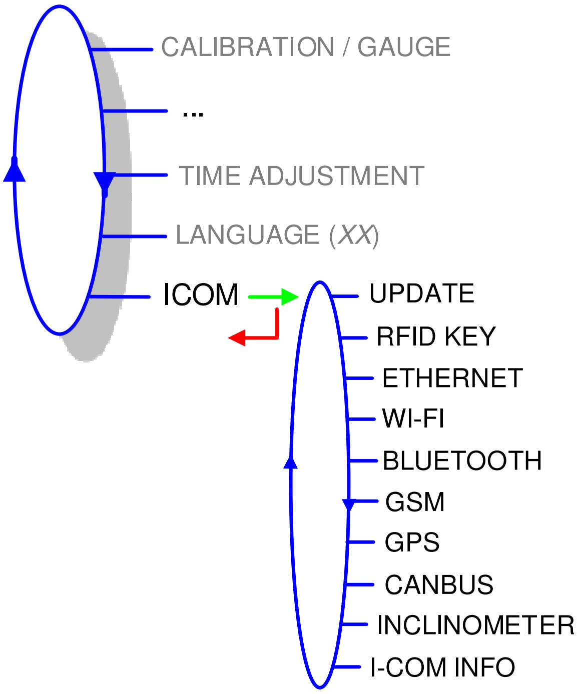
Manager RFID key – Green – Level 2

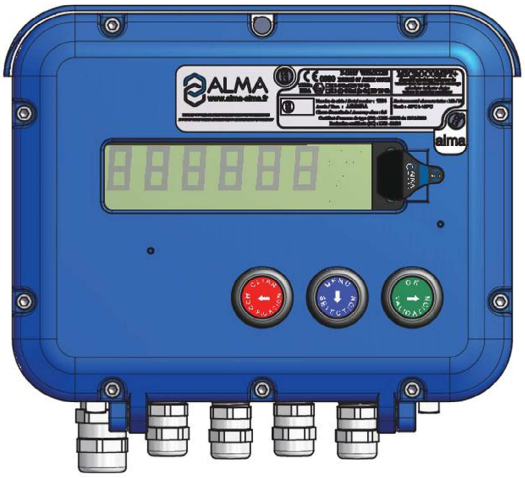
Many of these keys can be associated to a single MICROCOMPT+. Likewise, a single key can be associated to one or many MICROCOMPT+.

RFID key is used to switch into SUPERVISOR mode to access the ICOM menu. Specific menus are available that allow the manager to configure the MICROCOMPT+ for its communication with the external environment. The specific menus are indicated by green boxes within the document.

Maintenance RFID key – Red – Level 3

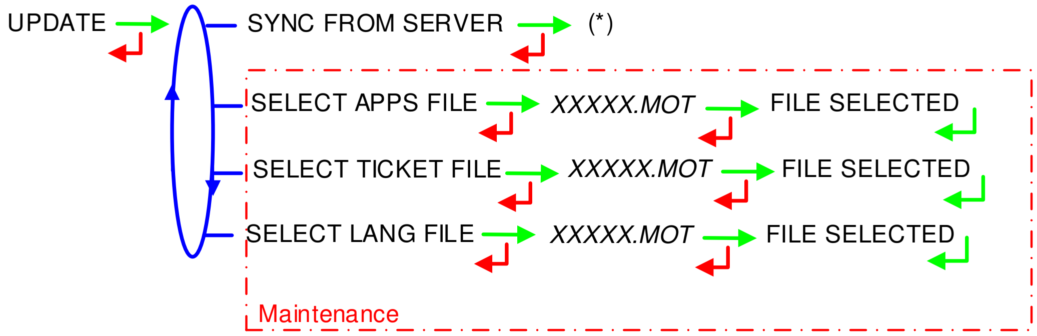
This key doesn't need to be associated to the MICROCOMPT+. It is used to switch into SUPERVISOR mode to access the ICOM menu. Specific menus are available that allow the maintenance operator to change parameters. The specific menus are indicated by red boxes within the document.


CALIBRATION / GAUGE
...
TIME ADJUSTMENT
LANGUAGE (XX)
ICOM
UPDATE
RFID KEY
ETHERNET
WI-FI
BLUETOOTH
GSM
GPS
CANBUS
INCLINOMETER
I-COM INFO



2.1. Menu UPDATE

The MICROCOMPT+ connects to the server via Wi-Fi, Bluetooth, Ethernet or GSM.


UPDATE
SYNC FROM SERVER
(*)
SELECT APPS FILE
XXXXX.MOT
FILE SELECTED
SELECT TICKET FILE
XXXXX.MOT
FILE SELECTED
SELECT LANG FILE
XXXXX.MOT
FILE SELECTED
Maintenance

(*) IN PROGRESS / xx NEW UPDATE FOUND / ANY UPDATE FOUND

SYNC FROM SERVER: Synchronization of the updated files from ALMA server. If an update of the functions or the communication configuration is uploaded, it will be applied on the next reboot of the MICROCOMPT+.

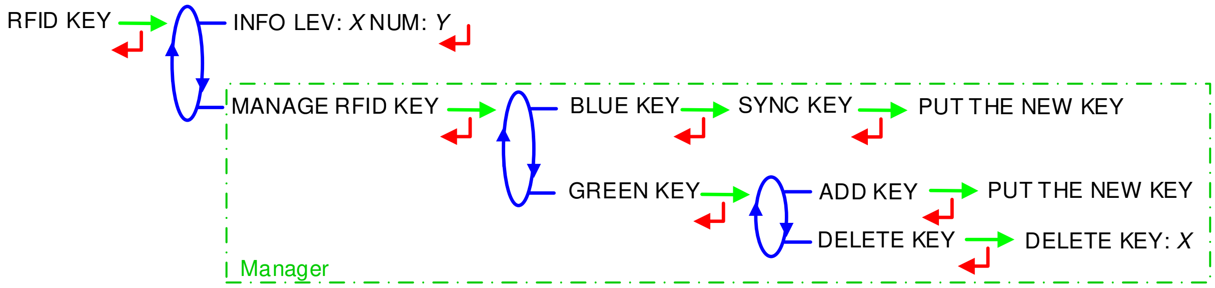
SELECT APPS FILE(*) – *Access restricted to the Maintenance*: Used to display and select the version(s) of the application available on the SD card. NO FILE is displayed if there's no file to download.

SELECT TICKET FILE(*) – *Access restricted to the Maintenance*: NO FILE is displayed if there's no file to download.

SELECT LANG FILE(*) – *Access restricted to the Maintenance*: NO FILE is displayed if there's no file to download.

(*) Selected files are automatically downloaded onto the AFSEC board when switching the MICROCOMPT+ into 'Resident' mode. See the operating manual MU 7037 (§2).

2.2. Menu RFID KEY


RFID KEY
INFO LEV: X NUM: Y
MANAGE RFID KEY
BLUE KEY
SYNC KEY
PUT THE NEW KEY
GREEN KEY
ADD KEY
PUT THE NEW KEY
DELETE KEY
DELETE KEY: X
Manager

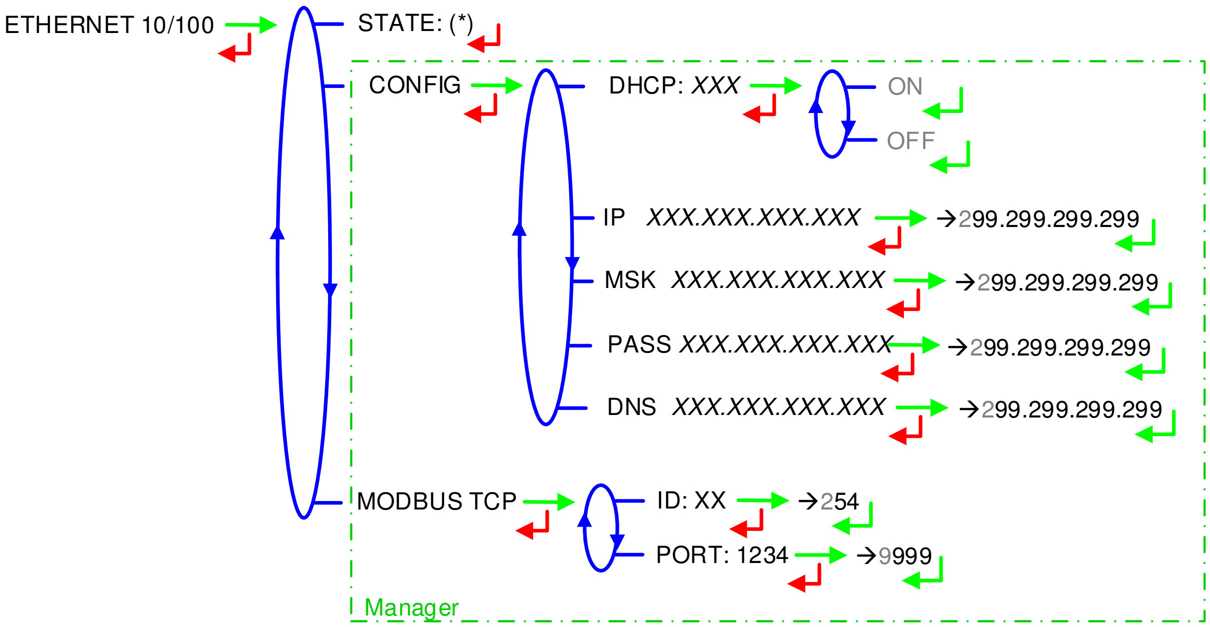
INFO: Display of the level and the identifier of the RFID key (Level 1/Blue/User, Level 2/Green/Manager, Level 3/Red/Maintenance)

MANAGE RFID KEY – *Access restricted to the Manager:*

BLUE KEY: Used to associate a user RFID key to the MICROCOMPT+

GREEN KEY: Used to associate a manager RFID key to the MICROCOMPT+ or to remove keys that have already been associated.

2.3. Menu ETHERNET


ETHERNET 10/100
STATE: (*)
CONFIG
DHCP: XXX
ON
OFF
IP XXX.XXX.XXX.XXX
→299.299.299.299
MSK XXX.XXX.XXX.XXX
→299.299.299.299
PASS XXX.XXX.XXX.XXX
→299.299.299.299
DNS XXX.XXX.XXX.XXX
→299.299.299.299
MODBUS TCP
ID: XX
→254
PORT: 1234
→9999
Manager

(*) CONNECTED / DISCONNECTED

STATE: Status of the Ethernet connection

CONFIG – *Access restricted to the Manager*:

DHCP: If ON is enabled, IP parameters can be initialized through the DHCP protocol. If OFF is enabled, parameters are set manually

IP: IP: eMICROCOMPT+ IP address

MSK: Subnet mask (IP mask for the internal IP address allocation)

PASS: Gateway (IP Address for the internet access of the Ethernet interface)

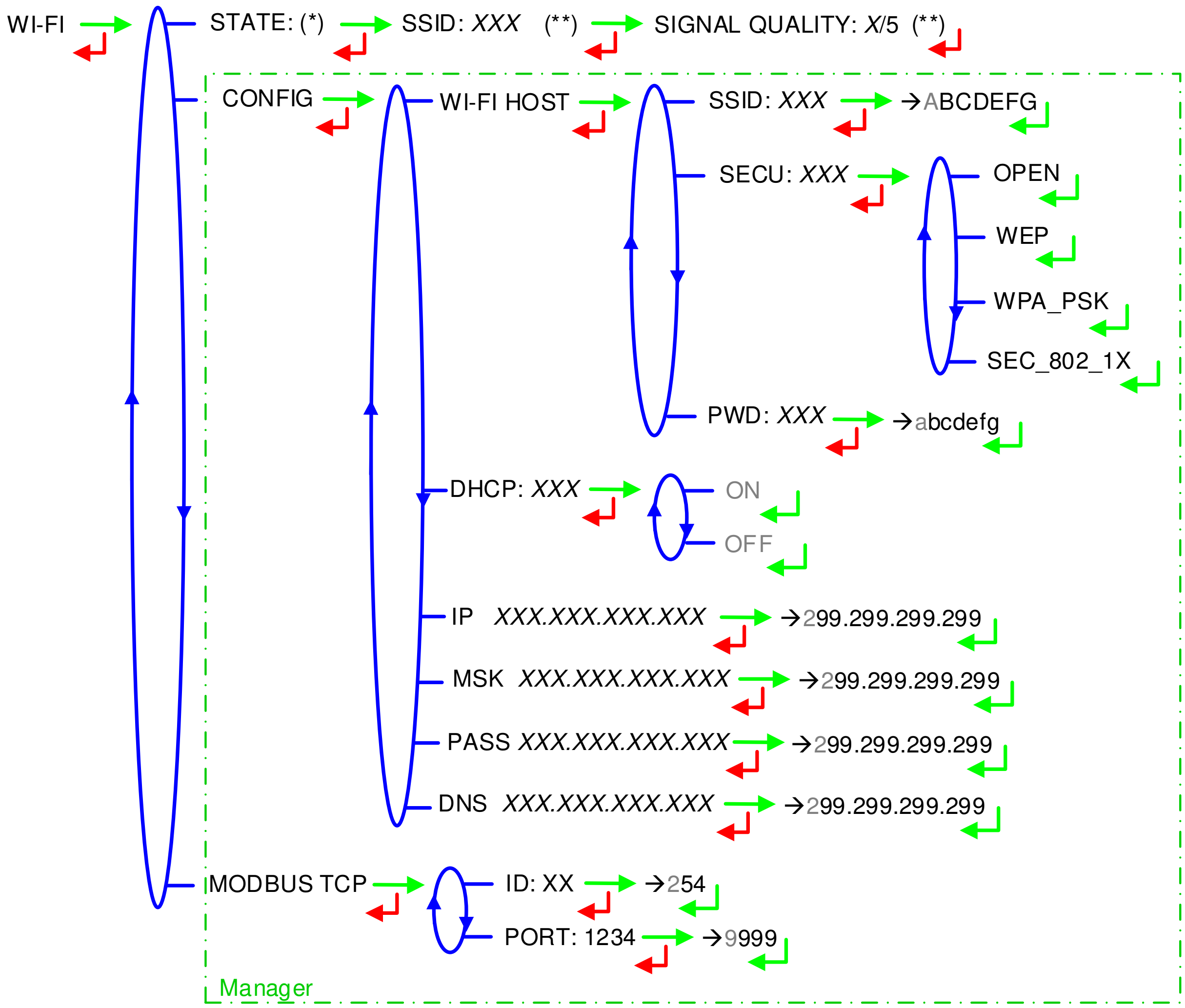
DNS: IP Address to access a DNS server

MODBUS TCP – *Access restricted to the Manager*:

ID: eMICROCOMPT+ Modbus identifier between 0 and 255

PORT: TCP/IP access port for Modbus protocol

2.4. Menu Wi-Fi


WI-FI
STATE: (*)
SSID: XXX (**)
SIGNAL QUALITY: X/5 (**)
CONFIG
WI-FI HOST
SSID: XXX
→ABCDEFG
SECU: XXX
OPEN
WEP
WPA_PSK
SEC_802_1X
PWD: XXX
→abcdefg
DHCP: XXX
ON
OFF
IP XXX.XXX.XXX.XXX
→299.299.299.299
MSK XXX.XXX.XXX.XXX
→299.299.299.299
PASS XXX.XXX.XXX.XXX
→299.299.299.299
DNS XXX.XXX.XXX.XXX
→299.299.299.299
MODBUS TCP
ID: XX
→254
PORT: 1234
→9999
Manager

(*) NOT AVAILABLE (the calculator is not equipped) / DISCONNECTED / CONNECTED
(**) IF CONNECTED

STATE: Status of the Wi-Fi connection. If connection is successful, you can do a check of SSID and quality

WI-FI HOST: Set the characteristics of the wireless network access point

SSID: 32 characters-alphanumeric key that identifies the wireless network uniquely

SECU: Type of security protocol for the network

OPEN: Free Wi-Fi

WEP: Encryption protocol by a key encoded in 64 or 128 bits

WPA_PSK: Encryption protocol by a 128 bits-dynamic key

SEC_802-1X: Encryption protocol compatible with the standard IEEE 802.1X

PWD: Network password. Permitted character: <space>!"#$%&'()*+,-./ 0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~<DEL> (See §3 visualization on the MICROCOMPT+ display)

DHCP: If ON is enabled, IP parameters can be initialized through the DHCP protocol. If OFF is enabled, parameters are set manually

IP: IP: eMICROCOMPT+ IP address

MSK: Subnet mask (IP mask for the internal IP address allocation)

PASS: Gateway (IP Address for the internet access of the Ethernet interface)

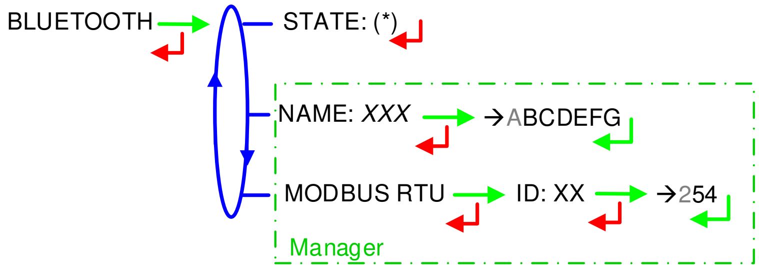
DNS: IP Address to access a DNS server

MODBUS TCP – *Access restricted to the Manager*:

ID: eMICROCOMPT+ Modbus identifier between 0 and 255

PORT: TCP/IP access port for Modbus protocol

2.5. Menu BLUETOOTH



(*) NOT AVAILABLE (the calculator is not equipped) / DISCONNECTED / CONNECTED

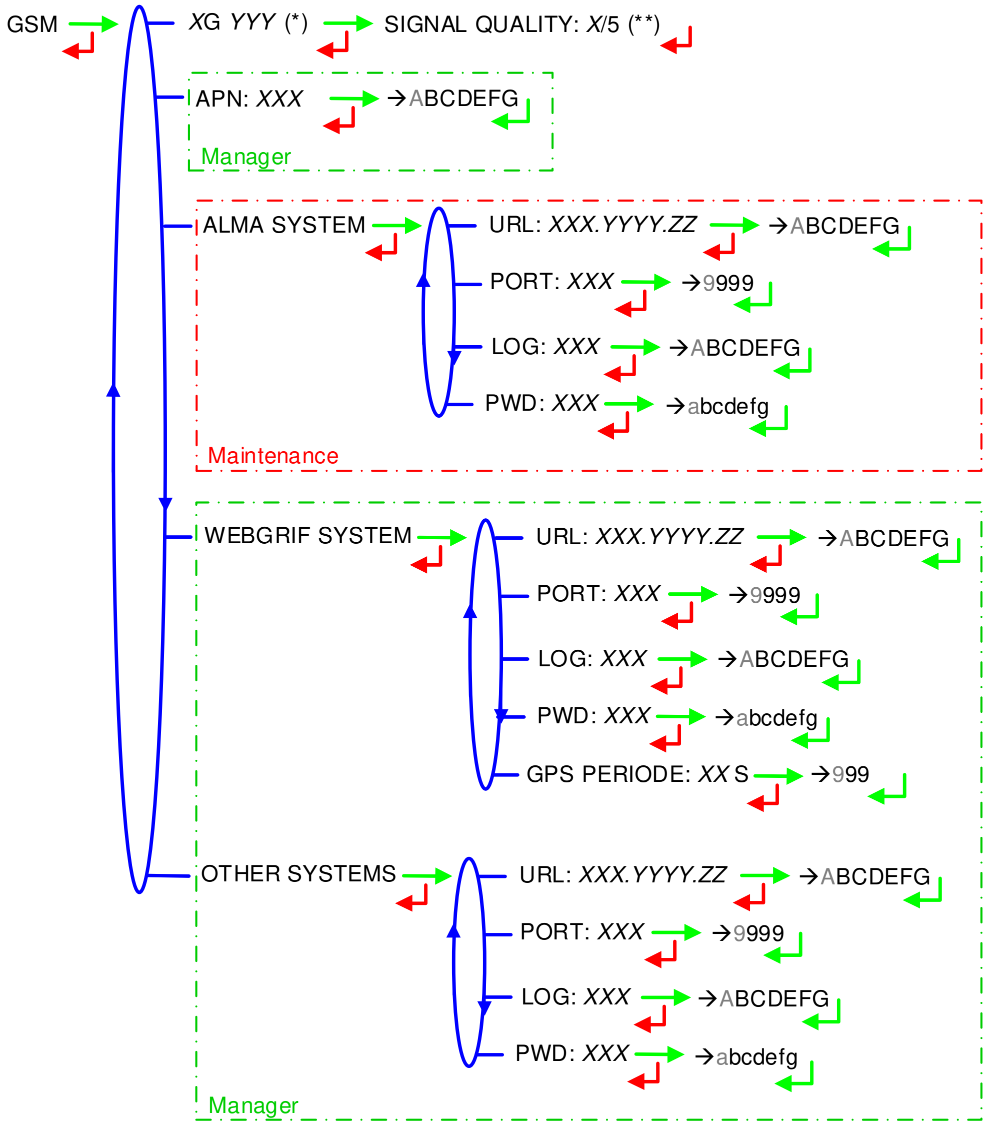
STATE: Status of the Bluetooth connection

NAME – *Access restricted to the Manager*: Set the connection name

MODBUS RTU – *Access restricted to the Manager*:

ID: Modbus identifier via Bluetooth (between 1 and 254)

2.6. Menu GSM


GSM
XG YYY (*)
SIGNAL QUALITY: X/5 (**)
APN: XXX
→ABCDEFG
Manager
ALMA SYSTEM
URL: XXX.YYYY.ZZ
→ABCDEFG
PORT: XXX
→9999
LOG: XXX
→ABCDEFG
PWD: XXX
→abcdefg
Maintenance
WEBGRIF SYSTEM
URL: XXX.YYYY.ZZ
→ABCDEFG
PORT: XXX
→9999
LOG: XXX
→ABCDEFG
PWD: XXX
→abcdefg
GPS PERIODE: XX S
→999
OTHER SYSTEMS
URL: XXX.YYYY.ZZ
→ABCDEFG
PORT: XXX
→9999
LOG: XXX
→ABCDEFG
PWD: XXX
→abcdefg
Manager

(*) NO SIGNAL ou 2G 3G 4G + INTERNET PROVIDER D'ACCES
(**) IF CONNECTED

XG YYY: The signal is being received: the type of mobile network is displayed (with X=2 for 2G, X=3 for 3G, and X=4 for 4G) according to the protocols GSM / GPRS / EDGE, UMTS / HSPA+ / LTE, followed by the name of the service provider. Otherwise NO SIGNAL is displayed

APN – *Access restricted to the Manager*: Name of the internet access point, only if ALMA does not supply it

ALMA SYSTEM – *Access restricted to the Maintenance*: Information of connection to the ALMA FTP server for files transfer

URL: Web address of the ALMA FTP server (host)

PORT: ALMA FTP server port, default value: 21

LOG: ALMA FTP server identifier

PWD: ALMA FTP server password. Permitted characters: <space>!"#$%&'()*+,-./

0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~<DEL> (See §3 visualization on the MICROCOMPT+ display)

WEBGRIF SYSTEM – *Access restricted to the Manager*: Information of connection to the Webgrif FTP server for files transfer

URL: Web address of the Webgrif FTP server (host)

PORT: Webgrif FTP server port, default value: 21

LOG: Webgrif FTP server identifier

PWD: Webgrif FTP server password. Permitted characters: <space>!"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~<DEL> (See §3 visualisation on the MICROCOMPT+ display)

GPS PERIOD: Backup period of GPS coordinates (from 1 to 999 seconds)

OTHER SYSTEM – *Access restricted to the Manager*: Information of connection to the FTP server for files transfer

URL: Web address of the FTP server (host)

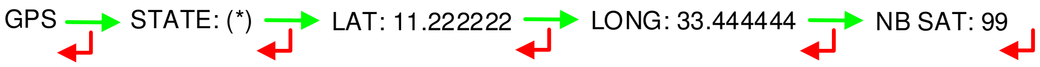
PORT: FTP server port, default value: 21

LOG: FTP server identifier

PWD: FTP server password. Permitted characters: <space>!"#$%&'()*+,-./

0123456789:;<=>?@ABCDEFGHIJKLMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuvwxyz{|}~<DEL> (See §3 visualization on the MICROCOMPT+ display)

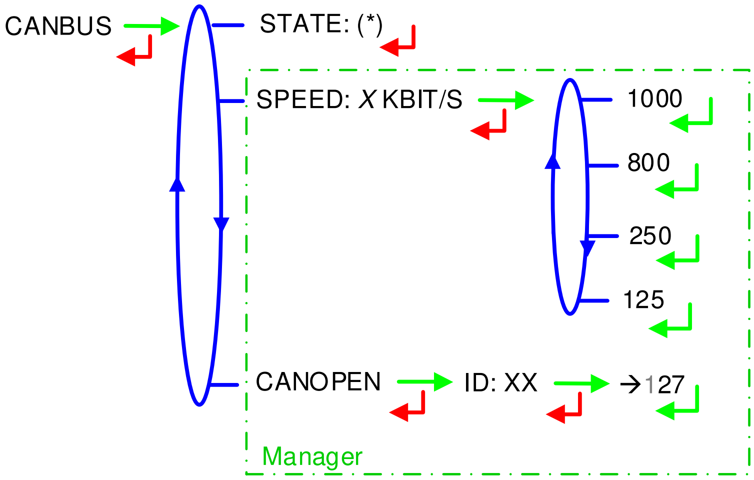
2.7. Menu GPS



(*) NO SIGNAL / 2DFIX / 3DFIX

STATE: The signal is being received: the type of signal is displayed 2DFIX or 3DFIX. Validating the data makes the GPS coordinates appear (latitude then longitude), and lastly appears the number of satellites which signals are simultaneously received (that gives information about the position accuracy). Otherwise NO SIGNAL is displayed.

2.8. Menu CANBUS



(*) CONNECTED / DISCONNECTED
(**) BETWEEN 1 AND 127

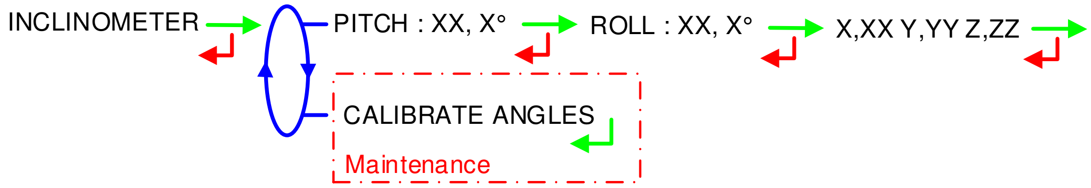
STATE: Status of the CANBus connection

SPEED – *Access restricted to the Manager*: Speed of the CANBus connection

CANOPEN – *Access restricted to the Manager*:

ID: Identifier for the CANopen protocol (between 1 and 127)

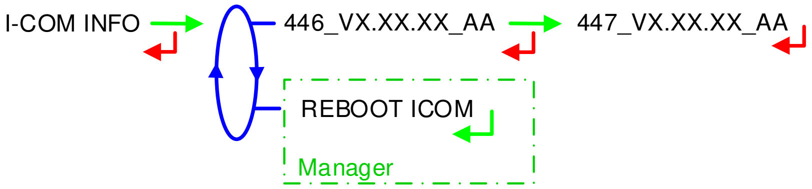
2.9. Menu INCLINOMETER


INCLINOMETER
PITCH : XX, X°
ROLL : XX, X°
X,XX Y,YY Z,ZZ
CALIBRATE ANGLES
Maintenance

PITCH…: Used to display the bank angles of the truck and the inclinometer raw data

CALIBRATE ANGLES – *Access restricted to the Maintenance*: Used to reset the angles ‘pitch’ and ‘roll’ when the truck has a horizontal position in order to correct the assembly tolerances of the MICROCOMPT+ on the truck.

2.10. Menu I-COM INFO

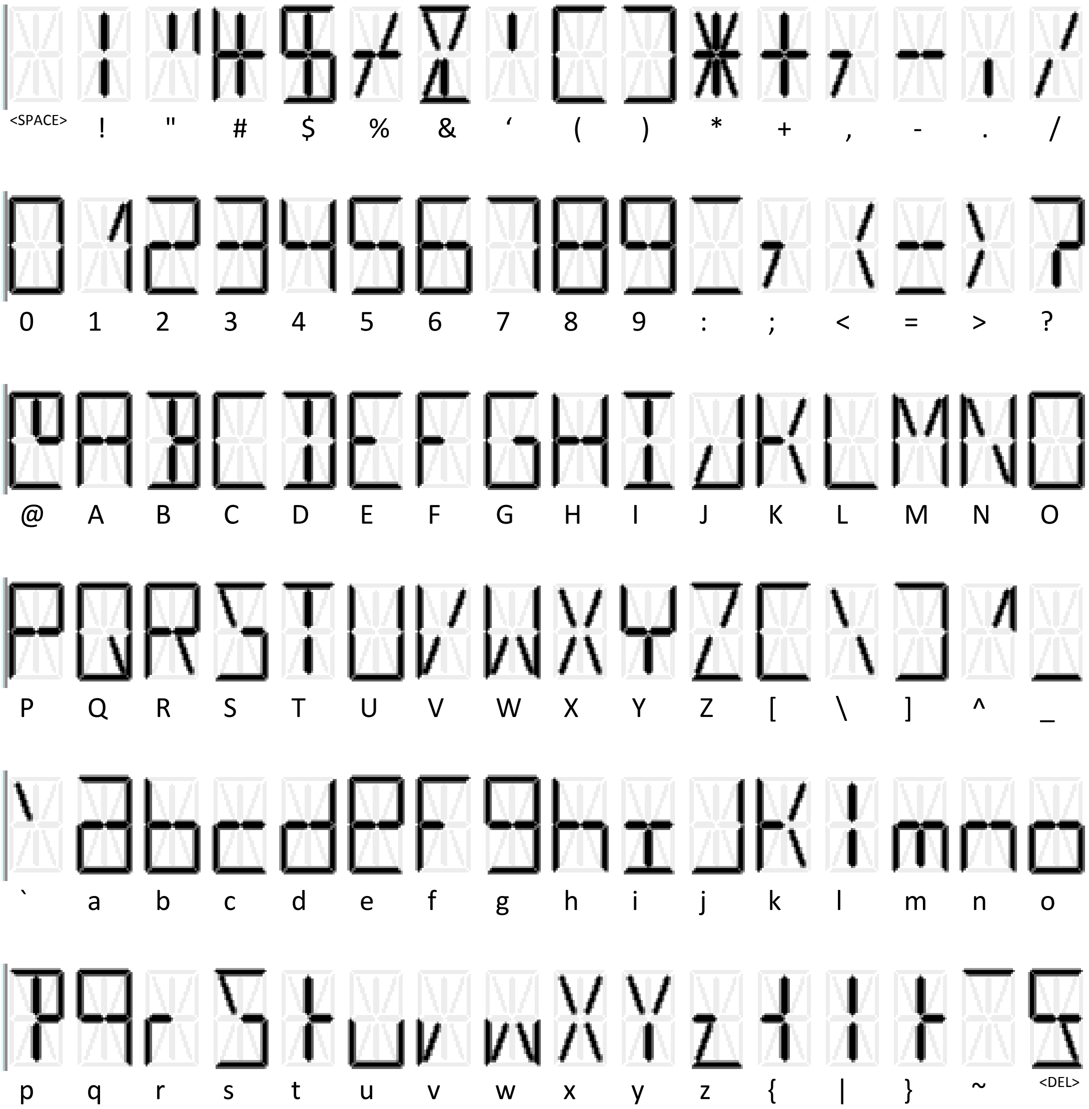

I-COM INFO
446_VX.XX.XX_AA
447_VX.XX.XX_AA
REBOOT ICOM
Manager

446_V…: Software’s number and version

REBOOT COM – *Access restricted to the Manager*: Reset of the ‘interface com’ board.

3. VIZUALISATION OF THE PERMITTED CHARACTERS ON THE MICROCOMPT+

Visualization of the permitted characters on the MICROCOMPT+ display:


<SPACE> ! " # $ % & ‘ ( ) * + , - . /
0 1 2 3 4 5 6 7 8 9 : ; < = > ?
@ A B C D E F G H I J K L M N O
P Q R S T U V W X Y Z [\ ] ^ _
` a b c d e f g h i j k l m n o
p q r s t u v w x y z { | } ~ <DEL>

ANNEX 2: PRINTINGS

```
X.TRONIQUE 341+.001  CARTE REV8
VERSION 09.13.03 DU 17.01.19
EDITE LE 25.01.19 A 11:26
VEHICULE   : AA-215-EL
REFERENCE :  03201

************* PARAMETRES *****************
VOIES/VANNE:                    F1P-F2V
GESTION MOTEUR:                 OUI
BOITE AUTOMATIQUE:              CONTINUE
SONDE ANTIDEBORDEMENT:EXTERNE
TRAPPES/RETOURS/SONDES:
  CPT No :  1   2   3  4   5   6   7   8   9
  TRAPPE :  O   O   O  O   O   N   N   N   N
  RETOUR :  O   O   O  O   O   N   N   N   N
  SONDE :   O   O   O  O   O   N   N   N   N
  CPT PLEXMI: N, RETURN PLEXMI: N
OPTION CMA:
  HAUTEUR PD:   700 MM
  HYSTERESIS PD-GD: 150 MM
  HAUTEUR FIN: 300 MM
  HYSTERESIS PD FIN: 100 MM
  TPSIA:  3 UT   /   TPSID:  3 UT
  HAUTEUR:6356 MM / COEFF PDC:1.50000
MODE:                           TRONIQUE
INFORMATIQUE EMBARQUEEALMA v1.10
  CODE PRODUIT:                 NON
  IMPRIMANTE:                   NON
TICKET:                         COB2
DSPGI:                          OUI
  BLOQUANT:                     OUI
PLAN DE CHARGEMENT              OUI
   BLOQUANT:                    NON
CATALOGUE LANGUE:               frv9.13.02
SEQUENCEMENT:                   OUI
  SENS:                         C3-C2-C1
DEVISE:                         EUR
RETOUR ADDITIF:                 NON
CTRL NIVEAU ADDITIF:            OUI
EMA POMPE:
  COEFFICIENT K1:               10.0000 IMP/L
  DEBIT Q1 (PD):                0.0 M3/h
  COEFFICIENT K2:               10.0000 IMP/L
  DEBIT Q2 (GD):                0.0 M3/h
  DEBIT MIN:   4.0   /   MAX:   50.0 M3/h
  QUANTITE MINIMALE:            00200 L
  TE          +19.8°C

FOD   (01/0)  CO+NA+BA  NON  NON ADD
FOD+ (02/1)  CO+A+BA    NON  NON ADD
GO    (03/2)  NC+NA+10  NON  NON ADD
GO+  (04/3)  NC+A+10    NON  NON ADD
GNR  (05/4)  CO+NA+10  NON  NON ADD
GNR+ (06/5)  CO+A+10    NON  NON ADD

                PAGE 1/2
```

```
X.TRONIQUE 341+.001  CARTE REV8
VERSION 09.13.03 DU 17.01.19
EDITE LE 25.01.19 A 11:26
VEHICULE   : AA-215-EL
REFERENCE :  03201

************* PARAMETRES *****************
NOMS LIGNES:
  LIGNE 1:              HOSE 1
  LIGNE 2:              HOSE 2
VOLUME DE PD DE FIN:          30 L
DEBIT ACTIVANT LE GD:         7.5 M3/H
PETIT DEBIT OBJECTIF:         9.0 M3/H
PURGE          COMMUN  LIGNE1  LIGNE2
COMPLETE          009 L       090 L      009 L
REDUITE           008 L       080 L      008 L
PRODUIT             03           01           00
VOLUME COLLECTEUR:            20 L
TEMPO: SOUFFLAGE 5S
TEMPO DEBIT   0S /EGOUT. COLLEC 10S
ARRET DEBIT A 31.0 M3/H AVEC 1.9 L
COEFFICIENT JETEE             0.0574

                PAGE 2/2
```

Cette ligne indique le code du produit contenu dans chaque partie de la tuyauterie (partie commune, ligne 1, ligne 2).
Un code à 00 signifie que le MICROCOMPT+ ne sait pas définir le produit (première mise en service, mélange, ou flexible vide).

SUMMARY:

```
X.TRONIQUE 341+.001  CARD REV8
VERSION 09.13.03 DATED 17.01.19
PRINTED ON THE 25.01.19 AT 15:30
VEHICULE  :  AA-215-EL
INDICATOR :  03201

SUMMARY
OF DELIVERIES OF 06.12.18
DAY 340 - 003 MEMORISED RESULTS


**** DAILY TOTALISERS ****

FOD     (01) :     00026000 L   +11,3°C
FOD+    (02) :     00005000 L   +10,6°C
GO      (03) :     00000000 L   +00,0°C
GO+     (04) :     00000000 L   +00,0°C
GNR     (05) :     00000000 L   +00,0°C
GNR+    (06) :     00000000 L   +00,0°C

TOTAL FROM 1 TO 6:00031000 L    +11,2°C



********** DAILY SUMMARY **********
HR     HR    NO               (L)      (°C)
START  END   MESUR  PROD  VOLUME  TEMP
09:40  09:50  S01    FOD   14000   +11,3
09:51  10:01  F02    FOD   12000   +11,3
10:02  10:23  F03    GO    05000   +10,6
PRE(S)ET; (F)REE; (B)ARRELS; (P)URGE;
FLE(X)I; (T)RANS; (D)RAIN;
(A)NTICIPATORY PURGE.
```

TOTALISERS:

```
X.TRONIQUE 341+.001  CARD REV8
VERSION 09.13.03 DATED 17.01.19
PRINTED ON THE 25.01.19 AT 17:32
VEHICULE  :  AA-215-EL
INDICATOR :  03201


********** TOTALISERS**********

GENERAL TOTALISER 1:     00056638  L

FOD     (01) :     00028000 L
FOD+    (02) :     00028000 L
GO      (03) :     00000000 L
GO+     (04) :     00000000 L
GNR     (05) :     00000000 L
GNR+    (06) :     00000000 L
        (07) :     00000000 L
        (08) :     00000000 L
        (09) :     00000000 L
        (10) :     00000000 L
        (11) :     00000000 L
        (12) :     00000000 L
        (13) :     00000000 L
        (14) :     00000000 L
        (15) :     00000000 L
        (16) :     00000000 L

TOTAL FROM 1 TO 16 : 00056000 L
NO ALLOCATED VOLUME: 00000008 L
```

FORM DOC 120 A

EVENTS RECORDED:

```
X.TRONIQUE 341+.001  CARD REV8
VERSION 09.13.03 DATED 17.01.19
PRINTED ON THE 25.01.19 AT 17:02
VEHICULE  :  AA-215-EL
INDICATOR :  03201
EVENTS ON 06/12/18




137 RECORD(S)

14:33:33 STOP DISCHARGE
14:30:03 PTO DEFAULT
14:24:33 DRIVER MODE
...


09:47:15 PARAM@ 8=750.000000
09:47:06 PARAM@ 3=1.000000
08:59:02 METROLOGICAL MODE
08:58:57 SWITCH ON
```

LOADING PLAN

```
X.TRONIQUE 341+.001  CARD REV8
VERSION 09.13.03 DATED 17.01.19
PRINTED ON THE 25.01.19 AT 14:34
VEHICULE  :  AA-215-EL
INDICATOR :  03201


********** LOADING PLAN **********

CPT      PROD.     VOLUME (L)
1        FOD            1000
2        FOD+           2000
3        GO             3000
4        GO+            4000
5        GNR            5000
```

DELIVERY TICKET(according to customer)

```
Date                  : 25/01/19
Starting              : 14:44
Vehicule              : AA-215-EL
Indicator : 03201
Product               : GO
Temperature           : +19.8°C
Volume                : 01500 L
Index 012 before  00005461
Index 013 after   00006961







In case of dispute, the measurement
results stored by the main indicating
device providing proof.
```

CARGO PLAN

```
X.TRONIQUE 341+.001  CARD REV8
VERSION 09.13.03 DATED 17.01.19
PRINTED ON THE 25.01.19 AT 14:51
VEHICULE  :  AA-215-EL
INDICATOR :  03201


********** CARGO PLAN **********

CPT      PROD.     VOLUME (L)
1        FOD            1000
2        FOD+           2000
3        GO             1500
4        GO+            4000
5        GNR            5000
```

RELATED DOCUMENTS

GU 7034	User Guide
MV 5010	Verification Manual
FM 8000	Replacement of the backup batteries on the AFSEC electronic board
FM 8001	Diagnostic support for power supply failure
FM 8002	Diagnostic support for a display failure
FM 8003	Diagnostic support for DEB_0 or ZERO FLOW DEFAULT alarm
FM 8004	Diagnostic support for GAS or PRESENCE GAS alarm
FM 8005	Diagnostic support for METERING PROBLEM alarm
FM 8006	Diagnostic support for DATE AND TIME LOST alarm
FM 8007	Diagnostic support for MEMORY LOST or DEF MEMO alarm
FM 8010	Diagnostic support for EEPROM MEMORY LOST alarm
FM 8011	Configuration of jumpers and adjustment of metering thresholds on the AFSEC+ electronic board
FM 8013	Replacement of the backup batteries on the AFSEC+ electronic board
FM 8501	Adjustment of a DMTRONIQUE
FM 8510	Adjustment of a temperature chain in a MICROCOMPT+