OPERATING MANUAL

MU 7051 EN E

GPL TRONIQUE

Issue	Date	Nature of modifications	Written by	Approved by
E	2019/02/26	Conversion menus, software in English *[MDV631]*	DSM	SR
D	2018/09/24	Display of one-tenth volume, calibration VM or VB, volume conversion at 20°C *[MDV622]*	DSM	XS
C	2017/12/21	Configuration of density in SUPERVISOR MODE or METROLOGICAL mode *[MDV587]*	DSM	XS
B	2012/09/20	New software ergonomics, internationalization, linearization, delivery ways menu, V15, V20, Vm/Vb display, events recorded	DSM	AH
A	2010/12/06	Creation	DSM	MV

CONTENTS

1 GENERAL PRESENTATION AND DESCRIPTION

The GPL TRONIQUE measuring system must be fitted on road tankers only for measurement of quantities of liquefied gases under pressure.

The GPL TRONIQUE measuring system comprises:

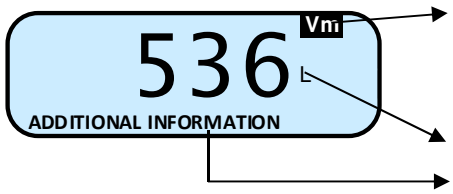
- ⇨ An ALMA turbine meter for liquefied petroleum gas
- ⇨ A MICROCOMPT+ electronic calculator-indicator
- ⇨ An gas separator
- ⇨ A pump which flowrate and pressure characteristics are compatible with the meter used
- ⇨ An automatic pressure control valve, regulated to maintain pressure at least 1 bar higher than the saturated vapour pressure in the tank
- ⇨ A set of devices by two ways of delivery, controlled by a valve which allows the choice between a full flexible hose or a direct release
- ⇨ As an option, a Pt100 temperature sensor to calculate and display the mean temperature of the liquid measured during metering
- ⇨ A printer

There are two models of GPL TRONIQUE: volume at temperature or volume at reference temperature (measure and compensation of the volume at a reference temperature). The “embedded computing” and “remote control” (GPL TRONIQUE CD) options are also available. This document presents all the possibilities. Some menus are the same; others are specific and are differently identified.

Identification of the different models of GPL TRONIQUE in the following pages:

With conversion
Without conversion

The GPL TRONIQUE has one display:

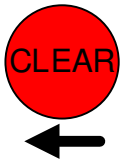
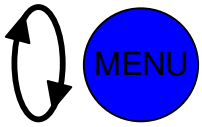


Volume indication
- Vm: volume in metering conditions
- Vb: volume converted to the reference temperature

Volume unit

On the prompter: Additional information
- During measurement: flow, temperature
- Out of measurement: totaliser

The GPL TRONIQUE has three pushbuttons:

	Increment a blinking figure or letter Come back to the previous step Stop the measurement
	Select a figure, a letter or a menu
	Validate the data

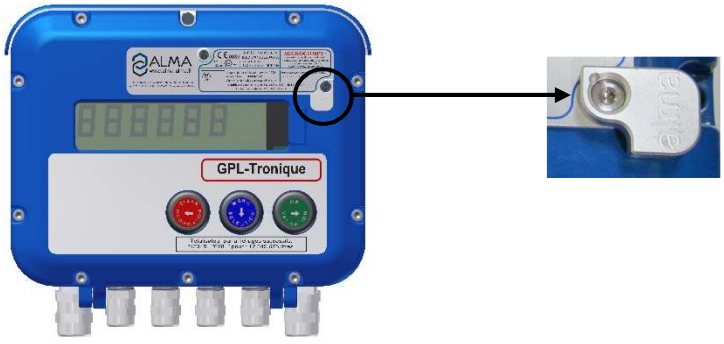
2 OPERATING RECOMMENDATIONS

Safety valves may be incorporated in the GPL TRONIQUE measuring system. If they are located downstream of the turbine meter they must open to the atmosphere or be connected to the receiving tank.

3 CONFIGURATION, SETTING AND CALIBRATION

3.1 Configure the GPL TRONIQUE

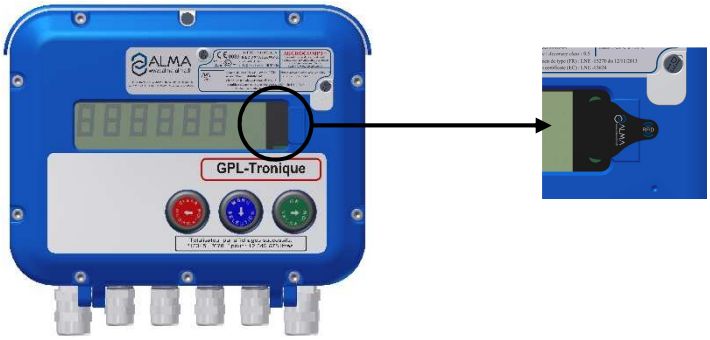
You must configure the GPL TRONIQUE during commissioning and sometimes during metrological controls. You must remove the seal as shown below. **NOTE**: Only approved persons are permitted to remove the seal.



Then you enter the METROLOGICAL mode. Details are available in the section CONFIGURE THE GPL TRONIQUE: METROLOGICAL MODE.

3.2 Set the GPL TRONIQUE

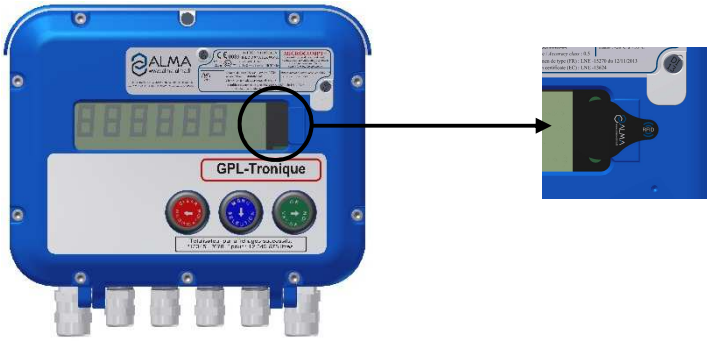
You must set the GPL TRONIQUE before any operation. To set the GPL TRONIQUE, you need an ALMA RFID key that you put on the display as shown below:



Then you enter the SUPERVISOR mode. Details are available in the section SET THE GPL TRONIQUE: SUPERVISOR MODE and annex 1.

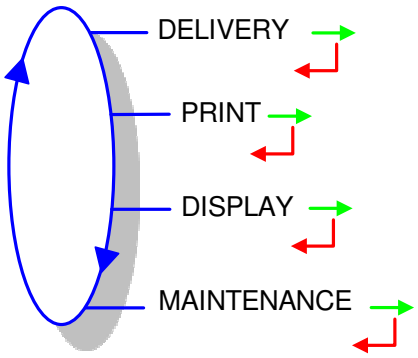
3.3 Calibrate the GPL TRONIQUE

To calibrate the GPL 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 GPL TRONIQUE: SUPERVISOR MODE.

4 USER MODE



In USER mode, the GPL TRONIQUE displays a blinking figure which is the latest delivered quantity. On the prompter, you can see the name of the menu.

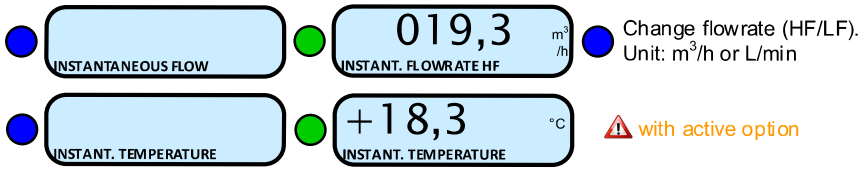
The use of the GPL TRONIQUE depends on the hardware configuration of the truck, the features and the configuration of the equipment carried out during commissioning.

Therefore, the user menu depends on several items:

- ⇨ The number of distribution ways (one or two)
- ⇨ The distribution mode (free or preset)
- ⇨ The temperature control (conversion of the volume).

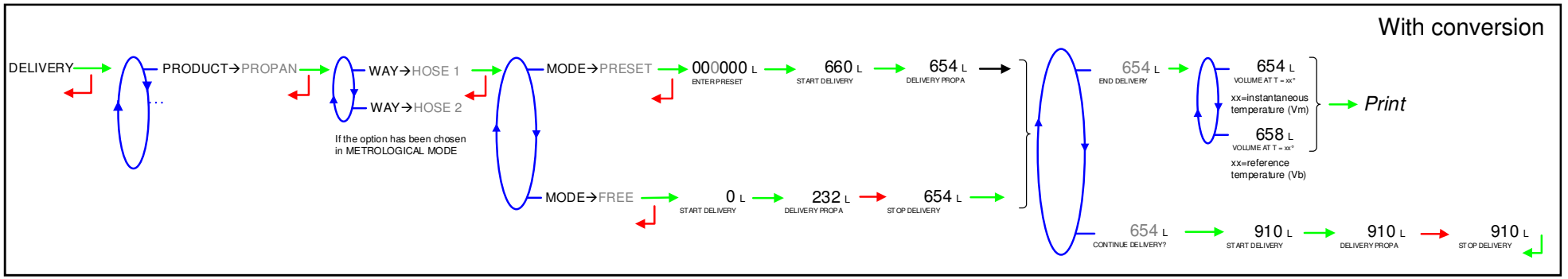
During delivery, the following information may be displayed:

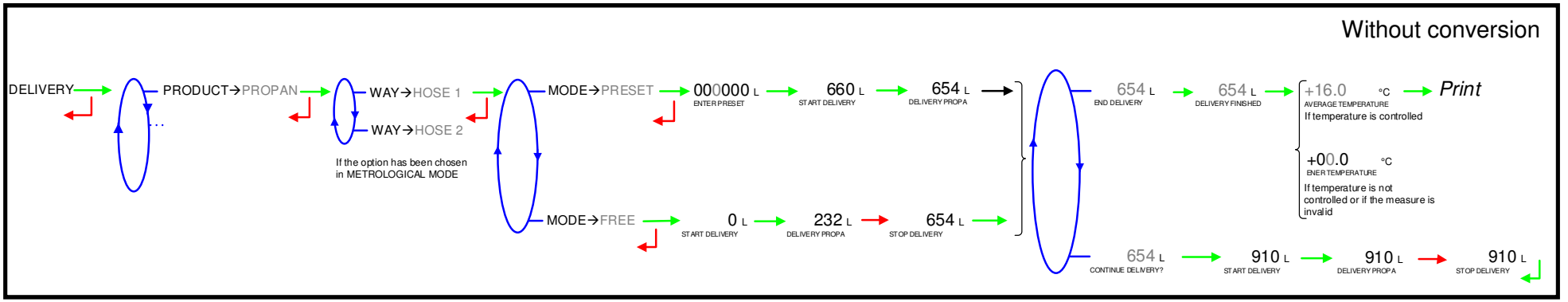
- ⇨ The instantaneous flow rate in high or low flowrate (m^3/h or L/min; depending on the display unit set)
- ⇨ The temperature (°C) if it is taken into account.



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

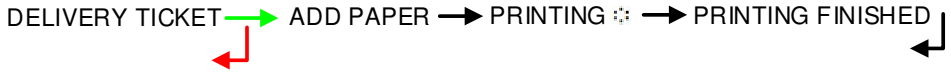
4.1 Menu DELIVERY



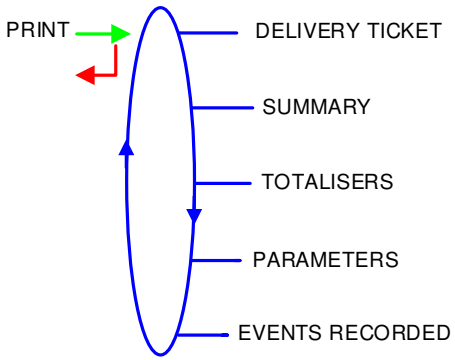


Print:

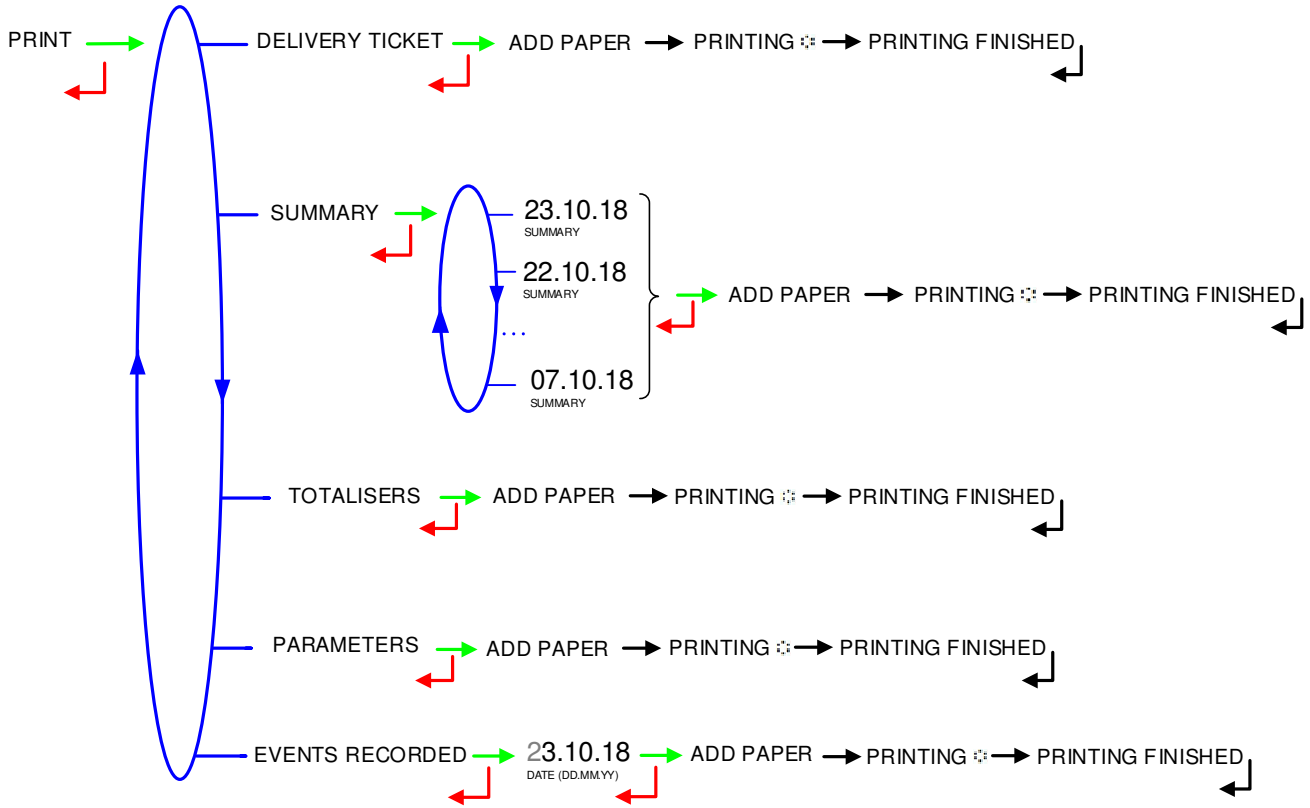
If the menu PRINTER SETTINGS>DELIVERY TICKET is ON in SUPERVISOR MODE, the delivery ticket of the last measuring operation is printed:



4.2 Menu PRINT

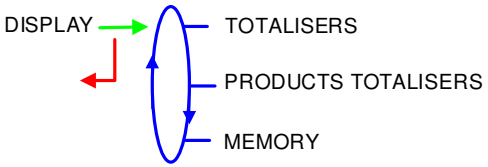


DELIVERY TICKET: Print the ticket of the last measuring operation.
SUMMARY: Record a date and validate to print the summary of the measuring operations.
TOTALISERS: Print the products totalisers.
PARAMETERS: Print the recorded parameters.
EVENTS RECORDED: Record a date and validate to print the events recorded.


PRINT
DELIVERY TICKET
ADD PAPER
PRINTING
PRINTING FINISHED
SUMMARY
23.10.18
SUMMARY
22.10.18
SUMMARY
...
07.10.18
SUMMARY
ADD PAPER
PRINTING
PRINTING FINISHED
TOTALISERS
ADD PAPER
PRINTING
PRINTING FINISHED
PARAMETERS
ADD PAPER
PRINTING
PRINTING FINISHED
EVENTS RECORDED
23.10.18
DATE (DD.MM.YY)
ADD PAPER
PRINTING
PRINTING FINISHED

4.3 Menu DISPLAY

This menu is available in stand-by mode or during an intermediate stop. It allows the proofreading of totalisers and measurement results.

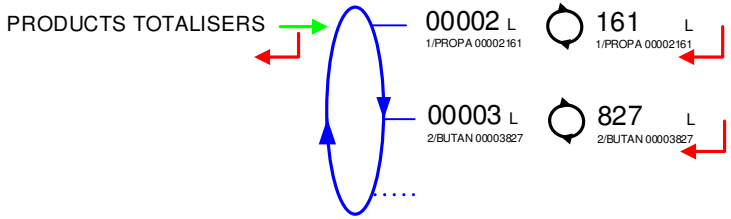


4.3.1 Sub-menu TOTALISERS

Displays the main totaliser.

4.3.2 Sub-menu PRODUCTS TOTALISERS

Displays the secondary totalisers by for each product.



4.3.3 Sub-menu MEMORY

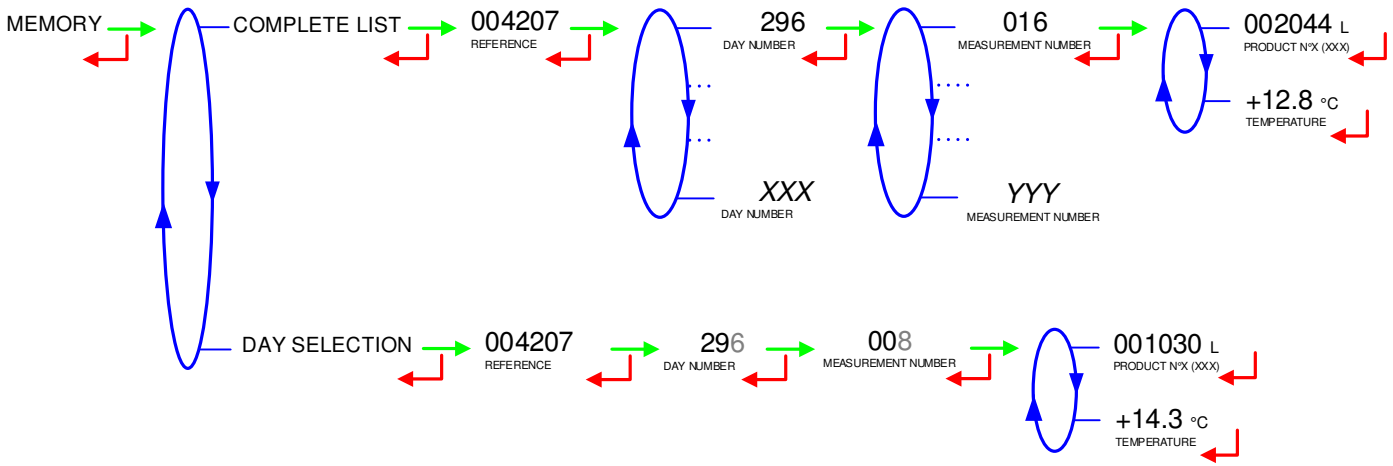
Memorization allows the proofreading of all the measurement results stored by the calculator-indicator. That can be done in two ways:

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

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

For each measurement, you can read:

- The measured quantity, the product number and name
- The temperature, with active option.



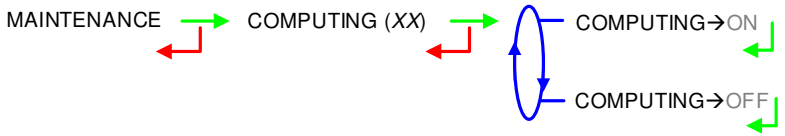
4.4 Menu MAINTENANCE

This menu depends on the configuration of the GPL TRONIQUE.

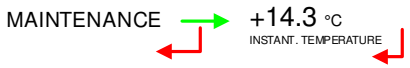
- If the GPL TRONIQUE controls an embedded computing (menu METROLOGICAL>EMBEDDED COMPUTING), this menu is used to activate or not the operation with embedded computing.

  COMPUTING→ON: Activate the operation with embedded computing

  COMPUTING→OFF: Activate the degraded operation without embedded computing (in case of failure for example)



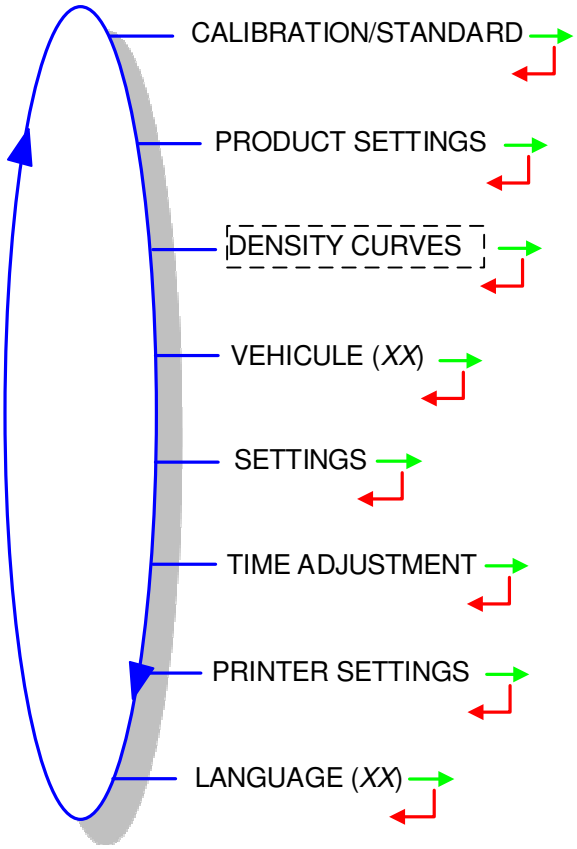
- If the GPL TRONIQUE controls the temperature, this menu is used to display the instantaneous temperature.



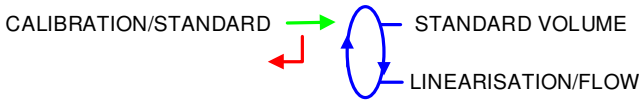
4.5 List of alarms

		DISPLAY	MEANING	ACTION
USER		STOP DISCHARGE	Intentional interruption of discharge	Continue or end the delivery
		COMMUNICATION DEFAULT	Communication with the printer lost	Check the connection cable, on-off switch and fuse
		POWER SUPPLY PROBLEM	Power outage during delivery	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 (lower than minimal flowrate)	Check if the pulse transmitter is powered (red indicators)
		HIGH FLOW DEFAULT	High flowrate (greater than maximal flowrate)	Check the parameters / Reduce flowrate
		METERING PROBLEM	Metering problem with the measuring device	Check if the pulse transmitter is powered (red indicators)
		PTO DEFAULT	Coherence failure with power take-off	Check the power take-off status in driver's cab
		HOSE BURST	Flowrate variation caused by a hose burst	The delivery is stopped automatically
		DIARY DEFAULT	Reset of the events diary	Acknowledge the alarm, check the date in supervisor mode (supervisor key)
REPARATOR	NON BLOCKING	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 MICROCOPT+ / If steady alarm, substitution of the faulty card
		TOTALISER LOST	Loss of totaliser	Substitution of the backup battery
		TEMPERATURE DEFAULT	Temperature determination failure	Check the temperature probe / 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 METROLOGICAL 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
		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

5 SET THE GPL TRONIQUE: SUPERVISOR MODE



5.1 Menu CALIBRATION/STANDARD



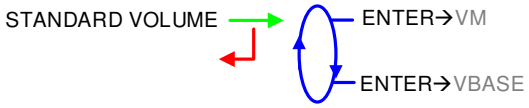
5.1.1 Sub-menu STANDARD VOLUME

This menu allows you to check the accuracy of the measuring system by calculating the measuring device error and the new corrected coefficient.

First, fill the gauge (USER mode) with predetermination of the volume.

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

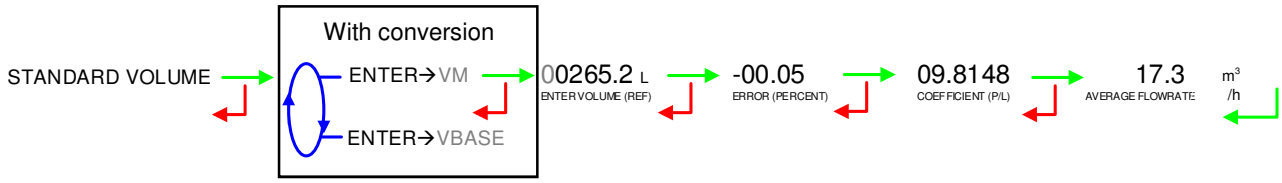
When conversion is active, you can choose to compare volumes with or without temperature-compensation. When conversion is not active, this possibility is not available:



Enter the reference volume and validate. The following information is then displayed:

- The signed error in %
- The coefficient revised as a function of the error

- The average flow of the delivery.



5.1.2 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.

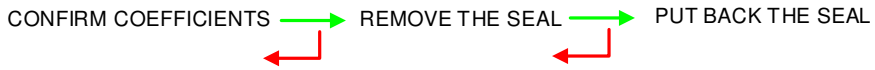
To linearise the curve, follow these instructions:

- Fill the gauge in high flow [$flow_{min}$×3]≤high flow<[$flow_{max}$], and enter the volume read on the gauge in the menu CALIBRATION/STANDARD>STANDARD VOLUME as described above
- Fill the gauge in low flow [$flow_{min}$]≤low flow≤[$flow_{min}$×2], enter the volume read on the gauge in the menu CALIBRATION/STANDARD> STANDARD VOLUME as described above
- Choose CALIBRATION/STANDARD>LINEARISATION/FLOW and validate. It is then possible to read the coefficients and the flow rates data for the two tests carried out.

If the procedure failed, the following alarms may be displayed:

- 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: [$flow_{min}$×3] ≤high flow< [$flow_{max}$]
- LO-FLOW OUT OF RANGE: Low flowrate value is out of range. It needs to be: [$flow_{min}$] ≤low flow≤$flow_{min}$×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 following sequence is displayed:



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

5.2 Menu PRODUCT SETTINGS

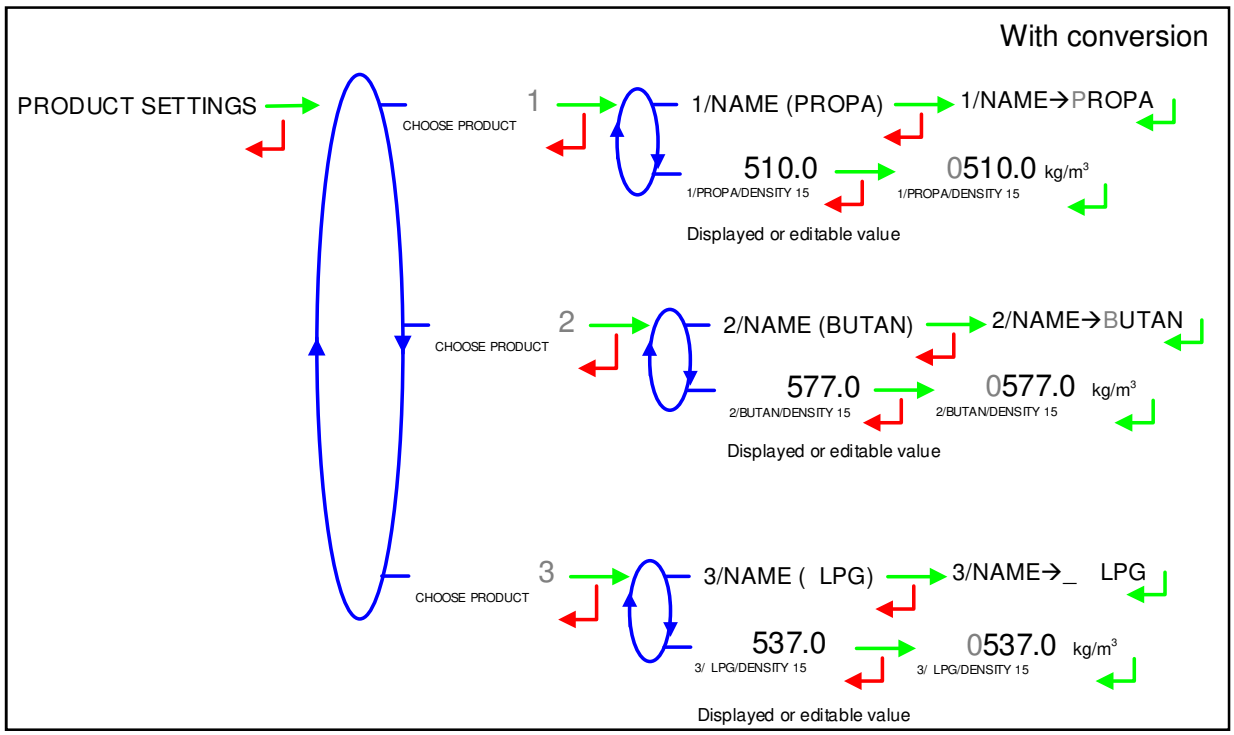
This menu depends on the GPL TRONIQUE model.

5.2.1 With conversion

METROLOGICAL configuration:

- CONFIGURATION>CONVERSION – MAIN DISPLAY→VBASE, or
- CONFIGURATION>CONVERSION – MAIN DISPLAY→VM

Depending on the metrological configuration (CONFIGURATION>CONVERSION>PRODUCT SETTINGS), the setting of density may be prohibited in SUPERVISOR mode.



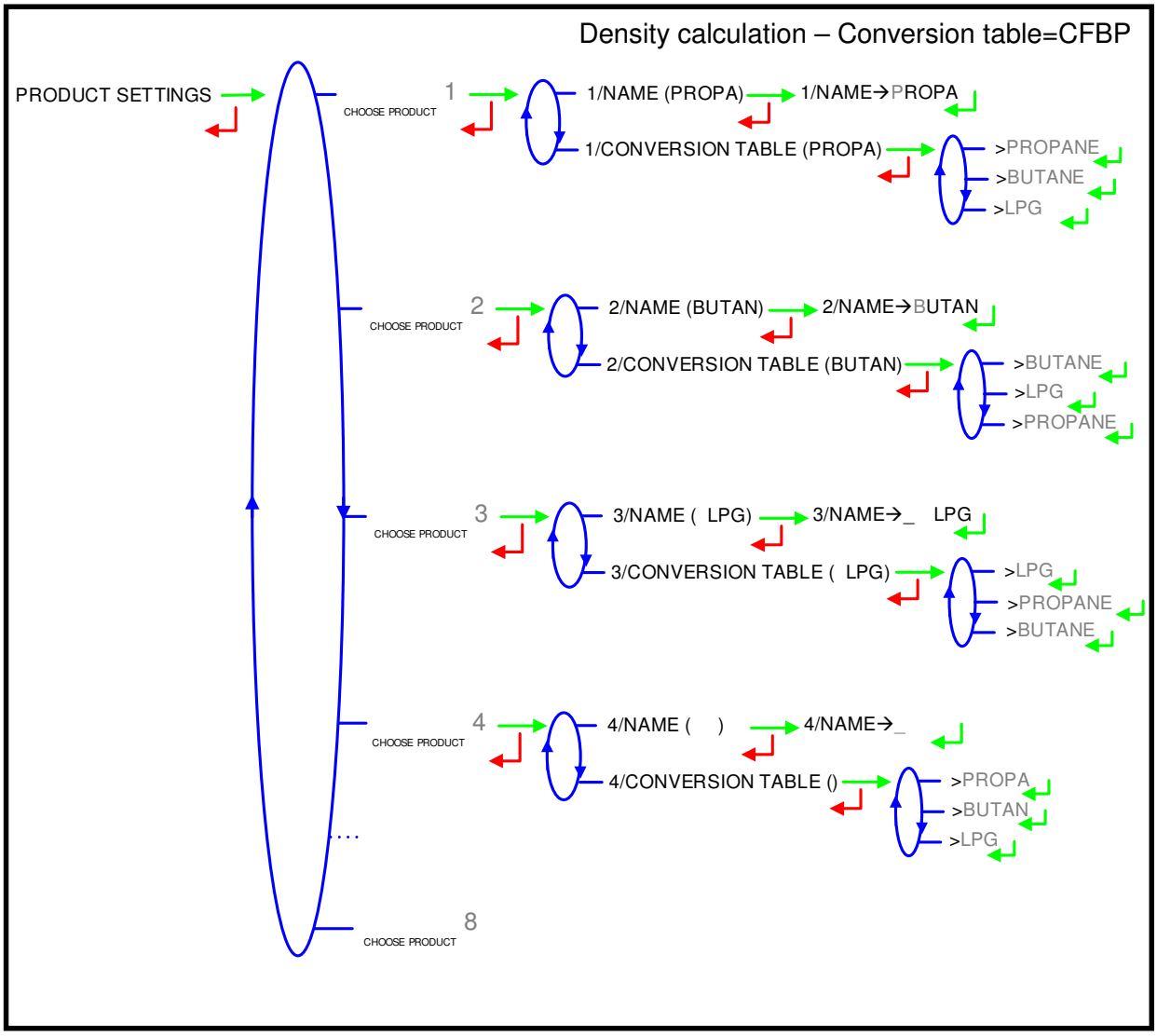
5.2.2 Without conversion

METROLOGICAL configuration:

CONFIGURATION>CONVERSION→OFF **and**

CONFIGURATION>DENSITY CALCULATION→CFBP.

A maximum of 8 products may be configured. Each time, set or validate the name and then choose the equivalent product for conversion: PROPANE, BUTANE or LPG.

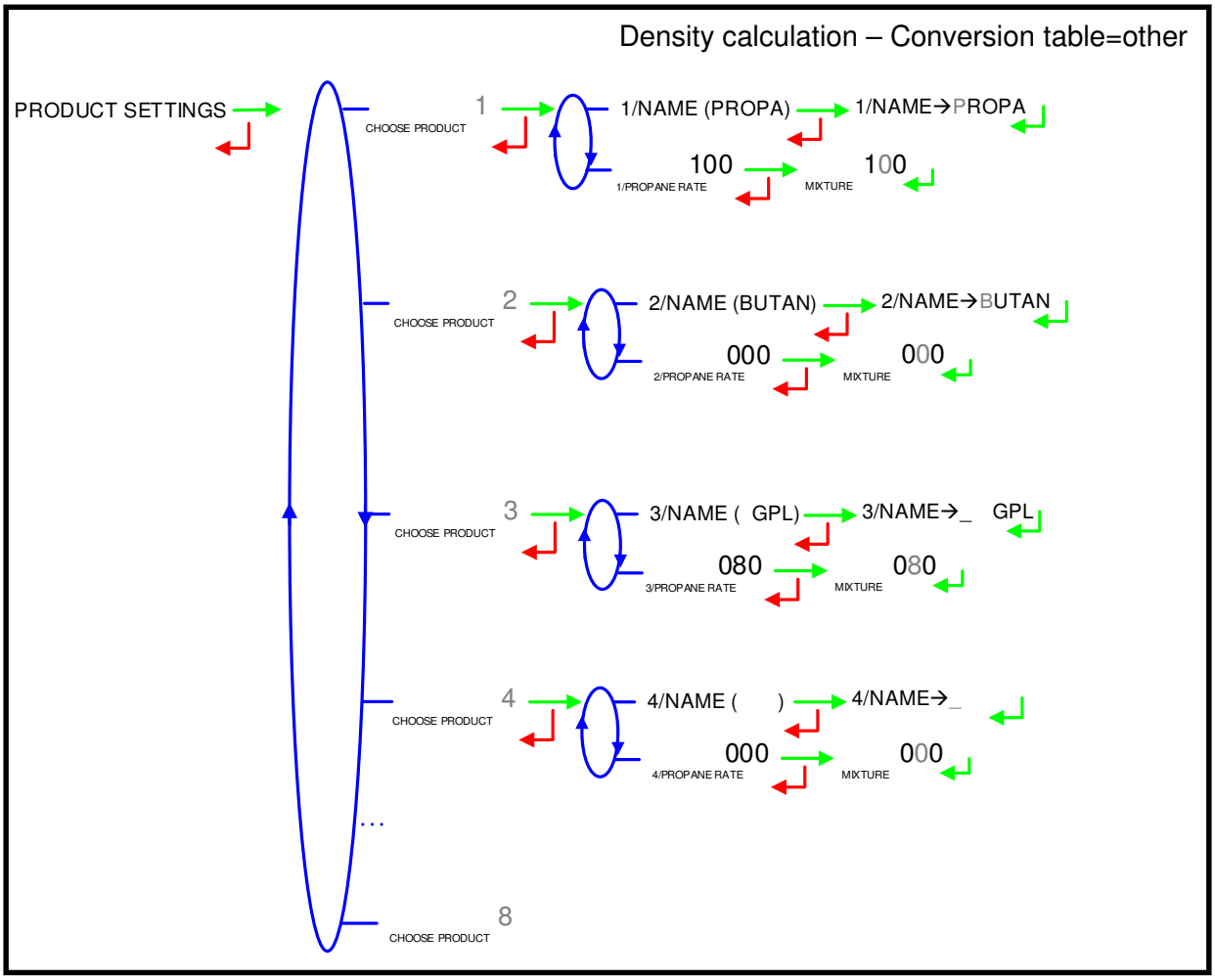


METROLOGICAL configuration:

CONFIGURATION>CONVERSION→OFF **and**

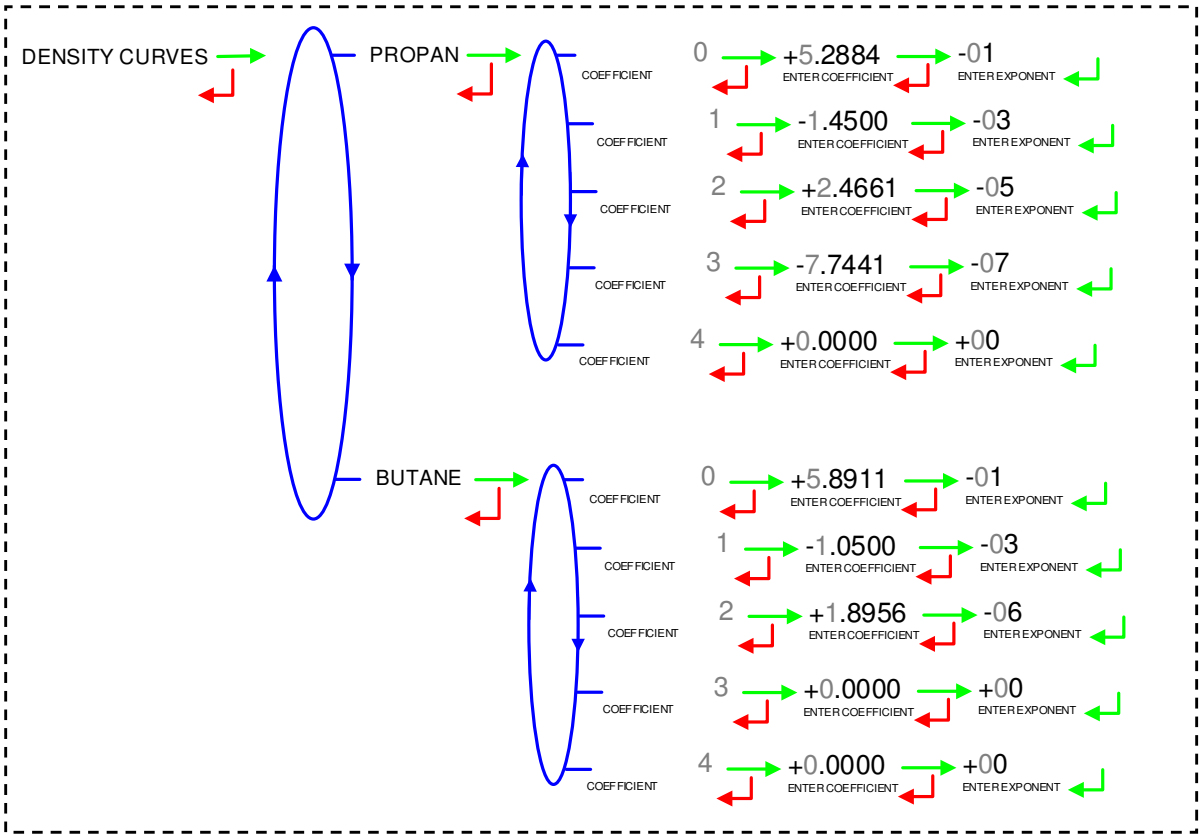
CONFIGURATION>DENSITY CALCULATION→OTHER.

A maximum of 8 products may be configured. Each time, set or validate the name and the propane rate.



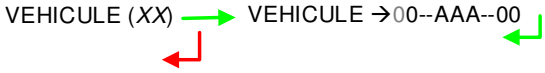
5.3 Menu DENSITY CURVES

This menu is available if conversion is off. The feature is enabled in METROLOGICAL mode (CONFIGURATION>DENSITY CALCULATION→OTHER). The coefficients of the polynomial used for density calculation must be entered in this menu.

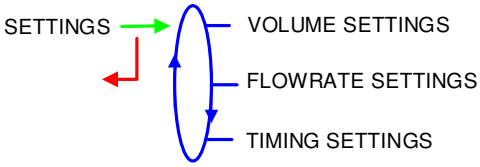


5.4 Menu VEHICULE

Record the vehicle registry number on which the GPL TRONIQUEis installed. This number will be printed on delivery tickets, invoices…



5.5 Menu SETTINGS

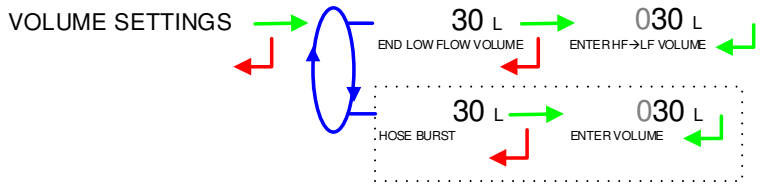


5.5.1 Sub-menu VOLUME SETTINGS

This menu allows you to configure the volume parameters:

END LOW FLOW VOLUME: Set the volume, in liters, delivered in low flowrate to finish the measurement

HOSE BURST: This menu appears if the option has been activated during the commissioning of the measuring system (CONFIGURATION>HOSE BURST menu). Volume (litres) beyond which the GPL TRONIQUE controls a material flowrate variation that may happen during a hose burst.

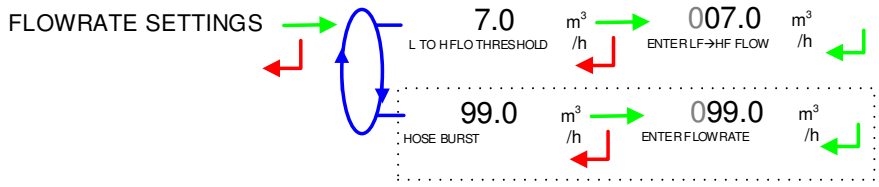


5.5.2 Sub-menu FLOWRATE SETTINGS

This menu allows you to configure the flowrates parameters:

L TO H FLOW THRESHOLD: Flowrate beyond which the GPL TRONIQUE (running in low flowrate) drives the high flowrate

HOSE BURST: This menu appears if the option has been activated during the commissioning of the measuring system (CONFIGURATION>HOSE BURST menu). Flowrate gradient (m^3/h/sec) beyond which the GPL TRONIQUE stops the delivery.



5.5.3 Sub-menu TIMING SETTINGS

This menu allows setting the duration parameters:

SHORT TIME FLOW_0: Time out in seconds before operating the 'zero flow default' without any flow of liquid

LONG TIME FLOW_0: Time out in seconds before operating the 'zero flow default' after a flow of liquid

T.O DECLUTCHING (S): Time out in seconds between pushing start and declutching

T.O DECLUTCH→PTO(S): Time out in seconds between declutching and PTO switching on

T.O PTO→VALVE (S): Time out in seconds between PTO switching on and the valve opening

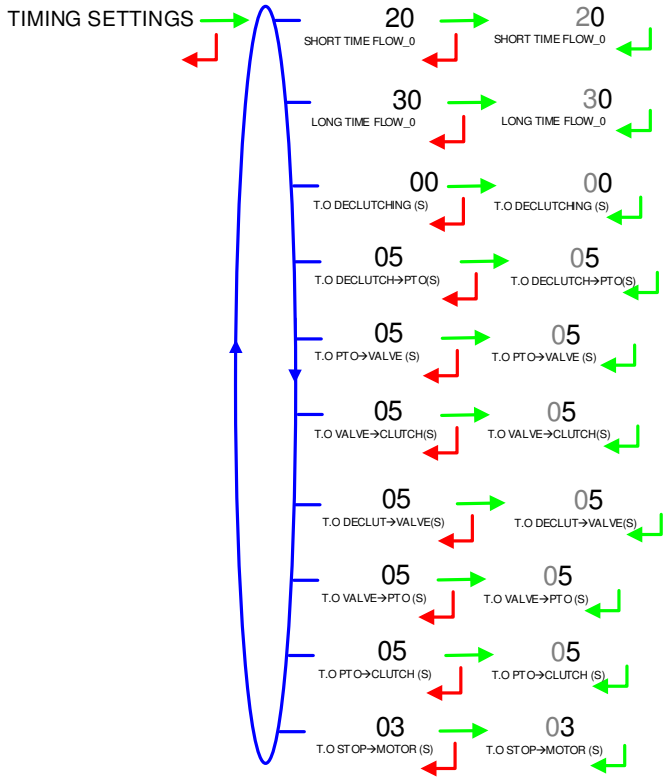
T.O VALVE→CLUTCH (S): Time out in seconds between valve opening and clutching

T.O DECLUTCH→ VALVE(S): Time out in seconds between declutching and the valve closing

T.O VALVE→PTO (S): Time out in seconds between the valve closing and the PTO switching off

T.O PTO→CLUTCH (S): Time out in seconds between the PTO switching off and the clutching

T.O STOP→MOTOR (S): Time out in seconds between pushing stop and the engine cut.



5.6 Menu TIME ADJUSTMENT

Date and time are set in METROLOGICAL mode. The hour may be adjusted (±2h) one time a day. Use French format, for example: 14.41 means 2.41 pm.

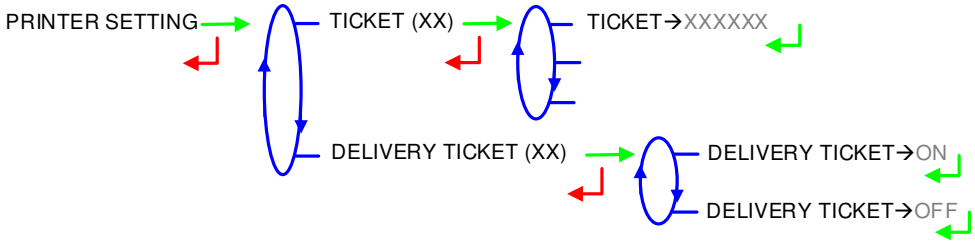
5.7 Menu PRINTER SETTINGS

This menu is used to configure printing options.

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

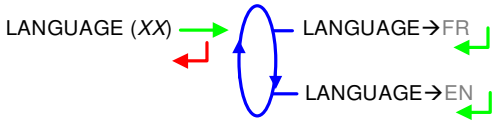
DELIVERY TICKET:

- DELIVERY TICKET→ON: The printing of the delivery ticket is proposed at the end of the delivery
- DELIVERY TICKET→OFF: The printing of the delivery ticket is not proposed at the end of the delivery. It may be printed later through the menu USER>PRINT>DELIVERY TICKET.

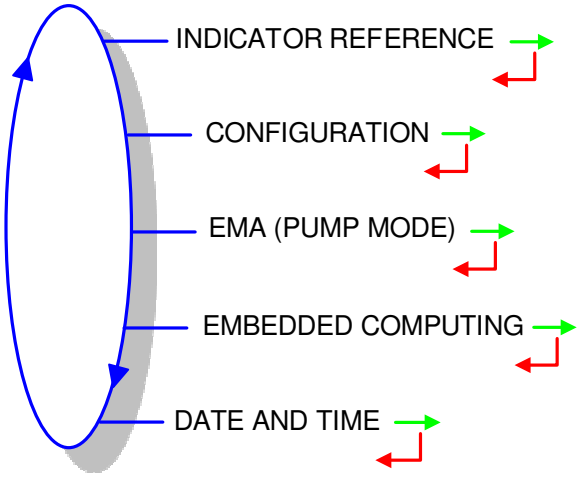


5.8 Menu LANGUAGE

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

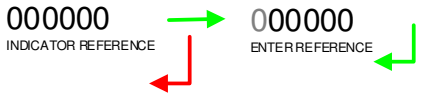


6 CONFIGURE THE GPL TRONIQUE: METROLOGICAL MODE

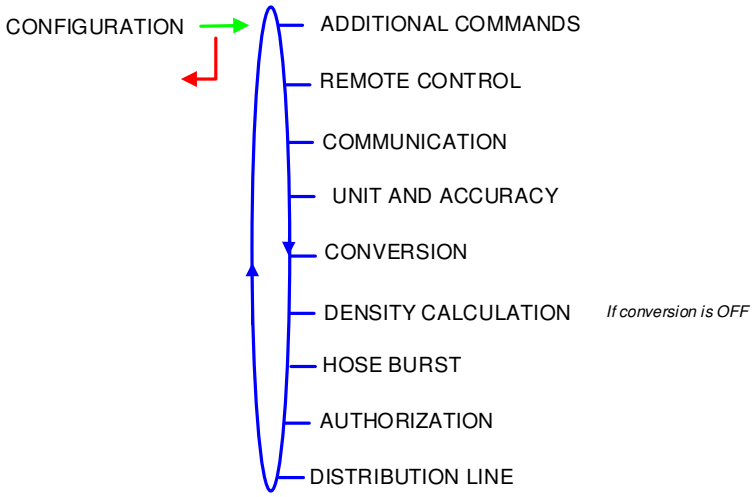


6.1 Menu INDICATOR REFERENCE

Record the GPL TRONIQUE serial number (5 numeric values).

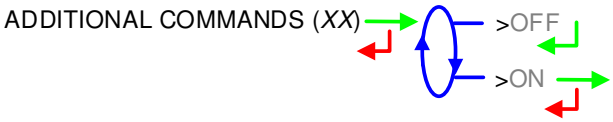


6.2 Menu CONFIGURATION



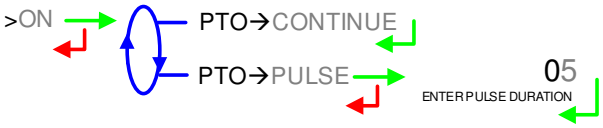
6.2.1 Sub-menu ADDITIONAL COMMANDS

This menu allows to operating with or without additional commands.



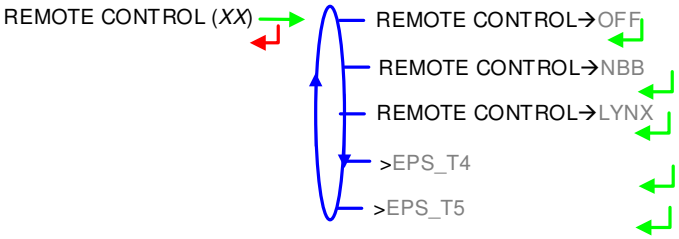
When additional commands is active, this menu allows to select the type of command for power take off.

PTO: Non-stop command PTO→CONTINUE or command by pulse PTO→PULSE



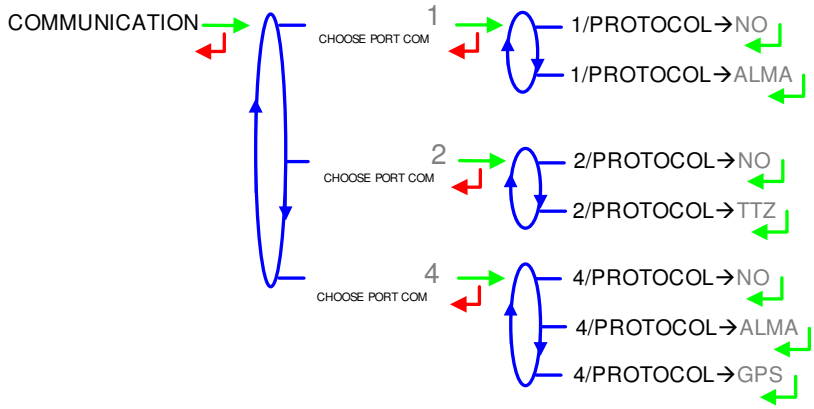
6.2.2 Sub-menu REMOTE CONTROL

This menu allows to choose the remote control model.



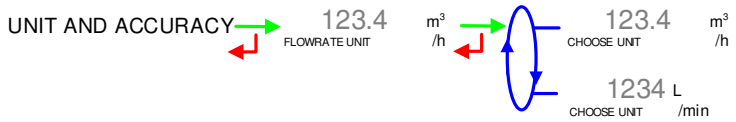
6.2.3 Sub-menu COMMUNICATION

Choose the network communication port: COM 1 (RS232), COM 2 (RS485), COM 4 (RS232) and then for each port, choose the communication protocol.



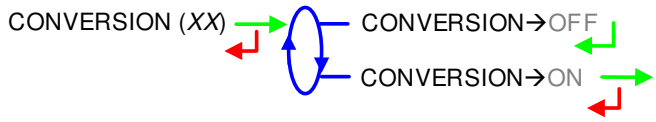
6.2.4 Sub-menu UNIT AND ACCURACY

Choose the unit of the flowrate that will be displayed and printed.



6.2.5 Sub-menu CONVERSION

The GPL TRONIQUE can operate with conversion or not.



Changing the status resets the metrological diary by causing a 'MEMORY LOST' fault.

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

MAIN DISPLAY: Select the type for displayed volume

VM: Volume in metering conditions

VBASE: Volume converted to the reference temperature

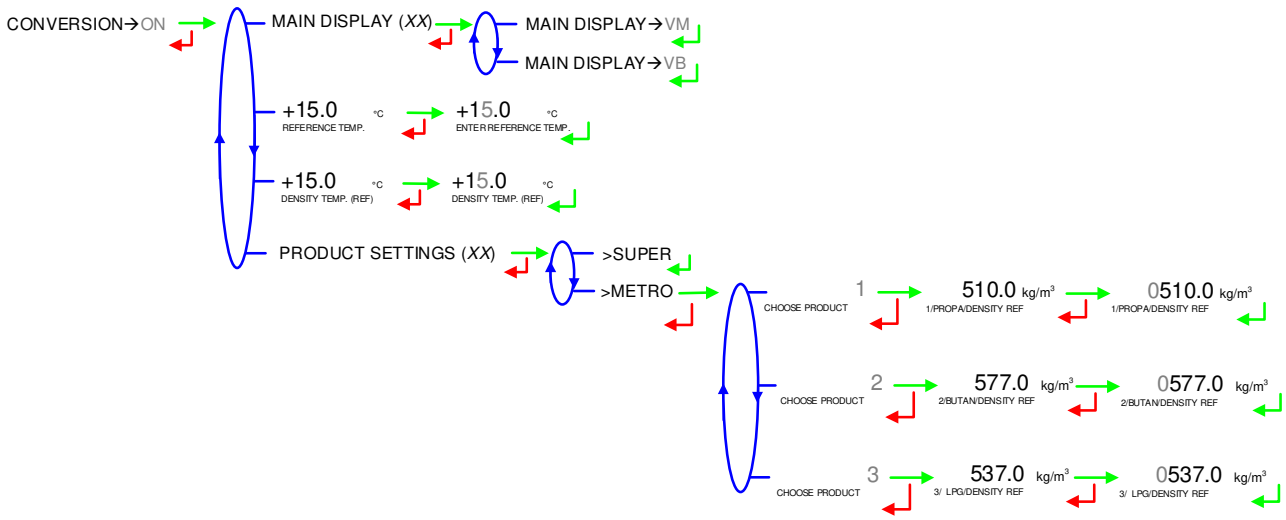
REFERENCE TEMP.: Record the reference temperature for conversion. Default value: 15°C for the most common conversion

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

Changing one of the reference temperature values resets the metrological diary by causing a 'MEMORY LOST' fault.

PRODUCT SETTINGS: Choose whether density setting is possible in SUPERVISOR or METROLOGICAL MODE.

- If **PRODUCT SETTINGS>SUPER** is chosen, the density value for each product can be set in SUPERVISOR mode with the menu PRODUCT SETTINGS.
- If **PRODUCT SETTINGS>METRO** is chosen, validate or enter the density value for each product. The non-editable values will be displayed in SUPERVISOR mode with the menu PRODUCT SETTINGS.

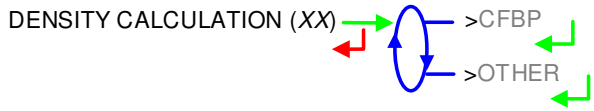


6.2.6 Sub-menu DENSITY CALCULATION

This menu is used without any conversion of volume: CONVERSION→OFF. Density can be calculated in two ways:

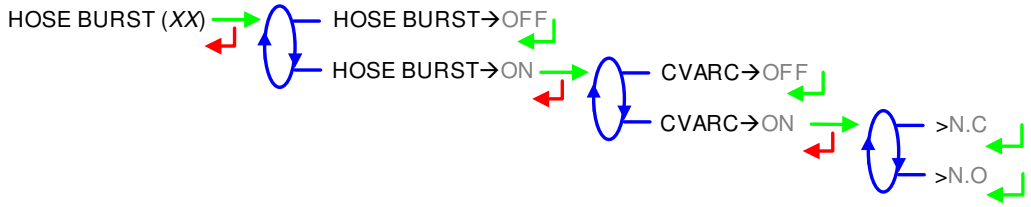
>CFBP: By using the CFBP table

>OTHER: By using another curve. If the option is enabled, the coefficients of the polynomial must be entered in the menu DENSITY CURVES of the SUPERVISOR MODE



6.2.7 Sub-menu HOSE BURST

This menu is used to configure an emergency stop in case of hose burst.

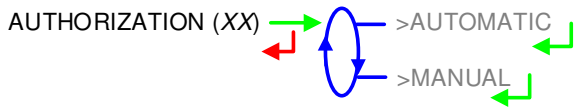


6.2.8 Sub-menu AUTHORIZATION

This menu is used to configure how the delivery starts:

AUTOMATIC: The delivery starts automatically

MANUAL: Press the green button OK to start delivery.

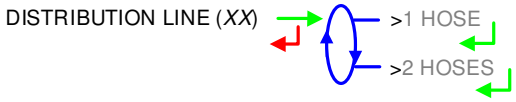


6.2.9 Sub-menu DISTRIBUTION LINE

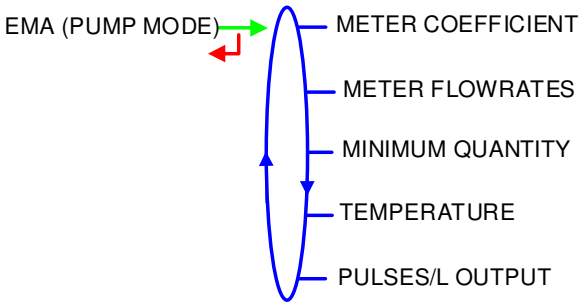
This menu allows to set the number of distribution ways:

1 HOSE: Operation with 1 hose

2 HOSES: Operation with 2 hoses.



6.3 Menu measuring system EMA (PUMP MODE)



6.3.1 Sub-menu METER COEFFCIENT

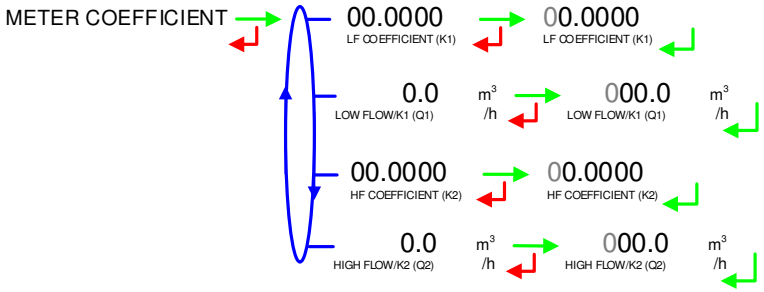
This menu is used to set the coefficient of the measuring system meter (pulses/litre)

LF COEFFICIENT (K1): Coefficient for low flow (pulses/litre)

LOW FLOWRATE/K1 (Q1): Low flow reference (m^3/h)

HF COEFFICIENT (K2): Coefficient for high flow (pulses/litre)

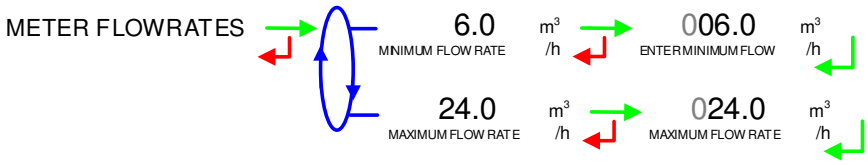
HIGH FLOWRATE /K2 (Q2): High flow reference (m^3/h)



6.3.2 Sub-menu METER FLOWRATES

MINIMUM FLOWRATE: Record the metrological minimum flowrate of the GPL TRONIQUE in m^3/h or l/min. You can select the flow unit in the menu CONFIGURATION>UNIT AND ACCURACY.

MAXIMUM FLOWRATE: Record the metrological maximum flowrate of the GPL TRONIQUE in m^3/h or l/min. You can select the flow unit in the menu CONFIGURATION>UNIT AND ACCURACY.

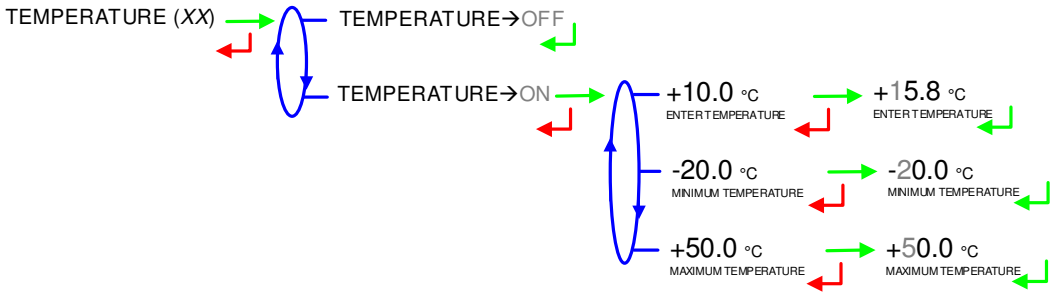


6.3.3 Sub-menu MINIMUM QUANTITY

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

6.3.4 Sub-menu TEMPERATURE

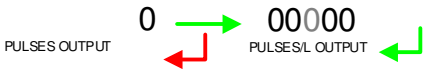
This menu is an option. It is used to calibrate the temperature into the MICROCOMPT+. See maintenance sheet FM 8510.



6.3.5 Sub-menu PULSES OUTPUT

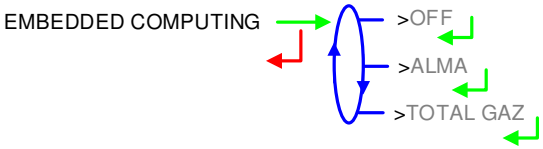
Copy out the volume measured by the GPL TRONIQUE.

Record the number of pulses that the MICROCOMPT+ must generate for each display-unit counted in the totaliser. Enter a null value to disable the function



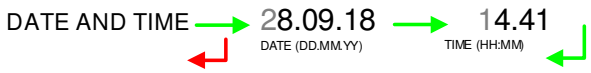
6.4 Menu EMBEDDED COMPUTING

Choose the communication for embedded computing.



6.5 Menu DATE AND TIME

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



ANNEXE

SUMMARY

```
GPLTRONIQUE 384+  carte rev8
VERSION 3.03.04 DATED 23/10/18
PRINTED 23/10/18 AT 11h55
VEHICLE :  AA215EL
INDICATOR :  03201

SUMMARY
OF MEASUREMENTS OF 23.10.18 AT 15H03
DAY 296   005 MEMORISED RESULTS

TICKET NUMBER              006

        **** DAILY TOTALISERS ****

PROPA   (1) :          00026000 L
BUTAN   (2) :          00005000 L
GPL     (3) :          00000000 L
        (4) :          00000000 L
        (5) :          00000000 L
        (6) :          00000000 L
        (7) :          00000000 L
        (8) :          00000000 L

TOTAL FROM 1 TO 8: 00031000 L

      ********** SUMMARY **********
HR     HR     NB                 (L)          (°C)
BEG    END    MEASU  PROD   VOLUME TEMP
09:40  09:50  001    PROPA  1400   +11,3
09:51  10:01  002    BUTAN  1200   +11,3
10:02  10:23  003    BUTAN   0500  +10,6
```

TOTALISERS

```
GPLTRONIQUE 384+  carte rev8
VERSION 3.03.04 DATED 23/10/18
PRINTED 23/10/18 AT 10h20
VEHICLE :  AA215EL
INDICATOR :  03201



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

GENERAL TOTALISER:     00056638  L

PROPA   (1) :          00028000 L
BUTAN   (2) :          00028000 L
GPL     (3) :          00000000 L
        (4) :          00000000 L
        (5) :          00000000 L
        (6) :          00000000 L
        (7) :          00000000 L
        (8) :          00000000 L

TOTAL FROM 1 TO 8: 00056000 L
```

PARAMETERS

```
GPLTRONIQUE 384+  carte rev8
Version 3.03.04 dated 23/10/18
Printed 23/10/18 at 11h55
Vehicule :  AA215EL
Indicator :  03201

********** PARAMETERS **********

RC OPTION              : OFF
REMOTE CONTROL   : OFF
CONVERSION           : ON
REFERENCE TEMP   : +15°C
DENSITY CURVE       : OFF
HOSE BURST           : ON
AUTHORIZATION       : MANUAL
TICKET                   : xxx
DELIVERY TICKET     : ON
EMA PUMP
  COEFFICIENT K1    : 09.8148P/L
  FLOWRATE Q1 (LF):      5.5M3/H
  COEFFICIENT K2    : 09.7926P/L
  FLOWRATE Q2 (HF):   17.3M3/H
  MIN FLOW: 6.0M3/H / MAX:24.0M3/H
  MINIMUM QUANTITY: 000200 L
  TEMPERATURE       :+12.8 °C
COMPUTING
     COM1  : NO
     COM2  : NO
     COM4  : NO
PULSE COEFFICIENT: +1  P/L

  ********** PRODUCTS **********

  PROPA   (510.0 kg/m3)
  BUTA     (577.0 kg/m3)
  GPL      (537.0 kg/m3)
  DENSITY TEMP. (REF) : +15.0°C
  (MVREF SUPER)

 ********** SETTINGS **********

 LF END VOLUME              : 30 L
 FLOWRATE FOR HF          : 7.0 M3/H
 SHORT TIME FLOW_0       : 20.00
 LONG TIME FLOW_0         : 30.00
 T.O DECLUTCHING (S)      : 0
 T.O DECLUTCH→PTO(S)   : 5
 T.O PTO→VALVE (S)        : 5
 T.O VALVE→CLUTCH(S)   : 5
 T.O DECLUT→VALVE(S)   : 5
 T.O VALVE→PTO (S)        : 5
 T.O PTO→CLUTCH (S)       : 5
 T.O STOP→MOTOR (S)       : 3
 STOP FLOWRATE 5.0M3/H WITH 0.2 L
```

EVENTS RECORDED

```
GPLTRONIQUE 384+  carte rev8
VERSION 3.03.04 DATED 23/10/18
PRINTED 23/10/18 AT 18h20
VEHICLE :  AA215EL
INDICATOR :  03201



68 RECORDING(S)

14:33:33 DRIVER MODE
14:30:03 SWITCH ON
14:24:33 RESET APPLICATION
...


09:47:15 PARAM@15=          0
09:47:06 PARAM@  5=          1
09:42:57 PARAM@16=          2
08:59:02 METROLOGICAL MODE
08:58:57 TEMPERATURE DEFAULT
```

RELATED DOCUMENTS

GU 7051	User Guide
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 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 8510	Adjustment of a temperature chain into the MICROCOMPT+ by software settings