


USER MANUAL

MU 7051 EN H
LPG TRONIQUE



Document applicable for the software from 384+v3.7.x

| | | | | |
|-------|------------|--|------------|-------------|
| H | 2024/01/12 | Deletion of « Low Flow Debut »that appeared in the sub-chapter 4.6 List of alarms. | ITB | NC |
| G | 2023/10/11 | Change menus | ITB | NC |
| F | 2019/12/10 | Connected MICROCOMPT+ [PJV129] | DSM | SQS |
| 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 |
| A | 2010/12/06 | Creation | DSM | MV |
| Issue | Date | Nature of modifications | Written by | Approved by |

| | | |
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1 GENERAL PRESENTATION AND DESCRIPTION

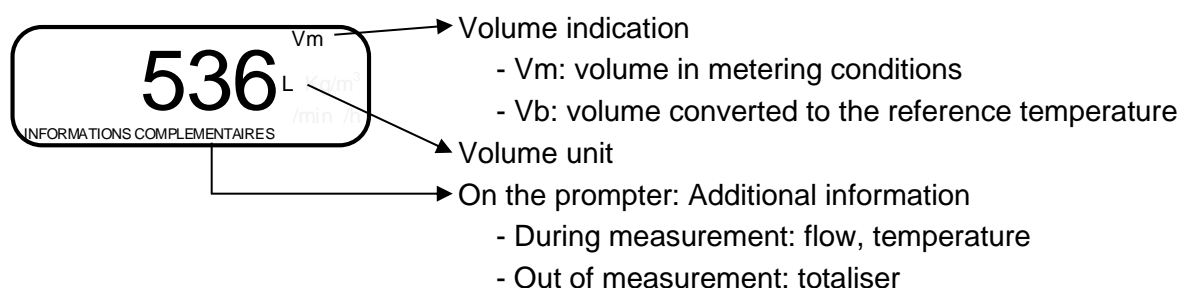
The LPG TRONIQUE is a measuring system that must be fitted on road tankers. It measures liquefied gases under pressure.

The LPG TRONIQUE contains these parts:




- ⇒ A turbine measuring device for liquefied petroleum gas
- ⇒ A MICROCOMPT+ electronic device
- ⇒ A gas separator
- ⇒ A pump
- ⇒ An automatic pressure control valve
- ⇒ A set of devices by two ways of delivery, controlled by a valve allowing the choice between a full flexible hose delivery or by a direct release
- ⇒ A temperature probe (option)
- ⇒ A printer

There are two models of LPG TRONIQUE: volume at temperature or volume at reference temperature (measure and compensation of the volume at a reference temperature). The LPG TRONIQUE can operate with the embedded computing option. A remote control version of the LPG TRONIQUE is also available (LPG TRONIQUE CD). This document presents all the possibilities. Some menus are the same; others are specific and are differently identified.



The LPG TRONIQUE has one display:



The LPG 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 |

Use the RFID keys:

| | |
|--|--|
|  | Blue key: Level-User This key is associated to a single MICROCOMPT+. It is used to switch into SUPERVISOR mode. |
|  | Green key: Level-Manager This key is associated to a single or several MICROCOMPT+. It is used to switch into SUPERVISOR mode. |

2 CONNECTED FEATURES

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


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

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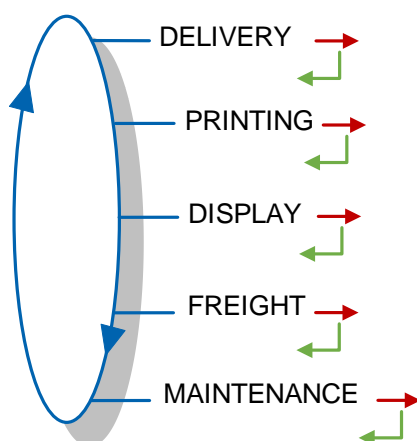
Three tricolor LED on the MICROCOMPT+ front face are showing the wireless connection status as described in the table below:

| Left-hand LED: Bluetooth (Blue) or Wi-Fi (Cyan) | Middle LED: GSM / GPS | Right-hand LED: NFC (RFID) |
|--|---|---|
| <p><u>Steady light:</u></p> <ul style="list-style-type: none"> Blue / Cyan*: Connection OK Red: Waiting for initialization <p><u>Flashing light:</u></p> <ul style="list-style-type: none"> Blue / Cyan slow flashing: Waiting for connection Blue / Cyan rapid flashing: Communication in progress Red: Initialization error | <p><u>Steady light:</u></p> <ul style="list-style-type: none"> Purple: Waiting for internet connection White: Internet connection OK Red: Waiting for initialization <p><u>Flashing light:</u></p> <ul style="list-style-type: none"> White: Transfer in progress Red every 2 seconds: Coordinates not found Green every 2 seconds: GPS OK Red: Initialization error | <p><u>Flashing light:</u></p> <ul style="list-style-type: none"> Green: Authentication of the RFID key OK Red: Authentication error of the RFID key Green/ Red: RFID key not accepted, but authentication is ok |

3 OPERATING RECOMMENDATIONS

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

4 USE THE LPG TRONIQUE: USER MODE



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

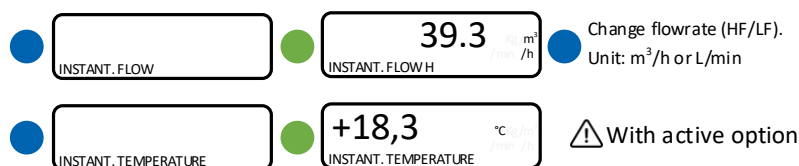
The use of the LPG TRONIQUE depends on the hardware configuration of the truck, the features and the configuration of the equipment carried out during commissioning.

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 measurement, the following information may be displayed:

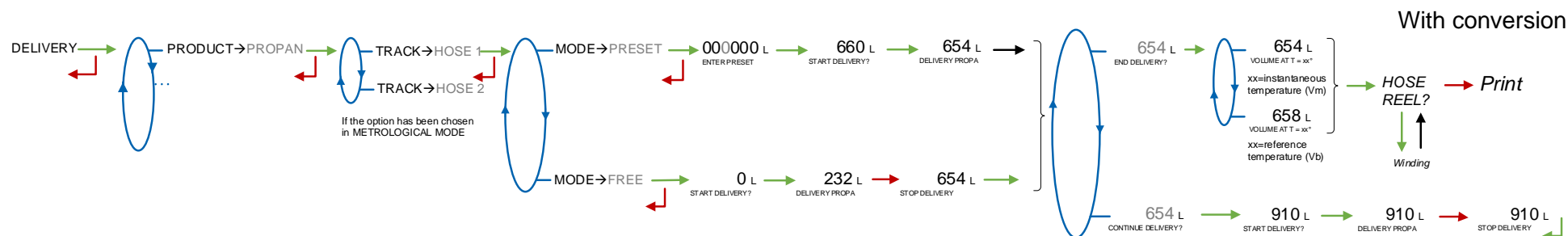
- ⇒ The instantaneous high or low flow rate. The unit is m^3/h or L/min ; depending on the display unit set
- ⇒ The temperature ($^{\circ}\text{C}$) if it is considered.



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

4.1 Menu DELIVERY

If the LPG TRONIQUE is configured with a LYNX or EPS-T5 remote control, the menus for choosing the product and entering the volume (MODE-> PRESET>SAISIR PREDE) are not shown.

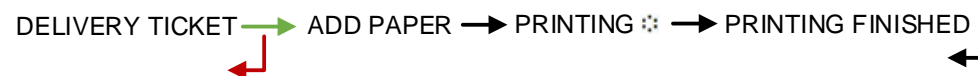
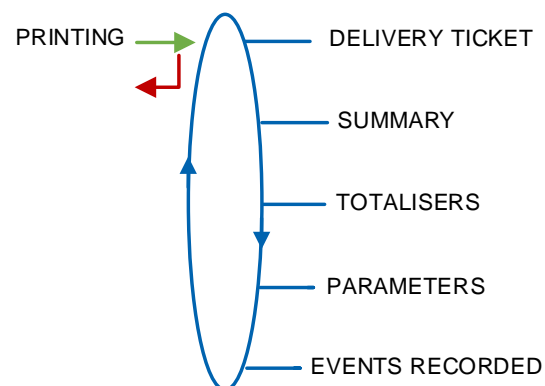


HOSE REEL :

The sub-menu is only available if the RCT5 remote control and hose control are active.

Printing:

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

**4.2 Menu PRINTING**


DELIVERY TICKET: Print the ticket of the last measuring operation

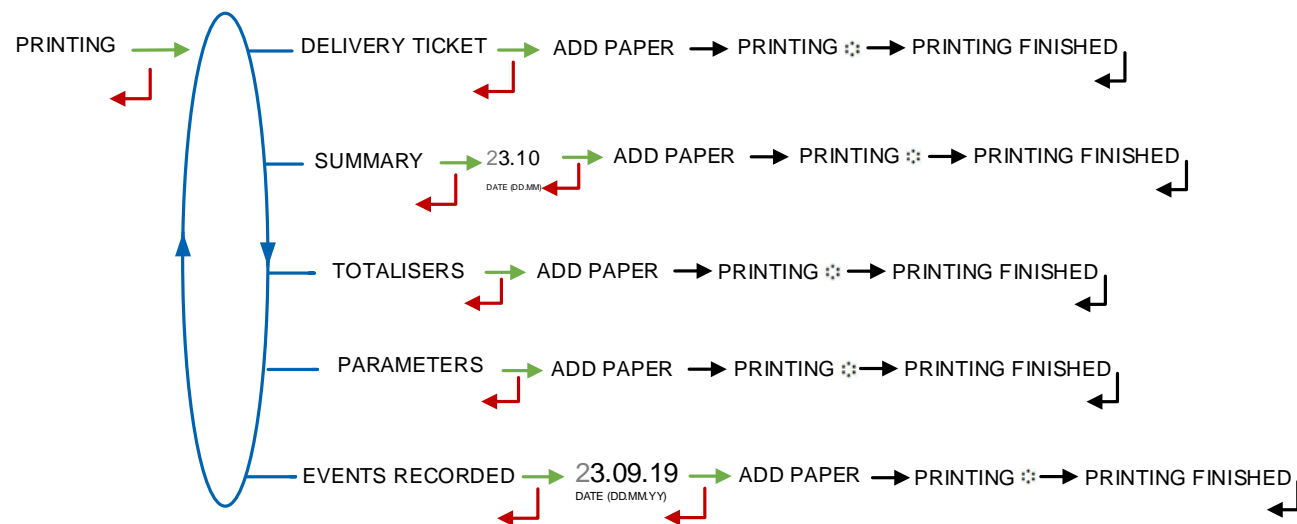
SUMMARY: Record a date and validate to print the summary of the measuring operations

TOTALISERS: Print the products totalisers.

PARAMETERS: Print the recorded parameters.

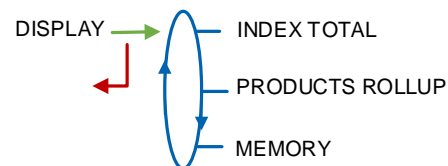
EVENTS RECORDED: Record a date and validate to print the events recorded.

| | | |
|---|--|-----------|
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4.3 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.



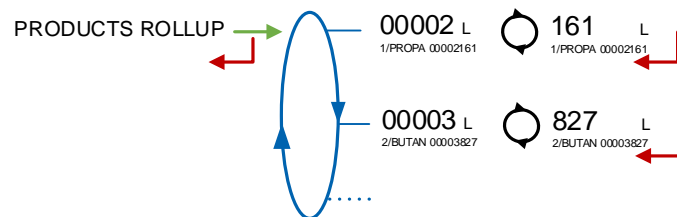
4.3.1 Sub-menu INDEX TOTAL

Displays the main totaliser.




4.3.2 Sub-menu PRODUCTS ROLLUP

Display the secondary totalisers per product.



4.3.3 Sub-menu MEMORY

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

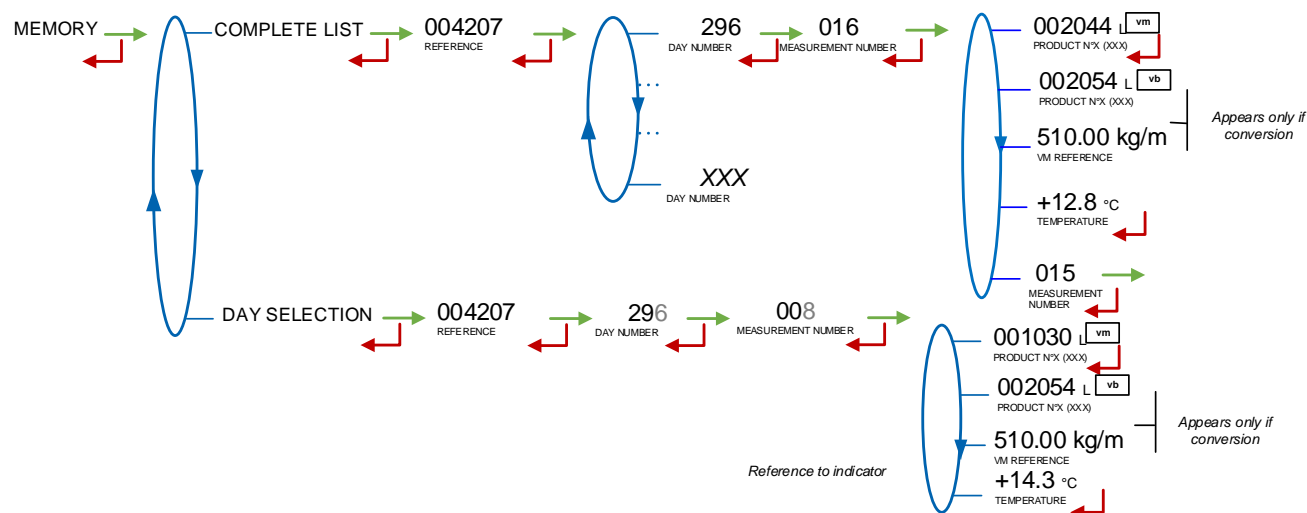
| | | |
|---|--|------------|
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COMPLETE LIST: Display all the measurement details recorded from the newest to the oldest, sorted by day then by measurement number.

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


For each measurement, you can read:

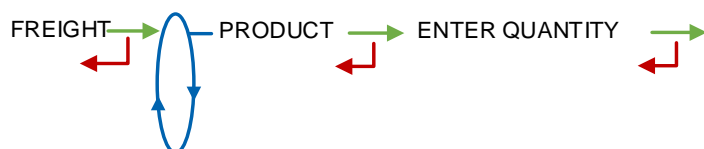
- The measured quantity, the number and the name of the product
- The temperature, with active option



4.4 Menu FREIGHT

This menu depends on the configuration of the LPG TRONIQUE. The product and the freight quantity are set by the user or automatically. In that case, they cannot be manually changed. The freight quantity is updated as the measuring operations progress.

| | | |
|---|--|------------|
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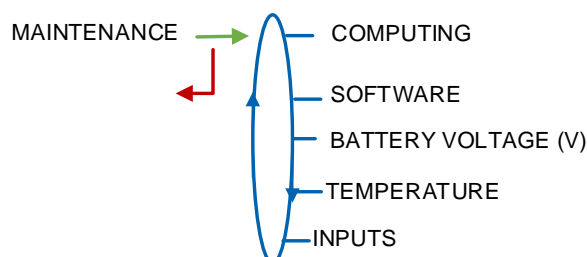
For the next operation, the LPG TRONIQUE displays the name of the product set for the freight.

The free delivery mode can start if the quantity set for the freight is non-zero. The preset delivery mode can start if the quantity set for the freight is non-zero and if the preset volume is below or equal to this quantity.

When the user enters the preset volume, the MICROCOMPT+ can display the information that follows:

- MINIMUM QUANTITY: The volume set is less than the minimum quantity
- MAXIMUM QUANTITY: The volume set is higher than the quantity set for the freight
- PRESET→NOT POSSIBLE: The freight quantity is null or less than the minimum quantity
- FREE→NOT POSSIBLE: The freight quantity is null.

4.5 Menu MAINTENANCE



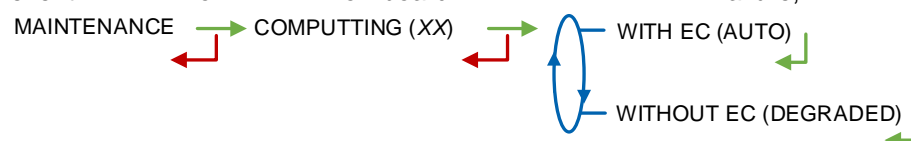
4.5.1 Sub-menu COMPUTING

This menu depends on the setting of the LPG TRONIQUE.

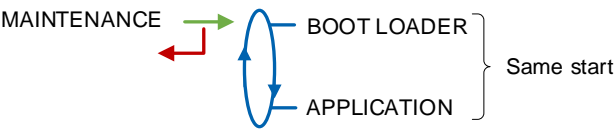
- If the LPG tronique manages IT : this menu is used to enable or disable operation with embedded computing.

COMPUTING→WITH IC (auto): Enables operation with embedded computing

COMPUTING→WITHOUT IE (degraded) : Enables degraded operation without on-board IT (in the event of on-board IT failure, for example)

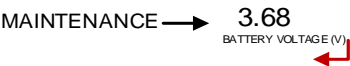


4.5.2 Sub-menu SOFTWARE



4.5.3 Sub-menu BATTERY VOLTAGE (V)

Displays the battery voltage in volts.



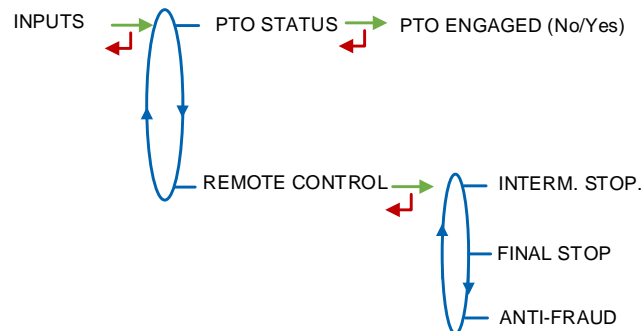
4.5.4 Sub-menu TEMPERATURE

This menu shows the current temperature.



4.5.5 Sub-menu INPUTS

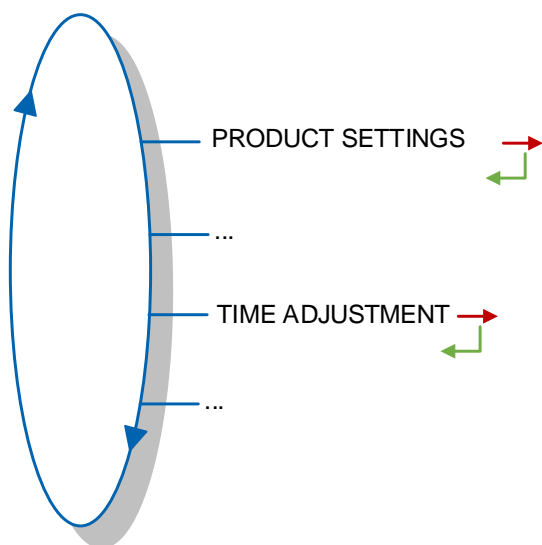
Input status display for easy maintenance.



4.6 List of alarms

| | DISPLAY | MEANING | ACTION |
|---|----------------------|---|---|
| USER | STOP DELIVERY | Intentional interruption of delivery | Continue or end the delivery |
| | COMMUNICATION FAULT | 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) |
| | 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 (RFID key) |
| Three tricolour LED on the MICROCOMPT+ front face are showing the wireless connection status as described in the operating manual MU 7051 | | | |
| REPARATOR | 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 |
| | 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 |
| | 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 (RFID 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 |

5 SET THE LPG TRONIQUE: SUPERVISOR MODE



5.1 Menu PRODUCT SETTINGS

This menu is used to set the product label.

5.2 Menu TIME ADJUSTMENT

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

TIME ADJUSTMENT  14.41
TIME (HH:MM)

The diagram shows the text 'TIME ADJUSTMENT' followed by a green arrow pointing right and a red arrow pointing left. To the right of these arrows is the number '14.41' with the text 'TIME (HH:MM)' below it. A green arrow points right from the number, and a red arrow points left from the number.

ANNEX 1: PRINTINGS

SUMMARY

GPLTRONIQUE 384+ carte rev8
 VERSION 3.07.03 DATED 10/10/23
 RESIDENT 04.05.01 (6F7E)
 PRINTED 10/10/23 AT 11h55
 VEHICLE : AA-000-AA
 INDICATOR : 03201

SUMMARY
 OF MEASUREMENTS OF 10.10.23
 DAY 283 005 MEMORISED RESULTS

TICKET NUMBER 006

**** DAILY TOTALISERS ****

| | |
|-------------|------------|
| PROPA (1) : | 00026000 L |
| BUTAN (2) : | 00005000 L |
| LPG (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 |

PARAMETERS

GPLTRONIQUE 384+ carte rev8
 VERSION 3.07.03 DATED 10/10/23
 RESIDENT 04.05.01 (6F7E)
 PRINTED 10/10/23 AT 11h55
 VEHICLE : AA-000-AA
 INDICATOR : 03201
 ***** PARAMETERS *****

RC OPTION : OFF
 REMOTE CONTROL : OFF
 CONVERSION : ON
 REFERENCE TEMP. : +15.0°C
 DENSITY CURVE : OFF
 HOSE BURST : ON
 HOSE FLOWRATE : 99.0 M3/H
 HOSE VFLOWRATE : 30 L
 VARC : OFF
 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

PULSES OUTPUT : +1 P/L

***** PRODUCTS *****

PROPA (510.0 kg/m3)
 BUTAN (577.0 kg/m3)
 LPG (537.0 kg/m3)
 DENSITY TEMP. (REF) : +15.0°C

***** SETTINGS *****

END LOW FLOW VOLUME : 30 L
 FLOW ACTIVATED 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

TOTALISERS

GPLTRONIQUE 384+ carte rev8
 VERSION 3.07.03 DATED 10/10/23
 RESIDENT 04.05.01 (6F7E)
 PRINTED 10/10/23 AT 11h55
 VEHICLE : AA-000-AA
 INDICATOR : 03201

***** TOTALISERS*****

GENERAL TOTALISER: 00056638 L

| | |
|-------------|------------|
| PROPA (1) : | 00028000 L |
| BUTAN (2) : | 00028000 L |
| LPG (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

EVENTS RECORDED

GPLTRONIQUE 384+ carte rev8
 VERSION 3.07.03 DATED 10/10/23
 RESIDENT 04.05.01 (6F7E)
 PRINTED 10/10/23 AT 11h55
 VEHICLE : AA-000-AA
 INDICATOR : 03201

EVENTS ON 10/10/2023

68 RECORDING(S)

14:33:33 USER 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

DELIVERY TICKET (according to customer):

Date : 10/10/23
 Truck N° : AA-215-EL
 Product : PROPANE
 Delivery N° : 002

Index 008 before : 00006530
 Index 009 after : 00006829
 Quantity : 00299 L

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

Freight volume : 00299 L

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 in a MICROCOMPT+ |