

USER MANUAL

MU 7131 EN A
LPG TRONIQUE MASSIC



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

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1 GENERAL PRESENTATION AND DESCRIPTION

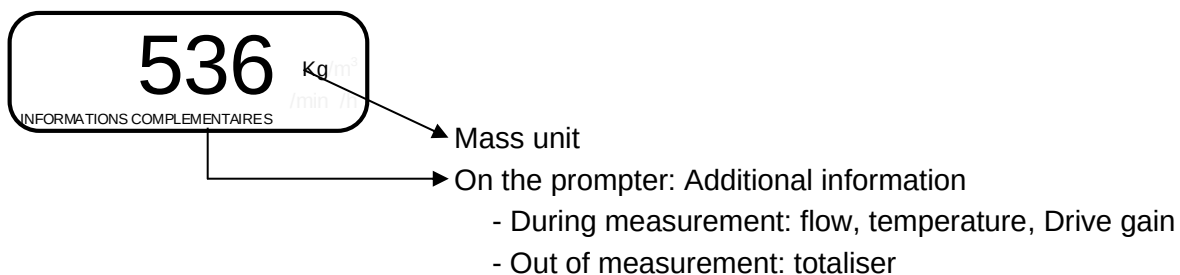
The LPG TRONIQUE is a measuring system that must be fitted on road tankers. It measures liquefied gases under pressure.

The LPG TRONIQUE contains these parts:

- ⇒ A mass flowmeter CORIOLIS
- ⇒ A MICROCOMPT+ electronic device
- ⇒ A gas separator, optional
- ⇒ 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 printer

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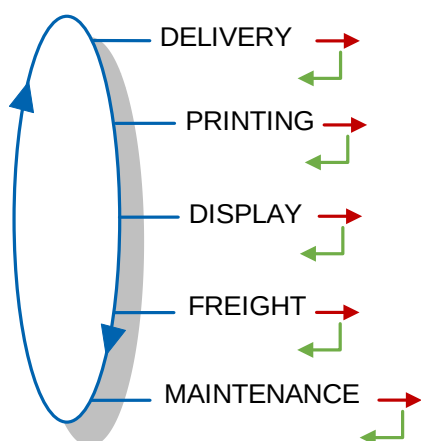
Three tricolor LED on the MICROCOMPT+ front face are showing the wireless connection status as described in the table below:

Left-hand LED: Bluetooth (Blue) or Wi-Fi (Cyan)	Middle LED: GSM / GPS	Right-hand LED: NFC (RFID)
<u>Steady light:</u> • Blue / Cyan*: Connection OK • Red: Waiting for initialization <u>Flashing light:</u> • Blue / Cyan slow flashing: Waiting for connection • Blue / Cyan rapid flashing: Communication in progress • Red: Initialization error	<u>Steady light:</u> • Purple: Waiting for internet connection • White: Internet connection OK • Red: Waiting for initialization <u>Flashing light:</u> • White: Transfer in progress • Red every 2 seconds: Coordinates not found • Green every 2 seconds: GPS OK • Red: Initialization error	<u>Flashing light:</u> • 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 Coriolis 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.

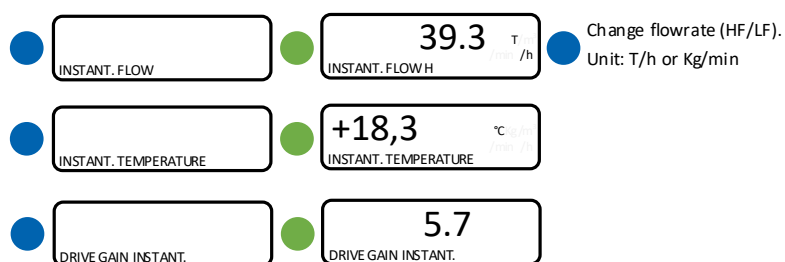
The use of the LPG TRONIQUE depends on the hardware configuration of the truck, the features and the configuration of the equipment carried out during commissioning.

Therefore, the user menu depends on several items:

- ⇒ The number of distribution ways (one or two)
- ⇒ The distribution mode (free or preset)

During measurement, the following information may be displayed:

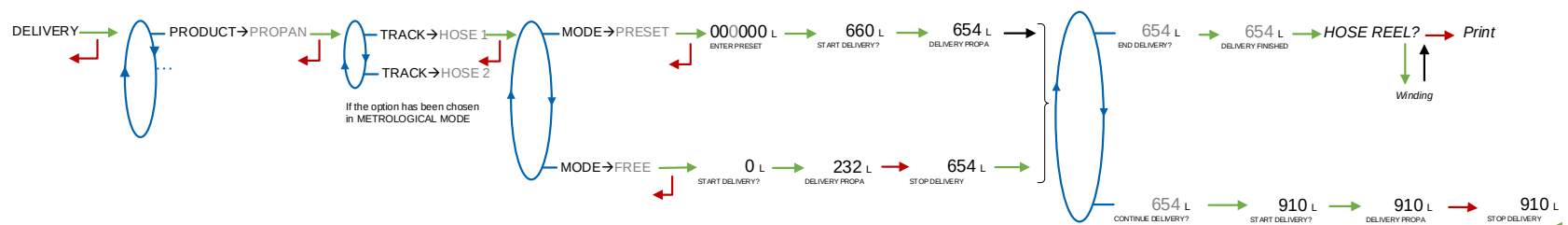
- ⇒ The instantaneous high or low flow rate. The unit is T/h or kg/min; depending on the display unit set
- ⇒ The temperature (°C) if it is considered.



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.

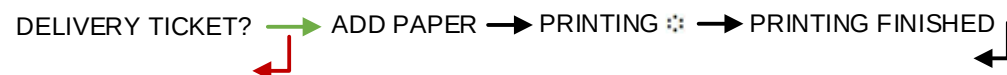


HOSE REEL :

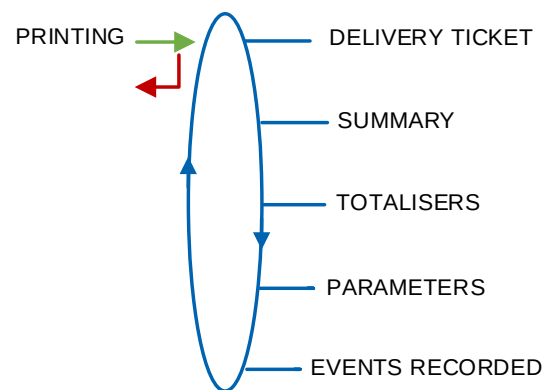
The sub-menu is only available if the RCT5 remote control and hose control are active.

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



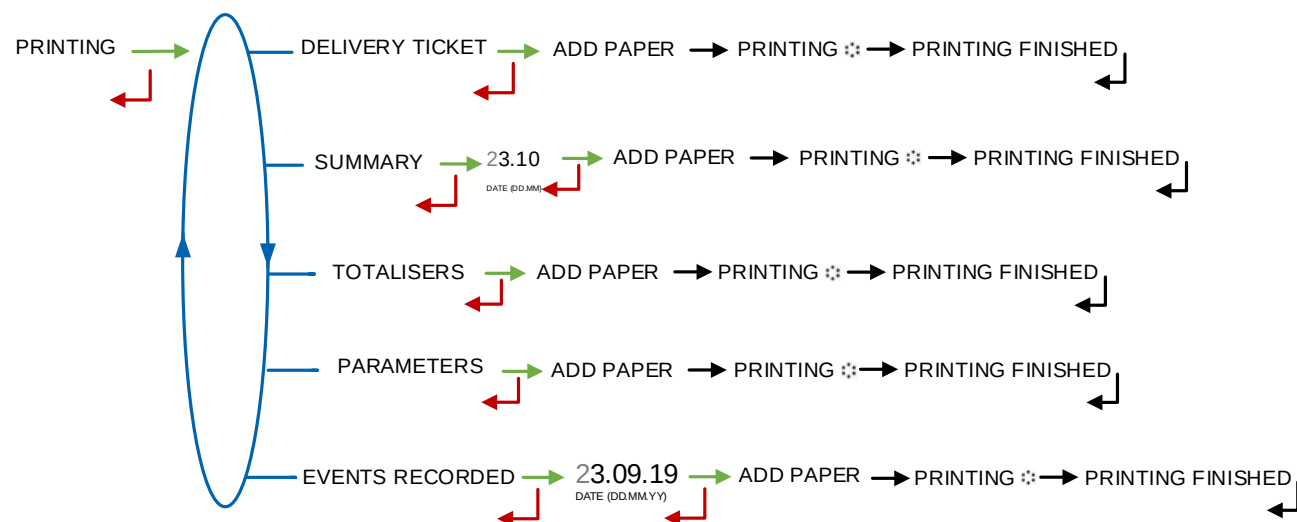
DELIVERY TICKET: Print the ticket of the last measuring operation

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

TOTALISERS: Print the products totalisers.

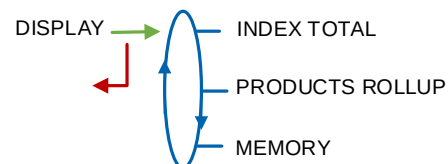
PARAMETERS: Print the recorded parameters.

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



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.



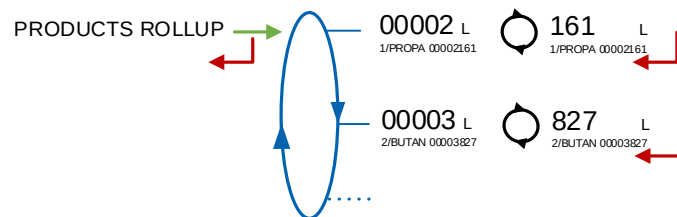
4.3.1 Sub-menu INDEX

Displays the main totaliser.



4.3.2 Sub-menu PRODUCTS ROLLUP

Display the secondary totalisers per product.



4.3.3 Sub-menu MEMORY

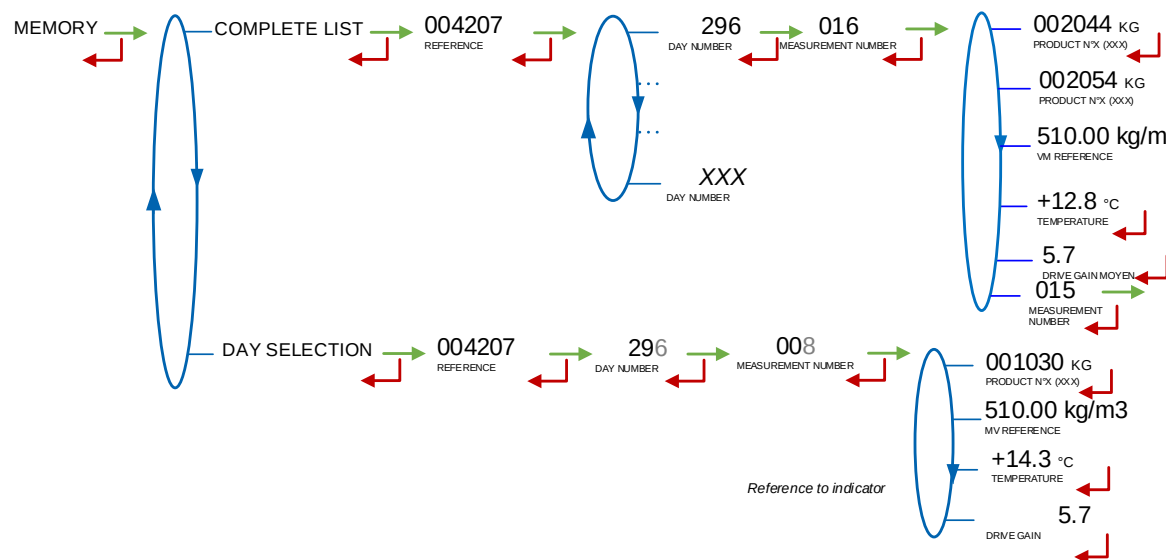
You can read all the measurement results stored by the MICROCOMPT+. That can be done in two ways:

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:

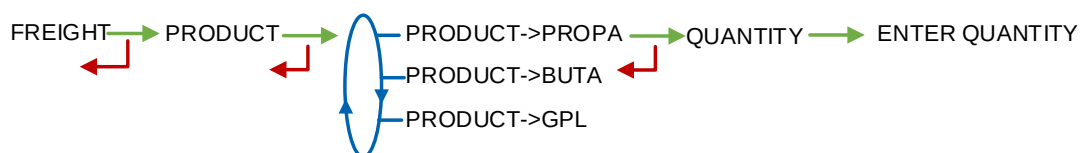
- The measured quantity, the number and the name of the product
- The mass volume of the product (with only the CORIOLIS)
- The temperature
- DRIVE GAIN (with only the CORIOLIS)



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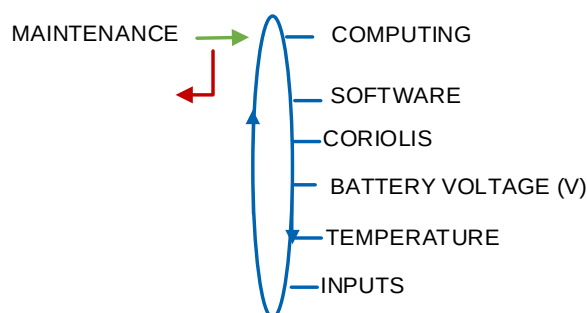
For the next operation, the LPG TRONIQUE displays the name of the product set for the freight.

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



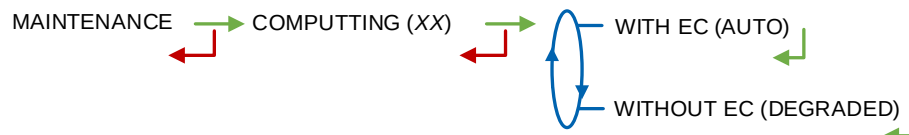
4.5.1 Sub-menu COMPUTING

This menu depends on the setting of the LPG TRONIQUE.

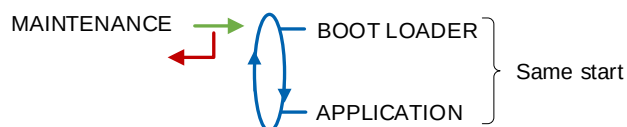
- If the LPG tronique manages IT : this menu is used to enable or disable operation with embedded computing.

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)

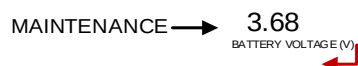


4.5.2 Sub-menu SOFTWARE



4.5.3 Sub-menu BATTERY VOLTAGE (V)

Displays the battery voltage in volts.



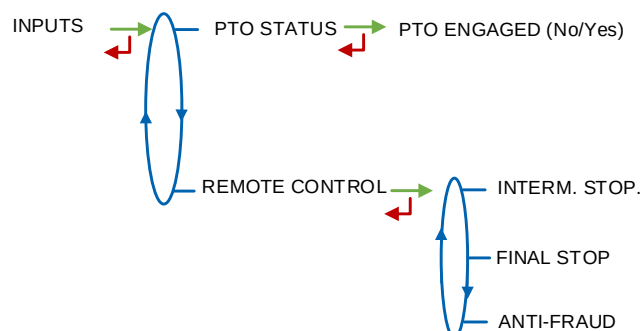
4.5.4 Sub-menu TEMPERATURE

This menu shows the current temperature.

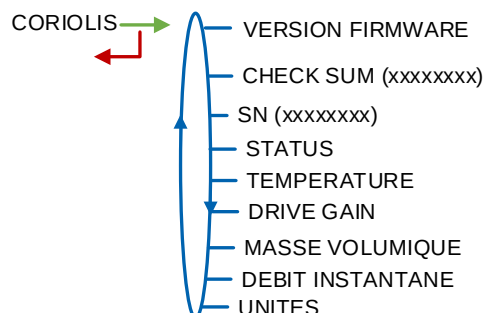


4.5.5 Sub-menu INPUTS

Input status display for easy maintenance.



4.5.6 Sub-menu CORIOLIS



This can be used to display states and quantities from the CORIOLIS.

- **STATUS** : This is the internal state of the CORIOLIS. Its value is zero when the CORIOLIS detects no internal problem. If the value is not zero, note it down and send it to the manufacturer, who will analyse the cause of the problem.
- **TEMPERATURE** : the current temperature of the fluid in the CORIOLIS.
- **DRIVE GAIN** : the current DRIVE GAIN value
- **MASS VOLUME** : the current density of the fluid in the CORIOLIS (in kg/m³)
- **MASS FLOW RATE**: the flow rate of the fluid in the CORIOLIS
- **UNITS** : the units of mass, mass flow rate and density set in CORIOLIS..

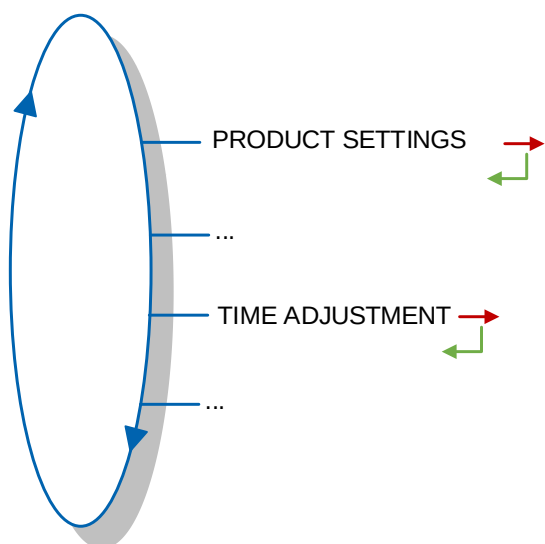
4.6 List of alarms

	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)
	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)
	DRIVE GAIN DEFAULT	During a measurement, the CORIOLIS Drive Gain becomes superior to the DriveGain max.	Stop the measurement
	DEF.COM.CORIOLIS	The CORIOLIS does not respond to the MICROCOMPT request	Check COM port connections and settings in Supervisor mode
	DEF PARAM CORIOLIS	At start, the MICROCOMPT could not get the CORIOLIS parameters.	No measurement possible. Restart the MICROCOMPT.
	CORIOLIS DEFAULT	The CORIOLIS reports an intern default.	Note the code displayed with the alarm to report to the maintenance. No measurement possible.
	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
	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

Le paramétrage et la configuration du système sont décrits dans le Manuel de mise en service et de maintenance MM XXXX. Cependant les opérations les plus courantes effectuées par l'exploitant, telles que le réglage de l'heure ou la configuration des produits, sont décrites sommairement ci-dessous.

L'accès au paramétrage est soumis à l'utilisation d'une clé RFID.



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) 

ANNEX 1: PRINTINGS

SUMMARY

PARAMETERS

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GPLTRONIQUE 384+ carte rev8
 VERSION 3.08.00 DATED 30/07/24
 RESIDENT 05.01.02 (B6A97AA1)
 PRINTED 19/12/24 AT 11h55
 VEHICLE : AA-00-AA
 INDICATOR : 03201
 SUMMARY
 OF MEASUREMENTS OF 19.12.24
 DAY 354 005 MEMORISED RESULTS

TICKET NUMBER 006

*** DAILY TOTALISERS ***

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

TOTAL FROM 1 TO 8: 00031000 KG

***** SUMMARY *****

HR	HR	NB	(KG)	(°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

GPLTRONIQUE 384+ carte rev8
 VERSION 3.08.00 DATED 30/07/24
 RESIDENT 05.01.02 (B6A97AA1)
 PRINTED 19/12/24 AT 11h55
 VEHICLE : AA-00-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 KG
 VARC : OFF
 AUTHORIZATION : MANUAL
 TICKET : xxx
 DELIVERY TICKET : ON
 EMA PUMP
 COEFFICIENT K1 : 09.8148P/KG
 FLOWRATE Q1 (LF): 5.5M3/H
 COEFFICIENT K2 : 09.7926P/KG
 FLOWRATE Q2 (HF): 17.3M3/H
 MIN FLOW: 6.0M3/H / MAX:24.0M3/H
 MINIMUM QUANTITY: 000200 KG
 TEMPERATURE : +12.8 °C
 COMPUTING
 COM1 : NO
 COM2 : NO
 COM4 : NO
 PULSES OUTPUT : +1 P/KG

***** 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 KG
 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 0.2KG

TOTALISERS

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 RESIDENT 05.01.02 (B6A97AA1)
 PRINTED 19/12/24 AT 11h55
 VEHICLE : AA-00-AA
 INDICATOR : 03201

***** TOTALISERS*****

GENERAL TOTALISER: 00056638 KG

PROPA (1) :	00028000 KG
BUTAN (2) :	00028000 KG
LPG (3) :	00000000 KG
(4) :	00000000 KG
(5) :	00000000 KG
(6) :	00000000 KG
(7) :	00000000 KG
(8) :	00000000 KG

TOTAL FROM 1 TO 8: 00056000 KG

EVENTS RECORDED

GPLTRONIQUE 384+ carte rev8
 VERSION 3.08.00 DATED 30/07/24
 RESIDENT 05.01.02 (B6A97AA1)
 PRINTED 19/12/24 AT 11h55
 VEHICLE : AA-00-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 : 19/12/24
 Truck N° : AA-215-EL
 Product : PROPANE
 Delivery N° : 002

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

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

Freight volume : 00299 KG

RELATED DOCUMENTS

GU 7119	User Guide
MM 9012	Maintenance Manual
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+