


USER MANUAL**MU 7088 EN B****AIRTRONIQUE**

B	2020/01/20	Measure of differential pressure [PJV193]	DSM	SH
A	2018/10/02	Creation [PJV167]	DSM	XS
Issue	Date	Nature of modifications	Written by	Approved by

	MU 7088 EN B AIRTRONIQUE	Page 1/39
	This document is available on www.alma-alma.fr	

CONTENTS

1	GENERAL PRESENTATION AND DESCRIPTION.....	4
2	CONNECTED FEATURES.....	5
3	CONFIGURATION, SETTINGS, CALIBRATION.....	7
4	USE THE AIRTRONIQUE: USER MODE.....	8
4.1	Menu DISCHARGING.....	9
4.2	Menu PRINT.....	10
4.3	Menu DISPLAY.....	12
4.3.1	Sub-menu TOTALISER(S).....	12
4.3.2	Sub-menu MEMORISATION.....	12
4.4	Menu MAINTENANCE.....	13
4.5	List of alarms.....	14
5	SET THE AIRTRONIQUE: SUPERVISOR MODE.....	15
5.1	Menu CALIBRATION/ GAUGE.....	15
5.1.1	Sub-menu ENTER GAUGE VOLUME.....	15
5.1.2	Sub-menu LINEARISATION/FLOW.....	16
5.2	Menu PRODUCT SETTINGS.....	17
5.3	Menu OPERATION SETTINGS.....	19
5.4	Menu LINE SETTINGS.....	19
5.5	Menu VEHICLE.....	19
5.6	Menu SETTINGS.....	19
5.6.1	Sub-menu VOLUME SETTINGS.....	20
5.6.2	Sub-menu FLOWRATE SETTINGS.....	20
5.6.3	Sub-menu BACKUP VALUE.....	20
5.6.4	Sub-menu CLOGGING SETTINGS.....	20
5.7	Menu TIME ADJUSTMENT.....	20
5.8	Menu PRINTER.....	21
5.9	Menu LANGUAGE.....	21
5.10	Menu ICOM MENUS.....	22
6	CONFIGURE THE AIRTRONIQUE: METROLOGICAL MODE.....	23
6.1	Menu INDICATOR REFERENCE.....	23
6.2	Menu CONFIGURATION.....	23
6.2.1	Sub-menu DISTRIBUTION LINE.....	23
6.2.2	Sub-menu COMPARTMENT OPTIONS.....	24
6.2.3	Sub-menu UNIT AND ACCURACY.....	24

6.2.4	Sub-menu CONVERSION	24
6.2.5	Sub-menu PULSES OUTPUT.....	26
6.3	Menu EMA.....	26
6.3.1	Sub-menu METER COEFFICIENT	26
6.3.2	Sub-menu CORRECTION	26
6.3.3	Sub-menu METER FLOWRATES	27
6.3.4	Sub-menu MINIMUM QUANTITY	27
6.3.5	Sub-menu TEMPERATURE.....	27
6.3.6	Sub-menu FILTER DELTA P.....	27
6.4	Menu DATE AND TIME.....	28
ANNEX 1: PRESENTATION OF THE MENU SUPERVISOR>ICOM MENUS.....		29
ANNEX 2: VIZUALISATION OF THE PERMITTED CHARACTERS ON THE MICROCOMPT+.....		36
ANNEX 3: PRINTINGS.....		37
RELATED DOCUMENTS.....		39

1 GENERAL PRESENTATION AND DESCRIPTION

The AIRTRONIQUE is a meter for use at airports and airfields. It measures aviation fuels such as JET A1 or AVGAS. You can install it on refueling tanker trucks, hydrant vehicles or swap bodies.

The AIRTRONIQUE contains these parts:

- ⇒ A turbine meter 2", 3" or 4"
- ⇒ A MICROCOMPT+ electronic calculator-indicator
- ⇒ A temperature probe (option)
- ⇒ A differential pressure transmitter (option)
- ⇒ An optional printer

The AIRTRONIQUE can:

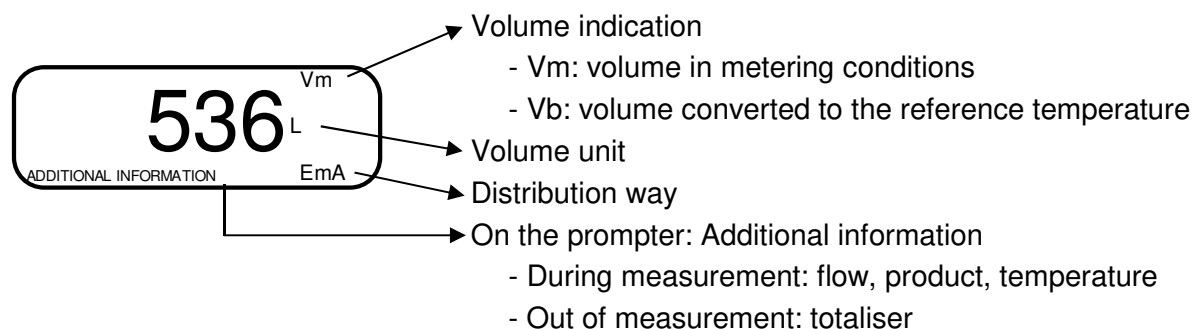
- ⇒ Manage measuring operations. A measuring operation can be a delivery or an unloading of product;
- ⇒ Manage faults
- ⇒ Measure quantities of products


The optional functions are available:

- ⇒ The AIRTRONIQUE can control the product temperature. It shows volume in metering conditions or volume converted to the reference temperature;
- ⇒ It can control an additive injection device. This injection must occur upstream of the meter
- ⇒ A printer can print delivery tickets, invoices, internal totalisers, parameters or diary printings.




NOTE: The AIRTRONIQUE shows the legally-binding information. The information printed by the printer has no metrological value.

The AIRTRONIQUE has one display:






	MU 7088 EN B AIRTRONIQUE	Page 4/39
	This document is available on www.alma-alma.fr	

The AIRTRONIQUE 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:

	RFID blue key: Level1-User This key is associated to a single MICROCOMPT+. It is used to switch into SUPERVISOR mode
	RFID green key: Level2-Manager 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. 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 ANNEX 1.
	RFID red key: Level3-Maintenance This key doesn't need to be associated to the MICROCOMPT+. It is used to switch into SUPERVISOR mode. Specific menus are available that allow the maintenance operator to change parameters. The specific menus are indicated by red boxes within the ANNEX 1.

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.

	MU 7088 EN B AIRTRONIQUE	Page 5/39
	This document is available on www.alma-alma.fr	

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.

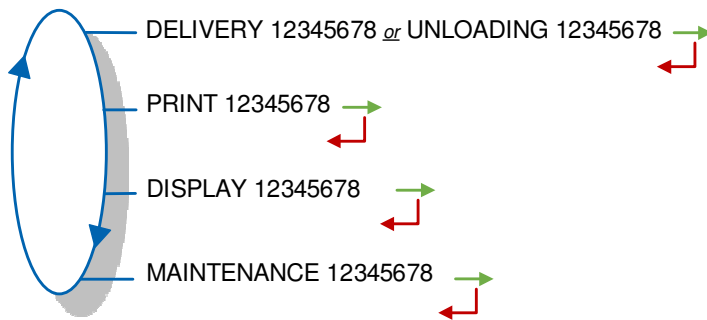
Three tricolor LED on the MICROCOMPT+ front face are showing the wireless connection status as described in the table below:

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 CONFIGURATION, SETTINGS, CALIBRATION

CONFIGURATION: METROLOGICAL mode	SETTINGS: SUPERVISOR mode menu ICOM MENUS	SETTINGS, CALIBRATION: SUPERVISOR mode
§ CONFIGURE THE AIRTRONIQUE: METROLOGICAL MODE	§ANNEX 1	§ SET THE AIRTRONIQUE: SUPERVISOR MODE
You must configure the AIRTRONIQUE during commissioning and sometimes during metrological controls.	You must set the AIRTRONIQUE before any operation and sometimes during metrological controls (specific menus)	You must set the AIRTRONIQUE before any operation You must control the accuracy of the AIRTRONIQUE cyclically
NOTE: Only approved persons are permitted to remove the seal	NOTE: Only approved persons are permitted to change parameters of the specific menus	NOTE: Only approved persons are permitted to change parameters or to make calibration.
<ul style="list-style-type: none"> - Unseal the cup - Remove the seal 	<ul style="list-style-type: none"> - Put the RFID key at the right side of the display 	<ul style="list-style-type: none"> - Put the RFID key at the right side of the display 
		

4 USE THE AIRTRONIQUE: USER MODE



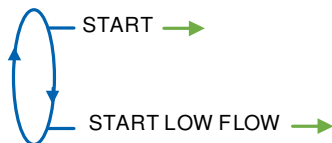
In USER mode, the AIRTRONIQUE displays a blinking figure which is the latest delivered quantity. On the prompter, you can see the name of the menu and the 8-char totaliser.

The use of the AIRTRONIQUE 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:

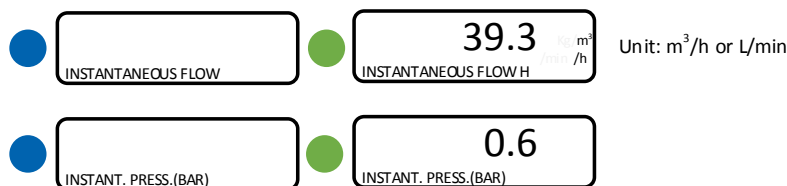
- ⇒ The number of distribution ways (one or two)
- ⇒ The number of compartments
- ⇒ The control of the compartments flaps
- ⇒ The distribution mode (free or preset)
- ⇒ The temperature control (conversion of the volume).

An operation can be performed in high or low flow. Select the flow before the measurement starts. Push MENU to select high or low flow and validate with OK.



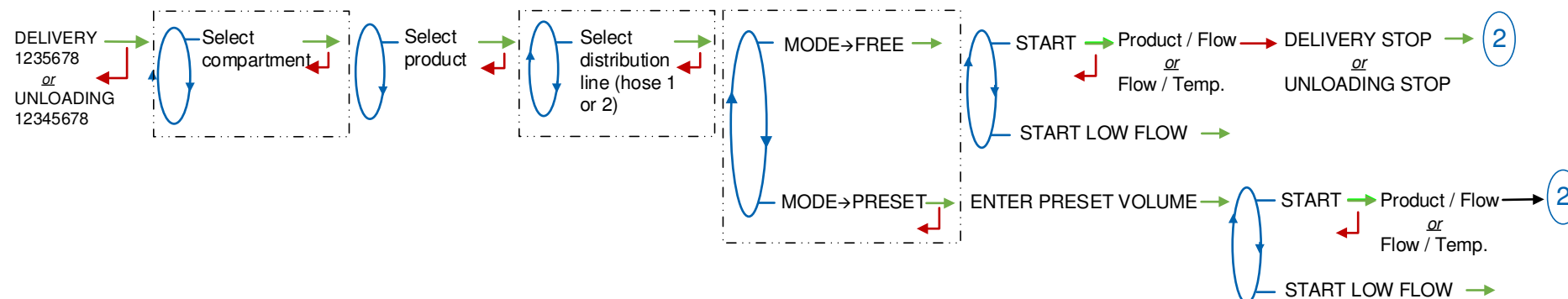
During measurement, you can display the information that follow.

- ⇒ The instantaneous flowrate (m³/h or L/min)
- ⇒ The instantaneous pressure (with active option)

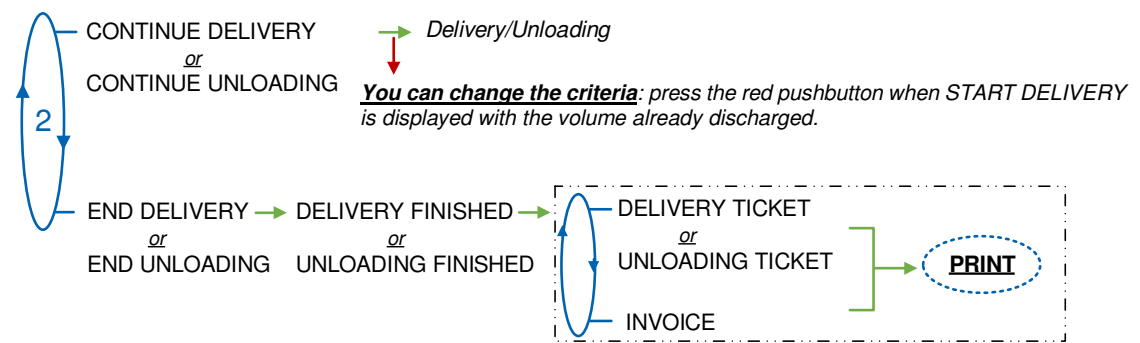


Back to normal display is automatic: DO NOT PRESS RED CLEAR BUTTON TO KEEP FROM INTERRUPTING THE MEASURING OPERATION.

4.1 Menu DISCHARGING



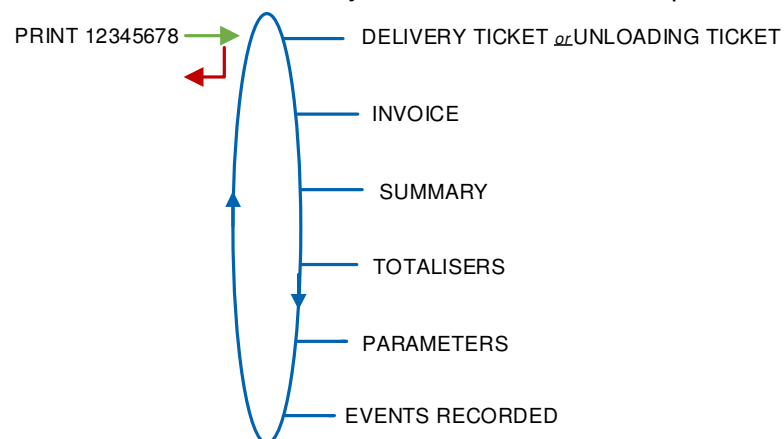
Non-systematic phase: Only if there are more than one compartment
 Non-systematic phase: Only with two distribution ways
 Non-systematic phase: Only if both modes are available



Non-systematic phase: Only if the AIRTRONIQUE operates with a printer

4.2 Menu PRINT

This menu is available only if the AIRTRONIQUE operates with a printer (SUPERVISOR>PRINTER→ON).



DELIVERY TICKET or UNLOADING TICKET: Print the ticket of the last measuring operation.

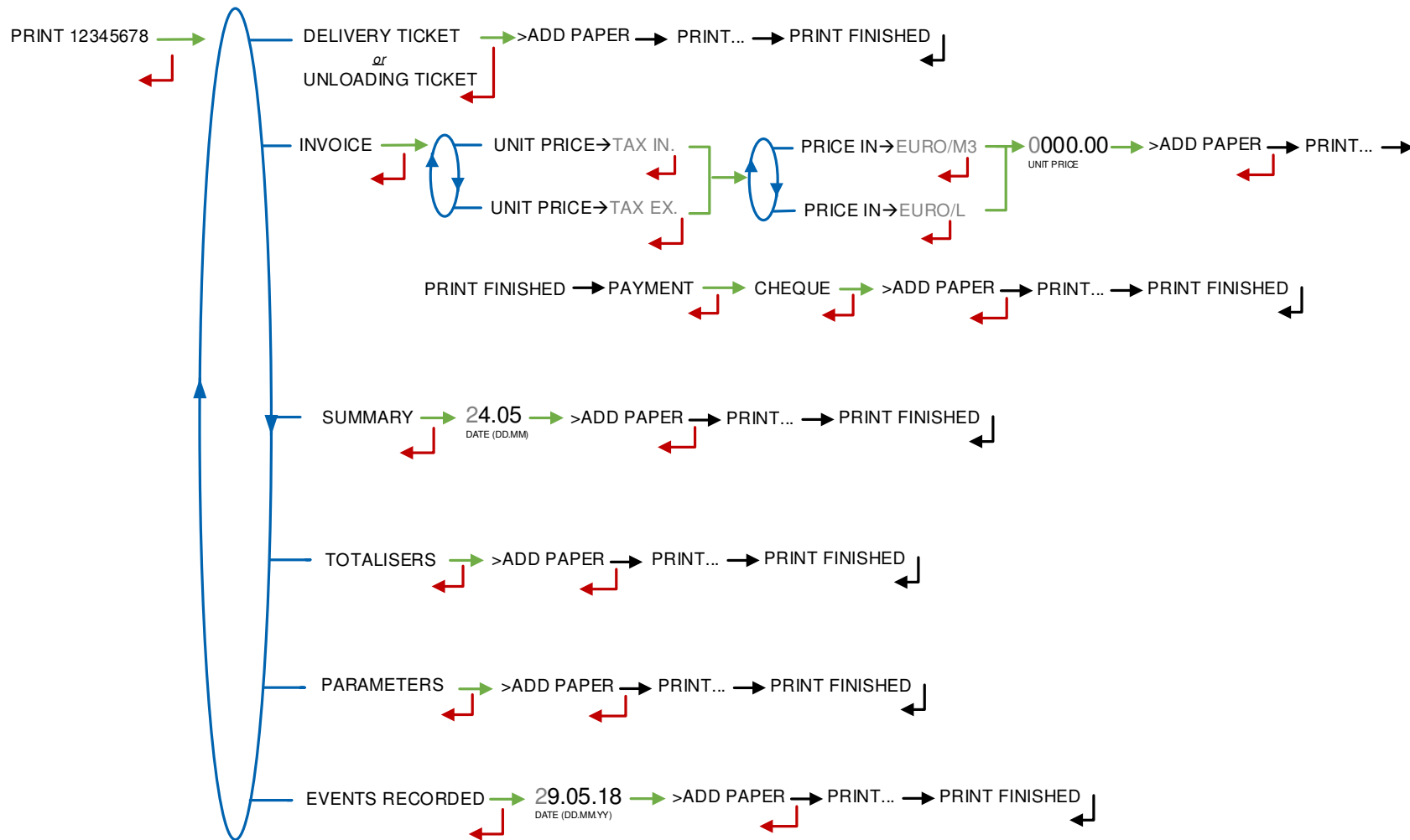
INVOICE: Print the invoice and the payment of the last measuring operation.

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.

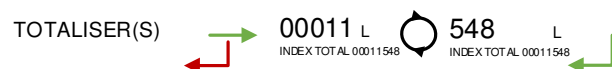


4.3 Menu DISPLAY

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 TOTALISER(S)



4.3.2 Sub-menu MEMORISATION

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

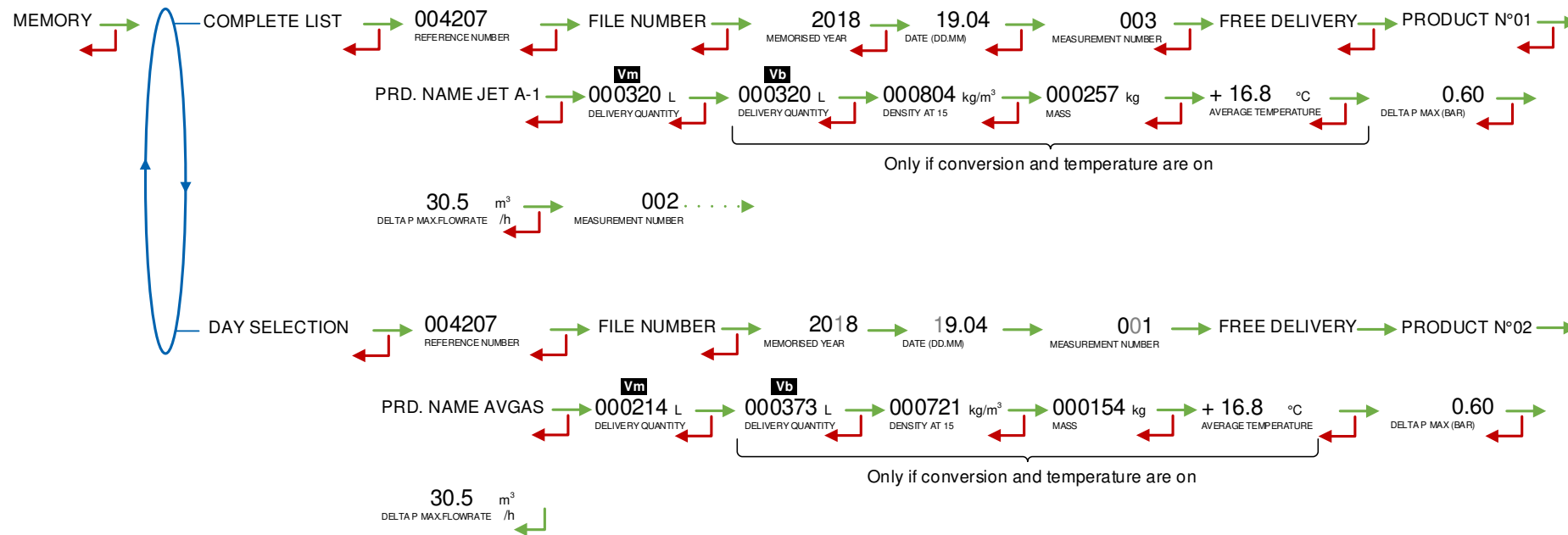
COMPLETE LIST: Display all the measurement details recorded, from the newest to the oldest, sorted by day then by measurement number.

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

For each measurement, you can read:

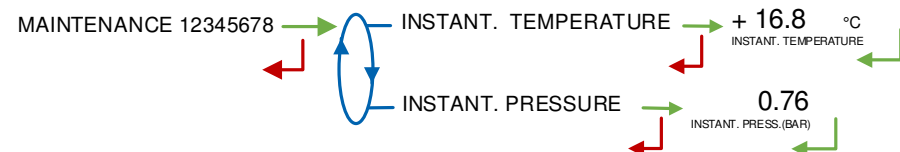
- The distribution mode
- The product number
- The name of the product
- The measured quantity
- The temperature
- The maximum value of the differential pressure (delta P max)
- The flowrate when measuring the maximum value of differential pressure

Example:



4.4 Menu MAINTENANCE

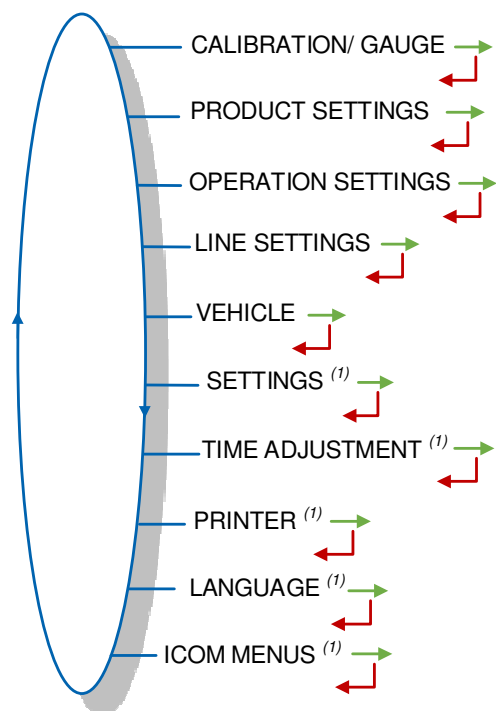
This menu is available only if the AIRTRONIQUE controls the product temperature and/or the differential pressure.



4.5 List of alarms

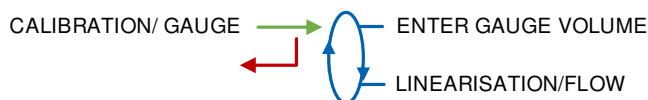
	DISPLAY	MEANING	ACTION
USER	STOP	Intentional interruption of delivery or return	Continue, stop or finish the delivery or unloading
	PRINTER DEFAULT	Communication with the printer lost	Check the connection cable, on-off switch and fuse
		Jammed paper in the printer	Use the RELEASE button to eject paper
	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 (RFID key)
	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)
	CLOGGED FILTER	The filter is clogged (threshold 1 exceeded)	Acknowledge the alarm. Plan to clean the filter. If steady alarm, replace the filter
	FILTER DEFAULT	The filter no longer fulfills its function (threshold 2 exceeded)	Acknowledge the alarm (RFID key). You must do an internal inspection of the filter
Three tricolour LED on the MICROCOMPT+ front face are showing the wireless connection status as described in the operating manual MU 7088			
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 MICROCOMPT+ / If steady alarm, substitution of the faulty card
	VOLUME CONVER DEFAULT	Problem during conversion of volume	Problem with temperature or with density configuration / If steady alarm, substitution of the AFSEC+ electronic card
	TOTALISER 1 LOST	Loss of totaliser	Substitution of the backup battery
	TEMPERATURE 1 DEFAULT	Temperature determination failure	Check the temperature probe status / If steady alarm, see a reparator for trouble shooting
REPARATOR - 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 (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 AIRTRONIQUE: SUPERVISOR MODE



(1): The sub-menus are different according to the level of access: Level1-User, Level2-Manager and Level3-Maintenance.

5.1 Menu CALIBRATION/ GAUGE



5.1.1 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, fill the gauge (USER mode) in high or low flow with predetermination of the volume.

Switch to SUPERVISOR mode, select 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.



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 record the values via the EMA>METER COEFFICIENT menu.

To linearize the curve, two tests are necessary:

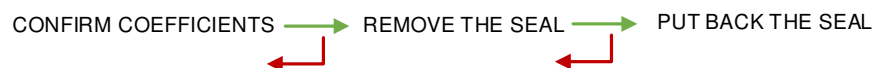
- Fill the gauge in high flow $[\text{flowmin} \times 3] \leq \text{high flow} < [\text{flowmax}]$, and enter the volume read on the gauge in the menu CALIBRATION/ GAUGE>ENTER GAUGE VOLUME as described above
- Fill the gauge in low flow $[\text{flowmin}] \leq \text{low flow} < [\text{flowmin} \times 2]$, 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:

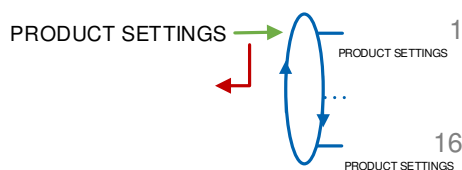
- LARGE GAP K1/K2: Correction between both measuring points more than 0.5%
- FLOWS TOO CLOSE: High flowrate value is out of range. It needs to be: $[\text{flowmin} \times 3] \leq \text{high flow} < [\text{flowmax}]$.
- LO-FLOW OUT OF RANGE: Low flowrate value is out of range. It needs to be: $[\text{flowmin}] \leq \text{low flow} \leq [\text{flowmin} \times 2]$
- 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.

5.2 Menu **PRODUCT SETTINGS**



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

NAME: Record the name of the product. Default name for product 1: JET A-1, default name for product 2: AVGAS.

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

CURRENCY: Record the currency of the price.

PRICE IN: Select the unit of the price: m³ per hour or liter per hour.

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

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

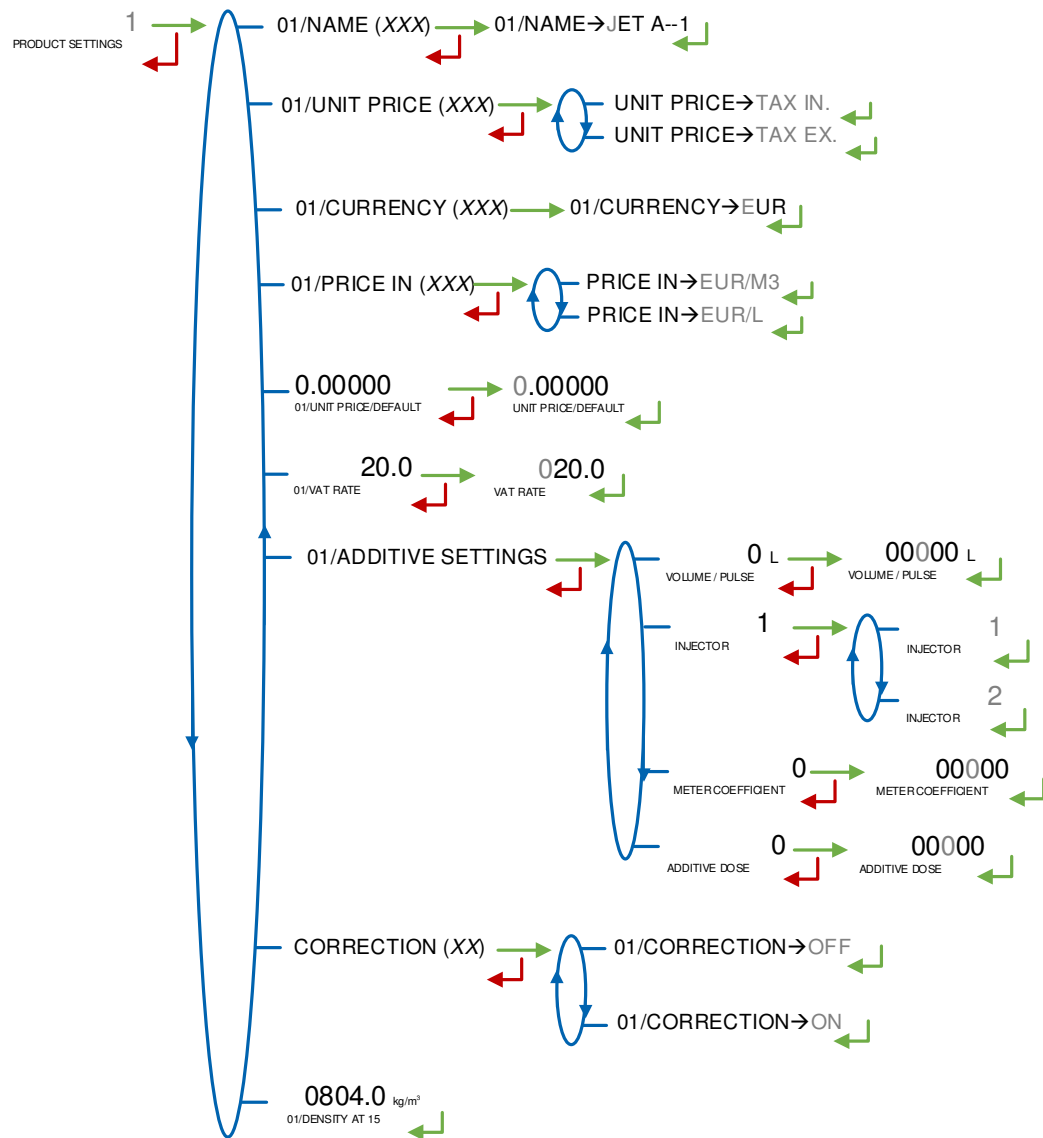
ADDITIVE SETTINGS: If the AIRTRONIQUE controls an additive injection device, you must configure the parameters that follow:

- **VOLUME/PULSE:** Record the volume of primary product. For example "00200": the AIRTRONIQUE puts a dose of additive every 200 liters of primary product.
- **INJECTOR:** Select the injector.
- **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>PRODUCT CORRECTION).

DENSITY AT 15: Record the product density in Kg/m³. **NOTE:** If the value is recorded during the configuration, you are not permitted to change it (See METROLOGICAL>CONFIGURATION>CONVERSION>PROD. CONFIG.).

Example for product 1:



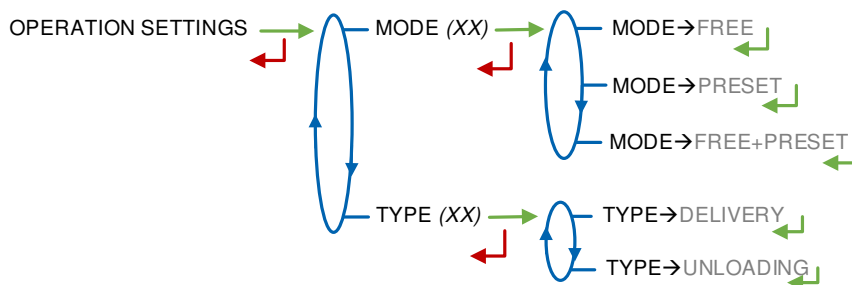
5.3 Menu OPERATION SETTINGS

You must select the mode and the type of measuring operation you want to do.

MODE: The AIRTRONIQUE can operate in three modes:

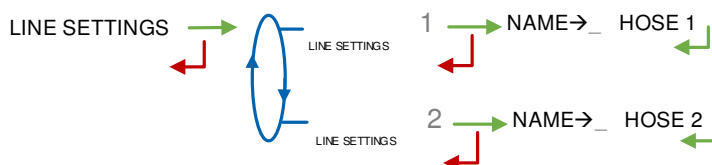
- **MODE→FREE:** The quantity of product is free for any measuring operation.
- **MODE→PRESET:** Before a measuring operation, you must set the quantity of product.
- **MODE→FREE+PRESET:** Before a measuring operation, you must select the mode.

TYPE: You must select the type of measuring operations the AIRTRONIQUE is for: delivery of product or unloading of product.



5.4 Menu LINE SETTINGS

There can be one or two distribution lines (see METROLOGICAL>CONFIGURATION>DISTRIBUTION LINE). Record the name of the distribution lines.

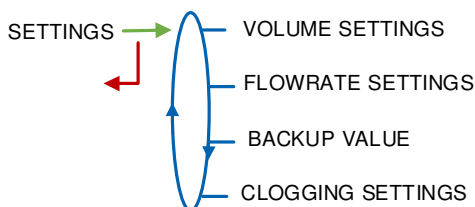


5.5 Menu VEHICLE

Record the vehicle registry number on which the AIRTRONIQUE is installed. This number is printed on tickets, invoices ...



5.6 Menu SETTINGS



5.6.1 Sub-menu VOLUME SETTINGS

You can set the volume parameters that follow:

END LOW FLOW VOLUME: Record the volume (in liters) delivered in low flowrate to complete the measurement.



5.6.2 Sub-menu FLOWRATE SETTINGS

You can set the flowrate parameters that follow:

L TO H FLO THRESHOLD: Record the flowrate beyond which the AIRTRONIQUE switches from low to high flowrate.



5.6.3 Sub-menu BACKUP VALUE

Record the backup value for temperature. This menu is available when the conversion is ON in METROLOGICAL mode: CONFIGURATION>CONVERSION->ON.

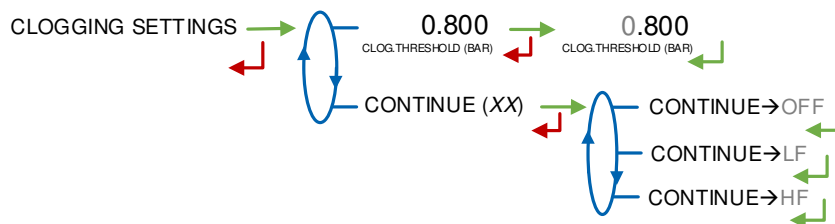


5.6.4 Sub-menu CLOGGING SETTINGS

This menu is used to record the fouling of the filter and prevent clogging. It is available if the relevant menu is on in METROLOGICAL mode: EMA>FILTER DELTA P->ON.

CLOG.THRESHOLD: Pressure threshold triggering the alarm CLOGGED FILTER

CONTINUE: Choose how to continue the measurement after a CLOGGED FILTER default (stop, low flow, high flow)

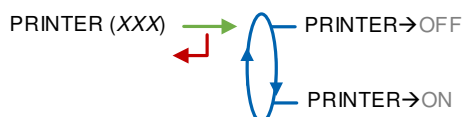


5.7 Menu TIME ADJUSTMENT

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.



5.8 Menu PRINTER



If the AIRTRONIQUE operates with a printer, select the menu PRINTER->ON. Then, you can configure the parameters that follow:

TICKET: Select the format of the ticket.

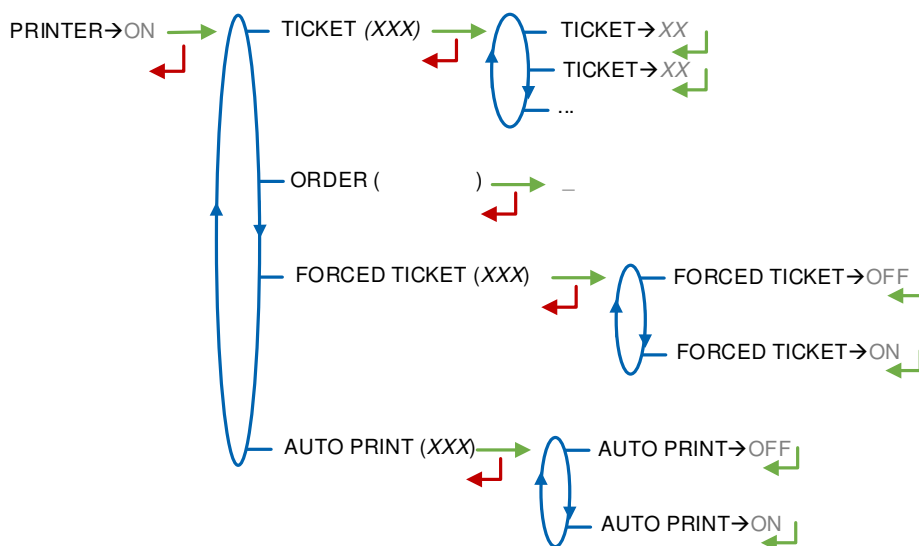
Set the order for payment with a maximum of 20 characters. If you record this field, you can print the invoice and the payment at the end of the measuring operation. Set the order for payment with a maximum of 20 characters. You can print the delivery ticket later with the menu: USER>PRINT>DELIVERY TICKET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

FORCED TICKET:

- FORCED TICKET->ON: It is mandatory to print the delivery ticket. The next measuring operation can't start.
- FORCED TICKET->OFF: It is not mandatory to print the delivery ticket.

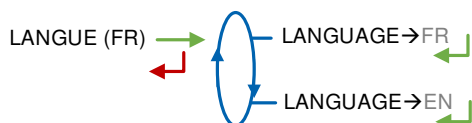
AUTO PRINT:

- AUTO PRINT->ON: The delivery ticket is automatically printed at the end of the measuring operation.
- AUTO PRINT->OFF: The delivery ticket is not automatically printed. You must push OK to print or CLEAR to cancel.



5.9 Menu LANGUAGE

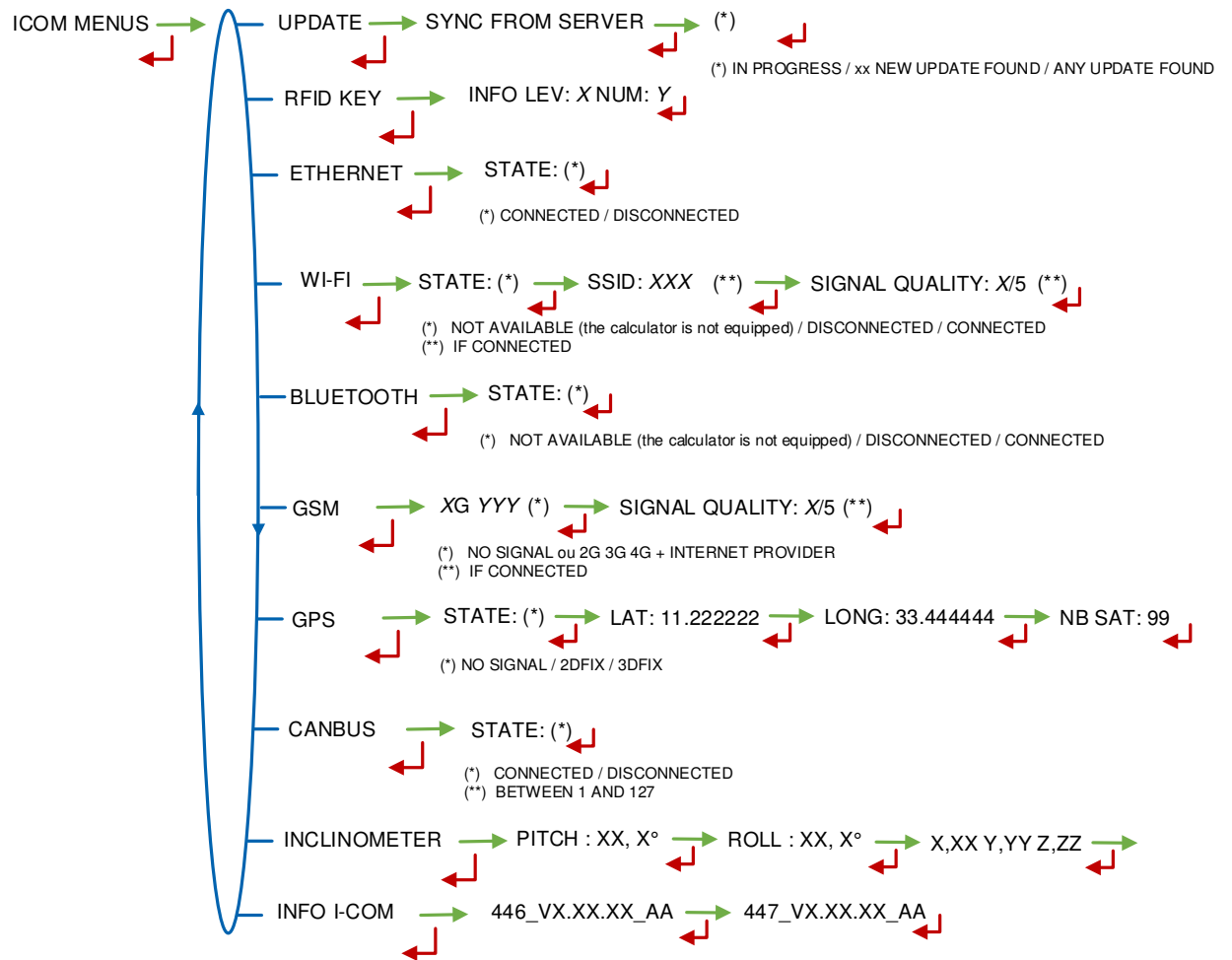
Select the display language. This menu is available if a translation catalogue is uploaded in the MICROCOMPT+.



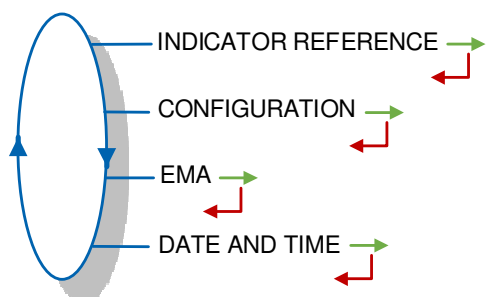
5.10 Menu ICOM MENUS

The sub-menus are different according to the level of access: The ANNEX 1 shows all the sub-menus available.

Put the RFID blue key Level1-User to display the available parameters as shown below:



6 CONFIGURE THE AIRTRONIQUE: METROLOGICAL MODE

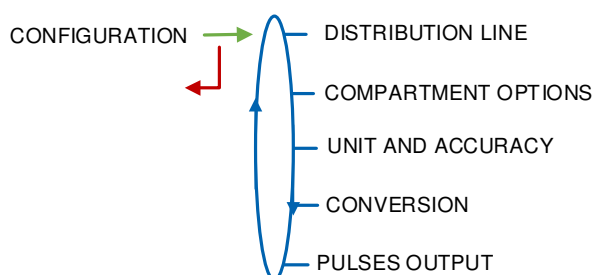


6.1 Menu INDICATOR REFERENCE

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



6.2 Menu CONFIGURATION

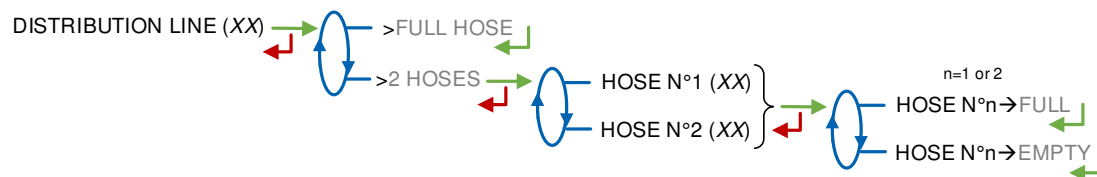


6.2.1 Sub-menu DISTRIBUTION LINE

You can configure one or two distribution lines. See the hydraulic configuration of the installation to see the number of available hoses.

FULL HOSE: Operation with one distribution line which is a full hose with authorization valve.

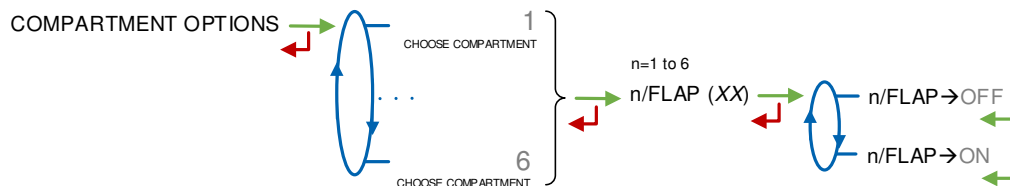
2 HOSES: Operation with 2 hoses. Each may be full or empty hose



6.2.2 Sub-menu COMPARTMENT OPTIONS

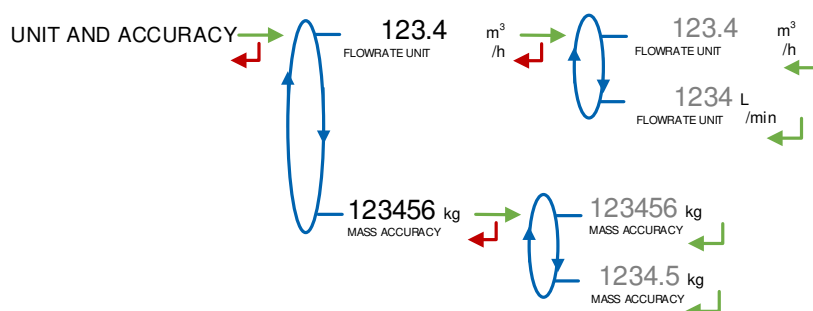
The AIRTRONIQUE can control a maximum of six compartments.

FLAP: You must validate FLAP→ON to control the compartment flap.



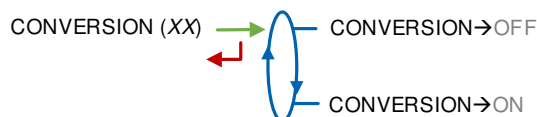
6.2.3 Sub-menu UNIT AND ACCURACY

Select the unit of the flow. The AIRTRONIQUE will show it on the display and the printer will print it. Then select the accuracy of the mass.



6.2.4 Sub-menu CONVERSION

The AIRTRONIQUE can operate with conversion or without conversion.



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

MAIN DISPLAY: Select the type for displayed quantity

VM: volume in metering conditions

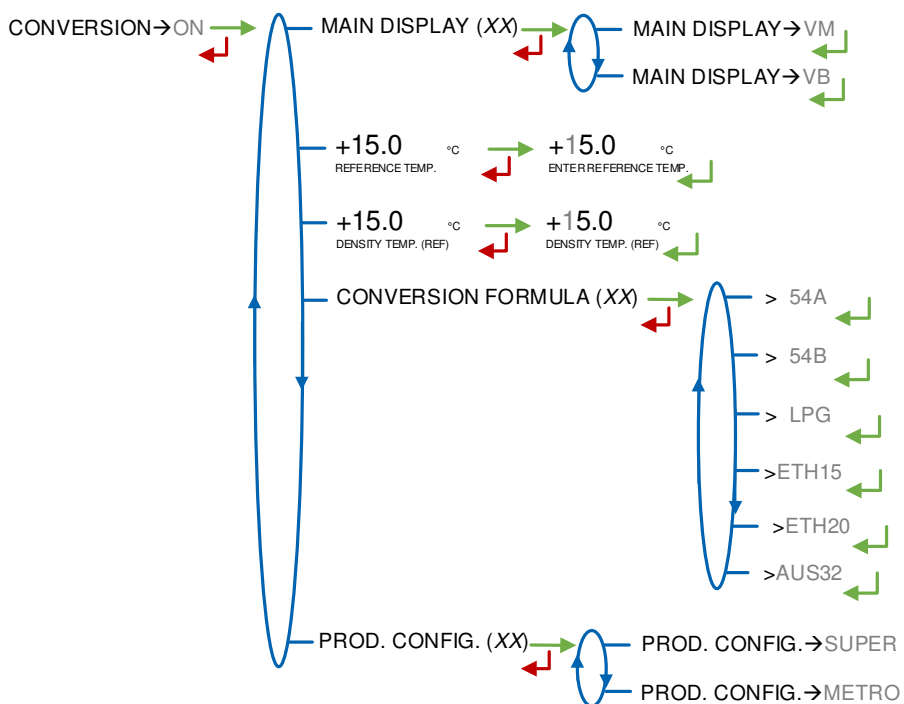
VB: volume converted to the reference temperature

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).

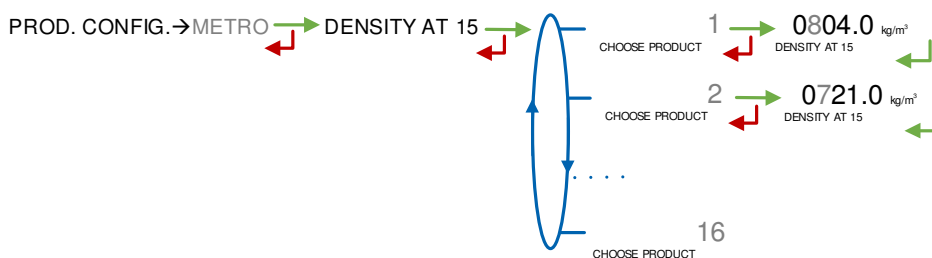
CONVERSION FORMULA: The choice of the conversion formula causes an implicit definition of valid density and temperature ranges to guarantee the conversion result. See the table below to select the conversion table 54B that corresponds to aviation fuel:

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



PROD. CONFIG.: This menu let you select if the configuration of the product density is available in METROLOGICAL mode or in SUPERVISOR mode. You can record the density of a maximum of 16 products.

- PROD. CONFIG. → SUPER: You must record the density in SUPERVISOR mode
- PROD. CONFIG. → METRO: You must record the density of a maximum of 16 products. You can see the value in SUPERVISOR mode but you are not permitted to change it.

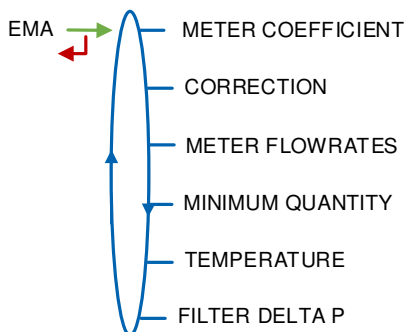


6.2.5 Sub-menu PULSES OUTPUT

Record the number of pulses per liter that corresponds to the quantity of liquid that the AIRTRONIQUE counts.



6.3 Menu EMA



6.3.1 Sub-menu METER COEFFICIENT

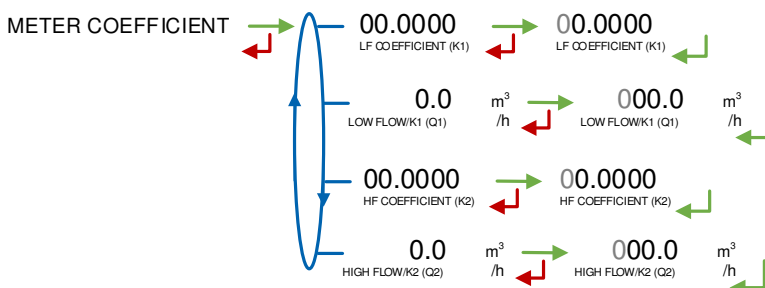
Enter the coefficient of the measuring system meter (pulses/liter).

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

LOW FLOW/K1 (Q1): Low flow reference (m³/h)

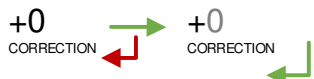
HF COEFFICIENT (K2): Coefficient for high flow (pulses/liter)

HIGH FLOW/K2 (Q2): High flow reference (m³/h)



6.3.2 Sub-menu CORRECTION

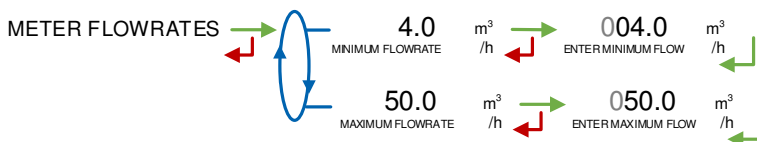
Record the correction factor per thousand (‰) of the AIRTRONIQUE for a measurement with low viscosity products. See the marking of the turbine meter or see the ALMA calibration certificate.



6.3.3 Sub-menu METER FLOWRATES

MINIMUM FLOWRATE: Record the metrological minimum flowrate of the AIRTRONIQUE in m³/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 AIRTRONIQUE in m³/h or l/min. You can select the flow unit in the menu CONFIGURATION>UNIT AND ACCURACY.



6.3.4 Sub-menu MINIMUM QUANTITY

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



6.3.5 Sub-menu TEMPERATURE

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



6.3.6 Sub-menu FILTER DELTA P

The AIRTRONIQUE can operate with conversion or without differential pressure transmitter.

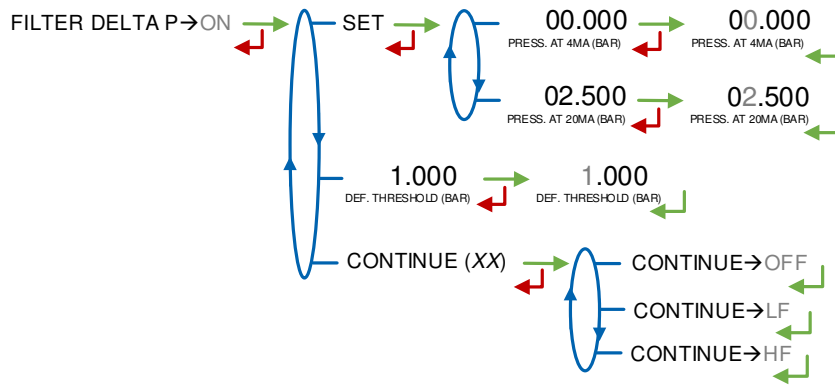


When feature is on, you must configure the parameters that follow:

SET: Set the pressure in bar for current values 4mA and 20mA

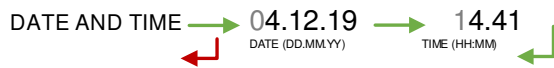
DEF.THRESHOLD: Pressure threshold triggering the alarm FILTER DEFAULT

CONTINUE: Choose how to continue measurement after a FILTER DEFAULT (stop, low flow, high flow)



6.4 Menu DATE AND TIME

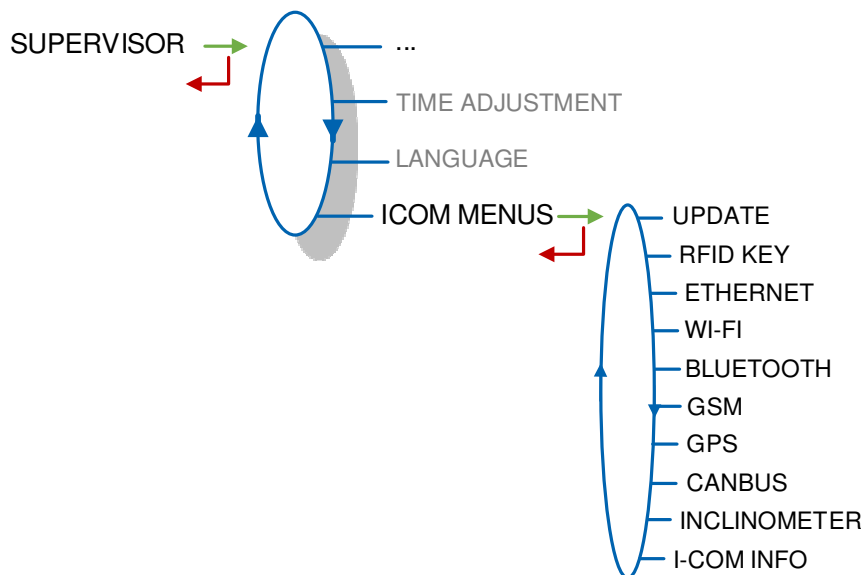
Record the date. Then record the time at French format and validate (e.g. 14.41 means 2.41 pm).



ANNEX 1: PRESENTATION OF THE MENU SUPERVISOR>ICOM MENUS

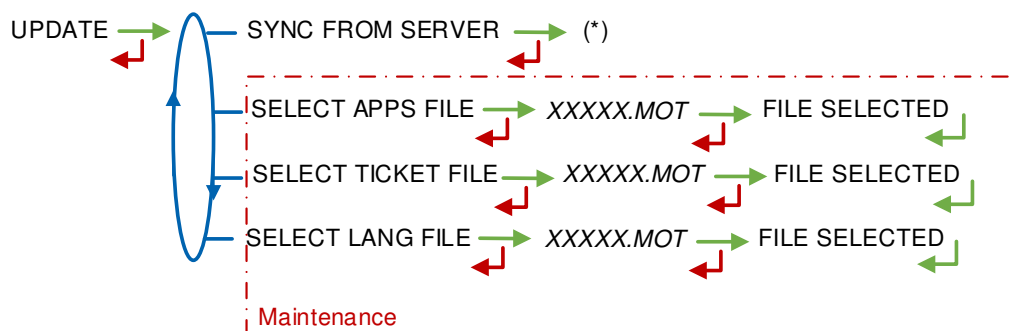
The sub-menus are different according to the level of access:

- ⇒ Level1-User: The sub-menus are not highlighted See Menu ICOM MENUS for simplified presentation
- ⇒ Level2-Manager The sub-menus are indicated in green boxes
- ⇒ Level3-Maintenance The sub-menus are indicated in red boxes



1.1. Menu UPDATE

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



(*) 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.

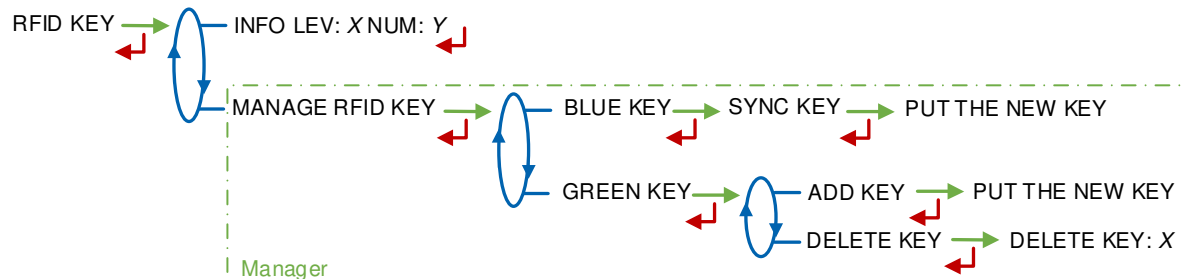
SELECT TICKET FILE(*) – Access restricted to the Maintenance: Used to display and select the version(s) of the ticket file available on the SD card. NO FILE is displayed if there's no file to download.

	MU 7088 EN B AIRTRONIQUE	Page 29/39
	This document is available on www.alma-alma.fr	

SELECT LANG FILE(*) – Access restricted to the Maintenance: Used to display and select the version(s) of the translation catalogue available on the SD card. 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).

1.2. Menu RFID KEY



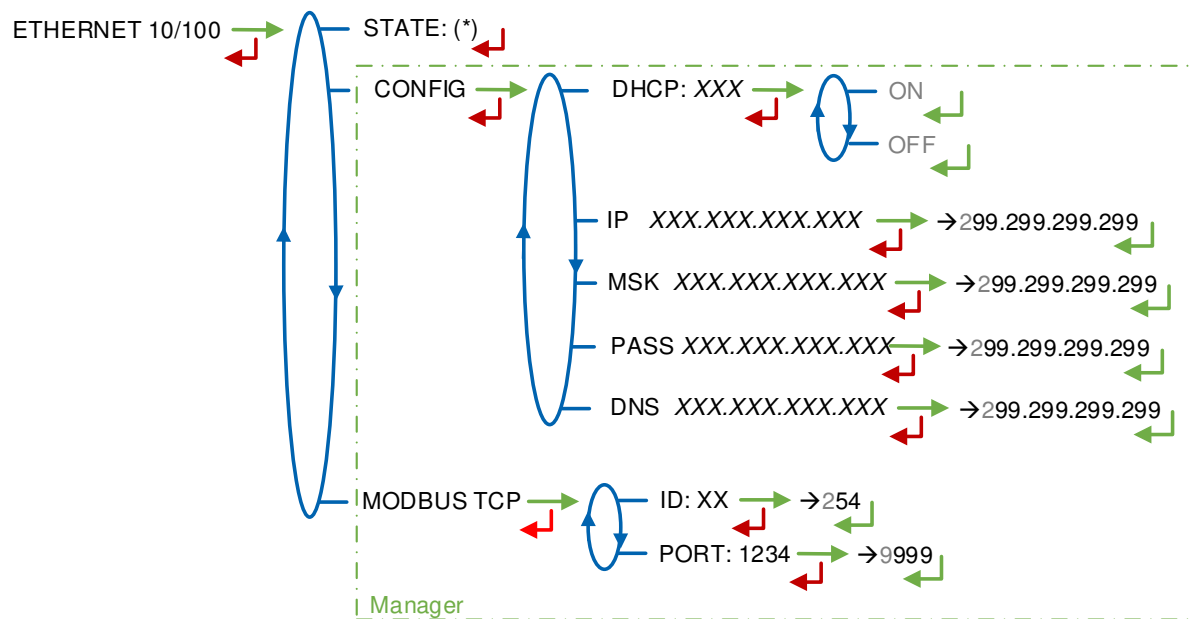
INFO: Display of the level and the identifier of the RFID key (blue key: Level1-User, green key: Level2-Manager, red key: Level3-Maintenance)

MANAGE RFID KEY – Access restricted to the Manager:

BLUE KEY: Used to associate an RFID key Level1-User to the MICROCOMPT+

GREEN KEY: Used to associate an RFID key Level2-Manager to the MICROCOMPT+ or to remove keys that have already been associated.

1.3. Menu ETHERNET



(*) 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)

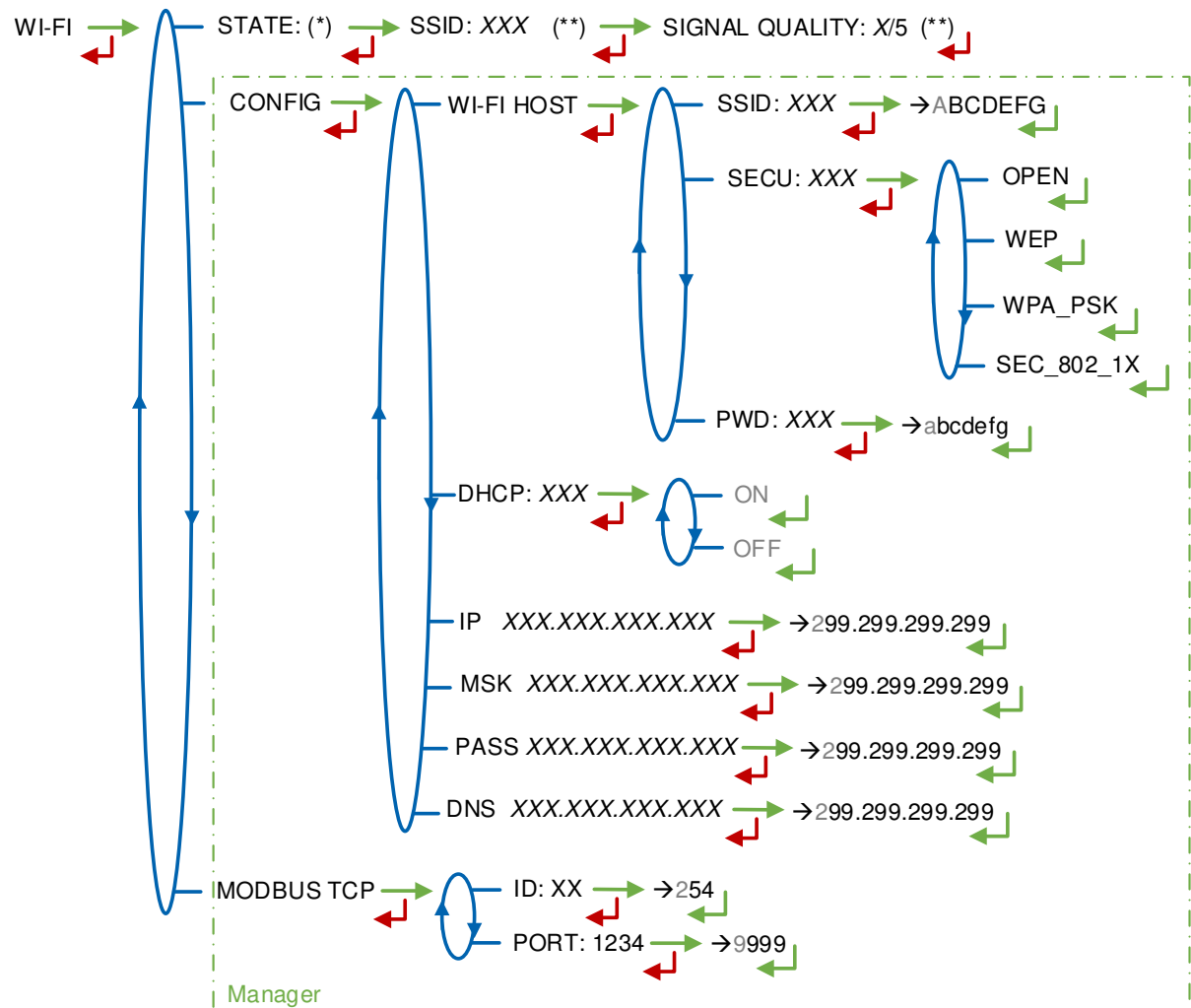
DNS: IP Address to access a DNS server

MODBUS TCP – Access restricted to the Manager:

ID: eMICROCOMPT+ Modbus identifier between 0 and 255

PORT: TCP/IP access port for Modbus protocol

1.4. Menu Wi-Fi



(*) 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

	MU 7088 EN B AIRTRONIQUE	Page 31/39
	This document is available on www.alma-alma.fr	

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;:<=>?@ABCDEFGHIJKLMNPOQRSTUVWXYZ[\]^_`abcdefghijklmnopqr
stuvwxyz{|}~ (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)

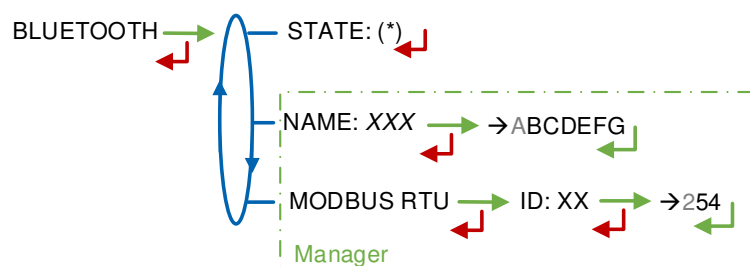
DNS: IP Address to access a DNS server

MODBUS TCP – Access restricted to the Manager:

ID: eMICROCOMPT+ Modbus identifier between 0 and 255

PORT: TCP/IP access port for Modbus protocol

1.5. Menu **BLUETOOTH**



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

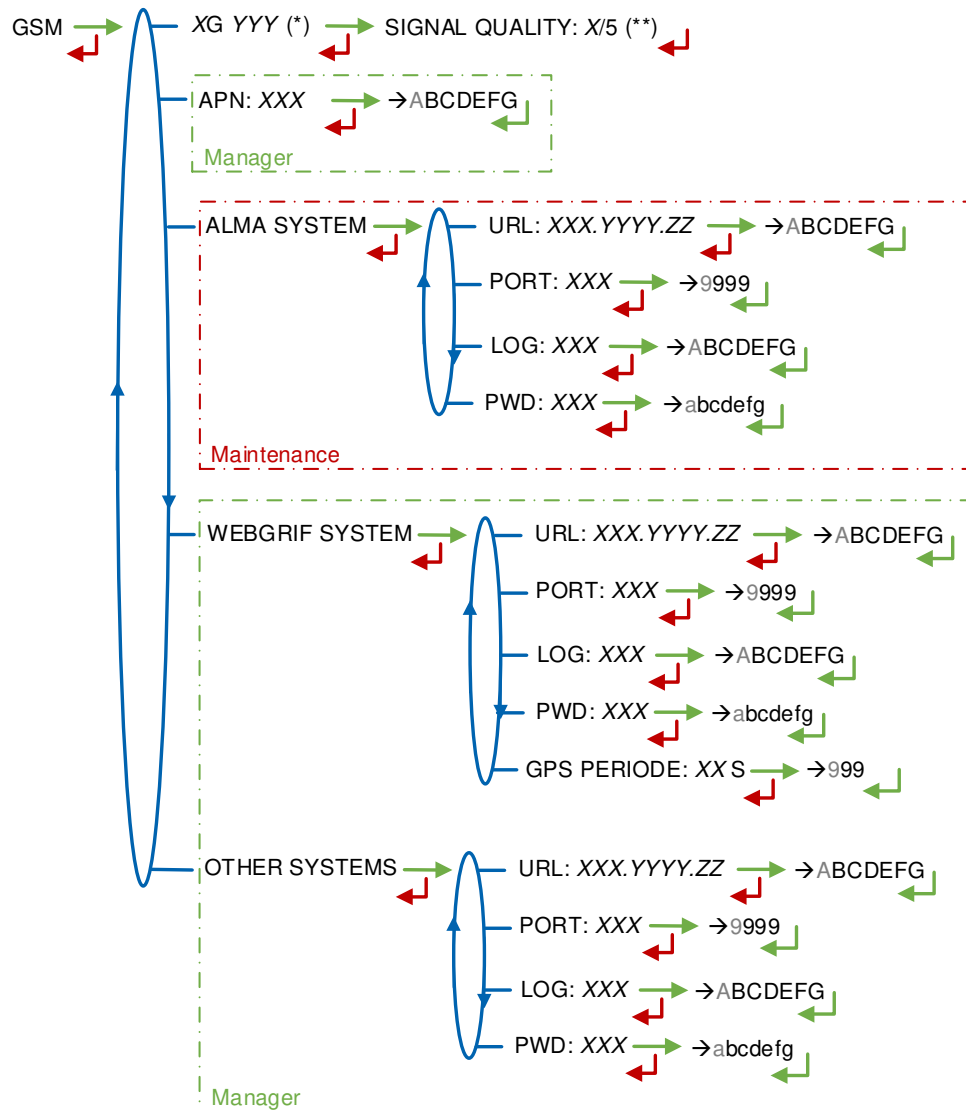
STATE: Status of the Bluetooth connection

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)

1.6. Menu GSM



(*) NO SIGNAL ou 2G 3G 4G + INTERNET PROVIDER
 (**) 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[]^_`abcdefghijklmnopqrstuvw
xyz{ }~ (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[]^_`abcdefghijklmnopqrstuvw
yz{ }~ (See §3 visualization 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[]^_`abcdefghijklmnopqrstuvw
xyz{ }~ (See §3 visualization on the MICROCOMPT+ display)

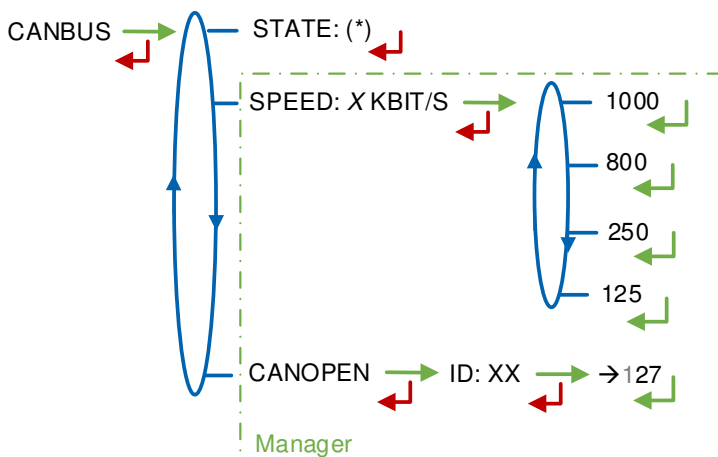
1.7. Menu GPS



(*) 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.

1.8. Menu CANBUS



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

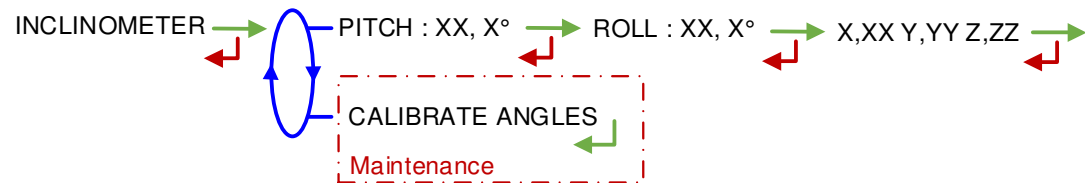
STATE: Status of the CANBus connection

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)

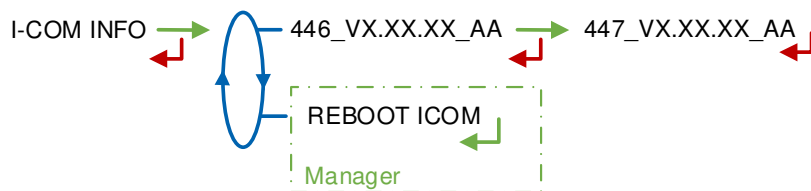
1.9. Menu INCLINOMETER



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.

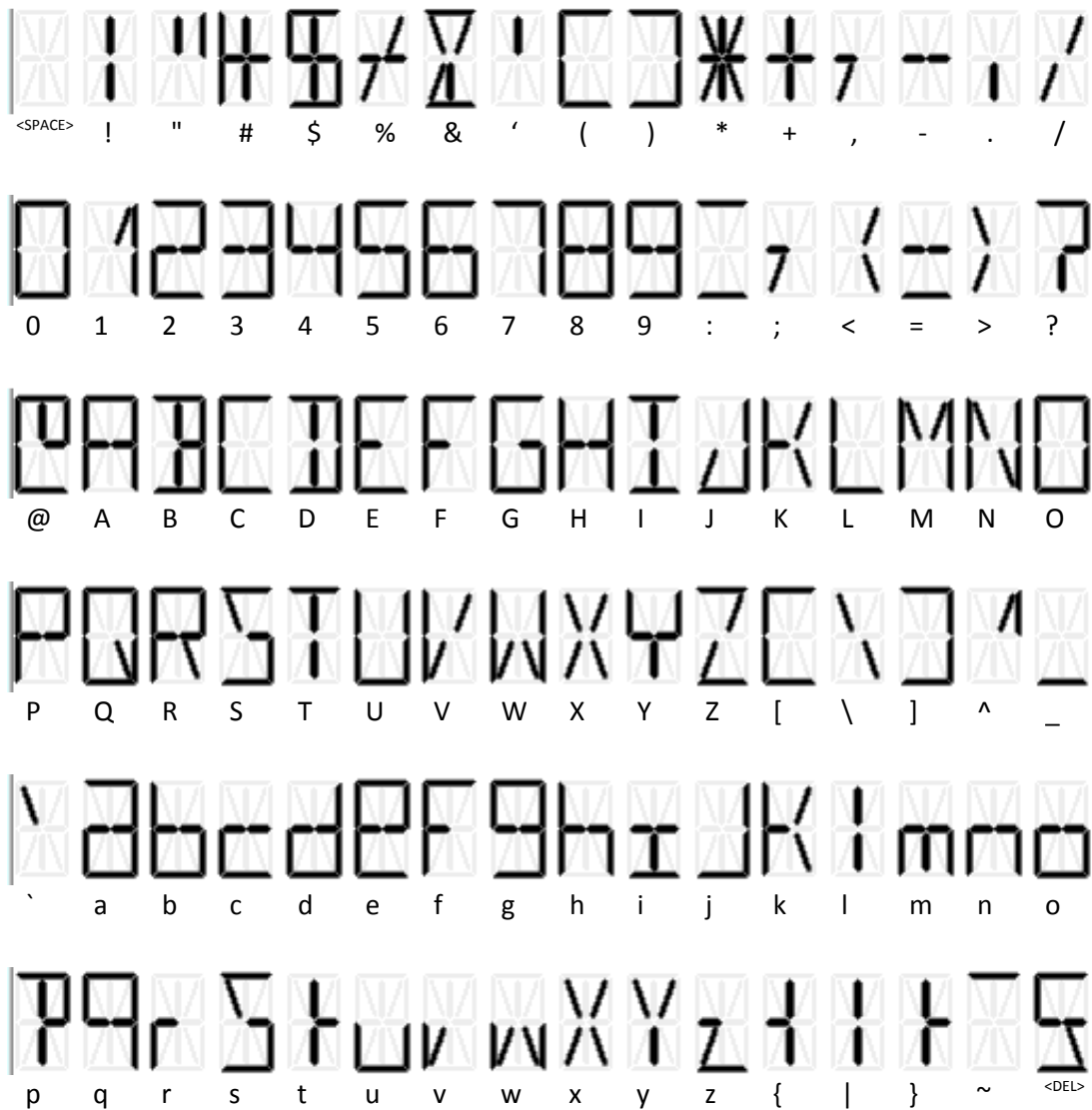
1.10. Menu I-COM INFO



446_V...: Software’s number and version

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

ANNEX 2: VIZUALISATION OF THE PERMITTED CHARACTERS ON THE MICROCOMPT+



ANNEX 3: PRINTINGS

SUMMARY:

```

AIRTRONIQUE 4051+.001
VERSION 01.02.00 DATED 16.01.20
PRINTED ON THE 19.01.20 AT 15:30
VEHICULE : AA-215-EL
INDICATOR : 03201

SUMMARY
OF DELIVERIES OF 19.01.20
DAY 019 - 006 MEMORISED RESULTS

****          DAILY TOTALISERS          ****

JET A-1 (01) :    00001258 L  +16.9°C
AVGAS (02) :    00000638 L  +16.9°C

TOTAL FROM 1 TO 2:00001896 L  +16.9°C

***** DAILY SUMMARY *****
HR   HR   NO      (L)   (°C)
START END MESUR PROD VM  TEMP
09:40 09:50 DF01  JET A  00210 +16.8
      DELTA P MAX: 0.35 AT 8.0 M3/H
09:51 10:01 DF02  JET A  00226 +16.8
      DELTA P MAX: 0.35 AT 16.4 M3/H
10:02 10:23 DF03  AVGAS 00047 +16.8
      DELTA P MAX: 0.35 AT 13.8 M3/H
11:30 11:50 DF04  JET A  00454 +16.8
      DELTA P MAX: 0.35 AT 20.2 M3/H
12:51 13:11 DF05  JET A  00368 +16.8
      DELTA P MAX: 0.35 AT 09.4 M3/H
13:22 13:53 DF06  AVGAS 00591 +16.8
      DELTA P MAX: 0.35 AT 16.9 M3/H
(D)ELIVERY;(U)NLOADING;
PRE(S)ET; (F)REE.
    
```

PARAMETERS:

```

AIRTRONIQUE 4051+.001
VERSION 01.02.00 DATED 16.01.20
PRINTED ON THE 19.01.20 AT 15:30
VEHICULE : AA-215-EL
INDICATOR : 03201

***** PARAMETERS *****
OUTLETS/VALVE:      FULL HOSE
FLAPS:              OFF
MODE:               TRONIQUE
  AUTO PRINT:       OFF
EMBEDDED COMPUTING: OFF
EMA PUMP:
  COEFFICIENT K1:   10.0000 IMP/L
  FLOWRATE Q1 (LF): 0.0 M3/h
  COEFFICIENT K2:   10.0000 IMP/L
  FLOWRATE Q2 (HF): 0.0 M3/h
  MIN FLOWRATE: 4.0 / MAX: 50.0 M3/h
  MINIMUM QUANTITY: 00200 L
  TEMPERATURE:     +16.8°C
  FILTER DEF.THRESHOLD 1.000 BAR
  FILTER DEF. CONTINUE OFF
PULSES OUTPUT:      +01.0 /LITER
FLOWRATE UNIT:      123.4 M3/H
CONVERSION:
  PROD. CONFIGURATION: METRO
  MASS ACCURACY:       123456 KG

JET A1 (01) OFF EUR
AVGAS (02) OFF EUR
OPERATION:
  MODE:              FREE
  TYPE:              RETURN

LINE NAMES:
  LINE 1:            HOSE 1
END LOW FLOW VOLUME: 30 L
FLOW ACTIVATED HF:   7.5 M3/h
CLOGGING THRESHOLD  0.800 BAR
CLOGGING CONTINUE   LF
STOP FLOW AT 0.0 M3/H WITH 0.0 L
PRESET END COEFF.:   0.1700
    
```

TOTALISERS:

AIRTRONIQUE 4051+.001
 VERSION 01.02.00 DATED 16.01.20
 PRINTED ON THE 19.01.20 AT 17:30
 VEHICULE : AA-215-EL
 INDICATOR : 03201

***** TOTALISERS*****

GENERAL TOTALISER 1: 00001896 L

JET A-1	(01) :	00011229 L
AVGAS	(02) :	00001269 L
	(03) :	00000000 L
	(04) :	00000000 L
	(05) :	00000000 L
	(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: 00012498 L

EVENTS RECORDED:

AIRTRONIQUE 4051+.001
 VERSION 01.02.00 DATED 16.01.20
 PRINTED ON THE 19.01.20 AT 17:30
 VEHICULE : AA-215-EL
 INDICATOR : 03201
 EVENTS ON 19/01/20

84 RECORD(S)

14:33:33 STOP
 14:24:33 DRIVER MODE

...

09:47:15 PARAM@ 62=91.540863
 09:47:06 PARAM@ 60=1.000000
 08:59:02 METROLOGICAL MODE
 08:58:57 SWITCH ON

DELIVERY/UNLOADING TICKET (according to customer):

AIRTRONIQUE

ID SYSTEME	N°	AA-215-EL
DELIVERY	N°	000009
DAY MEASUREMENT	N°	009
INDICATOR	N°	03201
DELIVERY DATE		19/01/20
STARTING		16:45
ENDING		16:53

PRODUCT	AVGAS
QUANTITY VM	00299 L
QUANTITY VB	*00000 L
MASS	*00000 kg
TEMPERATURE	+09.7°C
DELTA P MAX	0.5 BAR
DELTA P MAX.FLOWRATE	50 M3/H

TOTAL BEFORE AND AFTER

INDEX 000008	BEFORE	00006530
INDEX 000009	AFTER	00006829

Only the volume and mean
 temperature indications displayed
 by the indicator shall be deemed valid.



MU 7088 EN B
 AIRTRONIQUE

This document is available on www.alma-alma.fr

Page 38/39

RELATED DOCUMENTS

GU 7088	User Guide
FM 8000	Replacement of the backup batteries on the AFSEC and 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 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 8510	Adjustment of a temperature chain in a MICROCOMPT+