


USER MANUAL

MU 7092 EN A CRYOTRONIQUE CO2



Document applicable for software from version 4050+v0.1.X

A	2020/01/21	Creation [PJV162]	DSM	SH
Issue	Date	Nature of modifications	Written by	Approved by

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1 GENERAL PRESENTATION AND DESCRIPTION

The CRYOTRONIQUE is a measuring system. You can install it on tank trucks. It measures liquefied carbon dioxide CO₂.

The CRYOTRONIQUE measuring system comprises:

- ⇒ An ADRIANE turbine meter DN50-50 CO₂
- ⇒ A MICROCOMPT+ electronic calculator-indicator
- ⇒ A temperature sensor
- ⇒ A *pumping system*
- ⇒ A *delivery hose*

The CRYOTRONIQUE TC50-V performs the functions that follow:

- ⇒ Calculation of volume
- ⇒ Calculation and display of the mean temperature of the liquid by a Pt100 temperature sensor
- ⇒ The calculation of the volume flow
- ⇒ The display and memorization of the volume of the balance of the measurement

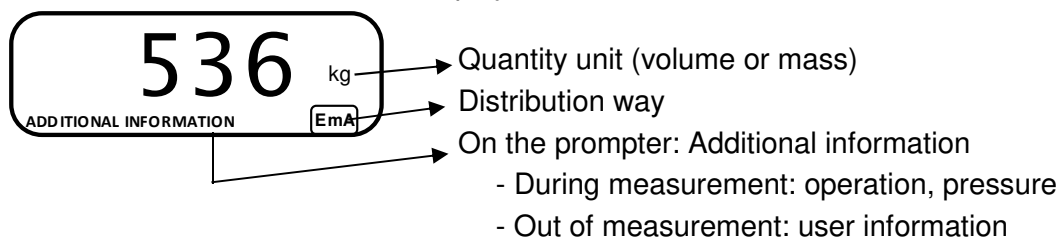
The CRYOTRONIQUE TC50-M performs the functions that follow:


- ⇒ Calculation of volume
- ⇒ Calculation and display of the mean temperature of the liquid by a Pt100 temperature sensor
- ⇒ The conversion of the volume by mass from the density calculated on the basis of the product temperature and a polynomial formula
- ⇒ The calculation of the rate of compensation for the quantities of gas returned to the tank calculated from the temperature of the product and a polynomial formula
- ⇒ The calculation, the display and the storage of the conventional mass
- ⇒ The calculation of the mass flow
- ⇒ The display and memorization of the mass of the balance of the measurement

The optional functions are available:




- ⇒ The CRYOTRONIQUE can be associated to a printer device. **NOTE:** The CRYOTRONIQUE shows the legally-binding information. The information printed by the printer has no metrological value.

The CRYOTRONIQUE has one display:






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The CRYOTRONIQUE 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 ANNEXE 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 ANNEXE 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.

Communication modules are listed below:



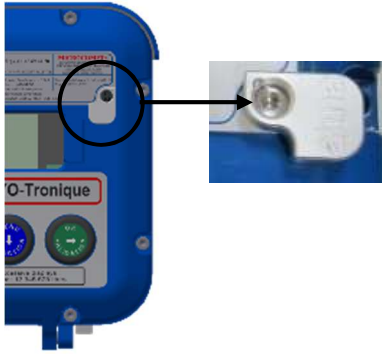


- ⇒ Wi-Fi (IEEE 802.11 b/g/n (2.4GHz) **OR** Bluetooth Low Energy 4.1
- ⇒ GSM (2G, 3G, 4G) / GPS
- ⇒ RFID NFC allowing the reading of an RFID key to switch in SUPERVISOR mode
- ⇒ Ethernet Base 10/100

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

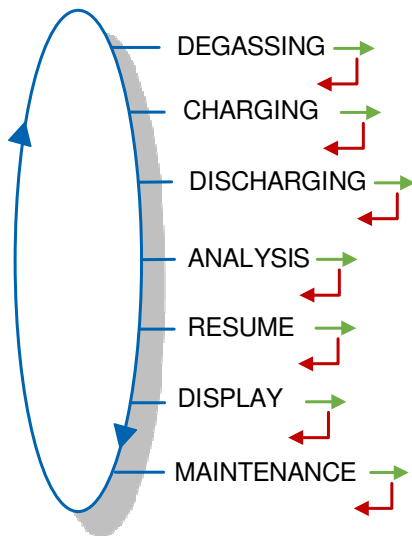
Three tricolor LED on the MICROCOMPT+ front face are showing the wireless connection status as described in the table below:

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, SETTING AND CALIBRATION

CONFIGURATION: METROLOGICAL mode	SETTINGS: SUPERVISOR mode	CALIBRATION: CALIBRATION mode
§CONFIGURE THE CRYOTRONIQUE: METROLOGICAL MODE	§SET THE CRYOTRONIQUE: SUPERVISOR MODE §ANNEXE 1	§USE THE CRYOTRONIQUE: USER mode (Calibration)
You must configure the CRYOTRONIQUE during commissioning and sometimes during metrological controls.	You must set the CRYOTRONIQUE before any operation.	
NOTE: Only approved persons are permitted to remove the seal	NOTE: Only approved persons are permitted to change parameters	NOTE: Only approved persons are permitted 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 CRYOTRONIQUE: USER MODE



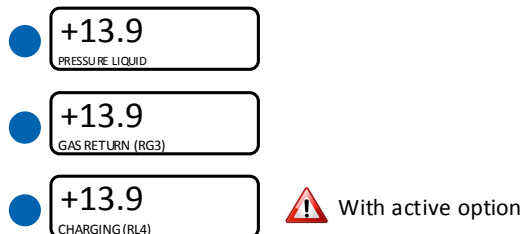
In USER mode, the CRYOTRONIQUE displays a blinking figure which is the latest delivered quantity. On the prompter, you can see the name of the menu.

The use of the CRYOTRONIQUE 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 hoses (one or two)
- ⇒ The temperature control (volume to mass conversion).

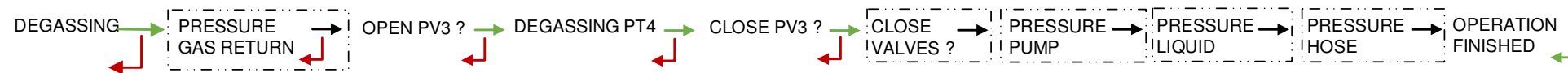
During an operation, the following information may be displayed by pressing the BLUE MENU BUTTON. Values are displayed during 10 seconds. Example for a charging operation:



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

4.1 Menu DEGASSING

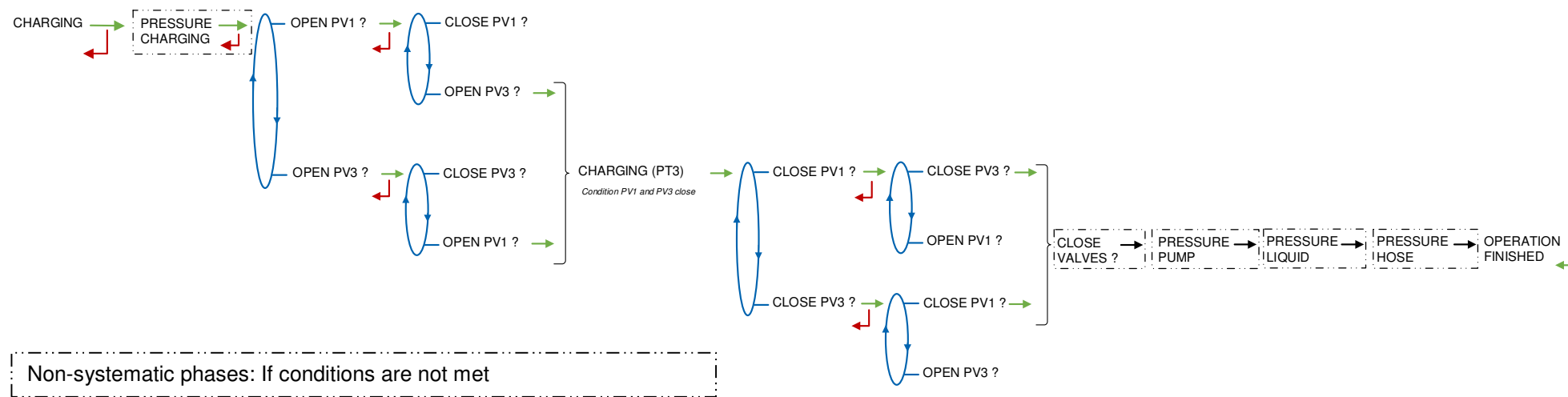
This menu is used to purge the tank.



Non-systematic phases: If conditions are not met

4.2 Menu CHARGING

This menu is used to fill the tank.



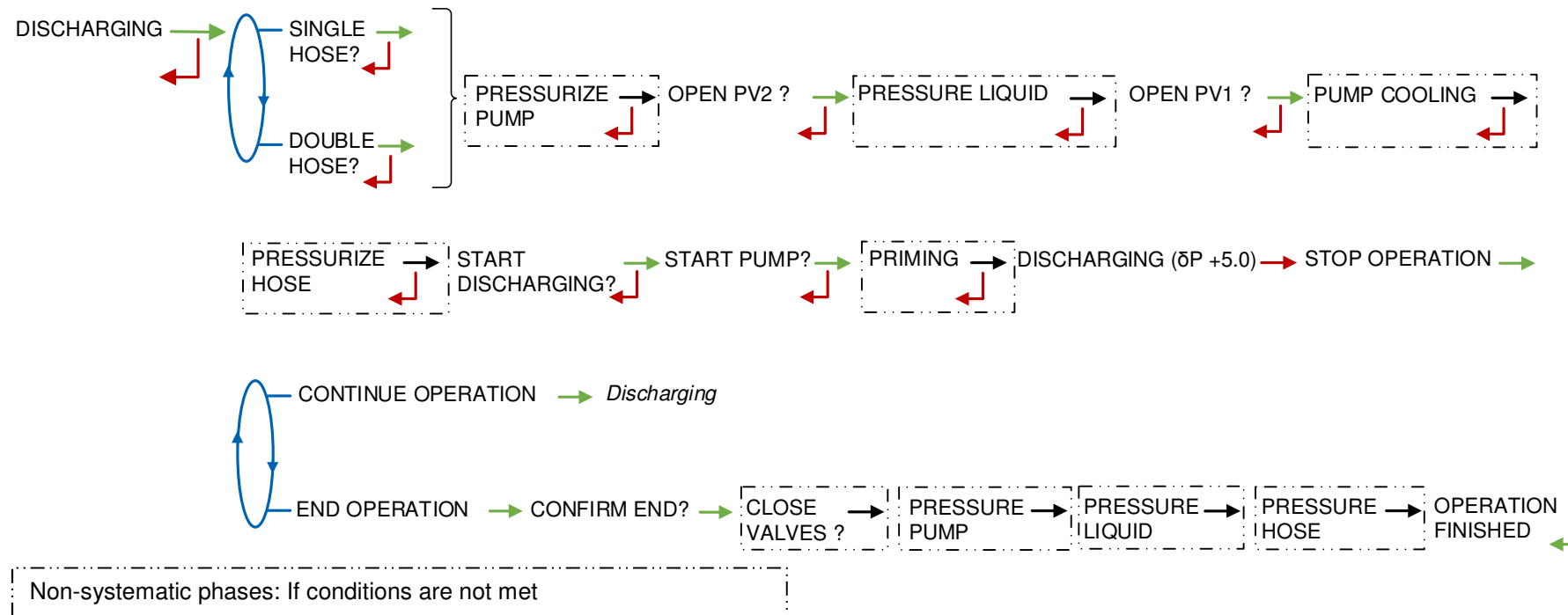
Non-systematic phases: If conditions are not met

4.3 Menu DISCHARGING

This menu is used to deliver the product to the customer.

SINGLE HOSE: Delivery hose used in “empty hose” mode

DOUBLE HOSE: Additional hose installed between the gaseous phases of the receiving and delivery tanks.



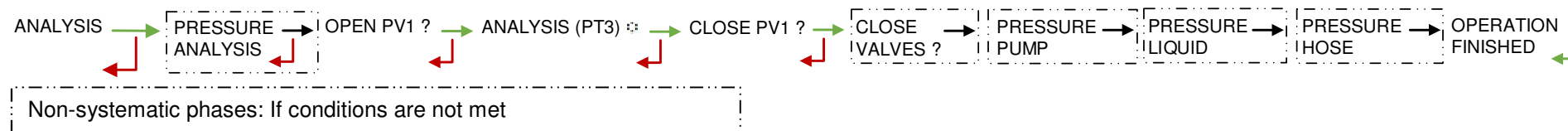
4.3.1 Calibration

Access restricted to permitted persons with RFID key Level2-Manager. During a delivery, you can do the meter calibration. The flow unit depends on the CONFIGURATION>UNIT AND ACCURACY.

DISCHARGING (δP +5.0) → Put the RFID key → CALIBRATION 123 KG/MI → BATCH ON 123 KG/MIN → BATCH OFF 123 KG/MIN → Remove the RFID key → DISCHARGING (δP +5.0)

4.4 Menu ANALYSIS

This menu is used to sample product from the tank for analysis.

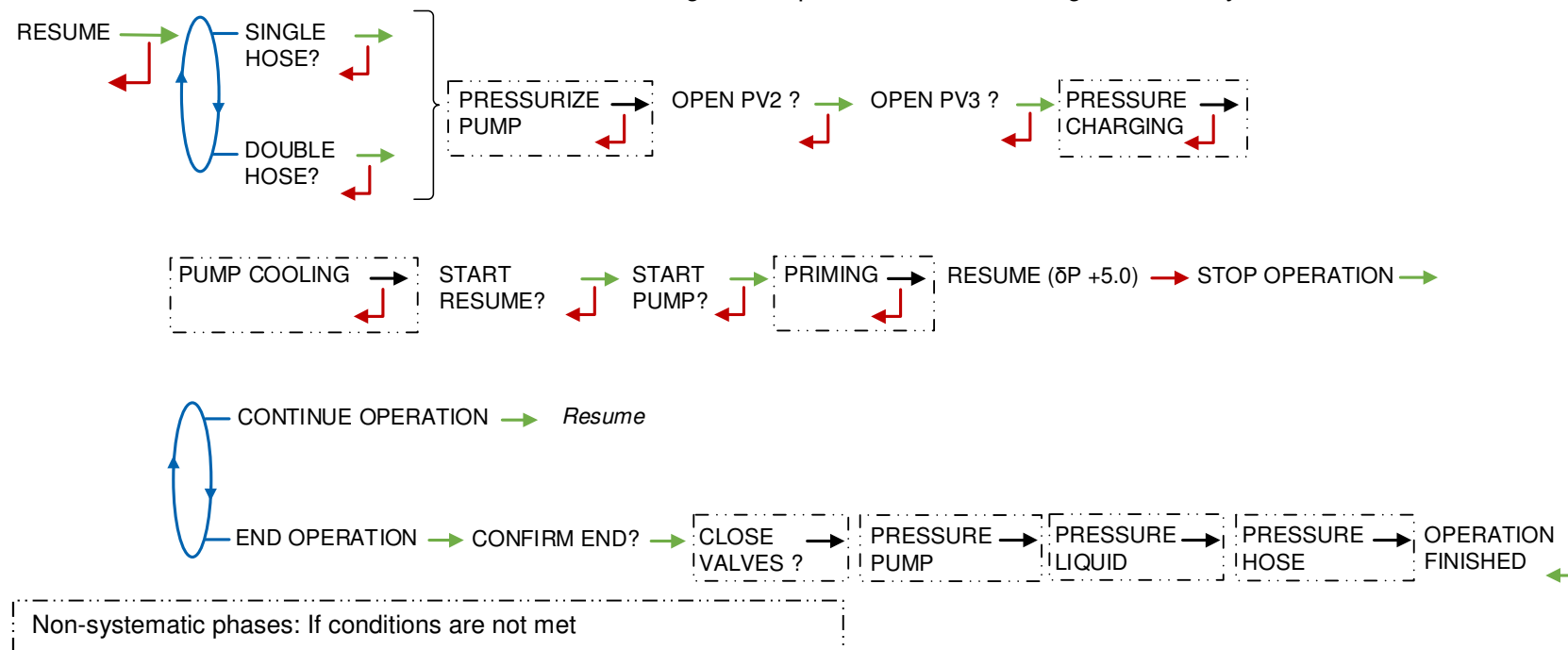


4.5 Menu RESUME

This menu is used to recover product from a third party.

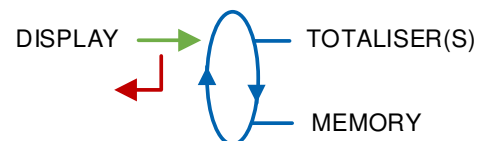
SINGLE HOSE: Delivery hose used in “empty hose” mode

DOUBLE HOSE: Additional hose installed between the gaseous phases of the receiving and delivery tanks.



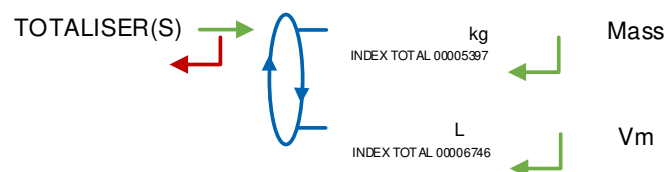
4.6 Menu DISPLAY

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



4.6.1 Sub-menu TOTALISER(S)

You can see the mass and volume totalisers values.



4.6.2 Sub-menu MEMORY

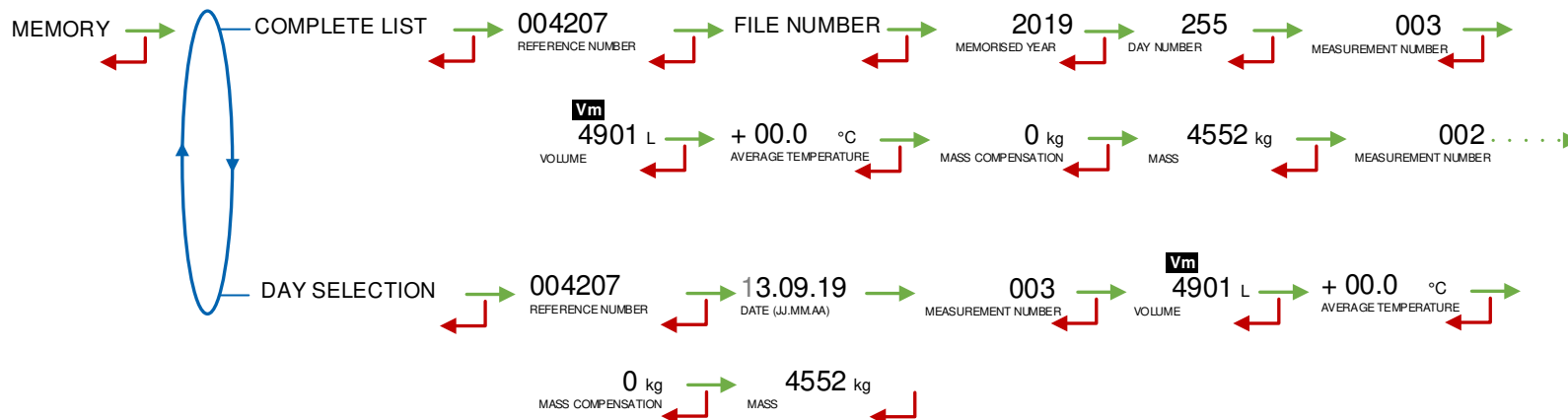
You can read all the measurement results stored by the MICROCOMPT+. That can be done in two ways:

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

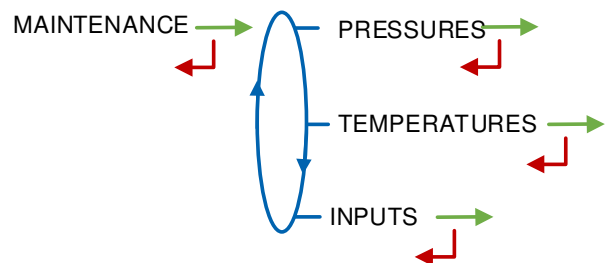
DAY SELECTION: Display a specific measurement by selecting the day number and the measurement number.

For each measurement, you can read:

- The volume
- The average temperature
- The mass compensation
- The mass



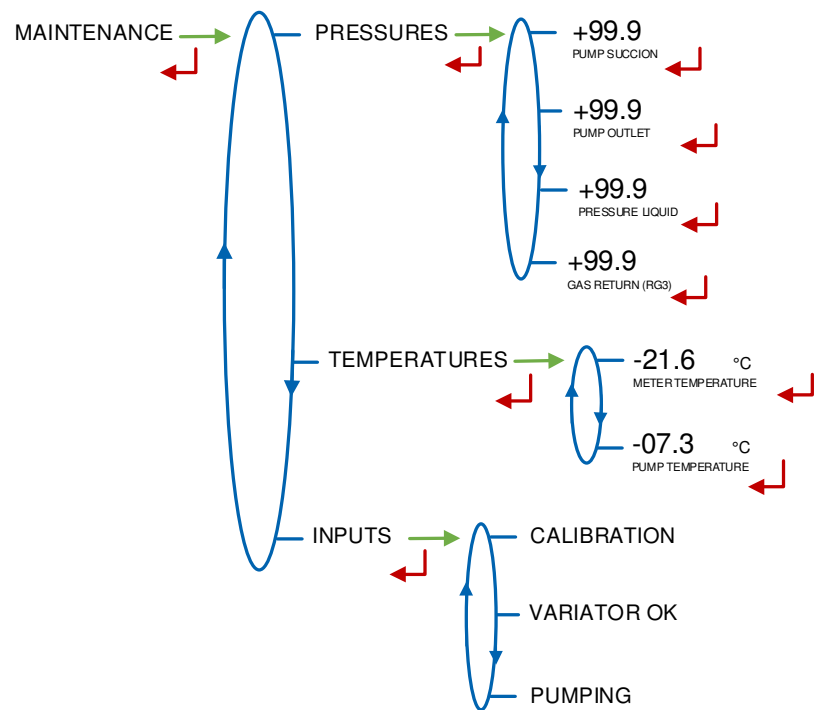
4.7 Menu MAINTENANCE



PRESSURES: Display the pressures recorded by transmitters PT1 to PT4

TEMPERATURES: Display the temperature values for the meter TT1 and the pump TT2

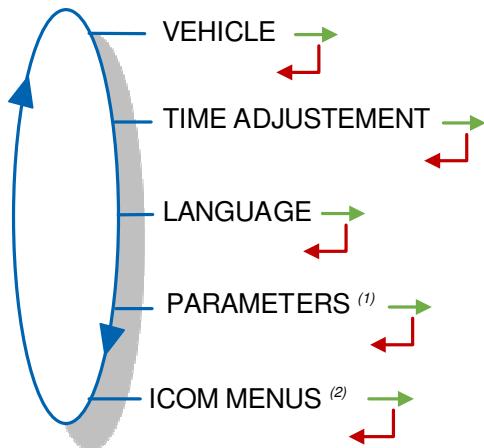
INPUTS: Display the status of the inputs to ease maintenance: OFF or ON



4.8 List of alarms

	DISPLAY	MEANING	ACTION
USER	STOP OPERATION	Intentional interruption of the operation	Continue or end the operation
	POWER SUPPLY PROBLEM	Power outage during the operation	Check the cause
	LOW FLOW FAULT	Low flowrate (lower than minimal flowrate)	Check the hydraulic system
	HIGH FLOW FAULT	High flowrate (greater than maximal flowrate)	Reduce flowrate
	EM METERING PROBLEM	Metering problem with the measuring device	Check if the pulse transmitter is powered (red indicators)
	DIARY FAULT	Reset of the events diary	Acknowledge the alarm, check the date in supervisor mode (RFID key)
	DISPLAY FAULT	Problem with display card	If steady alarm, substitution of the display card
	WATCHDOG FAULT	Fault with display or power card or AFSEC+ card	If steady alarm, substitution of the faulty card
Three tricolour LED on the MICROCOMPT+ front face are showing the wireless connection status as described in the operating manual MU 7092			
REPARATOR	TOTALISER LOST	Loss of totaliser	Substitution of the backup battery
	PRODUCT TEMP FAULT	Incorrect product temperature measurement	If steady alarm, see a reparator for trouble shooting
	PUMP TEMP FAULT	Incorrect pump temperature measurement	If steady alarm, see a reparator for trouble shooting
	CAVITATION FAULT	Incorrect pump Delta-P	Check the circuit pressure, 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	Substitution of the backup battery
	DATE AND TIME LOST	Loss of date and time	Set date and time in supervisor mode (RFID key)
	COEFFICIENTS FAULT	Deviation between coefficient LF/HF	Modification of the low flow coefficient (K1)
	PROM FAULT	When updating the app	No required action
		Loss of software or resident integrity	Substitution of the AFSEC+ electronic card
	RAM FAULT	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	The oldest recording is older than 3 months
	PT1 FAULT	Problem with pressure transmitter PT1	Make sure PT1 is operational
	PT2 FAULT	Problem with pressure transmitter PT2	Make sure PT2 is operational
	PT3 FAULT	Problem with pressure transmitter PT3	Make sure PT3 is operational
PT4 FAULT	Problem with pressure transmitter PT4	Make sure PT4 is operational	

5 SET THE CRYOTRONIQUE: SUPERVISOR MODE



PARAMETRES ⁽¹⁾: Access restricted to permitted persons with RFID key Level2-Manager or Level3-Maintenance.

ICOM MENUS ⁽²⁾: The sub-menus are different according to the level of access: Level1-User, Level2-Manager and Level3-Maintenance.

5.1 Menu VEHICLE

Record the vehicle registry number on which the CRYOTRONIQUE is installed.



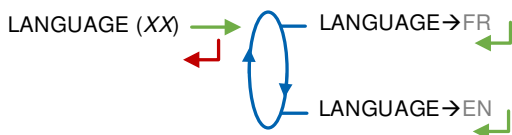
5.2 Menu TIME ADJUSTMENT

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.



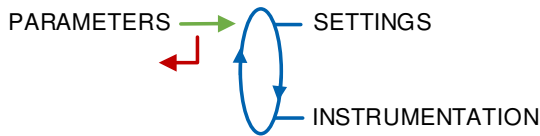
5.3 Menu LANGUAGE

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



5.4 Menu **PARAMETERS:**

Access restricted to permitted persons with RFID key Level2-Manager, Level3-Maintenance.



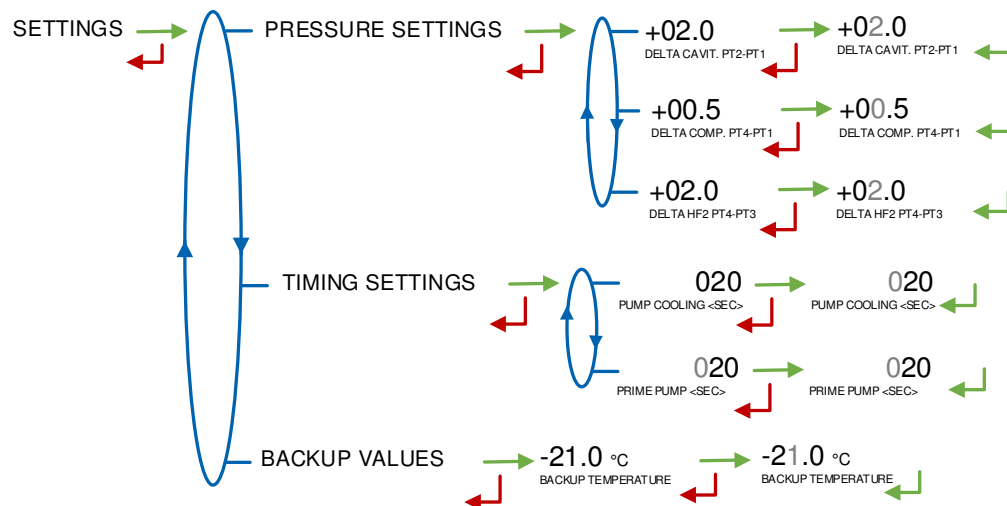
5.4.1 Sub-menu **SETTINGS**

PRESSURE SETTINGS: Set the parameters of the pressure transmitters in order to hold the hydraulic system under pressure

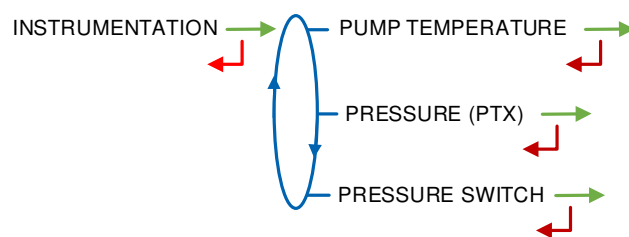
TIMING SETTINGS: This menu allows setting the duration parameters of the pump.

- PUMP COOLING (SEC): Estimated time out in seconds for cooling the pump
- PRIME PUMP (SEC): Estimated time out in seconds for priming the pump

BACKUP VALUES: Record the backup value for temperature.



5.4.2 Sub-menu **INSTRUMENTATION**



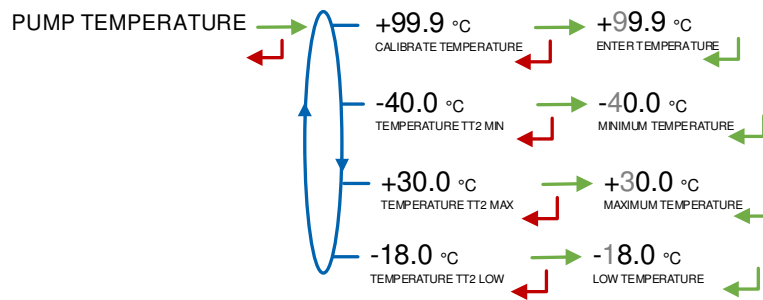
5.4.2.1 Sub-menu **TEMPERATURE PUMP**

CALIBRATE TEMPERATURE: This menu is used to calibrate the temperature of the pump. The calibration is done on two measuring points at least

TEMPERATURE TT2 MIN: Minimum value of the pump temperature

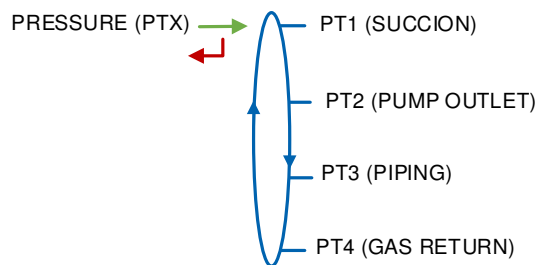
TEMPERATURE TT2 MAX: Maximum value of the pump temperature

TEMPERATURE TT2 LOW: The pump temperature must be less than this value to let the product flow



5.4.2.2 Sous-menu PRESSURES (PTX)

This menu is used to calibrate and set the four 4-20mA pressure transmitters that follows:

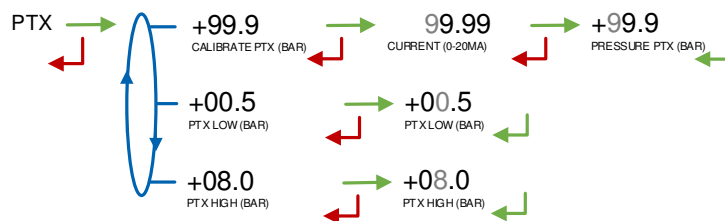


For each pressure transmitter, the menu is the same (X=1 to 4):

CALIBRATE PTX (BAR): This menu is used to calibrate the pressure transmitter. The calibration is done on two measuring points at least

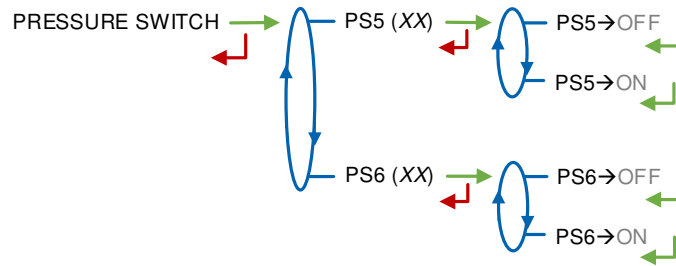
PTX LOW (BAR): The pressure must be less than this value to ensure that the discharging or resume sequence runs smoothly

PTX HIGH (BAR): The pressure must be greater than this value to ensure that the discharging or resume sequence runs smoothly



5.4.2.3 Sous-menu PRESSURE SWITCH

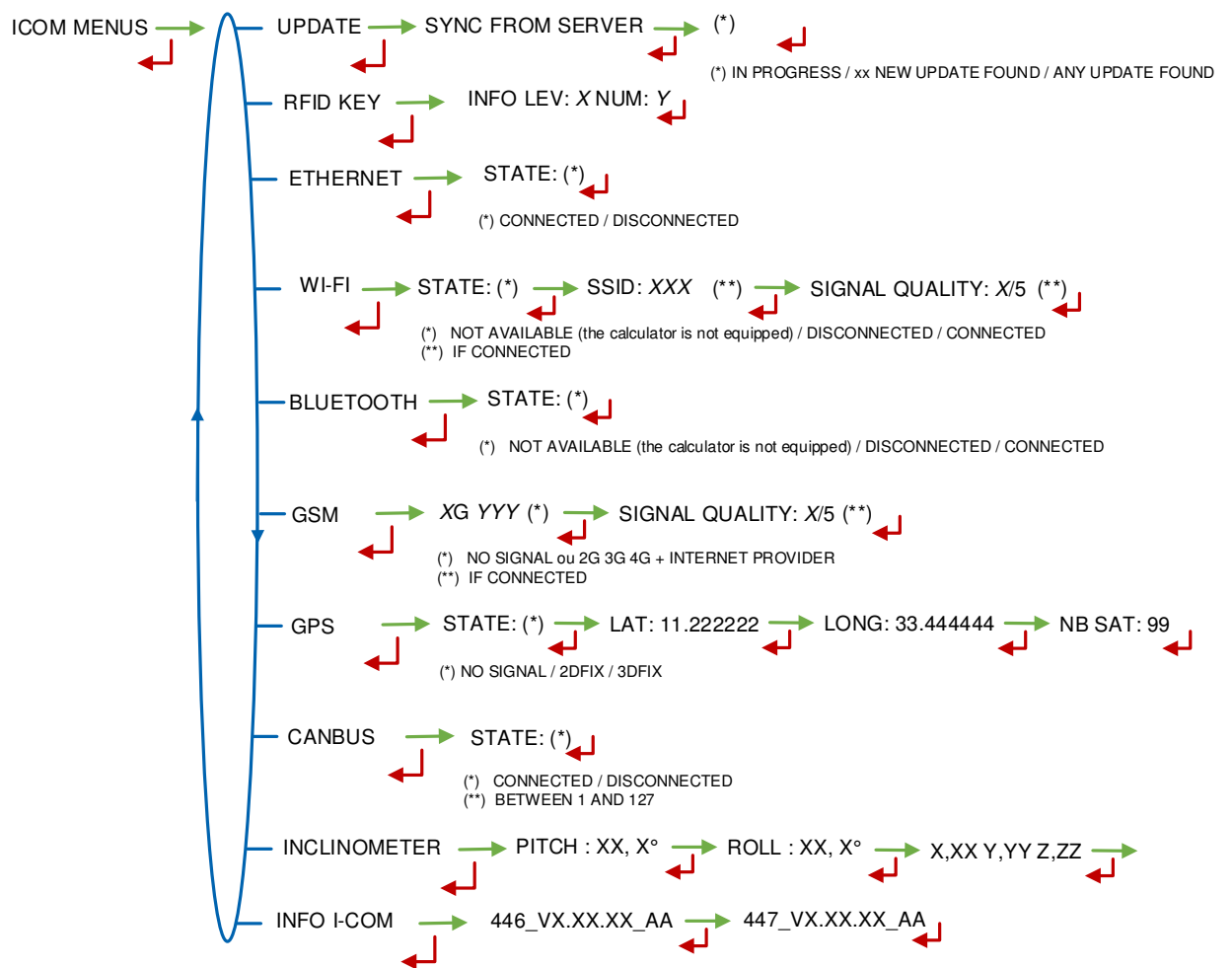
This menu is used to validate the digital pressure switches PS5 and PS6. This feature is an option.



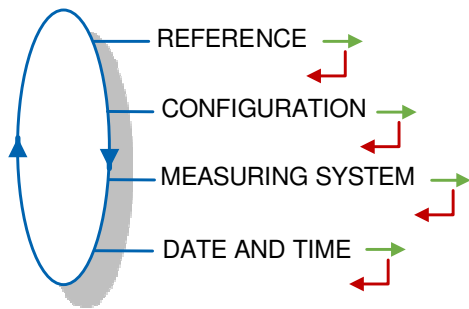
5.5 Menu ICOM MENUS

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

The parameters available with the RFID key Level1-User are shown below.

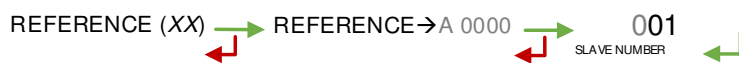


6 CONFIGURE THE CRYOTRONIQUE: METROLOGICAL MODE

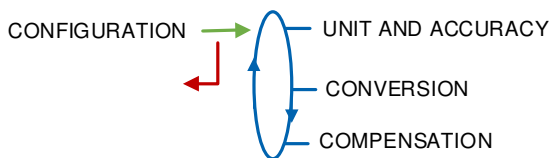


6.1 Menu REFERENCE

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



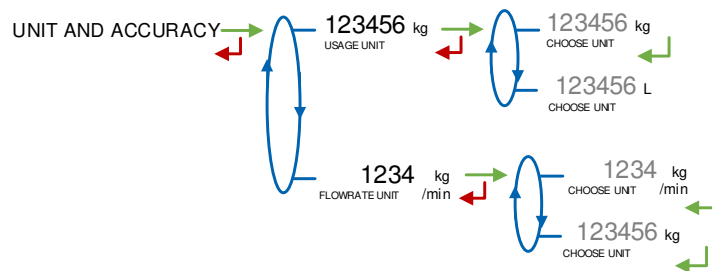
6.2 Menu CONFIGURATION



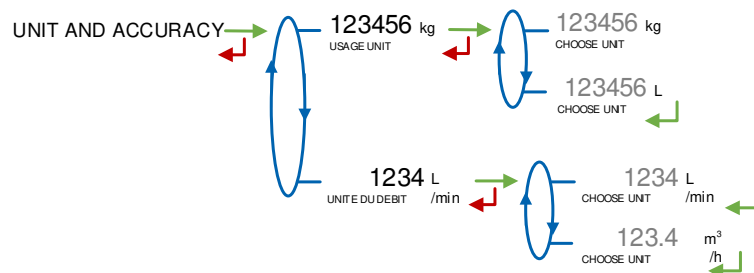
6.2.1 Sub-menu UNIT AND ACCURACY

Choose the usage unit: mass or volume. Then, choose the unit of the flow rate. Choices depend on the usage unit set before.

Example usage unit=mass:



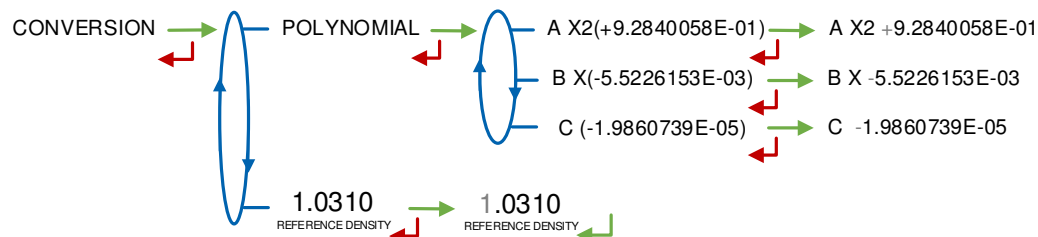
Example usage unit=volume:



6.2.2 Sub-menu CONVERSION

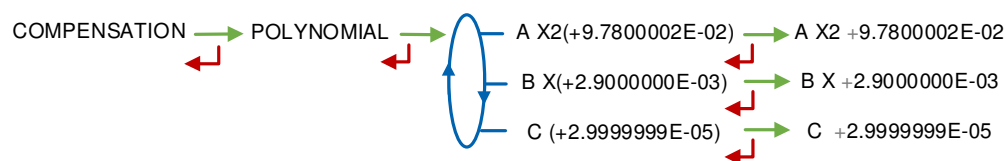
POLYNOMIALS: Record the coefficients of the polynomial

REFERENCE DENSITY: Record the reference density of the product for conversion.

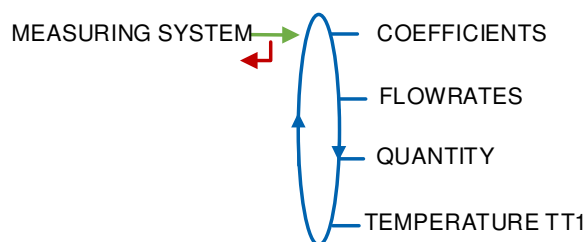


6.2.3 Sub-menu COMPENSATION

POLYNOMIALS: Record the coefficients of the polynomial.



6.3 Menu MEASURING SYSTEM



6.3.1 Sub-menu COEFFICIENT

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

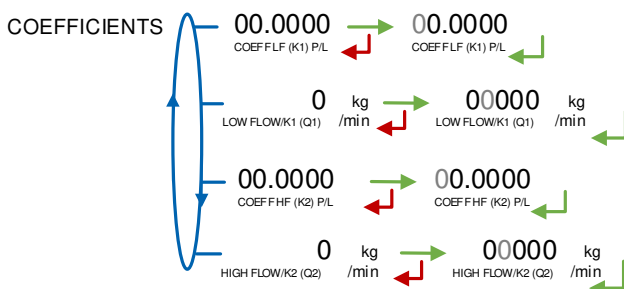
COEFF LF (K1) P/L: Coefficient for low flow (pulses/liter)

LOW FLOW/K1 (Q1): Reference low flow (unit according to CONFIGURATION>UNIT AND ACCURACY)

COEFF HF (K2) P/L: Coefficient for operating flow (pulses/liter)

HIGH FLOW/K2 (Q2): Reference operating flow (unit according to CONFIGURATION>UNIT AND ACCURACY)

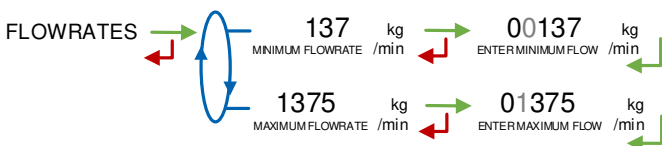
Example with volume expressed in Kg and flowrate expressed in Kg/min:



6.3.2 Sub-menu FLOWRATES

MINIMUM FLOWRATE: Record the metrological minimum flowrate of the CRYOTRONIQUE (unit according to CONFIGURATION>UNIT AND ACCURACY).

MAXIMUM FLOWRATE: Record the metrological maximum flowrate of the CRYOTRONIQUE (unit according to CONFIGURATION>UNIT AND ACCURACY).



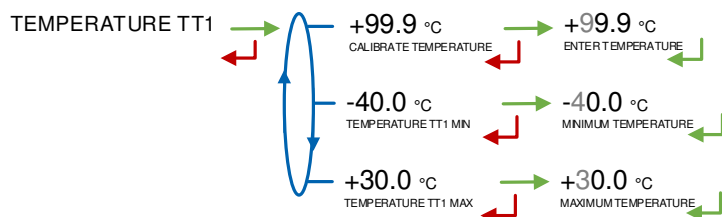
6.3.3 Sub-menu QUANTITY

Record the measured minimum quantity of the CRYOTRONIQUE (unit according to CONFIGURATION>UNIT AND ACCURACY). This value is given by the EU examination certificate of the CRYOTRONIQUE.



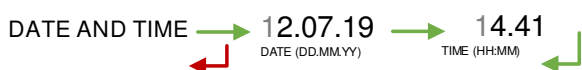
6.3.4 Sub-menu TEMPERATURE TT1

It is used to calibrate the temperature into the MICROCOMPT+. The calibration is done on two measuring points at least



6.4 Menu DATE AND TIME

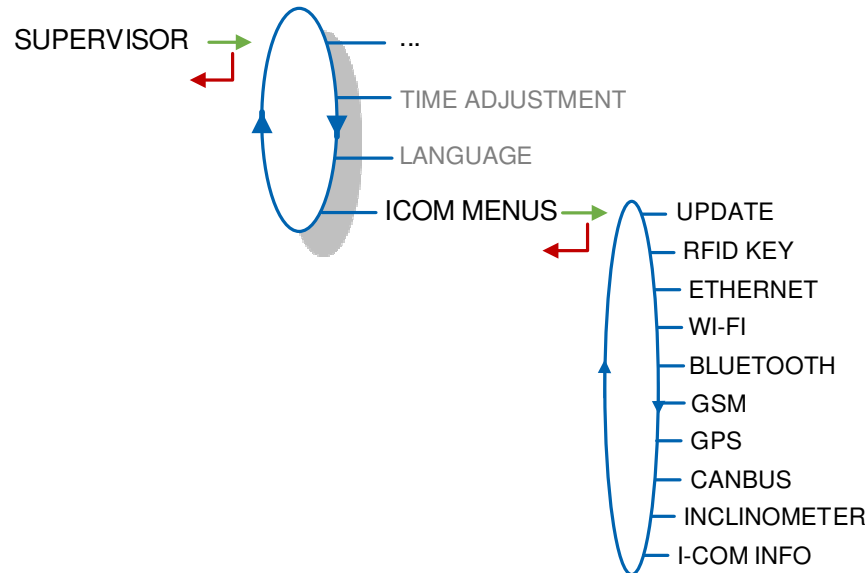
Record the date. Then record the time at French format and validate (e.g. 14.41 means 2.41 pm).



ANNEX 1: PRESENTATION OF THE MENU SUPERVISOR>ICOM MENUS

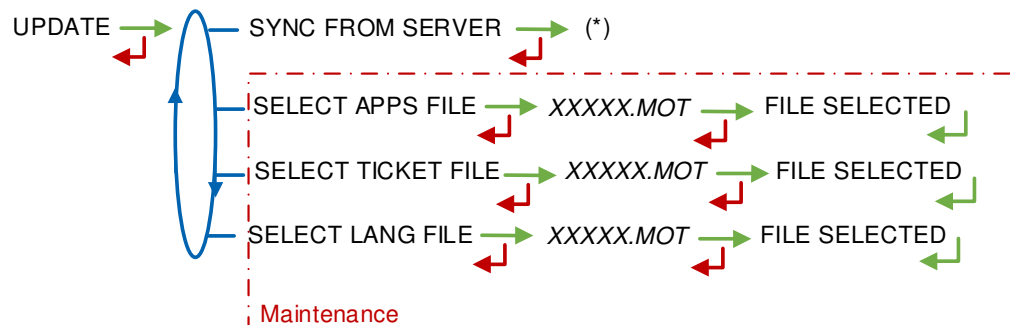
The sub-menus are different according to the level of access:

- ⇒ 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+.

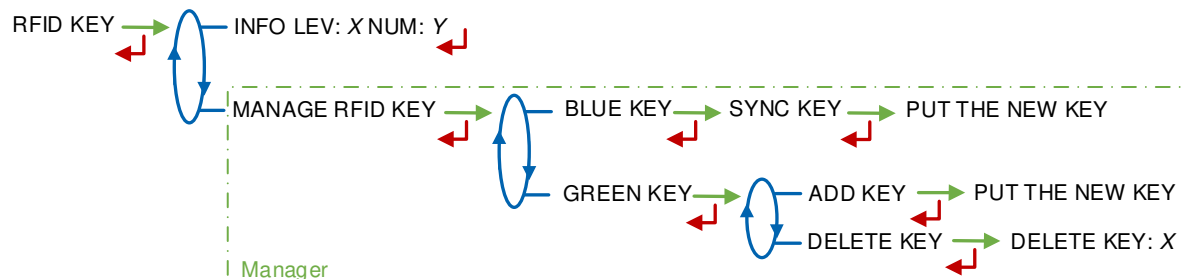
SELECT APPS FILE(*) – Access restricted to the Maintenance: Used to display and select the version(s) of the application available on the SD card. NO FILE is displayed if there's no file to download.

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.

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



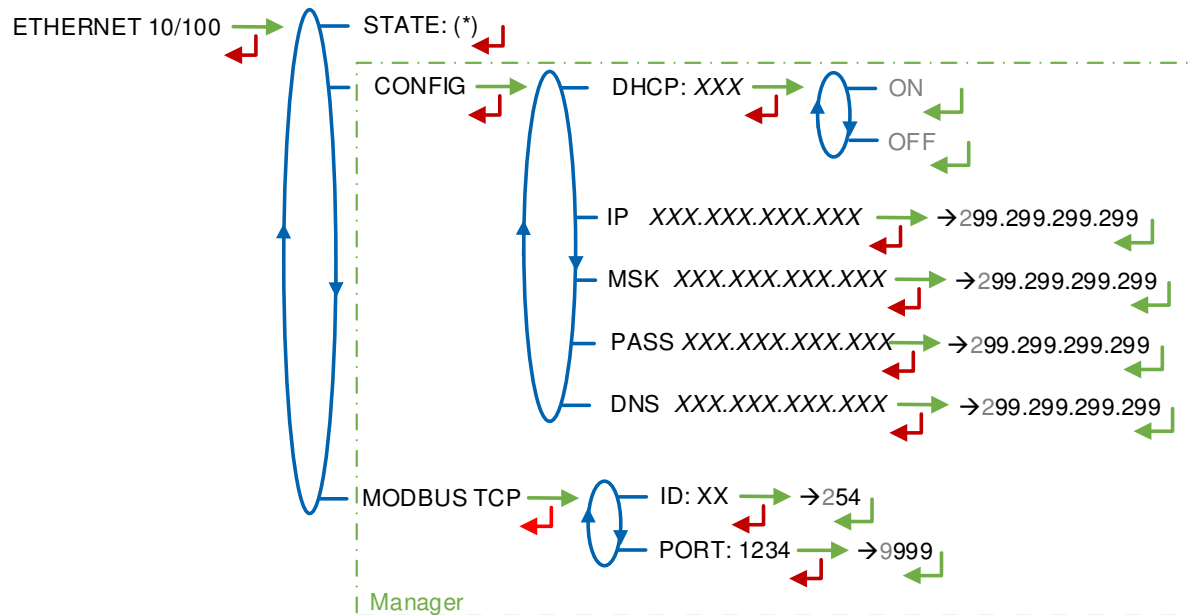
INFO: Display of the level and the identifier of the RFID key (blue key: Level1-User, green key: Level2-Manager, red key: Level3-Maintenance)

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)

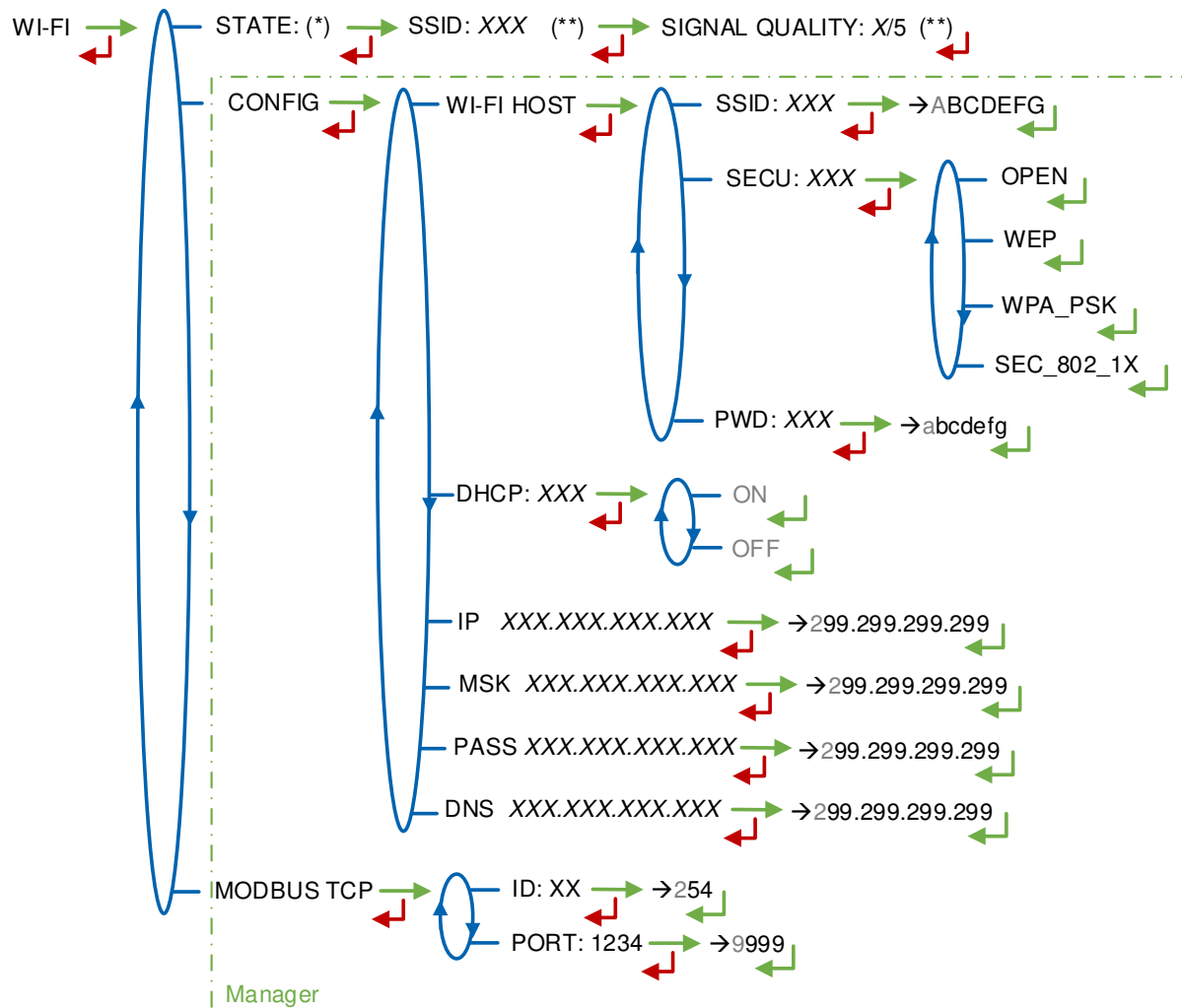
DNS: IP Address to access a DNS server

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

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	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)

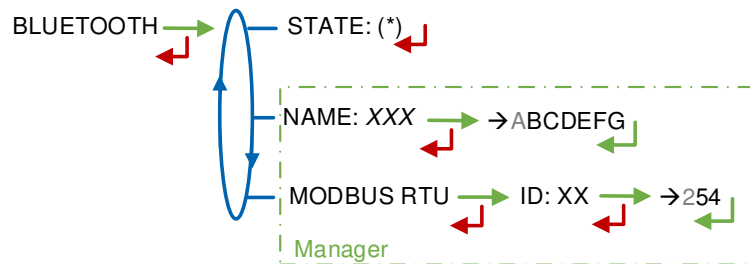
DNS: IP Address to access a DNS server

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

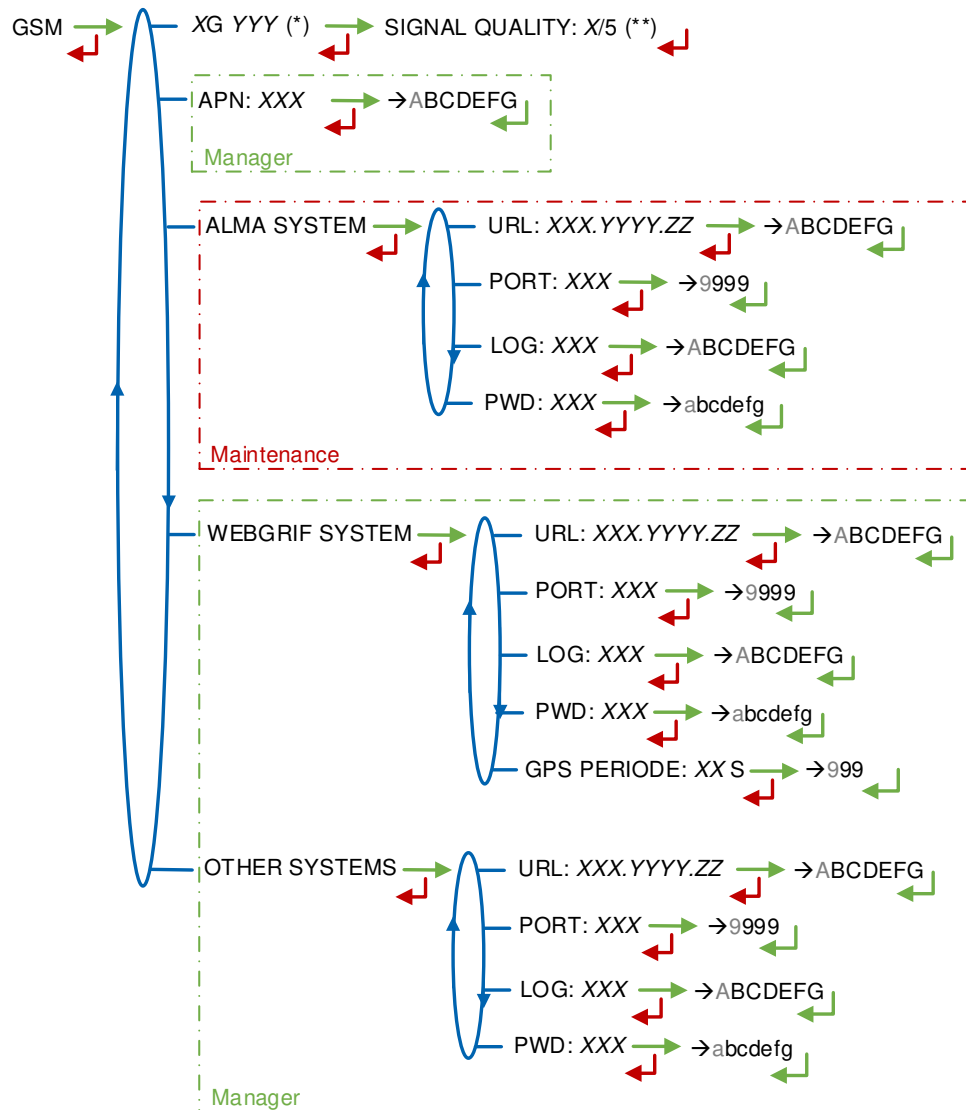
STATE: Status of the Bluetooth connection

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)

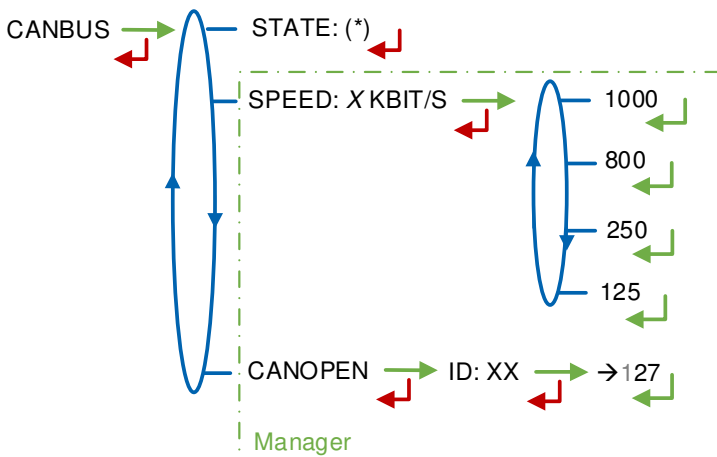
1.7. Menu GPS



(*) 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

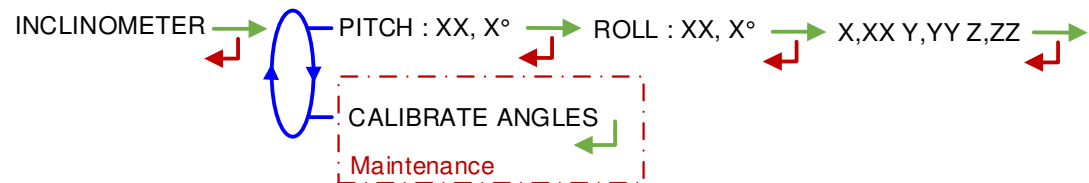
STATE: Status of the CANBus connection

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)

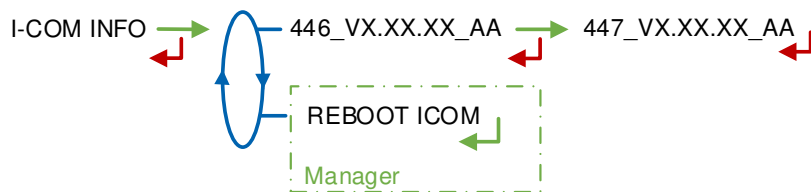
1.9. Menu INCLINOMETER



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.

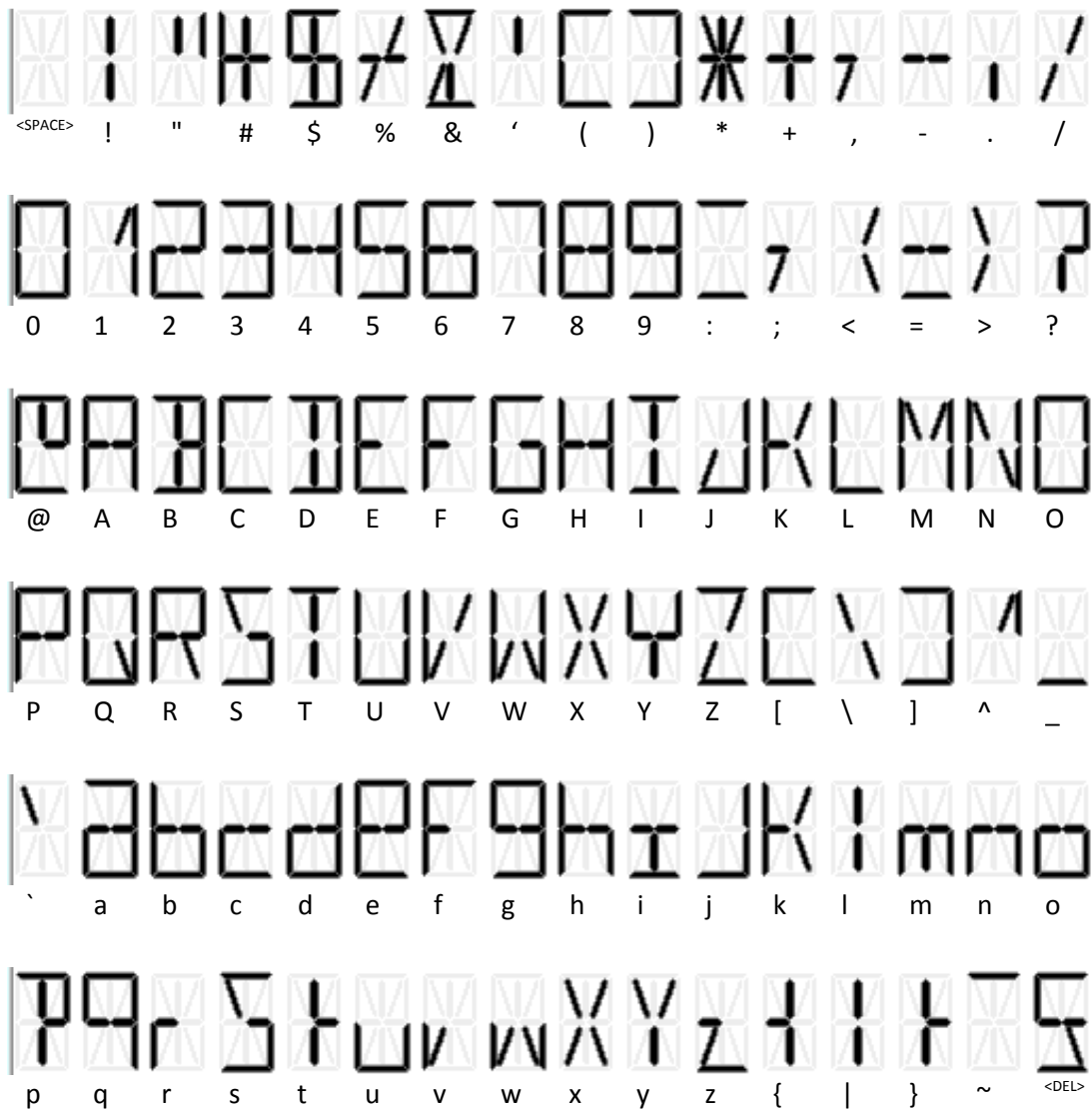
1.10. Menu I-COM INFO



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+



RELATED DOCUMENTS

GU 7092	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+