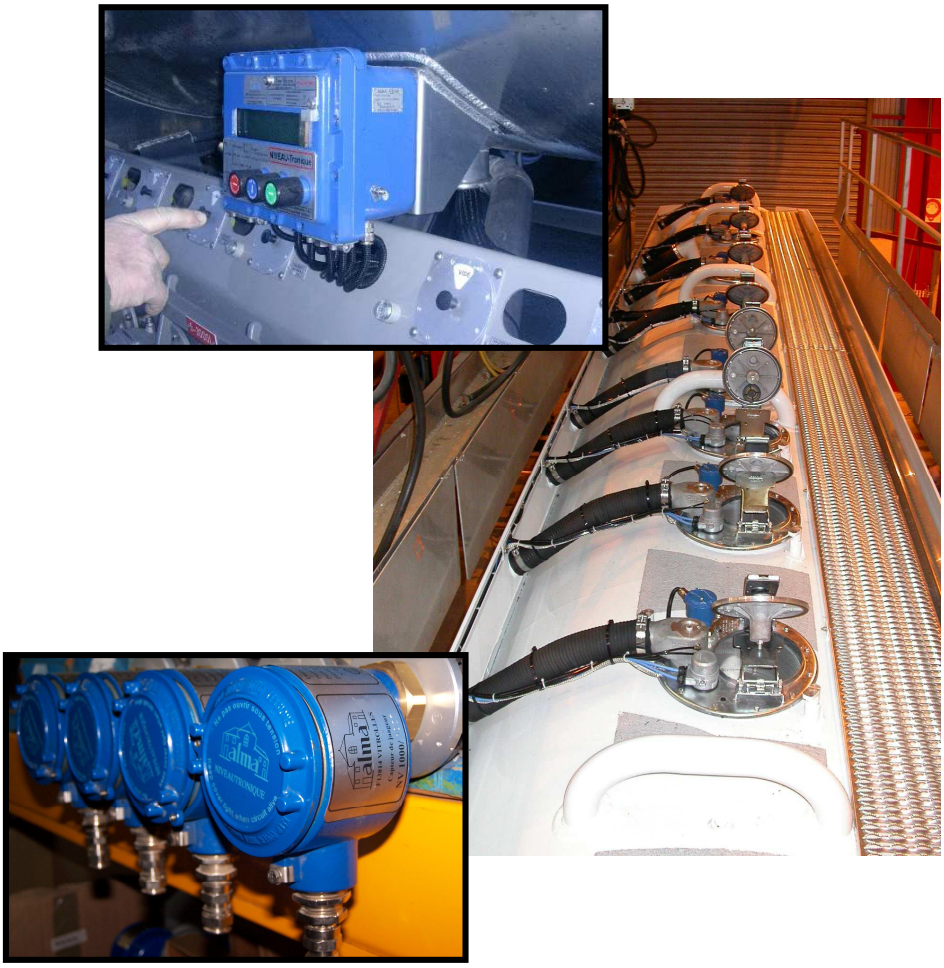
OPERATING MANUAL

MU 7045 EN B

NIVEAUTRONIQUE

TANK-TRUCK ELECTRONIC LEVEL GAUGE



Relevant software 4002+v4.0

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CONTENTS

1 GENERAL PRESENTATION AND DESCRIPTION:.....3
2 OPERATING RECOMMENDATIONS: 4
3 OPERATION MODE OF THE INDICATOR DEVICE:.....4
3.1 Driver mode.....4
3.2 Supervisor mode 4
3.3 Metrological mode.....4
4 DRIVER MODE:.....5
4.1 Menu DISCHARGE 6
4.2 Menu DISCHARGE with loading option.....7
4.3 Menu PRINTING 8
4.4 Menu MAINTENANCE.....9
4.5 List of alarms.....10
5 SUPERVISOR MODE:.....11
5.1 Menu GAUGE CONTROL 12
5.2 Menu DATE AND TIME.....12
5.3 Menu PRODUCTS 13
5.4 Menu CONFIG. COMPARTIMENTS or STRAPPING TABLE 13
5.5 Menu VEHICLE.....14
5.6 Menu PARAMETERS 15
5.7 Menu LANGUAGE.....15
6 METROLOGICAL MODE:.....16
6.1 Menu INDICATOR REFERENCE.....17
6.2 Menu CONFIGURATION.....17
6.3 Menu COMPARTMENT(S) 18
ANNEX.....19

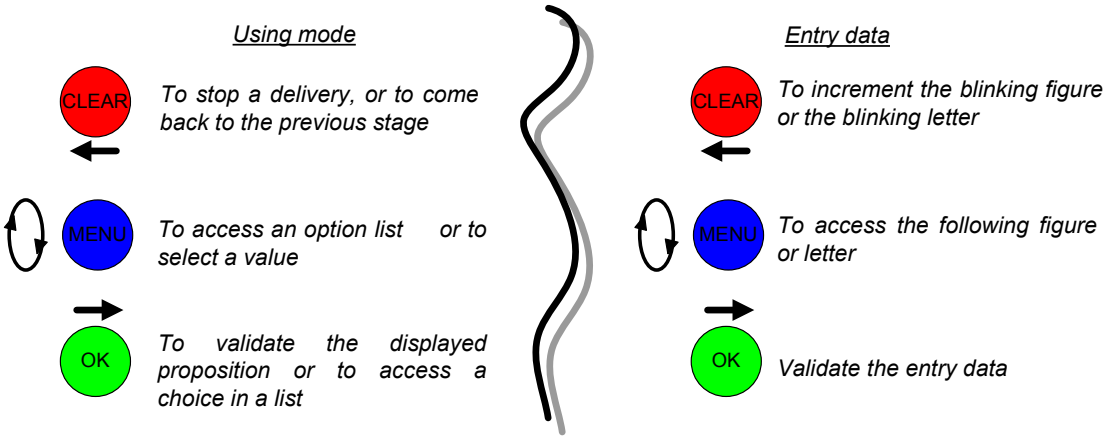
1 GENERAL PRESENTATION AND DESCRIPTION:

The NIVEAUTRONIQUE level gauge is associated to one or several compartments of a tank truck. It is composed of a level sensor installed on a gauge tube. This tube guides and protects the float that follows the product movements. The sensor detects the position of the float. It is connected to the indicator device that can be common to several level sensors (max 9).

The indicator device may be connected to an external printer.

Presentation of the MICROCOMPT+ calculator-indicator:

Buttons function:



The MICROCOMPT+ calculator-indicator manages measuring operation and computerizes the measuring system defaults.

2 OPERATING RECOMMENDATIONS:

The conditions for installation of the level gauge should ensure the verification of the level gauge by comparison to a gauging sabre of class II. The sabre should be positioned at a minimum distance of 100 mm of gauging tube.

3 OPERATION MODE OF THE INDICATOR DEVICE:

3.1 Driver mode

This is the normal using mode in exploitation. It is used to specify the loading plan from the products table set in SUPERVISOR mode and to display for each compartment the level measure (in mm) by ullage or height.

Refer to DRIVER MODE.

3.2 Supervisor mode

To access the supervisor mode, use the magnetic key that must be put at the right of the MICROCOMPT display. This mode is used to set the measuring system by specifying the products table useful for the tank exploitation. Some information is available such as the height values (tenth of a millimetre) and characteristics of different devices defined in METROLOGICAL mode.

Refer to SUPERVISOR MODE.

3.3 Metrological mode

The configuration of the indicator device is done by an authorized person at the commissioning of the measuring system and sometimes during metrological controls. To access the METROLOGICAL mode, the MICROCOMPT+ has to be unsealed. Only an authorized person can remove the seal.

This mode allows setting all metrological and functional parameters of the device taking into account the physical characteristics of the equipment, its instrumentation and the desired use.

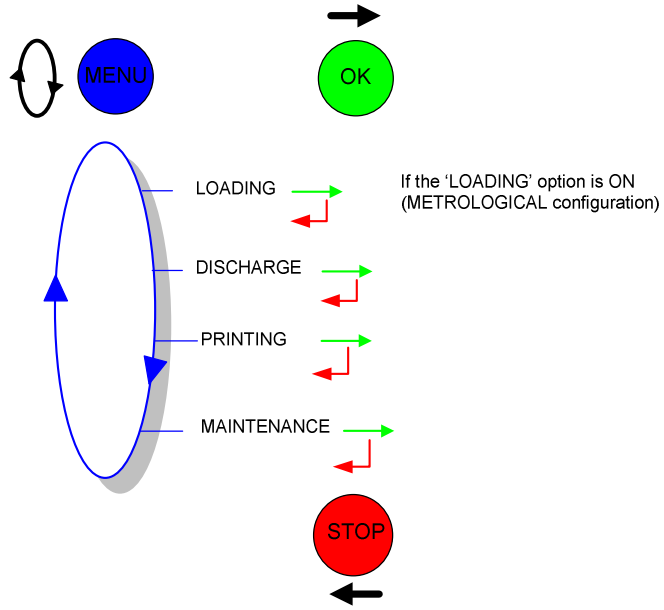
Refer to METROLOGICAL MODE.

4 DRIVER MODE:

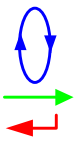
By default, it was chosen to display the level measure by ullage. It is also possible to display the level measure by height; in that case, the measure is no more metrological. This choice is made during the metrological configuration of the equipment.

The DRIVER mode leads 3 or 4 menus depending on the metrological configuration:

LOADING	:	depends on metrological configuration: only if the LOADING option is ON. Specification of the loading plan: for each compartment, set the product type and the quantity associated
DISCHARGE	:	unload the products of the non-empty compartments and print the delivery ticket
PRINTING	:	printing of tickets, parameters and events recorded in the system
MAINTENANCE	:	check equipment status and important information



LEGEND:

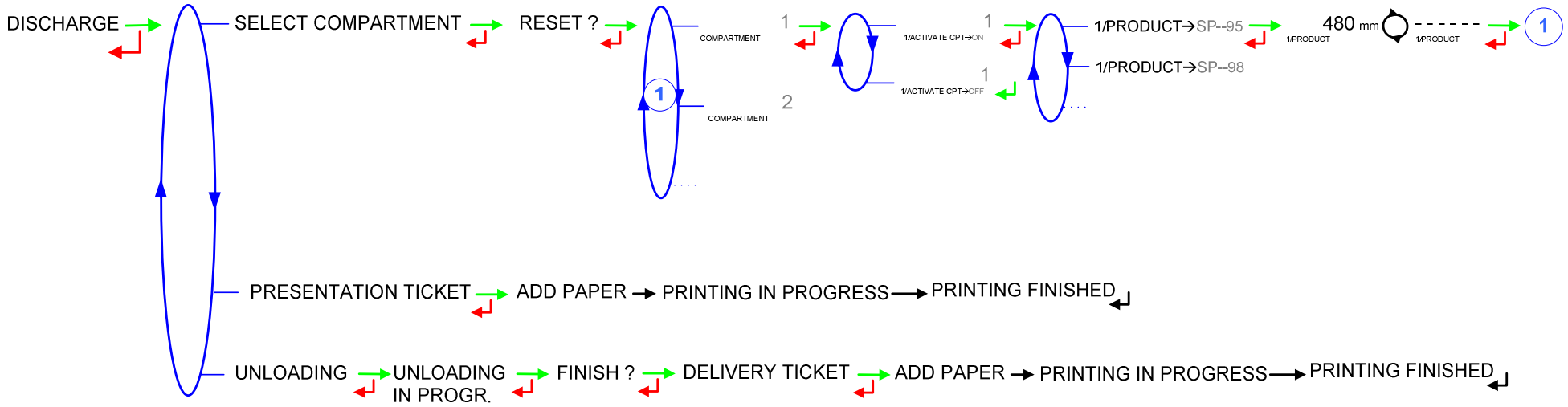


Press the button (red, blue or green) as many times as necessary to display the next message

4.1 Menu DISCHARGE

The DISCHARGE menu gives to the user the possibility to:

- Store the product loaded in each compartment, one after the other
- Print the presentation ticket which presents the tank loading (before the beginning of the discharge)
- Unload a volume and print the delivery ticket which shows the compartments that have been unloaded.



This menu allows to empty the compartments (that are not empty) and to print a delivery ticket

The display of the volume depends if the volume is guaranteed or not:

Fixed display	:	volume guaranteed
Blinking display	:	volume not guaranteed (footvalves closed...)
Display of '---'	:	volume below to the rest position of the float

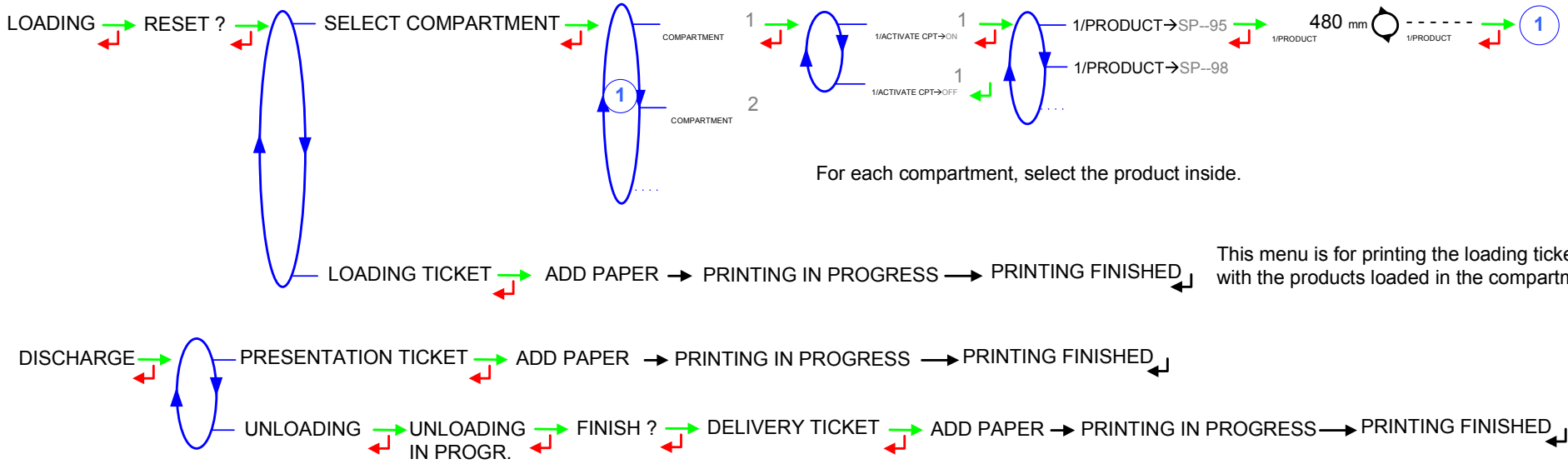
In a compartment, when the product level is below to the defined threshold (rest position of the float), the indicator MICROCOMPT displays 'REST'.

4.2 Menu DISCHARGE with loading option

The LOADING menu gives to the user the possibility to specify, store and print the products and quantities loaded in the compartments one after the other. The loading ticket must be printed before leaving the loading terminal.

The DISCHARGE menu gives to the user the possibility to:

- Print the presentation ticket which presents the tank loading when it arrives at the station (before the beginning of the discharge)
- Unload a volume and print the delivery ticket which shows the compartments that have been unloaded.



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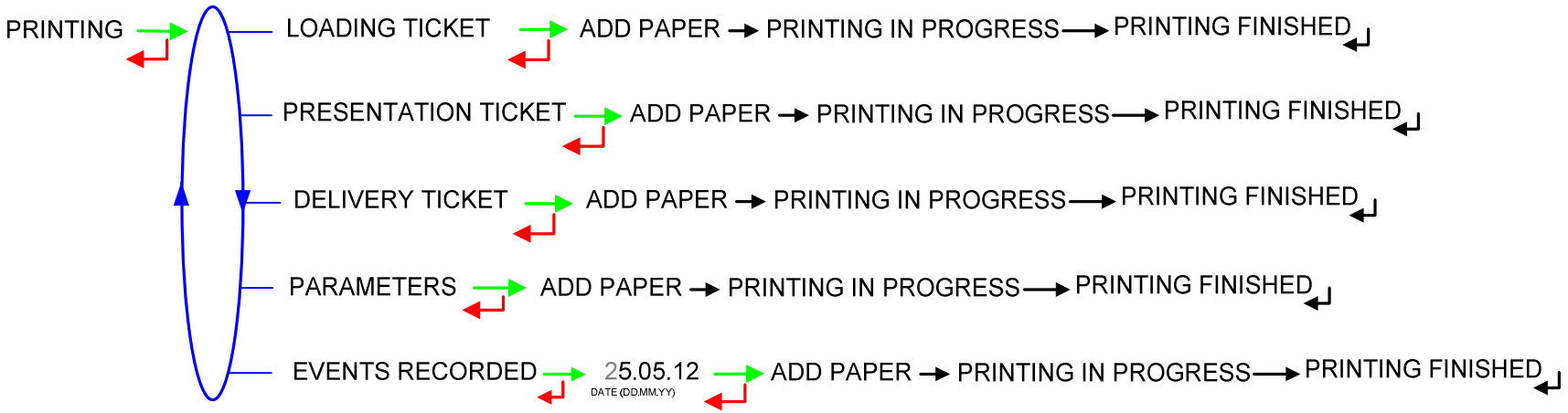
Blinking display	:	volume not guaranteed (footvalves closed...)
Display of '---'	:	volume below to the rest position of the float

In a compartment, when the product level is below to the defined threshold (rest position of the float), the indicator MICROCOMPT displays 'REST'.

4.3 Menu PRINTING

This menu leads 4 or 5 printing sub-menus depending on the METROLOGICAL configuration:

LOADING TICKET: only if the LOADING option is ON (METROLOGICAL configuration)
PRESENTATION TICKET: this ticket presents the cargo
DELIVERY TICKET: the delivery ticket presents the discharged products
PARAMETERS: printing of the indicator parameters
EVENTS RECORDED: the events recorded are printed for a chosen date



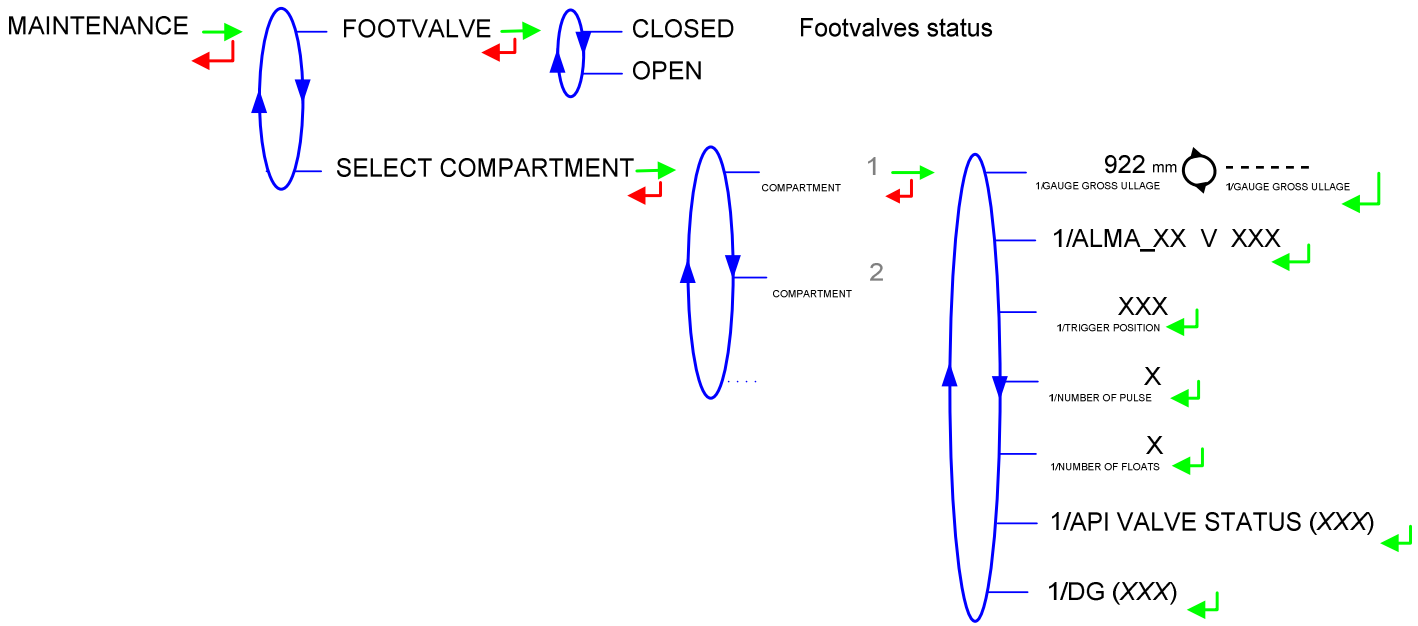
4.4 Menu MAINTENANCE

This menu allows to check the status of the equipment and to control important information:

FOOTVALVE: foot valve status

SELECT COMPARTIMENT: for one compartment, visualisation of the following data:

GAUGE GROSS ULLAGE	: gross ullage measured by the gauge
ALMA_XX V XXX	: version of the software installed on the gauge
TRIGGER POSITION	: signal sent out by the gauge. Strong ≥ 100 > correct ≥ 70 > low
NUMBER OF PULSE	: number of echo (resonance) useful for one measure
NUMBER OF FLOATS	: number of floats in the gauge tube
API VALVE STATUS	: API valve status
DG	: vacuity sensor status

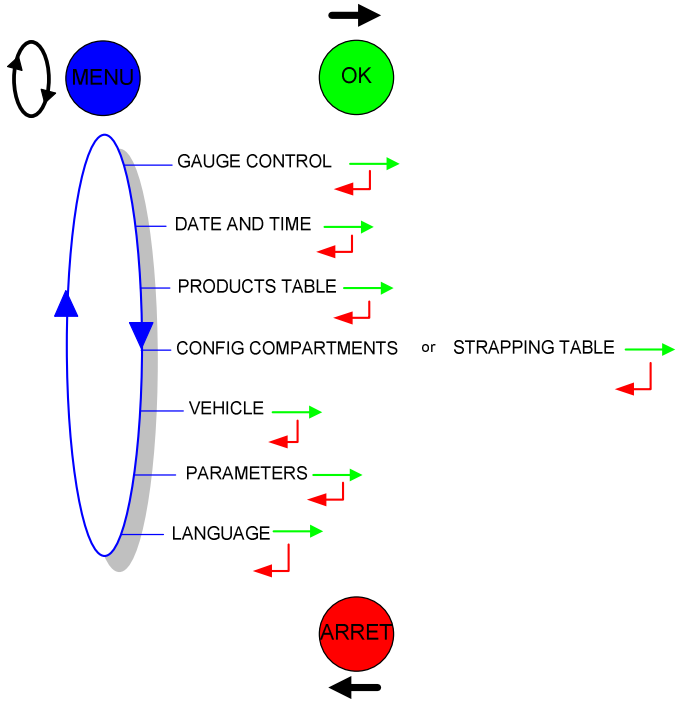


4.5 List of alarms

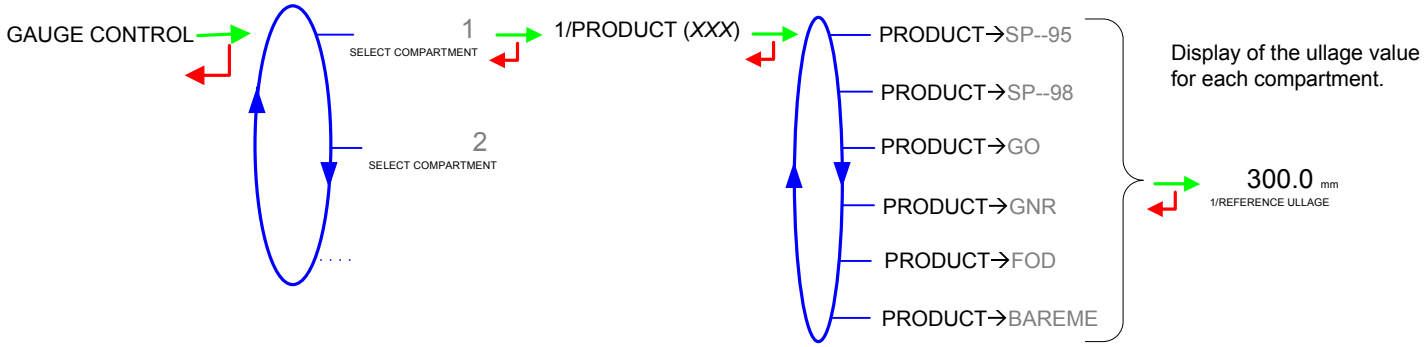
		DISPLAY	MEANING	ACTION
USER		COMMUNICATION DEFAULT	Communication with the printer lost	Check the connection cable, on-off switch and fuse
		CAN BUS DEFAULT	Default on the CAN electronic board (vacuity sensor control)	Switch off-on. If steady alarm, see a reparator for trouble shooting
		DTV BOX DEFAULT	Default on the DTV box (vacuity sensor control)	Switch off-on. If steady alarm, see a reparator for trouble shooting
		GAUGE N* DEFAULT	No response from gauge N*	Acknowledge the alarm. If steady alarm, see a reparator
		LINK DEFAULT GAUGEN*	Problem of link with gauge N*	Acknowledge the alarm. If steady alarm, see a reparator
		METERING DEFAULT GN*	Metering problem with gauge N*	Acknowledge the alarm. If steady alarm, see a reparator
		PARAM DEFAULT GN*	Problem with the parameters of gauge N*	Acknowledge the alarm. If steady alarm, see a reparator
		FLOAT DEFAULT GAUGN*	Problem with the float of gauge N*	Acknowledge the alarm. If steady alarm, see a reparator
		GAS DETECTOR DEFAULT	Problem with vacuity sensor	Check the status of vacuity sensor in maintenance menu
		DIARY DEFAULT	Reset of the events diary	Acknowledge the alarm, check the date in supervisor mode (key)
REPARATOR	NB	WATCHDOG DEFAULT	Fault with display or power card or AFSEC+ card	Switch on-off the MICROCOPT+ / If steady alarm, substitution of the faulty card
	BLOCKING	MEMORY LOST (PILE)	Loss of saved memory	Substitution of the backup battery
		DATE AND TIME LOST	Loss of date and time	Set date and time in SUPERVISOR MODE
		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
		CONFIG METRO	Irrelevant metrological configuration	Substitution of the AFSEC+ electronic card
		MEMORY OVER LOADED	SIM memory full	Substitution of the AFSEC+ electronic card

*N = 1 to 9

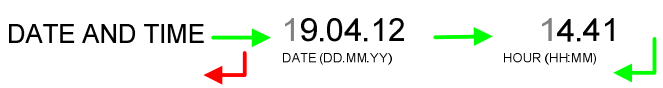
5 SUPERVISOR MODE:



5.1 Menu GAUGE CONTROL

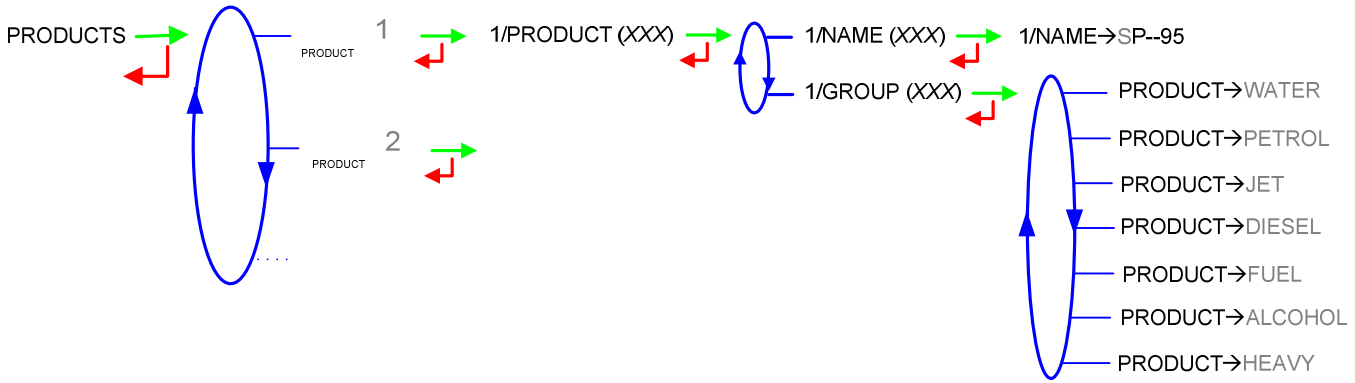


5.2 Menu DATE AND TIME



Enter the day, the month and the year, and then enter hour and minutes.

5.3 Menu PRODUCTS

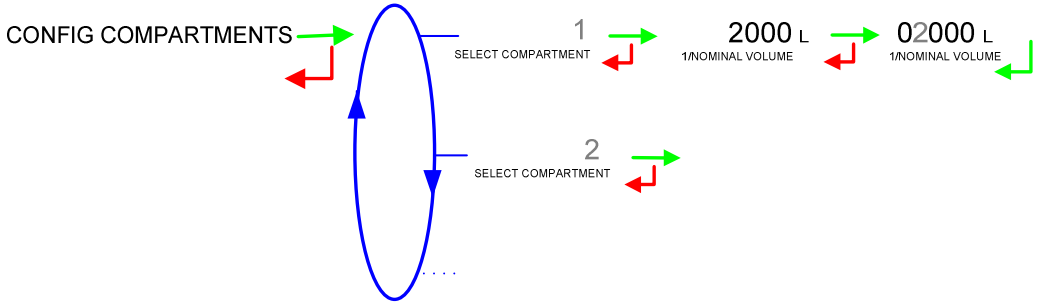


Enter the products name. Few names are set in the indicator device: SP--95, SP--98, GO, GNR, FOD and BAREME.

Choose the group of the product. Some categories are memorized in the indicator device:
- WATER: 1000 kg/m^3
- PETROL: 750 kg/m^3
- JET: 790 kg/m^3
- DIESEL: 820 kg/m^3
- FUEL: 850 kg/m^3
- ALCOHOL: 810 kg/m^3
- HEAVY: 930 kg/m^3

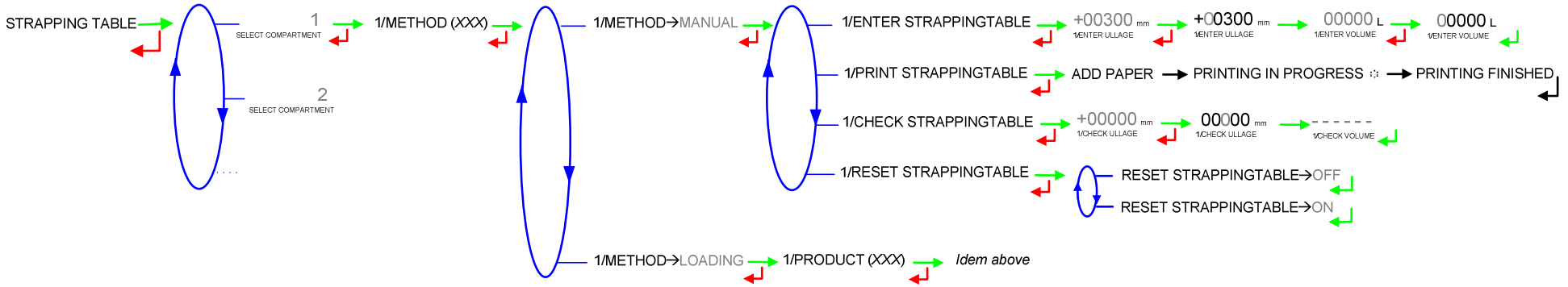
5.4 Menu CONFIG. COMPARTIMENTS or STRAPPING TABLE

The COMPARTMENTS CONFIGURATION menu occurs if the strapping option is OFF in METROLOGICAL MODE. For each compartment, enter the nominal volume in liters.



The STRAPPING TABLE menu occurs if the strapping option is ON in METROLOGICAL MODE. For each compartment, the strapping of the tank is done either manually or by loading. In any case, the ullage value (or the height value – depending on the indication) and the associated volume must be memorized in the indicator device

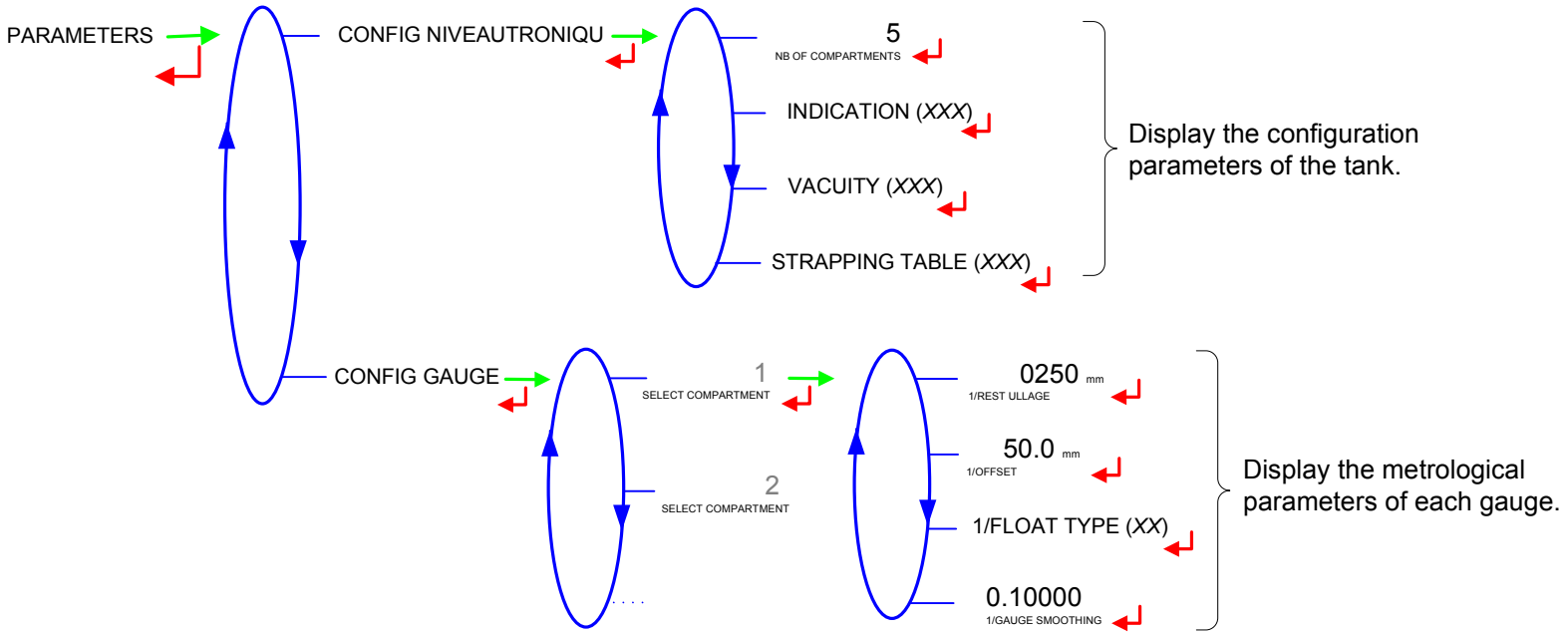
This menu allows printing the strapping table, checking it or resetting it.



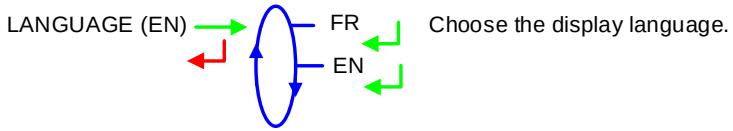
5.5 Menu VEHICLE

VEHICLE NB (00--AAA--00) → VEHICLE NB →00--AAA--00 ↵ Set the vehicle registry number.

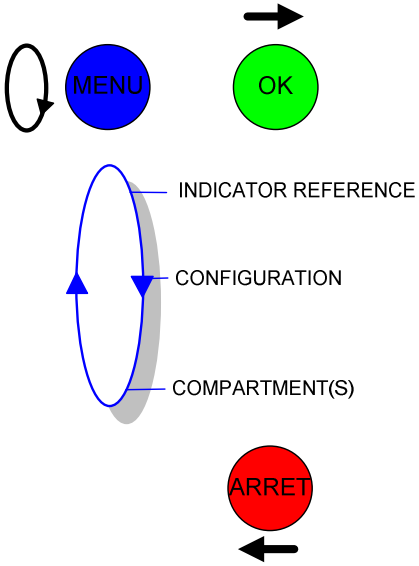
5.6 Menu PARAMETERS



5.7 Menu LANGUAGE



6 METROLOGICAL MODE:

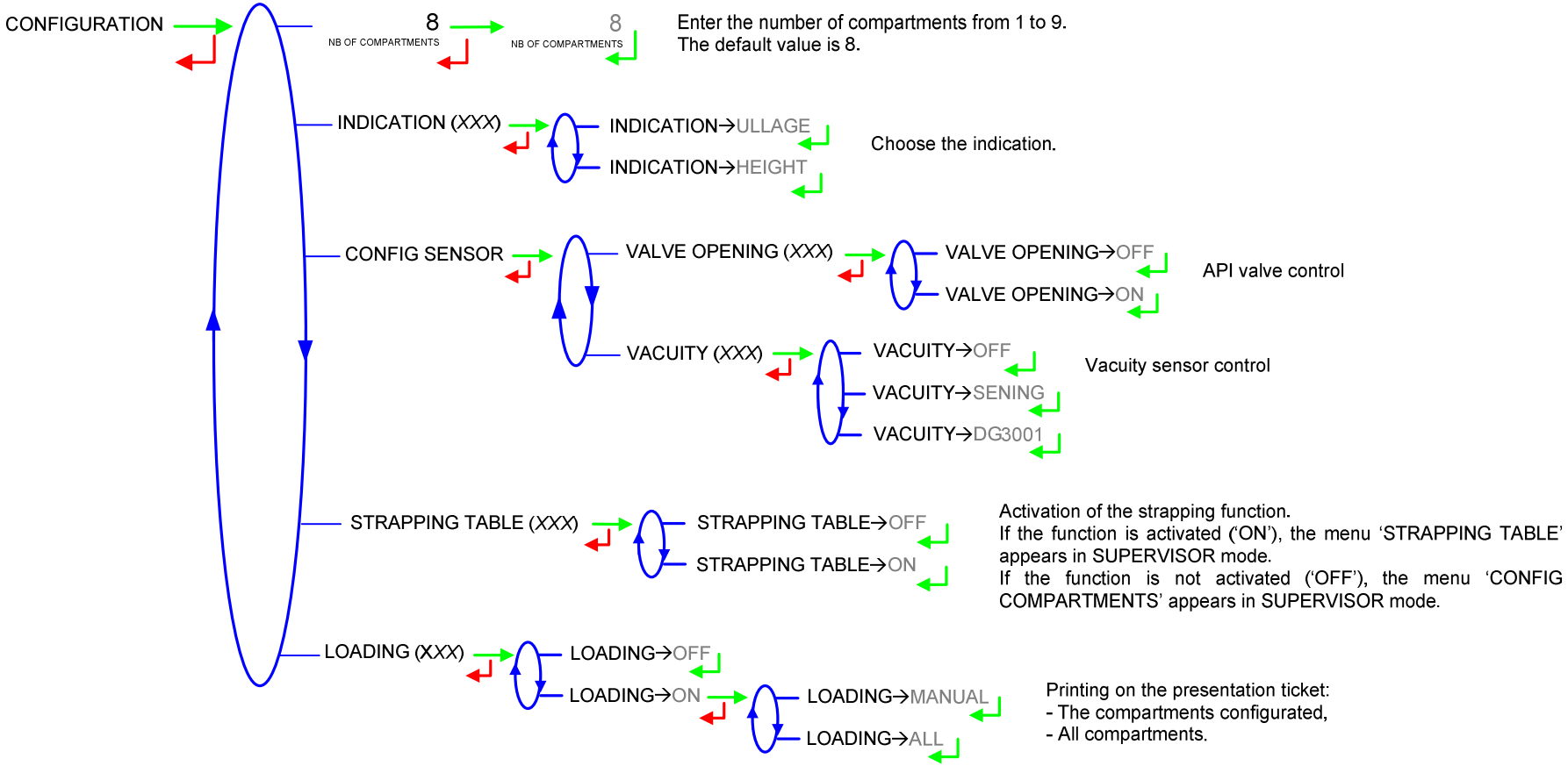


6.1 Menu INDICATOR REFERENCE

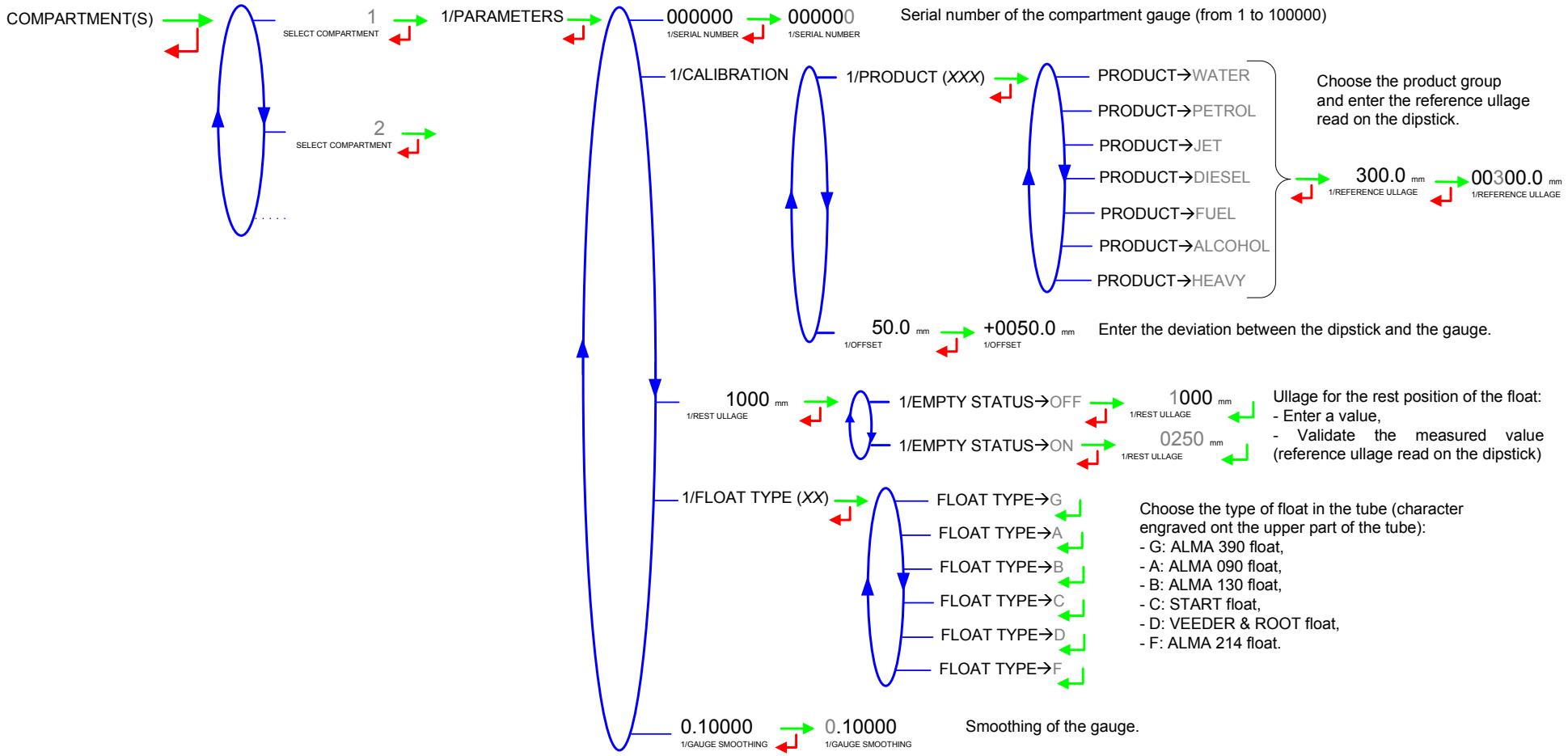
000000 (INDICATOR REFERENCE) → 000000 (ENTER REFERENCE)

Set the indicator device serial number (5 numeric values).

6.2 Menu CONFIGURATION



6.3 Menu COMPARTMENT(S)



ANNEX

EVENTS RECORDED:

NIVEAUTRONIQUE 4002
Version V4.0.0 of 10/05/12
Vehicle number : AA-215-EL
Indicator : 03201
Printed on 25/05/12 11h31

Events from 25/05/12

7 recording(s)

10:28:24 discharged +851 mm
10:20:01 presented +851 mm
10:00:00 DG 1 wet sensor
09:30:01 API valve cpt 1 open
09:29:03 DG 1 dry sensor
09:00:03 Driver mode
08:59:00 Switch-on

PARAMETERS:

NIVEAUTRONIQUE 4002
Version V4.0.0 of 10/05/12
Vehicle number : AA-215-EL
Indicator : 03201
Printed on 25/05/12 11h31

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

Number compartments : 1
Strapping table : active
Measurement type : ullage
Valve sensor : on
Vacuity sensor : DG3001
Loading option : off
***CONFIG GAUGE ***

CPT	SERIAL	SMOOTH	VL	SGL	E
01	00100	0.10000	31	155	6

* CONFIG COMPARTMENTS *

Cpt	Rest	Float	Offset
01	+804	G	+50.1

Prod	Name	Category
Pro 01	SP-95	ESSEnCE
Pro 02	SP-95	ESSEnCE
Pro 03	GO	GO
Pro 04	GO-SF	GO
Pro 05	Fod	fod
Pro 06	EAU	EAU
Pro 07	No	WATER
Pro 08	No	WATER
Pro 09	No	WATER
Pro 10	No	WATER
Pro 11	No	WATER
Pro 12	No	WATER
Pro 13	No	WATER
Pro 14	No	WATER
Pro 15	No	WATER
Pro 16	No	WATER

PRESENTATION TICKET:

NIVEAUTRONIQUE 4002
Version V4.0.0 of 10/05/12
Vehicle number : AA-215-EL
Indicator : 03201
Printed on 25/05/12 11h31

PRESENTATION TICKET

Printing 001

C	Prod	Ullage Presented	Volume indicatio
1	SP-95	+301 mm	2000 L

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

ACCEPTANCE
PRESENTATION

Date :
Hour :

RECEIVER SIGNATURE :

DELIVERY TICKET :

NIVEAUTRONIQUE 4002
Version V4.0.0 of 10/05/12
Vehicle number : AA-215-EL
Indicator : 03201
Printed on 25/05/12 11h31

DELIVERY TICKET

Printing 002

C	Prod	Ullage Presented	Volume indicatio	Stat
1	SP-95	+301 mm	2000 L	empt*

Last compartment supplied on :
25/05 11h30

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

ACCEPTANCE
DELIVERY

Date :
Hour :

RECEIVER SIGNATURE :

*If vacuity option is ON