

AS1620 V3RXX

TECHNICAL MANUAL

(Translated from the original French version)

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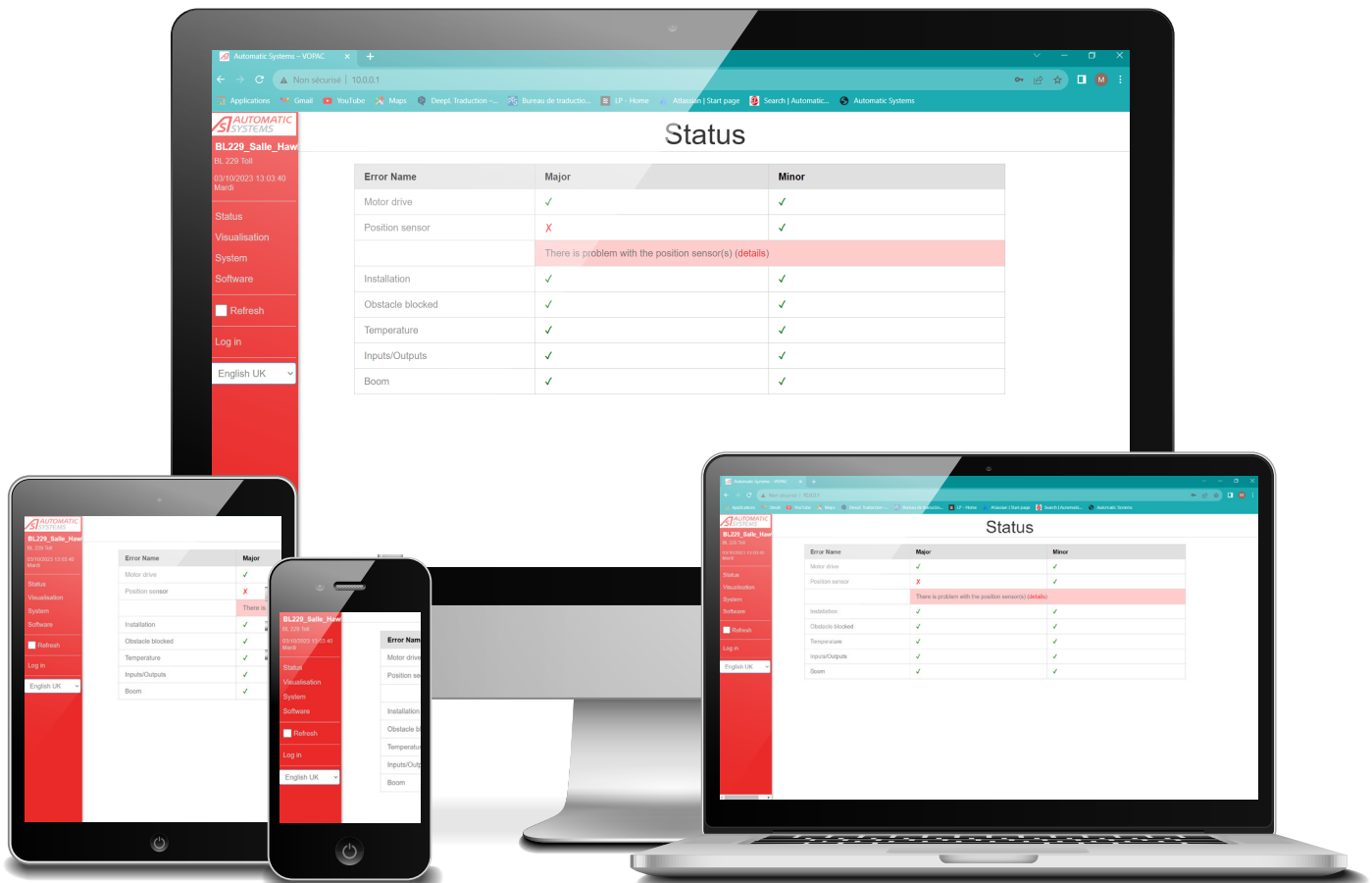


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1. PRESENTATION

We would like to thank you for choosing a barrier designed and manufactured by Automatic Systems and equipped with an AS1620 control logic, itself designed by Automatic Systems.

The AS1620 electronic control board, the result of more than 45 years' experience in the field of access control, incorporates the latest technological advances allowing optimised operation and perfect management of your Automatic Systems vehicle access control equipment.

The AS1620 is equipped as standard with all the components required for your equipment to function properly.

In order to improve both the user experience and the performance of the equipment, optional modules have been developed, such as:

- a Human Machine Interface board with a colour OLED display, AS1621.
- a board for additional inputs and outputs, AS1623.
- an Ethernet communication board, AS1622.

We are sure that your purchase will fully meet your requirements for many years and, to that end, would strongly advise you to read this manual carefully.

It will help you to use, set up and update the control logic.

Proper use and optimal set-up will ensure effective operation of the device and will significantly increase the lifespan of its components.

1.1. V03R01 - NEW FEATURES

Virtual inputs and interfaces

Time switches

Virtual copy output to input

Addition of new actions during snap-out

Possibility of disabling C3 security mode (fraud possible)

Possibility of disabling securities in local mode (dangerous - BL43 C50)

Laserscan integration



THE INFORMATION, DISPLAYS AND SETTINGS DESCRIBED IN THIS DOCUMENT RELATE TO VERSION V03R01 OF THE CONTROL LOGIC MANAGEMENT PROGRAM.

2. SAFETY WARNING



Read this document carefully and in full before using the barrier and keep it in a safe place for future reference. Failure to comply with the instructions in this document may lead to damage to the barrier, as well as bodily injuries that could be serious.

It is the responsibility of the user to inform the operators of this equipment of the precautions for use and to ensure that they are followed.

Any work on the control logic must be carried out by personnel qualified in electronics. Any work on this product that is not authorised or is carried out by an unqualified technician will automatically void the manufacturer's warranty.



ALL ELECTRONIC OPERATIONS MUST BE CARRIED OUT WITH THE POWER OFF AND IN COMPLIANCE WITH THE ELECTROSTATIC PRECAUTIONS DESCRIBED IN CHAP. 2.1.

Personnel must be informed of the electrical risks incurred in the case of negligent handling.

Any internal component likely to be electrically energised must be handled with caution.

The equipment is configured in a mode that minimises risks for its users. The settings must be altered solely with full knowledge of the facts by qualified personnel and shall not in any way invoke the liability of Automatic Systems.

2.1. HANDLING OF ELECTROSTATICALLY SENSITIVE DEVICES

Pay special attention to the handling of electrostatically sensitive devices.



STATIC ELECTRICITY CAN DAMAGE THE ELECTRONIC COMPONENTS AND THE SYSTEM. TO AVOID ANY RISK OF DAMAGE, KEEP ELECTROSTATICALLY SENSITIVE DEVICES IN THEIR ANTI-STATIC PACKAGING UNTIL THEY ARE READY TO BE INSTALLED.

To reduce the risk of electrostatic discharge, observe the following instructions:

- Limit your movements. Movement can cause static electricity to build up around you.
- Make use of a device for eliminating static electricity, such as an anti-static mat or wrist strap.
- Handle the device carefully, by holding it by its edges or its frame.
- Do not touch exposed solder joints, pins or printed circuitry.
- Do not leave the device where others can handle and possibly damage the device.
- While the device is still in its anti-static packaging, place it in contact with an unpainted metal area for at least two seconds. (This operation removes static electricity from the package and your body.)
- Remove the device from its packaging and install it directly without putting it down anywhere in the meantime. If you have to put the device down, place it on its anti-static packaging. (If it is a circuit board, put it down with the component side up.) Do not place the device on a metal table.
- Be even more cautious in cold weather, because the heating system reduces humidity and increases the accumulation of static electricity.



If you do not have an anti-static wrist strap, just touch a part of the unpainted equipment when handling the electronic device.

3. GENERAL SYMBOLS

The following symbols are used in this manual or as labels on the equipment:



This symbol is used to highlight a **tip** that may help you to better understand the product.



This symbol is used to highlight an **important instruction** for the correct use and/or maintenance of the product.



CAUTION: This symbol is used to highlight a **risk of injury or material damage**.



This symbol is used to highlight a **risk of electric shock or electrocution**.



This symbol is used to highlight a **risk of cutting yourself**.



This symbol is used to identify the **principal ground connection point**.
(Either in the form of an affixed label or directly engraved on a mechanical part).



This symbol is used to indicate the **tool** to be used for the relevant operation.



This symbol indicates that the equipment **conforms to European standards and directives**.



This symbol indicates that the equipment must **be disposed of in accordance with the applicable European Directives** (DEEE 2012/19/EU).

4. TERMINOLOGY

AS	Automatic Systems
RB	Raising barrier
BLCL	Blocked closed
BLOP	Blocked open
CMD	Command
PS	Presence sensor (generic term for detection loops and security cells)
DI	Digital input
DO	Digital output
ELV	Electromechanical (tip support)
I/O	Input/Output
LS	Limit switch
CLS	Closing limit switch
HLS	High limit switch
LLS	Low limit switch
OLS	Opening limit switch
CL	Closing
O/S	Out of service
HMI	Human machine interface
CRA	Card reader direction A
CRB	Card reader direction B
NC	Normally closed (contact)
NO	Normally open (contact)
Obstacle	Element constituting the obstacle to passage (the boom for a barrier)
OLED	Organic LED (display with text lines available as an option, AS1621)
OP	Opening
VFD	Variable frequency drive
MVT	Movement
AON	All or nothing
Direction A	By convention, direction A is the passage from the uncontrolled area to the controlled area.
Direction B	Direction of passage, contrary to direction A. Direction B corresponds to passing from the controlled area to the uncontrolled area.

5. DESCRIPTION

5.1. TECHNICAL SPECIFICATIONS

Power supply	24 VDC \pm 10%, max. 6A
Consumption*	< 5W
CPU	ARM CORTEX M3
Inputs	14 digital inputs. 0- 24 VDC
Outputs	Six (6) digital outputs, 24 VDC, max. 2A. (max. 6A in total)
Relays	Three (3) relays with NO and NC contacts - Maximum rated voltage of 125 VDC, 125 VAC - max. switching power 60 W.
Connection(s)	1x micro-USB of 12 Mbps at full speed.
	1x RS485 for communication with the variable frequency drive.
HMI	Embedded simplified version with digital display, consisting of four (4) seven-segment LEDs and five (5) push-buttons. Optional AS1621 board with OLED display.
Analog input(s)	0, +10 V, 12-bit resolution.

* Without expansion board and with the digital outputs and relays OFF.

5.2. LOCATION OF COMPONENTS

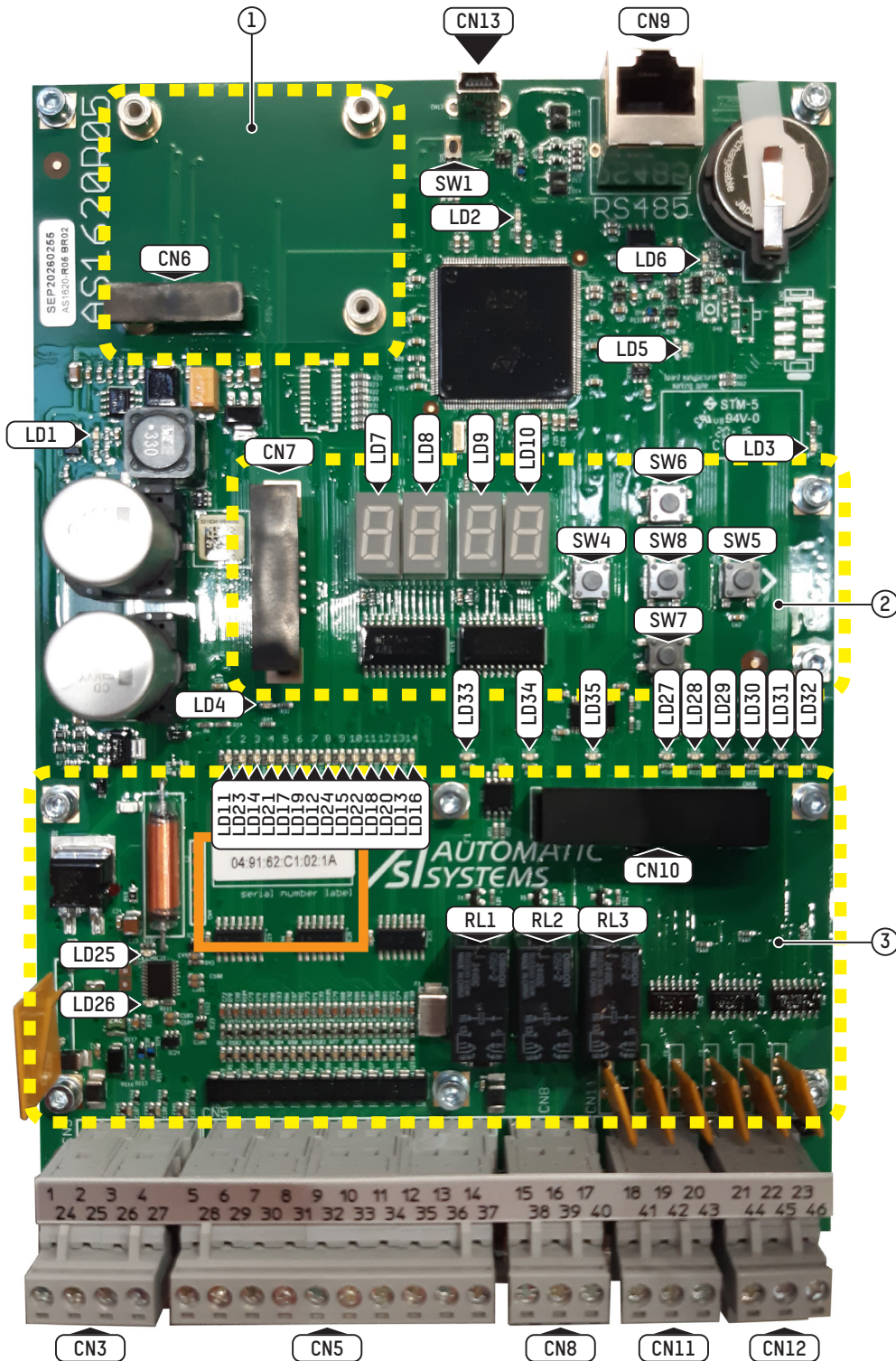


Fig. 1 - Location of components

REFERENCE	DESIGNATION
1	Slot for AS1622 Ethernet board (optional).
2	Slot for AS1621 OLED HMI (optional).
3	Slot for additional AS1623 I/O boards (optional).

5.2.1. DIAGNOSTIC LEDs

REFERENCE	DESIGNATION		COLOUR	
LD1	Voltage present	The LED lights up when the board is powered on	GREEN	Steady
LD2	MAJOR error	The LED lights up if there is a major error	RED	Steady
LD3	MINOR error	The LED lights up if there is a minor error	YELLOW	Steady
LD4	Presence under boom	The LED lights up if one of the security devices under the boom is enabled (security loop or cell).	YELLOW	Steady
LD5	ARM M3 processor watchdog	LED lights up when the barrier program is running	GREEN	Blinking
LD6	ARM M3 processor watchdog	LED blinks when communicating with the VFD	GREEN	Blinking
LD7	Seven-segment display	Left HMI	WHITE	
LD8	Seven-segment display	Middle left HMI	WHITE	
LD9	Seven-segment display	Middle right HMI	WHITE	
LD10	Seven-segment display	Right HMI	WHITE	
LD11	Digital input 1	LED lights up when input is enabled	GREEN	Steady
LD12	Digital input 4	LED lights up when input is enabled	GREEN	Steady
LD 13	Digital input 7	LED lights up when input is enabled	GREEN	Steady
LD 14	Digital input 2	LED lights up when input is enabled	GREEN	Steady
LD15	Digital input 5	LED lights up when input is enabled	GREEN	Steady
LD16	Digital input 14	LED lights up when input is enabled	GREEN	Steady
LD17	Digital input 3	LED lights up when input is enabled	GREEN	Steady
LD18:	Digital input 6	LED lights up when input is enabled	GREEN	Steady
LD19	Digital input 10	LED lights up when input is enabled	GREEN	Steady
LD20	Digital input 13	LED lights up when input is enabled	GREEN	Steady
LD21	Digital input 9	LED lights up when input is enabled	GREEN	Steady
LD22	Digital input 12	LED lights up when input is enabled	GREEN	Steady
LD23	Digital input 8	LED lights up when input is enabled	GREEN	Steady
LD24	Digital input 11	LED lights up when input is enabled	GREEN	Steady
LD25	Watchdog ARM M3 processor	LED blinks when the watchdog is enabled	GREEN	Blinking
LD26	ARM M2 processor error	LED lights up when the processor is defective	RED	Steady
LD27	Digital output 1	LED lights up when output is enabled	YELLOW	Steady
LD28	Digital output 2	LED lights up when output is enabled	YELLOW	Steady
LD29	Digital output 3	LED lights up when output is enabled	YELLOW	Steady
LD30	Digital output 4	LED lights up when output is enabled	YELLOW	Steady
LD31	Digital output 5	LED lights up when output is enabled	YELLOW	Steady
LD32	Digital output 6	LED lights up when output is enabled	YELLOW	Steady
LD33	Relay output 1	LED lights up when relay is enabled	YELLOW	Steady
LD34	Relay output 2	LED lights up when relay is enabled	YELLOW	Steady
LD35	Relay output 3	LED lights up when relay is enabled	YELLOW	Steady

5.2.2. CONNECTORS

CONNECTOR	FUNCTION
CN3	Analog position sensor connection + 24VDC power supply.
CN5	Connector for digital inputs.
CN6	Connection for Ethernet expansion board.
CN7	Additional HMI board connection.
CN8	Connection for relay outputs 1 and 2.
CN9	RJ45 connector for variable frequency drive connection.
CN10	Additional input/output expansion board connection.
CN11	Connection of relay outputs 3 + digital outputs 1 to 3.
CN12	Connection of digital outputs 4 to 6 + 3 earth terminals (GND).
CN13	Micro USB connector for programming and access to web pages.

5.2.3. THE RELAYS

The AS1620 circuit board contains three (3) relays whose coils are supplied with 24V, with configurable NO and NC contacts on the output connectors (⇒Chap. 17. PAGE - CONFIGURATION, page 49).

5.2.4. THE SWITCHES

REFERENCE	DESCRIPTION
SW1	Reset.
SW4	LEFT HMI button
SW5	RIGHT HMI button
SW6	UP HMI button
SW7	DOWN HMI button
SW8	OK HMI button

5.2.5. TERMINAL BLOCK

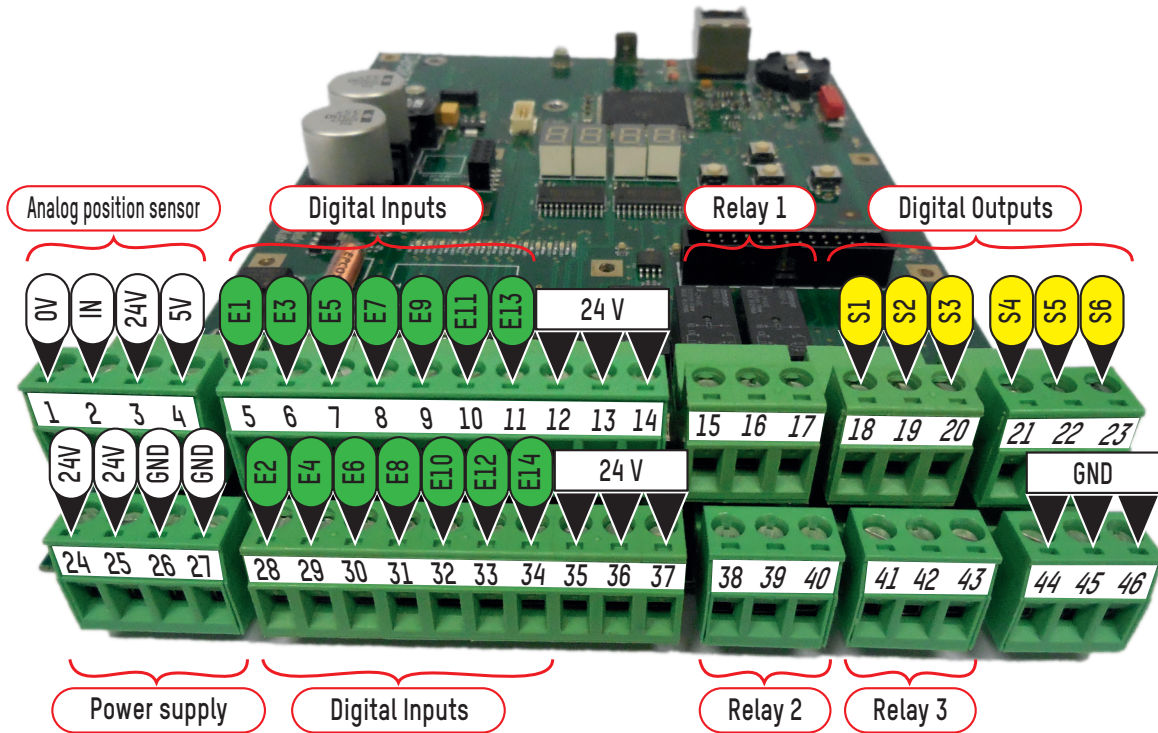


Fig. 2 - AS1620 board terminal block



For more information regarding the connection to the circuit board (⇒ Chap. 24: Wiring Diagrams, page 79).

6. HUMAN MACHINE INTERFACE (HMI)

The Human Machine Interface, which is integrated onto the AS1620 circuit board, provides a simplified way to:

- Display barrier status using short warning messages.
- Display counters.
- Modify settings.
- Perform calibration.
- Indicate the version of the embedded software.

An OLED (Organic LED) alphanumeric display that can be plugged into the CN7 connector is available as an option (AS1621 board).

It also gives access to more settings, enabling the inputs and outputs of the AS1620 board to be reconfigured, for example.

The web interface is more convenient to use than the HMI, and also provides access to all the functions, but its connection requires IT hardware.

6.1. THE LEDS

- Power LED, green (LD1, middle left on the circuit board): The LED is lit when the board is powered on.
- Watchdog LED, green (LD25, lower left on the circuit board): The LED blinks when the watchdog is enabled.
- Software LED, green (LD5, upper right on the circuit board): The LED blinks when the barrier program is running.
- Red LED (LD2, upper right on the circuit board): The LED lights up if there is a major error.
- Yellow LED (LD3, upper right on the circuit board): The LED lights up if there is a minor error.

6.2. THE HMI

The Human Machine Interface, which is integrated as standard onto the AS 1620 circuit board, consists of five (5) push buttons (SW4⇒ SW8) and four (4) seven-segment displays (LD7 ⇒ LD10):

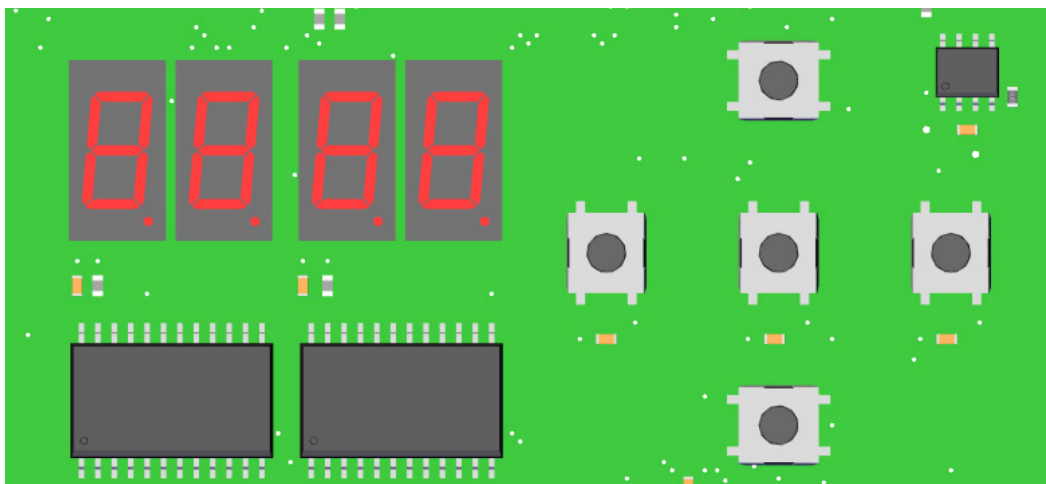


Fig. 3 - Human/Machine Interface (HMI)

The display comes on when the device is powered on, and automatically extinguishes after one (1) minute. It lights up again when pressing any of the push buttons or if an error occurs.

The letters and numbers are stylised as shown in the following illustration:

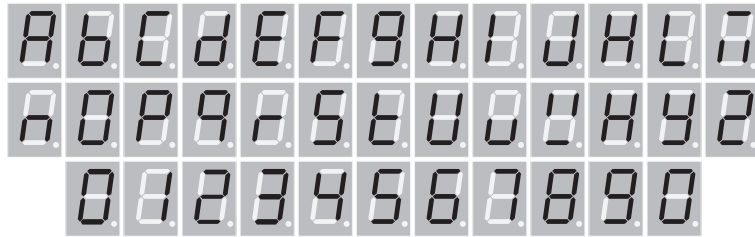


Fig. 4 - HMI LED stylised characters

6.2.1. MENU TREE

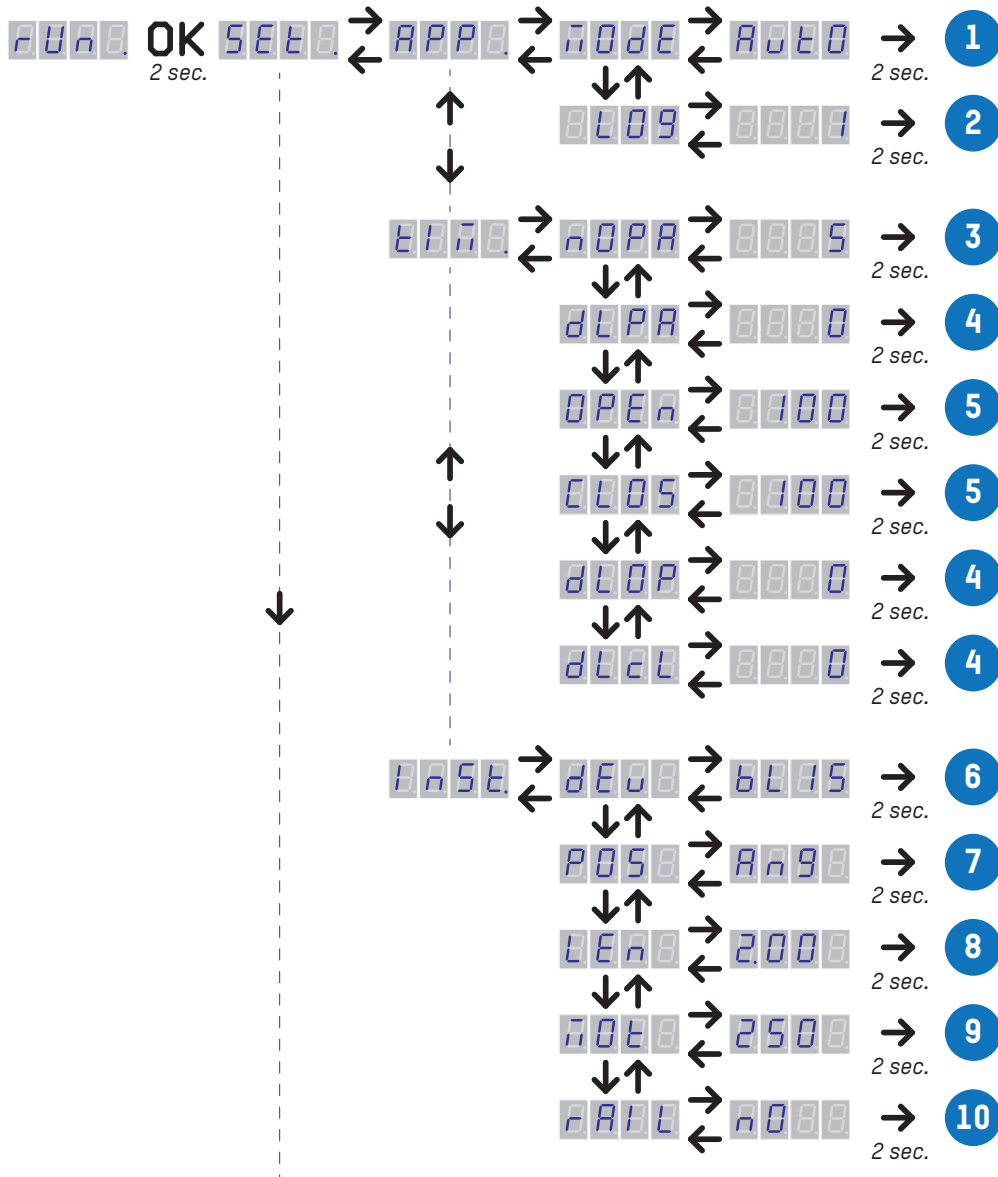


Fig. 5 - HMI LED menu tree (Part 1)

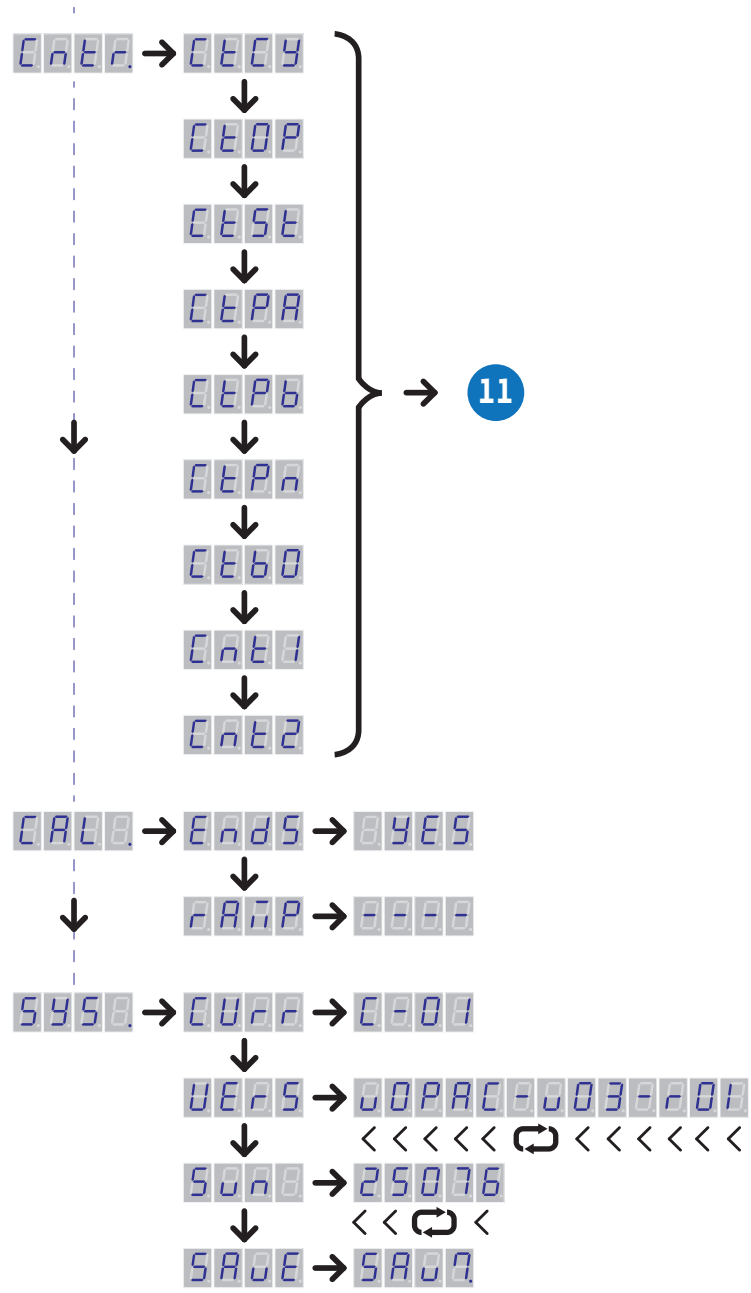


Fig. 6 - HMI LED menu tree (Part 2)

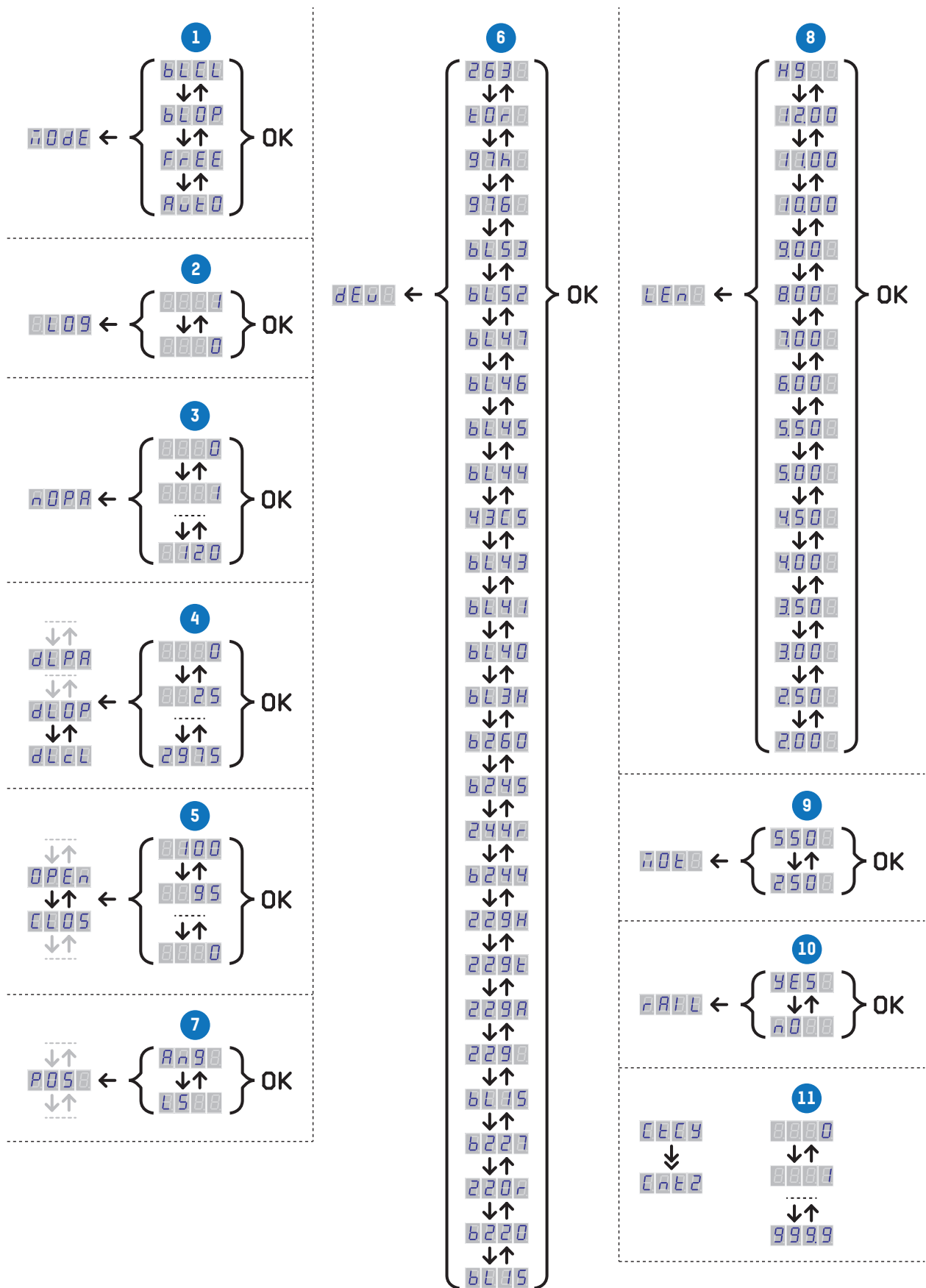


Fig. 7 - HMI LED menu tree (Part 3)

6.2.2. INFORMATION MODE

The display shows **0000** at start-up, and **rUn** when the program has been powered on.

The error code is displayed if the program detects a problem: The error code is **E-01** or **00**.

Errors beginning with **1** are major errors; Errors beginning with **2** are minor errors:

MAJOR error(s)

ERROR CODE	ERROR DESCRIPTION
E-01	Motor error.
E-01	Position sensor error (sensor not connected).
E-02	Device not installed.
E-03	Barrier blocked (Maximum time allowed to complete movement has been reached).
E-04	Critical temperature reached.
E-05	Input/output error.
E-06	Obstacle error (boom snap-out with open slowly action).
E-07	
E-08	

MINOR error(s)

ERROR CODE	ERROR DESCRIPTION
E-10	Motor problem.
E-11	Position sensor problem.
E-12	Installation problem (no defined input).
E-13	Barrier blocked (incorrect movement).
E-14	High temperature.
E-15	OS problem. (Operating system)
E-16	Obstacle problem (snap-out with action = holds the position or last movement much slower/quicker than it should be).
E-17	
E-18	

The display shows **rUn** when the error disappears.



If the current operating mode is other than **Automatic**, the message **rUn** appears alternately with the message corresponding to the mode (**FrEE**, **bLOP**, **bLCL**). If the operating mode is **Automatic**, the display shows only **rUn**.

6.2.3. CONFIGURATION MODE

Press the middle button, **OK** (SW8) for two seconds to switch to the Configuration mode. To exit this mode, press the **OK** button for two seconds or wait for one minute.

The configuration mode functions as a multi-level menu. Menus that have sub-menus always end with a full stop. Use the up and down buttons to scroll through the menu. Use the right button to enter a sub-menu. The left button is used to exit the sub-menu.

6.2.3.1. FIRST LEVEL

SET.	:	Settings	View and change certain settings.
Entr.	:	Counters	Display and reset the counters.
CAL.	:	Calibration	Display calibration status and start calibration.
545.	:	System	Display system information.

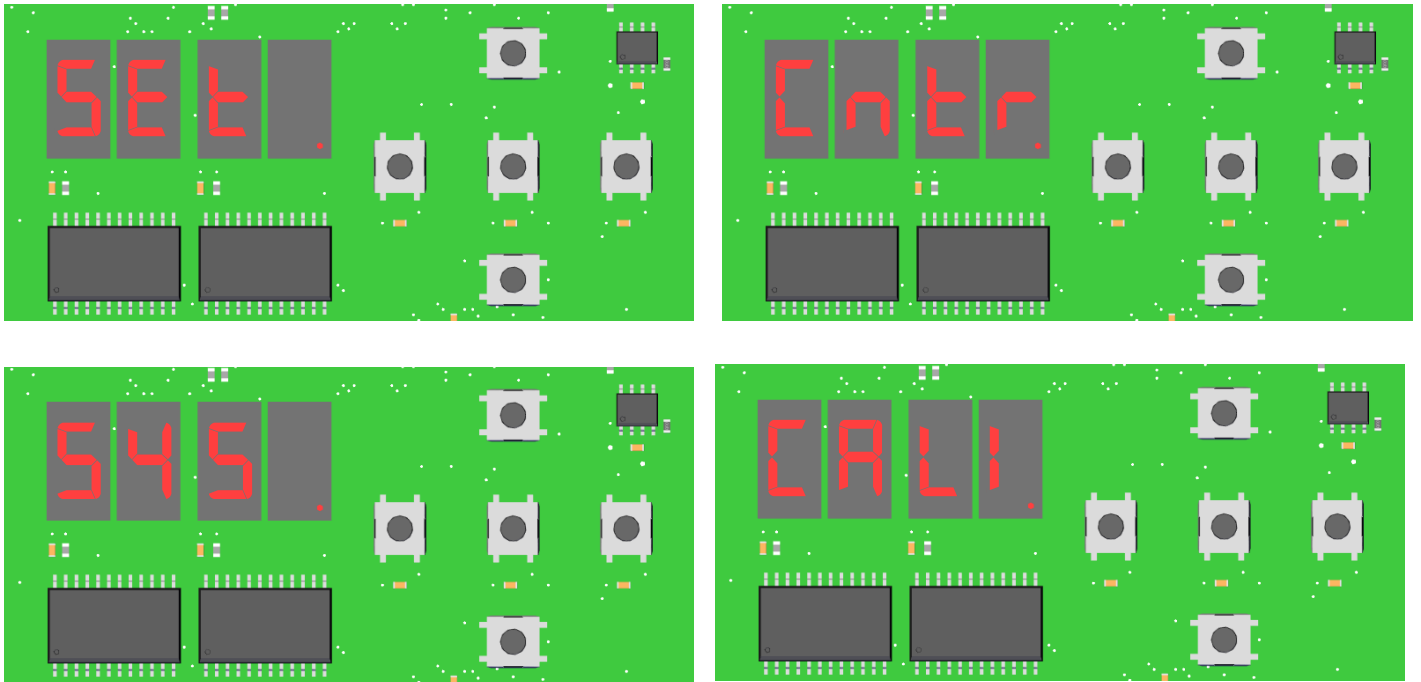


Fig. 8 - HMI - First level display

6.2.3.2. APPLICATION SETTINGS

mode	:	Operating mode.
		Four values are possible:
Auto	=	Automatic mode (Movements are controlled by the digital inputs)
FREE	=	Free access mode. (Movements are controlled by vehicle detection loops)
STOP	=	Block open mode. (Lock open)
block	=	Block closed mode. (Lock closed)
log	:	Event logging in a LOG file.
		Two values are possible:
YES	=	Logs the events.
NO	=	Does not log the events.



This setting corresponds to the setting visible on the **Configuration > Operating mode** page.



Other settings are likely to be added later.

Briefly press the right button (SW5) to display the value of the setting.

Pressing the right-hand button for more than two seconds switches to modification mode and the value starts blinking. Then use the up (SW6) and Down (SW7) buttons to change the value of the setting. When you have finished, confirm by briefly pressing the **OK** button. To cancel the modification, press the left-hand button (or wait one minute). In both cases, you exit modification mode and the setting value is displayed (without blinking).

6.2.3.3. TIMER SETTINGS

tim : Timer value adjustment

Six timers are available:

- nLPA** = No passage time. (In seconds) The barrier closes automatically after a defined time if no vehicle passage is detected.
- dLPA** = Passage delay on a re-close loop. (In hundredths of seconds (in steps of 25/100ths).
- OPEN** = Opening time. (Percentage of maximum speed (in 5% steps)
- CLOS** = Closing time. (Percentage of maximum speed (in 5% steps)
- dLOP** = Open delay, following an open command. (In hundredths of seconds (In steps of 25/100ths)
- dCLL** = Close delay. (In hundredths of seconds (in steps of 25/100ths) The signal light turns red immediately and the barrier closes after a defined time.

For details of timers, ⇒ Chap. 17.3 "TIMERS", page 52.

6.2.3.4. INSTALLATION SETTINGS

inst. : Adjustment of the installation settings.

Five settings can be adjusted:

- DEU** = (Device) Used to select the type of equipment controlled by the logic.
- POS** = Used to define the type of position sensor.
- LEN** = (Length) Used to define the length of the barrier boom.
- MOE** = Used to define the type of motor installed in the equipment.
- RAI L** = Used to define whether or not the boom is fitted with rigid railings, folding railings or a folding spike strip option.

6.2.3.5. COUNTERS

- CCY** : Number of cycles.
- LOP** : Number of open commands.
- STB** : Number of stops.
- TPA** : Number of passages direction A
- TPb** : Number of passages direction B
- TPn** : Number of vehicles in the parking lot.
- bbO** : Number of snap-outs.
- cnt1** : Generic counter 1.
- cnt2** : Generic counter 2.

For more details about counters (⇒ Chap. 14: Page - Counters, page 42).

Briefly press the right button to display the value of the counter.

The value is indicated rounded for large numbers:

- From 0 to 9,999: the number is indicated as it is.
- From 10,000 to 999.9 million: the number is rounded and shown as a fraction of 1 million.

For example:

- 10123: 0.001
- 1.2345678 million: 1.234
- 12.34 million: 12.34

In other words, if there is a point in the display, the counter is expressed in millions.

If there is no point, the display directly indicates the counter value.

Press the left button to go back to the name of the counter.

Press the right button for more than two seconds to reset the counter.

6.2.3.6. CALIBRATION

EndS : Calibrating the end positions.

Briefly press the right button to display the YES or n0 calibration status.

Press the right button for more than two seconds to start calibration.

6.2.3.7. SYSTEM

vErS : Numeric code indicating the status of the barrier (⇒ see table below).

vErS : Software version.

SvN : SVN version. (Subversion Number; this is a count of the modifications of the programming lines)

SAvE : Save the settings and counters (for example, before a power outage).

For vErS: briefly press right to display the name and version of the software.

For SAvE: press and hold right to start saving.

6.2.4. TABLE OF NUMERICAL CODES INDICATING BARRIER STATUS

CODE	DESCRIPTION	CODE	DESCRIPTION
0	Barrier moving	7	Security enabled
1	No command	8	Deadman mode
2	Undergoing maintenance	9	Authorisations pending
3	Locked mode	10	Command delay
4	"Motor off" command has been enabled	11	Passage delay
5	Stop command enabled	12	Emergency
6	Open command enabled	13	Error

7. AS1621 OLED DISPLAY OPTION

The operating logic of the OLED display (optional) and its five-key keypad is very similar to that of the HMI (⇒ Chap. 6: HUMAN MACHINE INTERFACE (HMI), page 16):



Fig. 9 - AS1621 - HMI OLED

- The keypad has the same five buttons.
- It switches itself off after one minute and is switched back on by pressing the **OK** button for a few seconds (3 to 10 seconds) or if an error occurs.
- The menus have several levels. Use the up and down buttons to scroll through the menu. Use the right button to enter a sub-menu. The left button is used to exit the sub-menu.
- But of course, the OLED display makes it even easier to read and access information.
- Another difference is that you don't need to make a manual save before switching off the power; the information is saved automatic every time you change a setting.

The home screen displays any errors and provides access to the **Level 1 menu**:

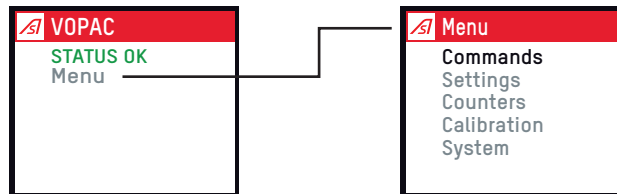


Fig. 10 - AS1621: home screen

Use the up and down arrows to select a menu option and the right arrow to access the submenus:

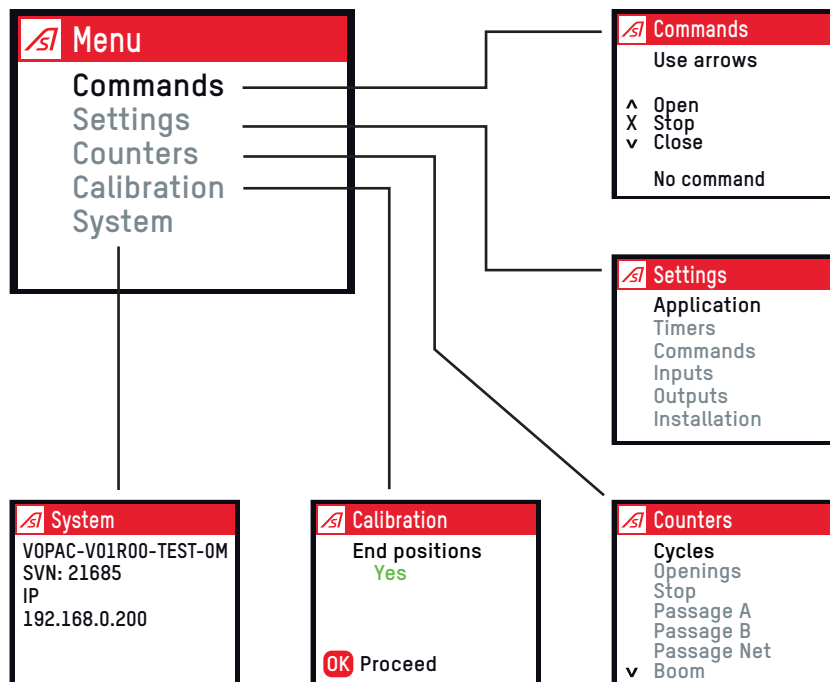


Fig. 11 - AS1621: Menu

The **Command** menu gives access to a series of manual actions on barrier movements: open, close or stop commands. (⇒ Fig. 11, page 24).

The **Settings** menu is divided into six sub-menus as shown in the figure below:

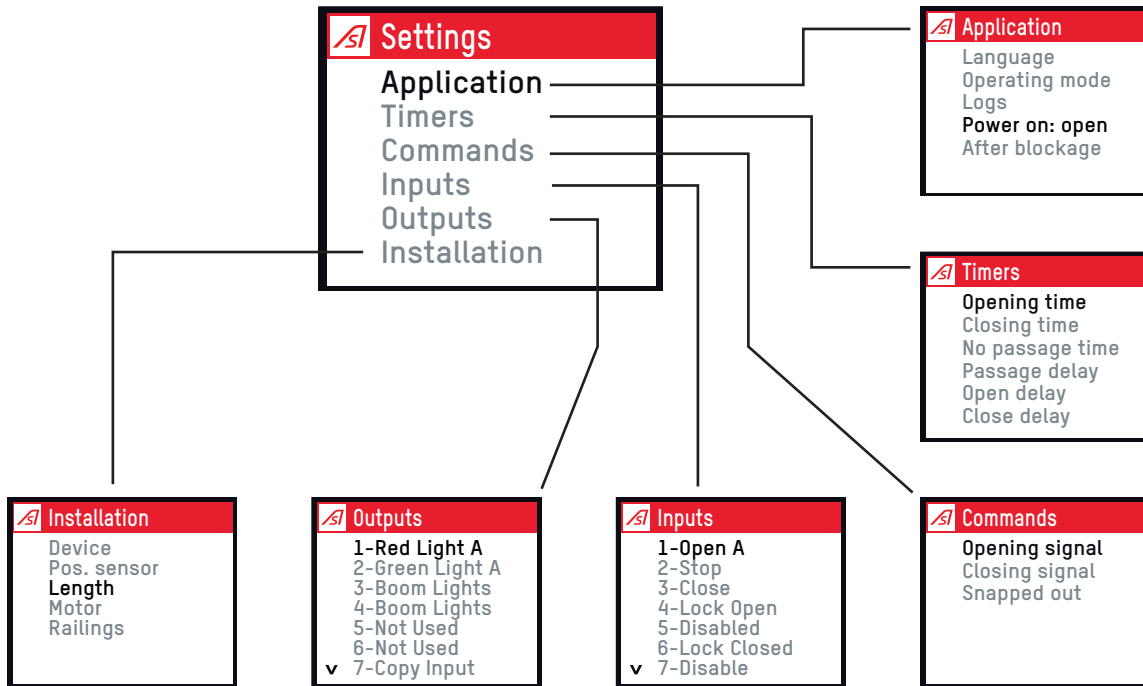


Fig. 12 - AS1621: Settings

The **Application** menu is used to:

- Select the **language** (currently six options).
- Select the barrier **Operating mode** (Automatic, free, lock open or lock closed).
- Set the **level of logs** (normal or more detailed barrier history).
- Determine whether the barrier opens automatically after power-up (**Power on**).
- When the barrier is **locked** during closing (when an obstacle locks the movement of the boom), it either stops or reopens.

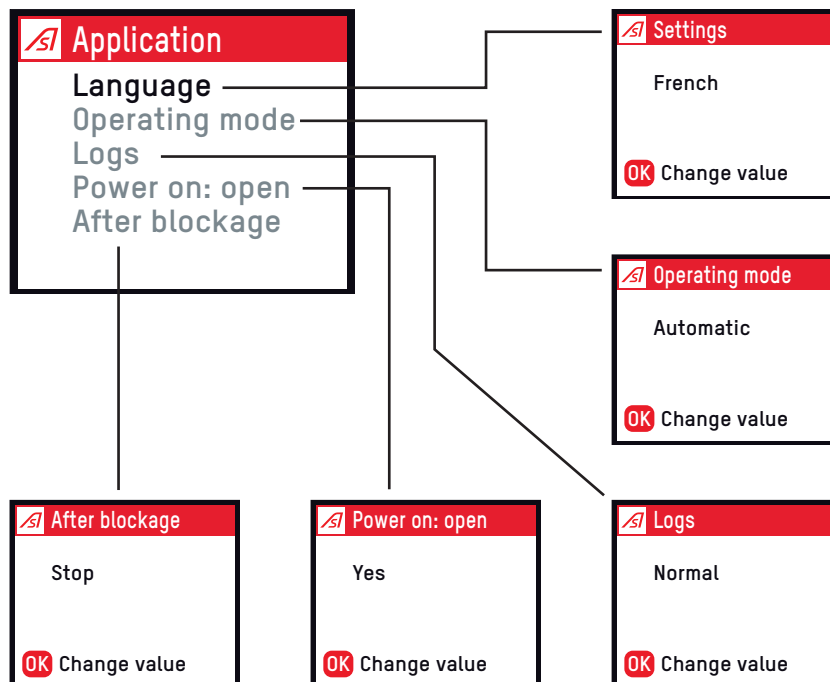


Fig. 13 - AS1621: Languages

The **Timers** menu is used to adjust:

- As a percentage of maximum speed, the **opening and closing time**.
- The **no passage time** after which the barrier closes if no vehicle has been detected.
- The **passage delay** which delays the closing cycle after detection on the closing loop.
- Finally, the software declares a blockage situation after the **opening time and closing time**.

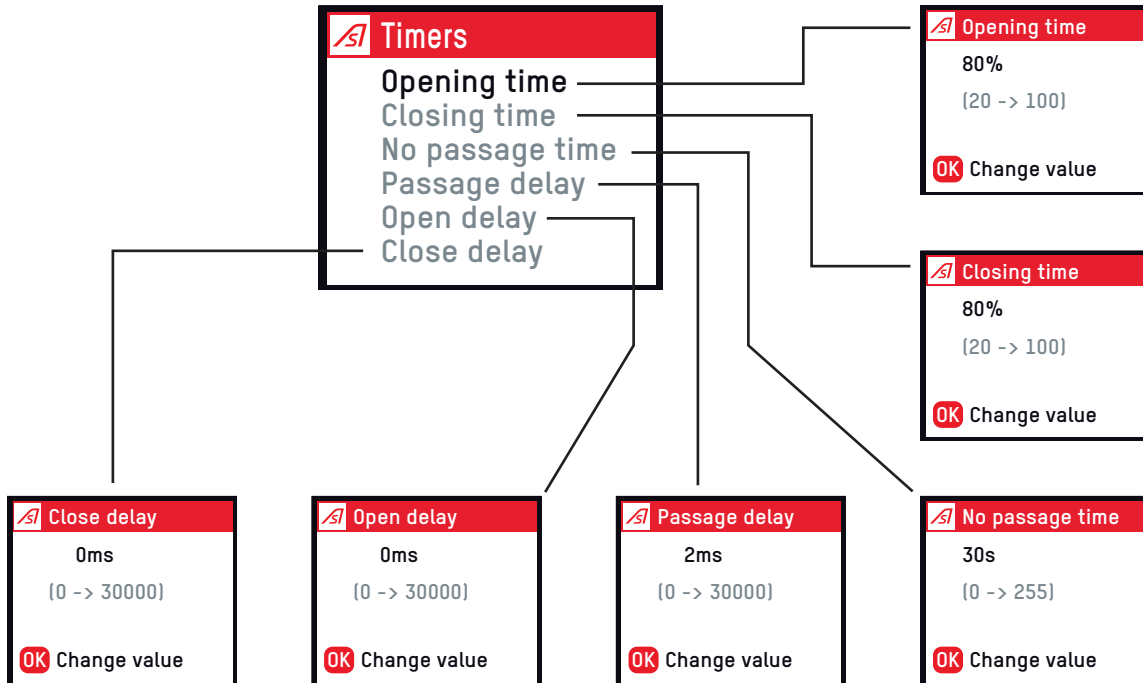


Fig. 14 - AS1621: Timer

The **Command** menu is used to:

- Determine whether the **open command** (and close command) is taken into account on the input voltage (24V) or on the rising or falling edge of the signal or to choose a **Deadman** operating logic (Movement stops if the input voltage drops).
- When boom **snap-out** is detected, the barrier can open slowly to lock the boom in the jaw and prevent it from pivoting horizontally in strong winds.

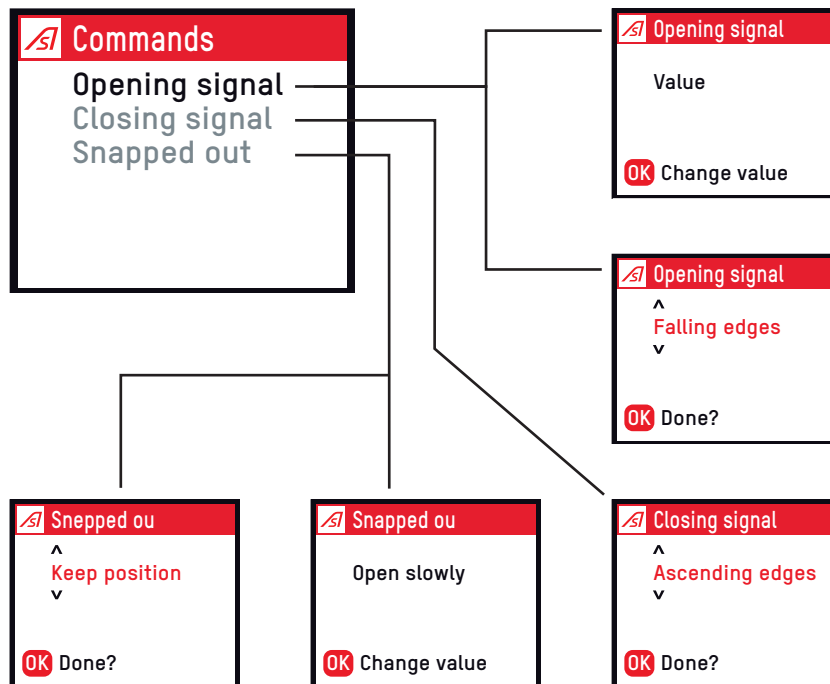


Fig. 15 - AS1621: Commands

The input menus give access to a function for each of the 14 inputs:

- The function linked to each input can be chosen from 38 options: open direction A, close, etc. (⇒ Chap. 17.5: INPUTS, page 56) for a full list of options).
- It is also necessary to specify (**signal type**) whether the signal reading logic is normally open or normally closed.
- When the input contact comes from a **detection loop**, the action to be taken if a vehicle is detected during the closing movement must also be specified: either **stop** or **reopen**. A closing action can be programmed again after the vehicle has been removed.

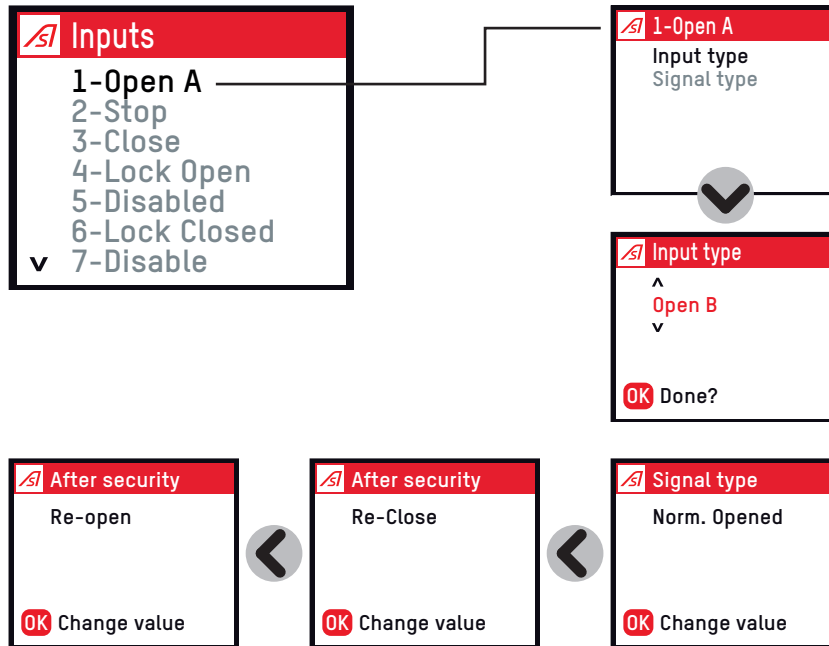


Fig. 16 - AS1621: Inputs

The **Outputs** menu is used to configure the nine outputs (outputs 6 to 9 are relay dry contacts, NO or NC)

Twenty-three options are available; for further details (⇒ Chap. 17.6: OUTPUTS, page 61).

Some choices require multiple settings. For example, for a boom lights output, you need to specify whether the lighting is continuous or blinking and whether it comes on when the barrier is open, moving and/or closed.

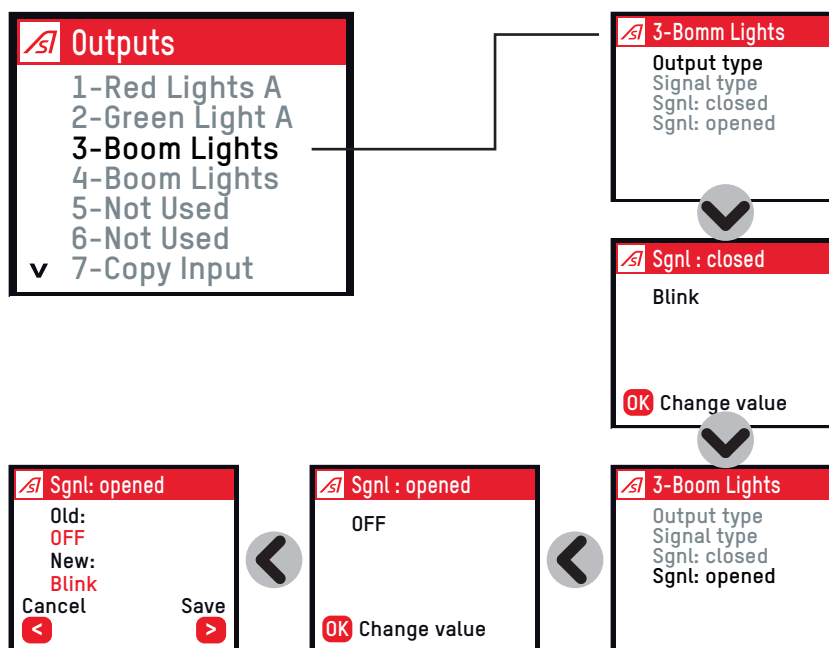


Fig. 17 - AS1621: Outputs

The **Installation** menu defines:

- The **device type** controlled by the logic (BL229, BL4x, etc.).
- The type of **position sensor** (limit switch or analog detector).
- The boom **length**.
- **Motor** power (250W or 500W).
- The presence of any **railings** on the boom.

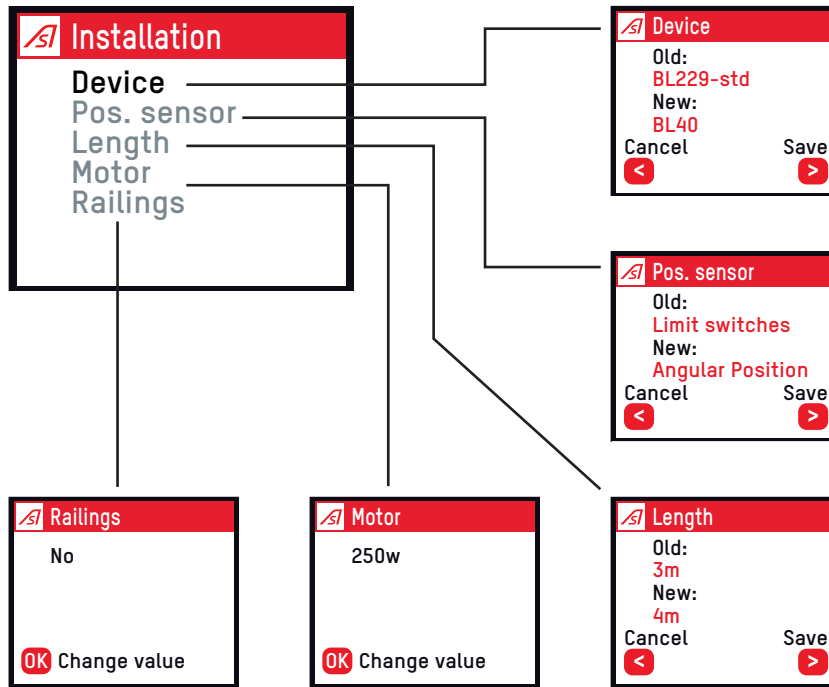


Fig. 18 - AS1621: Installation

The **counters** menu gives access to cycle counts (all types). The other available counters are listed below:

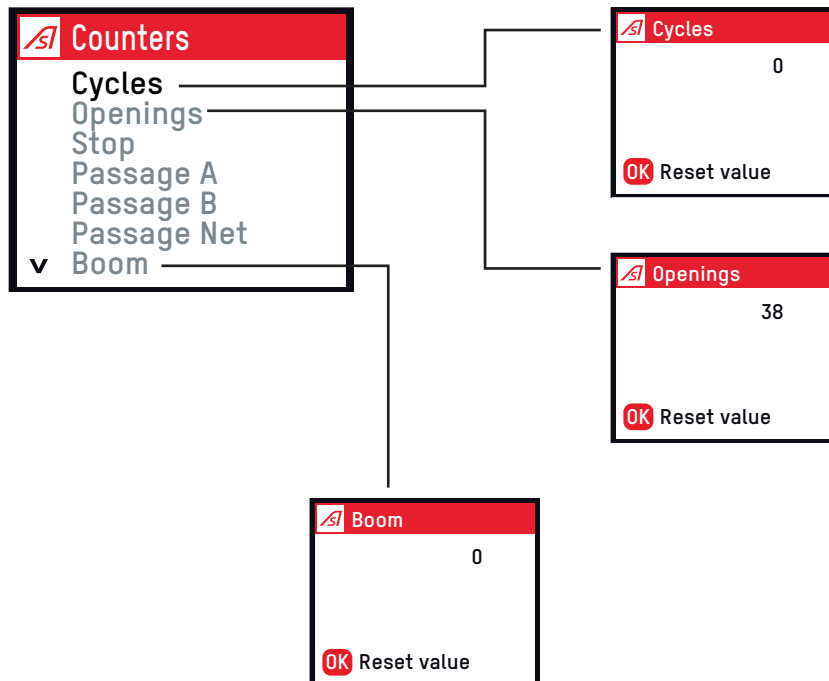


Fig. 19 - AS1621: Counters

The **Calibration** menu applies only when the barrier is equipped with an analog sensor. With the end position option, the boom swivels slowly to store the value of the analog signal in the high and low positions.

The **Speed ramp** option, available only on the BL1x devices, performs movements at different speeds to estimate the weight of the boom and optimise acceleration or deceleration ramps.

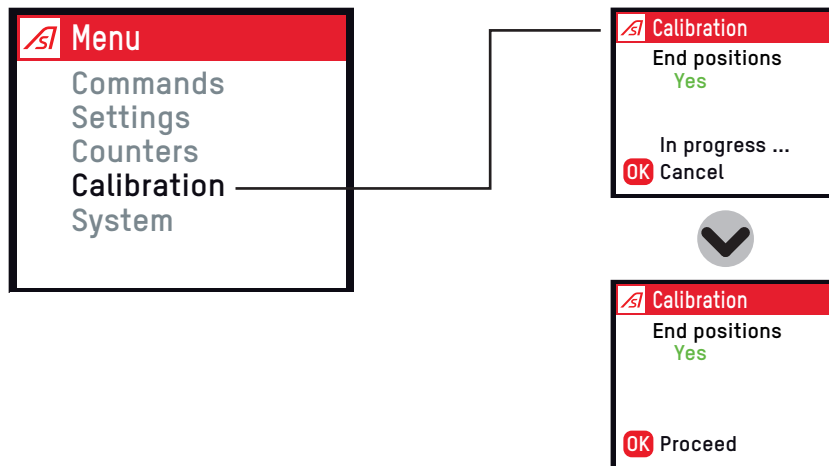


Fig. 20 - AS1621: Calibration

Finally, the **System** menu gives details of the software version and IP address of the circuit board.

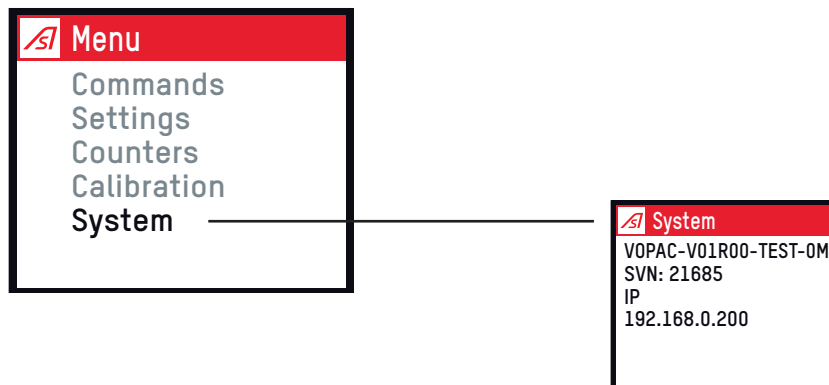


Fig. 21 - AS1621: System

In all cases, the procedure for modifying a setting is as follows:

- **OK** button to start the modification process.

Arrow up or down to scroll through the available values and confirm with **OK**:

- Right arrow to save and left arrow to cancel.

Here are two examples:

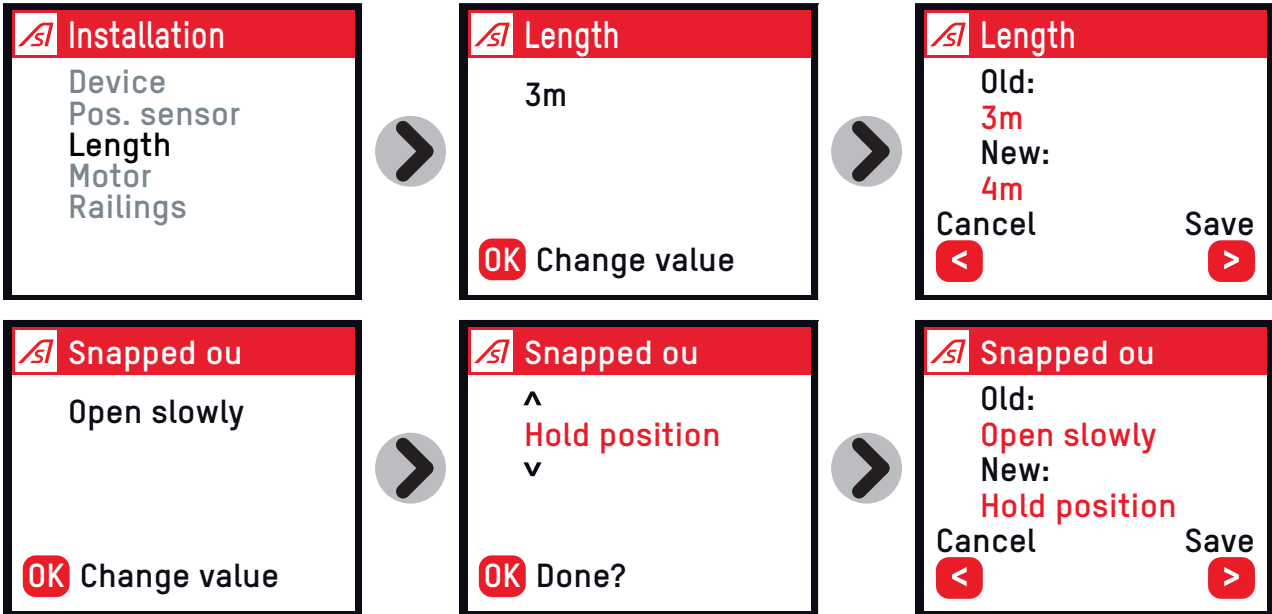


Fig. 22 - AS1621: Configuration example [1]

Some adjustments require a value to be chosen for two or even three settings; for example, to configure an input, it is necessary to choose its function and determine whether the reading logic is normally open or normally closed:

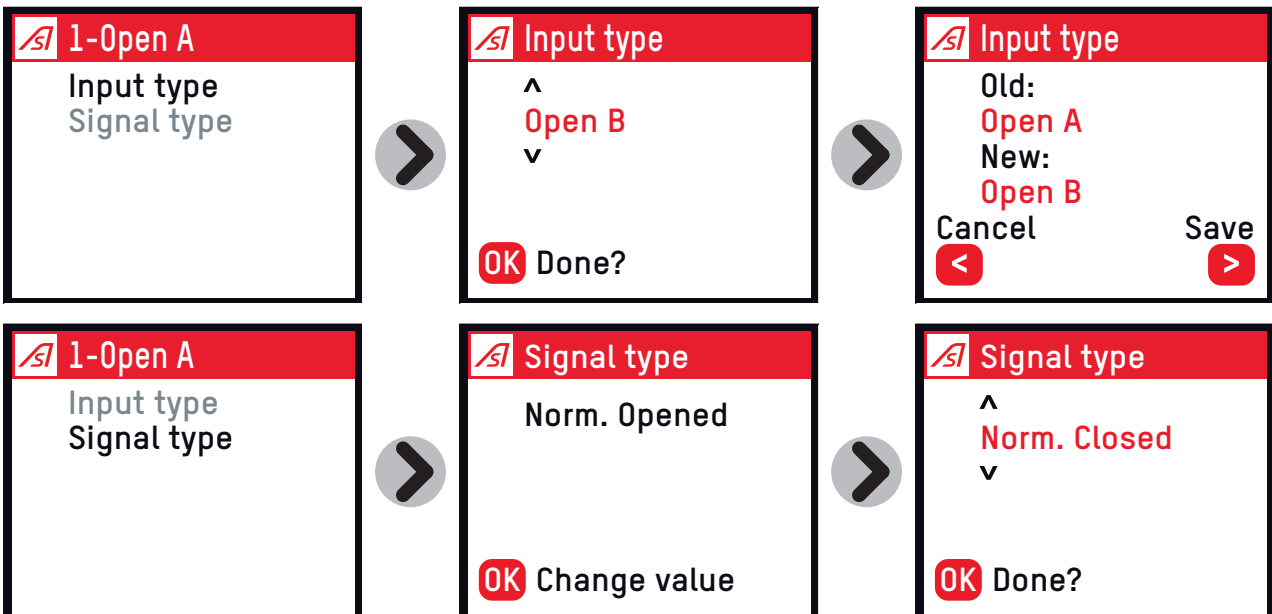


Fig. 23 - AS1621: Configuration example [2]

9. MAINTENANCE INTERFACE

9.1. PRESENTATION

The maintenance interface enables a direct connection to a barrier equipped with an AS 1620 logic board in order to configure it, monitor its operating status and carry out diagnostic and maintenance operations.

This is a resident tool, available as standard in the CPU of the circuit board, and does not require any additional software to install it.

The interface is accessible from any individual computer station or network via a simple web browser (no Internet connection required).

You can use one of the following browsers:



Firefox



Internet Explorer
(Version 11 and later)



Edge



Safari



Opera



Chrome



HOWEVER, WE WOULD RECOMMEND THAT YOU USE THE FIREFOX OR CHROME BROWSERS.



In the event of display problems in Internet Explorer:

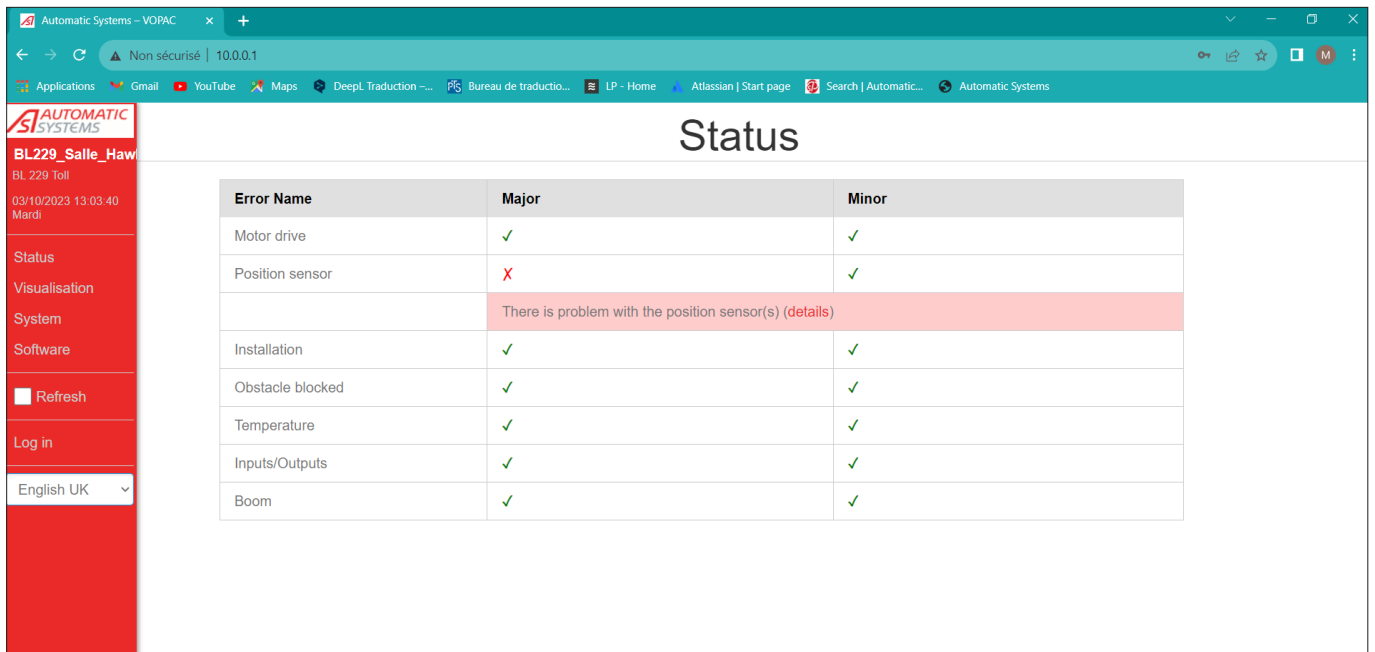
- In the Tools menu, uncheck the Compatibility View option.
- In the Tools/Compatibility View Settings menu, uncheck the "Display intranet sites" option in Compatibility View.
- Press the F5 key to refresh the web page.

9.2. CONNECTION

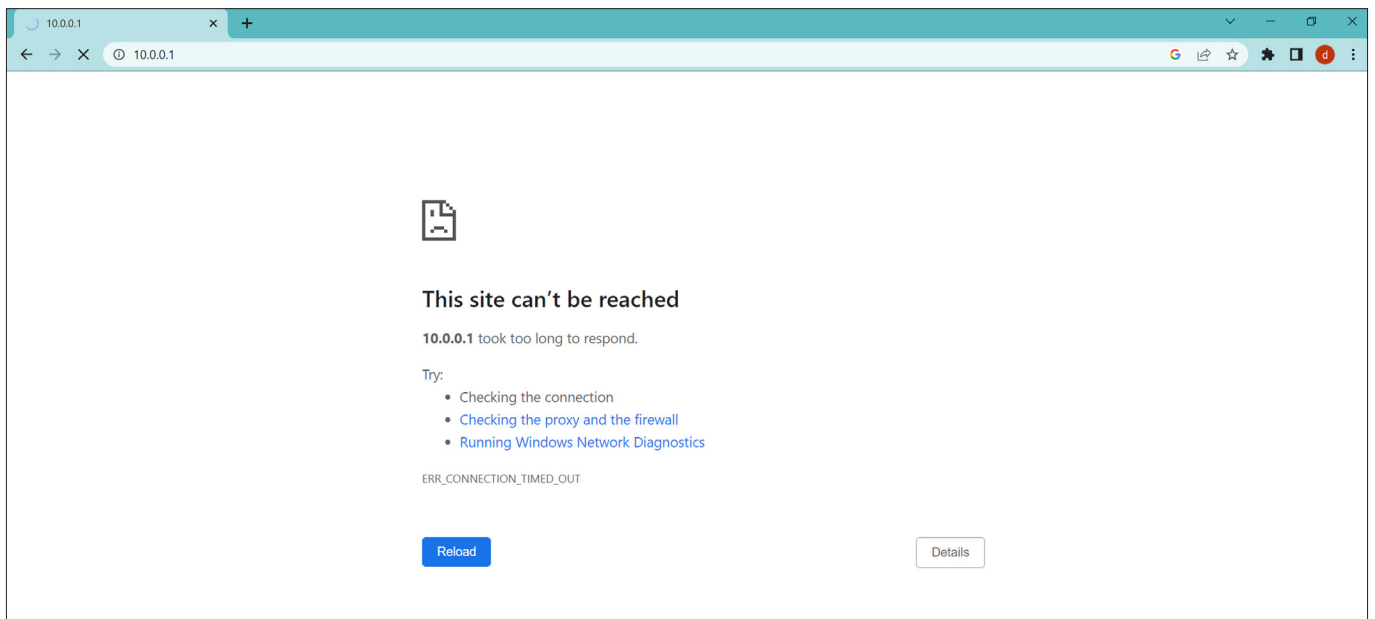
9.2.1. DIRECT CONNECTION VIA USB CABLE

The CN13 connector on the AS1620 circuit board is a mini-USB type socket that is programmed to work as an Ethernet jack. By connecting it to a computer with a USB cable, it should see a new network connection.

1. Connect the USB cable to the computer and to your equipment.
2. When the device has been detected by the computer, try to reach the equipment by entering the address **http://10.0.0.1** in the address bar of your browser. If the status web page or the machine identification page is displayed, then your driver is already installed.



3. If you receive this message:



⇒ Please follow the installation procedure for the RNDIS driver, which you can download below:



9.2.2. DIRECT CONNECTION USING ETHERNET CABLE (OPTION)

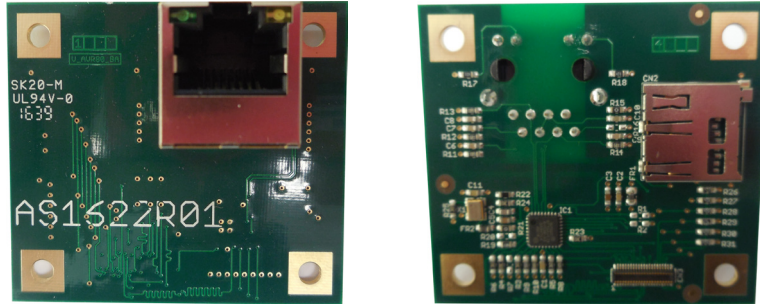


Fig. 24 - AS1622 - Ethernet / SD card option

Connect the **CN1** connector of the optional AS 1622 circuit board to a computer using a standard Ethernet cable.

The default IP address is 192.168.0.200, which can be modified via the **Network** page of the web interface, which also allows the other settings to be configured.

The computer to which the barrier is connected must be configured to have a static IP address on the same sub-network (for example, 192.168.0.199). The gateway address is normally irrelevant.

9.2.3. LOGGING ONTO THE MAINTENANCE WEB INTERFACE

Open an Internet browser and enter the IP address of the device into the address bar (⇒ Chap. 9.2.1 and Chap. 9.2.2).

The **main menu** opens automatically in the left part of the screen and the **barrier status** in the right part. The user accesses the **Identification** page via the main menu, in order to log on in technician mode and be able to modify the barrier settings.

The language in which the pages are displayed can be changed at the bottom of the main menu:



Fig. 25 - Change language from main menu

10. FIRST LOGON



When logging on without identification, the main menu is reduced. (⇒ Chap. 12: MAIN MENU, page 37)

When you are on the **Status** page, errors may possibly be mentioned.

Error Name	Major	Minor
Motor drive	✓	✓
Position sensor	✗	✓
	There is problem with the position sensor(s) (details)	
Installation	✓	✓
Obstacle blocked	✓	✓
Temperature	✓	✓
Inputs/Outputs	✓	✓
Boom	✓	✓

Fig. 26 - STATUS page - First connection

These errors are quite normal, as it is necessary to perform a few operations when the equipment is first powered on before it is operational:

- Check the settings for the boom snap out input.
- Initialisation of end positions for a barrier fitted with an analog or angular sensor.
- Initialisation of the speed ramp for a BLIX model barrier.



These two operations are performed via the **Individual tests > Calibration > End stops positions and Speed ramp** page. (⇒ Chap. 16.1: CALIBRATION, page 45)

11. IDENTIFICATION

Log in

User Name

Password

Update clock

At computer time

Fig. 27 - Identification

FIELD/BUTTON	DESCRIPTION
Username	Text box for entering the user access code (case sensitive). Access is restricted to technicians that have been trained on this product by AS. Consult your representative if necessary.
Password	Text box for the password associated with the Username (case sensitive).
Time switch update	Synchronisation of the date and time of the CPU with that of the computer accessing the maintenance interface.
Identification	Validation of the data entered in the fields and access to the Status page.



The correct indication of the time is very useful for the logs (⇒ Chap. 20: PAGE - SYSTEM, page 74). The battery is essential to maintain the hourly update in the event of a power outage.

12. MAIN MENU

The main menu will vary depending on the maintenance interface logon status:

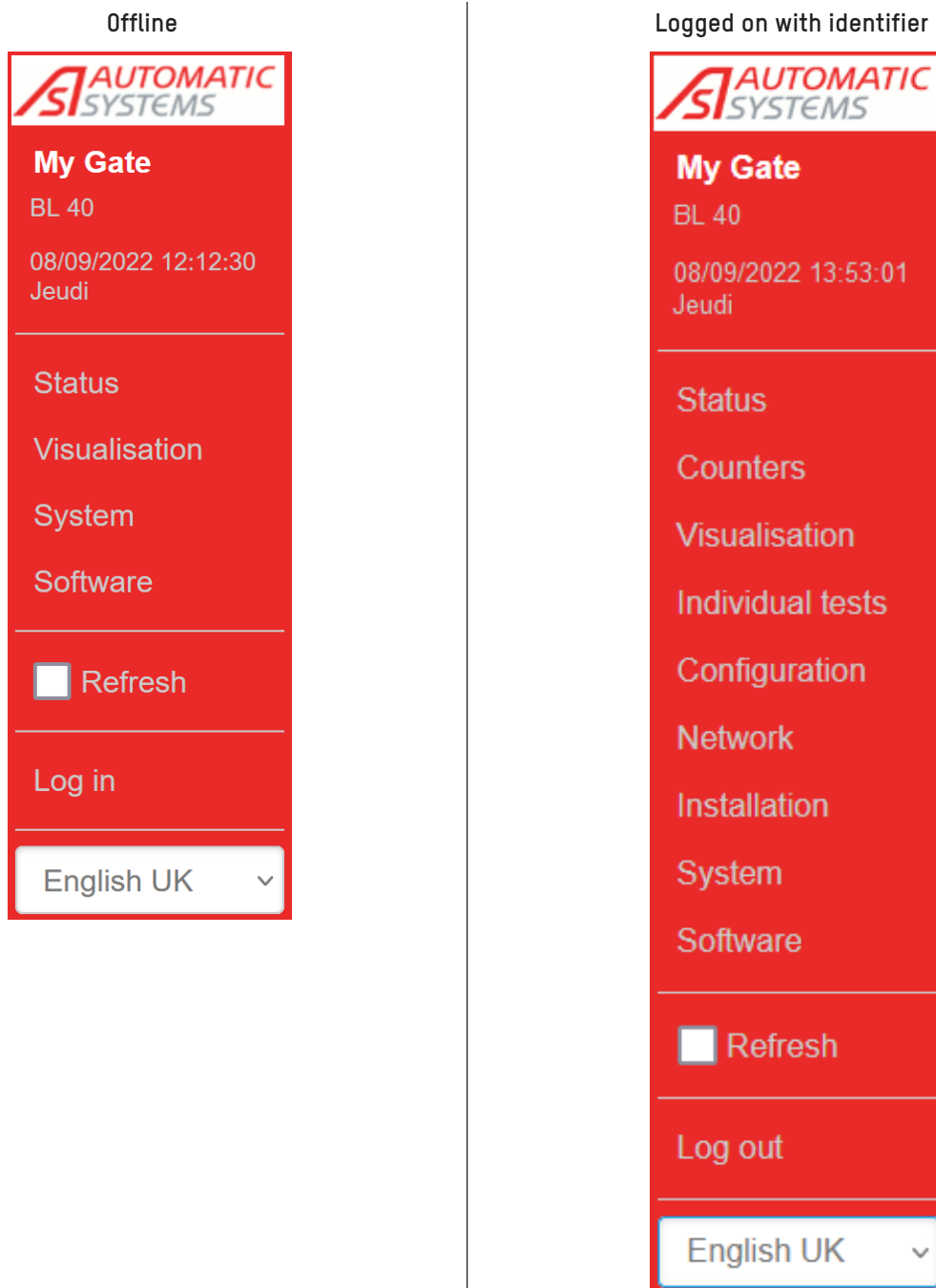



Fig. 28 - Main menu

The display of the Main menu and the screen content varies depending on the logon status:

- In **Unidentified** mode, it will be possible to see the **status** of the equipment and to access the **Visualisation**(without the open/close command buttons), **System**, **Software** (only in the version display mode) and **Identification** pages.
- In **Logged on** mode, you will have access to all the pages and the command buttons.

The maintenance interface has been designed to adapt to several types of devices (PC, tablet, Smartphone, etc.). Depending on the size of the screen, this menu may disappear. It will no longer be visible in its entirety, but in the form of a clickable tab (in the upper left-hand corner):



Status		
Error Name	Major	Minor
Motor drive	✓	✓
Position sensor	✓	✓
Installation	✓	✓
Obstacle blocked	✓	✓
Temperature	✓	✓
Inputs/Outputs	✓	✓
Boom	✓	✓

Fig. 29 - Status page (Adaptive interface)

This menu allows you to:

- Identify the name of the device.



The name of the equipment can be modified on the Configuration > Application > Device name page.

- Identify the device type.



The type of device can be modified on the Installation > Device type page.

- To browse the various pages of the interface, and to thus be able to consult and/or modify some settings, start a test, change the status of the equipment, etc.
- To refresh the display.



If checked, the data on the page automatically refreshes every two seconds.



Click on one of the menus to access one of the pages and refresh the contents.

- To log on or log off.



See the following pages for details on each of the possible actions.

- To choose the interface language.

13. STATUS PAGE

The **Status** page gives an overview of the self-tests carried out continually by the circuit board.

Status

Error Name	Major	Minor
Motor drive	✓	✓
Position sensor	✓	✓
Installation	✓	✓
Obstacle blocked	✓	✓
Temperature	✓	✓
Inputs/Outputs	✓	✓
Boom	✓	✓

Fig. 30 - Status page



The HMI located on the AS 1620 circuit board also indicates possible error messages on a loop via the diagnostic LEDs (⇒ Chap. 6.2.2: INFORMATION MODE, page 20) .

Two types of faults can be highlighted during these self-tests:

13.1. MAJOR FAULTS

⇒ The barrier is taken **Out of Service**:

- The motor is shut off.
- The brake (optional on some barriers) engages.



IMPORTANT: IF THE BARRIER IS NOT FITTED WITH A BRAKE, THE BOOM COULD RISE OR FALL AFTER THE MOTOR HAS BEEN SWITCHED OFF.



- The traffic lights (if present) turn red.
- The fault is indicated on the HMI as well as on a digital output of the circuit board, if this is the chosen configuration (⇒ Chap. 17.6: Sorties, page 62).

13.2. MINOR FAULT

⇒ The barrier remains operational, but its behaviour must be monitored.

Depending on the type of fault, it may be necessary to intervene on the equipment as follows:

ERROR TYPE	MINOR FAULT	MAJOR FAULT
Motorisation	N/A	<p>The VFD has failed or faulty communication between the circuit board and the VFD (see Visualisation page and VFD screen).</p> <p>Solution(s): Refer to the error message on the VFD and check the connection between the VFD and the circuit board.</p> <p>Check that the VFD is powered up.</p> <p>Check that the VFD is correctly configured (⇒ see barrier manual).</p> <p>If this does not solve the problem, switch off the power supply for five seconds and then switch it on again.</p> <hr/> <p>In the case of a TOLL 0.3 sec barrier, this error is displayed if no digital output (Open or Close) has been defined to control the VFD. The movement of this type of ultra-fast barrier is not controlled by the usual ATV12 VFD. Open and close commands are therefore sent via digital outputs.</p> <p>Solution(s): Define an output (open or close) to control the VFD.</p>
Position sensor	<p>Problems reading the signal from the analog position sensor.</p> <p>If the problem persists, contact AS.</p>	<p>Error while reading the value of the analog angular position sensor (⇒ the Visualisation page).</p> <p>Solution(s): Check that the angular position sensor cable is securely connected.</p> <p>Check that the sensor is working properly: disconnect the VFD from the circuit board, move the boom manually and check the changes in the angular position of the boom on the Visualisation > Motorisation > Angle [°] page.</p> <hr/> <p>In the case of a barrier with limit switches: the two sensors are enabled at the same time (check on the Visualisation page).</p> <p>Solution(s): Check that the sensors are working correctly and are set to normally open or closed.</p>
Installation	No inputs have been configured (see Configurations > Inputs page).	<p>The barrier has not been calibrated:</p> <div data-bbox="805 1512 1252 1713" style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p style="color: red; font-weight: bold;">Device is not calibrated!</p> <div style="display: flex; flex-direction: column; align-items: center;"> <div style="background-color: red; color: white; padding: 5px; margin-bottom: 5px;">End stops positions</div> <div style="background-color: blue; color: white; padding: 5px; margin-bottom: 5px;">Open Slowly</div> <div style="background-color: lightblue; color: white; padding: 5px;">Open</div> </div> </div> <p>Solution(s): Calibrate the barrier (See Individual tests > Calibration page).</p>
	<p>Some types of barrier do not require a calibration cycle. As a general rule, the end positions on barriers with analog sensors must be calibrated; the speed ramps for BL15s must be calibrated.</p>	

ERROR TYPE	MINOR FAULT	MAJOR FAULT
Blockage of the obstacle	<p>The boom is slowed down or blocked in its normal movement. The system will slightly increase the motor torque to release the boom. If the problem persists, the barrier will switch to major fault status.</p>	<p>The boom has not managed to perform a complete opening or closing movement within the allotted time, as defined in the Configuration > Timers > Maximum opening/closing time setting.</p> <p>Solution(s): Check what is preventing the boom from moving. Test the movement via the Individual tests > Motorisation page.</p>
	<p> The presence of an obstacle during the opening of the boom movement is initially considered to be a minor fault, not a blockage.</p> <p>Error detection For a MAJOR fault: when the barrier fails after five attempts to close with the ERROR TIMEOUT. (If there is an obstacle, the barrier performs its number of blockages. If the obstacle is still present, the barrier makes its five Timeout attempts. And if, after these five attempts, the obstacle is still present, the barrier fails)</p>	
Temperature	N/A	<p>The variable frequency drive or motor temperature reaches a critical value (see Visualisation page).</p> <p>Solution(s): Switch off the device until the temperature drops or add forced ventilation, available as an option. .</p>
Inputs/Outputs	N/A	<p>On a barrier fitted with a lock system with release verification, the error indicates that the lock has not been released. Check the operating mechanism of the lock.</p>
Boom	<p>The barrier has opened or closed much more quickly or slowly than is normal (25% deviation from the settings Opening time / Closing time on the Configuration > Timers page).</p> <p>Solution: Check what is interfering with the movement. If boom options or balancing springs have been added/removed, the speed curves must be re-calibrated via the Individual tests > Calibration > Speed ramp page.</p>	<p>The boom has snapped out (see the Visualisation page, the lines Closing sensor and Snap-out sensor are highlighted).</p> <p>Solution(s): Insert the boom correctly into its jaw.</p>
	<p> MAJOR error detection: Snap-out with Snap-out action option = opens slowly.</p> <p>MINOR error detection: Snap-out with Snap-out action option = stays in position.</p>	

14. PAGE - COUNTERS

The **Counters** page lists the various available counters:

Counters

Counter name	Perpetual counter	Partial counter ✘	Set Value
Cycles	46	35 ✘	
Opening commands	39	39 ✘	
Motor emergency stops	0	0 ✘	
Major errors	0	0 ✘	
Boom snapped out	0	0 ✘	
Passages A	1	1 ✘	
Passages B	0	0 ✘	
Vehicles in lot	1	1 ✘	<input type="text" value="1"/> ✔
Pending authorisations A	0	0 ✘	
Pending authorisations B	0	0 ✘	
Number of Authorisations A	0	0 ✘	
Number of Authorisations B	0	0 ✘	
Counter 1	0	0 ✘	<input type="text" value="0"/> ✔
Counter 2	0	0 ✘	<input type="text" value="0"/> ✔

Fig. 31 - Page - Counters



PERMANENT COUNTERS CANNOT BE RESET TO ZERO

Partial counters can be reset to zero by clicking on the corresponding cross. The cross at the top of the column is used to reset all the partial counters in a single operation.

COUNTER NAME	DESCRIPTION
Cycles	Number of cycles (open + close) performed.
Open commands	Number of open commands given (any type of open command: via digital input, web pages, detection loop, XML-RPC, etc.).
Emergency stops	Number of times the barrier has interrupted its closing movement following a presence under the boom (loops or security sensors).
Major errors	Number of times the barrier has failed following detection of a major error (see Status page).
Boom snap-outs	Number of times the barrier has failed following the detection of a boom snap-out (= Boom has come out from its jaw).
Passages A	Number of passages between the origin and destination loops as defined in the settings on the Configuration > Commands > Passage counter page: from .

COUNTER NAME	DESCRIPTION
Passages B	Number of passages between the destination and origin loops as defined in the settings on the Configuration > Commands > Passage counter page : to .
Vehicles in the parking lot	<p>The program counts the number of vehicles that have passed in direction A (Passages) minus those that have passed in the opposite direction (Passages in opposite direction). This counter is linked to the Parking lot capacity setting defined in the settings on the Configuration > Commands page.</p> <p>As with the other counters, this counter can be reset to zero by clicking on the cross. It is also possible to assign a value to it directly (following a manual recount in the parking lot) by entering it in the appropriate field (in the New value column of the table).</p>
Pending authorisations A	<p>Linked to the Record commands setting. Number of vehicles currently authorised to cross the passage in direction A ⇒ B.</p> <p>It is possible to assign a value directly to this counter.</p>
Pending authorisations B	<p>Linked to the Record commands setting. Number of vehicles currently authorised to cross the passage in direction B ⇒ A.</p> <p>It is possible to assign a value directly to this counter.</p>
Number of authorisations A	Number of A ⇒ B authorisations given.
Number of authorisations B	Number of B ⇒ A authorisations given.
Counter 1	Counter managed entirely by the user. It can therefore be increased, decreased, reset to zero or even enable an output on the basis of a threshold (⇒ Chap. 17, page 49).
Counter 2	Counter managed entirely by the user. It can therefore be increased, decreased, reset to zero or even enable an output on the basis of a threshold (⇒ Chap. 17, page 49).

15. PAGE - VISUALISATION

This page makes it possible to visualise the status of the various inputs and outputs, and perform operations on the barrier while keeping it in its normal operating state.

Visualisation

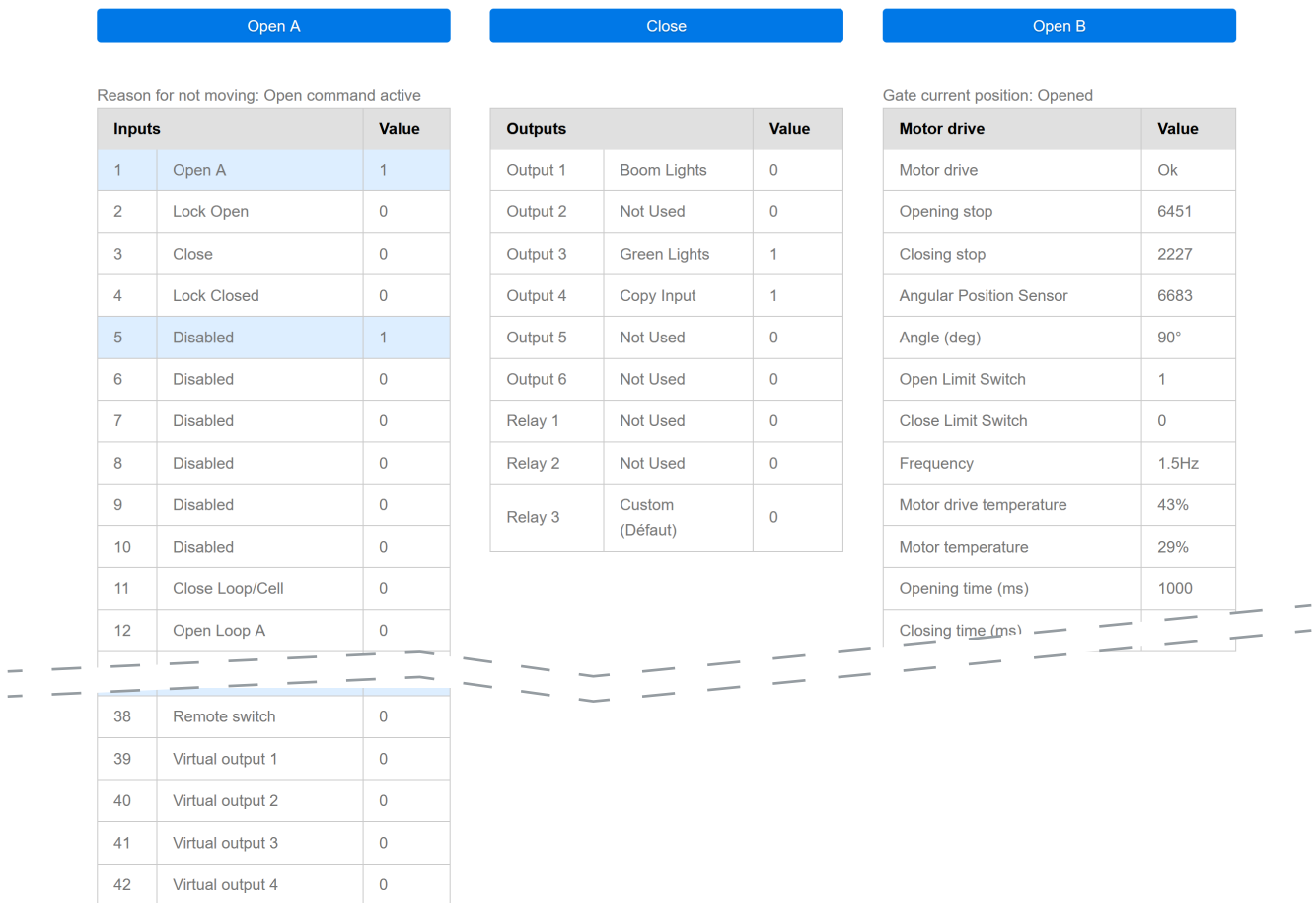



Fig. 32 - Page - Visualisation

- The values are updated by clicking the **Refresh** button if the check box in the Home menu has not been enabled (⇒ Chap. 11: Identification, page 36).
- Enabled inputs are highlighted with a blue background. Disabled inputs are displayed with a white background.
- If the status of one of the inputs or outputs is abnormal, the corresponding line will be shown in red.
- The errors are detailed on the **Status** page. (⇒ Chap. 13: STATUS PAGE, page 39)
- The **Open A**, **Close** and **Open B** buttons control an opening or closing movement at normal speed (defined on the **Configuration > Timers** page). (These are only visible once logged in, which gives access to the extended menu).
- The **Angle** setting gives the angular position of the boom in relation to the horizontal.
- The **Frequency** setting indicates the current frequency of the VFD.
- The variable frequency drive temperature is expressed as a percentage of the maximum temperature.
- The motor temperature is an indicative value estimated by the variable frequency drive, as a percentage of the maximum value.
- The value 0 or 1 corresponds to the electrical status.


16. PAGE - INDIVIDUAL TESTS

Access to this page requires you to be in Maintenance mode. Click on the button:



 Before doing Individual Tests, you must switch to "Maintenance Mode".
Do not forget to switch back to "Normal mode" afterwards.
Click to go to "Maintenance Mode"

To exit Maintenance mode, click on the button:

 Device is in "Maintenance Mode": Click to return to "Normal Mode".

The Maintenance mode can be exited at any time by clicking on the corresponding button.

Individual tests



Fig. 33 - Page - Individual tests

In the individual tests page, you can calibrate the equipment, test the motorisation or test the digital outputs and relays.

16.1. CALIBRATION

For barriers fitted with an angular position sensor, this test is used to calibrate the end stop positions and speed curves.

Calibration

✓ Device is calibrated

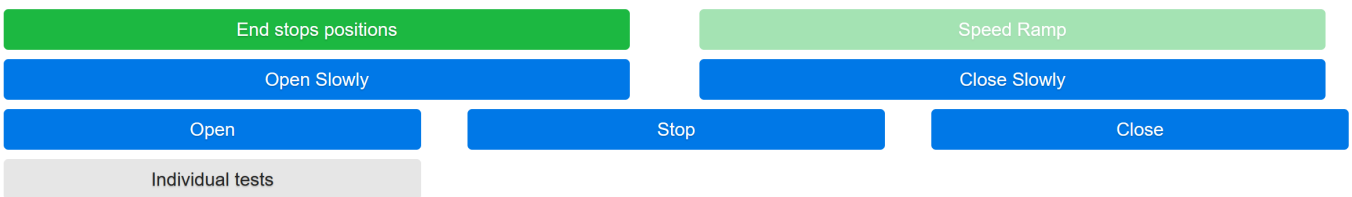


Fig. 34 - Calibration



The **End stops positions** and **Speed ramps** buttons can be coloured green or red.

If they are red, click on them to perform the calibration. For certain types of barrier, one or two buttons may be light green and disabled (impossible to click on), indicating that calibration of this type of barrier is not necessary.

✓ Device is calibrated



Fig. 35 - Speed ramp calibration not required

○ Calibration in progress... 

Fig. 36 - Calibration in progress

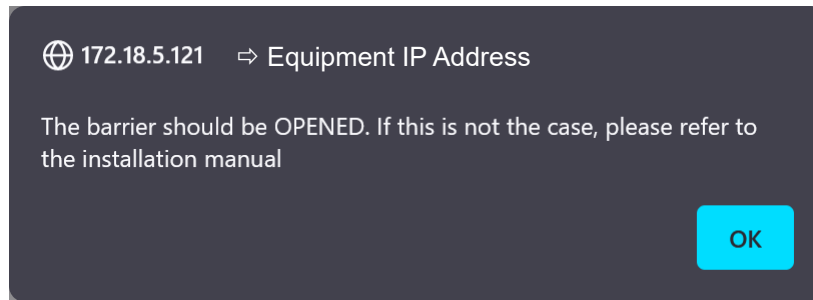


Fig. 37 - Calibration complete (End message)

FIELD/BUTTON	DESCRIPTION
Installation incomplete	This message appears when the End positions have yet to be recorded or the speed ramps have yet to be calculated.
End stops positions	<p>Purpose: Record the position of the barrier limit switches.</p> <p>The boom pivots slowly until it reaches the end positions, first downwards (closed position) then upwards (open position).</p> <p>At the end of initialisation, the boom will be in the vertical position (barrier open). If this is not the case, swap the connection of two phase cables of the variable frequency drive after switching off the power supply. Once this change has been made, carry out a new initialisation. The same applies whenever the limit switch end positions are changed or the angular position sensor is moved.</p>
Speed ramp	<p>Purpose: (BL1x only) Determine the optimum speed curves for the installed boom and for different opening and closing times, as defined on the Configuration > Timers page.</p> <p>This button is disabled until initialisation has been completed.</p>
Open slowly	Performs a complete opening movement at low speed.
Close Slowly	Performs a complete closing movement at low speed.
Opening	<p>Performs a complete opening movement within the time defined by the Opening time setting on the Configuration > Timers page.</p> <p>This button is disabled until the speed ramps have been initialised or calculated.</p>
Stop	Stops the current movement.
Close	<p>Performs a complete closing movement within the time defined by the Closing time setting on the Configuration > timers page.</p> <p>This button is disabled until the speed ramps have been initialised or calculated.</p>
Individual tests	Takes you back to the main individual test menu.

16.2. MOTORISATION

This test checks that the motor is operating correctly.

If the device is not calibrated, or is only partially calibrated, some buttons will not be accessible and the message **Installation incomplete** will be displayed.

Motor drive

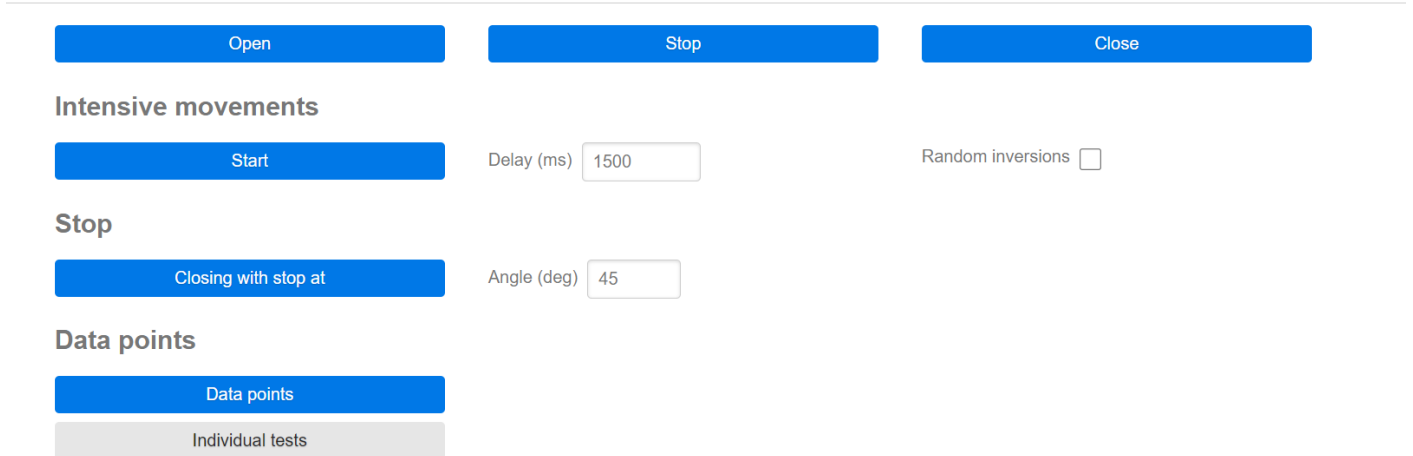


Fig. 38 - Motorisation

FIELD/BUTTON	DESCRIPTION
Open	Performs a full opening movement within the time defined by the Opening time setting on the Configuration > Timeouts page. This button is disabled until the speed ramps have been initialised or calculated.
Stop	Stops the current movement.
Close	Performs a complete closing movement within the time defined by the Closing time setting on the Configuration > Timers page. This button is disabled until the speed ramps have been initialised or calculated.
Start	The barrier will perform open and close cycles until the Stop button is clicked. After each movement, the barrier waits for the time defined by the Interval between movements setting before starting the next movement. The opening and closing times are the memorised times defined on the Configuration > Timers page.
Delay (ms)	Delay, in milliseconds, between each movement.
Random inversions	If this option is enabled, the closing movement will be randomly interrupted by an open command.
Close with stop at	Press this button to stop the boom from closing in the angular position indicated.
Angle (°)	Value of the stop angle when commanded to close with stop.
Data points	This button is used to retrieve a file containing information about the last movement carried out. This file can be requested by the AS technical department in the event of a problem.



The tests (End position, Speed ramp, Open, Close, Open slowly and Close slowly) can be stopped at any time by clicking on **Stop** in the **Test in progress** screen.

16.3. OUTPUTS

Outputs

Output 1	Boom Lights	<input type="checkbox"/>
Output 2	Not Used	<input type="checkbox"/>
Output 3	Green Lights	<input type="checkbox"/>
Output 4	Copy Input	<input checked="" type="checkbox"/>
Output 5	Not Used	<input type="checkbox"/>
Output 6	Not Used	<input type="checkbox"/>
Relay 1	Not Used	<input type="checkbox"/>
Relay 2	Not Used	<input type="checkbox"/>
Relay 3	Custom	<input type="checkbox"/>

Individual tests

Fig. 39 - Outputs

This test makes it possible to enable the selected digital outputs and relays on the circuit board in order to verify their correct functioning.

LEDs 26 to 34 indicate the status of the outputs and relays.

16.4. OPERATION

Operating

Intensive operating

Start

Delay (ms)

Stop

Individual tests

Fig. 40 - Operation

The function test enables the whole barrier to be tested during continuous opening and closing movements.

In this case, unlike the **Intensive movements** motor test, all the barrier's normal functions are enabled. In particular, the management of digital outputs, and therefore traffic lights.

17. PAGE - CONFIGURATION

This page will allow you to view and modify all the operating settings of the equipment.

Configuration

- Application
- Smart and Slim
- Timers
- Commands
- Inputs
- Outputs
- Movement
- Virtual inputs

From this page, you will be able to:







- Configure the equipment via the **Application** button.
- Define various settings in connection with the supervision via the **Smart n'Slim** button;
- Adjust the timers using the **timers** button.
- Adjust the commands using the **Commands** button.
- Configure the inputs via the **Inputs** button:
- Configure the outputs via the **Outputs** button.
- Adjust the barrier movement settings using the **Movement** button.


17.1. APPLICATION

Application

Device name	<input type="text" value="BL229_Salle_Hawkins"/>	?
Verbose Logs	<input type="text" value="Yes"/>	?
Operating mode	<input type="text" value="Automatic"/>	?
Action after power on	<input type="text" value="Closing"/>	?
Reset error after new command	<input type="text" value="Yes"/>	?
Error timeout (seconds)	<input type="text" value="1"/>	?
Number of blockages	<input type="text" value="3"/>	?
Action after blockage	<input type="text" value="Re-Open"/>	?
Enable HMI	<input type="text" value="Yes"/>	?
Priority opening loop	<input type="text" value="No"/>	?
Action after a stop	<input type="text" value="Wait command after stop"/>	?
Emergency closing	<input type="text" value="No"/>	?

Fig. 41 - Application

FIELD	DESCRIPTION
Device name	Allows a meaningful name to be given to the device. This name will also be used when generating log files.
Verbose logs	 <p>The optional Ethernet expansion board, AS1622, is required for saving the logs, because it contains the slot for the memory card used for saving.</p>
	 <p>DO NOT CHANGE THIS SETTING! ONLY AN AS TECHNICIAN IS AUTHORISED TO DO SO.</p>
	<p>Used to define the level of detail of the event log:</p> <ul style="list-style-type: none"> - Yes = The software saves more information on the SD card, if present. This setting has no effect without this SD card. - No = Only the major events are saved.
Operating mode	<p>Operating mode of the barrier:</p> <ul style="list-style-type: none"> - Automatic: the barrier is controlled by the digital inputs on the circuit board. - Free access: validation loop inputs function like open loops. - Locked open/close: the barrier will remain in the open/closed position regardless of the status of the digital inputs.
	 <p>IF BLOCKED OPEN/CLOSED IS SELECTED, THIS MODE REMAINS ENABLED EVEN AFTER THE POWER SUPPLY HAS BEEN CUT OFF.</p>
Action after power on	<p>Allows you to define whether the barrier should open or remain in position during start-up.</p> <ul style="list-style-type: none"> - NO ACTION = The barrier remains in its current position, open or closed. If it is between these two positions, it opens. - OPEN = The barrier opens. - CLOSE = The barrier closes.
	 <p>A close command is required to close the barrier after power-on. In other words, the "Maximum open time if no passage" setting below is disabled at start-up (except in Locked open mode)</p>
	 <p>IF THE BARRIER'S OPERATING MODE IS LOCKED OPEN OR LOCKED CLOSE, IT OPENS OR CLOSES AS APPROPRIATE, REGARDLESS OF THE VALUE OF THE MOVEMENT SETTING AT START-UP.</p>
Reset error after new command	<p>Do I need to send a new command to exit the error mode on a failed device?</p> <ul style="list-style-type: none"> - YES = a new command must be sent. - NO = it is not necessary to send a new command.
	 <p>An open or locked open command is required to re-enable the barrier. <i>For example:</i> If a motor fault occurs and disappears, an open command or a locked open command must be given for the barrier to be operational again.</p>
Error timeout (seconds)	Used to define the delay, in seconds, before an error message is sent to the system.

FIELD	DESCRIPTION
Number of blockages	<p>Sets the maximum number of closing attempts, at slow speed, when a boom blockage is detected. There are no multiple attempts if the opening movement is blocked. In this case the barrier goes into fault mode after timeout.</p> <p> IF THE ABOVE NUMBER OF BLOCKAGES IS SET TO 0, THE BLOCKAGE IS IGNORED AND THE BARRIER IMMEDIATELY SWITCHES TO DEFAULT MODE.</p>
Action after blockage	<p>Action to be taken if the boom is still blocked after the number of attempts defined above:</p> <ul style="list-style-type: none"> • Stop = the barrier holds its position (stop). • Re-open = the barrier opens.
Enable HMI	<ul style="list-style-type: none"> - YES = enables the human/machine interface (HMI) push buttons on the AS1620 board and those on the optional AS1621 board with colour LCD display (OLED). - NO = human/machine interface inoperative.
Priority opening loop	Opening loop enabled if present on closing loop
Action after a stop	<p>Action to be taken after a Stop (security enabled) has been triggered:</p> <ul style="list-style-type: none"> - Wait after stop = wait for a new command. - Auto close after stop = the barrier closes automatically as soon as the security devices are disabled.

By clicking on the Help button, located to the right of each of the configuration lines, you will obtain brief information about the setting and the possibility of restoring its factory setting:

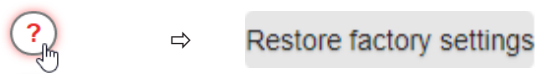


Fig. 42 - Help button

You can always undo or save the changes made on the different configuration pages.

In order to do this, the two buttons below will always be visible:



Fig. 43 - Buttons always visible

17.2. SMART N' SLIM

Allows you to define all the parameters related to the integration of the device in the Supervision module, or Smart n 'Slim, developed by **Automatic Systems**. (For more details, refer to the Smart n 'Slim manual)

FIELD / BUTTON	DESCRIPTION
Group name	Allows you to define the name of the group to which the equipment belongs.
Position in the array	Used to set the position of the equipment in an array.
Position in the bay	Used to determine the position of the equipment in the bay.
Role	Used to define the role of the equipment: <ul style="list-style-type: none"> - Independent = operating without relation to another barrier. - Master = barrier giving instructions in a Master/Slave configuration. (Head to tail). - Slave = barrier receiving instructions in a Master/Slave configuration. (Head to tail).
Partner ID	Used to identify the partner in a Master/Slave configuration. (Head to tail)






17.3. TIMERS

Timers

Max open time if no passage (seconds)	<input type="text" value="0"/>	?
Delay after passage (milliseconds)	<input type="text" value="0"/>	?
Delay before opening (milliseconds)	<input type="text" value="0"/>	?
Delay before closing (milliseconds)	<input type="text" value="0"/>	?
Delay after security (milliseconds)	<input type="text" value="0"/>	?
Max time to complete opening (seconds)	<input type="text" value="7"/>	?
Max time to complete closing (seconds)	<input type="text" value="7"/>	?
Max stopping time (seconds)	<input type="text" value="0"/>	?
Delay before brake (milliseconds)	<input type="text" value="1000"/>	?
Delay after brake (milliseconds)	<input type="text" value="500"/>	?

Fig. 44 - Timers

The Timers submenu is used to change the values of the various timers:

FIELD / BUTTON	DESCRIPTION
Maximum open time if no passage (seconds)	Time (in seconds) after which the barrier closes automatically if no passage has been detected. Number between 0 and 120 (= 2min).
	 A ZERO VALUE (0) MEANS THAT THERE IS NEVER AUTOMATIC CLOSING.
	 This timer is disabled at start-up (⇒ Movement at start-up setting in Chap. 17.1 APPLICATION, page 49).
Delay after passage (milliseconds)	Delay (in milliseconds) after notification of the end of a passage by the sensor (loop or cell) before the close command is enabled.
	 Works like a close delay but only with loops and/or cells.
Delay before opening (milliseconds).	Time (in milliseconds) after receiving an open command before the barrier actually starts to open. During this time, however, the digital outputs have already changed status. For example, the traffic lights have been changed to signal the opening movement that is about to begin. Number between 0 and 60000 (= 1 minute).
	 This setting is also linked to the presence of an electromagnetic or electromechanical tip support to finalise unlocking before starting the opening movement.
Delay before closing (milliseconds)	Time (in milliseconds) after receiving a close command before the barrier actually starts to close. During this time, however, the digital outputs have already changed status. For example, the traffic lights have been modified to signal the closure movement that is about to begin. Number between 0 and 60000 (= 1 minute).
Delay after security (milliseconds)	Additional delay (in milliseconds) during which a security movement (reopening or stopping) is maintained once all the security sensors and loops have been disabled. Number between 0 and 60000 (= 1 minute).
Maximum time to complete opening (seconds)	Maximum time (in seconds) allowed for an opening movement before going into fault mode and the Obstacle blockage error is sent(⇒ Chap. 12: MAIN MENU, page 37).
Maximum time to complete closing (seconds)	Maximum time (in seconds) allowed for a closing movement before going into fault mode and the Obstacle blockage error is sent(⇒ Chap. 12: MAIN MENU, page 37).
Maximum stopping time (seconds)	Maximum authorised time (in seconds) during which the boom must be held in the STOP position, beyond which the barrier goes into fault mode, returning the Obstacle blockage error(⇒ Chap. 12: MAIN MENU, page 37). Number between 0 and 30.
	 A ZERO VALUE (0) MEANS NO LIMIT.
Delay before brake (milliseconds)	Delay before the brake is enabled after reaching the limit switch enabling position.
Delay after brake (milliseconds)	Delay during which movement is maintained after the brake is enabled.


17.4. COMMANDS

Commands

Opening signal	<input type="text" value="Value"/>	<input style="border: 1px solid gray; border-radius: 50%;" type="button" value="?"/>
Closing signal	<input type="text" value="Value"/>	<input style="border: 1px solid gray; border-radius: 50%;" type="button" value="?"/>
Snapped out action	<input type="text" value="Open slowly"/>	<input style="border: 1px solid gray; border-radius: 50%;" type="button" value="?"/>
Passage counter : from	<input type="text" value="Input 5"/>	<input style="border: 1px solid gray; border-radius: 50%;" type="button" value="?"/>
Passage counter : to	<input type="text" value="Input 5"/>	<input style="border: 1px solid gray; border-radius: 50%;" type="button" value="?"/>
Record commands	<input type="text" value="Yes"/>	<input style="border: 1px solid gray; border-radius: 50%;" type="button" value="?"/>
Parking capacity	<input type="text" value="0"/>	<input style="border: 1px solid gray; border-radius: 50%;" type="button" value="?"/>
Counter 1 threshold	<input type="text" value="0"/>	<input style="border: 1px solid gray; border-radius: 50%;" type="button" value="?"/>
Counter 2 threshold	<input type="text" value="0"/>	<input style="border: 1px solid gray; border-radius: 50%;" type="button" value="?"/>

Fig. 45 - Commands

FIELD / BUTTON	DESCRIPTION
Opening signal	<p>Signal for open command (two contacts):</p> <ul style="list-style-type: none"> - Value = the input is enabled when the signal is high. - Falling edges = the input is enabled when the signal passes from high to low. - Deadman = the input is enabled when the signal is high. The barrier stops if the signal is low. <div style="border: 1px solid gray; padding: 5px; margin-top: 10px;"> This mode is only possible if the Manual mode input is enabled. </div>
Closing signal	<p>Signal for opening command (two contacts):</p> <ul style="list-style-type: none"> - Value = the input is enabled when the signal is high. - Falling edges = the input is enabled when the signal passes from high to low. - Deadman = the input is enabled when the signal is high. The barrier stops if the signal is low. <div style="border: 1px solid gray; padding: 5px; margin-top: 10px;"> This mode is only possible if the Manual mode input is enabled. </div>

FIELD / BUTTON	DESCRIPTION
Snap out action	<p>Used to determine the action to be taken when a snap out is detected:</p> <ul style="list-style-type: none"> - Open slowly = The barrier opens slowly. - The boom must be replaced for the equipment to return to normal operation. - Open - Close slowly = The barrier opens and closes slowly. - The boom must be replaced for the equipment to return to normal operation. - Wait for cycle = It is necessary to wait for a full cycle to be completed before restarting the mechanism. The boom must be replaced for the equipment to return to normal operation. - Hold position = The barrier holds its position. - To return to normal, put the boom back in place and give an open/close command. - None = no action is taken, the snap-out is ignored. This option is useful for recording events and/or transferring them to a third-party device via a digital output or relay. It is necessary to physically check the position of the boom and put it back in place for the equipment to return to normal operation.
Passage counter: from	<p>Passages are measured and counted by observing the passage between two inputs (generally loops). When a vehicle passes first through loop A and then through loop B, it is counted as passing from A to B</p>
Passage counter: to	<p>Passages are measured and counted by observing the passage between two inputs (generally loops). When a vehicle passes first through loop A and then through loop B, it is counted as passing from A to B</p>
	<p>If the Passage counter from and Passage counter to values are identical, counting will be non-directional: a passage will be counted each time a vehicle leaves the loop.</p>
Record commands	<p>Used to define whether or not to allow successive authorisations to be recorded:</p> <ul style="list-style-type: none"> - Yes = recording of successive authorisations enabled. You don't have to wait until the end of one passage to start another. - No = recording of successive authorisations is not enabled. It is necessary to wait until the end of one passage before starting another.
Parking capacity	<p>Used to define the number of spaces available in the parking lot. When the threshold is reached, the Parking lot full output is enabled.</p>
Counter 1 threshold	<p>Used to set the threshold value for counter 1. When the threshold is reached, the Counter 1 threshold output is enabled</p>
Counter 2 threshold	<p>Used to set the threshold value for counter 2. When the threshold is reached, the Counter 2 threshold output is activated</p>

17.5. INPUTS

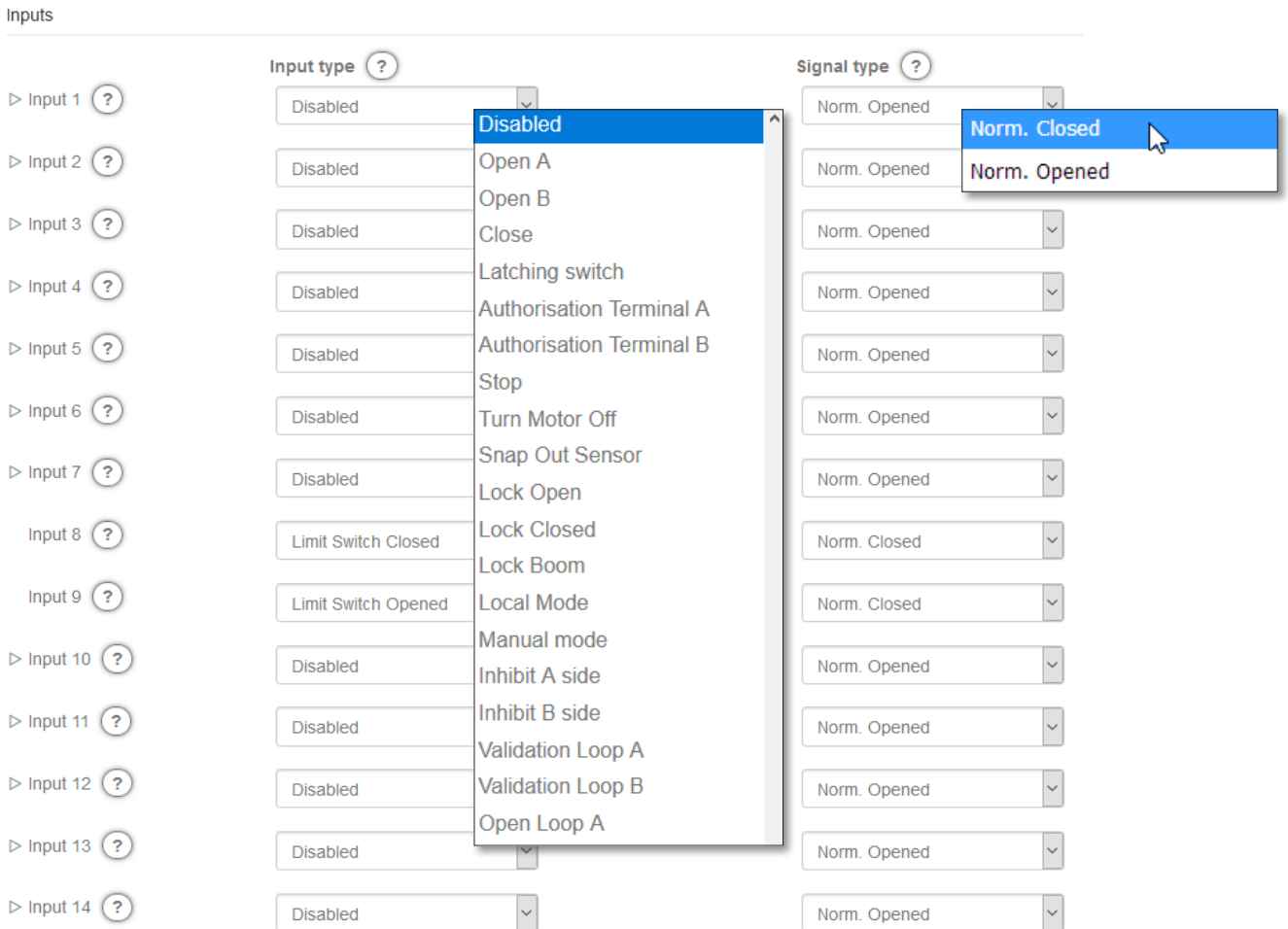


Fig. 46 - Inputs

Each of the inputs available on the AS1620 circuit board can be assigned one of the predefined functions. These are selectable in a drop-down menu.

The inputs are physically connected to the CN5 connector of the AS1620 circuit board.



An optional expansion board can be used to increase the number of inputs.

Each function can be freely assigned to each input. The same function can be used on several inputs (for example, in the case of several security sensors). In this case, the settings of the function (⇒ Chap. 17.1: APPLICATION, page 49) apply to all the inputs having this same function.



A loop signal from another presence detector can be assigned to any x input.

Some functions are only accessible if the barrier is bi-directional (in particular all the functions for direction B).

Depending on the input type, additional settings are available in the accessible box by clicking on the small triangle to the left of each line:

17.5.1. INPUT TYPE

Input type ?

▽ Input 1 ?

Open A

Rising Edge delaying (milliseconds) 500 ?

Falling Edge delaying (milliseconds) 0 ?

▷ Input 2 ?

Security Loop/Cell



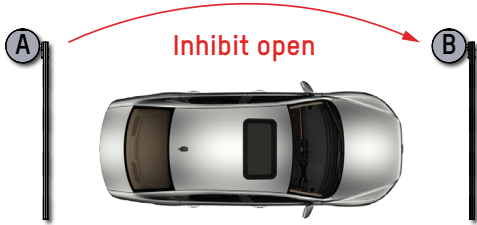

▷ Input 3 ?

Close

Fig. 47 - Input types

As two conflicting commands may be issued at the same time, it is important to know their order of priority: In descending order: STOP / Locked open / Locked closed / Open / Close command. So, for example, a close command is not executed in a STOP or Locked open situation.

INPUT TYPE	DESCRIPTION
Disabled	Input not used.
Open A	Opens the barrier with a two-wire command (the other wire is assigned to the close command). It is always a full opening movement unless the associated setting Opening signal is set to Deadman . Also configure the associated setting Opening signal (⇒ Chap. , page 53). For a bi-directional barrier, open for passage direction A to B.
Open B	For a bidirectional barrier, Open type input for passage direction B to A.
Close	Closes the barrier in the case of a two-wire command (the other wire is assigned to the open command). As a reminder, an open or stop command has priority over an open command. If the Close signal setting is configured to Deadman , a change of status of the input causes a stop. Also configure the associated setting Close signal (⇒ Chap. , page 53).
Latching switch	This Input is used to control the opening and closing of the barrier in the case of a single wire command. It is always a full movement. Each time the input is pressed, the command alternates between opening and closing.
Authorisation terminal A	This input is used to open the barrier in conjunction with a sensor or a validation loop (see Settings below). The barrier will only open if the authorisation terminal and a validation input are enabled at the same time. In the case of several authorisation terminals and/or several validation sensors/loops, all that is required to obtain passage authorisation is for one of the terminals and one of the sensors/loops to be enabled at the same time. If there is no sensor/enable loop, this input is equivalent to an Open on value input!
Authorisation terminal B	For a bi-directional barrier, Authorisation terminal type input for passage direction B to A. Works in conjunction with Sensor/validation loop B inputs. This distinction between authorisation for direction A and direction B also allows consistent management of traffic lights in both directions of passage.
Stop	This input stops the barrier movement immediately (emergency stop).
Turn off motor	Allows the motor to be switched off while the barrier is still operational (red lights on).

INPUT TYPE	DESCRIPTION
Snap-out sensor	Connection of a possible boom snap-out sensor. Also configure the associated setting Snap-out action (⇒ Chap. , page 53).
Lock open	When the input is enabled, the barrier is temporarily set to Lock open mode. When the input is disabled, the barrier returns to its default mode (⇒ Chap. 17.1, page 49).
Lock closed	When the input is enabled, the barrier is temporarily set to Lock closed mode. When the input is disabled, the barrier returns to its default mode (⇒ Chap. 17.1, page 49).
Lock boom	When the input is enabled, the barrier is temporarily set to: <ul style="list-style-type: none"> - Lock open if the barrier is open, opening or stopped. - Lock closed if the barrier is closed or closing. When the input is disabled, the barrier returns to its default mode (⇒ Chap. 17.1, page 49).
Local mode	All external commands are ignored; only the circuit board's push buttons act on the barrier unless they are disabled by the Enable HMI parameter. Commands via the maintenance web interface, Modbus or XML-RPC are also disabled.
 YOU CAN STILL RUN INDIVIDUAL TESTS FROM THE WEB INTERFACE!	
 WHEN THE BARRIER IS IN LOCAL MODE, ALL COMMANDS ARE IGNORED EXCEPT THOSE COMING FROM INPUTS OF A SPECIFIC TYPE: OPEN (LOCAL MODE) AND CLOSE (LOCAL MODE).	
Manual mode	If the input is enabled, all loops are disabled (except their security function). Movement is only possible via manual commands. Deadman mode for Open and/or Close inputs is possible.
Inhibit direction A	Used to ignore open requests on other digital inputs. Also configures the associated setting Action inhibited (⇒ Chap. : , page 53). This function is useful, for example, when two barriers are configured as an airlock or in a bidirectional configuration to prevent entry and/or exit. <div style="text-align: center;">  <p>Fig. 48 - Inhibit opening</p> </div>  The Lock Open and/or Lock Closed commands always have priority over the Inhibit command. This function blocks open commands in direction A but allows the barrier to operate normally in direction B.
Inhibit direction B	Blocks the open commands in direction B but allows the barrier to operate normally in direction A.

INPUT TYPE	DESCRIPTION
Validation loop A	This type of loop is used in conjunction with an authorisation terminal input to open the barrier. The barrier will only open if the authorisation terminal input and the validation loop are enabled at the same time. If there are several enabling terminals and/or several validation sensors/loops, it is sufficient for one of the terminals and one of the sensors/loops to be enabled at the same time. If there is no authorisation terminal, this loop has no function of its own and no security action. In the Free access operating mode, it operates in the same way as an opening loop.
Validation loop B	For a bi-directional barrier, validation loop type input for passage direction B to A. Works in conjunction with Authorisation terminal B inputs.
Opening loop A	The barrier opens when the loop is enabled. When the loop is disabled, the barrier closes if there are no other enabled loops.
Opening loop B	For a bidirectional barrier, Opening loop type input for passage direction B to A.
Closing loop or cell	The barrier closes when the closing loop or the closing sensor is disabled. It also functions as a security loop with a closed action after security.
Security loop or cell	It prevents the barrier from closing when a vehicle is under the boom. It is only enabled when the barrier is closing. Also configures the associated settings Security action and Action after security (⇒ Chap. 17.1: APPLICATION, page 49).
Limit Switch Opened	Used to control a barrier managed by limit switches.
Limit Switch Closed	Used to control a barrier managed by limit switches.
Power Fail Detection	When this input is enabled, the mechanism performs a slight opening movement. NB: In the case of a barrier with mechanical locking without lifting, the effect will be that the barrier will remain visually closed, but it will still be possible to lift it manually. NB: for all barriers except: BL 4x, BL 15, P+ 261/262, BL 227 and BL 245.
Dead Bolt Check	For barriers fitted with a lock (BL 4x), this is the input which indicates via a proximity detector whether the lock is unlocked or not. NB: For the locking function to work correctly, an output must be configured as Lock with the Norm. closed signal type.
Open (local mode)	Input for open command in local mode only .
Close (local mode)	Input for close command in local mode only .
Reset capacity	Resets the vehicle counter in the parking lot to zero.
Passage A	Each pulse on the input increments the passage counter in direction A to B.
Passage B	Each pulse on the input increments the passage counter in direction B to A.
Reset counter 1	Each time the input is pressed, counter 1 is reset to zero.
Increment counter 1	Each time the input is pressed, the value of counter 1 increases.
Decrement counter 1	Each time the input is pressed, the value of counter 1 falls.
Reset counter 2	Each time the input is pressed, counter 2 is reset to zero.
Increment counter 2	Each time the input is pressed, the value of counter 2 increases.
Decrement counter 2	Each time the input is pressed, the value of counter 2 falls.
Open (manual mode)	Input for open command in manual mode only .
Close (manual mode)	Input for close command in manual mode only .
Intermediate opening limit switch	This allows a 'virtual' intermediate opening limit switch to be defined. Used for barriers with movement decomposition (BL TOR) where the variable frequency drive can be controlled by digital inputs (no Modbus communication).

INPUT TYPE	DESCRIPTION
Intermediate closing limit switch	This allows a 'virtual' intermediate closing limit switch to be defined. Used for barriers with movement decomposition (BL TOR) where the variable frequency drive can be controlled by digital inputs (no Modbus communication).
Airlock loop A	Loop input for airlock, A side. ⇒ exit Airlock direction .
Airlock loop B	Loop input for airlock, B side. ⇒ exit Airlock direction .
Input customer 1	An input which has no functional use but which is used in logical combinations.
Input customer 2	An input which has no functional use but which is used in logical combinations.
Input customer 3	An input which has no functional use but which is used in logical combinations.
Virtual remote-control switch	Used to create a virtual remote-control switch (IN38)
Laser detector - Safety field	Used to test the BEA laserscan (⇒ laserscan output - Test)

17.5.2. INPUT SETTINGS

SETTING	DESCRIPTION
Security action	During a closing movement, what action will be triggered if one of the loops or cells is detected (settings with no effect for opening loops): <ul style="list-style-type: none"> - Stop = the barrier stops. - Re-open = the barrier reopens.
Action after security	Used to define the action that is triggered as soon as all the security loops and cells become disabled again: <ul style="list-style-type: none"> - Re-close = the barrier closes. - Hold position = the barrier remains in position.
Action to be inhibited	Action(s) which will not be executed if the inhibit input is enabled: <ul style="list-style-type: none"> - All commands (A and B) = all commands in both directions will be ignored. - Opening loops/commands = the action of loops and open commands will be ignored. - Open commands = open commands will be ignored. - Opening loops = the action of opening loops will be ignored.
Rising edge delaying (milliseconds)	Rising edge timer on input signal.
Falling edge delaying (milliseconds)	Falling edge timer on input signal.
Alias	Used to identify the selected input with the name of your choice.

The status of the inputs can be viewed on the circuit board by means of LEDs 11 to 24. See below for the LED / Input relationship:



Fig. 49 - Input label

17.6. OUTPUTS

Outputs

	Output type ?	Alias ?
▷ Output 1 ?	Double gate Direction	campingcar_app
▷ Output 2 ?	Logical Combination	
▷ Output 3 ?	Custom	
▷ Output 4 ?	Customer Output 1	
▷ Output 5 ?	Not Used	
▷ Output 6 ?	Not Used	
▷ Relay 1 ?	Not Used	
▷ Relay 2 ?	Not Used	
▷ Relay 3 ?	Not Used	

Fig. 50 - Outputs

Each of the six outputs and each of the three relays available on the AS1620 circuit board can be configured by choosing its type from the pull-down menu next to the corresponding item.

The outputs are physically connected to the CN8 connector of the AS1620 circuit board.



An optional expansion board can be used to increase the number of outputs. These are then numbered X1-X2-X3, etc.

FIELD / BUTTON	DESCRIPTION
Alias	The name of the output can be freely selected by the user. This is a simple alias, used especially on web pages displaying the status of the outputs or in the response of some XML-RPC requests.




17.6.1. OUTPUT TYPES

Depending on the output type, additional settings are available in the accessible box by clicking on the small triangle to the left of each line:


The screenshot shows a configuration interface for two outputs. At the top, there is a label 'Output type' with a question mark icon. Below it, 'Output 1' is expanded, showing several settings: 'Signal type' set to 'Norm. Opened', 'Period' set to '300', 'Signal when moving up (A)' set to 'Off', 'Signal when moving down' set to 'Off', and 'Closing : early reporting' set to 'No'. Each setting has a question mark icon to its right. 'Output 2' is collapsed, showing 'Not Used' as the selected type.

Fig. 51 - Output types

TYPE	DESCRIPTION
Not used	The output in question is not used.
Input copy	The signal from the selected input will be permanently copied to the output. Any rising or falling edge timers are not taken into account when copying. The input signal and its copy may differ slightly due to the sampling frequency, which is of the order of 40ms.
Passage contact	Each time a vehicle passes, a pulse of the specified length (in milliseconds) is sent to the output.
Logic combination	Allows an output to be assigned as a logical combination of one or more inputs. The text can contain the INX symbol (where X is 1, 2...), corresponding to one of the inputs, in combination with AND, OR, XOR, NOT or brackets (). Example, IN1 AND (NOT IN2 OR IN3)
End Position	Output enabled when the boom has physically reached the limit switch when opening and/or closing (to be set in the Limit switch open/closed: yes/no settings).
Parking full	The output is enabled when the parking lot has reached its maximum capacity.
Open command	Open command sent by the barrier to a slave device. The time at which the signal is sent to the slave is defined by the Include delays option.
Close command	Close command sent by the barrier to a slave device. The time at which the signal is sent to the slave is defined by the Include delays option.
Stop command	Stop command sent by the barrier to a slave device.
Engine brake	Command to enable the optional brake when the barrier is open and/or closed and/or stopped.
Electromagnetic tip support	Optional tip support enabling command.
Bead Bolt	Command to enable the optional boom lock.
Green lights	Command to enable traffic lights or green function pictograms(*) in any direction.
Green lights A/B	Command to enable green traffic lights or function pictograms(*) in direction A or B.
Red lights	Command to enable red traffic lights or function pictograms(*) in any direction.

TYPE	DESCRIPTION
Red lights A/B	Command to enable red traffic lights or function pictograms(*) in direction A or B.
	In the case of inductive loops, also select when the lights should be enabled: when the vehicle is on the loop (YES) or when it leaves it (NO). (⇒ Early closing signal)
	The two electrical cables in the function pictogram are connected to two outputs which must be assigned to the Green lights and Red lights functions respectively. For each of the two outputs, configure the custom settings below so that the pictogram displays the desired colour according to the status of the barrier. The orange colour of the pictogram is obtained by simultaneously enabling the two outputs Green and Red Lights (⇒ configure the Custom settings in the same way for the two outputs).
Boom lights	Enabling of the lights attached to the boom. Also defines the operating mode of the lights (off, continuous, blinking) when the boom is moving, open and closed.
Active security	Output enabled when a closing security loop or cell is enabled.
Block Mantrap	The output is enabled when the barrier is not closed or when a presence is detected on one of its opening or validation loops.
Fraud detection	The output is enabled when someone tries to raise the barrier when it is in the closed position.
Threshold counter 1	The output is enabled if the corresponding counter 1 has reached its threshold.
Threshold counter 2	The output is enabled if the corresponding counter 2 has reached its threshold.
Customised	Allows you to completely customise the output by adjusting a multitude of settings.  THIS OPTION SHOULD ONLY BE USED BY A QUALIFIED TECHNICIAN. INCORRECT SETTINGS CAN RENDER THE EQUIPMENT INOPERATIVE.
Customer output 1 > 6	Allows a customer-specific output to be enabled via the Modbus protocol.
Closing Var. Freq. Drive	Use in combination with the intermediate closing limit switch input.
Opening Var. Frequency Drive	Used in conjunction with the intermediate opening limit switch input.
Low Speed Var. Freq. Drive	Allows the VFD commanded by digital inputs to switch to low speed. Used for barriers with movement decomposition (BL TOR) where the variable frequency drive can be controlled by digital inputs (no Modbus communication).
Maintenance Var. Freq. Drive	Allows the VFD commanded by digital inputs to hold its position.
Mantrap direction	In combination with the Airlock loop A and Airlock loop B inputs, defines the enabling of the output according to the direction of passage on the loops: A ⇒ B, B ⇒ A or in both directions.
Laserscan - Test	In combination with the Laser detector - Safety field input, allows you to test the BEA Laserscan.

17.6.2. OUTPUT SETTINGS

TYPE	DESCRIPTION
Signal type	Output signal type: Norm. Open (Normally Open) or Norm. Closed (Normally closed).
Period	Length of pulse to be sent or blinking period (in ms)
Signal: closed	Signal on the output when the barrier is closed.
Signal: open	Signal on the output when the barrier is open.
Signal: open (A/B)	Signal on output when barrier is open on A/B side.
Signal: locked open	Signal on the output when the barrier is in Locked Open mode.
Signal: stopped	Signal on the output when the barrier is stopped.
Signal: opening movement (A)	Signal on the output when the barrier is opening on side A.
Signal: opening movement (B)	Signal on the output when the barrier is opening on side B.
Signal: closing movement	Signal emitted at the output when the barrier is closing. If the Time before closing (⇒ Chap. 16.2: MOTORISATION, page 47) is non-zero, the signal is sent before the barrier actually starts to move.
Signal: undergoing maintenance	Signal on the output when the barrier is undergoing maintenance.  In Individual tests , in the Outputs screen, this parameter is ignored when displaying/changing the status of outputs.
Signal: fail	Signal on the output when the barrier has failed.
Early closing signal	Signals a closure as soon as a closing loop is enabled (i.e. before the barrier starts to close). The output will therefore change as soon as a vehicle starts to pass under the barrier, instead of waiting until the vehicle has completely passed. Only the status of the output is changed, the barrier will always wait until the vehicle has left the closing loop before closing again. Possible choices: - No : normal transition = after closing loop. - Yes : early transition = on closing loop.
Input to be copied	Input to be copied to output (E1 ⇒ E14)
Passage contact	Sends a pulse when passing Possible choices: - None : no pulse is sent. - A ⇒ B : a pulse is sent in the direction of passage A to B. - B ⇒ A : a pulse is sent in the direction of passage B to A. - In both directions : a pulse is sent regardless of the direction of passage.
Rising edge delaying	Rising edge timer on input signal
Falling edge delaying	Falling edge timer on input signal

For each **Signal** type setting, four enabling options are available:

- **Off**: output disabled.
- **Steady**: output enabled.
- **Blinking**: change from enabled to disabled status (alternating 0 and 1) according to the period defined in the Period setting above.
- **Pulse**: output enabled (for the time defined in the Period setting above) when the barrier reaches the status in question.

17.7. MOVEMENT

Used to manage all aspects of the barrier movements.

Movement





















Opening	Opening time (%)	<input type="text" value="100"/>	
	Opening acceleration ramp (%)	<input type="text" value="100"/>	
	Opening - Duration before braking (%)	<input type="text" value="100"/>	
	Frequency at end of opening (%)	<input type="text" value="100"/>	
	Opening - Unlocking frequency (%)	<input type="text" value="100"/>	
	Keep Opened (%)	<input type="text" value="100"/>	
	Opening - Boost - Frequency (%)	<input type="text" value="0"/>	
	Opening - Boost - Duration (%)	<input type="text" value="0"/>	
Closing	Closing time (%)	<input type="text" value="100"/>	
	Closing acceleration ramp (%)	<input type="text" value="100"/>	
	Closing - Duration before braking (%)	<input type="text" value="100"/>	
	Closing - Frequency at end of closing (%)	<input type="text" value="100"/>	
	Closing - Unlocking frequency (%)	<input type="text" value="100"/>	
	Keep Closed (%)	<input type="text" value="100"/>	
	Closing - Boost - Frequency (%)	<input type="text" value="0"/>	
	Closing - Boost - Duration (%)	<input type="text" value="0"/>	
Calibration	Calibration - Search stop (%)	<input type="text" value="100"/>	
	Calibration - Stopping compression (%)	<input type="text" value="100"/>	
Safety Margin	Opening (%)	<input type="text" value="5"/>	
	Closing (%)	<input type="text" value="5"/>	

Fig. 52 - Movement

SETTING		VALUE(S)	DESCRIPTION
Opening	Opening time (%)	from 20 to 100	Adjustment of the opening time as a percentage of the maximum value recorded for the product installed. 100% corresponds to the fastest opening speed.
	Acceleration ramp (%) ⁽¹⁾	from 100 to 500	Adjustment of the opening acceleration ramp. (The higher the value, the longer the ramp)
	Duration before braking (%)	from 0 to 100	Adjustment of the duration before braking.
	Frequency at end of movement (%) ⁽¹⁾	from 0 to 100	Adjustment of the frequency used at the end of the opening movement. (Certain types of barrier switch to low frequency after passing over the limit switch)
	Unlocking frequency (%) ⁽¹⁾	from 0 to 100	Adjustment of the frequency used to release the lock.
	Keep opened (%) ⁽¹⁾	from 0 to 100	Used to adjust the frequency used to hold the barrier in its final position.
	Boost - Frequency (%)	from 0 to 100	Adjustment of the boost frequency.
	Boost - Duration (%)	from 0 to 100	Adjustment of the boost duration.
Closing	Closing time (%)	from 20 to 100	Adjustment of the closing time as a percentage of the maximum value recorded for the product installed. 100% corresponds to the fastest opening speed.
	Acceleration ramp (%) ⁽¹⁾	from 100 to 500	Adjustment of the closing acceleration ramp. (The higher the value, the longer the ramp)
	Duration before braking (%)	from 0 to 100	Adjustment of the duration before braking.
	Frequency at end of movement (%) ⁽¹⁾	from 0 to 100	Adjustment of the frequency used at the end of the closing movement. (Certain types of barrier switch to low frequency after passing over the limit switch)
	Unlocking frequency (%)	from 0 to 100	Adjustment of the frequency used to release the lock.
	Keep Closed (%) ⁽¹⁾	from 0 to 100	Used to adjust the frequency used to hold the barrier in its final position.
	Boost - Frequency (%) ⁽²⁾	from 0 to 100	Adjustment of the boost frequency.
	Boost - Duration (%) ⁽²⁾	from 0 to 100	Adjustment of the boost duration.
Calibration	Search stop (%)	from 0 to 100	Adjustment of the frequency used to reach the end position.
	Stopping compression (%)	from 0 to 100	Adjustment of the frequency used to push on the end position.
Safety margin	Opening (%)	from 3 to 15	Used to adjust the safety margin on the opening time.
	Closing (%)	from 3 to 15	Used to adjust the safety margin on the closing time.



⁽¹⁾ The value is the percentage of the pre-defined value for the type of barrier or from the calibration for the BL15.



⁽²⁾ If you wish to use the 'Boost' function, you need to increase the value of the 'Duration before braking (milliseconds)' (⇒ Chap. 17.3: TIMERS, page 52).

17.8. VIRTUAL INPUTS

Virtual inputs

Time switches	Time switch 1 [IN23] - Week	M	T	W	T	F	S	S	?	
	Switching time 1 Turn-on	00 : 00							⊗	?
	Switching time 1 Turn-off	00 : 00							⊗	?
	Switching time 2 Turn-on	00 : 00							⊗	?
	Switching time 2 Turn-off	00 : 00							⊗	?
	Switching time 3 Turn-on	00 : 00							⊗	?
	Switching time 3 Turn-off	00 : 00							⊗	?
	Time switch 3 [IN25] - Week	M	T	W	T	F	S	S	?	
	Switching time 1 Turn-on	00 : 00							⊗	?
	Switching time 1 Turn-off	00 : 00							⊗	?
	Switching time 2 Turn-on	00 : 00							⊗	?
	Switching time 2 Turn-off	00 : 00							⊗	?
Switching time 3 Turn-on	00 : 00							⊗	?	
Switching time 3 Turn-off	00 : 00							⊗	?	
Angle areas	Intermediate open angle [IN29]	10							⬇	?
	Intermediate closed angle [IN30]	10							⬇	?
Blinkers	Blinker 1 [IN36] Duration On (msec)	1000							⬇	?
	Blinker 1 [IN36] Duration Off (msec)	1000							⬇	?
	Blinker 2 [IN37] Duration On (msec)	1000							⬇	?
	Blinker 2 [IN37] Duration Off (msec)	1000							⬇	?
Output copy	Virtual output 1 [IN39]	Output 1							⬇	?
	Virtual output 2 [IN40]	Output 1							⬇	?
	Virtual output 3 [IN41]	Output 1							⬇	?
	Virtual output 4 [IN42]	Output 1							⬇	?

Fig. 53 - Virtual inputs

SETTING	DESCRIPTION
Time switch x [IN23 ⇔ IN25] - Week	Day of the week that enables the time switch. One or more days can be selected.
Switching time 1, 2 or 3 Turn on	Time switching turned on. The time switch is enabled from this time

SETTING	DESCRIPTION
Switching time 1, 2 or 3 Turn off	Time switching turned off. The time switch is enabled until this time. It is disabled at this minute.
Intermediate Open angle [IN29].	Enabling of virtual input IN29: 'Open Area'. Intermediate angle covering the sector from the 'Open' position.
Intermediate Closed angle [IN30]	Enabling of virtual input IN30: 'Closed Area'. Intermediate angle covering the sector from the 'Closed' position
Blinker 1 [IN36] Duration on (mS)	Enabling of virtual input IN33: 'Blinker 1'. Duration on
Blinker 1 [IN36] Duration off (mS)	Enabling of virtual input IN33: 'Blinker 1'. Duration off
Blinker 1 [IN37] Duration on (mS)	Enabling of virtual input IN34: 'Blinker 2'. Duration on
Blinker 1 [IN37] Duration off (mS)	Enabling of virtual input IN34: 'Blinker 2'. Duration off
Virtual output 1 [IN39]	Copies the actual status of an output.
Virtual output 2 [IN40]	Copies the actual status of an output.
Virtual output 3 [IN41]	Copies the actual status of an output.
Virtual output 4 [IN42]	Copies the actual status of an output.

18. PAGE - NETWORK

This page allows the user to configure the device so that it can be recognised by the network to which it is connected.

Network



Fig. 54 - Network page

The **Ethernet** section lets you configure the settings for connecting to a wired/WiFi network.

Ethernet

MAC address	<input type="text" value="80:1f:12:3b:4e:0b"/>
IP address	<input type="text" value="172.18.3.2"/>
Ethernet cable	<input type="text" value="Yes"/>
DHCP	<input type="text" value="No"/>
IP address	<input type="text" value="172.18.3.2"/>
Netmask	<input type="text" value="255.255.255.0"/>
Gateway	<input type="text" value="172.18.0.66"/>

Fig. 55 - Network - Ethernet

SETTING	DESCRIPTION
MAC address	The MAC address, or physical address, is the physical identifier stored in the AS1620 circuit board. It is unique and cannot be modified.
IP Address	Adjustment of the frequency used to push on the end position.
Ethernet cable	Indicates whether a wired Ethernet connection is operational.
DHCP	If enabled, automatically configures the IP settings of the AS1620 circuit board. In this case, the IP address and subnet mask settings are assigned automatically.
IP Address	This is the address assigned to the AS1620 circuit board connected to a computer network, enabling it to be identified on the network. By default, the IP address of the AS1620 is 192.168.0.200.
Netmask	The subnet mask distinguishes between the part of the address that is common to all devices on the subnet and the part that varies from one device to another. A subnet typically corresponds to an underlying local network.
Gateway	A gateway is a point on the network that acts as an entrance to another network using a different protocol.



You can temporarily restore the default IP address by pressing the **SW4 + SW5 + SW6** buttons simultaneously. The integrated HMI screen then displays the text '**Board IP address is temporary 192.168.0.200**'.

Once the circuit board has been restarted, the IP address reverts to the one set when the barrier was configured.

The **Communication** section is used to determine the **Modbus** communication settings.

Communication

Modbus Port	502	?
Modbus Slave ID	1	?
MODBUS Watchdog Start	0	?
MODBUS Watchdog Timeout (S)	5	?
XML-RPC Port	8081	?
XML-RPC Watchdog Start	0	?
XML-RPC Watchdog Timeout	5	?
Network Watchdog	30	?

Fig. 56 - Network - Communication

SETTING	VALUE(S)	DESCRIPTION
Modbus port	1 ⇒ 65535	Modbus communication port setting
Modbus slave	1 ⇒ 247	SERVER_ID setting
MODBUS watchdog start	0 ⇒ 255	Determines the number of frames before the watchdog starts.
MODBUS Watchdog timeout (S)	1 ⇒ 255	If the watchdog does not receive any information before the timer expires, the circuit board is reset.
XML-RPC port	1 ⇒ 65535	XML-RPC communication port setting.
XML-RPC watchdog start	0 ⁽¹⁾ ⇒ 255	The XML-RPC watchdog start setting specifies how many times the GetStatus() command should be sent to start the XML-RPC watchdog.
XML-RPC watchdog timeout	1 ⇒ 255	If GetStatus() has not been returned within this time, the AS1620 program will restart itself.
Network watchdog	30 ^{(2) (3)}	This setting defines the quality of network communication. The higher the value, the poorer the quality of network communication. If the value is exceeded, the circuit board restarts.

⁽¹⁾ If the value of the XML-RPC watchdog start setting is 0, the watchdog will never start.

(2) DO NOT CHANGE THIS SETTING!

(3) IF THE VALUE IS SET TO 0, THE CIRCUIT BOARD MAY GO OFF-NETWORK AND STOP COMMUNICATING WITHOUT REBOOTING.

The **Modbus** section is used to assign an input or output to a word in the Modbus table.

Modbus

Word (hex) ?	Content ?
0000	Inputs
0001	Angular sensor
0002	Outputs
0003	Input 1 type

Fig. 57 - Network - Modbus

18.1. MODBUS PROTOCOL FOR CUSTOMER OUTPUT

18.1.1. OUTPUT STATUSES

The statuses of customer outputs are as follows:

OFF	=	0
ON	=	1
PULSE (2 sec.)	=	2
BLINKING (500 ms ON / 500 ms OFF)	=	3

For each customer output, two bits are all that is needed to define the four possible statuses:

BIT_1	BIT_0	STATUS
0	0	OFF
0	1	ON
1	0	PULSE
1	1	BLINKING

18.1.2. WORD CONSTRUCTION

This creates a 12-bit word. The value of the word is sent to the register set to a new word which does not yet exist.

CUSTOMER 6		CUSTOMER 5		CUSTOMER 4		CUSTOMER 3		CUSTOMER 2		CUSTOMER 1	
Bit_1	Bit_0	Bit_1	Bit_0	Bit_1	Bit_0	Bit_1	Bit_0	Bit_1	Bit_0	Bit_1	Bit_0



Refer to the AS1620 Modbus Technical Manual for more information on the Modbus section.

19. PAGE - INSTALLATION

The installation page lets you choose which type of device you wish to install.

Installation

⚠ Caution: A change in these parameters may affect the compliance of the barrier.

Device Type	BL 229 Std	?
Position sensor type	Angular Position Sensor	?
Boom Length	2m	?
Railings	No	?
Brake connected to Motor Drive	No	?
Closing speed	Standard	?

Fig. 58 - Page - Installation




Different installation settings are available, depending on the type of device selected:

Device Type	BL 229 Std	?
Position sensor type	Angular Position Sensor	?
Boom Length	2m	?
Railings	No	?
Brake connected to Motor Drive		?
Closing speed		?

Device Type	BL 40	?
Position sensor type	Angular Position Sensor	?
Boom Length	5m	?
Railings	No	?
Brake connected to Motor Drive	N	?
Automatic opening	N	?
Closing speed	S	?

Device Type	BL TOR	?
Slow opening start time [mS]	2000	?
Slow opening end time [mS]	2000	?
Hold open	Yes	?
Slow closing start time [mS]	2000	?
Slow closing end time [mS]	2000	?
Hold barrier closed	Yes	?

Fig. 59 - Installation - Device type

SETTING	DESCRIPTION
 IMPORTANT! ANY CHANGE MADE TO THESE SETTINGS MAY AFFECT THE BARRIER'S COMPLIANCE.	
 <p>As you move through the various setting lines, the setting name is displayed in red.</p> <p>When the value of a setting is modified:</p> <ul style="list-style-type: none"> • the setting name is <u>underlined</u>. • the parameter value is displayed in bold. 	
Device type	Choosing the type of barrier to install.
Position sensor type	Choice of the type of position sensor fitted to the barrier. Two choices are available: <ul style="list-style-type: none"> - Angular position sensor - Limit switches.
Type of motor	Choice of motor type installed in the barrier: 250 or 550 W (For BL5x only).
Boom length	Choice of boom length, from two to 12 metres depending on the type of device selected.  IMPORTANT! SELECT THE LONGER LENGTH IF THE ACTUAL LENGTH IS NOT AVAILABLE.
Railings	Defines whether or not the barrier is fitted with rigid railings or a folding spike strip . (Yes / No)
Brake connected to motor drive	Defines whether a brake is connected to the motor drive relay. Yes / No
Closing speed	Choice of barrier closing speed based on three criteria: <ul style="list-style-type: none"> - Standard = Standard speed - Impact force in accordance with standard EN 12453 - Intermediate = Intermediate speed - Impact force compliant with standard EN 12453 thanks to the addition of foam protection under the boom. - Maximum = Maximum speed - The installer must ensure that the installation complies with the standard, for example, with deadman operation.
Automatic raising	Used to define whether or not the barrier is equipped with the automatic raising option (Yes / No).
Folding boom	Used to define whether or not the barrier is fitted with a folding boom
Magnetic suction pad	Used to define whether or not the barrier is equipped with an electromagnetic tip support.
Fibreglass	Used to define whether or not the barrier is fitted with a fibreglass boom (BL 245).
Slow opening start time [mS] (0 to 10000 mS)	Specifies the duration, in milliseconds, of the slow opening start phase. (BL TOR)
Slow opening end time [mS] (0 to 10000 mS)	Specifies the duration, in milliseconds, of the slow opening end phase. (BL TOR)
Hold open	Used to define whether ... (Yes / No). (BL TOR)
Slow closing start time [mS] (0 to 10000 mS)	Specifies the duration, in milliseconds, of the slow-closing start phase. (BL TOR)
Slow closing end time [mS] (0 to 10000 mS)	Specifies the duration, in milliseconds, of the slow closing end phase. (BL TOR)
Hold barrier closed	Used to define whether ... (Yes / No). (BL TOR)

20. PAGE - SYSTEM

Save logs and counters

Clear logs

Download Settings Listing

Fig. 60- System - Log buttons

Last Events

Date and Time	Type of event	Cause
03/10/2023 13:13:51	New date and time	Web
03/10/2023 13:14:12	Old date and time	Web
03/10/2023 12:53:19	Boot	--
28/09/2023 16:45:47	Power Failure	--
28/09/2023 16:28:05	Boot	--
26/09/2023 13:53:58	Power Failure	--
26/09/2023 13:49:13	Configuration	Change of configuration
26/09/2023 13:47:13	Configuration	Change of configuration
26/09/2023 13:47:02	Configuration	Change of configuration

Fig. 61 - System - Events

Last Errors and Warnings

Date and Time	Error/Warning	Resolved
03/10/2023 12:53:19	There is problem with the position sensor(s) (details)	--
28/09/2023 16:28:05	There is problem with the position sensor(s) (details)	--
26/09/2023 13:38:30	There is problem with the position sensor(s) (details)	--
13/09/2022 08:27:32	There is problem with the position sensor(s) (details)	13/09/2022 08:27:32
30/08/2022 09:07:25	DEVICE_WARNING_IOS	30/08/2022 09:13:19
30/08/2022 09:07:25	No digital inputs has been configured (details)	30/08/2022 09:13:19
30/08/2022 09:07:25	The device is not calibrated or only partially (details); or the limit switches are not defined (details)	30/08/2022 09:14:29

[All logs](#)

Fig. 62 - System - Errors and warnings

The **System** page displays the chronology of the most recent events in tabular form, with the most recent at the top of the list, as well as the latest errors and warnings.

This page can help resolve a problem that has occurred and help to put the equipment back in working order.

More complete logs are saved in a file on an SD card, if the AS1620 circuit board is equipped with the AS1622 Ethernet circuit board. This file can be downloaded from the **System** page: the **All logs** link appears at the bottom of the page.

FIELD / BUTTON	DESCRIPTION
Save logs and counters	Logs and counters saved on the SD card, where present.
Empty logs	Clears logs.
Download the configuration list	Saves the barrier configuration list on the PC.

21. PAGE - SOFTWARE

This page informs you of the version of the software on the equipment.

It is also here that you can back up or restore the settings, as well as update the software (see below).

Software

Product Code	VOPAC-V03R01_25076
Version	V03R01
Compilation Date	2022-06-30 06:57:25
SVN Version	25076
SVN Date	2022-06-30 04:54:50
Bootloader	V5
Board Name	AS1620 R05
Serial Number	010992
Production Date	020720

Fig. 63 - Page - Software



The buttons below are only visible if you are logged on.

For the **Configuration** part:

Configuration


Download Settings

Choose a file

Upload a setting file

Restore factory settings

Fig. 64 - Software - Configuration

FIELD / BUTTON	DESCRIPTION
Download Settings	Copy of the configuration settings in a file so that they can be reinstalled identically on other equipment, that is to say, equipment with the same electrical connections, the same boom length and the same type of spring. In this case, all the settings of the original equipment are copied, except for the settings specific to this equipment, in particular, the position of the end stops and the name of the equipment, ⇒ depending on the type of barrier, it will therefore be necessary to calibrate the equipment end stops (Individual tests > Calibration > End stop position and Speed ramp page)!
 ONCE YOU HAVE CONFIGURED YOUR HARDWARE, WE ADVISE YOU TO SAVE YOUR CONFIGURATION SO THAT YOU CAN REINSTALL IT IF NECESSARY.	
Choose a file	Allows you to browse your computer in order to choose a configuration file to load.
Upload a setting file	Installation of an archive file from the PC to the CPU of the AS1620 circuit board.
Overwrite the current factory setting	If this option is enabled, the file configuration will overwrite the current factory configuration.
Restore the factory setting	Restore the factory parameters.

For the **Software** part:

Software

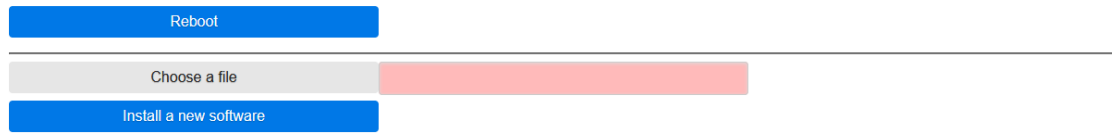


Fig. 65 - Software - Software

FIELD / BUTTON	DESCRIPTION
Reboot	Restart the program.
Choose a file	Opens a window to browse the computer in order to select a program archive.
Install a new software	Allows the installation of a new version of the software.

22. OPTIONAL EQUIPMENT

22.1. INPUT/OUTPUT EXPANSION BOARD - AS1623

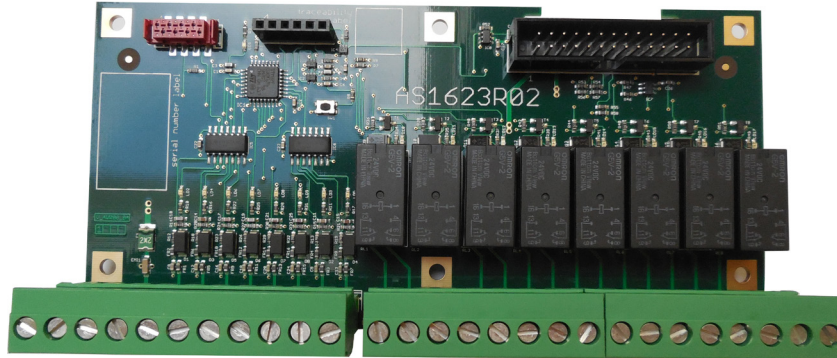


Fig. 66 - Option - AS1623 circuit board (I/O)

This circuit board can be used to increase the number of Inputs and Outputs:

- Eight (8) inputs
- Eight (8) outputs with NO relay

22.2. ETHERNET CONNECTION CIRCUIT BOARD - AS1622



Fig. 67 - Option - AS1622 circuit board (Ethernet / SD card)

If you want to connect your equipment to a network in order to be able to remotely make an intervention, change settings or know its status, this ETHERNET circuit board can be attached to the main control circuit board (AS1620).

22.3. CIRCUIT BOARD FOR HMI VIA COLOUR TFT DISPLAY - AS1621



Fig. 68 - Option - AS1621 circuit board (HMI)

If you do not have an Ethernet network to connect to the equipment, this expansion board with colour TFT display gives you simplified menus for setting up the barrier in a much more visual way.

24. WIRING DIAGRAMS

As the wiring is specific to the configuration of each piece of equipment, please refer to the wiring diagrams inside the machine or, failing that, to the diagrams in the electrical technical file (ETF) for the equipment in question.



BELGIAN & INTERNATIONAL OFFICES

Belgium

Tel: +32 (0) 10 23 02 11
helpdesk.as@automatic-systems.com

France

Tel: +33 1 30 28 95 53
helpdesk.fr@automatic-systems.com

Germany

Tel: +49 2303 553 4040
helpdesk.de@automatic-systems.com

United Kingdom

Tel: +44 (0) 1604 654 210
helpdesk.uk@automatic-systems.com

Spain

Tel: +34 93 478 77 55
helpdesk.es@automatic-systems.com

United States & Canada

Tel: +1 450 659 0737
helpdesk.nam@automatic-systems.com

Other countries

Tel: +32 (0) 10 23 02 11
helpdesk.as@automatic-systems.com

AS1620-MT-EN-04



Headquarters

Avenue Mercator, 5
1300 Wavre - Belgium

www.automatic-systems.com

