AS 1620
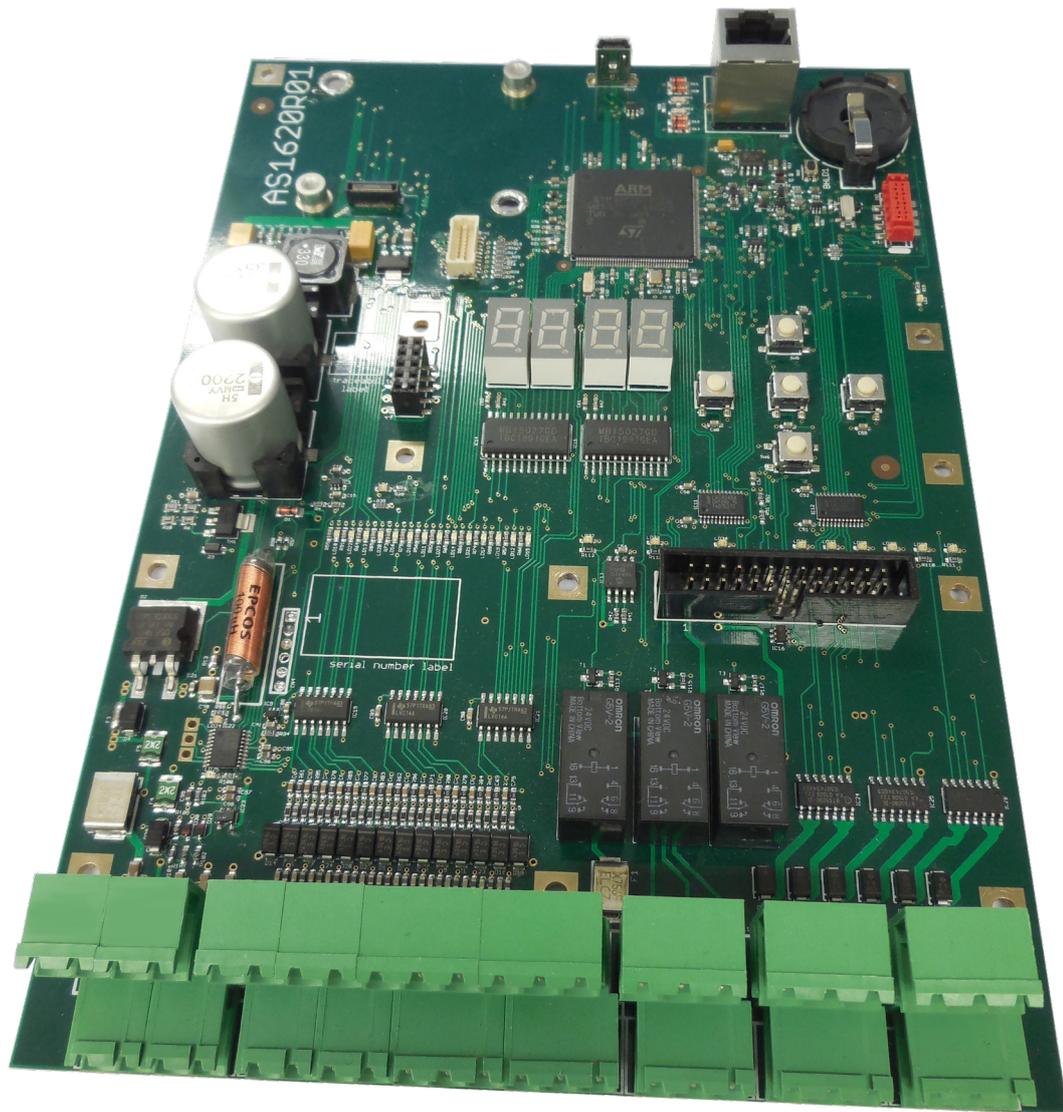
ELECTRONIC LOGIC BOARD

Technical manual

(Translated from the original french version)

Rev. 03

Appendix to the barrier manual

DOCUMENT REVISION

Rev	Date	Author	Checked by	Reason for revision
00	12-2016	SLu	DVS - SSA - ABA - AP	Draft.
01	2018-05-23	SLu and JB	YTH - FG - AP - ABA - NDL	General update and chapter 05 concerning AS1621 display
02	2019-08-01	SLu	HBE	Update of *Safety Warning, page 5*. Electrical drawings removed according PCC2-268. Chapter 5, page 21 : Press OK for 3 to 10 sec.
03	2020-02-12	MCo	SDa	Error in the Fig. of Chap. 3.3.5 (Terminal block) - Terminals 38 to 40: RELAY 1 instead of RELAY 2 - Terminals 41 to 43: RELAY 2 instead of RELAY 3 - Terminals 15 to 17: RELAY 3 instead of RELAY 1

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TABLE OF CONTENTS

1. SAFETY WARNING

It is responsibility of the user to inform the operators of this equipment of the precautions for use and to make them follow them.

Any maintenance on the control logic must be carried out by personnel qualified in electronics. Any maintenance that is not authorized or carried out on this product by an unqualified technician will automatically and completely void the manufacturer's guarantee.

> **⚠** **ALL ELECTRONIC HANDLING MUST BE CARRIED OUT OFF VOLTAGE AND IN COMPLIANCE WITH THE ELECTROSTATIC PRECAUTIONS DESCRIBED IN PARAGRAPH 1.1.**

Personnel must be informed of the electrical risks that are incurred in the event of negligent handling.

Any internal component likely to be energized must be handled with caution.

The equipment is configured in **_minimal risk_** mode for users. Parameters should only be changed by qualified personnel with full knowledge of the consequences, and any such changes shall in no way entail any liability on the part of Automatic Systems.

1.1. HANDLING OF DEVICES SENSITIVE TO STATIC ELECTRICITY

Pay special attention when handling devices sensitive to static electricity.

> **⚠** **Static electricity can damage electronic components and the system. To avoid possible damage, keep static-sensitive devices in their anti-static packaging until they are to be installed.**

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

- Limit your movements. Movements contribute to generating static electricity around you.
- Use a device that eliminates static electricity such as an anti-static mat or wrist strap.
- Handle the device with care, holding it by the edges or frame.
- Do not touch solder joints, pins or exposed printed circuit boards.
- Do not leave the device within reach of other persons likely to handle it and possibly damage it.
- With the device still in its anti-static package, place it in contact with an unpainted metal area for at least two seconds. *(This action eliminates static electricity from the packaging and from your body.)*
- Remove the device from its packaging and install it directly without setting it down in the meantime. If you must set it down, place it on its anti-static packaging. *(If it is a circuit board, set it down with the component side facing up.)* Do not place the device on a metal table.
- Be even more careful in cold weather, since heating reduces relative humidity and increases build up of static charge.

> **ⓘ** *If you do not have an anti-static bracelet, remain in contact with an unpainted part of the equipment while handling the electronic device.*

2. 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.

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 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 to perform the 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).*

3. DESCRIPTION

3.1. TERMINOLOGY

AS	*Automatic Systems.*
BL	Raising Barrier
BLQF	Blocked closed
BLQO	Blocked open
CMD	*Command*
CP	Presence sensor *(generic term for detection loops and safety cells)*
DI	Digital Input
DO	Digital Output
ETS	Electromechanical tip support
I/O	Input / Output
LS	Limit Switch
CLS	Closing limit switch
TLS	Top limit switch
BLS	Bottom limit switch
OLS	Opening limit switch
CL	Closing
O/S	Out of Service
HMI	Human Machine Interface
ACR	Direction A card reader
BCR	Direction B card reader
NC	Normally closed*(contact)*
NO	Normally open*(contact)*
OLED	Organic LED : 8 lines alphanumeric display with 5 keys keyboard available in option (AS1621)
Obstacle	Component constituting the obstacle to passage *(the boom for a barrier)*
OP	Opening
VF	Variable Frequency Controller
MVT	Movement
AON	All or nothing
Direction A	Direction A corresponds to passing from insecured zone to the secured one. It is also the conventionnal direction for defining the right and left units.
Direction B	Direction of the passage contrary to Direction A. Direction B corresponds to passing from the secured zone to the insecured one.

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3.2. TECHNICAL SPECIFICATIONS

Power supply	24 VDC ± 10%
Consumption*	< 5 W
CPU	ARM CORTEX M3
Inputs	14 digital inputs 0-24VDC
Outputs	6 digital outputs, MAX 2A maximum per output - 6A maximum in total.
Relays	3 relays with NO and NC contacts - Nominal voltage 125VDC and 125VAC maximum.
Connector(s)	1x micro-USB connector of 12Mbps at full speed.
	1x RS485 connector for communication with the variable frequency controller.
HMI	Embedded simplified version with digital display consisting of 4 7-segment LEDs and 5 pushbuttons. Alphanumeric display available with AS1621 (option).
Analog input(s)	0, +10 V, 12-bit resolution.

* Without extension circuit board and with all digital outputs and relays OFF.

3.3. LOCATION OF COMPONENTS
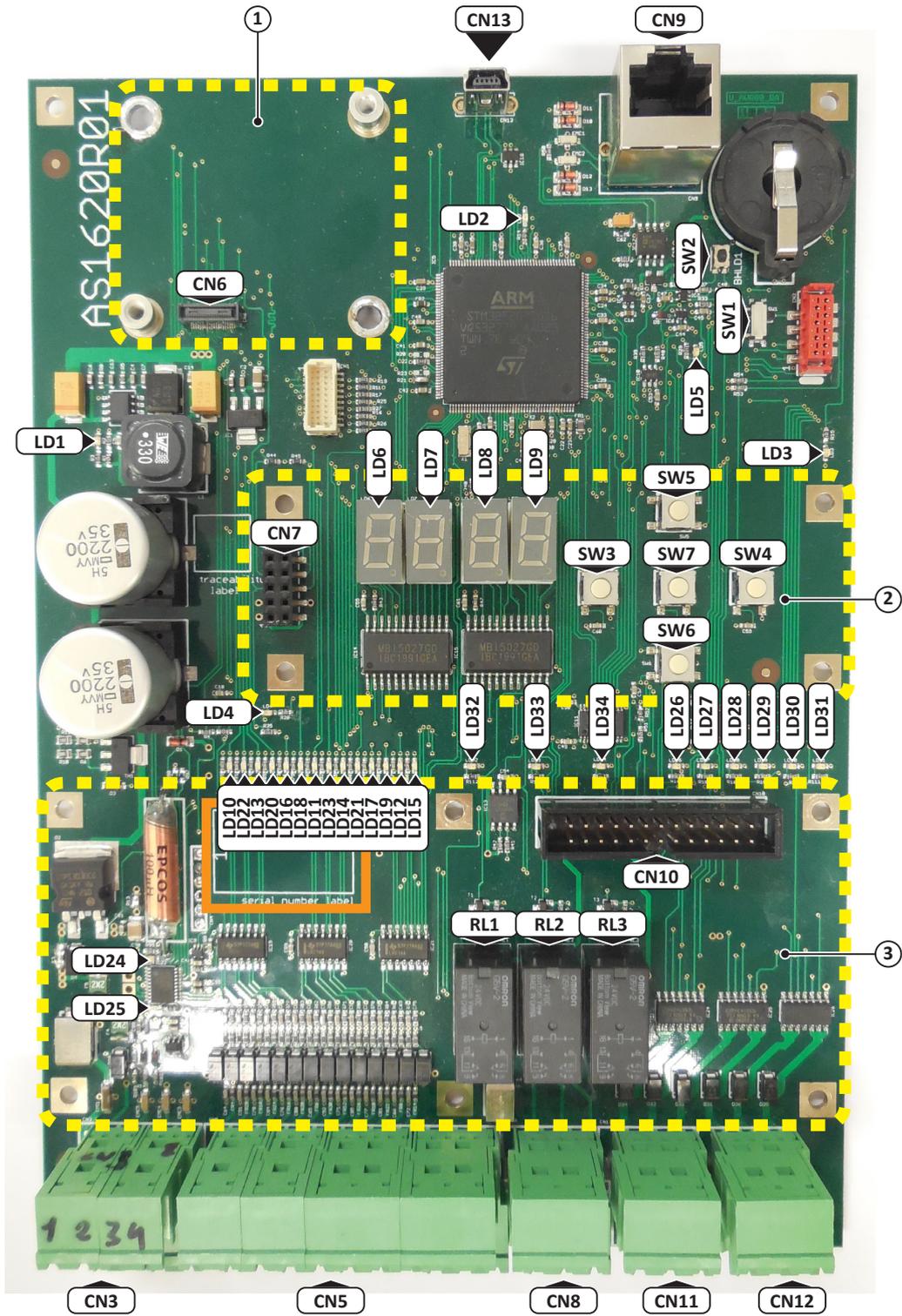
REF.	DESCRIPTION
1	Slot for Ethernet circuit board AS1622 (option).
2	Slot for HMI OLED AS1621 (option).
3	Slot for additional I/O circuit board AS1623 (option).

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3.3.1. Diagnostic LEDs

REF.	DESCRIPTION	COLOUR	
LD1	Voltage present	GREEN	Steady
LD2	MAJOR error	RED	Steady
LD3	MINOR error	YELLOW	Steady
LD4	Presence under boom *(Loop or safety cell active)*.	YELLOW	Steady
LD5	ARM M3 processor watchdog	GREEN	Blinking
LD6	Left HMI 7-segment display	WHITE	
LD7	Middle left HMI 7-segment display	WHITE	
LD8	Middle right HMI 7-segment display	WHITE	
LD9	Right HMI 7-segment display	WHITE	
LD10	Digital input 1	GREEN	Steady
LD11	Digital input 4	GREEN	Steady
LD12	Digital input 7	GREEN	Steady
LD13	Digital input 2	GREEN	Steady
LD14	Digital input 5	GREEN	Steady
LD15	Digital input 14	GREEN	Steady
LD16	Digital input 3	GREEN	Steady
LD17	Digital input 6	GREEN	Steady
LD18	Digital input 10	GREEN	Steady
LD19	Digital input 13	GREEN	Steady
LD20	Digital input 9	GREEN	Steady
LD21	Digital input 12	GREEN	Steady
LD22	Digital input 8	GREEN	Steady
LD23	Digital input 11	GREEN	Steady
LD24	ARM M0 processor watchdog	GREEN	Blinking
LD25	ARM M0 processor error	RED	Steady
LD26	Digital output 1	YELLOW	Steady
LD27	Digital output 2	YELLOW	Steady
LD28	Digital output 3	YELLOW	Steady
LD29	Digital output 4	YELLOW	Steady
LD30	Digital output 5	YELLOW	Steady
LD31	Digital output 6	YELLOW	Steady
LD32	Relay output 1	YELLOW	Steady
LD33	Relay output 2	YELLOW	Steady
LD34	Relay output 3	YELLOW	Steady

3.3.2. Connectors

CONNECTOR	FUNCTION
CN3	Connector for analog position sensor + 24VDC power supply.
CN5	Connector for digital inputs
CN6	Connection for the Ethernet extension circuit board.
CN7	Connection for additional HMI circuit board.
CN8	Connector for relays 1 and 2 outputs.
CN9	RJ45 connector for Variable Frequency Controller connection.
CN10	Connection for supplementary inputs/outputs extension circuit board.
CN11	Connection for Relay 3 outputs + digital outputs 1 to 3.
CN12	Connection of digital outputs 4 to 6 + 3 ground terminals *(GND)*.
CN13	Micro USB connector for programming and web page access.

3.3.3. Relays

3 relays with NO and NC contacts are available on the AS1620. Settings are described ⇨ 15. Configuration page, page 45.

3.3.4. Switches

REFERENCE	DESCRIPTION
SW1	Watchdog ON/OFF.
SW2	Reset to zero *(RESET)*.
SW3	**LEFT** HMI button.
SW4	**RIGHT** HMI button.
SW5	**UP** HMI button
SW6	**DOWN** HMI button.
SW7	**OK** HMI button.

3.3.5. Terminal block
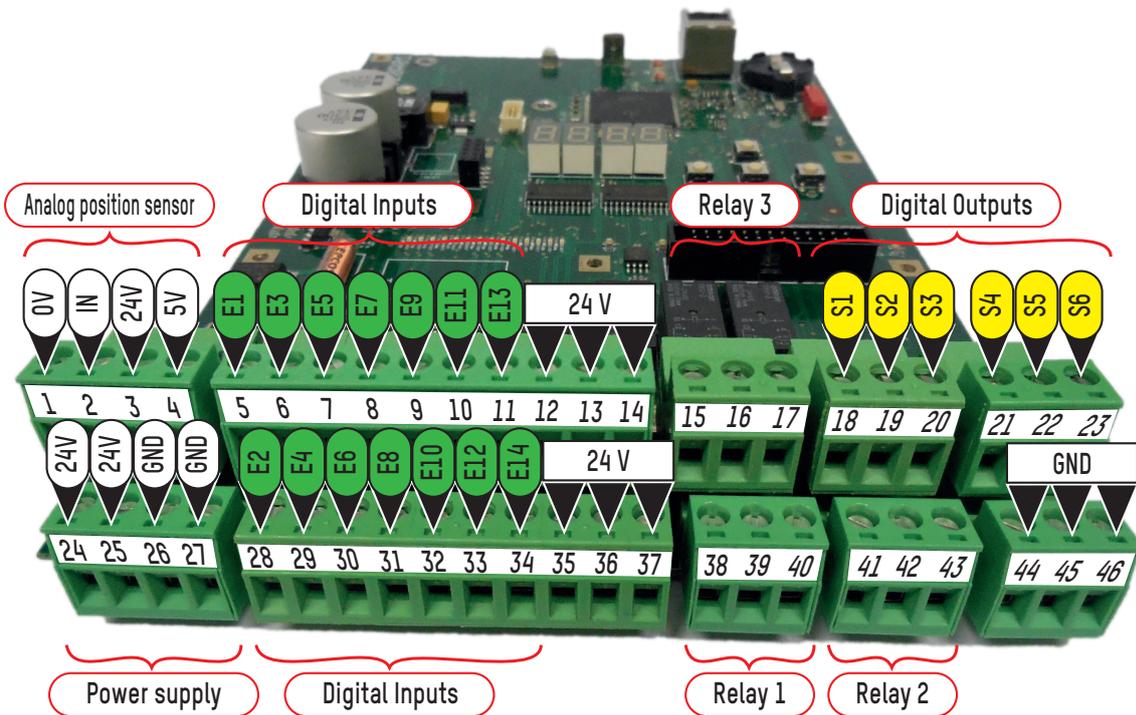
For more information about connecting the circuit board, see electrical schematic, Ch.*22, page 72*.

4. HUMAN MACHINE INTERFACE (HMI)

The Human Machine Interface, integrated with the AS1620 circuit board, enables, in a simplified manner:

– Displaying the status of the barrier through short warning messages;

– Displaying the counters;

– Modifying settings;

– Performing calibration;

– Indicating the version of the embedded software.

An alphanumeric OLED (Organic LED) display ref AS1621 is available as option, plugged into CN7 connector.

The web interface is still much easier to use, but requires computer hardware for the connection.

4.1. LEDs

Green power LED *(LD1, middle left on the circuit board)*: The LED is lit when the circuit board is powered on.

Green watchdog LED *(LD24, lower left on the circuit board)*: The LED blinks when the watchdog is active.

Green software LED *(LD5, top right on the circuit board)*: The LED blinks when the barrier program is running.

Red LED *(LD2, top right on the circuit board)*: The LED lights in case of a major error.

Yellow LED *(LD3, top right on the circuit board)*: The LED lights in case of a minor error.

4.2. HMI

The Human Machine Interface, integrated as standard with the AS 1620 circuit board, consists of 5 pushbuttons *(SW3 ⇨ SW7)* and 4 7-segment displays *(LD6 ⇨ LD9)*:

The display lights at start-up then goes out automatically after 1 minute.

It lights up again whenever any of the pushbuttons is pressed or if an error appears.

The letters and numbers are stylized according to the following picture:

A b c d E F g H I J H L M

n O P q r S t U u Y H Y Z

0 1 2 3 4 5 6 7 8 9 0
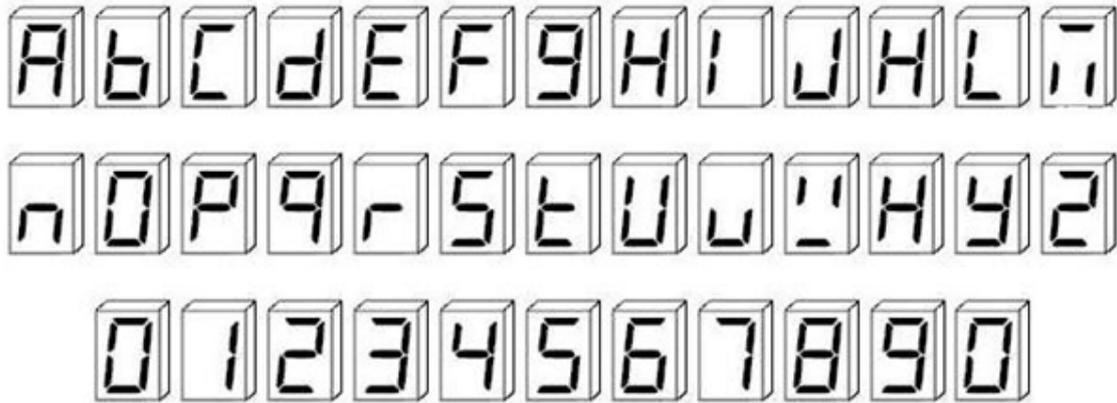
4.2.1. Menus and sub-menus tree's configuration

run → OK → SEt ⇄ APP ⇄ mode ⇄ Auto → **1** (2 sec.)
(2 sec.)
　　　　　　　　　　　　　　　L09 ⇄ 1 → **2** (2 sec.)

　　　　　　　　　　tIm ⇄ nOPA ⇄ 5 → **3** (2 sec.)
　　　　　　　　　　　　　　dLPA ⇄ 0 → **4** (2 sec.)
　　　　　　　　　　　　　　OPEn ⇄ 100 → **5** (2 sec.)
　　　　　　　　　　　　　　CLOS ⇄ 100 → **5** (2 sec.)
　　　　　　　　　　　　　　dCOP ⇄ 0 → **4** (2 sec.)
　　　　　　　　　　　　　　dLcL ⇄ 0 → **4** (2 sec.)

　　　　　　　　　　InSt ⇄ dEu ⇄ bL1S → **6** (2 sec.)
　　　　　　　　　　　　　　POS ⇄ Ang → **7** (2 sec.)
　　　　　　　　　　　　　　LEn ⇄ 2.00 → **8** (2 sec.)
　　　　　　　　　　　　　　mOt ⇄ 250 → **9** (2 sec.)
　　　　　　　　　　　　　　rAIL ⇄ nO → **10** (2 sec.)

Cntr → CtCY

rAIL ⇄ nO → **10**
2 sec.

Cntr. → CtCY ⎫
↓
CtOP
↓
CtSt
↓
CtPA
↓
CtPb ⎬ → **11**
↓
CtPn
↓
Ctb0
↓
Cnt1
↓
Cnt2 ⎭

CAL. → EndS → nO
↓
rAMP → nO

SYS. → CUrr → C-13
↓
UErS → vOPAC-v01-r00-tESt-OnLY
↓ <<<<<<<<<<< ↻ <<<<<<<<<<<
Sun → 21107
↓ << ↻ <
SAvE → SAvM.
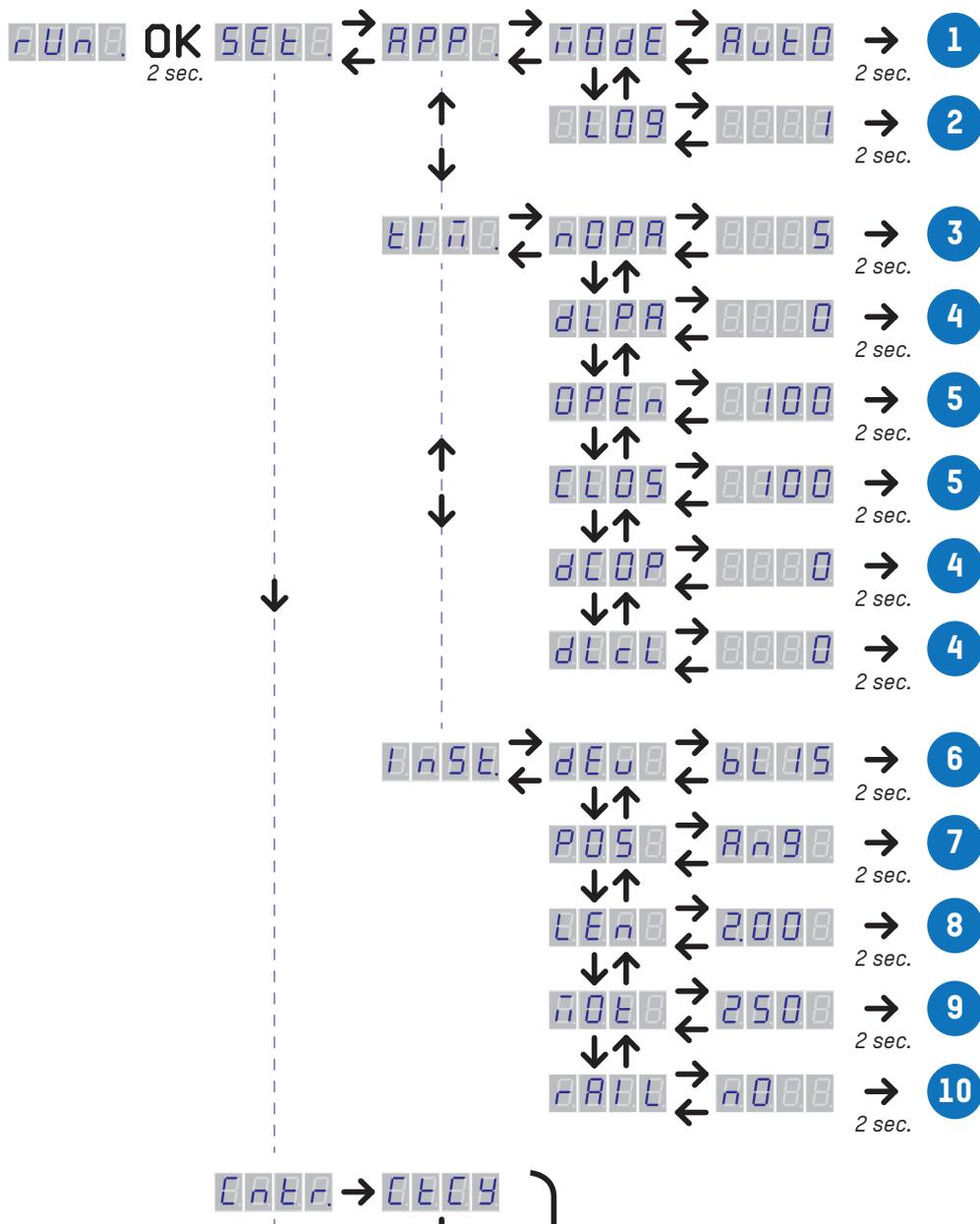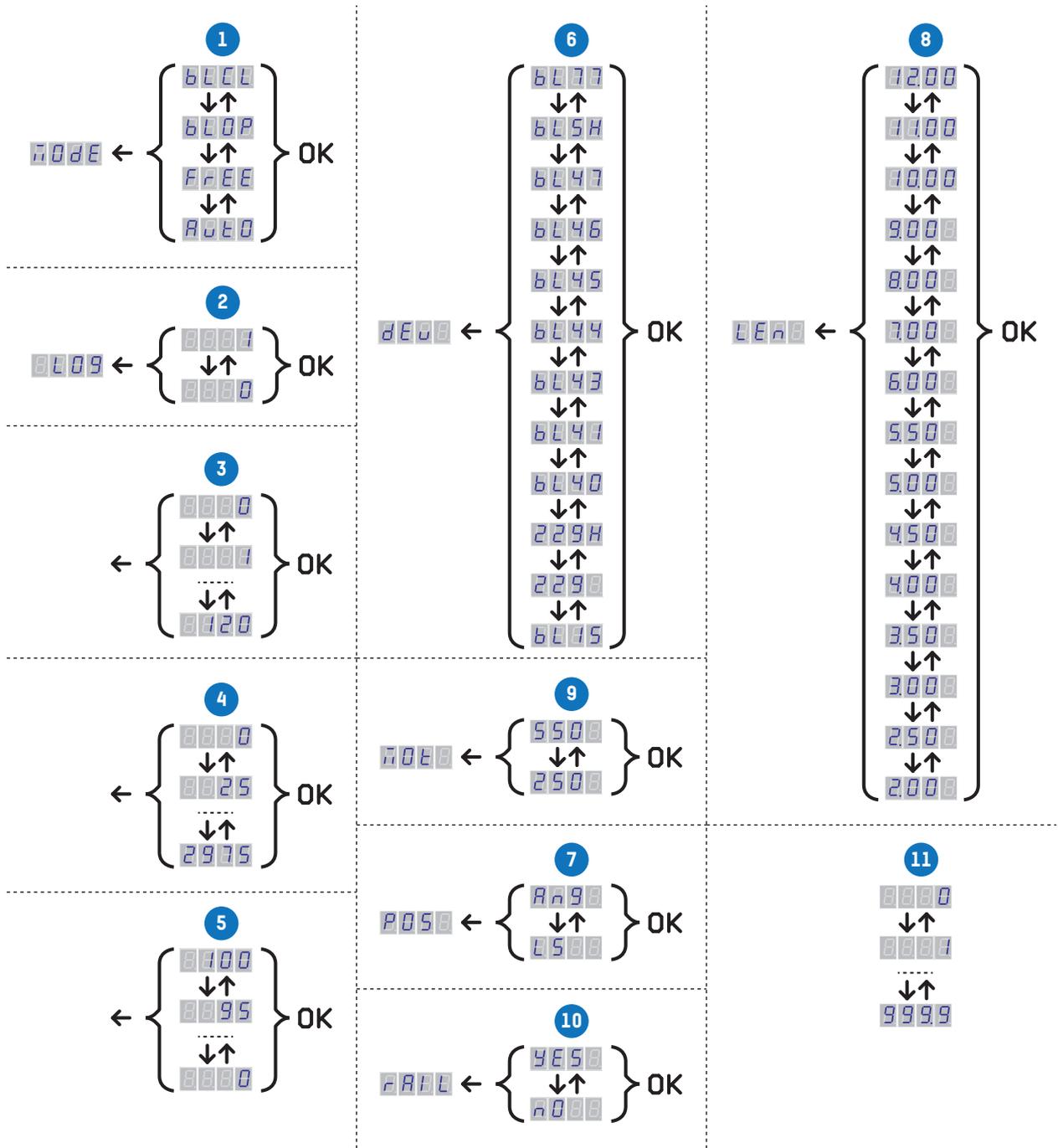
4.2.2. Information Mode

At start-up, the display shows `boot` then, when the program has launched, `rUn`.

If the program detects a problem, the error code is displayed: `E-XX` where `XX` is the error code.

Errors beginning with `E` are major errors. Those beginning with `A` are minor errors:

MAJOR error(s)

Error code:		Description of the error:
`E-01`	:	Motor error.
`E-02`	:	Position sensor error *(Sensor not connected)*.

`E-02` : No device.

`E-03` : Barrier blocked *(Maximum movement time reached)*.

`E-04` : Critical temperature reached.

`E-05` : Input/Output error.

`E-06` : Obstacle error *(swing-off with slow opening action)*.

MINOR error(s)

Error code: Description of the error:

`E-10` : Motor problem .

`E-11` : Position sensor problem .

`E-12` : Installation problem *(no input defined)*.

`E-13` : Barrier stuck *(movement not proceeding as expected)*.

`E-14` : High temperature.

`E-15` : OS problem. *(Operating System)*

`E-16` : Obstacle problem *(swing-off with action = position held or last movement was much more slowly or rapidly than expected)*.

When the error disappears, the display indicates `rUn`.

> **i** If the current operating mode is other than **Automatic**, the `rUn` message will alternate with the message corresponding to the mode (`FrEE`, `StOP`, `bLCL`). If the mode is **Automatic**, the display will only indicate `rUn`.

4.2.3. Configuration mode

Pressing for 2 seconds on the middle **OK***(=SW7)* button enters configuration mode. To leave this mode, press the **OK** button for 2 seconds or wait 1 minute.

The configuration mode operates as a multilevel menu. Menus that have sub-menus always end with a period. Use the up and down buttons to navigate through the menu. Use the right button to enter a sub-menu. The left button is used to exit the sub-menu.

4.2.3.1. FIRST LEVEL:

`SEt.` : Settings Display and change certain settings.

`Cntr.` : Counters Display and reset counters.

`CAL.` : Calibration Display calibration status and start calibration.

`SYS.` : System Display certain system information.
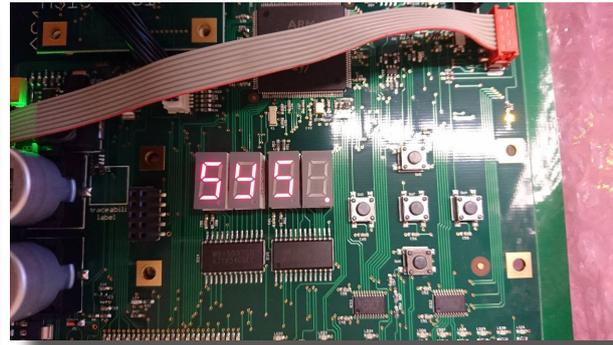
4.2.3.2. PARAMETERS

mOdE : Operating mode.

4 values are possible:

AutO = Automatic mode (Opening and closing cycles are controlled by the digital inputs)

FrEE = Free access mode. (Opening and closing cycles are controlled by loop detectors or presence detectors)

bLOP = Blocked open mode

bLCL = Blocked closed mode

LOG : Record events in a LOG file.

2 values are possible:

YES = Record events.

nO = Don't record events.

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

> *i* Other settings will certainly be added later.

Briefly press the right button *(SW4)* to display the value of the parameter.

Press the right button for more than 2 seconds to change to edit mode; the value starts blinking. The use the up *(SW5)* and down *(SW6)* buttons to change the parameter's value. When finished, confirm by briefly pressing the **OK** button. To cancel the change, press the left button *(or wait 1 minute)*. In both cases, this closes the edit mode and the parameter's value is displayed *(without blinking)*.

4.2.3.3. PARAMETERS OF TIMERS

tim. : Adjusting the timer values

6 timers are available:

nOPA = Maximum open time if there is no passage. (seconds). If no vehicle is detected in that lane, the barrier will automatically close after time out.

`dLPA` = Time delay after passage. *(in hundredths of a second (in increments of 25/100ths)*

`OPEn` = Opening time. *(Percentage of the maximum speed. (by step of 5%))*

`CLOS` = Closing time. *(Percentage of the maximum speed. (by step of 5%))*

`dLOP` = Delay before opening. *(in hundredths of a second (in increments of 25/100ths)*

`dLCL` = Delay before closing. (in hundredths of a second (in increments of 25/100ths). Traffic light will switch to red immediately but the closing cycle will be delayed.

For details of delays, see Ch. 15.3. Timers, page 48.

4.2.3.4. PARAMETERS OF THE INSTALLATION

`InSt.` : Adjusting the installation parameters.

5 parameters are ajustable:

`dEu` = Allows you to choose the type of equipment driven by logic.

`POS` = Used to define the type of position sensor.

`LEn` = Used to define the lenght of the arm.

`mOt` = Used to define the motor type installed in the device.

`rAIL` = Used to define if the arm is equipped, or not, with a rigid skirt, a folding skirt or other optional accessory.

4.2.3.5. COUNTERS

`CtCY` : Number of cycles.

`CtOP` : Number of open commands.

`CtSt` : Number of stops.

`CtPA` : Number of passages in direction A.

`CtPb` : Number of passages in direction B.

`CtPn` : Number of vehicles in the parking lot.

`CtbO` : Number of swing-offs.

`Cnt1` : Generic counter 1.

`Cnt2` : Generic counter 2.

For details of counters, see Ch.12. Counters page, page 38

Briefly press the right button to display the counter's value.

For large numbers, the value is rounded:

- From `0` to `9999`: The number is displayed as is.

- From 10000 to 999.9 million: the number is rounded and indicated as a decimal of 1 million.

For example:

- 10123: `0.101`

- 1.2345678 million: `1.234`

- 12.34 million: `12.34`

In other words, if there is a decimal point displayed, the count is expressed in millions.

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If there is no decimal point, the value is displayed directly on the counter.

Press the left button to return to the name of the counter.

Press the right button for more than 2 seconds to reset the counter to zero.

4.2.3.6. CALIBRATION

EndS : Calibration of stops.

rAmP : Calibration of speed ramps.

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

Press the right button for more than 2 seconds to begin calibration.

4.2.3.7. SYSTEM

turr : Numeric code shows the barrier status (⇨ table below)

vErS : Software version.

Svn : SVN version.(Subversion Number. The counter is increased any time one of the embedded software routine is modified)

SAvE : Save the parameters and counters *(before turning power off, for example)*.

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

For **SAvE**: press and hold down right button to start the backup.

Code	Description	Code	Description
0	Barrier moving	7	Active safety
1	No command	8	Dead-man mode
2	In maintenance	9	Pending authorizations
3	Blocked mode	10	Delay before command
4	The command 'motor off' has been activated	11	Delay after passage
5	Stop command running	12	Emmergency
6	Opening command running	13	Error

5. OPTION ECRAN OLED AS1621

This time again, the configuration mode operates as multilevel menus and a 5 buttons keyboard.

- The up and down buttons are used to navigate through the menus at the same level

- The right button gives access to sub-menus and the left button allows to exit sub-menus.

- If no activity is detected, the display lights off by himself after a one minute time out and lights on again by pressure from 3 to 10 seconds on *OK* button.

- This Alphanumeric display is far more easy to use comparing to the HMI interface and can be easily plugged into the CN7 connector. The AS1621 option offers the option to modify the settings, including the inputs and outputs. (Not available using the IHM alone).

- Please note also that it is not necessary to go through a memory save procedure; the new settings are automatically saved when you go back to the upper menu's level.

At start-up, the display shows **boot** with a percentage going from 0% to 100%. After that, the error codes (if any) are displayed with an access to the main menu :
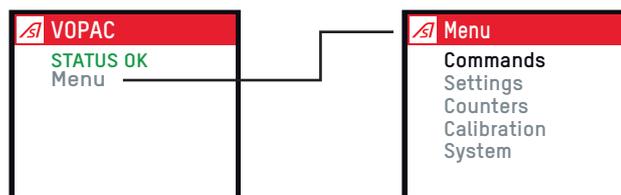
Use the right button to access the main menu and sub-menus; the left button allows to exit sub-menus **OK** is used to modify a setting.
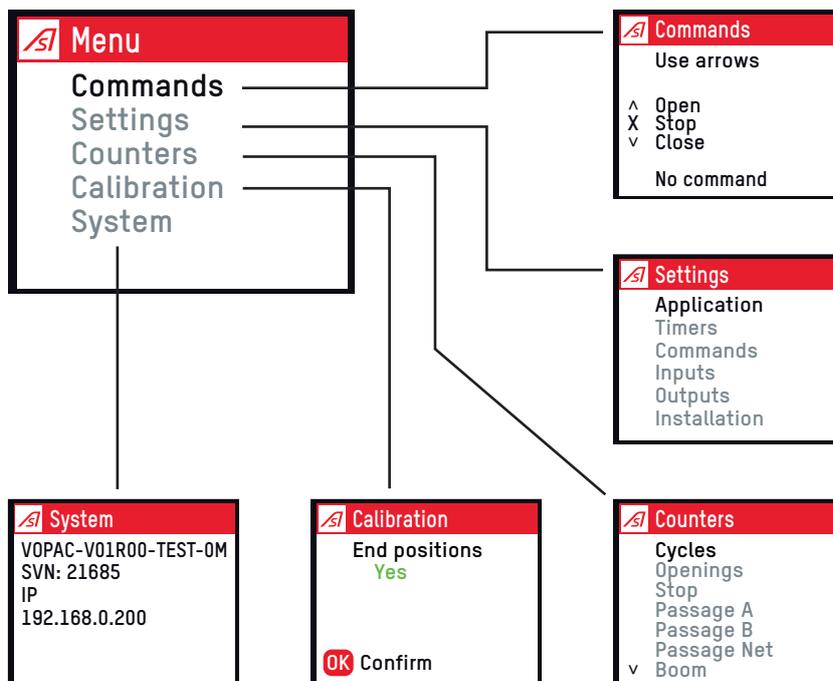
The sub-menu **Commands** allows to manually rotate the barrier up and down. The stop option is also available.

The sub-menu **Settings** gives access at the next level to 6 sub-menus. See below:

```
┌─────────────────────────┐          ┌──────────────────────────┐
│ AS  Settings            │          │ AS  Application          │
│ Application ────────────┼──────────│ Language                 │
│ Timers                  │          │ Operating mode           │
│ Commands                │          │ Logs                     │
│ Inputs                  │          │ Power on: open           │
│ Outputs                 │          │ After blocakge           │
│ Installation            │          └──────────────────────────┘
└─────────────────────────┘          ┌──────────────────────────┐
                                      │ AS  Timers               │
                                      │ Opening time             │
                                      │ Closing time             │
                                      │ No passage time          │
                                      │ Passage delay            │
                                      │ Open delay               │
                                      │ Close delay              │
                                      └──────────────────────────┘
```
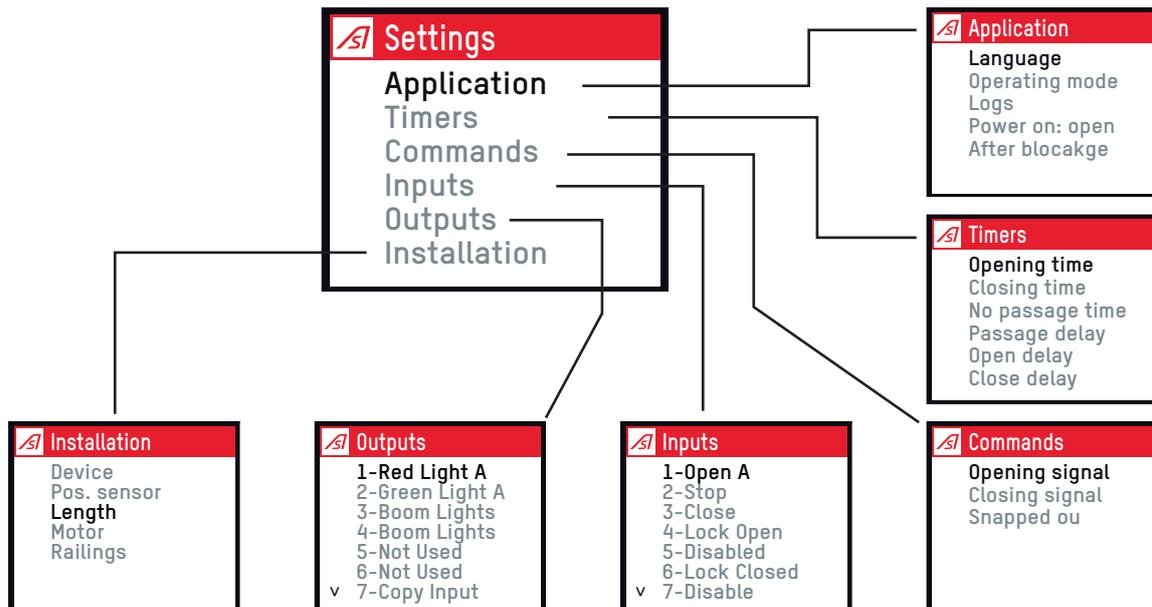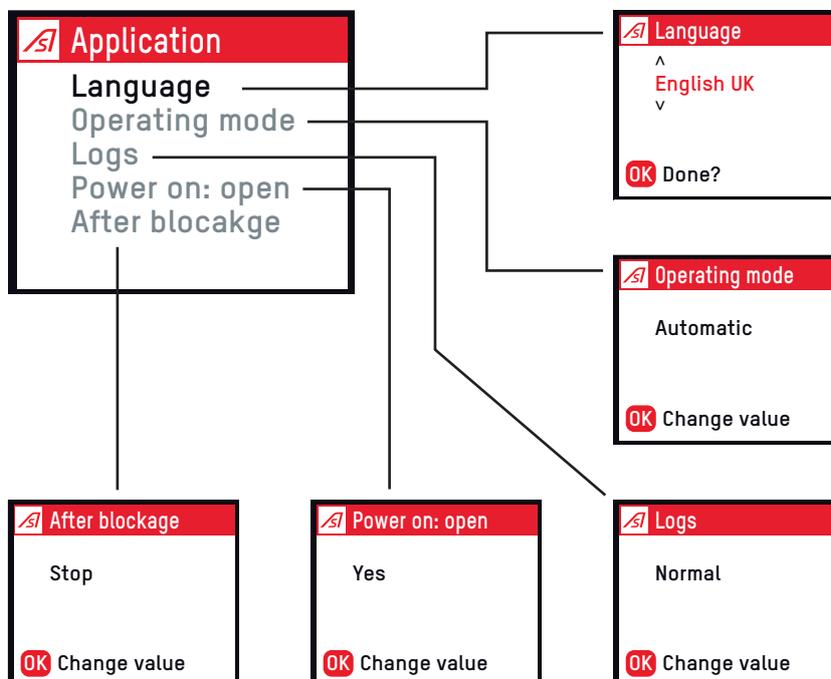
```
┌────────────────┐  ┌────────────────┐  ┌────────────────┐  ┌────────────────┐
│ AS Installation│  │ AS  Outputs    │  │ AS  Inputs     │  │ AS  Commands   │
│ Device         │  │ 1-Red Light A  │  │ 1-Open A       │  │ Opening signal │
│ Pos. sensor    │  │ 2-Green Light A│  │ 2-Stop         │  │ Closing signal │
│ Length         │  │ 3-Boom Lights  │  │ 3-Close        │  │ Snapped ou     │
│ Motor          │  │ 4-Boom Lights  │  │ 4-Lock Open    │  └────────────────┘
│ Railings       │  │ 5-Not Used     │  │ 5-Disabled     │
└────────────────┘  │ 6-Not Used     │  │ 6-Lock Closed  │
                    │ ∨ 7-Copy Input │  │ ∨ 7-Disable    │
                    └────────────────┘  └────────────────┘
```
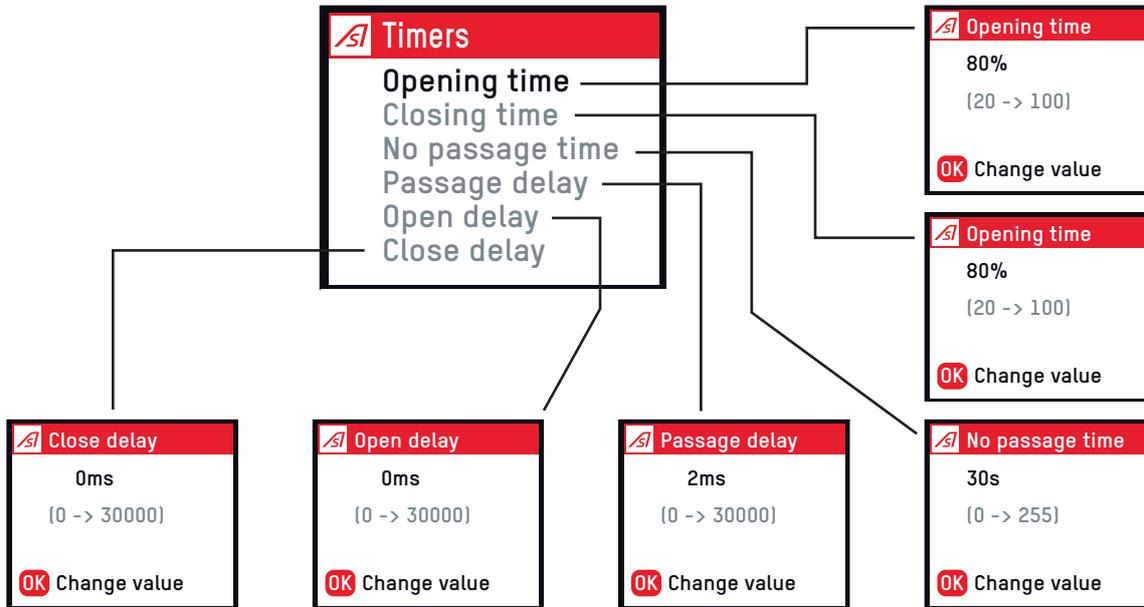
The **Application** sub-menu is used to:

- Select the **language** (6 options available)

- Select the barrier **operating mode** : Automatic, free, locked open or locked closed.

- Define the logs level : normal or detailed.

- Instruct the logic board to open the barrier at **power up** or stay on position

- Reopen (or not) the barrier on a boom **arm blockage** detection.

```
┌─────────────────────────┐          ┌──────────────────────────┐
│ AS  Application         │          │ AS  Language             │
│ Language ───────────────┼──────────│ ^                        │
│ Operating mode          │          │ English UK               │
│ Logs                    │          │ v                        │
│ Power on: open          │          │                          │
│ After blocakge          │          │ OK  Done?                │
└─────────────────────────┘          └──────────────────────────┘
                                      ┌──────────────────────────┐
                                      │ AS  Operating mode       │
                                      │                          │
                                      │ Automatic                │
                                      │                          │
                                      │ OK  Change value         │
                                      └──────────────────────────┘
```

```
┌────────────────┐  ┌────────────────┐  ┌────────────────┐
│ AS After blockage│ │ AS Power on: open│ │ AS  Logs       │
│                │  │                │  │                │
│ Stop           │  │ Yes            │  │ Normal         │
│                │  │                │  │                │
│ OK Change value│  │ OK Change value│  │ OK Change value│
└────────────────┘  └────────────────┘  └────────────────┘
```
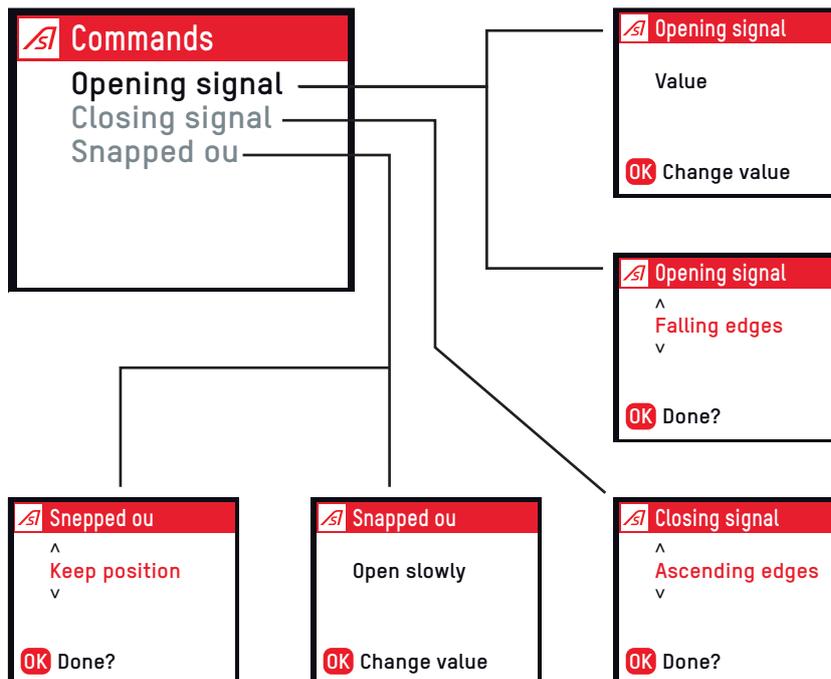
In the **Timers** sub-menu you can :

- Adjust the **opening** and **closing time** in percentage of the minimum time (=maximum speed allowed)

- Define the **no passage time**, after which the barrier will automatically close (if no vehicle is detected)

- Adjust the **Passage delay,** to add a delay time to start closing when the vehicle sensor (loop or cell) notifies the end of passage. (but the red traffic light will switch on immediately)

- Add a **delay before opening or closing** after receiving an opening or closing command before the barrier actually start to open or close.

Timers
Opening time
Closing time
No passage time
Passage delay
Open delay
Close delay

Opening time
80%
(20 -> 100)
OK Change value

Opening time
80%
(20 -> 100)
OK Change value

Close delay
0ms
(0 -> 30000)
OK Change value

Open delay
0ms
(0 -> 30000)
OK Change value

Passage delay
2ms
(0 -> 30000)
OK Change value

No passage time
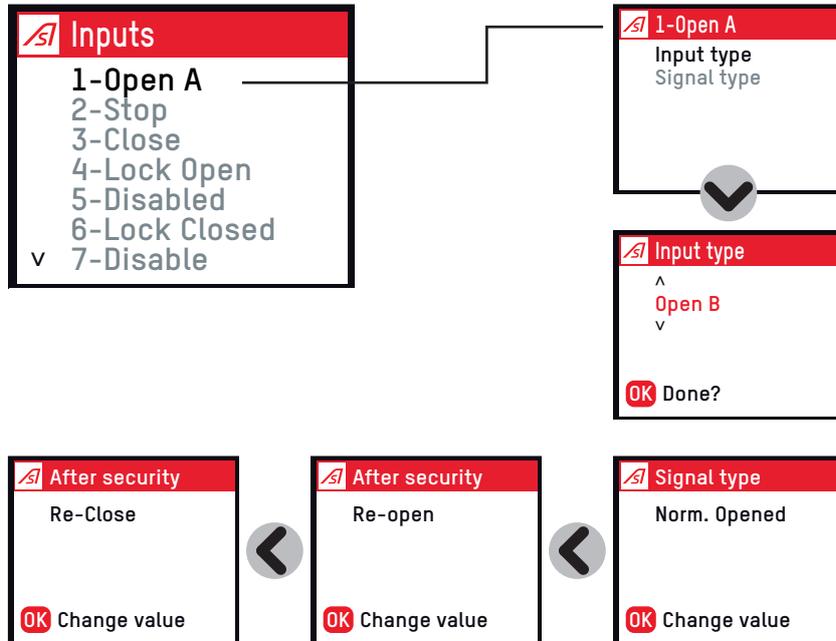30s
(0 -> 255)
OK Change value

In the **Commands** sub-menu you can:

- Determine if the **opening (and closing) signal** entry is active when the signal is high (24VDC) or when the signal swaps from high to low (**falling edges**). Another option is **Dead-man**: The input is active when the signal is high and the barrier stops during closing cycle if the signal falls down.

- After swing off (**snapped out**) the barrier can open slowly or hold position.

Commands
Opening signal
Closing signal
Snapped ou

Opening signal
Value
OK Change value

Opening signal
^
Falling edges
∨
OK Done?

Snepped ou
^
Keep position
∨
OK Done?

Snapped ou
Open slowly
OK Change value

Closing signal
^
Ascending edges
∨
OK Done?

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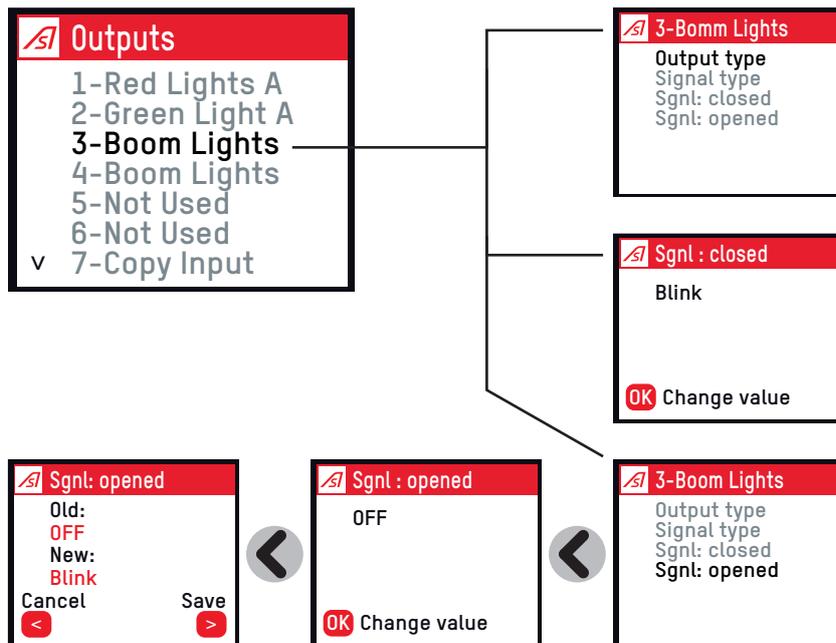The **Inputs** sub-menu allows to allocate a function type to each of the 14 inputs:

- 38 options are available for the **Input type** parameter: Open command A or B side, closing command, etc...(⇨ 15.5. Inputs, page 52 to get the list of input types options)

- The signal type must be defined: It can be normally open or normally closed.

- According to the Input type, other settings can be required. For instance, if a **safety loop entry** is selected, the logic board needs to know which action is required if a vehicle is detected during the closing cycle. The options are **Stop** or **Re-open**. (and re-close when the detection signal is released)

🔺 Inputs
1-Open A
2-Stop
3-Close
4-Lock Open
5-Disabled
6-Lock Closed
∨ 7-Disable

🔺 1-Open A
Input type
Signal type

🔺 Input type
^
Open B
∨
OK Done?

🔺 After security
Re-Close
OK Change value

🔺 After security
Re-open
OK Change value

🔺 Signal type
Norm. Opened
OK Change value

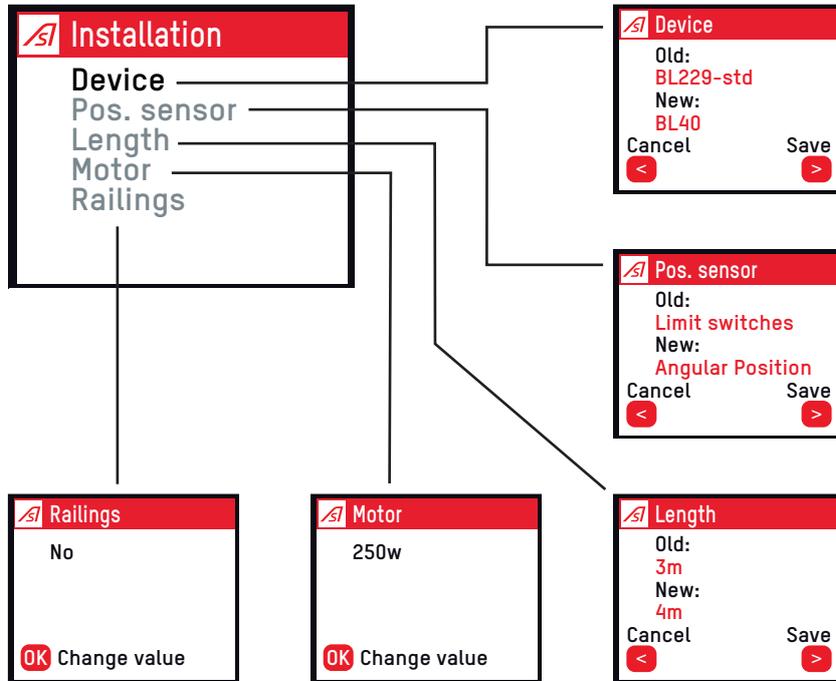The 9 outputs (including 3 relay contacts, outputs references 6 to 9) are allocated through the Outputs sub-menu.

23 options are available: traffic lights control, Boom arm lights etc..⇨15.6. Outputs, page 57

The **Output type** and **Signal type** are always required to define an output. Additional settings are recommended depending of the output selection: For example, the **Boom lights** can be on, off or blinking during opening and closing cycle.

🔺 Outputs
1-Red Lights A
2-Green Light A
3-Boom Lights
4-Boom Lights
5-Not Used
6-Not Used
∨ 7-Copy Input

🔺 3-Bomm Lights
Output type
Signal type
Sgnl: closed
Sgnl: opened

🔺 Sgnl : closed
Blink
OK Change value

🔺 Sgnl: opened
Old:
OFF
New:
Blink
Cancel   Save
< >

🔺 Sgnl : opened
OFF
OK Change value

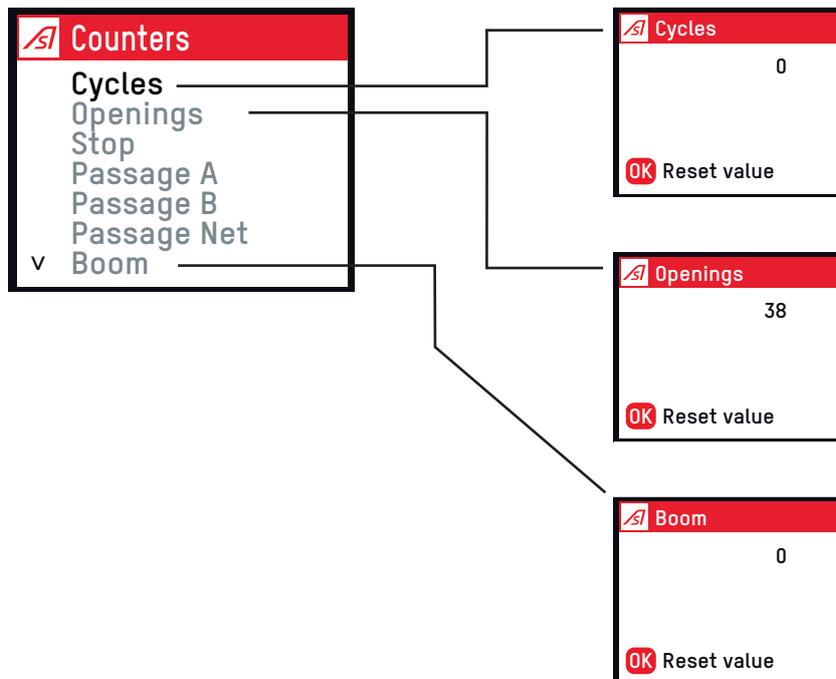| 🔺 3-Boom Lights |
|---|
| Output type |
| Signal type |
| Sgnl: closed |
| **Sgnl: opened** |

With the **installation** menu the user will define the main settings of the barrier:

- The type of barrier controlled by the logic board (BL229, BL4x etc...)

- The position sensor (analog sensor or limit switches)

- The boom arm length (the maximum speed is automatically recalculated according to the barrier type and boom length.

- The motor type (250W ou 500W)

- The optional accessories fixed on the boom arm (rigid skirt, folding skirt...).

Installation
Device
Pos. sensor
Length
Motor
Railings

Device
Old:
BL229-std
New:
BL40
Cancel   Save
<   >

Pos. sensor
Old:
Limit switches
New:
Angular Position
Cancel   Save
<   >

Railings
No

OK Change value

Motor
250w

OK Change value

Length
Old:
3m
New:
4m
Cancel   Save
<   >

The counter's values are displayed through the **Counter** menu: number of opening or closing cycles, number of stop , passage confirmed on A or B side, swing off occurrences...

Counters
Cycles
Openings
Stop
Passage A
Passage B
Passage Net
v Boom

Cycles
0

OK Reset value

Openings
38

OK Reset value

Boom
0

OK Reset value

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The **Calibration** menu, **End positions** option, makes sense only when an angular analog sensor is installed inside the mechanism. The barrier will slowly rotate from down to up position and the logic board will memorize the up and down sensor value.

The **Speed Ramps** option is only available on the BL15 (ParlPlus) barrier. For this kind of barrier, an algorithm will estimate the arm weight (and the ramp's speed) performing several opening and closing cycles with inversions at predefined speeds.
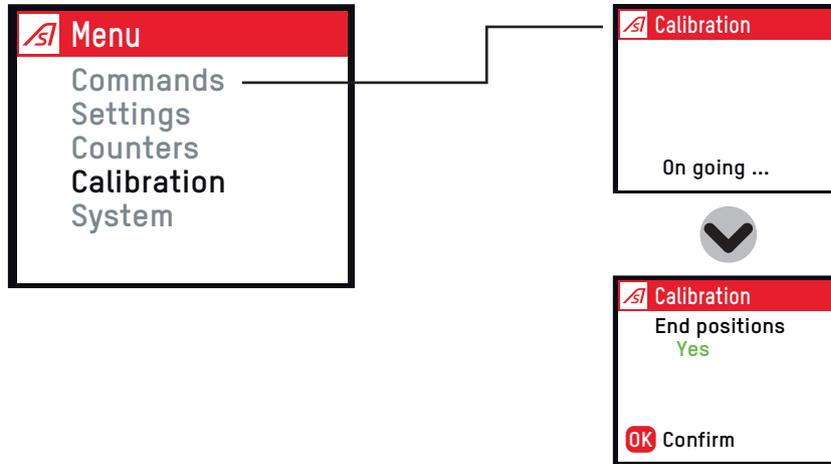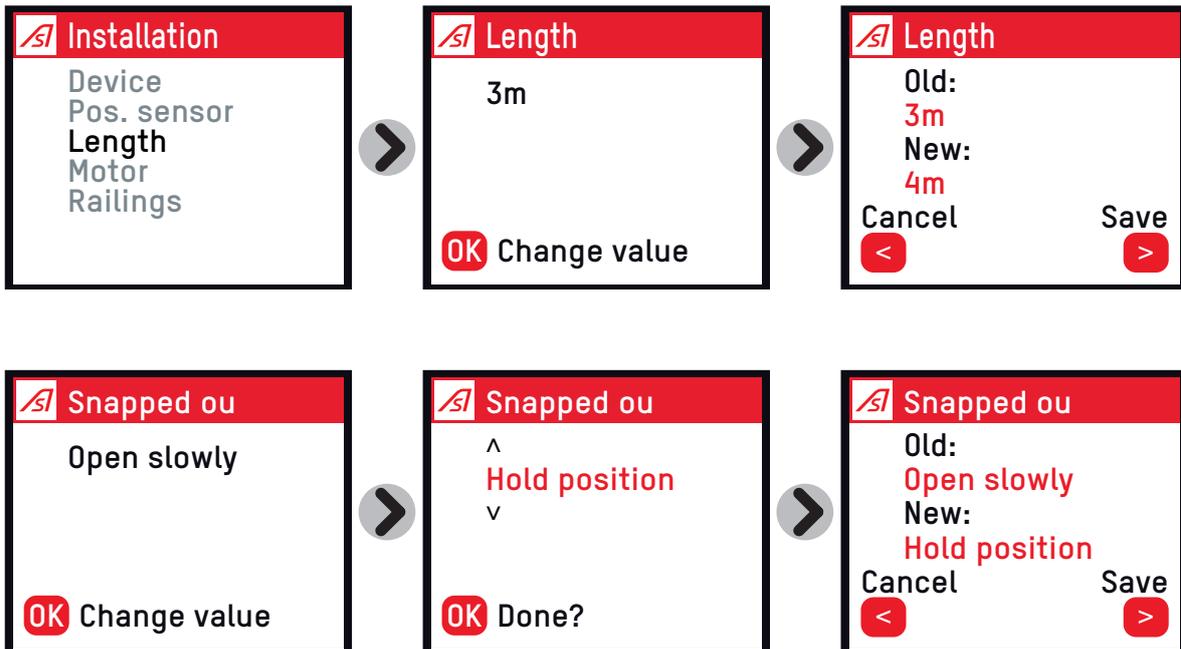

Finally, the **System** menu delivers a precise information concerning the software version, the SVN value and the IP address.
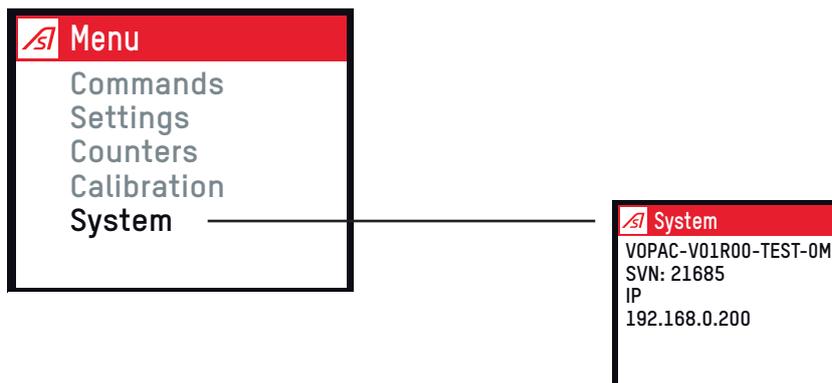
In any case, the procedure to modify a setting is always the same:

- Select the parameter to be modify with the right/left and up/right buttons.

- Press the **OK button** to access the modification menu.

- Choose a new value or an option using the up/down button and confirm with **OK**.

- The screen displays the old and new settings; use the right button to save the new value and the left button to cancel.

Several examples follow:

SI Installation		*SI* Length		*SI* Length
Device Pos. sensor **Length** Motor Railings	**>**	3m **OK** Change value	**>**	Old: **3m** New: **4m** Cancel Save **<** **>**

SI Snapped ou		*SI* Snapped ou		*SI* Snapped ou
Open slowly **OK** Change value	**>**	^ **Hold position** v **OK** Done?	**>**	Old: **Open slowly** New: **Hold position** Cancel Save **<** **>**

Other adjustments are sometimes required: an entry can be normally open or normally closed (NO/NC), a boom light can be blinking during opening an closing cycle, a vehicle detection can force a reopening cycle during closing etc...:

SI 1-Open A		*SI* Input type		*SI* Input type
Input type Signal type 	**>**	^ **Open B** v **OK** Done?	**>**	Old: **Open A** New: **Open B** Cancel Save **<** **>**

SI 1-Open A		*SI* Signal type		*SI* Signal type
Input type **Signal type** 	**>**	**Norm. Opened** **OK** Change value	**>**	^ **Norm. Closed** v **OK** Done?

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6. ADJUSTMENT OF VARIABLE FREQUENCY CONTROLLER ATV12

Factory settings allow the variable frequency controller and the geared motor to be protected against all malfunctions. The variable speed controller settings should therefore not be changed for any reason.

> **Any modification of these settings without prior express permission from *Automatic Systems* is your full responsibility and will automatically void the product warranty.**

The variable frequency controller used is a Schneider Altivar ATV12 connected via Modbus.

Configuration is done via Modbus. The only setting to be entered manually is the Modbus address (add = 1) and the baud rate (tbr = 38400). They can be accessed on the configuration menu:

Conf   Frl   Mdb

Conf   FULL   COM   Add = 1

                            tbr = 38400

Switch the circuit breaker off and on again for the changes to take effect.

6.1. MAIN ERROR MESSAGES

In the event of a fault, the converter may indicate the source of the fault via codes. The most common are described below.

Caution: After switching off the power, this code disappears and will no longer be visible when power is switched on again. It is therefore imperative to record this code before reinitializing the barrier.

CODES	DESCRIPTION
OHF	Variable frequency drive overheated.
OLF	Motor overload.
ObF	Excessive braking.
SLF1	Modbus communication fault: check that the cable connecting the AS1620 logic and the variable frequency controller are connected correctly.
OPF1	Loss of one phase at the variable speed controller output.

7. MAINTENANCE INTERFACE

7.1. PRESENTATION

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

It is a resident tool, as standard, in the CPU on the circuit board, and does not require any additional software to be installed.

The interface is accessible from any computer station, whether stand-alone or networked, by a simple web browser *(internet connection not necessary)*.

You can use any of the following browsers:

Firefox	Internet explorer **(Version 11 or higher)**	Edge
Safari	Opera	Chrome

> ⊘ We recommend the use of *Firefox* or *Chrome* browsers.

7.2. Connection

7.2.1. Direct connection with a USB cable

The **CN13** connector on the AS 1620 circuit board is a mini USB socket programmed to function as an Ethernet socket. Once connected to a computer using a USB cable it should appear as a new network connection.

> Under Windows, it may be necessary to first install appropriate drivers for the USB cable.
>
> Download ⬇

In this case, the IP address of the device is 10.0.0.1 and cannot be changed.

7.2.2. Direct connection with an Ethernet cable (Option)
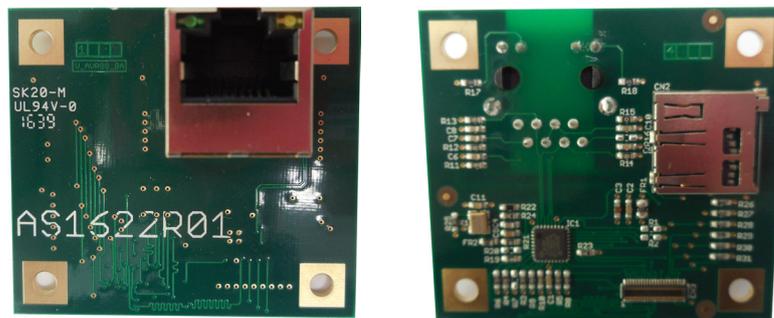
Connect the **CN1** connector from the optional AS 1622 circuit board to a computer using a standard Ethernet cable.

By default, the barrier has IP address 192.168.0.200, which can be changed on the **Network** page of the web interface, which also permits the other parameters to be configured.

The computer to which the barrier is connected must be configured with a static IP address on the same subnet. The gateway address is not usually important.

7.2.3. Connection to the web interface for maintenance

Open a browser and type the IP address of the device in the address bar *(⇨ Ch. 7.2.1 and 7.2.2).*

The user will be automatically directed to the **Identification** page.

The language for display of the pages can be changed:

• In the **Identification** window, on the language selection table;

• In the main menu, via the same table.

8. FIRST SIGN IN

> *i* The first time you sign in, the **Identification** page appears automatically.

After you are identified you are taken to the **Status** page where errors are listed.

Status

Error Name	Major	Minor
Motor drive	✓	✓
Position sensor	✓	✓
Installation	✗	✓
	The device is not calibrated or only partially (details)	
Obstacle blocked	✓	✓
Temperature	✓	✓
Inputs/Outputs	✓	✓
Boom	✗	✓
	The obstacle has snapped out: put it back in place	

This is normal since there are some operations that need to be performed for the equipment to be operational:

- Checking the settings for the boom swing-off input;
- Initialization of the stops;
- Initialization of the speed ramp;

> *i* These two operations are carried out on the **Unit tests > Calibration > Position of stops and Speed ramp** page. *(⇨Ch.14.1. Calibration, page 41)*

9. IDENTIFICATION PAGE

Log in

User Name	
Password	
Update clock	☑

Log in

User Name	User access code input field *(case sensitive)*.
Password	Input field for the password associated with the ***Username*** *(case sensitive)*.
Update clock	Synchronization of the date and time of the CPU with that of the computer accessing the maintenance interface.
Language selection	Table where the available interface languages can be selected.
Log in	Validation of data entered in the fields and access to the ***Status*** page.

> ℹ️ The time is very useful for the Logs *(ref. System page)*.

10. MAIN MENU

The main menu will vary depending on the connection status to the service interface:
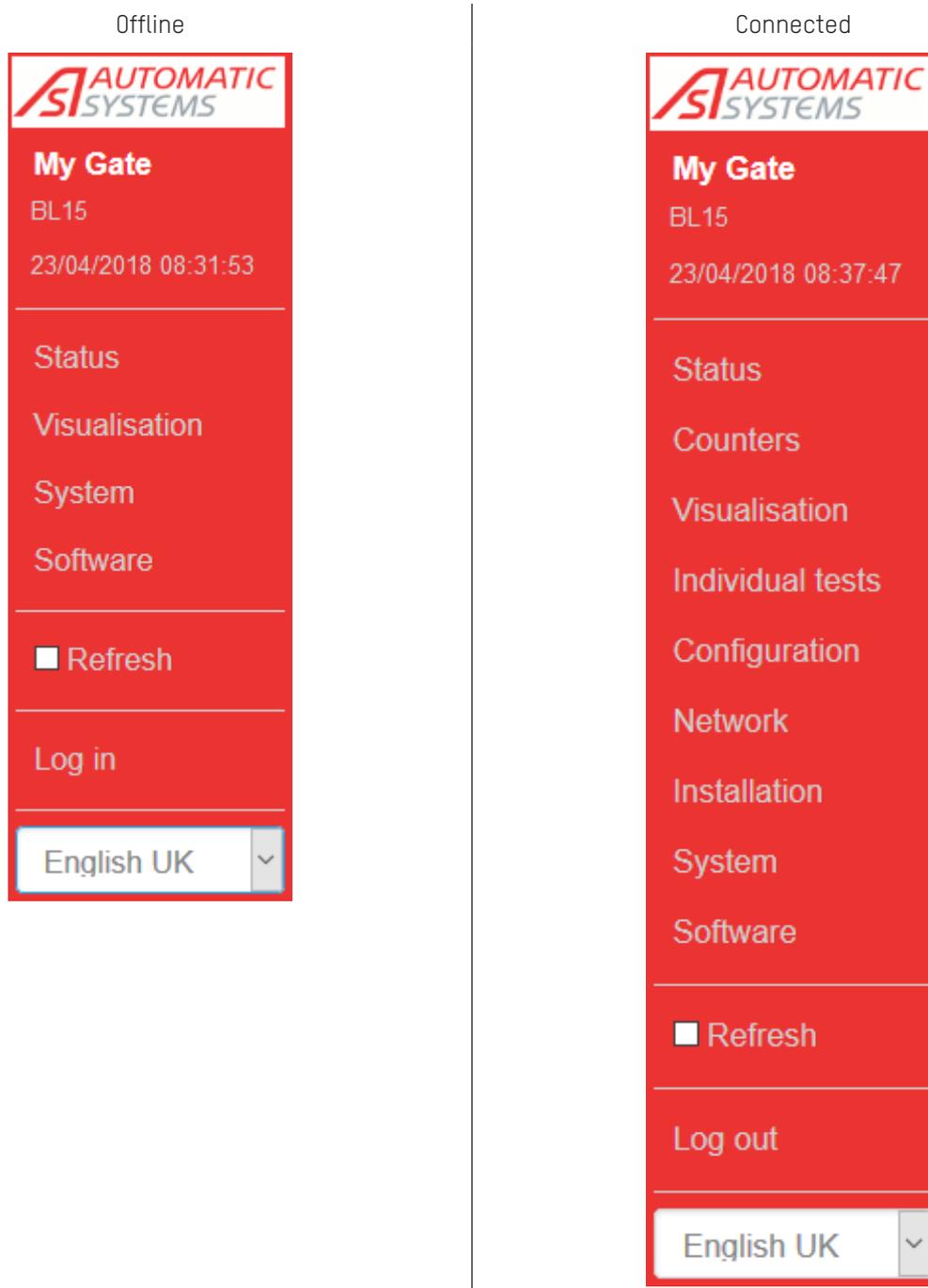
Offline | Connected

Depending on the connection status, the display of the main menu and the screen contents varies:

- Offline, it will be possible to view the status of the equipment and access the View *(without the open/close buttons)*, *System, Software (in version display mode only)* and Login pages.

- Connected, you will have access to all pages and buttons.

  The maintenance interface is designed to be responsive to many types of devices *(PC, tablet, Smartphone, etc.)* so it is possible for the menu to disappear, depending on the size of the screen. It will then no longer be fully visible but take the form of a tab to be clicked *(in the top left corner)*:

Status

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

This menu allows you to:

- Identify the name of the equipment;

> *The name of the equipment can be changed on the **Configuration > Application > Name of device** page.*

- Identify the device type;

> *The device type can be changed on the Installation > Device Type page.*

- Browse the various pages of the interface and consult and/or change certain settings, launch a test, change the equipment status, etc.;
- Refresh the display;

> *If checked, the data on the page refresh automatically every 2 seconds.*

> *Clicking on a menu to access one of the pages refreshes the content of that page.*

- Log in or log out;

> *See the following pages for explanations of each of the possible actions.*

- Choose the interface language.

11. STATUS PAGE

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

Status

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

> *i* The HMI on the AS 1620 circuit board also repeats any error messages via the diagnostic LEDs *(⇨ Ch.4.2.2. Information Mode, page 16).*

During these self-tests, two types of faults can be highlighted:

11.1. MAJOR FAULT

⇨ The barrier is put **Out of Service**,

- the motor is turned off
- the brake *(option)* locks.

> (!) If the barrier is not equipped with a brake, the boom can be lifted or dropped.on

- the lights change to red,
- the fault is indicated on the HMI as well as on a digital output of the circuit board, if configured as such (⇨ 15.6. Outputs, page 57).

11.2. MINOR FAULT

⇨ The barrier remains operational, but its behavior must be monitored.

Depending on the type of fault, it will be necessary to respond as follows on the equipment:

Type of error	Minor fault	Major fault
Motor drive	NA	Visualization faulty or defective communication between the circuit board and the VF *(see the **Display** page and the VF screen)*. Solution(s): Refer to the error message on the VF and check the connection between the VF and the circuit board. Check that there is power to the VF. Check that the VF is configured correctly *(⇨ see barrier manual)*. If this does not resolve the problem, turn the power off for 5 seconds then turn it on again.
		In the case of a barrier type TOLL 0.3 sec, this error is displayed if no digital output (Open or Close) has been defined to control the VF. *Solution(s):* *Set an output (open or close) to control the VF.*
Position sensor	Problems with data coming from the analog position sensor. If the problem persists, please contact AS.	Error reading the analog angular position sensor *(see the **Display** page)*. Solution(s): Check that the angular position sensor cable is properly connected. Check that the sensor is operating correctly: disconnect the VF from the circuit board, move the boom manually and check for changes in the angular position of the boom on the **Display > Drive > Angle (°)** page.
		In case of barrier with limit switches: both sensors are active in the same time (check on Visualisation page). Solution(s): Check if sensors run correctly and are well defined in normally open or closed.
Installation	No input has been configured *(see **Configurations > Inputs** page)*.	The barrier has not been calibrated: **Device is not calibrated!** End stops positions Open Slowly Open Solution: Calibrate the barrier *(See the **Unit tests > Calibration** page)*.
	ℹ️	*Some types of barriers do not require calibration. In general, the stops of the barriers with analogue sensor must be calibrated; the speed ramps for the BL15 must be calibrated.*

Type of error	Minor fault	Major fault
Obstacle blocked	The boom is slowed 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 become a major fault.	The boom has not been able to make a full opening or closing movement within the set time, as defined in the setting **Configuration > Timer > Maximum time to complete opening/closing**. Solution(s): Check what is preventing movement of the boom. Test movement on the **Unit test > Drive** page.
i	An obstacle during opening of the boom is considered a fault, not a blockage. **MAJOR** error detection: when the barrier fails after 5 closing attempts with **ERROR TIMEOUT**. *(If there is an obstacle, the barrier shows its blockage number. If the obstacle is still present, the barrier then makes its 5 Timeout attempts. If, after these 5 attempts, the obstacle is still present, the barrier goes into fault.)*	
Temperature	NA	The temperature of the Variable Frequency Controller or motor is critical *(see the **Display** page)*. Solution: Turn the unit off until the temperature drops.
Inputs/Outputs	NA	On a barrier equipped with a locking system with release check, the error indicates that the latch has not unlocked.
Boom	The barrier performs an opening or closing movement much faster or slower than expected *(25% deviation from the* <u>Opening time</u>/<u>Closing time</u> *settings on the* **Configuration > Timer***).*⇨15.3. Timers, page 48 Solution: Check what is interfering with the movement. If options of the boom or balance springs have been added/removed, the speed curves must be recalibrated on the **Unit test > Calibration > Speed ramp** page.⇨14.1. Calibration, page 41	The boom is unhinged *(see on the **Display** page the* <u>Closing cell</u> *and* <u>Swing-off sensor</u> *lines are highlighted)*. Solution: Insert the boom into its jaw.
i	**MAJOR** error detection: Unhinged with option <u>**Action when unhinged**</u> = opens slowly. **MINOR** error detection: Unhinged with option <u>**Action when unhinged**</u> = holds position.	

12. COUNTERS PAGE

The *Counters* page lists the various counters available:

Counters

Counter name	Perpetual counter	Partial counter ✗	Set Value
Cycles	42357	0 ✗	
Opening commands	41989	41623 ✗	
Motor emergency stops	5	5 ✗	
Major errors	10	10 ✗	
Boom snapped out	0	0 ✗	
Passages	114	114 ✗	
Passages from opposite direction	0	0 ✗	
Vehicles in lot	114	114 ✗	⬍ ✓
Number of Authorisations	0	0 ✗	⬍ ✓
Counter 1	0	0 ✗	⬍ ✓
Counter 2	0	0 ✗	⬍ ✓

> ⚠ The permanent counters cannot be reset to zero.

The partial counters can be reset to zero by clicking the corresponding X. The X at the top of the column resets all the partial counters to zero.

Cycles	Number of cycles *(opening + closing)* performed.
Opening commands	Number of open commands given *(any type of command: digital input, web pages, detection loop, XML-RPC, etc.)*.
Motor emergency stops	Number of times the barrier stopped its closing movement following a presence under the boom *(loops or safety sensors)*.
Major errors	Number of times the barrier has gone into fault following detection of a major error *(ref. Status page)*.
Boom snapped out	Number of times the barrier has gone into fault after detection of a swing-off of the boom *(= Come out of its jaw)*.
Passages	Number of passages between the **origin** and **destination** loops as defined in the settings on the **Configuration > Commands > Passage counter: from** page.
Passages from opposite direction	Number of passages between the **destination** and **origin** loops as defined in the settings of the **Configuration > Commands > Passage counter: to** page.
Vehicles in (the parking) lot	The program counts the number of vehicles that have passed in direction A *(Passages)* less those that have passed in the opposite direction *(Passages in opposite direction)*. This counter is connected to the **Parking lot capacity** setting defined in the settings of the **Configuration > Commands** page. 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 by entering it in the field provided *(in the New value column of the table)*.

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Number of authorizations	Related to the ***Stored commands*** setting. Number of vehicles currently authorized to pass.
Counter 1	Counter managed entirely by the user. It can be incremented, decremented, reset or even activate an output based on a threshold (⇨Chap.15, page 45).
Counter 2	Counter managed entirely by the user. It can be incremented, decremented, reset or even activate an output based on a threshold (⇨Chap.15, page 45).

13. VISUALIZATION PAGE

This page is used to display of the status of various inputs and outputs and to perform operations on the barrier while keeping it in its normal operating state.

Visualization

Open A	Close	Open B

Inputs		Value
1	Open Loop	0
2	Open Loop	1
3	Open Loop B	1
4	Close Loop	1
5	Inhibit	0
6	Snap Out Sensor	1
7	Disabled	0
8	Inhibit	0
9	Disabled	0
10	Disabled	0
11	Disabled	0
12	Disabled	0
13	Security Loop	0
14	Open Loop	0

Outputs		Value
Output 1	Red Lights	1
Output 2	Green Lights	0
Output 3	Boom Lights	0
Output 4	Not Used	0
Output 5	Open Command	0
Output 6	Close Command	1
Relay 1	End Position	0
Relay 2	Not Used	0
Relay 3	Not Used	0

Motor drive	Value
Motor drive	Ok
Angular Position Sensor	829
Angle (deg)	90°
Open Limit Switch	1
Close Limit Switch	0
Motor drive temperature	35%
Motor temperature	13%

Values are updated by clicking on the **Refresh** button, if the check box is not checked *(⇨ Ch.9. Identification page, page 32)*.

Active inputs are displayed in green.

If the status of an input or output is abnormal, the corresponding line will be displayed in red.

Errors are detailed on the **Status** page.

The **Open side A**, **Open side B** and **Close** buttons control an opening or closing movement at normal speed *(defined at the* **Configuration > movement** *page)*. *(These are visible only if you have identified yourself.)*

The **Angle** setting gives the angular position from horizontal of the boom.

The Frequency parameter indicates the current frequency of the VF.

The temperature of the variable speed control is expressed as a percentage of maximum temperature.

The motor temperature is a reference value estimated by the variable frequency controller, as a percentage of the maximum value.

14. INDIVIDUAL TESTS PAGE

This page can only be accessed 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 quit the Maintenance mode, click on the button.

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

Individual tests

| Calibration | Motor drive | Outputs | Operating |

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

14.1. CALIBRATION

This test permits calibration of the end stops and speed curves.

Calibration

✓ Device is calibrated

End stops positions		Speed Ramp
Open Slowly		Close Slowly
Open	Stop	Close

The **End stop poditions** and **Speed ramps** buttons can be green or red.

If they are red, click on them to perform the calibration. For some barrier types, 1 or both buttons may be light green and disabled (cannot be clicked), indicating that calibration of this barrier type is not required.

Installation incomplete	Message displayed when registration of the end stop position or calculation of the speed ramps has yet to be done.
End stop position	Purpose: To record the position of the barrier's travel limits.
	The boom moves slowly until it reaches the stops, first toward the lower (closed) stop then towards the upper (open) stop.
	On completion of initialization, the boom must be raised (barrier open). If this is not the case, turn off the power and invert the connections of 2 cables from the variable frequency controller phases. Once the change has been made, perform a new initialization, as well as with each modification of the limit stops or movement of the angular position sensor.

> ℹ️ It is possible for the barrier to open after the test. This can happen when the option to raise in the event of power failure has been selected and the motor is connected incorrectly *(phases inverted)*.

Speed ramp	Purpose: *(Only for BL1x)* Determine the optimal speed curves for the installed boom and for different opening and closing times, as defined on the **Configuration > Times** page. ***This button is inactive until initialization has been performed.***
Open slowly	Perform a full opening movement at slow speed.
Close slowly	Perform a full closing movement at slow speed.
Opening	Performs a full opening movement in the time defined by the **_Opening time_** setting on the **Configuration > Timers** and **movement** pages. ***This button is inactive until initialization or the ramp speeds calculation has been performed.***
Stop	*Stop the movement in progress.*
Closing	Performs a full closing movement in the time defined by the **_Closing time_** setting on the **Configuration > Timers** and **movement** pages. ***This button is inactive until initialization or the ramp speeds calculation has been performed.***

14.2. MOTOR DRIVE

This test permits testing proper operation of the motor.

If the equipment is not calibrated or is partially calibrated, certain buttons will not be accessible and the **Installation incomplete** message will be displayed.

Motor drive

| Open | Stop | Close |

Intensive movements

| Start | Delay (ms) 1500 | Random inversions ☐ |

Stop

| Closing with stop at | Angle (deg) 45 |

Data points

| Data points |

Open	Performs a full opening movement within the time defined by the **Opening time** setting on the **Configuration > Timers** page. ***This button is inactive until initialization or the ramp speeds calculation has been performed.***
Stop	Stops the current movement.
Close	Performs a full closing movement within the time defined by the **Closing time** setting on the **Configuration > Timers** page. ***This button is inactive until initialization or the ramp speeds calculation has been performed.***
Start	The barrier performs opening and closing cycles until the **Stop** button is clicked. After each movement, the barrier waits for the time specified in the **Interval between movements** setting before beginning the next movement. The opening and closing times are the normal times specified on the **Configuration > Timers** page.
Random inversion	If this option is activated, the closing movement will be randomly interrupted by an opening command.
Closing with stop at	Press on this button so the boom stops its closing movement at the angular position indicated.
Data points	*This button allows to create a file with informations concerning the last movement done. This file can be asked by AS in case of problem.*

> ℹ️ The tests *(Stop position, Speed ramp, Open, Close, Open slowly and Close slowly)* can be stopped at any time by clicking **Stop** on the **Current test** screen.

14.3. OUTPUTS

Outputs

Output 1 ☑
Output 2 ☐
Output 3 ☐
Output 4 ☐
Output 5 ☐
Output 6 ☑
Relay 1 ☐
Relay 2 ☐
Relay 3 ☐

This test enables activation of the digital outputs and relays selected on the circuit board.

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

14.4. OPERATING

Operating

Intensive operating

| Start | Delay (ms) | 1500 | Stop |

The function test allows the entire barrier to be tested during continuous opening and closing movements.

In this case, unlike the «Intensive movements» motor test, all normal barrier functions are activated. In particular the management of digital outputs, and therefore traffic lights.

15. CONFIGURATION PAGE

This page lets you display and change all the equipment's operating settings.

Configuration

| Application | Smart n' Slim | Timers | Commands | Inputs | Outputs | Movement |

In the *Application* section you can:

- Configure the equipment ⇨ *Application* page;
- Adjust the timeouts ⇨ *Timers* page;
- Adjust the commands ⇨ *Commands* page;
- Define the inputs ⇨ *Inputs* page;
- Define the outputs ⇨ *Outputs* page;
- Calibrate the equipment ⇨ *Movement* page.

15.1. APPLICATION

Application

Device name	My Gate
Verbose Logs	Yes
Operating mode	Automatic
Open after power on	No
Reset error after new command	Yes
Error timeout (seconds)	1
Number of blockages	1
Action after blockage	Stop
Enable HMI	Yes

Cancel   Save

Device name	Permits using a meaningful name for the device.

Detailed Logs	The optional Ethernet extension circuit board, AS1622, is required to save logs since it contains the slot for the memory card for recording.
	Do not change this setting! **Only an AS technician has the right to do this.**
	Used to define the level of detail of the event log: – **Yes** = We will record more information on the SD card, if present. Without an SD card, this setting has no effect. – **No** = major events only.
Operating mode	Operating mode of the barrier: – **Automatic**: the barrier is controlled by the circuit board's digital inputs. – **Free access**: **validation loop** type inputs operate as opening loops. – **Blocked Open/Closed**: the barrier will remain in open/closed position regardless of the state of digital inputs. **If Locked open/closed is selected, it remains active even if the barrier is turned off.**
Open after power on	Permits setting whether the barrier must open or remain in its position on start-up. – **YES** = The barrier opens. A close command is required to close the barrier the first time. In other words, the "Maximum opening time if no passage" below is deactivated at start-up (except in the Blocked open mode If the barrier's operating mode is Blocked open or closed, it opens or closes respectively, independently of the value of the Movement setting at start-up. – **NO** = The barrier remains in its current position, open or closed. If it is between these 2 position, it opens.
Reset error after new command	Should a new command be sent to quit error mode on a faulty device: – **YES** = sending a new command is required. – **NO** = sending a new command is not required. An open or locked open command is required to reactivate the barrier. <u>For example:</u> If there is a motor error, when this one disappears, it is obligatory to have an opening command or an locked open for the barrier to be operational again.
Error timeout (seconds)	*Sets the delay, in seconds, before an error is returned to the system.*

Number of blockages	Permits setting the maximum number of closing attempts, at slow speed, when the boom is blocked. ⊘ if the Number of blockages above is set to 0, the blockage is ignored and the barrier immediately faults.
Action after blockage	Action to be taken if the boom remains blocked after the number of attempts set above: – **YES** = the barrier stays in its position *(stop)*. – **NO** = the barrier opens.
Enable IHM	– YES = activates the push buttons of the man/machine interface (HMI) on the AS1620 board as well as those of the optional AS1621 board with colour LCD display. – NO = Human/Machine Interface inoperative.

Clicking on the Help button, at the right of each configuration line, will display brief information on the setting and allows the selected setting to be restored to the factory value:

In the various configuration pages you can always cancel or save the changes made.

To do this, the two buttons below will always be visible:

15.2. SMART 'N SLIM

Allows to define all the parameters related to the integration of the device in the Supervision module, or Smart n' Slim, developed by **Automatic Systems**.

Group name	Defines the name of the group to which the equipment belongs.
Position in the group	Allows you to define the position of the equipment in a battery.
Position in the lane	Allows you to determine the position of the equipment in the lane.
Role	Defines the role of the equipment in Master/Slave operation. (Head to tail)
Partner ID	Identifies the partner, if used as Master/Slave. (Head to tail)

15.3. TIMERS

Timers

Max open time if no passage (seconds)	30	?
Delay after passage (milliseconds)	500	?
Delay before opening (milliseconds)	0	?
Delay before closing (milliseconds)	0	?
Delay after security (milliseconds)	0	?
Max time to complete opening (seconds)	7	?
Max time to complete closing (seconds)	7	?
Max stopping time (seconds)	0	?
Delay before brake	1000	?

Cancel   Save

The Timeouts section permits modifications to the values of various timeouts:

Max open time if no passage (seconds)	Time *(in seconds)* after which the barrier closes automatically if no passage has been detected.99 Number between 0 and 120 *(= 2min)*. ⚠ A zero value (0) means never. ℹ This delay time is deactivated during start-up *(⇨ 14.1. Calibration, page 41)*.
Delay after passage (milliseconds)	Delay *(in milliseconds)* after the sensor *(loop or cell)* notifies the end of a pass before the closing command is activated. ℹ *Works as a delay before closing but only with loops and/or cells.*

Delay before opening (milliseconds):	Delay *(in milliseconds)* after receiving an open command before the barrier actually begins to open. During this delay, the digital outputs have nonetheless already changed state. For example, the signal lights have changed to signal that the opening movement is about to start. Number between 0 and 60000 *(=1 minute)*. *Parameter also linked to the presence of an electromagnetic or electro-lockable tip support.*
Delay before closing (milliseconds):	Delay *(in milliseconds)* after receiving a close command before the barrier actually begins to close. During this delay, the digital outputs have nonetheless already changed state. For example, the signal lights have changed to signal that the closing movement is about to start. Number between 0 and 60000 *(=1 minute)*.
Time delay after safety (milliseconds):	Additional delay *(in milliseconds)* during which a safety movement *(reopening or stop)* is maintained once all safety sensors and loops have become inactive. Number between 0 and 60000 *(=1 minute)*.
Maximum time to open (seconds):	Maximum time *(in seconds)* allowed to perform an opening movement before changing to fault and sending the ***Blocking of the obstacle*** error (⇨ *Ch.10. Main menu, page 33*).
Maximum time to close (seconds):	Maximum time *(in seconds)* allowed to perform a closing movement before changing to fault and sending the ***Blocking of the obstacle*** error (⇨ *Ch.10. Main menu, page 33*).
Max stopping time (seconds)	Maximum time (in seconds) allowed during which the beam must be held in a STOP position, beyond which the barrier goes into fault by returning the obstacle blocking error ***Blocking of the obstacle*** (⇨*Ch.10. Main menu, page 33*). Number between 0 and 30.
	A zero value (0) means never.
Delay before brake	Delay before the brake is activated after the limit switch has been reached.

15.4. COMMANDS

Commands

Opening signal	Value	?
Closing signal	Value	?
Snapped out action	Open slowly	?
Passage counter : from	Input 5	?
Passage counter : to	Input 5	?
Record commands	Yes	?
Parking capacity	0	?
Counter 1 threshold	0	?
Counter 2 threshold	0	?

Cancel	Save

Opening signal	Signal giving the open command (2 contacts):
	– *Value* = the input is active when the signal is high.
	– *Fall time* = the input is active as the signal changes from high to low.
	– *Deadman* = the input is active when the signal is high. The barrier stops if the signal is low.
	– NB: This mode is only possible if the Manual mode input is active.
Closing signal	Signal giving the close command (2 contacts):
	– *Value* = the input is active when the signal is high.
	– *Fall time* = the input is active as the signal changes from high to low.
	– *Deadman* = the input is active when the signal is high. The barrier stops if the signal is low.
	– NB: This mode is only possible if the Manual mode input is active.
Snapped out action	Permits determining the action to be performed when a swing-off is detected:
	– *Open slowly* = the barrier opens slowly. The boom must be returned to its place for the equipment to return to normal operation.
	– *Hold position* = The barrier holds its position. To return to normal, the boom must be returned to its place and an opening/closing command given.
	– *None* = no action is taken, the swing-off is ignored. This option is useful to record events and/or transfer them to a third device via a digital or relay output.

Passage counter: from	Passages are measured and counted by observing the passage between 2 inputs *(generally loops)*. When a vehicle first passes loop A then loop B, it counts a passage **from A** to B
Passage counter: to	Passages are measured and counted by observing the passage between 2 inputs *(generally loops)*. When a vehicle first passes loop A then loop B, it counts a passage from A **to B**

> *If the Passage Counter and Passage Counter values are the same, the counting will be non-directional: one pass will be counted each time a vehicle leaves the loop.*

Record commands	Permits defining whether memorizing successive authorizations is allowed:
	– **Yes** = memorizing successive authorizations is active. It is not necessary to wait for the end of one passage before beginning another.
	– **No** = memorizing successive authorizations is inactive. It is necessary to wait for the end of a passage before beginning another.
Parking capacity	Permits defining the number of spaces available in the parking lot.
Counter 1 threshold	Permits defining the counter 1 thershold. When the threshold is attempt, the output **Counter 1 threshold** is activated.
Counter 2 threshold	Permits defining the counter 2 thershold. When the threshold is attempt, the output **Counter 2 threshold** is activated.

15.5.   INPUTS

Inputs

	Input type ?	Signal type ?
▷ Input 1 ?	Disabled	Norm. Opened
	Disabled	**Norm. Closed**
▷ Input 2 ?	Disabled — Open A	Norm. Opened
	Open B	
▷ Input 3 ?	Open Loop — Close	Norm. Opened
	Latching switch	
▷ Input 4 ?	Disabled — Authorisation Terminal A	Norm. Opened
▷ Input 5 ?	Security L — Authorisation Terminal B	Norm. Opened
	Stop	
▷ Input 6 ?	Disabled — Turn Motor Off	Norm. Opened
	Snap Out Sensor	
▷ Input 7 ?	Disabled — Lock Open	Norm. Opened
▷ Input 8 ?	Disabled — Lock Closed	Norm. Opened
	Lock Boom	
▷ Input 9 ?	Disabled — Local Mode	Norm. Opened
	Manual mode	
▷ Input 10 ?	Disabled — Inhibit A side	Norm. Opened
▷ Input 11 ?	Disabled — Inhibit B side	Norm. Opened
	Validation Loop B	
▷ Input 12 ?	Disabled — Open Loop A	Norm. Opened
	Open Loop B	
▷ Input 13 ?	Disabled — Close Loop/Cell	Norm. Opened
	Security Loop/Cell	
▷ Input 14 ?	Disabled — Limit Switch Opened	Norm. Opened
	Limit Switch Closed	

Cancel   Save

At each input available on the AS1620 circuit board, a predefined function can be allocated. These can be selected from a dropdown menu.

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

> *i*   An optional extension circuit board increases the number of inputs.

Each function can be freely assigned to each input. A single function can be used on several inputs (for example, in the case of several safety sensors). In this case, the function's settings *(⇨ Ch.15.1. Application, page 45)* apply to all inputs that have the same function.

> It is possible to assign a loop signal from another presence detector to any input x.

Certain functions are only accessible if the barrier is of the bidirectional type (including all functions for direction B).

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

15.5.1. Type of input

Disabled	Input not used.
Open A	Opens the barrier in the case of a 2-wire command *(the other wire is assigned to the close command)*. There is always a complete opening movement unless the associated **Opening signal** setting is configured on **Deadman**. Also configures the associated **Opening signal** setting *(⇨ Ch.15.4. Commands, page 50)*. For a bidirectional barrier, opening in the A to B passing direction.
Open B	For a bidirectional barrier, **Opening** type input for the B to A passing direction.
Close	Closes the barrier in the case of a 2-wire command *(the other wire is assigned to the open command)*. There is always a complete closing movement unless the associated **Closing signal** setting is configured on **Deadman**. Also configures the associated **Closing signal** setting *(⇨ Ch.15.4. Commands, page 50)*.
Latching switch	This input is used to command opening and closing of the barrier in the case of a 1-wire command. There is always a full movement. With each pulse on the input, the control alternates between opening and closing.
Authorization Terminal A	This input is used to open the barrier in conjunction with a validation sensor or loop *(ref. Settings below)*. The barrier will only open if the authorization terminal and a validation input are active at the same time. In the case of several authorization terminals and/or several validation sensors/loops, it is only necessary for one of the terminals and one of the sensors/loops to be active at the same time. If there is no validation sensor/loop, this input is equivalent to an **Open on value** type input!
Authorization Terminal B	For a bidirectional barrier, **Authorization terminal** type of input for the B to A passing direction. Functions in conjunction with the **validation sensor/loop B** Inputs.
Stop	This input permits immediate stopping of the barrier in its movement *(emergency stop)*.
Turn motor off	Allows the engine to be switched off by leaving the functional barrier *(red lights on)*.

Snap Out Sensor	Connection to a potential sensor for unhinging of the boom. Also configures the associated **Action during swing-off** setting *(⇨ Ch.15.4. Commands, page 50)*.
Lock Open	When the input is active, the barrier is temporarily placed in **Block open** mode. When the input is inactive, the barrier returns to its default mode*(⇨ Ch.15.1. Application, page 45)*.
Lock Closed	When the input is active, the barrier is temporarily placed in **Block closed** mode. When the input is inactive, the barrier returns to its default mode*(⇨ Ch.15.1. Application, page 45)*.
Lock boom	When the input is active, the barrier is temporarily placed in the following mode: • **Blocked open** if the barrier is open, opening or stopped • **Blocked closed** if the barrier is closed or closing. When the input is inactive, the barrier returns to its default mode*(⇨ Ch.15.1. Application, page 45)*.
Local mode	

⚠	It's always possible to do individual tests from the web interface!
⚠	When the barrier is local mode, all commands are ignored except those coming from inputs of a specific type: Open *(local mode)* and Close *(local mode)*.

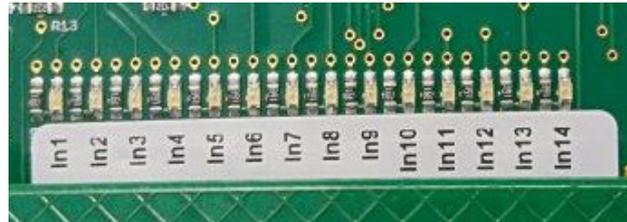|	
Manual mode	If the input is active, all loops are disabled *(except their safety function)*. The movements are only possible with manual controls. Dead man mode for the Open and/or Close inputs is possible.
Inhibit A side	Permits inhibition of open requests from other digital inputs. Also configures the associated **Action inhibited** setting *(⇨ Ch.15.4. Commands, page 50)*. This function is useful, for example, during configuration of 2 interlocked or bidirectional configuration barriers to prevent entry and/or exit.
	The **Blocked open** and/or **Blocked closed** commands always have priority over the Inhibit command.
	This function blocks open commands in direction A but leaves the barrier functioning normally in direction B.
Inhibit B side	Blocks open commands in direction B but leaves the barrier functioning normally in direction A.
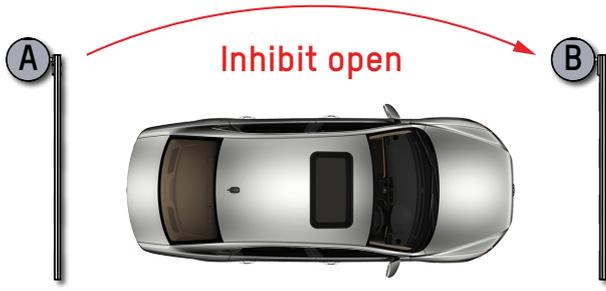
Validation Loop A	This type of loop is used in conjunction with an authorization terminal input to open the barrier. The barrier will only open if the authorization terminal input and the validation loop are active at the same time. In the case of several Authorization terminals and/or several Validation sensors/loops, it is only necessary for one of the terminals and one of the sensors/loops to be active at the same time. If there is no authorization terminal, this loop will not have its own function nor a safety action. In the **Free access** operating mode it will operate in the same way as an opening loop.
Validation Loop B	For a bidirectional barrier, **Validation loop** type of input for direction of passage from B to A. Functions in conjunction with the **Authorization terminal B** inputs.
Open loop A	The barrier opens when the loop is active. When the loop becomes inactive, the barrier closes if there are no other active loops.
Open loop B	For a bidirectional barrier, **Opening loop** type input for direction of passage from B to A.
Close loop / Cell	The barrier closes when the loop or the cell becomes inactive. It also operates as a safety loop whose action after safety is to **reclose**.
Security loop / Cell	This prevents the barrier from closing when a vehicle is under the boom. It only has an active role when the barrier is performing a closing movement. Also configures the **Safety action** and **Action after safety** associated settings (⇨ *Ch.15.1. Application, page 45*).
Limit Switch Opened	Allows to control the barrier managed by limit switches.
Limit Switch Closed	Allows to control the barrier managed by limit switches.
Power Fail Detection	When this input becomes active, a slight opening movement is made. *NB:* In the case of a barrier with mechanical locking without lifting, this will have the effect that the barrier will remain visually closed but it will nevertheless be possible to raise it by hand. *NB:* for all barriers excepted: BL 4x, BL 15, P+ 261/262, BL 227 and BL 245.
Dead Bolt Check	For barriers equipped with a lock *(BL 4x)*, this is the input that indicates whether the lock is unlocked or not. *NB:* For this to work, it is necessary to configure an output type in Lock with the signal type **Normally closed**.
Open (local mode)	Input for opening command, **in local mode only**.
Close (local mode)	Input for closing command, **in local mode only**.
Reset capacity	Resetting the vehicle counter in the car park.
Passage A	Each pulse on the input increments the counter from direction A to B.
Passage B	Each pulse on the input increments the counter from B to A.
Reset counter 1	With each impulse on the input, reset the counter value 1.
Increment counter 1	With each impulse on the input, increments la valeur du compteur 1.
Decrement counter 1	With each pulse on the input, decrements the value of counter 1.
Reset counter 2	With each impulse on the input, reset the counter value 2.
Increment counter 2	With each pulse on the input, increments the value of counter 2.
Decrement counter 2	With each pulse on the input, decrements the value of counter 2.

15.5.2. Input settings

Security action	During a closing movement, what action will be triggered by the loops or cells (without effect for the opening loops): – **Stop** = the barrier stops. – **Re-open** = the barrier reopens.

Action once security is cleared	Allows to define the action that is triggered as soon as all safety loops and cells become inactive: – **Re-close** *= the barrier closes.* – **Keep position** *= the barrier remains in position.*
Rising Edge delaying (milliseconds)	Rise time of the input signal.
Falling Edge delaying (milliseconds)	Fall time of the input signal.
Alias	Used to identify the selected entry with the name of your choice.

The status of inputs can be consulted on the circuit board on LEDs 10 to 23. See below for the LED / Input relationship:

15.6.   OUTPUTS

Outputs

| Output 1 ⑦ | Output type ⑦ | Alias ⑦ |

| ▷ Output 1 ⑦ | Block Mantrap | |
| ▷ Output 2 ⑦ | Not Used | |

Copy Input
Passage Contact
Logical Combination
End Position
Parking Full
Open Command
Close Command
Stop Command
Engine Brake
Electromagnetic Tip Support
Dead Bolt
Green Lights
Green Lights A
Green Lights B
Red Lights
Red Lights A
Red Lights B
Boom Lights
Active Security
Block Mantrap
Fraud detection
Counter 1 Threshold
Counter 2 Threshold

▷ Output 3 ⑦	Not Used	
▷ Output 4 ⑦	Not Used	
▷ Output 5 ⑦	Not Used	
▷ Output 6 ⑦	Not Used	
▷ Relay 1 ⑦	Not Used	
▷ Relay 2 ⑦	Not Used	
▷ Relay 3 ⑦	Not Used	

Cancel   Save

Each of the 6 outputs and each of the 3 relays available on the AS1620 circuit board can be configured by choosing its type from the corresponding dropdown menu.

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

> *i* An optional extension circuit board increases the number of outputs. These are then numbered X1-X2-X3, …

| Alias | Output name left at the user's choice. It is a simple alias, typically used on the web pages that display the status of outputs or in response to certain XML-RPC requests. |

15.6.1. Type of outputs:

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

▽ Output 2 (?)   **Red Lights**

Signal type	Norm. Opened (?)
Period	300 (?)
Signal when moving up (A)	Off (?)
Signal when moving down	Off (?)
Closing : early reporting	No (?)

Not used	The output considered is not used.
Copy input	The signal from the selected input will be continuously copied to the output. Any rise times or fall times are not taken into account when copying. The input signal and its copy can differ slightly due to the sampling frequency which is around 40 ms.
Passage contact	With each passage of a vehicle, a pulse of the length specified *(in milliseconds)* is sent to the output.
Logic combination	Permits assigning an output as a logic combination with one or more inputs. The text can contain the symbol INX *(where X is 1, 2...),* corresponding to one of the inputs, in combination with AND, OR, XOR, NOT or brackets ( ). For example, IN1 AND (NOT IN2 OR IN3)
End Position	Output active when the boom has physically reached the end of travel stop while opening and/or closing *(to be defined at the End of open/close travel settings: yes/no).*
Parking full	The output is active when the parking lot has reached its maximum capacity.
Open command	Open command sent by the barrier to a slave device. The moment when the signal is sent to the slave is defined with the **Customized** settings below.
Close command	Close command sent by the barrier to a slave device.
Stop command	Stop command sent by the barrier to a slave device.
Engine brake	Command for optional brake activation when the barrier is open and/or closed and/or stopped.
Electro-magnetic tip support	Command to activate the optional tip support.
Bead Bolt	Command to activate the optional boom lock.
Green lights	Command for activation of green signal lights or function pictograms(*) in any direction of passage.
Green lights A/B	Command for activation of signal lights or green function pictograms(*) in direction A or B.
Red lights	Command for activation of red signal lights or function pictograms(*) in any direction of passage.
Red lights A/B	Command for activation of red signal lights or function pictograms(*) in direction A or B.

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	In the presence of inductive loops, also select the time when the lights should be activated: when the vehicle is on the loop *(YES)* or when it leaves *(NO).(⇨ **Early closing signal***, 15.6.2. Output customisation, page 60)*
	* The 2 electrical cables for the function pictogram are connected to 2 outputs which must be assigned to the **Green lights** and **Red lights** function respectively. For each of the 2 outputs, configure the customized settings below so that the pictogram displays the color desired depending on the status of the barrier. The orange color of the pictogram is obtained by simultaneously activating the 2 outputs **Green lights** and **Red lights** *(⇨ configure the **Customized** settings in the same way for the 2 outputs).*

Boom lights	Activation of lamps attached to the boom.
	Also define the lamp operating mode (off, steady, blinking) when the boom is moving, open or closed.
Active security	Output active when a closing safety loop or cell is active.
Block Mantrap	The output is active when the barrier is not closed or when a presence is detected on one of its opening or validation loops.
Fraud detection	Output is active if somebody tries to move the boom arm up when the barrier is closed.
Threshold counter1	The output is active if the corresponding counter 1 has reached its threshold.
Threshold counter2	The output is active if the corresponding counter 2 has reached its threshold
Customized	Permits complete customization of the output by acting an a multiplicity of parameters.
	This option can only be used by a qualified technician. Incorrect setting can render the equipment inoperative.

15.6.2. Output customisation

Signal type	Choose between a **Normally Open** or **Normally Closed** type signal.
Period (milliseconds)	Length of the pulse to be sent or blinking period.
Signal when closed	Signal on output when the barrier is closed.
Signal when open (A)	Signal on output when the barrier is open.
Signal when open (B)	Signal on output when the barrier is open side B.
Signal when locked open	Signal on output when the barrier is in the Blocked Open Mode.
Signal when stopped	Signal on output when the barrier is stopped.
Signal when moving up (A)	Signal on the output when the barrier is in the opening movement.
Signal when moving up (B)	Signal on the output when the barrier is in the opening movement side B.
Signal when moving down	Signal on the output when the barrier is in the closing movement.
	If the **Delay before closing** *(⇨Ch.14.2. Motor drive, page 43)* is not null, the signal is emitted before the barrier actually begins to move.
Signal when in maintenance	Signal on the output when the barrier is in maintenance.
	In **Unit tests**, in the **Outputs** screen, this setting is ignored when the during display/change of state of the outputs.
Signal when error	Signal on the output when the barrier is faulty.
Closing: early reporting	Signals a closing when the closing loop becomes active *(therefore before the barrier initiates the closing movement)*.
	The output then changes as soon as a vehicle begins to pass under the barrier, instead of waiting for the vehicle to pass completely.
	Only the state of the output is changed, the barrier will still wait until the vehicle has left the closing loop before closing.
	Possible choices:
	No: normal transition = after closing loop;
	Yes: early transition = on the closing loop.

For each **Signal** type parameter, 4 activation choices are possible:

- **Off**: output inactive.

- **Steady**: output active.

- **Blinking**: changing from active state to inactive state *(alternating 0 and 1)* depending on the period defined at the **Period** setting above;.

- **Pulse**: output active *(for the time set at the **Period** setting above)* when the barrier reaches the state in question.

15.7. MOVEMENT

Allows the management of all aspects of barrier movement.

Movement

Opening time (%)	80
Closing time (%)	60
Safety Margin Opened (%)	3
Safety Margin Closed (%)	3
Keep Opened (%)	100
Keep Closed (%)	100
Frequency at end of opening (%)	100
Frequency at end of closing (%)	100
Opening acceleration ramp (%)	100
Closing acceleration ramp (%)	100
Inversion ramp (%)	100

Cancel   Save

Paramètre:	Valeur(s):	Description:
Opening time (%)	from 20 to 100	Adjustment of the opening time as a percentage of the maximum value recorded for the installed product. 100% corresponds to the fastest opening speed.
Closing time (%)	from 20 to 100	Adjustment of the closing time as a percentage of the maximum value recorded for the installed product. 100% corresponds to the fastest opening speed.
Safety Margin Opened (%)	from 3 to 15	Safety margin applied at the end of travels as calibrated. The boom moves at reduced speed once it has reached the zone defined by the safety margin.
Safety Margin Closed (%)	from 3 to 15	Safety margin applied at the end of travels as calibrated. The boom moves at reduced speed once it has reached the zone defined by the safety margin.
Keep Opened (%)*	from 0 to 500	Adjusts the frequency used to hold the barrier in place.
Keep Closed (%)*	from 0 to 500	Adjusts the frequency used to hold the barrier in place.

Frequency at end of opening (%)*	from 0 to 500	Adjustment of the frequency used at the end of the opening cycle. (This feature is only interesting if the limit switch pulse is used to slowdown the speed)
Frequency at end of closing (%)*	from 0 to 500	Adjustment of the frequency used at the end of the closing cycle. (This feature is only interesting if the limit switch pulse is used to slowdown the speed)
Opening acceleration ramp (%)*	from 100 to 500	Adjustment of the opening acceleration ramp. *(The higher the value, the longer the ramp will be)*
Closing acceleration ramp (%)*	from 100 to 500	Adjustment of the closing acceleration ramp. *(The higher the value, the longer the ramp will be)*
Inversion ramp (%)	from 100 to 500	Adjustment of the acceleration ramp when reopening during closing.

* The value is the percentage of the preset value for the barrier type or from the calibration for BL15.

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16. NETWORK PAGE

This page is used to configuration of the equipment so that it will be recognized by the network to which it is connected.

Network

Ethernet	Communication	Modbus

Ethernet

MAC address	d8:80:39:d0:18:1f
IP address	172.18.1.46
Ethernet cable	Yes
DHCP	No
IP address	172.18.1.46
Netmask	255.255.255.0
Gateway	172.18.0.66

Cancel   Save

The *Communication* section is used to determine the **Modbus** communication settings. THE XML_RPC Watchdog Start indicates the number of time GetStatus() must be sent to start the Watchdog XML-RPC. This process will never start with value 0. The timeout will reset the AS1620 program if no GetStatus() is received during that time.

Network

Ethernet	Communication	Modbus

mmunication

Modbus Port	502
Modbus Slave ID	1
XML-RPC Port	8081
XML-RPC Watchdog Start	1
XML-RPC Watchdog Timeout	5

Cancel   Save

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

Network

Ethernet	Communication	Modbus

Modbus

Word (hex) ?	Content ?
0000	Inputs
0001	Angular sensor
0002	Outputs
0003	Input 1 type
0004	Input 2 type
003F	Input 3 type
0040	Input 4 type
0041	Input 5 type
0042	Input 6 type
0043	Input 7 type
0044	Input 8 type
0045	Input 9 type
0046	Input 10 type
0047	Input 11 type
0048	Input 12 type

FFFF	None
FFFF	None
FFFF	None
FFFF	None
FFFF	None

Cancel	Save

17. <u>INSTALLATION PAGE</u>

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

Installation

Device Type	BL15
Boom Length	3m
Brake connected to Motor Drive	No

Cancel   Save

Depending on the device type selection, different installation parameters are available:

Installation

Device Type	BL229-std
Position sensor type	Angular Position Sensor
Boom Length	3m
Brake connected to Motor Drive	

Cancel

Installation

Device Type	BL5X
Motor type	250w
Brake connected to Motor Drive	No

Cancel   Save

Installation

Device Type	BL40
Boom Length	3m
Railings	No / Yes
Brake connected to Motor Drive	No

Cancel   Save

Parameter	Description
Position sensor type	Allows you to choose the type of position sensor that equips the device. You can choose between **angular position sensor** and **limit switches**.
Motor type	**250 or 550 W** *(Only for BL5x).*
Boom length	Choice of the boom length, **from 2 to 12 meters** depending on the type of device selected.
Railing	Allows you to define whether or not the barrier is equipped with a rigid net or an articulated harrow.
Brake connected to motor drive	Used to define whether a brake is connected to the frequency converter relay.

18. SYSTEM PAGE

System

Save logs and counters	Clear logs

Last Events

Date and Time	Type of event	Cause
03/22/2017 10:35:46	New date and time	Web
03/22/2017 10:31:59	Old date and time	Web
03/17/2017 09:51:13	Moving Down	Recorded input command
03/17/2017 09:51:10	Moving Up	Input command
03/17/2017 09:50:54	Moving Down	Input command
03/15/2017 14:53:00	Boot	--
03/15/2017 14:52:40	Power Failure	--
03/15/2017 14:51:54	Boot	--
03/15/2017 14:51:45	Power Failure	--
03/15/2017 14:51:22	Boot	--
03/15/2017 14:51:11	Power Failure	--
03/15/2017 14:45:21	Power Failure	--
03/15/2017 14:38:47	New date and time	Web
03/15/2017 14:37:53	Old date and time	Web
03/14/2017 15:55:00	Software reset	Web
03/14/2017 08:20:41	New date and time	Web
03/14/2017 08:20:10	Old date and time	Web
03/13/2017 17:22:05	New date and time	Web
03/13/2017 17:21:50	Old date and time	Web
03/10/2017 13:41:40	Software reset	Web

Last Errors and Warnings

Date and Time	Error/Warning	Resolved
03/15/2017 14:51:45	The obstacle has snapped out: put it back in place	--
03/13/2017 17:23:59	The obstacle has snapped out: put it back in place	--
03/13/2017 17:22:37	The obstacle has snapped out: put it back in place	--

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

This page can help solve problems which arise and restore the equipment to operating condition.

19. SOFTWARE PAGE

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

This is also where you can backup or restore settings as well as update the software (see below).

Software

Product Code	VOPAC-trunk
Version	TEST
SVN Date	2018-03-21
SVN Version	22229
Compilation Date	2018-03-26 18:12:30
Bootloader	V4
Board Name	AS1620R00
Serial Number	00000000
Production Date	170929

> The buttons below are only visible if you have identified yourself.

For the *Configuration* section:

Configuration

Download Settings

Choose a file

Upload a setting file ☑ Overwrite current factory settings

Restore factory settings **Save new factory settings**

Downloading Settings	Copy of configuration settings that can be used to reinstall a piece of equipment or to copy a configuration between 2 identical pieces of equipment, that is, having the same electrical connections, the same boom length and the same type of spring. In this case, all the settings for the equipment are copied, except for the settings specific to it, in particular the position of the stops and the name of the equipment ⇨ it will therefore be necessary to calibrate the equipment's stops *(Unit tests > Calibration > Position of stops* and *Speed ramp page)*!
Choose a file	Browse your computer to select a configuration file to load.
Upload a setting file	Install an archive file from the PC to the CPU.
Overwrite current factory settings	If this option is enabled, the file configuration will overwrite the current factory configuration.
Restore factory settings	Restores factory settings.

Save new factory settings	Saves the current configuration as the factory configuration.
	⛔ **Warning: the old factory configuration will be deleted!**

For the *Software* section:

Software

[Reboot]

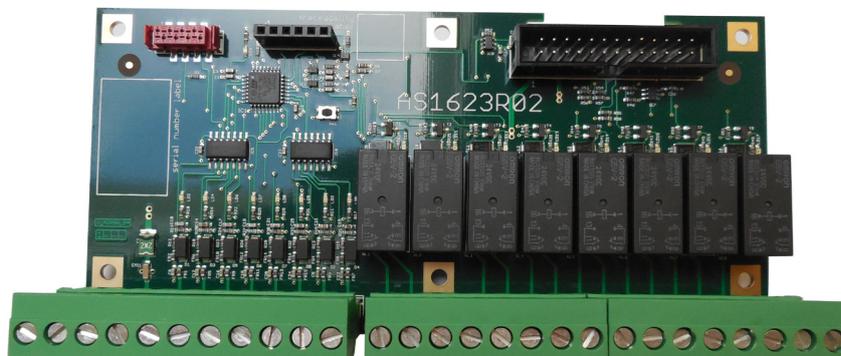[Choose a file] [ ]

[Install a new software]
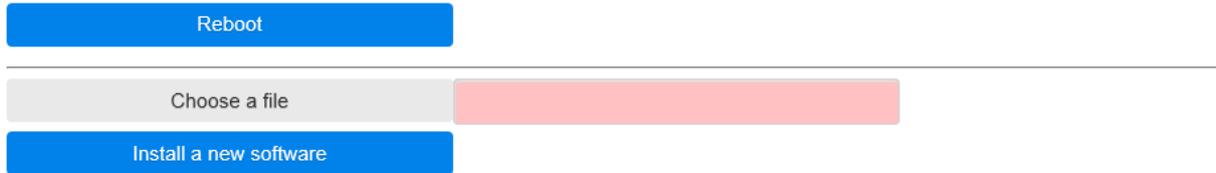
Reboot	Restart the program.
Choose a file	Browse your computer to select a program archive to load.
Install a new program	Allows a new version of the program be installed.

20. OPTIONAL EQUIPMENT

20.1.   INPUTS/OUTPUTS EXTENSION BOARD - AS1623

This extension board allows you to increase the number of Inputs and Outputs:

*   8 Inputs

*   8 Outputs with relay NC.

20.2.   BOARD FOR ETHERNET CONNECTION - AS1622

If the user wants to connect the barrier to a network in order to get a remote control, or to access the status of this network, remotely, this ETHERNET card can be added to the main control card (AS1620).

20.3.   BOARD FOR HMI WITH COLOR TFT DISPLAY - AS1621

When an Ethernet network is not available, this expansion card with colour TFT display allows, via simplified menus, much more visual settings of the barrier.

20.4.   AS1650 LOOP DETECTOR INTERFACE BOARD

An interface board AS1650 is available as an option to simplify the wiring connexion between the AS1620 entry connector CN5 and the loop detectors. ⇨22. Electrical diagrams, page 72.
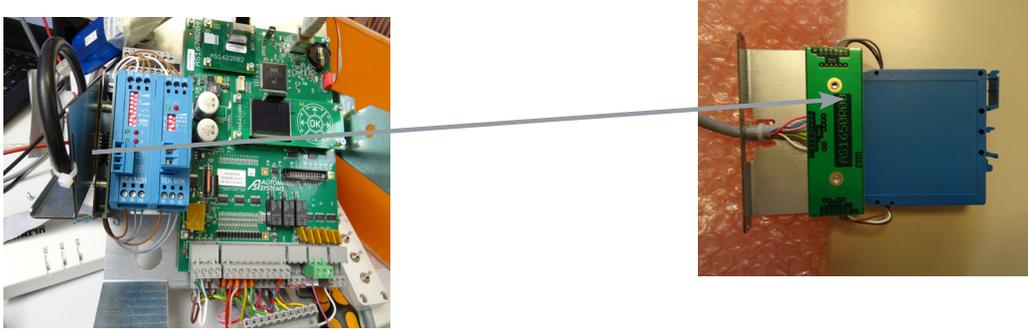
This small AS1650 interface board delivers the 0V and 24VDC to several points of the simple or double loop detectors.

21. MASTER SLAVE CONFIGURATION

It is sometime necessary to control a vehicle access lane with 2 barriers in a master/ slave configuration (see picture below). In order to synchronize the opening and closing cycle between the two barriers, the loop detectors ans readers are connected to the master logic board and the master forwards the opening and closing commands to the slave.

See for example the master / slave connexion on the BL229 electrical drawing ⇨ 22. Electrical diagrams, page 72 . In this configuration, the output number 5 of the master barrier is settle as **open command** and the output 6 is a **close command**. On the slave side, these outputs are connected to entries E1 et E3.

If the boom arm position is detected by an angular analog sensor or if a brake is available, a stop command makes sense and another output (master logic) can be programmed as a **stop command**.

22. ELECTRICAL DIAGRAMS

As the wiring is specific to the configuration of each piece of equipment, please refer to the electrical diagram located inside the machine, or failing that, to the diagram in the technical manual of the equipment in question.

NOTE(S)

AS1620-MT-EN-03

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