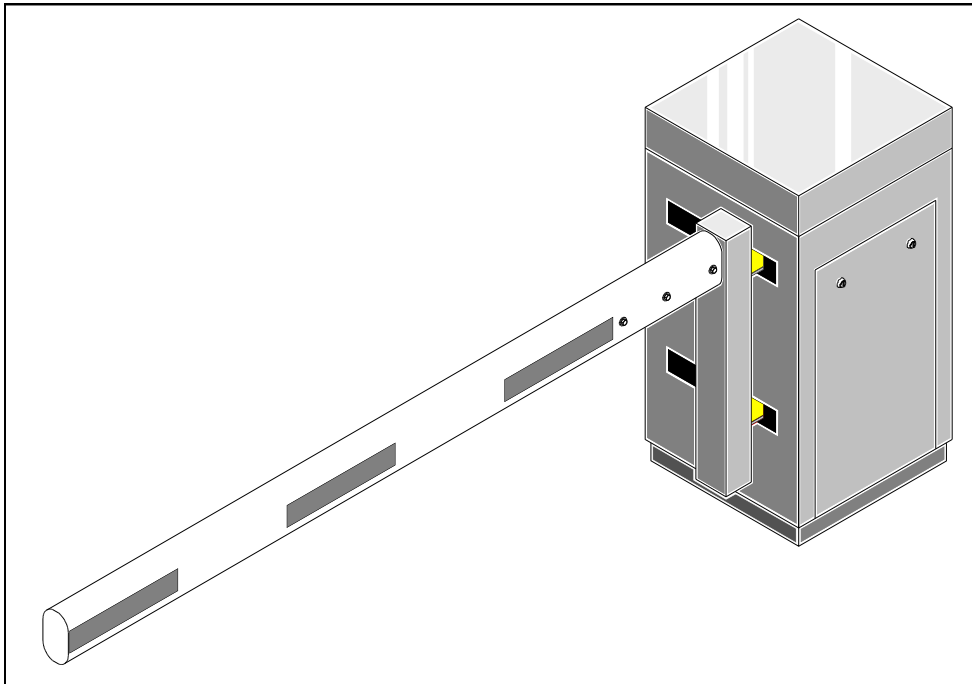


## **Electrical swinging barrier**

### **BP56**



## **OPERATING MANUAL**

(translated from French)

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## Revision page

| Rev | Date          | Written by | Checked by | Nature of the modification   |
|-----|---------------|------------|------------|--|
| 02  | Nov. 30, 2007 | MFy        |            | <ul style="list-style-type: none"> <li>- Adapt to software version 4.1 of AS1320 control board (ch 2.3).</li> <li>- Update of the electric diagram (ch 6).</li> <li>- Addition of the layout plan (ch 7)</li> <li>- Update of the conformity certificates (ch 8).</li> </ul> |
| 03  | Jun 20, 2008  | MFy        |            | <ul style="list-style-type: none"> <li>- Control board: adapted to version 6.x of the program.</li> <li>- Revision of the electric diagram &amp; addition of connector blocks assignment.</li> </ul>   |
| 04  | July 3, 2008  | MFy        |            | Ch.6.1: adapt the detection loops pinning references to electric drawings (X9-X11-X13-X14).  |
| 05  | 2009-08-04    | MFy        |            | Ch.2.4: operation t° modification.<br>Ch. 8: EC certificate update.  |
| 06  | 2009-11-27    | MFy        |            | Ch.1: warning added regarding detection loops installation.<br>Ch.2.3 adapted to control board v 6.2.  |
| 07  | 2010-01-05    | MFy        |            | EC certificate update.   |
| 08  | 2015-04-20    | SLu        | AD         | General dimension drawing updated (p.25).  |

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## 1. INTRODUCTION

### WARNING:

YOUR SWINGING BARRIER TYPE BP56 COMPRISES A MECHANISM AND VARIOUS ELECTRICAL COMPONENTS. ANY NEGLIGENCE DURING AN INTERVENTION IN THE MACHINE MAY SERIOUSLY ENDANGER YOUR SAFETY. AS SOON AS YOU OPEN THE HOUSING, SWITCH OFF THE CIRCUIT BREAKER (2:1) LOCATED BEHIND THE SIDE DOOR (1:1). BE CAREFUL IN HANDLING ANY INTERNAL ELEMENT WHICH MIGHT BE UNDER POWER OR COULD BE SET IN MOTION.

### IMPORTANT INFORMATION CONCERNING HEALTH & SAFETY PROCEDURES

The introduction of a pedestrian or vehicle barrier product as manufactured by **Automatic Systems** places a duty of responsibility for the safety and well-being of any user(s) or person(s) in close proximity to such equipment. You are required therefore to observe and put in place appropriate safety measures, as deemed necessary.

- ◆ Pedestrian flow must be prohibited anywhere within a vehicle barrier passage-way, unless the movement of the barrier system is clearly indicated, e.g. audible and/or visual signals, floor marking, notices, etc.
- ◆ Access keys to any of the internal mechanisms can only be issued to authorised and qualified personnel, aware of the relevant electrical and mechanical safety codes and regulations in force. All equipment housing must be kept locked.

You have a legal obligation and responsibility to enforce good safety practices at all times. See also note below.

**Note:** *In the countries of the European Union, the requirement 1.3.7.2 of the EC Machines Directive prescribes that the pictogram for "Dangerous area" -- no entry for pedestrians" be affixed on both sides of the equipment (\* within 1 meter of the barrier arm).*

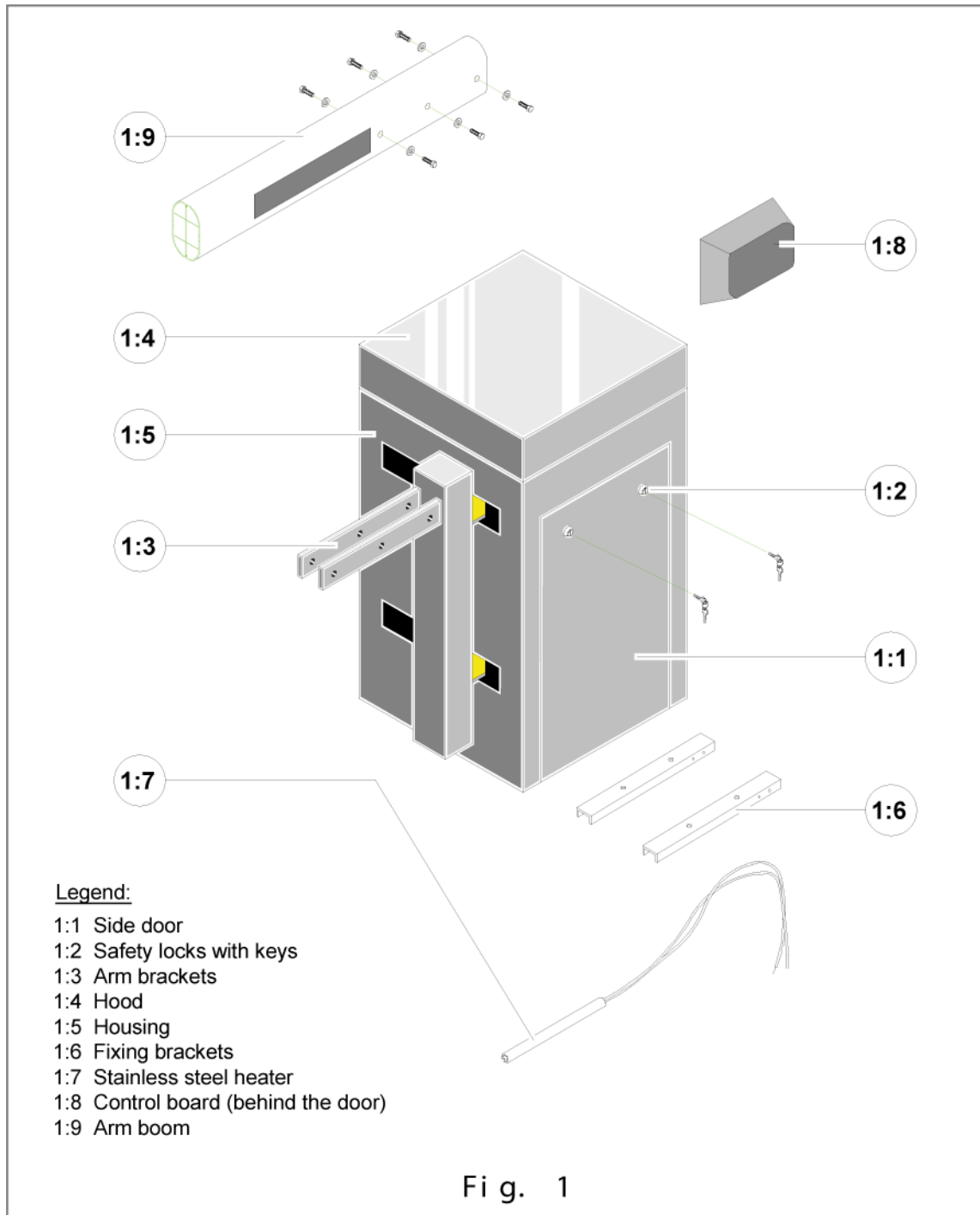


The installation of detection loops must be validated by qualified personnel who will determine their optimal configuration (adapted to vehicle type and passageway).

**WARNING:** The risk of injury exists for people when using standard detection loops: they can incorrectly detect trucks and (motor)bikes and close the gate on them!

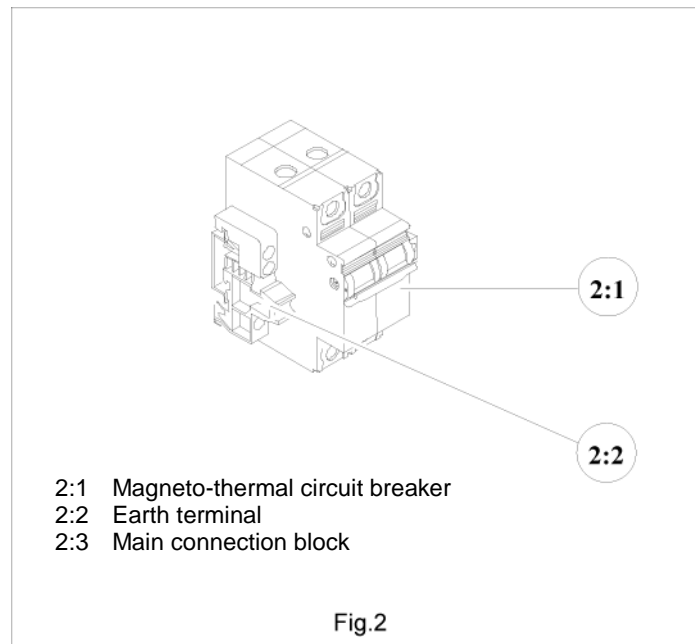
## 2. GENERAL

### 2.1. Overall view



## 2.2. Switching off the equipment

- As soon as you open the housing, switch off the power by switching off the magneto-thermal circuit breaker (2:1) located behind the side door (1:1).



### 2.3. AS1320 Control board (Extract from AS1320 technician manual)

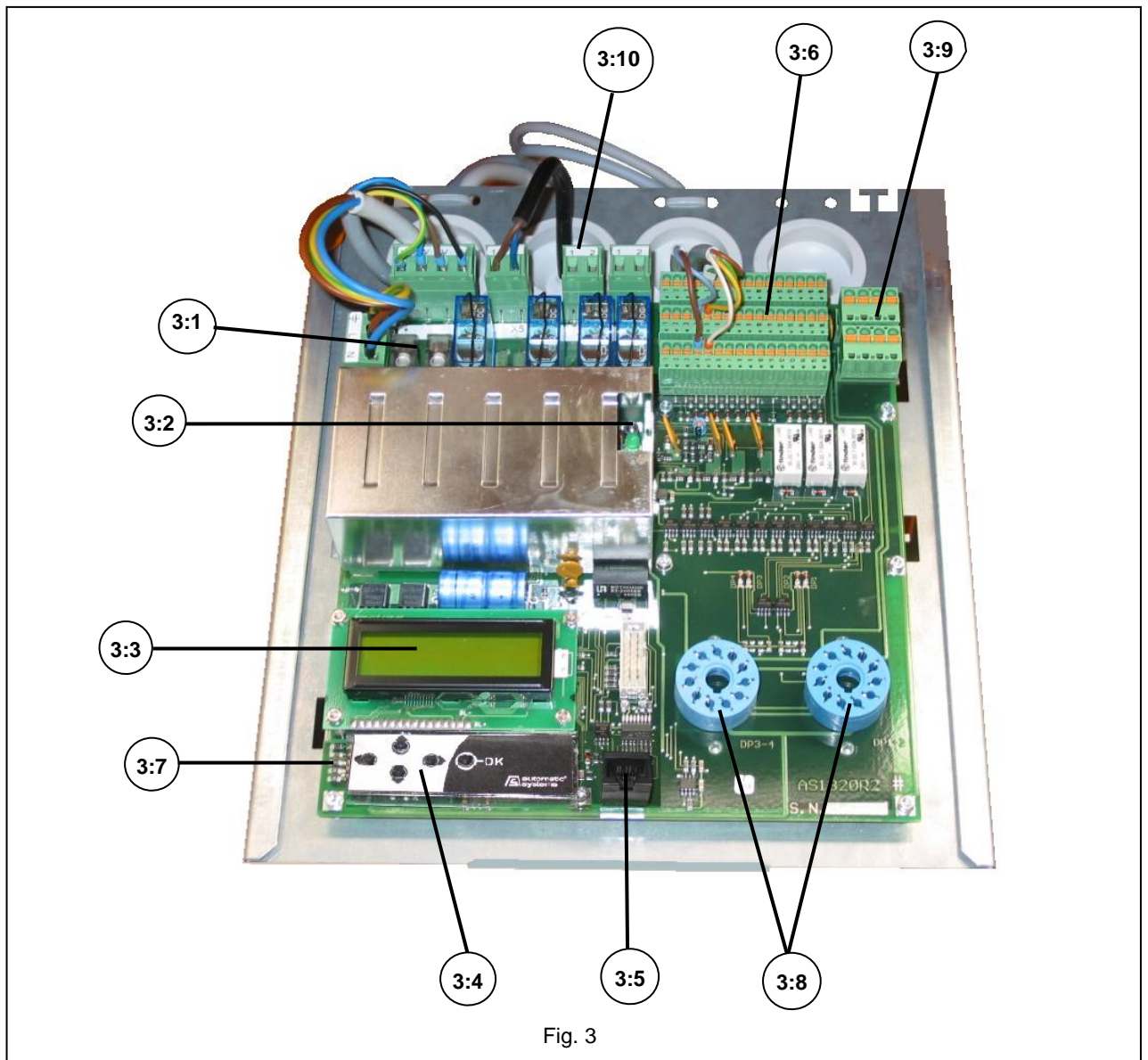


Fig. 3

- 3:1. Fuses
- 3:2. Stabilised power supply indicator light
- 3:3. Menu display screen
- 3:4. Menu navigation keys
- 3:5. RJ45 communication connector
- 3:6. In/Out control connector blocks
- 3:7. 5 green LEDs (lit when the board is on)
- 3:8. Connectors for presence detectors (for inductive loops)
- 3:9. Connector for inductive loops
- 3:10. "X8" connector for heater

The control board is the interface between the user and the obstacle, which manages all the latter's actions, including any possible options.

Hereinafter are presented only the functions accessible in Simplified mode and sufficient for daily use of the equipment.

For a detailed description of all the functions, their parameter setting, etc, please refer to the manual dedicated to the board (available on request)..

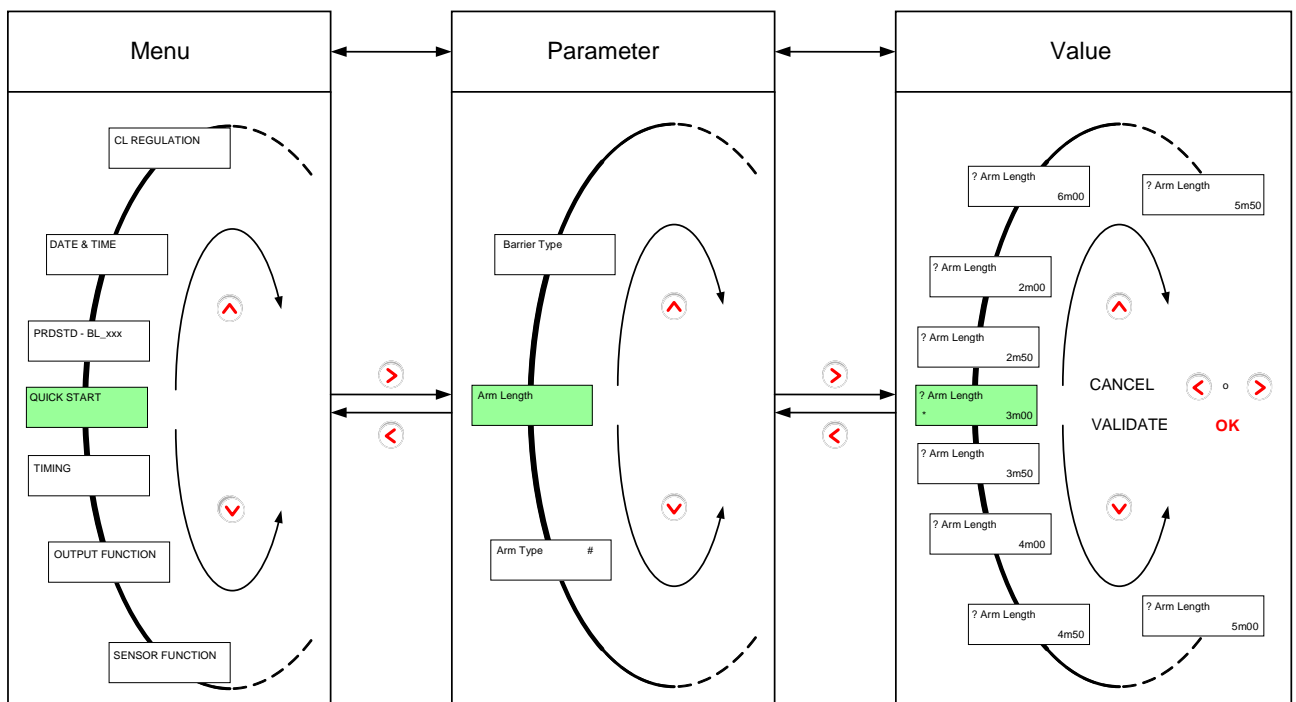
Navigation in the menus of the display screen is based on a pull-down menu architecture on 3 levels:

MENUS ↔ PARAMETERS ↔ VALUES.

Moving from one level to another is achieved via the ◀ ▶ keys and navigation inside those levels by means of the ▲ ▼ keys (press for a few seconds to go from the at-rest screen to another menu).

**Note:** the second column in the tables below provides the parameter default values as they are entered during manufacturing of the control board.

Nevertheless, as each equipment has been specifically adjusted in our workshops, the values actually present on the board may differ slightly.



Menus are displayed in capital letters on the top line, starting with the first character of the LCD. Hold ▲ or ▼ for a few seconds to leave the PRDSTD screen and access the other menus.

Only the first letter of each word in the parameters is a capital. They are displayed on the top line starting with the second character of the LCD (i.e., there is a space in front). At the end of the top line, the parameter unit is displayed if there is one.

A question mark (?) preceding the parameter indicates that it is ready to be modified. The current value of the parameter appears on the second line. A star (\*) below a parameter indicates that it is the default value (set in the factory). To validate a modification, press the OK key.

**⚠ Store the modifications to avoid them being lost in the event of a power outage ("QUICK START" → "MEMORY" → "Save").**



### 2.3.1. “PRDSTD – BL\_xxx” Menu: Diagnosis and monitoring

This screen appears when the unit is turned on and when there has not been any navigation through the menus in Simplified mode for 100 seconds.



| Parameter | Values | Description  |
|-----------|--------|--|
|           |        | <p><b>OK key:</b> (only within this menu <b>(*)</b> and when no other parameter is selected): command for opening and closing the obstacle.<br/>           OK during opening: without effect.<br/>           OK during closing: inversion (= opening).<br/>           OK maintained: oscillating movement around the opening limit switch: the obstacle opens, starts closing, opens again, etc.</p> <p><b>(*) Warning:</b> in "QUICKSTART" menu, validating passage from Extended to Simplified menus through the OK key causes also an opening or closing movement of the arm, even if a presence is detected by the Presence sensors.</p> <p><b>Note:</b> When the operating mode is configured as “1 contact” (see the “Exploitation” parameter in the "QUICK START" menu), the obstacle closes automatically when the opening limit switch is detected.</p> <p><b>Left key (◀):</b> Change the menu display language with each touch.<br/>           EN = English<br/>           FR = Français<br/>           NL = Nederlands<br/>           DE = Deutsch<br/>           ES = Español<br/>           IT = Italiano<br/>           SV = Svenska</p> <p>Select the language using the OK key or allow it to change automatically after a few seconds, following which <b>all of the preceding parameter modifications</b> (including the language) will be saved in MEM1.</p> |

|                      |                         |   |     |                         |   |     |                       |  |     |                         |  |     |                      |   |
|----------------------|-------------------------|---|-----|-------------------------|---|-----|-----------------------|--|-----|-------------------------|--|-----|----------------------|---|
| <i>Soft. Version</i> |                         | <p>Display the software version used by the control unit, following format "type – evolution – version – revision – minor index" of the application.</p> <p>The descriptions included in this chapter correspond to versions "00-00-06-rr-00".</p>  |     |                         |   |     |                       |  |     |                         |  |     |                      |   |
| <i>Log</i>           |                         | <p>Display of the last 100 events (use ► the ▲ and keys to view preceding events).</p> <p>For the first two seconds, the event number (00 for the last event recorded (= most recent), 01 for the preceding event, and so on), as well as the date (year-month-day) and time (hours-minutes-seconds) of creation are displayed.</p> <p>In the next two seconds, the event description is displayed.</p> <p>For example:</p>   |     |                         |   |     |                       |  |     |                         |  |     |                      |   |
|                      |                         | <table border="1"> <tr> <td>2 s</td> <td>Log<br/>00 060324 235034</td> <td>On 24 March 2006 at 23 hours (11 p.m.) 50 minutes and 34 seconds...</td> </tr> <tr> <td>2 s</td> <td>Log<br/>Out Of Service</td> <td>...the apparatus was put out of service.</td> </tr> <tr> <td>2 s</td> <td>Log<br/>01 060324 235034</td> <td>View the preceding message (01) using the ►▲ keys...</td> </tr> <tr> <td>2 s</td> <td>Log<br/>Open Time Out</td> <td>...we observe that it was put out of service due to a time out while opening.</td> </tr> </table> <p><b>Note:</b> If no error message is displayed when the machine fails, refer to the Troubleshooting chapter.</p> | 2 s | Log<br>00 060324 235034 | On 24 March 2006 at 23 hours (11 p.m.) 50 minutes and 34 seconds... | 2 s | Log<br>Out Of Service | ...the apparatus was put out of service. | 2 s | Log<br>01 060324 235034 | View the preceding message (01) using the ►▲ keys... | 2 s | Log<br>Open Time Out | ...we observe that it was put out of service due to a time out while opening. |
| 2 s                  | Log<br>00 060324 235034 | On 24 March 2006 at 23 hours (11 p.m.) 50 minutes and 34 seconds...   |     |                         |   |     |                       |  |     |                         |  |     |                      |   |
| 2 s                  | Log<br>Out Of Service   | ...the apparatus was put out of service.  |     |                         |   |     |                       |  |     |                         |  |     |                      |   |
| 2 s                  | Log<br>01 060324 235034 | View the preceding message (01) using the ►▲ keys...  |     |                         |   |     |                       |  |     |                         |  |     |                      |   |
| 2 s                  | Log<br>Open Time Out    | ...we observe that it was put out of service due to a time out while opening.   |     |                         |   |     |                       |  |     |                         |  |     |                      |   |
|                      | <i>Power Up</i>         | Power was turned on.  |     |                         |   |     |                       |  |     |                         |  |     |                      |   |
|                      | <i>Power Down</i>       | Power was turned off.   |     |                         |   |     |                       |  |     |                         |  |     |                      |   |
|                      | <i>Short Circuit</i>    | <p>Short circuit of the control board outputs (connector blocks). The short circuit is declared and the equipment put Out of Service only after 3 unsuccessful reactivation tries within the 2.5 seconds following a voltage drop in the 24V power supply (this is to avoid putting it out of service at inopportune moments, as for example during a network changeover to an emergency generator).</p> <p>If one of the outputs short circuits, all of them become inactive and the control board must be powered up again for the outputs to be reactivated.</p>   |     |                         |   |     |                       |  |     |                         |  |     |                      |   |
|                      | <i>Open Time Out</i>    | Time out during opening: the time allocated for opening was exceeded ("TIMING" menu, "OpenTimeOut" parameter).  |     |                         |   |     |                       |  |     |                         |  |     |                      |   |
|                      | <i>Close Time Out</i>   | Time out during closing: the time allocated for closing was exceeded ("TIMING" menu, "CloseTimeOut" parameter).   |     |                         |   |     |                       |  |     |                         |  |     |                      |   |
|                      | <i>Close Retries</i>    | Allotted number of trials to close have been executed (as defined in the "TIMING" menu).  |     |                         |   |     |                       |  |     |                         |  |     |                      |   |
|                      | <i>Arm Swing Off</i>    | <p>Arm detected out of its support jaw (see the "Arm Swing Off" parameter in the "OPTIONS" menu).</p> <p>If the message continues to be displayed after the arm is rehinged, check the status of the "SW arm presence" sensor and its fastening.</p>  |     |                         |   |     |                       |  |     |                         |  |     |                      |   |

|  |                          |  |
|--|--------------------------|--|
|  | <i>Out Of Service</i>    | <p>Apparatus out of service. This may be caused by the following events:</p> <ol style="list-style-type: none"> <li>1) Time out during opening (see "<i>Open Time Out</i>" message).</li> <li>2) Time out during closing (see "<i>Close Time Out</i>" error) + allotted number of tries to close have been executed (see "<i>Close Retries</i>" message).</li> <li>3) Arm is unhinged (see "<i>Arm Swing Off</i>" message).</li> <li>4) Locking or unlocking failure of the BL4x (see "<i>Unlock BL4x Er</i>" message).</li> <li>5) Defect of the frequency inverter.</li> </ol> |
|  | <i>Time Adjust</i>       | Modification of the date and time.   |
|  | <i>Access Level Chg</i>  | Change to the access level.  |
|  | <i>OOS Restore</i>       | Apparatus put back in service (after it has been out of service) => see the " <i>RestartMode</i> " parameter under the " <i>OPTIONS</i> " menu.  |
|  | <i>Test Intensive</i>    | Activation of the intensive test.  |
|  | <i>Lock Open</i>         | The Lock Open command of the test mode has been activated.   |
|  | <i>Lock Close</i>        | The Lock Close command of the test mode has been activated.  |
|  | <i>Safety Arm</i>        | Safety arm (only with the "rubber protection profile" option: Rubber strip that detects when the arm makes contact with a vehicle).  |
|  | <i>Sw Manual</i>         | <p>Frequency converter power cut-off in order to prevent any movement of the obstacle in case of:</p> <ul style="list-style-type: none"> <li>• Crank presence sensor activation (available on some equipment for manual handling of the obstacle),</li> <li>• Door/hood opening sensors activation (option on some equipment).</li> </ul>  |
|  | <i>Reset Sensor Init</i> | Change of the positioning sensor type (cf. " <i>Positioning</i> " parameter of " <i>QUICKSTART</i> " menu).  |
|  | <i>LS Fault</i>          | Both opening and closing limit switches are activated simultaneously or badly connected during 100 ms, while " <i>Positioning</i> " parameter of the " <i>QUICKSTART</i> " menu is set to " <i>Limit Switches</i> ".   |
|  | <i>Reset LS Fault</i>    | Limit switch problem resolved (see " <i>LS Fault</i> " error).   |
|  | <i>Analog. Fault</i>     | The analogue sensor send measure 0 or 1000 during minimum 100 ms. This may result from a defective wiring, a wrong positioning of the sensor in front of its cam, a defective sensor, etc.   |
|  | <i>OP Power Cut</i>      | Unlocking of the obstacle following an outage of the supply voltage (if " <i>QUICK START</i> " ► " <i>Power Fail OP</i> " ► " <i>ON</i> ").  |

|  |                          |   |
|--|--------------------------|---|
|  | <i>OP Power Blip</i>     | Unlocking of the obstacle following a micro-outage of the supply voltage (the voltage drops to 0 V during a few milliseconds) (if " <i>QUICK START</i> " ► " <i>Power Fail OP</i> " ► " <i>ON</i> ").<br>In this state, the obstacle is STOPPED but still operational, because the supply voltage has returned. The apparatus waits for the next command to execute a movement. |
|  | <i>CoolingMotor ON</i>   | Start-up of the motor cooling fan.<br><b>Note:</b> This message is only displayed if the "Cooling – Log" (below) is "ON".   |
|  | <i>CoolingMotor OFF</i>  | Stopping of the fan that cools the motor.<br><b>Note:</b> This message is only displayed if the "Cooling – Log" (below) is "ON".  |
|  | <i>Stop Time Out</i>     | Elapse of the delay defined under the " <i>Max Stop</i> " parameter of the " <i>TIMING</i> " menu for the regulation of the obstacle position with regard to the Stop.  |
|  | <i>Download Chg Lv1</i>  | Download of a version of the control board program differing from the one previously installed.<br>As there is a difference of level 1 (revision modification), only the parameter values found in MEM1 are modified.   |
|  | <i>Download Chg Lv2</i>  | Download of a version of the control board program differing from the one previously installed.<br>As there is a difference of level 2 (modification of the version or evolution), all of the parameters are returned to their default values.  |
|  | <i>Download Chg Lv3</i>  | Download of a version of the control board program differing from the one previously installed.<br>As there is a difference of level 3 (modification of the application), all of the parameters are returned to their default values and the counters are reset to 0.   |
|  | <i>Reset Counters</i>    | Counters reset to zero following the download of a different program version of level 3 (see " <i>Download Chg Lv3</i> ").  |
|  | <i>Curve 229Std</i>      | Change in the type of barrier: selection of "curve 229 standard" (" <i>Barrier Type</i> " parameter under the " <i>QUICK START</i> " menu).   |
|  | <i>Curve 229Highway</i>  | Change in the type of barrier: selection of "curve 229 highway" (" <i>Barrier Type</i> " parameter under the " <i>QUICK START</i> " menu).  |
|  | <i>Curve 1x-2x-3x-5x</i> | Change in the type of barrier: selection of "curve for BL16, BL32, BL33, BL52, BL53" (" <i>Barrier Type</i> " parameter under the " <i>QUICK START</i> " menu).   |
|  | <i>Curve BLG77</i>       | Change in the type of barrier: Selection of "curve BLG77" (" <i>Barrier Type</i> " parameter under the " <i>QUICK START</i> " menu).  |
|  | <i>Curve Special</i>     | Change in the type of barrier: selection of the " <i>Special</i> " curve (" <i>OPTIONS</i> " menu) for operation according to the " <i>OP REGULATION</i> " and " <i>CL REGULATION</i> " menus.  |

|                     |                            |   |
|---------------------|----------------------------|---|
|                     | <i>Curve BL223</i>         | Change in the type of barrier: Selection of “curve BL223” (“ <i>Barrier Type</i> ” parameter under the “ <i>QUICK START</i> ” menu).  |
|                     | <i>Curve BL40 AVR</i>      | Change in the type of barrier: Selection of “curve BL40 AVR” (“ <i>Barrier Type</i> ” parameter under the “ <i>QUICK START</i> ” menu).   |
|                     | <i>Curve BL40 SR</i>       | Change in the type of barrier: Selection of “curve BL40SR” (“ <i>Barrier Type</i> ” parameter under the “ <i>QUICK START</i> ” menu).   |
|                     | <i>Curve BL41 AVR</i>      | Change in the type of barrier: Selection of “curve BL41AVR” (“ <i>Barrier Type</i> ” parameter under the “ <i>QUICK START</i> ” menu).  |
|                     | <i>Curve BL41 SR</i>       | Change in the type of barrier: Selection of “curve BL41SR” (“ <i>Barrier Type</i> ” parameter under the “ <i>QUICK START</i> ” menu).   |
|                     | <i>Curve BL43 AVR</i>      | Change in the type of barrier: Selection of “curve BL43AVR” (“ <i>Barrier Type</i> ” parameter under the “ <i>QUICK START</i> ” menu).  |
|                     | <i>Curve BL43 SR</i>       | Change in the type of barrier: Selection of “curve BL43SR” (“ <i>Barrier Type</i> ” parameter under the “ <i>QUICK START</i> ” menu).   |
|                     | <i>Curve BL44 AVR</i>      | Change in the type of barrier: Selection of “curve BL44AVR” (“ <i>Barrier Type</i> ” parameter under the “ <i>QUICK START</i> ” menu).  |
|                     | <i>Curve BL44 SR</i>       | Change in the type of barrier: Selection of “curve BL44SR” (“ <i>Barrier Type</i> ” parameter under the “ <i>QUICK START</i> ” menu).   |
|                     | <i>Curve BL46 AVR</i>      | Change in the type of barrier: Selection of “curve BL46AVR” (“ <i>Barrier Type</i> ” parameter under the “ <i>QUICK START</i> ” menu).  |
|                     | <i>Curve BL46 SR</i>       | Change in the type of barrier: Selection of “curve BL46SR” (“ <i>Barrier Type</i> ” parameter under the “ <i>QUICK START</i> ” menu).   |
|                     | <i>Curve RSB 70&amp;71</i> | Change in the type of equipment: Selection of “curve RSB 70&71” (“ <i>Barrier Type</i> ” parameter under the “ <i>QUICK START</i> ” menu).  |
|                     | <i>Unlock BL4x Er</i>      | Only with “ <i>locking of the arm</i> ” option for BL4x. The inductive sensor has not detected the unblocking of the lock within the 3 seconds following the open or close request: check whether the locking pin is pressing on the locking clips, preventing them from opening, or whether the sensor is defective. |
| <i>Close Status</i> |                            | Cases when the obstacle is prevented from closing during a close request:   |
|                     | <i>OK</i>                  | Normal closure.   |
|                     | <i>PS1 Activated</i>       | A sensor (loop/cell) detects the presence or a cut in the circuit. In the latter case:  |
|                     | <i>PS2 Activated</i>       | <ul style="list-style-type: none"> <li>• Check whether the sensor is plugged into the corresponding connector block and whether it is</li> </ul>  |


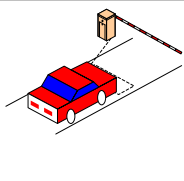
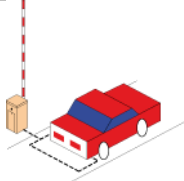
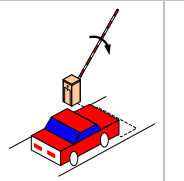
|                    |                       |  |
|--------------------|-----------------------|--|
|                    | <i>PS3 Activated</i>  | <p>functioning properly.</p> <ul style="list-style-type: none"> <li>• Check whether the sensor is properly connected.</li> <li>• Check whether the sensors are programmed correctly ("SENSOR FUNCTION" menu).</li> </ul>   |
|                    | <i>PS4 Activated</i>  |  |
|                    | <i>Lock OP Hold</i>   | Check why the Lock Open command is being sustained on the control board connector block.   |
|                    | <i>Safe Arm Activ</i> | <p>Activation of the "Safety Arm" sensor (only with the "rubber protection profile" option: rubber strip that detects when the arm makes contact with a vehicle):</p> <ul style="list-style-type: none"> <li>• Check whether the arm safety sensor is functioning properly.</li> <li>• Check whether the "Safety Arm" parameter is programmed correctly ("Options" menu).</li> </ul> |
|                    | <i>PWF Open Activ</i> | <p>Setting of the "<i>PWF Open Activ</i>" parameter of the "OPTIONS" menu to "ON", that is to say that during activation the obstacle opens and waits for the activation of a close or lock-close command.</p> <p><b>Note:</b> the closure loops are not taken into account for closing in this case.</p>  |
|                    | <i>Lock Open LCD</i>  | The "Test Mode" parameter of the "TEST" menu is not set to " <i>Deactivated</i> ".   |
|                    | <i>Delay Befor CL</i> | Wait for the delay programmed under the "Delay Befor. CL" parameter <i>under</i> the "TIMING" menu to elapse.  |
|                    | <i>Open Cmd Hold</i>  | Check why the open command is being sustained on the control board connector block.  |
|                    | <i>Stop Cmd Hold</i>  | <ul style="list-style-type: none"> <li>• Check why the stop command is being sustained on the control board connector block.</li> <li>• Check whether the "Stop Cmd" parameter is programmed correctly ("Options" menu).</li> </ul>  |
|                    | <i>Reader A Hold</i>  | Check why the Reader A command is being sustained on the control board connector block.  |
|                    | <i>Reader B Hold</i>  | Check why the Reader B command is being sustained on the control board connector block   |
|                    | <i>Position Fail</i>  | The type of sensor selected is " <i>Analogue Sensor</i> " ("QUICK START" ► menu " <i>Positioning</i> "); nevertheless, the obstacle still has to be activated (► " <i>Activate Motor?</i> " ► OK).   |
|                    | <i>Counter CR</i>     | <ul style="list-style-type: none"> <li>• The reader counter (see the "OPTIONS" menu ► "Counter CR") is greater than zero.</li> <li>• Or the timing for no passage is other than zero (see the "TIMING" menu ► "No Passage").</li> </ul>  |
| <i>Open Status</i> |                       | Cases when the obstacle is prevented from opening during a request to open.  |
|                    | <i>OK</i>             | Normal opening.  |
|                    | <i>Lock CL Hold</i>   | Check why the Lock CL command is being sustained on the control board connector block.   |

|                        |   |  |
|------------------------|---|--|
|                        | <i>Lock Close LCD</i>                           | The “ <i>Test Mode</i> ” parameter of the “ <i>TEST</i> ” menu is not set to “ <i>Deactivated</i> ”.   |
|                        | <i>Delay Befor OP</i>                           | Wait for the time programmed under the “ <i>Delay Bef. OP</i> ” under the “ <i>TIMING</i> ” menu to elapse.  |
|                        | <i>Stop Cmd Hold</i>                            | <ul style="list-style-type: none"> <li>• Check why the close order is being sustained on the control board connector block.</li> <li>• Check whether the “<i>Stop CMD</i>” parameter is programmed correctly (“<i>Options</i>” menu).</li> </ul>                         |
|                        | <i>Arm ELV Locked</i>                           | <ul style="list-style-type: none"> <li>• Check whether the detector of the unlocking of the electrically locking (ELV) tip is functioning properly.</li> <li>• Check whether the “<i>Arm</i>” parameter in the “<i>OPTIONS</i>” menu is programmed correctly.</li> </ul> |
|                        | <i>Arm ELV Detect</i>                           | Check whether the detector sensing the presence of the arm is functioning properly on the control board connector block.   |
|                        | <i>Position Fail</i>                            | The type of sensor selected is “ <i>Analog. Sensor</i> ” (“ <i>QUICK START</i> ” menu ► “ <i>Positioning</i> ”); nevertheless, the obstacle still has to be activated (► “ <i>Activate Motor?</i> ” ► OK).   |
| <i>Counter 1</i>       | <i>0 to 99,000,000</i><br><i>(0 by default)</i> | Total number of manoeuvres executed by the obstacle since it was first put into service.   |
| <i>Counter 2</i>       | <i>0 to 99,000,000</i><br><i>(0 by default)</i> | Representation of counter 1, with the possibility of resetting it to zero.   |
| <i>Reset counter 2</i> |   | Counter 2 reset to zero.   |
|                        | <i>OFF (by default)</i>                         | No resetting.  |
|                        | <i>ON</i>                                       | Request to reset to zero.  |
|                        | <i>Done</i>                                     | Message is displayed for 1 second when the counter has been reset to zero.   |



### 2.3.2. "QUICK START" menu: quick configuration



This menu inspects the parameters that have to be configured before the equipment may be used.

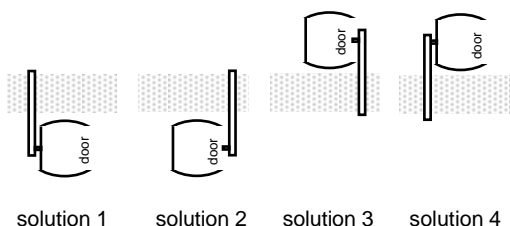
| Parameter  | Values   | Description   |  |          |   |
|--|--|---|--|----------|---|
| PS1 Function   | 0 (by default) to 7  | Definition of the mode of operation of Presence Sensor 1: see table below.                                    |  |          |   |
| PS 2 Function:   | 0 (by default) to 7  | Definition of the mode of operation of Presence Sensor 2: see table below.                                    |  |          |   |
|  <p><b>By default, the presence sensors are deactivated. Therefore, in order to ensure that their safety functions are operational, it is indispensable that the parameters for each of the presence sensors used be set.</b></p> |  |   |  |          |   |
|  | <p><b>closed obstacle</b></p>   | <p><b>open obstacle</b></p>  | <p><b>Closing obstacle</b></p>  |          |   |
| <b>Sensor function</b>   | <b>Action upon arrival in the sensor's field</b>   | <b>Action upon leaving the sensor's field</b>   | <b>Action upon arrival in the sensor's field</b>   | <b>+</b> | <b>Action upon leaving the sensor's field</b> |
| 0 <b>Deactivated</b>   | **   | -   | -  |          |   |
| 1 <b>Opening</b>   | Opening**  | Closing*  | Opening  | +        | Closing*                                      |
| 2 <b>CL_Stop+CL</b>  | **   | Closing***  | Stop   | +        | Closing                                       |
| 3 <b>CL_OP+CL</b>  | **   | Closing***  | Opening  | +        | Closing                                       |
| 4 <b><u>Nothin_Stop+CL</u></b>   | **   | -   | Stop   | +        | Closing                                       |
| 5 <b><u>Nothing_OP+CL</u></b>  | **   | -   | Opening  | +        | Closing                                       |
| 6 <b><u>Nothing_Stop</u></b>   | **   | -   |  |          | Stop  |
| 7 <b><u>Nothing_OP</u></b>   | **   | -   |  |          | Opening                                       |
| <b>Incompatible</b>  | This message is displayed for 1 second if the selected operating mode for the sensor is not compatible with the exploitation mode (parameter below). See the table of incompatible modes here under. |   |  |          |   |

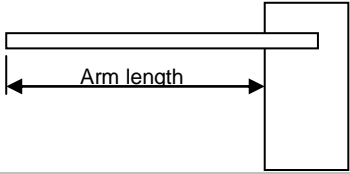
\*: Automatic closure only if the preceding opening was initiated by detection and not if presence is detected by another sensor. Notably, if there is a power outage when the obstacle is open, the obstacle will not close automatically when the power is brought back (a close command must be executed).  
**Warning:** The presence sensor operating in "Open" mode may not be placed under the arm, because it is not secured, in contrast to the other modes: a Lock Close command has priority for it (see the "Exploitation" parameter below) and could cause the arm to close on a vehicle.  
 \*\*: Opening is possible using the commands present on the control board's connector blocks: open command, reader command, and Lock Open command.  
 \*\*\*: If passage is detected while the obstacle is Locked Open, closure will take place when the Lock Open command is deactivated.  
 █: With regard to the underlined values, a close command must be executed to close the obstacle when it is open. The safety function is only activated during the closing movement of the obstacle.  
**Note:** the installation of 2 loops on PS1 and PS2 requires the use of a double detector since PS1 and PS2 are electrically connected to the same connection pin.  
**Note:** 2 supplementary Presence Sensor (PS3 and PS4) are available through extended menu "SENSOR FUNCTION".  
**Note:** the information regarding the sensor status (1/0) is always available (for each function mode) through extended menu "OUTPUT FUNCTION".  
**Warning:** When the power is turned on, the detectors (DP) measure the state of the loops and initialize the reference level with regard to their environment. Hence, if a vehicle is present on the loop during activation, it will not be detected and the loop will give the order to close (in modes 1, 2 and 3 only)!

|             |   |
|-------------|---|
| Positioning | Definition of the type of sensor used to position the obstacle. |
|-------------|---|



|  |                                    |  |   |
|--|------------------------------------|--|---|
|  | <i>Limit Switches (by default)</i> | To be selected if the position of the obstacle is determined by limit switch interrupters, enabling the extreme positions of the obstacle to be detected (completely open or completely closed).   |   |
|  | <i>Analog. Sensor</i>              | To be selected if the position of the obstacle is determined by an analogue sensor.<br>The analogue position sensor measures the distance separating it from a spiral cam located on the shaft that transmits the movement of the obstacle's motor, which means that the angular position of the obstacle is known at all times. Also, see the "Min Sensor Max" parameter below.   |   |
|  | <i>Manual Switch</i>               | This message is displayed if it is not possible to activate the analogue sensor, as per one of these cases: <ul style="list-style-type: none"> <li>• The crank presence detector (only present on some equipments) is engaged.<br/>=&gt; Remove the crank so that the motor may be engaged.</li> <li>• If the equipment does not have a crank presence detector, the circuit may have been cut.<br/>=&gt; bypass the corresponding connector blocks.</li> </ul>  |   |
|  | <i>Activate Motor?</i>             | Pushing the OK key within 5 seconds launches the analogue sensor activation procedure (see below) <b>and the movement of the obstacle!</b><br> <b>The Barrier Type and Arm characteristics must be selected BEFORE initializing the analogue sensor. Otherwise, rough movements of the arm can occur with risk of injury for the personnel and the equipment.</b><br><b>=&gt; Navigate through the menus by means of the upper key (▲).</b> |   |
|  | <i>Search LSO...</i>               | The obstacle opens to look for its limit switch.   | <br><b>The obstacle is moving during this phase!</b> |
|  | <i>Search LSC...</i>               | The obstacle closes to look for its limit switch.  |   |
|  | <i>Init. Passed</i>                | This is displayed if the opening and closing limit switches were detected.<br>The analogue sensor is then operational.<br>The message disappears after 5 seconds or if the OK key is pushed.<br><b>IMPORTANT:</b> Save the values in MEM1 or MEM2 ("MEMORY" menu), then turn off the control board and turn it back on again.  |   |
|  | <i>Adjust Sensor</i>               | Activation failed because the analogue sensor was not properly positioned => adjust it (closer or further away from the cam) so the measurement is included in the working range (= between the min. and the max. set in the "Min Sensor Max" parameter below).  |   |
|  | <i>Value 0 Detect</i>              | Activation failed because the analogue sensor returned a measurement of zero.<br>As this value does not exist, check: <ul style="list-style-type: none"> <li>• the sensor's wiring (in the sensor as well as on the control board's connector blocks);</li> <li>• whether the sensor is too close to the cam;</li> <li>• whether the sensor is functioning: LED on the sensor is illuminated and the value measured is displayed in the "Min Sensor Max" parameter below.</li> </ul>   |   |


|              |                              |   |
|--------------|------------------------------|---|
| Barrier Type |                              | <p>Definition of the equipment type; this allows the program to automatically modify the opening and closing curves.</p> <p><b>Note 1:</b> The equipment type is stated on the reference plate, inside the housing.</p> <p><b>Note 2:</b> to change from barrier solution 1 or 2 to solution 3 or 4 (illustration below), 2 phases of the motor have to be inverted.</p>  <p style="text-align: center;">solution 1    solution 2    solution 3    solution 4</p> |
|              | 229 Standard<br>(by default) | Parameter to select for a BL229 Standard.   |
|              | 229 Highway                  | Parameter to select for a BL229 Highway.  |
|              | 1x – 2x – 3x – 5x            | Parameter to select for a BL16, BL32, BL33, BL52, BL53, BP56, RSB70, or RSB71.  |
|              | BLG77                        | Parameter to select for a BLG77.  |
|              | BL 223                       | Parameter to select for a BL223.  |
|              | RSB 70 & 71                  | Parameter to select for a RSB 70 or RSB 71.   |
|              | BL 40 SR                     | Parameter to select for a BL40 without automatic opening of the arm in case of power cut.   |
|              | BL40 AVR                     | Parameter to select for a BL40 with automatic opening of the arm in case of power cut.  |
|              | BL 41 SR                     | Parameter to select for a BL41 without automatic opening of the arm in case of power cut.   |
|              | BL 41 AVR                    | Parameter to select for a BL41 with automatic opening of the arm in case of power cut.  |
|              | BL 43 SR                     | Parameter to select for a BL43 without automatic opening of the arm in case of power cut.   |
|              | BL 43 AVR                    | Parameter to select for a BL43 with automatic opening of the arm in case of power cut.  |
|              | BL 44 SR                     | Parameter to select for a BL44 without automatic opening of the arm in case of power cut.   |
|              | BL44 AVR                     | Parameter to select for a BL44 with automatic opening of the arm in case of power cut.  |
|              | BL 46 SR                     | Parameter to select for a BL46 without automatic opening of the arm in case of power cut.   |
|              | BL 46 AVR                    | Parameter to select for a BL46 with automatic opening of the arm in case of power cut.  |

|                      |                            |  |
|----------------------|----------------------------|--|
| <i>Arm Length</i>    |                            | <p>Specification of the arm mounted on the barrier; this allows the program to automatically modify the opening and closing curves.</p> <p>If the selected length does not correspond to a standard for the barrier selected in the "Barrier Type" parameter, the message "Doesn't Exist" appears briefly.</p> <p><b>Note:</b> arm length = free passage = distance between the arm tip and the barrier housing.</p>  |
|                      | <i>2m00</i>                | Select this for a BL4x or BL229 with an arm of 2 m.  |
|                      | <i>2m50</i>                | Select this for a BL4x or BL229 with an arm of 2.5 m.  |
|                      | <i>3m00</i>                | Select this for a BL4x or BL229 with an arm of 3 m.  |
|                      | <i>3m50</i>                | Select this for a BL4x or BL229 with an arm of 3.5 m.  |
|                      | <i>4m00</i>                | Select this for a BL4x or BL229 with an arm of 4 m.  |
|                      | <i>4m50</i>                | Select this for a BL4x or BL229 with an arm of 4.5 m.  |
|                      | <i>5m00 (by default)</i>   | Select this for a BL4x or BL229 with an arm of 5 m.  |
|                      | <i>5m50</i>                | Select this for a BL4x or BL229 with an arm of 5.5 m.  |
|                      | <i>6m00</i>                | Select this for a BL4x or BL229 with an arm of 6 m.  |
|                      | <i>7m00</i>                | Select this for a BL4x with an arm of 6,5 or 7 m.  |
|                      | <i>8m00</i>                | Select this for a BL4x with an arm of 7,5 or 8 m.  |
|                      | <i>9m00</i>                | Select this for a BL4x with an arm of 8,5 or 9 m.  |
|                      | <i>10m00</i>               | Select this for a BL4x with an arm of 9,5 or 10 m.   |
|                      | <i>11m00</i>               | Select this for a BL4x with an arm of 10,5 or 11 m.  |
|                      | <i>12m00</i>               | Select this for a BL4x with an arm of 11,5 or 12 m.  |
|                      | <i>Non-modifiable</i>      | This message is displayed when the "Barrier Type" parameter does not allow any modification of the arm length.   |
|                      | <i>Incompatible</i>        | Message displayed when the selected Arm Length is not compatible with the selected Barrier Type.   |
| <i>Arm Type</i>      |                            | Specification of the type of arm assembled on the barrier. This parameter only applies to the BL Highway and is not taken into account for other types of equipment.   |
|                      | <i>Aluminium (default)</i> | Aluminium arm.   |
|                      | <i>Carbon</i>              | Carbon arm.  |
|                      | <i>Non-modifiable</i>      | Message displayed for the equipments different than BL229 Highway.   |
| <i>Power Fail OP</i> |                            | <p>Choice(*) of mode for unlocking the obstacle during a loss of supply voltage.</p> <p>(*) Except for BL4x, which parameter is automatically set to ON and not adjustable.</p>  |

|                            |   |  |
|----------------------------|---|--|
|                            | <p><b>OFF</b><br/>(by default, except for BL4x)</p>             | <p>The obstacle remains mechanically locked, thanks to the position of the transmission elements between them. Nevertheless, it is possible to unlock it manually using a lever or a crank.</p>  |
|                            | <p><b>ON</b><br/>(by default for BL4x only, not adjustable)</p> | <p>The obstacle is unlocked: a pulse is given to take the transmission elements out of alignment; opening may have to be effected by hand.</p> <p>This electrical opening is only available for equipment that has a reversible motor reduction drive and a frequency inverter (thanks to the capacities integrated into the control board and the frequency inverter).</p> <p><b>Note:</b> for BL4x AVR (with automatic opening of the arm in case of power failure) subjected to great forces (strong winds or fraud attempts to manually open the arm), the locking pin might press against the locking clips and prevent the automatic opening of the lock in case of power failure. This parameter allows then to give the necessary reversed impulse to release the lock.</p> <p>For the BL4x SR (without automatic opening), this parameter has no effect because the electromagnetic brake will block the arm in position in any case.</p> <p><b>Warning:</b> this adjustment is incompatible with the "Lock Closed" command which has priority and will maintain the obstacle closed.</p> |
| <p><i>Exploitation</i></p> |   | <p>Operating modes for the opening, closing and STOP commands.</p> <p>The commands follow this decreasing order of priority:</p> <p>STOP (stop)<br/>       Lock OP (lock open)<br/>       Lock CL (lock close)<br/>       OP (open)<br/>       CL (close)</p> <p>The presence sensors and reader inputs are at the same hierarchical level as OP/STOP/CL =&gt; Lock Close has priority in an opening loop and will work even if something is detected.</p> <p><b>Warning:</b> The OP command is never interrupted (the arm always goes to the LSO before accepting the next command) =&gt; Lock Close will take affect after the obstacle has reached its LSO.</p> <p><b>Note:</b> Some use modes are incompatible with the operating mode of the presence sensors (see the table of incompatible modes, here after).</p>  |
|                            | <p><b>2 Contacts</b><br/>(by default)</p>                       | <p>2 contacts used for opening and closing, on the control board's connector block.</p> <p>Open Cmd: open the obstacle<br/>       Close Cmd: close the obstacle on the rising edge of the command.<br/>       STOP Cmd: stop.</p> <p><b>Note:</b> A Lock Open command is given if the "No Passage" timing has been activated, it will close when the following two conditions have been met:</p> <ul style="list-style-type: none"> <li>• the Lock Open command is deactivated,</li> <li>• the set time has elapsed (or, immediately if there is a detector on a closing sensor).</li> </ul>   |

|               |                             |  |
|---------------|-----------------------------|--|
|               | <i>1 Contact</i>            | <p>Open Cmd: if active, the obstacle opens.<br/>         Open Cmd: if inactive, the obstacle closes.<br/>         STOP Cmd: stop. When the stop is released, the obstacle will continue to open if an OP/Lock Open command is still present, if not the obstacle will close.</p> <p><b>Note:</b> there is no CL contact in this mode.</p> <p><b>Note:</b> if this mode is used for a reader, it must be ensured that the latter sends a continuous signal in order for the obstacle to be kept open for a given time.</p> <p><b>Note:</b> this mode is highly recommended for barriers which arm is Normally Open (tunnel entry, etc.). In this case effectively, it is mandatory to maintain a continuous opening command in order to prevent an untimely closing (by maintenance personnel for example).</p> <p><b>Warning:</b> if there is a voltage loss while the obstacle is open, the obstacle will close when the power comes back if the OP command is not activated, because – in this mode – an inactive open command equals a close command.</p> |
|               | <i>Step by Step</i>         | <p>Open Cmd: inversion at each rising edge (i.e., at each pulse).<br/>         STOP Cmd: stop.</p> <p><b>Note:</b> neither CL nor reader commands are available in this mode.</p>  |
|               | <i>Dead Man</i>             | <p>Open Cmd: if active, the obstacle opens.<br/>         Open Cmd: if inactive (i.e., when the command is released), stop.<br/>         Close Cmd: If active, the obstacle closes.<br/>         Close Cmd: if inactive, stop.<br/>         STOP Cmd: stop.</p> <p><b>Note:</b> the reader commands do not work in this mode.</p> <p><b>Note:</b> this mode is only compatible with presence sensors operating under the “Nothing_Stop” or “Deactivated” modes (otherwise the “Incompatible” message appears briefly).</p>  |
|               | <i>2 Contacts CFE</i>       | <p>Same as “2 Contacts” operation, except:<br/>         Close Cmd: <b>C</b>losure of the obstacle on the <b>F</b>alling <b>E</b>dge of the command (i.e., when the button is released).</p>  |
|               | <i>Incompatible</i>         | <p>This message is displayed for one second if the operating mode selected is not compatible with the parameters set for the presence sensors.</p>   |
| <i>Memory</i> |                             | <p>Save the parameter values (see “MEMORY” menu).</p>  |
|               | <i>Ignored (by default)</i> | <p>No action.</p>  |
|               | <i>Save</i>                 | <p>Save the modified parameters in MEM1.</p> <p><b>Note: this saving action is necessary so that the modifications made are not lost during a power cut!</b></p>   |
|               | <i>Load Default</i>         | <p>Recall the default values (factory settings) of the parameters accessible in the level from which this command is executed. E.g.: If you are in the Simplified menus, this function will only load the default values of the parameters accessible in Simplified menu, and will not modify the values of the parameters accessible in Extended or Manufacturer menus.</p> <p><b>Warning: the loading of the default parameters entails the loss of the parameters specific to the installation’s real situation and may put the equipment out of service.</b></p>   |
|               | <i>Done</i>                 | <p>This message is displayed when the save or the load is finished and disappears automatically after 1 second.</p>  |

|                       |   |   |   |   |
|-----------------------|---|---|---|---|
| <i>Min Sensor Max</i> | <i>0000</i><br><i>(default)</i><br><i>to</i><br><i>1024</i> | <i>0000</i><br><i>(default)</i><br><i>to</i><br><i>1024</i> | <i>0000</i><br><i>(default)</i><br><i>to</i><br><i>1024</i> | This parameter applies to the analogue sensor (see the "Positioning" parameter above) and allows viewing the current value of the sensor ("Sensor") (reflection of the angular position of the obstacle) in its measurement range ("Min" and "Max" being the sensor values at the extreme positions of the obstacle: completely open and closed). |
| <i>Menu Access</i>    |   |   |   | Choice of the display mode for the menus.   |
|                       |   | <i>Simplified (default)</i>                                 |   | Access to the menus included in the Simplified mode.<br><b>Warning:</b> pressing the OK key to validate the passage from the Extended to the Simplified mode causes a movement of the arm (opening or closing), even if a presence is detected by the Presence sensors.   |
|                       |   | <i>Extended</i>   |   | Access to supplementary parameters.   |

|   |                |  |                                     |                                     |                                     |                                     |
|---|----------------|--|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
|  |                | <b>Table of incompatibility</b> between the exploitation modes and the presence sensor function: |                                     |                                     |                                     |                                     |
|   |                | <input checked="" type="checkbox"/> compatible <input type="checkbox"/> incompatible             |                                     |                                     |                                     |                                     |
|   |                | <b>Exploitation mode</b>   |                                     |                                     |                                     |                                     |
|   |                | 2 Contacts   | 1 Contact                           | Step by Step                        | Dead Man                            | 2 Contacts CFE                      |
| <b>Sensor Function</b>  | Desactivated   | <input checked="" type="checkbox"/>  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
|   | Opening        | <input checked="" type="checkbox"/>  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
|   | CL_Stop+CL     | <input checked="" type="checkbox"/>  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
|   | CL_OP+CL       | <input checked="" type="checkbox"/>  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
|   | Nothin_Stop+CL | <input checked="" type="checkbox"/>  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
|   | Nothing_OP+CL  | <input checked="" type="checkbox"/>  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
|   | Nothing_Stop   | <input checked="" type="checkbox"/>  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
|   | Nothing_OP     | <input checked="" type="checkbox"/>  | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

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## 2.4. General conditions of use

- Your swinging barrier type BP56 has been designed to operate in any kind of climatic environment, from -20°C to +50°C, with up to 95% of relative humidity.

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## 2.5. Emergency operation

- The following instructions are to be given to the installation supervisor.

### 2.5.1. Opening or closing in case of power failure

- Insert the emergency crank handle into the crank hole provided in the housing. A safety device automatically switches off the power supply, thus eliminating any risk of accident in case the power supply returns.
- Turn the crank in either direction to unlock the barrier arm mechanically from its closed or open position, then go on until the desired position is reached.
- When the arm is in the closed or open position, keep turning the crank to lock the barrier mechanically.

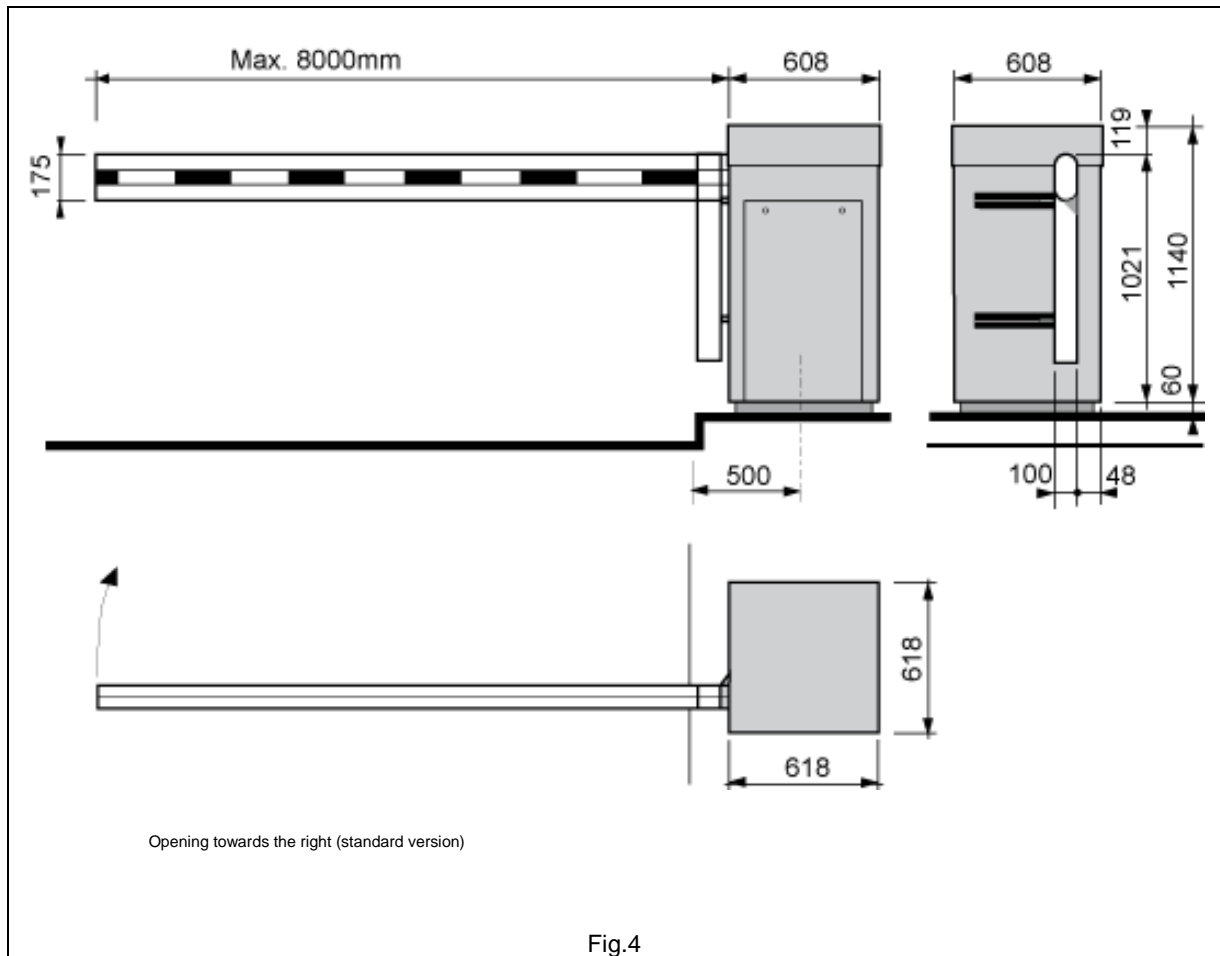
## 2.5.2. In case of breakdown

|                                    |   |  |
|------------------------------------|---|--|
| The obstacle does not move         | Liquid crystal display is off               | <ul style="list-style-type: none"> <li>• Check the general power supply.</li> <li>• Check the voltage on the circuit breaker (2:1), and check if this late is on.</li> <li>• Check the connection of the control wires referring to the electrical diagram, as well as their tightening.</li> <li>• Check the state of the fuses (3:1) on the electrical control board.</li> <li>• Check that the green LEDs are lit under the connectors (3:6). <ul style="list-style-type: none"> <li>- If not, check the general fuses (3:1).</li> <li>- If so, check that the logic board is not in programming mode (cable RJ45, plugged in socket (3:5)).</li> </ul> </li> </ul> |
|                                    | Liquid crystal display is on                | <ul style="list-style-type: none"> <li>• Check that the red LEDs under the connector (3:6) are on (other than the analogue output ones). <ul style="list-style-type: none"> <li>- If not, cut the supply voltage and remove the connectors (3:6) (on the AS1320 and AS1321, if present). Turn the power back on and then check whether the red LEDs are on. If that is the case, there is a short circuit in one of the connectors (3:6). In order to reactivate the outputs, the logic board has to be turned on again.</li> <li>- If so, refer to the displayed breakdowns ("PRDSTD – BL_ xxx" menu → "Log"/"Close Status"/"Open Status").</li> </ul> </li> </ul>    |
|                                    | Check the defects on the frequency inverter | Refer to AS1320 control board manual.  |
| The obstacle stops during movement | OP, CL and STOP commands have no effect.    | Opening and/or closing limit switch is defective or badly connected.   |

**Note:** *If the trouble persists after you carry out the checks above, call your local **Automatic Systems** agent.*



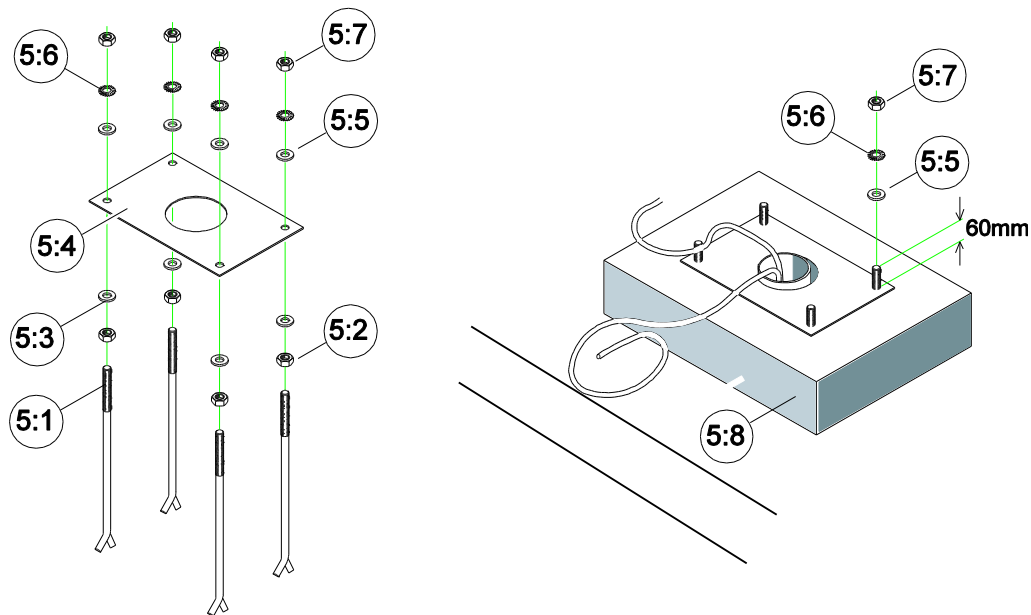
## 2.6. General dimensions



### 3. INSTALLATION

#### 3.1. Preliminary work on site

- This is basically the following:
  - Assembly of the barrier installation basement kit, delivered as an accessory.



Pass the four anchoring bolts (5:1) into the holes of the sealing frame (5:4) using a nut (5:2) and a flat washer (5:3) each time. The curved end of the anchoring bolts must be oriented downwards and the threaded end upwards as illustrated in Fig.5a. Secure the anchoring bolts on the sealing frame by putting a flat washer (5:5), a lock washer (5:6) and a nut (5:7) on each threaded rod with a 60mm tail. Tighten the nuts. It is advisable to protect the threads sticking out of the sealing frame from concrete projections by means of adhesive tape.

- PVC tube (minimum diameter 60mm) to be provided to allow the power supply and remote control wires to exit from within the concrete base.
- Construction of a concrete base (5:8) in which the basement kit is to be buried according to the instructions of plan Nr CH2260. The basement kit must be flush with the finished level of the concrete base and perfectly horizontal (Fig.5b). When the concrete is dry (allow minimum 21 days), remove the adhesive protection tape from the threads, and remove the nuts (5:7), the lock washers (5:6) and the flat washers (5:5).
- Wiring (to be provided by the customer, according to the legal prescriptions in use in the country of installation):
  - # Power supply (from the general power supply box to the concrete base)
  - # Control wiring (from the place where the control box will be installed to the concrete base).
 Ensure that the cables have a minimum of 1 metre out of the concrete base.

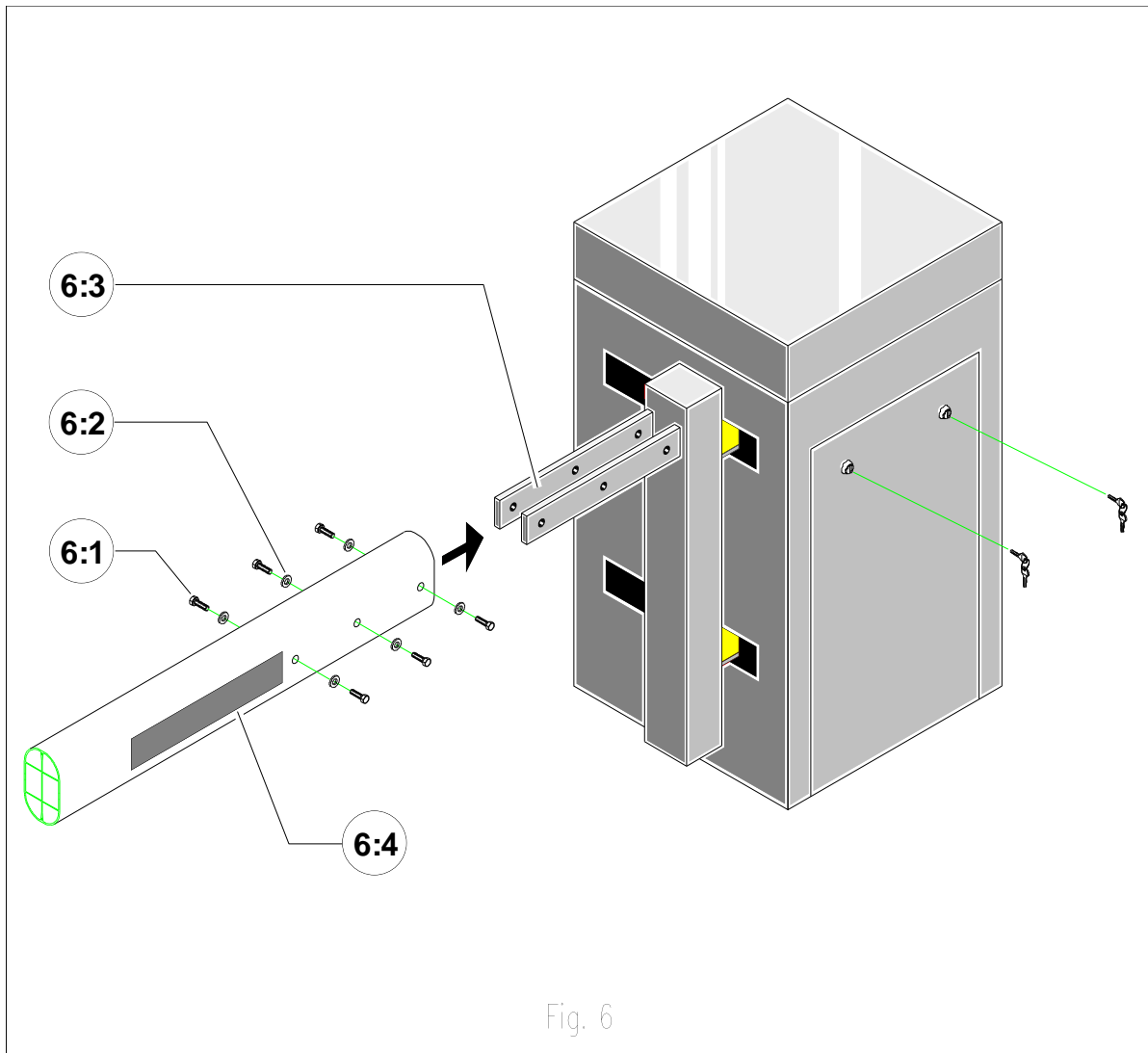
---

## 3.2. Handling and installing the unit

- The barrier has been packaged in a wood crate for transport. Carry the material to the installation site with the help of a fork-lift truck or a crane (according to the site configuration), place the crate upright and dismantle.
- Unlock and remove the side door (1:1). Keys are attached on the arm brackets (1:3) by means of adhesive tape.
- Unlock the two latches from the inside of the housing (1:5) and remove the hood (1:4).
- Check the state of the equipment. Though it has been carefully packed, damage may have occurred during transport: in this case, do not forget to advise your local **Automatic Systems** agent or your insurance company. If need be, proceed with the necessary repairs.
- Strip the insulation of the cables from within the concrete base along approx.50cm.
- With the help of the fork-lift truck or the crane, in order not to damage the anchoring bolts, place the housing (1:5) on its concrete base.
- Insert the two fixing brackets (1:6) inside the unit onto the anchoring bolts (5:1) of the basement kit.
- Secure the barrier to the basement kit by locking the fixing brackets (1:6) with the flat washers (5:5), the lock washers (5:6) and the nuts (5:7).
- Fix the stainless steel heater (1:7) into the sheath provided behind the gearbox console, below the technical identification plate.
- If required, add shims between the sealing frame and the housing in order to ensure the barrier is perfectly level.

|   |
|---|
| <b>Note:</b> <i>Since final adjustment of the alignment with the roadway may be necessary after the arm is installed, do not tighten the nuts (5:7) firmly now.</i> |
|---|

### 3.3. Installing barrier arm



**Attention:** Fixing the arm requires at least two people, depending on its length! In case of difficulty, the use of a crane is highly advisable.

- Remove the three screws (6:1) and flat washers (6:2) from the twin arm bracket (6:3).
- Insert the arm tube (6:4) inside the arm bracket (6:3), if necessary using a crane.
- Fix the flat washers (6:2) and screws (6:1) again. Tighten the screws (6:1) firmly.
- Check the alignment of the complete barrier with the roadway and adjust if necessary.
- Tighten the nuts (5:7) firmly to lock the barrier on the sealing frame.

---

### 3.3. Electrical connections and initial power-up

**Warning:** high leakage current (between 3.5 mA and 5% of the nominal current).

Earth connection with a cable of minimum 1 mm<sup>2</sup> section is mandatory before connecting power supply.

- The electrical connections must be made according to the electric diagram.
- Make sure the power supply cables are not live.
- Remove the control board from the housing.
- Connect the two phases of the power supply to the circuit breaker (2:1).
- Connect the earth wire to the earth terminal (2:2).
- Connect the wires from the three-push button box to the control board connector (3:6).
- Connect the wires of the stainless-steel heater to connector (3:10).
- If the installation includes one (or more) detection loop(s), connect it(them) to connectors (3:8) and (3:9).
- Proceed to the other electrical connections (if the case arises) according to the electrical diagram supplied with the equipment.
- Arm the overload protection of the electrical control board by switching on the circuit breaker (2:1). If the installation includes one (or more) detector(s), make sure no vehicle activates it (them) at that moment since this might distort the detector(s)' sensitivity.
- Proceed with an electrical opening/closing test by pushing the OK button of the control board or using the push button box.
- Fix the cables under the electrical control board by means of the cable binders provided.
- Replace the control board into the housing, and tighten the fixing screw (4:5) again.

|   |
|---|
| <p><b>Note:</b> For further information on the control logic or the type of detector to use (according to the road width, etc.), please refer to the corresponding technical data sheet or contact your local <b>Automatic Systems distributor</b>.</p> |
|---|

## 4. ADJUSTMENTS AND TECHNICAL INTERVENTIONS

### WARNING!

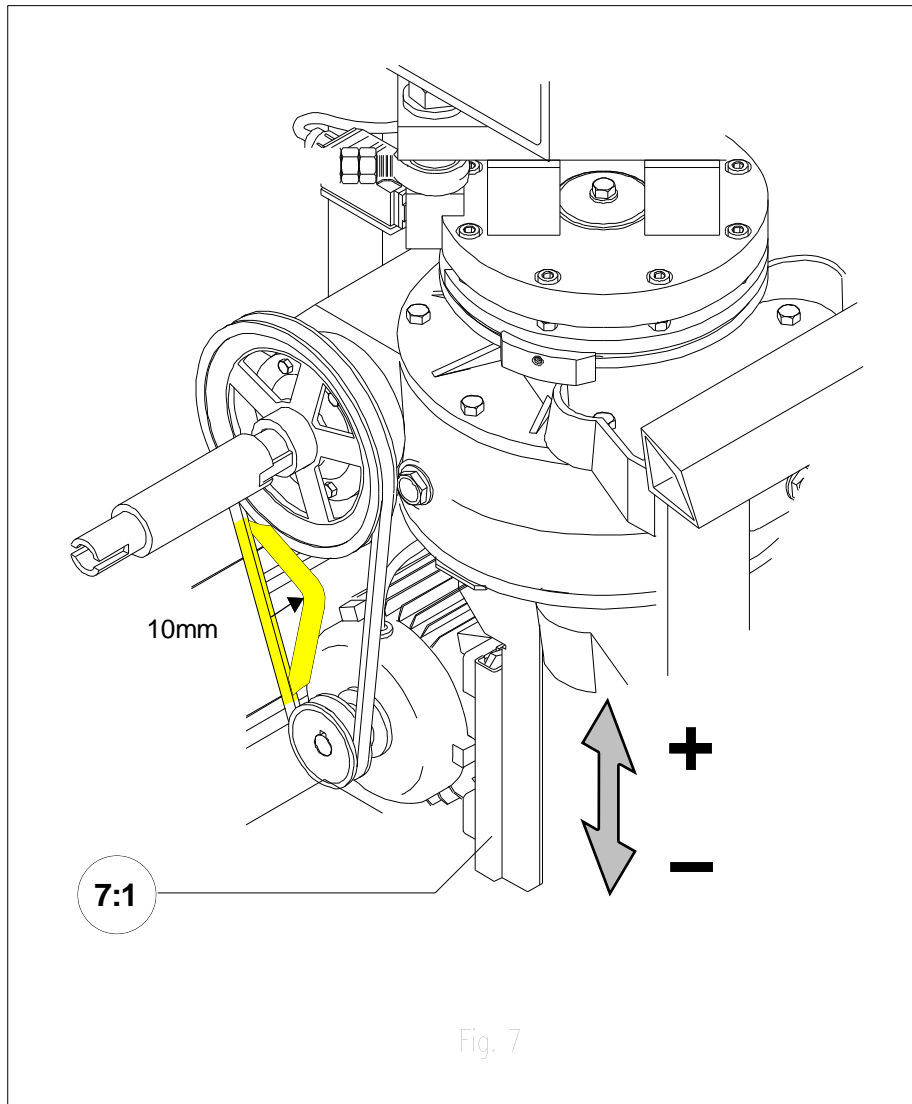
REMINDER: YOUR SWINGING BARRIER TYPE BP56 COMPRISES A MECHANISM AND VARIOUS ELECTRICAL COMPONENTS. ANY NEGLIGENCE DURING AN INTERVENTION IN THE MACHINE MAY SERIOUSLY ENDANGER YOUR SAFETY. AS SOON AS YOU OPEN THE HOUSING, SWITCH OFF THE POWER BY SWITCHING OFF THE CIRCUIT BREAKER (2:1) LOCATED BEHIND THE SIDE DOOR (1:1). BE CAREFUL IN HANDLING ANY INTERNAL ELEMENT WHICH MIGHT BE UNDER POWER OR COULD BE SET IN MOTION.

THE HOOD SHOULD BE REMOVED ONLY IF YOU NEED TO REPLACE THE DRIVING SHAFT OR THE BALANCE SPRING, ADJUST THE BELT OR PROCEED WITH THE MAINTENANCE.

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### 4.1. Belt tension adjustment

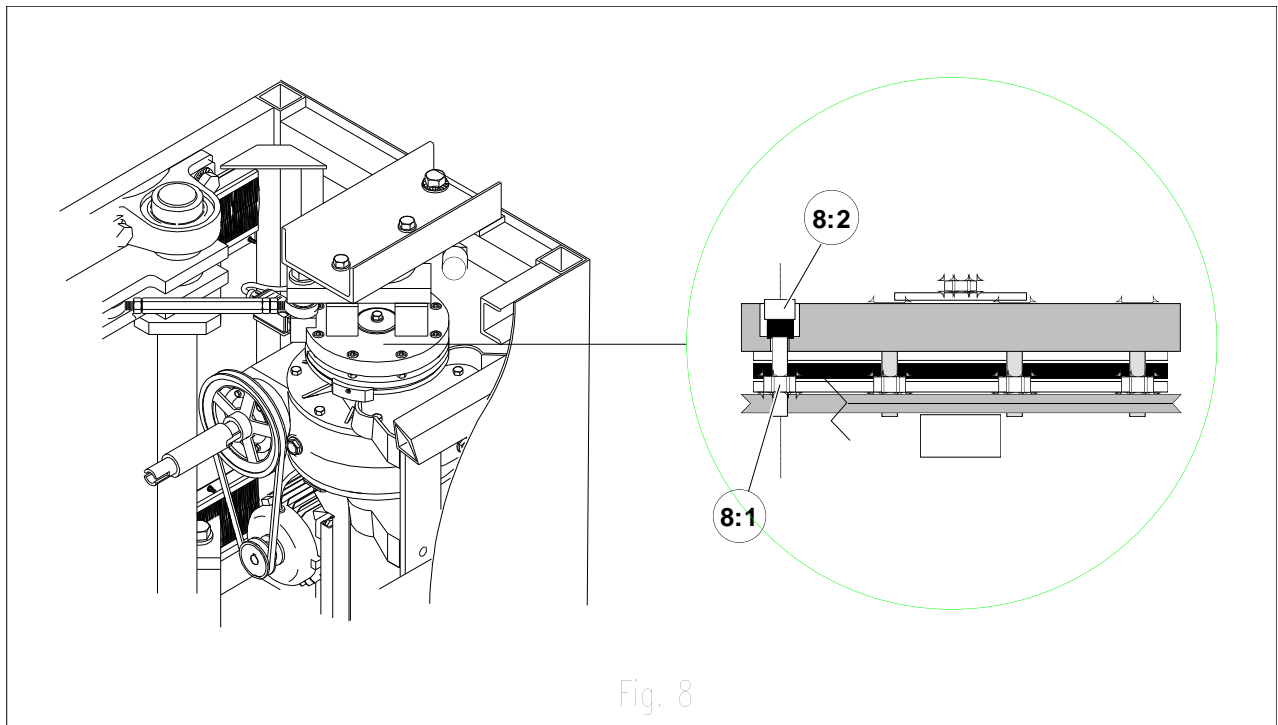
- The tension of the belt must be adjusted after replacement or after a certain time of operation, or when all the motor power cannot be transmitted to the mechanism. As a consequence, the belt slips on the pulleys and there is a formation of black dust. Proceed as follows to check the tension and/or replace the belt.
  - Arm the overload protection of the barrier by switching the circuit breaker (2:1) on.
  - Open the barrier arm electrically.
  - Close it electrically.
  - Reverse the movement when the arm is half-way (45° angle).
  - By slipping slightly, the torque limiter must absorb the inertia of the arm (NOT THE V-BELT!).
  - If necessary, adjust the belt tension as follows, after switching off the circuit breaker (2:1):
    - ☞ Loosen slightly the four screws that fix the motor.
    - ☞ If required, slide the motor downwards in its guides (7:1), remove the old V-belt and fix the new one.
    - ☞ Slide the motor upwards in its guides. The tension is properly adjusted if the belt can be depressed about 10mm when you push on it as illustrated in Fig.7.
    - ☞ Make sure that the motor is horizontal.
    - ☞ Tighten the four screws firmly again.



**Reminder:** In case a closing or opening movement is reversed, the belt must not absorb the inertia of the mechanism!

## 4.2. Safety torque limiter adjustment

- The torque limiter is a safety device and is factory-adjusted. However, some further adjustment may be necessary when the equipment has been installed or after a certain time of operation. Proceed with the adjustment in the following cases:
  - Either the barrier arm does not open easily when a closing movement is reversed. The friction clutch then slips and must be tightened.
  - The force needed to block the arm by hand during a closing or opening movement is too strong. The friction clutch then sticks and must be loosened.
- In either case, the state of the V-belt must first be checked according to *paragraph [4.1.Belt tension adjustment]*. Then proceed as follows:



- Loosen the eight lock nuts **(8:1)**.
- Tighten the eight screws **(8:2)** to tighten the torque limiter, untighten them to loosen it.
- Switch on the circuit breaker **(2:1)**.
- Make an electrical opening/closing test, and repeat the procedure above until the desired result is obtained. Never forget to first switch off the equipment.
- When the adjustment is completed, switch off the circuit breaker **(2:1)**.

**Warning:** Proceed smoothly by 1/8th of a turn successively, since the adjustment is very sensitive. When the adjustment is completed, do not forget to tighten the 8 lock nuts **(8:1)**.

**IMPORTANT:** The excessive tightening of the clutch may damage the gear box!



- To test the torque limiter adjustment, proceed as follows:
  - Arm the overload protection of the barrier by switching on the circuit breaker **(2:1)**.
  - Open the barrier arm electrically to an angle of 90°.
  - Close it electrically.
  - Reverse the movement when the arm is half-way (angle of 45°).
  - By slipping slightly, the torque limiter must absorb the inertia of the arm (NOT THE V-BELT!).
  - When the check is completed, switch off the circuit breaker **(2:1)**.

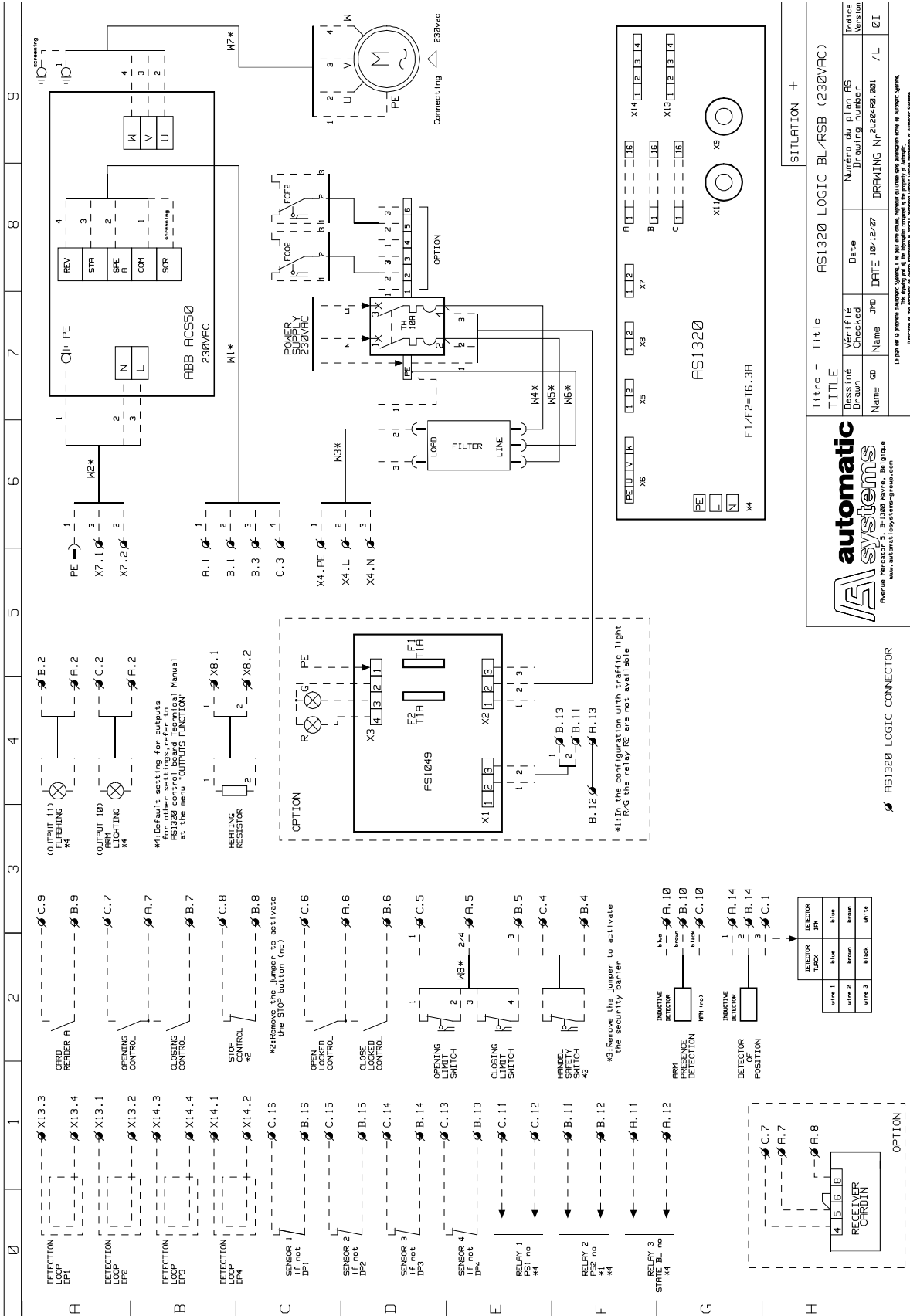
## 5. MAINTENANCE

- The following operations are to be repeated every 6 to 12 months according to the traffic intensity.
  - Unlock and remove the side door (1:1).
  - Unlock the two latches from the inside and remove the hood (1:5) if necessary.
  - clean the interior of the housing.
  - Check if all screws and nuts have been tightened firmly.
  - Check if all wires are firmly connected to their respective terminal blocks. Check the state of the contacts and relays of the control board: black traces, etc.
  - Check if the arm is correctly fixed. If not, refer to *paragraph [3.3.Installing barrier arm]*.
  - Check the state and the tension of the V-belt referring to *paragraph [4.1.Belt tension adjustment]*.
  - Check if the arm reopens with difficulty in case a closing movement is reversed, or if it cannot be stopped by hand during a manoeuvre. If necessary, refer to *paragraph [4.2.Safety torque limiter adjustment]*.
  - Open and close the barrier electrically: at the end of each movement, check that the arm is mechanically blocked, with motor stopped.
  - Grease the ball straps (spherical rod ends) once a year. Use a lithium or metallic lithium-base anticorrosive, multifunction grease with a working range from -25°C to +110°C (-13°F to +250°F).
  - Check if you did not forget any tool inside the barrier.
  - Replace the hood (1:4) and lock it from the inside with the two latches.
  - Put the side door (1:1) and lock it.
  - Clean the outside of the housing and the arm with a soft cloth or brush. In countries with prolonged periods of sunshine, it is also advisable to polish the outside of the housing on a regular basis

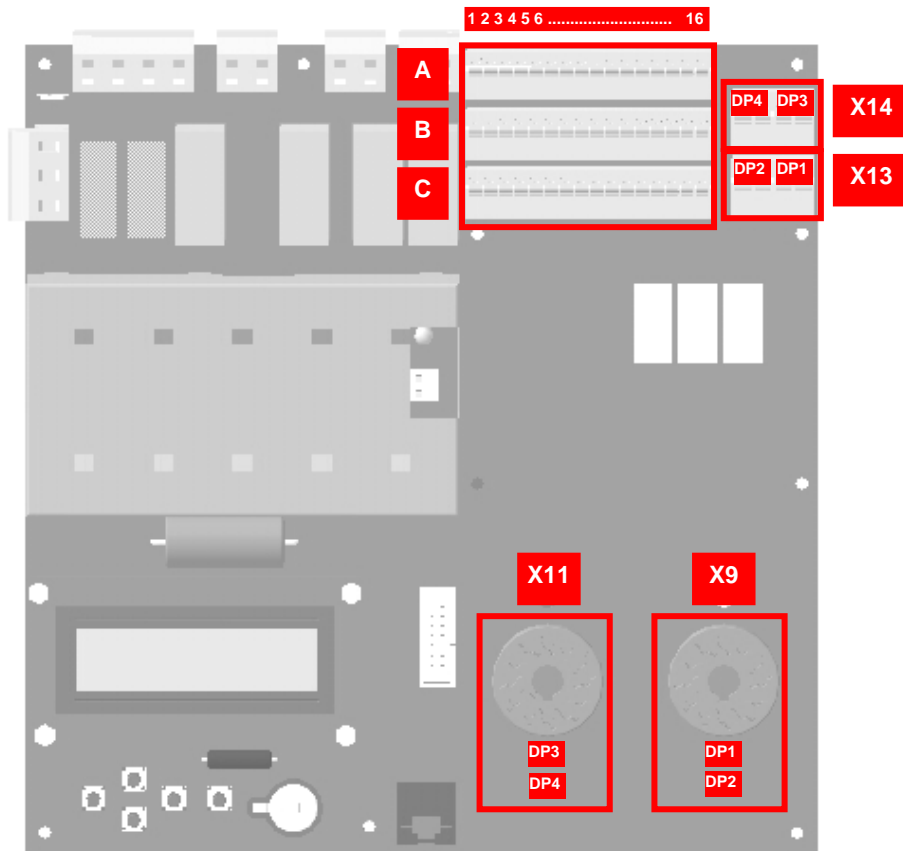
|  |
|--|
| <b>Note:</b> <i>The reduction gearbox and the pillow blocks are life-lubricated and do not require any maintenance. Just check on a regular basis if they do not leak.</i> |
|--|

## 6. ELECTRIC DIAGRAM

**Note:** for information only. The reference diagram is inside the equipment.



## 6.1 Control blocks assignment



A In/Out  
B connector blocks.  
C

X13 Inductive loops  
X14 connectors.

Y Inductive loops presence  
detector.

X9 Connectors for  
X11 inductive loops presence  
detectors.



|            |   | Connector block number |                       |                         |                            |                    |                        |                      |                     |                         |                             |                          |                          |               |               |               |               |
|------------|---|------------------------|-----------------------|-------------------------|----------------------------|--------------------|------------------------|----------------------|---------------------|-------------------------|-----------------------------|--------------------------|--------------------------|---------------|---------------|---------------|---------------|
|            |   | 1                      | 2                     | 3                       | 4                          | 5                  | 6                      | 7                    | 8                   | 9                       | 10                          | 11                       | 12                       | 13            | 14            | 15            | 16            |
| Connectors | A | GND                    | GND                   | GND                     | GND                        | 24V                | 24V                    | 24V                  | GND                 | GND                     | GND                         | REL3 -<br>Output relay 3 | REL3 +<br>Output relay 3 | GND           | GND           | GND           | GND           |
|            | B | AO1<br>FI setting      | DO11 PWM<br>Output 11 | DO8<br>Descending motor | 24V                        | DI13<br>Closing LS | DI11<br>Lock Close CMD | DI9<br>Close command | 24V                 | 24V                     | 24V                         | REL2 -<br>Output relay 2 | REL2 +<br>Output relay 2 | 24V           | 24V           | 24V           | 24V           |
|            | C | AI1<br>Analog. Sensor  | DO10sPWM<br>Output 10 | DO7<br>Rising motor     | DI14<br>crank limit switch | DI12<br>Opening LS | DI10<br>Lock Open CMD  | DI8<br>Open command  | DI7<br>Stop command | DI6<br>Reader A command | DI5<br>Swing off sens./Lock | REL1 -<br>Output relay 1 | REL1 +<br>Output relay 1 | DI4<br>Cell 4 | DI3<br>Cell 3 | DI2<br>Cell 2 | DI1<br>Cell 1 |

## **INPUTS**

Signals from outside that are received by the control board.

There is a green LED under every input connection, which indicates its status (ON/OFF).

**DI1, DI2, DI3, DI4 (cell):** signal from the optional safety cells (see “connecting the presence sensors” below).

**DI5 (Swing off sens./Lock):**

1. **Swing off sensor:** for all machines except BL4x, signal emitted by the optional arm swing off detector when it no longer detects the arm on the jaw. Also, configure the “*Arm Swing Off*” parameter in the “*OPTIONS*” menu.
2. **Lock:** for BL4x, signal emitted by the arm locking device sensor, indicating the status of the lock (locked or unlocked).

**DI6 (reader A command):** order to open from the optional badge reader.

**DI7 (stop command):** order to stop the movement of the obstacle immediately, from a push-button box, remote control, etc. Also, configure the “*Stop CMD*” parameter in the “*OPTIONS*” menu.

**DI8 (open CMD):** order to open the obstacle, from a push-button box, remote control, reader, etc. Also, configure the “*Exploitation*” parameter in the “*QUICK START*” menu.

**DI9 (close CMD):** order to close the obstacle, from a push-button box, remote control, etc. Also, configure the “*Exploitation*” parameter in the “*QUICK START*” menu.

**DI10 (lock open CMD):** order to keep the obstacle in the open position, from an external switch.

**DI11 (lock close CMD):** order to keep the obstacle in the closed position, from an external switch.

**DI12 (Sw open):** signal from the opening limit-switch detector.

**DI13 (Sw close):** signal from the closing limit-switch detector.

**DI14 (crank limit switch):** signal from the presence detector switch of the crank used for manual operation of the obstacle (only on some types of equipment). This turns off the motor command outputs (DO7 and DO8) to prevent the obstacle from moving while the crank is engaged (safety). If there is no crank limit switch on the equipment, connections B4 and C4 must be linked.

**AI1 (analogue sensor):** analogue signal from the analogue position sensor, which must be activated (“*Positioning*” parameter under the “*QUICK START*” menu).

## **OUTPUTS**

Signals sent by the control board to external elements.

There is a red LED under every output connection, which indicates its status (ON/OFF).

**REL1- and REL1+:** connectors of the relay from which the indication to transmit comes (parameter is adjustable via the “*OUTPUT FUNCTION*” menu).

**REL2- and REL2+:** connectors of the relay from which the indication to transmit comes (parameter is adjustable via the “*OUTPUT FUNCTION*” menu).

**REL3- and REL3+:** connectors of the relay from which the indication to transmit comes (parameter is adjustable via the “*OUTPUT FUNCTION*” menu).

**DO7 (rising motor):** status 1 (ON) if the obstacle is opening or completely open.

**DO8 (descending motor):** status 1(ON) if the obstacle is closing or completely closed.

**(DO9 = Power relay 1** (cf. “*OUTPUT FUNCTION*” menu) on X8 connector (ch.**Erreur ! Source du renvoi introuvable.**))

**DO10 PWM and DO11 PWM (Pulse Width Modulation):** power element outputs (for arm lighting, flashing light, frequency inverter fan) adjustable via the “*OUTPUT FUNCTION*” menu: outputs 10 and 11.

**AO1 (FI setting):** analogue signal sent to the frequency inverter controlling the speed of the motor.

## **CONNECTORS FOR EXTERNAL ELEMENTS**

**24V:** 24 Volt DC connector.

**GND:** 0 Volt connector.

## **Connecting the presence sensors**

The board accepts up to four **P**resence **S**ensors (cells and/or loops, the generic term used in the rest of the manual and on the plans, diagrams and display is "PS").

- The cells are directly connected to connectors A, B and C (positions 13 to 16).
- The loops are connected to the X13 connectors (loop x on connector DPx) (cable sections  $\leq 2.5 \text{ mm}^2$ ) and the associated detector (Y) is connected to the corresponding pin (Z).

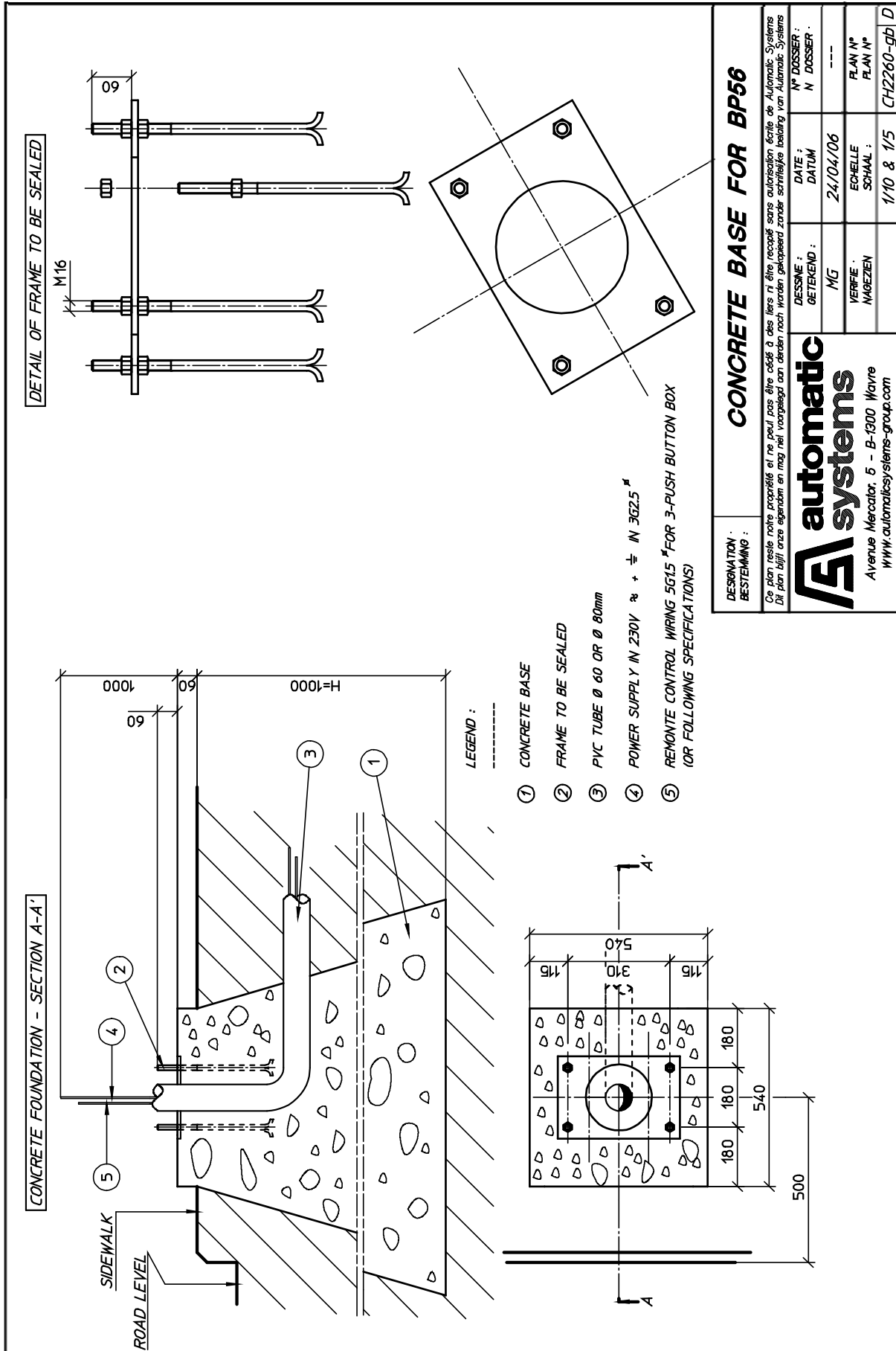
**Note 1:** a double detector allows the handling of 2 loops simultaneously, but only following 2 combinations: either DP1 & DP2, either DP3 & DP4.

**Note 2:** circuits DP1, DP2, DP3, DP4 of connector X13 are respectively linked to circuits DP1, DP2, DP3, DP4 of connectors A, B and C. A loop and a cell may not be put on the same circuit (in other words, if a cell is connected to DI1 (connector 16), a loop may not be at DP1 but may be at DP2, 3 or 4).

**Note 3:** it is also necessary to configure the "*Exploitation*" parameter in the "*QUICK START*" menu.

**Warning:** when the presence sensors are put in place, the obstacle may move. Hence, the presence sensors should not be placed before power to the equipment has been cut (circuit breaker cut).

## 7. INSTALLATION PLAN



## 8. EC DECLARATION OF CONFORMITY

### Déclaration CE de conformité

Nous, soussignés,

AUTOMATIC SYSTEMS s.a.  
Avenue Mercator, 5  
B-1300 WAVRE  
Belgique

Déclarons que la machine

**Barrière pivotante électrique  
BP56**

est conforme aux dispositions des Directives, normes  
et autres spécifications suivantes:

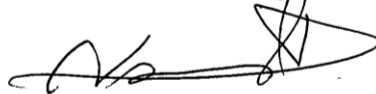
- Directive Sécurité des Machine 2006/42/CE.
- Directive Basse Tension 2006/95/CE.
- Directive Compatibilité électromagnétique 2004/108/CE.
- EN 12100-1: 2003 Sécurité des machines- Terminologie de base et méthodologie.
- EN 12100-2: 2003 Sécurité des machines- Principes techniques et spécifications.
- EN 60204-1: 2006 Sécurité des machines, Equipement des machines- Règles générales.
- EN 61000-6-3: 2001 Compatibilité électromagnétique- Norme générique émission- Résidentiel, commercial, industrie légère.
- EN 61000-6-2: 2001 Compatibilité électromagnétique- Norme générique immunité- Résidentiel, commercial, industrie lourde.

Fait à WAVRE,  
le : 2009-12-03

Nom du signataire : Denis VANMOL

Fonction : Directeur du développement

Signature :



### EC declaration of conformity

We, undersigned,

AUTOMATIC SYSTEMS s.a.  
Avenue Mercator, 5  
B-1300 WAVRE  
Belgium

Herewith declare that the machinery

**Electrical swinging barrier  
BP56**

is in accordance with the conditions of the following  
Directives, standards and other specifications:

- Machinery Directive 2006/42/CE
- Low-voltage Directive 2006/95/CE
- Electromagnetic compatibility Directive 2004/108/EC
- EN 12100-1: 2003 Machinery – Basic terminology and methodology.
- EN 12100-2: 2003 Machinery – Technical principles and specifications.
- EN 60204-1: 2006 Safety of machinery. Electrical equipment of machines. General requirements.
- EN 61000-6-3: 2001 Electromagnetic compatibility (EMC). Generic standards. Emission standard for residential, commercial and light-industrial environments.
- EN 61000-6-2: 2001 Electromagnetic compatibility (EMC). Generic standards. Immunity standard for industrial environments.

Made in WAVRE  
Date: 2009-12-03

Name : Denis VANMOL

Function : Director of Development

Signature :





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