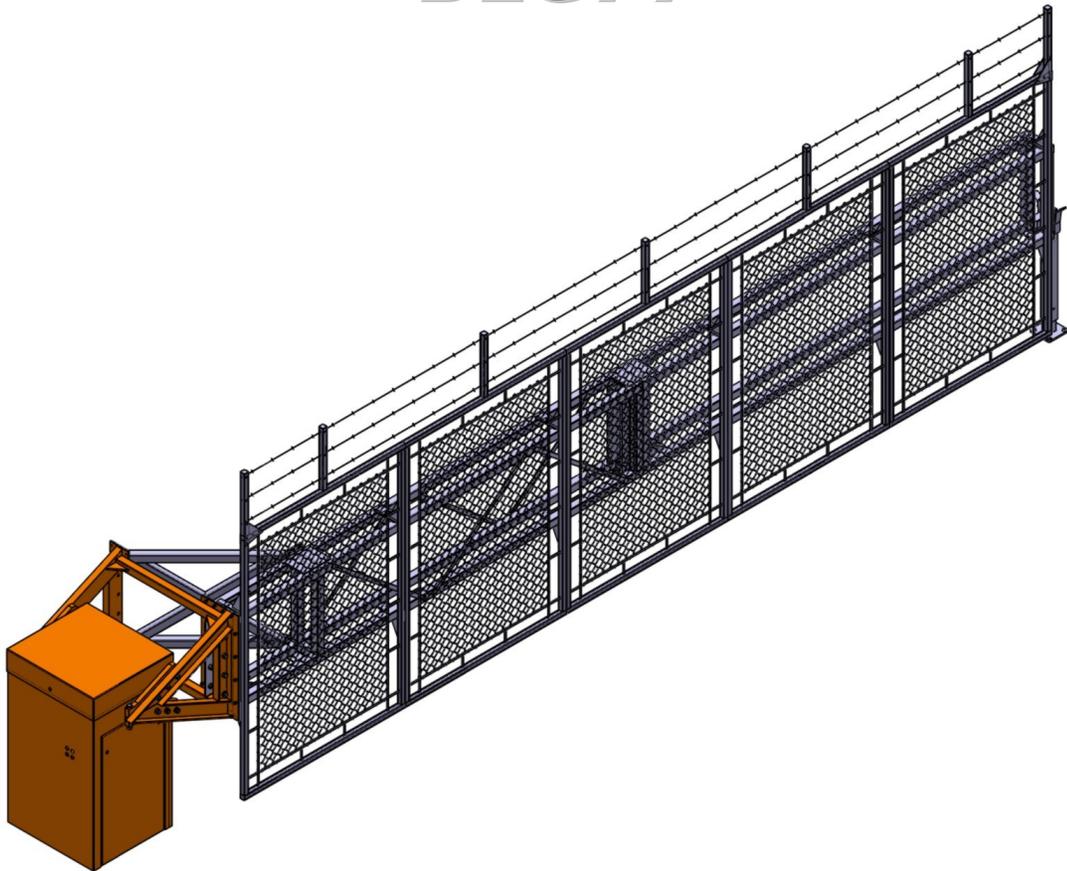


# **ELECTRICAL RISING BARRIER**

## **BLG77**



## **TECHNICAL MANUAL**

Rev 09

(Translated from the original French notice)

## Revision of document

Rev	Date	Written	Checked	Nature of the modification
1	2007-10-23	PYM		Initial version
2	2007-11-23	PYM		Sections on options and heating added
3	2007-12-21	PYM		Addition of section on safety edge
4	2008-01-28	PYM		Update of dimension and installation drawings following dimensions changes
5	2008-02-08	PYM		Update of electrical drawing to revision B
6	2008-07-28	PYM		Update for AS1320 version 6.x and removal of sections installation drawings, electrical diagram and spare parts.
7	2011-03-28	SSA		Page 7 and 8 3D representation update. Update of the text reference to page 7 and 8 drawing. Section 2.6, 4.4 and 4.5 added. Section 4.3, 5.2 and 7 modified.
8	2011-06-14	SSA	MFy	Section 2.6 modification. ATV11 replace by the ATV12.
9	2012-05-16	MFy		Electric diagram updated.

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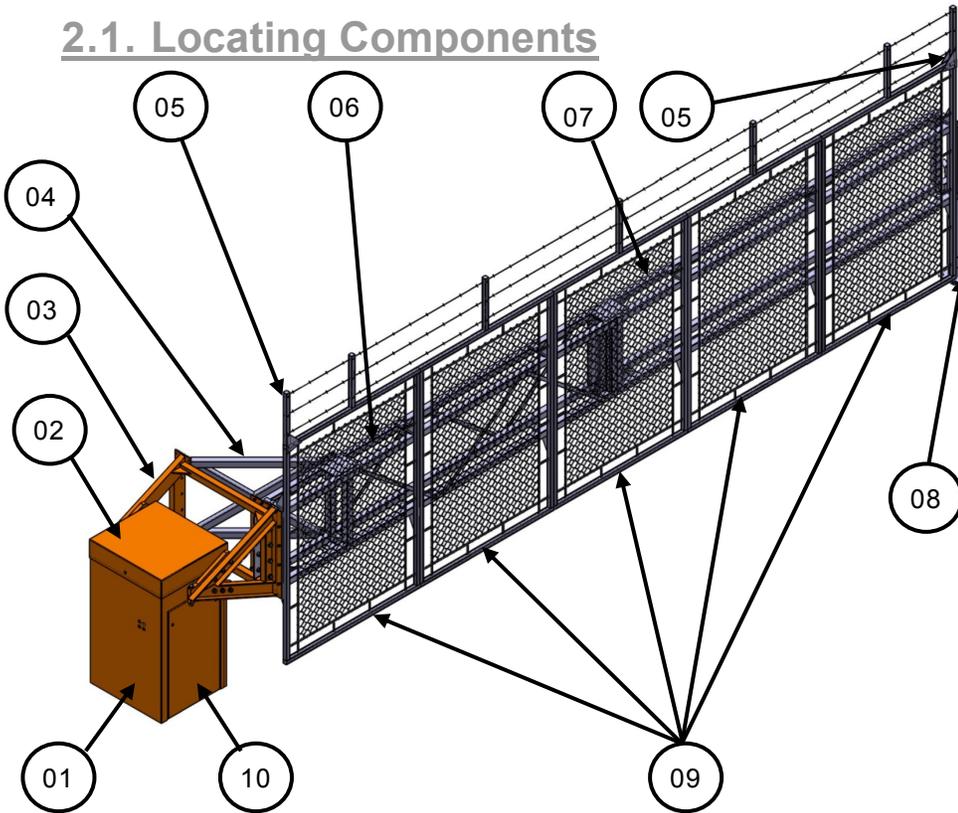
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## 1. SAFETY WARNINGS

- This manual must be available to anyone working on the equipment: installer, maintenance operator, final user, etc.
- This equipment is intended to control access to vehicles and cannot be used for another purpose without risk to the user and the integrity of the equipment.  
The responsibility of Automatic Systems may not be raised for damages resulting from improper use of the equipment.
- Circulation of pedestrians in the area where the barrier is moving must be banned (risk of being hit and pinching). Two pictograms for the prohibition of pedestrian access are provided with the equipment; the EC Machine Directive requires that they be affixed to either side of the barrier, in a location visible to pedestrians. 
- Do not install this equipment in an explosive area.
- Do not add unapproved accessories (contact between different metals causes an electrolytic effect which is detrimental to the equipment's corrosion resistance).
- The contractor is to comply with local regulations when installing the equipment.
- 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 arm on them!
- Any operation of equipment must be performed by qualified personnel. Any unauthorized intervention performed by a non-qualified technician on this product will automatically void the manufacturer's warranty.
- Access to the mechanism must be reserved for staff who are aware of the electrical and mechanical risks incurred in case of negligent handling. This staff must block access to the mechanism after intervention.
- For any operation that does not require the equipment to be under power, turn off the power by means of the [circuit breaker](#) (13, ch.2.1. ).
- Any internal item likely to be energized or in movement must be handled with care.
- The equipment is configured in "minimum risk" mode for users. Any modification of parameters must be done knowingly by qualified personnel and does not incur any responsibility by Automatic Systems.
- The end of the arm must always be kept at a distance of at least 0.5 m from any object.
- The barrier must be fully visible by the user before being actuated.
- After a collision, even without apparent damages, the equipment must be carefully checked by an approved technician.

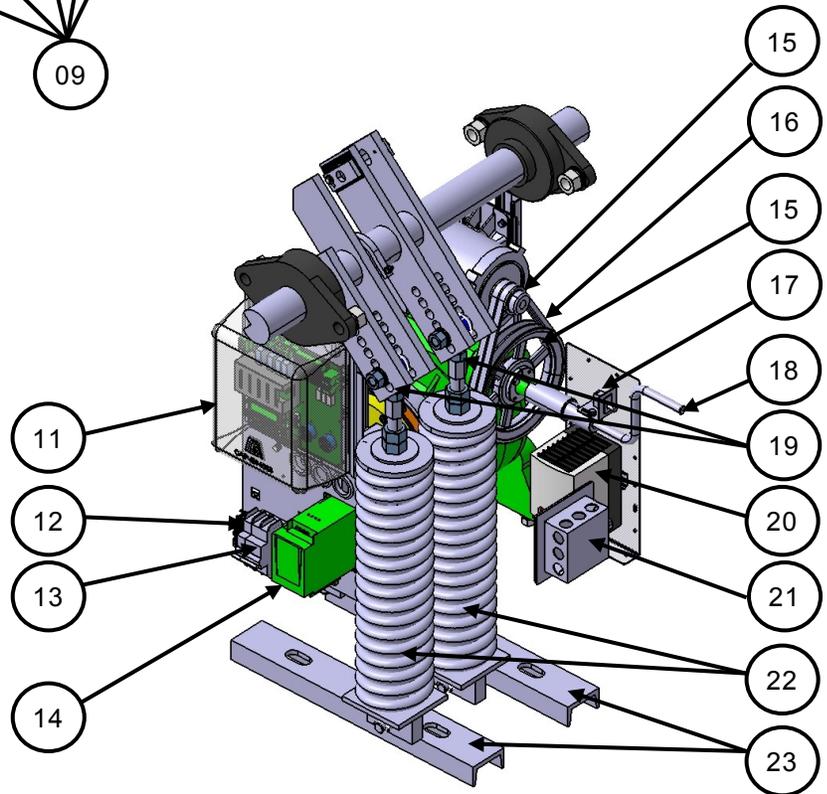
## 2. DESCRIPTION

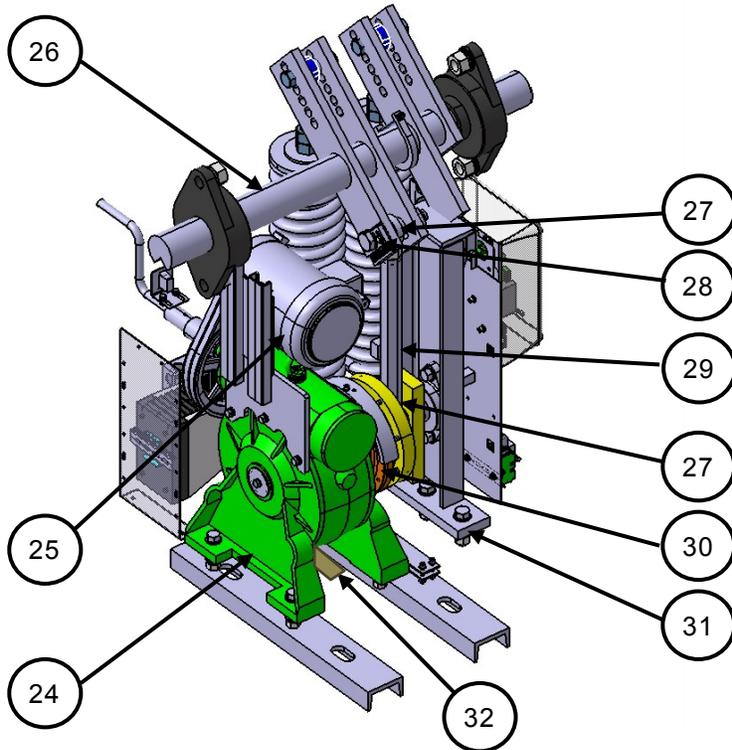
### 2.1. Locating Components



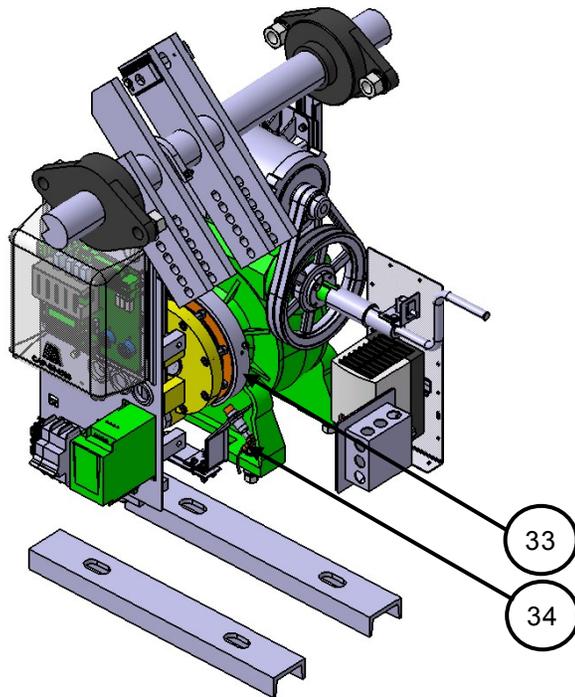
- 01- Cabinet
  - 02- Cover
  - 03- Deported arm
  - 04- X support
  - 05- Barbwire end support
  - 06- Base structure
  - 07- End structure
  - 08- Electromagnetic tip support
  - 09- Panels
  - 10- Doors
- \* The fence is the assembly of items 5-6-7-8.

- 11- Electronic board
- 12- Heater breaker
- 13- Main breaker
- 14- Frequency inverter
- 15- Pulleys
- 16- Belts
- 17- Small door limit switch
- 18- Manual crank
- 19- Springs rod end
- 20- Fan heater (option)
- 21- Audible alarm module
- 22- Springs
- 23- Fixing clamps





- 24- Reducer 100:1
- 25- Motor
- 26- Arm shaft Friction
- 27- Rod ends
- 28- Grooved plates
- 29- Rod
- 30- Clutch
- 31- Stopper
- 32- Heating element (STD)



- 33- Analog sensor cam
- 34- Analog sensor

## 2.2. Principle of Operation

The opening of the barrier is ordered by the user, (via a key switch, a pushbutton, a radio operator transmitter), by loops of detections buried under the roadway or by an external body. Closing is ordered in the same manner or, automatically at the end of a temporization.



**A “STOP” command turns off the engine immediately but, the movement of the fence does not cease instantly. It can continue to go down gradually because of its weight and its angular position. The adjustment of the friction can reduce this phenomenon.**

The movement, created by the engine, is transmitted to the fence by a system of rod/crank. Balancing springs play the part of counterweight to assist the engine with the opening and closing of the barrier.

### Safety

The barrier is put out of service, when its movements are not finished in assigned time or when it does not manage to close again after several attempts, with a sensor under the fence.

A sensor can be added, in option, to order a reopening in the event of detection of a user in the vicinity of the equipment or, at the time of impact with a vehicle during a closing.

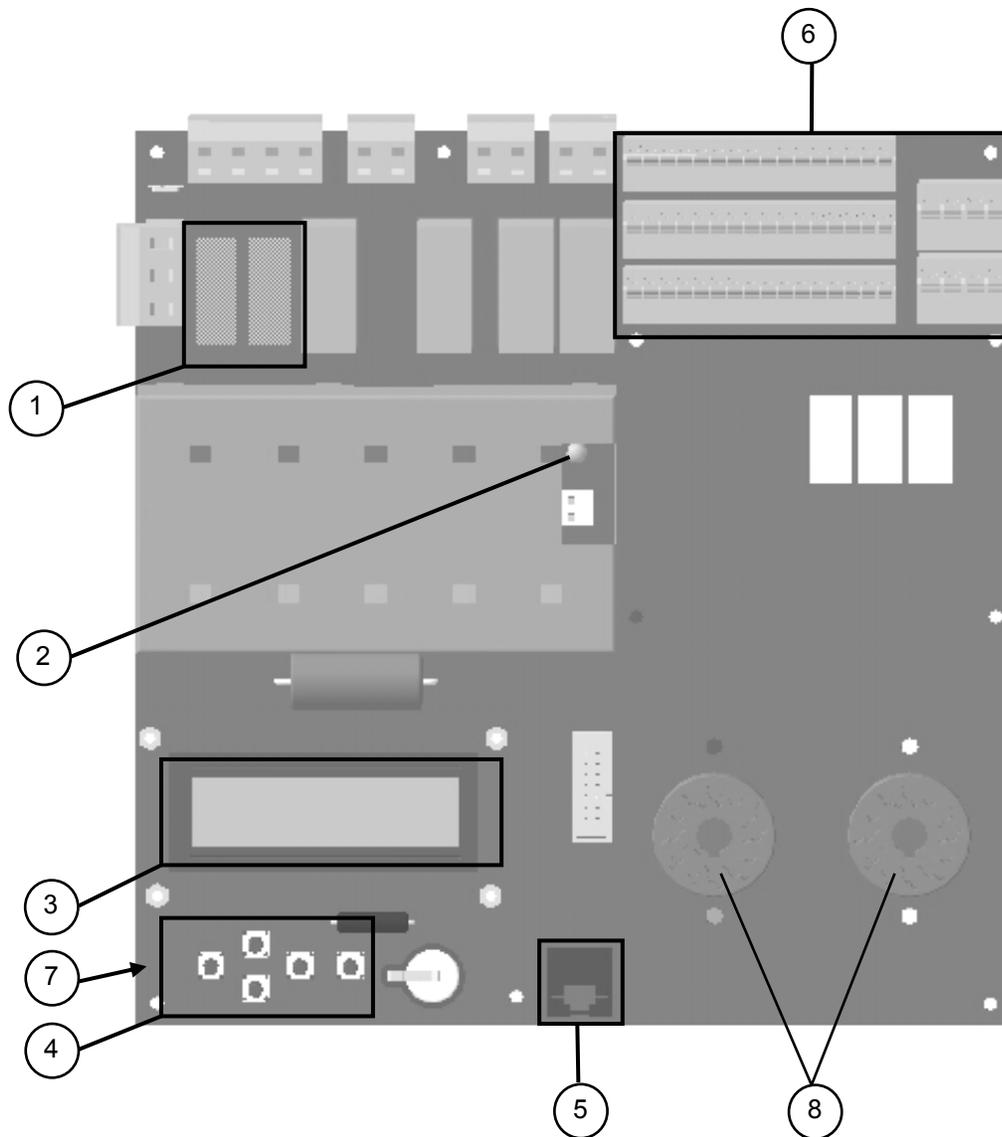
In open or closed position, the alignment of the rod and crank block the movement of the arm “mechanical locking”.

The barrier is parameterized in the factory, in order to remain mechanically locked in the event of power failure. The raising of the arm is then carried out by means of the crank (18, p5).

### Control Board

The control board (10, p5), coordinates the activity of the barrier: movement management, the options, inputs and outputs processing, etc.

## 2.3. Control Board AS1320



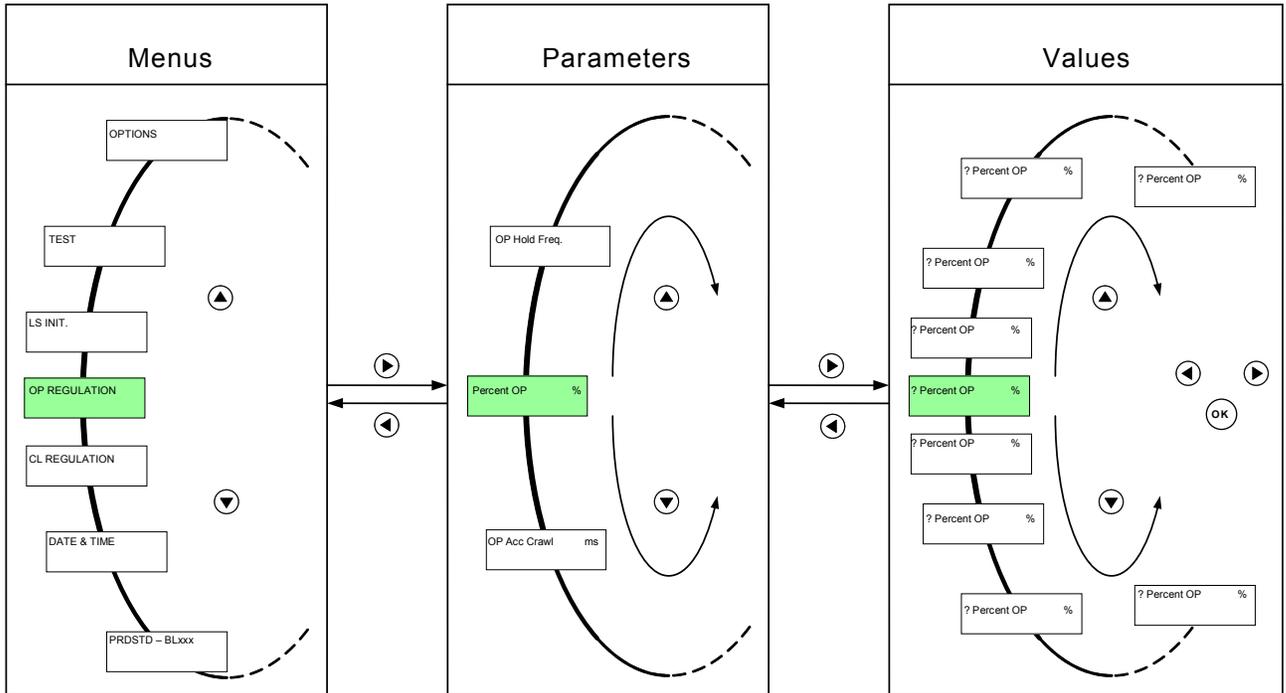
1. Fuses
2. Stabilized power supply indicator light
3. Menu display screen
4. Menu navigation keys
5. RJ45 communication connector
6. In/Out control connector blocks
7. 5 green LEDs (lit when the board is on)
8. Connectors for presence detectors (for inductive loops)

The control board (10, p5) is the interface between the user and the barrier. It allows for management of all the barrier's actions, including any possible options.

**The most current and normal functions of the board, in daily use of the barrier are presented below. For a detailed description of all the functions, their parameter settings, etc, please refer to the manual dedicated to the board (available on request).**

Navigation in the menus of the display screen is based on 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



The menus are displayed on the first line, in upper case.

Press a few seconds on ▲ or ▼ to get out the Standby menu.

The parameters are displayed in lower case with the first letter of each word in upper case, followed by their unit if applicable.

The question mark (?) preceding the parameter indicates that this one is ready to be modified.

The current value of the parameter appears on the second line.

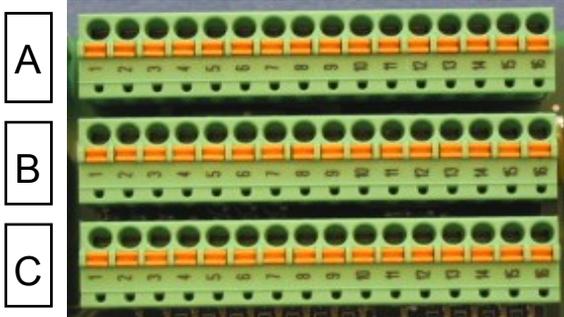
The asterisk (\*) in the lower part of a parameter indicates the default value ("factory set" value).

The change is validated by pressing the OK key.

**⚠ Save the changes to avoid losing them at the time of a power failure ("MEMORY" ▶ "Save" ▶ "MEM1" or "MEM2").**

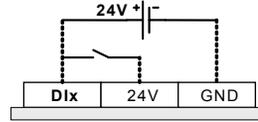
### 2.3.1. Control Terminal Block of the Control Board AS1320

3 connectors with 16 pins each provide for the communications between the logic board and the outside.

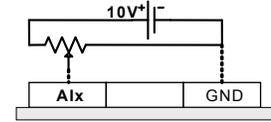


#### Input connection

(DI=Digital Input)

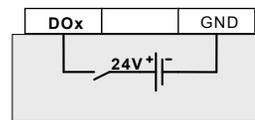


(AI=Analogue Input)

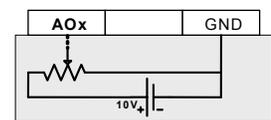


#### Output connection

(DO=Digital Output)



(AO=Analogue Output)



**Note:** refer to the electrical diagram 0-1910-001 supplied with the barrier for the wiring between the various elements.

		Terminal 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 - Output relay 3	REL3 + Output relay 3	GND	GND	GND	GND
	B	AO1 FI setting	DO11 PWM Output 11	DO8 Descending motor	24V	DI13 Closing LS	DI11 Lock Close CMD	DI9 Close command	24V	24V	24V	REL2 - Output relay 2	REL2 + Output relay 2	24V	24V	24V	24V
	C	AI1 Analog. Sensor	DO10sPWM Output 10	DO7 Rising motor	DI14 crank limit switch	DI12 Opening LS	DI10 Lock Open CMD	DI8 Open command	DI7 Stop command	DI6 Reader A command	DI5 Arm presence LS	REL1 - Output relay 1	REL1 + Output relay 1	DI4 Cell 4	DI3 Cell 3	DI2 Cell 2	DI1 Cell 1

## THE INPUTS

Signals from outside that are received by the logic board.

There is a green LED under every input pin, which indicates the status (ON/OFF) of the latter.

**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, emitted by 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, emitted by a push-button box, remote control, reader, etc. Also, configure the “*Exploitation*” parameter in the “*QUICK START*” menu, p. 22.

**DI9 (close CMD):** order to close the obstacle, emitted by a push-button box, remote control, etc. Also, configure the “*Exploitation*” parameter in the “*QUICK START*” menu, p. 22.

**DI10 (lock open CMD):** order to keep the obstacle in the open position, emitted by an external interrupter.

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

**DI12 (Sw open):** signal emitted by an opening limit-switch detector, when the obstacle reaches the limit switch.

**DI13 (Sw close):** signal emitted by a closing limit-switch detector, when the obstacle reaches the limit switch.

**DI14 (crank limit switch):** signal emitted by the presence detector of the crank used for manual operation of the obstacle (only on some types of equipment). This indication allows for the motor command outputs (DO7 and DO8) to be cut, in order for the obstacle not to become electronically activated while the crank is engaged (safety). If there is no detector on the equipment, terminal blocks B4 and C4 must be bypassed.

**AI1 (analogue sensor):** analogue signal emitted by the analogue position sensor. The sensor must be activated (“*Positioning*” parameter under the “*QUICK START*” menu).

## THE OUTPUTS

Signals sent by the logic board to external elements.

There is a red LED under every input pin, which indicates the status (ON/OFF) of the latter.

**REL1- and REL1+:** 0 V and 24 VDC terminals of the relay from which the indication to transmit comes (parameter is adjustable via the “*OUTPUT FUNCTION*” menu).

**REL2- and REL2+:** 0 V and 24 VDC terminals of the relay from which the indication to transmit comes (parameter is adjustable via the “*OUTPUT FUNCTION*” menu).

**REL3- and REL3+:** 0 V and 24 VDC terminals of the relay from which the indication to transmit comes (parameter is adjustable via the “*OUTPUT FUNCTION*” menu).

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

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

**(DO9 = Power relay 1)**

**DO10 PWM and DO11 PWM (“Pulse Width Modulation”):** power element commands, such as arm lighting or flashing light (parameters 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.

## THE TERMINALS FOR CONNECTING EXTERNAL ELEMENTS

**24V:** 24 Volt DC terminal.

**GND:** 0 Volt terminal.

**Connecting the presence sensors**

The board accepts up to four Presence Sensors (cells and/or loops, the generic term used in the rest of the manual and on the plans, diagrams and display is “PS”).

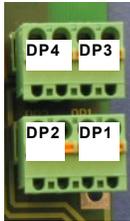
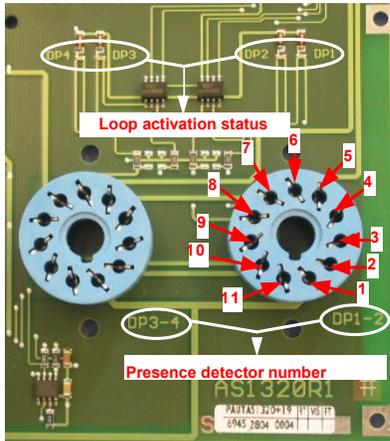
- The cells are directly connected to connectors A, B and C (positions 13 to 16).
- The loops are connected to the X13 connectors below (loop x on terminal DPx) and the associated detector (Y) is connected to the corresponding pin (Z).

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

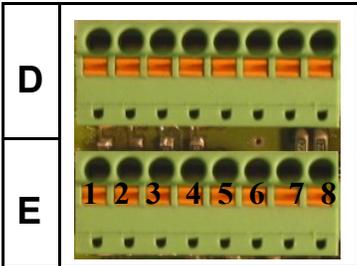
**Note 2:** circuits DP1, DP2, DP3, DP4 of connector X13 are respectively linked to circuits DP1, DP2, DP3, DP4 of connectors A, B and C. A loop and a cell may not be put on the same circuit (in other words, if a cell is connected to D11 (connector 16), a loop may not be at DP1 but may be at DP2, 3 or 4).

**Note 3:** it is also necessary to configure the “Exploitation” parameter in the “QUICK START” menu, p. 22.

**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).

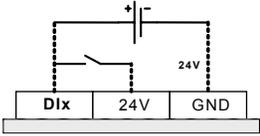
Detection loops pinning:																																							
X13	Y	Z	Pin assignment																																				
Connection of the loops to the following connectors (cable sections ≤ 2.5 mm <sup>2</sup> ):	Double detector (for two loops)	Pin for a detector																																					
			<table border="1"> <thead> <tr> <th>Number</th> <th>Simple detector</th> <th>Double detector</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>12-24V AC/DC</td> <td>12-24V AC/DC</td> </tr> <tr> <td>2</td> <td>+/- 15%</td> <td>+/- 15%</td> </tr> <tr> <td>3</td> <td>Loop 1</td> <td>Loop 1</td> </tr> <tr> <td>4</td> <td>Twisted pair</td> <td>Twisted pair</td> </tr> <tr> <td>5</td> <td>N.C.</td> <td>Loop 2</td> </tr> <tr> <td>6</td> <td>N.C.</td> <td>Twisted pair</td> </tr> <tr> <td>7</td> <td>N.C.</td> <td>Relay 2</td> </tr> <tr> <td>8</td> <td>N.C.</td> <td>NC contact</td> </tr> <tr> <td>9</td> <td>Ground</td> <td>Ground</td> </tr> <tr> <td>10</td> <td>Relay 1</td> <td>Relay 1</td> </tr> <tr> <td>11</td> <td>NC contact</td> <td>NC contact</td> </tr> </tbody> </table>	Number	Simple detector	Double detector	1	12-24V AC/DC	12-24V AC/DC	2	+/- 15%	+/- 15%	3	Loop 1	Loop 1	4	Twisted pair	Twisted pair	5	N.C.	Loop 2	6	N.C.	Twisted pair	7	N.C.	Relay 2	8	N.C.	NC contact	9	Ground	Ground	10	Relay 1	Relay 1	11	NC contact	NC contact
Number	Simple detector	Double detector																																					
1	12-24V AC/DC	12-24V AC/DC																																					
2	+/- 15%	+/- 15%																																					
3	Loop 1	Loop 1																																					
4	Twisted pair	Twisted pair																																					
5	N.C.	Loop 2																																					
6	N.C.	Twisted pair																																					
7	N.C.	Relay 2																																					
8	N.C.	NC contact																																					
9	Ground	Ground																																					
10	Relay 1	Relay 1																																					
11	NC contact	NC contact																																					

### 2.3.2. Control Terminal Block on the AS1321 Logic Control Board (Option)

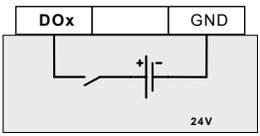


1 2 3 4 5 6 7 8

**Input connections**



**Output connections**



		Terminal number							
		1	2	3	4	5	6	7	8
Connectors	D	REL7 or GND	REL6 or GND	REL5 or GND	REL4 GND	24V	24V	24V	24V
	E	REL7 or DO12 Relay 7 or Output 12	REL6 or DO6 Relay 6 or Output 6	REL5 or DO5 Relay 5 or Output 5	REL4 or DO4 Relay 4 or Output 4	D118 Reserved	D117 Lock LS of the electrically locked tip support (ELV)	D116 Rubber protection profile	D115 Reader B command

#### THE INPUTS

**D115 (Reader B command):** opening command coming from an optional second badge reader.

**D116 (Rubber protection profile):** signal coming from the pressure sensor when the optional rubber protection profile on arm is pressed against a vehicle.

**D117 (Lock LS of the electrically locked tip support):** signal coming from the lock of the electrically locked tip support when it is locked and maintaining the arm in closed position.

**D118 (LS arm presence ELV):** signal coming from the electrically locked tip support when the arm is supported.

#### THE OUTPUTS:

Terminals 1 to 4 may be assigned to Outputs or Relays (the choice is made when ordering). Their parameter is adjustable and defined in the "OUTPUT FUNCTION" menu.

#### THE CONNECTORS FOR EXTERNAL ELEMENTS

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

**GND:** 0 Volt connector.

## 2.4. “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 user mode for 100 seconds.



When you see a  symbol, it means that you need a code to access those parameters. Ask your AS representative if required.

Parameter	Values	Description
		<p><b>OK key:</b> (only within this menu <sup>(*)</sup> and when no other parameter is selected): command for opening and closing the obstacle.            OK during opening: without effect.            OK during closing: inversion (= opening).            OK maintained: oscillating movement around the opening limit switch: the obstacle opens, starts closing, opens again, etc.</p> <p><sup>(*)</sup> <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.            EN = English            FR = Français            NL = Nederlands            DE = Deutsch            ES = Español            IT = Italiano            SV = Svenska            Select the language using the OK key or allow it to change automatically after a few seconds, following which all of the preceding <b>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 the last 100 events in English (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" data-bbox="751 625 1463 976"> <tr> <td data-bbox="751 625 808 724">2 s</td> <td data-bbox="808 625 1101 724">Log 00 060324 235034</td> <td data-bbox="1101 625 1463 724">On 24 March 2006 at 23 hours (11 p.m.) 50 minutes and 34 seconds...</td> </tr> <tr> <td data-bbox="751 724 808 802">2 s</td> <td data-bbox="808 724 1101 802">Log Out Of Service</td> <td data-bbox="1101 724 1463 802">...the apparatus was put out of service.</td> </tr> <tr> <td data-bbox="751 802 808 879">2 s</td> <td data-bbox="808 802 1101 879">Log 01 060324 235034</td> <td data-bbox="1101 802 1463 879">View the preceding message (01) using the ►▲ keys...</td> </tr> <tr> <td data-bbox="751 879 808 976">2 s</td> <td data-bbox="808 879 1101 976">Log Open Time Out</td> <td data-bbox="1101 879 1463 976">...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 section 5.2, p. 59.</p>	2 s	Log 00 060324 235034	On 24 March 2006 at 23 hours (11 p.m.) 50 minutes and 34 seconds...	2 s	Log Out Of Service	...the apparatus was put out of service.	2 s	Log 01 060324 235034	View the preceding message (01) using the ►▲ keys...	2 s	Log Open Time Out	...we observe that it was put out of service due to a time out while opening.
2 s	Log 00 060324 235034	On 24 March 2006 at 23 hours (11 p.m.) 50 minutes and 34 seconds...												
2 s	Log Out Of Service	...the apparatus was put out of service.												
2 s	Log 01 060324 235034	View the preceding message (01) using the ►▲ keys...												
2 s	Log 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 logic unit's outputs (terminal blocks p. 10). The short circuit is declared and this 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, 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 logic unit 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 unhinged (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>” error).</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>” error).</li> <li>3) Arm is unhinged (see “<i>Arm Swing Off</i>” error).</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>	Crank presence sensor activated (for manual handling of the obstacle).
	<i>Reset Sensor Init</i>	Deactivation of the analogue-sensor activation by resetting the limit-switch interrupters (see the “ <i>Positioning</i> ” parameter under the “ <i>QUICK START</i> ” menu).
	<i>LS Fault</i>	Defective or badly connected opening and/or closing limit switch.
	<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>	<p>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>”).</p> <p>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.</p>
	<i>CoolingMotor ON</i>	<p>Start-up of the motor cooling fan.</p> <p><b>Note:</b> This message is only displayed if the “Cooling –</p>

		Log" (below) is "ON".
	<i>CoolingMotor OFF</i>	Stopping of the fan that cools the motor.  <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 "Max Stop" parameter of the "TIMING" 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.  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.  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.  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 "Download Chg Lv3").
	<i>Curve 229Std</i>	Change in the type of barrier: selection of "curve 229 standard" ("Barrier Type" parameter under the "QUICK START" menu).
	<i>Curve 229Highway</i>	Change in the type of barrier: selection of "curve 229 highway" ("Barrier Type" parameter under the "QUICK START" menu).
	<i>Curve 1x-2x-3x-5x</i>	Change in the type of barrier: selection of "curve for BL16, BL32, BL33, BL52, BL53" ("Barrier Type" parameter under the "QUICK START" menu).
	<i>Curve BLG77</i>	Change in the type of barrier: Selection of "curve BLG77" ("Barrier Type" parameter under the "QUICK START" menu).
	<i>Curve Special</i>	Change in the type of barrier: selection of the "Special" curve ("OPTIONS" menu) for operation according to the "OP REGULATION" and "CL REGULATION" menus.
	<i>Curve BL223</i>	Change in the type of barrier: Selection of "curve BL223" ("Barrier Type" parameter under the "QUICK START" menu).
	<i>Curve BL40 AVR</i>	Change in the type of barrier: Selection of "curve BL40 AVR" ("Barrier Type" parameter under the "QUICK START" menu).
	<i>Curve BL40 SR</i>	Change in the type of barrier: Selection of "curve BL40SR" ("Barrier Type" parameter under the "QUICK START" menu).

		menu).
	<i>Curve BL41 AVR</i>	Change in the type of barrier: Selection of “curve BL41AVR” (“Barrier Type” parameter under the “QUICK START” menu).
	<i>Curve BL41 SR</i>	Change in the type of barrier: Selection of “curve BL41SR” (“Barrier Type” parameter under the “QUICK START” menu).
	<i>Curve BL43 AVR</i>	Change in the type of barrier: Selection of “curve BL43AVR” (“Barrier Type” parameter under the “QUICK START” menu).
	<i>Curve BL43 SR</i>	Change in the type of barrier: Selection of “curve BL43SR” (“Barrier Type” parameter under the “QUICK START” menu).
	<i>Curve BL44 AVR</i>	Change in the type of barrier: Selection of “curve BL44AVR” (“Barrier Type” parameter under the “QUICK START” menu).
	<i>Curve BL44 SR</i>	Change in the type of barrier: Selection of “curve BL44SR” (“Barrier Type” parameter under the “QUICK START” menu).
	<i>Curve BL46 AVR</i>	Change in the type of barrier: Selection of “curve BL46AVR” (“Barrier Type” parameter under the “QUICK START” menu).
	<i>Curve BL46 SR</i>	Change in the type of barrier: Selection of “curve BL46SR” (“Barrier Type” parameter under the “QUICK START” menu).
	<i>Curve RSB 70&amp;71</i>	Change in the type of equipment: Selection of “curve RSB 70&71” (“Barrier Type” parameter under the “QUICK START” menu).
	<i>Unlock BL4x Er</i>	Only with “locking of the arm” 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 later case: <ul style="list-style-type: none"> <li>• Check whether the sensor is plugged into the corresponding terminal block and whether it is functioning properly.</li> <li>• Check whether the sensor is properly connected.</li> <li>• Check whether the sensors are programmed correctly (“SENSOR FUNCTION” menu).</li> </ul>
	<i>PS2 Activated</i>	
	<i>PS3 Activated</i>	
	<i>PS4 Activated</i>	
	<i>Lock OP Hold</i>	Check why the Lock Open command is being sustained (DI10, p. 10).
	<i>Safe Arm Activ</i>	Activation of the “Safety Arm” sensor (only with the

		<p>“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>	Setting of the “ <i>PWF Open Activ</i> ” parameter of the “ <i>OPTIONS</i> ” 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. (Note: the closure loops are not taken into account for closing in this case.
	<i>Lock Open LCD</i>	Setting of the “Test Mode” parameter of the “ <i>TEST</i> ” menu to <i>Lock Open LCD</i> . Parameter 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 “ <i>TIMING</i> ” menu to elapse.
	<i>Open Cmd Hold</i>	Check why the open command is being sustained (DI8, p. 10).
	<i>Stop Cmd Hold</i>	<ul style="list-style-type: none"> <li>• Check why the stop command is being sustained (DI7, p. 10).</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 (DI6, p. 10).
	<i>Reader B Hold</i>	Check why the Reader B command is being sustained (DI15, p. 10).
	<i>Position Fail</i>	The type of sensor selected is “ <i>Analogue 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 CR</i>	<ul style="list-style-type: none"> <li>• The reader counter (see the “<i>OPTIONS</i>” menu ► “<i>Counter CR</i>”) is greater than zero.</li> <li>• Or the timing for no passage is other than zero (see the “<i>TIMING</i>” menu ► “<i>No Passage</i>”).</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 (DI11, p. 10).
	<i>Lock Close LCD</i>	Setting of the “Test Mode” parameter of the “ <i>TEST</i> ” menu to <i>Lock Close LCD</i> . Set the Parameter to “ <i>Desactivated</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 (DI7, p. 10).</li> <li>• Check whether the “Stop CMD” parameter is programmed correctly (“Options” menu).</li> </ul>

	<i>Arm ELV Locked</i>	<ul style="list-style-type: none"> <li>• Check whether the detector of the unlocking of the electrical locking (ELV) arm is functioning properly (DI17, p. 13).</li> <li>• Check whether the "Arm" parameter in the "OPTIONS" menu is programmed correctly.</li> </ul>
	<i>Arm ELV Detect</i>	Check whether the detector sensing the presence of the arm is functioning properly (DI5, p. 10).
	<i>Position Fail</i>	The type of sensor selected is " <i>Analog. Sensor</i> " ("QUICK START" menu ► " <i>Positioning</i> "); nevertheless, the obstacle still has to be activated (► " <i>Activate Motor?</i> " ► OK).
⊗ <sup>T</sup> <i>Temperature</i>	<i>-50 to +100°C</i>	Temperature of the logic control unit (measured by an integrated probe).
<i>Counter 1</i>	<i>0 to 99,000,000</i> <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> <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 one second when the counter has been reset to zero.
⊗ <sup>T</sup> <i>Motor Using</i>	<i>0 to 100%</i>	Motor utilisation rate. The value is updated every two minutes.
⊗ <sup>T</sup> <i>Communication</i>		Information on the RS232 communication port is sent to an external PC as a .txt file.
	<i>Desactivated (by default)</i>	No communication.
	<i>Stack Watch</i>	Sending of the stack values, so that it can be verified whether the number of bytes allocated to each of the program tasks is sufficient or whether one task could overflow onto another.
	<i>Upload Params</i>	Uploading of the modified parameters, as compared with the default values (factory settings).
	<i>Upload Log</i>	Uploading of the events (see " <i>Log</i> " parameter).
⊗ <sup>T</sup> <i>Cooling -&gt; Log</i>		Entry of a request to record, in the " <i>Log</i> " parameter (see above), the date and time of the start-up and stop of the fan that cools the motor.
	<i>OFF (by default)</i>	Fan activity not recorded in the Log.
	<i>ON</i>	Fan activity recorded in the Log.

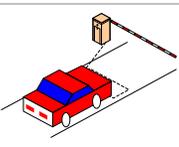
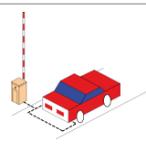
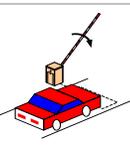
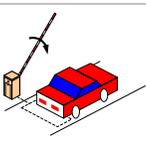
## 2.5. "QUICK START" Menu: Quick Configuration

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.



**By default, the presence sensors are deactivated. Therefore, in order to ensure that their safety functions are operational, it is required that the parameters for each of the presence sensors used be set.**

		closed obstacle	open obstacle	Closing obstacle	
					
Sensor function		Action upon arrival in the sensor's field	Action upon leaving the sensor's field	Action upon arrival in the sensor's field	+ Action upon leaving the sensor's field
0	<b>Desactivated</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>Nothin_Stop+CL</b>	**	-	Stop	+ Closing
5	<b>Nothing_OP+CL</b>	**	-	Opening	+ Closing
6	<b>Nothing_Stop</b>	**	-	Stop	
7	<b>Nothing_OP</b>	**	-	Opening	
<b>Incompatible</b>		This message is displayed for one second if the selected operating mode for the sensor is not compatible with the exploitation mode (parameter below). See the table of incompatible modes p. 29.			

\*: Automatic closure only if the preceding opening was initiated by detection and not if presence is detected by another sensor. Note, if there is a power outage when the barrier is open, the barrier 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 logic unit's terminal blocks (see p. 10): 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.

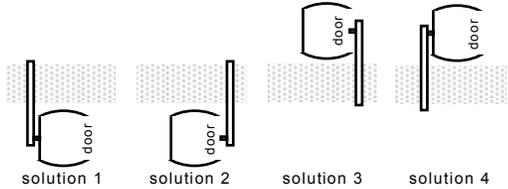
**Note:** the installation of 2 loops on PS1 and PS2 requires the use of a double detector since PS1 and PS2 are electrically connected to the same connection pin.

**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)!

<i>Positioning</i>		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 (miniinterrupters), 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 analog sensor.  The analog 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 analog sensor, as per one of these cases: <ul style="list-style-type: none"> <li>• The crank presence detector (only present on some equipment) is engaged. =&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. =&gt; bypass the B4 and C4 terminal blocks (p. 10).</li> </ul>	
	<i>Activate Motor?</i>	Pushing the OK key within 5 seconds launches the analog sensor activation procedure (see below) and the movement of the obstacle!	
	<i>Search LSO...</i>	The obstacle opens to look for its limit switch.	 <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. The analog sensor is then operational.  The message disappears after 5 seconds or if the OK key is pushed.  <b>IMPORTANT:</b> Save the values in MEM1 or MEM2 ("MEMORY" menu), then turn off the logic unit and turn it back on again.	
	<i>Adjust Sensor</i>	Activation failed because the analog 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>	<p>Activation failed because the analog sensor returned a measurement of zero. As this value does not exist, check:</p> <ul style="list-style-type: none"> <li>• the sensor's wiring (in the sensor as well as on the logic unit's terminal blocks: see p. 10);</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>
<i>Barrier Type</i>		<p>Definition of the equipment type; this allows the program to automatically modify the opening and closing curves.</p> <p><u>Note 1:</u> The equipment type is stated on the reference plate, inside the housing.</p> <p><u>Note 2:</u> 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> 
	<i>229 Standard (by default)</i>	Parameter to select for a BL229 Standard.
	<i>229 Highway</i>	Parameter to select for a BL229 Highway.
	<i>1x – 2x – 3x – 5x</i>	Parameter to select for a BL16, BL32, BL33, BL52, BL53, BP56, RSB70, or RSB71.
	<i>BLG77</i>	Parameter to select for a BLG77.
	<i>BL 223</i>	Parameter to select for a BL223.
	<i>RSB 70 &amp; 71</i>	Parameter to select for a RSB 70 or RSB 71.
	<i>BL 40 SR</i>	Parameter to select for a BL40 without automatic opening of the arm in case of power cut.
	<i>BL40 AVR</i>	Parameter to select for a BL40 with automatic opening of the arm in case of power cut.
	<i>BL 41 SR</i>	Parameter to select for a BL41 without automatic opening of the arm in case of power cut.
	<i>BL 41 AVR</i>	Parameter to select for a BL41 with automatic opening of the arm in case of power cut.
	<i>BL 43 SR</i>	Parameter to select for a BL43 without automatic opening of the arm in case of power cut.
	<i>BL 43 AVR</i>	Parameter to select for a BL43 with automatic opening of the arm in case of power cut.

	<i>BL 44 SR</i>	Parameter to select for a BL44 without automatic opening of the arm in case of power cut.
	<i>BL44 AVR</i>	Parameter to select for a BL44 with automatic opening of the arm in case of power cut.
	<i>BL 46 SR</i>	Parameter to select for a BL46 without automatic opening of the arm in case of power cut.
	<i>BL 46 AVR</i>	Parameter to select for a BL46 with automatic opening of the arm in case of power cut.
	 <i>Special</i>	This message only appears if the "Special" curve in the "OPTIONS" menu is activated. Moreover, in this case, the preceding parameters (229, 1x-2x-etc.) cannot be modified.
<i>Arm Length</i>		Specification of the arm mounted on the barrier; this allows the program to automatically modify the opening and closing curves.
	<i>2m00</i>	Select this for a BL229 with an arm of 2 m.
	<i>2m50</i>	Select this for a BL229 with an arm of 2.5 m.
	<i>3m00 (by default)</i>	Select this for a BL229 with an arm of 3 m.
	<i>3m50</i>	Select this for a BL229 with an arm of 3.5 m.
	<i>4m00</i>	Select this for a BL229 with an arm of 4 m.
	<i>4m50</i>	Select this for a BL229 with an arm of 4.5 m.
	<i>5m00</i>	Select this for a 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>	Message 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 229 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>		Choice <sup>(*)</sup> of mode for unlocking the obstacle during a loss of supply voltage. (*) Except for BL4x, which parameter is automatically set to ON and not adjustable.
	<i>OFF (by default, except for BL4x)</i>	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.
	<i>ON (by default for BL4x only, not adjustable)</i>	The obstacle is unlocked: a pulse is given to take the transmission elements out of alignment; opening may have to be effected by hand.  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).  <u><b>Note:</b></u> 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. 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.  <u><b>Warning:</b></u> this adjustment is incompatible with the "Lock Closed" command which has priority and will maintain the obstacle closed.
<i>Exploitation</i>		Operating modes for the opening, closing and STOP commands.  The commands follow this decreasing order of priority:  STOP (stop) Lock OP (lock open) Lock CL (lock close) OP (open) CL (close)  The presence sensors and reader inputs are at the same hierarchical level as OP/STOP/CL => Lock Close has priority in an opening loop and will work even if something is detected.  Warning: The OP command is never interrupted (the arm always goes to the LSO before accepting the next command) => Lock Close will take affect after the obstacle has reached its LSO.  <u><b>Note:</b></u> Some use modes are incompatible with the operating mode of the presence sensors (see the table of incompatible modes, p. 29).

	<i>2 Contacts (by default)</i>	<p>2 contacts used for opening and closing, on the terminal block p. 10: DI8 and DI9.          Open Cmd: open the obstacle          Close Cmd: close the obstacle on the rising edge of the command.          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.          Open Cmd: if inactive, the obstacle closes.          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 later sends a continuous signal in order for the obstacle to be kept open for a given time.</p> <p><b>Note:</b> if there is a voltage loss while the obstacle is open, the barrier 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).          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.          Open Cmd: if inactive (i.e., when the command is released), stop.          Close Cmd: If active, the obstacle closes.          Close Cmd: if inactive, stop.          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 “Desactivated” mode.</p>
	<i>2 Contacts CFE</i>	<p>Same as “2 Contacts” operation, except:          Close Cmd: Closure of the obstacle on the Falling Edge 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>		Save the parameter values (see the “MEMORY” menu).
	<i>Ignored (by default)</i>	No action.
	<i>Save</i>	Save the modified parameters in MEM1. <b>This saving action is necessary so that the modifications made are not lost during a power failure!</b>
	<i>Load Default</i>	Recall the default values (factory settings) of the parameters accessible in the level from which this command is executed. E.g.: If you are at User level, this function will only load the default values of the parameters accessible in user mode, and will not modify the values of the parameters accessible in Technician or Manufacturer mode. <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>
	<i>Done</i>	This message is displayed when the save or the load is finished and disappears automatically after one second.
<i>Min Sensor Max</i>	0000 (default) to 1024      0000 (default) to 1024      0000 (default) to 1024	This parameter applies to the analog 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. <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 (preceded by  symbol in this manual).

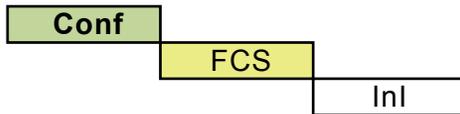
		Exploitation mode				
		2 Contacts	1 Contact	Step by Step	Dead Man	2 Contacts CFE
<b>Sensor Function</b>	Desactivated	✓	✓	✓	✓	✓
	Opening	✓	✓	✓	✗	✓
	CL_Stop+CL	✓	✓	✓	✗	✓
	CL_OP+CL	✓	✓	✓	✗	✓
	Nothin_Stop+CL	✓	✓	✓	✗	✓
	Nothing_OP+CL	✓	✓	✓	✗	✓
	Nothing_Stop	✓	✓	✓	✓	✓
	Nothing_OP	✓	✓	✓	✗	✓

## 2.6. ATV12 frequency drive parameter settings



**WARNING:** We recommend that you consult our technician for all parameters setting modifications.

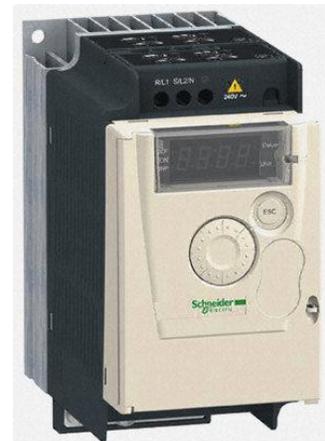
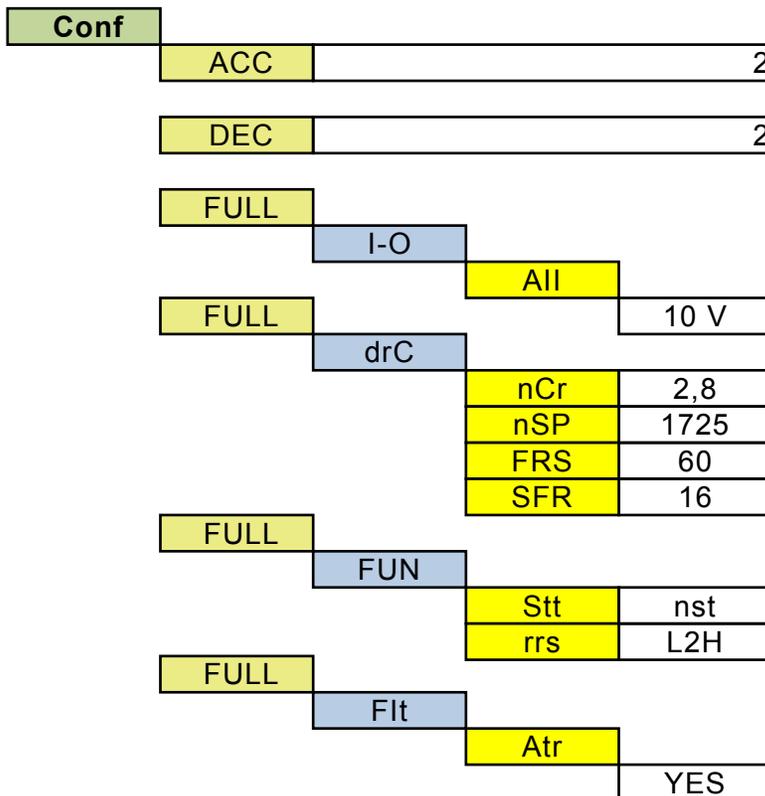
### 1) Default settings restoration « Manufacture »



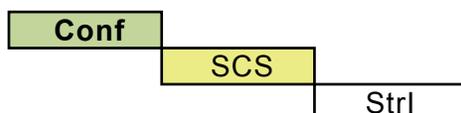
Press the « ENT » button.

The default parameters setting are restored when the LED « CONF » stop blinking.

### 2) BLG 77 ATV12 configuration



### 3) Setting recording



Press the « ENT » button. (5 sec)

The configured settings are saved when the LED « CONF » stop blinking.

## 3. INSTALLATION

### 3.1. Installation of the barrier

- ⚠ **WARNING:** As the barrier cannot be installed directly on the ground, it will be necessary to anchor it on a concrete base plate, must be made following Automatic Systems recommendations as described in the installation drawings. The disregard of these recommendations may cause injuries or even death and also jeopardize the performance and the reliability of the barrier.
- Bring the equipment on site by means of an appropriate handling device (hand truck or equivalent). The barrier must be raised by holding the bottom of the moving arm. Use protection in order to not damage the paint.
  - Unlock and remove the side door (3, p7). The keys are attached on the arm fixing clamp.
  - Unlock and remove the cover (2, p5).
  - Strip the cable jacket starting from 50 cm from the ground.
  - Avoid damaging the anchoring rods and place the barrier on its base.
  - Secure the housing to the base plate by tightening the fixing clamps (11, p5) on the anchoring rods by means of flat washers, split washers and nuts provided.  
**Note : only tighten the nuts after the installation of the fence and the electromagnetic tip support.**

For security reasons, the key which allows the opening of the security door has a distinct number (key 017) of those allowing opening the big doors and the hood (keys 004). The 004 keys should be kept in a restricted place where only a qualified technician could access them for maintenance purpose. The 017 keys should be kept with the manual crank (15,p5) in a place where the site responsible could access them at any time. So, in case of a power failure, this person will be able to access the barrier and open the arm manually.

## 3.2. Installation of the Fence

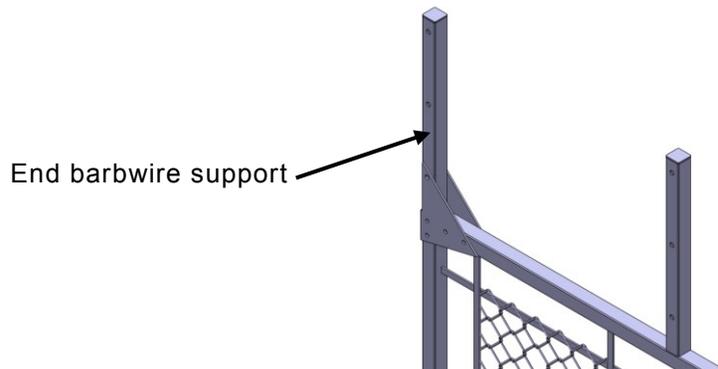
**WARNING:** Read carefully the complete procedure before starting

**Note:** Two persons are required for the installation of the fence.

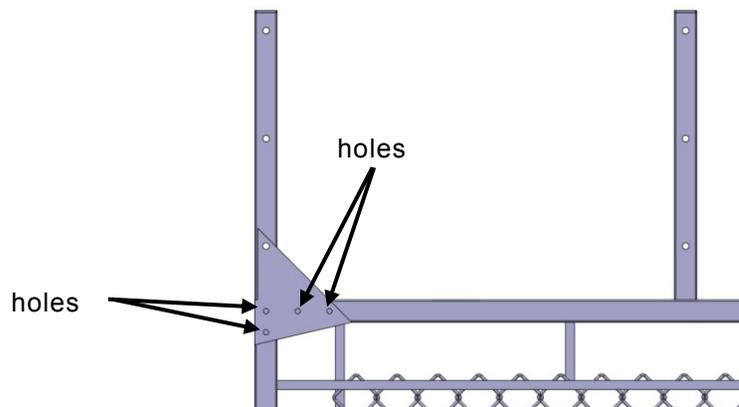
### 3.2.1. Preparation before assembling the fence

End barbwire supports (This step may already have been done at the plant)

1.1) Position the end barbwire support on the end panels as shown on the picture.



1.2) Drill four holes in the corresponding slots with a 5/16 drill bit.



1.3) Install the 4 bolts M8 x 60 from the bags labeled #P1.



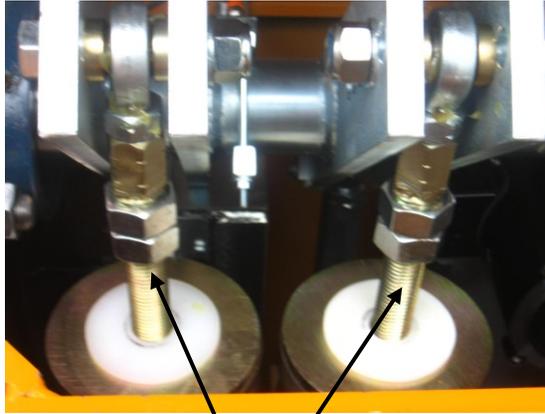
1.4) Install the fasteners from the bags labeled #P2.



### 3.2.2. Assembly of the base structure

1.1) Inside the barrier, loosen the spring nuts.

**WARNING:** The balancing springs inside the barrier can be dangerous when compressed. They can go off without warning. All operations made on the barrier when the springs are compressed should be made with care.

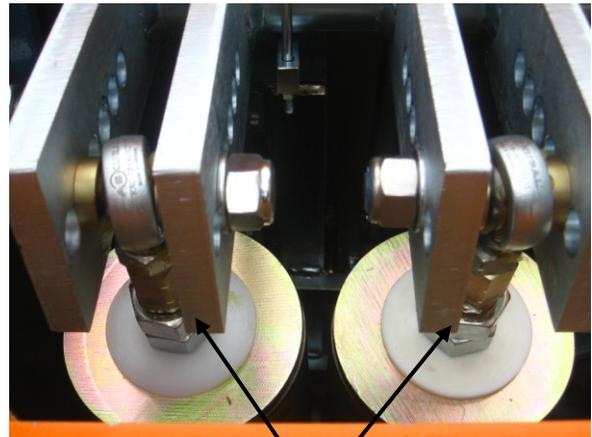


Spring nuts

1.2) Bring down the arm with the manual crank until the springs begin to compress.



Manual crank



Top of the springs  
reaches the nuts.

1.3) While the arm is in this position, install the base structure.



Slide the structure  
inside the structural  
arm.

1.4) Fasten the 8 bolts M16 x 40 from bag #1.4.



M16 x 40 mm

1.5) Fasten the 16 bolts M8 x 30 from bag #1.5.



M 8 x 30 mm

### 3.2.3. Assembly of the end structure

2.1) Using the manual crank, lower the arm. At some point, it will not be possible to lower it more because of the resistance of the springs. A second person will have to pull on the structure and hold it firmly while at the same time the first one uses the manual crank to completely lower the arm.

**WARNING:** the person who holds the structure should NEVER release it unless the rod mechanism has reached its locking point (at this time, the rod hits its bumper as shown in the picture). If the structure is released before it reached its locking point, it may open very quickly due to the springs compression and injure the workers severely or even cause death.



Hold the arm firmly



This part of the friction (30, p6) is blocked on the end unit (31, p6) and it is vertical with the rod (29, p6).

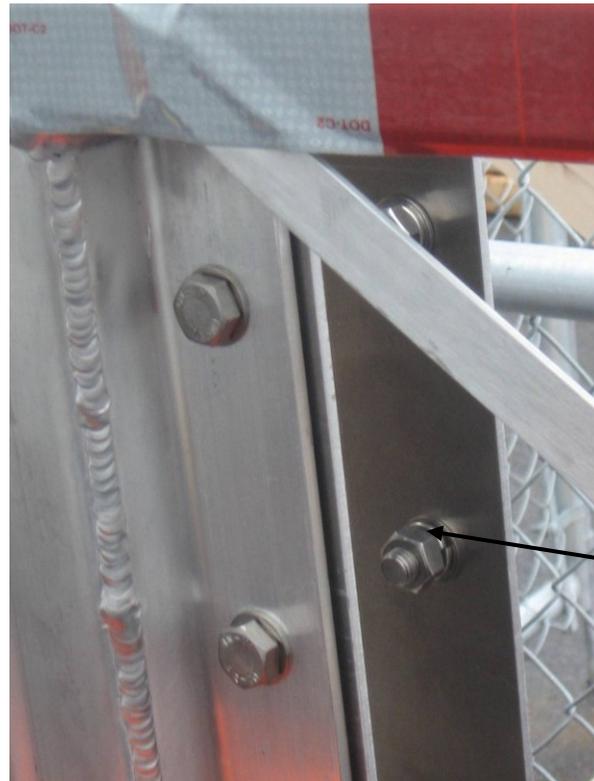
2.2) When the structure is completely down, add the end structure as shown on the pictures.



Slide the end structure inside the base structure.



2.3) Fasten the 8 bolts M14 x 40 from bag #2.3.



M 14 x 40 mm

2.4) Fasten the 6 bolts M10 x 30 from bag #2.4.



M 10 x 30 mm

### 3.2.4. Assembly of the X support

3.1) Position the X support as shown in picture below. This part is not symmetric, there is only one way to install it. Fasten the 10 bolts M10 x 30 from bag #3.1,.



X support

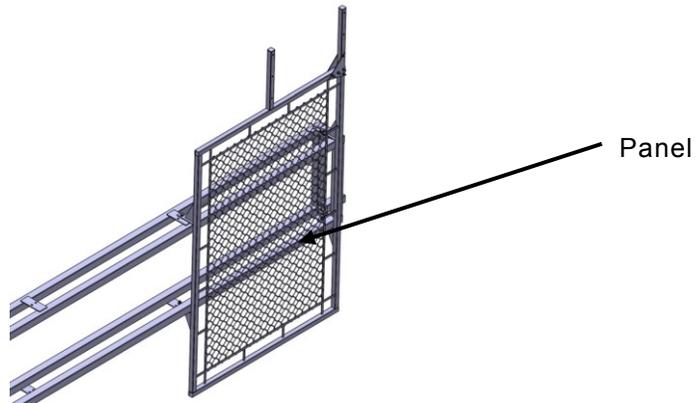
3.2) Fasten the 10 bolts M10 x 30 from bag #3.2.



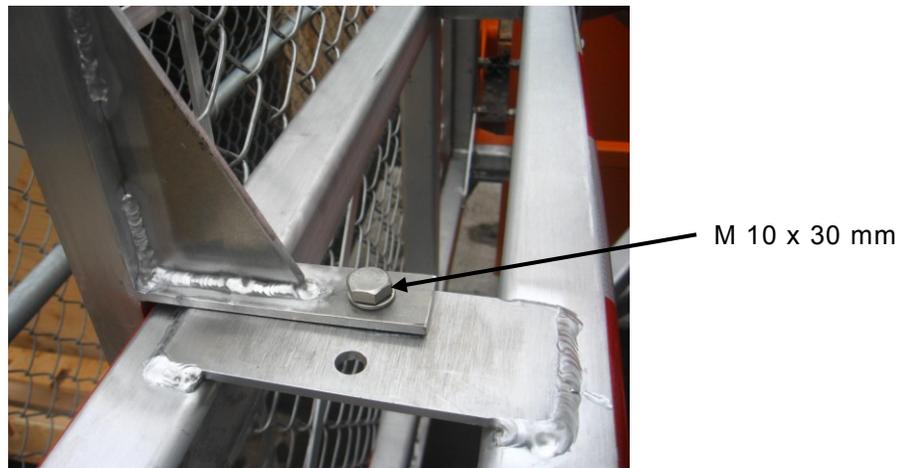
M 10 x 30 mm

### 3.2.5. Assembly of the panels

4.1) Install a panel on the structure as shown in the picture.



4.2) Fasten the 4 bolts M10 x 30 from bag #4.2.



4.3) Repeat steps 4.1 and 4.2 for all panels.



### 3.2.6. Assembly of the barbwire

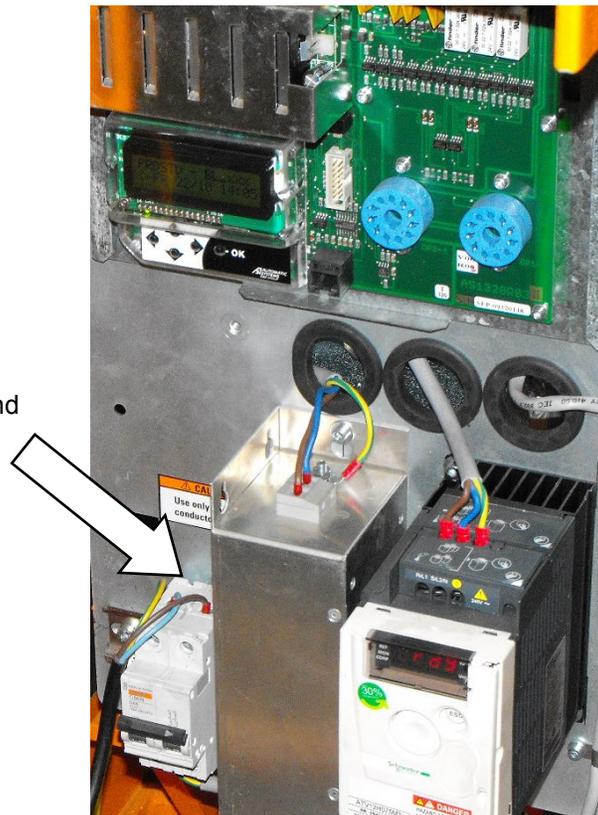
5.1) Pass the barbwire as shown in the picture.



### 3.3. Electrical connections

- ⚠ **WARNING:** do not connect to a floating network or to high impedance earthed industrial distribution network.
- ⚠ **WARNING:** high leakage current.  
Imperatively connect to the ground with a 1-mm<sup>2</sup> cable minimum before connecting the mains.  
Protect the power supply by a 16A circuit breaker.  
Do not connect several barriers to the same differential breaker.
- ⚠ **Note 1:** Connections must be made in accordance with the electrical wiring diagrams located inside the equipment which remain the reference.
- ⚠ **Note 2:** In order to avoid interference, power and control cables must be placed in two different conduits separated by at least 10 cm.
- ⚠ **Note 3:** The arm must be mounted before proceeding to electrical connections!

230 V AC single phase + Ground



### 3.4. Installation of the Electromagnetic Tip Support

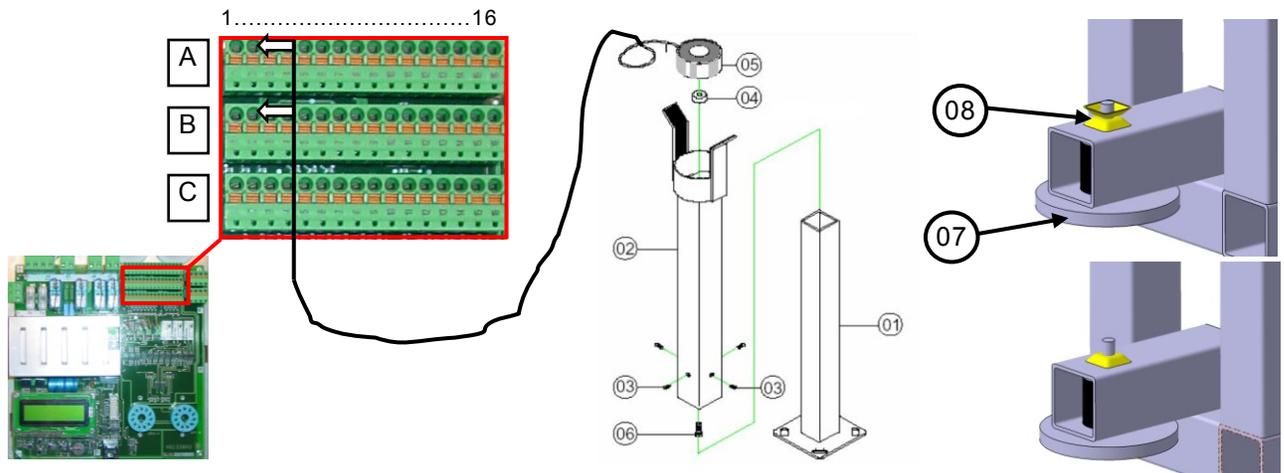
**Note:** The disregard of the tip support installation recommendations may jeopardize the performance and the reliability of the barrier.

The electromagnetic tip support comes standard with the BLG77 except for master/slave barriers (option)

The tip support's role is to maintain the end of the fence in its horizontal position and to ensure its rigidity. It also ensures a weight release on the mechanism. The electromagnetic tip support adds an extra degree of safety.

The tip support must be fixed on a concrete base, according to the instructions of drawing CH1019 (⇒ ch.8. ).

The height of the tip support is to be adjusted once the fence has been leveled (⇒ ch.4.2. ):



- Install the tip support plate (07) on the end structure (06, p5). Make sure to align the plate (07) with the suction piece (05). To tighten the tip support plate, use the two sloped nuts (08). Once the bottom nut is tight, remove the top nut (cf. bottom picture).
- Install the foot of the tip support (01) on the concrete base.
- Insert the head of the tip support (02) on the foot of the tip support (01).
- Adjust the height of the head of the tip support (02) and mark the screw holes (03) on the foot of the tip support (01) with a marker. Remove the head of the tip support (02) and, drill and wire as described in the guide provided with the tip support. Make electrical connections of the tip support and replace the top of the tip support (02) on the foot (01).

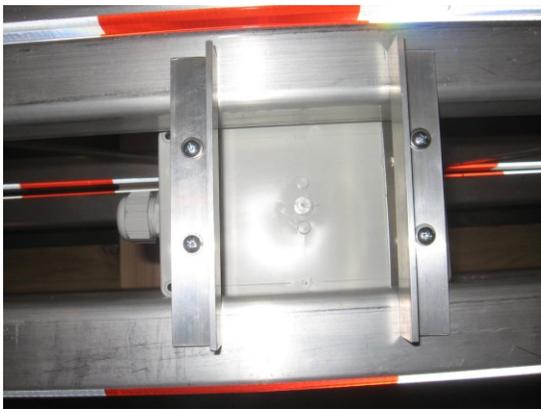
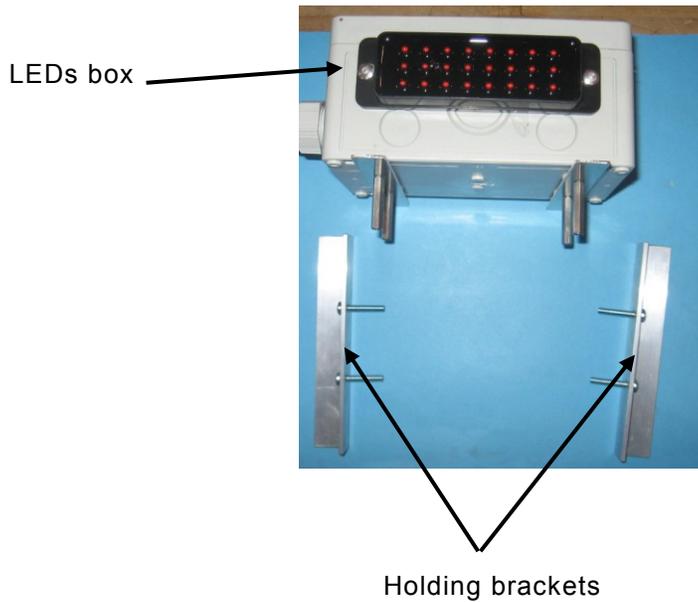
**Note:** You must leave 1cm between the plate (07) and the magnetic suction plate (05).

- Align the arm in the tip support by making, if necessary, the barrier swivel on its base.
- Tighten the anchor nuts to ensure the final fastening of the barrier.
- Connect the electromagnet to A2+B2 terminals of AS1320 control board.
- Adjust the following parameters in AS1320 control board:  
     QUICK START ⇒ Menu Access ⇒ Extended  
     OUTPUT FUNCTION ⇒ Output 11 ⇒ 19 (lock command)

### 3.5. Installation of a LEDs Lights (Option)

#### 3.5.1. Procedure for Installation of the LEDs Lights

To install the LEDs box, place them just below the top aluminum profiles as shown in pictures below. With the fasteners and the holding brackets, fix the LEDs box so they will hold in place while the fence is moving. Position the LEDs box so you can route the reinforced cable to the barrier. Pass the cable through the 90 degrees connector on the side of the barrier.



Top view



Side view

### 3.5.2. How to Program your LEDs Lights on the AS1321 and AS1320

1. Connect the LEDs cable to terminals D1 and E1 of the AS1321 (p13).
2. On the AS1320, set QUICK START menu ⇒ Menus Access ⇒ Extended.
3. OUTPUT FUNCTION ⇒ Output 12 ⇒ parameter 18: Barrier LEDs.
4. OPTIONS ⇒ Arm Lighting ⇒ cf. following chart:

 <i>Arm Lighting</i>		Arm Lighting option's operating mode.
	<i>Off (by default)</i>	Inactive.
	<i>Full Blink</i>	Blinks continually.
	<i>Warn Blink</i>	Blinks continually, except when the obstacle is on its opening limit switch (LSO) <b>and</b> if there is no closing command.
	<i>Full On</i>	Is continually ON.
	<i>Warn On</i>	ON continually, except when the obstacle is on its opening limit switch (LSO) <b>and</b> if there is no closing command.

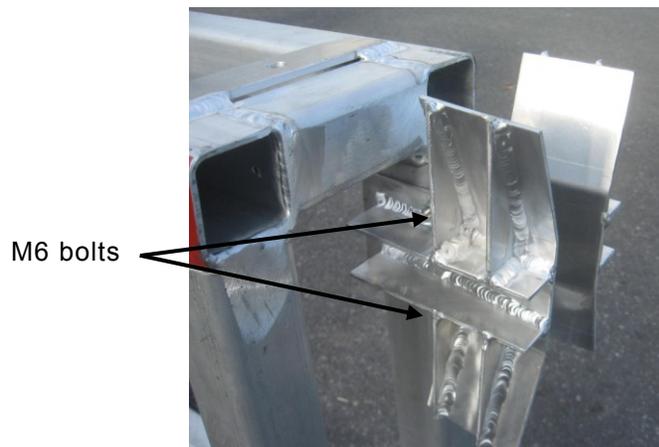
### 3.6. Installation of Master/Slave Barriers (Option)

#### 3.6.1. Procedure for Installation of the Interlock Mechanism



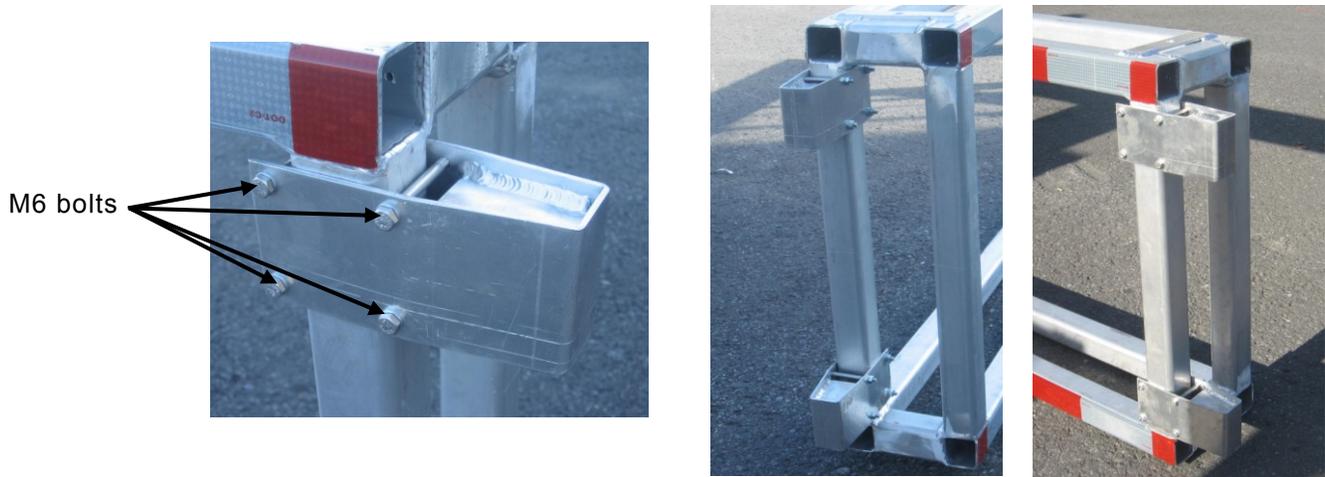
#### STEP ONE: Master brackets

Install the brackets on the master end structure with the given fasteners.



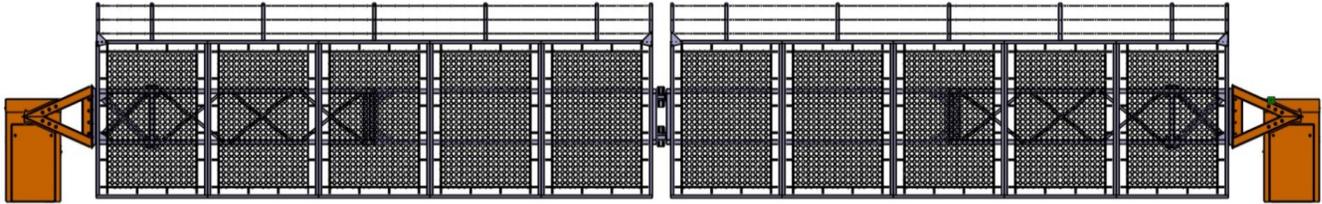
STEP TWO: Slave brackets

Install the brackets on the slave end structure with the given fasteners.



### 3.6.2. How to Program the Master/Slave Control on the AS1320

**Note:** this chapter is an extract from AS1320 manual, which remains the reference.



When two equipments operate simultaneously (i.e., they open and close at the same time), one equipment must be defined as the “master”; it will give the other (the “slave”) orders to move.

The following adjustments are then necessary:

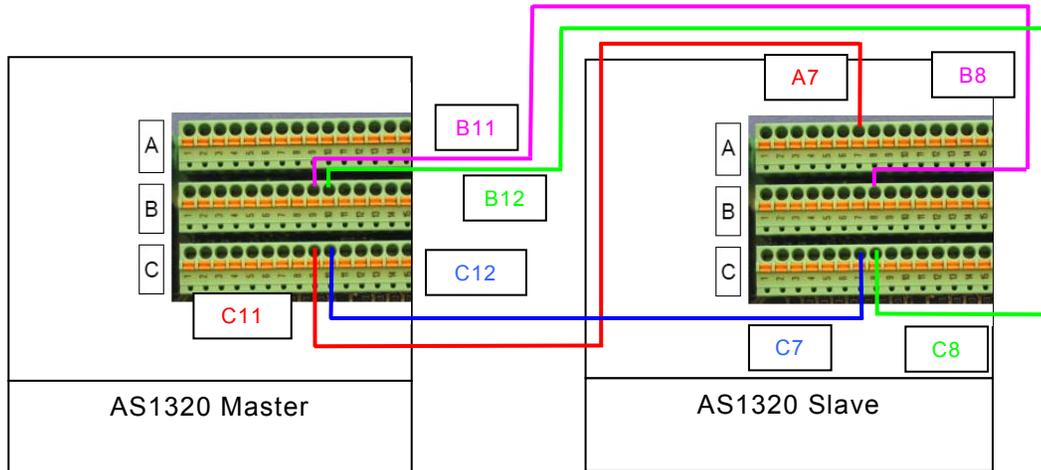
- Open and close commands:
  - On the master logic board, in the “*OUTPUT FUNCTION*” menu, adjust the “*Relay 1*” parameter to “*M/S OP/CL*”.
  - Connect the two equivalent terminal blocks (C11 + C12, p. 10) respectively to the terminal blocks (A7 + C7, p. 10) (= Open command) of the slave’s logic board.
  - On the slave’s logic board, in the “*QUICK START*” menu, adjust the “*Exploitation*” parameter to “*1 contact*” (=> warning: the slave obstacle, which was opened when the power was turned on, will consequently close automatically. In “*1 contact*” mode, an inactive open command in fact equals a close command).
- Stop command:
  - On the master logic board, in the “*OUTPUT FUNCTION*” menu, adjust the “*Relay 2*” parameter to “*M/S STOP*”.
  - Connect the two equivalent terminal blocks (B11 + B12, p. 10) respectively to the terminal blocks (B8 + C8, p. 10) (= Stop command) of the slave’s logic board.
  - On the slave’s logic board, in the “*OPTIONS*” menu adjust the “*Stop CMD*” parameter to “*NC*”.

Relays 1, 2 or 3 may be used as relays for the open and close commands.

- All of the control contacts and presence sensors must be connected to the master logic board.
- All of the presence sensors must have the same mode of operation (adjusted in the “*SENSOR FUNCTION*” menu).
- The slave logic board must be adjusted without presence sensors (“*SENSOR FUNCTION*” menu, “*PSx Function*” (x = 1 to 4) parameters adjusted to “*Desactivated*”).
- Delays before opening or closing, if selected, must be set on the master’s logic board only (“*TIMING*” menu).
- Save these modifications: “*MEMORY*” menu ► “*Save*” ► “*Mem1*”.

Resume :

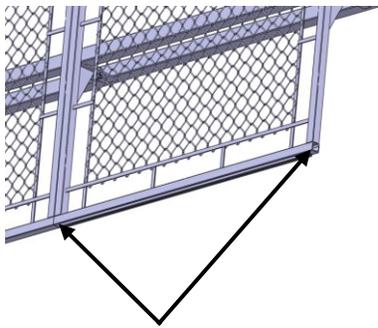
Master	Function	Connections	Slave	Function	Connections
Relay 1	M/S OP/CL	C11	+24V	Open	A7
		C12	DI 8		C7
Relay 2	M/S STOP	B11	+24V	Stop	B8
		B12	DI 7		C8



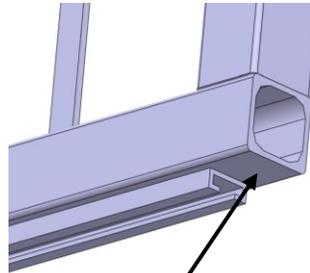
### 3.7. Installation of Impact Detection Safety Edge (Option)

#### 3.7.1. Installation Procedure

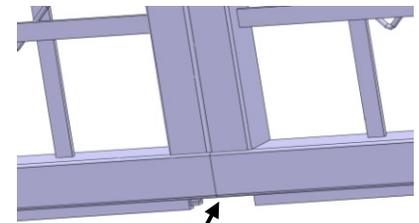
Install the rails on the bottom of each panel. The rails being shorter than the panels, center the rail with regard to the panel (let 25 mm at each side) and attach them with self-taping screws.



25 mm space on both sides



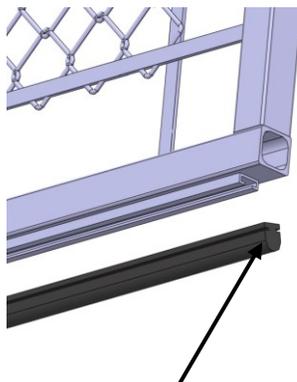
25 mm



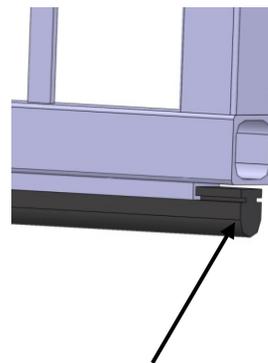
50 mm space

Starting from the end of the last panel, install the safety edge by entering one side at a time with a flat screw driver.

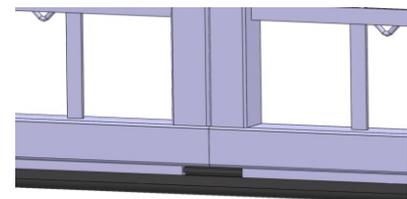
Do not try to slide the safety edge in the rail: it is too long and could be damaged while pulling it.



safety edge



Start from the end



Safety edge completely installed

### 3.7.2. How to Program your Safety Edge on the AS1321 and AS1320

Regarding the number of presence sensors installed on the barrier (loops and photocells) the safety edge will be connected in the AS1320 or in the AS1321.

#### Safety edge connected in the AS1320

**Note:** the safety edge being a NO contact while the Sensor Functions of the control board are working in NC mode, it is necessary to pass through Relay 1 to invert the contact signal.

- 1) Connect the safety edge in PS4, which are B13 and C13.
- 2) Install two jumpers, one between C12 and B14 and one between C11 and C14.
- 3) Then go in the "OUTPUT FUNCTION" menu and select parameter "relay 1". Set it at "Status PS4 NO".
- 4) Then go in the "SENSOR FUNCTION" menu and select parameter "PS3 Function". Set it at "Nothing\_OP+CL".

#### Safety edge connected in the AS1321

- 1) Connect the safety edge in D7 and E7.  
The control board is already set for a NO safety edge.

## 4. ADJUSTMENTS

**⚠ WARNING:** to reduce the risk of injury or death, read and follow all safety instructions (chapter 1) before installing, operating, or servicing the barrier.

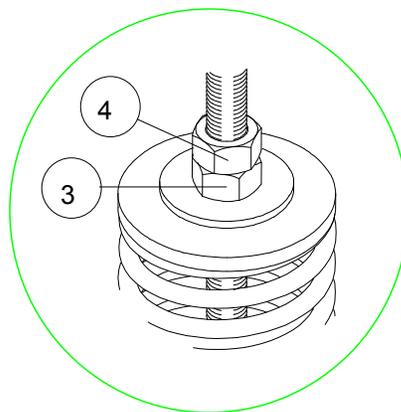
Any intervention on the barrier must be made by personnel qualified in electronics. Any work on this product that is unauthorized or carried out by an unqualified technician can cause serious injuries or even death and shall automatically entail the annulment of the manufacturer's warranty.

### 4.1. Balancing of the Fence by Means of the Springs

**⚠ WARNING:** two persons are necessary to perform this adjustment.

The tension of the springs must be adjusted in such a way as to ensure minimal effort for the motor both at the opening and the closing of the barrier:

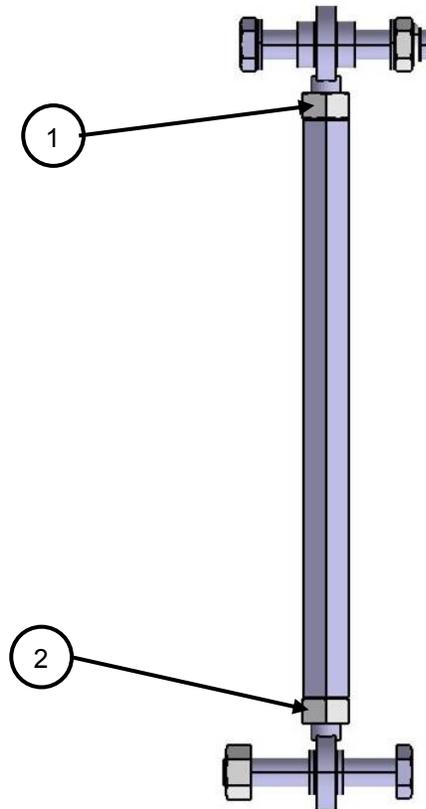
1. Withdraw rod nuts (1 and 2, p53) without turning the rod.
2. With the manual crank (18, p5), bring the arm to a 45 degrees position.
3. At this point, if the fence is balanced, you should be able to turn the rod easily manually. If you are not able to easily turn the rod, then you need to adjust the springs. There are two possible cases:
  - If you need to pull down the fence in order to be able to turn the rod, then the springs are compressed too much ⇒ Unscrew the nuts (3 and 4) to uncompress the springs.
  - If you need to push up the fence in order to be able to turn the rod, then the springs are not compressed enough ⇒ Screw the nuts (3 and 4) to compress the springs.
  - Do again steps 4 and 5 until the fence is balanced.
  - In most cases, you won't need to do a lot of turns to balance the fence.
4. When the fence is balanced, tighten the rod screws.



## 4.2. Leveling the Fence

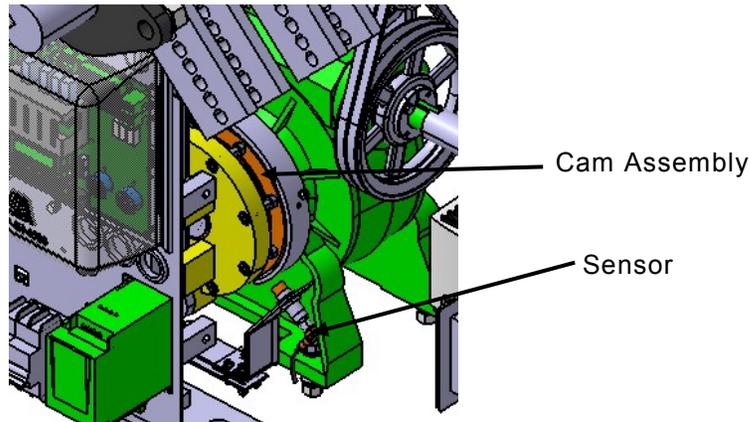
1. Close the barrier to put the arm in its horizontal position.
2. On the rod (29, p6), loosen nuts 1 and 2.  
**Note:** one nut has a left-hand thread and the other a right-hand thread.
3. Turn the rod in the clockwise direction to make the arm rise and counter-clockwise to make it descend.  
Check the arm's horizontality by means of a spirit level.
4. Tighten the nuts.

**Note:** It is possible to set a 90 degree angle of movement on the barrier. To do so, move the grooved plates (32, p6) from the arm shaft (26, p6). Moving the grooved plates closer to the arm shaft will increase the angular travel of the fence. Conversely, moving the grooved plates away from the arm shaft will decrease the angular travel of the fence.



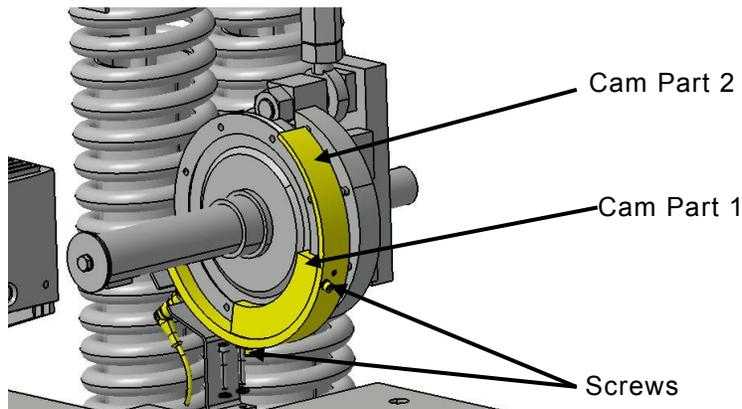
### 4.3. Adjusting the Analog Sensor

The end positions (open and close) of the obstacles are define by the analog sensor. This sensor provided the angular position of the barrier at all time.



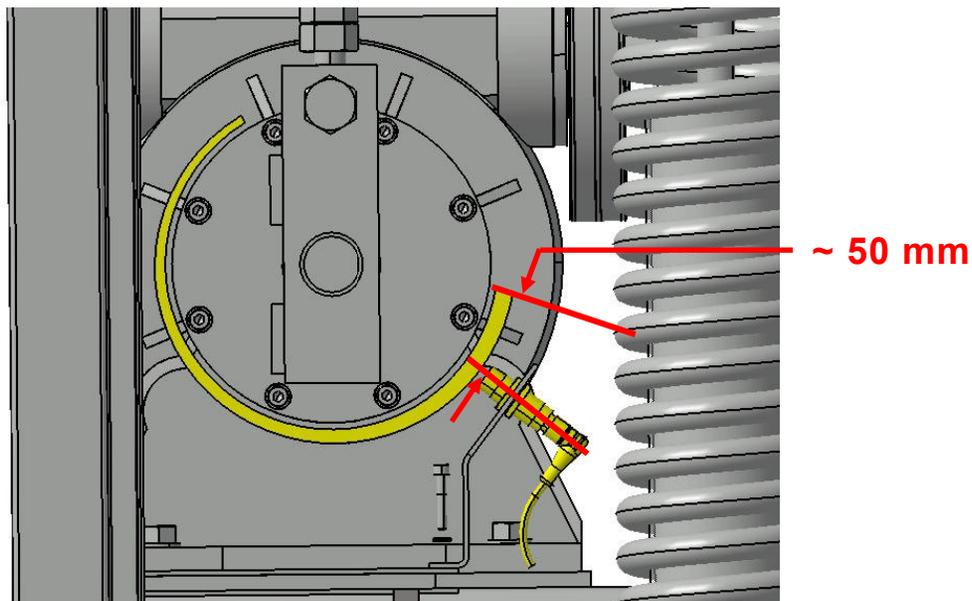
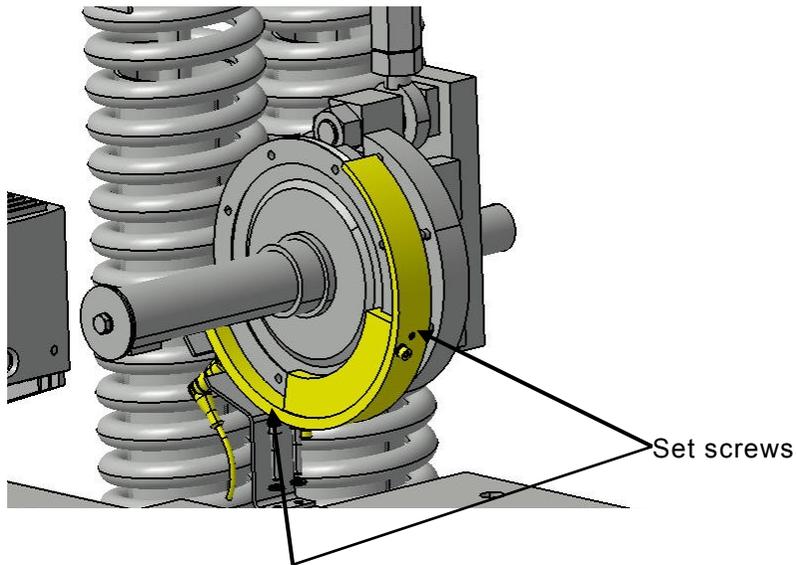
**Note:** the cam is high precision part which must be handled with caution!

- 1) Assemble the 2 cam components of the cam assembly using the M5 x 12mm screws and the related hardware. Tighten the nut appropriately.



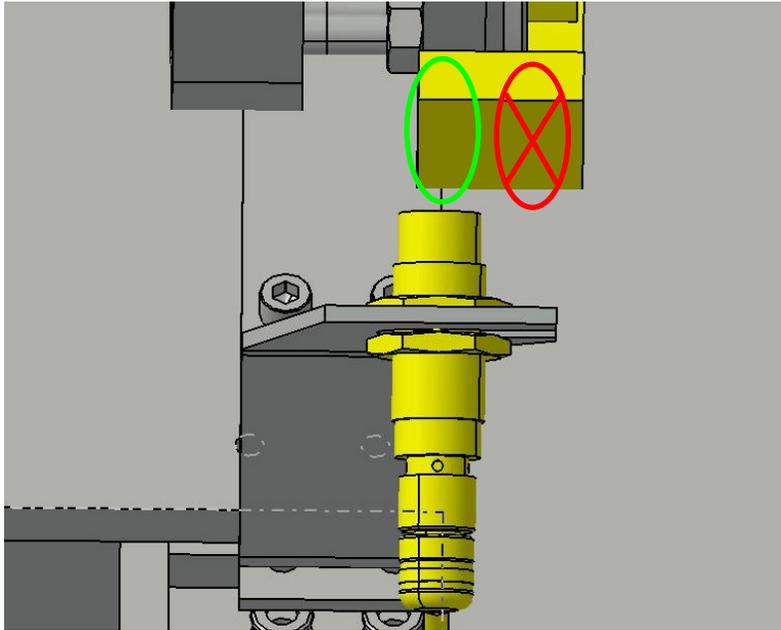
- 2) Insert the M6x16mm set screws in the threaded holes.
- 3) Install the cam assembly as shown below. Align the slot in the cam assembly with the slot of the clutch, then set the assembly in place by thightenning the set screws. The cam end must be located at approximately 50 mm of the sensor (barrier in the closed position, i.e. horizontal). The following figures are showing the position of the Cam in relation to the clutch.

**Note:** Do not over thight the set screws. Over thighting the set screws will pry the opening of the cam assembly.



- 4) Set the sensor at approximately 0,5 mm of the cam and thighten the nuts. If the sensor is too far from this position, the sensor will be out of reach when the barrier is in the open position. It may be necessary to perform adjustment after the initial sensor calibration.

- 5) To align the detection surface of the sensor with the cam, slide the sensor in its bracket. DO NOT POSITION THE SENSOR ON THE RIGHT OF THE CAM, in this position the screws head will interfere with the sensor and may damage it. The figure below shows the optimal sensor position. The sensor should point slightly to the left of the cam.



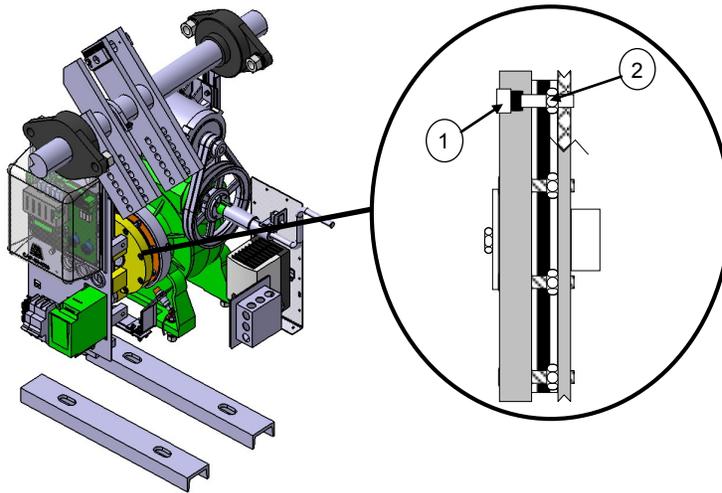
- 6) Initialize the sensor. The electronic initialization of the sensor is mandatory to translate the barrier end positions in analog values that will be analyzed by the logic:  
QUICK START menu ⇒ Positioning ⇒ Activate Motor.
- 7) To move the sensor closer or farther from the cam, loose the sensor nuts then move slightly the sensor before tightening the sensor nuts.

## 4.4. Clutch Adjustment

The clutch setting or the safety torque limiter, as been performed in the manufacture. However, it might be necessary to adjust it after the barrier installation or the initial working period. You need to perform adjustment in the following cases:

- The arm is having difficulty reopening following a reverse command during the closing cycle. The clutch slide and must be thighten.
- It is not possible to stop manually the arm while it is in motion. The clutch is too thigh and must be loosen.
- Whenever the arm is beeing balanced using the springs.

In any of the above cases, you must first check the wear of the belt using described mehod in the section 4.5. Then proceed as follow.



- Switch off the main breaker.
- Loosen the 8 jam nut (2).
- Tighten the 8 screws (1) if the clutch slide or loosen them if the clutch is too stiff.  
**Note:** Make sure you are thightening all 8 screws uniformly by performing 1/8 of a turn at the time on all the screws. (The setting is very sensitive!). Once the setting is done do not forget to thighten firmly the 8 jam nuts (2).  
**Note:** An excessive thightening may damage the reducer!
- Switch on the main breaker.
- Perform an automatic opening / closing cycle using the OK button on the AS1320 logic board. Repeat the above procedure until the desire result is achieve. DO NOT FORGET TO TURN OF THE MAIN BREAKER PRIOR PERFORMING THIS PROCEDURE.
- Once the setting is done, close the main breaker.

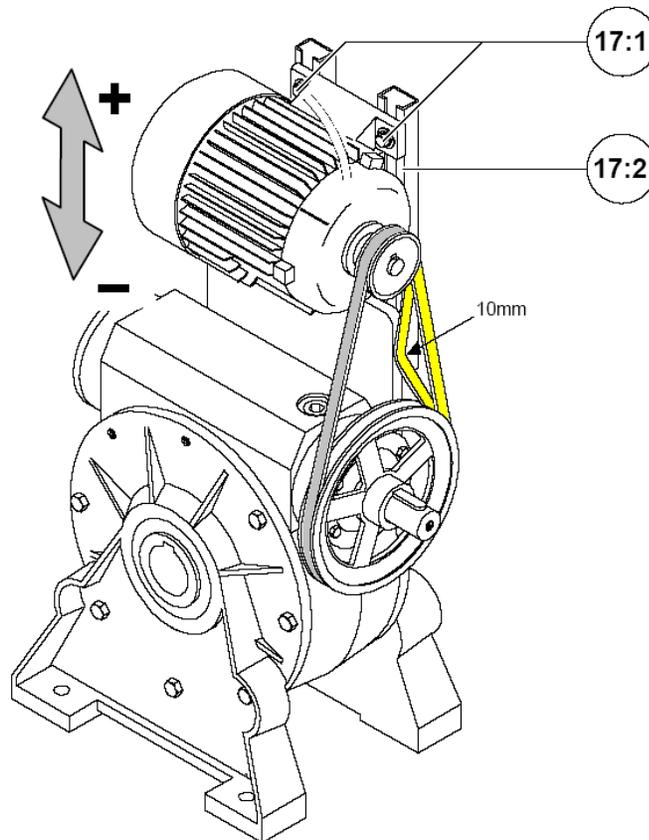
To test the clutch setting proceed as follow :

- Open the main breaker.
- Open the barrier at 90° by pressing the OK button on the logic.
- Close the barrier by pressing again on the OK button of the logic.
- Reverse the barrier motion when it reaches an angle of 45°.
- The clutch must absorb the barrier inertia by sliding a little. THE BELTS MUST NOT SLIDE.
- Once the setting is done, close the main breaker.

## 4.5. Belt Setting

The belts transmission needs to be adjusted after a belt replacement, a 6 month operation period or if the power is not transmitted properly to the reducer. When the belt are worn out or not adjusted properly, you will find black dust produce by the sliding of the belt on the pulley. Proceed as follow to check the belt adjustment and/or replace the belts.

- Open the main breaker.
- Open the barrier at 90° by pressing the OK button on the logic.
- Close the barrier by pressing again on the OK button of the logic.
- Reverse the barrier motion when it reaches an angle of 45°.
- The clutch must absorb the barrier inertia by sliding a little. **THE BELTS MUST NOT SLIDE.**
- If required, adjust the belt tension as follow. Close the main breaker prior the to adjustment.



- Loosen the 4 motor fixation screws (17:1).
- If required, lower the motor in it rails (17:2), remove the old belts and install the new one.
- Pull the motor upward. The belt tension is correct if you have a play of 10mm when you press on the belt as shown in the figure above.
- Make sure the motor is horizontal.
- Tighten the 4 screws (17:1).

## 5. USE

### 5.1. Commissioning

- Before commissioning, review the procedures described in Chapters 3. “INSTALLATION”, 4. “ADJUSTMENTS” and 6 “INSPECTION AND MAINTENANCE”.
- Switch on the circuit breaker and the heater breaker (13 and 12, p5).
- On the control board, configure:
  - The choice of language (first screen when you power up)
  - The date and the time (DATE & TIME menu)
  - The barrier type (QUICK CONFIG. ⇒ Barrier Type ⇒ BLG77)
  - The presence sensors (SENSORS FUNCTION ► PS1 Function) and other options.
  - Save the changes made (MEMORY menu ► Save ► MEM1).
- Turn the power off, and then back on again.
- Wait a few seconds.
- Carry out some electrical opening and closing tests by pressing on the control board’s “OK” button or by means of the command mode that is at your disposal (pushbutton box, transmitter/receiver, etc).
- Check the proper positioning of the arm in its open position (vertical) and closed position (horizontal). Refer to the corresponding adjustment if necessary (p52).
- Check the proper working of any options and safety measures.

### 5.2. Trouble Shooting

If the barrier does not work, or not correctly, check the following points:

- Check the displayed messages (“OPERATION” menu ⇒ “Log” ⇒ “Closing Status”/“Opening Status” (p15).
- Review the procedures described in Chapters 3. “INSTALLATION”, 4. “ADJUSTMENTS” and 6 “INSTALLATION AND MAINTENANCE”.
- Disengage the circuit breaker (13, p5) and then check the fuses (1, p8) on the control board.
- Check that the circuit breaker (13, p5) is properly engaged and that the voltage corresponds to the voltage required in the technical specifications (p63).
- Check that the board is not in programming mode (RJ45 cable (5, p8) connected).
- If the red LEDs under the control connector blocks (6, p8) are not lit, switch the power off and remove the connector blocks on the control board and extension AS1321 if present. Switch the power back on and check if the LEDs lit up. If they do, there is a short circuit at the level of the control connector blocks.
- Check if the motor is working.
- It is possible that the motor runs without the arm moving.
- Check if the motor is correctly wired to the frequency converter.

- Check if the frequency converter (14, p5) is in default: There will be an error message on the frequency drive screen. Refer to the table below:

Codes	Name	Possible causes	Remedy
CrF1	Precharge	<ul style="list-style-type: none"> <li>• Charging relay control fault or charging resistor damaged</li> </ul>	<ul style="list-style-type: none"> <li>• Turn the drive off and then back on again</li> <li>• Check the connections</li> <li>• Check the stability of the main supply</li> <li>• Contact helpdesk</li> </ul>
InFE	Internal CPU	<ul style="list-style-type: none"> <li>• Internal microprocessor</li> </ul>	<ul style="list-style-type: none"> <li>• Turn the drive off and then back on again</li> <li>• Contact helpdesk</li> </ul>
OCF	Overcurrent	<ul style="list-style-type: none"> <li>• Parameters in the Motor control menu drC are not correct</li> <li>• Inertia or load too high</li> <li>• Mechanical locking</li> </ul>	<ul style="list-style-type: none"> <li>• Check the parameters</li> <li>• Check the state of the mechanism</li> <li>• Check the ground connection of drive, motor cable and motor insulation.</li> <li>• Contact helpdesk</li> </ul>
SCF1	Motor short circuit	<ul style="list-style-type: none"> <li>• Short-circuit or grounding at the drive output</li> <li>• Ground fault during running status</li> <li>• Commutation of motors during running status</li> <li>• Significant current leakage to ground if several motors are connected in parallel</li> </ul>	<ul style="list-style-type: none"> <li>• Check the cables connecting the drive to the motor, and the motor insulation</li> <li>• Contact helpdesk</li> </ul>
SCF3	Ground short circuit		
Others	Contact helpdesk		

- Check the connection of the commands according to the electrical diagram supplied with the barrier.
- Check that all the electric wires are correctly connected, and tighten them if necessary.
- Carry out an electrical opening/closing test by pressing on the control board's OK key.

Following an out-of-service condition of the barrier, rebooting will be carried out according to the mode defined in the "OPTIONS" menu, "Reboot Mode" (by default, a new power-up).

### 5.3. Prolonged Stoppage / Destruction

If the barrier is not used for a long period, it is recommended:

- To place the barrier in a dry place that is protected from heat and bad weather.
- To leave the barrier turned on. With the motor remaining permanently powered, a certain temperature is maintained in the housing. This eliminates problems of condensation and, at low temperature, prevents the geared motor's oil from solidifying, which would cause the performances of the barrier to fail during the first maneuvers following a long period of inactivity.
- When the equipment is decommissioned, empty the oil from the geared motor and scrap the various components of the machine by the appropriate means (metal parts, electronic components, etc) according to the legislation in force in the considered country.

## 6. MAINTENANCE

The BLG77 is a heavy duty equipment that requires inspection and proper maintenance to ensure the safety of its users and increase the lifetime of the equipment. Below, you'll find the details of the type of maintenance required and its frequency. It is important to fill out this form and do the proper maintenance. This will help prevent any accident or malfunction of your product.

Maintenance operations must be carried out by qualified technicians in compliance with the safety warnings stated in Chapter 1. Before you proceed, unlock and remove the door (3, p5) without damaging the ground wire that connects it to the housing. Switch off the circuit breaker (13, p5). If necessary, remove the cover (2, p5) without damaging the ground wire that connects it to the housing. For the required torque when screwing the bolts, we recommend to follow the chart given on next page.

During any inspection, if one or more parts are found to be defective, the barrier should be put out of service until defective parts are replaced.

Keep barriers properly maintained. When servicing, keep the place around the barrier secured to avoid risk of injuries if the barrier were to move without warning.

It is important to test the barrier to ensure that the force of the arm is not excessive. If the barrier is equipped with the impact detection safety edge, the barrier must reverse on contact with a rigid object or stop depending on the programming of the sensor. After adjusting the force or the travel limit, retest the barrier. Failure to adjust and retest the barrier properly can increase the risk of injury or death.

Maintenance operation	Each 3 months or 50 000 cycles	Each year or 250 000 cycles	Each two years or 500 000 cycles	After each crash
- Check that all the nuts and screws of the fence are tight.	X	X	X	X
- Check that there are no cracks on the welds of the fence.	X	X	X	X
- Check that all the nuts and screws of the arm are tight.	X	X	X	X
- Check that all the nuts and screws of the rod ends are tight.	X	X	X	
- Check that there is no major slack in the rod ends.	X	X		
- Lubricate all rod ends.	X	X		
- Check that all the nuts and screws of the jaws are tight.	X	X	X	
- Check that all the nuts and screws of the bearings are tight.	X	X	X	
- Lubricate all bearings.	X	X	X	
- Check that all the nuts and screws of the end unit are tight.	X	X	X	
- Check that all the nuts and screws of the pulleys are tight.	X	X	X	
- Check that all the nuts and screws of the analog sensor and spiral cam are tight.	X	X	X	

- Check that all the nuts of the anchor bolts are tight.	X	X	X	
- Check that all the electrical connections are tight.	X	X	X	
- Dust and clean the interior of the housing.	X	X	X	
- Check that the belts are not significantly worn.	X	X		
- Replace the rod ends with new ones.			X	
- Replace the belts with new one.			X	
- Check that the jaws and the arm are not bent.				X

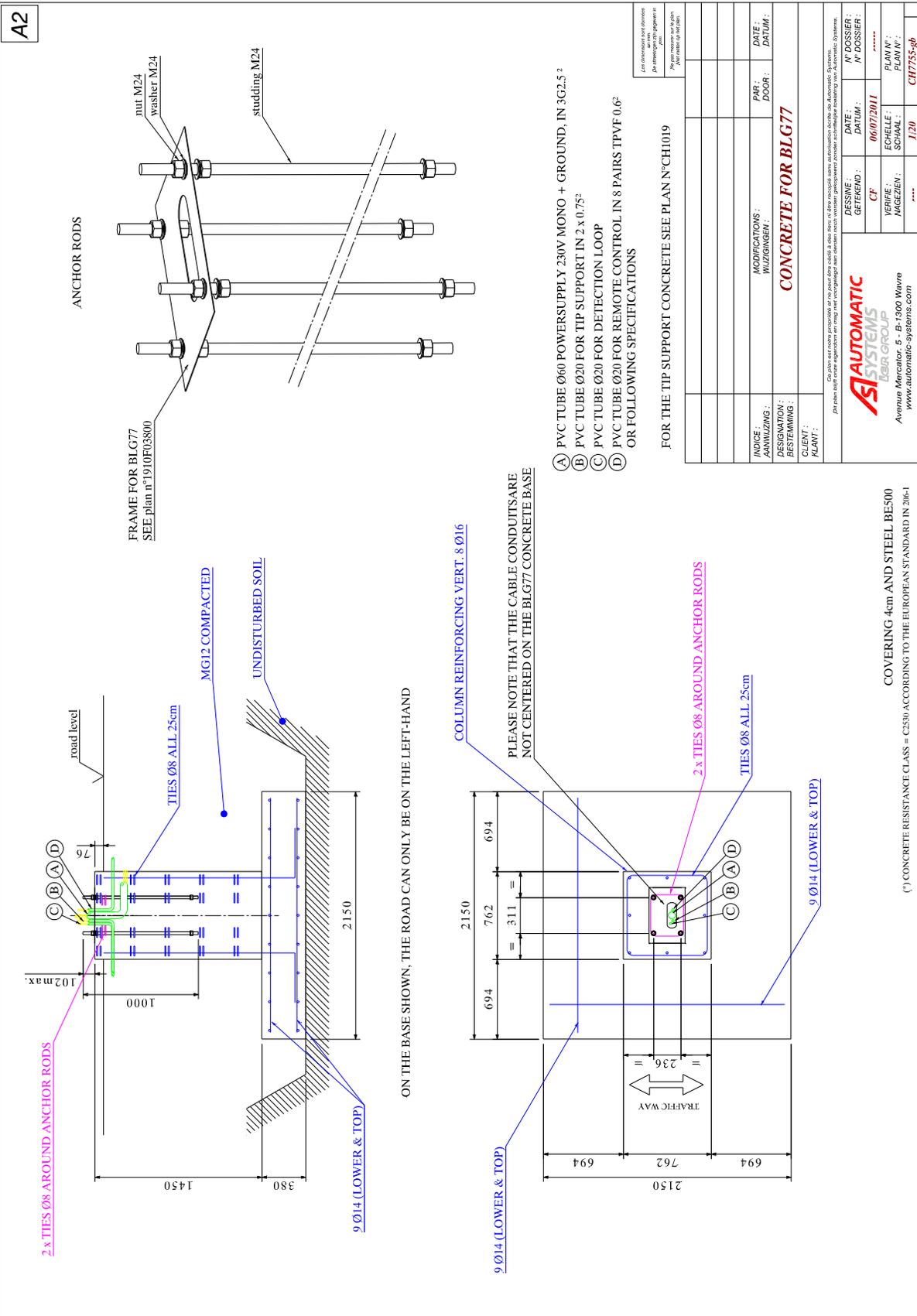
Torque chart in function of the screw diameter:

Diameter	Torque (Nm)
M6	10
M8	25
M10	49
M12	85
M14	135
M16	210
M18	300
M20	300
M22	300

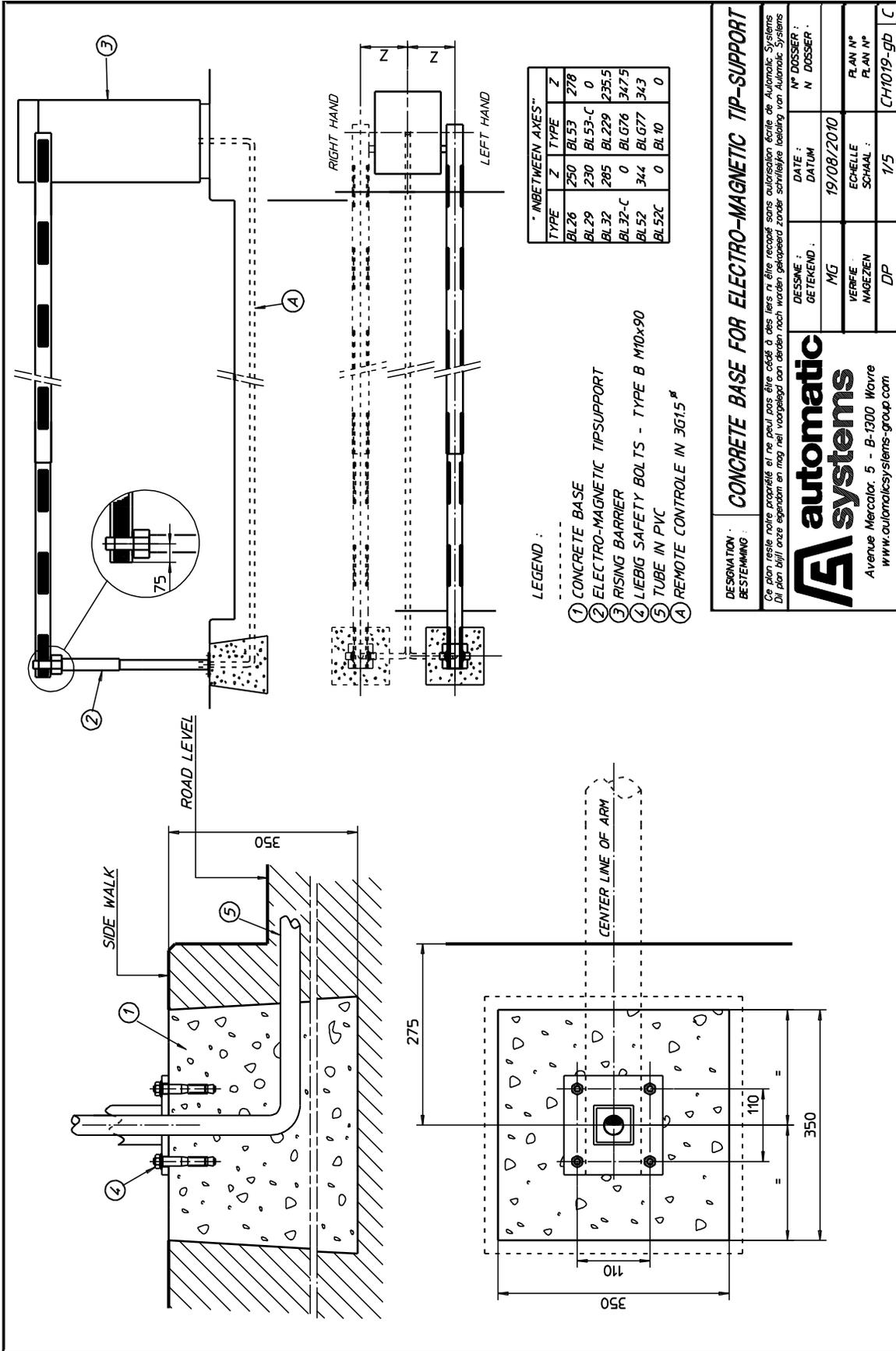
## 7. TECHNICAL SPECIFICATIONS

- The fence is all made of Aluminum.
- Opening time: 7 to 10 seconds.
- Electromechanically locking tip support. (See Tip Support data sheet).
- Motor: 3/4 HP Three phase.
- Power supply: 240V AC single phase for the main power supply (Except the fan heater option CSA that need a 120V power supply).
- Frequency: 60 Hz.
- The barrier and fence, even if opened, will resist to wind up to 120km/h (75 mi/h) with normal maintenance.
- Heavy-duty Clutch.
- Heater : 200W Strip heater
- Gearbox type: reduction ratio: 100:1.
- Net weight: 640 kg with barrier fence.
- Operation temperatures with standard 200W strip heater: -35°C to +50°C.
- Mechanical endurance (MCBF) (Normal maintenance required): 750 000 cycles at a rate of 100 complete cycles/h max with a maximum of 1000 complete cycles per day.

# 8. INSTALLATION DRAWING & DIMENSIONS

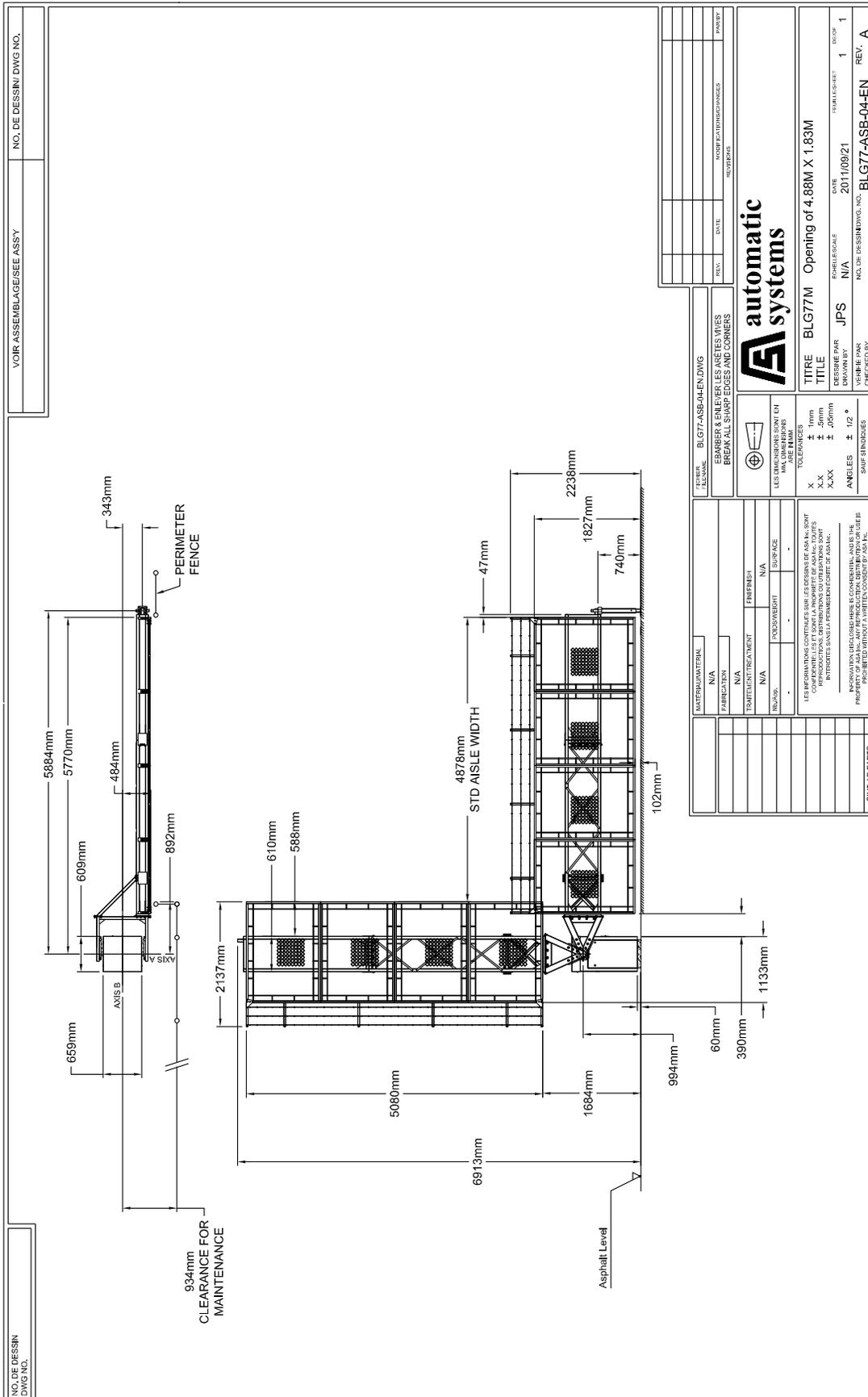


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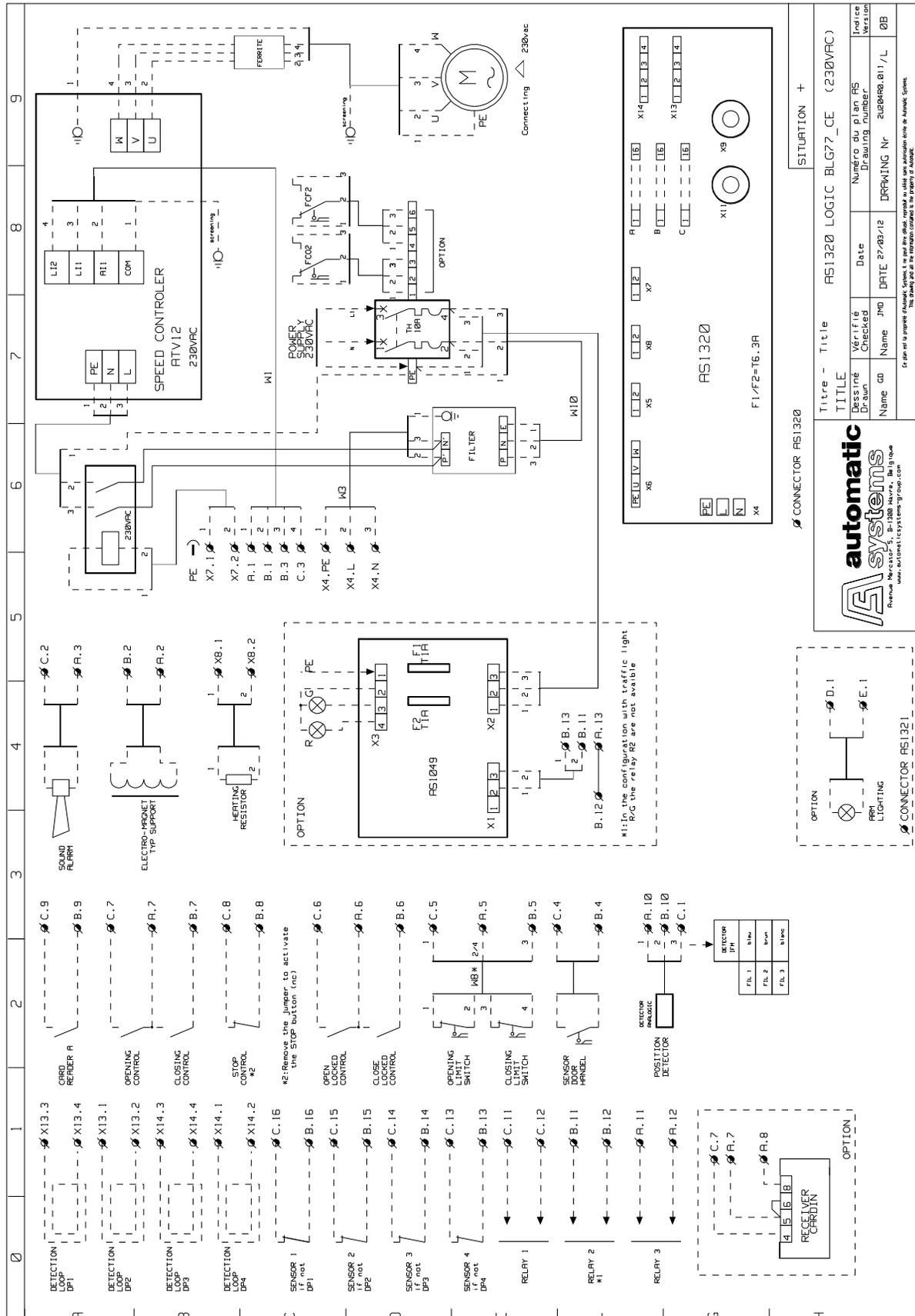




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**BLG77-MT-EN-08**

# 9. ELECTRIC DIAGRAM



Titre - Title		AS1320 LOGIC BLG77_CE (230VAC)	
Dessiné Dr. num.	Vérifié Checked	Date	Numero du plan Drawing number
Name GD	JMO	DATE 27/03/12	DRAPPING Nr 2020480.01/L
www.automaticsystems.com		Version 00B	

AS1320  
F1/F2=16.3A

CONNECTOR AS1320

SITUATION +

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## 10. 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 grillagée lourde  
BLG 77**

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: Sécurité des machines- Terminologie de base et méthodologie.
- EN 12100-2: Sécurité des machines- Principes techniques et spécifications.
- EN 60204-1: Sécurité des machines, Equipement des machines- Règles générales.
- EN 61000-6-3: Compatibilité électromagnétique- Norme générique émission- Résidentiel, commercial, industrie légère.
- EN 61000-6-2: Compatibilité électromagnétique- Norme générique immunité- Résidentiel, commercial, industrie lourde.

Fait à WAVRE,  
le : 2010.10.04  
Nom du signataire : Yves THERASSE  
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

**Heavy Duty Rising Fenced Barrier  
BLG 77**

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: Machinery – Basic terminology and methodology.
- EN 12100-2: Machinery – Technical principles and specifications.
- EN 60204-1: Safety of machinery. Electrical equipment of machines. General requirements.
- EN 61000-6-3: Electromagnetic compatibility (EMC). Generic standards. Emission standard for residential, commercial and light-industrial environments.
- EN 61000-6-2: Electromagnetic compatibility (EMC). Generic standards. Immunity standard for industrial environments.

Made in WAVRE  
Date: 2010.10.04  
Name : Yves THERASSE  
Function : Director of Development  
Signature :

*Y Therasse*

