GLASS SWING GATE
SL930 – SL931 – SL932 PPV323
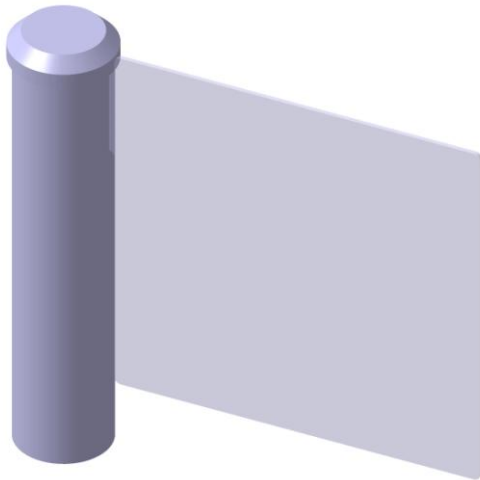
GLASS LOW-HEIGHT TURNSTILE TBV327
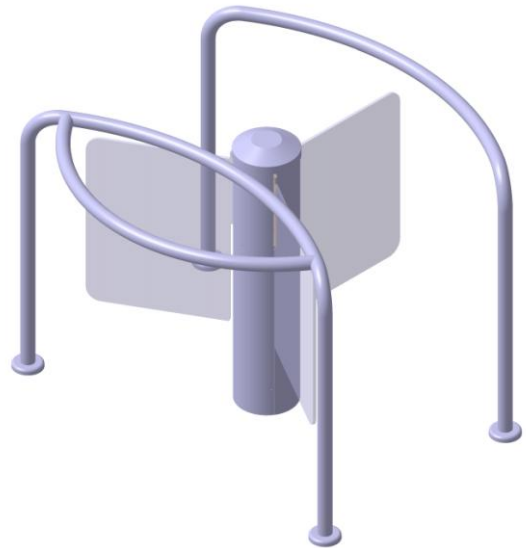
USER MANUAL
Rev 9

(Translated from French original notice)

Document changes

Rev.	Date	Written	Checked	Subject
00	2006-12-12	MFy	RWK + JB	Initial version
01	2007-04-23	MFy		- Page 15 (locking): *"locked __under__ voltage"*. - Parameter 60°, 90°, rotating): add range and default value. - Input 2: *"__Pitch of__ encoder __80__"*. - Page 25 (point 3): *"remove the screw__s__ (31)"*. - Page 5 (1st point): *"Folded and soldered __stainless__ steel plate housing"*.
02	2007-06-25	MFy		- Pages 11, 13, 15, 19: replace the terms "suction device" and "suction mechanism" by "hold magnet". - Pages 15 & 34: translate electric diagrams in English.
03	2010-06-11	MFy	RWK+HB+DL	- Complete revision for adaptation to the modification realized on the equipment.
04	2010-07-01	MFy		- Tec. Spec: replace flow by opening time of the obstacles. - Non-return lock option for TBV only.
05	2010-07-02	MFy	RH	- Installation: Last points of the Fixing procedure transferred to Electrical connections and Commissioning chapters. - Preventive maintenance: check power leakage and evacuation.
06	2011-01-17	MFy		- SL932 added in: · Title p1, · Table ch.2.1, · Installation plan ch.3.2, · Spare parts ch.5.4, · EC certificate ch.7.
07	2012-01-09	MFy		- Ch. 2.1: MCBF, IP, CE, DAS added.
08	2012-10-03	MFy		- Parts related to PPV322 & TBV326 removed from spare parts.
09	2013-04-03	MFy	YC + RWK	- Spare parts: conical coupling + references to illustrations added. - Ch. 5.10. adapted to software version v5.36. - Ch.5.11. added (Maintenance Interface). - Electrical diagrams adapted to CPU v16 + Power board v10.

Table of Contents

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SL93x + PPV323 + TBV327-MT-EN   **p. 3/39**

1. SAFETY INSTRUCTIONS

- The SL93x, PPV323 and TBV327 gates and turnstiles are intended for the access control of users and cannot be otherwise used without risk for the user or for the integrity of the equipment.

- They are intended for light traffic applications (cf. technical specifications, ch.2.1.)

- It is mandatory to let the equipment complete its opening and closing cycles automatically (without pushing the obstacle) to avoid untimely out of order.

- All operations on the equipment must be carried out by qualified personnel. Any unauthorized operation, or operation carried out by a technician not qualified on this product, voids the manufacturer's guarantee automatically.

- Access to the mechanism must be limited to personnel aware of the electrical and mechanical risks that are incurred by negligent action.

- If possible, disconnect the electrical supply before opening the enclosure.
  Otherwise, turn the power off by means of the circuit breaker located on the power board (ch.5.2.).
  WARNING: In both cases, wait 5 minutes before working inside the equipment (capacitors discharge)!

- Any internal element likely to be put under voltage or to move must be handled with caution.

- The equipment is configured in a minimal risk mode for its users. Any changes to the parameters must be carried out with full knowledge of the facts by qualified personnel and are not the responsibility of *Automatic Systems*.

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SL93x + PPV323 + TBV327-MT-EN **p. 4/39**

2. DESCRIPTION

## 2.1. Technical Specifications

- AISI 304 stainless steel sheet housing.

- Internal frame protected with epoxy coating.

- Passage obstacle in clear toughened glass, thickness: 10 mm.

- Electrical supply: single phase, 230 VAC, 50 Hz (not to be connected to a floating network or to high-impedance earthed industrial distribution network).

- Consumption: 0.12 A in closed and locked position,

                      0.50 A when turning,

                      0.90 A while locking.

- Automatic obstacle unlocking on power failure.

- Variable speed controller ensures smooth obstacle movements.

- Obstacle position determined by encoder.

- Operating temperature: -20(*) to +60°C (*Thanks to the heat generated by the powered internal equipment).

- RH < 95%, without condensation.

- Minimum opening time of the obstacle (adjustable): 2.5 seconds.

- Net weight (kg):

	PPV323	SL930 1 m	SL930 1.2 m	SL931 1.4 m	SL931 1.7 m	SL931 1.9 m	SL932 0.9m	TBV327
Column	62	62	62	77	77	77	62	77
Panels	17	19	24	29	36	40	17	3 x 8.4
Total	79	81	86	106	113	117	79	102

- MCBF (Mean Cycles Between Failures), when respecting recommended maintenance: 1,000,000 cycles

- IP 51

- EC compliant.

- DAS Certified (Powered Security Device) in accordance with Fire Safety NF S 61-937 standard

Gates and turnstiles control pedestrian access in both directions.
By definition, **Direction A** is the direction in which the controls are located on the right of the user (=> obstacle opening in the **clockwise** direction).

Direction A = clockwise
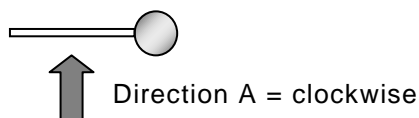
2.2. Location of the components
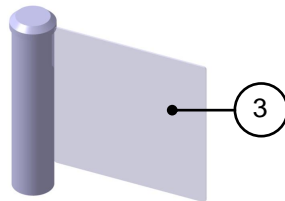
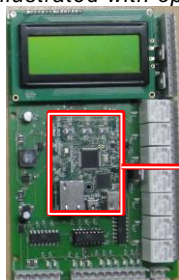1. Mounting base (attached to the floor)
2. Main chassis (= equipment without obstacle)
3. Obstacle (= glass panel)
4. Conical coupling of the rotor to the motor
5. Movement limit stop (not on TBV)
6. Variable speed controller
7. Locking system
8. Position encoder
9. Power supply board
10. Control board v16 (CPU)
    (illustrated with optional IP module)

IP option

11. Regulated power supply
12. Obstacle support rotor
13. Additional support for high obstacle
    (for SL931 only)
14. Motor
15. Serial plate
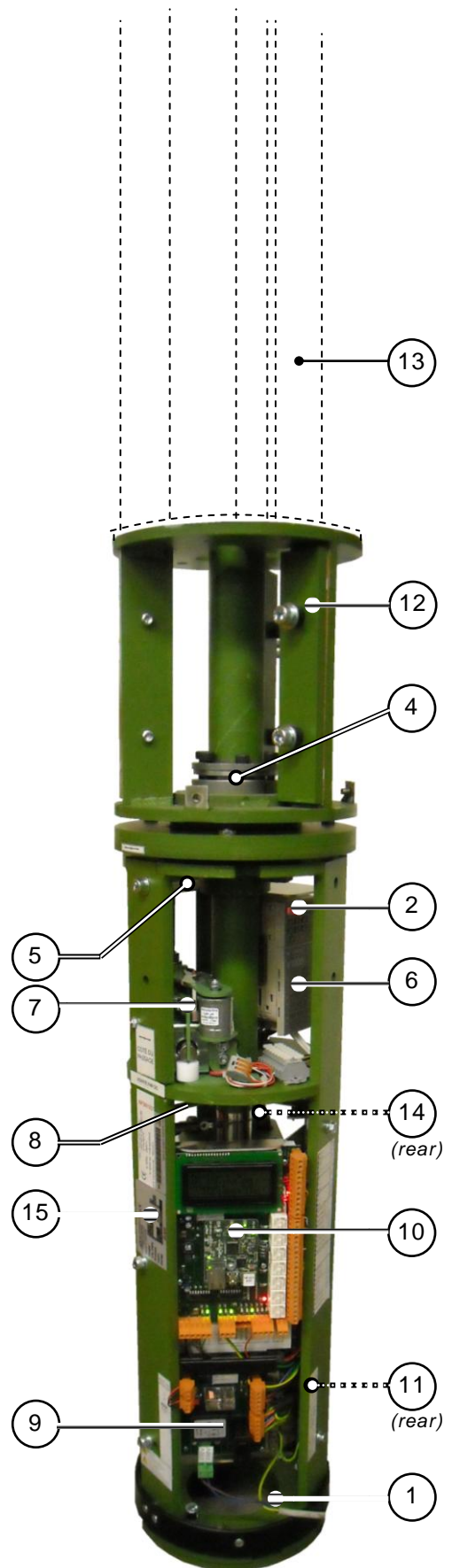
3. INSTALLATION

The installation must be carried out in accordance with the safety instructions (p 4) and the installation plan (p3.2.).

3.1. Storage

Before installation, avoid all shocks to the equipment and place it in its original packing in a dry place, protected from dust, heat and bad weather.
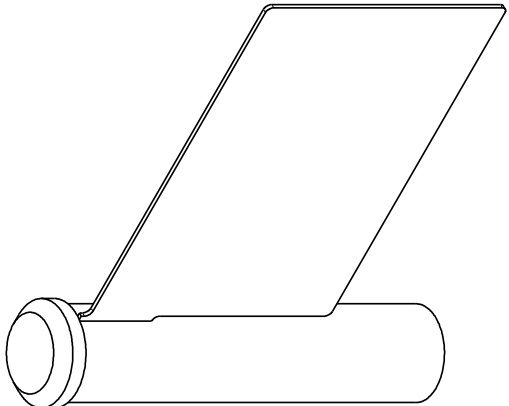Storage temperature limits: -30 to +80°C
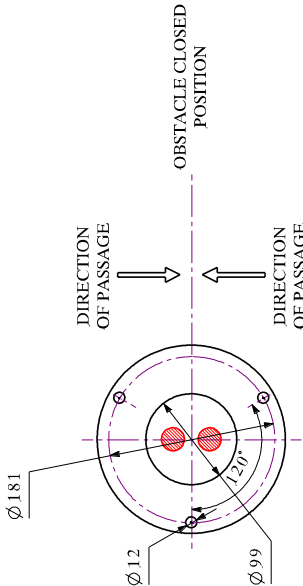
A3

STANDARD HEIGHTS

TYPE	H	A	B
SL930	1000	1030	170
	1200	1030	170
SL931	1400	1535	170
	1700	1535	170
	1900	1535	170
SL932	900	1030	160

FLOOR FIXING DETAIL

OBSTACLE CLOSED POSITION

DIRECTION OF PASSAGE

DIRECTION OF PASSAGE

Ø 181

Ø 12

120°

Ø 99

H

B

10

PL.: 900

850

850

Ø 238

Ø 215

min. 150

Ø 238

A

NECESSARY CABLING :

SINGLE-PHASE 230VAC, 3G2.5 ²

CONTROL CABLES, FOLLOWING REQUIREMENTS

FORESEE 2 CONDUITS, Ø25

PROVIDED FIXING :

EXPANDING BOLTS, TYPE LIEBIG B15/30 (ADAPT TO THE TYPE OF FLOORING)

SL930/931/932 GLASS SWING DOOR

DESSINE : GETEKEND : CF	DATE : DATUM : 13/01/2011	N° DOSSIER : N° DOSSIER : STD
VERIFIE : NAGEZIEN : MF	ECHELLE : SCHAAL : 1/10	PLAN N° : PLAN N° : CH6377-gb

B

DESIGNATION :
BESTEMMING :

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A3

FLOOR FIXING DETAIL

∅ 181

∅ 12

∅ 99

120°

120°

120°

DIRECTION
OF PASSAGE

DIRECTION
OF PASSAGE

OBSTACLE CLOSED
POSITION

H.: 932

292

10

PL.: 1000

50

950

950

min. 150

∅ 238

∅ 215

∅ 238

1030

NECESSARY CABLING:

SINGLE-PHASE 230VAC, 3G2.5 ²

CONTROL CABLES, FOLLOWING REQUIREMENTS

FORESEE 2 CONDUITS, ∅25

PROVIDED FIXING:

EXPANDING BOLTS, TYPE LIEBIG B15/30 (ADAPT TO THE TYPE OF FLOORING)

PPV323 GLASS SWING DOOR

| DESIGNATION :
BESTEMMING :		
DESSINE :
GETEKEND :	DATE :
DATUM :	N° DOSSIER :
N° DOSSIER :
CF	22/06/2010	STD
VERIFIE :
NAGEZIEN :	ECHELLE :
SCHAAL :	PLAN N° :
PLAN N° :
MF	1/10	CH6375-gb
		A

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A2

FLOOR FIXING DETAIL

OBSTACLE CLOSED POSITION

DIRECTION OF PASSAGE

DIRECTION OF PASSAGE

Ø 181
Ø 112
Ø 99

NECESSARY CABLING :

SINGLE-PHASE 230 VAC, 3G2,5 ²

CONTROL CABLES: FOLLOWING REQUIREMENTS

FORESEE 2 CONDUITS, Ø25

PROVIDED FIXING :

CENTRAL PILLAR :EXPANDING BOLTS, TYPE LIEBIG B15/30 (ADAPT TO THE TYPE OF FLOORING)

RAILING FOOT : EXPANDING BOLTS, TYPE LIEBIG B15/30 (ADAPT TO THE TYPE OF FLOORING)

640
292
675
Ø 238
675
1025
1030

1350
675
675
10
480
410
1350
410

		A		
		EXPANDINGS BOLTS	CF	22/06/2010
	INDICE : AANWIJZING :	MODIFICATIONS : WIJZIGINGEN :	PAR : DOOR :	DATE : DATUM :
	DESIGNATION : BESTEMMING :	TBV327 GLASS LOW-HEIGHT TURNSTILE		
	CLIENT : KLANT :			

Ce plan est notre propriété et ne peut être cédé à des tiers ni être recopié sans autorisation écrite de Automatic Systems.
Dit plan blijft onze eigendom en mag niet voorgelegd aan derden noch worden gekopieerd zonder schriftelijke toelating van Automatic Systems.

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DESSINE : GETEKEND :	CF	DATE : DATUM :	13/12/2006	N° DOSSIER : N° DOSSIER :	
VERIFIE : NAGEZIEN :	MF	ECHELLE : SCHAAL :	J:110	PLAN N° : PLAN N° :	STD
					CH6378-gb

STD
A

Les dimensions sont données en mm.
De afmetingen zijn gegeven in mm.
Ne pas mesurer sur le plan.
Niet meten op het plan.

3.3. Fixing the equipment to the floor
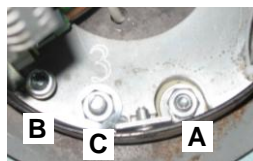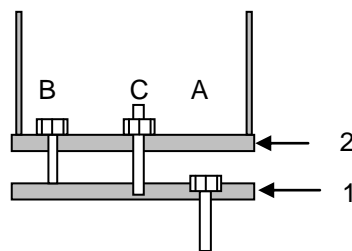
1. Remove the 2 covers by removing the screws (50, p 25).

2. Unscrew the base (1, p 6) from the main chassis and secure it to the floor with the 3 expanding bolts supplied (Liebig B15/30 (A)). First drill 3 x 15 mm diameter holes to a depth of 85 mm.
   <u>WARNING</u>: It is essential to adapt the fastening hardware and the installation procedure to the environment and the nature of the floor on which the gate will be positioned.
   Installation must be validated by certified civil engineers.
   The gate must be fastened to the floor before it is made available to the users!
   Automatic Systems cannot be held responsible for any accident or damage to the gate due to the fact that the gate was not adequately fastened to the floor.

3. Position the main chassis (2, p 6) over the base (1), with the sticker COTE DU PASSAGE (=Passageway side) aligned as shown below, so that the control board (10, p 6) remains accessible.
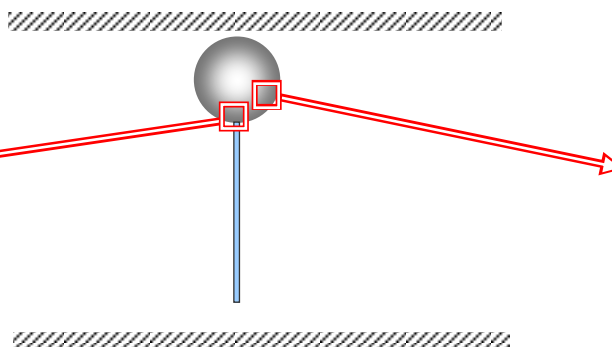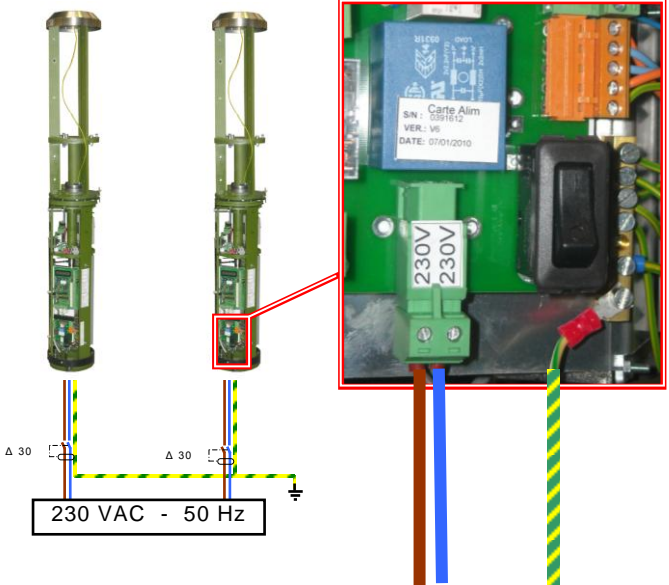

4. Fit the obstacle(s) to the rotor (see ch.5.9.).

5. Adjust the vertical alignment of the main chassis with the 3 bolts (B).

6. Tighten the 3 locknuts (C) to secure the main chassis to the base (tightening torque: 43 Nm).

7. Cut the cable tie securing the locking mechanism (7, p 6).

3.4. Electrical connections

WARNING: The operations must be undertaken in accordance with the safety warnings, ch.1.
In particular, the mains must be shut down before any of the work described below is begun.

Connections must be executed **in accordance with the wiring diagrams** provided inside the equipment, which **remain the reference**.

Type of cable	Connections	
3G2.5²	Electrical power supply of each equipment (230 V single phase + ground + differential breaker 30 mA min for each equipment). **WARNING**: High leakage current. => Connection to the ground imperative with a 1-mm² cable before connecting the mains. => Do not connect several equipments to the same differential breaker.	230 VAC - 50 Hz
2.5²	If the gates are powered through long cables, ensure the equipotential bonding between the gates forming a bank by connecting them with a 1-mm² ground wire.	
0.75²	Connect the Emergency command (Fire) if desired.	Refer to the electrical diagrams.
0.75²	Connect the opening commands and eventual Inputs/Outputs.	Refer to the electrical diagrams.

3.5. Commissioning

1. Adjust the obstacle opening angle in the clockwise and anti-clockwise directions by adjusting the mechanical stops (ch.5.7.).

2. Switch ON the equipment.
   The obstacle will move, seeking its starting point (closed position), then it locks.

3. Start the CONFIG AUTO menu (**Note**: the obstacles must be fitted):
   - Press the Menu button,
   - Press the > button until CONFIG AUTO is displayed,
   - Press OK to start the procedure

   The equipment seeks the mechanical stops in both directions at slow speed and accelerates.

4. Check the locking by pushing the obstacle.

5. Give a clockwise opening command.

6. Give a counter-clockwise opening command.

7. Trigger a FIRE command (open the Fire contact on the power board, see electric diagrams) and check if the obstacle opens (the opening direction is adjustable, cf. ch.5.10.).

8. Turn off the power and check that the obstacle unlocks.

9. Replace the covers.

4. PRINCIPLE OF OPERATION

The references in this chapter refer to the illustrations on ch.2.2.

The Swing Gates and Turnstiles (named hereafter "Gates") are bidirectional pivoting access control units that allow passage in both directions.
They have a steel **central column (2)** fixed to the floor containing the **control board (10)** and the drive unit. The central column is equipped with 1 or 3 **glass obstacles (3)**.

The gate is unlocked by an external command (pushbutton, card readers, etc.). According to the selected mode, the obstacle then starts to turn automatically (in the authorized direction of passage) or on light pressure.
The movement of the obstacle is transmitted by a geared motor driven by a **variable speed controller (6)**, which allows the opening and closing speed to be adjusted.

The opening angle can be adjusted in both directions and 2 mechanical stops maintain the obstacles open.
The direction of rotation and the position of the obstacle are determined by a **position encoder (8)**.
The obstacle stays open for a period set by a parameter and then closes again automatically.

Movement sequence:

- The obstacle opens from the starting point (= passage closed) at the selected speed.
- From the BRAKING ANGLE (set by the program according to the selected speed and the obstacle inertia), the obstacle decelerates to complete its movement against the mechanical stop.
- The obstacle registers a stopping time (set by parameter) in the open position.
  The obstacle is maintained at low power against the limit stop.
- The obstacle closes at the selected speed.
- From the BRAKING ANGLE, the obstacle decelerates to complete its movement.
- When the obstacle reaches its closed position, the lock is engaged.
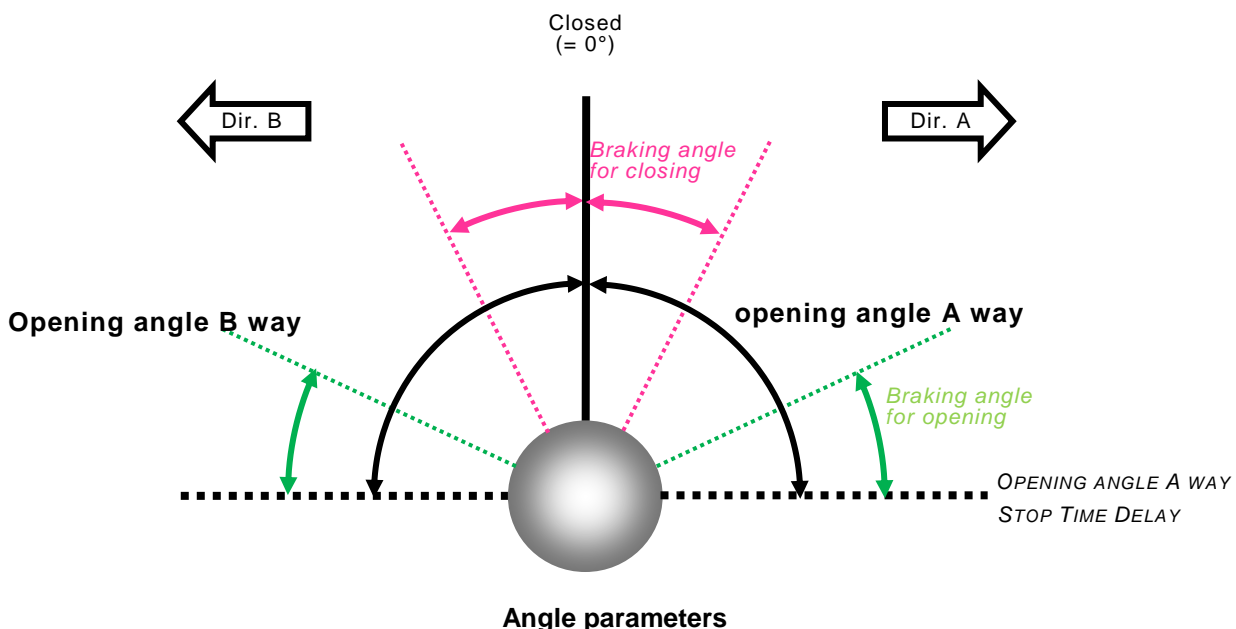

Angle parameters

The parameters are the same for clockwise and counter-clockwise
opening directions.

4.1. Locking

The **locking mechanism (70)** is activated by an **electromagnet (71)** with positive security (locked under voltage).

When the obstacle approaches its closed position, the **locking sensor (75)** is activated by detection of a **vane (76)**. The electromagnet then moves the lock into hole (77a) of **plate (77)**, locking the rotor (12). Locking is maintained by the electrical circuit between the **hold magnet (72)** and the **contact plate (73)**.

The Fire Detection signal on the power board (see wiring diagrams) opens the obstacle in the selected direction and allows free passage.
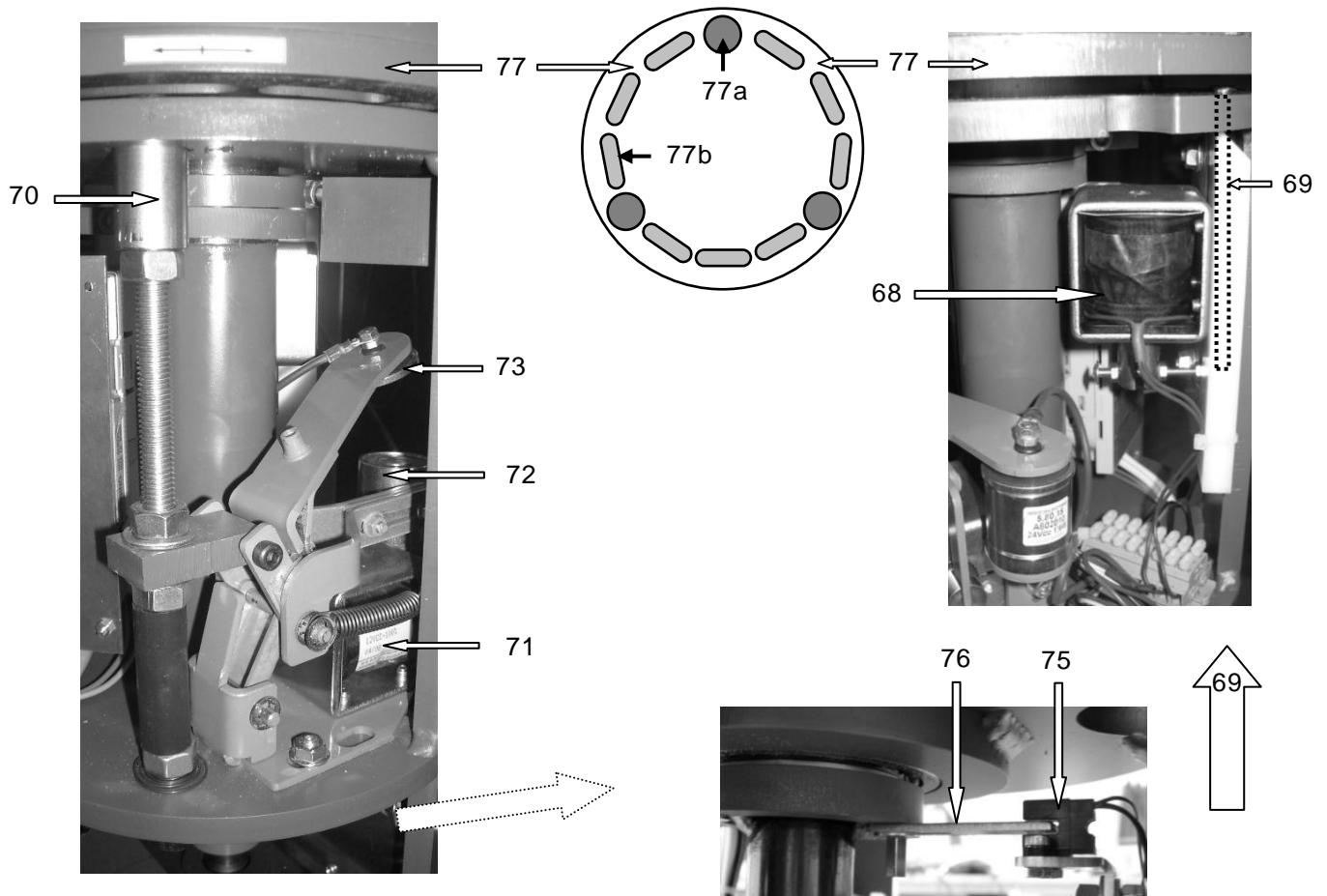
NON-RETURN OPTION (for TBV model only*): During the opening in one direction, if the obstacle is forced to open in the other direction, the electromagnet (68) moves the non-return lock (69) into hole (77b) of plate (77), locking the rotor (12).
The correct movement continues as soon as this reverse force is removed (without putting the equipment out of service).

(*) *This option is not available on SL93x because the flow direction is not controlled.*

4.2. Position encoder

The direction of rotation and the position of the obstacle are determined by a **position encoder (80), consisting of a vaned disk** that turns with the motor shaft and passes through 2 **sensors (81 and 82)**. This encoder does not need any adjustment.
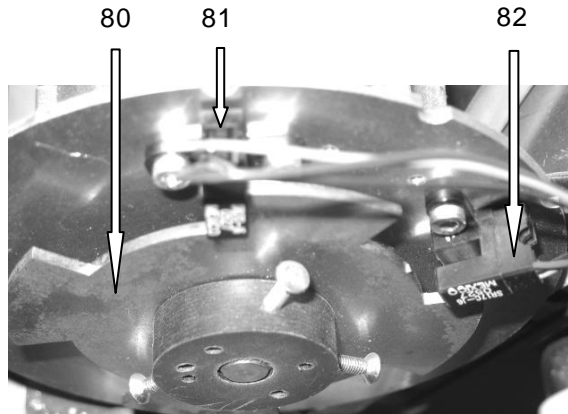
4.3. Safety

- During rotation, if the obstacle encounters an obstruction limiting its movement, it will make several attempts to complete the current movement, after which the motor will be powered off automatically if the resistance is still present (see parameter NUMBER OF WARNINGS, ch.5.10.).

- As long as the opening command is maintained, the obstacle will not close.

- When a second opening command is received in the same direction while the obstacle is closing, it will re-open immediately.

- When an Emergency command (FIRE) is received, the gate opens automatically (the direction of opening is set by parameter DIR. EMERGE. OPENING, ch.5.10.).

- When there is a power failure, the gate is unlocked automatically and can then be opened manually.
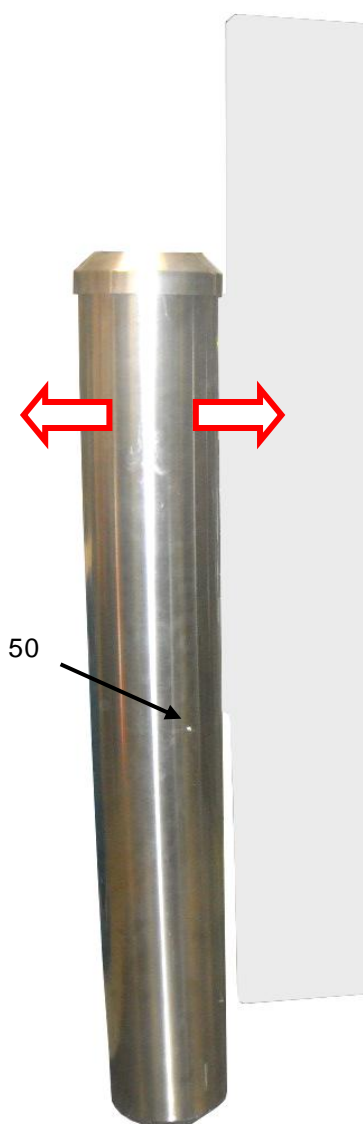
5. MAINTENANCE
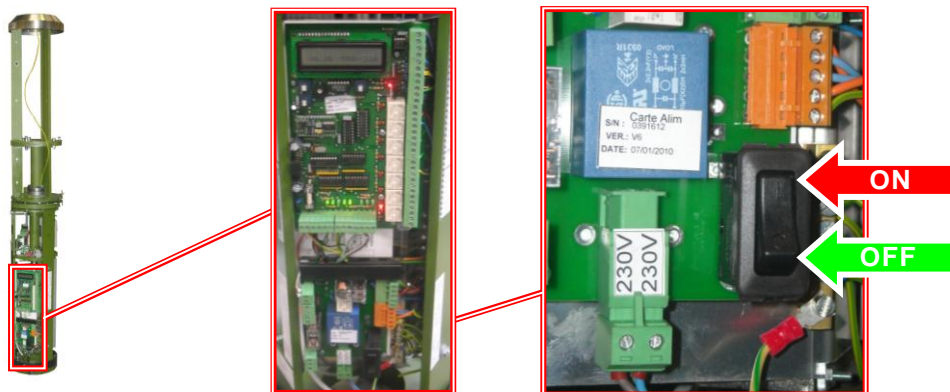
WARNING: The adjustment operations must be carried out in accordance with the safety instructions (p 4).

5.1. Removing the housing

1. Remove all the screws (50).
2. Remove both elements of the housing.
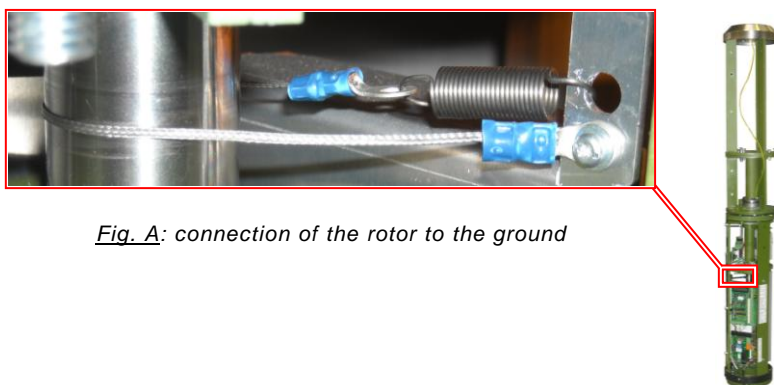

50

5.2. Turning the equipment ON/OFF

ON

OFF

5.3. Preventive maintenance

Every 100,000 operations, or every 6 months, whichever comes first, check the following points:

- The security of all components (attachment to the floor, obstacle, motor, conical coupling (4, p 6), etc.).
- The state of the ground cable on the rotor (Fig. A).

Fig. A: connection of the rotor to the ground

- The control signals.
- The opening and closing speeds.
- The obstacle opening and closing angles and positions.
- The activation of the locking mechanism in the closed position.
- The unlocking in case of a power outage.
- The obstacle opening in case of an emergency command (opening of the Fire contact on the power board, see electric diagrams).
- Any output signals to optional peripheral equipment.
- Clean the stainless steel surfaces and glasses by means of an appropriate product.

Every 800,000 operations, replace the locking mechanism (ch.5.8.).

5.4. Spare parts

| DESIGNATION	CODE	VALIDITY	PPV323	SL930	SL931	SL932	TBV327
Conical coupling (4, p6)	0/6980/816	> 01/2007	x	x	x	x	x
Contact plate (73, p 15)	0/6982/072	> 01/2007	x	x	x	x	x
CPU board (10, p6)	E/6980/530	> 01/2007	x	x	x	x	x
Electromagnet (71, p 15)	E/6980/540	> 01/2007	x	x	x	x	x
Frequency inverter 230V	0/6982/066	> 12/2008	x	x	x	x	x
Frequency inverter 230V (6, p 6)	E/6980/538	< 12/2008	x	x	x	x	x
Hall-effect sensor (75, p15 & 82, p16)	E/6980/531	> 01/2007	x	x	x	x	x
Holder electromagnet (72, p 15)	E/6980/520	> 01/2007	x	x	x	x	x
Locking assembly (p 22)	E/6980/542	> 01/2007	x	x	x	x	x
Locking disc (77, p 15)	0/6980/583	> 01/2007	x	x	x	x	x
Long lock in aluminum (21, p22)	0/6982/068	< 08/2008	x	x	x	x	x
Mobile obstacle 1030 x 850 mm	OBV-E07047	> 01/2007		x			
Mobile obstacle 1230 x 850 mm	OBV-E07050	> 01/2007			x		
Mobile obstacle 1530 x 850 mm	OBV-E07030	> 01/2007			x		
Mobile obstacle 1730 x 850 mm	OBV-E07049	> 01/2007			x		
Mobile obstacle 480 x 640 mm	OBV-E07054	> 01/2007					x
Mobile obstacle 640 x 950 mm	OBV-E07052	> 01/2007	x				
Mobile obstacle 830 x 850 mm	OBV-E07014	> 01/2007		x			
Motor assembly with encoder (14 + 8, p6)	0/6982/065	> 12/2008	x	x	x	x	x
Motor assembly with encoder (14 + 8, p6)	E/6980/541	< 12/2008	x	x	x	x	x
Non-return lock (69, p15)	0/6980/658	> 01/2007					x
Obstacle mobile 740 x 850 mm	E/0875/023	>01/2007				x	
Optocoupler on CPU board	E/6980/539	> 01/2007	x	x	x	x	x
Power supply board V3 (9, p 6)	E/6980/537	< 10/2009	x	x	x	x	x
Power supply board V5 (9, p 6)	0/6982/064	> 10/2009	x	x	x	x	x
Short lock in stainless steel (21, p22)	0/6982/069	> 08/2008	x	x	x	x	x
Stabilized Power supply (11, p 6)	E/6980/536	> 01/2007	x	x	x	x	x
Stainless steel cover	0/6980/542	> 01/2007					x
Stainless steel cover (cut-out)	0/6980/545	> 01/2007	x	x		x	
Stainless steel cover (cut-out)	0/6980/547	> 01/2007			x		
Stainless steel cover (straight)	0/6980/546	> 01/2007	x	x		x	
Stainless steel cover (straight)	0/6980/548	> 01/2007			x		
Stainless steel top cover	0/6980/549	> 01/2007	x	x	x	x	x

5.5. Adjusting the locking sensor
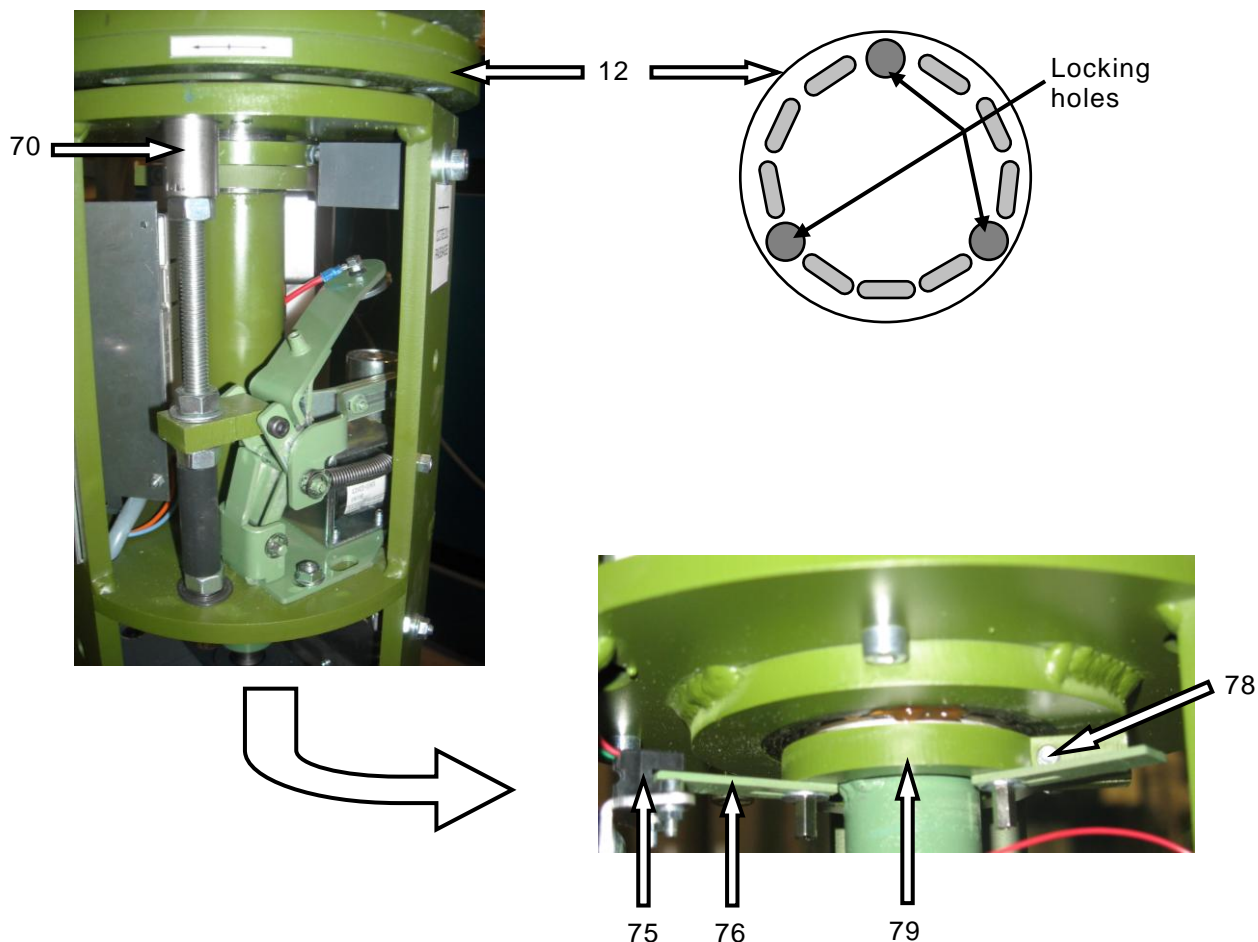
Locking holes

1. Unlock the obstacle by switching off the power or selecting programming mode.

2. Turn rotor (12) until one of the 3 locking holes is in front of lock (70).

3. In that position, the sensor (75) must detect one of the vanes (76).
   If necessary, adjust the vane and/or the vane support ring (79).

4. For the TBV327, repeat the procedure for the 2 remaining locking holes.

5.6. Adjusting the obstacle closed point

1. Close and lock the obstacle.

2. Loosen the 6 screws (D) on the conical coupling (4, p6) for 3 mm.

3. Tighten the 3 screws (E) in the upper ring so that the 2 parts of the coupling are separated.
   Note: if the screws (E) are not supplied, use 3 screws (D).

4. Move the obstacle to its closed position.
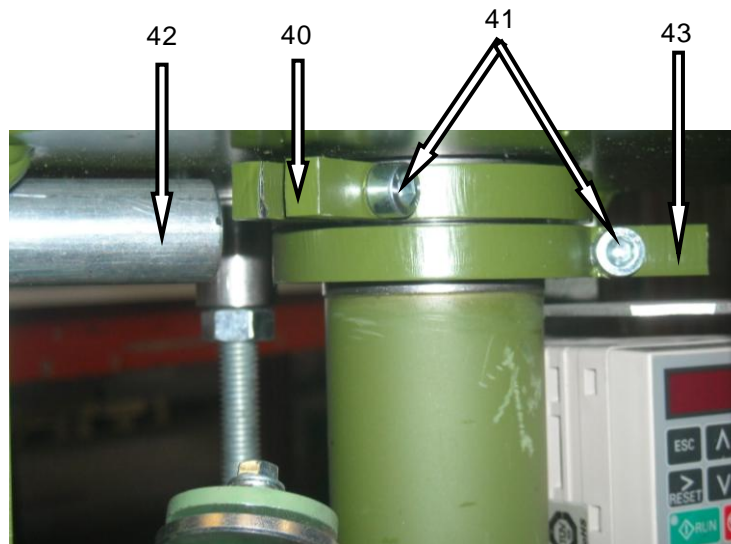
5. Unscrew the 3 screws (E) and tighten the other 6 (D).
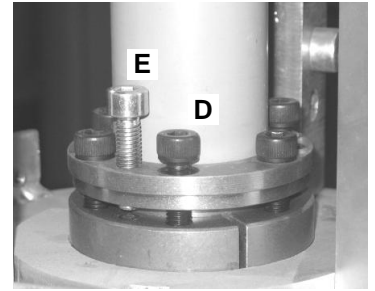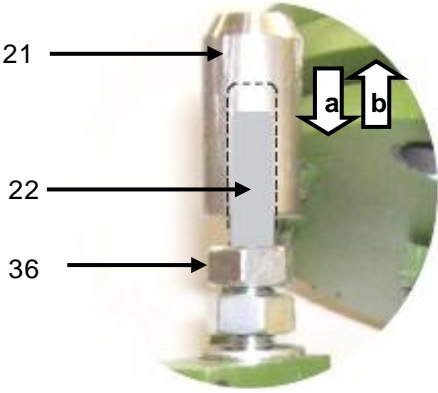

5.7. Setting the movement limit stops (5, p6)
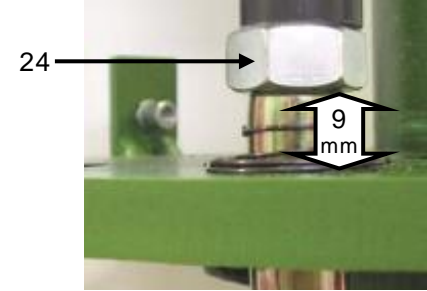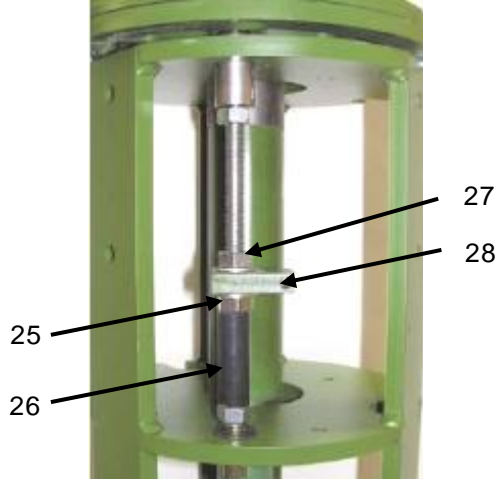
Note: **there are no stops for the TBV327turnstile!**

Note: Check that the obstacle operating angle allowed by the stops is greater than the angle set by the OPENING ANGLE CLOCKWISE and OPENING ANGLE ANTI-CLOCKWISE parameters (ch.5.10.).

1. Switch off the power.

2. Loosen screw (**41**) on cams (**40**) and (**43**).

3. Bring the obstacle to the desired position in one opening direction.
   Bring cam (**40**) against stop (**42**), then position the cam 3 mm back from the stop and tighten screw (**41**).

4. Adjust the second cam (**43**) in the same way for the other opening direction.

5. Start an AUTOMATIC SETUP in the control unit (ch.5.10.)

5.8. Fitting and adjusting the locking mechanism

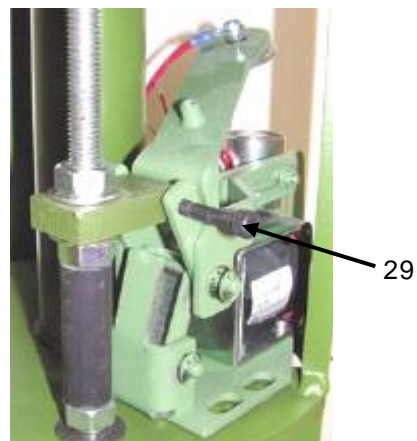|	
a. Slacken the lock-nut **(36)** and screw the **lock (21)** completely onto the **threaded rod (22)**, b. Unscrew 4 turns.	21 — 22 — 36 —
Unscrew the **sleeve (23)**, pass the rod through the plate and tighten the sleeve.	23 —
Turn the obstacle rotor (12), p6 so that the lock (21) lines up with a locking hole (cf. ch.5.5.). Turn the sleeve (23) until it is 9 mm above the plate level and lock it with **nut (24)**.	24 — 9 mm
Screw completely the lock (21). Slightly tighten **nut (25)** to hold the **spacer (26)**. Firmly tighten **nut (27)** against **nut (25)** to lock the **plate (28)** in position.	27 28 25 26

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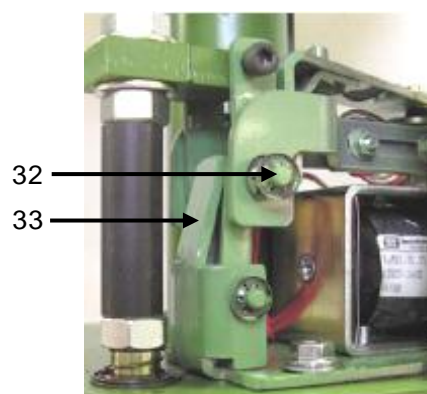SL93x + PPV323 + TBV327-MT-EN **p. 22/39**

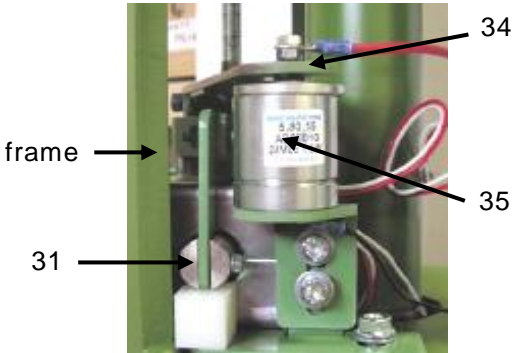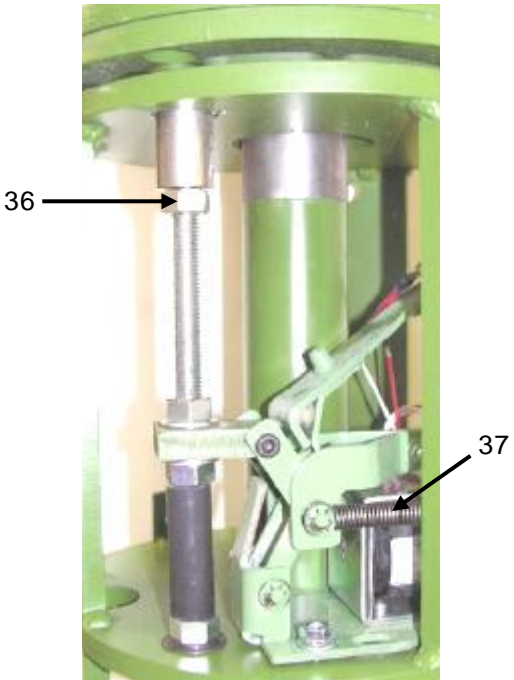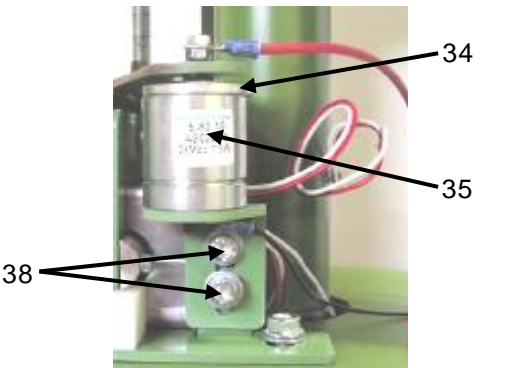|	
Fit the electromagnet assembly to plate (28) by means of **screw (29)**.	29
Put the **fixing screws (30)** in place, without tightening them.	30 31
Push in the **electromagnet core (31)** to bring the **centre shaft (32)** in contact with the **stop (33)**.	32 33

With the obstacle in its locked position (**lock 21** engaged into a hole), the **contact plate (34)** must lie on the **hold magnet (35)**. Check that the **electro-magnet core (31)** does not touch the steel frame; if so, move the complete lock assembly away from the frame. Fix the lock assembly to the plate by <u>tightening</u> **screws (30)**.	 34 frame 35 31
In the locked position (activate the lock by pushing **core (31)** and not **contact plate (34)**!), adjust the **lock (21)** until it is as far as possible into the hole: the contact plate (34) must smoothly lie on hold magnet (35), without forcing. If not the case, adjust the hold magnet support height by means of the **screws (38)**. Check the same adjustment for the 2 remaining locking holes. Fix the lock (21) by firmly tightening **nut (36)**. Fit the **return spring (37)**.	 36 37
Adjust the centering of contact plate (34) with respect to hold magnet (35) by carefully bending the contact plate's arm.	 34 35 38
Connect the red cable to the contact plate exactly as shown in the picture. The cable must be not snag during the movement of contact plate (34).	

5.9. Replacing an obstacle

1. Remove the 2 parts of the housing by unscrewing the screws (50).

2. Hold the glass plate.

3. Remove the screws (51) maintaining the glass on its support.

4. Remove the clamp (52).

5. Remove the glass plate.

6. Remove the spacers (53) from the holes in the glass plate that has been removed and fit them to the new glass plate.

7. Attach the new glass plate in the reverse order.
   Do not forget the cork gaskets between metal and glass.
   The glass edge must be parallel to the frame.
   Tightening torque: 45 Nm min.
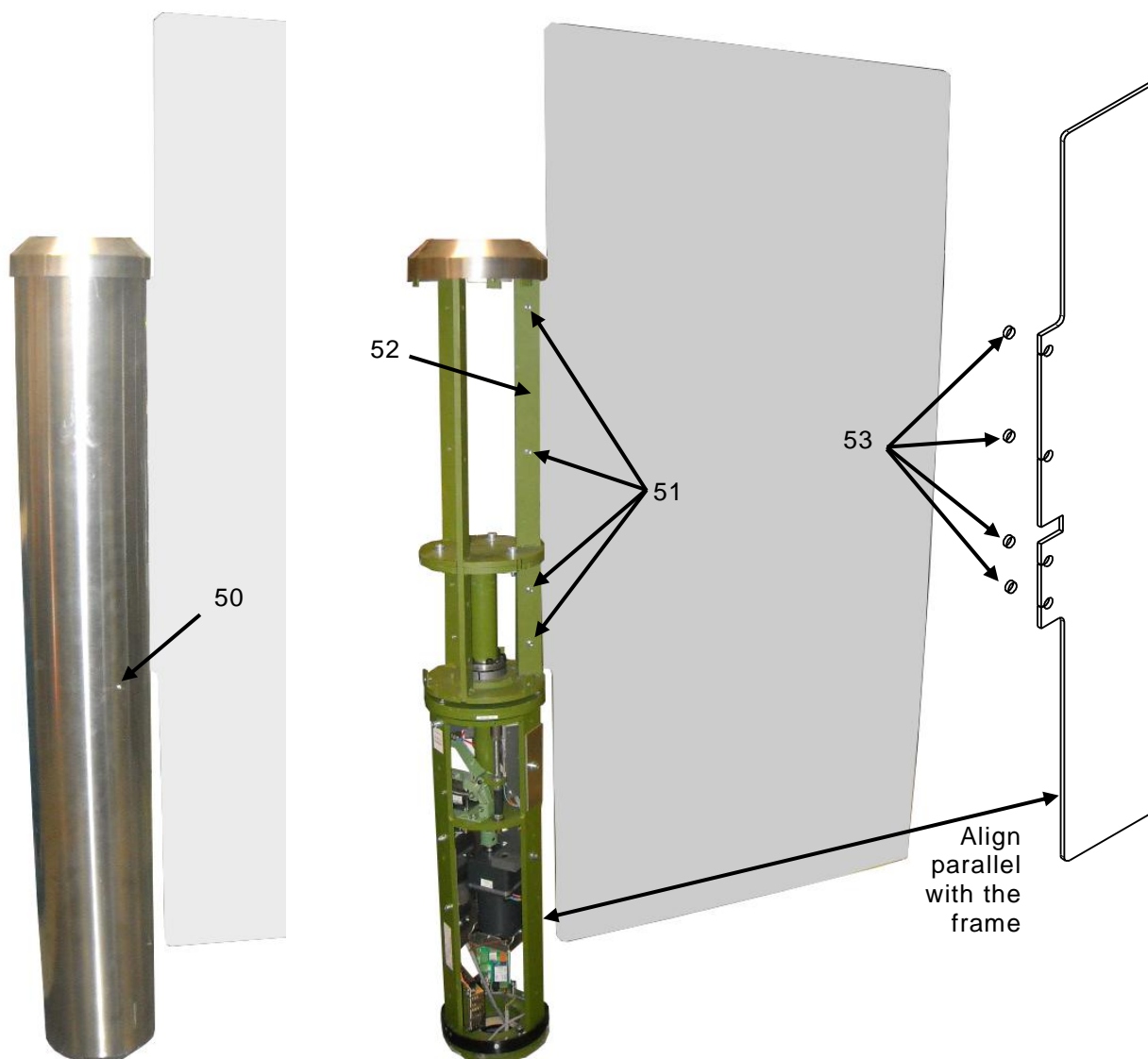
5.10. Control unit menu (program v5.36)
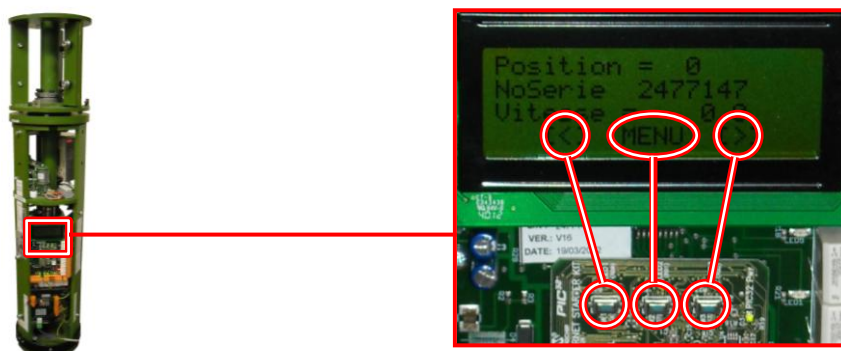
The 3 pushbuttons correspond to the text on the display.

When not in the menu, buttons **<** and **>** start a clockwise and counter-clockwise rotation of the obstacle.

When powering on the gate, the software versions are displayed for a few seconds, then the following parameters:

- Position of the obstacle with regard to its closed position.
- Serial n° of the CPU board, alternating with the IP address of the board if the IP interface option is fitted.
- The obstacle rotation speed.
- Any error messages (⇨ ch.5.12.)

- **Enter** the menu by pressing the center button (**MENU**) => the obstacle unlocks.
  Note: do not enter the menu before the serial n° is displayed. This would lose the customized configuration and return to the factory settings.
- **Move** in the various sections by means of button **>**.
- **Choose** one parameter of a series by means of button **CHG**.
- **Modify** the parameter value by means of buttons **<** and **>**.
- The modifications **validation** is automatic.
- **Exit** the menu via **QUIT** section of the menu or by pressing the button **>** for at least 3 s.

Parameter	Description
PRODUCT TYPE	Select the equipment model (cf. serial plate 15, ch.2.2.): - PPV 323 - TBV 327 - SL930 - SL931 - SL932 - Unknown **Note**: to be recognized by the Smart n' Slim monitoring panel, all models must be declared as SL930.

Parameter	Description
PUSH AND GO	**No**: a passage authorization unlocks the obstacle and its rotation is driven by the motor. **Yes**: the passage authorization unlocks the obstacle. Its rotation must be started manually, the motor assisting for the complete opening. The obstacle locks again automatically if it has not been opened after 6 seconds (not adjustable). The AUTH MEMORISATION parameter is not active if PUSH AND GO is set to Yes.
AUTONM./MASTER/ SLAVE	Autonomous ⇨ normal operation Master/ Slave ⇨ only with IP option
AUTH. MEMORISATION (TBV only)	Number of opening requests saved while the preceding movement is still in progress. The stack of opening requests in one direction is always cleared before accepting opening requests in the opposite direction.
OPENING ANGLE A WAY (PPV only)	Fine adjustment of the maximum opening angle in the clockwise direction (A direction), measured during the automatic configuration (AUTOMATIC SETUP section). This adjustment may be necessary according to obstacle's height. **Note**: adjust the limit stops after modifying this parameter (ch.5.7.).
OPENING ANGLE B WAY (PPV only)	Fine adjustment of the maximum opening angle in the counter-clockwise direction (B direction), measured during the automatic configuration (AUTOMATIC SETUP section). This adjustment may be necessary according to obstacle's height. **Note**: adjust the limit stops after modifying this parameter (ch.5.7.).
TIME DELAY AFTER CMD	Time delay between an opening command (badge, pushbutton, etc.) and the actual unlocking (0 to 100 seconds).
STOP TIME DELAY (PPV only)	Stop time in the open position before closing (0 to 100 s).
BRAKING ANGLE	Angle from which the obstacle speed decreases (cf. ch.4.). **Note**: do not change this value, calculated during the automatic configuration (AUTOMATIC SETUP section) according to the obstacle dimensions and inertia.
DIR.EMERGE.OPENING (PPV only)	Direction of obstacle opening on an Emergency (FIRE) command (ch.4.3.): clockwise (A) or counter-clockwise (B)
ROTATION SPEED	Adjustment of the obstacle's opening and closing speed (5 to 40, 22 by default). **Note**: proceed to an AUTOMATIC SETUP after each modification of this parameter!
NUMBER OF WARNING	Number of successive attempts to complete the opening or closing movement, before the equipment is put out of service and the error message is displayed and a signal is sent to the CPU output.
LANGUAGE	Menu language selection: French / English.

Parameter	Description
FUNCTIONAL TEST	Continuous clockwise and anti-clockwise opening cycles. Exit the mode by pressing on the STOP button.
AUTOMATIC SETUP	Automatic configuration of the BRAKING ANGLE, according to the ROTATION SPEED set and the obstacle inertia.
PRESS OK TO QUIT AND SAVE SETUP	Leave programming mode and return to the main screen.
MANUFACTURER RESET	Loading of the default values for the menu and the variable speed controller parameters.
BACKLASH	Display of the mechanical play of the motor coupling, as measured during the AUTOMATIC SETUP procedure.

5.11. Maintenance interface

5.11.1. Network communication settings

Note: a basic knowledge of networks is necessary.

1. Switch the power on the gate (ch.5.2.).
2. Connect a PC to the RJ45 connector of the CPU board by means of an Ethernet patch cable.
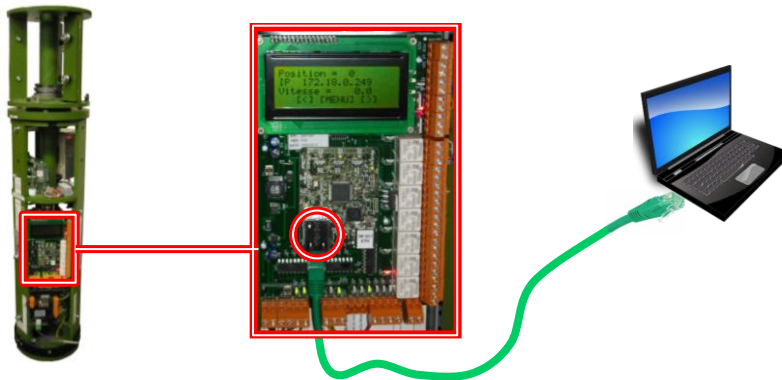
3. Set the PC communication parameters:

   - On the web browser, deactivate the *Network communication mode via Proxy server*.
   - Set the PC IP address to be in the same range as the gate's address, displayed on the CPU (192.168.0.85 by default).

4. In the PC web browser, type the gate's IP address.

5.11.2. Login

User: **admin**

Password: **as**

Note: the menu language is adjustable through Configuration section.

5.11.3. Status

Status

Status

Navigation	
Status	
Identification	
Commands	
Network	
Configuration	

This screen shows the current status of the equipment.

Status

Field	Value	Description
Mobile obstacle :	Closed	Status of the obstacle
Last major error :	None	Last major defect registered
Last minor error :	None	Last minor defect registered
Backlash (%) :	0	Mechanical play of the motor coupling
Backlash (ps) :	0	Mechanical play of the motor coupling (pitch)

Resetable counters

Field	Value	Description
Major errors :	0	Number of major/minor defects since the last reset
Minor errors :	0	
Openings in direction A :	0	Number of openings in clockwise direction (A) or counter-clockwise (B) since the last reset
Openings in direction B :	0	
Reset counter :	Major errors	Reset of 1 of the 4 counters above

Reset

Perpetual counters

Field	Value	Description
Major errors	5	Same counters as above, without reset
Minor errors	3	
Openings in direction A	669	
Openings in direction B	389	

5.11.4. Identification

Identification

Navigation	
Status	
Identification	
Commands	
Network	
Configuration	

This screen shows the identify of the equipment.

Client identification

Product type :	AS-SL930
Hostname :	SL_930

Sauver

Indicate the type of gate
⇨ see serial number or installation drawing

Note: if the gate is connected to the Smart n' Slim monitoring panel, select AS-SL930

Enter the desired reference for the gate

Save the modifications

5.11.5. Commands

Commands

Navigation	
Status	
Identification	
Commands	
Network	
Configuration	

Use this screen to send commands to the equipment.

Closing

Send

This screen allows testing the following inputs:

Closing: closing and locking the obstacle
Emergency opening: opening of the obstacle.
Opening in direction A (clockwise) / B (counterclockwise): opening of the obstacle in the A or B direction.

5.11.6. Network

Modification of the gate's IP address (cf. ch.5.11.1. to adapt it to a new network.
These parameters must be authorized by the network manager!
<u>Note</u>: the gate's IP address is displayed on the CPU when powering it on

Validation of the modifications

5.11.7. Menu Configuration

This section is a copy of the CPU parameters (cf. ch.5.10.).
The last change in the maintenance interface or the CPU prevails.

5.12. Trouble shooting

Refer to error messages of the control unit.

SYMPTOM	CAUSE / REMEDY
No power	• Check that the equipment is connected to the power supply as specified (ch.2.1.) and that the mains switch is ON (ch.5.2.).

Buzzer
 	
+
 	
Error message on the CPU display
	• Defect detected:
	
	   - **Holding**: the contact plate (73, p15) is not in contact with hold magnet (72, p15).
	
	   - **Origin**: the obstacle did not find the locking position sensor (= the origin point corresponding to its closed position).
	
	   - **Obstruction**: the obstacle did not complete its opening or closing movement.
	
	   - **Mech. stop**: the obstacle rotation passed beyond the mechanical stop position, as memorized during the AUTOMATIC SETUP procedure.
	   ⇨ Check the speed and opening angles (ch.5.10.). These must be smaller than the angles allowed by the mechanical stops.
	
	   - **Mot. drive com**: communication fault with the variable speed controller.
	
	   - **Lock fever**: fuse failed on the lock electro magnet.
	
	   - **Emergency opening:** Emergency (FIRE) opening active on the power supply board.
	
	Note: The error is reset by an opening command or an Emergency opening command.

The obstacle does not move	• Check if the gate has detected a defect (see error messages here above). • Check that ambient temperature is within the required range (ch.2.1.). • Check the power supply, the state of the circuit breaker and the fuses, and the voltage delivered by the gate's power supply (24VDC). • Check if the variable speed controller is defective (refer to the error code on the VSC). • Check the hold magnet (72, ch.4.1.) power supply (broken cable, …). • Check the conical coupling (see ch.5.6.).
The obstacle does not lock in closed position	• Check the power supply (see here above). • Check if the lock is powered and enters into the rotor hole (ch.4.1.). • Check the electromagnet contact plate wire. • Check the variable speed controller power supply. • Check for a mechanical obstruction of the movement.
The obstacle remains open	• Check that the clockwise/counter-clockwise opening commands are not maintained. • Check that the evacuation contact is closed (ch.3.4.).

5.13. Disposal / Destruction

If the equipment is not used for an extended period, it should be stored in a dry place, protected from heat and bad weather conditions.

When the equipment is retired from service, dispose of the various components through the appropriate channels (metal parts, electronic components, etc.) according to the regulations in force in the country concerned.

6. ELECTRICAL DIAGRAMS

CONNECTIONS

MOTOR

The Locked Gate input ▯ is activated by direct contact▯ between the Hold magnet (ground)▯ and the contact plate (+)

GROUND

VARIABLE SPEED CONTROLLER

220V
220V

+R
-R
SG
+S
-S

SC
S5
S4
S3
S2
S1

contact plate

ground

Hold magnet

thermal fuse

Electromagnet

19	RS485 (A)
20	RS485 (B)
21	GROUND
22	+ 24 V
23	Fire detection
24	OUT
25	+ 24 V
26	GROUND
27	OUT
28	+ 24 V
29	GROUND
30	Counterclockwise (NO) s1
31	Counterclockwise (NC)
32	Counterclockwise (COM)
33	Clockwise (NO) s2
34	Clockwise (NC)
35	Clockwise (COM)
36	Low/High speed (NO) s3
37	Low/High speed(NC)
38	Low/High speed(COM)
39	
40	
41	
42	Open Gate (NO)
43	Open Gate (NC)
44	Open Gate (COM)
45	Alarm (NO)
46	Alarm (NC)
47	Alarm (COM)
48	Locked Gate (NO)
49	Locked Gate (NC)
50	Locked Gate (COM)

VSC
Power
Fire
LOCK 24V
Hold mag 24V
Variable Speed Controller
OUTPUTS

Non return lock
(option)

Locking position sensor

Motor encoder sensors

Emergency Opening command I I
(see separated diagram)

Electromagnet +
Electromagnet -
POWER-
POWER+
EMERGENCY
VSC 220
VSC 220
Power 220
Power 220
GROUND
Breaker 3A
250 V

24VDC

220VAC

10 / 2012
CPU : V16
PWR board: V10

NEUTRAL
LINE

MAINS 220V AC

Ground connector

HOUSING

EMERGENCY OPENING

Output+24 Vdc
Ground

Emergency command 24/48 Vdc **(*)**
Ground

(*) *Jumper to the right for 24 Vdc*
Jumper to the right for 48 Vdc

Max absorbed Power: 1W

Shunt the connectors
if the Emergency command
is not used

Voltage

24 Vdc
or 48 Vdc
see above

Dry contacts

INPUTS / OUTPUTS

Terminal	Signal	Group
19	RS485 (A)	VSC
20	RS485 (B)	
21	GROUND	Power
22	+ 24 V	
23	EMERGENCY	EMGCY
24	OUT	LOCK 24V
25	+ 24 V	
26	GROUND	
27	OUT	Hold mag 24V
28	+ 24 V	
29	GROUND	
30	Counterclockwise (NO) s1	Variable Speed Controller
31	Counterclockwise (NC)	
32	Counterclockwise (COM)	
33	Clockwise (NO) s2	
34	Clockwise (NC)	
35	Clockwise (COM)	
36	Low/High speed (NO) s3	
37	Low/High speed(NC)	
38	Low/High speed(COM)	
39		
40		
41		
42	Open Gate (NO)	DRY CONTACTS OUTPUTS
43	Open Gate (NC)	
44	Open Gate (COM)	
45	Alarm (NO)	
46	Alarm (NC)	
47	Alarm (COM)	
48	Locked Gate (NO)	
49	Locked Gate (NC)	
50	Locked Gate (COM)	

GATE OPEN (except for emergency cmd)

DEFECT DETECTED

CLOSED & LOCKED GATE (except for emergency cmd)

01	02	03	04	05	06
+ 24 V	GROUND	GROUND	+ 24 V	Encoder sensor 1	Encoder sensor 2

Power IN / Power OUT / INPUTS

07	08	09	10	11	12	13	14	15	16
Locked gate (5V)	Locking point	COM 0V		Clockwise opening	Counterclockwise opening	Thermal fuse			

17	18
RS 485	

INPUTS

COUNTERCLOCKWISE opening request

CLOCKWISE opening request
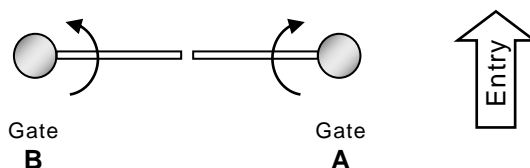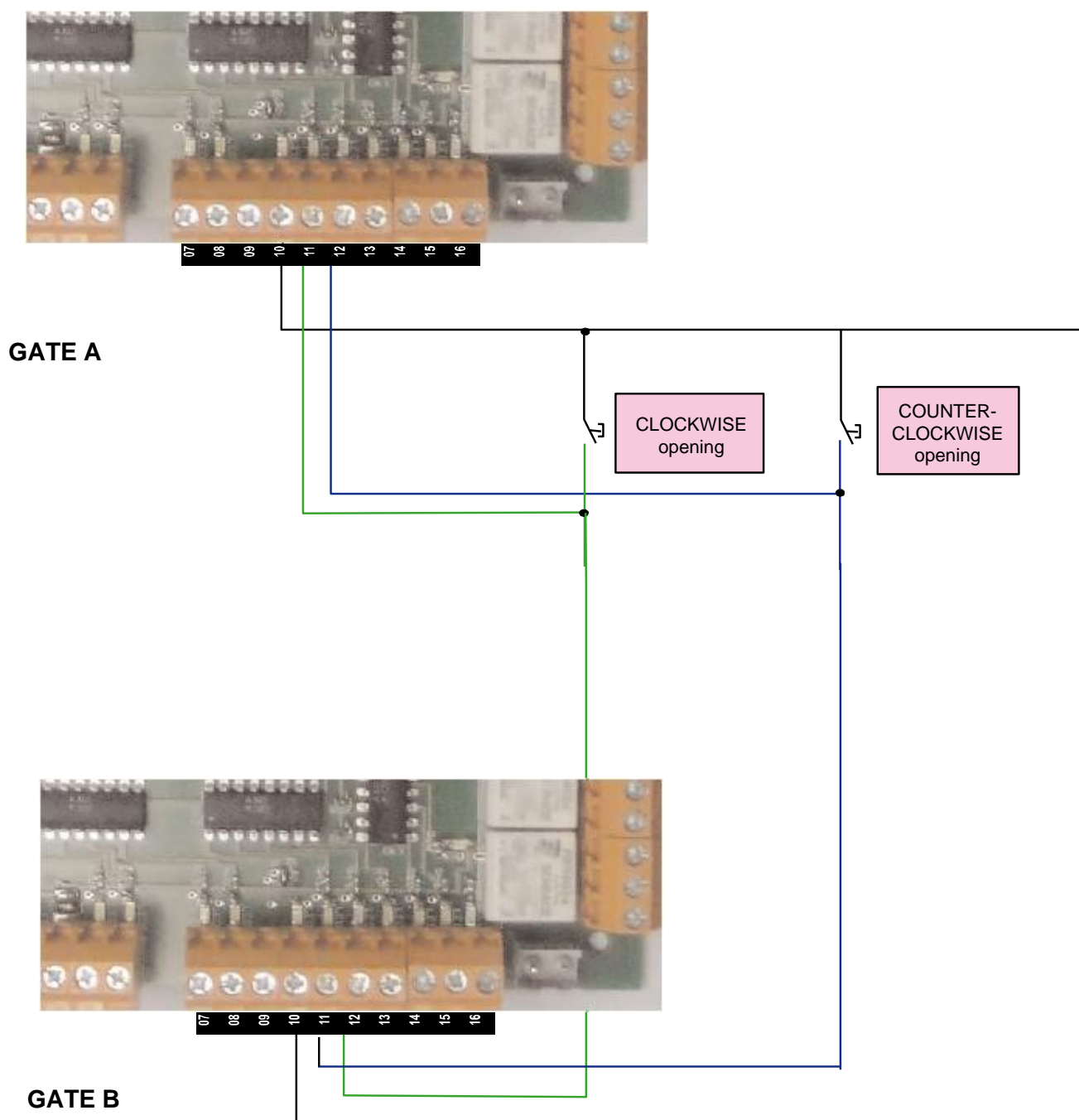
DOUBLE GATES

In the case of 2 gates that must open simultaneously, one opens in the clockwise direction and the other in the anti-clockwise direction, and vice versa.

Gate **B**   Gate **A**   Entry

Note: The opening request inputs must be connected as described below. Note that the <u>clockwise</u> input on one gate is connected to the <u>counter-clockwise</u> input on the other:

GATE A

CLOCKWISE opening

COUNTER-CLOCKWISE opening

GATE B

7. DECLARATION OF CONFORMITY

Déclaration CE de conformité

Nous, soussignés,

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

Déclarons que les machines

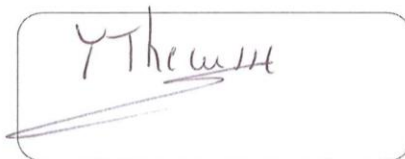|	
Portillon pivotant	PPV 323
Portillon pivotant	SL 930
Portillon pivotant	SL 931
Portillon pivotant	SL 932
Tourniquet tripode	TBV 327

sont conformes 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 : 2011.01.17
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 following machines

Swing Gate	PPV 323
Swing Gate	SL 930
Swing Gate	SL 931
Swing Gate	SL 932
Turnstile	TBV 327

are 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: 2011.01.17
Name : Yves THERASSE
Function : Director of Development
Signature :

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