Automatic Gates

PNG3xx Series

programs version prdstd png38x t00 e04 v00 r04 m00

prdstd png38x t00 e05 v00 r04 m00 trolley

TECHNICAL MANUAL

Rev 20

(Translated from French)

Document revisions

Rev.	Date	Written	Checked	Subject
01	26.04.2004	FF	EB	DOC-PNG38x-MT-EN-0001-00
02	Not distributed	MFy		· The M340 programmable controller from Télémécanique replaces the TSX programmable controller. · The ATV31 variable speed controller from Schneider replaces the KEB variable speed controller. · Orientation pictogram is supplied as standard. · Housing with an inclined for roof sections and extensions is supplied as standard. These modifications take effect starting with the following serial numbers, in accordance with the PNG series: 08-PNG380-B0139 08-PNG381-B0017 08-PNG382-B0045 08-PNG390-B0028 08-PNG391-B0008 08-PNG392-B0009
03	07.07.2008	MFy		Correction of a type mismatch in ch.2.2.1. (cells C13 and C14 ... PNG381 and 382). Ch 4.4. : replacement of ground connector. Ch. 5.5. & 5.6. : Replacement of the illustrations.
04	08.07.2008	MFy		Ch. 9. 10. 11. : translation in English.
05	20.08.2008	MFy		· Addition of the PLC program version on the 1st page. · Replacement of CRx terminology (Card Reader x) by LCx, to correspond to the marking of the AS1007 board. · Ch. 3.2.3. Addition of the concerned relays numbers. · Ch , point 4: addition of a delay before resetting. · Ch.6. : word 1, dips 4 & 6: inversion of the working modes. · Ch.6. : word 2, dip 1: delay not modifiable. · Ch.6. : word 3, dip 4: correction.
06	09.09.2008	MFy		· Ch.6. : passage to revision 4 of the PLC program. · Ch. 11. : EC certificate update.
07	2010-01-05	MFy		· EC certificate update.
08	2010-03-08	MFy		· EC certificate update.
09	2010-07-06	MFy		· Electrical connections: add warnings.
10	2010-07-19	MFy		· Technical specs: storage t° modified.
11	2010-08-17	MFy		· Structure of chapter Use modified.
12	2010-11-29	MFy		· Program upgraded => prdstdPng38x t00 **e04** v00 **r02** (bug corrected on word 2, bit 1 in programming mode).
13	2010-12-13	MFy		· Technical specs: MCBF increased after tests.
14	2010-12-23	MFy		· Wiring diag 2PNG00.060 -> rev B (+W23 cable).
15	2011-02-08	MFy		· Ch. 2.2 + 2.2.3 + 5.2 + Wiring diag : Passage to ATV312 variable frequency drive (no functional change).
16	2011-08-18	MFy		· Ch.1: warnings added. · Ch.2.2.1: "children" removed.
17	2011-11-09	MFy		· Ch. 6: Word 1 ⇨ modification of dips 1+4 factory setting. Word 2 ⇨ modification of dips 1+4+5 factory setting. Operation ⇨ modification of dip 6. · Ch.7.4: balancing spring replacement added.
18	2012-01-04	MFy		· Ch.2.2.1: TA+TB cells added.
19	2012-03-13	MFy		· Ch.5.4 + 5.5 + 7.4: replacement of the upper bushing by a bearing. · Ch.7.4: replacement of the shutter added.
20	2013-04-30	MFy		· Ch.2.2.1: inversion of cells Txx

Table of contents

1. SAFETY WARNINGS 4

2. DESCRIPTION 5
2.1. DESCRIPTION OF THE RANGE AND DEFINITIONS 5
2.2. LOCATION OF THE COMPONENTS 6

3. OPERATION 12
3.1. MODICON M340 PROGRAMMABLE CONTROLLER 12
3.2. AS1007 INTERFACE CARD 13
3.3. STATE OF THE OBSTACLES DURING STANDBY 15
3.4. OPERATION MODES OF THE PASSAGE DIRECTIONS 15
3.5. EMERGENCY MODE 16
3.6. PASSAGE AUTHORISATIONS 16
3.7. DETECTION OF PASSAGE THROUGH THE OBSTACLES 16
3.8. PASSAGE CONTACT 17
3.9. LOCKING OF THE CARD READER 17
3.10. SAFETY ON OBSTACLE CLOSING 17
3.11. SAFETY ON OBSTACLE OPENING 18
3.12. MANAGEMENT OF THE VARIABLE SPEED CONTROLLER 18
3.13. PICTOGRAMS 18
3.14. THE INFRINGEMENTS 19

4. INSTALLATION 21
4.1. PREPARATORY WORK AT THE SITE 21
4.2. STORING THE EQUIPMENT BEFORE INSTALLATION 21
4.3. POSITIONING THE EQUIPMENT 22
4.4. ELECTRICAL CONNECTIONS 23

5. MECHANICAL ADJUSTMENTS AND OPERATIONS 28
5.1. TIGHTENING TORQUE 28
5.2. SETTING THE PARAMETERS OF THE VARIABLE SPEED CONTROLLER 28
5.3. REPLACING AND ADJUSTING THE DETECTION PHOTOCELLS 29
5.4. REPLACING AND ADJUSTING THE BALANCING SPRING 32
5.5. REPLACING THE SELF-LUBRICATING BUSHING 33
5.6. REPLACING A MOVING OBSTACLE 34
5.7. ADJUSTING THE CLEARANCE SPACE FOR THE PASSAGE OF MOVING OBSTACLES 35
5.8. ADJUSTING THE LIMIT-SWITCH CAM 36

6. CONFIGURING THE PROGRAMMABLE CONTROLLER 37

7. USE 40
7.1. START-UP 40
7.2. TURNING OFF THE POWER 40
7.3. PROLONGED STOP/DESTRUCTION 40
7.4. MAINTENANCE 41
7.5. SPARE PARTS ..... **ERREUR ! SIGNET NON DEFINI.**

8. TECHNICAL SPECIFICATIONS 42

9. INSTALLATION PLANS AND DIMENSIONS 43

10. WIRING DIAGRAMS 49
10.1. AS 1007 CARD 59
10.2. PROGRAMMABLE CONTROLLER INPUTS (5, CH. 2.2.3.) 60
10.3. PROGRAMMABLE CONTROLLER OUTPUTS (5, CH. 2.2.3.) 61
10.4. PARAMETERS OF THE PROGRAM 62

11. CERTIFICATE OF COMPLIANCE 64

1. SAFETY WARNINGS

Installing an access control obstacle exposes the user to responsibilities with regards to the safety of people:

- The obstacle must be completely visible to the user as well as to any operators before being actuated.
- For security reasons, children (user smaller than 1 m tall) must be supervised by an adult at all times when in the vicinity of the unit and during passage through the lane
- A child must absolutely precede the accompanying adult when lane passage is required
- If habitual use by children is anticipated, Automatic Systems recommends the addition of all options required to optimize the level of protection.
- All operations performed on the equipment must be undertaken by qualified personnel. All operations that are not authorised or that are carried out on this product by an unqualified technician shall automatically and ipso jure lead to the refusal of the manufacturer's warrantee.
- The access keys to the mechanism must only be used by personnel informed about the electrical and mechanical risks incurred by negligent handling. This personnel is required to lock the mechanism's access doors after finishing the work.
- For all work that does not require the equipment to be on, turn off the power supply using the circuit breaker (21, Ch.2.2.3.) belonging to the aisle's master gate.
  Note: The slave gate (to the left, in passage A direction) is fed by the master gate (to the right) (see Ch. 3.1.).
- All internal elements that could receive power or move must be handled with care.
- The equipment is configured in a "minimal risk" mode for its users. All modifications of the parameters must be undertaken by experienced and qualified personnel and in no way entail the responsibility of *Automatic Systems*.
- If the equipment is to be resold, it is the reseller's responsibility to ensure, both at time of offer and order submittal as well as during installation of the equipment, that its environment and expected use conform to the technical specifications of the equipment, and reflect these directions.
- The reseller agrees to indemnify and hold harmless Automatic Systems of all claims arising from the reseller's failure to respect the preceding conditions.

2. DESCRIPTION

2.1. Description of the range and definitions

The PNG gates control the access of pedestrians with or without luggage, in both directions, guaranteeing high levels of security and safety.

By definition:

Direction A: Passage direction for which the programmable controller is in the right-hand gate.

Direction B: Passage direction for which the programmable controller is in the left-hand gate.

Security: Ability of the equipment to prevent infringements.

Safety: Protection of the users while using the gate.

Abbreviations:

LCx: Card Reader in direction x (and, by extension, all passage validation systems).

NO: Normally Open.

NC: Normally Closed.

AON: All Or Nothing.

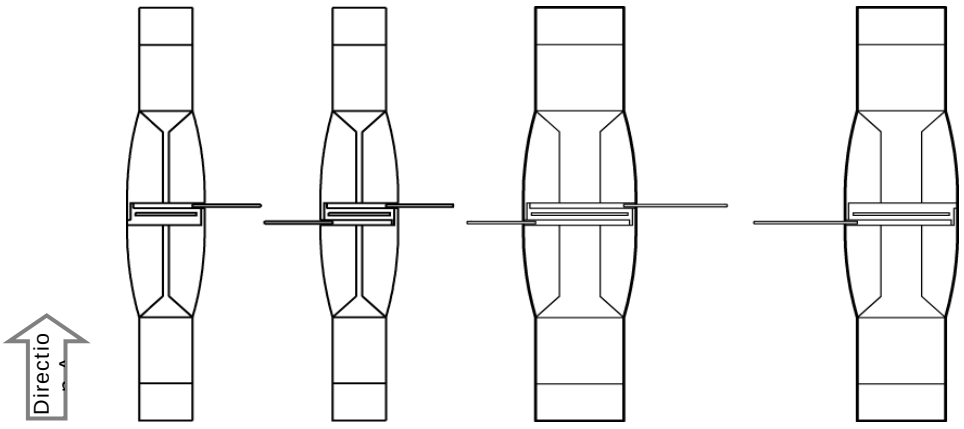
CAN: Controller Area Network (communication bus using CAN protocol)

The **gate** is composed of (see Ch. 2.2.):

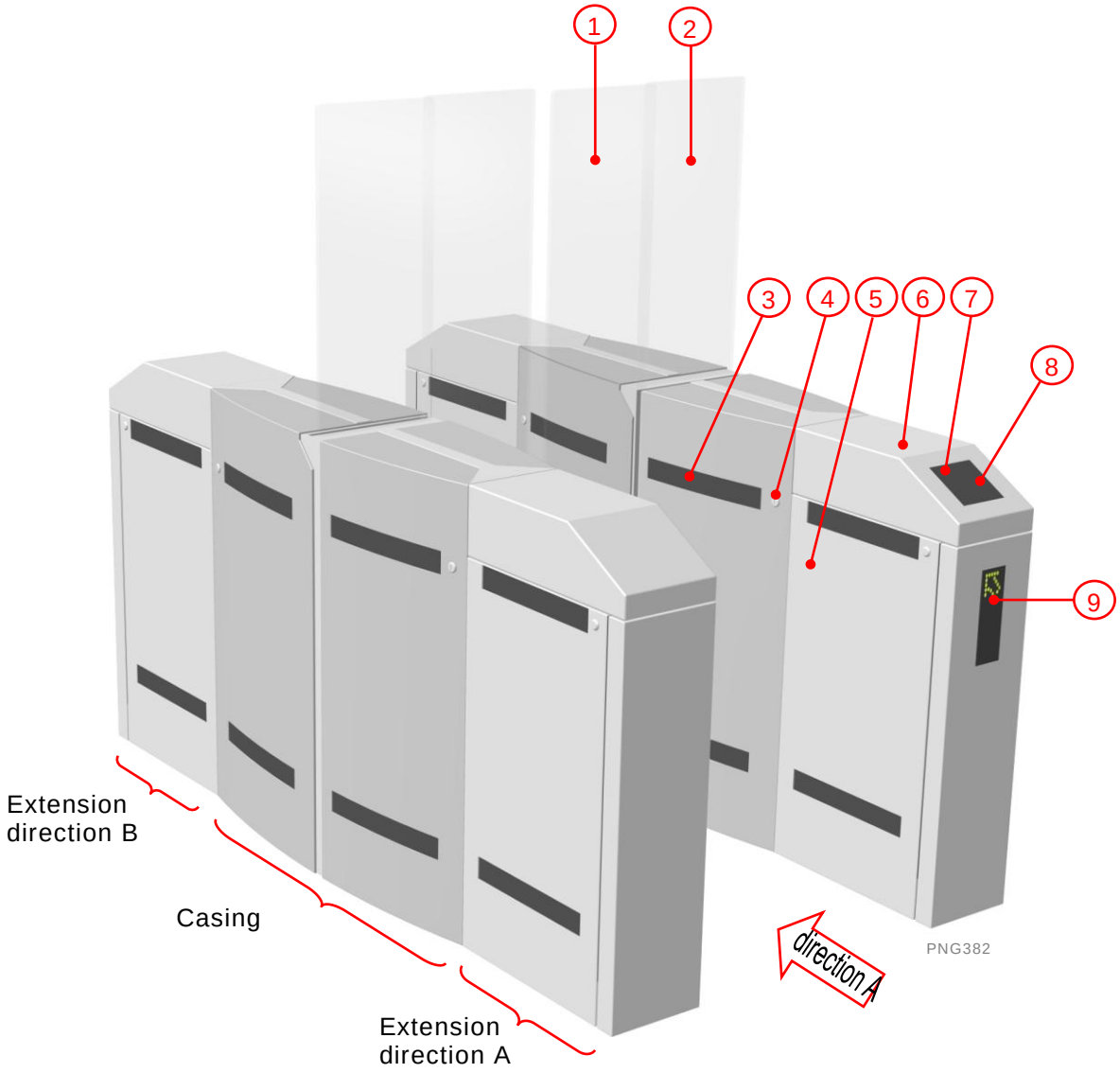
1. A retractable pane constituting **the obstacle** to passage.
2. **Housing** comprising the obstacle's operating machinery, the detection cells ensuring security and safety, as well as the programmable controller for management of the equipment.
3. Potentially, **extensions** that allow for additional detection cells to be placed, in order to ensure monitoring against infringements and to integrate a badge reader or another validator.

Depending on the width of the obstacle, the gates come in one of two free passage widths (aisle): 600 mm for PNG38x, 900 mm for PNG39x.

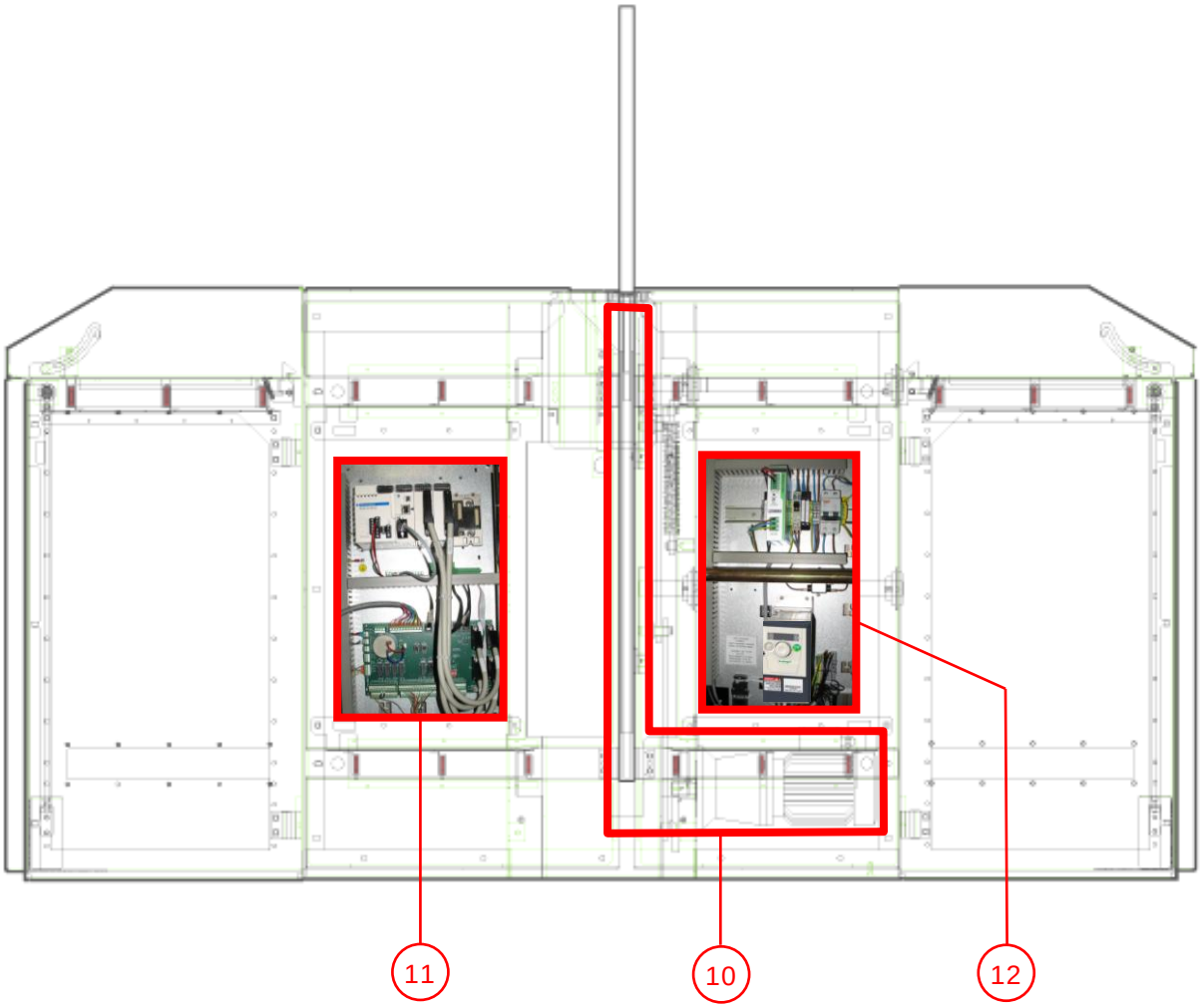
Naturally, the gates may be installed singly or in a group. In the second case, if the conventional direction is direction A, a **left gate**, a **right gate** and **intermediate gates** will be defined. The latter may be **hybrids**, i.e. they form the link between two aisles of different widths.



2.2. Location of the components

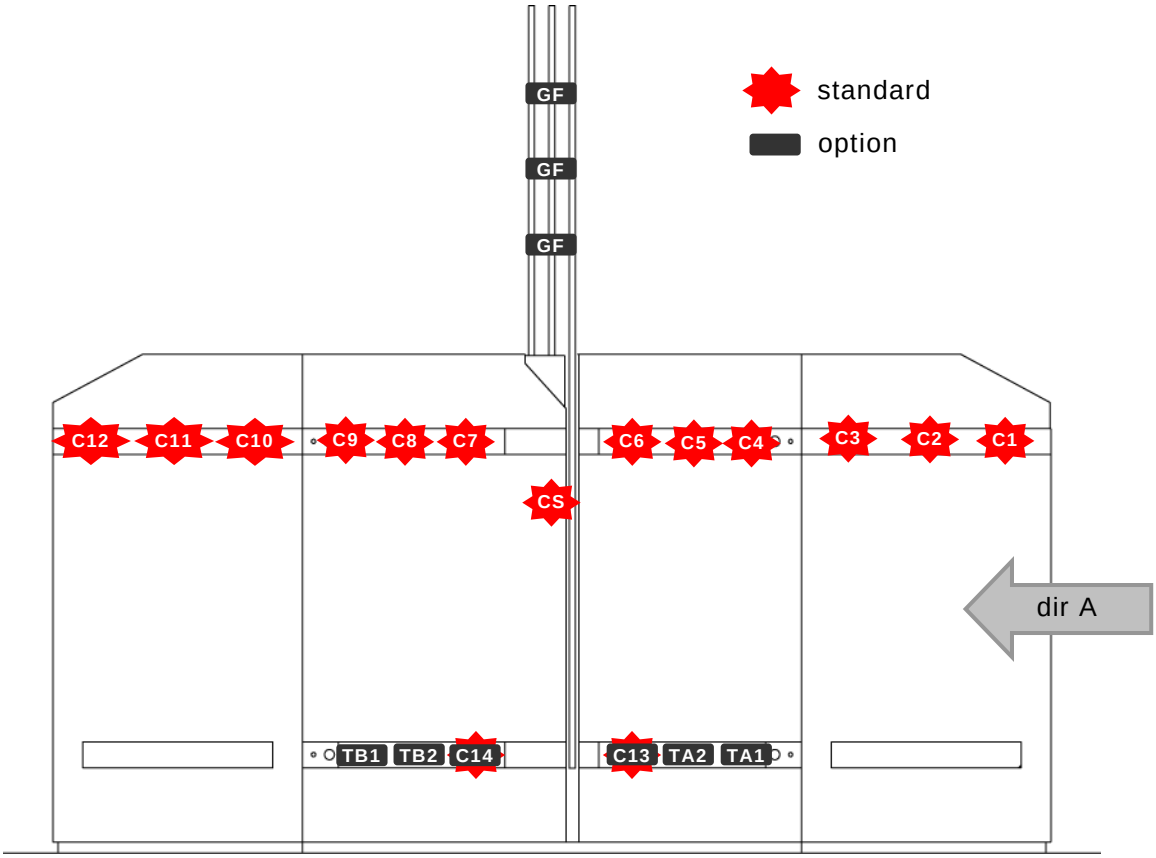


1. Moving obstacle.
2. Fixed obstacle (only with some equipment).
3. Detection photocells behind a tinted screening plate (see p. 8 for their location).
4. Access door to the housing, with lock no. 004.
5. Access door to the *(optional) extension* with lock no. 004.
6. *(Optional) extension* cover.
7. *Function pictogram (optional).*
8. *Badge reader (optional)*.
9. Orientation pictogram.



10. Mechanical assembly (see Ch. 2.2.2.): one mechanical assembly per moving obstacle.
11. Programmable controller board (see Ch. 2.2.3.).
12. Variable speed controller board (see Ch. 2.2.3.).

2.2.1. Detection cells



- **Cells C1 to C12** manage passage and check against infringements (see p. 19). C1, C2, C3, C10, C11 and C12 are only present on models with extensions.
- **The safety cell (CS)** ensures that the presence of something near the moving obstacles is detected and prevents them from opening and closing (without any distinction between authorised and unauthorised users).
- **Cells C6 and C7** may be set as safety cells (see Ch.6. *)* to extend the safety zone around the moving obstacles.
- **Enhanced safety cells C13 and C14** *(optionally with the PNG380*, standard with the PNG381 and 382) also act as safety cells and reduce the risk of fraud by extending the detection area further down near the obstacles.
- **The *"Trolley" protection cells TAx and TBx (option)*** enhance the electronic protection of the suitcases drawn by the user.
- **The *(optional) GF cells*** are installed on fixed obstacles belonging to equipment with high moving obstacles and better protect users' heads, as well as the bags being carried on their backs.
  Warning: If the GF cells are not present, the X13.15 and X13.16 terminals on the AS1007 card must be bypassed (see the wiring diagrams).

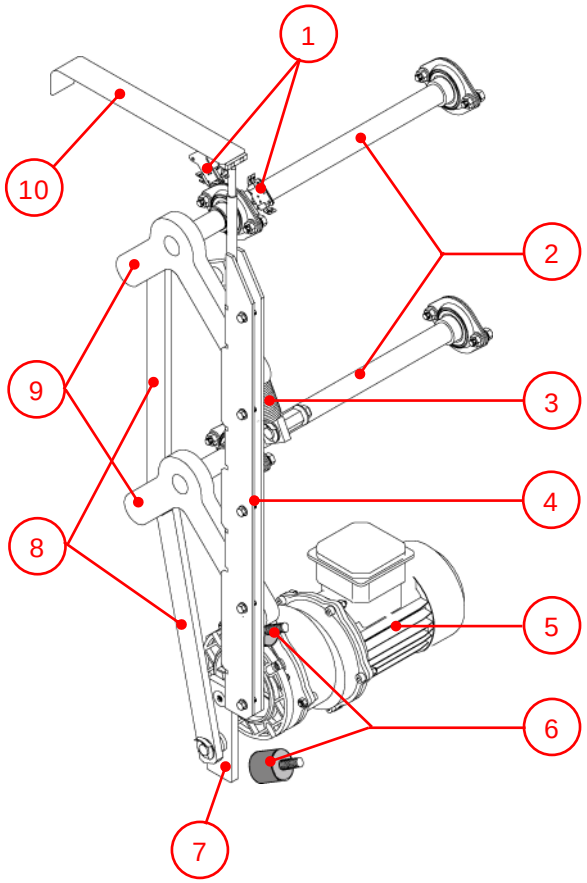
The Cx cells are reflex cells. The signal emitted by the transmitter/receiver cell (on the right gate, in direction A) is returned by the reflector fixed to the left gate.
The GF cells are of the Transmitter or Receiver type. The signal emitted by the transmitter cell (left gate, in direction A) is received by the receiver cell on the right gate.
The cell beams are laid out in horizontal groups, behind a tinted screening plate which renders them invisible to people who might want to commit fraud.

2.2.2. Mechanical assembly

Each obstacle is actuated by its own specific mechanical assembly. Thus, the intermediary gates comprise two mechanical assemblies (controlled by two different programmable controllers, one per aisle, see Ch. 3.1.) and the end gates (left and right) comprise one.

The movement of the motor is transmitted to the obstacle fixed to the **plinth (4)**, by means of the assembly of the **rods (8)** and **cranks (7+9)**.
This assembly also ensures the mechanical locking of the obstacle in the closed position through the alignment of the crankshaft with the lower rod. Thus the obstacle cannot be opened manually, except by pushing the lower rod inside the housing (8).

A preloaded **balancing spring (3)** helps the motor open and close the obstacle.
This spring also ensures that the obstacle opens in the event of a power failure, once a pulse has been given by the **spiral release spring (4)** (“anti-panic” system).

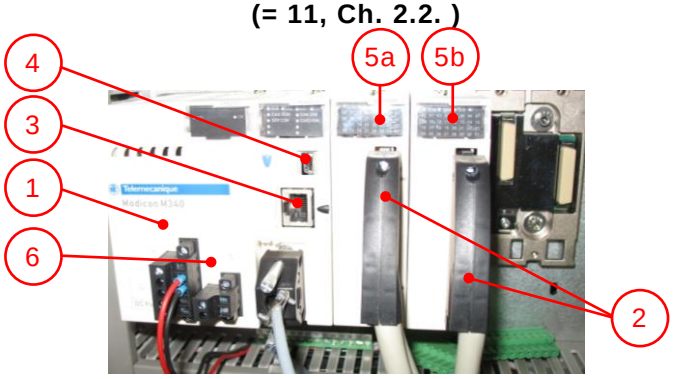


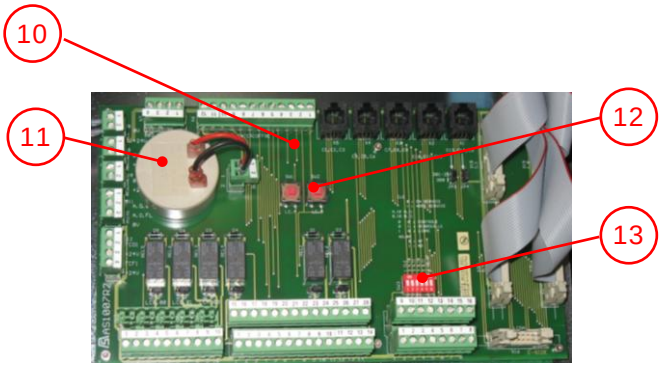
1. Limit switch sensors.
2. Transmission shafts and pillow blocks.
3. Balancing spring.
4. Moving obstacle support plinth.
5. Geared motor.
6. Limit switch abutments.
7. Drive crank.
8. Transmission rods.
9. Transmission cranks.
10. Safety shutter that covers the opening made in the housing for the passage of the moving obstacle.

2.2.3. Electric console

Master gate (on the right in direction A):

Programmable Controller Board (= 11, Ch. 2.2.)

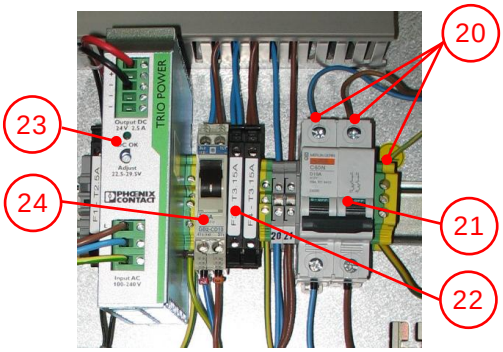


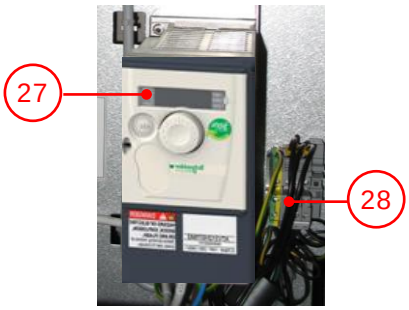


1. M340 programmable controller (see Ch. 3.1.):
2. Connectors for AS1007 card.
3. Ethernet connector (RJ45).
4. USB connector.
5. Display LEDs for the Inputs (5a) and Outputs (5b): See Ch. 10.2. and 10.3. .
6. Reset button.

10. AS1007 card (see Ch. 3.2.).
11. Buzzer.
12. Buttons for open command simulation in direction A (LCA) and in direction B (LCB).
13. DIP switches for configuration and operation.

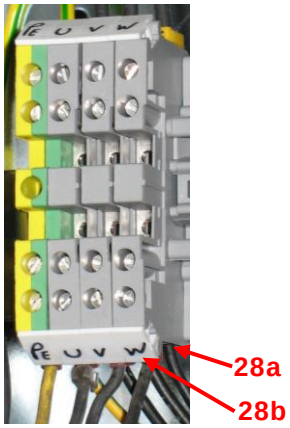
Variable Speed Controller Board (= 12, Ch. 2.2.)



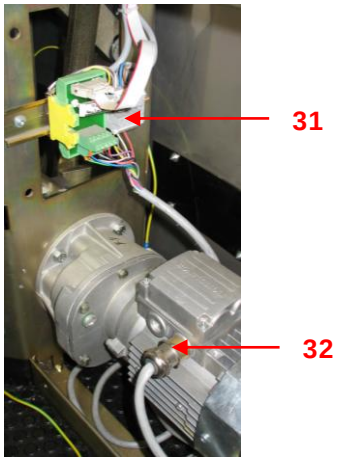


20. General electrical power supply + ground.
21. General circuit breaker.
22. Fuses.
23. Stabilised power supply.
24. Variable speed controller circuit breaker.

27. Variable speed controller.
28. Motor connection (see Ch. 4.4.):
    a. Connectors in the back for the Master motor.
    b. Connectors in the front for the Slave motor.



Slave gate (on the left in direction A), right panel (+ left):



31. Intermediate terminal block: connection with the master gate's X6 connector on the AS1007 card.
32. Connection of the Slave motor to terminal block 17b in the Master gate.

3. OPERATION

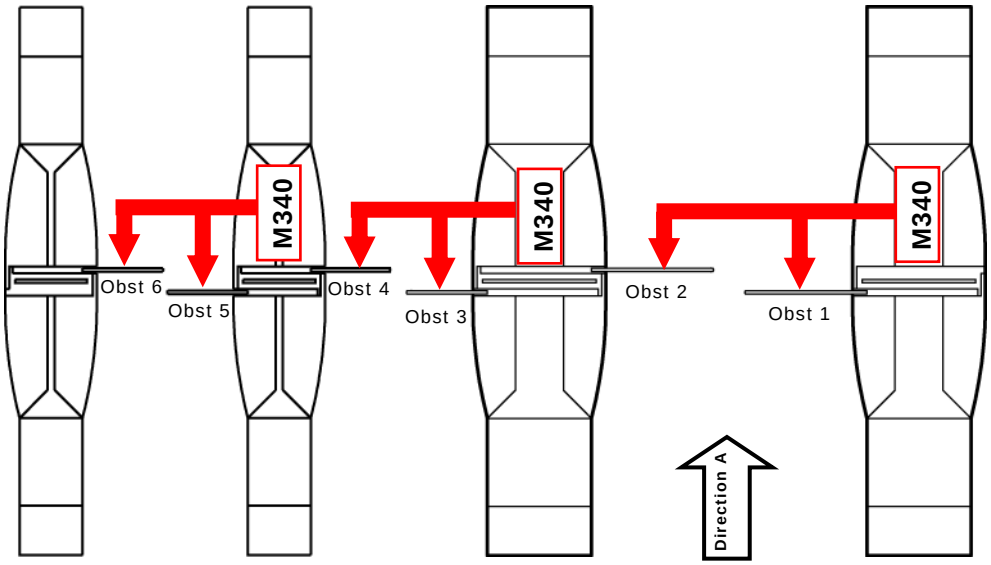
3.1. Modicon M340 Programmable Controller

The programmable controller houses the gate's management program, which has the role of

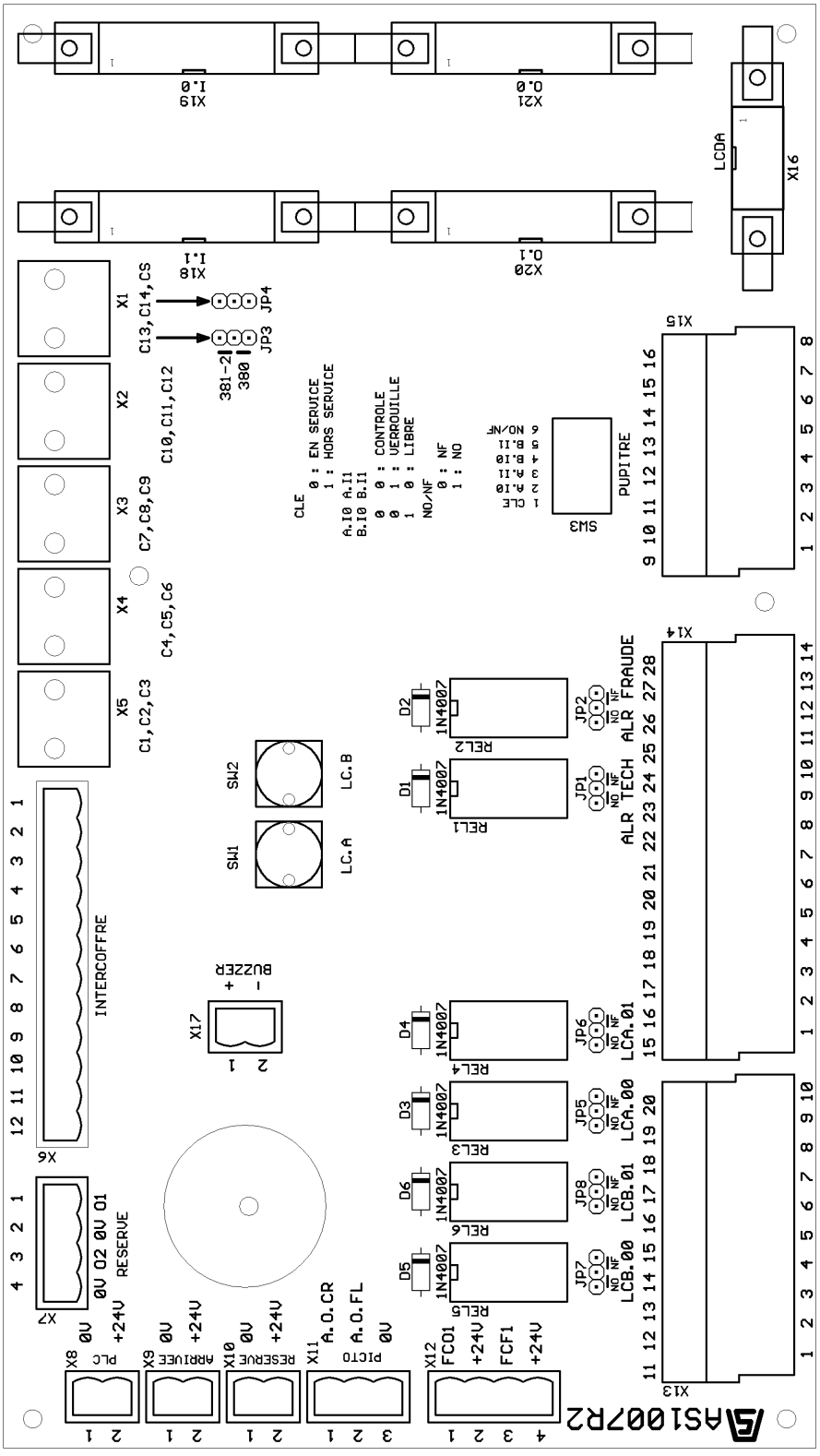
- Detecting all users who try to cross the aisle
- Making a distinction between authorised users and others
- Letting authorised users pass through
- Following the progress of all users throughout the entire aisle
- Recognising/recording or cancelling the passage of authorised users
- Preventing unauthorised users from passing through
- Managing the opening and the closing of the obstacles
- Managing the signalling and the alarm
- Managing external communication.

All the gate's parameters have been set in the factory, in accordance with the configuration and operating mode specified on the order.
Nevertheless, they may be modified using the *(optional) Modbus configurator*, which allows different versions of the programs to be downloaded, each cell to be defined and assigned, all the variable parameters to be adjusted, etc.
A summary of the modifiable parameters - referenced in the course of this manual - may be found in Ch. 10.4.

An aisle is controlled by a single programmable controller, which therefore controls the movements of the two obstacles that constitute this aisle and that belong to two different gates. Hence, a MaSTer (MST) gate and a SLaVe (SLV) gate are defined and the programmable controller is located in the Master gate (to the right in direction A).
Thus, an intermediary gate is the Master for the aisle located to its left and the Slave for the aisle located to its right.



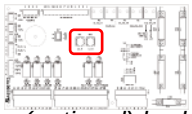
3.2. AS1007 interface card



The AS1007 card (10, Ch. 2.2.3.) is the interface between the programmable controller and the rest of the equipment, including the client's peripheral equipment (communication with the outside).

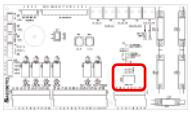
An overview of the main interfaces follows. For a detailed description of the assignment of connectors, please refer to the wiring diagrams.

3.2.1. SW1 & SW2 (LCA & LCB) buttons



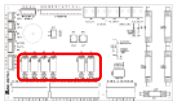
Pressing these buttons simulates passage authorisation sent by the *(optional) badge reader* to the programmable controller, in directions A and B respectively, and allows the obstacles to open (once it has been configured, see Ch. 6.).

3.2.2. SW3 selector



The six DIP switches on this selector allow for the configuration of the gate and the definition of its operation mode (see. Ch. 6.).

3.2.3. Relay outputs



For the following information, the AS1007 card provides several potential-free contacts (on connectors X13 and X14) via relays REL1 to 6, for the following information:

REL1 (ALR TECH) (technical alarm): Signal sent on X14.24 and X14.25 when the variable speed controller is in service (and, thus, the aisle is receiving voltage) (see Ch. 3.12.).

REL2 (ALR FRAUDE) (fraud alarm): Signal sent on X14.26 and X14.27 when an infringement is detected (see Ch. 3.14.).

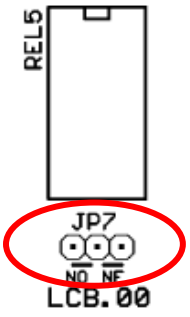
REL3 (LCA.00) (direction A passage contact): Pulse sent on X13.7 and X13.8 when a user crosses the obstacles in direction A (see Ch. 3.8.).

REL4 (LCA.01) (locking of passage request in direction A): signal sent on X13.9 and X13.10 when the program is not ready to process a passage authorisation given by the reader, in direction A (see Ch. 3.9.).

REL5 (LCB.00) (direction B passage contact): Pulse sent on X13.17 and X13.18 when a user crosses the obstacles in direction B (see Ch. 3.8.).

REL6 (LCB.01) (locking of passage request in direction A): signal sent on X13.19 and X13.20 when the program is not ready to process a passage authorisation given by the reader, in direction B (see Ch. 3.9.).

Each contact may be set to NO or NC mode. To do so change the position of the **JPx** jumper under the corresponding relay. The contacts are set to NO mode in the factory:
- When the jumper is connected to the two pins on the left, the contact is NO.
- When the jumper is connected to the two pins on the right, the contact is NC.



3.3. State of the obstacles during standby

In NO (Normally Open) mode, the obstacles remain open while standing by and close if there is an unauthorised attempt to pass.
In NC (Normally Closed) mode, the obstacles remain closed while standing by and open if there is an authorised attempt to pass.

3.4. Operation modes of the passage directions

Controlled in both directions:

In both directions, authorisation is needed to pass through.

Controlled in one direction - Free in the other

- Authorisation is needed to pass through in the controlled direction.
- People may freely pass through in the other direction. As soon as the first cell is obscured, the obstacles open (in NO mode, they stay open) and the corresponding pictogram displays a green arrow. In NC mode, the obstacles close after the cells in the safety zone have been freed and the %TM1 time delay has elapsed.
  It should be noted that infringements are also detected in free mode, with the exception of intrusions (see Ch. 3.14.).

Controlled in one direction - Locked in the other

- Authorisation is needed to pass through in the controlled direction.
- No one may pass through in the locked direction: in NC mode, the obstacles remain closed; in NO mode, the obstacles close as soon as a cell is obscured.

Free in both directions

Passage through the gate is free in both directions.

In NC mode, the obstacles open as soon as a cell is obscured. They close when all the cells are no longer obscured and after a %TM12 time delay has elapsed.
It should be noted that infringements are also detected in free mode, with the exception of intrusions (see Ch. 3.14.).

Locked in both directions

In both directions, no passage is permitted: in NC mode, the obstacles remain closed; in NO mode, the obstacles close as soon as a cell is obscured.

Free in one direction - Locked in the other

In the free directions, the obstacles open when the first cell is obscured (in NO mode they remain open) and the pictogram displays a green arrow.
In NC mode, the obstacles close after the aisle has been freed and the %TM1 time delay has elapsed.

In the locked direction, no passage is permitted: in NC mode, the obstacles remain closed; in NO mode, the obstacles close as soon as a cell is obscured.

It should be noted that infringements are also detected in free mode, with the exception of intrusions (see Ch. 3.14.).

3.5. Emergency mode

As soon as the "emergency" mode is activated, the obstacles are opened and remain open so that passage through the gate is free in both directions.

This operating mode takes priority over all the others.

The emergency mode may be activated either by the variable speed controller, in the event of a power failure (anti-panic system), or by an external contact between inputs 5 and 6 on connector X13 of the AS1007 card (Ch. 10.1.), in the event of a fire alarm, etc. The latter contact may be defined as NO or NC during the configuration procedure (Ch. 6.). The emergency mode remains active for as long as the contact is sustained.

The transmission elements are released thanks to the faculties integrated into the variable speed controller and the spiral release spring. The preloaded balancing spring then provides a push which ensures that the obstacle opens completely (3, Ch. 2.2.2.).

3.6. Passage authorisations

Passage authorisation is issued by a card reader, obscuring of the first cells, a push-button box, a console, or by any other passage validation system (designated "LC" in this manual).

It is possible to choose whether passage authorisations are saved or not (see Ch. 6.):

- Management of saved passage authorisations: each impulse contact between terminals 1 and 2 (11 and 12) on the X13 connector of the AS1007 card (Ch. 10.1.) provides passage authorisation in direction A (B). When multiple passage authorisations are entered, their sum is taken and as many passages are permitted. In this case, all users passing in one direction should be let through first and then all those going in the opposite direction.

- Management of unsaved passage authorisations: impulse contact between the above-mentioned terminals is not taken into account and only gives rise to passage authorisation once the preceding passage has been fully completed (see Ch. 3.7.). If multiple passage authorisations are successively received before passage has been fully completed, they are not taken into account and only the one passage will receive authorisation.

Once passage is first authorised, the corresponding pictogram displays a green arrow, the obstacles open and the %TM3 time delay is launched. It corresponds to the time allocated to the user to pass. If the time delay is set to zero, the reader manages this time delay by sustaining the passage authorisation signal.

In NC mode, the obstacles close:
- either after this time delay has elapsed (passage authorisation is then cancelled);
- or when the user is detected as having passed the obstacles and the time delay for closing of the obstacles (%TM4) has elapsed.

After the obstacles close, the PNG returns to its standby state:
- either after a time delay for the end of passage (%TM7) that engages once the aisle has been completely freed (this time delay ensures that the alarm is not set off by superfluous movements, such as users swinging their arms behind them after they have left the aisle);
- or after a time delay for the user to leave the exit zone (%TM9) that engages once the obstacles close.

Any new authorisation for passage in the same direction is taken into account immediately, without waiting for the obstacles to close or for the time delays to elapse.

Passage authorisation in the opposite direction will only be taken into account once the PNG has returned to standby.

The "opposite direction" infringement can be detected as long as the obstacle is not closed.

3.7. Detection of passage through the obstacles

In direction A (B), the program follows the successive progression of the user in front of cells C4, C5 and C6 (C9, C8 and C7). Once cell C6 (C7) has been freed, passage detection is actuated on the condition that the cells at the front of the obstacle are free (the number of cells

involved may be defined under parameter %MW29).
- %MW29 = 3 (factory setting): this mode prevents the obstacles from closing at inopportune moments and is suitable for average flows.
- %MW29 = 2: this mode is better suited to larger flows.

When the user is detected as being beyond the obstacles, passage is validated, passage authorisation is deactivated, the number of saved authorisations is decreased by one and the gate returns to standby (closure of the obstacles in NC mode).

3.8. Passage contact

In all operation modes, a 700 ms impulse is generated on a terminal of the AS1007 card (see Ch. 3.7.) each time passage is detected in direction A (B) (see Ch. 3.2.).
The passage contact may be given at two different times depending on the value of parameter %M34:
%M34 = 0 (factory setting): passage contact is given when the entry zone is left in the direction of passage. This method maximises passage flow.
%M34 = 1: passage contact is given when the person has passed through in the correct direction, has completely left the PNG and the obstacles are closed. In this event, saving authorisations is not possible as the obstacles have to close after each person.
This method slows down the flow but maximises control.

3.9. Locking of the card reader

When the PNC is busy and cannot process a new passage authorisation, a signal is sent to the reader via a terminal on the AS1007 card (see Ch. 3.2.) in order to momentarily stop it from working.

The reader is locked in direction A (B) in the following situations:

1. Emergency mode
2. Free mode in direction A (B)
3. Locked mode in direction A (B)
4. Passage in progress in direction B (A) in free or controlled mode
5. Passage in progress direction A (B) without reader saving
6. “Opposite direction” infringement
7. Depending on the initialisation, (pre-alarm) intrusion in direction A (B)

Note: The reader is not locked in the event of a "tailgating" infringement so that the user does not have to turn back and present their card again.

3.10. Safety on obstacle closing

If the closing limit switch is not reached before the end of the %TM10 time delay while the obstacles are closing, the obstacles will open again and stay that way for the %TM11 time delay before attempting to close again.
This sequence remains active as long as the closing limit switch is not reached.

3.11. Safety on obstacle opening

If something is present in the safety zone and the obstacles must open when they are closed, they remain closed as long as the safety zone has not been freed.
Once the zone is freed, the obstacles will open after a time delay (%TM13) if the open command is still active.

3.12. Management of the variable speed controller

A signal is sent to a terminal block of the AS1007 card (see Ch. 3.2.) when the variable speed controller is in service (and, thus, the aisle is receiving voltage).

The program transmits an open order to the variable speed controller in the following circumstances:

- The program gives an open command
- The obstacles are not closed and something is present in the safety zone
- The PNG is in safety mode for closing
- The PNG is in NO standby mode
- The program is starting up.

In all other circumstances, a closing command is transmitted.

3.13. Pictograms

A pictogram indicates what users can or should do in the direction they present themselves. There are two types of pictograms:

1. **The orientation pictogram** (9, Ch. 2.2.) displays a red cross or a green arrow and may be configured in two ways (see Ch. 3.6.):

   1.a. As a **reflection of passage**:
   - "Green arrow": passage authorised.
   - "Red cross": passage prohibited.

   This mode is usually used when the orientation pictogram stands alone.

   1.b. As a **reflection of the operation mode**:
   - "Green arrow": aisle is in service (appears in "controlled" and "free" mode).
   - "Red cross": aisle is out of service (appears in "locked" and "out of service" mode).

   This mode is usually used when the orientation pictogram is accompanied by an *(optional) operating pictogram*.

2. ***The (optional) function pictogram*** (7, Ch. 2.2.) can display a red cross, a green arrow or an orange card and always reflects passage:
   - "Card": waiting for passage authorisation ("Present a valid badge")
   - "Green arrow": passage authorisation ("Go")
   - "Red cross": passage prohibition ("Wait")

   When passage authorisation is granted, the "card" becomes a "green arrow".

   When the equipment is configured to save passage authorisations (see Ch. 3.6.) and the last authorised user awaiting passage is present in the area in front of the obstacle, the "green arrow" becomes a "card" again.

   When the equipment is not configured to save passage authorisations, the "green arrow" is replaced with a "red cross" once the user is present in the area in front of the obstacle. The "card" will be displayed again when passage through the obstacle has been detected.

   When an infringement is detected, the "red cross" lights up.

For each pictogram, only one indication is lit at a time.

3.14. The infringements

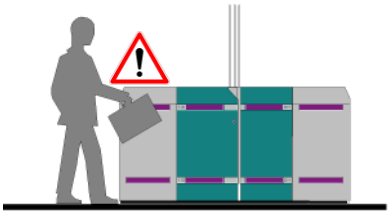
An infringement is an unauthorised movement in an aisle, with or without the obstacle being traversed.

For each direction of passage, types of fraud are defined in detail below.
When an infringement is detected, the gate goes into alarm mode:

- The obstacle closes as long as there is no one in front of the safety cells (CS, *(optional) GF* if present, and C6, C7, C13 and C14 if configured as such).
- The buzzer sounds for as long as it is activated.
- The orientation and *(optional) operating* pictograms display a red cross.
- A signal is sent to a terminal block on the AS1007 card (see Ch. 3.2.).
- After the cause of the infringement has been removed, the latter is sustained for a given period of time, so that quick attempts at infringement are also signalled.
  The gate then returns to the state it was in before the infringement (in particular the saved requests for passage are still present).

3.14.1. "Intrusion" infringement

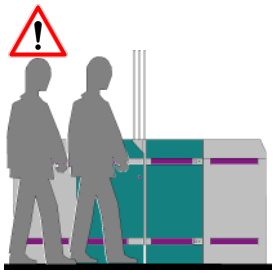
When the PNG is in standby, intrusion is detected as soon as something is present in front of at least one cell.



- If the user has not introduced a valid passage request before the time delay (%TM2) has elapsed, the PNG goes into alarm mode.
- If something is detected near the obstacle (cell 6 or 7) during the time delay, the PNG immediately goes into alarm mode.

The alarm stops when nothing is present in both entry aisles (directions A and B) and after the time delay (%TM0).

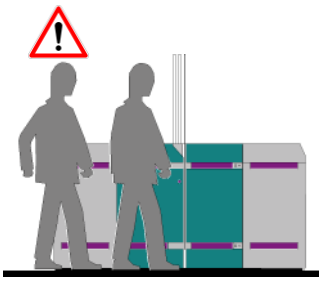
3.14.2. "Joining" infringement



This type of infringement is declared and the gate goes into alarm mode as soon as the number of cells activated in a single entry zone exceeds the authorised maximum number (%MW30).
The alarm stops when the number of activated cells no longer exceeds the authorised maximum number and after the time delay sustaining the alarm has elapsed (%TM6). The obstacle opens if the authorised user has not passed through at this time.

Note: This infraction may be declared when users are carrying large luggage on their bodies.

3.14.3. "Tailgating prior to authorised passage" infringement



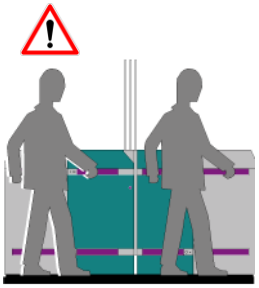
This type of infringement is declared and the gate goes into alarm mode as soon as, among cells C1 to C6, two groups of "x" cells are activated and these groups are separated by at least one free cell ("x" may be configured separately for aisles A and B using parameters %MW21 and %MW22).
Given the number of cells involved, this type of detection is only effective on gates with extensions. For PNG 380s, "x" is set to 1 which increases the risk of false alarms.

The alarm ends when only one group of cells is activated and after a

time delay (%TM6). The obstacle opens if the authorised user has not passed through at this time.

Note: Users carrying luggage must consequently hold it against them, in order to avoid obscuring two different groups of cells at the same time and prevent an infringement from being declared.

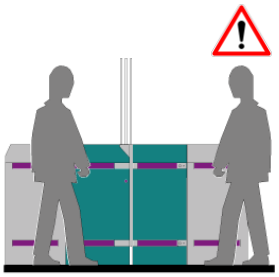
3.14.4. "Tailgating after authorised passage" infringement



This type of infringement is declared and the gate goes into alarm mode as soon as unauthorised entry is detected in the same direction as the passage of an authorised user who has already traversed the obstacles.

The alarm stops after the %TM6 time delay. If there is still something present in the aisle and authorisation is provided in the meantime, the obstacles open. Otherwise, an "intrusion" infringement is declared (see above).

3.14.5. "Opposite direction" infringement



General idea:

This type of infringement is declared and the gate goes into alarm mode as soon as a person is detected in one direction whilst passage in the other is underway.

The alarm stops when the exit zone has been freed and after the %TM6 time delay. The obstacles open if the authorised person has not passed through and the time delay granted to the authorised passage is reset to zero.

By default, three cells are used to detect entry into the exit zone. Detection is activated when the first and second cells are successively obscured and the third is free.
Using the *(optional) configurator*, the PNG may be configured to detect "opposite direction" infringements with two cells. In this case, detection will take place more quickly however there will consequently be an increased risk of false alarms during the passage of the authorised person.

Specific case of "Free in one direction" operation mode

There are two possibilities:

1) Entry through the free direction and detection in the other. "Opposite direction" infringements are declared immediately, which obliges the user who freely entered the aisle to exit first.

2) Entry through the other direction and detection in the free direction. The operating mode depends on the configuration (Ch. 6.):

- **reinforced detection:** “opposite direction” infringements are immediately detected, which obliges the user who freely entered the aisle to exit first.
  The alarm stops when the exit zone has been freed and after the %TM6 time delay. The obstacles open if the authorised person has not passed through and the time delay granted to the authorised passage is reset to zero.
- **reduced detection**: no infringements are detected.

4. INSTALLATION

The operations described in this chapter must be undertaken in accordance with the safety warnings, p. 4.

Note: The PNGxx range gates are designed to be installed inside buildings.

4.1. Preparatory work at the site

Work prior to the installation of the equipment must be executed in accordance with the installation plan (Ch. 9.).

The ground on which the gate will rest must be perfectly flat.

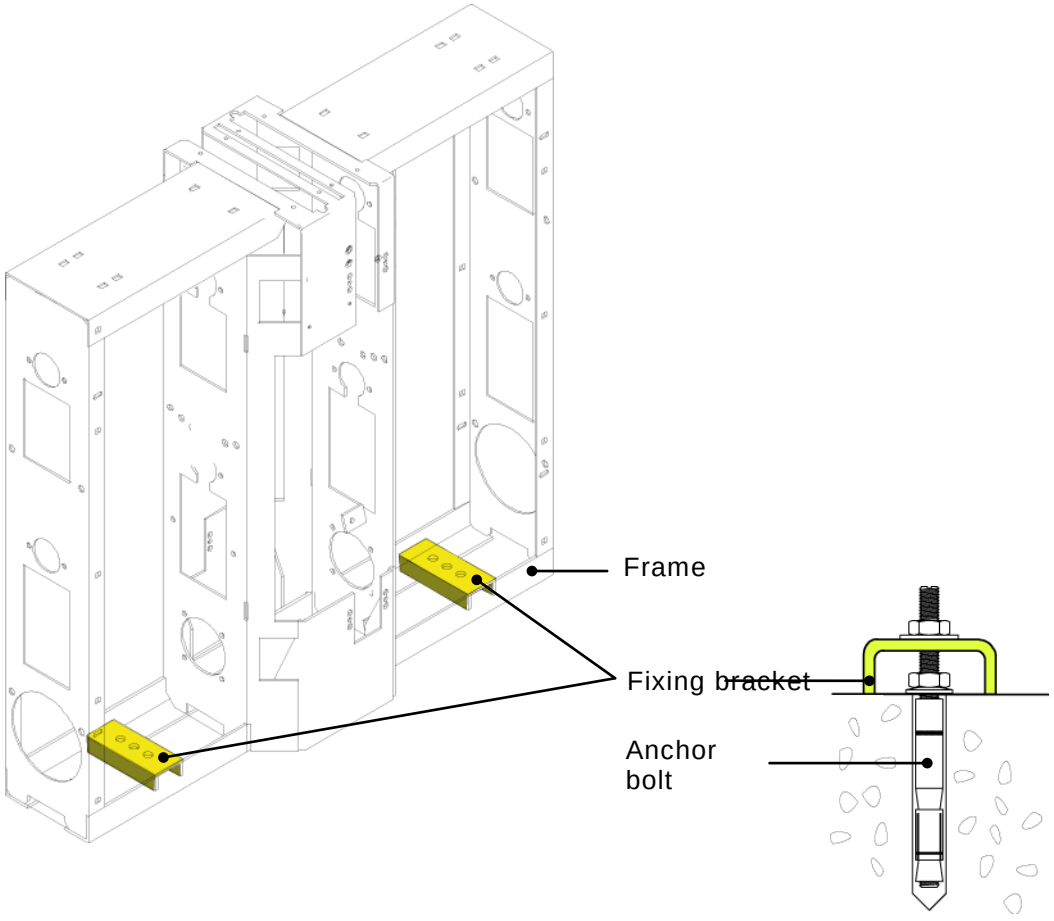
4.2. Storing the equipment before installation

Ensure that the equipment does not receive any hits, leave it in its original packaging, and place it in a dry area protected from dust, heat and the weather.

4.3. Positioning the equipment

Warning: *Automatic Systems* supplies two fixing brackets and four anchor bolts (Liebig B15/95, *Automatic Systems* ref. 0/7420/300) for fastening the equipment to the ground standard.
Nevertheless, the installer is responsible for adapting the means of fastening to the nature of the ground.

1. At the location foreseen on the layout plan, drill the Ø 15-mm holes 100 mm deep (see Ch. 9.). Place the anchor bolts in them and tighten with the first nut using torque of 50 Nm.
2. Bring over the gate using a pallet truck, for example, and position it precisely.
3. Open the side doors (the keys are attached to the packaging of the fixed glass pane or to the housing).
4. If necessary, adjust the level of the gate by placing shims under the frame.
   Check the clearance space for the passage of the moving obstacles (see Ch. 5.7.).
   Warning: In order for the gate to function properly, the obstacles must be vertical and the frame must not be twisted!
5. Place the fixing brackets on the frame (see the illustration) and tighten them with a second anchor bolt using torque of 50 Nm.
6. When they are installed in a line, check that each of the PNGs are aligned and level. If necessary, make corrections by placing shims under the frame.



4.4. Electrical connections

The operations must be undertaken in accordance with the safety warnings, p. 1.
In particular, the circuit breaker (21, Ch. 2.2.3.) must be cut before any of the work described below is begun.

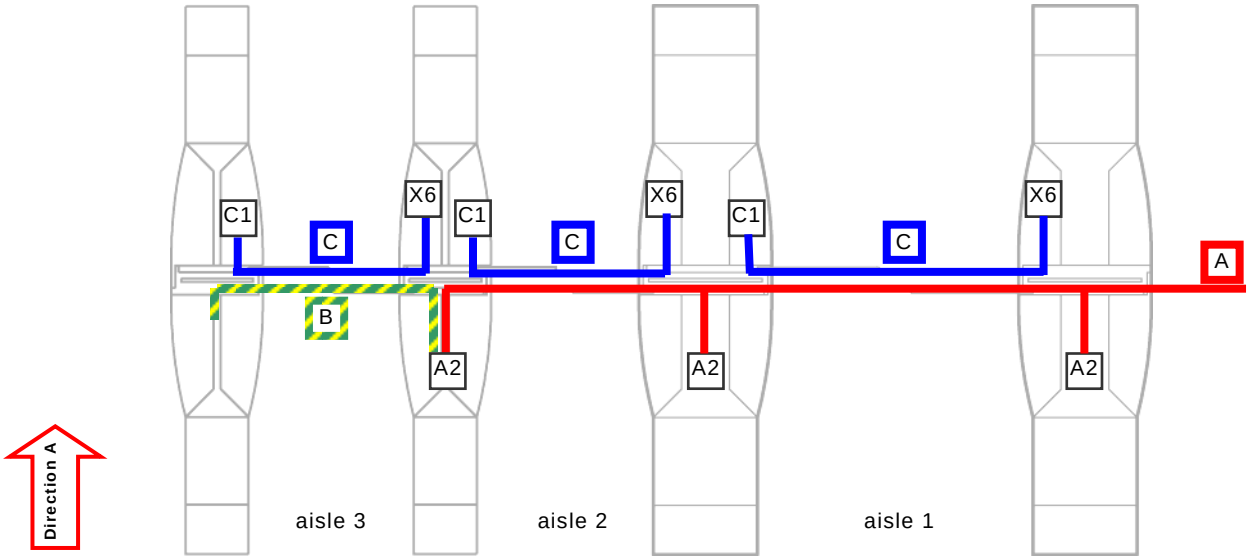
Connections must be executed in accordance with the wiring diagrams provided inside the equipment, which remain the reference.

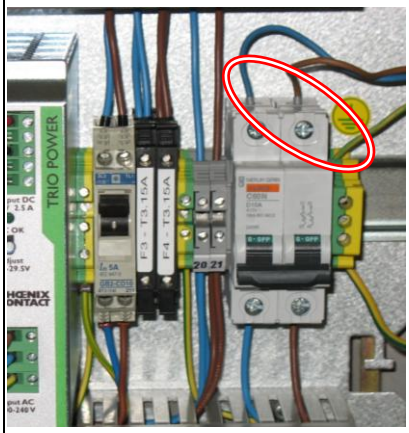
Some connection cables must be supplied by the user. They are specified on the layout plan.

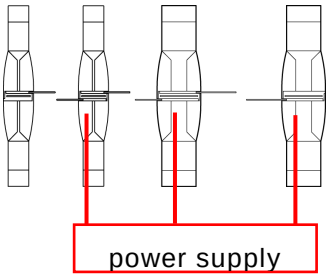
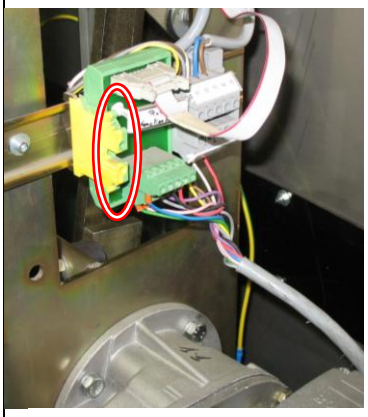
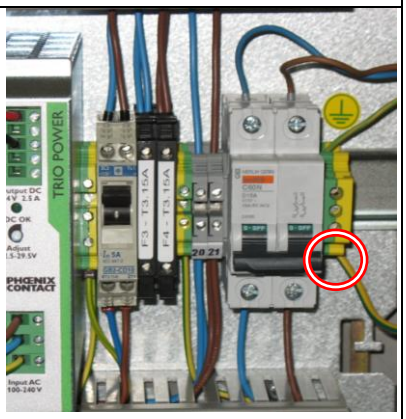
The direction of passage determines the right, intermediary and left housings.

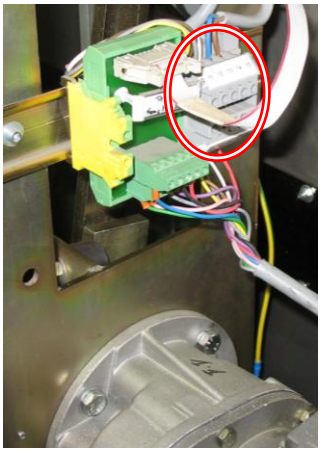
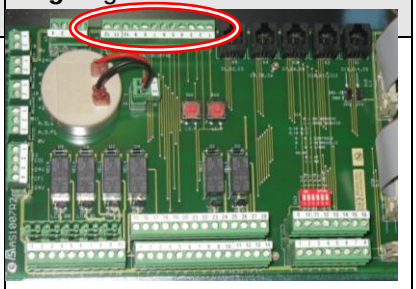
In order to avoid interference, the various types of cables cannot all be next to each other. To this end, there must be 2 different sheaths separated by at least 10 cm.

Ø 80-mm sheath:

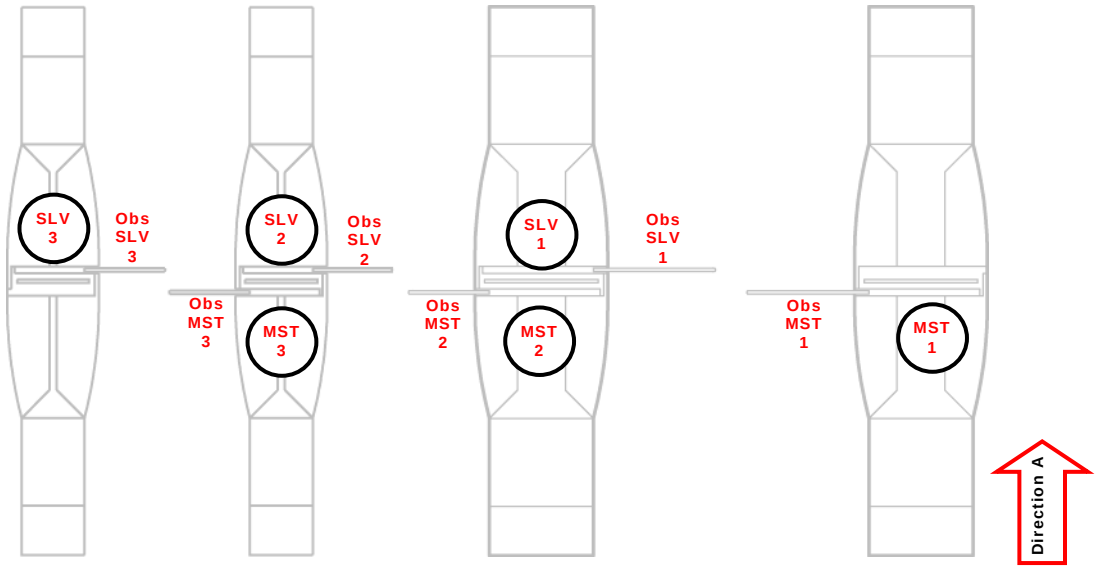


Ref.	Type of cable	Connections	**Left** gate of the aisle	**Right** gate of the aisle
A	3G2.5²	For the right and intermediary gates: Electrical power supply (230 V single phase + ground + at least 30 mA differential per apparatus): from the client's switchboard to terminal block A2. **WARNING**: do not connect to a floating network or to high impedance earthed industrial distribution network. **WARNING**: high leakage current.		 A2 (= 20, Ch. 2.2.3.).

Ref.	Type of cable	Connections	**Left** gate of the aisle	**Right** gate of the aisle
		Imperatively connect to the ground with a 1-mm² cable minimum before connecting the mains. Do not connect several equipments to the same differential breaker. **Note**: Each apparatus is protected by a 10 A curve D circuit breaker (12, p. 10).		
B	2.5²	For the extreme left gate: Connect a ground wire from PE terminal above the motor (B1) of the extreme left gate to terminal block A2 of the gate located to its right. **Warning**: Additionally, ensure that equipotentiality between gates forming a group is guaranteed (by connecting them to each other with a ground wire). This is especially the case if they are powered by different long lines (risk of electrocution for the user).  	 B1	 A2 (= 20, Ch. 2.2.3.).

Ref.	Type of cable	Connections	**Left** gate of the aisle	**Right** gate
C	TPVF 12-pair 0.6² cable	<u>For two gates belonging to the same aisle</u>: Attach connector C1 of the left gate to connector X6 (on the AS1007 card) of the right gate.	 C1 (= 31, Ch. 2.2.3.).	 X6
	TPVF 12-pair 0.6² cable	<u>For any options present (remote control, etc.)</u>, please refer to the wiring diagram (no. 059?).		

Ø 40-mm sheath:



Motor MSTx controls moving obstacle Obs. MST x.
Motor SLVx controls moving obstacle Obs. SLV x.
Motors MSTx and SLVx are controlled by the same variable speed controller and the same programmable controller (see Ch. 3.1.).
Therefore, the SLV motor must be connected to the MST variable speed controller in each aisle.

Ref.	Type of cable	Connections	**Left** gate of the aisle	**Right** gate of the aisle
	4G1.5², LIYCY type, supplied by *Automatic Systems*	<u>For the left and intermediary gates</u>: Attach connector D1 of the SLVx motor to connector D2 of the gate located immediately to its right (MSTx). The ground strap must protrude from the sheath and be kept in place with the metal grommet.	 D1 (= 32, Ch. 2.2.3.)	 D2 (=28b, Ch. 2.2.3.) 2

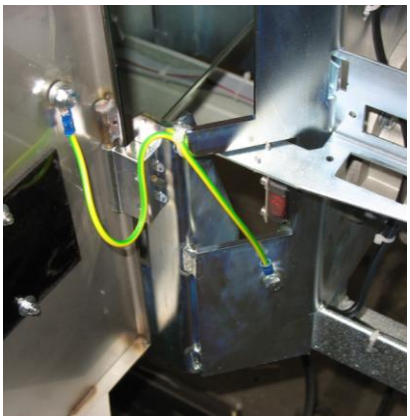
<u>Warning</u>: Check the connection and fastening of all the cables before restoring the general circuit breaker.

Ground cables

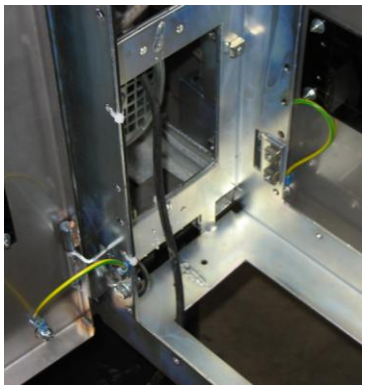
Check that the ground cables linking all the metal parts to each other are connected properly:

1. From the circuit breaker to the frame.
2. From the four doors of the housing to the frame.
3. From the two doors of each *(optional) extension* to the frame.
4. From the cover of each *(optional) extension* to the frame.

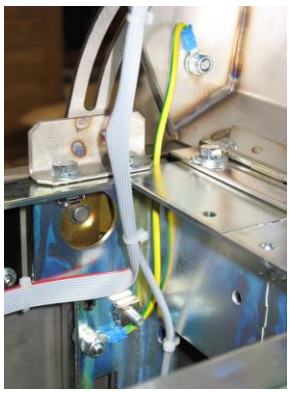
1



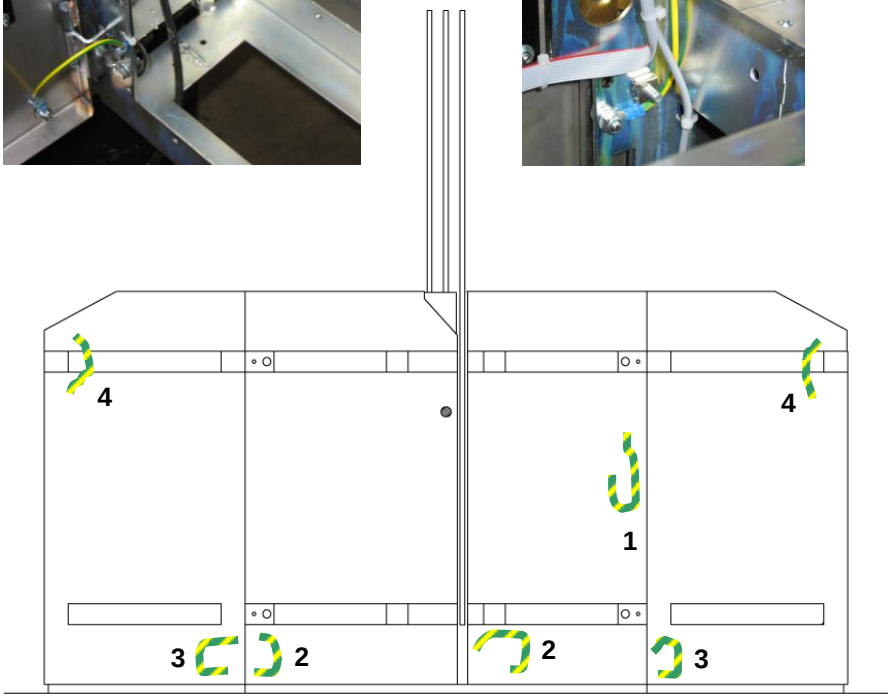
2



3



4



5. MECHANICAL ADJUSTMENTS AND OPERATIONS

The operations must be undertaken in accordance with the safety warnings, p. 4.

The various adjustments were set in the factory. Nevertheless, they must be checked before the equipment is put in service the first time and when there is a problem with the equipment's operation.

Ground cables connect all the metal parts to each other (see p. 27).
They must not be damaged at the time of disassembly and must be reconnected during reassembly.

5.1. Tightening torque

Recommended torque for tightening the screws and nuts, except if specified to the contrary:

Type of Screw	Torque (Nm)
M2	0.32
M3	1.15
M4	2.65
M5	5.2
M6	8.9
M7	14.5
M8	22

Type of Screw	Torque (Nm)
M10	43
M12	75
M14	119
M16	182
M18	250
M20	355
M22	480

5.2. Setting the parameters of the variable speed controller

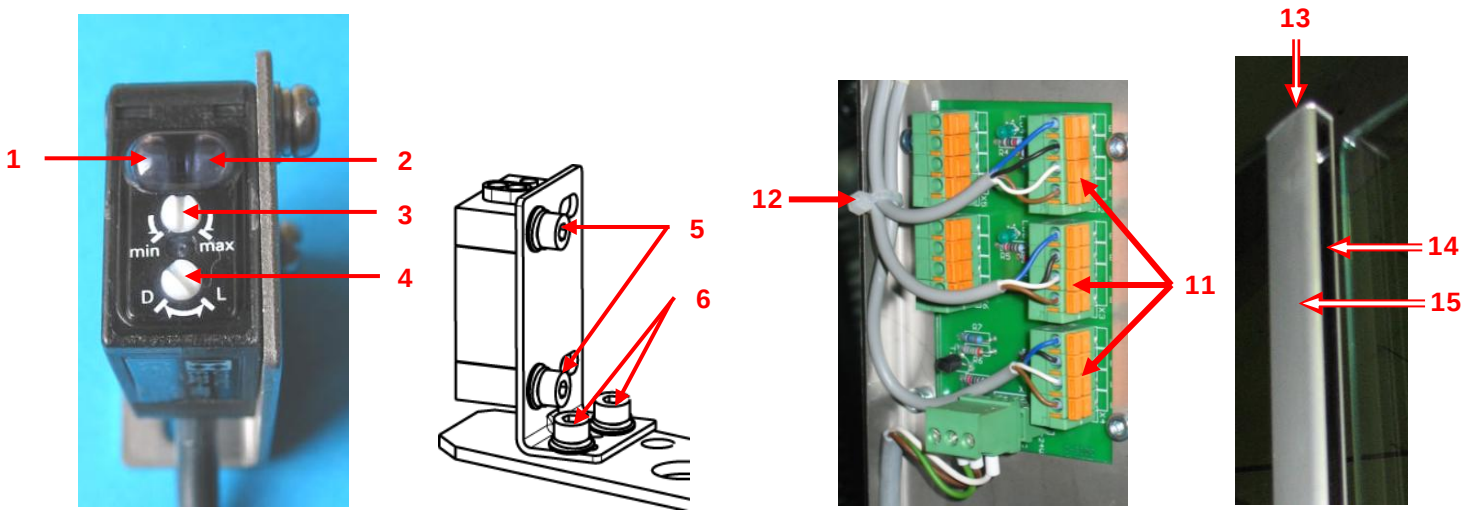
The Schneider ATV312 variable speed controller is configured in factory for the CAN bus to recognise it. To recover those factory settings, proceed as follows:

- Using the keys on the variable speed controller, configure the parameters

```
RDY - Enter
 Set
  ⇩COM - Enter
   ADC0 – Enter        (CAN address)
    ⇩ 1 - Enter
   ESC
   BDC0 – Enter
    ⇩ 500 – Enter      (baud rate)
FLt – Enter
 Atr – Enter
    ⇩ yES – Enter Restart automatically
```

- Turn off the variable speed controller and wait for the display to turn off completely.
- Turn the variable speed controller back on. Configuration is complete.

5.3. Replacing and adjusting the detection photocells



Access to the cells

The location of the cells is given in Ch. 2.2.1.
To access the Cx and CS cells, remove the corresponding door.
To access the *(optional) GF cells*:

- Unscrew the cap (13).
- Unplug the connector cables (11).
- Extract the screen (14) from the section (15) by pulling up.
- Take the cells out of the section.

Removing a cell:

- Unscrew the screws (5) fastening it to its support.
- Disconnect the connectors (11).
- Remove the clamping collars (12) holding the cables on the frame.

Adjusting the OMRON E3Z-R81 cells

Turn on the gate.

The green stability indicator (1) is lit up when the cell is receiving power and in working order.

The orange status indicator (2) is lit up when the cell detects the reflected beam. It turns off when the cell is not properly aligned in relation to the reflector or when a gate user cuts off the beam.

Beam intensity may be adjusted using the scale switch (3).

The mode selector switch (4) must always be set to "L" (Light on) (= turned all the way going counter-clockwise).

Adjust the cells in accordance with the four steps described below.
In all cases:

- Use something that is not reflective (cardboard or a sheet of paper, for example) to interrupt the beam of the cell being adjusted.
- Use something that is not reflective to obscure the cells neighbouring the one being adjusted.
- Do not interrupt the beam of the cell being adjusted while handling it.
- The green stability indicator (1) of the cell being adjusted must be lit up.

Step 1: Aligning the cell with its reflector

- Set the scale switch (3) to the middle of its range (between the min and the max).
- Obscure the reflectors that are not directly across from the cell.
- Align the cell with the corresponding reflector using the screws fastening the cell to its support (5) and the support to the frame (6), adjust it so that the orange status indicator (2) lights up.

Step 2: Adjusting the intensity of the beam

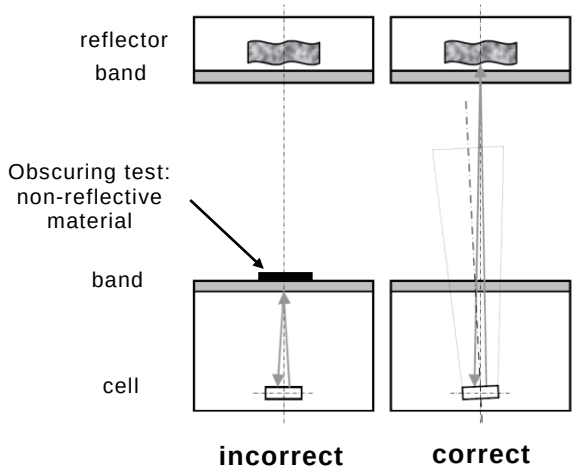
The aim of this is to limit the power of the signal emitted, if it is too high it could lead to a detection malfunction.

- Set the scale switch (3) to the min (turned all the way going counter-clockwise).
- Then, slowly turn the switch clockwise to progressively increase the signal emitted, until the orange status indicator (2) lights up continuously.
- Turn the switch an additional 30°.

Step 3: Adjusting the azimuth of the beam

Interrupt the beam being emitted from the external face of the band (7, p. 6) on the side the cell is found.

The orange status indicator (2) must turn off.
This does not occur if the beam is perfectly perpendicular to the band, horizontally and vertically. In this case, the beam is reflected by the band which acts as a mirror and nothing can be detected.
To rectify this, very slightly skew the cell horizontally using the screw (6) fastening the support to the frame and vertically using the screw (5) fastening the cell to its support.



Step 4: Final test

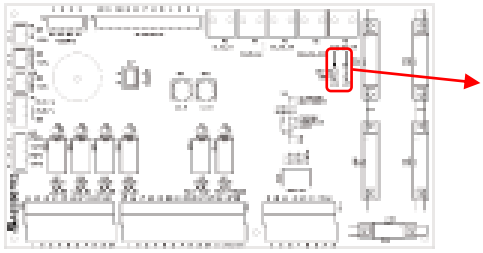
- Interrupt the beam from the band on the reflector side and make sure that the orange indicator (2) turns off.
- Interrupt the beam from the band on the cell side and make sure that the orange indicator (2) turns off.
- Pass through the aisle normally and make sure that the orange indicator (2) turns off.
- For each of the three tests described above, check that the indicator at the corresponding entry on the programmable controller (5, Ch. 2.2.3.) also turns off. If this is not the case, check the cell connections.
- If one of these tests is not satisfactory, readjust the cell starting at Step 1.

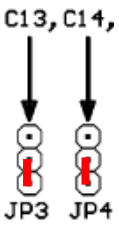
Configuration of the JP3 and JP4 jumpers on the AS1007 card

A standard PNG380 does not comprise cells C13 and C14. They are present in all the other configurations.

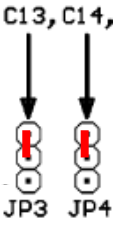
For a standard **PNG380**, place the **JP3** and **JP4** jumpers on the two lower terminals.

For all other configurations, place the **JP3** and **JP4** jumpers on the two upper terminals.





PNG380 std

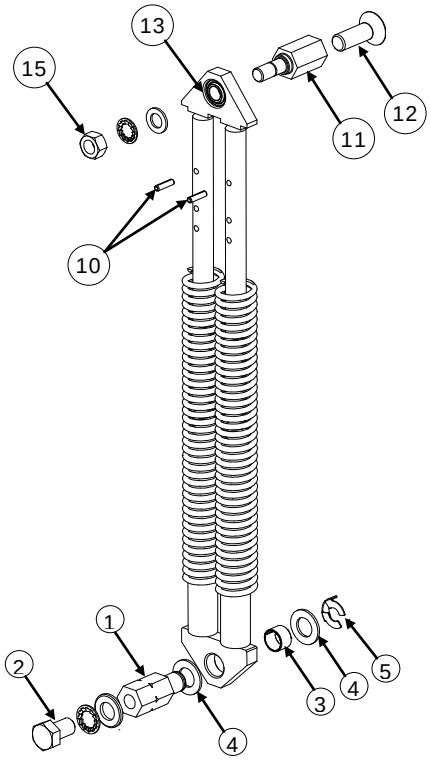


PNG380 with optional C13 and C14
PNG381
PNG382

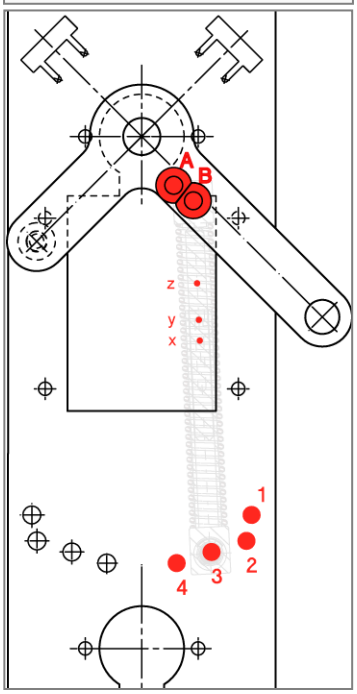
5.4. Replacing and adjusting the balancing spring

To remove the spring assembly:

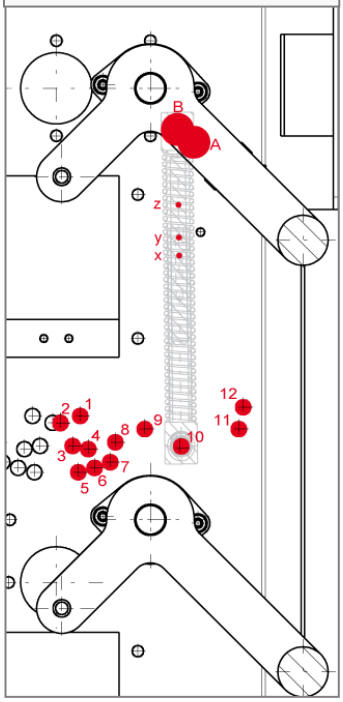
- Open the obstacle (retracted into the housing) and lock the mechanism in order to prevent the obstacle from moving in an untimely fashion (see Ch. 5.6.).
- Use a 21-mm open-ended wrench to hold the lower pivot (1) and unscrew the screw (2) using a 19-mm ratchet wrench.
- Use a 21-mm open-ended wrench to hold the upper pivot (11) and unscrew the screw (12) using an 8-mm Allen wrench.
- Remove the spring assembly.
- To take apart the assembly, push the two ends together and then turn in order to release the pin from its housing (position x, y, z).
- To fit the new spring assembly, proceed in the reverse order.
  The following table shows the fastening points of the spring assembly/assemblies corresponding to the various obstacle heights.



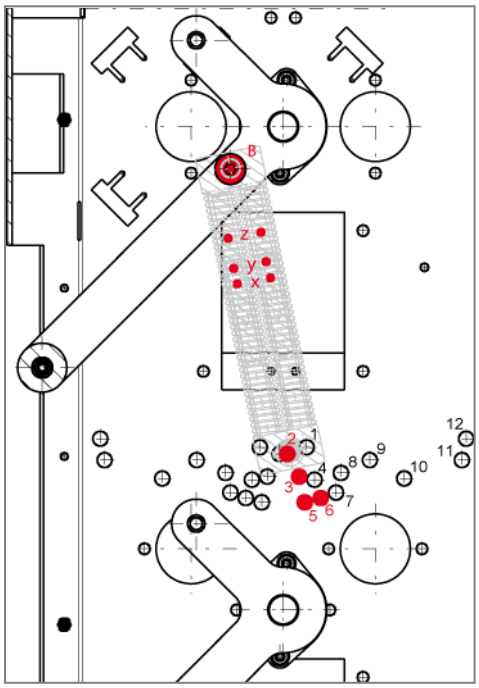
PNG 38x



PNG 38x Hybrids



PNG 39x



Obstacle height (mm)	1000	1200	1400	1700	1900
PNG38x	A-1-y	A-1-y	B-2-y	B-3-y (*)	B-3-y
PNG38x hybrids	A-12-y	A-12-y	B-11-y	B-10-y	B-10-y
PNG39x	B-5-x	B-6-x	B-3-y	B-2-z (*)	B-2-z

(*)The 1700-mm obstacles comprising an optional silicone protection section are adjusted in the same way as the 1400-mm obstacles.

5.5. Replacing the self-lubricating bushing

1. Remove the spring assembly as described in Ch. 5.4.
2. Remove the circlip (5) and the washer (4).
3. Push the pivot out (1).
4. Hold the axis containing the self-lubricating bushing (3) (with a vice for example).
5. Place the new bushing on the one to be replaced.
6. Push the old bushing out by inserting the new one, using a mallet or any other tool with hardness inferior to that of the steel of the bushing in order not to damage it. If this is not possible, place a more supple material (wood, nylon, etc.) between the bushing and the hammer.
7. Grease the pivot with multipurpose, anticorrosive grease (of the "Molykote" kind) and assemble following steps 3 to 1.

Step 4

Step 5

Step 6

5.6. Replacing a moving obstacle

1. Open the doors.
2. Pull the plinth (7, p. 9) manually to remove the obstacle **and lock the crankshaft using a shim (*Fig. A*)**!
   For an intermediate gate consisting of two obstacles, in the same way, lock the obstacle not being moved in the exit position to clear the access.
3. Unscrew and remove the five screws (1) holding the obstacle to the plinth.
4. Remove the obstacle.
5. Keep the supple spacers (4) from the old obstacle and put them in the bores of the new one.
6. Stick crepe paper (5) (“masking tape”) to the new obstacle at the location where it will be in contact with the plinth (3).
7. Fasten the obstacle to the plinth using the five hexagon head screws (1) and the lock washers (2)
8. Check the positioning of the obstacle using a level, hold it 3 mm from the shutter (6), and progressively tighten the five screws (1) (tightening torque of 11 Nm maximum).
9. Replace the panels and remove the shims.

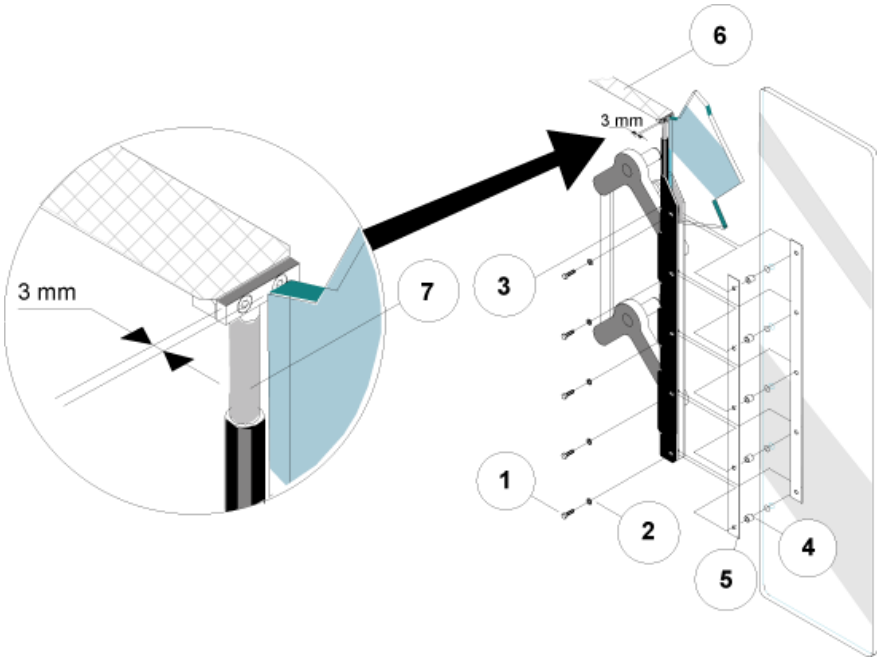
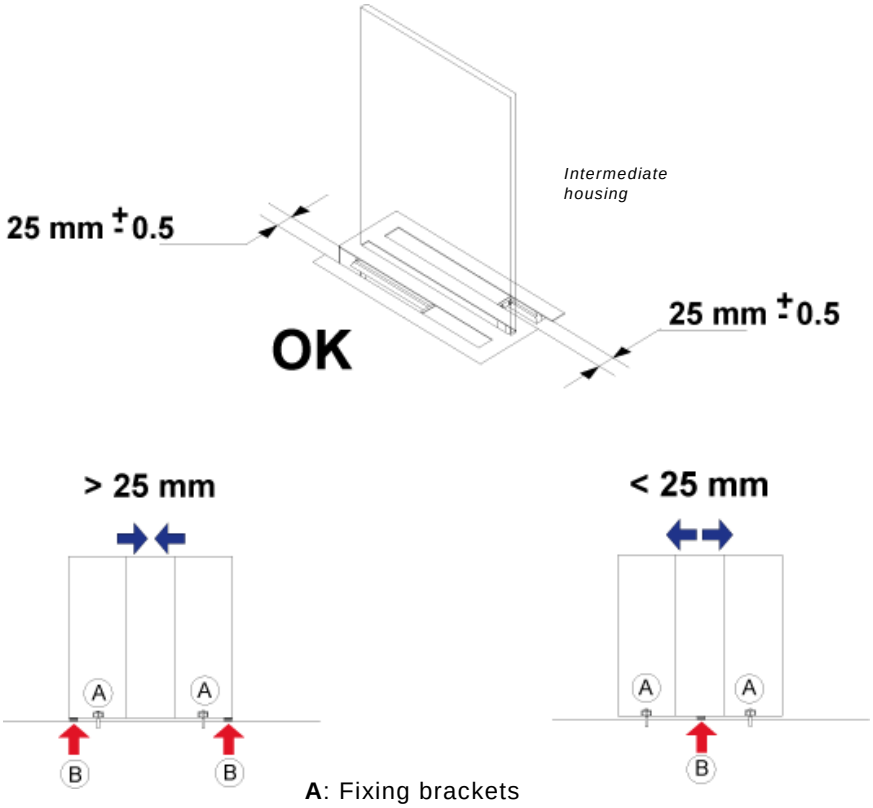


Fig. A

5.7. Adjusting the clearance space for the passage of moving obstacles

If the frame is out of shape, the clearance space for the passage of moving obstacles in the upper part of the gate will not be 25 mm.
In this case, adjust the position of the shims (B) in relation to the fixing brackets (A) to adjust the gap.

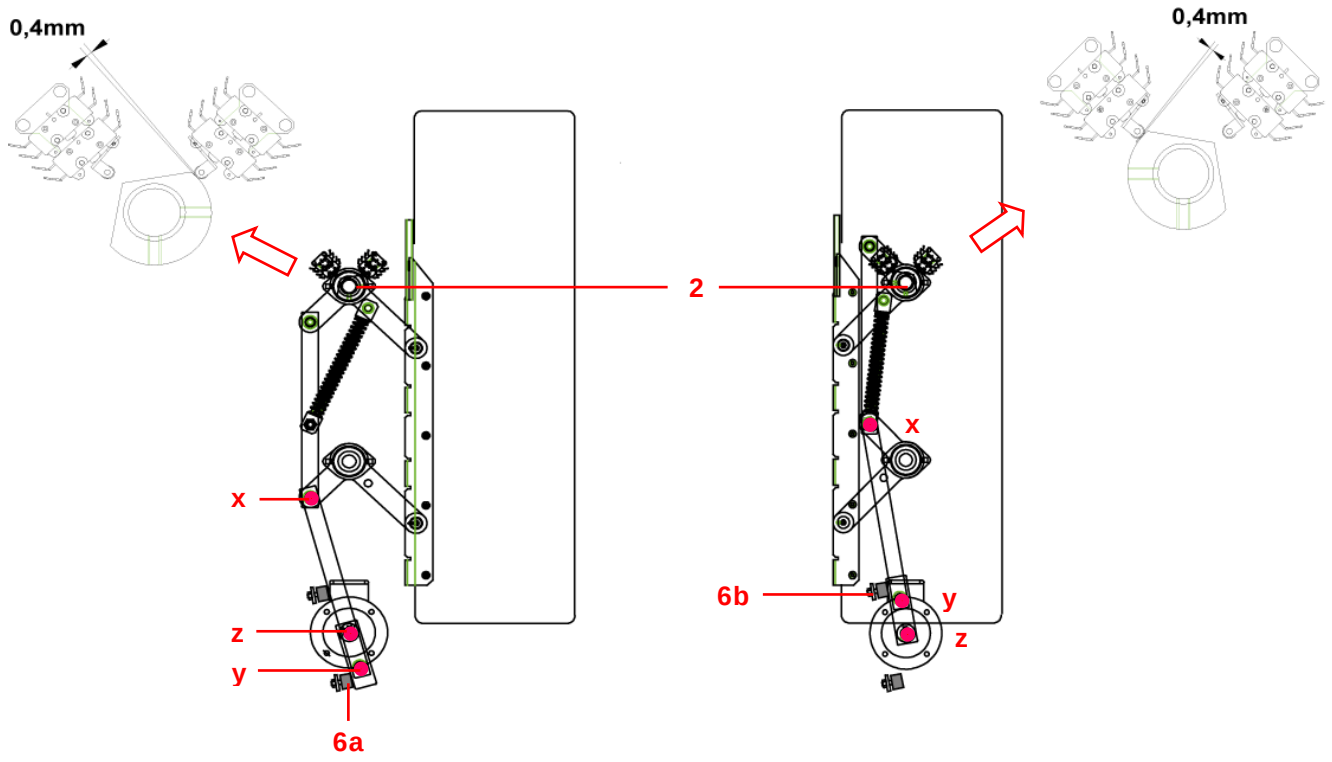


A: Fixing brackets
B: Shim

5.8. Adjusting the limit-switch cam

When the obstacle is closed/open, the clearance space is at a minimum and the motor is stopped, the moving obstacle is locked if points (**x**), (**y**) and (**z**) of the crankshaft-rod device are perfectly aligned, as illustrated below. To correct the position of the limit-switch cam, proceed as follows:

- Turn the equipment off (general circuit breaker disengaged).
- Manually position the geared-motor crank (7, Ch. 2.2.2.) 40 mm from the closing stop (6a)/opening stop (6b).
- Loosen the screws locking the cam (2), carefully move the cam in either direction until the microswitch is engaged (a click can then be heard) and then tighten the screws locking the cam again.
- Turn on the power to the equipment and issue an open/close command. Check that the opening/closing microswitch is properly engaged. As necessary, repeat the preceding adjustment procedure until the desired results have been reached.
  Note: When the microswitch is engaged, there must then be a clearance space of 0.4 mm between the actuating cam and the microswitch roller when it is compressed at the stop, as illustrated in the figure. We recommend using a gauge to take this measurement.



Closing limit switch **Opening limit switch**

6. CONFIGURING THE PROGRAMMABLE CONTROLLER

Before employing the gate, the programmable controller must be configured.

Three "configuration words" determine the PNG's operating mode.
The parameters of these three words are adjusted using the SW3 DIP switches (Ch. 3.2.2.).
Follow the procedure below **in full**.
Nevertheless, the parameters can be modified individually by means of the *(optional) configurator* after initial configuration.

Value 1 signifies that the switch is in the ON position.
Value 0 signifies that the switch is in the OFF position.
The default value (factory setting) is in **bold**.

1. Turn off general circuit breakers and the variable speed controller (21 and 24, Ch. 2.2.3.).
2. Remove the X15.low (Console), X13.low (LCA.) and X13.high (LCB.) connectors.
3. Engage the main circuit breaker.
4. Once the PLC is completely initialised (passage of the blinking "run" LED to a fix light, which corresponds to a delay of approximately 20 seconds), push the RESET button (6, Ch. 2.2.3.) on the programmable controller.
5. Configuration of **WORD 1**:

DIP 1	DIP 2	Type of PNG
0	0	PNG380 or 390
0	1	PNG381A or 391A (= with extension at the entry in direction A)
1	0	PNG381B or 391B (= with extension at the entry in direction B)
1	1	PNG382 or 392
DIP 3		**Type of PNG**
0		PNG
1		TWIN
DIP 4		**Management of the orientation pictogram for direction A (Ch. 3.13.)**
0		Reflects passage
1		Reflects the operation mode
DIP 5		**Always set to 0.**
DIP 6		**Management of the orientation pictogram for direction B (Ch. 3.13.)**
0		Reflects passage
1		Reflects the operation mode

6. Press the LCA push-button (SW1 = 12, Ch. 2.2.3.), wait for the validation signal (buzzer) and release the button.
7. Configuration of **WORD 2**:

DIP 1	Period to traverse the obstacle after passage has been authorised
0	5 seconds
1	10 seconds
DIP 2	**Management of cell C6 in the safety group (Ch. 2.2.1.)**
0	C6 excluded from the safety zone
1	C6 included in the safety zone
DIP 3	**Management of cell C7 in the safety group (Ch. 2.2.1.)**
0	C7 excluded from the safety zone
1	C7 included in the safety zone
DIP 4	**Management of cell C13 in the safety group (Ch. 2.2.1.)**
0	C13 excluded from the safety zone
1	C13 included in the safety zone

DIP 5	Management of cell C14 in the safety group (Ch. 2.2.1.)
0	C14 excluded from the safety zone
1	C14 included in the safety zone
DIP 6	**Management of passage authorisations (Ch. 3.6.)**
0	Passage authorisations not saved
1	Passage authorisations saved

8. Press the LCB push-button (SW2 = 12, Ch. 2.2.3.), wait for the validation signal (buzzer) and release the button.

9. Configuration of **WORD 3**:

DIP 1	DIP 2	Selection of the closing speed (Ch. 8.)
0	**0**	Slow
0	1	Semi-slow
1	0	Semi-fast
1	1	Fast
DIP 3		**Detection of "tailgating prior to passage" infringement (Ch. 3.14.)**
0		Deactivated
1		Activated
DIP 4		**Selection of the opening speed (Ch. 8.)**
0		Mid-slow
1		Fast
DIP 5		**Activation level of the emergency mode (signal received on terminals X13.5 and X13.6 of the AS1007 card)**
0		Signal taken into account at level 0 (= switch open)
1		Signal taken into account at level 1 (= switch closed)
DIP 6		**Type of obstacle**
0		Always set to 0

10. Press simultaneously the LCA and LCB buttons (SW1 & SW2 = 12, Ch. 2.2.3.), wait for the validation signal (buzzer) and release the button.
11. Turn off the PNG main power supply.

12. Configuration of the **operation** of the PNG:

    13.2. If there is an external console, turn DIP switches 1 to 5 in the OFF position (the console is connected, in parallel, to the contacts of the SW3 selector).

DIP 1	Console
0	External console activated
DIP 2	
0	
DIP 3	
0	
DIP 4	
0	
DIP 5	
0	
DIP 6	**Obstacles state at rest**
0	Obstacles Normally Closed
1	Obstacles Normally Open

13.1. If there is no external console, configuration is as follows:

DIP 1	Console	
1	External console deactivated	
DIP 2	**DIP 3**	**Configuration of direction A**
0	**0**	Direction A Controlled
0	1	Direction A Locked
1	0	Direction A Free
DIP 4	**DIP 5**	**Configuration of direction B**
0	**0**	Direction B Controlled
0	1	Direction B Locked
1	0	Direction B Free
DIP 6	**Obstacles state at rest**	
0	Obstacles Normally Closed	
1	Obstacles Normally Open	

13. Reconnect the X15.Low, X13.High and X13.Low connectors.
14. Engage the circuit breaker for the variable speed controller (24, Ch. 2.2.3.).
15. Engage the general PNG power supply (21, Ch. 2.2.3.).

The gate is now operational.

7. USE

The operations must be undertaken in accordance with the safety warnings, p. 4.

7.1. Start-up

1. Ensure that the equipment was assembled in compliance with the safety warnings in Ch. 4.
2. Check the settings listed in Ch.5. Although they were set in the factory, they may become distorted during transportation and installation (this is especially the case for cell alignment).
3. Configure the programmable controller (Ch. 6.).
4. First engage the circuit breaker for the variable speed controller and **then** the general circuit breaker (24 then 21, Ch. 2.2.3.).
   Upon power-up the initialisation sequence provokes the opening of the two leaves, which close immediately after.
   Check that the variable speed controller (27, Ch. 2.2.3.) is within the range of positive values when the obstacle opens and that of the negative values when it closes.
   If one of the two motors is running in reverse, you must reverse two phases of that motor (= invert cables U and V near the connector (28, Ch. 2.2.3.) after having disengaged the general circuit breaker).
5. Execute several electric opening and closing tests using the available controls (push button, reader, console or other validator).
   Check that the moving obstacle is correctly locked when it is closed with the motor stopped and whether it completely enters the housing when it is open and the motor is also stopped. If this is not the case, please refer to Ch.5.8.
6. Check that the barrier opens completely in the event a power cut (proper operation of the "anti-panic" system).
7. Check that the orientation pictogram is operating properly (see Ch. 3.13.).
8. Check that any optional items present (*operating pictogram, reader*, etc.) are operating properly.
9. Execute the operations described in the "maintenance" chapter (7.4.).

7.2. Turning off the power

1. Turn off the circuit breakers (21 and 24, Ch. 2.2.3.).

7.3. Prolonged stop/Destruction

If the equipment is not going to be used for a long period, it is advised that it be:

- Kept under the same conditions as it was before installation (see Ch. 4.2.).
- Left connected to the mains supply. The motor continually receives power, resulting in a certain temperature in the housing being sustained. This reduces condensation problems and prevents the oil of the speed reduction gear from freezing – that would prevent the gate from reproducing its performance during the first operations executed after a long idle period.
- Broken in anew before being put in service by executing 3,000 obstacle opening and closing operations (configuration of DIP 6 in operation mode, see Ch. 6.)

When the equipment is withdrawn from service, scrap the various components of the machine through the appropriate channel (metal parts, electronic components, etc.) according to the legislation in force in the country concerned.

7.4. Maintenance

The operations must be undertaken in accordance with the safety warnings, p. 4.

Every 3 months or 300,000 cycles, whichever comes first:

1. Clean the housing using a product for stainless steel. *Automatic Systems* can supply an approved product, reference no. 0/6031/000.
   Warning: The frequency of maintenance must be adjusted to the conditions of use of the gate, in particular when it is located in an oxidizing atmosphere: at the entry to a swimming pool (heated and chlorinated atmosphere), near the sea, in an industrial environment, etc.
2. Clean the obstacles using a product for cleaning windows.
3. Dust and clean the plate screening the cells and the lenses of the latter using a soft rag impregnated with an antistatic and mild cleaning product.
   Never use paint thinner or any other organic solvent.

Every 6 months or 600,000 cycles, whichever comes first:

4. Check that the obstacle opens completely (flush with the housing) in the event of a power cut, if the gate's operating mode is configured to do so.
5. Check the state of the electrical connections, especially those defined in Ch. 4.4. Clean and tighten them if necessary.
6. Check that the nuts and screws are properly tightened.
7. Execute several electric opening and closing tests using the available controls (push button, reader, console or other validator).
   Check that the obstacle is correctly positioned in the open and closed position (reaches the limit switches). Adjust if necessary (Ch.5.8.).
8. Check that the two diodes (1 and 2, Ch. 5.3.) belonging to each detection cell are lit up and that diode 2 turns off when the reflected beam is obscured.
9. Check the settings described in Chapter 5.
10. Check the wear and the fouling of the shutter (10, Ch.2.2.2.) and replace if necessary to ensure its correct sliding.
11. Check the state of the abutments (6, ch.2.2.2.) and replace them if necessary.
12. Check the tightness of the geared motor and the bearings (lifetime lubricated).
13. Grease with multipurpose anticorrosive grease (Automatic Systems can supply an approved product, reference no 0/3565/000):
    - The moving parts of the mechanical assembly as well as the balancing spring (Ch. 2.2.2.).
    - The upper bearing (13, Ch.5.4.) of the balancing spring.
      Note: if the bearing shows some wear, replace the balancing spring assembly (⇨ ch.5.4.).
    - The shutter rod (7, Ch. 5.6.)

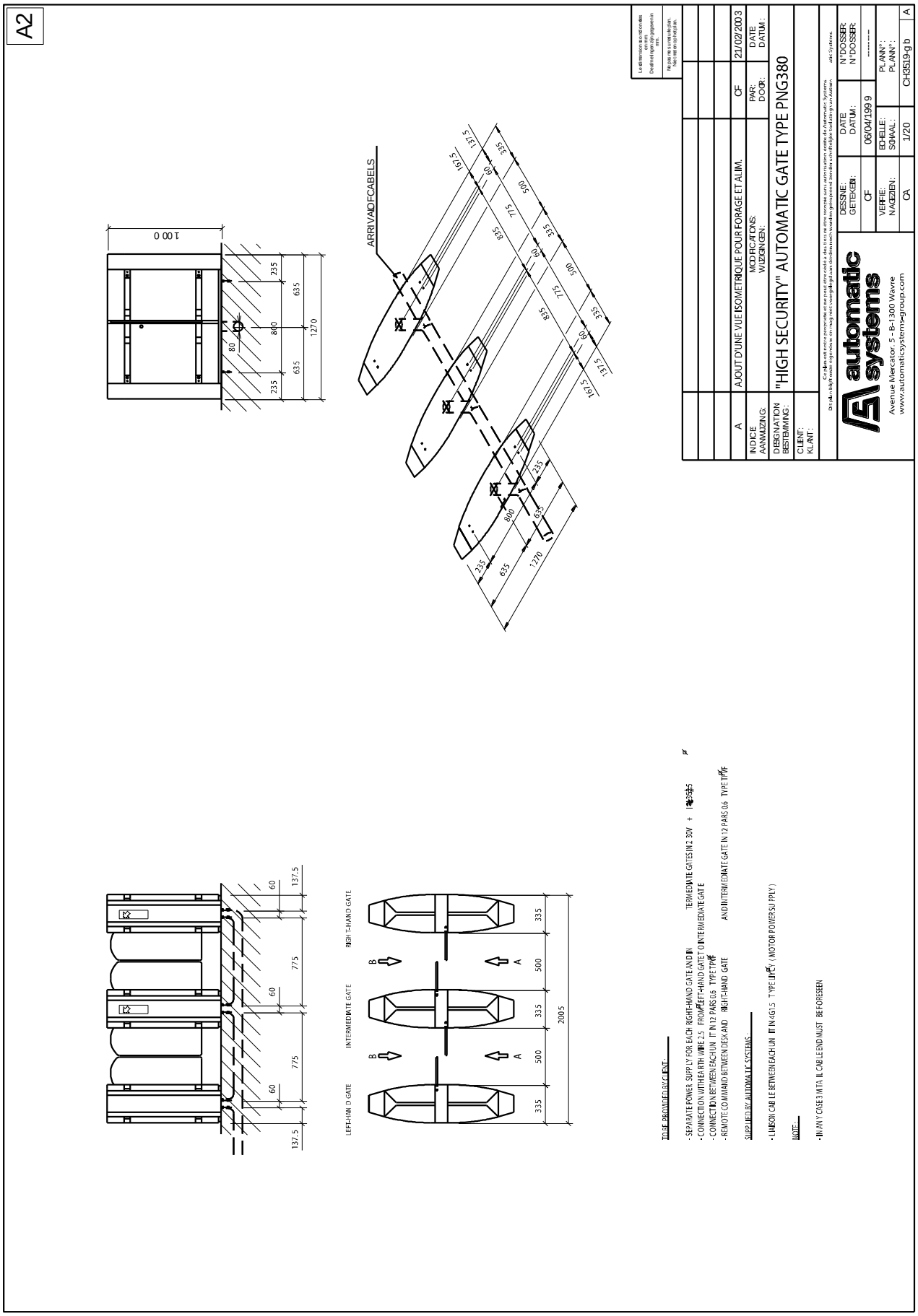
Every year or 1.200,000 cycles, whichever comes first:

14. Replace the limit switch sensors (1, ch.2.2.2.).

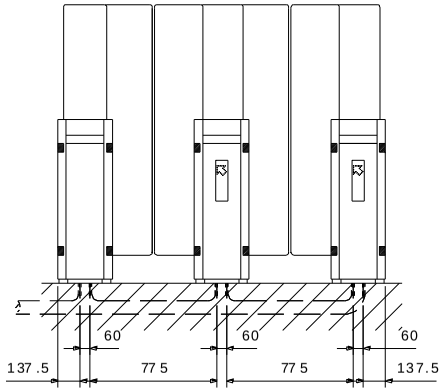
8. TECHNICAL SPECIFICATIONS

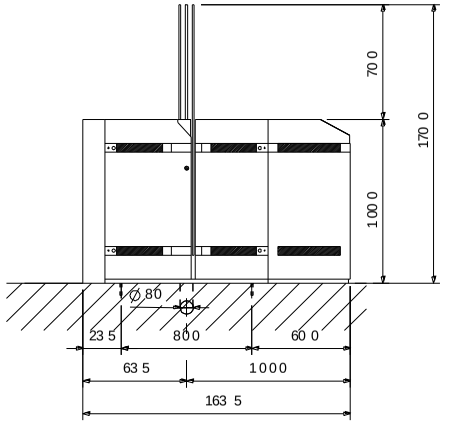
- Guaranteed detection of users taller than 80 cm (nevertheless, the safety of people and objects shorter than this height is guaranteed against the untimely closure of the obstacles).
- The internal mechanical parts (frame, connecting rod, crank, etc.) are metal treated against corrosion by RoHS electrogalvanising.
- Electrical power supply: 230 V AC (± 10%), single-phase, 50 Hz + ground, + differential of 30 mA for each piece of equipment.
- Three-phase asynchronous motor of 120 W.
- Consumption per aisle (standby/moving): 120/250 W.
- Authorised ambient temperature: from 0°C to +50°C.
- Store between: -30°C and +80°C.
- Maximum relative humidity: 95% without condensation.
- Minimum opening time of the obstacle: 0.5 s (not including the action time of the validator). Minimum closing time: 0.6 s depending on the configuration of the gate (not including the action time of the validator).
- MCBF (Mean Cycles Between Failure), with respect for the recommended installation and maintenance: 2,500,000 cycles.
- IP40.
- Compliant with CE standards.
- Obstacle impact force complies with the EN12650 standard.
- Net weight of a standard gate, according to its configuration (left, right, intermediary):
    - from 150 to 190 kg (PNG380)
    - from 185 to 235 kg (PNG381)
    - from 220 to 280 kg (PNG382)
    - from 220 to 280 kg (PNG390)
    - from 245 to 305 kg (PNG391)
    - from 270 to 330 kg (PNG392)

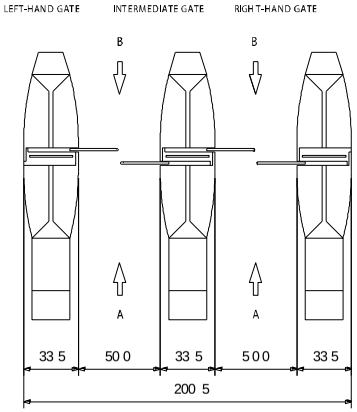
9. INSTALLATION PLANS AND DIMENSIONS

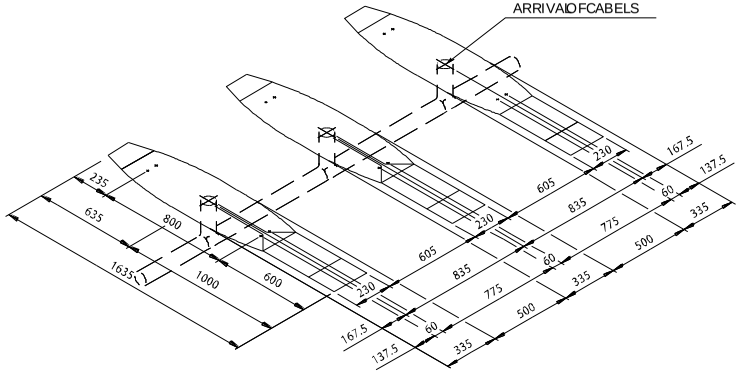


A2









TO BE PROVIDED BY CLIENT:

- SEPARATE POWER SUPPLY FOR EACH RIGHT-HAND GATE AND INTERMEDIATE GATES IN 230V + N & 3G1.5
- CONNECTION WITH EARTH WIRE 2.5 FROM LEFT-HAND GATE TO INTERMEDIATE GATE
- CONNECTION BETWEEN EACH UNIT IN 12 PARS 0.6 TYPE TPVF
- REMOTE COMMAND BETWEEN DESK AND RIGHT-HAND GATE AND INTERMEDIATE GATE IN 12 PARS 0.6 TYPE TPVF

SUPPLIED BY AUTOMATIC SYSTEMS:

- LIAISON CABLE BETWEEN EACH UNIT IN 4G1.5 TYPE LIYCY (MOTOR POWER SUPPLY)

NOTE:

- IN ANY CASE 3 MITAL CABLE END MUST BE FORESEEN

Les dimensions sont données en mm.
Die afmetingen zijn gegeven in mm.

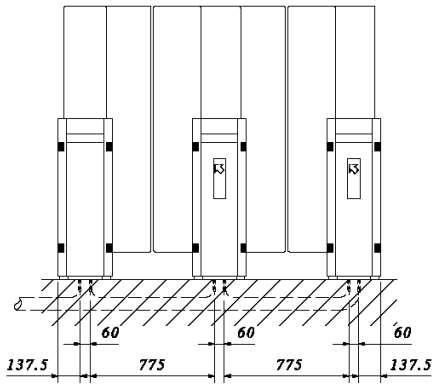
Ne pas mesurer sur le plan.
Niet meten op het plan.

A	"AJOUT D'UNE VUE ISOMETRIQUE POUR FORAGE ET ALIM."	CF	23/07/02
INDICE AANWIJZING:	MODIFICATIONS: WIJZIGINGEN:	PAR: DOOR:	DATE DATUM:
DESIGNATION BESTEMMING:	"HIGH SECURITY" AUTOMATIC GATE TYPE PNG381		
CLIENT: KLANT:			

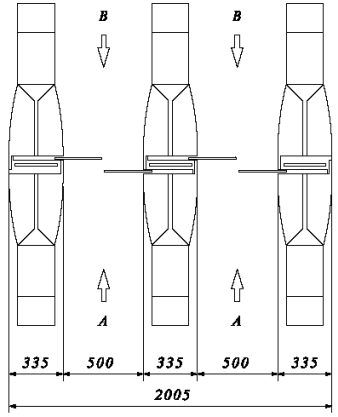
automatic systems
Avenue Mercator, 5 - B-1300 Wavre
www.automaticsystems-group.com

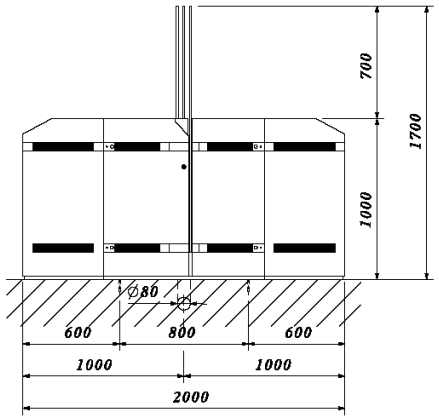
DESSINE: GETEKEND:	DATE DATUM:	N° DOSSIER: N° DOSSIER:
SL	15/12/2002	-------
VERIFIE: NAGEZIEN:	ECHELLE: SCHAAL:	PLAN N°: PLANN°:
SL	1/20	CH3527-gb A

A2

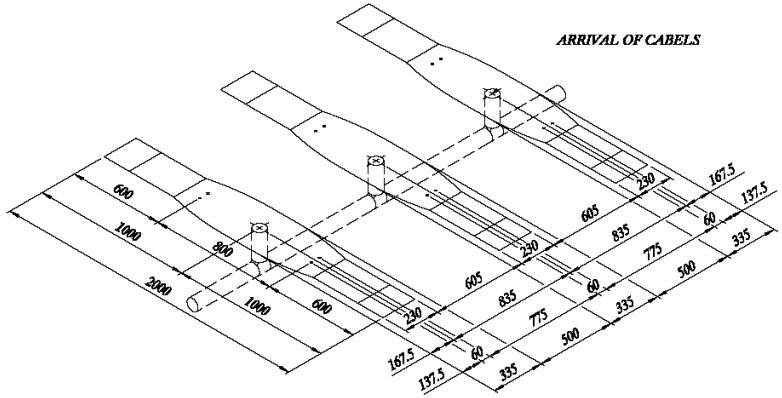


LEFT-HAND GATE INTERMEDIATE GATE RIGHT-HAND GATE





ARRIVAL OF CABELS



TO BE PROVIDED BY CLIENT :

- *SEPARATE POWER SUPPLY FOR EACH RIGHT-HAND GATE AND INTERMEDIATE GATES IN 230V ≂+⏚ IN 3G2.5²*
- *CONNECTION WITH EARTH WIRE 2.5² FROM LEFT-HAND GATE TO INTERMEDIATE GATE*
- *CONNECTION BETWEEN EACH UNIT IN 12 PARS 0.6² TYPE TPVF*
- *REMOTE COMMAND BETWEEN DESK AND RIGHT-HAND GATE AND INTERMEDIATE GATE IN 12 PARS 0.6² TYPE TPVF*

SUPPLIED BY AUTOMATIC SYSTEMS :

- *LIAISON CABLE BETWEEN EACH UNIT IN 4G1.5² TYPE LIYCY (MOTOR POWER SUPPLY)*

NOTE :

- *IN ANY CASE 3 M TAIL CABLE END MUST BE FORESEEN*

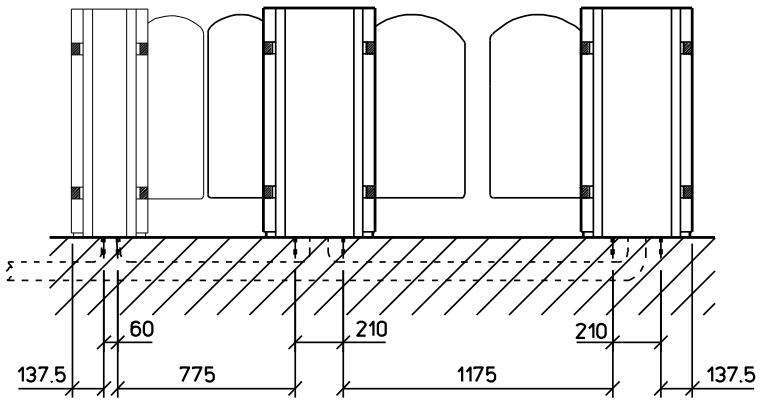
Les dissolutions sont données en mm.
De afmetingen zijn gegeven in mm.

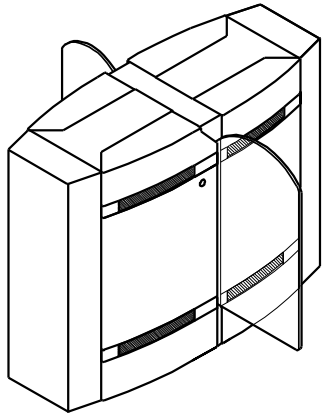
Ne pas mesurer sur le plan.
Niet meten op het plan.

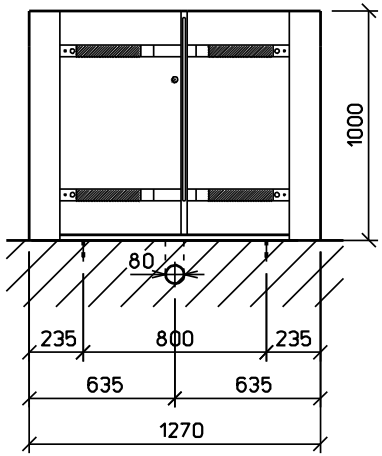
B	MAUVAISE COTE (PAS 336 MAIS 335)	CF	27/01/2004
A	"AJOUT D'UNE VUE ISOMETRIQUE POUR FORAGE ET ALIM."	CF	23/07/02
INDICE : AANWIJZING :	MODIFICATIONS : WIJZIGINGEN :	PAR : DOOR :	DATE : DATUM :
DESIGNATION : BESTEMMING :	"HIGH SECUTITY" AUTOMATIC GATE TYPE PNG382		
CLIENT : KLANT :			

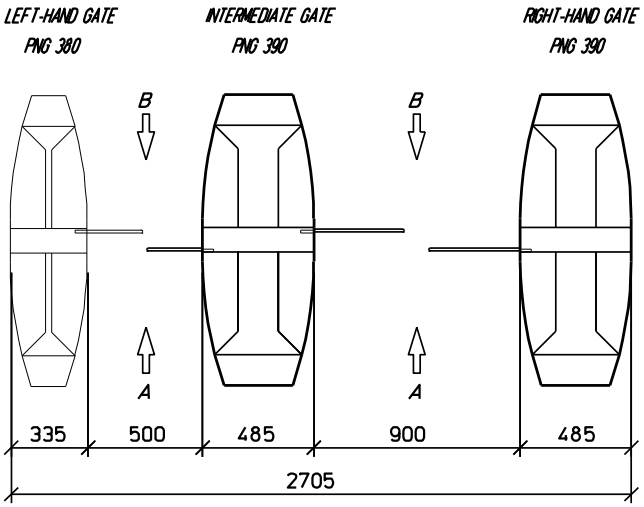
automatic systems
Avenue Mercator, 5 - B-1300 Wavre
www.automaticsystems-group.com

DESSINE : GETEKEND :	DATE : DATUM :	N° DOSSIER : N° DOSSIER :	
SL	15/12/2002	----------	
VERIFIE : NAGEZIEN :	ECHELLE : SCHAAL :	PLAN N° : PLAN N° :	
SL	1/20	CH3520-gb	B









TO BE PROVIDED BY CLIENT :

- SEPARATE POWER SUPPLY FOR EACH RIGHT-HAND GATE AND INTERMEDIATE GATES IN 230V ≈ + ⏚ IN 3G2.5 "
- CONNECTION WITH EARTH WIRE 2.5 " FROM LEFT-HAND GATE TO INTERMEDIATE GATE
- CONNECTION BETWEEN EACH UNIT IN 12 PARS 0.6 " TYPE TPVF
- REMOTE COMMAND BETWEEN DESK AND RIGHT-HAND GATE AND INTERMEDIATE GATE IN 12 PARS 0.6 " TYPE TPVF

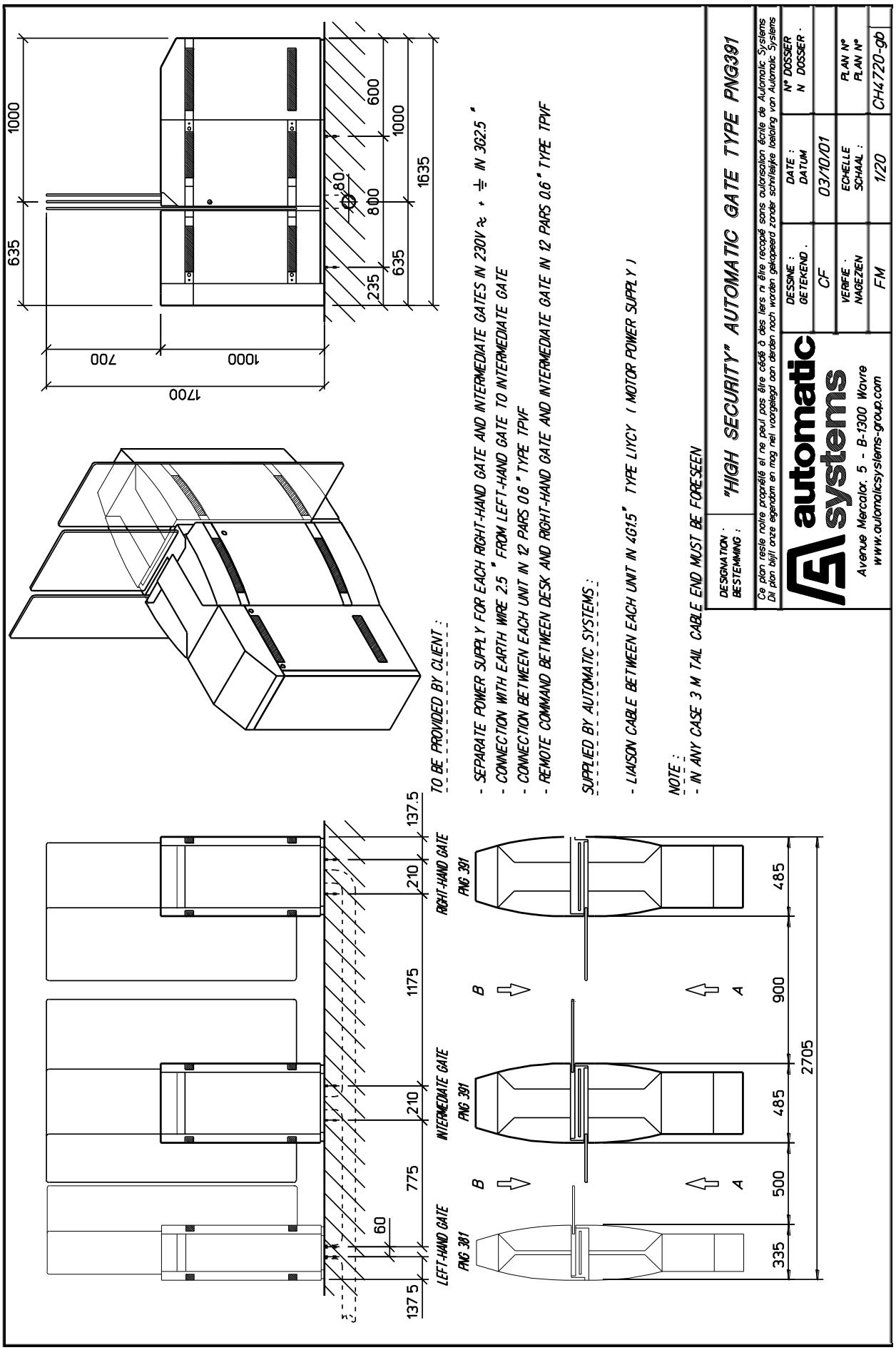
SUPPLIED BY AUTOMATIC SYSTEMS :

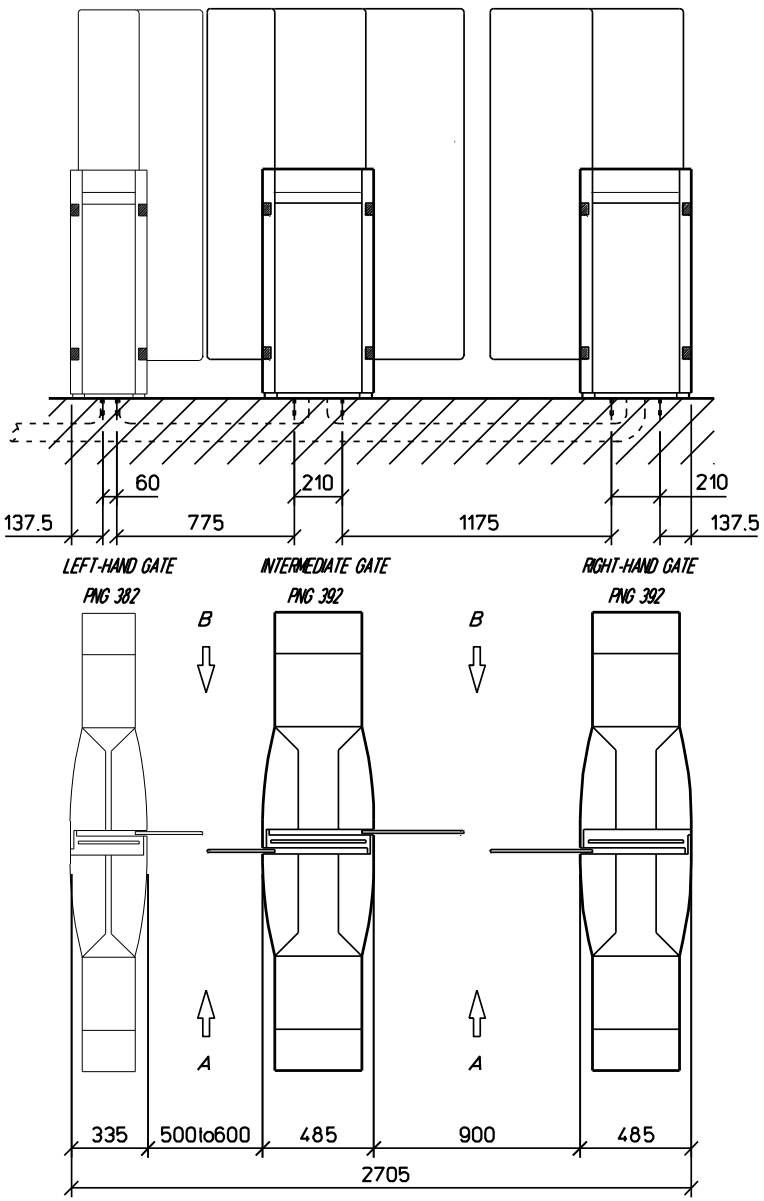
- LIAISON CABLE BETWEEN EACH UNIT IN 4G1.5" TYPE LIYCY (MOTOR POWER SUPPLY)

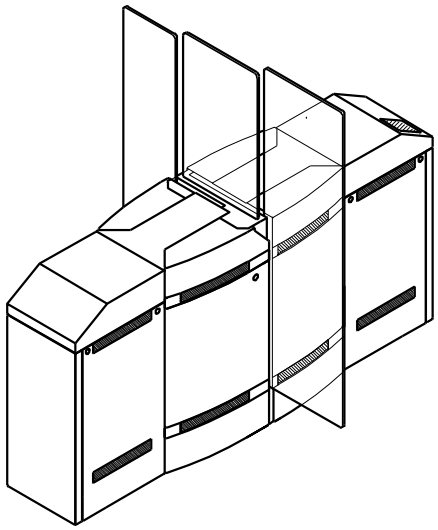
NOTE :

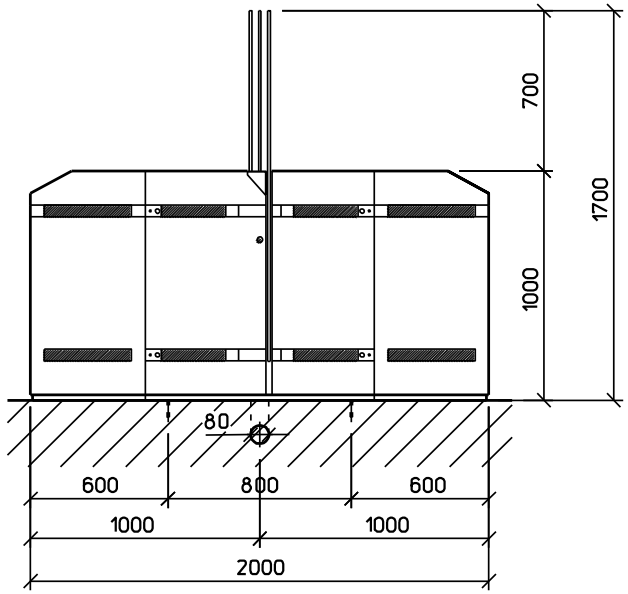
- IN ANY CASE 3 M TAIL CABLE END MUST BE FORESEEN

DESIGNATION : BESTEMMING :	"HIGH SECURITY" AUTOMATIC GATE TYPE PNG390		
Ce plan reste notre propriété et ne peut pas 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 gekopeerd zonder schriftelijke toelating van Automatic Systems			
automatic systems Avenue Mercator, 5 - B-1300 Wavre www.automaticsystems-group.com	DESSINE : GETEKEND .	DATE : DATUM	N° DOSSIER N DOSSIER ·
	CF	03/10/01	
	VERIFIE · NAGEZIEN	ECHELLE SCHAAL :	PLAN N° PLAN N°
	FM	1/15	CH4719-gb









TO BE PROVIDED BY CLIENT :

- SEPARATE POWER SUPPLY FOR EACH RIGHT-HAND GATE AND INTERMEDIATE GATES IN 230V ≈ + ⏚ IN 3G2.5 ²
- CONNECTION WITH EARTH WIRE 2.5 ² FROM LEFT-HAND GATE TO INTERMEDIATE GATE
- CONNECTION BETWEEN EACH UNIT IN 12 PARS 0.6 ² TYPE TPVF
- REMOTE COMMAND BETWEEN DESK AND RIGHT-HAND GATE AND INTERMEDIATE GATE IN 12 PARS 0.6 ² TYPE TPVF

SUPPLIED BY AUTOMATIC SYSTEMS :

- LIAISON CABLE BETWEEN EACH UNIT IN 4G1.5² TYPE LIYCY (MOTOR POWER SUPPLY)

NOTE :

- IN ANY CASE 3 M TAIL CABLE END MUST BE FORESEEN

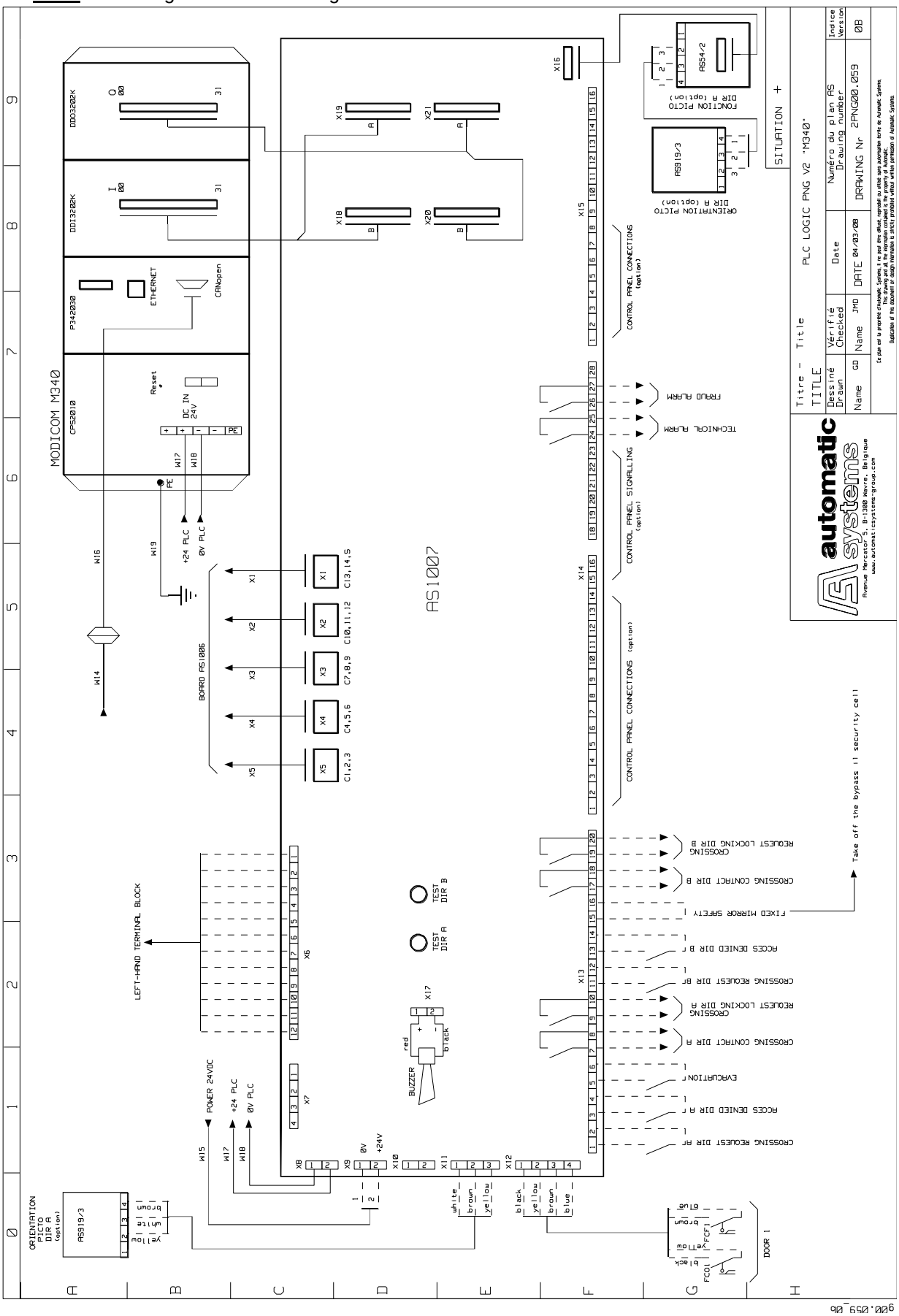
DESIGNATION · BESTEMMING :	"HIGH SECURITY" AUTOMATIC GATE TYPE PNG392

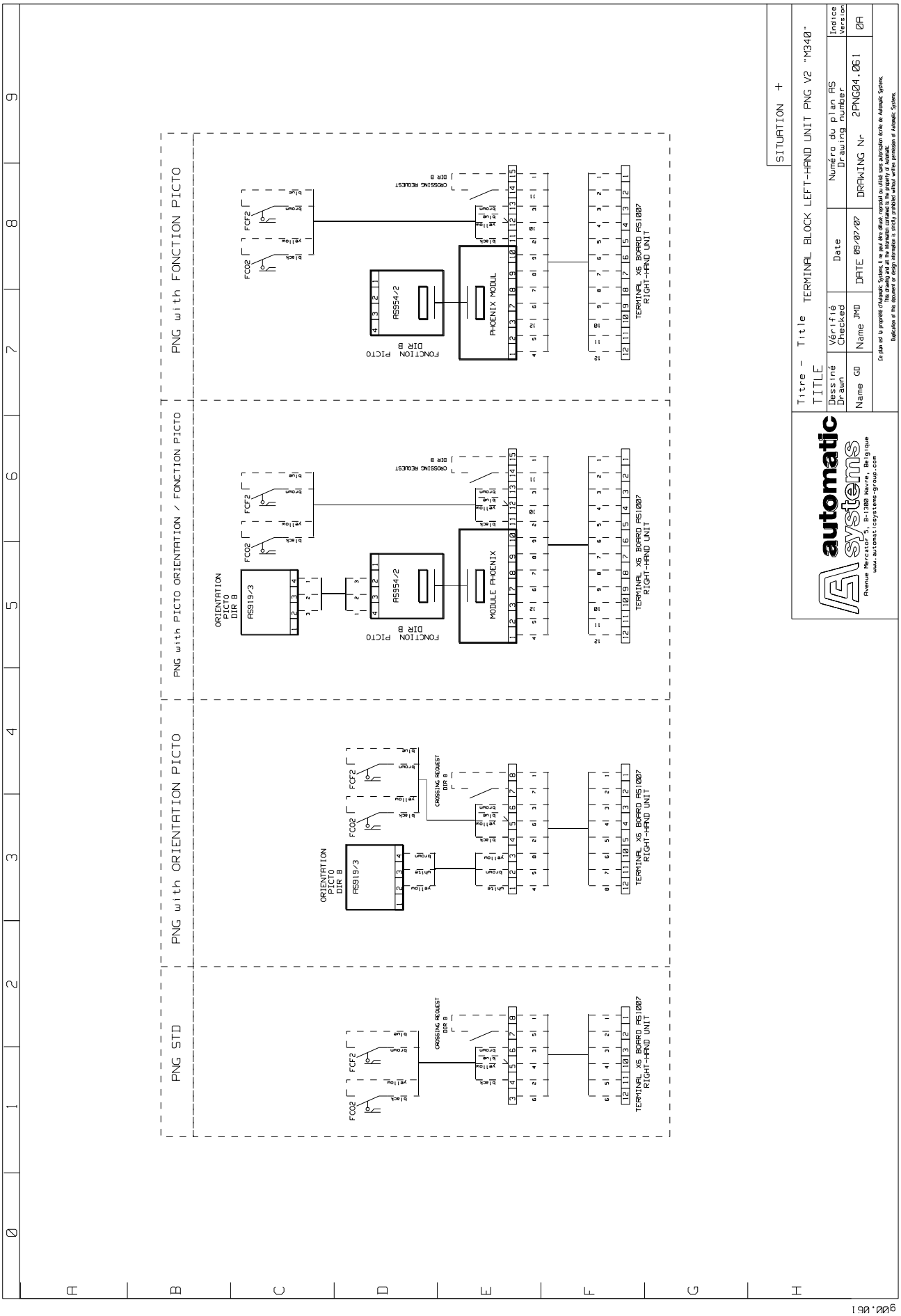
automatic systems
Avenue Mercator, 5 - B-1300 Wavre
www.automaticsystems-group.com

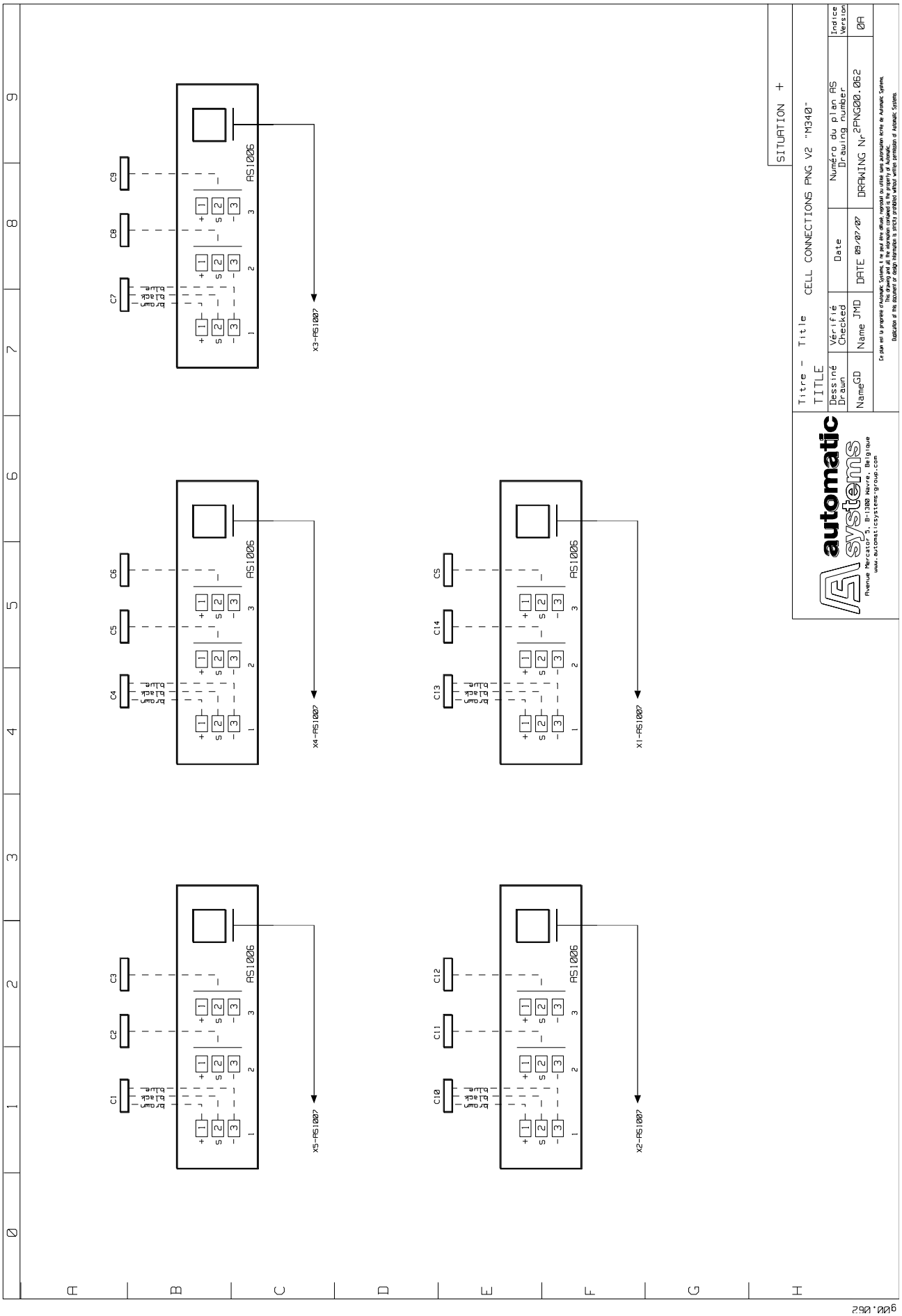
DESSINE : GETEKEND .	DATE : DATUM	N° DOSSIER N DOSSIER ·
CF	03/10/01	
VERIFIE · NAGEZIEN	ECHELLE SCHAAL :	PLAN N° PLAN N°
FM	1/20	CH4717-gb

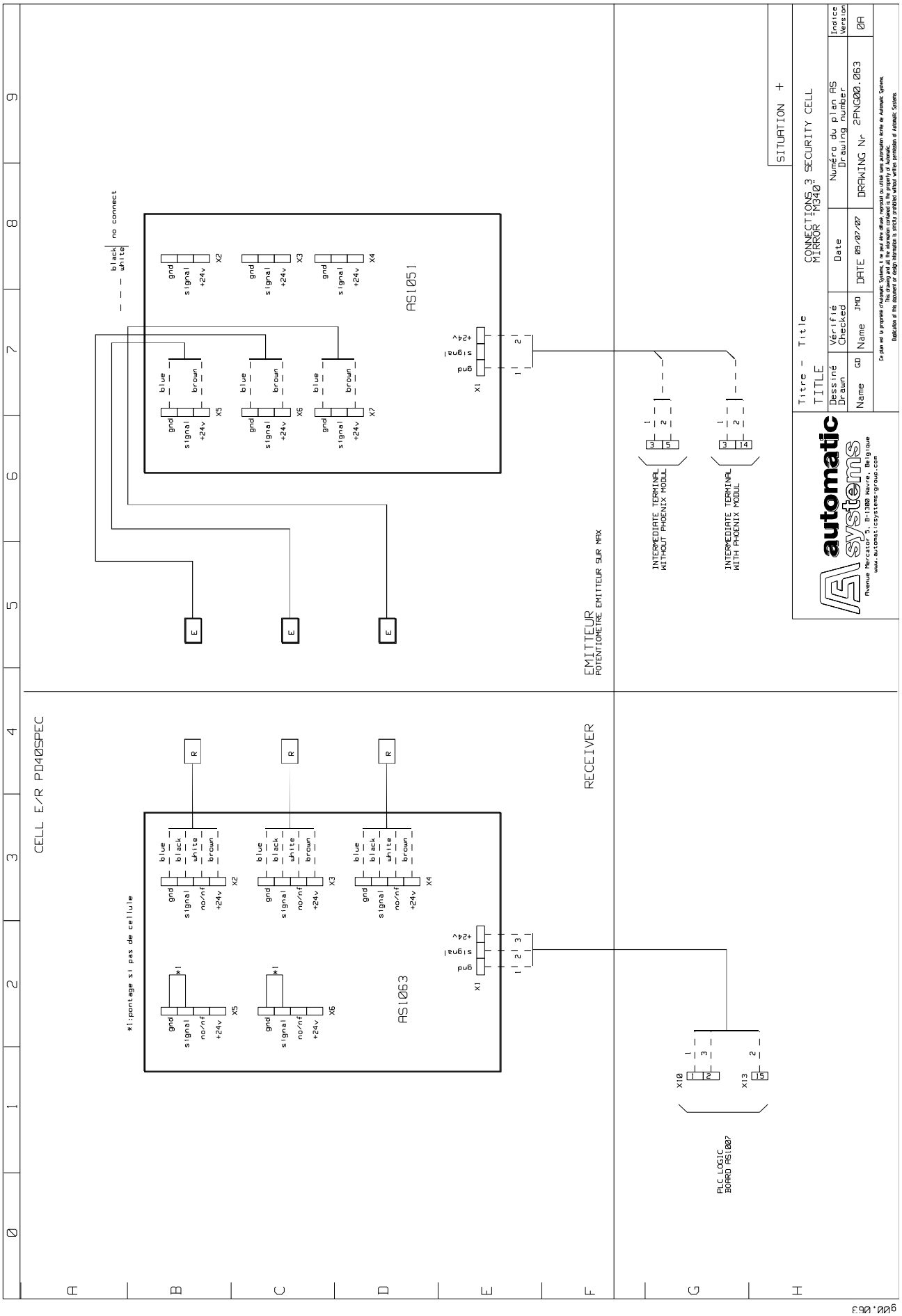
10. WIRING DIAGRAMS

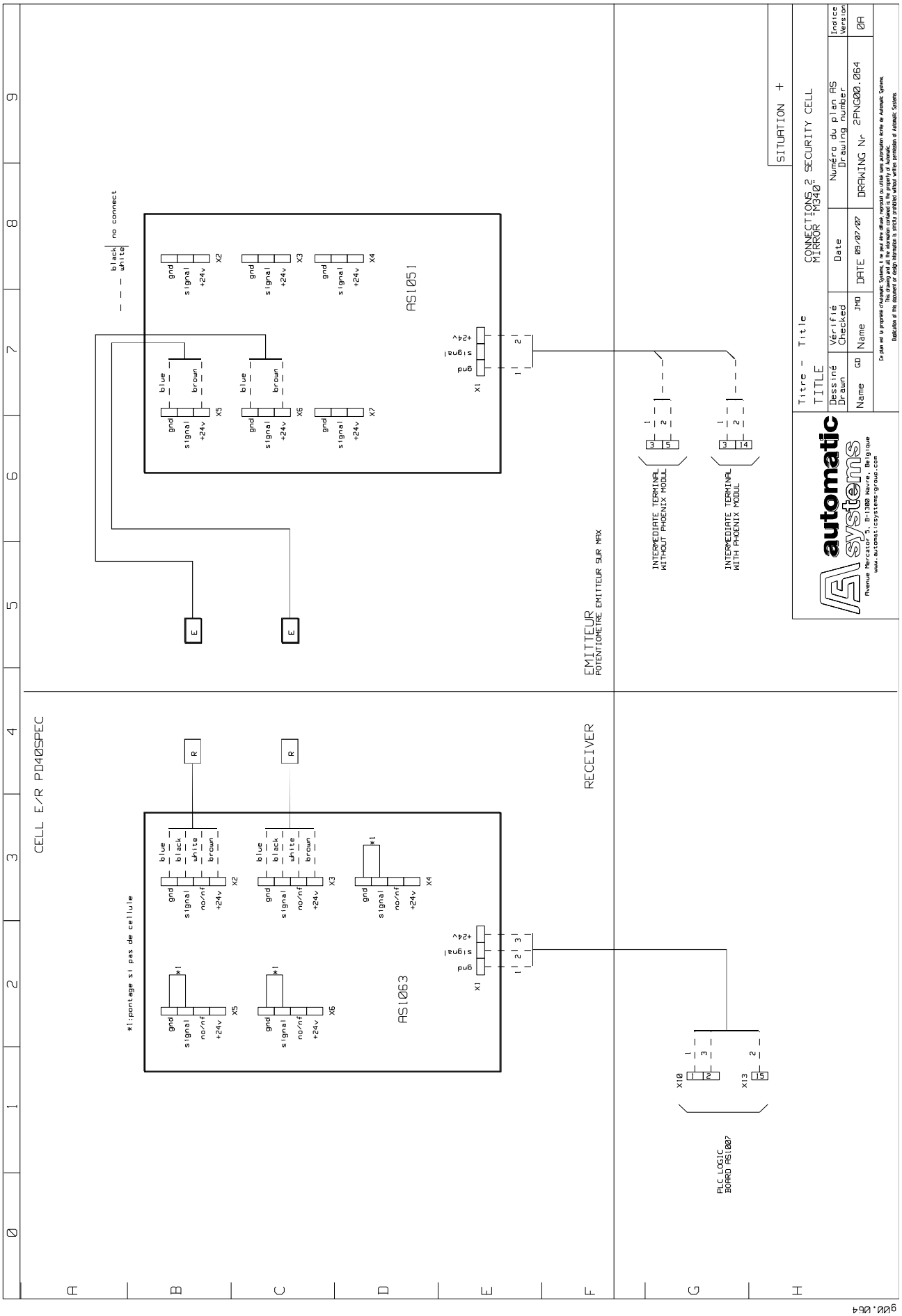
Note: The diagrams inside the gate are the reference.

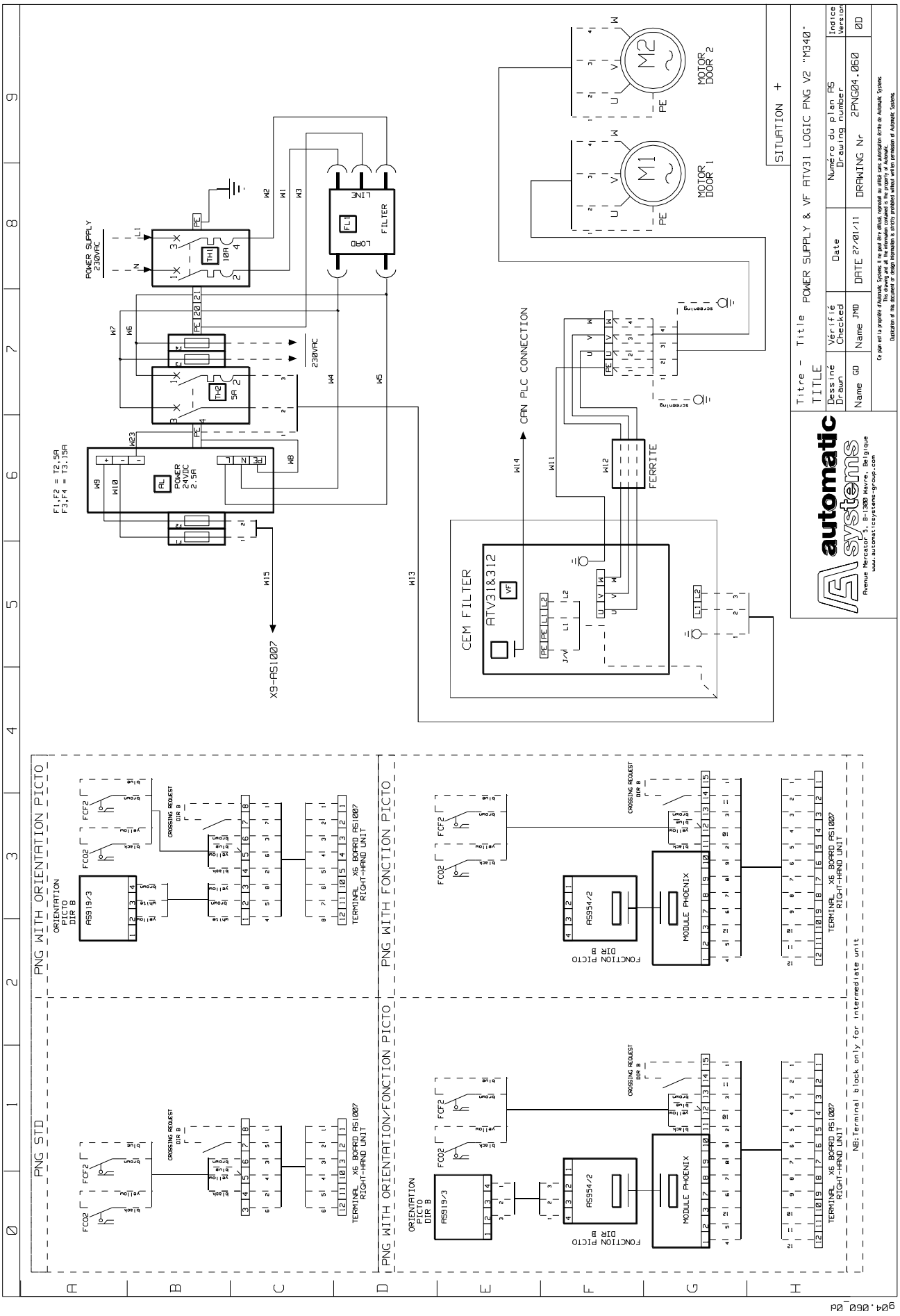


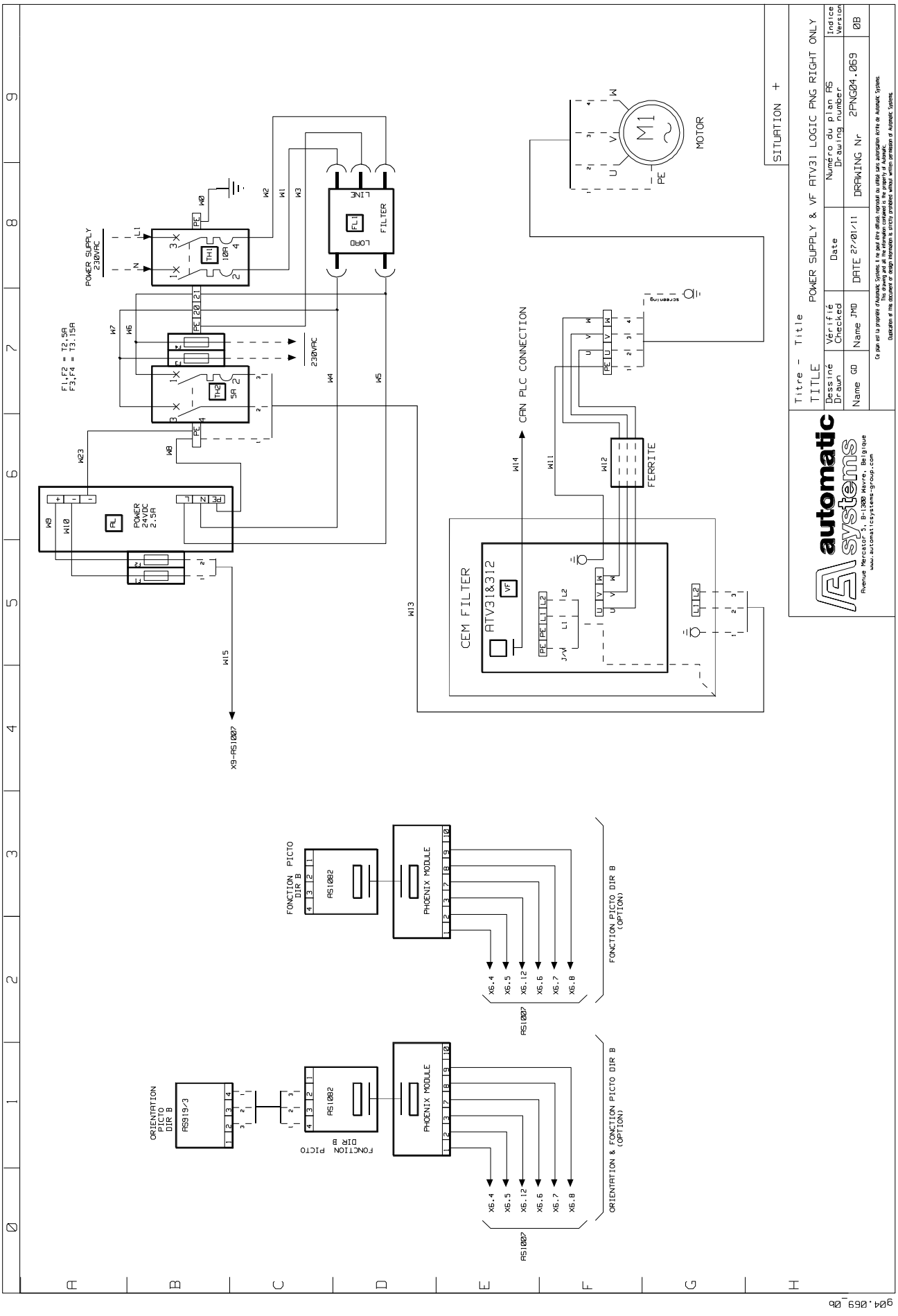


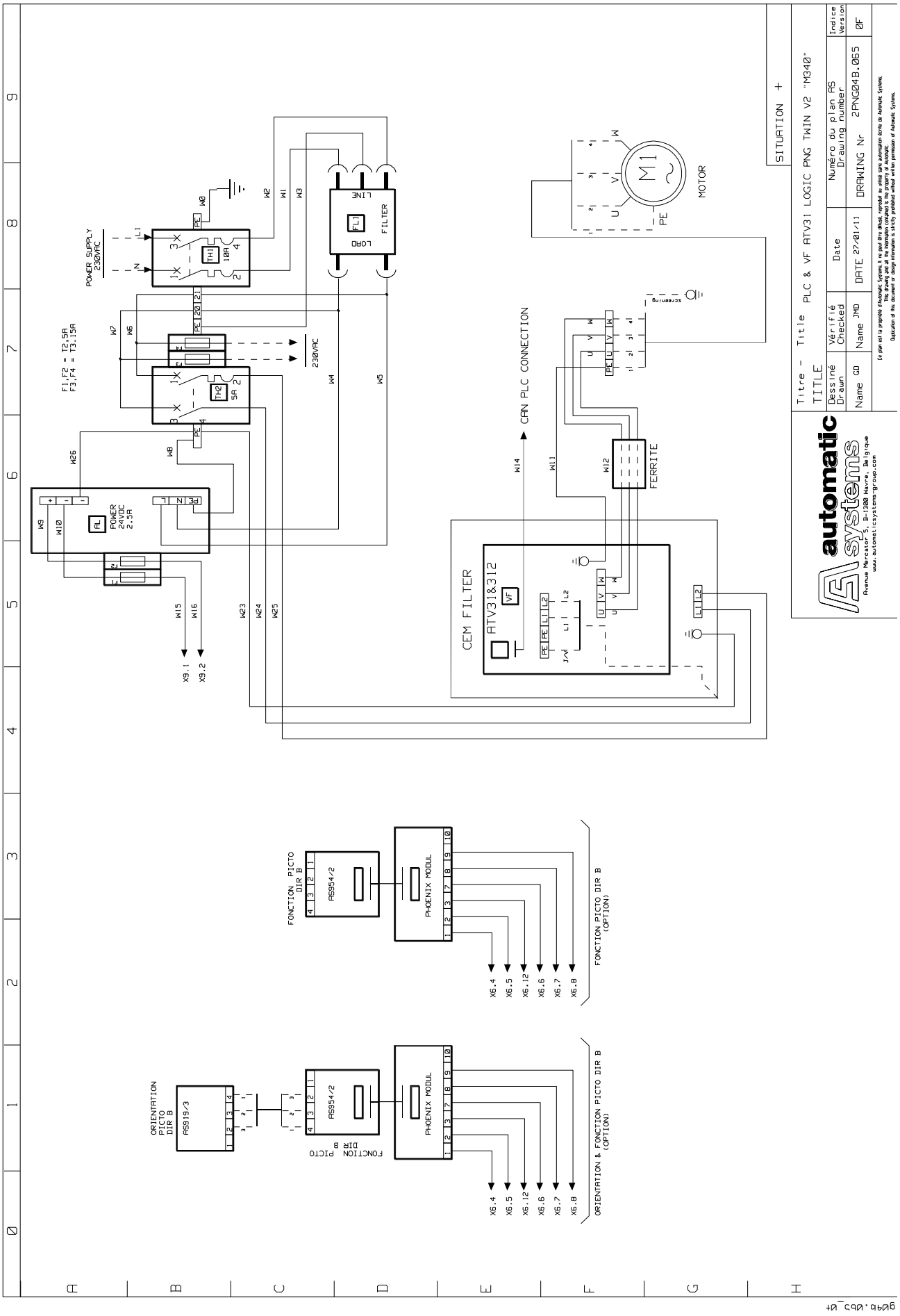


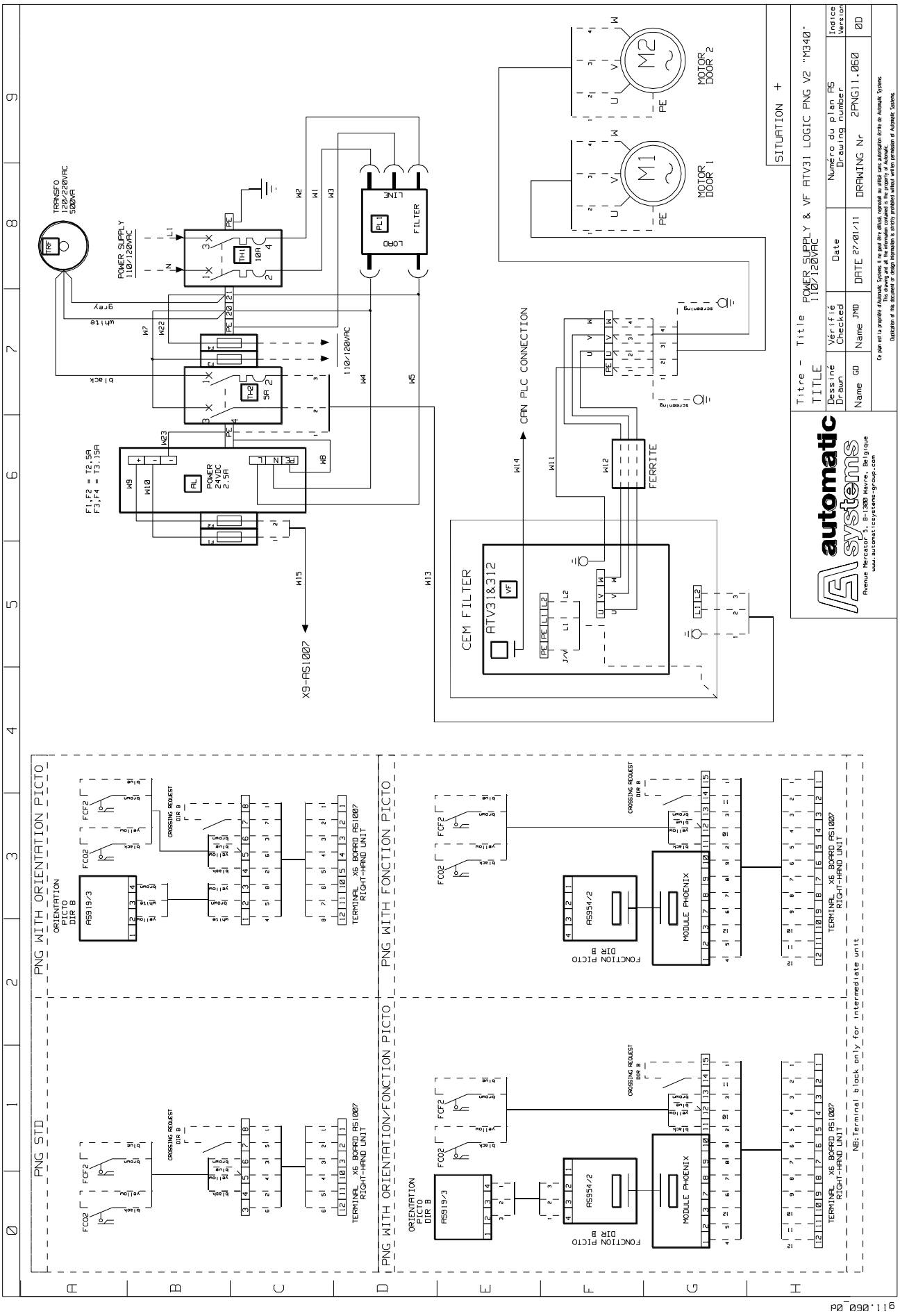


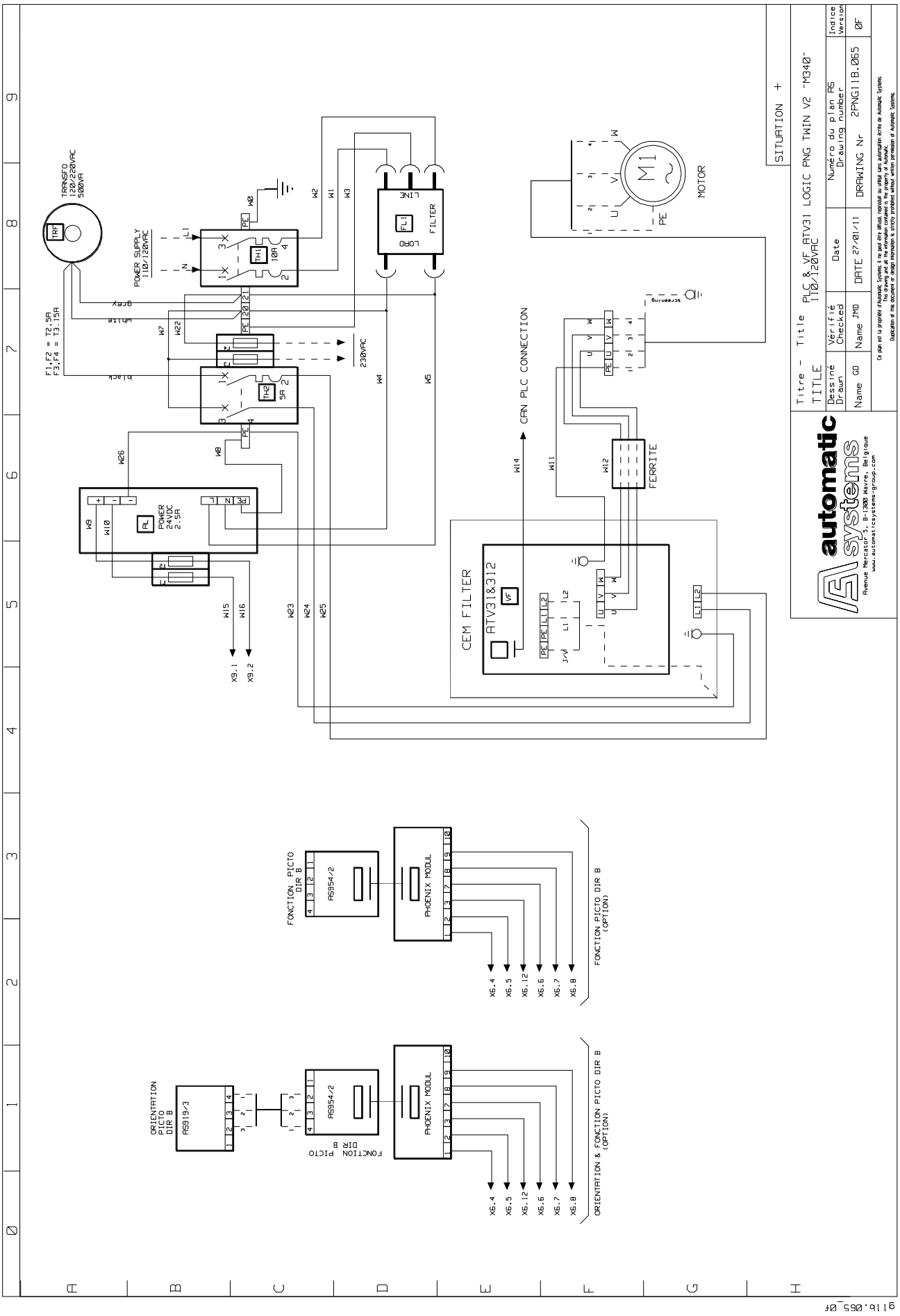

CELL E/R PD40SPEC
RECEIVER
EMITTEUR
POTENTIOMETRE EMITTEUR SUR MAX
AS1051
AS1063
*1:pontage si pas de cellule
black
white
no connect
blue
brown
gnd
signal
+24v
no/nf
INTERMEDIATE TERMINAL WITHOUT PHOENIX MODUL
INTERMEDIATE TERMINAL WITH PHOENIX MODUL
PLC LOGIC BOARD AS1007
SITUATION +
Titre - Title
CONNECTIONS 2 SECURITY CELL MIRROR "M340"
TITLE
Dessiné Drawn
Vérifié Checked
Date
Numéro du plan AS Drawing number
Indice Version
Name GD
Name JMO
DATE 09-07/07
DRAWING Nr 2PNG00.064
0A
automatic systems
Avenue Mercator 5, B-1300 Wavre, Belgique
www.automaticsystems-group.com
Ce plan est la propriété d'Automatic Systems. Il ne peut être diffusé reproduit ou utilisé sans autorisation écrite de Automatic Systems.
This drawing and all the information contained are the property of Automatic.
Duplication of this document or design information is strictly prohibited without written permission of Automatic Systems.
2PNG00.064



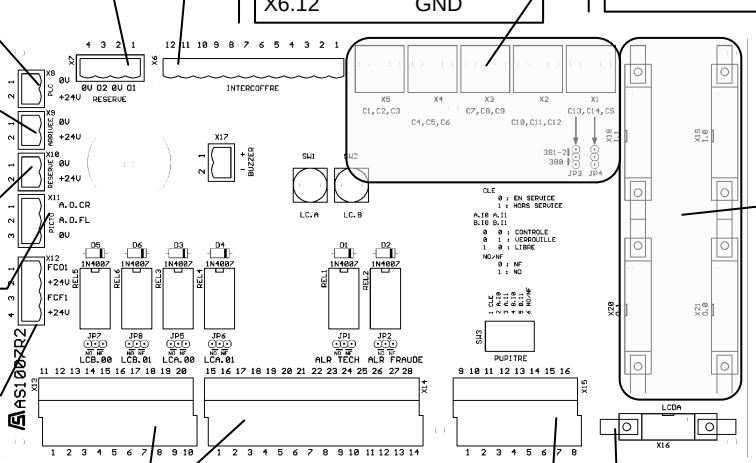








10.1. AS 1007 card



X7.1	Q4.15	Out 0
X7.2		GND
X7.3	Q4.31	Out 1
X7.4		GND

X6.1	I3.29	LC Aut B
X6.2	I3.24	FCO2
X6.3	I3.25	FCF2
X6.4	Q4.22	Pic B.O.LC
X6.5	Q4.23	Pic B.O.AR
X6.6	Q4.24	Pic B.F.AR
X6.7	Q4.25	Pic B.F.LC
X6.8	Q4.26	Pic B.F.CA
X6.9	Q4.21	Pic Strobe
X6.10		+24VDC
X6.11		+24VDC
X6.12		GND

X8.1	GND
X8.2	+24VDC

X9.1	GND
X9.2	+24VDC

X10.1	GND
X10.2	+24VDC

X11.1	Q4.16	Pic A.O.LC
X11.2	Q4.17	Pic A.O.AR
X11.3		GND

X12.1	I3.22	LSO1.1
X12.2		LSO1.2
X12.3	I3.23	LSC1.1
X12.4		LSC1.2

X13.1	I3.26	LC Aut A
X13.2		+24VDC
X13.3	I3.27	LC Denied A
X13.4		+24VDC
X13.5	I3.28	Emergency
X13.6		+24VDC
X13.7	Q4.27	Passage A
X13.8		Passage A
X13.9	Q4.28	LC A lock
X13.10		LC A lock
X13.11	I3.29	LC Aut B
X13.12		+24VDC
X13.13	I3.30	LC Denied B
X13.14		+24VDC
X13.15	I3.31	Safety exit
X13.16		+24VDC
X13.17	Q4.29	Passage B
X13.18		Passage B
X13.19	Q4.30	LC B lock
X13.20		LC B lock

X14.1	Q4.0	NO mode
X14.2	Q4.1	NC mode
X14.3	Q4.2	Controlled A
X14.4	Q4.3	Free A
X14.5	Q4.4	Locked A
X14.6	Q4.5	Controlled B
X14.7	Q4.6	Free B
X14.8	Q4.7	Locked B
X14.9	Q4.8	Passage A
X14.10	Q4.9	Passage B
X14.11	Q4.10	Technical alr
X14.12	Q4.11	Fraud alr
X14.13		+24VDC
X14.14		GND
X14.15	Q4.0	NO mode
X14.16	Q4.1	NC mode
X14.17	Q4.2	Controlled A
X14.18	Q4.3	Free A
X14.19	Q4.4	Locked A
X14.20	Q4.5	Controlled B
X14.21	Q4.6	Free B
X14.22	Q4.7	Locked B
X14.23		+24VDC
X14.24	Q4.10	Technical alr
X14.25		Technical alr
X14.26	Q4.11	Fraud alr
X14.27		Fraud alr
X14.28		GND

X16.1	Q4.16	Pic A.O.LC
X16.2	Q4.17	Pic A.O.AR
X16.3		GND
X16.4		+24VDC
X16.5		GND
X16.6		
X16.7	Q4.18	Pic A.F.AR.A0
X16.8	Q4.19	Pic A.F.LCA2
X16.9	Q4.20	Pic A.F.CA.A1
X16.10	Q4.21	Strobe

X15.1	I3.16	DIP1 - Key
X15.2	I3.17	DIP2 - A.0
X15.3	I3.18	DIP3 - A.1
X15.4	I3.19	DIP4 - B.0
X15.5	I3.20	DIP5 - B.1
X15.6	I3.21	DIP6 - NO/NC
X15.7		+24VDC
X15.8		GND
X15.9	Q4.12	VSC Opening
X15.10	Q4.13	VSC LSO
X15.11	Q4.14	VSC LSC
X15.12	I3.15	VSC Failure
X15.13		+24VDC
X15.14		+24VDC
X15.15		GND
X15.16		GND

10.2. Programmable controller inputs (5, Ch. 2.2.3.)

Programmable controller LED	Assignment
0	Cell 1
1	Cell 2
2	Cell 3
3	Cell 4
4	Cell 5
5	Cell 6
6	Cell 7
7	Cell 8
8	Cell 9
9	Cell 10
10	Cell 11
11	Cell 12
12	Cell 13
13	Cell 14
14	Safety cell CS
15	Variable speed controller failure
16	DIP1: Console key
17	DIP2: Direction A – Free
18	DIP3: Direction A – Locked
19	DIP4: Direction B – Free
20	DIP5: Direction B – Locked
21	DIP6: Obstacle mode, NO/NC
22	Opening limit switch of the master obstacle
23	Closing limit switch of the master obstacle
24	Opening limit switch of the slave obstacle
25	Closing limit switch of the slave obstacle
26	Card reader – Authorised passage – Direction A
27	Direction A Reader – Passage denied
28	Emergency
29	Card reader – Authorised passage – Direction B
30	Direction B Reader – Passage denied
31	Fixed safety glass

10.3. Programmable controller outputs (5, Ch. 2.2.3.)

Programmable controller LED	Assignment
0	NO mode signalling
1	NC mode signalling
2	Controlled signalling - Direction A
3	Free signalling - Direction A
4	Locked signalling - Direction A
5	Controlled signalling - Direction B
6	Free signalling - Direction B
7	Locked signalling - Direction B
8	Passage contact – Direction A
9	Passage contact – Direction B
10	Signalling – Technical alarm
11	Signalling – Infringement
12	AOR variable speed controller – Open command CAN variable speed controller – Reserve
13	AOR variable speed controller – VSC opening limit switch state CAN variable speed controller – Closing limit switch signalling
14	AOR variable speed controller – VSC closing limit switch state CAN variable speed controller – Closing limit switch signalling
15	AOR variable speed controller – Opening limit switch signalling CAN variable speed controller – Reserve
16	Cross orientation pictogram – Direction A
17	Arrow orientation pictogram – Direction A
18	Arrow function pictogram – Direction A
19	Cross function pictogram – Direction A
20	Card function pictogram – Direction A
21	LCD pictogram – Strobe (not used)
22	Cross orientation pictogram – Direction B
23	Arrow orientation pictogram – Direction B
24	Arrow function pictogram – Direction B
25	Cross function pictogram – Direction B
26	Card function pictogram – Direction B
27	Card reader – Passage contact – Direction A
28	Card reader – Reader locking – Direction A
29	Card reader – Passage contact – Direction B
30	Card reader – Reader locking – Direction A
31	AOR variable speed controller – Closing limit switch signalling CAN variable speed controller – Reserve

10.4. Parameters of the program

Note: The PNG program parameters can only be modified using an *(optional) configurator*. For additional information, please refer to the configurator manual.

Note: The tables below provide the default parameter values, as initially entered into the program.

Time delays and pulses

The following values may range from 0 to 9999, in increments of 100 milliseconds.

Time delays and pluses	Name	Value set in the factory	Description
%TM0	T_intrusion	1 s	Sustains the alarm when the "intrusion" infringement disappears.
%TM1	T_free_open	2 s	Period during which the obstacle remains open after the user has left the entry zone in the "free in one direction" mode.
%TM2	T_pre-alarme	15 s	Period before the buzzer is activated in the event of an intrusion.
%TM3	T_no_pass	15 s	Period before return to standby mode if there is no passage following an authorisation.
%TM4	T_ferme_porte	0.5 s	Period during which the obstacle remains open after authorised passage has been detected.
%TM5	T_contraire	1 s	Sustains the alarm when the "opposite direction" infringement disappears.
%TM6	T_train	1 s	Sustains the alarm when the "tailgating" infringement disappears.
%TM7	T_fin_pass	1 s	Period before the gate returns to standby mode once the user has exited the aisle (Ch. 3.6.).
%TM9	T_t_o_pass	10 s	Maximum time period given to the user to exit the aisle after the obstacles have closed (Ch. 3.6.).
%TM10	T_safe_open	4 s	During an obstacle closing sequence, if the corresponding limit switch is not reached by the end of this time delay, the obstacle reopens (Ch. 3.10.).
%TM11	T_safe_close	2 s	Period during which the obstacle remains open in the event of a safety close (*T_safe_open*) (Ch. 3.10.).
%TM12	T_full_free	3 s	Period for which the obstacle remains open after passage through the PNG has ended, in "free in both directions" mode.
%TM13	T_wait_open	0.3 s	Time delay before the obstacles are opened after the presence obscuring the safety cells has disappeared (Ch.3.11.)
%MN0	M_new_lc_a	0.7 s	Duration of the passage contact pulse in direction A on the AS1007 X13.7 and X13.8 connectors.
%MN1	M_new_lc_b	0.7 s	Duration of the passage contact pulse in direction B on the X13.17 and X13.18 connectors.

Variables:

Variable	Name	Description
%M3	Lc_mem_lc	Counting the number of passage authorisations: 0: no counting 1: counting
%M9	Detect_p_t	"Tailgating" detection after traversing the obstacle (DIP3 of word 3): 0: No detection of *tailgating* before traversing of the obstacles 1: Detection of *tailgating* before traversing of the obstacles
%M34	Sel_pass	Type of passage contact (Ch. 3.8.): 0: passage contact is given when the entry zone is exited 1: passage contact is given when the PNG has been exited completely
%M36	Mode_sens_contraire	Detection of entry in the opposite direction (DIP2 of word 3): 0: detection of *opposite direction* entry on three cells 1: detection of *opposite direction* entry on two cells
%M46	Ext_cel_a	Cell extension – direction A: 0: absent (PNG380) 1: present (PNG381-PNG382)
%M47	Ext_cel_b	Cell extension – direction B: 0: absent (PNG380-PNG381) 1: present (PNG382)
%M85	Mode_sortie_libre	Type of "opposite direction" infringement detection in free exit mode (DIP6 of word 3): 0: reduced detection 1: reinforced detection
%M113	Act_emergency	Activation level of the "Emergency" input (DIP5 of word 3): 0: *Emergency* if connection 5-6 of X13 is open 1: *Emergency* if connection 5-6 of X13 is closed
%MW0	Phase_png	Program phase
%MW1	Cfg_pic_a	Configuration of the pictograms in direction A: 0: restricted management 1: extended management
%MW2	Nb_lc_a	Number of passage authorisations in direction A
%MW3	Nb_lc_b	Number of passage authorisations in direction B
%MW4	Cfg_safe	Configuration of the safety system: Bit 1 0: C6 excluded from the group 1: C6 included in the group Bit 2 0: C7 excluded from the group 1: C7 included in the group Bit 3 0: C13 excluded from the group 1: C13 included in the group Bit 4 0: C14 excluded from the group 1: C14 included in the group
%MW8	Cfg_pic_b	Configuration of the pictograms in direction B: 0: restricted management 1: extended management
%MW12	Cel_state	Cell status: X15 indicates the status of cell C1; X14 of C2; X13 of C3, etc., and X1 of CS; X0: 0
%MW21	Min_cel_zone_a	Number of cells to be obscured simultaneously in per zone for a "tailgating prior to passage" infringement to be declared in direction A. Value set in the factory: 2.
%MW22	Min_cel_zone_b	Number of cells to be obscured simultaneously per zone for a "tailgating prior to passage" infringement to be declared in direction A. Value set in the factory: 2.
%MW29	Nb_cel_pass	Number of cells to be freed in front of the obstacle for passage detection to be validated (Ch. 3.7.).
%MW30	Max_cel_zone	Number of cells to be obscured simultaneously in an entry zone for a "joining" infringement to be declared.

11. CERTIFICATE OF COMPLIANCE

Déclaration CE de conformité

Nous, soussignés,

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

Déclarons que la machine

Couloir sécurisé de passage
PNG380
PNG381
PNG382
PNG390
PNG391
PNG392
PNG390 Twin
PNG391 Twin
PNG392 Twin

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

- Directive Sécurité des Machine 2006/42/CE.
- Directive Basse Tension 2006/95/CE.
- Directive Compatibilité électromagnétique 2004/108/CE.
- EN 12100-1: 2003 Sécurité des machines- Terminologie de base et méthodologie.
- EN 12100-2: 2003 Sécurité des machines- Principes techniques et spécifications.
- EN 60204-1: 2006 Sécurité des machines, Equipement des machines- Règles générales.
- EN 61000-6-3: 2007 Compatibilité électromagnétique- Norme générique émission- Résidentiel, commercial, industrie légère.
- EN 61000-6-2: 2005 Compatibilité électromagnétique- Norme générique immunité- Résidentiel, commercial, industrie lourde.

Fait à WAVRE,
le : 2010-03-04
Nom du signataire : Denis VANMOL
Fonction : Directeur du développement
Signature :

EC declaration of conformity

We, undersigned,

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

Herewith declare that the machinery

Security entrance lane
PNG380
PNG381
PNG382
PNG390
PNG391
PNG392
PNG390 Twin
PNG391 Twin
PNG392 Twin

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

- Machinery Directive 2006/42/CE
- Low-voltage Directive 2006/95/CE
- Electromagnetic compatibility Directive 2004/108/EC
- EN 12100-1: 2003 Machinery – Basic terminology and methodology.
- EN 12100-2: 2003 Machinery – Technical principles and specifications.
- EN 60204-1: 2006 Safety of machinery. Electrical equipment of machines. General requirements.
- EN 61000-6-3: 2007 Electromagnetic compatibility (EMC). Generic standards. Emission standard for residential, commercial and light-industrial environments.
- EN 61000-6-2: 2005 Electromagnetic compatibility (EMC). Generic standards. Immunity standard for industrial environments.

Made in WAVRE
Date: 2010-03-04
Name : Denis VANMOL
Function : Director of Development
Signature :