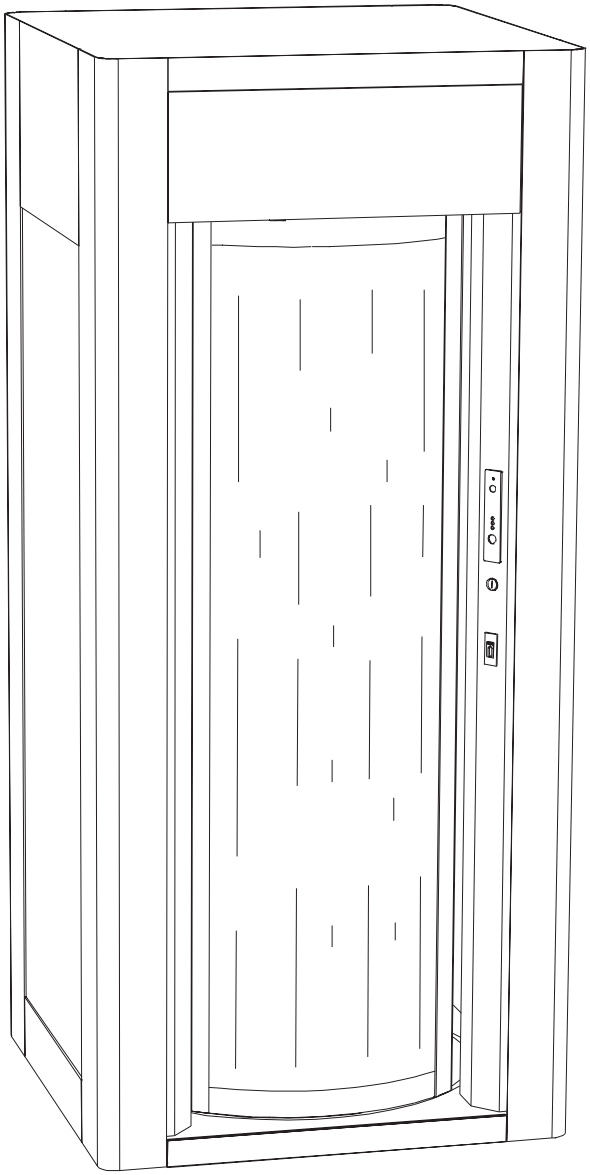
ClearLock 645



Technical Manual

(English Version)

Rev 00

DOCUMENT REVISION

Rev.	Date	Writer	Checked by	Subject
00	11/2015	SLu		First edition

TABLE OF CONTENTS

PLACING AND MAINTENANCE

This handbook must be used only by qualified technicians and authorised by Automatic Systems

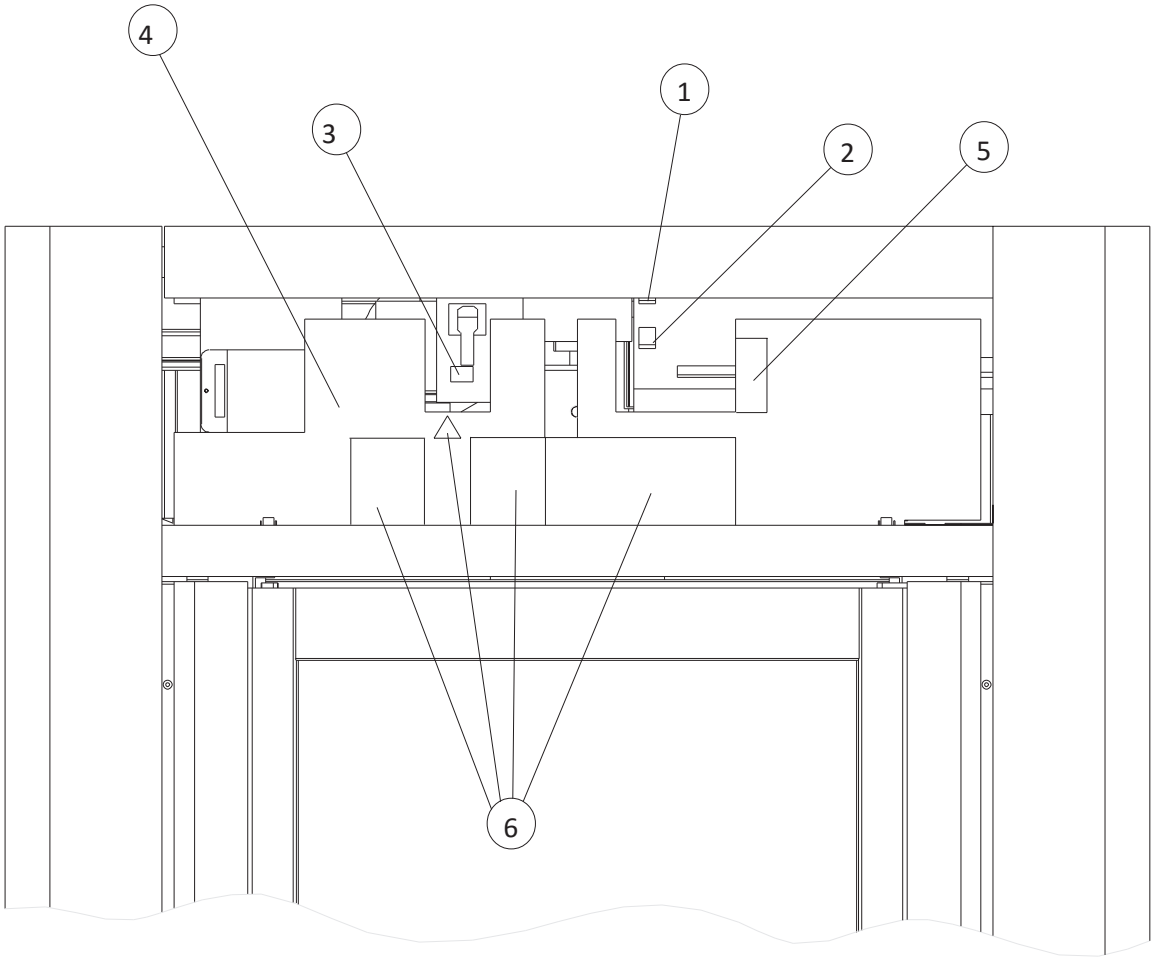
1. Safety warnings

- This manual must be made available to any person who works with the equipment, e.g., installers, maintenance technicians, end users, etc.
- This equipment has been designed to control and manage pedestrian access and flow and cannot be applied to any other use without risk to users or to the integrity of the equipment.
  ***Automatic** Systems* cannot be held responsible for damages caused by improper use of the equipment.
- It is strongly recommended that children be supervised as they pass through the door.
  Extreme care is also required with animals, which should be kept on a leash and under the control of their owners.
- Do not add non-approved accessories (contact between different metals causes an electrolytic effect that decreases the equipment's corrosion resistance or a malfunction of the metal detector).
- The Contractor shall comply with local standards when installing the equipment.
- Any work on the equipment must be performed by qualified personnel. ***Automatic** Systems* shall reserve the full right to automatically refuse our warranty if any unauthorized work or work performed by an unqualified technician is performed on this product.
- Access to the mechanism is reserved for personnel who are aware of the electrical and mechanical dangers in the case of negligent operation. This personnel is obliged to close off access to the mechanical equipment after completing any work.
- For any operation that does not require the equipment to be powered on, disconnect the electrical power using the ***SYSTEM*** switch on the console ð ***OFF*** (or open the breaker on the client distribution panel) **AND** disconnect the batteries.
- Any internal element that may be live or that could move should be handled with caution.
- The equipment is factory configured in "minimal risk" mode for its users. Parameters should only be changed by qualified personnel with full knowledge of the consequences, and this shall in no way entail any liability on the part of ***Automatic** Systems*.
- The equipment must be completely visible to the user/operator before being put into operation.
- After a collision, even if there is no visible damage, the equipment must be checked by a qualified technician.
- Especially for booth product:
  - not walk on the booth's roof.
  - Do not close circuit the batteries.
  - Before moving the booth make sure that the weight basket is anchored to the casing with the blocking system.
  - Always place the protection guard behind the panel after maintenance.
  - There is a small internal panel where the main switch can be accessed and the security system can be adjusted.
  - After unpacking and before you proceed to assemble the booth, put away all the material in a dry and clean place.

2. STRUCTURE AND COMPONENTS

2.1. Main switch and on switch

Table 01



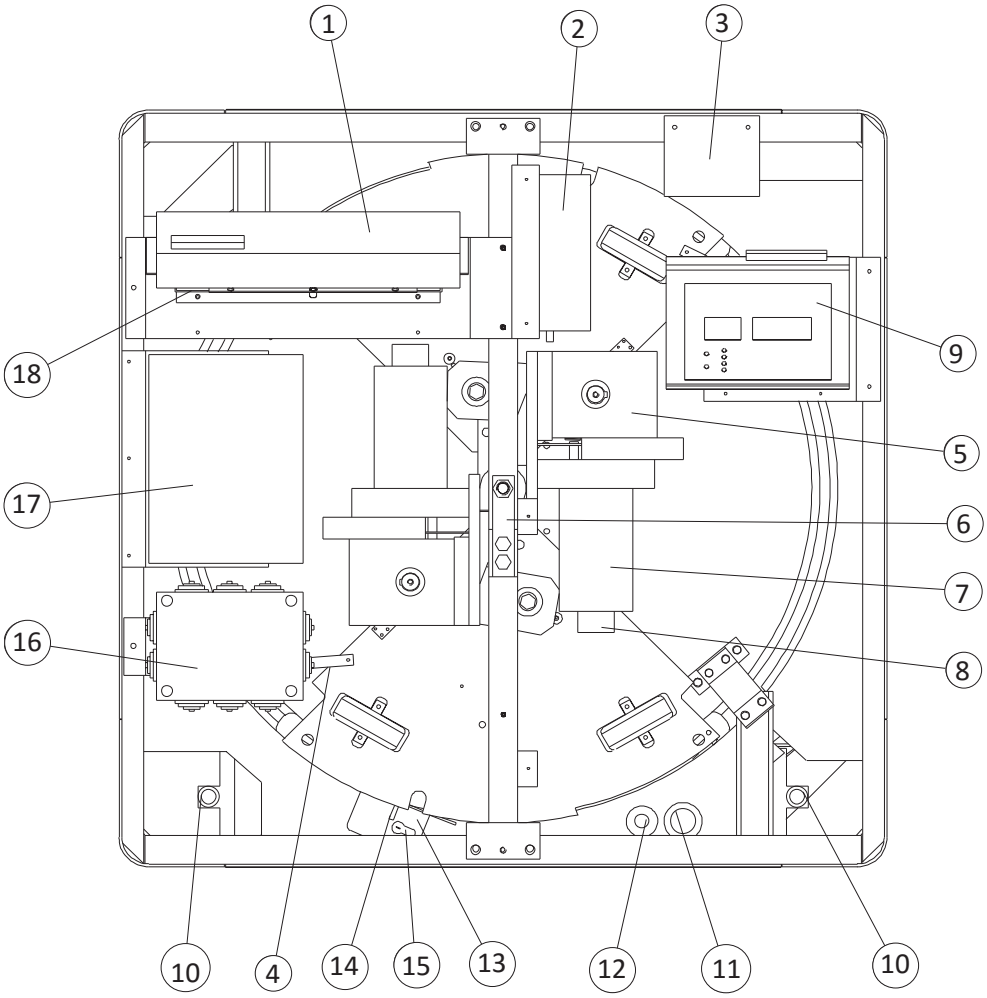
Inside view with open inspection panel

1) Booth's ON/OFF switch
2) Switch to run booth on batteries.
3) Switch 220 V.
4) Anti accident guard.
5) Battery check stick on.
6) Instructions stick on.

2.2. Top view

Table 02

Internal



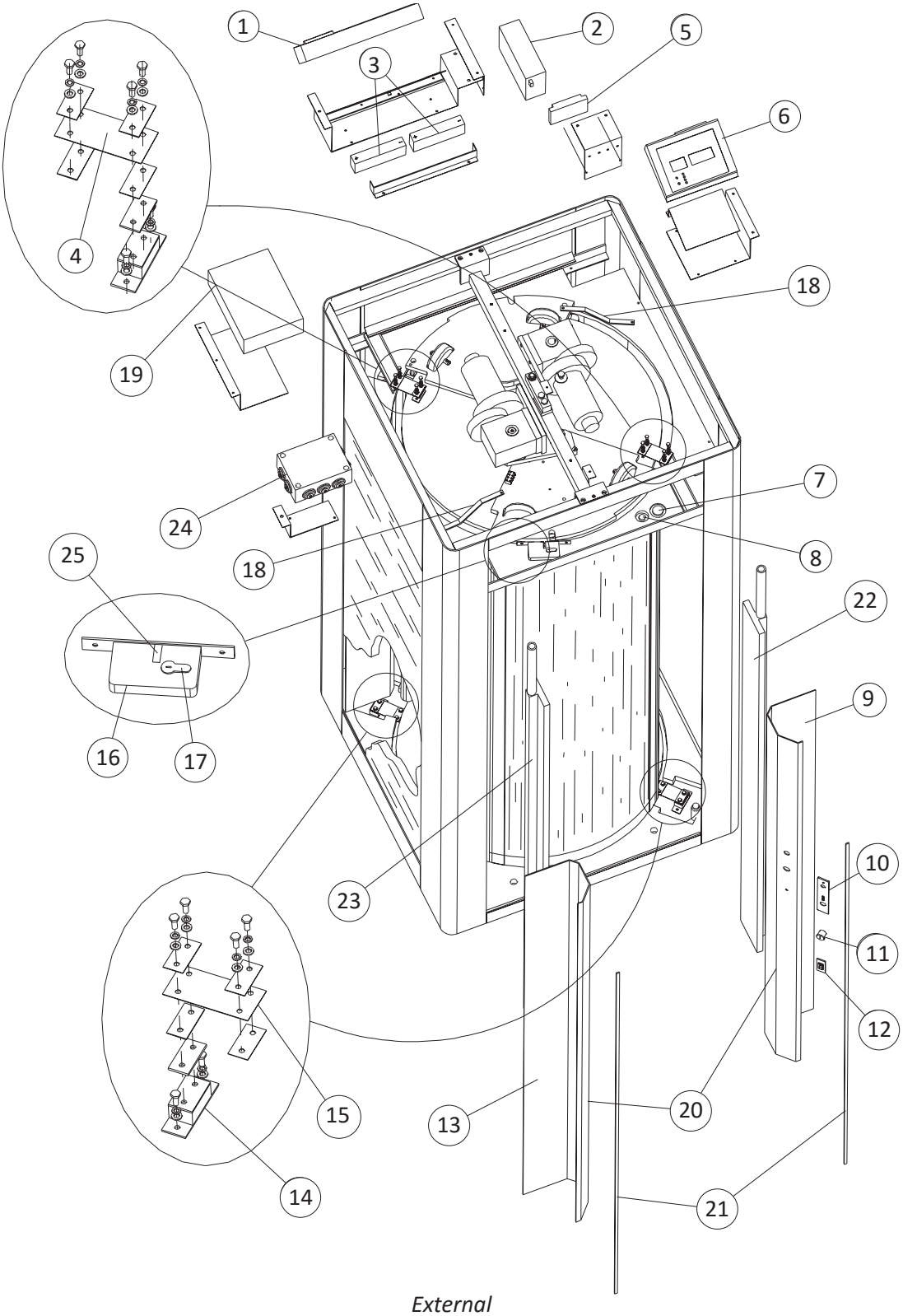
External

2.3. Components list table 02

Rep.	Particulars	Qty.	Code
1	Main board	1	5205305
2	Power supply	1	5205727
3	Main anti accident photocell board	1	5205078
4	Door blocking stirrup	2	350789364
5	Reducer	2	5005904
6	Loading Cell	1	509T500
7	Motor	2	5105226
8	Encoder	2	5206032
5+7+8	Motor reducer group	2	5105903
9	Metal Detector Main Board	1	5206089
10	Stirrup to fix stalk M.D.	2	440205605R1
11	Speaker	1	5805868
12	Electronic key (optional)	1	
13	Mechanical lock	1	5300961
14	Mechanical lock Micro switch	1	5200067
15	Mechanical lock cylinder	1	5303656
16	Box for auxiliary board I/0 315 (optional)	1	5207391
17	Management box for emergency exit (optional)	1	5207851
18	Emergency batteries	2	50982A12V

2.4. Section design main view

Table 03



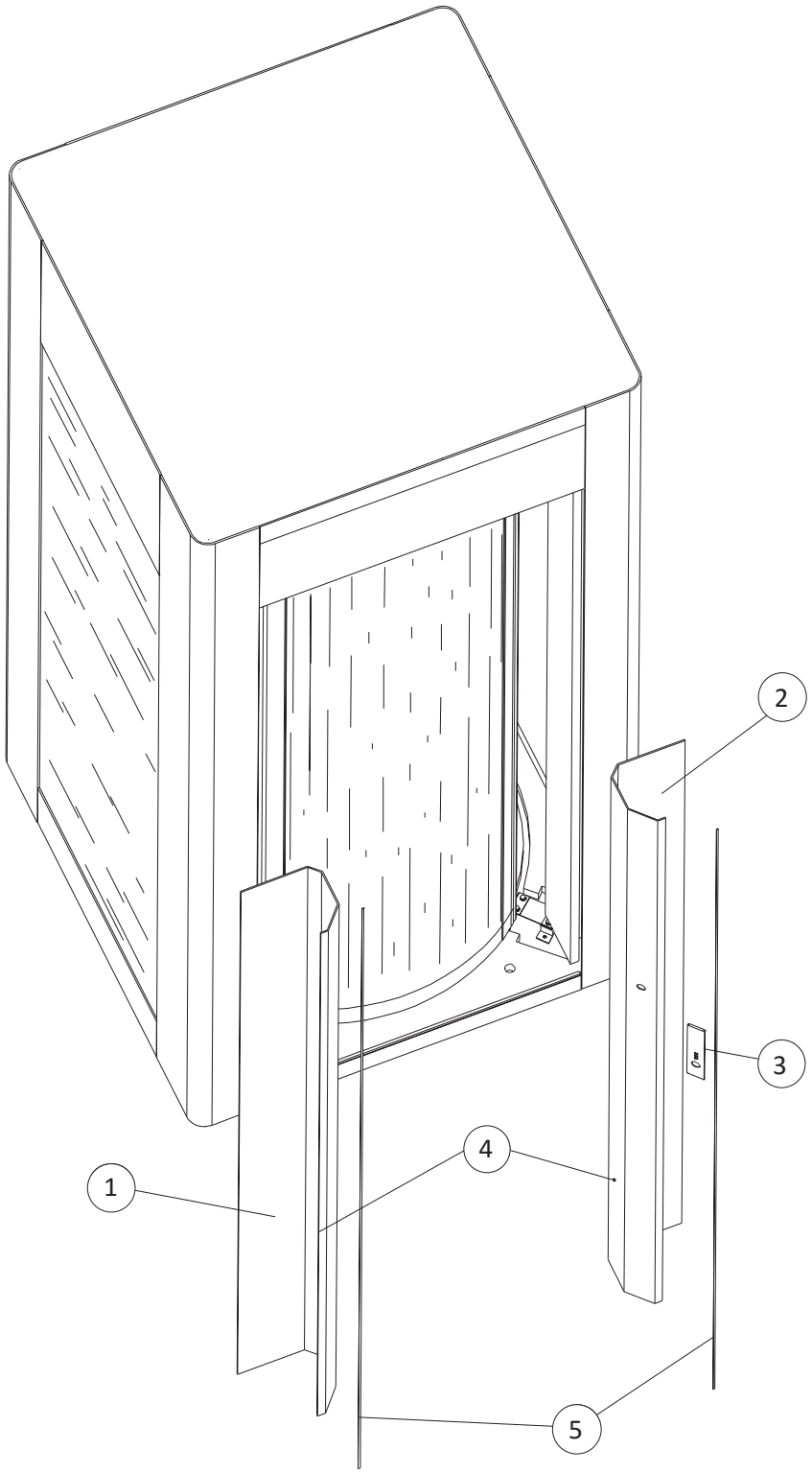
External

2.5. Components list table 03

Rep.	Particulars	Qty.	Code
1	Main board	1	5205305
2	Power supply	1	5205727
3	Emergency batteries	2	50982A12V
4	Long leaf Spring	2	4401124
5	Main anti accident photocell board	1	5205078
6	Metal Detector Main Board	1	5206089
7	Speaker	1	5805868
8	Electronic key (optional)	1	
9	Push button panel	1	410586364
10	Push button panel with intercom	1	5205306
11	Electric key (optional)	1	
12	Electronic key (optional)	1	
13	Unmarked panels	1	4101794
14	Leaf spring support	4	4401518
15	Short leaf spring	2	4400861
16	Mechanical lock	1	5300961
17	Mechanical lock cylinder	1	5303656
18	Door blocking stirrup	2	350789364
19	Management box for emergency exit (optional)	1	5207851
20	Accident prevention photocells	2 Pairs	5204239
21	Magnets	4	4400267
22	Metal Detector TX Panel	1	5207151
23	Metal Detector RX Panel	1	5207152
24	Box for auxiliary board I/0 315 (optional)	1	5207391
25	Mechanical lock Micro switch	1	5200067

2.6. Internal Section diagram

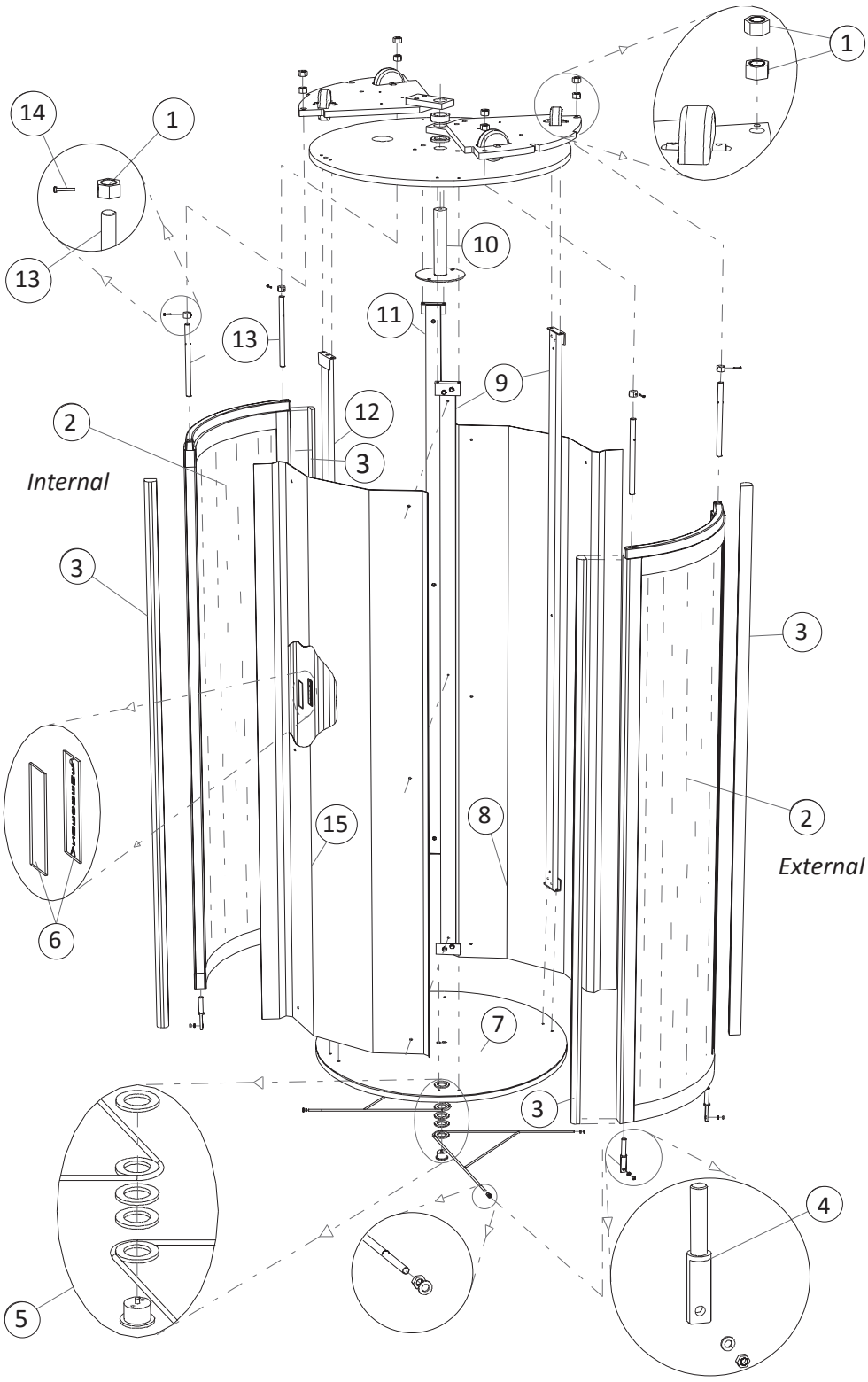
Table 04



Internal

2.7. Weight Internal space

Table 05



2.8. Components list table 04

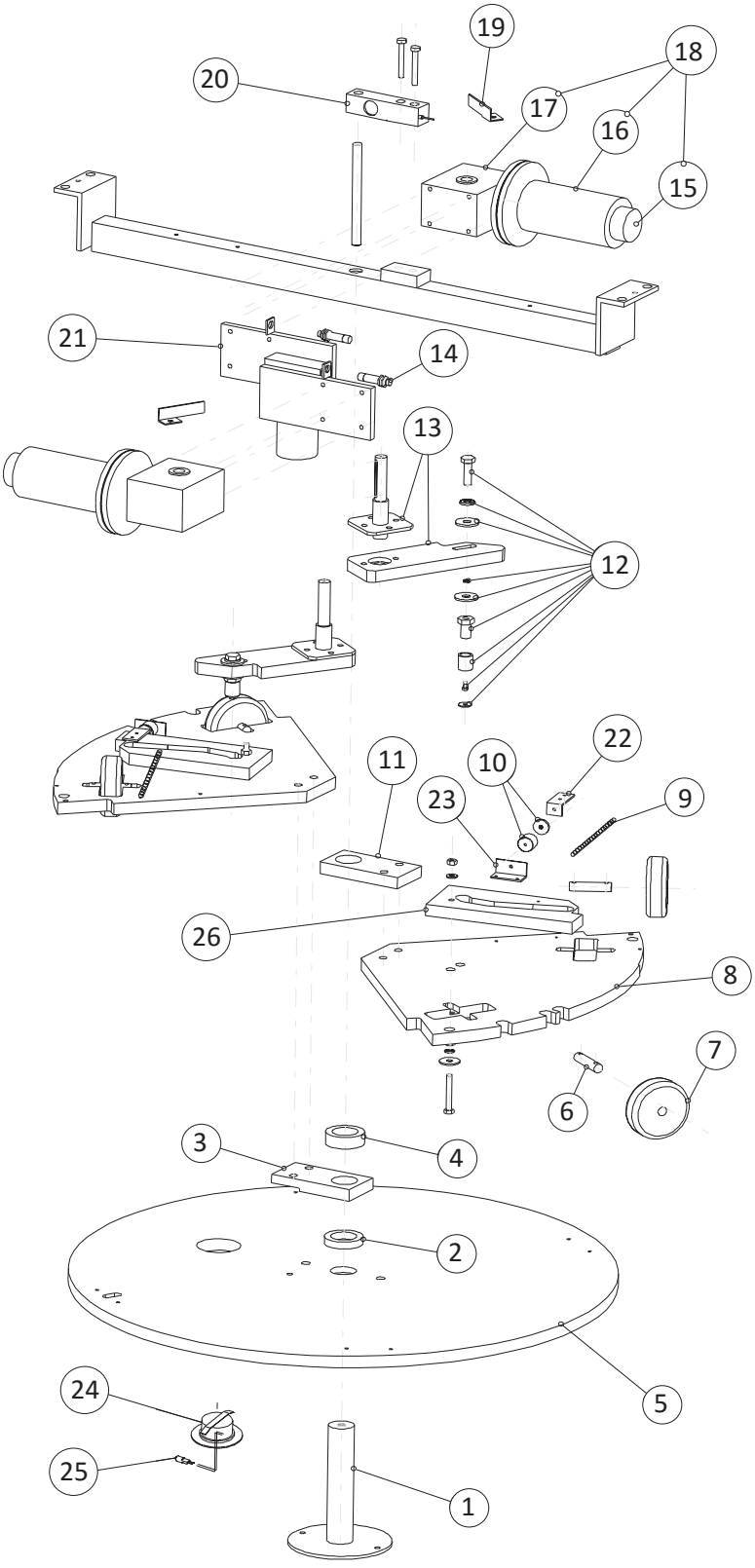
Rep.	Particulars	Qty.	Code
1	Unmarked panels	1	3504267
2	Push button panel	1	350586564
3	Push button panel without intercom	1	5205307
4	Accident prevention photocells	2 Pairs	5204239
5	Magnets	4	4400267

2.9. Components list table 05

Rep.	Particulars	Qty.	Code
1	Nylon bolt M16 H15	12	5400519
2	Assembled door	2	230698664
3	Door's rubber side non active	4	4401070
4	Door's lower arm attachment	4	4302523
5	Door's lower arm attachment parts	1	2202007
6	CE complete push button panel	1	2207304
7	Basket's bubble floor	1	440719064
8A	Glass basket wall	1	430756764
8B	Unmarked basket wall	1	430756864
9	Phenol basket panel	2	440717964
10	Basket support shaft	1	4401957
11	Basket iron stanchion	1	350717764
12	Basket side CE iron stanchion	1	350717864
13	Door attachment screw	4	4300518
14	Screw M	8	
15A	Basket side glass wall CE	1	430726864
15B	Unmarked basket wall side CE	1	430726964

2.10. Mechanical Movement

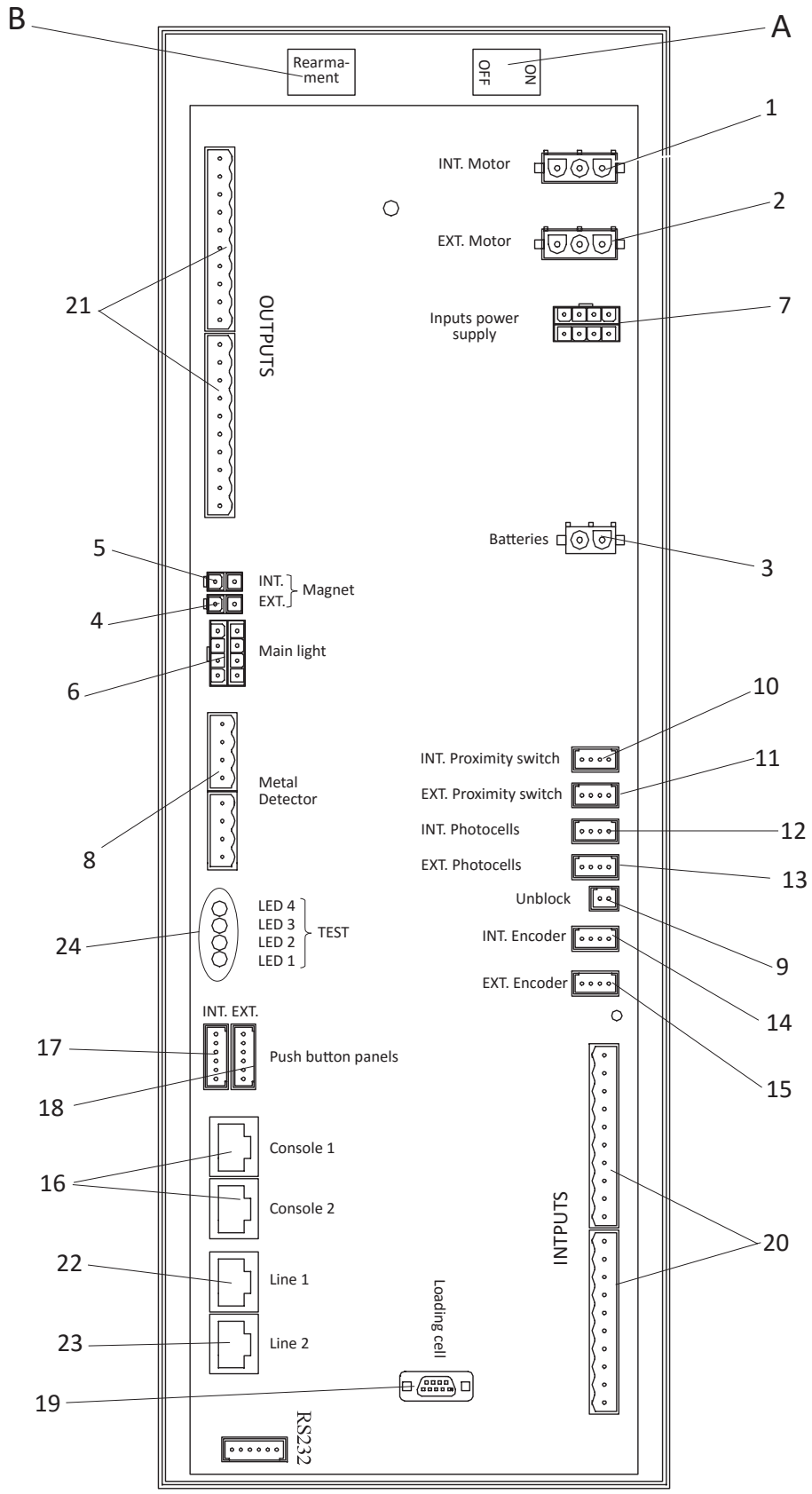
Table 06



2.11. Components list table 06

Rep.	Particulars	Qty.	Code
1	Basket support shaft	1	4401957
2	Top hub spacer ring	1	4302624
3	Internal cabin attachment plate	1	4402588
4	Top hub spacer ring	1	4302623
5	Basket ceiling	1	440719164
6	Carrier wheel pin	4	4302531
7	Carrier wheel	4	504117100
8	Carrier	2	440818794R2
9	Unblocking door spring	2	4402653
10	Electromagnet stabilizer	2	5105867
11	Internal cabin attachment plate	1	4402587
12	Pin parts to move carrier	2	2209307
13	Motor reducer connecting rod parts	2	2209308
14	Proximity Sensor	2	5092PNO
15	Encoder	2	5206032
16	Motor	2	5108258
17	Reducer	2	5008150
18	Motor reducer group	2	5108259
19	Proximity small reading square	2	350844394
20	Loading Cell	1	509T500
21	Motor reducer support	1	350818394R1
22	Magnet attachment plate	2	350818894
23	Small reading square attachment for electromagnet	2	350818194
24	Light	2	5801285
25	Light bulb	1	50912V10W
26	Cam.	2	430667964R3

3. ELECTRONIC MAIN BOARD



3.1. Connections to main board

A Booth's ON/OFF switch.

B Re-able switch with emergency batteries after discharging.

1 Cable cv02A connection to the internal motor.

2 Cable cv01A connection to the external motor.

3 Cable cv03B connection to emergency batteries.

4 Cable cv07B connection to the unblock magnet for the internal door emergency.

5 Cable cv07A connection to the unblock magnet for the external door emergency.

6 Cable cv06A connection to the voice message speaker.
Cable cv13A connection to the spotlight.
Cable cv14A connection to the intercom's call button (main push button panel) CE.

7 Cable cv08A power connection.

8 Cable cv12A connection to the metal detector's main board.

9 Cable cv14A connection to the emergency button (main push button panel) CE.

10 Cable cv11A connection to the internal proximeter.

11 Cable cv10A connection to the external proximeter.

12 Cable cv17A connection to the door's external rubber side contact.

13 Cable cv18A connection to the internal rubber side and main board power contact.

14 Connection with encoder cable to internal encoder.

15 Connection with encoder cable to external encoder.

16 Cable cv19A connection to the console.

17 Cable cv05A connection to the internal push button panel.

18 Cable cv04A connection to the external push button panel.

19 Connection with loading cell cable to loading cell.

20 Input connections:

- clamps 1 and 3 activating bridge.
- clamps 4 and 8 unblocked ext. door.
- clamps 4 and 9 unblocked int. door.
- clamps 11 and 12 cable cv09A connection to mechanical lock.
- clamps 15 and 20 first entrance bridge.

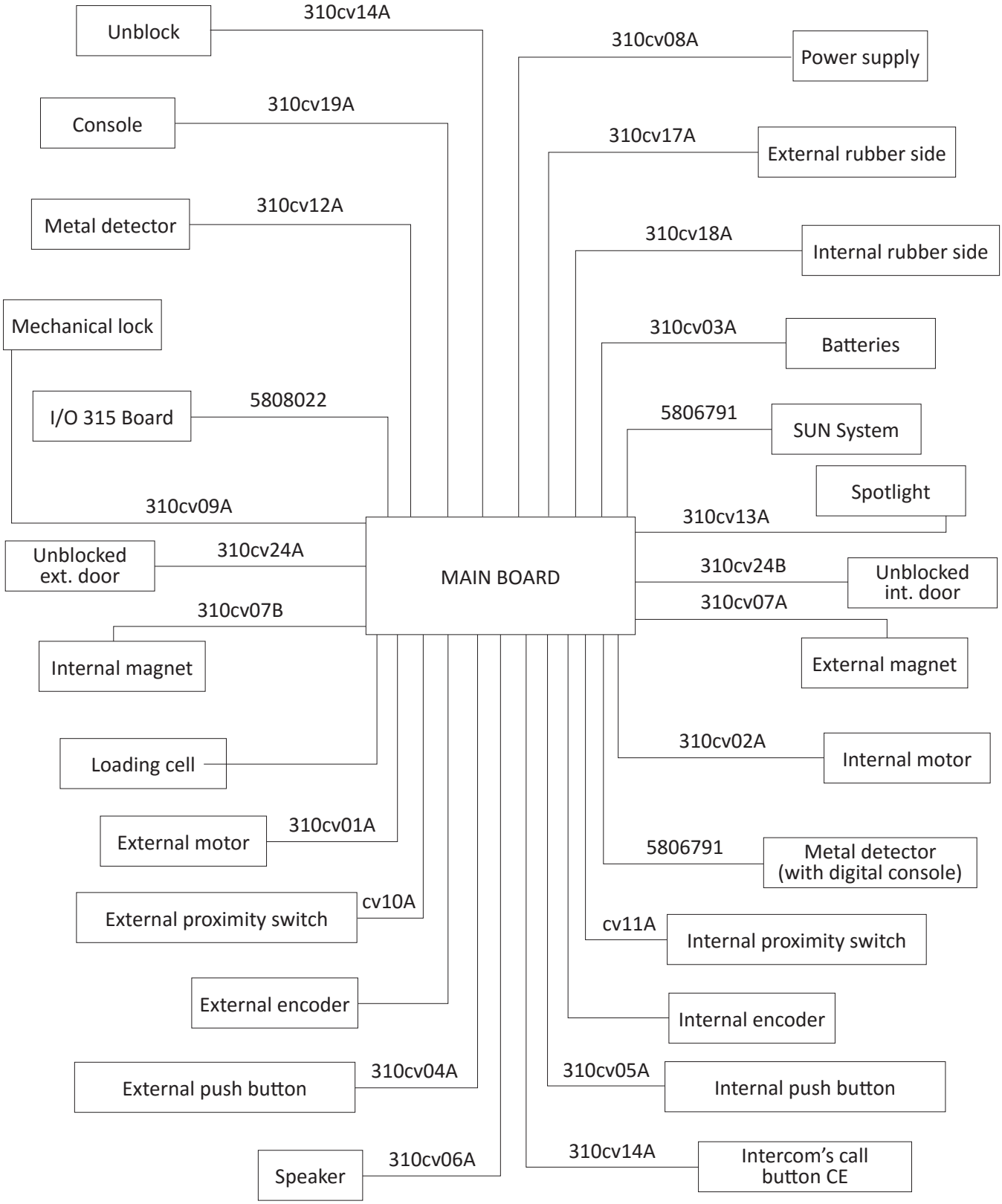
21 Exit connections.

22 Cable 5806791 connection to the SUN system (only booth's with Sun system).

23 Cable 5806791 connection to the SAIMA metal detector with digital console.

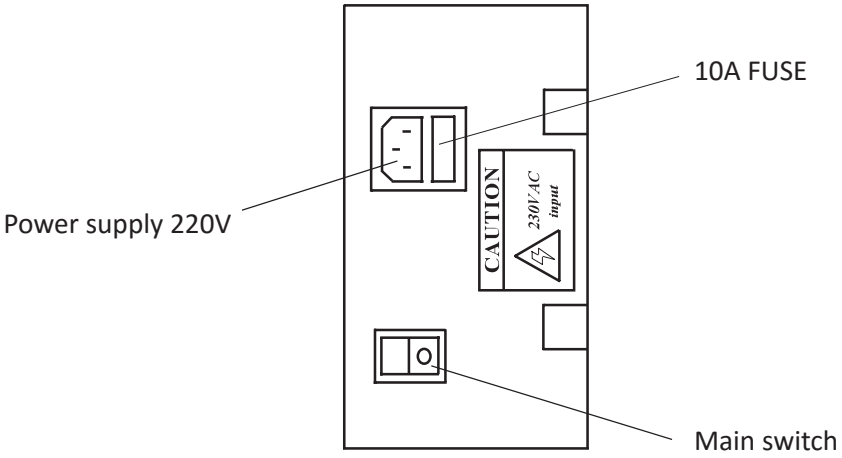
24 Auto diagnostic led.

3.2. Block diagram

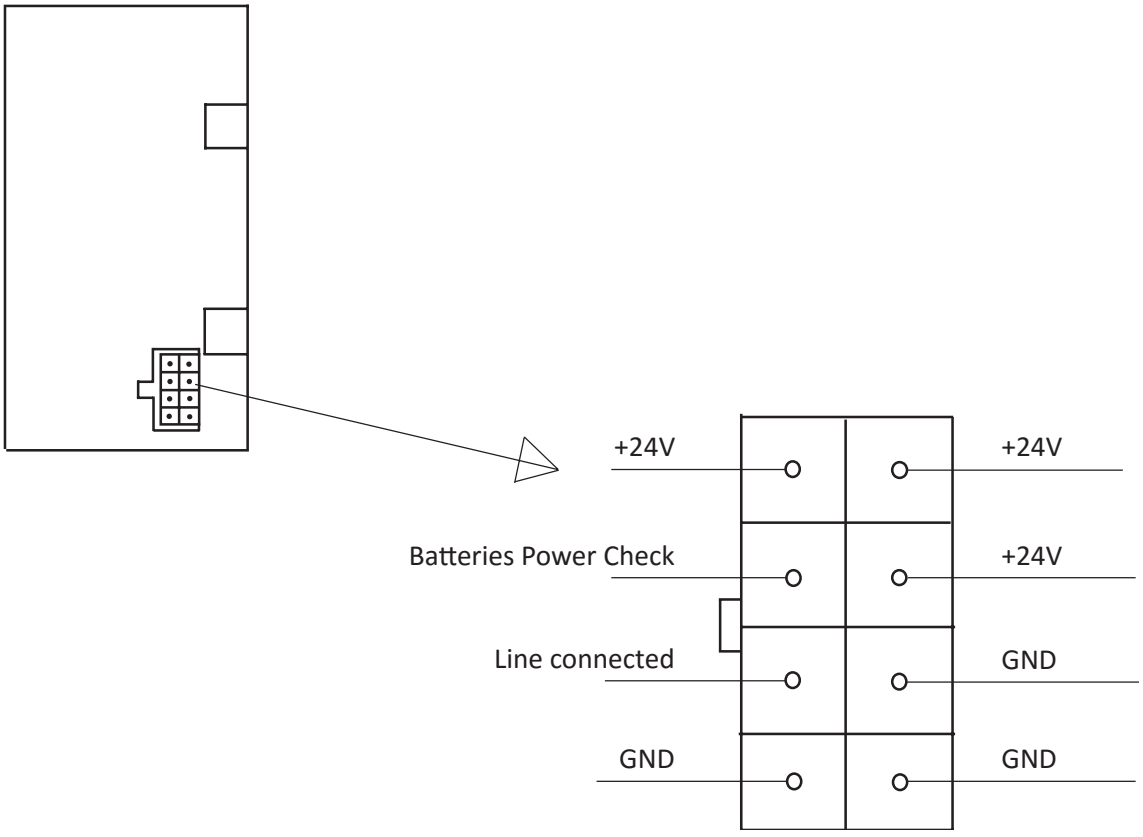


3.3. Power Supply

3.3.1. Back view



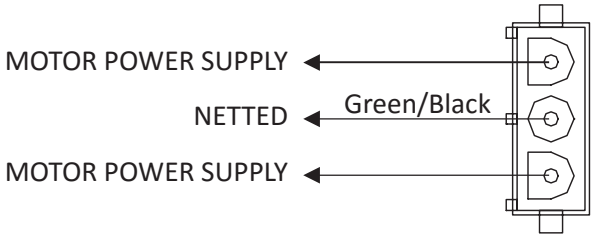
3.3.2. Side back view



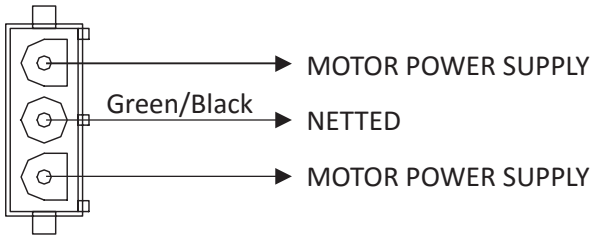
3.4. Connections (main board)

3.4.1. Motors

3.4.1.1. Internal door motor



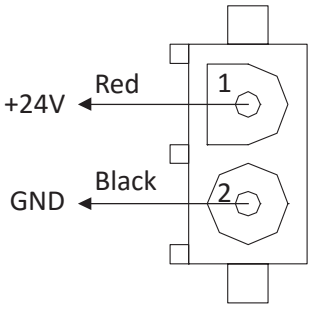
3.4.1.2. External door motor



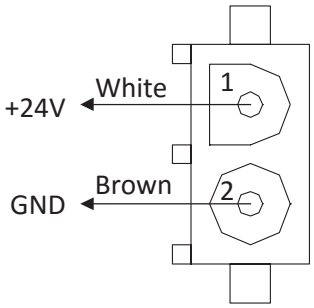
Cable/colour motor connection chart

MOTOR / BOOTH	INTERNAL	EXTERNAL
MIDDLE	1 BROWN 3 WHITE	1 BROWN 3 WHITE
LEFT	1 BROWN 3 WHITE	1 WHITE 3 BROWN
RIGHT	1 BROWN 3 WHITE	1 WHITE 3 BROWN

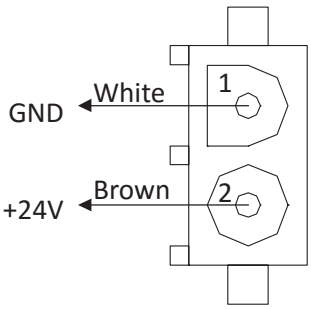
3.4.1.3. Batteries



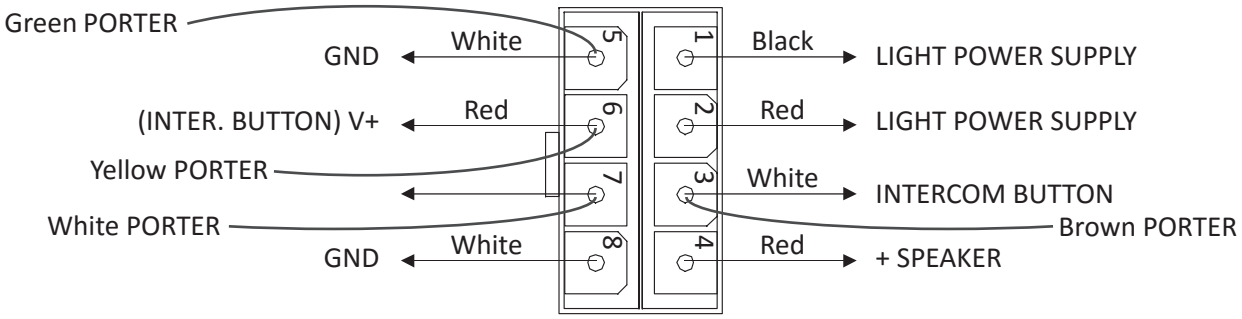
3.4.1.4. Int. magnet



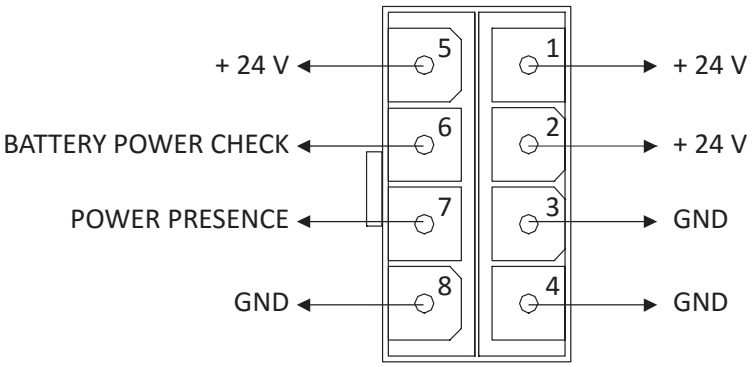
3.4.1.5. Ext. magnet



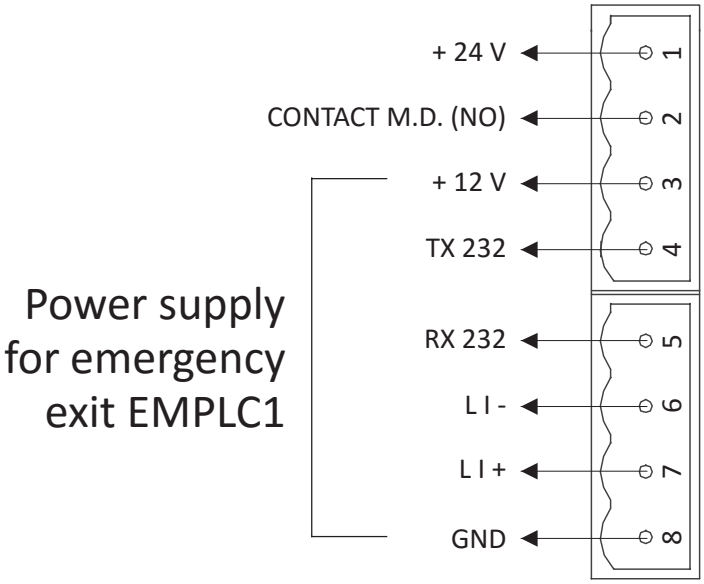
3.4.1.6. Ceiling light



3.4.1.7. Power supply

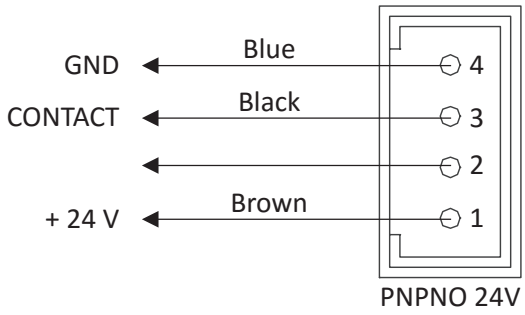


3.4.1.8. Metal Detector

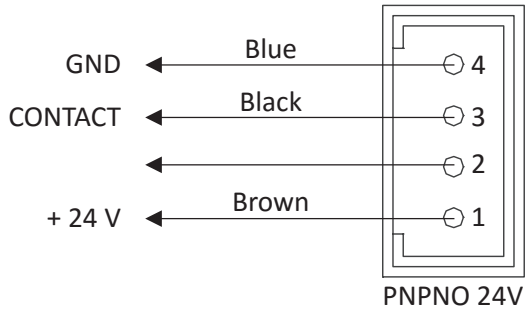


3.4.1.9. Unblock

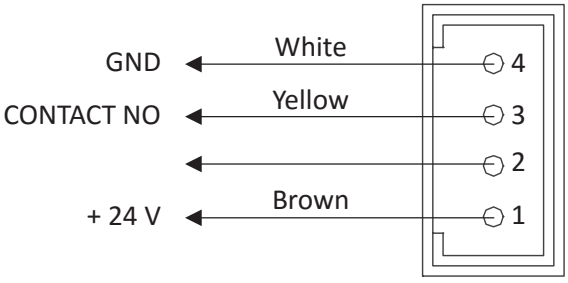
3.4.1.10. INT. proximity switch



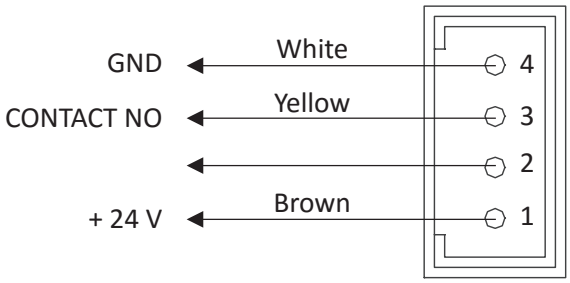
3.4.1.11. EXT. proximity switch



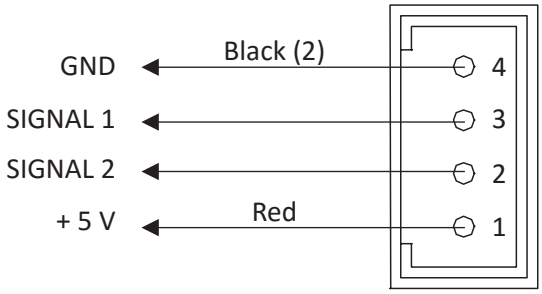
3.4.1.12. INT. accident prevention photocell



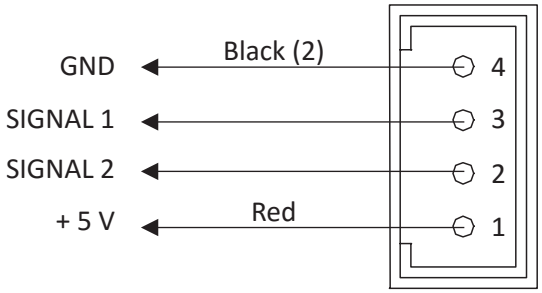
3.4.1.13. EXT. accident prevention photocell



3.4.1.14. INT. encoder



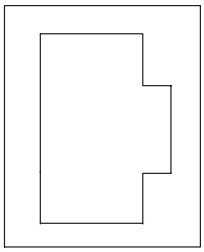
3.4.1.15. EXT. encoder



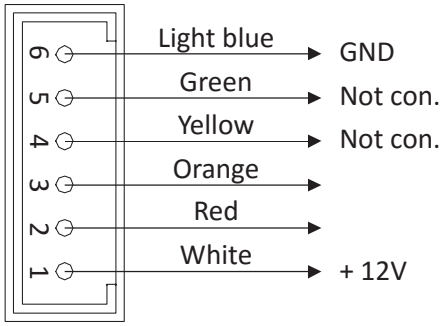
Cable/colour encoder connection chart

ENCODER BOOTH	INTERNAL	EXTERNAL
MIDDLE	3 GREEN 2 YELLOW	3 GREEN 2 YELLOW
LEFT	3 GREEN 2 YELLOW	3 YELLOW 2 GREEN
RIGHT	3 GREEN 2 YELLOW	3 YELLOW 2 GREEN

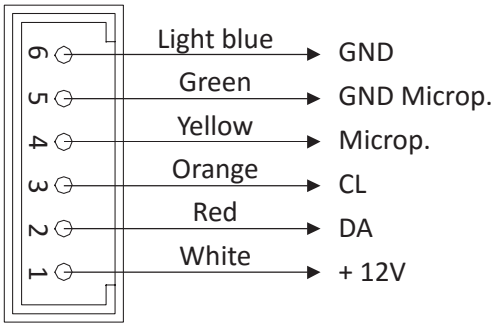
3.4.1.16. Main Console



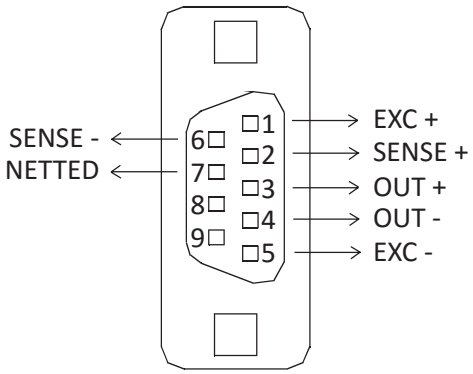
3.4.1.17. INT. push button panel



3.4.1.18. EXT. push button panel

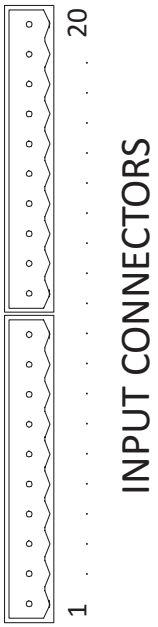


3.4.1.19. Loading cell



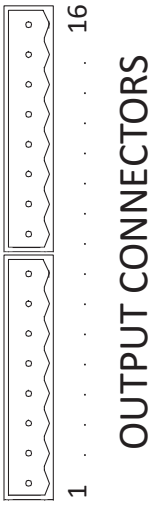
3.4.1.20. Inputs

N°	NAME	ORDER
1	ING 6	TURN ON (Contact NC)
2	ING 7	Person Sensor
3	+ 24 V	TURN ON (Common)
4	GND	Not used
5	+ 12 V	Not used
6	+ 12 V EXT	Power opto-isolator
7	ING 8	Rubber side opening
8	ING 9	Ext. unblocked
9	ING 10	Int. unblocked
10	ING 11	Excluded m.d. first passage
11	+ 24 V	Mechanical lock (contact C)
12	ING 0	Mechanical lock (contact NO)
13	ING 1	Input auxiliary metal alarm (also see metal connector)
14	+ 24 V	First entrance key (contact C)
15	ING 2	First entrance key (contact NC)
16	ING 3	Internal Radar (contact NO)
17	+ 24 V	Radar (Common)
18	ING 4	External radar (contact NO)
19	ING 5	Post Key (contact NC)
20	+ 24 V	Post Key (contact C)

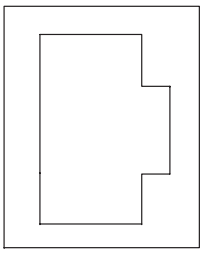


3.4.1.21. Outputs

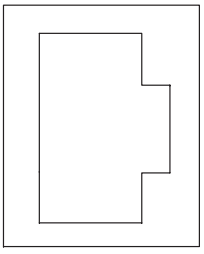
N	NAME	ORDER
1	GND	Not used
2	OUT 8	Cycle TV camera
3	GND	Not used
4	OUT 7	Unable m.d. Ceia
5	GND	Not used
6	OUT 6	Person presence
7	GND	Not used
8	OUT 5	Night function
9	GND	Not used
10	+ 12 V OUT	Protected power supply 12 V (external use)
11	GND	Outside ground
12	OUT 3	Not used
13	GND	Not used
14	+ 24 V OUT	Protected power supply 12 V (external use)
15	GND	Outside ground
16	OUT 1	Not used



3.4.1.22. Line 1 (SUN SYSTEM where used)



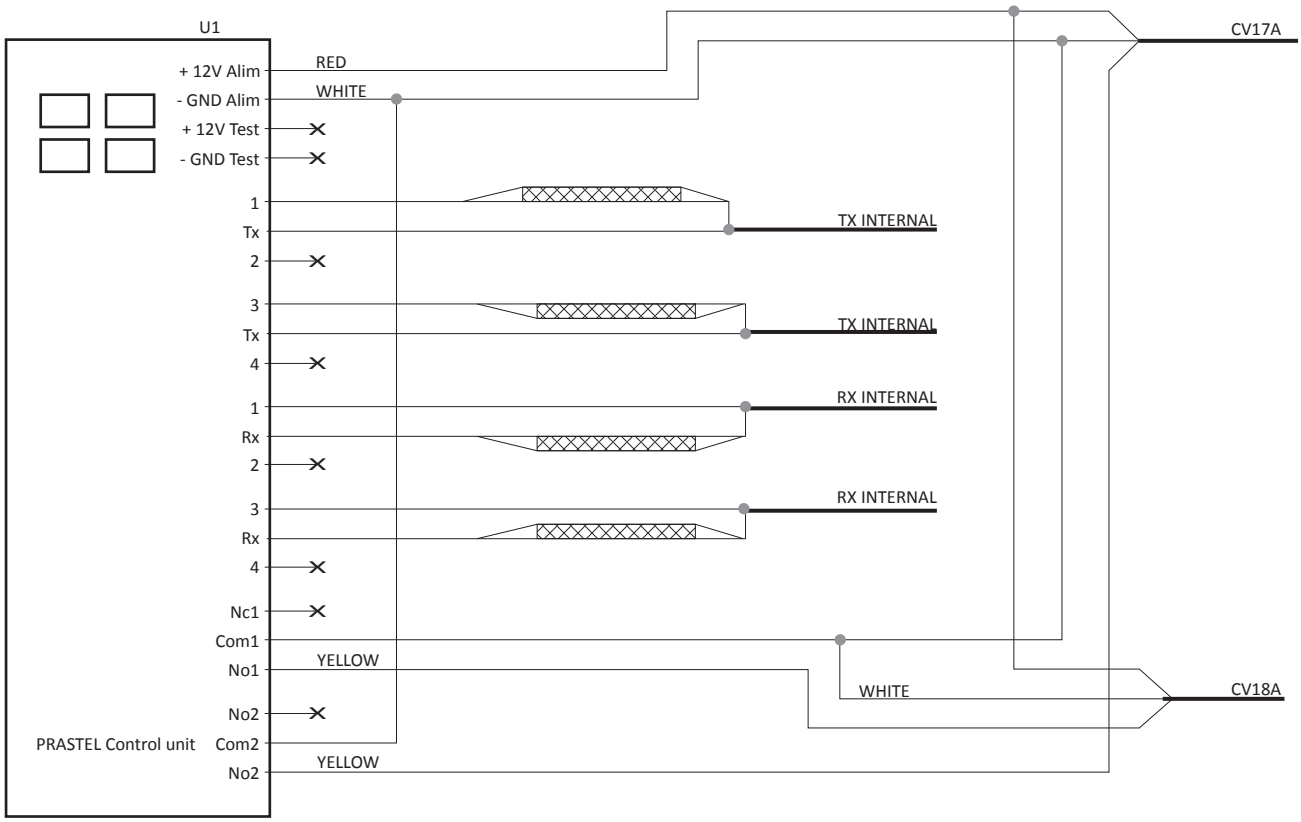
3.4.1.23. Line 2 (Metal Detector with digital console)



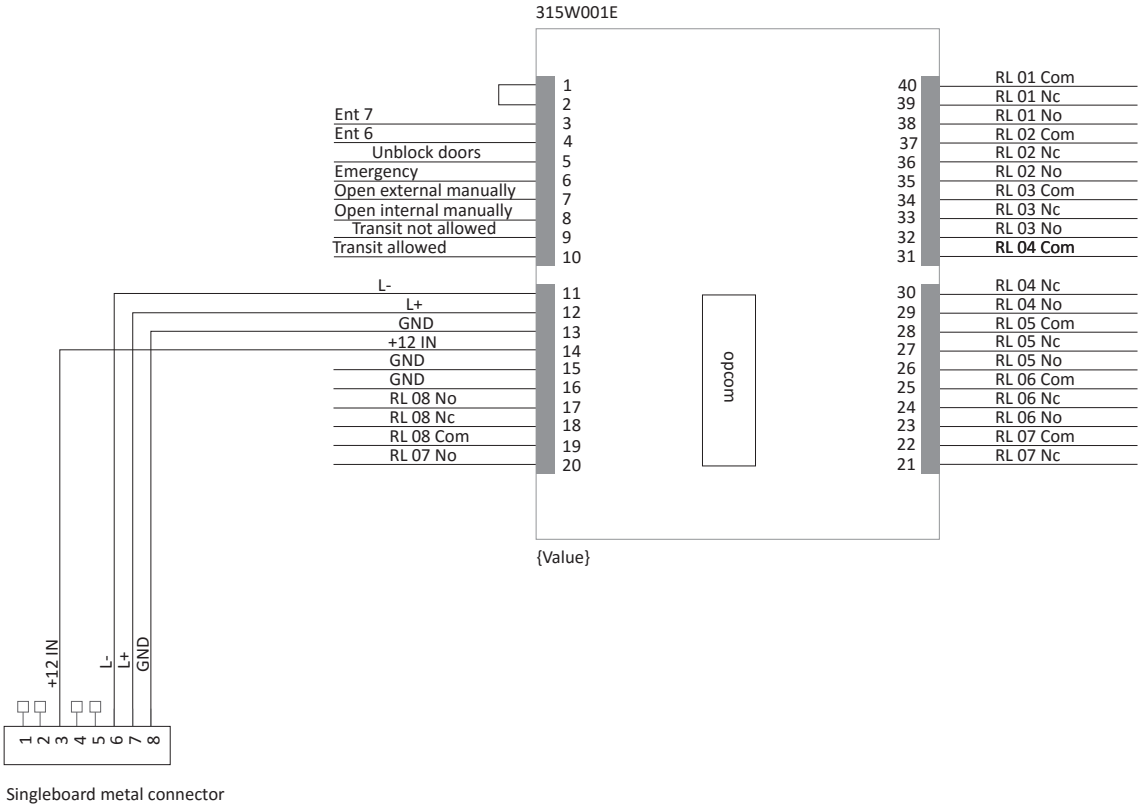
3.4.1.24. Auto diagnostic led

LED CONDITION	MEAN
OLD 1 on	Encoder error
OLD 2 on	Weight error
OLD 1 & 2 on	One rubber side excluded
OLD 3 on	Micro position error
OLD 1 & 3 on	Encoder direction error

3.5. Photocell connection diagram



3.6. Auxiliary board T/O315 connection diagram



Singleboard metal connector

RL 01 ENTRANCE TRANSIT VALIDATION

RL 02 EXIT TRANSIT VALIDATION

RL 03 BOOTH CONTACT IN EMERGENCY

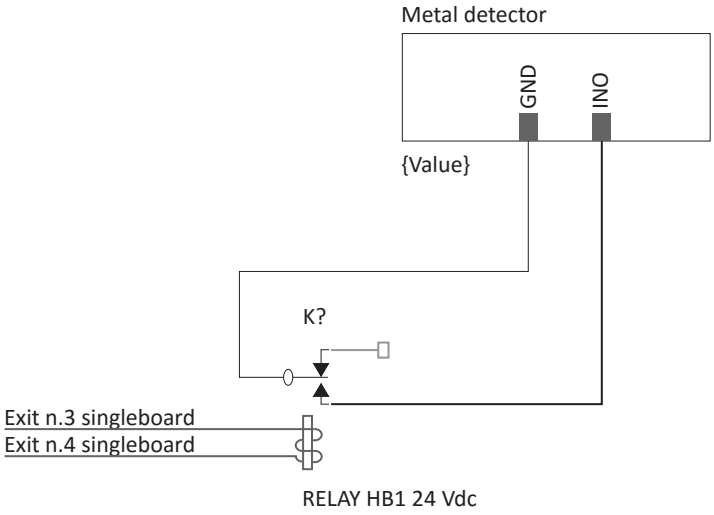
RL 04 CONDITION CONTACT INTERNAL DOOR

RL 05 CONDITION CONTACT EXTERNAL DOOR

RL 06 EXCESSIVE WEIGHT SIGNAL

RL 07 INTERCOM SIGNAL

3.7. Metal Detector CETA cut off diagram



4. PROGRAMMING AND ANALYSIS

Testing for bad or broken booth components and changes to the parameters different from those set by the factory, must be made with the “Power Console” software available on request from ***Automatic*** *Systems*.

The “Power Console” program has been created to manage the booth functions of the Single board type.

This program works only with a hardware key. Should you need one, please contact ***Automatic*** *Systems* technical assistance service.

This program communicates with the booth using a serial door on the PC through a RS232/RS485 converter.

In order to work the software needs the following kit:

- RS232/RS485 converter.
- converter cable DB9 female, DB9 male.
- interface cable converter/logic 8 prong plug.
- programming cable with button.
- hardware key.

The minimum required to install is:

- Windows 2000 Professional.
- RAM 128 Mb.
- 100 Mb of free space on the hard disk.

Installing the “Power Console” program.

1) Click on “hdd32.exe” and choose typical installation. This will install the driver for the hardware key.
2) Install “Power Console”.

ATTENTION: If a system error called “ENCODER ERROR” appears on the input status screen, while opening the program, this could mean that:

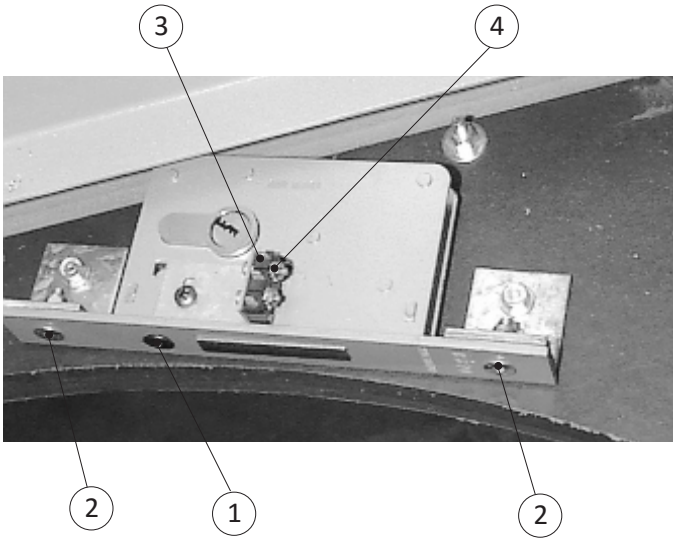
- The power supply of the motors is inverted.
- Counting of the encoder rotation stage is inverted.
- Some type of hindrance prevents the doors to move toward the closed position.

For instructions on how to use the “Power Console” software, you can request the handbook by calling ***Automatic*** *Systems* technical assistance service.

For Metal Detector maintenance or to change the parameters set by ***Automatic*** *Systems* you must request the operating manual or contact ***Automatic*** *Systems* assistance service.

5. CHANGING COMPONENTS

5.1. Lock



WARNING: Turn off the booth before you do any maintenance using the single board's ON/OFF switch and open the door manually.

5.1.1. SUBSTITUTING THE CYLINDER

1) Untighten the screw (1).
2) Being a security cylinder rotate the key from its position only a few degrees just enough to allow the cylinder to come out.
3) Take out the cylinder.

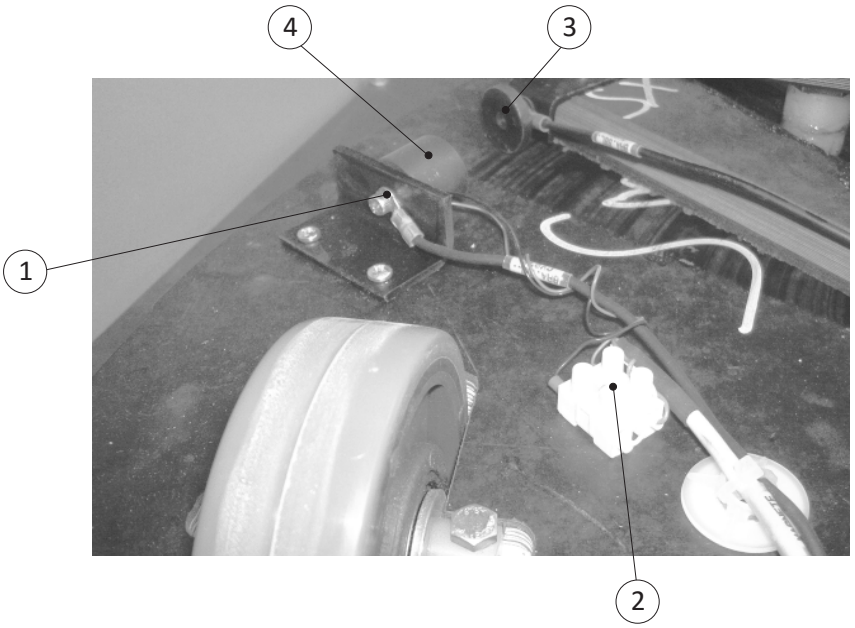
5.1.2. SUBSTITUTING THE MECHANICAL LOCK

1) Untighten the screw (1).
2) Remove the cylinder as described on top.
3) Unscrew the screws (2).
4) Remove the mechanical lock.

5.1.3. SUBSTITUTING THE MICROSWITCH

1) Untighten the screw (4).
2) Remove the micro switch (3) and substitute.
3) Screw in making sure not to damage the micro Switch.
4) Activate the lock with the key to verify that the micro switch is working.
5) If the lock does not work properly un-tighten the screws (4) and change the micro switch's inclination.

5.2. Emergency unblock magnet



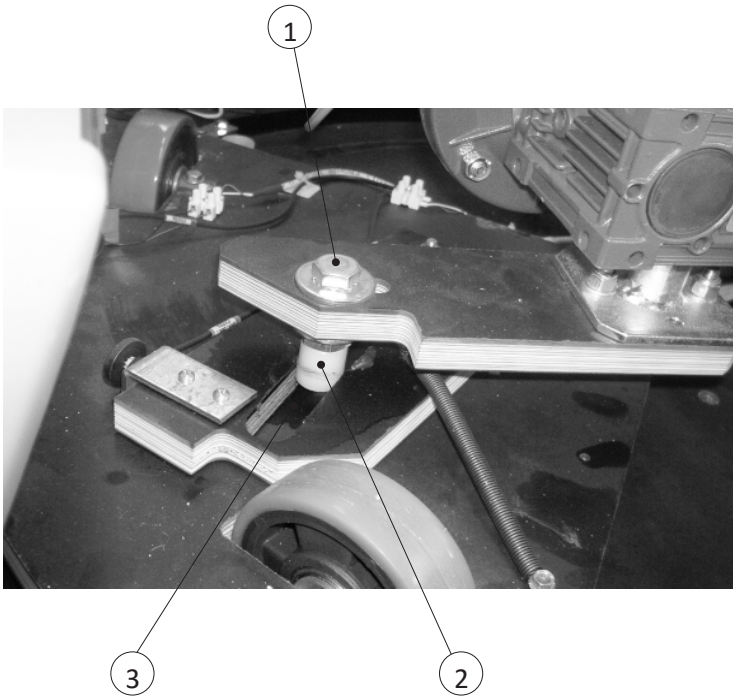
WARNING: Turn off the booth before you do any maintenance using the single board's ON/OFF switch and open the door manually.

5.2.1. CHANGING THE MAGNET

1) Disconnect the cables from the clamp (2).
2) Remove the screw (1) holding the magnet (4) with your hand.
3) Mount the new magnet with the screws and contacts in the exact sequence.

N.B.: the magnet (4) is in the correct position when it is perfectly aligned and in contact with the plate (3) when the door is closed.

5.3. Motor reducer connecting rod



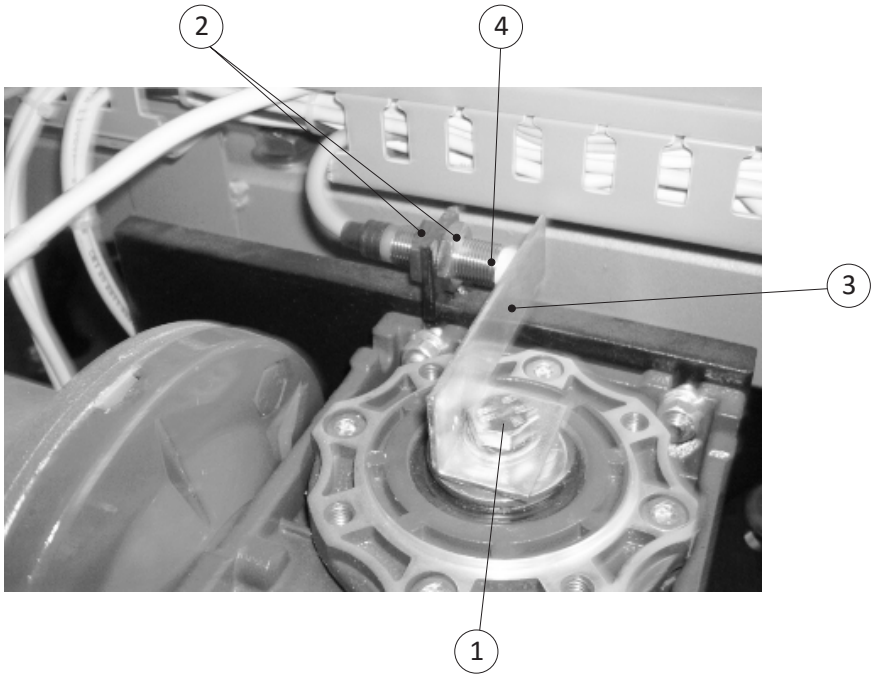
WARNING: Turn off the booth before you do any maintenance using the single board's ON/OFF switch and open the door manually.

5.3.1. ADJUSTING THE DOOR'S CLOSING POINT

Un-tighten the bolt (1) and move the pin (2) in the door's frame (3) until it closes properly.

WARNING: After adjusting tighten the bolt (l) to it's maximum torque (about 9O Nm).

5.4. Proximity Sensor



WARNING: Turn off the booth before you do any maintenance using the single board's ON/OFF switch and open the door manually.

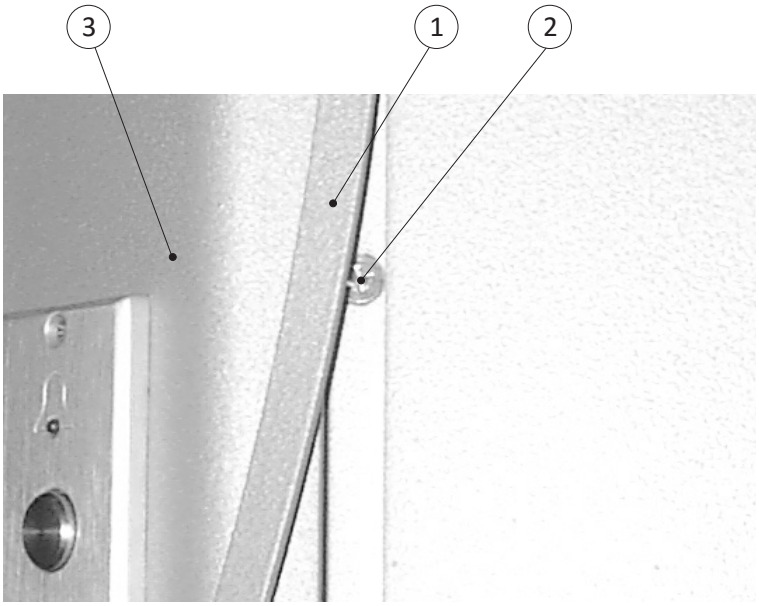
5.4.1. PROXIMITY SENSOR ADJUSTMENT

1) Loosen the bolt (2) and counter bolt.
2) Ad just the proximity sensor (4) to the reading clamp (3) leaving a space of about 1-2 mm with the door in closed position.
3) Verify that the proximity sensor's head is perpendicular to the reading clamp (3).

If the reading staff is not perpendicular to the proximity sensor:

1) Loosen the bolt (1).
2) Adjust the reading clamp.
3) Tighten the bolt (1).

5.5. Entrance panel edge



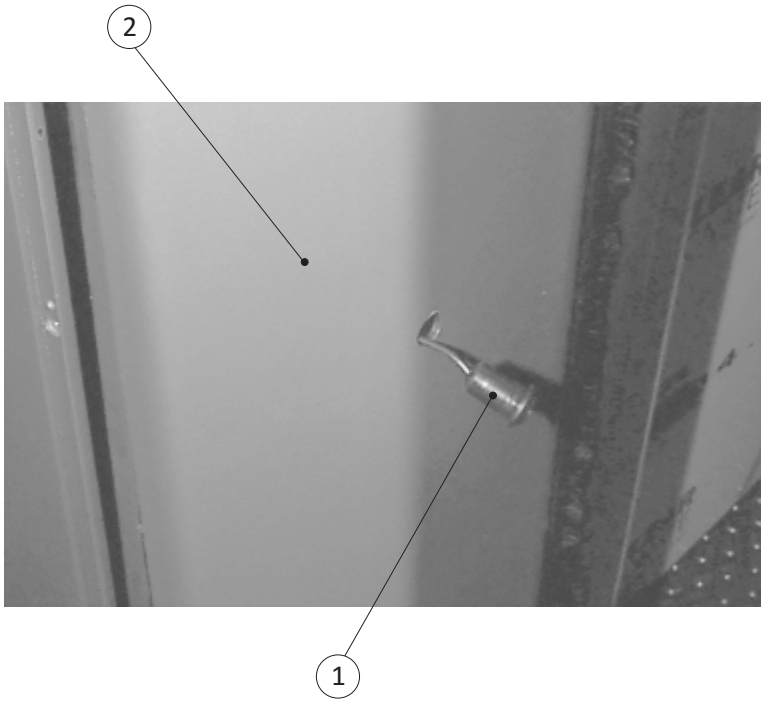
WARNING: Turn off the booth before you do any maintenance using the single board's ON/OFF switch and open the door manually.

5.5.1. DISSEMBLING THE PANEL

1) Remove the magnetic strip (1) starting from its end.
2) Un-tighten and remove screws (2).
3) To remove the panel (3) apply pressure.

While re-assembling the panel, make sure that its internal part is inserted in the booth and fits properly.

5.6. Accident prevention photocells

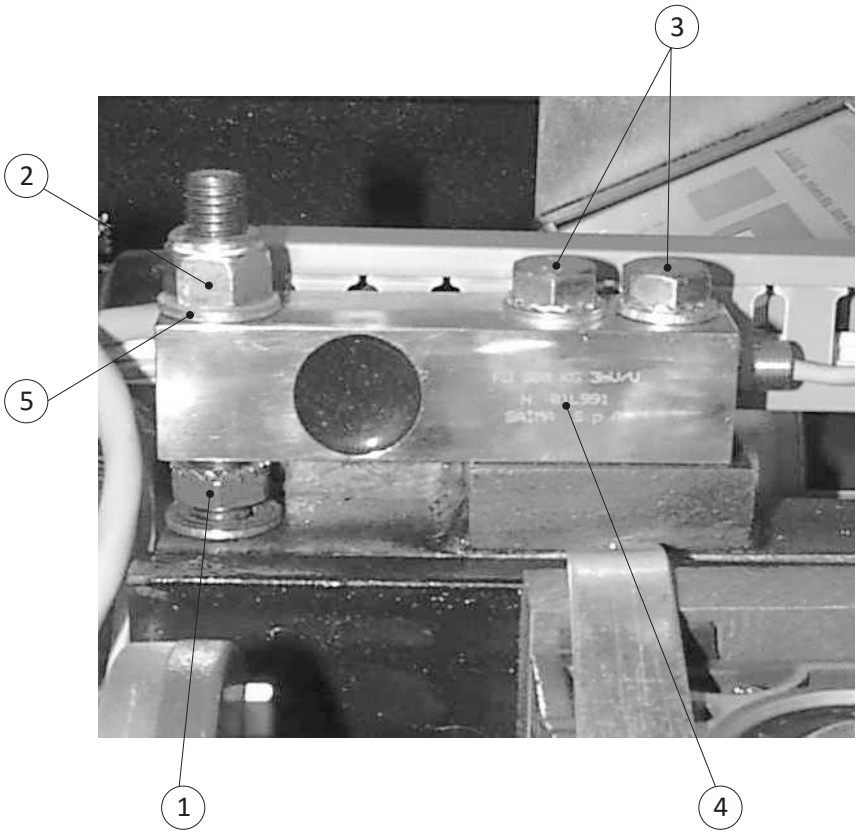


WARNING: Turn off the booth before you do any maintenance using the single board's ON/OFF switch and open the door manually.

5.6.1. SUBSTITUTING THE PHOTOCELL

1) Remove the panel (2) from the edge (see "Removing the panel").
2) Remove the photocell (1) as in the photograph.
3) Free the photocell's cable from inside the panel and the raceways.
4) Disconnect the cable and remove it.
5) Insert the new photocell, position and connect the cable as it was .

5.7. Loading Cell

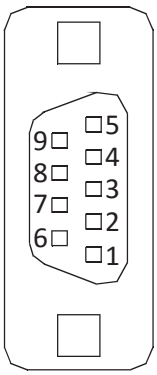


WARNING: Turn off the booth before you do any maintenance using the single board's ON/OFF switch and open the door manually.

5.7.1. SUBSTITUTING THE LOADING CELL

1) Tighten the bolt (1) until the washer (5) is free.
2) Un-tighten and remove the bolt (2).
3) Un-tighten and remove the bolts (3).
4) Remove the loading cell (4) freeing the cable from the raceway and disconnect from the "Single board".
5) Position the new loading cell and force tighten the bolts (3).
6) Tighten the bolt (2) leaving the washer (5) free (like in point 1).
7) Un-tighten the bolt (1) moving it slightly to the loading cell.
8) Reposition the cable and connect (with connector) to the "Single board"

NB: If the cable is not fitted with a connector use the one from the replaced cell and solder it to the cable following the diagram:



LOADING CELL MODEL. **GEFRAN**

1 White
2 Empty
3 Red
4 Yellow
5 Green
6 Empty
7 Screen Wire

LOADING CELL MODEL. **SAIMA** or **NBC**

1 Red
2 White
3 Yellow
4 Green
5 Blue
6 Black
7 Screen Wire

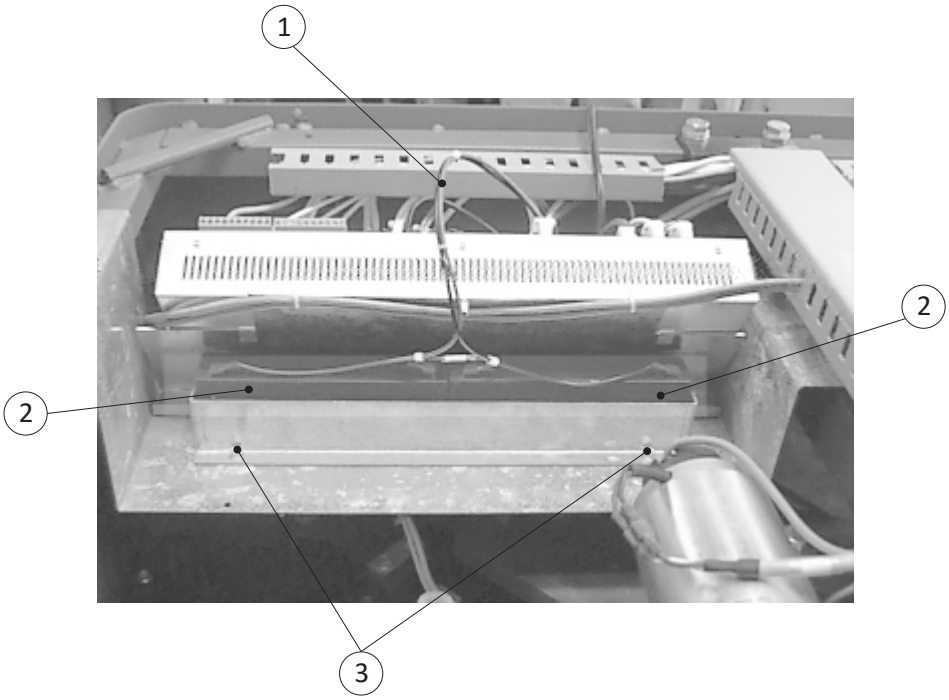
LOADING CELL MODEL. **TEDEA**

1 Red
2 Blue
3 Green
4 White
5 Black
6 Brown
7 Screen Wire

LOADING CELL MODEL. **METIOR**

1 Red
2 Blue
3 Green
4 Grey
5 Black
6 Yellow
7 Screen Wire

5.8. Batteries

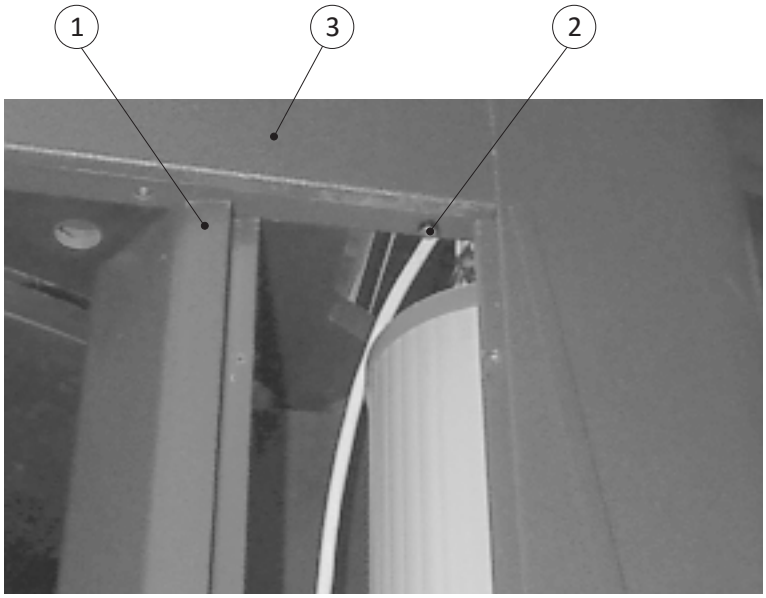


WARNING: Turn off the booth before you do any maintenance using the single board's ON/OFF switch and open the door manually.

5.8.1. SUBSTITUTING THE BATTERIES

1) Disconnect the cables (1) from the batteries.
2) Un-tighten and remove the screws (3).
3) Substitute the batteries (2) and reconnect the cables (1) respecting the polarity (Red positive, Black negative).

5.9. External door panel

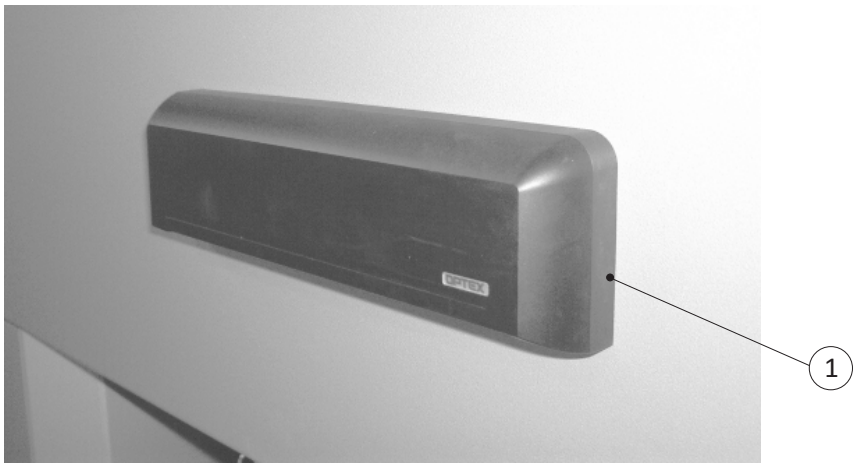


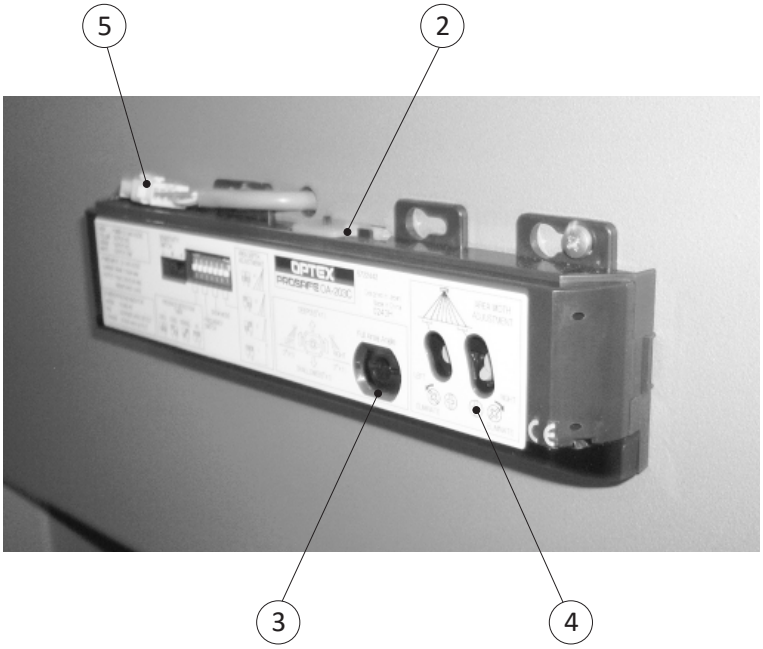
WARNING: Turn off the booth before you do any maintenance using the single board's ON/OFF switch and open the door manually.

5.9.1. Opening the door panel

1) Move the external edge panels (1) (see "Removing panels") until the screws (2) appear.
2) Un-tighten and remove screws (2).
3) Lift the panel door (3).

5.10. External radar (opening door)



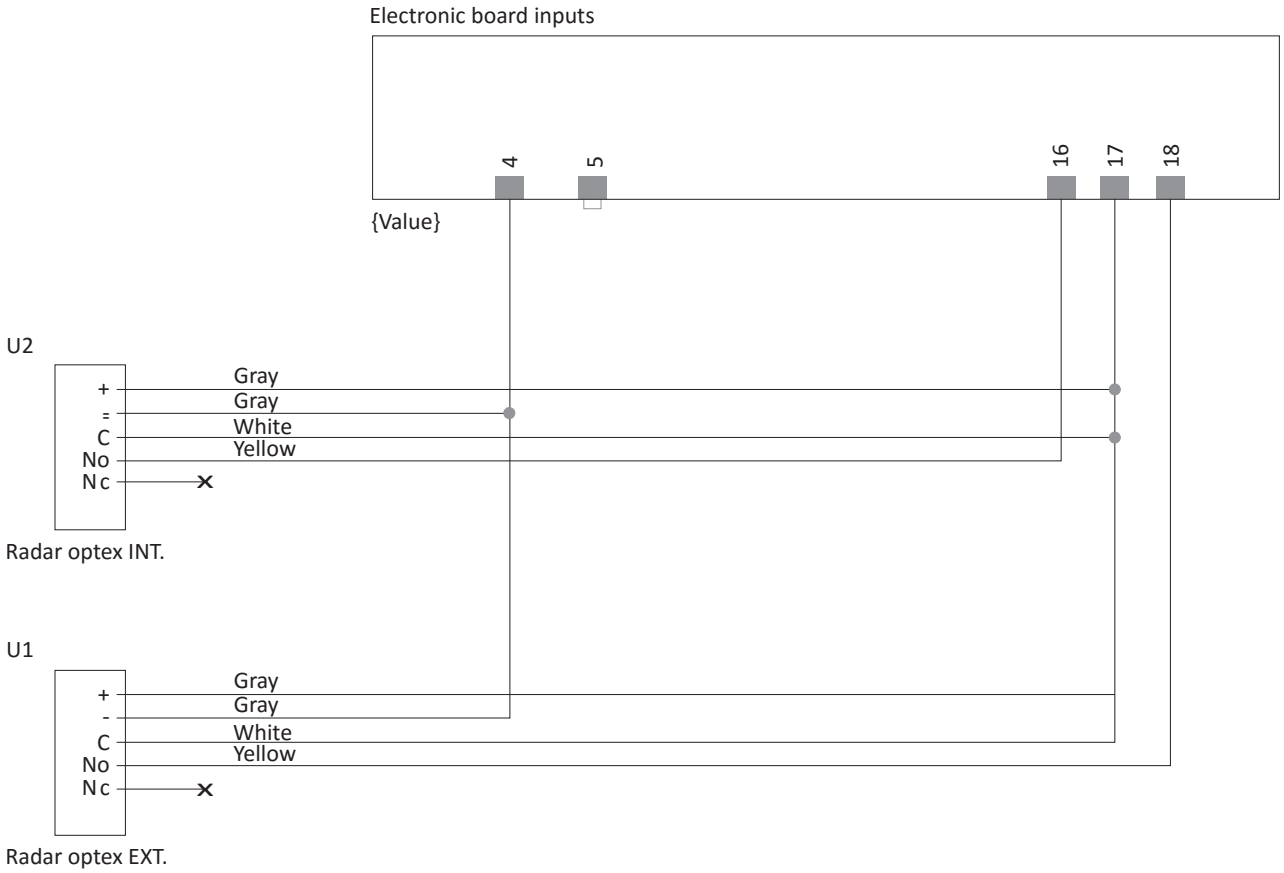


WARNING: Turn off the booth before you do any maintenance using the single board's ON/OFF switch and open the door manually.

5.10.1. ADJUSTING THE OPTEX RADAR

1) Take the top off (1).
2) Modify the inclination of the optex radar using the key (2) in the sliding lever and full area angle (3), if it is necessary to move the sensitivity of the radar further away or to bring it closer to the door.
3) To modify the inclination of the optex radar towards the right or the left use the key (2) in the area width adjustment leaver (4).

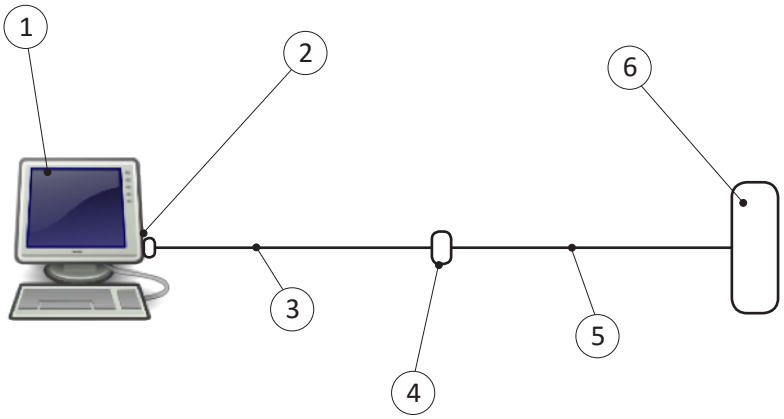
5.10.2. Radar connection diagram



6. FUNCTION ANOMALIES

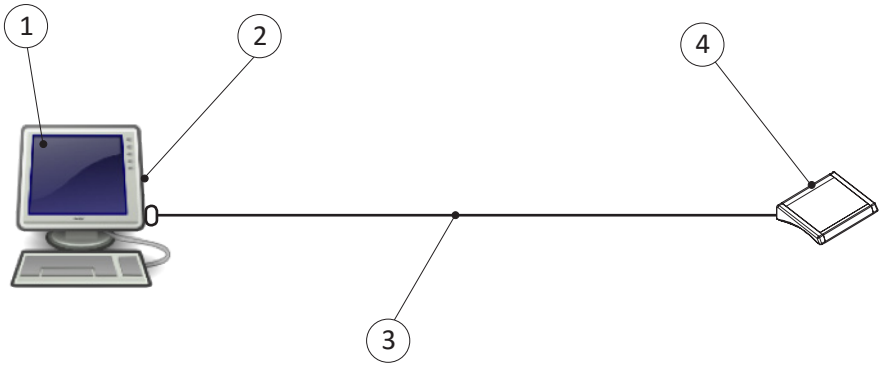
ANOMALY	POSSIBLE SOLUTIONS
The external door opens and closes constantly a voice message asks to “Please put all metal objects in the box”	1) Check and see if any dangerous or suspicious object has been abandoned in the booth. Please do not do anything and ring the alarm. If it is a different object remove it as follows: 1.1) Do a “Reset” on the serial console and press “Enter” on the digital console. 1.2) Open the internal door using the exit button and remove the object. 1.3) After the door closes repeat the procedure described in point 1.1. 2) After having verified that the booth is empty follow the procedure described in point 1.1. 3) Should this problem arise immediately after or after a short period of time please contact ***Automatic Systems*** assistance service.
The door does not close.	1) Two people are in the booth at the same time: 1.1) Through the intercom ask one person to leave. 2) A person that weighs too much is inside the booth or an adult with a child: 2.1) Push “Enter” on the digital console and “Reset” on the serial console if you want to allow the person/people to pass. If not use the intercom and ask the person to leave. 3) The booth is empty: 3.1) Check the console’s condition. See that the “block” function is not active on both the serial console and the digital console. 4) The booth is empty and none of the above conditions apply. (1-2-3): 4.1) Push “Enter” on the digital console and “Reset” on the serial console. 5) The photocell on the side of the passage is covered: 5.1) Remove the object in front of the photocell. 5.2) Clean the photocell’s glass. 5.3) Turn off the photocell. If it is the external photocell push 10 on the serial console or 11 for the internal door. Press 7 for a second at the same time. The booth is reset, but you must call ***Automatic Systems*** assistance service. 6) Please contact ***Automatic Systems*** assistance service.
The door does not work properly.	1) Verify the settings on the console. 2) Do a console “Reset” (only the serial console).
The metal detector’s alarm goes off constantly.	1) Make sure that there are no metal objects near the external door. 2) Make sure that there are no maintenance workers or equipment near the booth. 3) On the serial console press “Control” to de-activate the metal detector and call ***Automatic Systems*** assistance service. 4) On the digital console it is possible to lower the metal detector’s sensitivity (call ***Automatic Systems*** assistance service).

6.1. CONNECTION PLAN COMPUTER - MAIN ELECTRONIC SYSTEM



Rep.	Particulars
1	Personal computer
2	Hardware key
3	Serial cable DB9 female, DB9 male
4	RS232 / RS485 converter.
5	Converter cable - 8 pin
6	Main electronic system

6.2. CONNECTION PLAN COMPUTER - METAL DETECTOR



Rep.	Particulars
1	Personal computer
2	Hardware key
3	Serial cable RS232 - DB9 female, DB9 male
4	Metal Detector main electronic system

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