ClearLock 642

INSTALLATION AND PARTS MANUAL
Rev 2

Rev	Date	Nature of the modification
00	27-12-11	1° ISSUE
01	20-02-12	Up date
02	29-03-12	Up date page 36

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Low side

External identification plate
(part number only)

Sliding Door Manual
Lock (if fitted)

Traffic lights and intercom
plates

Vertical Safety Beams

Vertical Safety Beams

Low side

Metal detector antenna
(if fitted).

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1.1. Recommended Tools and Supplies

You must have the following tools on the job site to effectively complete the installation:

- Percussion Hammer (ø : 35 mm)
- Hammer drill (ø : 15 mm)
- Percussion drill bits (3mm, 4mm, 5mm, 6mm, 8 mm,10 mm, by 15 cm long)
- Cordless 10 mm drill with clutch (to drive screws)
- Screwdriver #2 Phillips bit and #3 Phillips bit, 15 cm long for drill
- Step ladders (h: 2m)
- Aluminium shims, various thickness and sizes
- Wire stripper tool
- Console cable (provided in accessories box inside BOX , 50 m, see page 10)
- Feeder cable (Supplied by others 8A, 220V)
- Intercom cable (provided in accessories box inside BOX , 50 m, see page 10)
- Tape measure
- Self expanding anchors (provided)
- Tools kit as shown in the picture below, containing:

Table 1-1 Tools kit

(l = length; w = width; ø = diameter)

Quantity	Description	Sizes (ø, l and w in mm)
3	- Nick - head	- ø x l : 0.6x4–1x6.5–1.2x8
3	- Phillips - head	- ø : 1–2–3
5	- Hexagonal - head	- ø : 3–4–5–6–8
13	- Hexagonal spanners	- ø : 4–4.5–5–5.5–6–7–8–9 10–11– 12–13–17
2	- Extensions	- l : 55–105
1	- Pawl	
1	- T Handle	
1	- Hinge	
1	- Handle	

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Figure 1-3 Tools kit
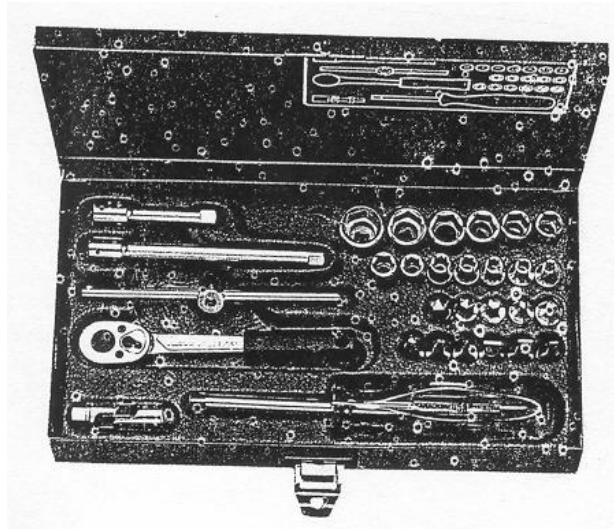
- Lifting device
- Grinder or round and square files
- Utility knife
- Pliers (length: 200 mm)
- Silicone caulking (provided)
- Silicone gun
- Snips
- Water level
- Shop vacuum cleaner
- Glass cleaner
- Paper towels
- Masking tape or other device for labeling cables and wires
- 2 Suction Cups to move glass

1.2. Safety Equipment

Make sure to have the following safety equipment on the job site:

- Hard hat
- Steel toe shoes
- Safety glasses
- Back support
- Gloves

2. <u>Installation Procedure</u>

2.1. Pre-installation Inspection

To put into practice a good installation creating as less as possible troubles and risks, it is better to check:
- If installation ambient temperature is -10° < °C < +70° for all the year.
- If the passage for console and intercom cables was planned before starting booth installation.
- If no high power cables or tubes are present in the nearby of the booth location.

Note: It is available, in case of really cold weather conditions, an automatic heater that installed into the top of the booth grants acceptable conditions for the booth.

Proceed, when it is possible, the laying of cables in connection with booth installation, in any case before installing possible false ceilings or floating floors.
Be sure that the electric plant is appropriate for this installation: 220V, 10A.
Carefully protect all parts in glass and/or painted when working close to the booth
Make sure the floor is level plus or minus 6 mm within 4 m run. If the floor is not level, stop this installation and ask the general contractor to level the floor.
Make sure that the width of the wall opening is at least 10 mm larger than the outside width of the booth.
A 50 m length of console and intercom cable is provided with the booth. Unless specified on the sales order, all other required cabling is not shipped with the booth.
Make sure the minimum clearance above the boothI is 60 cm or larger. This space is necessary to allow for electrical connections and future servicing.
Do not use the booth as a scaffold or as a support for the execution of overhanging works!
Avoid that any acid (also if diluted) used to clean floors or glasses may enter in contact with the base of the booth.

<u>Do not modify in any way the booth.</u>

Check floor resistance to booth weight.
Use non-shrink cement filling the hole in the floor around the pit form in order to achieve a stable and flat positioning. Avoid using highly liquid mixings that during the drying process contract themselves leaving empty spaces, allowing oscillations.
The anchorage of the embedded template has to be done well in advance of booth installation to enable a correct cement drying.
A good success of this operation is basic to obtain a correct working of the booth.

Avoid the creation of intermittent windings with additional metal works.
Pay attention that screws, used to fix additional metal works to the booth, do not pierce the non-conducting structure.

Metal Detector correct working may be affected also by noises originated outside the room in which the booth has been installed.

It is necessary to notify to installation technicians about this situation to solve possible problems arising from noises near to the booth, e.g.:
- overhead or underground electric lines;
- transformers;
- radio transmitters;
- neon signs working incorrectly or with no-standard reactors;
- high voltage transformers;
- machines that cause high vibrations;
- the transit nearby of trains or underground;
- high frequency machines;
- Lifts;
- Conditioning units, monitors, televisions, cash dispensers.

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Moving doors have to be as far away as possible from Metal Detector antennas (at least 100 cm.).
When these doors are closed, they have to be perfectly locked and they have not to swing.
In case one door is used as a passage, it has to be slowed down by a piston pump in order to avoid swinging while closing.
Sectioning cuts must be arranged in the door frame.
Pay attention that possible electric locks do not create intermittent windings between the fixed part and the mobile part, in that case use non-conducting mobile parts. (PVC, resin, laminate, etc.)

Avoid positioning of Metal Detector antennas close to metallic false ceilings: they could create intermittent windings.
In case it is not possible to use different kind of materials, pay attention that false ceiling support structure is compact and isolated from other metallic parts.
If it is possible, please use plaster cardboard, plastic material or in any case no-magnetic materials for false ceilings.
In case of floating floors, carefully check that the supporting structures do not cause intermittent windings.
Check that there are no electric dissipations on the ground.
Arrange for a dedicated line with 10 A two poles automatic breaker on the main panel.

2.2. Installation Procedure

2.2.1. Unpacking and Inspecting:

Move the box near to the place of installation with a crane truck, open and unpack all single booth component:

BOX : weight about 1100 Kg.
(main booth components are show in the figure at page 58)

- N°1 BASE (drawing AD 003 # 1)
- N°1 TOP OF THE BOOTH WITH MOTORS AND FULL ELECTRONICS (drawing AD003 # 2)
- N°1 CEILING
- N°2 METAL DETECTOR ANTENNAS (on request) (drawing AD003 # 11 – 12)
- N°2 SLIDING DOORS (drawing AD003 # 5–6)
- N° 1 ACCESSORIES AND SCREWS BOX
- N° 4 JAMBS (drawing AD003 # 7.1–8.1–9.1–10.1)
- N° 4 ADDITIONAL STEEL FRAMES FOR JAMBS (drawing AD003 # 7.2–8.2–9.2–10.2)
- N° 2 SIDE GLASSES or SIDE FRAMES (on request) (drawing AD003 # 3–4)
- N° 1 TOP COVER

- Remove the protective plastic insulating foil
- Remove packaging taking care not to cause damage to glasses or to surface. Clear all parts from the bottom box
- Check that the parts are not damaged (glasses and surface).
- Remove on the top of the booth the dehydrating salt bags inside
- Remove the accessories box that is inside the BOX, lean it on the floor, open it and check that nothing is missing (see the list on the box):
- 1 Console with Handset
- 1 Console cable (50 m)
- Fixing screws
- Plastic Shims
- 1 Paint box to cover scratches (on request)
- 1 Silicone tube

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- 2 Keys for sliding door manual lock
- 2 Traffic lights / Intercom plates
- 4 Console keys

- Check if the Metal Detectors antennas are not visibly damaged during the shipment

2.2.1. Installation

Note : In case the booth is sent as a monoblock (see also Figure 2-1), connect the crane of the truck to the 4 eyebolts on the top of the booth, then position 4 nylon rods on the floor and move the booth on them after having disconnect the crane. When you arrive in the right position, move away the booth from the rods with pry bars, taking care of the entrance/exit reference orientation. Finally go to step 1).

Figure 2-1 How to position the booth on the floor in order to move it in final position
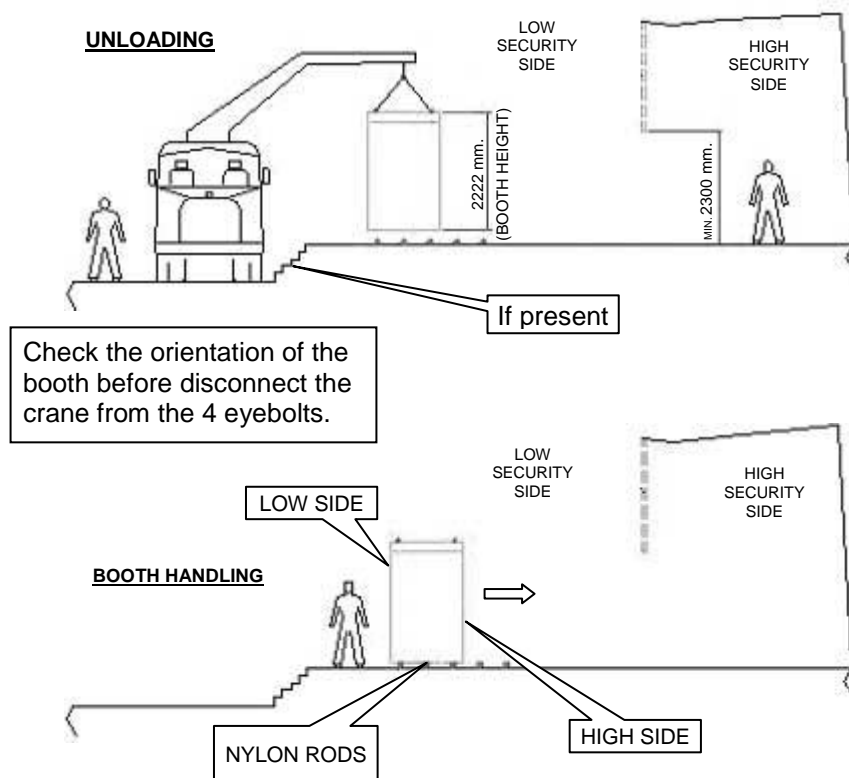
1) Connect the intercom cable (provided) to the handset, the console cable (provided) to VB3406 board, the power supply to the main power.

2) Check if each part of the structure is isolated, using a tester in buzzer position (if metal detector has been installed). If the isolation has been done in a correct way the tester should remain silent. If the tester rings, check if all screws have their non-conducting washer. Turn ON the main power and turn ON the console. After initialization check if everything works (sensors, safety beams photocells, doors speed, traffic lights, metal detector, spot lights, loudspeaker…) and, if something has to be modified, please follow instruction at Section 3 of this manual. Remove adhesive tapes from the spot light slowly.

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3) During initialization be sure that no people and no objects are near to the booth because this can interfere with motion detectors automatic setting. At the end put on the top the top cover.

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2.3. Wiring the system

Figure 2-2 General Components layout

- VB4313SW power supply
- Batteries
- Outputs terminal board
- Loudspeaker
- VB403A Additional I/O Board
- HIGH SIDE
- VB1290/9 (*) single presence board
- IRA-4BIP Safety beams board
- LOW SIDE
- VB3406 Main Board

(*) See note at page 23
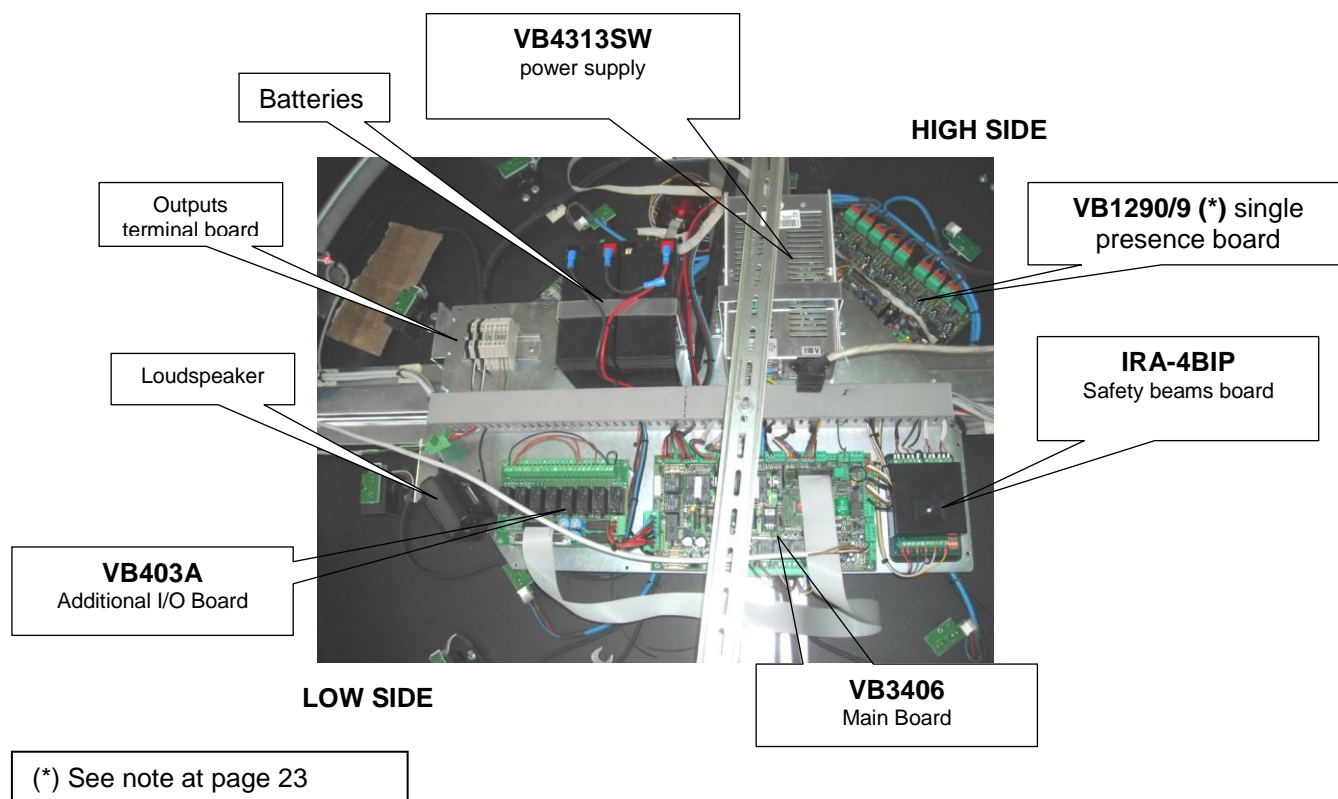
Figure 2-3 General components LAY OUT on the ceiling

Ceiling view from the top
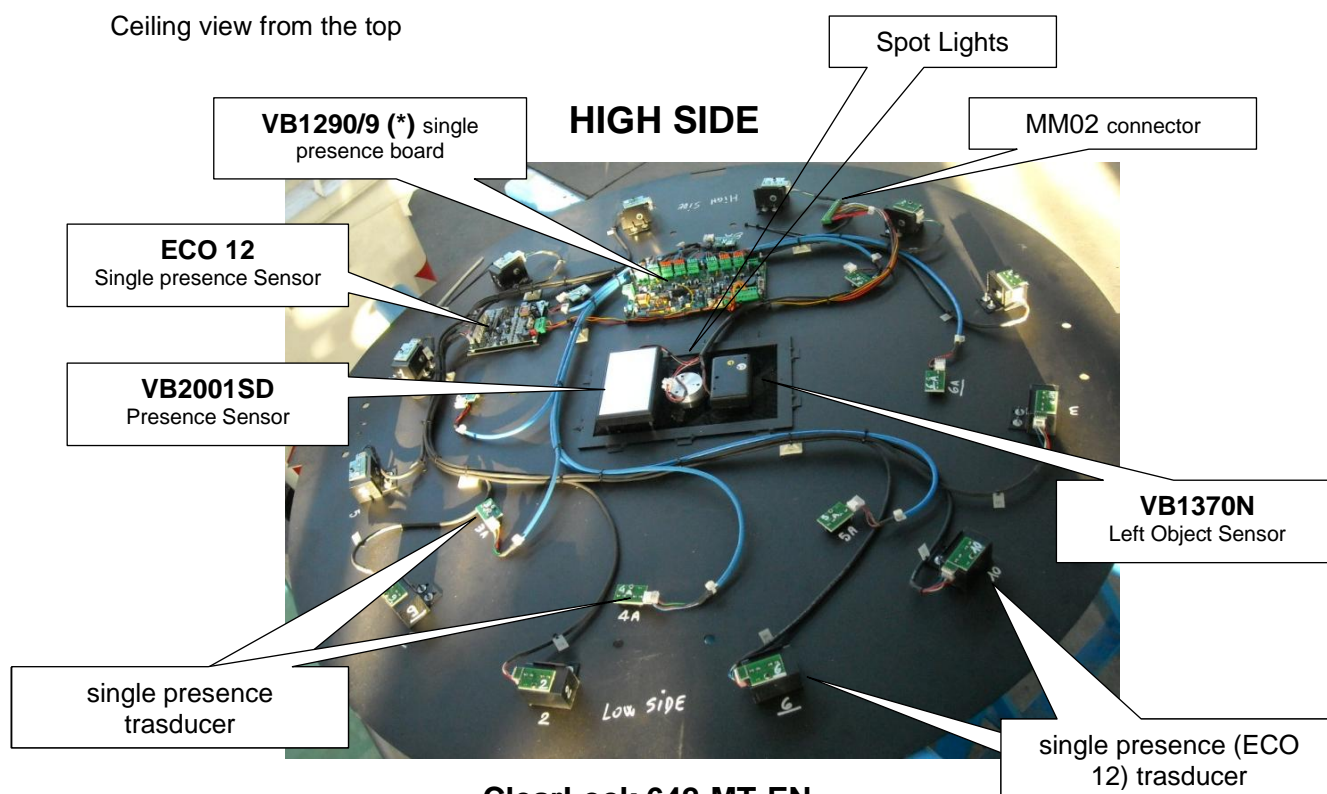
- Spot Lights
- VB1290/9 (*) single presence board
- HIGH SIDE
- MM02 connector
- ECO 12 Single presence Sensor
- VB2001SD Presence Sensor
- VB1370N Left Object Sensor
- single presence trasducer
- single presence (ECO 12) trasducer

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LOW SIDE

Figure 2-4 Electronic wiring diagrams

Diagram showing connections:

- BATTERIES → VB4313SW → VB 3406
- Safety beams board → VB 3406
- VB 3406 → Motor/Encoder P1
- VB 3406 → Motor/Encoder P2
- VB 3406 → Metal Detector RDS UNIV
- VB 3406 → VB 1370 N
- VB 3406 → ECO 12
- VB 3406 → VB 1290/9 (*)
- VB 3406 → VB 2001 SD
- (VB 1370 N, ECO 12, VB 1290/9 (*), VB 2001 SD are within the Booth ceiling)
- VB 3406 → CONSOLE

(*) See note at page 23
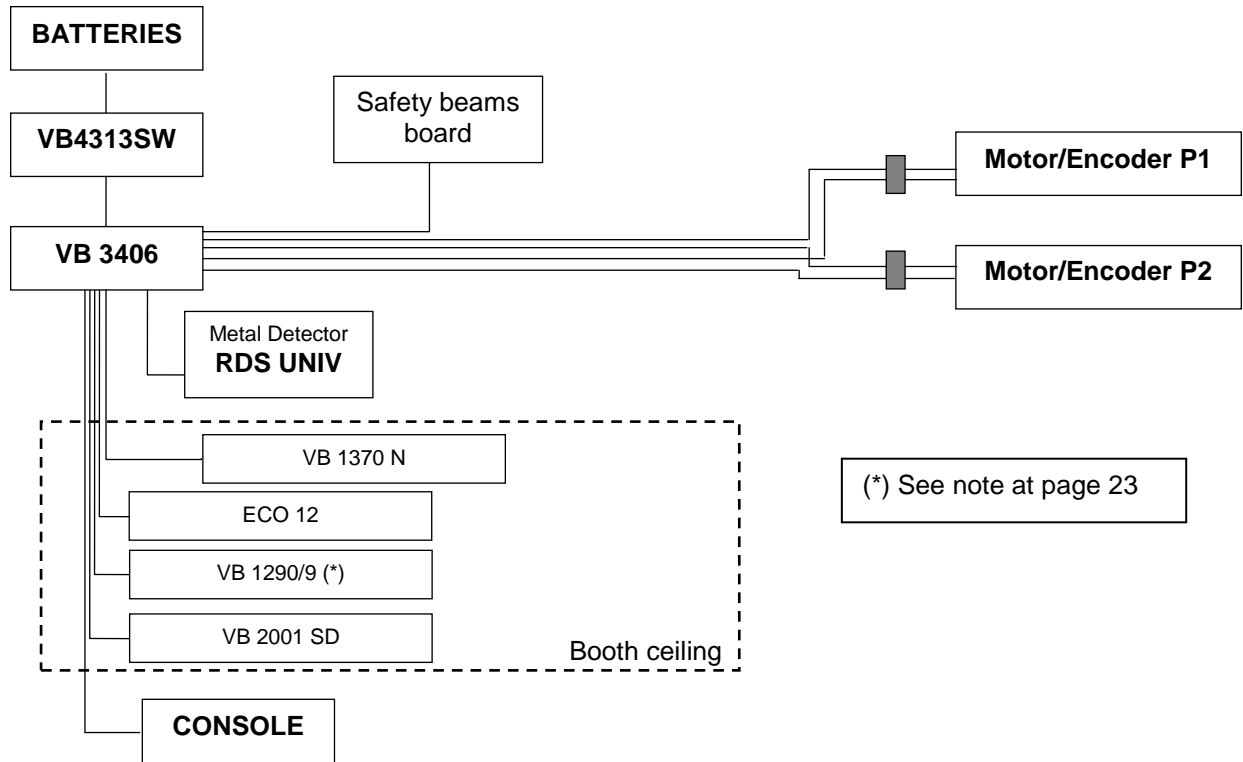
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Figure 2-5 VB 4313SW Power supply wiring + Back-up batteries
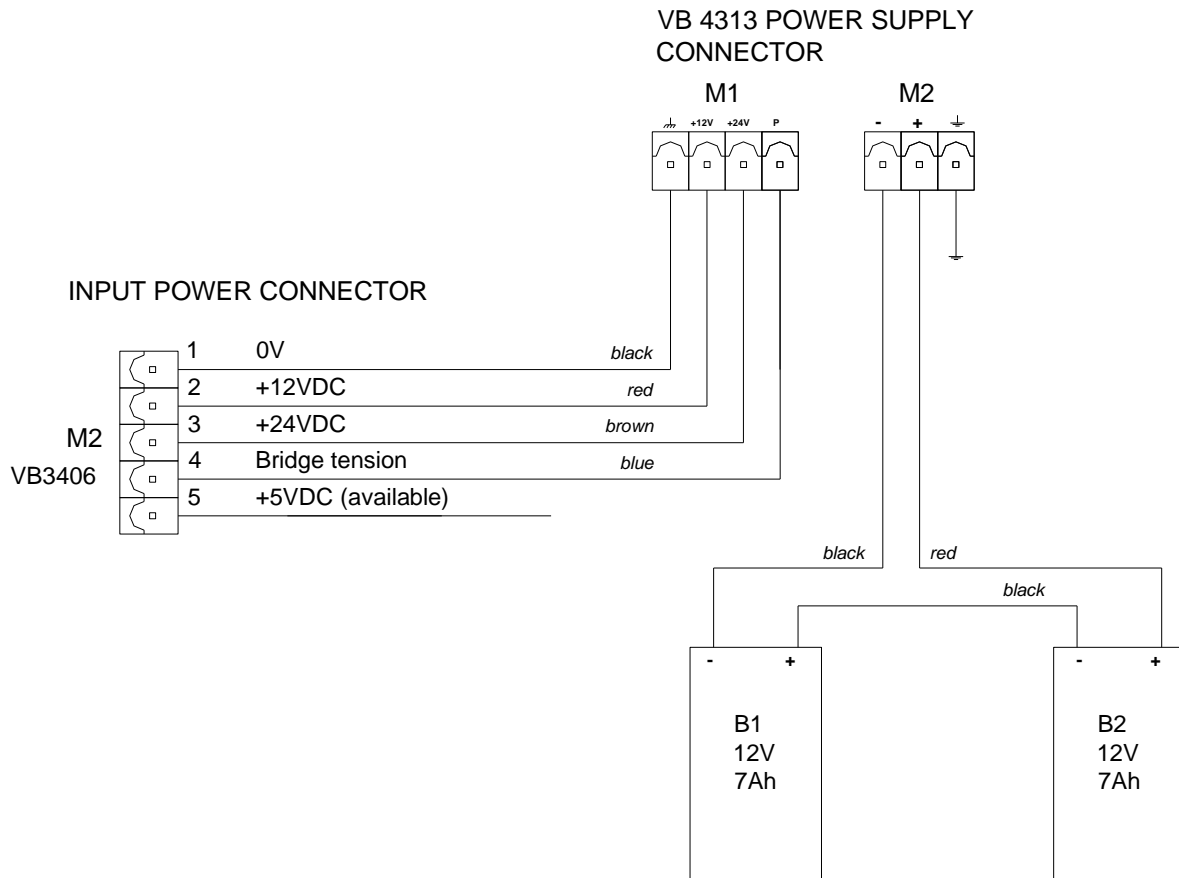
VB 4313 POWER SUPPLY
CONNECTOR

M1   M2

INPUT POWER CONNECTOR

1	0V		*black*
2	+12VDC		*red*
3	+24VDC		*brown*
4	Bridge tension		*blue*
5	+5VDC (available)		

M2
VB3406

black   *red*

black

B1
12V
7Ah

B2
12V
7Ah

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Figure 2-6 NCD2 Console wiring

Console connector

Round connector 8P M
Main console

1	0V	black
2	Power input	white
3	+12VDC	red
4	+ RS 485	brown
5	- RS 485	green

M4

Secondary Console Connection:

Secondary console is connected in parallel with the main console a part from power input

Dip-switches, on the main console, have to be positioned as shown to obtain the correct address.

In case of more consoles, repeat the same connections.

Round connector 8P M
Secondary console

NCD2 address setting
with GR308-01 board

See also pag. 27

address setting
main console

address setting
secondary console
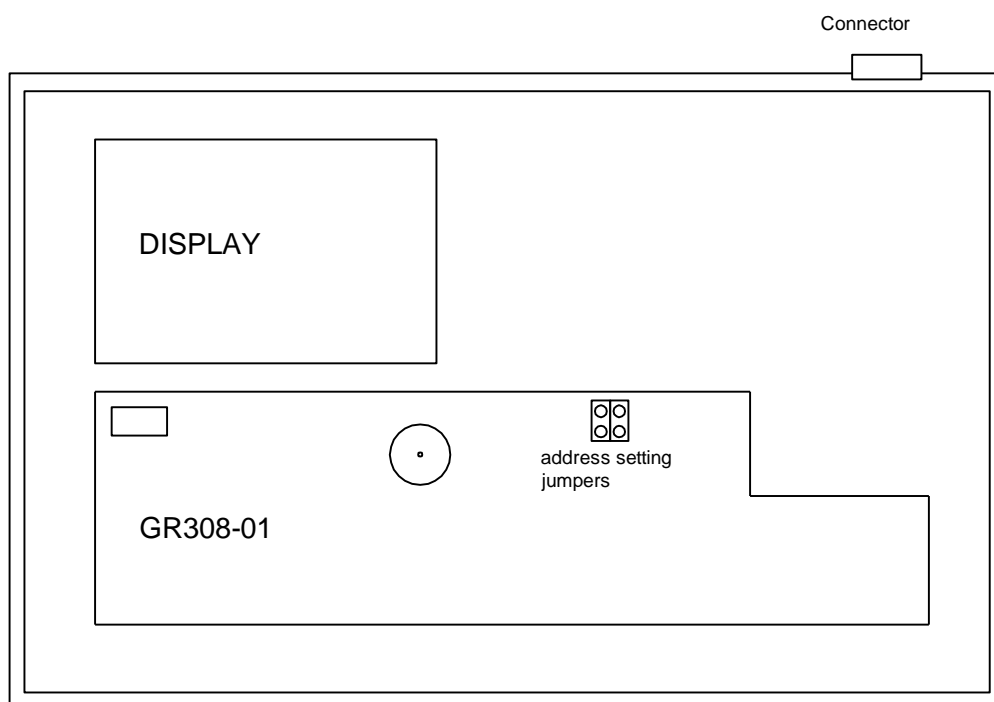
Connector

DISPLAY

address setting
jumpers

GR308-01

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Figure 2-7 VB 3406 power supply and serial connectors

M1 VB3406	1	+24VDC	*brown*
	2	+12VDC	*red*
	3	0V	*black*

RS 485 SERIAL CONNECTOR

CN1 VB3406	1	+24VDC
	2	+12VDC
	3	- RS 485
	4	+ RS 485
	5	0V
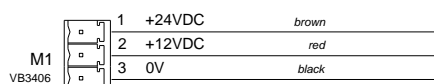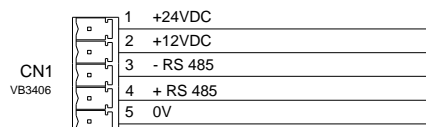
Figure 2-8 Metal detector wiring (if present)

MDB BOARD

CN2A VB3406	1	0V
	2	+24VDC

brown +V IN
grenn/yellow GND   M1
blue -V IN

CN2B VB3406	1	0V
	2	Reset M. D. (RLS N.O.)
	3	Reset M. D. (RLS C.)
	4	M.D. alarm contact

ON 3
ON 2   M3

green RESET
brown 0   M9

black C
NC   M10
red NO

METAL DETECTOR CONNECTORS
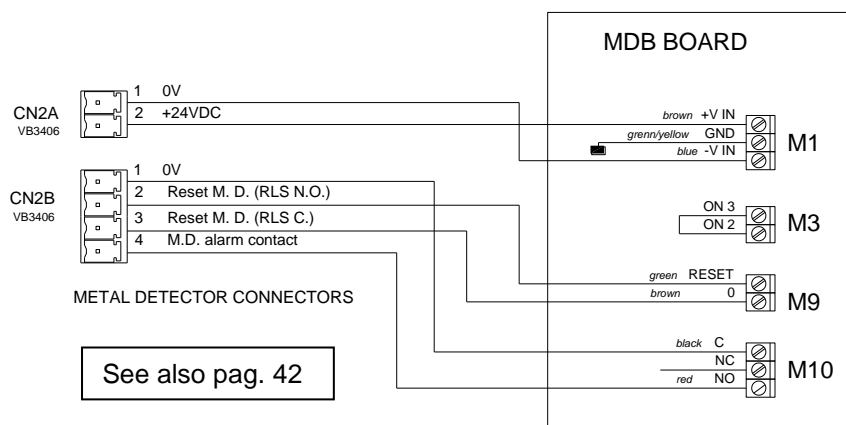
Figure 2-9 Traffic-light plate wiring
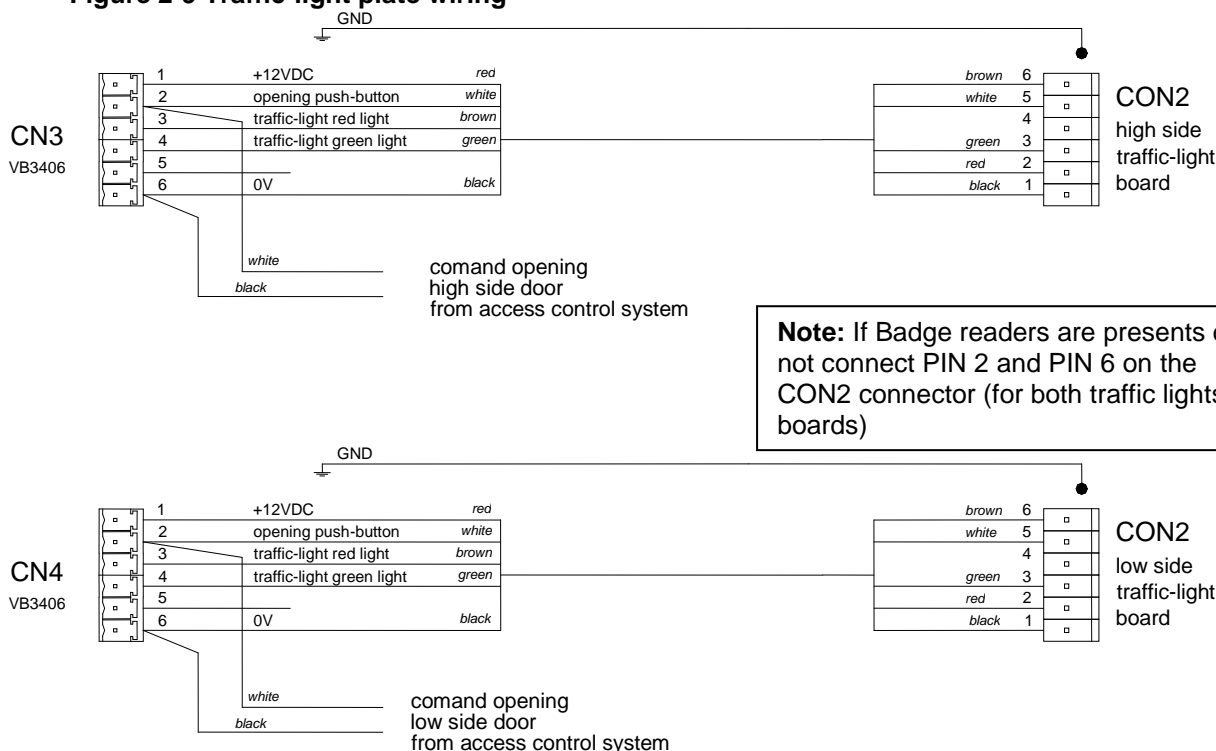
GND

CN3 VB3406	1	+12VDC	*red*
	2	opening push-button	*white*
	3	traffic-light red light	*brown*
	4	traffic-light green light	*green*
	5		
	6	0V	*black*

brown	6	CON2 high side traffic-light board
white	5	
	4	
green	3	
red	2	
black	1	

white
black
comand opening
high side door
from access control system

Note: If Badge readers are presents do not connect PIN 2 and PIN 6 on the CON2 connector (for both traffic lights boards)

GND

CN4 VB3406	1	+12VDC	*red*
	2	opening push-button	*white*
	3	traffic-light red light	*brown*
	4	traffic-light green light	*green*
	5		
	6	0V	*black*

brown	6	CON2 low side traffic-light board
white	5	
	4	
green	3	
red	2	
black	1	

white
black
comand opening
low side door
from access control system

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M3
VB3406

1	+12VDC
2	0V
3	- RS 485
4	+ RS 485
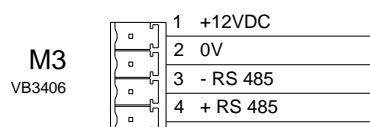
Attention
M3 is available to connect the intercom board or the biometric device: di-bis (serial line RS485).

CN5
VB3406

1	+12VDC
2	available input
3	0V
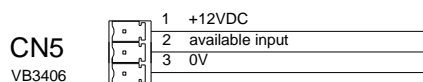
for presence sensor

VB2001SD (see also pag.20)

CN6
VB3406

1	+12VDC
2	available input
3	0V
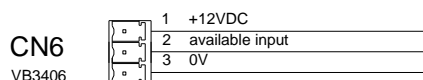
available for high side radar

CN7
VB3406

1	+12VDC
2	available input
3	0V
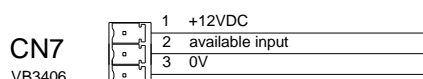
available for low side radar

Figure 2-10 Photocells amplifier general wiring

CN9
VB3406

1	opening protections contact	white
2	closing protections contact	yellow
3	+12VDC	
4	0V	

CN8
VB3406

1	opening protections contact	green
2	closing protections contact	brown
3	+12VDC	red
4	0V	black
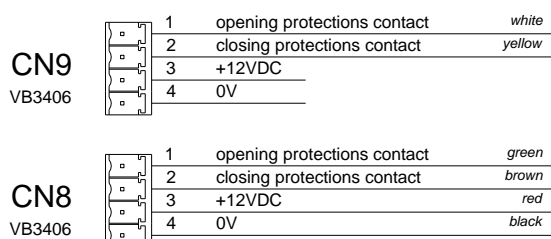
Photocells amplifier board

See also pag. 29 for more information

Figure 2-11 High and low side reset "0" sensor

CN10
VB3406

CN9

BLU
BROWN
BLACK
BLACK

blu
black
brown

blu
black
brown

OPS1

"0" sensor
Door low side

OPS2

"0" sensor
Door high side

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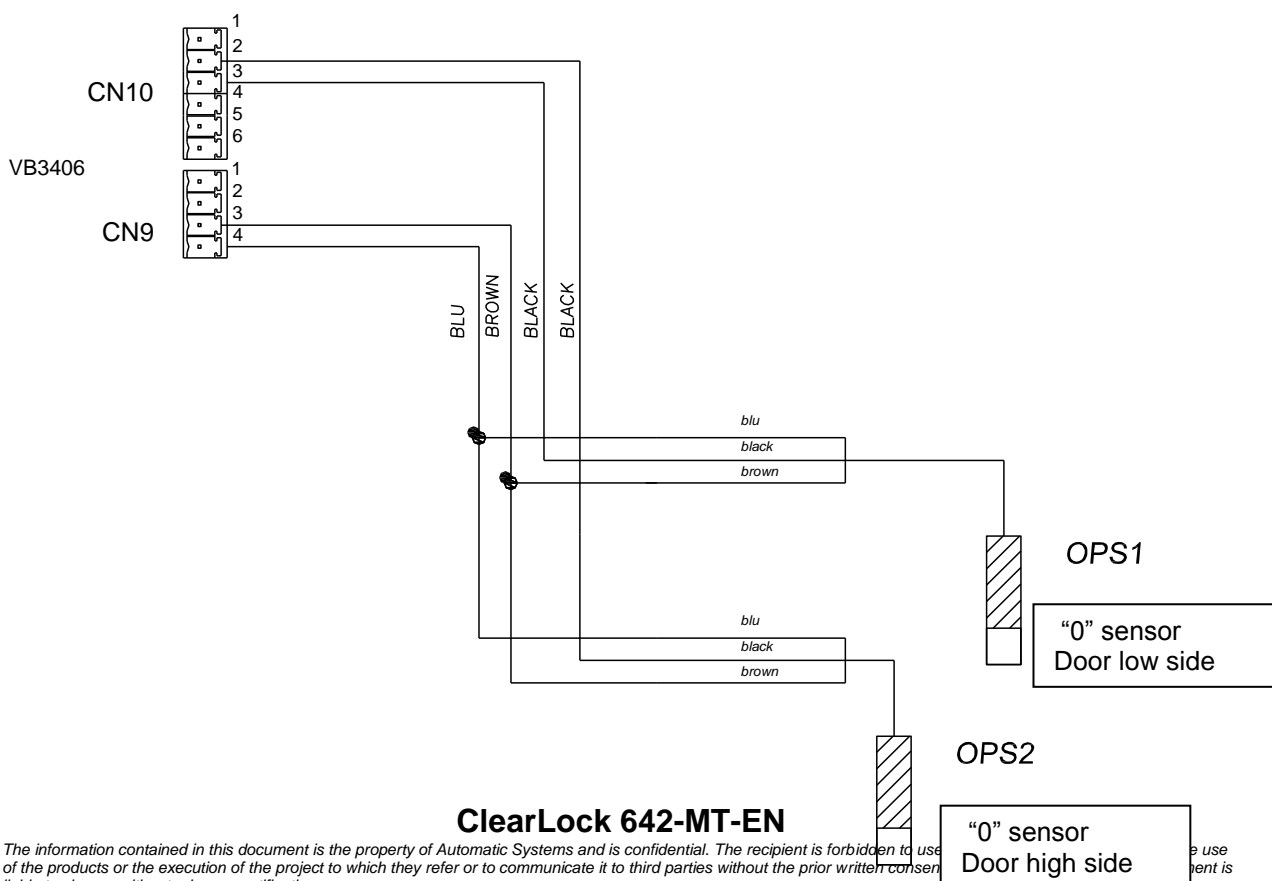
Figure 2-12 Mechanical lock switch low side door

CN11

VB3406

1	0 Vdc
2	
4	
5	light blue
6	light blue (0V)

Mechanical lock
switch low side door
Door locked (close)

SW DC1

NC
NO
C

SWITCH
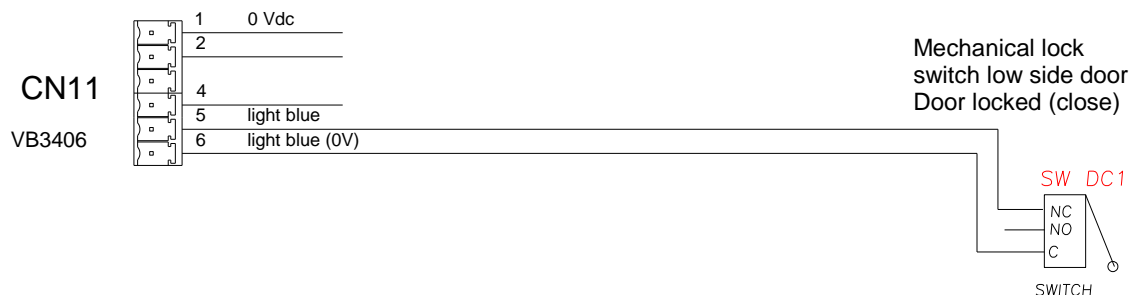
Figure 2-13 High side and low side motor encoder wiring

Low side door E1 encoder connector

CN13

VB3406

1		
2	0V	black
3	signal A	green
4	signal B	brown
5	+12VDC	red

black	4
green	3
brown	2
red	1

E1
encoder

CN12

VB3406

1		
2	0V	black
3	signal A	green
4	signal B	brown
5	+12VDC	red

black	4
green	3
brown	2
red	1

E2
encoder

High side door E2 encoder connector
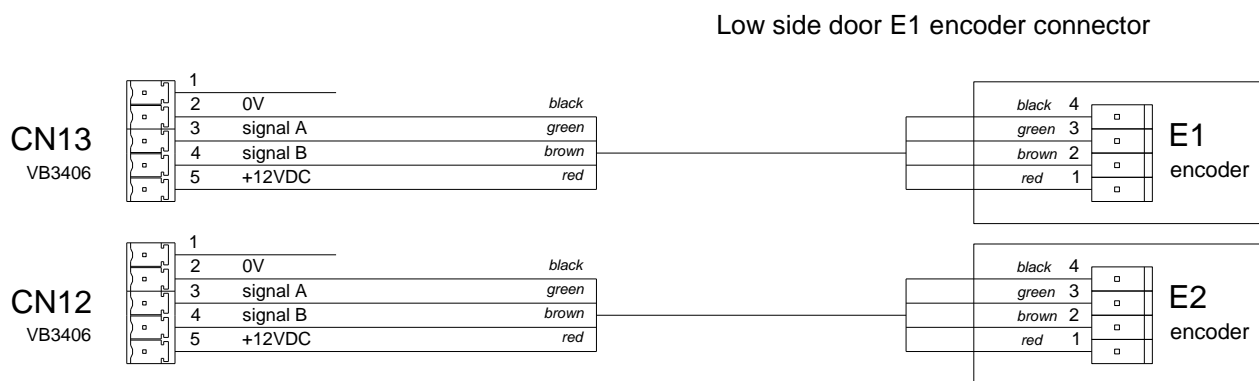
Figure 2-14 High side and low side motor and lock piston wiring

CN15

VB3406

1	low side door P1 motor	red
2	motor	black
3	+24VDC	brown
4	door lock piston N.C.	
5	door lock piston N.O.	green

red / red   black / black

M1
motor

brown / red   green / red

LP1
lock piston

CN14

VB3406

1	high side door P2 motor	red
2	motor	black
3	+24VDC	brown
4	door lock piston N.C.	
5	door lock piston N.O.	green

red / red   black / black

M2
motor

brown / red   green / red

LP2
lock piston

F3 = FUSE 3; F4 = FUSE 4 (see 30 for more details)

NOTE:
On request both doors (low and high side doors) can be managed in two differents way:

FAIL-LOCK: door is blocked during power cut
FAIL-SAFE: door is unblock for free passage during power cut

NOTE:
If the booth is managed in "Fail lock" way an emergy button may be supplied to release the locked door. If Emergency button is fitted, see wiring at page 60.
Locked door may be released also manually by a lever acting on locking piston (see picture at page 59)

Figure 2-15 Loud speaker wiring

CN16
VB3406

| 1 | + loudspeaker | black |
| 2 | - loudspeaker | white |

LD
LOUDSPEAKER
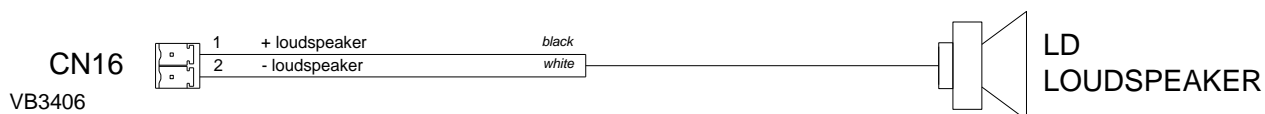
Figure 2-16 Connector MM02 wiring (part 1)
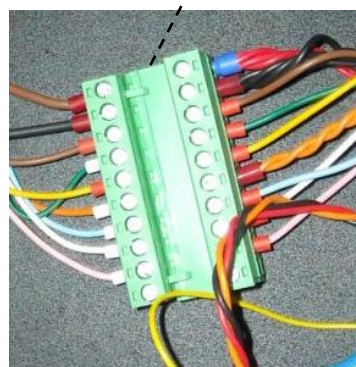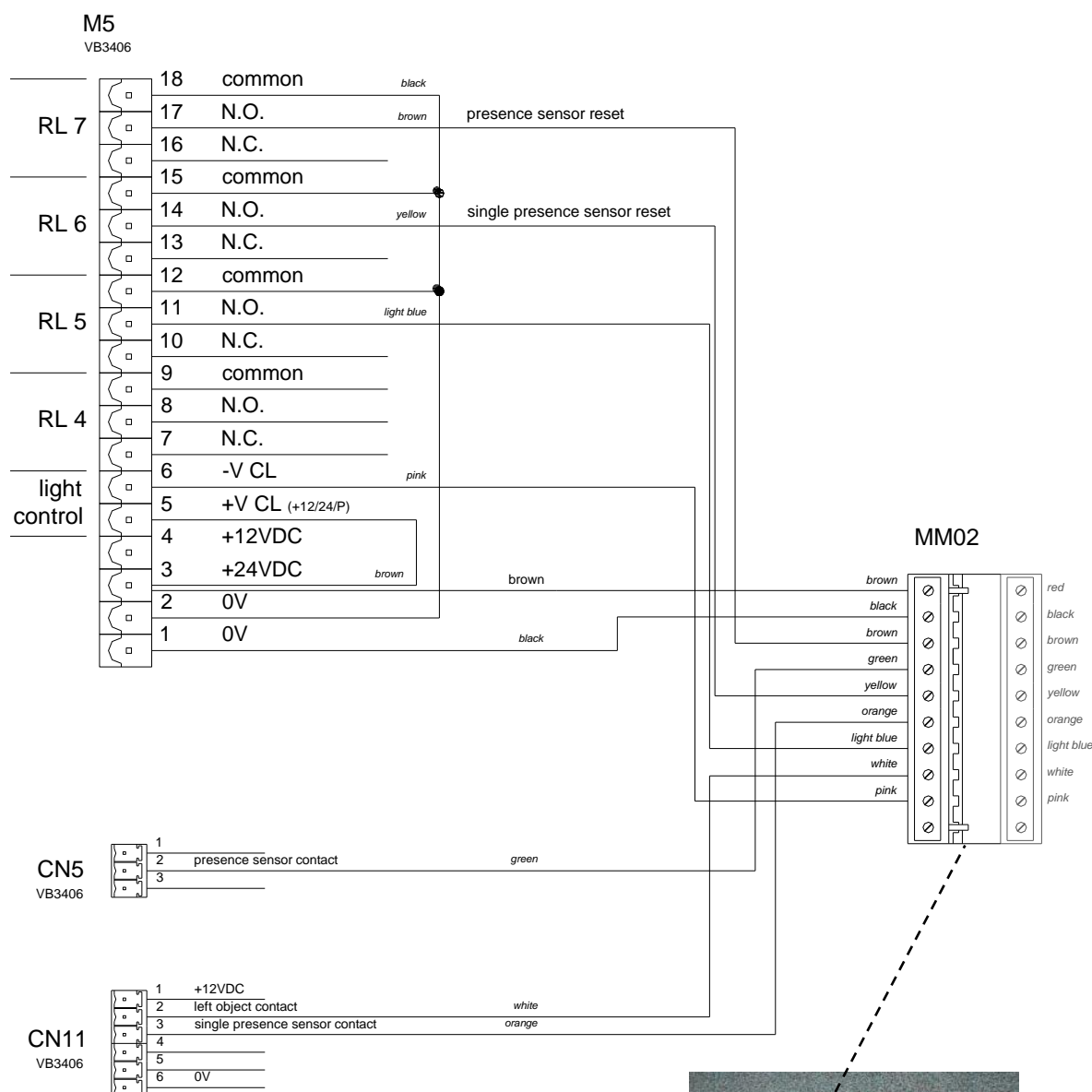
M5
VB3406

18	common	black
17	N.O.	brown	presence sensor reset
16	N.C.		
15	common		
14	N.O.	yellow	single presence sensor reset
13	N.C.		
12	common		
11	N.O.	light blue	
10	N.C.		
9	common		
8	N.O.		
7	N.C.		
6	-V CL	pink	
5	+V CL (+12/24/P)		
4	+12VDC		
3	+24VDC	brown	brown
2	0V		
1	0V	black

RL 7
RL 6
RL 5
RL 4
light control

MM02

brown — red
black — black
brown — brown
green — green
yellow — yellow
orange — orange
light blue — light blue
white — white
pink — pink

CN5
VB3406

1	
2	presence sensor contact	green
3	

CN11
VB3406

1	+12VDC
2	left object contact	white
3	single presence sensor contact	orange
4	
5	
6	0V

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Figure 2-17 Connector MM02 wiring (part 2)
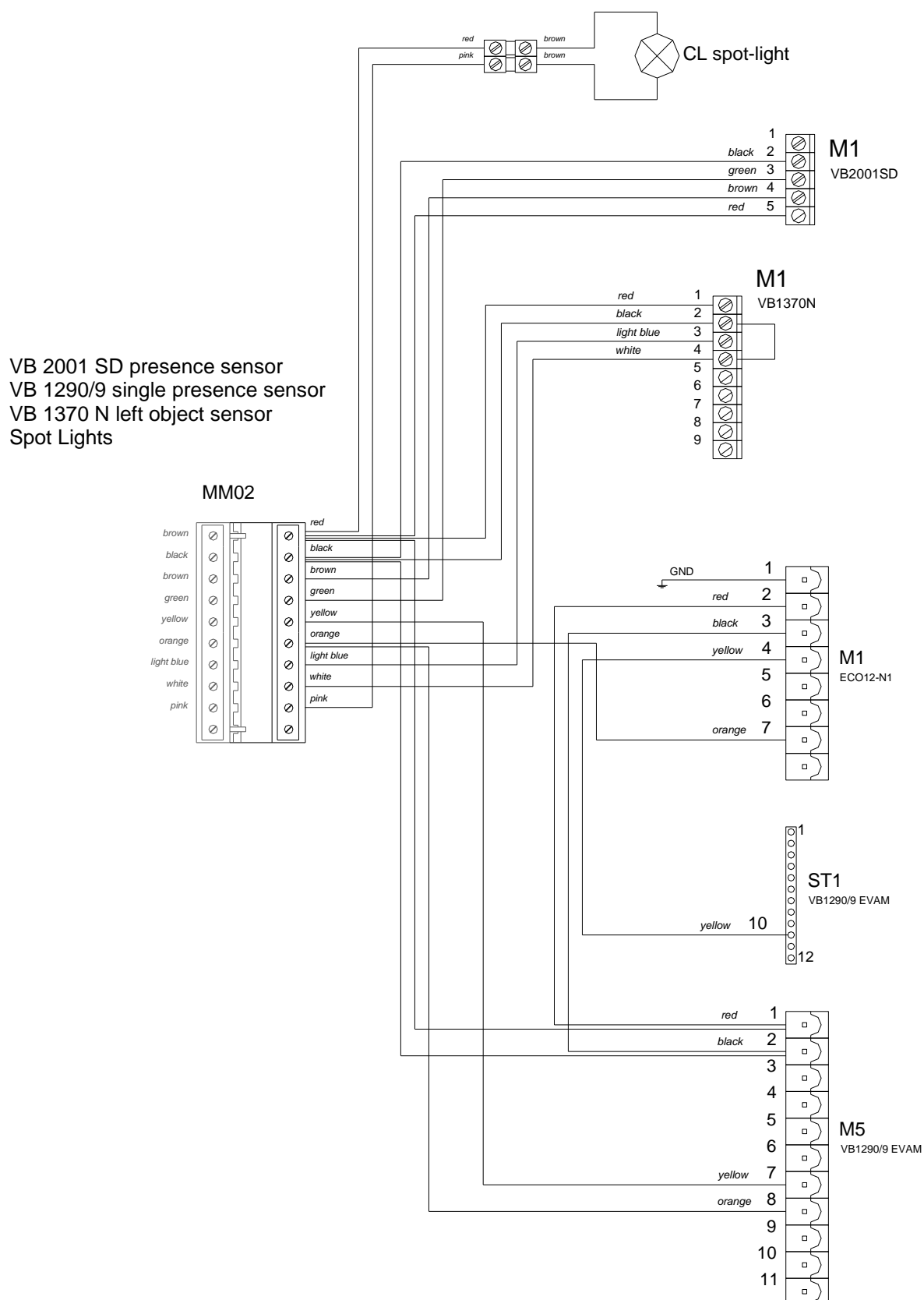
CL spot-light

M1
VB2001SD

M1
VB1370N

VB 2001 SD presence sensor
VB 1290/9 single presence sensor
VB 1370 N left object sensor
Spot Lights

MM02

M1
ECO12-N1

ST1
VB1290/9 EVAM

M5
VB1290/9 EVAM

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Figure 2-18 VB 2001 SD presence sensor

View from top   From components board
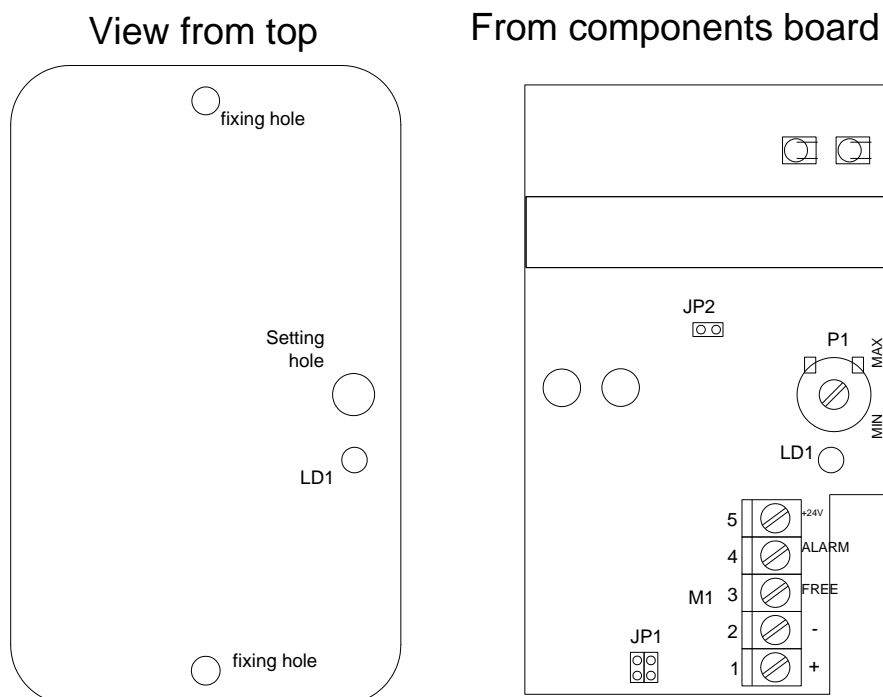
TR1   sensitivity setting potentiometer
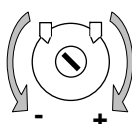
View from top

- Rotate CLOCKWISE to improve sensitivity
- Rotate ANTI-CLOCKWISE to decrease sensitivity

TR1   sensitivity setting potentiometer **with the NEW BOARD**
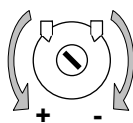
View from top

- Rotate CLOCKWISE to **decrease** sensitivity
- Rotate ANTI-CLOCKWISE to **improve** sensitivity

LD1   alarmed sensor signalling led

JP1,JP2   work frequency setting

1,579 KHz		1,610 KHz
1,650 KHz		1,690 KHz

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Figure 2-19 VB 1290/9 EVAM single presence board
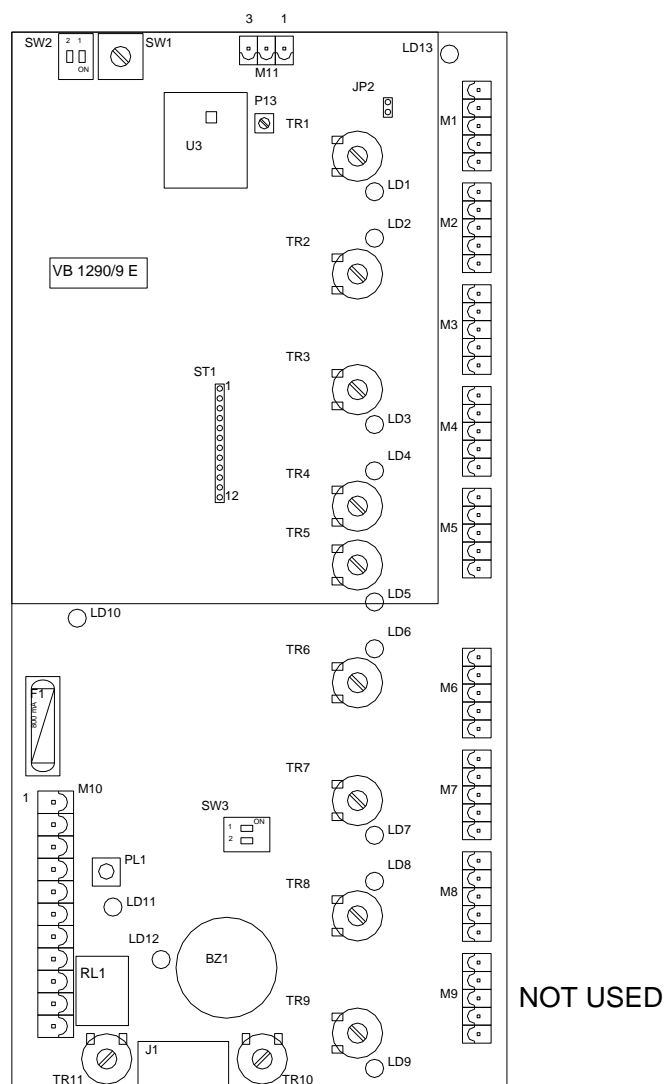
Transducers wiring (from connectors M1, M2, M3, M4,M5, M6, M7, and M8 to transducers through the supplied cable)
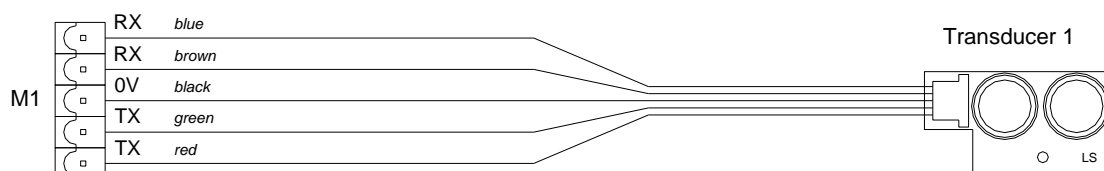
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LD1,2,3,4,5,6,7,8,9
      Transducers signal intensity led

Transducers signal setting (for each transducer use
            relevant potentiometer;
            ex. TR1 = transducer 1)

TR1
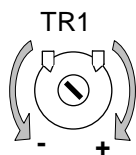
- Rotate CLOCKWISE to increase the signal.
- Rotate ANTI-CLOCKWISE to decrease the signal.

-   **+**

SW3-2 Alarm phonic (BZ1) signal switch (ON-OFF)
(SW3-2 = ON, alarm phonic is activated in case of alarm situation)
LD12   Alarmed sensor signalling led

TR10   collapsing effect setting potentiometer

- Rotate CLOCKWISE to increase the collapsing effect.
- Rotate ANTI-CLOCKWISE to decrease the collapsing effect.

-   **+**

TR11   sensitivity setting potentiometer
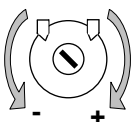
- Rotate CLOCKWISE to increase the sensitivity.
- Rotate ANTI-CLOCKWISE to decrease the sensitivity.

-   **+**

PL1   Sensor RESET push button
LD11   Signalling Led for sensor RESET

J1   Connector to remote bar-graph display

F1   Fuse (800mA)

LD13   Blinded sensor signalling led
P13   Blinding sensitività potentiometer
JP2   General allarm for blinded sensor jumper

Blinded sensor alarm contact wiring

M11
3	Common
2	N.O. contact
1	N.C. contact

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Some suggestions for a correct setting of the VB 1290/9 EVAM board
(9 sensors single-passage-checking-system)

1) Connect the separately provided bar-graph display to the dedicated connector J1

2) Rotate clockwise trimmer TR10 till its end

3) Ask for the collaboration of a possibly corpulent person (target person [TP]) to help you during the settings, and let him cross the booth from low to security side

4) Let the TP enter inside the unit and check that on the bar-graph display 3 bars are ON (<u>high</u> intensity light): if YES, let the TP exit and go to point number 7

5) Let the TP exit and set trimmers TR1 up to TR9* in order to reach on the bar-graph display 3 bars ON (<u>high</u> intensity light): rotate** clockwise if less than 3 bars are ON; rotate** anti-clockwise if more than 3 bars are ON

6) Push the reset button PL1 and go to point number 4

7) Rotate** anti-clockwise TR10 and push the reset button PL1

8) Let the TP enter inside the unit and check that on the bar-graph display 1 bar is ON (<u>high</u> intensity light): if YES, let the TP exit and go to point number 11

9) Let the TP exit and set trimmer TR10 in order to reach on the bar-graph display 1 bar ON (<u>high</u> intensity light): rotate** clockwise if less than 1 bar is ON; rotate** anti-clockwise if more than 1 bar is ON

10) Push the reset button PL1 and go to point number 8

11) With the booth now empty, set trimmer TR11 (Alarm threshold setting indication) so that on the bar-graph display device 3 bars are ON (<u>low</u> intensity light)

12) Disconnect the bar-graph display

<u>ATTENTION</u>: all above mentioned checks and settings must be performed with doors (both sides) closed, either with the TP in or out.

* Note: all the trimmers TR1 up to TR9 are set approximately at the same value (in the same angular position).

** Note: the rotation has to be very short.

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Figure 2-20 ECO12-N1 (additional) single presence control board
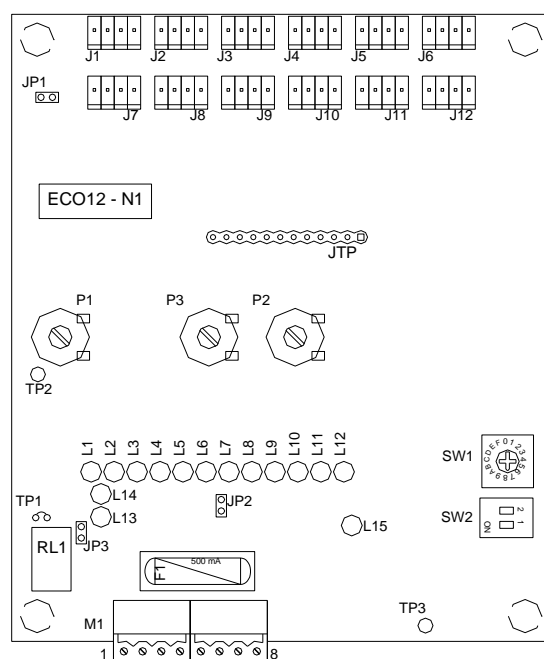
Transducers wiring (from connectors J1 .. J12 to transducers through the supplied cable)

In order to set the additional single presence control board ECO 12-N1 please follows the following procedure:

1) If the system has to work in parallel with VB1290/9 single presence board (like in this case) please check that jumper JP2 is open, connect PIN SIN (4) on the M1 connector to VB1290/9 (as described in the wiring diagrams see Figure 2-17 at page 21), Led L15 will start blinking.

2) Rotate trimmer P1 fully anticlockwise direction

3) Connect the black connector into TP3 and the red connector into TP2 of a millimeter tester

4) Slowly rotate SW1 in both directions and stop rotating when you will see on the tester the maximum voltage rating reached

5) This setting will also correspond to the maximum intensity of the Led L1 up to Led L12

6) The system is now ready to work

NOTE: The board has 4 different programs according to the distance between the ceiling and the floor. Check that dip-switch SW2 has both 1 and 2 in ON (height 2300mm)

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Figure 2-21 VB 1370 N left object board (if fitted)

Lay-out board
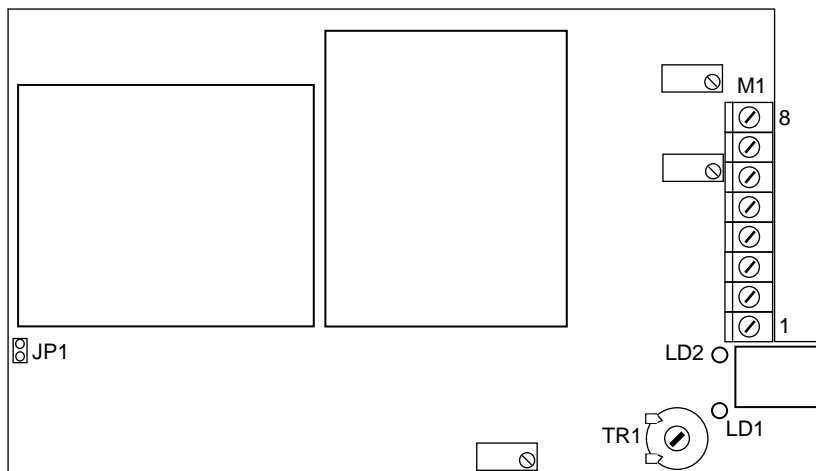
TR1　　Sensitivity setting potentiometer
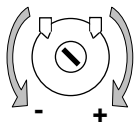
- Rotate CLOCKWISE to increase sensitivity
- Rotate ANTI-CLOCKWISE to decrease sensitivity

LD1　　Alarmed sensor signalling led

LD2　　Sensor reset signalling led

JP1　　Clocking selection　　　　MASTER　　　SLAVE

Figure 2-22 LAY OUT – GR308-01 board
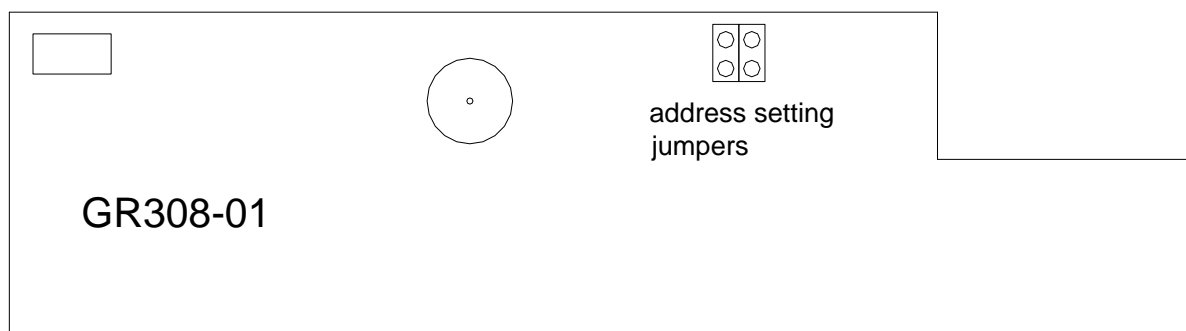
address setting jumpers

GR308-01

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Figure 2-23 Intercoms wiring
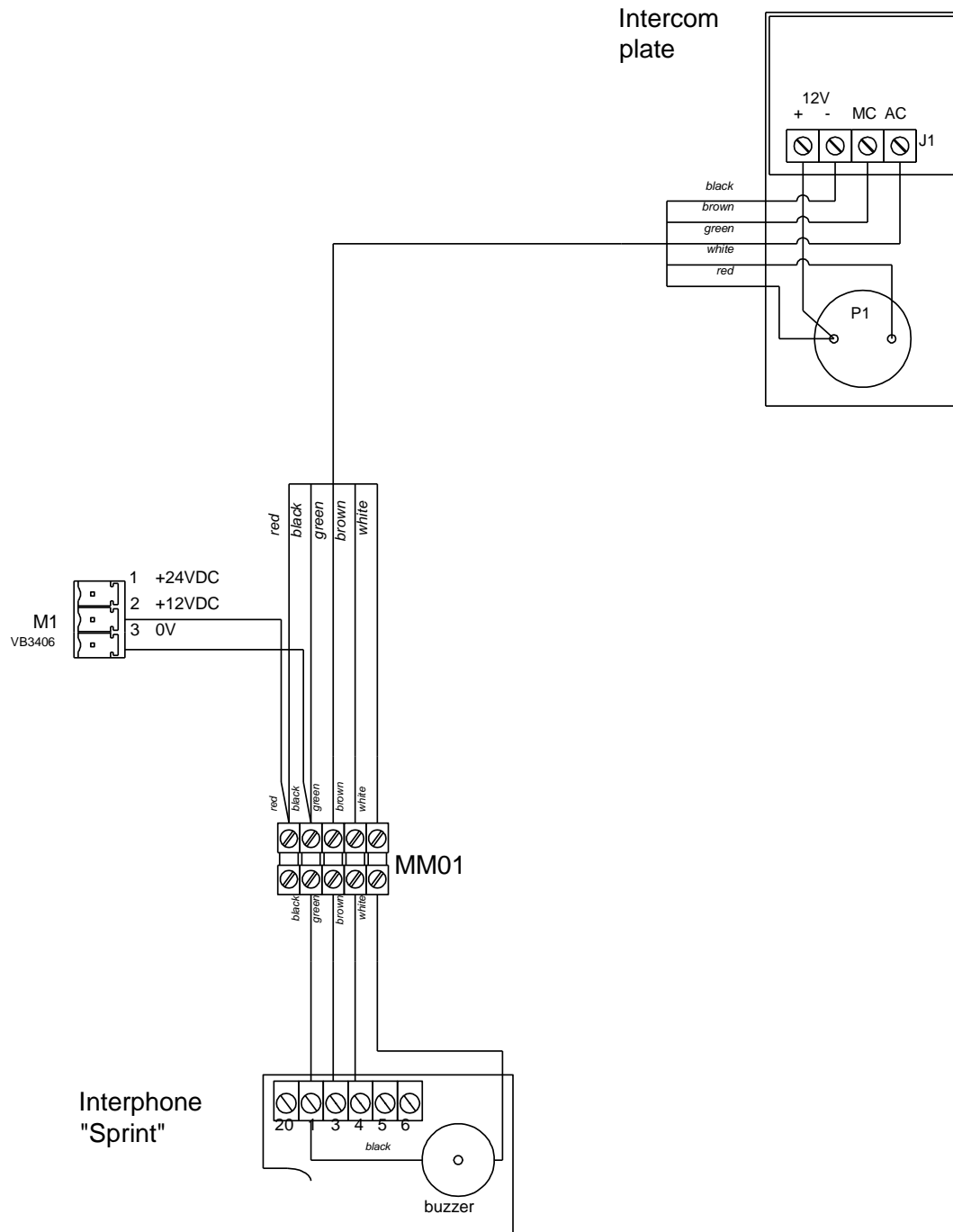
Figure 2-24 "IRA-4BIP" Safety beams wirings
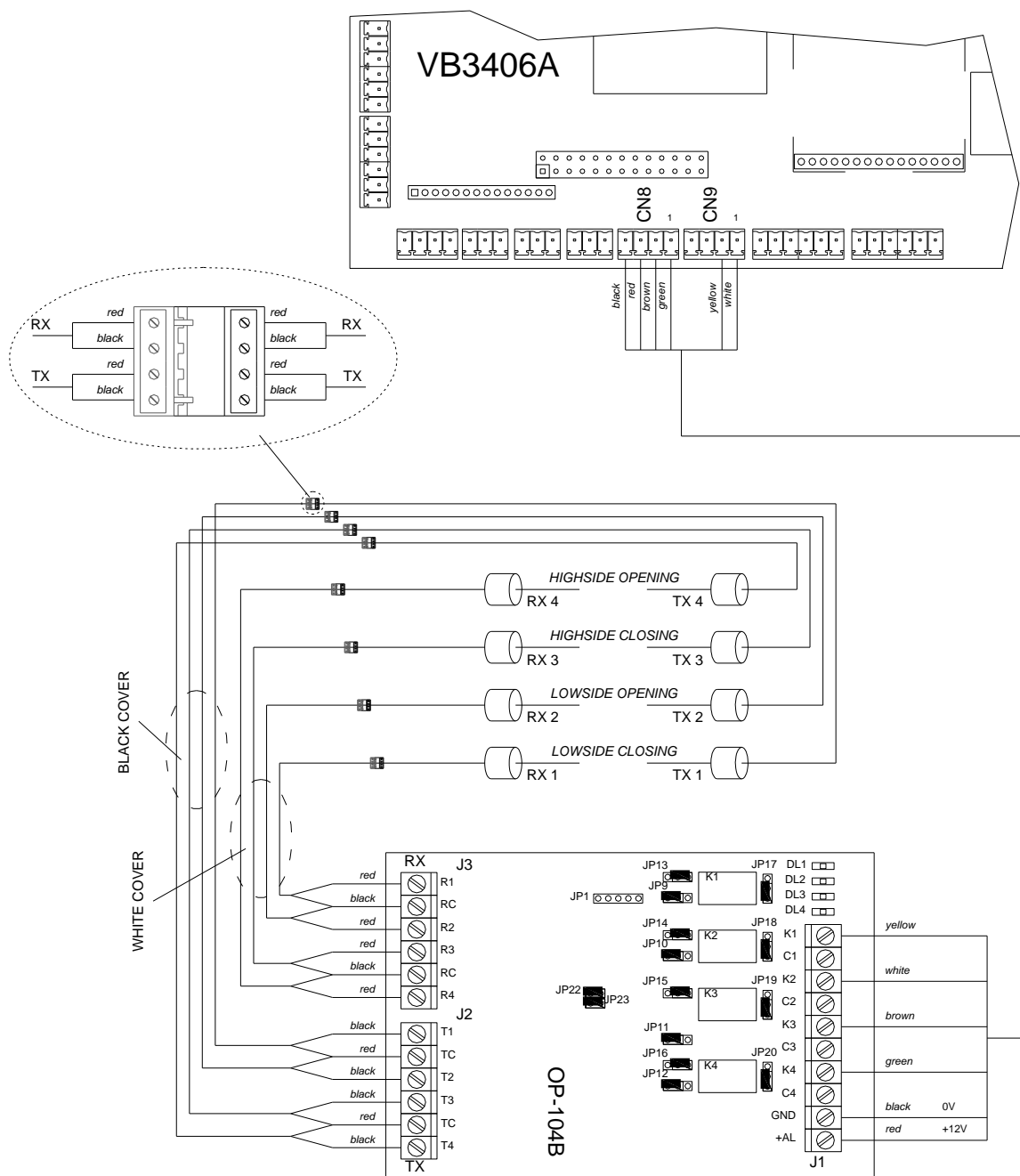
Figure 2-25 VB3406 Main Board layout
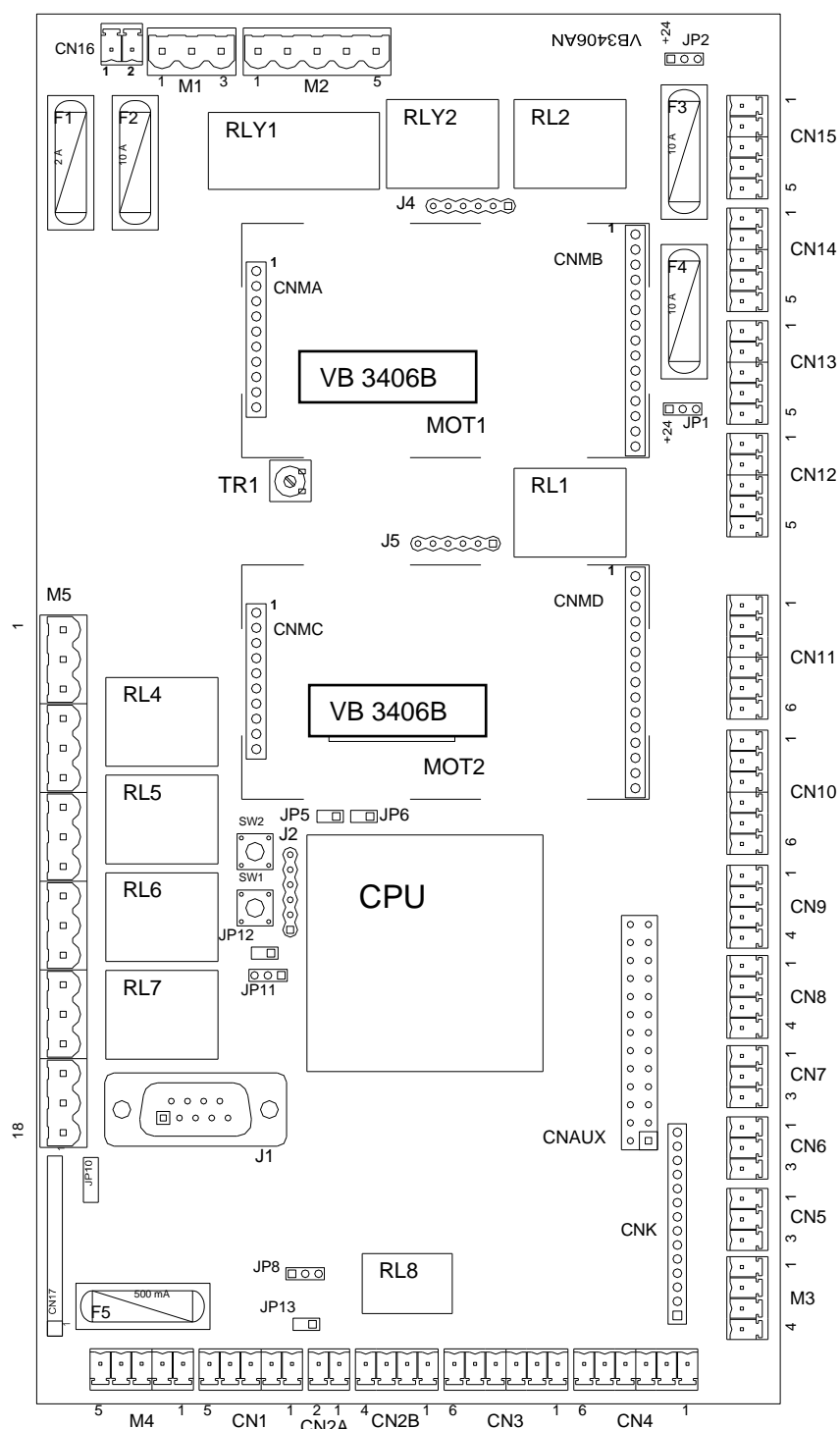
Table 2-1 VB3406 components legend

(See also page 30)

JP1   output selection +12/24VDC   3 - CN14
JP2   output selection +12/24VDC   3 - CN15

3
2   output selection +12VDC
1

3
2   output selection +24VDC
1

JP3   RS 485 serial line end jumper
JP5   Service jumper – DO NOT touch (closed)
JP6   Service jumper – DO NOT touch (closed)
JP7   Vocal messages Write protect jumper – close=write protect
JP12   Service jumper – DO NOT touch (pos. 1-2 closed)

LD5   Relay RL1 state led
LD7   Low side door data movement recording led
LD9   RS-232 communication led
LD10   RS-485 communication led
LD15   Relay RL2 state led
LD20   High side door data movement recording led
LD21   Relay RL4 state led
LD22   Relay RL5 state led
LD26   Relay RL6 state led
LD27   Relay RL7 state led
LD34   Power ON led
LD40   Relay RL8 state led

TR1   Messages volume setting
SW1   Main microprocessor RESET button
SW2   Available button

F 1   Fuse 2A quick burning (+12VDC power in)
F 2   Fuse 10A quick burning (+24VDC power in)
F 3   Fuse 10A quick burning (low side door motor - CN15)
F 4   Fuse 10A quick burning (high side door motor - CN14)
F 5   Fuse 500mA quick burning (M4 connector power out +12/24VDC)

J1   RS-232 connector
J2   IN-CIRCUIT main CPU programming connector
J3   Connettore di servizio – factory test
J4   IN-CIRCUIT low door motor CPU programming connector
J5   IN-CIRCUIT high door motor CPU programming connector

CNAUX   Connector for additional I/O VB 403 board

CNMA-CNMB   Connectors for VB 3406 B motor board - CN15 connector
CNMC-CNMD   Connectors for VB 3406 B motor board - CN14 connector

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Figure 2-26 LAY OUT – Intercom and traffic lights plates

Back view (board side)

LED red

LED green

CON2

ETA003/NW

Back view (board side)

TL1 & TL2 - traffic-light plates

12V
+ - MC AC
J1

P1

PUSH

IC1 - intercom plate

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Figure 2-27 LAY OUT – VB403A I/O board (if fitted)

Connected to the main control board (VB3406) through a flat cable (using CNA1 connector).

For connection details (if fitted) see the addendum supplied with this manual separately

LAYOUT componenti
scheda VB 403 A

JP 2 CLOSE = COMMON RELE' +12V
JP 3 CLOSE = COMMON RELE' +24V
JP 1 CLOSE = COMMON RELE' 0V
ALL JUMPERS OPEN =FREE CONTACT
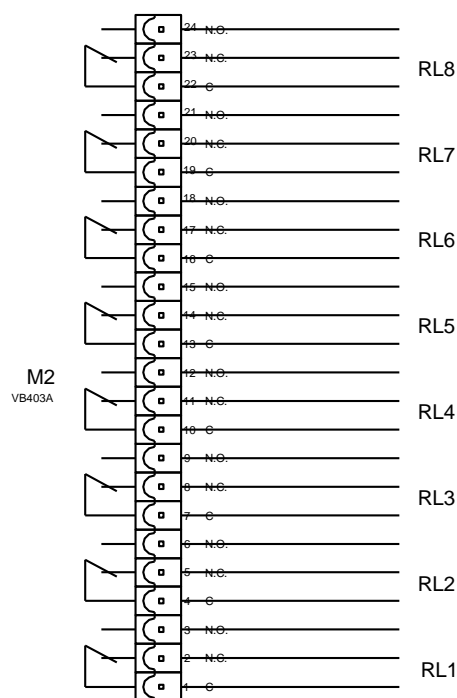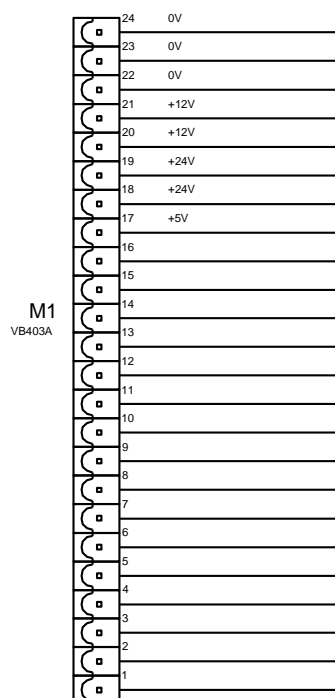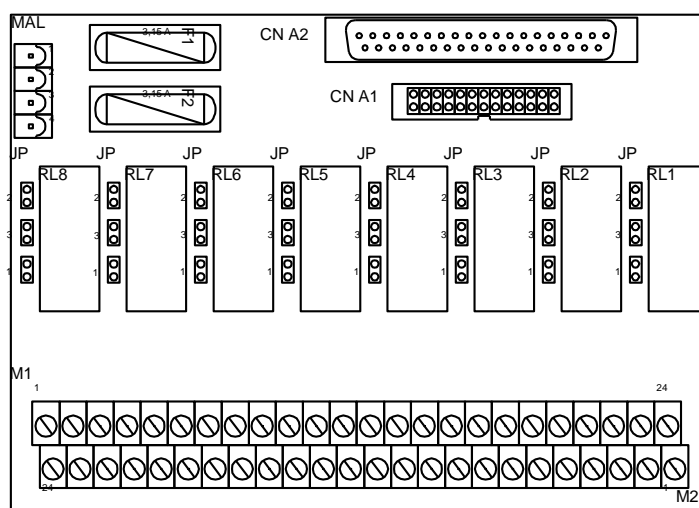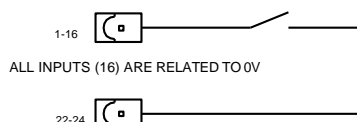
1-16

ALL INPUTS (16) ARE RELATED TO 0V

22-24

M1
VB403A

24	0V
23	0V
22	0V
21	+12V
20	+12V
19	+24V
18	+24V
17	+5V
16	
15	
14	
13	
12	
11	
10	
9	
8	
7	
6	
5	
4	
3	
2	
1	

M2
VB403A

24	N.O.	
23	N.C.	RL8
22	C	
21	N.O.	
20	N.C.	RL7
19	C	
18	N.O.	
17	N.C.	RL6
16	C	
15	N.O.	
14	N.C.	RL5
13	C	
12	N.O.	
11	N.C.	RL4
10	C	
9	N.O.	
8	N.C.	RL3
7	C	
6	N.O.	
5	N.C.	RL2
4	C	
3	N.O.	
2	N.C.	RL1
1	C	

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3. <u>Preventive Maintenance and Adjustments</u>

3.1. Intent of this Section

This section covers the recommended procedures to reduce service calls and prolong the life and appearance of the booth.

3.2. Main Checks

After having installed the booth to be sure that everything is working correctly, some checks have to be done. These checks should be done at least twice a year:

1) Check that the two motors are correctly fixed and tighten

Figure 3-1 Motors check

Check that the four screws [1] are tighten to avoid wrong motors movements
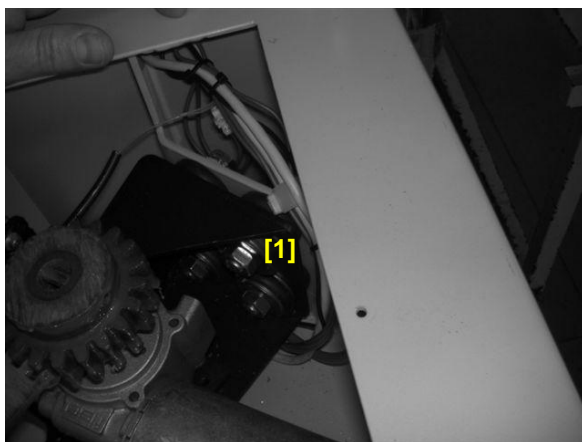
2) Check that sliding doors end pistons are correctly fixed.
3) Adjust end piston fixing bolt until the end pistons are activated when the sliding doors are correctly close

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3.3. Basic Maintenance

Clean once a week with a soft cloth all photocells because if they are dirty they may cause a wrong doors working (sliding doors may stop with no reason, because dust on the photocells seem to be an object between the sliding door and the booth). Figure 3-2.
In case a wrong doors working still remain, probably the photocells are in a wrong position.

Figure 3-2 Booth cleaning
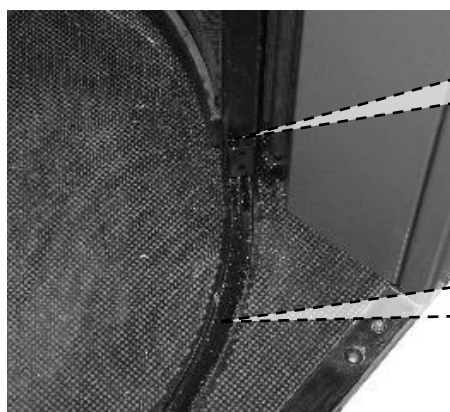
Clean once a week with a soft towel all vertical safety beams to avoid wrong doors working

Clean with a vacuum cleaner the two slide-ways once a week to avoid the presence of dust and obstacles

Check if all users information stickers are present.
If the booth needs a different kind of maintenance, that is to say some parameters (speed of the doors, sensitivity of metal detector) have to be changed, please see paragraph 3.4 and 3.5.

Ceiling Lamp Removal, Replacement: Using a glove or paper towel grab the bulb and pull it from its socket. Using a glove or paper towel push a new bulb into the fixture socket.

Ceiling Lamp Fixture Removal, Replacement: Remove the wiring of the faulty fixture from the main board VB3406. Pull the fixture and its wiring down through the hole. Work the wiring up through the hole in the ceiling panel and push the light fixture into hole until it snaps into place. Wire the light fixture to the main board.

Traffic-lights removal, replacement: when a traffic lights has to be replaced pull the traffic-lights plate and replace it with the new one as show in the next Figure 3-3.

Figure 3-3 Traffic lights plates[A] replacement

To replace the traffic-lights disconnect and re-connect this plug

If the electronic key is fitted disconnect and re-connect also the electronic key

---
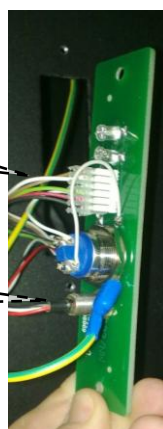
[A] Figure represent a kind of plate with traffic lights, intercom system and electronic key

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3.4. Doors parameters setting

To change doors parameters follow these procedures:
From the console enter in Service Programming turning selector S1 clockwise to PROGRAM. On the display it appears:

```
COMMAND MODE
7=>AM 8=>PM 9=>NIGHT
4=>CONSOLE
5=>FUNCTIONS 6=>DATE
```

Pushing in rapid sequence the buttons F3, F4 and 1 the service menu is entered. On the display it appears:

```
        SERVICE MENU
1= READ PATH
2= MOTOR PARAMETERS
```

READ PATH: Push button **1** to access the "path" menu to change the opening/closing path points of the doors. On the display it appears:

```
        DOOR SELECTION
        1= INTERNAL DOOR
        2= EXTERNAL DOOR
```

Pressing buttons 1 - 2 it is possible to introduce new parameters in closing and in opening for the high door and the low door.

Push button **1** to introduce new parameters in closing and in opening for the high door. On the display it appears:

```
        READ INT PATH
              xx
3= Reset        7= Save
4= Open         8= Close
```

Follow the next steps in order to introduce the new path:

1) push button 8 until the door is completely closed
2) push button 3 to reset the old path
(on the display it appears 00 instead of the old points number)
3) push button 4 until the door is completely opened
4) push button 7 to save the new data. On the display it appears:

```
SAVE DATA AND RECORD
        THE PATH ?
3= Cancel        7= Save
```

Pressing button 3 to cancel the new parameters.
Pressing button 7 to introduce the new parameters: the booth automatically makes a new door initialization to record the new path.

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Push button **2** to introduce new parameters in closing and in opening for the low door. On the display it appears:

```
┌─────────────────────────────┐
│       READ EXT PATH         │
│             xx              │
│  3= Reset        7= Save    │
│  4= Open         8= Close   │
│                             │
└─────────────────────────────┘
```

Follow the next steps in order to introduce the new path:

1) push button 8 until the door is completely closed
2) push button 3 to reset the old path
(on the display it appears 00 instead of the old points number)
3) push button 4 until the door is completely opened
4) push button 7 to save the new data. On the display it appears:

```
┌─────────────────────────────┐
│  SAVE DATA AND RECORD       │
│       THE PATH ?            │
│  3= Cancel        7= Save   │
│                             │
└─────────────────────────────┘
```

Pressing button 3 to cancel the new parameters.
Pressing button 7 to introduce the new parameters: the booth automatically makes a new door initialization to record the new path.

Rotate S1 selector back to ON position to get out of this function.

MOTOR PARAMETERS: Push button **2** to access the "parameters" menu to change the doors movements setting. On the display it appears:

```
┌─────────────────────────────┐
│      DOOR SELECTION         │
│    1= INTERNAL DOOR         │
│    2= EXTERNAL DOOR         │
│                             │
└─────────────────────────────┘
```

Pressing buttons 1 - 2 it is possible to introduce new parameters for the high door and the low door. On the display it appears:

```
                                    ┌──────────────────┐
                                    │  Selected door   │
                                    └──────────────────┘
┌─────────────────────────────┐
│ A) PROTECTION THRESH.       │
│            xx               │
│ 5=> Inc   │ EXT│  6=> Dec   │
│ 4=> Pre   #=>OK  8=> Next   │
└─────────────────────────────┘
```

The two doors have the same menu voices: on the display appears which door is selected at the moment.

- push button 5 to increase the current value
- push button 6 to decrease the current value
- push button 4 to access the previous menu item
- push button 8 to access the next menu item

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- push button # to save the new data. On the display it appears:

```
SAVE DATA AND RECORD
       THE PATH ?
3= Cancel        7= Save
```

Pressing button 3 to cancel the new parameters.
Pressing button 7 to introduce the new parameters: the booth automatically makes a new door initialization to record the new path.

Rotate S1 selector back to ON position to get out of this function.

A) PROTECTION THRESH.: value from 1 to 100. It represents the "power" that the door uses to win an obstacle during the run. A higher value makes the door "stronger".

B) INITIALIZ.SPEED: value from 1 to 100. It is speed of the door during the initialization process or when the door performs a "reverse" during the run (example: when a safety beam is alarmed). A higher value makes the door "faster" during initialization.

C) OPEN: SPEED: value from 1 to 100. It is speed of the door in opening. A higher value makes the door "faster".

D) OPEN: % PATH ACCELL: value from 1 to 100. It is % of the whole space in which the door accelerate up to the normal speed in opening (item C)). A higher value makes the door "slower".

E) OPEN: START BRAKE: value from 1 to 100. It is % of the whole space to be made by the door in opening before the door starts decelerating up to 0.

F) OPEN: TIME BRAKE: value from 1 to 1000. It is time of the short circuit applied on the motor when the door starts to brake in opening. Value expressed in milliseconds.

G) OPEN: BRAKE SPEED: value from 1 to 100. It is braking speed of the door in opening. A higher value makes the door "faster".

H) CLOSE: SPEED: value from 1 to 100. It is speed of the door in closing. A higher value makes the door "faster".

I) CLOSE: % PATH ACCELL: value from 1 to 100. It is % of the whole space in which the door accelerate up to the normal speed in closing (item H)). A higher value makes the door "slower".

L) CLOSE: START BRAKE: value from 1 to 100. It is % of the whole space to be made by the door in closing before the door starts decelerating up to 0.

M) CLOSE: TIME BRAKE: value from 1 to 1000. It is time of the short circuit applied on the motor when the door starts to brake in closing. Value expressed in milliseconds.

N) CLOSE: BRAKE SPEED: value from 1 to 100. It is braking speed of the door in closing. A higher value makes the door "faster".

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3.5. Metal Detector setting

If in the booth a metal detector is fitted follow this instructions.
The metal detector board is located in the top of the booth; for the board lay out see the following figure.

Figure 3-4 Metal Detector Board

Led VIS bar

To Receiving antenna RX

To Transmitting Antenna TX

Connection to Power Supply through CN2A on VB 3406 A board
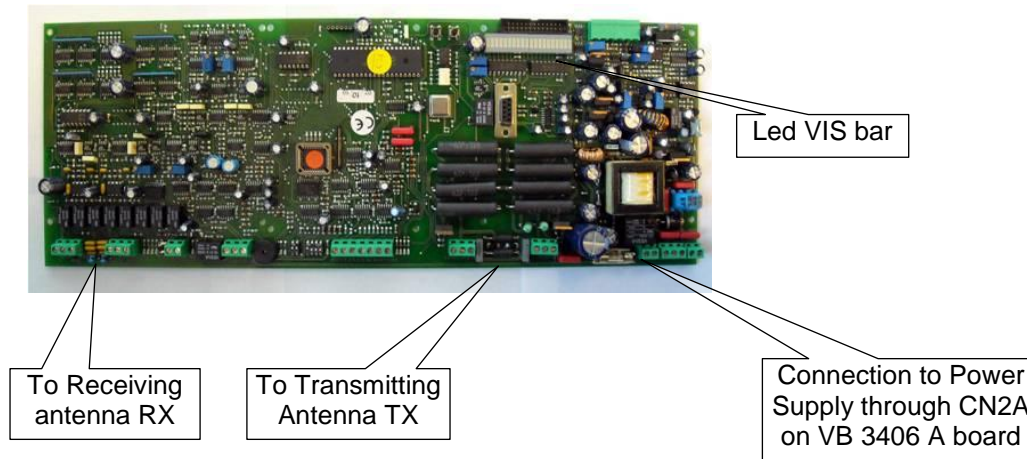
The layout of the board is shown at Figure 3-7.
This board has the option to be connected with a programming console. The console is not used during the normal operation of the metal detector, but it is needed during activation and maintenance procedure. (see Figure 3-5)
The console can be used for more than one booth with metal detector. Just one console is requested in case of multiple units with multiple metal detectors.

Figure 3-5 Metal Detector programming console
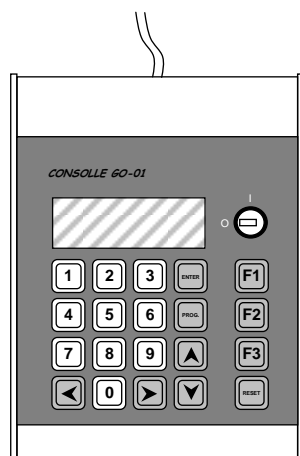
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3.5.1. Electrical wiring connections

The next figures will show all wiring connections among metal detector board, the programming console and the two antennas.
For the connection to the main board VB 3406.

Figure 3-6 General wiring connections
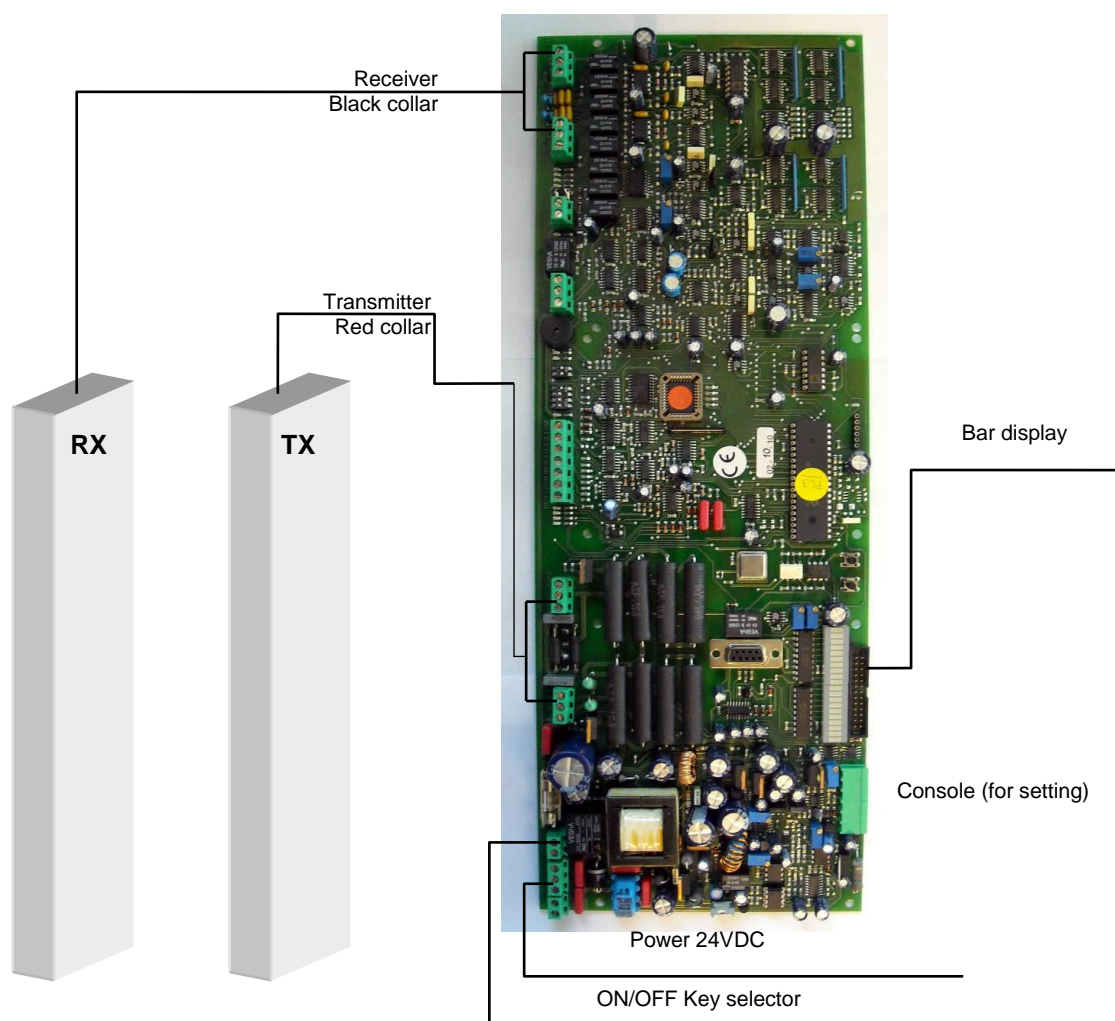
Figure 3-7 Metal detector board layout
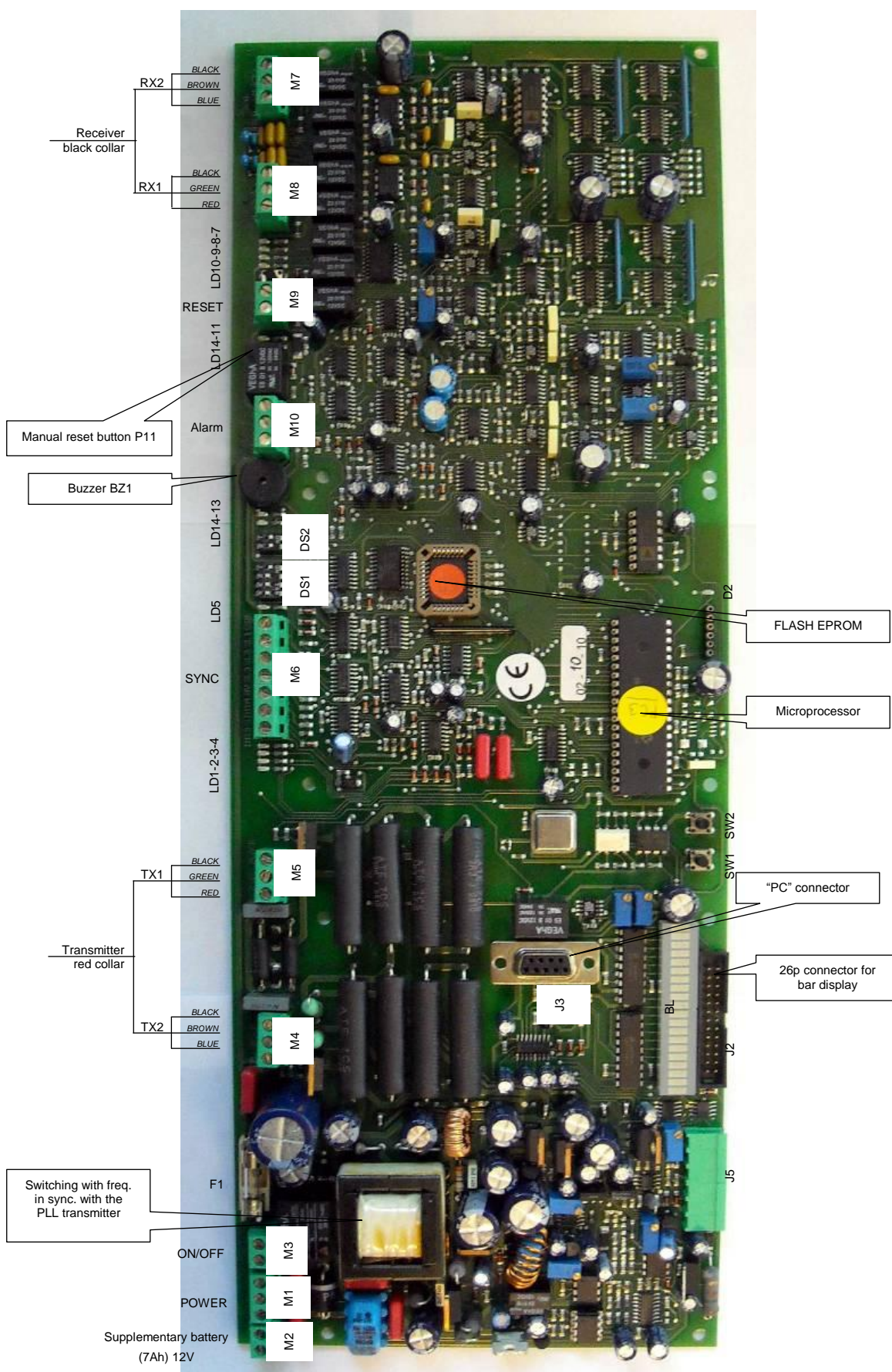
Labels (left side, top to bottom):

- RX2 — BLACK, BROWN, BLUE — M7
- Receiver black collar
- RX1 — BLACK, GREEN, RED — M8
- LD10-9-8-7
- RESET — M9
- LD14-11
- Manual reset button P11
- Alarm — M10
- Buzzer BZ1
- LD14-13
- DS2
- DS1
- LD5
- SYNC — M6
- LD1-2-3-4
- TX1 — BLACK, GREEN, RED — M5
- Transmitter red collar
- TX2 — BLACK, BROWN, BLUE — M4
- F1
- Switching with freq. in sync. with the PLL transmitter
- ON/OFF — M3
- POWER — M1
- Supplementary battery (7Ah) 12V — M2

Labels (right side):

- FLASH EPROM
- Microprocessor
- D2
- SW2
- SW1
- "PC" connector
- 26p connector for bar display
- J3
- BL
- J2
- J5

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Figure 3-8 metal detector board electrical wiring connection
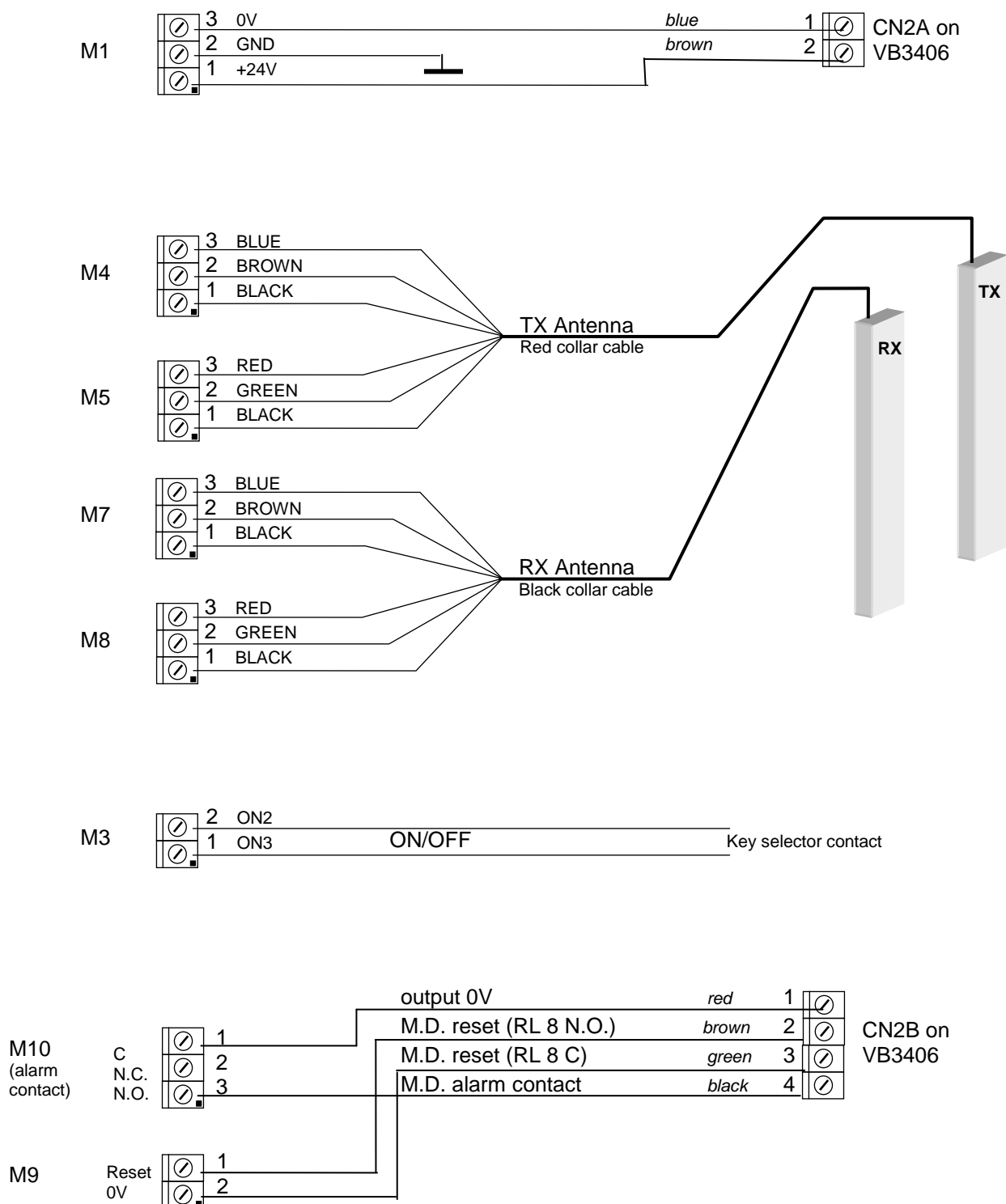
M1	3 0V	*blue*	1	CN2A on
	2 GND	*brown*	2	VB3406
	1 +24V			

M4
3 BLUE
2 BROWN
1 BLACK

M5
3 RED
2 GREEN
1 BLACK

TX Antenna
Red collar cable

M7
3 BLUE
2 BROWN
1 BLACK

M8
3 RED
2 GREEN
1 BLACK

RX Antenna
Black collar cable

TX

RX

M3
2 ON2
1 ON3   ON/OFF   Key selector contact

	output 0V	*red*	1		CN2B on
M10	1 C	M.D. reset (RL 8 N.O.)	*brown*	2	VB3406
(alarm contact)	2 N.C.	M.D. reset (RL 8 C)	*green*	3	
	3 N.O.	M.D. alarm contact	*black*	4	

M9
1 Reset
2 0V

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Figure 3-9 metal detector console wiring connection

J5 K6317BN1		
6	shield	*white/blue*
5	-485	*blue*
4	+485	*brown*
3	ON1	*green*
2	-VIN	*black*
1	+VIN	*red*

Console
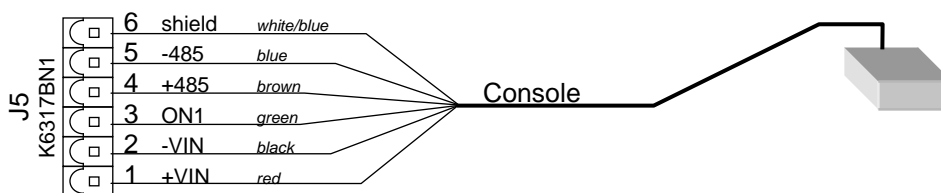
Figure 3-10 metal detector board electrical wiring connection
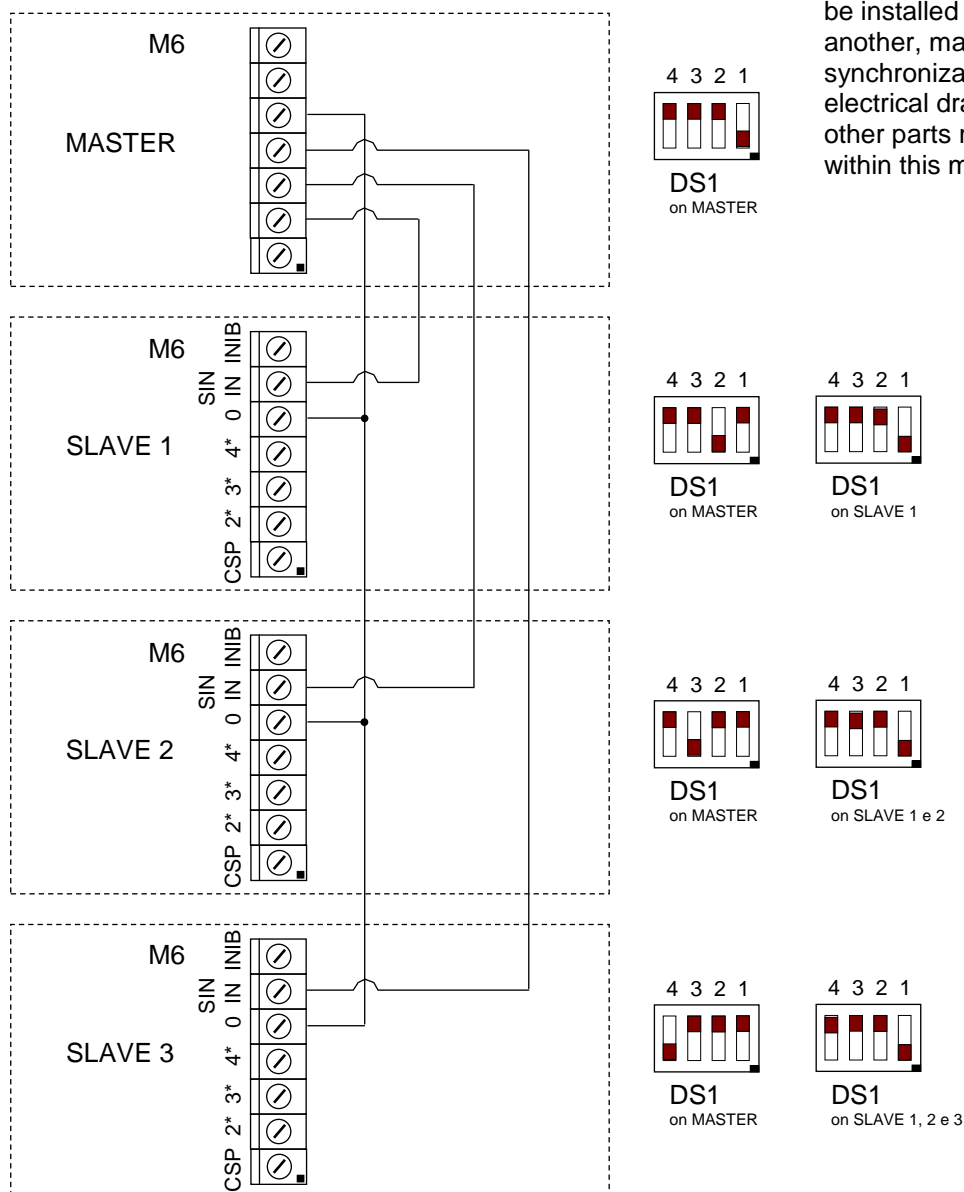
Up to four Metal Detector can be installed one to the side of another, making the synchronization following the electrical draw (see also the other parts regarding the sync. within this manual)

M6

MASTER

4 3 2 1

DS1
on MASTER

M6

SLAVE 1

SIN 0 IN INIB
CSP 2* 3* 4*

4 3 2 1

DS1
on MASTER

4 3 2 1

DS1
on SLAVE 1

M6

SLAVE 2

SIN 0 IN INIB
CSP 2* 3* 4*

4 3 2 1

DS1
on MASTER

4 3 2 1

DS1
on SLAVE 1 e 2

M6

SLAVE 3

SIN 0 IN INIB
CSP 2* 3* 4*

4 3 2 1

DS1
on MASTER

4 3 2 1

DS1
on SLAVE 1, 2 e 3

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Table 3-1 metal detector board components description

DS1
MASTER/SLAVE setting on MASTER M.D.

DS1		1	2	3	4
0	ONLY MASTER	*ON*	*OFF*	*OFF*	*OFF*
1	MASTER + 1 SLAVE	OFF	ON	OFF	OFF
2	MASTER + 2 SLAVE	OFF	OFF	ON	OFF
3	MASTER + 3 SLAVE	OFF	OFF	OFF	ON

MASTER/SLAVE setting on SLAVE M.D.

DS1		1	2	3	4
--	M.D. SLAVE	*ON*	*OFF*	*OFF*	*OFF*

DS2
Settings.

DS2	ON	OFF
1 Buzzer	*Enable*	Disable
2 OUT OF SERVICE	*Enable*	Disable

BL
Bar with 20 led indicating sensitivity/signal level. This M.D. model is not provided with the led bar on board.

BZ1
Alarm buzzer. Switch selector 1 on DS2 to ON to activate.

M1
Power connector (24VDC - 3A max).

M1	Ref.	Description
1	**+VIN**	+24VDC
2	**GND**	Ground + antennas shield
3	**-VIN**	0VDC

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M2
Connector for supplementary back-up battery 12V – 7Ah.

M2	Ref.	Description
1	**+**	Battery +
2	**-**	Battery -

M3
ON/OFF connector. To switch ON contact must be bridged.
When the M.D. has to stay ON all the time install a fixed bridge.

M3	Ref.	Description
1	**ON2**	Switch connector terminal
2	**ON3**	Switch connector terminal

M6
I/O connection to external devices

M6	Ref.	Description
1	**CSP**	Main Synchronization command
2	**2***	Synchronism 2
3	**3***	Synchronism 3
4	**4***	Synchronism 4
5	**0**	"0"
6	**SIN IN**	Synchronism signal
7	**INIB**	Inhibition signal (transmission stand by)

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M4
Channel 2 (TX 2) connector.

M4	Ref.	Description
1	M4.1	Antenna cable (red collar/black wire)
2	M4.2	Antenna cable (red collar/brown wire)
3	M4.3	Antenna cable (red collar/blue wire)

M5
Channel 1 (TX 1) connector.

M5	Ref.	Description
1	M5.1	Antenna cable (red collar/black wire)
2	M5.2	Antenna cable (red collar/green wire)
3	M5.3	Antenna cable (red collar/red wire)

M7
Channel 2 (RX 2) connector.

M7	Ref.	Description
1	M7.1	Antenna cable (black collar/ black wire)
2	M7.2	Antenna cable (black collar/ brown wire)
3	M7.3	Antenna cable (black collar/ blue wire)

M8
Channel 1 (RX 1) connector.

M7	Ref.	Description
1	M8.1	Antenna cable (black collar/ black wire)
2	M8.2	Antenna cable (black collar/green wire)
3	M8.3	Antenna cable (black collar/ red wire)

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M9

External "reset" command connector. To be used when the M.D. is set-up to "static", or other devices are connected. (e.g. inside an interlocking equipment). When M9 is bridged the alarm signal is reset.

M9	Ref.	Description
1	RESET	Reset command
2	0	"0" reference

M10

External alarm signal connector. (Available either as N.O. or N.C. - max 1A 30VDC).

M10	Ref.	Description
1	C	Common (max 1A 30VDC)
2	N.C.	Normally Closed Contact (M.D. is active)
3	N.O.	Normally Open Contact (M.D. is active)

J2

Connection to the external led bar display with 26 wires flat cable. Available for M.D. stand alone unit only

F1

Main fuse: 2,5A max.

LD1, LD2, LD3, LD4

Abnormal operation red signaling leds: switched off on correct working condition. Lit on in case of M.D. antennas malfunctioning. **WHEN LIT CALL ON SERVICE**.

LD7

Generic "failure" red led: switched off on normal use; **WHEN LIT CALL ON SERVICE**. If LD7 is ON together with LD3/LD4, check if the wiring on M7/M8 is correctly fixed, or if the receiver antenna has been visibly damaged. In the second case the receiver antenna has to be replaced. If LD7 is ON together with LD1/LD2, the metal detector board is out of order and has to be replaced.

LD5, LD6

Operational yellow, green leds: LD5 lit ON on normal use; LD6 is OFF on normal use; LD5 switched off in case of M.D. alarm; LD6 lit ON in case of M.D. alarm

LD8

Operational green led: switched OFF on normal use; lit ON when the M.D. "reset" command is ON. (M9).

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LD9, LD10, LD11, LD12
Operational green leds: when lit ON the relevant filter (LD9 – Filter 1; LD10 – Filter 2; …) has been chosen at the M.D. remote console (see Function 11 page 52).

Table3-2 K6317AN1 board components description

P11
"Reset" button: for M.D. setting-up and start-up procedures.

LD13
Operational green led: lit ON when the M.D. is "inhibit" (INIB on M6) that is to say the turnstile is stopped – M.D. alarm is not displayed on booth console. When the turnstile starts rotating the led is OFF and M.D. alarm is displayed on the booth console too.

Table3-3 K6317BN1 board components description

SW1
Microprocessor reset button: for M.D. test procedures.

SW2
"Password reset" button: used in case of programming password lost.

D2
Transmission led yellow: lit on when the M.D. is transmitting to the console (this happens during M.D. setting).

3.5.2. Programming

Programming can be selected using the dedicated console.

Metal Detector has 12 programming sections, as shown here below:

4) working frequency selection
5) sensitivity level adjustment
6) object catching sensitivity
7) automatic refresh times
8) pre-amplification setting
9) vibration noise damping channel 1 and cannel 2
10) static / dynamic modality
11) password selection
12) channel amplification selection
13) program number selection
14) filter selection
15) ON / OFF channel 1 and channel 2 during vibration noise damping programming section.

Console buttons legenda:

▲ to go to the next programming section

▼ to go back to the previous programming section

◄ to decrease values of each programming section

➤ to increase values of each programming section.

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With **PROGR** button it is possible to confirm the set value.

After having finished wiring connections as shown in the diagrams, proceed as shown here below:
Turn ON Metal Detector rotating the console key to ON position (position1).
The console display will light and on the display will appear:

```
Introduce password
0 to 9 buttons
Enter to confirm
```

The preset password is 58, to change the password see Function 8.

3.5.3.   Functions

All MENU functions changes have to be recorded pushing button PROGR to automatically re-establish the normal condition of metal detector working.
Anyway, it is possible to see in real time metal detector working only about these functions:
FREQUENCY – SENSITIVITY – VIBRATION NOISE DAMPING CHANNEL 1 AND CHANNEL 2
In case the operator has to modify one of these function parameters, he/she can do that without pushing button PROGR, except at the end when he/she will find the correct value.
Otherwise the operator can turn the console key in position 2 for a second and then re-position the key in position 1 (position 0: M.D. OFF, position 1: M.D. ON) and at the same time press RESET button until the display LCD return in the normal position.
After this operation when the operator enters in MENU with the password, he/she can remain in MENU for the period he/she needs and not only for 20 second as in normal conditions.
To stop this function turn again the key in position 2 for a second and then in position1 without pressing any other button.

1   Function 1 – Working frequency selection

This function is used to set an optimum working frequency according to the environment in which the metal detector has been installed, avoiding outside noises (neon signs, motors, electric devices, etc.) can affect metal detector correct working.
It is possible to see the noise on the led bar BL, central leds move with an irregular movement.
To change preset parameter enter in this function and with dedicated buttons increase / decrease the value (each value increases / decreases of 0.6 Hz) till the correct frequency has been found (the led bar BL on the top of the two metal detector antennas has the central leds stable).
The metal detector working frequency has to be in the range of 450Hz – 971.8Hz.

2 Function 2 – sensitivity level adjustment.

This function is used to set the metal detector sensitivity level, the value must be in the range of 0 (minimum sensitivity) to 255 (maximum sensitivity).
The sensitivity level can be also seen on the led bar BL made of 20 leds, located on the top of the two metal detector antennas.
In the central part C led is ON when metal detector is in stand-by (no metal objects are crossing the two antennas).
There are other two leds that are ON in asymmetrical way with reference to the central led C : ex. A6 and B6 (see Figure 3-11).

It is possible moving these leds to change the sensitivity level: increasing the sensitivity level, the field between the leds is shorter and they will be nearer A1 and B1 leds, decreasing the sensitivity level, the field between the two leds is larger, moving to A10 and B10 leds.

Figure 3-11 Led VIS bar
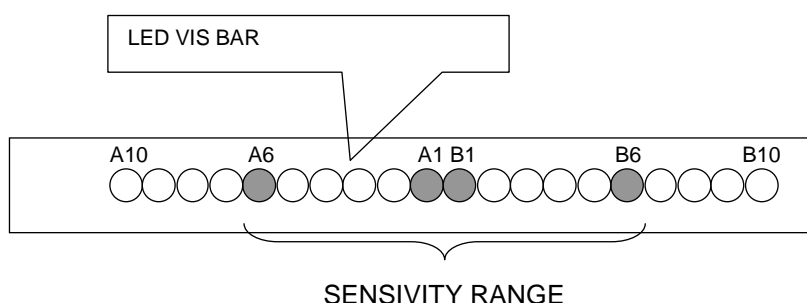
After having found the requested sensitivity, confirm the value with PROGR button.

3 Function 3 – Object catching sensitivity

This function is used to set the object catching sensitivity while the object is crossing the two antennas.
There are 4 levels in the range of 5 – 20 : 5-10-15-20 (low – medium-low – medium-high – high)
After having chosen the requested catching sensitivity, confirm with PROGR button.

Note: for ClearLock 642 metal detector the value suggested is 10.

Note: this function is connected with environmental noise immunity (the less noises are, the higher objects catching sensitivity is accepted).
- minimum object catching sensitivity (5) maximum noises control
- maximum object catching sensitivity (20) minimum noises control.

The transmitting antenna (red cable) must be on the side of possible noise source (ex: X ray device).

4 Function 4 – Automatic refresh times

This function is used to set metal detector automatic refresh times canceling false alarms due to environmental noises that are different in each place.
There are 5 levels and the value must be in the range of 0 (no correction in case of environmental noises) and 4 (maximum correction in case of environmental noises).
After having found the best automatic refresh times, confirm the value with PROGR button.
Note: for ClearLock 642 metal detector the value suggested is 4.

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5 Function 5 – Pre-amplification setting

This function is used to set pre-amplification parameters in connection with metal detector antennas used and the requested program selection (range 1:1 / 1:2 / 1:4).
 Note: for ClearLock 642 metal detector the value must be set up to 1:2.

6 Function 6 – Vibration noise damping channel 1 and channel 2

Vibration noise damping setting allows to optimize metal detector working, avoiding possible noises due to antennas movement and/or vibrations due to objects near metal detector.
The setting has to be done introducing one channel only per time (see function 12 to ON / OFF channels) and using function 6 settings, with varying values according to the chosen program: for program 0 to be set in case of ClearLock 642 metal detector values are in the range of 220 - 250.
After having turn OFF the channel that has not to be set (function 12), move the two antennas a little bit.
If it is possible to see on the led bar BL leds oscillation (from the central to A10 and B10), change the present setting until it was found a value that reduce to the minimum leds oscillation.
Do the same thing for the other channel and press PROG to confirm the value.

7 Function 7 – Static / dynamic modality

In "static" modality there is a continuous alarm in case of a metallic object between the two antennas, instead, in "dynamic" modality there is a short alarm each time a metal object cross the two antennas.
The decision between the two options depends on clients needs.
Note: for ClearLock 642 metal detector the modality has to be set in "dynamic".

8 Function 8 – Password selection

This function is used to change the pre-set password digiting on the console a new number with maximum 12 characters and press ENTER button.
Then press PROGR button.
In case the operator forget the password, he/she can press the dedicated button on the board with the microprocessor (see Figure 3-7): in this case the set password is 123456 that allows the operator to enter in MENU and follow this procedure to introduce a new password.

9 Function 9 – Channels amplification selection

The value must be in the range of 1-2-3-4.
It depends on which program has been chosen and which kind of antennas has been installed.
Note: for ClearLock 642 metal detector the value must be set up to 3.

10 Function 10 – Program selection

This function is used to change the program number.
Note: for ClearLock 642 metal detector the program must be set up to 0.

Table 3-4 Program selection

Program	Vibration noise damping	Filter selection
0	*≈ 230*	*1=ON*
1	≈ 230	1=ON
2	≈ 180	1=ON
3	≈ 170	4=ON
4	≈ 230	1=ON
5	≈ 220	1=ON
6	≈ 230	1=ON
7	---	---
8	≈ 60	1=ON 4=ON
9	≈ 220	1=ON
10	≈ 140	4=ON

11 Function 11 – Filter selection

It is possible to introduce 4 different kind of filters, it depends on which kind of program is used and also which kind of electromagnetic noise is present in the area where the metal detector has been installed.
Usually it is used filter 1 ON but in particular condition it can be better using another filter ON.
Note : for ClearLock 642 metal detector, filter 1 must be set up to ON; filters 2-3-4 must be set up to OFF).

12 Function 12 – ON / OFF channel 1 and channel 2

This function is connected with function 6, because if vibration noise damping of channel 1 has to be cancel channel 2 has to be put in OFF position vice-versa.
Before going to function 6 memorize the set channel with PROGR.

To exit from MENU remember to press any time PROGR button to confirm the chosen setting.
If not, metal detector may work with parameters different from the chosen ones. Be careful in case the console key has not been turn into position 2 (see page 39) because after 20 second without pressing any button the console exit automatically from MENU re-introducing the last saved parameters.

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DIP-SWITCH:

DS2 :   1 ON: internal buzzer ON
            1 OFF: internal buzzer OFF
2 ON: alarm in case of out of order
2 OFF: no alarm in case of out of order condition

2 must be always in ON position
In case of out of order condition (for example short circuit of TX or RX winding – a real rare situation), the output relay will be always in alarm, so that the buzzer will sound.
In this case it is not possible to enter in MENU also with the password but it is necessary to turn OFF the device.

DS1:   used to synchronize M.D. near to the master one, till a maximum of 3 (3 SLAVE + 1 MASTER).

Ex.   1 ON single metal detector installation [1MASTER]
            2 ON Two metal detectors installation [1 MASTER + 1 SLAVE (1=ON)]
            3 ON Three metal detectors installation [1 MASTER + 2 SLAVE (1=ON)]
            4 ON Four metal detectors installation [1 MASTER + 3 SLAVE (1=ON)]

Notes: the working frequency on the slave M.D. console is 1/2 of master M.D. in case there is 1 master and 1 slave M.D.; it is 1/3 in case there are 1 master and 2 slaves M.D.; it is 1/4 in case there are 1 master and 3 slaves M.D.
During parameters setting the operator may, if necessary, re-position leds to the central led with the manual reset (see Figure 3-7), or pushing button RESET on the console after having digit the password to enter in the MENU.
In case of lack of power there is a back up battery that supports metal detector for 2 hours

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4. <u>Troubleshooting Guide</u>

* If something on request has not been fitted, the relevant problem cannot exist

One or both doors do not operate correctly		
Possible Cause	**Check Point**	**Action**
1) in the slide – way of the door there is an object that avoid the correct movement	Check that no object is inside the slide-way	Remove the object and clean the slide-way with a vacuum cleaner
2) one of door parameters is not appropriate for that place	Please see Door Parameters Setting at page 36 of this manual and follow the instructions	Adjust accordingly
3) one or more safety beams photocells are dirty	Check if there is some dust on one or more safety beams photocells	Clean with a soft towel. Don't use solvents
4) one or more safety beams photocells have been broken or they are misaligned	Check if one or more safety beams photocells are correctly fixed to the frame and aligned	Replace the safety beams photocells paying attention to connect the new one in the same way if it's broken, and aligned them carefully
5) the console is set to manual function or that booth is set for entrance/exit only	Check if you are in manual function on the display console and check if the door you approach is the correct one to enter/exit	Change the programmation to requested function See the operating guide.

The console is OFF		
Possible Cause	**Check Point**	**Action**
1) S1 selector at the console is in OFF position	Check that S1 selector is in ON position	If it is in OFF position turn clockwise the key of 90°
2) Connectors between the console and the booth are not properly connected	Check that the console connection is properly wired with the console cable and that the wiring of connection cable at the main board is ok (see page 16 of this manual)	Act accordingly
3) One or two fuses are burnt	Check that fuses F1 and F2 on VB3406 are not burnt	Replace the burnt fuses with new ones with same characteristic (see page 30 of this manual)

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The consoles signals the lack of power		
Possible Cause	Check Point	Action
1) Booth power switch of the main power board of the building is in OFF position.	Check if the booth power switch of the main power board of the building is in ON position.	If not turn ON the main power
2) The power supply plug is not correctly connected or there is a fault in the plug	Check that the plug is not damaged and it is correctly connected	In case the plug is damaged replace it
3) There is a lack of the main power	Check main power presence at the power supply with proper test instrument	Call the Energy supplier

*Metal Detector is continuously alarmed or is not alarmed by metals		
Possible Cause	Check Point	Action
1) Parameters set are not correct	Metal Detector does not work properly	Follow instruction according to Metal Detector Setting at page 39 of this manual
2) Metal detector is OFF	Metal detector is not alarmed by any metal	Check on the console if MD has been excluded (see Operating Guide)
3) Metal detector is broken	Check if the two antennas have been damaged	Change the damage metal detector antenna/s.

*2 people are allowed to enter even if the single presence sensor system is ON (on the console)		
Possible Cause	Check Point	Action
1) VB1290 has to be adjusted	people do not alarm VB1290	See Figure 2-19 and follow the instructions
2) Problem with the connection between VB1290 and VB3406	there is an alarm on VB1290 but 2 people can enter the same	Check the connection between VB1290 and VB3406 (CN11 see page 20 of this manual)
3) VB1290 not working	2 people do not alarm VB1290	After having checked that it isn't point 1, VB1290 has to be replaced

Spot lights are OFF during booth working		
Possible Cause	Check Point	Action
1) spot lights are broken	spot lights is OFF	Replace the relevant spot light
2) wrong connection on VB3406	spot lights is OFF	Check the connection on VB3406 (see page 21 of this manual)

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One or both traffic lights don't work		
Possible Cause	**Check Point**	**Action**
1) one or two leds are broken	Only the red or the green light doesn't work	Replace the traffic lights as shown at Figure 3-3
2) wrong connection on VB3406	Both lights are OFF	Check the connection on VB3406 (CN3-CN4 see page 17 of this manual)

*The loudspeaker doesn't work		
Possible Cause	**Check Point**	**Action**
1) wrong connection on VB3406		Check the connection on VB3406 (see pages 20 of this manual)
2) the loudspeaker is broken	Check if the loudspeaker is damaged	Replace the broken loudspeaker (see of pages 13 - 20 this manual)

*The intercom doesn't work		
Possible Cause	**Check Point**	**Action**
1) wrong connection on VB3406	No intercom is visibly damaged	Adjust the connection on VB3406 and on the handset (see pages 28 of this manual)
2) one intercom is broken	One intercom is visibly damaged	Replace the broken intercom

During initialization one or both doors do not close as first action		
Possible Cause	**Check Point**	**Action**
1) The connection to motors is inverted	One or both doors start opening and not closing	Invert the wiring on the motor/s

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During initialization one or both doors do not move		
Possible Cause	**Check Point**	**Action**
1) one or both motors are not correctly connected	Check the wiring to the motor/s	Adjust the wiring (see page 19 of this manual)
2) on VB3406 there isn't the correct voltage	Check the voltage of 24V on VB3406 at point (connector M2 page 15 of this manual)	See the next point
3) one or more fuses are burnt	Check that fuses F2, F3 and F4 on VB3406 are not burnt	Replace the burnt fuses with new ones with same characteristics (see page 30 of this manual)
4) VB3406B boards are not correctly connected with VB3406	Locate the VB3406B on the main board	Check that VB3406B boards are correctly connected

During initialization one or both doors do not move correctly		
Possible Cause	**Check Point**	**Action**
1) the encoder/s are not correctly connected or are broken	Check the wiring on the encoders or if they are damaged	Adjust the wiring (see page 19 of this manual) or replace encoder/s if they are broken
2) the doors moving is limited by an obstacle or the mechanical lock has not been opened correctly	Check if there is an object in the slide – ways and if the mechanical lock is correctly open	Remove the object / open the lock

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5. Appendix A - AD003 Drawing

Table B - Layout (AD003 drawing)
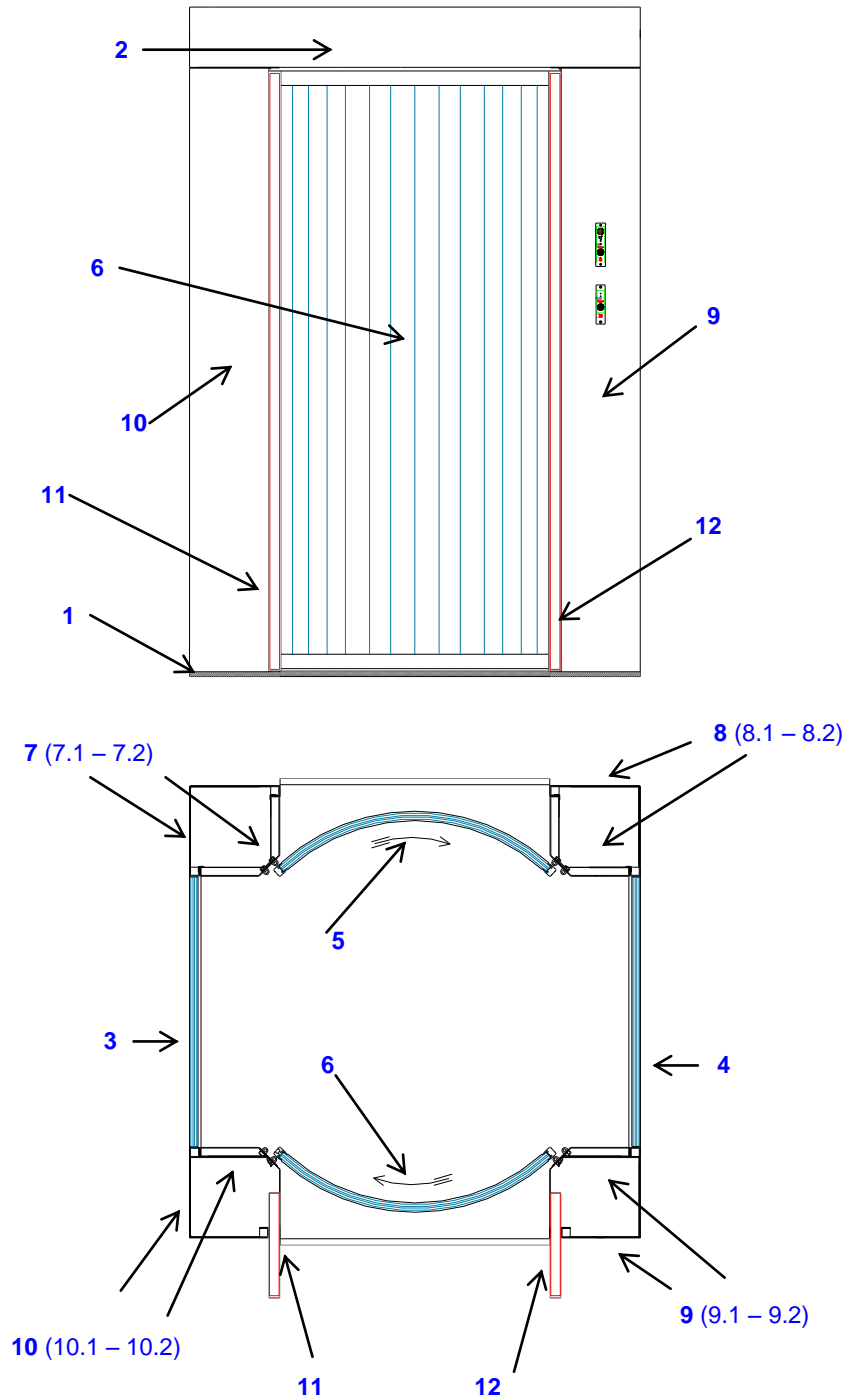
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6. Appendix D – Manual release of the low side door

In case low side door is managed as Fail lock (door is blocked during power cut) and for emergency needs (tipically) it is necessary release the low side door, a manual release may be provided (a releasing lever must be placed outside the unit, acting on the lock door piston as shown in Figure 6-1)
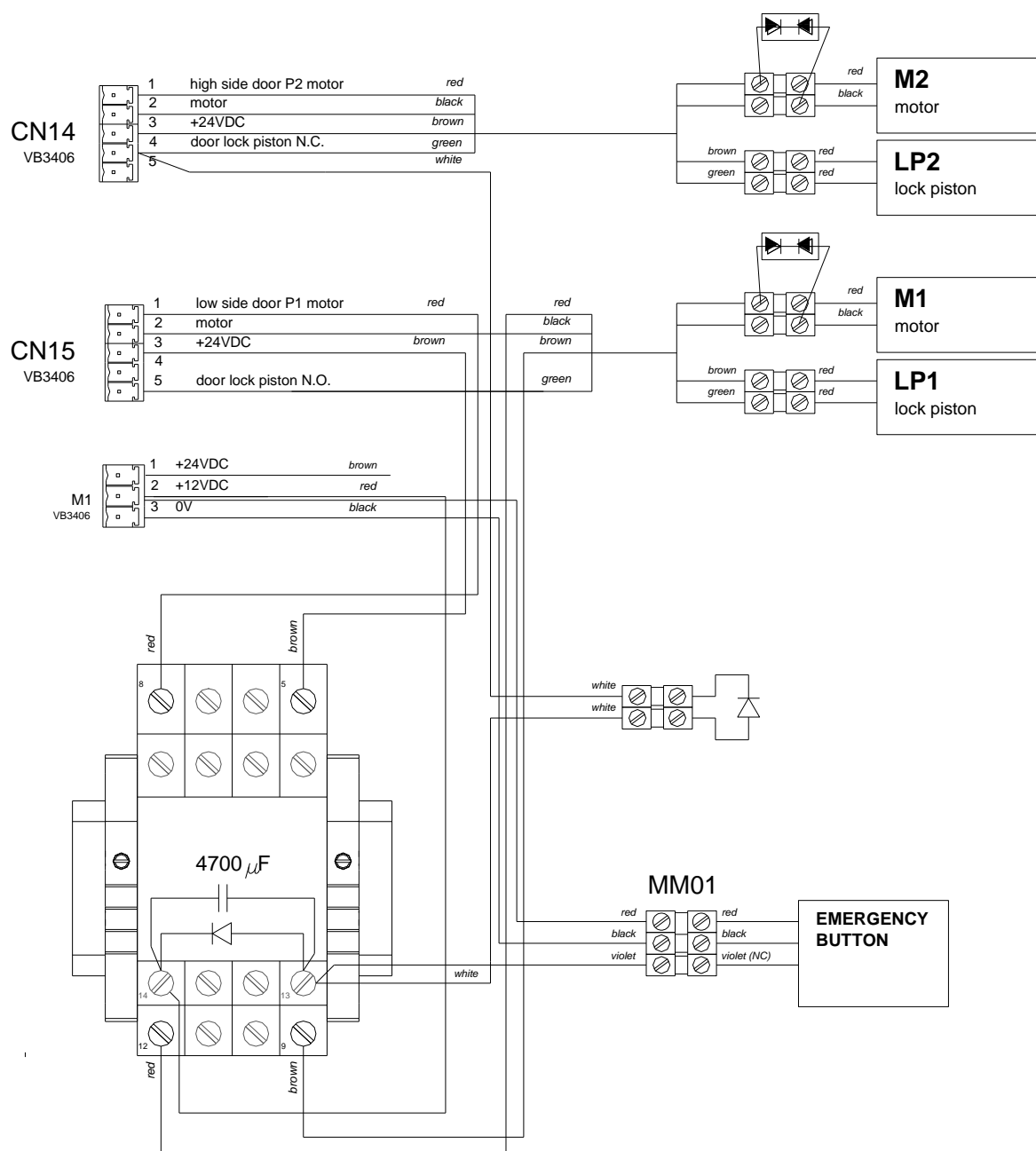
Figure 6-1 manual release of the low side door (for emergency purpose)
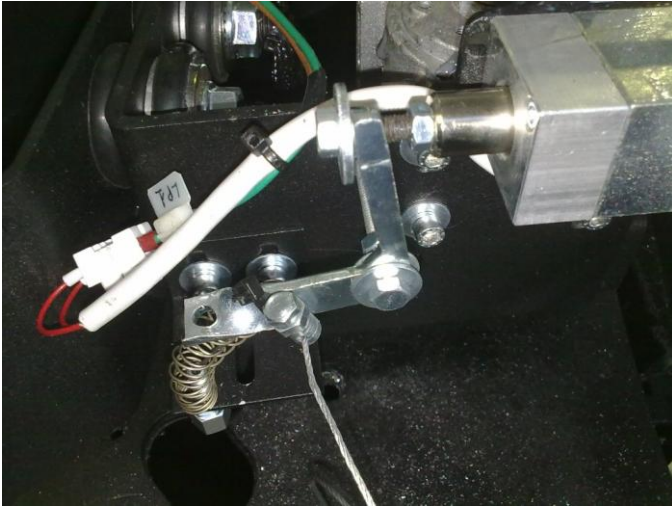
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7. Appendix B – (active) emergency push button wiring (if fitted)

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