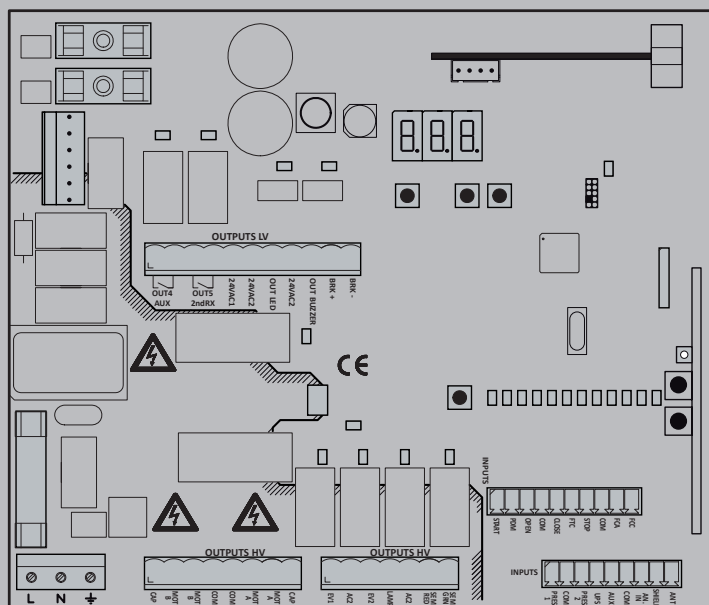


PERSEO CBE (FW 1.3.X)



INSTALLATION AND OPERATION MANUAL

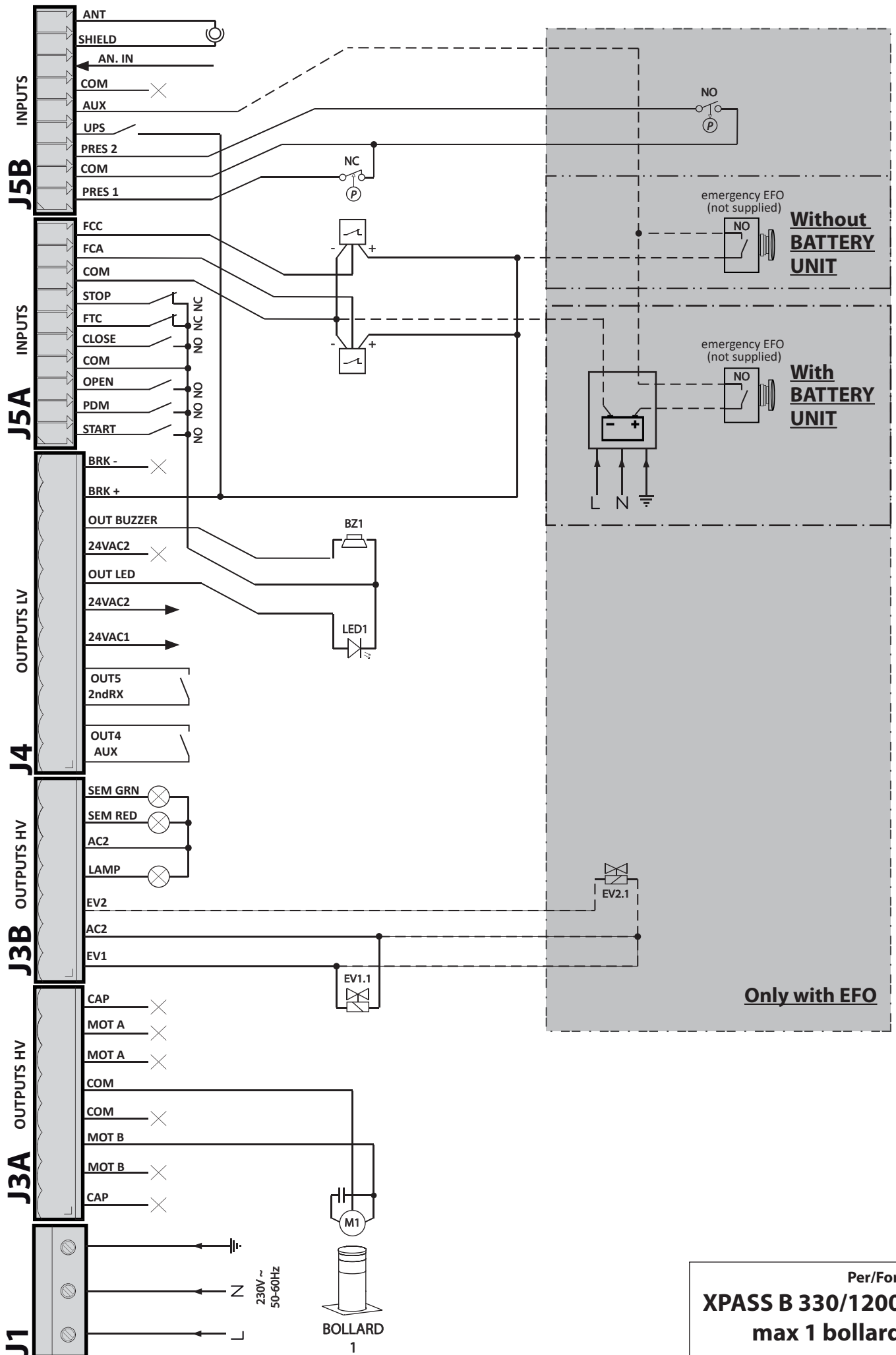
CONTROL UNIT

Caution! Read "Warnings" inside carefully!

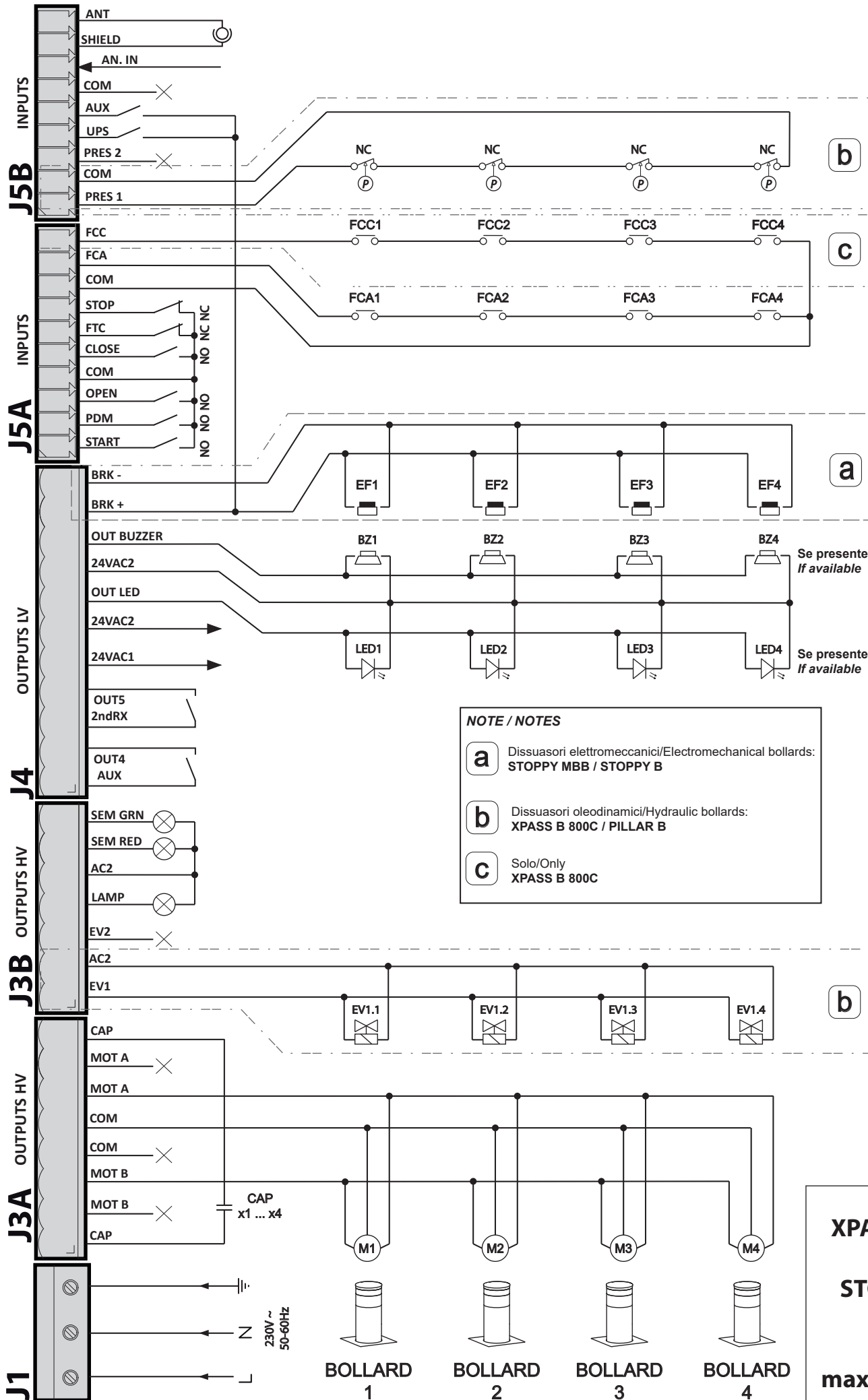


AZIENDA CON
SISTEMA DI GESTIONE
CERTIFICATO DA DNV GL
= ISO 9001 =
= ISO 14001 =





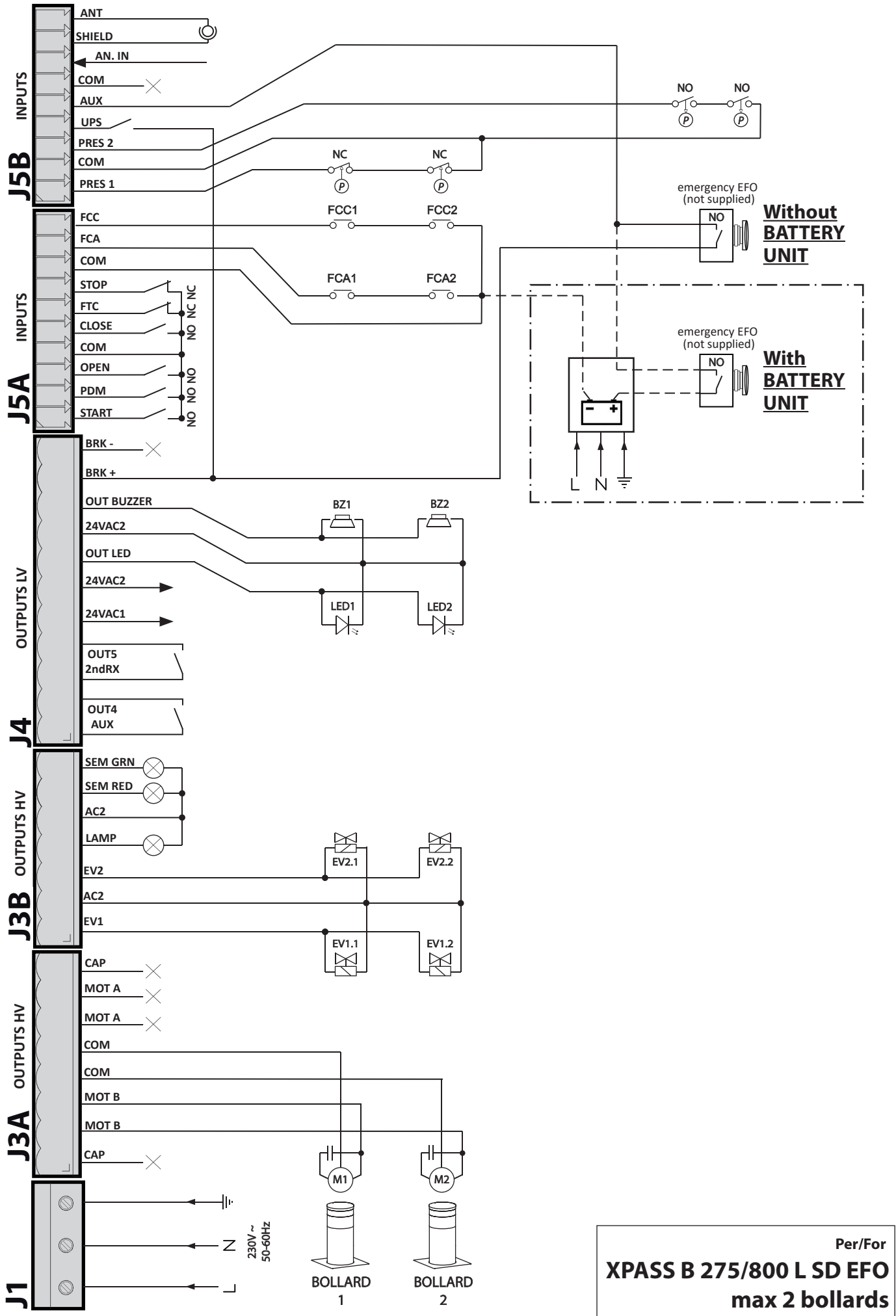
Per/For
XPASS B 330/1200
 max 1 bollard



NOTE / NOTES

- a** Dissuasori elettromeccanici/Electromechanical bollards: STOPPY MBB / STOPPY B
- b** Dissuasori oleodinamici/Hydraulic bollards: XPASS B 800C / PILLAR B
- c** Solo/Only XPASS B 800C

Per/For
XPASS B 800C
PILLAR B
STOPPY MBB
STOPPY B
max 4 bollards



Per/For
XPASS B 275/800 L SD EFO
 max 2 bollards

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1. INTRODUCTION



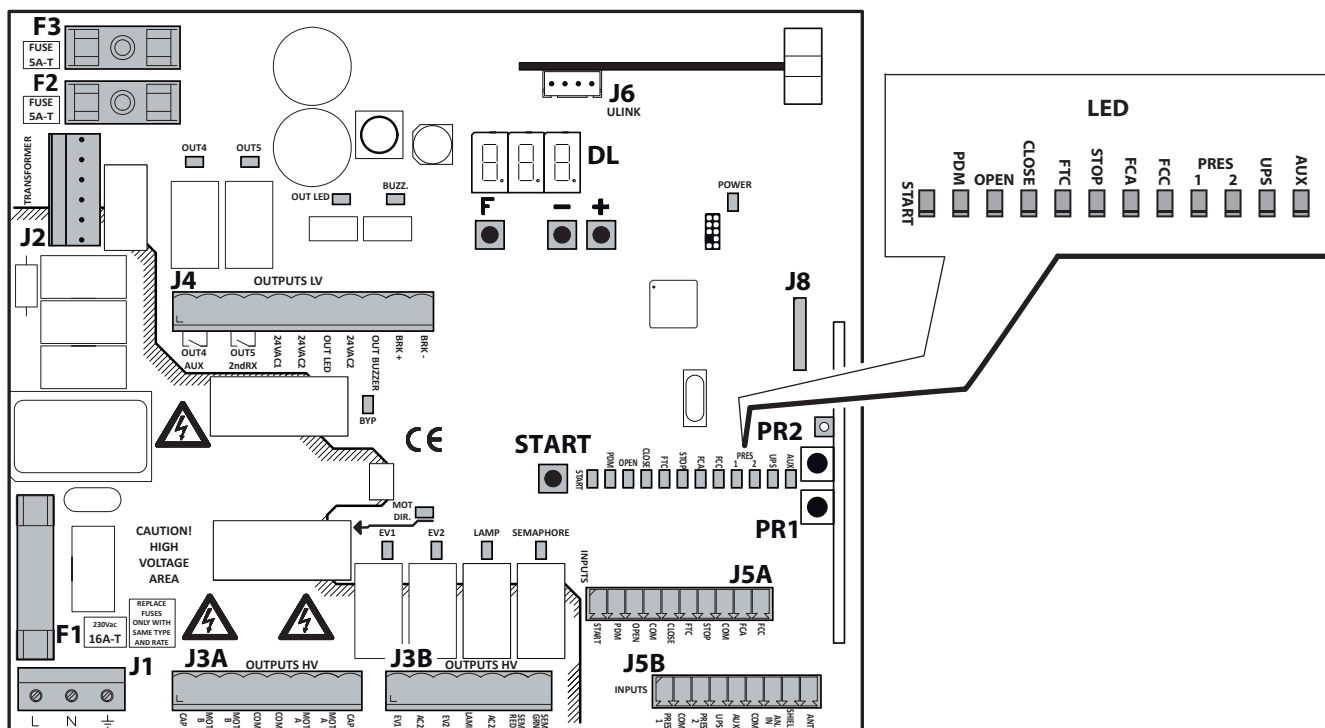
The control unit has been developed to control automatic bollards.



= Electrical connections coming from bollard.

2. MAIN CHARACTERISTICS

- Microprocessor logic
- LEDs displaying input and output status
- Socket for integrated radio receiver 433Mhz; 2048 codes (optional)
- 3-digit display
- 2 configurable outputs
- PROGRAMMER connector for receiver
- Integrated heater TERMON



J1: 230Vac terminal block

J3A/J3B: Power terminal block (high voltage)

J4: Outputs/accessories power supply terminal block (low voltage)

J5A/J5B: Input terminal block

J6: Expansion connector

J8: Programmer connector for receiver

DL: 3-digit display

SW1: "START" control button

F1: Line fuse: 6.3x32 16A T

F2/F3: Low voltage fuses: 5x20 5A T

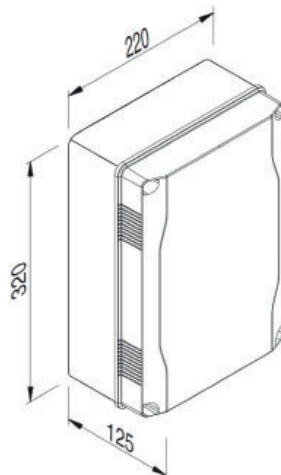
F/+/-: Programming push buttons

PR1/PR2: Radio receiver programming push buttons

3. TECHNICAL SPECIFICATIONS

| | | | |
|---------------------------------|-----------------------|------------------------------|----------------|
| - Power supply: | 230Vac +-10%, 50/60Hz | -Operating ambient humidity | up to 95% |
| - Motor output: | 230Vac; 13A max | | non condensing |
| - Flashing light/traffic light: | 230Vac; 40W max | -Protection degree | IP55 |
| - Accessory output: | 24Vac; 1A max | -Storage ambient temperature | -25° +60° C |
| -Operating ambient temperature | -25° +60° C | | |

3.1 CONTROL PANEL DIMENSIONS



4. INSTALLATION SAFETY

In order to reach the level of safety required by current regulations, read the following prescriptions carefully.

- 1) Make all connections in the terminal block after carefully reading the instructions given in this manual and observing the general rules and technical standards governing electrical systems.
- 2) Upstream from the installation, fit an omnipole miniature circuit breaker with a contact gap of at least 3 mm.
- 3) If there isn't one already, install a residual current device with a threshold of 30 mA.
- 4) Check the effectiveness of the grounding system and connect to it all the parts of the automation fitted with a terminal or grounding cable.
- 5) Fit at least one external warning device, such as a traffic light or flashing light, along with a warning or danger sign.
- 6) Fit all the safety devices required by the type of installation, taking into consideration the risks it can cause.
- 7) Separate the power lines (min. sect. 1.5 mm²) from the low-voltage signal lines (min. sect. 0.5 mm²) in the ducts.



5. PRELIMINARY OPERATION

- Before sending a command to the automation, make sure to have selected correctly the type of bollard as follows:

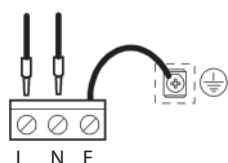
Bollard selection

- Hold down buttons F and + for 5 seconds to select the connected bollard.
- Select the type of bollard using the buttons +/-.
- Press F and + to confirm.

| BOLLARD TABLE | | | | | |
|---------------|--|----|----------------------------------|----|--------------------------|
| 96 | PILLAR B 275/600 | E5 | EASY Ø115-500 - STOPPY B 115/500 | a7 | STOPPY Ø210-700 |
| 98 | PILLAR B 275/800 - PILLAR B O 275/800.6C L - XPASS B 275/800C - XPASS B O 275/800C L | E7 | EASY Ø200-700 - STOPPY B 200/700 | U5 | NOT AVAILABLE |
| H6 | PILLAR B 275/600.6C SD | F7 | NOT AVAILABLE | U7 | NOT AVAILABLE |
| H8 | PILLAR B 275/800.6C SD - XPASS B 275/800C SD | I7 | NOT AVAILABLE | 92 | NOT AVAILABLE |
| H2 | XPASS B 330/1200 | EA | NOT AVAILABLE | LB | XPASS B 275/800 L SD EFO |
| d5 | STOPPY MBB 219-500.C | Eb | NOT AVAILABLE | | |
| d7 | STOPPY MBB 219-700.C | a5 | STOPPY Ø210-500 | | |

- **Select network frequency through H_E parameter.** (see 3rd level programming).
- **(Hydraulic bollards with EFO only) Select the parameter EF=01** (see 2rd level programming).
- **(Hydraulic bollards only) Select the pressure switch type with the parameter PP** (see 3rd level programming).
- Check the connection method for simultaneous operation, if controlling multiple deterrent devices simultaneously (see paragraph 10).

6. INPUT AND OUTPUT FUNCTIONALITY AND CONNECTIONS



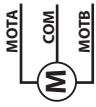
6.1 J2 POWER TERMINAL BLOCK



LINE 230V

230V 50/60Hz power supply with varistor internal protection and 5A T (5x20) plus 16A T (6.3x32) fuses. Connect the phase and neutral as shown on the screen printing. Use a cable type H07RN-F 2x1.5+E min. Connect the yellow/green wire of the power supply mains to the earth terminal of the appliance.

6.2 J3A/J3B POWER TERMINAL BLOCK



MOT B - COM - MOT A

Motor connection, MOT A for open direction and MOT B for close direction



CAP

Capacitor if not present on motor(s) side



EV1

Electrovalve (230Vac RAC), for hydraulic bollards only



EV2

Electrovalve (230Vac RAC), for EFO bollards equipped only



TRAFFIC LIGHT - GREEN LAMP

Traffic light outputs green lamp (230Vac)



TRAFFIC LIGHT - RED LAMP

Traffic light outputs red lamp (230Vac)



FLASHING LIGHT

Flashing light, (230Vac)

6.3 J4 OUTPUTS/ACCESSORIES TERMINAL BLOCK



EF ELECTRIC BRAKE OUTPUT (Electromechanical bollards only)

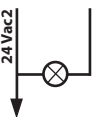
Connection for two white power supply cables for the motor's parking electric brake and for the battery charger device, when available.

Activation is possible only when the bollard is completely lifted (24Vcc starting / 12Vcc to stand on).



Power supply for accessories

24Vac, 1A max



Cover lights 24Vac

Self-powered output. 24Vac, 800mA max



Cover lights 12Vac (XPASS B 330/1200 only)

Self-powered output. 12Vac, 800mA max



Cover buzzer 24Vac

Self-powered output. 24Vac, 100mA max



Cover buzzer 12Vac (XPASS B 330/1200 only)

Self-powered output. 12Vac, 100mA max



OUT4/AUX

Programmable free contact relay output, max. 500mA 24 Vac/dc (parameter *RLU* - level 2)



OUT5/2ndRX

Programmable free contact relay output/ N.O. output of the 2nd radio receiver channel; 500mA max, 24Vac/dc (parameter *RLU* - level 2)

6.4 J5A/J5B INPUTS TERMINAL BLOCK



FCC

2 wire N.O. closing limit switch input (set parameter $Lt=00$ - level 3 and parameter $Fc=01$ - level 2).
When activated the opening travel ends (XPASS B 800C).



3 wire N.O. closing limit switch input (set parameter $Lt=00$ - level 3 and parameter $Fc=01$ - level 2).
When activated the opening travel ends (XPASS B 330/1200).



FCA

2 wire N.O. opening limit switch input (set parameter $Lt=00$ - level 3). When activated the opening travel ends.



3 wire N.O. opening limit switch input (set parameter $Lt=01$ - level 3). When activated the opening travel ends (XPASS B 330/1200).



STOP

N.C. safety input. When it is activated, the automation is immediately stopped. During the pause time, a stop control eliminates the automatic closing, leaving the bollard open waiting for a command.



FTC

N.C. photocell input. It allows the automation to be closed only if the safety devices have not triggered. Operating mode programmable with parameter Ft -level 1.



CLOSE

N.O. closing input. It allows the automation to be closed only if the safety devices have not triggered. Operating mode programmable with parameter Ct -level 1.



OPEN

N.O. opening input.

By keeping this input controlled, the automation performs the opening manoeuvre and will close automatically only when the input is freed. Connect clocks, daily timers or weekly timers here if wanted.



START

N.O. input that operates the bollard's opening and closing. The command is ignored while opening



PDM

Programmable Input $Pd-3$ liv..
May be duplicated on AUX output.



PRES 1

Closure travel limit pressure switch input (see parameter Pp - level 3). Limit switch N.C. input in closing.
When activated the closing travel finishes (For hydraulic bollards only).



PRES 2

EFO pressure switch input (see parameter Pe - level 3 and parameter Ef - level 2).
(For EFO equipped bollards only).



UPS

UPS status input. To be connected to smart UPS with status output, active-high during mains failure. The control unit has also an internal detector that works with simpler square-wave and quasi-sinusoidal UPS. With these simpler UPS there is no need to use this input.



AUXILIARY INPUT AUX

For bollards with EFO device. Is active when emergency EFO command is active (see parameter Pf - level 3)



ANALOG INPUT

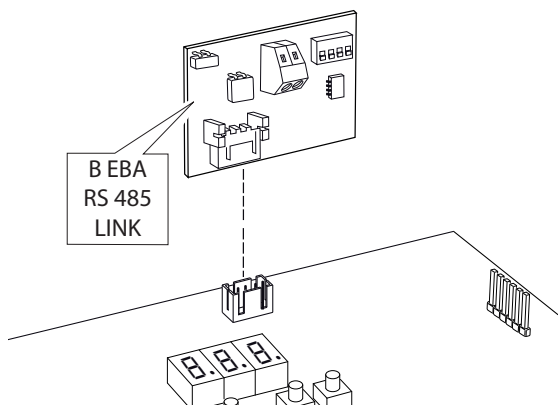
Multi-purpose analog input 0..5V



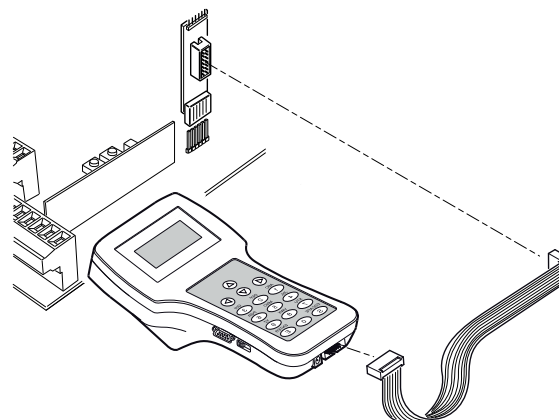
ANTENNA

Antenna connection for the radio receiver (option).

6.5 J6 EXPANSION CONNECTOR



6.6 J8 PROGRAMMER CONNECTOR FOR RECEIVER



7. DISPLAY

At power-on the display shows the board type "LdH", then the FW release X.Y.Z, then the type of bollard (see table on chapter cap. 5), and finally the status or error code.

The status (initial 0!) or error code is always displayed except in programming menu or when a blocking error is present.

7.1 STATUS CODE

The status code is shown on the first 2 digits.

| | |
|----|--|
| | 01: Idle |
| OP | 02: Opening 03: Opening limit switch reached 04: Stop activated during opening |
| CL | 05: Closing 06: Closing limit switch reached 07: Stop activated during closing |

| | |
|----|---|
| Ft | 08: Stop due to photocell triggering 09: Opening after photocell triggering 10: Pause after photocell triggering |
| Ob | Hydraulic bollards only: 11: Stop due to a detected obstacle 12: Opening after a detected obstacle 13: Pause after obstacle detection |
| tL | 14: Maximum working time in opening reached 15: Maximum working time in closing reached |

! A standard cycle, without errors, is always 2 -> 3 when opening, 5 -> 6 when closing

On the third digit and dot, additional information is shown:

| Display | STATUS |
|---------|-----------------------------------|
| 8.8.8. | UPS active, mains voltage failure |
| 8.8.8. | STOP signal active |
| 8.8.8. | "Termon" active |
| 8.8.8. | Photocell engaged |

8.1 BASIC FUNCTIONS

To access programming, press button **F** for 2 seconds.

Programming is divided into 4 levels.

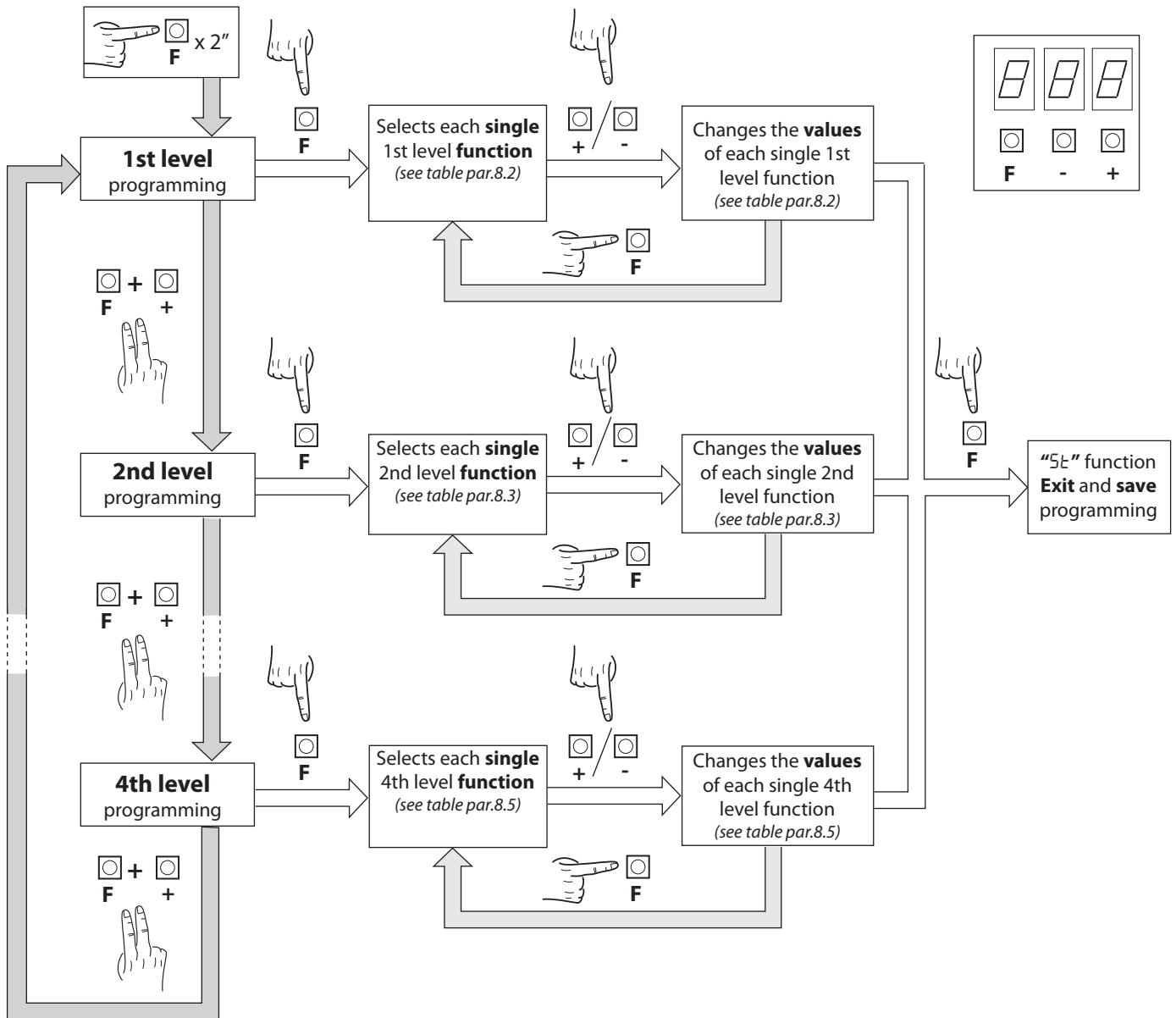
To go to the next level keep button **F** pressed and press the + key (Sequence 1-2-3-4-1.....).

After selecting the level wanted, press button **F** to display the functions available in consecutive order. Each time **F** is pressed the menu shifts to the next function (L0 - LL - FL.....)

With the function selected, use the \oplus or \ominus key to change the value of the parameter (\oplus : 00-0 1-02-03... / \ominus : ...03-02-0 1-00).

The changes made to the parameters are active immediately, but will be permanently saved only when exiting the menu, selecting the ST function with key **F**.

NOTE: In case of power failure during programming, all changes will be lost.



Example:
Selecting Output2 set to closed arm:

| | | | | |
|---|---|---|--|---|
| (A) $\square \times 2''$ F x 2'' | (B) $\square + \square$ F + + 2 nd level | (C) $\square \times 5$ F x 5 $\alpha 2$ | (D) $\square \times 4$ F + x 4 04=bollard closed | (E) $\square \times 3$ F x 3 5t |
|---|---|---|--|---|

8.2 1st LEVEL PROGRAMMING

The following table gives the 1st level functions and the adjustable parameters.



= DEFAULT value set in factory.



= parameter value set during installation: should be filled if DEFAULT value is modified.

| Par | Function | Settable data | | |
|-----|---|--|----|--|
| L0 | Selects the functioning logic. (see notes after the table) | 00: Hold-to-run | 01 | |
| | | 01: Semi automatic | | |
| | | 02: Automatic | | |
| CL | Close input configuration (see notes after the table) | 00: Standard close input | 00 | |
| | | 01: Close-when-released input | | |
| | | 02: The close command acts as a close-when-released and safety function. | | |
| Ft | Photocells | 00: During, it reopens and waits for the photo cell free commands closing. | 02 | |
| | | 01: When closing it reopens; closes after 1" when the photocell is free | | |
| | | 02: When closing it reopens; closes after 5" when the photocell is free | | |
| Ob | Obstacle detection (for hydraulic bollards only) | 00: Disabled | 03 | |
| | | 01: When closing it stops and waits for commands | | |
| | | 02: When closing it reopens and waits for commands | | |
| | | 03: When closing it reopens, then closes after 5 seconds | | |
| PO | Opening-warning time | 0-30 | 00 | |
| PC | Closing-warning time | 0-30 | 00 | |
| Ld | Bollard lights | 00: Cover lights flashing during movement, fixed on when the bollard is opened and closed | 00 | |
| | | 01: Cover lights flashing during movement and with bollard open, fixed on when the bollard is closed | | |
| | | 02: Cover lights always flashing | | |
| | | 03: Cover lights flashing during movement and with bollard closed, fixed on when the bollard is open | | |
| tP | Pause time (in seconds) | 00-99 | 10 | |
| bu | Buzzer | 00: Buzzer off | 01 | |
| | | 01: Buzzer on during movement | | |
| Pr | Preset controlling entrance configuration | 01: none | 01 | |
| | | 02: Configuration of installation type A parameter (see chapter 13.1) | | |
| | | 03: Configuration of installation type B parameter (see chapter 13.2) | | |
| | | 04: Configuration of installation type C parameter (see chapter 13.3) | | |
| | | 05: Configuration of installation type D parameter (see chapter 13.4) | | |
| dF | Resetting default parameters. (see notes after the table) | 00: No resetting | 00 | |
| | | 01: Resetting the default parameters | | |
| | | 02: Same as 01, except for "COM" parameters that are not reset | | |
| St | Exiting the menu/saving | Pressing the "F" key exits the programming menu and changes are saved | | |

Description of level 1 parameters

• L0: Functioning logic

- Hold-to-run: Close function active for as long as inputs are active. Open function activated by activating and releasing input. The start command opens once and closes once.
- Semi automatic: The automation works with jog commands, without automatic reclosing. Hence, when fully open, to control closing you need to act on the start or close command respectively.
- Automatic: The automation works in jogs. When the opening manoeuvre is completed in the standard cycle, automatic reclosing is activated after the pause time set (parameter tP).

• **CL**: Close configuration

- **01**: Close-when-released input

The bollard closes automatically only when the vehicle has completely passed by the photocell or magnetic detector (the recommended accessories for this purpose). Connect the N.O. contact of the detector or photocell to the close input terminals. If the vehicle is on the detector or in front of the photocell it does not cause immediate closing but the control board will wait for the signal to be released (i.e. vehicle moved).

- **02**: The close command acts as close-when-released and safety function.

When closing, a close command stops the automation. When close input becomes inactive the bollard resumes closing.

• **Pr**: Preset

- To configure the parameters for installation type **A**, **B**, **C** and **D**; set the corresponding value and exit the menu. See chapter 13 for details on installation types.

• **dF**: Default

- To restore the parameters to the factory default values, set the "dF" to 1 or 2, then exit the menu. if **PF=02** the communication "Com" settings is kept.

Warning: The "default" operation sets all parameters to the factory default values, including the Preset values and the bollard type.

8.3 2nd LEVEL PROGRAMMING

The following table gives the 2nd level functions and the adjustable parameters.



= DEFAULT value set in factory.



= parameter value set during installation: should be filled if DEFAULT value is modified.

| Par | Function | Settable data | | |
|--|---|--|--------------|--|
| 5r | Request for maintenance | 00: disabled | 00 | |
| | | 01: active on the configured outputs | | |
| | | 02: as in 01 plus lights flash twice | | |
| nt | Programming maintenance cycles in thousands | 00-99 | 00 | |
| nL | Programming maintenance cycles in millions | 0.0-9.9 | 0.0 | |
| 04 05 | Output 4, Output 5 | 00: scheduled maintenance required | M=50 H=40 | |
| | | 01: photocell triggering | | |
| | | 02: obstacle detection (for hydraulic bollard only) | | |
| | | 03: PDM input active | | |
| | | 04: bollard fully up (close position) | | |
| | | 05: bollard fully down (open position) | | |
| | | 06: STOP input active | | |
| | | 07: warning flash | | |
| | | 08: START input active | | |
| | | 09: OPEN input active | | |
| | | 10: power failure (the output is activated at switch-on) | | |
| | | 11: assistance required | | |
| | | 12: CLOSE input active | | |
| | | 13: UPS | | |
| | | 14: second radio channel active | | |
| | | 15: buzzer (for Totem) | | |
| | | 16: EFO pressure switch failure | | |
| 17: FCC sensor failure or manual forcing attempt | | | | |
| FC | Closing limit switch presence | 0: not present | see note | |
| | | 1: present | | |
| EF | EFO present (for SD version and XPASS B 330/1200) | 00: not present | 00 | |
| | | 01: present | | |
| EE | TERMON | 00-30: heating level (01 = min; 30 = max) | 00 | |

| | | | | |
|----|--|---|----|--|
| UP | UPS | 00: disabled | 00 | |
| | | 01: enabled, opens automatically during mains failure | | |
| | | 02: enabled, closes automatically during mains failure ⚠WARNING: THIS SELECTION MAY BE DANGEROUS | | |
| Cr | Deceleration torque (not available for hydraulic bollards) | 20-80 | 50 | |
| St | Exiting the menu/saving | Pressing the "F" key exits the programming menu and changes are saved | | |

Description of level 2 parameters

- 5r: Request for maintenance
 - 00: the request for maintenance is not active.
 - 01: after the programmed cycles set by the counters nE and nL , the programmed output is activated (see parameters $a4$, $a5$)
 - 02: after the programmed cycles set by the counters nE and nL , the programmed output is activated (see parameters $a4$, $a5$) and the bollard lights flash twice.
- nE-nL: Programming maintenance cycles in thousands and millions

These two parameters set the number of cycles after which a request for maintenance is signalled. Thousands of cycles can be set with the nE parameter, millions of cycles with the nL parameter. Example: to set maintenance alarm after 275 000 cycles, set nL to 0.2 and nE to 75.
- FC: Closing limit switch presence.

This parameter must be set only for bollards with additional limit switch installed for closed-fully up position. After every default operation it is set to 01 for H2 and 9A bollards, 00 for the others.
- a4=11; a5=11: Assistance required

If configured, the contact indicates that the electronic control unit detected an error in the automation and in particular, the failure of the travel stop or the solenoid valve (hydraulic bollards only). The error is also signalled by the triple flashing of the cover lights, if installed
- EE: TERMON (integrated electronic motor heating system)

Should be activated ONLY when the ambient temperature where the bollard is installed drops below a minimum of 0°C for all the day.

EE = 00, TERMON is disabled (default)
EE = 01, minimum heating
EE = 30, maximum heating
- Cr: Deceleration torque (electromechanical bollards only)

Sets the deceleration speed at the end of the closing manoeuvre.
The value of the deceleration speed at the end of opening is factory preset and cannot be modified.

8.4 3rd LEVEL PROGRAMMING

The following table gives the 3rd level functions and the adjustable parameters.



= DEFAULT value set in factory.



= parameter value set during installation: should be filled if DEFAULT value is modified.

| Par. | Function | Settable data | | |
|----------|--|------------------------------------|----|--|
| Pd | PDM dynamic input polarity | 00: input N.O. | 00 | |
| | | 01: input N.C. | | |
| Lc | Limit switch connection | 00: series (N.O. 2-wire sensors) | 00 | |
| | | 01: parallel (N.C. 3-wire sensors) | | |
| PP | Pressure switch polarity (for hydraulic bollards only) | 00: N.O. (used until 2012) | 01 | |
| | | 01: N.C. (used from 2013) | | |
| PE | EFO Pressure switch polarity | 00: N.O. | 00 | |
| | | 01: N.C. | | |
| PA | Input AUX polarity | 00: N.O. | 00 | |
| | | 01: N.C. | | |
| P4 P5 | Output 4 polarity Output 5 polarity | 00: N.O. | 00 | |
| | | 01: N.C. | | |
| CP | Commands accepted during pause time | 00: OFF | 01 | |
| | | 01: ON | | |

| | | | | |
|----|--|---|----|--|
| FP | Programmable PDM input for special functions | 00: None | 00 | |
| | | 01: Opening Enable when active | | |
| | | 02: Opening Enable and pause time reset (with Pr=04), when active | | |
| | | 03: TERMON Enabled when active | | |
| | | 04: Opening Enable and pause time reset (with Pr=05), when active | | |
| r1 | Radio channel 1 command selection | 00: Receiver channel 1 not used | 01 | |
| | | 01: Receiver channel 1 mapped to START | | |
| | | 02: Receiver channel 1 mapped to OPEN (with Pr=05 special function) | | |
| HL | Select mains frequency | 50-60: Value of main frequency in Hertz (Hz) | 50 | |
| St | Exiting the menu/saving | Pressing the "F" key exits the programming menu and changes are saved | | |

Description of level 3 parameters

• **Pd: Input polarity**

For N.O. or N.C. input polarity configuration.

• **P4 P5: Output 4 polarity, Output 5 polarity**

Output polarity: The outputs can be configured as N.O. or N.C.. NOTE: in the event of a power failure the N.C. contact opens anyway.

• **PR: Output polarity**

The outputs can be configured as N.O. or N.C.. NOTE: in the event of a power failure the N.C. contact opens anyway.

• **CP: Enable command during the pause time**

Depending also upon other settings, the system accepts or not the commands from inputs.

• **FP: Special PDM functions**

FP=01 PDM is used as opening enable. As long as it is not active, no opening command is accepted. Also no close command is accepted so the bollard remains open.

FP=02 The PDM functions as described in point 1, but in case of automatic logic, the pause time is reloaded.

FP=03 The PDM function enables the TERMON system. Based on the setting of the Pd parameter, the closing or opening of the contact activates or deactivates the TERMON system. This allow the TERMON function to be controlled by a calendar and/or a thermostat.

• **PP: Pressure switch polarity**



N.O.: Pressure switch type used until **2012**.

N.C.: Pressure switch type used from **2013** on.

8.5 4TH LEVEL PROGRAMMING



The following table gives the 4th level functions and the adjustable parameters.



= DEFAULT value set in factory.



= parameter value set during installation: should be filled if DEFAULT value is modified.

| Par | Function | Settable data |  |  |
|-----|------------------------|---|---|---|
| Com | Communication protocol | 00: disabled | 00 | |
| | | 01: U-LINK | | |
| | | 02: Modbus/RTU | | |
| Umo | U-LINK mode | 00: Slave | 00 | |
| | | 01: Master | | |
| Uld | U-LINK adress | 00 - 120 | 00 | |
| RID | Modbus/RTU ID | 01 - 247: For Slave | 01 | |
| | | 00: For Master | | |
| RSP | MODBUS RTU speed | 19.2: 19 200 baud | 38.4 | |
| | | 38.4 38 400 baud | | |
| EOE | Cycles counter | Read only parameter, in thousands (x1000) | 000 | |
| Err | Historical errors | 00: do not clear (keeps) the list | 00 | |
| | | 01: clear the list | | |

Description of level 4 parameters

.COT:

Setting communication protocol.

Set value always same to Master and Slave.

.Uio:

Setting U-LINK mode.

.Uld:

Setting U-LINK address.

.id:

Setting Modbus/RTU ID.

.ISP:

Setting MODBUS RTU speed

.Err:

Show the list of error codes and the number of time they occur, alternatively.

9. RADIO RECEIVER

9.1 RECEIVER TECHNICAL SPECIFICATIONS

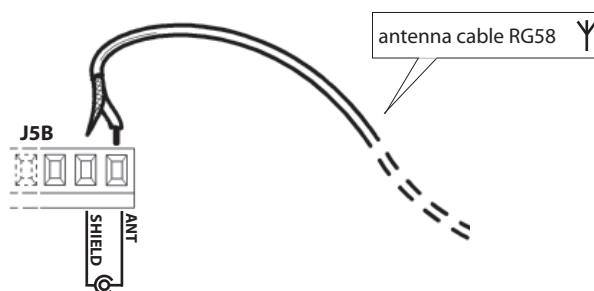
| | |
|--|------------------------|
| - Max. n° of transmitters that can be memorized: | 2048 |
| - Frequency: | 433.92MHz |
| - Code by means of: | Rolling-code algorithm |
| - N° of combinations: | 4 billion |

9.2 RADIO CHANNELS FUNCTIONALITY

| | |
|------------|---|
| Channel 1: | Select the command from parameter $r1$ - level 2 |
| Channel 2: | Closes the relay contact on the terminal block J4: OUT4, OUT5, if activated $o4=14$ - level 2, $o5=14$ - level 2 (default). |

9.3 ANTENNA INSTALLATION

Use an antenna tuned to 433MHz. Connect the tuned antenna to the antenna terminals using RG58 coaxial cable.



9.4 MANUAL PROGRAMMING

In the case of standard installations where no advanced functions are required, it is possible to proceed to manual storage of the transmitters, making reference to programming table A and to the example for basic programming.

- 1) If you wish the transmitter to activate output 1, press pushbutton PR1, otherwise if you wish the transmitter to activate output 2, press pushbutton PR2.
- 2) When LED DL1 starts blinking, press "hidden key" on the transmitter, LED DL1 will remain continuously lit.
- 3) Press the key of the transmitter to be memorized, LED DL1 will flash quickly to indicate that it has been memorized successfully. Flashing as normal will then be resumed.
- 4) To memorize another transmitter, repeat steps 2) and 3).
- 5) To exit memorizing mode, wait for the LED to go off completely or press the key of a remote control that has just been memorized.

IMPORTANT NOTE: ATTACH THE ADHESIVE KEY LABEL TO THE FIRST MEMORISED TRANSMITTER (MASTER).

In the case of manual programming, the first transmitter assigns the key code to the receiver; this code is necessary in order to carry out subsequent cloning of the radio transmitters.



"Hidden key"

9.5 SELF-LEARNING MODE PROGRAMMING

This mode is used to copy the keys of a transmitter already stored in the receiver memory, without accessing the receiver.

The first transmitter is to be memorised in manual mode (see paragraph 9.4).

- a) Press hidden key on the transmitter already memorised.
- b) Press key T on the transmitter already memorised, which is also to be attributed to the new transmitter.
- c) Within 10 s., press "hidden key" on the new transmitter to be memorised.
- d) Press key T to be attributed to the new transmitter.
- e) To memorise another transmitter, repeat the procedure from step (c) within a maximum time of 10 seconds, otherwise the receiver exits the programming mode.
- f) To copy another key, repeat from step (a), having waited for the receiver to exit the programming mode (or after disconnecting the receiver from the power supply).



"Hidden key"

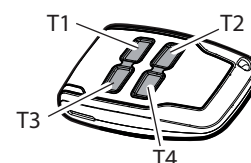
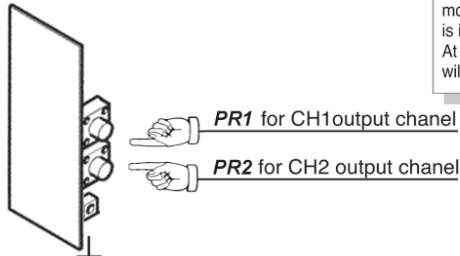
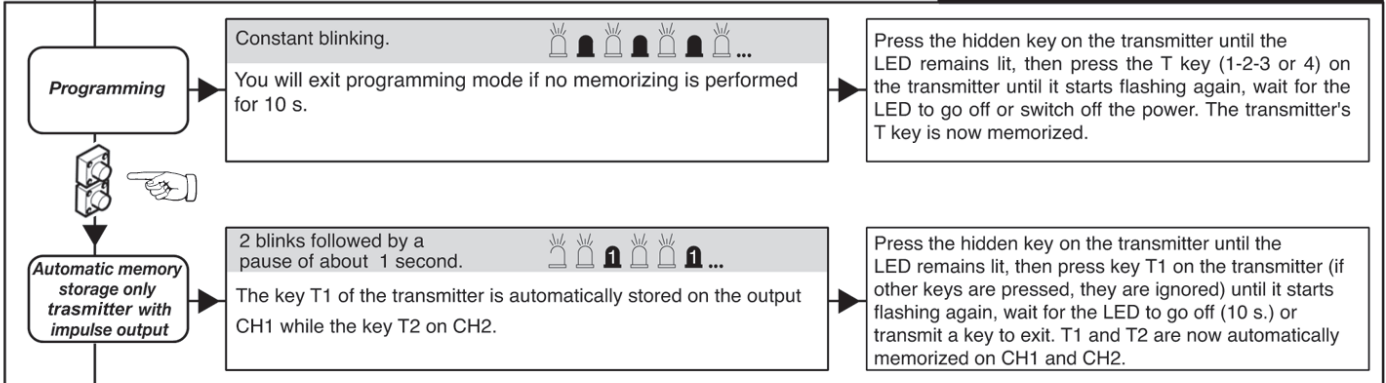


TABLE A

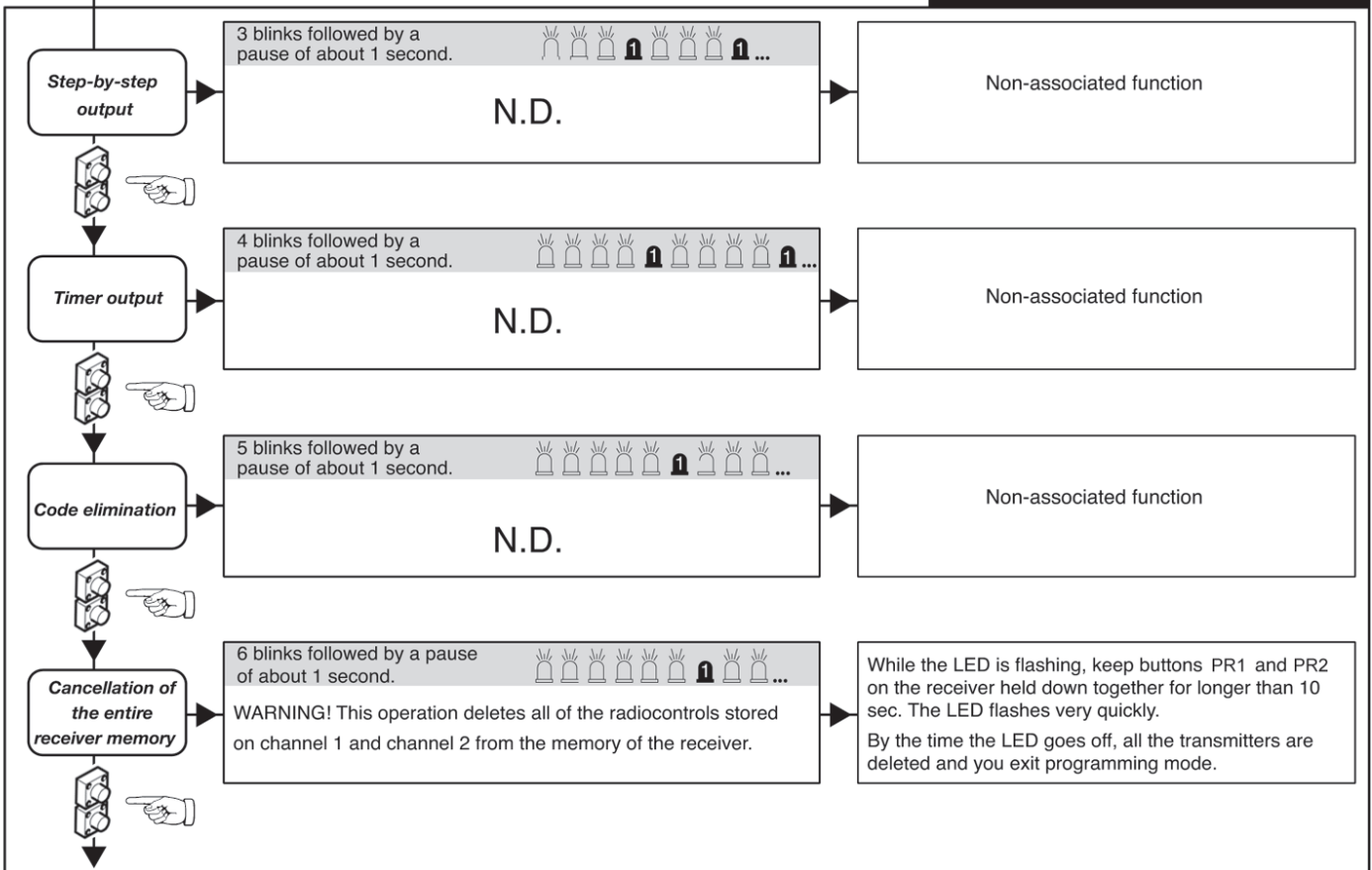
When pressing the key PR1 (for channel 1) or PR2 (for channel 2) for the first time, the receiver sets to the programming mode. Every time the key PR is pressed after that, the receiver switches to the configuration for the subsequent function, that is indicated by the number of flashings (see table). At this stage, after selecting the channel (PR1 or PR2) and the desired function, the key T (T1-T2-T3 or T4) of the transmitter will be stored in the memory of the receiver as indicated in the table for programming.



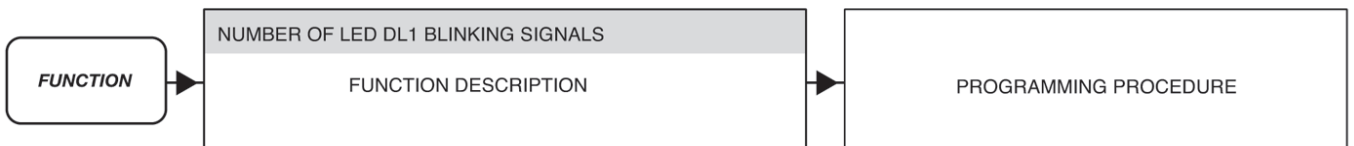
Standard Programming



Advanced Programming



LEGEND



10. CONNECTIONS FOR SIMULTANEOUS OPERATION (FIG. PAG. 7 and 8)

The control unit is used to operate up to a maximum of four bollards connected in parallel to thus obtain simultaneous operation with just one control panel.

We recommend to use a junction box with adequate protection rating to complete the connections between two or more bollards. Following the table with indicated how to connect, serial or parallel, the common cables.

Refer to the specific bollard manual for identify the right wires.

| | 96, 98, H6, H8 | LB | d5, d7, E5, E7, F7, I7, CA, Cb, o5, o7, U5, U7 |
|----------------------------------|--|--|---|
| MOTOR | Connect them in parallel respecting the polarity of the motors and joining the black cables, the brown cables and the blue cables together. If present, joining the gray cables with the blue cable together. | | |
| CAPACITOR | Connect in parallel the capacitor supplied with each bollard | | |
| ELECTRIC BRAKE | NOT PRESENT | | Connect the WHITE cables of the electric brakes in parallel |
| LIGHT | Connect the YELLOW cables of the LED lamps in parallel | | |
| HORN | Connect the PINK cables of the horn contact in parallel | | |
| FCA | Connect the GREEN cables of the limit switch in series. | | Connect the GREEN cables of the limit switch in series. |
| FCC | Connect the ORANGE cables of the limit switch in series (only for XPASS B 800C) | Connect the ORANGE cables of the limit switch in series | NOT PRESENT |
| PRESSURE SWITCH PRES1 | Connect the WHITE cables of the pressure switch in parallel (used until 2012) Connect the WHITE wires of the pressure switch (used from 2013) in series | Connect the WHITE wires of the pressure switch in series | NOT PRESENT |
| PRESSURE SWITCH EFO PRES2 | Connect the GREEN/WHITE cables of the EFO pressure switch in parallel, if present | | NOT PRESENT |
| BURGLAR | Connect the ORANGE cables of the burglar device contact in series (only for PILLAR B, option) | Connect the PINK/ORANGE cables of the burglar device contact in parallel, if envisaged | Connect the ORANGE cables of the burglar device contact in series, if envisaged |
| HEATING ELEMENT | NOT PRESENT | NOT PRESENT | Connect the RED cables of the heating element in parallel, if envisaged |
| UNLOAD ELECTROVALVE EV1 | Connect the RED cables of the electrovalve element in parallel | | NOT PRESENT |
| UPLOAD ELECTROVALVE EV2 | NOT PRESENT | Connect the RED/WHITE cables of the electrovalve element in parallel | NOT PRESENT |
| EFO ELECTROVALVE | NOT PRESENT | Connect the WHITE cables of the electrovalve element in parallel, if EFO present | NOT PRESENT |

11. TROUBLESHOOTING GUIDE

In the case of a malfunction, check that the correct bollard was selected (paragraph 5)

- Dual flashing of the cover lights. Indicates that scheduled maintenance is required. Check the parameters Sr, nE, nL
- Triple flashing of the cover lights and status 14 or 15 on the display at the end of the manoeuvre. Check the opening travel stop and the pressure switch contact at the end of closing (hydraulic bollards only).

12. WARNINGS

The builder recommended to make an installation which has all the accessories necessary to ensure operation according to current provisions, always using genuine devices.

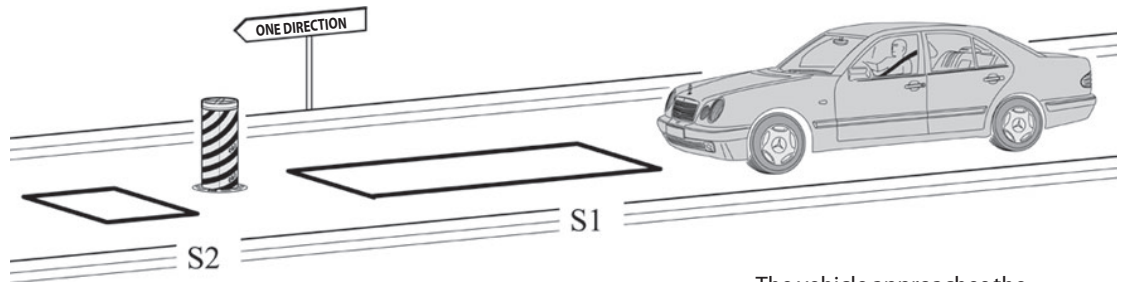
This equipment must be installed and used in strict compliance with the manufacturer's instructions. The manufacturer cannot be held responsible for any damage deriving from improper or unreasonable installation and use.

The constructor disclaims all liability for any inaccuracies contained in this manual and reserves the right to make changes at any time without any prior notice whatsoever.

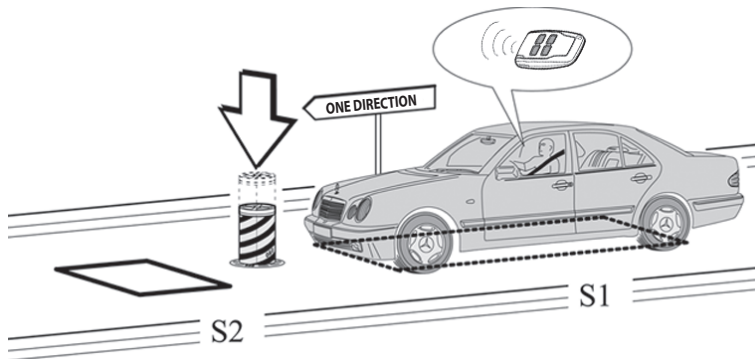
13. EXAMPLES OF CONTROLLED ENTRIES/EXITS

13.1 INSTALLATION A CONTROLLED ENTRY OR EXIT

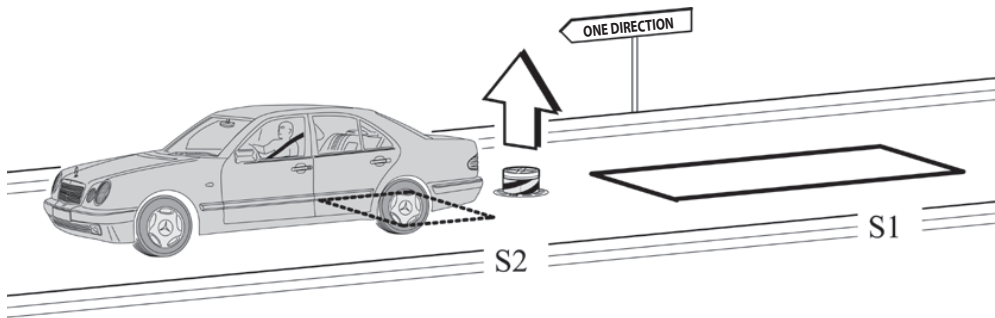
This solution is recommended when you want to enter a reserved area in just one direction, by activating a command (radio control, proximity key, magnetic keys, etc.).



The vehicle approaches the reserved area.



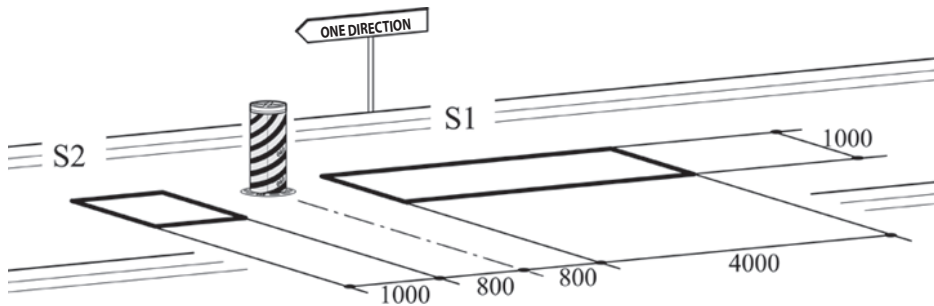
When the vehicle is on the loop **S1** the bollard will go down only after a command (ex.: remote control). If the bollard is closing and the user wants to lower it again, the vehicle must be over loop **S1** and the command must be repeated.



When the vehicle is no longer over loop **S2** the bollard will close.

Loops **S1** and **S2** also have a safety function in that they will not let the bollard to move all the time if the vehicle is over **S1** or **S2**.

RECOMMENDED DIMENSIONS

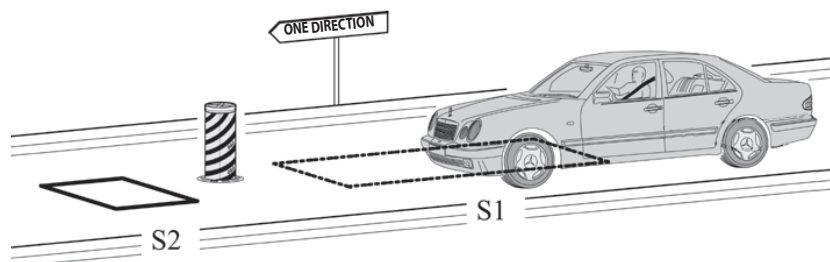


- Connect the **N.O.** contact of the **S1** loop receiver to **PDM** input.
- Connect the **N.O.** contact of the **S2** loop receiver to **CLOSE** input.
- The dimensional values given are approximate.
- * We suggest installing the "RME 2" metal mass loop detector.

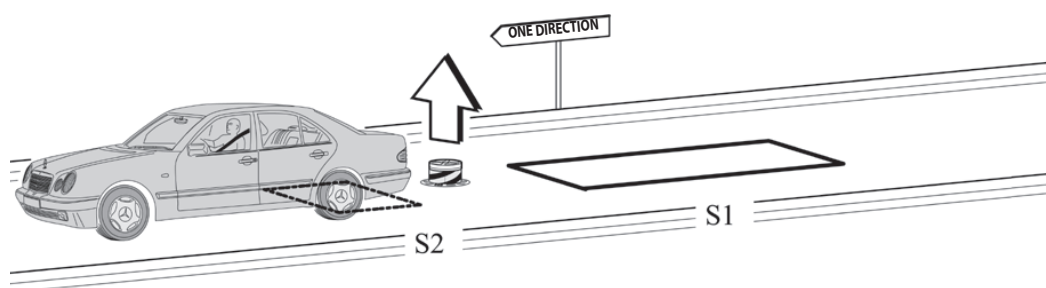
| | PARAMETER | DATA | DESCRIPTION |
|-------|-----------|------|---|
| Pr=02 | CL | 02 | The close command acts as a close-when-release and safety function. |
| | r 1 | 02 | Radio channel 1: Open |
| | FP | 01 | Opening consent |
| | LD | 01 | Semiautomatic logic |
| | CP | 00 | Commands during pause is OFF |

13.2 INSTALLATION B AUTOMATIC ENTRY OR EXIT

This solution is recommended when you want to allow entry to a reserved area, without using any commands, allowing transit of vehicles in **just one direction**.



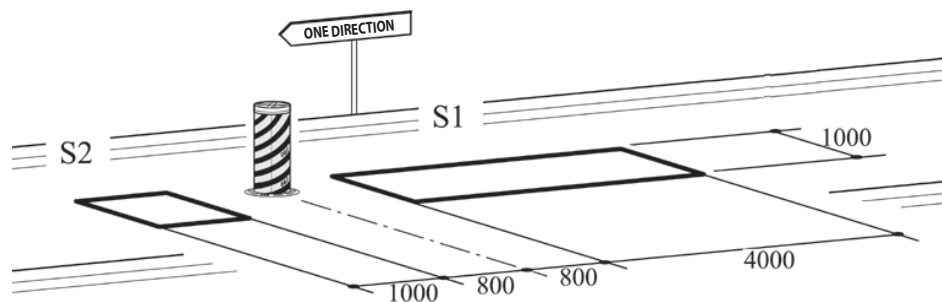
The vehicle approaches the reserved area. When over the loop **S1**, the bollard goes down.



When the vehicle is no longer over loop **S2**, the bollard will rise again.

Loops **S1** and **S2** also have a safety function in that they will not let the bollard to move all the time if the vehicle is over **S1** or **S2**.

RECOMMENDED DIMENSIONS



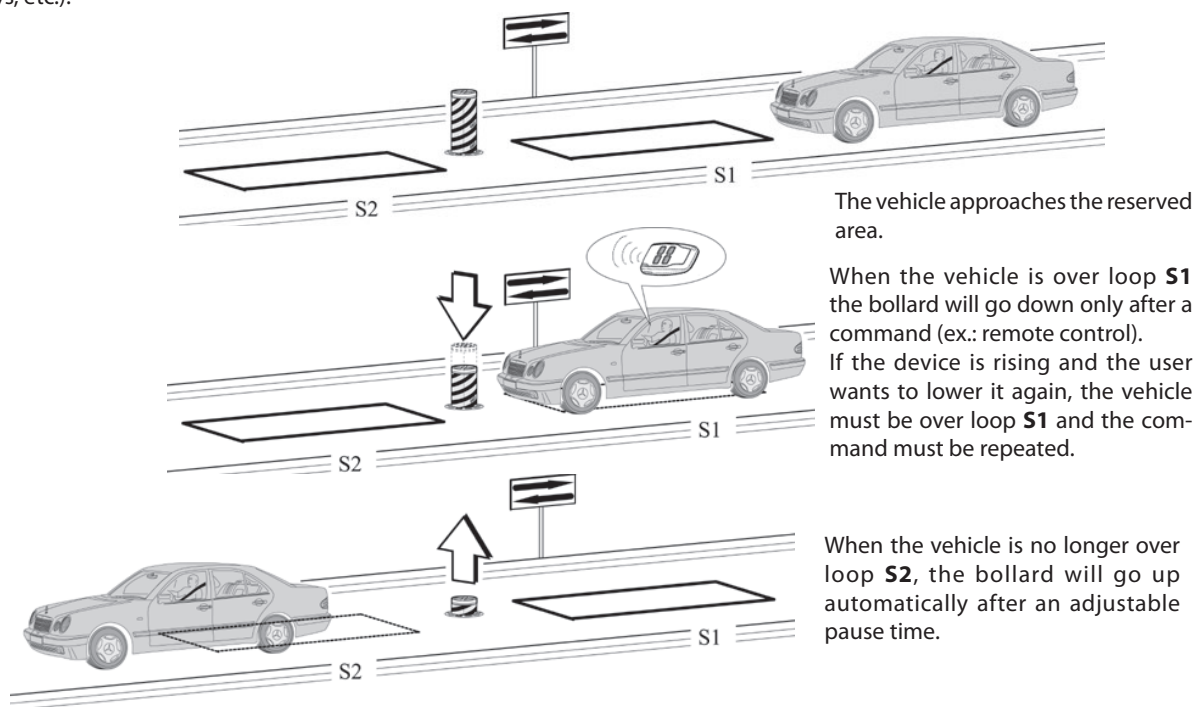
- Connect the **N.O.** contact of the coil receiver **S1** to the **OPEN** input.
 - Connect the **N.O.** contact of the **S2** loop receiver to the **CLOSE** input.
 - The dimensional values given are only approximate.
- * We suggest installing the "RME 2" metal mass detector.

| | PARAMETER | DATA | DESCRIPTION |
|-----|-----------|------|--|
| P=1 | CL | 02 | The close command acts as a close-when-released and safety function. |
| | r1 | 00 | Radio channel 1: Disabled |
| | FP | 01 | Opening consent |
| | LD | 01 | Semiautomatic logic |
| | CP | 00 | Command during pause is OFF |

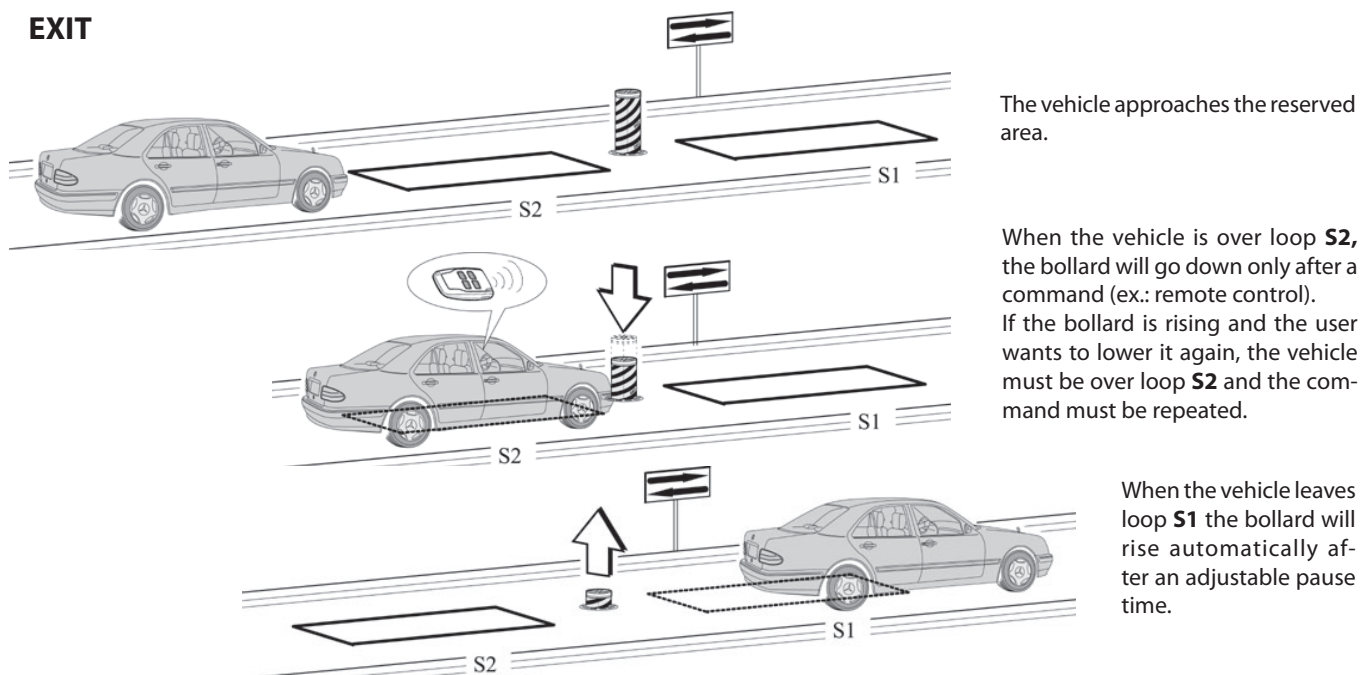
13.3 INSTALLATION C CONTROLLED ENTRY AND EXIT

This solution is recommended when you want to enter a reserved area in both directions by activating a command (radio control, proximity key, magnetic keys, etc.).

ENTRY

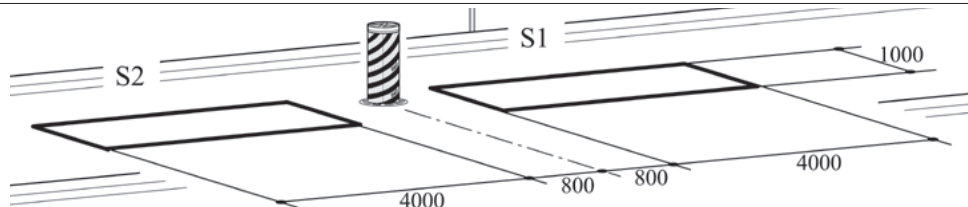


EXIT



Loops S1 and S2 also have a safety function in that they will not let the bollard to move all the time if the vehicle is over S1 or S2.

RECOMMENDED DIMENSIONS



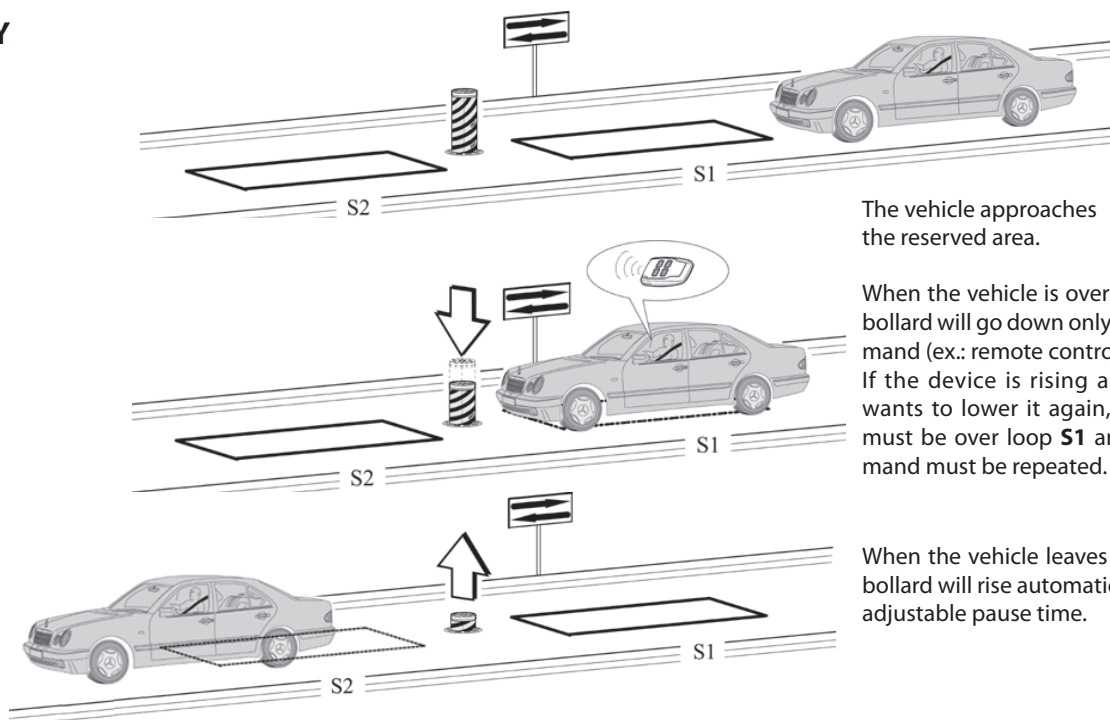
- Connect the **N.O.** contact of the coil **S1** and **S2** receiver to **PDM** input.
- The dimensional values given are approximate.
- * We suggest installing the "RME 2" metal mass detector.

| | PARAMETER | DATA | DESCRIPTION |
|--------|-----------|------|--------------------------------------|
| HCF=01 | L0 | 02 | Functioning logic: Automatic |
| | tP | 1-99 | Pause time |
| | FP | 02 | Opening consent and pause time reset |
| | r1 | 02 | Radio channel 1: Open |
| | CP | 00 | Command during pause is OFF |
| | CL | 00 | Standard close |

13.4 **INSTALLATION D** CONTROLLED ENTRY AND AUTOMATIC EXIT

This solution is recommended when you want to enter a reserved area in both directions. Entry is by means of a command while exiting is automatic.

ENTRY

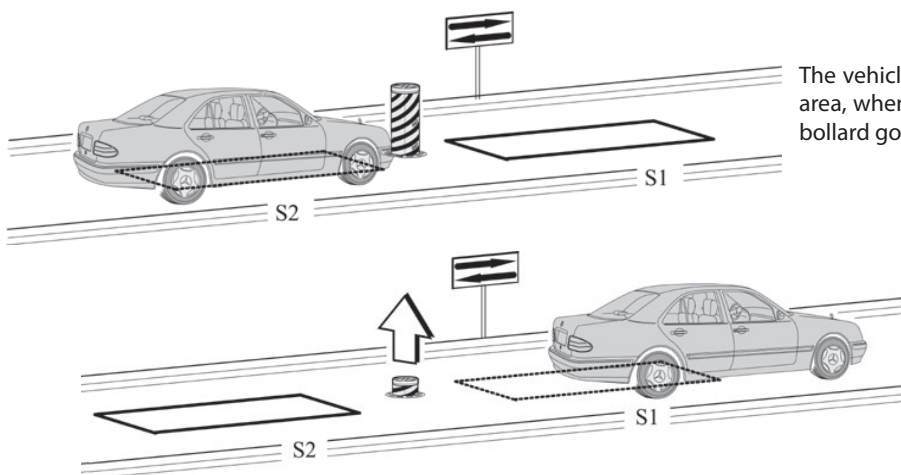


The vehicle approaches the reserved area.

When the vehicle is over loop **S1** the bollard will go down only after a command (ex.: remote control). If the device is rising and the user wants to lower it again, the vehicle must be over loop **S1** and the command must be repeated.

When the vehicle leaves loop **S2** the bollard will rise automatically after an adjustable pause time.

EXIT

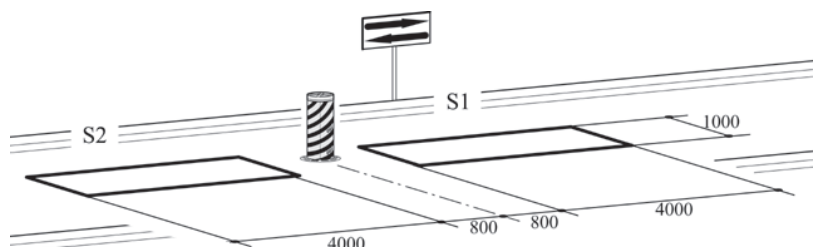


The vehicle approaches the reserved area, when it is over the loop **S2**, the bollard goes down.

When the vehicle leaves loop **S1** the device will rise automatically after an adjustable pause time.

Loops **S1** and **S2** also have a safety function in that they will not let the bollard to move all the time if the vehicle is over **S1** or **S2**.

RECOMMENDED DIMENSIONS



- Connect the contact of loop **S1** receiver to **PDM** input.
- Connect the N.O. contact of the **S2** loop receiver to **OPEN** input.
- The dimensional values given are approximate.
- *We suggest installing the "**RME 2**" metal mass detector.

| | PARAMETER | DATA | DESCRIPTION |
|------|-----------|------|------------------------------|
| P=05 | L0 | 02 | Functioning logic: Automatic |
| | FP | 04 | Special function |
| | r1 | 02 | Radio channel 1: Open |
| | [P | 00 | Command during pause is OFF |
| | [L | 00 | Close standard |

14. ERROR HANDLING

The control board can store up to 10 different errors, with no. of occurrences limited to 10, for each event.

In case of blocking (severe) error, it is possible to restart the board by pressing both keys "+" and "-" for 5 seconds or by switching off and on the power supply. When restarting by means of keys, a memory check is performed and automatic recovery of out-of-range parameters is done. The parameters are set to default factory values, so a new setup should be done, if necessary.

In level 4 menu, parameter "Err", shows the list of events and error stored in memory. The display shows alternatively the error code E_{xx} and the number of occurrences. Use "+" e "-" for scroll the whole list.

At the end of the list, an exit code is presented: quitting (by pressing "F") with 000 the error list is preserved, quitting with 00 the error history is cleared to zero.

Events/warning not severe are stored in memory, without blocking the normal behaviour of the control board.

List of errors and events with the indication of blocking/not blocking:

FAULT AND EVENTS TABLE:

| Par | Description | BLOCKING |
|------|---|----------|
| E 10 | Internal error on memory access. | YES |
| E 14 | Out of range memory address. | YES |
| E20 | Fuse F2 or F3 blown or not present. | YES |
| E21 | STOP occurred, changing the normal automation behaviour.(*) | NO |
| E23 | Obstacle detected during operation. | NO |
| E24 | Time-out elapsed while opening. | NO |
| E25 | Time-out elapsed while closing. | NO |
| E27 | Break on U-Link communication. | NO |
| E28 | Programmed maintenance cycles reached. | NO |
| E29 | Close limit switch not working (when present and enabled). | NO |
| E92 | MODBUS: unknown command. | YES |
| E95 | MODBUS: parity parameter error. Internal error. | YES |
| E97 | MODBUS: wrong parameter or data length. | YES |
| E99 | Communication parameter unknown | YES |

(*) Events occurrence that change the normal behaviour, such as STOP, obstacle detection, etc., are stored.

For example, if STOP input activates during a static status (automation stopped), the event is not saved; but if it prevents a movement or inhibits a command, it is stored.

INSTALLATORE
INSTALLER
INSTALLATEUR
INSTALLATEUR
INSTALATOR

DATA
DATE
DATE
DATUM
FECHA



www.bft-automation.com

BFT Spa

Via Lago di Vico, 44 ITALY
36015 Schio (VI)
T +39 0445 69 65 11
F +39 0445 69 65 22

SPAIN

**BFT GROUP ITALIBERICA DE
AUTOMATISMOS SL**
Camí de Can Bassa, 6, 08401
Granollers, Barcelona, Spagna

FRANCE

AUTOMATISMES BFT FRANCE SAS
50 rue jean zay
69800 Saint-Priest, Francia

GERMANY

BFT ANTRIEBSSYSTEME GMBH
Faber-Castell-Straße 29, 90522
Oberasbach, Germania

UNITED KINGDOM

BFT AUTOMATION UK LTD
Unit C2-C3 The Embankment Business
Park, Vale Road Heaton Mersey Stockport
Cheshire SK4 3GL United Kingdom

BFT AUTOMATION (SOUTH) LTD

Enterprise House Murdock Road, Dorcan,
Swindon, England, SN3 5HY

PORTUGAL

BFT PORTUGAL SA
Urb. Pedrulha lote 9 - Apartado 8123,
3025-248 Coimbra Portugal

POLAND

BFT POLSKA SP ZOO
Marecka 49, 05-220 Zielonka, Polonia

IRELAND

BFT AUTOMATION IRELAND
Unit D3 City Link Business Park, Old Naas
Road, Dublin

CROATIA

BFT ADRIA DOO
Obrovac 39, 51218, Dražice, Croazia

CZECH REPUBLIC

BFT CZ SRO
Ustecka 533/9, 184 00 Praha 8,
Czech

TURKEY

BFT OTOMASYON KAPI
Şerifali Mahallesi, no, 34775
Ümraniye/Istanbul, Turchia

U.S.A.

BFT AMERICAS INC.
1200 S.W. 35th Avenue Suite B Boynton
Beach FL 33426

AUSTRALIA

BFT AUTOMATION AUSTRALIA PTY
29 Bentley St, Wetherill Park NSW
2164, Australia

EMIRATES

BFT MIDDLEEAST FZCO
FZS2 AA01 -PO BOX 262200, Jebel Ali Free
Zone South Zone 2 , Dubai - United Arab

NEW ZEALAND

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224/A Bush Road, Rosedale,
Auckland, New Zealand