CAME

ACCESS CONTROL SYSTEM

CE

INSTALLATION MANUAL

RBM84 - HW

EN English

SUMMARY

What RBM84 is

The system and its software can manage up to 5500 users.
RBM84 is an integrated access control system completely controlled by a Personal Computer.

The base configuration comprises two devices, **RBM84** and **PC30**, and a **proprietary software** that is easy to install and use on a PC running Windows OS (**Xp/Windows7/Windows8, Professional versions**).

The RBM84 card is the heart of the system, and can be installed remotely from the computer (max 1000 m) as all programming/modification/control functions are handled by the software.

PC30 should instead be installed in the vicinity of the computer (max 5 m), as it is an indispensable tool for programming the control devices connected. PC30 unites all the decoders required to store all compatible Came control devices:

- Transmitters of the series **Atomo**, **Tam, Top, TWIN** (in **TOP, TAM** mode).
- **S5000, S6000** and **S7000** keyboard selectors;
- **TSP00 sensor** for transponder card.
- **LT001 reader** for magnetic stripe cards.
- **WAVE sensors** (**WA01**).
- **Twister and Guardian turnstiles.**
The number of these devices varies depending on the type of system.

The basic configuration can manage and control up to **8 operators** (doors, gates, bars, etc.) with **4 control devices**; There are also **8 digital inputs** for connecting alarms, emergency locks, traffic lights, sensitive mats , etc.

Up to **60 Rem expansion devices** or **60 Twister/Guardian turnstiles** can be added to this configuration, used simultaneously **without exceeding 60 units.** In addition, up to **8 Wave sensors** can be connected.
The system can manage and control up to **128 operators** via **124 sensors** and **128 digital inputs**.

REM is an expansion card created to extend the capabilities of RBM84 in terms of equipment and / or devices connected (not necessarily both); they are connected to each other via a serial cable whose total length must not exceed 1000 m where RBM84 can be installed at the starting point (single line connection) or in an intermediate position (two-line connection).

The turnstiles are bidirectional electromechanical devices for regulating transit in high flow areas.

Wave WA01 is a proximity sensor with graphic display for an additional output.

The uses of RBM84

The RBM84 system is able to fit into any context that requires access control for:

- access authorisation
- entrance/exit recording
- entrance/stay/exit monitoring
- entrance and exit activation and selection
- controlling parking time and costs
- locking/releasing the system and/or providing real-time authorisation
- allow system centralised management

The areas of application vary greatly and the main ones include:

PUBLIC CAR PARKS
PRIVATE PARKING
COMPANY PARKING AND BUILDINGS
EMPLOYEE MANAGEMENT
TOWN CENTRES
SPORTS FACILITIES
PUBLIC TOILETTES
WASTE DISPOSAL SYSTEMS

Employee access   *Employee parking*   *Offices*   *Loading/unloading bay*

What RBM84 can do

The following features are offered for all these applications and for any system that includes access and/or exit points that require authorisation/control/recording/monitoring:

For the system as a whole

- Configuration - within the system - of different control devices, even for the same automation: a keyboard selector, transmitter or transponder cards (magnetic or swipe), home control systems (Wave).
- Automation enabling/disabling.
- Digital input enabling/disabling.
- Definition of 30 homogeneous groups of users for collective authorisation/denial.
- Setting of 8 "vacant/occupied" control traffic lights, with maximum number of spots and availability.
- Selection of relay operating mode, bistable / monostable (with setting of monostable closing time).
- Selection of contact type NO/NC, for all digital inputs.
- Settings for 8 different time brackets of the day.
- Enabling/disabling of time brackets.
- Programming of hourly costs for time brackets and whole day.
- Set of 4 discount levels.
- Programming complementary parking time limit.
- Setting the timed AntiPassBack duration.
- Programmed access opening and closing.
- Definition of "blocked days": partial or total system lock-up
- System lock-up/release.
- Storage/recording of 5500 different users with personal data and code of the control device assigned.
- User list print function.
- User operations per set time interval display or print function.
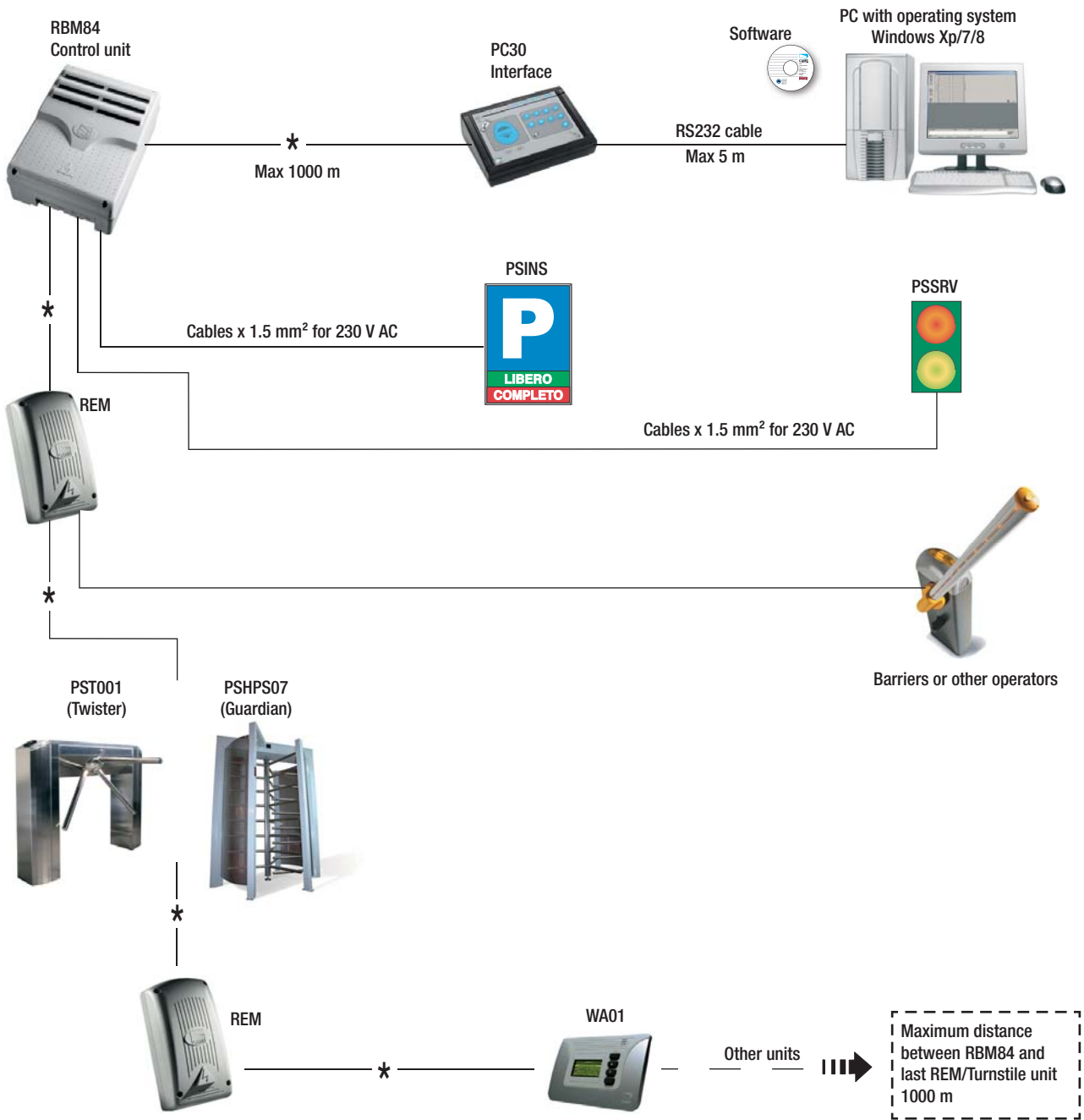
For each user

- Association to a homogeneous group.
- Enable/disable: edits or deletes user permanently
- Definition of type of access: normal, time or amount prepaid, subscription (in days).
- Antipassback type selection: normal or timed.
- Setting of hourly costs for customised credits.
- Allocation of discounts and complementary parking.
- Allocation of time brackets on a daily basis.
- Monitoring the status of the user: if recorded, last entrance and last exit, total stay, total accesses, remaining credit.
- User configuration print function.
- User operations per set time interval display or print function.

All these functions can be activated/blocked/changed at any time through the software, and all drives connected to RBM84 and REM can be locked/unlocked using the safety push buttons connected to digital inputs.

Technical data for individual components

	RBM84	REM	PC30	WA01	TSP00	S5000	S6000	S7000	PST001
Power supply	120/230V	120/230V	15V AC	120-230V	15V DC	12/24V	-	10VDC	230V AC
Maximum power	18W	8W	2.7W	2.3W	0.45	1W	-	0.05W	55W
Current draw when idle	40mA	34 mA AC	180mA AC	10mA AC	30mA DC	43mA AC	-	3.2mA	130mA
Protection rating	IP54	IP54	IP20	IP40	IP54	IP54	IP54	IP54	IP44
Working temperature	-20 / 55C°	-20 / 55C°	-20 / 55C°	-20 / 55C°	-20 / 55C°	-20 / 55C°	-20 / 55C°	-20 / 55C°	-20 / 55C°

Schematic diagram

RBM84
Control unit

PC30
Interface

Software

PC with operating system
Windows Xp/7/8

* Max 1000 m

RS232 cable
Max 5 m

*

PSINS

P
LIBERO
COMPLETO

PSSRV

Cables x 1.5 mm² for 230 V AC

Cables x 1.5 mm² for 230 V AC

REM

*

Barriers or other operators

PST001
(Twister)

PSHPS07
(Guardian)

*

REM

WA01

Other units

┌─────────────────────┐
│ Maximum distance   │
│ between RBM84 and   │
│ last REM/Turnstile unit │
│ 1000 m   │
└─────────────────────┘

* Recommended cable: unshielded braided multi-strand (CAT 5 - U/UTP - AWG 24)

Types of compatible commands

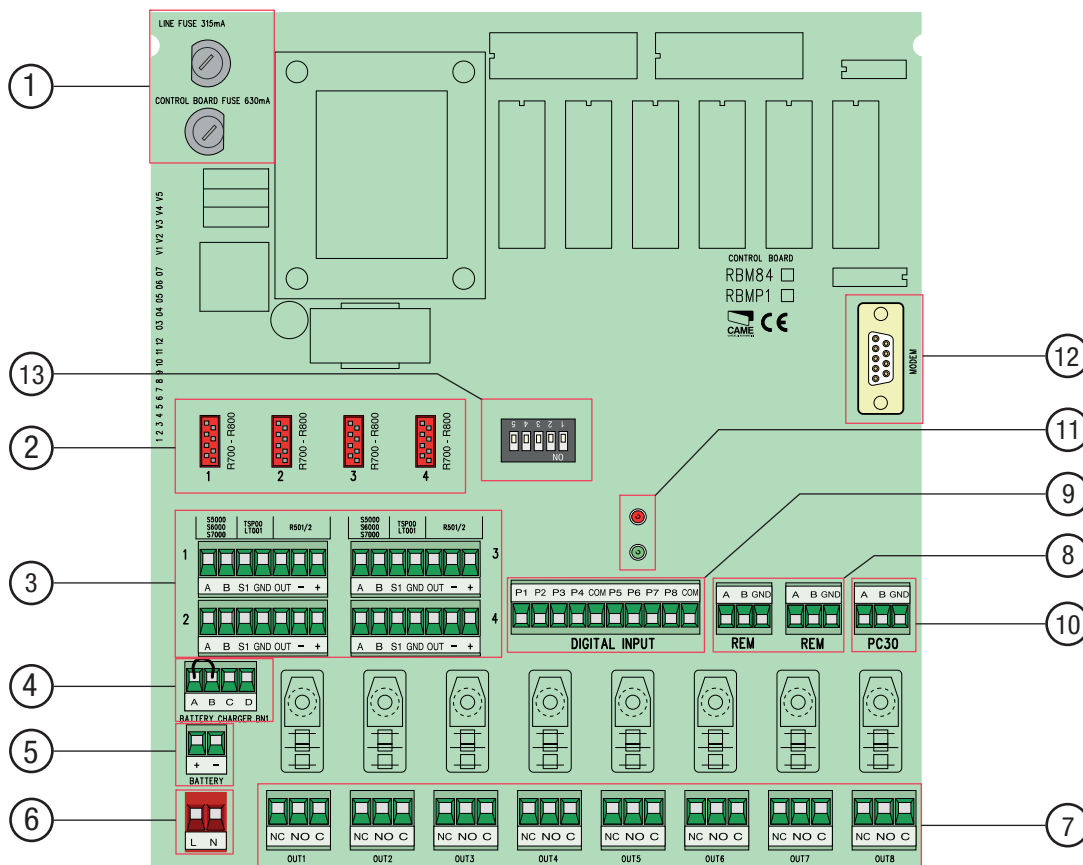| Transmitters **ATOMO/TOP/TAM TWIN**	Transponder card sensors **TSP00/TST01**	Transponder keychain **PCT/TAG**	Magnetic card sensor **LT001/TST02**	Transponder sensor **WA01**	Keypad selectors **S5000/S6000 S7000**

RBM84 base board - description

1. 315mA safety fuses (Line) and 630mA circuit fuses (control board)

2. R700 and R800 board connector

3. Sensor connection terminal

4. LBD2BN1 battery charger board connection terminals

5. Battery connection terminals

6. 230V A.C. line connection

7. Connector terminal block for controlled devices, max. 5A at 230V per contact.

8. Connection terminals for REM extensions/Wave connection or PST001.

9. Connection terminals for input digital devices.

10. PC30 connection terminals

11. Signalling LEDs: red - "circuit active" - green - "communication in progress".

12. Modem RS232 connector

13. Function selector (see p. 27)

RBM84 base board - description

1. Power supply terminals for 230V A.C. board

2. Power supply safety fuse

3. Circuit safety fuse

4. Connection terminals for transponder sensors (TSP00) and reader for magnetic stripe cards (LT001).

5. Connectors for signal decoding cards (selectors, sensors, transmitters)

6. Antenna connection terminals

7. Connection terminals for digital input devices

8. Connection terminals for slave devices

9. "Circuit active" alert LED

10. Rem address selector (see p. 26)

11. Connection terminal block for segment subsequent device (REM/WAVE/Turnstile).

TOR100 base board - description

1. Transformer

2. Transformer connection terminal block

3. 1.6A accessory fuse

4. Limit switch connection terminal block

5. 1.6A line fuse

6. Board power supply terminal block, 230V A.C.

7. Control accessories and devices connection terminal block

8. Electric lock connection terminal block

9. Buzzer (Siren) connection terminal block
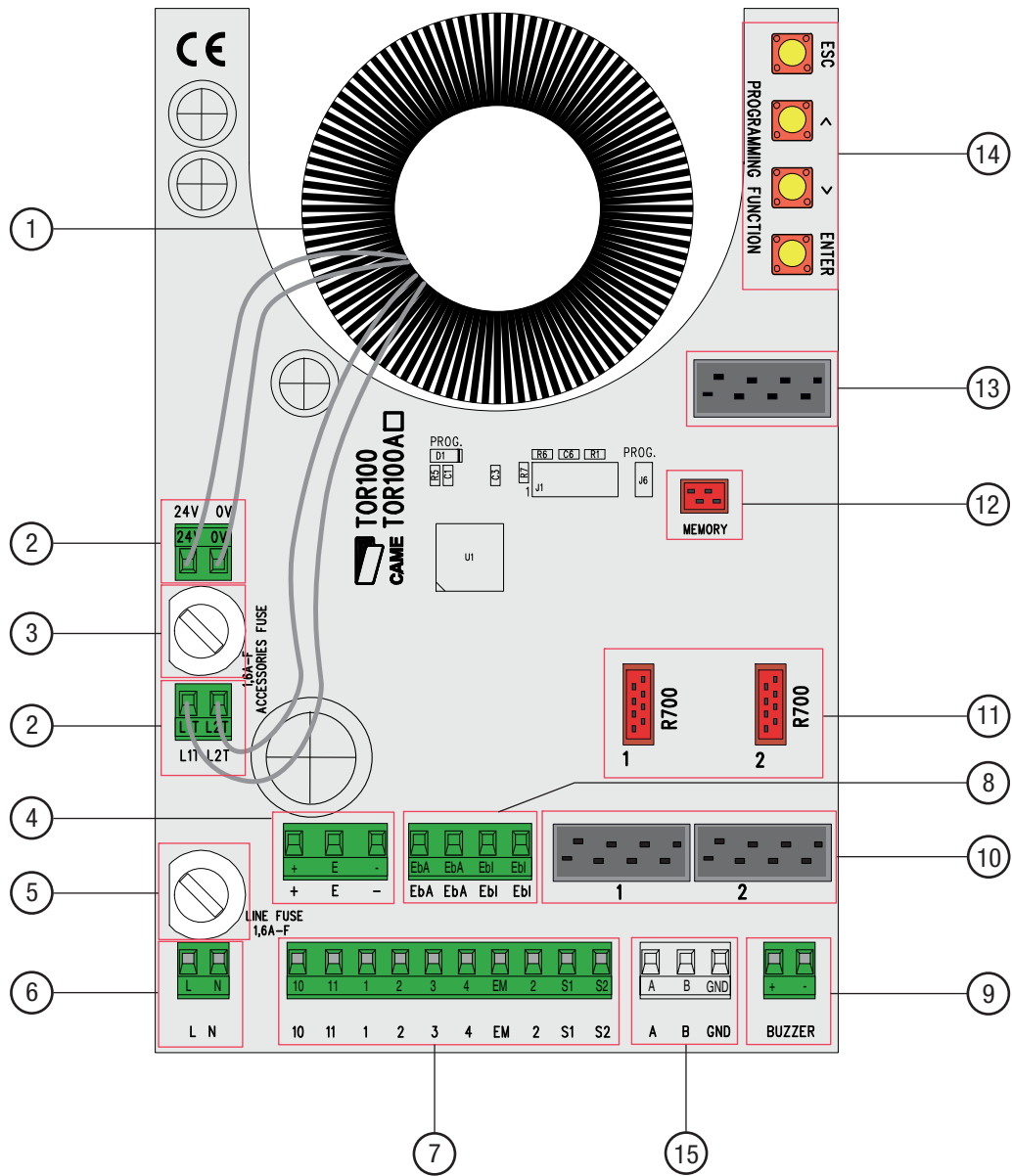
10. Transponder connection connectors

11. R700 board connectors

12. Memory roll card connector

13. Display connection connector

14. Function programming buttons

15. Connection terminal block for segment subsequent device (REM/WAVE/Turnstile).

RBM84 Turnstile configuration

The turnstile must be configured and numbered via functions 11 and 12 in order to perform operations in the RBM84 system, as shown hereafter.

Function 11: Stand Alone or OnLine mode
In Stand-Alone (OFF) the turnstile works automatically, while On-Line (ON) the turnstile is connected and controlled by RBM84.

ENTER + > **(for 10 cycles)**

F – 10
F – 11
F – 12

ENTER

Esc

OFF   >   ON   >
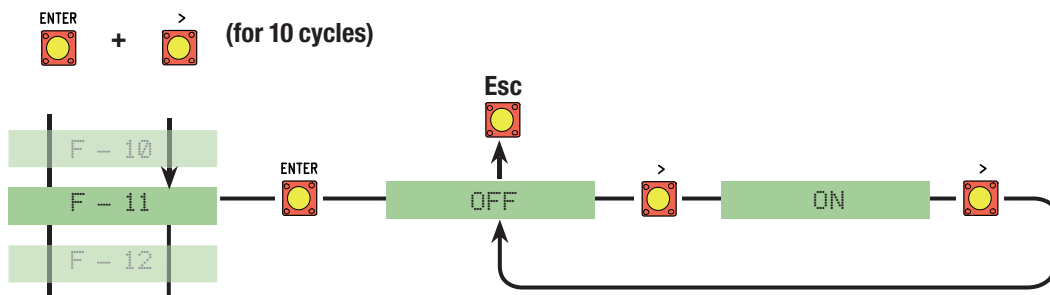
Function 12: Device number.
Assign the position inside the RBM84 circuit to each turnstile.

ENTER + > **(for 11 cycles)**

F – 11
F – 12
F – 13

ENTER

Esc

1   >   2   >   3

60   >   >

PC30 - description

1. 12V A.C. power supply

2. RS232 serial port for PC connection

3. Rbm84 connection terminals (RS485 serial port)

4. 12V A.C. power supply

5. RS232 cable x 1.5 m, complete with connectors

6. S5000/S6000/S7000 selector code memorisation keyboard

7. Top/Tam/Atomo transmitter memorisation area

8. TSTO1 card memorisation area (proximity card)

9. TSTO2 card memorisation area (magnetic stripe and swipe cards)

10. "Voltage present" indicator LED

11. "Code recorded" / "code already present" indicator LED

RBM84 - *Hardware and connections*

RBM84 connection <----> PC30 <----> Personal Computer

Port
COM

1.5 m cable
for RS232 serial ports
supplied with connectors

PC30

RS232 serial port

Cable **NOT INCLUDED**
recommended type:
unshielded
multipair cable
(CAT 5 - U/UTP - AWG24)
see Annex A

12V AC power supply
for 230V A.C. power supply - 50÷60Hz
800 mA current draw
working temperature between -20 and +50°C

RBM 84

A	B	GND		A	B	GND		A	B	GND
	REM				REM				PC30	
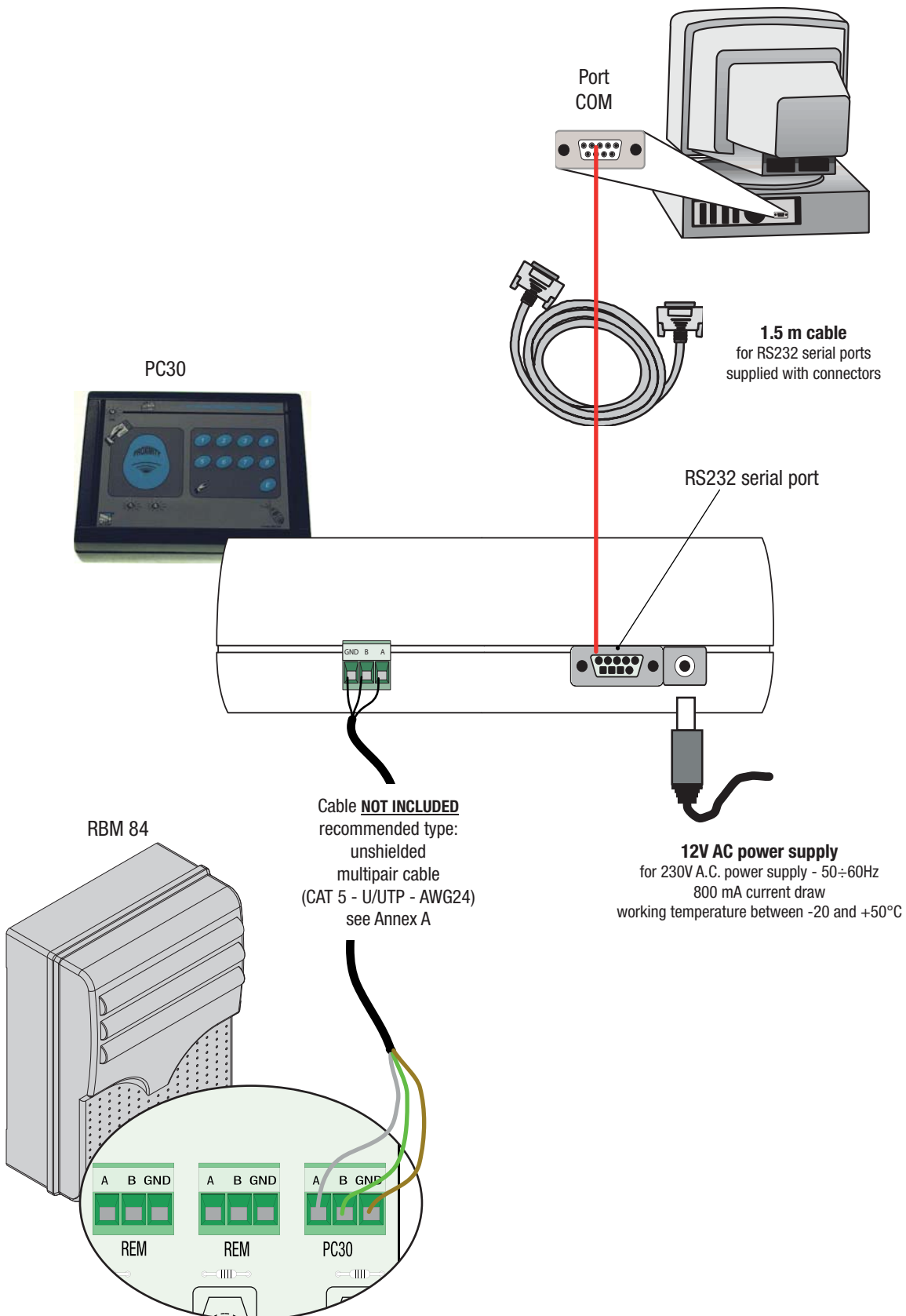
RBM84 connection <----> Modem <----> Personal Computer

Caution! The phone number entered to place a call is that of the digital modem connected to RBM84

PC
for remote control

Integrated or external modem

Telephone
Line

RBM84

RS232 Modem
Null Cable

CONTROL BOARD
RBM84 □
RBMP1 □

MODEM

P1 P2 P3 P4 COM P5 P6 P7 P8 COM

A B GND   A B GND   A B GND

DIGITAL INPUT   REM   REM   PC30

NO C   NC NO C   NC NO C   NC NO C   NC NO C   NC NO C
OUT3   OUT4   OUT5   OUT6   OUT7   OUT8

N.B. It is possible to use standard Hayes, GSM or V92 analogue modem with RS232 connection.
Communication is between a PC, its modem, the receiving modem and RBM84.

Caution! Remove and restore line voltage to the RBM84 board each time a modem is connected.
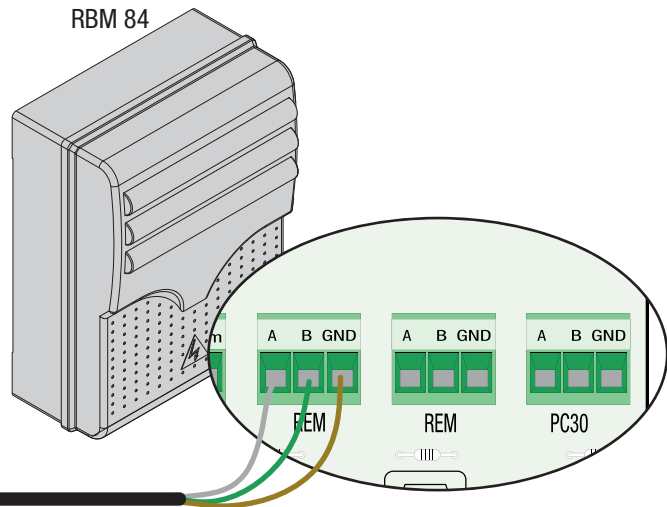
When connected it is possible to read all information and change all parameters, excluding the creation of new users. The modem must be replaced with a PC30 in order to add and memorise NEW USERS.
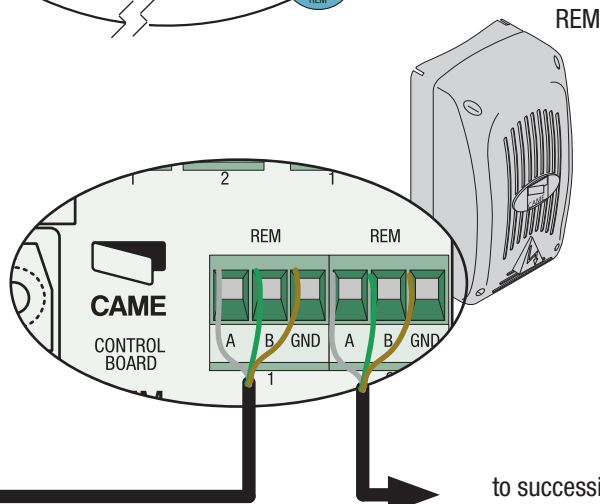
RBM84 connection <----> REM (single segments)

RBM 84

A B GND   A B GND   A B GND

REM   REM   PC30

Cable **NOT INCLUDED**
recommended type:
unshielded
multipair cable
(CAT 5 - U/UTP - AWG24)
see Annex A

Connecting to A segment:
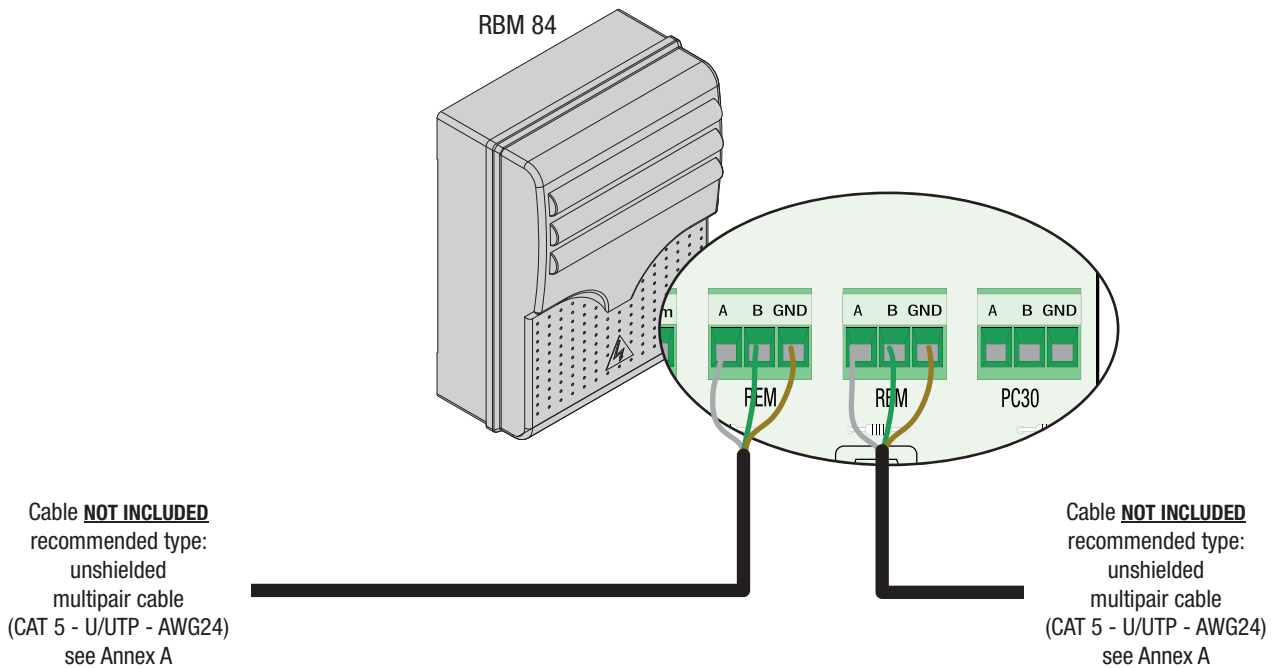RBM84 is at the end of the cable path
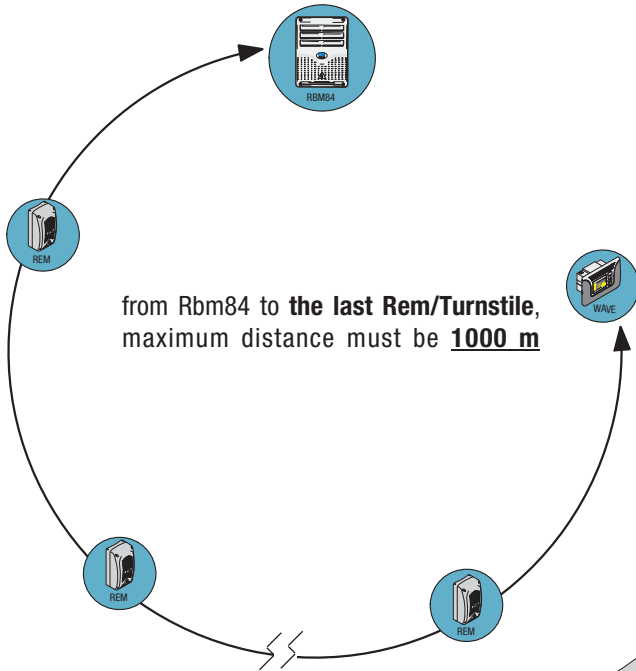
RBM84

Each Rem is identified by Rbm84 through a progressive sequential numbering (1 to 60) regardless of the position along the path of the connection cable; such number (also called address) must be set to the appropriate dip selector in the base Rem card. *In the event of communication problems between the Rem and the RBM84 card, position Dip4 to ON on the last Rem connected.*

REM

from Rbm84 to **the last Rem/Turnstile**, maximum distance must be **1000 m**

WAVE

REM

REM

REM

CAME

CONTROL
BOARD

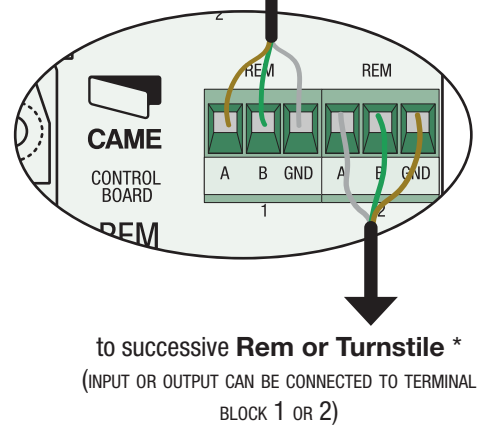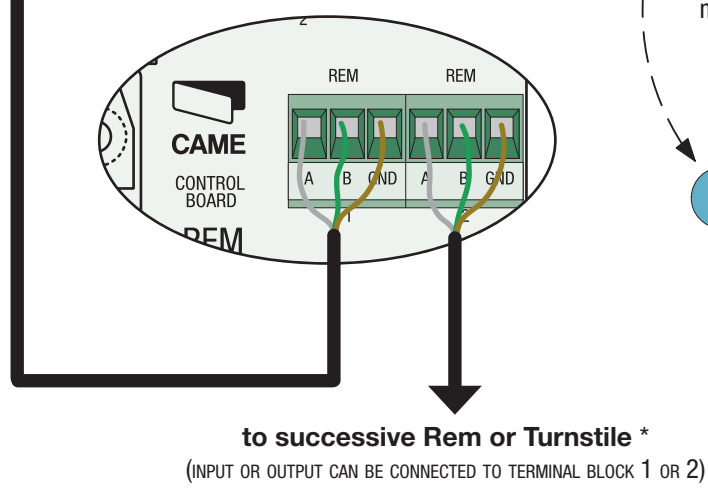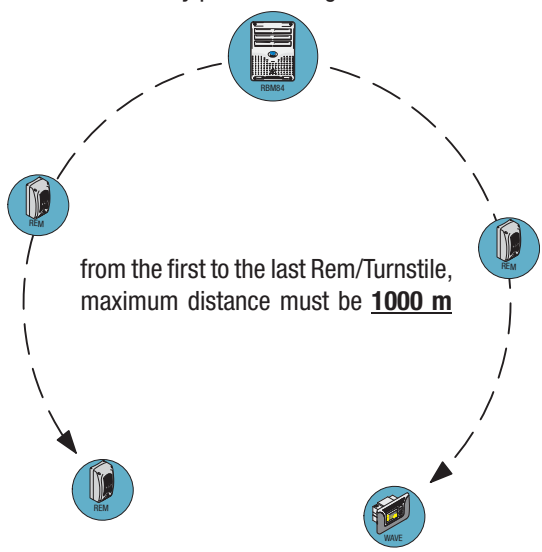REM   REM

A B GND   A B GND

1

to successive **Rem or Turnstile,** up to 60 units
(INPUT OR OUTPUT CAN BE CONNECTED TO TERMINAL BLOCK 1 OR 2)

RBM84 connection <----> REM (two segments)

RBM 84

A B GND   A B GND   A B GND

REM   RBM   PC30

Cable **NOT INCLUDED**
recommended type:
unshielded
multipair cable
(CAT 5 - U/UTP - AWG24)
see Annex A

Cable **NOT INCLUDED**
recommended type:
unshielded
multipair cable
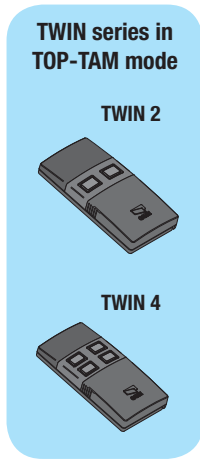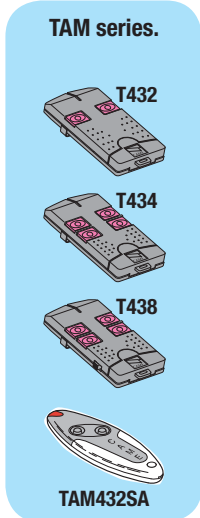(CAT 5 - U/UTP - AWG24)
see Annex A

Each Rem is identified by Rbm84 through progressive sequential numbering (1 to 60) regardless of the position along the path of the connection cable; such number (also called address) must be set on the appropriate dip selector in the base Rem card.

Two SEGMENT connection: RBM84 can be located in any position along the cable route

RBM84

from the first to the last Rem/Turnstile, maximum distance must be **1000 m**

REM

WAVE

Segment A*

CAME

CONTROL
BOARD
REM

REM   REM

A B GND   A B GND

Segment B

CAME

CONTROL
BOARD
REM

REM   REM

A B GND   A B GND

to successive Rem or Turnstile *
(INPUT OR OUTPUT CAN BE CONNECTED TO TERMINAL BLOCK 1 OR 2)

to successive **Rem or Turnstile** *
(INPUT OR OUTPUT CAN BE CONNECTED TO TERMINAL
BLOCK 1 OR 2)

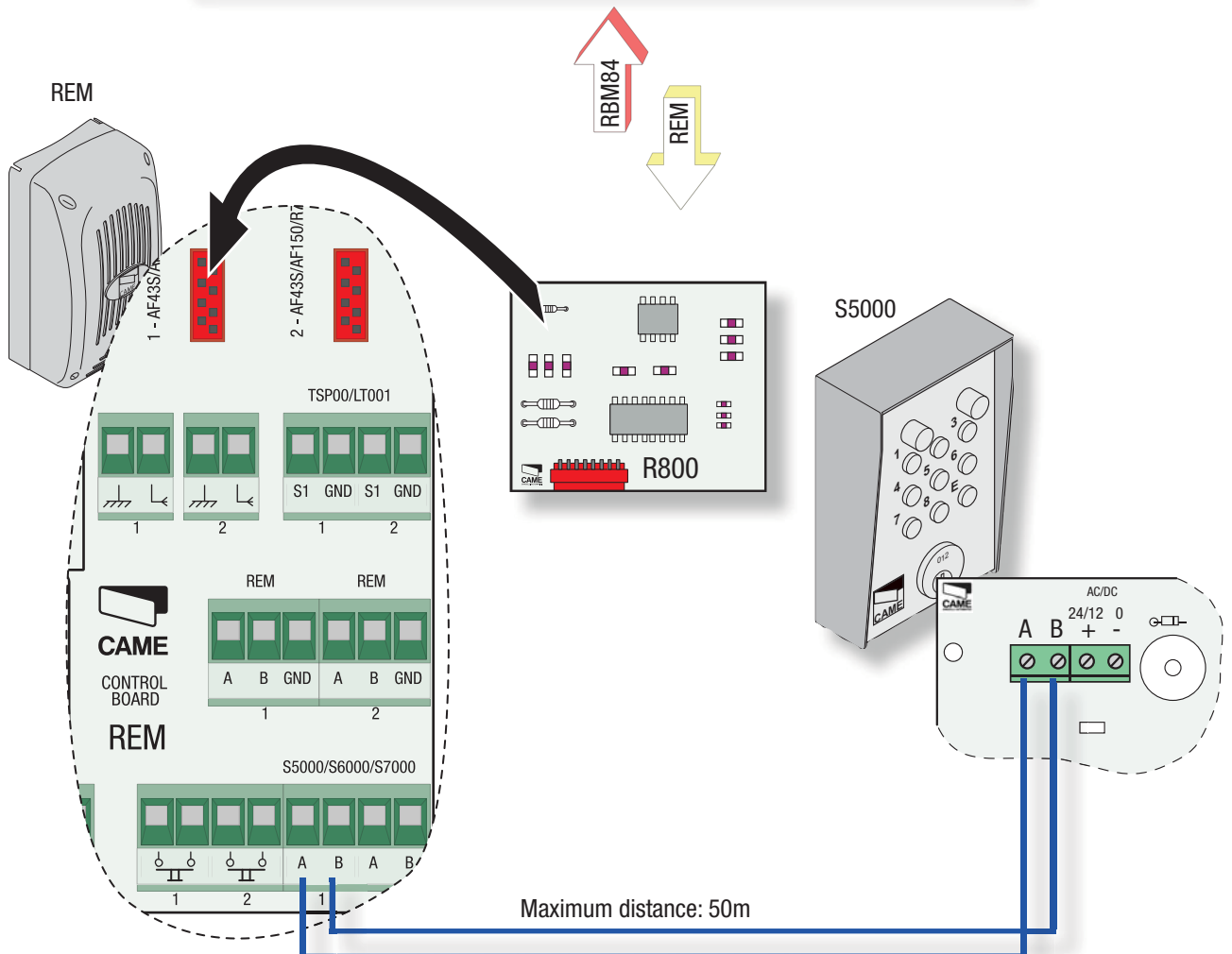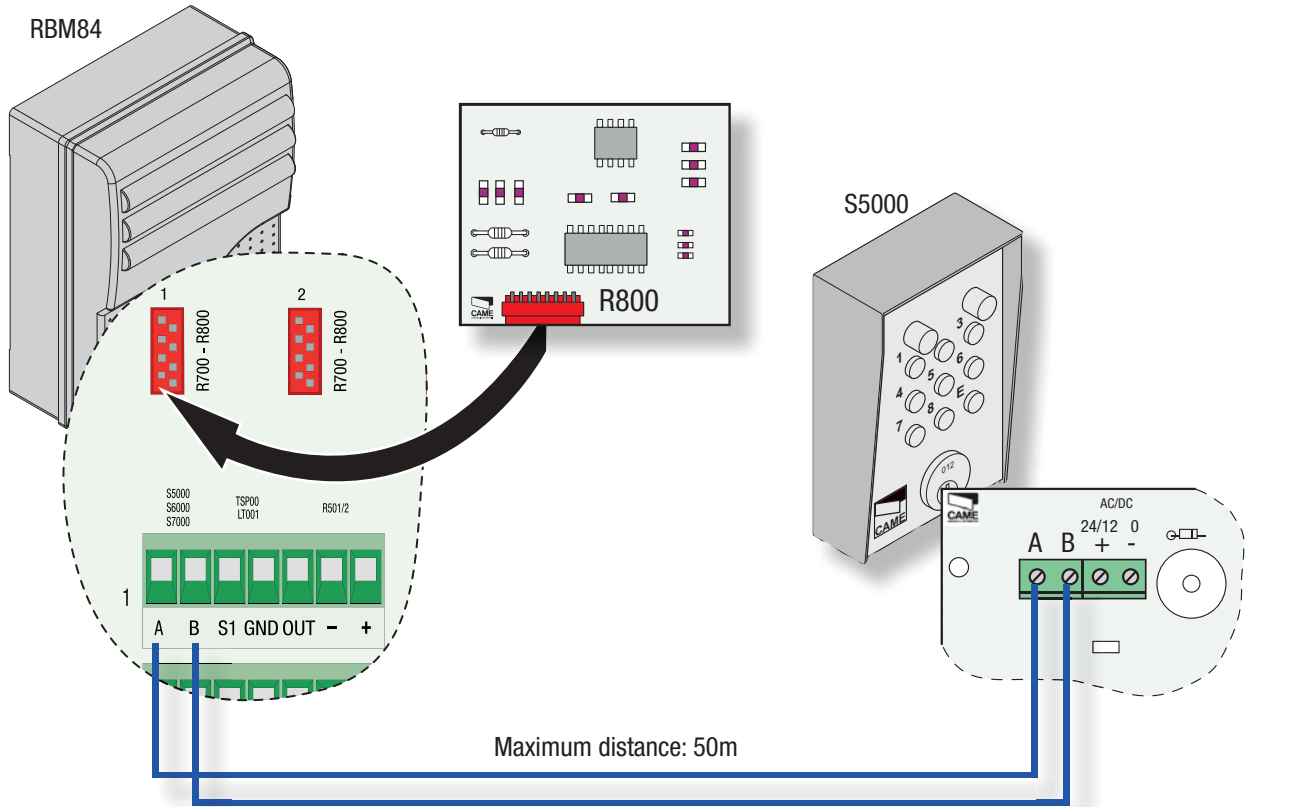* the sum of the Rem and/or Turnstiles that are serial connected along the segment A+B must be at most 60 units

Connection RBM84/REM <----> Sensor: remote control

RBM 84

Connect the receiver R501N (that includes the plug-in radio frequency card AF43S) to the RBM84. The antenna Top-A433N is also connected to the receiver.

R501N   TOP-A433N

AF43S

1   R700 - R800
2   R700 - R800

S5000
S6000   TSP00
S7000   LT001   R501/2

1

A   B   S1   GND   OUT   −   +

OUT   −   +

MAX LENGTH: 50 m

52 OHM IMPEDENCE
MAX LENGTH: 10 m

REM

RBM84
REM

On Rem, simply connect a AF43S radio-frequency card and connect a TOP-A433N antenna on the Rem base card.

1 - AF43S/AF150/R70
2 - AF43S/AF150/R70

TSP00/LTC

S1   GND

1   2   1

AF43S

TOP-A433N

52 OHM IMPEDENCE
MAX LENGTH: 10 m

ATOMO series

AT01

AT02

AT04

TOP series.

TOP-432NA

TOP-434MA

TAM series.

T432

T434

T438

TAM432SA

**TWIN series in
TOP-TAM mode**

TWIN 2
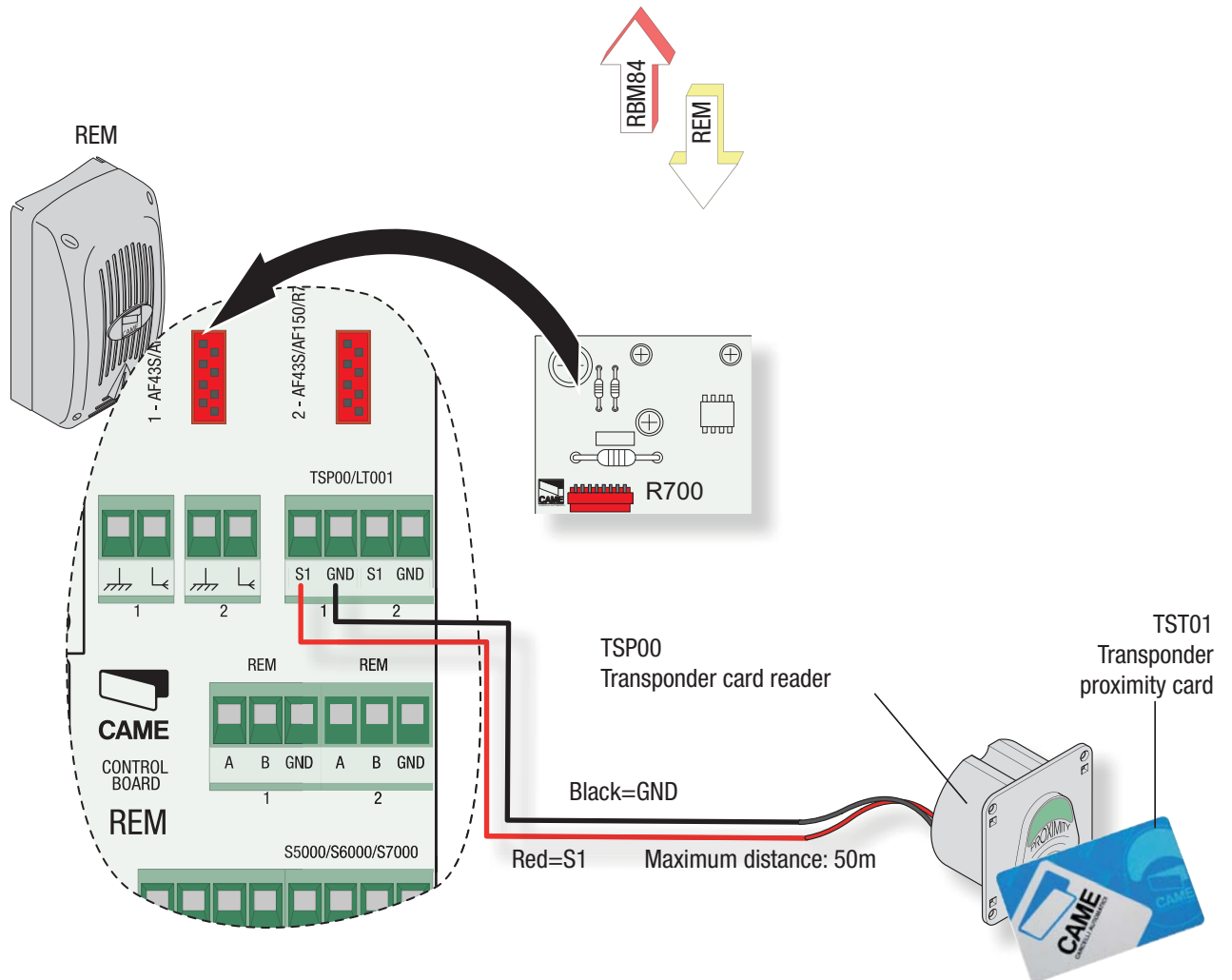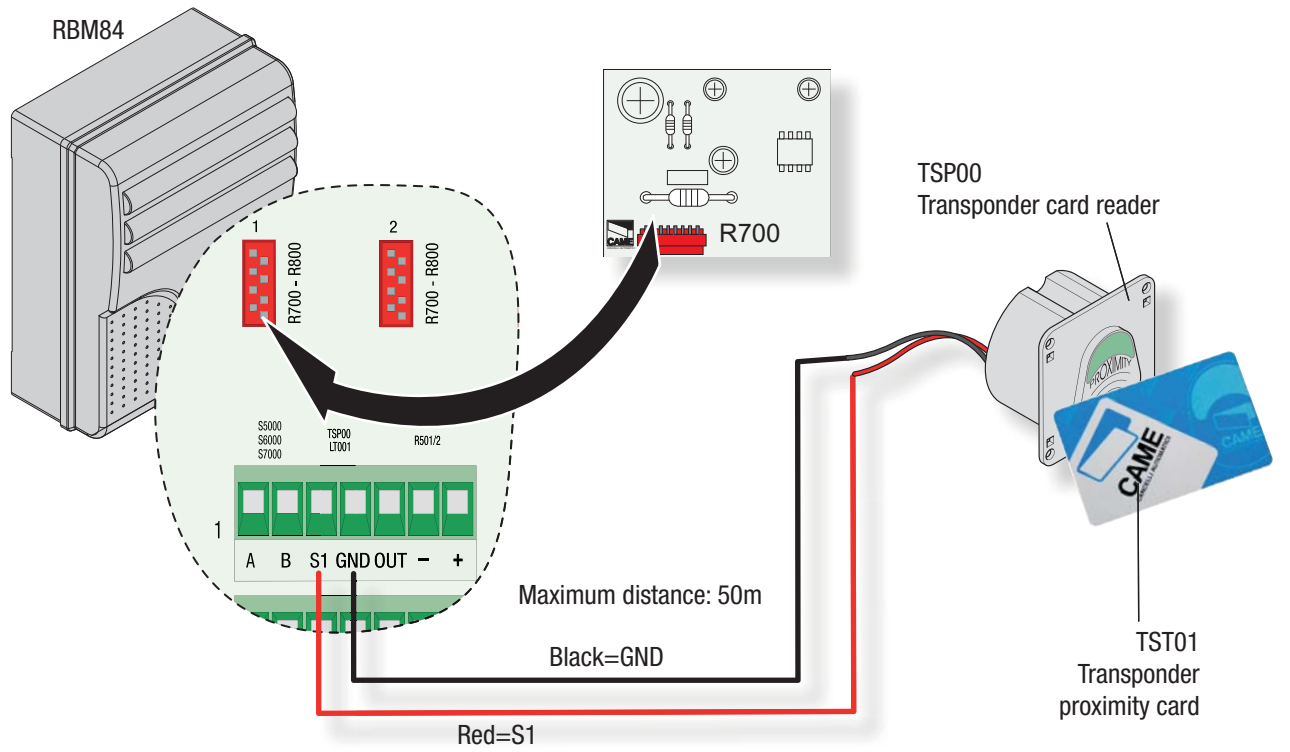
TWIN 4

Connection RBM84/REM <----> S5000 keyboard selector series

RBM84

1   2

R700 - R800   R700 - R800

R800

S5000

S5000
S6000
S7000

TSP00
LT001

R501/2

1

A   B   S1   GND   OUT   −   +

AC/DC

A   B   24/12   0   +   −

Maximum distance: 50m

RBM84

REM

REM

1 - AF43S/R   2 - AF43S/AF150/R

TSP00/LT001

S1   GND   S1   GND

1   2

R800

1   2

S5000

REM   REM

A   B   GND   A   B   GND

1   2

CAME

CONTROL
BOARD

REM

S5000/S6000/S7000

AC/DC

A   B   24/12   0   +   −
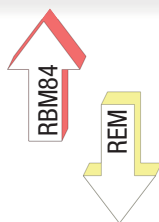
A   B   A   B

1   2

Maximum distance: 50m

Connection RBM84/REM <----> S6000 / S7000 keyboard selector series

RBM84

R700 - R800   1
R700 - R800   2

R800

S5000
S6000
S7000

TSP00
LT001

R501/2

1

A B S1 GND OUT − +

S6000 / S7000

White=A

Blue=B   Maximum distance: 50m

RBM84

REM

REM

1 - AF43S/TAM

2 - AF43S/AF150/RT

R800

TSP00/LT001

S1 GND   S1 GND
1   2

1   2

REM   REM

CAME

CONTROL
BOARD

REM

A B GND   A B GND
1   2

S6000 / S7000

White=A

Blue=B

S5000/S6000/S7000

1   2   A B   A B
                  1

Maximum distance: 50m
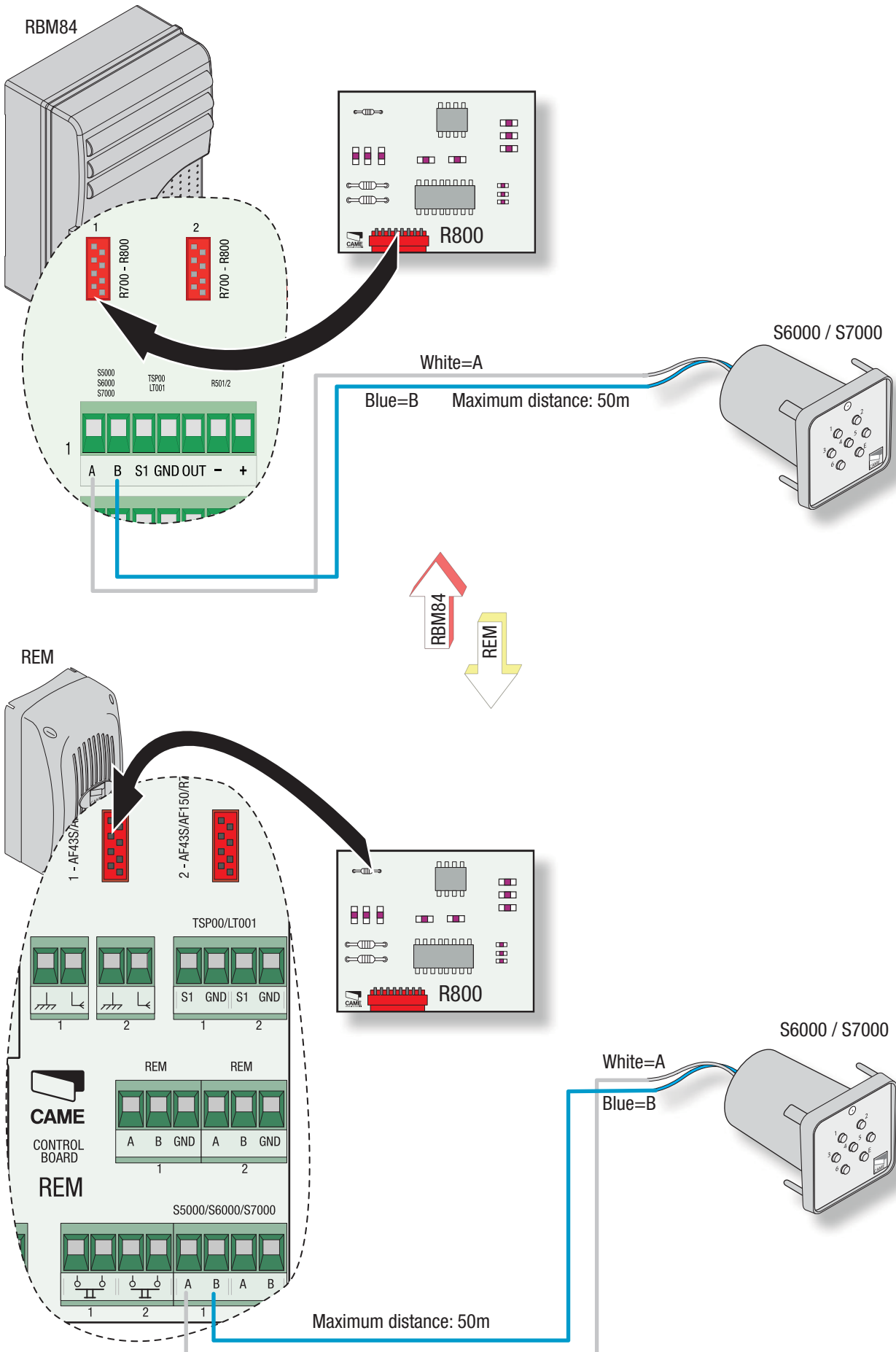
Connection RBM84/REM <----> Transponder sensor for proximity devices

RBM84

1   R700 - R800
2   R700 - R800

R700

TSP00
Transponder card reader

S5000
S6000
S7000   TSP00
LT001   R501/2

1

A   B   S1   GND   OUT   −   +

Maximum distance: 50m

Black=GND

Red=S1

TST01
Transponder
proximity card

RBM84
REM

REM

1 - AF43S/A
2 - AF43S/AF150/R7

R700

TSP00/LT001

S1   GND   S1   GND
1   2

REM   REM

CAME

CONTROL
BOARD

REM

A   B   GND   A   B   GND
1   2

S5000/S6000/S7000

TSP00
Transponder card reader

Black=GND

Red=S1   Maximum distance: 50m

TST01
Transponder
proximity card

Connection RBM84/REM <----> Sensor for magnetic swipe cards

RBM84

1   R700 - R800

2   R700 - R800

R700

S5000
S6000
S7000

TSP00
LT001

1

A   B   S1   GND   OUT   −   +

TST02
Magnetic card

LT001
Swipe reader
for magnetic cards

Maximum distance: 50m   Black=GND

Red=S1

RBM84

REM

REM

1 - AF43S/AF150/R700/R800

2 - AF43S/AF150/R700/R800

R700

LT001
Swipe reader
for magnetic cards

TST02
Magnetic card

TSP00/LT001

S1   GND   S1   GND

1   2   1   2

Maximum distance: 50m   Black=GND

Red=S1
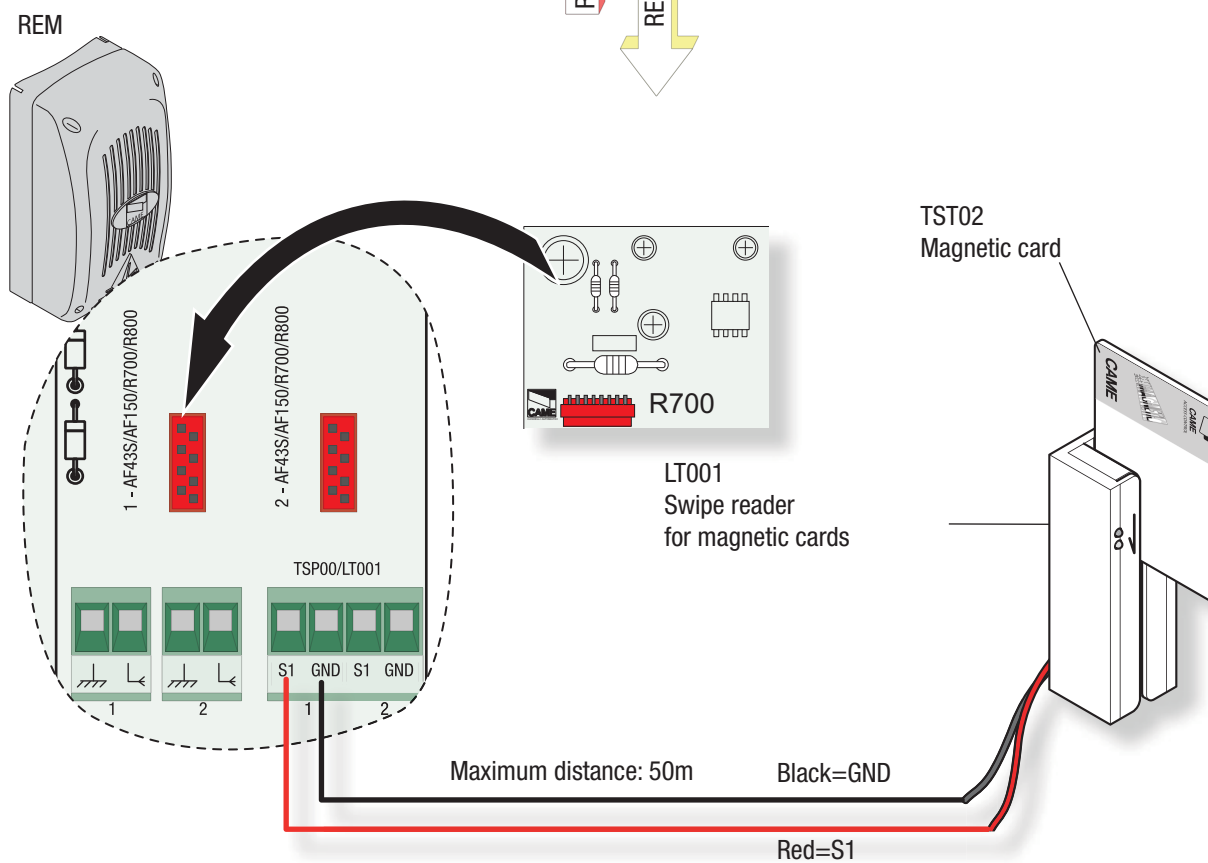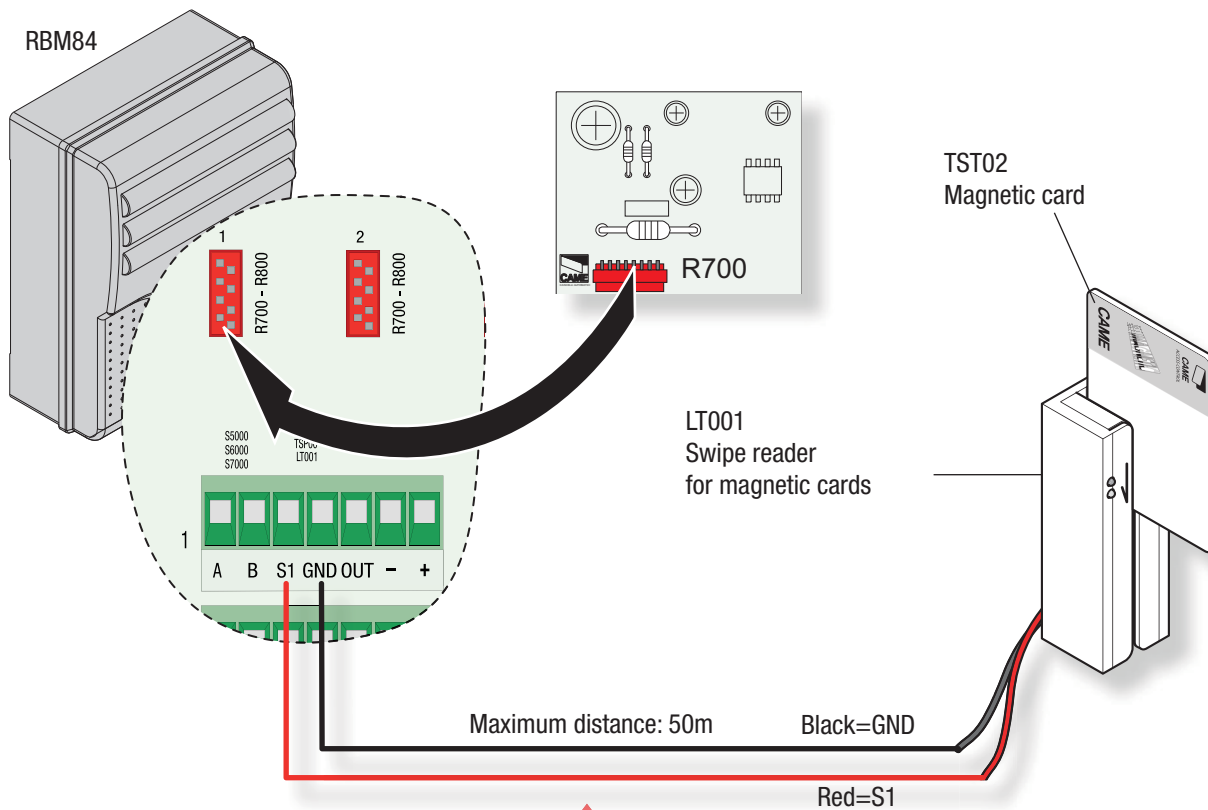
Connection RBM84/REM <----> Digital input contacts

Rbm84

P1 P2 P3 P4 Com P5 P6 P7 P8 Com

DIGITAL INPUT

Capable of connecting alarms, magnetic coils, locks, etc.

RBM84

REM

REM

CAME

CONTROL BOARD

REM

A B GND A B G

1 2

S5000/S6000/S7000

C

A B A B

1 2 1

Capable of connecting alarms, magnetic coils, locks, etc.

Connection RBM84/REM <----> Turnstile connection

Rbm84

PSHPS07 Turnstile (Guardian)*****

PST001 (Twister) Turnstile *****

A	B	GND		A	B	GND		A	B	GND

REM   REM   PC30

S1	S2		A	B	GND		+	-		

S2   A   B   GND   BUZZER

Cable **NOT INCLUDED**
recommended type:
unshielded
multipair cable
(CAT 5 - U/UTP - AWG24)
see Annex A

Rem

PSHPS07 Turnstile (Guardian)*****
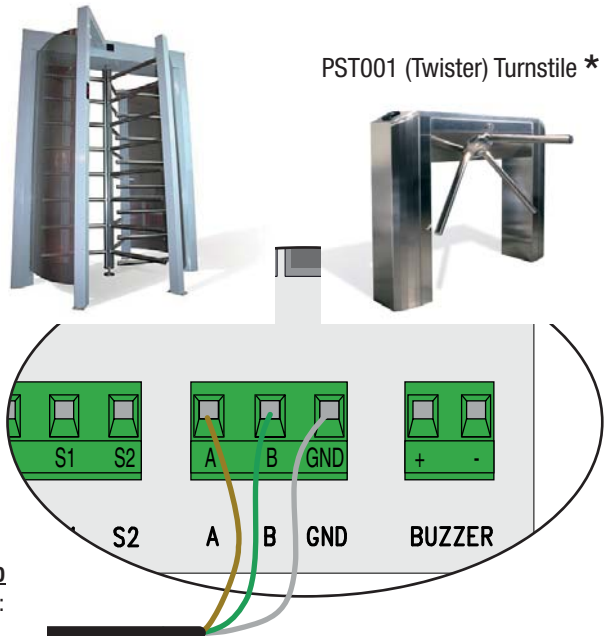
PST001 (Twister) Turnstile *****

S1	GND	S1
2	1	2

REM   REM

A	B	GND	A	B	GND
	1			2	

CAME

CONTROL
BOARD

REM

S5000/S6000/S7000

S1	S2		A	B	GND		+	-		

S2   A   B   GND   BUZZER

Cable **NOT INCLUDED**
recommended type:
unshielded
multipair cable
(CAT 5 - U/UTP - AWG24)
see Annex A

* Only with RBM84 software version 3 or later.
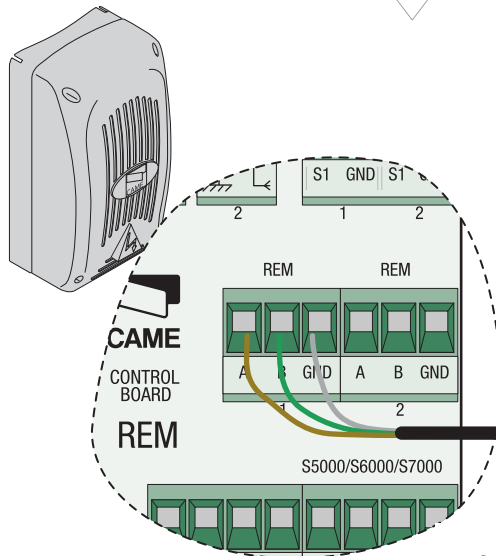
Connection RBM84/REM <----> WAVE connection

RBM84
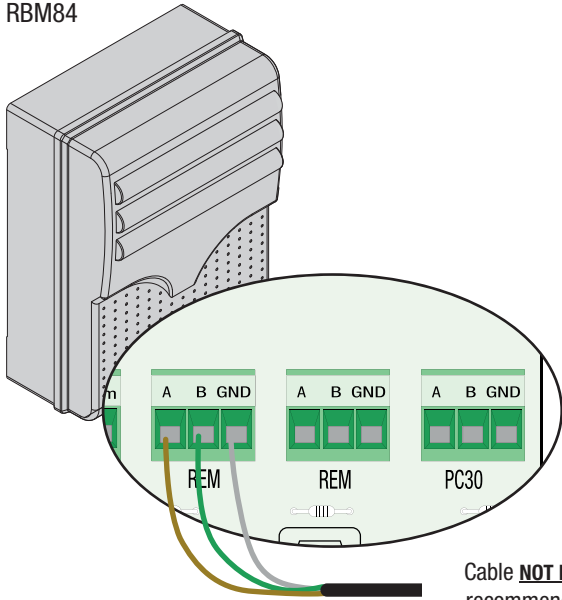
A B GND   A B GND   A B GND

REM   REM   PC30

Cable **NOT INCLUDED**
recommended type:
unshielded
multipair cable
(CAT 5 - U/UTP - AWG24)
see Annex A

230 VAC power supply

Wave (WA01)

S_911
>P.A.6<

L1 L2
230V AC

COM   OUT

B GND   C NC NO

Relay contact

RBM84

REM

REM

S1 GND S1
2   1   2

REM   REM

CAME

CONTROL
BOARD

REM

A B GND   A B GND
2

S5000/S6000/S7000

230 VAC power supply

Wave (WA01)

S_911
>P.A.6<

L1 L2
230V AC

COM   OUT

B GND   C NC NO

Relay contact
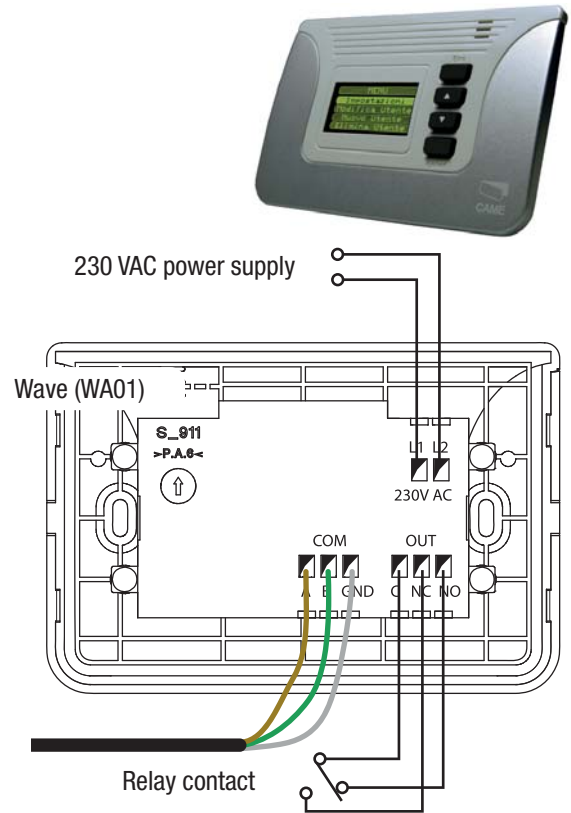
Cable **NOT INCLUDED**
recommended type:

(CAT 5 - U/UTP - AWG24)
see Annex A
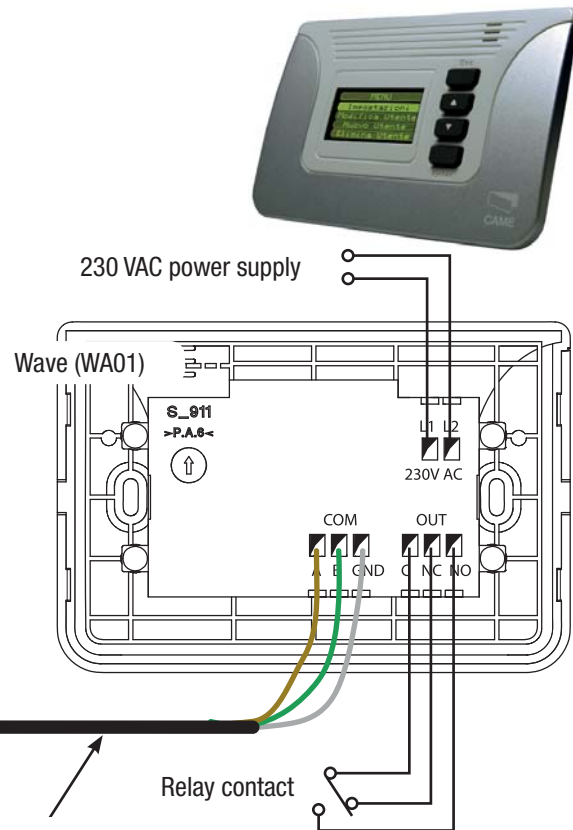
Connection RBM84 <----> Traffic lights

① = Black
② = Brown
③ = Blue
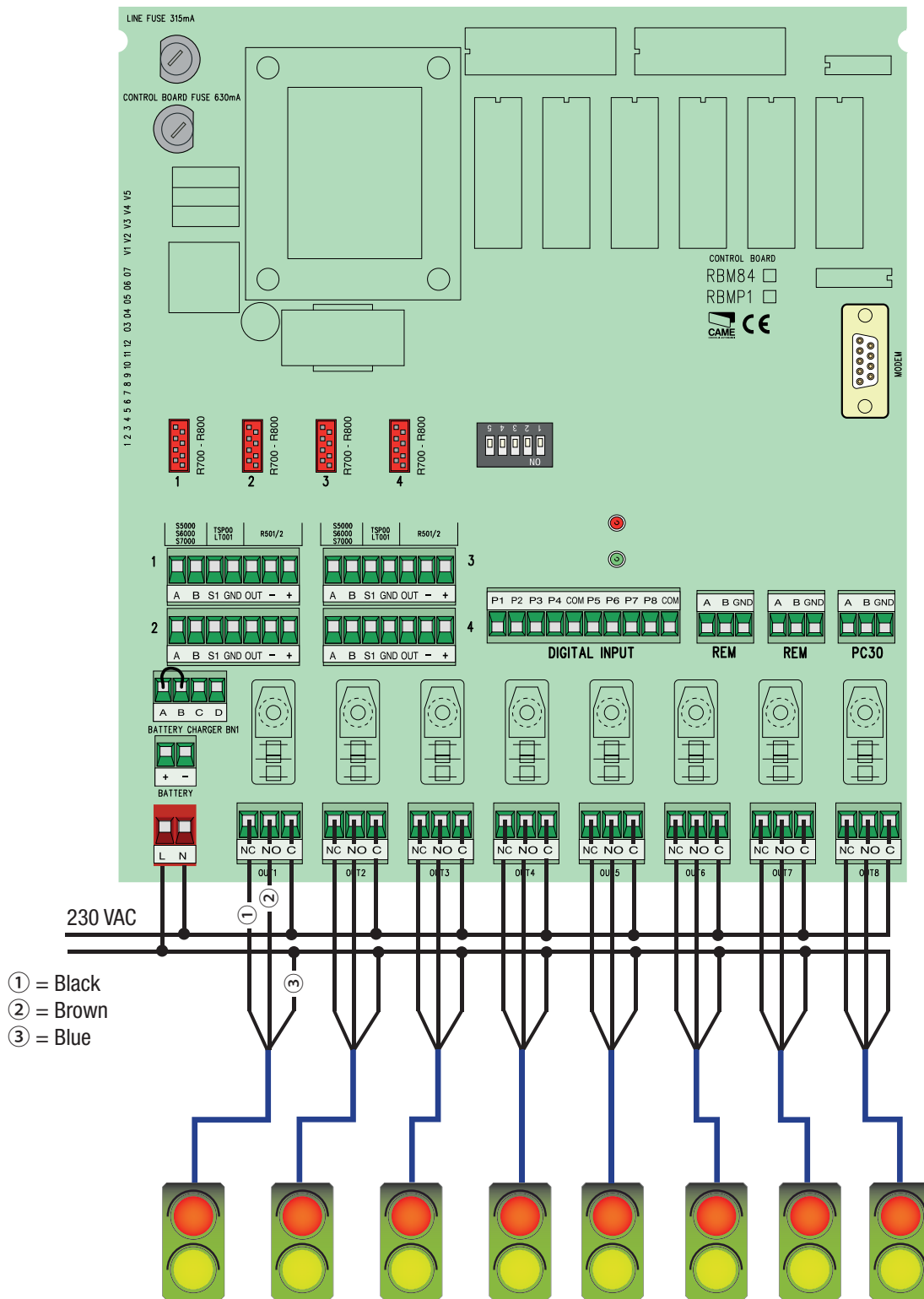
"Partial" traffic lights associated to different levels or sectors, up to 8 at most, where 4 are controlled by REM, which in turn is controlled by the software supplied.
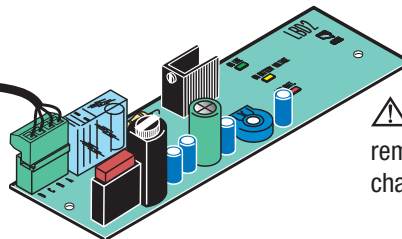
⚠ *Provide a suitable omnipolar circuir breaker, with 3 mm maximum distance between contacts to disconnect the power supply;*

Connection RBM84 <----> LBD2/BN1 battery charger

In a minimum access control system with RBM84 (without REM installation), connect an LBD/BN1 battery recharger board and relative batteries as protection against power disruption.
For more complex systems with one or more REMs, each group should be equipped qith a UPS that is overdimensioned if frequently used.

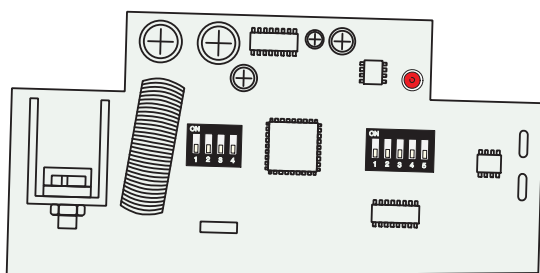⚠ Terminals A and B must remain jumpered if the battery charger is not connected.
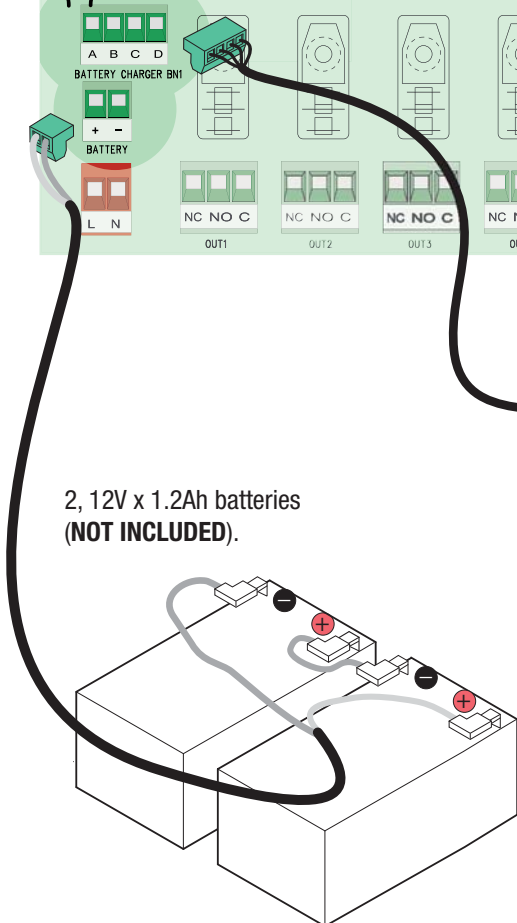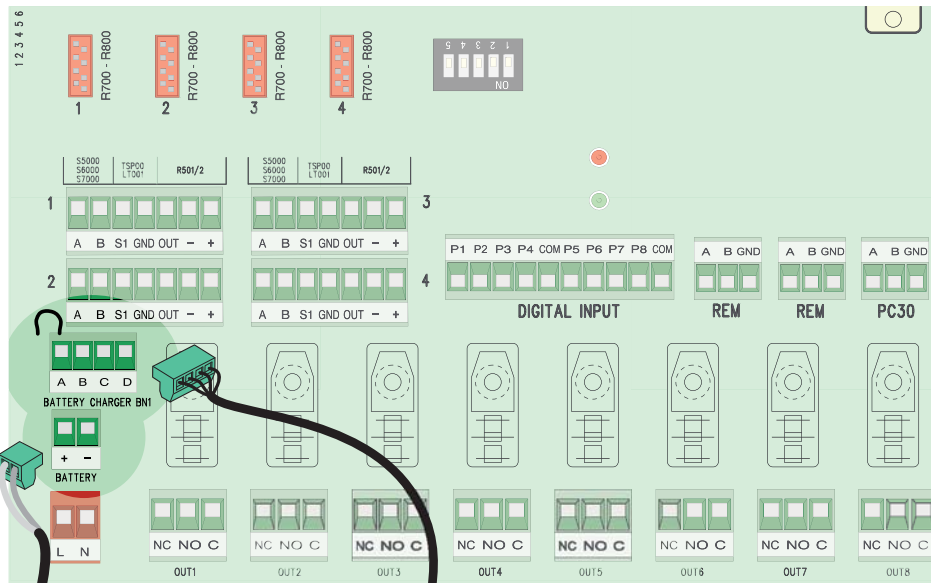
2, 12V x 1.2Ah batteries (**NOT INCLUDED**).

RBM84

Batteries + battery charger
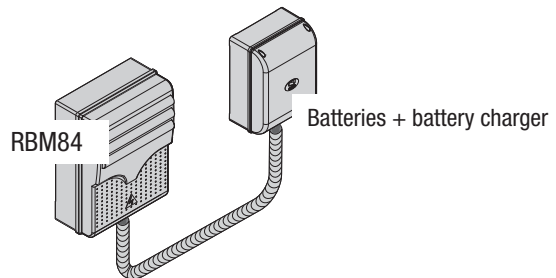
Procure a casing (e.g.: Came code 119RIR315 panel casing) to house the batteries and the battery charger board. Connection cables must be 2 metres long at most.

DIP setting on REM connected in succession

REM n° 1   REM n° 15   REM n° 29   REM n° 45

REM n° 2   REM n° 16   REM n° 30   REM n° 46

REM n° 3   REM n° 17   REM n° 31   REM n° 47

REM n° 4   REM n° 18   REM n° 32   REM n° 48

REM n° 5   REM n° 19   REM n° 33   REM n° 49

REM n° 6   REM n° 20   REM n° 34   REM n° 50

REM n° 7   REM n° 21   REM n° 35   REM n° 51

REM n° 8   REM n° 22   REM n° 36   REM n° 52

REM n° 9   REM n° 23   REM n° 37   REM n° 53

REM n° 10   REM n° 24   REM n° 38   REM n° 54

REM n° 11   REM n° 25   REM n° 39   REM n° 55

REM n° 12   REM n° 26   REM n° 40   REM n° 56

REM n° 13   REM n° 27   REM n° 41   REM n° 57

REM n° 14   REM n° 28   REM n° 42   REM n° 58

              REM n° 43   REM n° 59

              REM n° 44   REM n° 60

Dip switch RBM84 - Function selection

Lock-out user with zero credit function
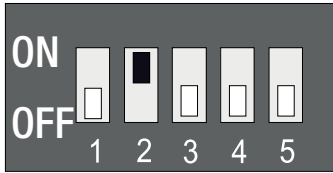
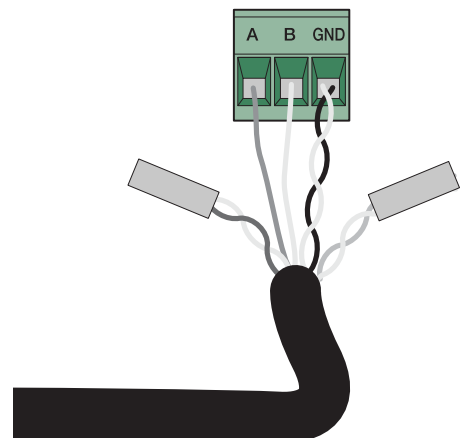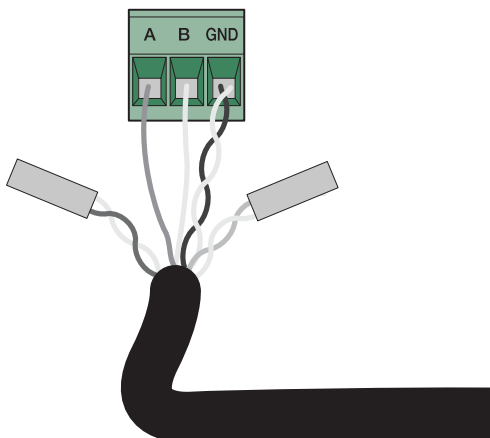Dip 2 ON................A user with 0 credit may enter: must purchase additional credit to exit. Users with negative credit are denied access.
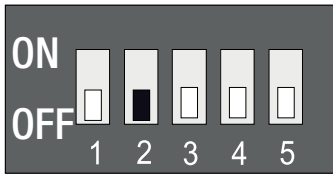
Dip 2 OFF................A user with 0 credit, denied access.

N.B. Dip 1,3,4 and 5 are not used, leave OFF.

Annex A - How to connect the U/UTP cable

Cable **NOT INCLUDED**
recommended type:
unshielded
multipair cable
(CAT 5 - U/UTP - AWG24)

Connection mode:
√ 1 pair of twisted wires on GND (for example, WHITE/ORANGE pair);
√ 1 pair of untwisted wires on A and B (for example the WHITE wire on A and GREEN wire on B);
√ the other two pairs must be isolated.

CAME
safety & comfort

Came S.p.A.

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