



## IMPORTANT INFORMATION

Information provided in this manual is used for the installation of the radio remote control on the machine and for its maintenance.

Information provided in this manual allows to disable, enable and set some radio remote control's functions that may have impacts on the risk assessment related to the radio remote control.

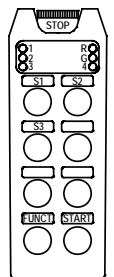
Information provided in this manual cannot be used and performed by people who are not competent and responsible for this matter.

Those who use this information must have been trained about the radio remote control and its risks by Autec's personnell or by people authorized by Autec.

Autec srl cannot be held liable for responsibilities resulting from the modification of these functionalities.

## AIR SERIES

## BACK-UP UNIT (with PAIR 2.0)





# General Section

## General instructions

This manual aims at providing information to enable, disable and modify the features of Autec Air series' radio remote controls.

This manual and the "user manual" need to be fully read and understood by those who decide upon and/or modify the radio remote control's features.

Contact Autec if any of the instructions and/or warnings provided in this manual are not clear.

No part of this manual may be reproduced, in any form or by any means, without written permission of Autec (including recording and photocopying).

All operations described in this manual must be carried out by qualified technicians who are suitably trained with respect to the relevant norms and laws.

As for instructions and warnings regarding the machine where the radio remote control is to be installed, follow the instructions given in the machine's manual.

## Symbol conventions

This manual contains two symbols that highlight special indications.

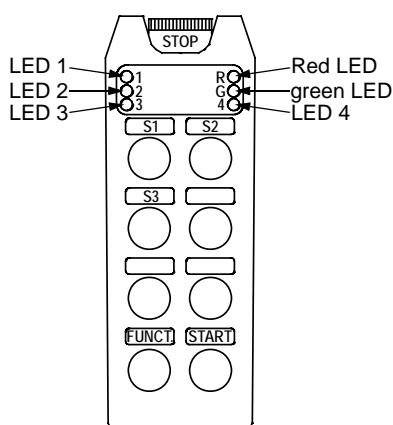


This symbol marks all extremely important indications and information: if they are not respected, this may result in critical danger for people or property.



This symbol identifies all texts in the manual that shall be read carefully.

## Caption



| Signals |                                       |
|---------|---------------------------------------|
|         | LED is off                            |
|         | LED blinks once in a second           |
|         | LED blinks twice in a second          |
|         | LED blinks three times in a second    |
|         | LED is steady on                      |
|         | LED repeats 1 blink and an off phase  |
|         | LED repeats 2 blinks and an off phase |
|         | LED repeats 3 blinks and an off phase |
|         | LED repeats 4 blinks and an off phase |
|         | LED repeats 5 blinks and an off phase |

| Pushbuttons |                                  |
|-------------|----------------------------------|
|             | pushbutton is released           |
|             | pushbutton pressed to first step |
|             | pushbutton is pressed            |

## **BACK-UP UNIT (with PAIR 2.0)**

In radio remote controls consisting of one transmitting unit and one receiving unit, when the transmitting unit cannot be used any more it is possible to replace it with a back-up unit by performing the PAIR 2.0. procedure  
The back-up transmitting unit is identical to the radio remote control's transmitting unit.  
The back-up unit is marked with a label on the battery cover reading "BACK-UP UNIT".

The PAIR 2.0 procedure is used to match a transmitting unit with a receiving unit.

**The PAIR 2.0 procedure can only be performed if the radio remote control's transmitting unit cannot be used any more (being broken, lost, damaged), that is to say, only in case of maintenance or replacement.**










**WARNING This procedure can only be used for radio remote controls consisting of a transmitting unit and a receiving unit. This procedure cannot be used to share the control of a receiving unit among different transmitting units: if it is used for that purpose, the machine where the radio remote control is used will result non-compliant (ref. IEC 60204-1 and IEC 60204-32).**

Depending on the application and on the working environment where the radio remote control works, a transmitting unit can be paired with a receiving unit by performing one of these two procedures:

- PAIR 2.0 DIP: procedure that requires the opening of the receiving unit
- PAIR 2.0 SERIAL: procedure that implies entering the "SERIAL N." and does not require the opening of the receiving unit.

## Warnings

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-  **Specific competence and caution are required to carry out the PAIR 2.0 procedure: only those who are aware of risks deriving from the use of the system “machine + radio remote control” can perform this procedure.**
- WARNING**  **As required by standards IEC 60204-1 (§9.2.7.4) and IEC 60204-32 (§9.2.7.5), the PAIR 2.0 procedure ensures that one single transmitting unit is enabled to control the machine at a specific moment. Hence, a receiving unit can only be controlled by the last transmitting unit that performed the PAIR procedure. After performing the PAIR procedure, the transmitting unit that was previously paired cannot control the machine any more.**
- WARNING**  **Before pairing the back-up unit with a receiving unit, those who perform the PAIR 2.0 procedure must do the following:**
- store the transmitting unit to be replaced in an inaccessible place
  - inform all persons involved that this unit cannot control the machine any more.
- This way, operators won't have doubts on which unit is to be used.**
- WARNING**  **If the output dedicated to the machine's horn, siren or blinker is used for another command, due to application's and/or functional reasons, it is not possible to perform the PAIR 2.0 SERIAL procedure, because it would not be possible to verify the correct pairing. To perform the PAIR 2.0 DIP procedure, do the following:**
- WARNING**  **As required by standard IEC 60204-32, each radio remote control is uniquely identified through a serial number (“SERIAL N.”). The “SERIAL N.” is provided in the identification plate in the two units that compose the radio remote control. For this reason, in case of replacement move the battery cover from the replaced transmitting unit to the back-up unit, so that the transmitting unit shows the same “SERIAL N.” as the paired receiving unit. Autec cannot be held liable if the battery cover, where the “SERIAL N.” is reported, is not moved to the back-up unit.**
-  **If it were not possible to use the battery cover of the replaced transmitting unit or if the identification plate were damaged and/or not readable, write the “SERIAL N.” indelibly. If it were not possible to use the battery cover of the replaced transmitting unit or if the identification and technical data plates were damaged and/or not readable, contact Autec.**
- WARNING**  **After performing the PAIR procedure, test the system “machine+radio remote control” and make sure that the back-up unit is paired with the right receiving unit. Also make sure that the commands sent correctly match with the actions performed by the machine (in particular the STOP command).**


## Introduction to the PAIR 2.0 procedure


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The PAIR procedure is used to match a transmitting unit with a receiving unit.

Before performing the PAIR 2.0 procedure, do the following:

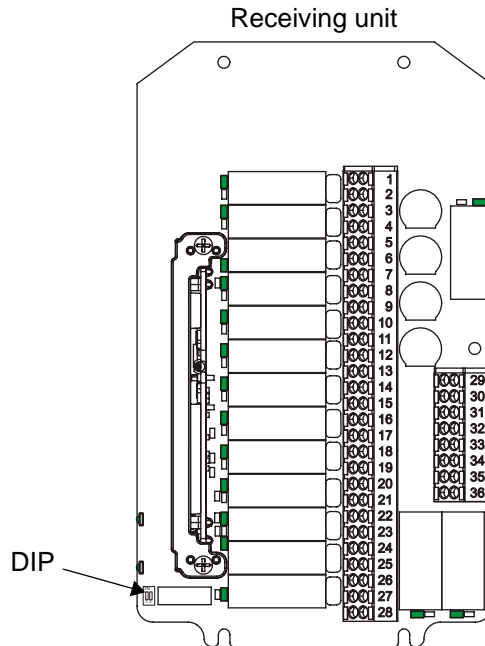
- In the data sheet related to the receiving unit you want to pair, look up the “PAIR” section under “FACTORY SETTINGS” and check that it reads “2.0”.
- Make sure that the transmitting unit has not already been paired with any receiving unit; in case it is, perform the UNPAIR procedure (see the document “Menu of Transmitting Unit (MTU)”, which is also available in Autec's website).
- Make sure that the transmitting unit is set on the same frequency band as the receiving unit. The frequency band is selected by DIP 1 on the transmitting unit's battery housing and DIP 1 on the receiving unit. These DIPs shall be set in the same way.

 With the PAIR procedure, PIN START UP, PIN CODE and SWITCH OFF are restored to factory settings. If those settings have been modified (as recorded in the technical data sheet), restore them as shown in the document “Menu of Transmitting Unit (MTU)”, which is also available in Autec's website.

 A single transmitting unit can be paired endless times with the same receiving unit, whereas each receiving unit can be paired with up to 15 different transmitting units.

**PAIR 2.0 DIP**

The PAIR 2.0 DIP procedure uses DIP setting in the receiving unit; this aims at defining the beginning and end of the procedure. This way the possibility of pairing the unit with an undesired receiving unit is avoided.

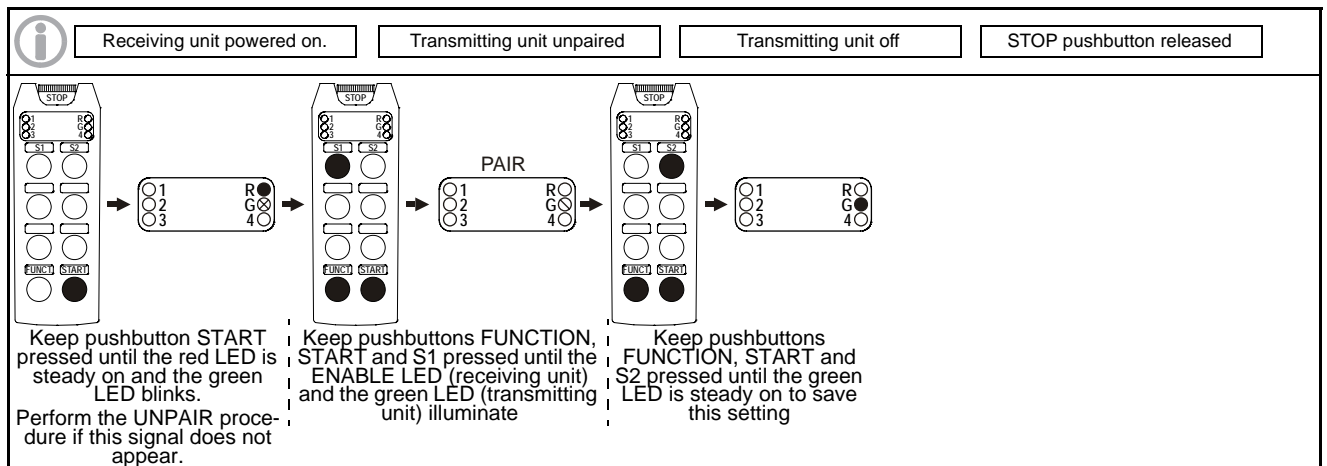


To perform the PAIR 2.0 DIP procedure, do the following:

1. Remove power from the receiving unit and wait until the POWER LED switches off.
2. Open the receiving unit and set DIP switch 2 on the mother board to ON.



3. Close the receiving unit and power it (POWER LED on).
4. Within 2 minutes after powering the receiving unit, perform the following actions with the transmitting unit unpaired and switched off, and the STOP pushbutton not activated.



5. Remove power from the receiving unit and wait until the POWER LED switches off.
6. Open the receiving unit and set DIP switch 2 on the mother board to OFF.



7. Close the receiving unit.
8. Make sure that the transmitting unit is paired with the desired receiving unit (see page9).

## PAIR 2.0 SERIAL

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The PAIR 2.0 SERIAL procedure saves in the transmitting unit the "SERIAL N." of the receiving unit you want to pair. This way the possibility of pairing the unit with an undesired receiving unit is avoided, without the need to open the receiving unit.



**WARNING** The pairing may occur even when the transmitting unit is placed in enclosed spaces or is out of sight (e.g. the transmitting unit and receiving unit are not in the same working environment or are separated by walls). Therefore, do not perform this procedure if the receiving unit is out of sight, as it is important to follow the correctness of the pairing step by step.



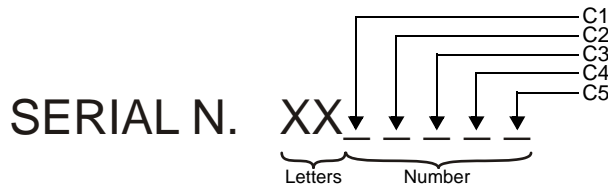
**WARNING** Pay particular attention when entering the "SERIAL N.". If a wrong "SERIAL N." is entered, the transmitting unit may get paired with an undesired receiving unit if this is in its working range (even though the pairing in this case has very low probabilities to happen).

To perform the PAIR 2.0 SERIAL procedure, do the following:

1. Note down the "SERIAL N." corresponding to the receiving unit you want to use for the PAIR procedure (see page 6).
2. Save the number (excluding the first two letters) that forms the "SERIAL N." in the transmitting unit (see page 6).
3. Make sure that the number is correct (see page 7).
4. Pair the transmitting unit with the desired receiving unit (see page 8).
5. Make sure that the transmitting unit is paired with the desired receiving unit (see page 9).

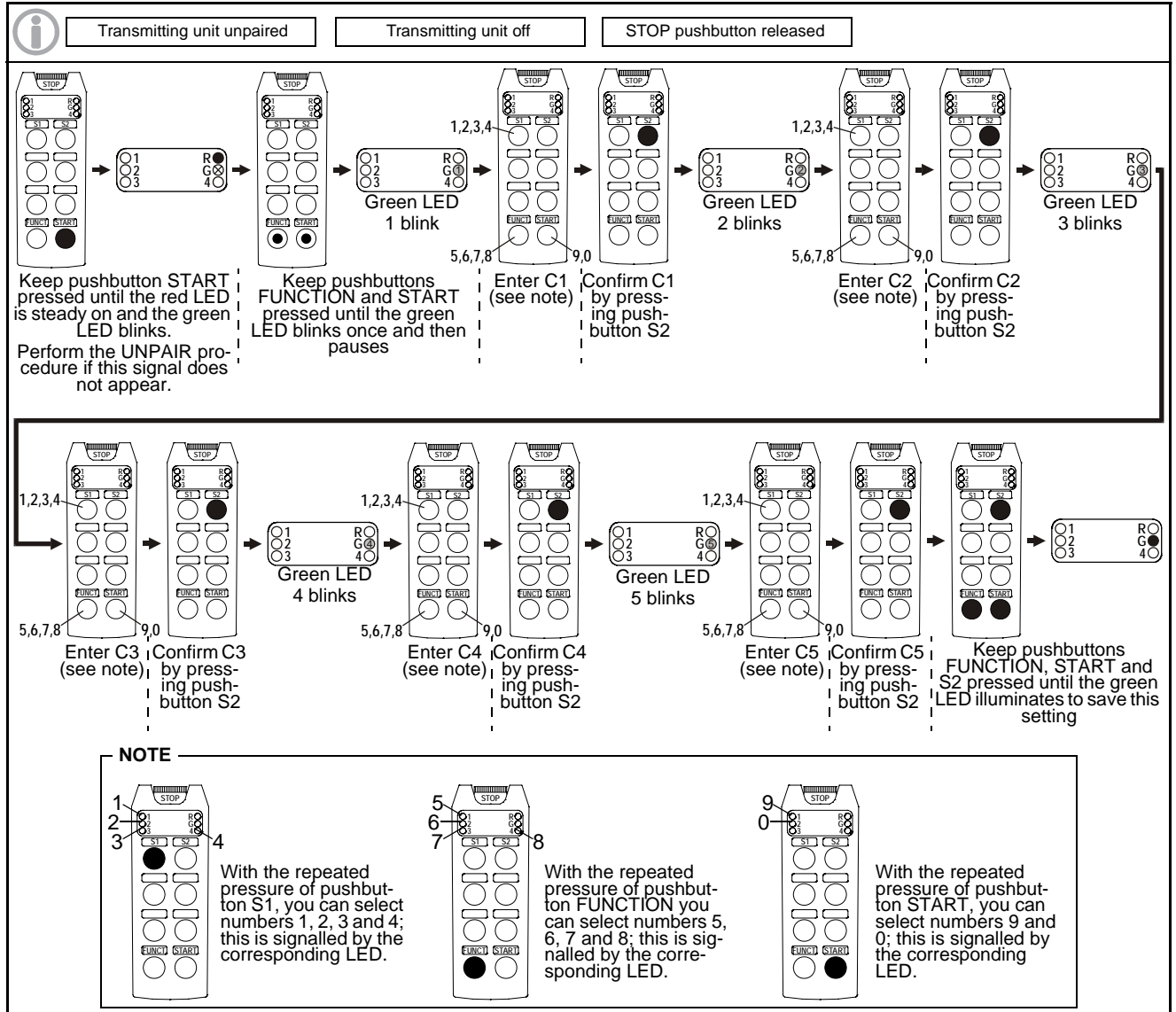
**Finding the "SERIAL N."**

The "SERIAL N." is present on the identification plate (or in the address key) of the receiving unit you want to pair.



**Saving the "SERIAL N."**

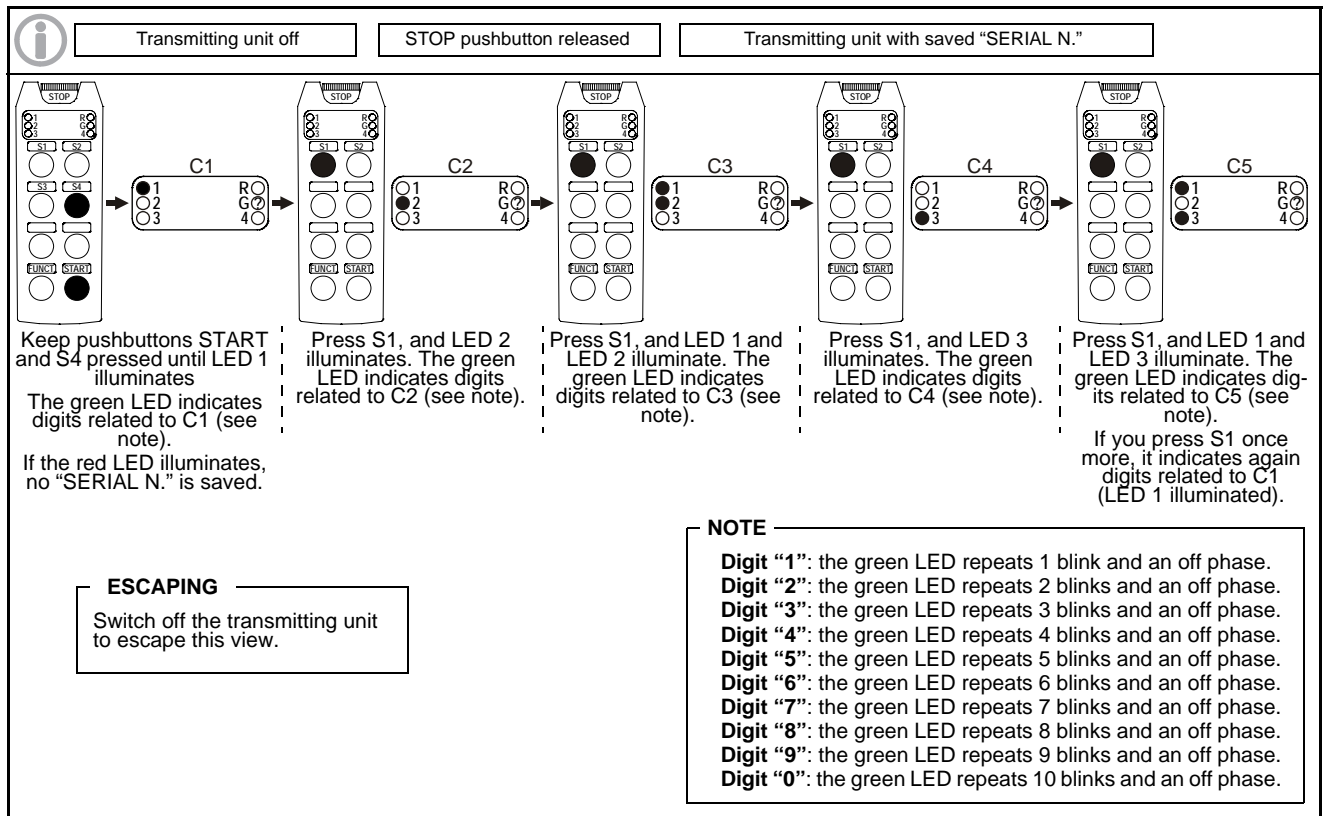
To save the number that forms the "SERIAL N." in the transmitting unit, perform the following procedure with the transmitting unit unpaired, switched off and with the STOP pushbutton released.





**Checking the “SERIAL N.” saved in the transmitting unit**


Perform the following procedure with the STOP pushbutton not activated to check the number saved in the transmitting unit.



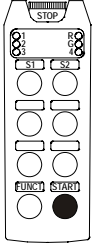
**Pairing the units**

Once the "SERIAL N." has been saved and checked in the transmitting unit, it is possible to complete the pairing procedure as described hereafter.

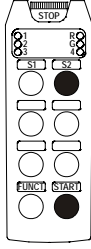
1. Remove power from the receiving unit and wait until the POWER LED switches off.
2. Power on the receiving unit (LED POWER on).
3. Within 2 minutes after powering the receiving unit, perform the following actions with the transmitting unit unpaired, switched off, with "SERIAL N." saved and the STOP pushbutton not activated.

|   |  |  |
|---|--|--|
|  | <div style="border: 1px solid black; padding: 2px; margin-bottom: 2px;">Receiving unit powered on.</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 2px;">Transmitting unit unpaired</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 2px;">Transmitting unit with saved "SERIAL N."</div> |  |
|   | <div style="border: 1px solid black; padding: 2px; margin-bottom: 2px;">Transmitting unit off</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 2px;">STOP pushbutton released</div>   |  |




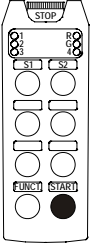
Keep pushbutton START pressed until the red LED is steady on and the green LED blinks.  
Perform the UNPAIR procedure and save the "SERIAL N." again if this signal does not appear.



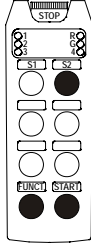
Keep pushbuttons START and S2 pressed until the ENABLE LED (receiving unit) and the green LED (transmitting unit) illuminate  
The POWER LED then switches on

PAIR






Keep the START pushbutton pressed (see machine's confirmation)



Keep pushbuttons FUNCTION, START and S2 pressed until the green LED illuminates to save this setting.


**Machine maintenance**

 **WARNING** When the START pushbutton is pressed, the related output on the receiving unit commutes. The signal (e.g. visual or acoustic) enabled by this output allows to verify that the transmitting unit is paired with the desired receiving unit.

if the transmitting unit does not result paired with the desired receiving unit, switch off the transmitting unit without saving the settings and without saving the correct "SERIAL N."

**Checking pairing**

To make sure that the transmitting unit is paired with the desired receiving unit, start up the radio remote control and check LED signals in the transmitting unit and the ENABLE LED signal in the receiving unit.

| Transmitting unit                           | Receiving unit         | PAIRING   |  |
|---|------------------------|---|--|
| The green LED blinks slowly.                | The ENABLE LED is off. | <b>WRONG</b><br><br><b>WARNING</b> | The transmitting unit has been paired with an undesired receiving unit because a wrong "SERIAL N." has been saved.<br><br><b>This situation is highly dangerous, so immediately press the STOP pushbutton<sup>a</sup>.</b> |
| The green LED blinks.<br>The red LED is on. | The ENABLE LED is off. | <b>FAILED</b>   | The transmitting unit has not been paired with any receiving unit. You need to repeat the PAIR 2.0 procedure.  |
| The green LED blinks slowly.                | The ENABLE LED blinks. | <b>SUCCEEDED</b>  | The transmitting unit has been paired with the desired receiving unit.   |

- a. If the transmitting unit is paired with a receiving unit that is not the desired one, do the following:
- 1 restore the receiving unit that has been paired by mistake: perform the UNPAIR (this procedure deletes the "SERIAL N." that has previously been saved); then perform the PAIR procedure with the transmitting unit that was originally paired with this receiving unit;
  - 2 finally perform the UNPAIR procedure and repeat the PAIR 2.0 procedure with the desired transmitting unit.

