

# FLEX

2/4 - CHANNEL RADIO RECEIVER

installation and service manual

v.1.0



cloud FLEX



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## 1. General information

FLEX868 receiver belongs to the group of radio remote control devices where the complimentary protocol with the IRS 104 bit encryption is used for the communication. In the series of devices marked DTM868MHz, additionally a frequency of a radio signal of 868 MHz was applied. This solution increases the reliability of the range in places with high-intensity of noises and in bigger centres of devices working in commonly used 433MHz frequency. FSK modulation applied along with the intelligent algorithm of the adaptation of radio circumferences of the transmitter and the receiver ensures even better noise immunity. Solutions used are a guarantor of the noticeable lack of worsening radio parameters associated with interferences of mobile phones and GSM base transceiver stations.

FLEX868 receiver (fig.1) is a 2/4 channel device intended for the cooperation with elements of gate and building automation. Thanks to the FLEX868 receiver it is possible to extend the functionality of gate and other automation installations for the function of remote control in the simplest manner. Different possible modes of output channels give huge flexibility and allow to adjust to the conditions of the majority of installations. The receiver cooperates with remotes of DTM868MHz series.

This receiver is the improved version of the MAX receiver. Strong emphasis was put for improving the functionality through the following:

- remote control using the integration in so called Cloud – optional WL module necessary;
- possibility to register the events in the off-line mode;
- increasing the memory of the remotes;
- adding manual control output with the possibility to assign it to any output channels;
- enlarging the display to 4 digits –for easier menu operation;
- possibility to extend for 2 additional channels thanks to optional modules, load capacity from 1A or to 5A;
- possibility to upgrade the programme of the receiver – optional WL module necessary;
- usage of dedicated casing and possibilities of the installation with the use of distance pegs – e.g. in the casing of alarm switchboard.

Thanks to these changes it is currently the most advanced and expanded receiver in the offer of DTM System.

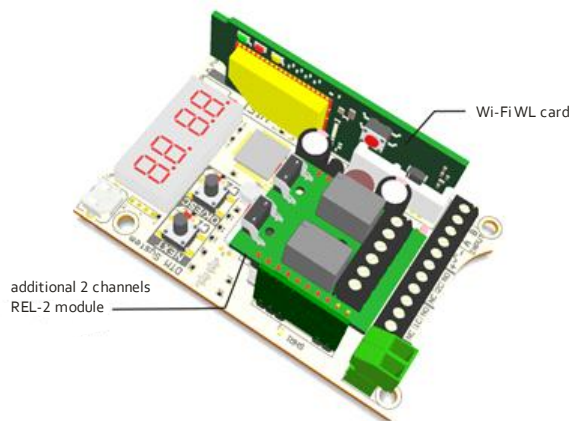


Fig. 1 FLEX868 view with optional module REL-2 and WL.

## 2. Technical parameters

- power supply: 12...24V AC/DC  $\pm 10\%$ ;
- power consumption 50mA;
- operational temperature:  $-20^{\circ}\text{C}$  do  $+55^{\circ}\text{C}$ ;
- memory capacity: 9 999 remotes, each with individual number;
- event memory capacity: 50 000 positions;
- manual control output to release receiver channels: programmed type (NO/NC), time of output breach (0...9s), possibility to assign any combination of outputs;
- relay outputs on the base board of the receiver (type / quantity / maximum load): NO or NC / 2 / 1A 24V AC or DC;
- optional 2 additional outputs – REL-2 or REL-2-PWR modules;
- optional Wi-Fi WL card module;
- outputs operational modes: monostable, bistable or pulse mode;
- output support time regulation in monostable mode: 0,1s to 6553,5s with 0,1s resolution;
- radio module: modern, digital, super heterodye with intelligent adaptation to external radio conditions ensuring reliability, repeatability and optional sensitivity;
- radio transmission security: 104-bit IRS;
- modulation type / frequency: FSK/868MHz;
- aerial output impedance:  $50\Omega$
- aerial: wire, clamps to connect external aerial, rod aerial on the casing optional;
- splash-proof (IP-54) plastic surface casing;
- openings in the receiver board are suitable for installation in buffer power supply unit casings;
- receiver memory: on the support;
- user interface: buttons and LED display;
- possibility to protect the access to the receiver menu with PIN code;
- real time clock with battery support for events registration;
- fast assigning of the remote button to the channel of the receiver;
- possibility to assign any remote button to any receiver channel;
- remote edition without its physical presence on the basis of its reference number;
- possibility to delete all memory;
- possibility to delete single remote;
- possibility to assign the remote without the access to receiver buttons: function of remote assigning of the remote control (in the radio range of the receiver); possible blockade of Remote assigning function
- function of transmitting the number of assigned remotes;
- security against accidental start with the use of the remote: double click of the remote button function
- function of copying the setting for the programmed remote: from Any other remote configured earlier.

### 3. Installation and operating mode

The receiver is delivered in the dedicated surface casing IP-54 tightness with the set of rubber glands (it is possible to apply screwed  $\varnothing 16\text{mm}$  glands). It is also possible to install the receiver directly in the casing of other device. For that purpose the board of the receiver has four assembly holes of the standard span. In this case distance pegs should be used (accessible as Option at the producer). At the site chosen for the installation, in order to achieve the optimum radio range, it is important to remember about:

- negative influence of electrical devices and metal elements in the neighbourhood of the receiver aerial ;
- negative influence of radio noise from other sources than the remote;
- negative influence of buildings, wet or reinforced concrete walls;
- shorter range with used battery of the remote;
- increased range with the higher location of the receiver aerial.

The receiver has screw clamp terminals for connecting to the wiring of steered automation (Fig.2). Power cords must be connected to clamps "+" and "-". Controlled devices should be connected to receiver outputs OUT1 and OUT2 and the button of the manual control to clamps A and B of the receiver.

A flexible rod aerial is connected to the aerial adaptor in the brand new receiver. In order to increase the range of the radio remote control it is possible to use the outside aerial with the use of a coaxial cable with the impedance  $50\Omega$ . The aerial coaxial cable should be connected to the clamp marked  $\Upsilon$  (centre vein of the cable) and to the clamp marked  $\text{|||||}$  (screen of the cable to mass of the arrangement). Optional it is possible to use the outside aerial fixed to the casing of the receiver.

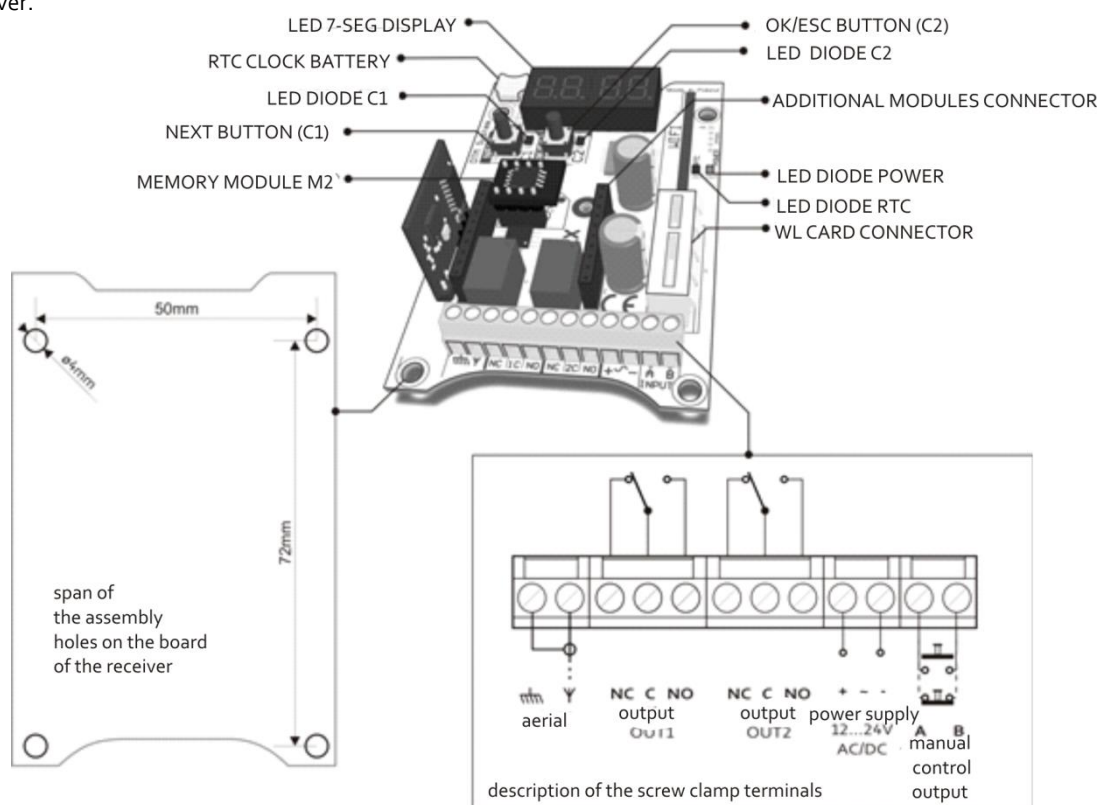


Fig. 2 View of the base board of the receiver with the description of extractions and main functional elements.

Connecting the power supply is indicated with lighting of the green POWER diode. While the device is working every activation of the C1/C2 output channel is signalled with switching on the C1/C2 diode. In the non active state the display is put out. At the triggering of receiver with radio transmitter (remote control), the number of the pressed remote button and its reference number appears on the display (Fig.3). In the case of triggering manual control output, an announcement 'Sr' appears. In case of some failures of the device the error codes appear on the display (see pt 10). Stopping of the receiver caused by performing internal operations e.g. formatting the memory of the receiver, is signalled with characteristic animation of wave on the display.

Manual control output ( screw clamps A and B) are used to connect pulse button and it enables manual activation of the receiver channels.



All works associated with connecting, installing and removing additional modules should be performed with disconnected power supply of the FLEX868 receiver.



Fig. 3 Exemplary view of the display after the usage of button number 2 in the remote number 0006.

#### 4. Simple assigning /removing of the remote

Proste dopisywanie pilota do pamięci odbiornika jest alternatywą do zaawansowanego programowania poprzez menu odbiornika, w sytuacji prostych i małych instalacji.

W przypadku wykorzystania jednej z metod prostego dopisywania pilota, odbiornik umieści go w swojej pamięci na pierwszej wolnej pozycji.

##### 4.1. Fast assigning of the remote button to the channel of the receiver

To make work with the FLEX868 receiver easier fast assigning of the remote button to the channel of the receiver was introduced. With the use of C1/C2 button it is possible to assign the remote to the C1/C2 channel. This activity requires pressing and holding the button of C1/C2 channel for more than 5 sec (accordingly 'c1' and 'c2' are shown on the display) and pressing chosen button of the remote at this time (Fig.4).

The individual blockade of simple/remote assigning of the remote is switched off after the assigning.

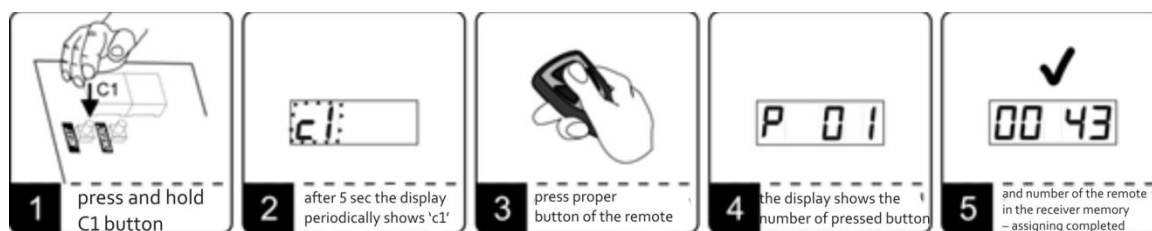


Fig. 4 The example of assigning button number 1 to the channel C1 of the receiver with the help of C1 buttons.



In the receiver equipped in optional REL-2/REL-2-PWR module assigning/removing the remote to the channels C3/C4 is made similarly as for the channels C1/C2.

##### 4.2. Fast removing of the connection between the remote button and the channel of the receiver

To remove the connection between the remote button and C1 channel it is necessary to:

- press and hold C1 button for more than 5 sec;
- 'c1' is shown on the display;
- press the removed remote button;
- the connection between the remote and the channel is deleted.

Removing the remote button from the other channel of the receiver is made similarly as for the channel C1.



In the case of removing all connections of remote buttons and the channels of the receiver the remote is in the memory of the receiver on the set position all the time. To remove the remote from the receiver memory it is necessary to use UP function from the submenu of PP function (see pt.5.1.7).

##### 4.3. Remote assigning of the remote in the radio range of the receiver

This function allows to assign new remotes without the necessity of physical access to the receiver button. The condition of success is to be in the radio range of the receiver and to have remote assigned earlier. To assign the remote to the receiver memory it is necessary to:

- press and hold for about 15sec any button of the remote assigned earlier;
- in time no longer that 3 sec from releasing the remote button press and hold for about 15 sec any button on the remote which is to be assigned.



Fig. 5 Remote assigning of the remote in the radio range of the receiver.



Failed assigning of the remote can be caused by:



- low battery of any of the remotes;
- radio noise which could appear during the process of remote assigning;
- full memory of the receiver (attempt to assign 10.000<sup>th</sup> remote);
- different types of remotes used.

The remote after assigning inherits the settings of the old remote which took part in the assigning process. If the remote with admin function switched on was used then individual blockade of remote assigning is automatically switched on in the new remote.

### 5. Programming –receiver menu

Programming of the receiver uses NEXT and OK/ESC buttons and LED display (Fig.6). The button described on the receiver board as NEXT is used to move between the functions and when held longer – move between positions. OK/ESC button is used to enter the functions, accepting the values and when held longer – exit the function and resign from changes.

Receiver programme menu (Fig.7), has a tree structure consisting of main and second-rate options. The entry to the menu of the receiver takes place through pressing the NEXT button in the operating mode. Next pressing of the NEXT button causes the passage to next function. Pressing OK/ESC button causes entering the given function



Alt A remote management through the Wi-fi WL card (Option) and web application CloudFlex (see pt 8) is an alternative option of the programming of the receiver

Main menu options (Fig.7):

- PP – programming of the remotes (adding, removing and copying of the remote, changes of the channels assigned to the buttons, individual blockade of the remote assigning of the remote);
- PC – programming of the channels of the receiver (monostable/bistable/ pulse mode, triple click, time of channel activation);
- LP – the number of remotes currently assigned to the receiver;
- bd – receiver access blockade – PIN code;
- bc – blockade of the remote assigning of the remotes;
- Sr – settings for manual control output;
- Et – ethernet network settings;
- Id – displaying the receiver identification;
- PF – restore factory settings.



#### LEGEND

- entering the function or accepting the value of the parameter – shortly press OK/ESC in the receiver
- moving in the receiver menu – shortly press NEXT in the receiver
- increasing the value of the parameter – shortly press OK/ESC in the receiver
- moving between the next positions on the LED display – press and hold NEXT button in the receiver
- return, withdrawal without changes – press and hold OK/ESC button in the receiver

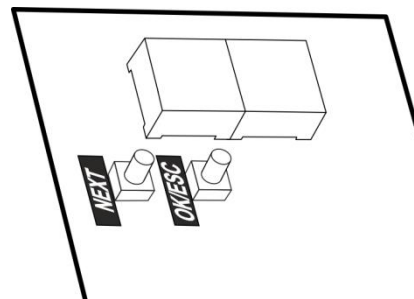


Fig. 6 View of receiver interface.

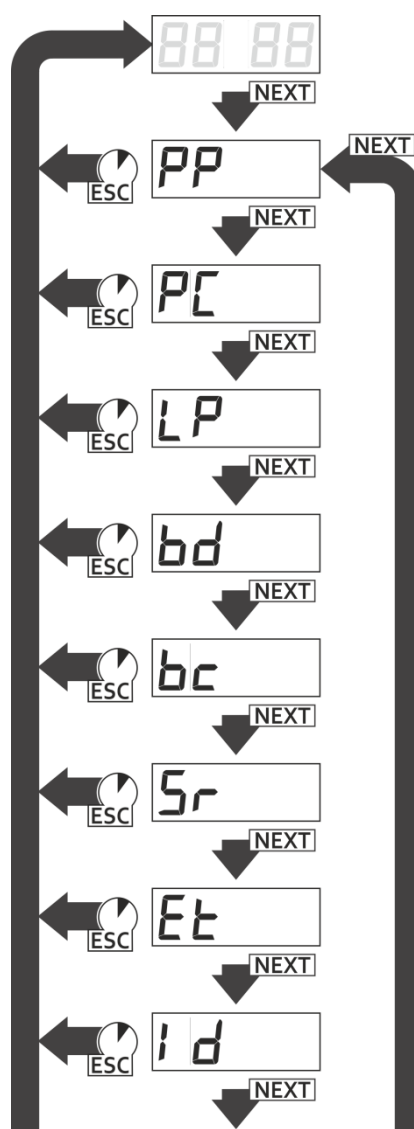


Fig. 7 Receiver main menu.

## 5.1. PP option – remote programming /edition

### 5.1.1. New remote programming

To add the remote to the receiver it is necessary to (Fig.8):

- while the display shows 'PP' press OK/ESC button of the receiver; the display shows 'PP-3';
- press the button of the remote which is to be assigned three times until 'PP-0' is shown on the display;
- press OK/ESC button to confirm; reference number of the remote is shown;
- press OK/ESC button again to confirm;
- At this time the remote assigned has factory settings:
  - button number 1 is assigned to the channel number 1;
  - button number 2 is assigned to the channel number 2;
  - button number 3 is assigned to the channel number 3 (needs REL-2/REL-2-PWR module installed);
  - button number 4 is assigned to the channel number 4 (needs REL-2/REL-2-PWR module installed);
  - individual blockade of remote assigning of the remote is switched off.

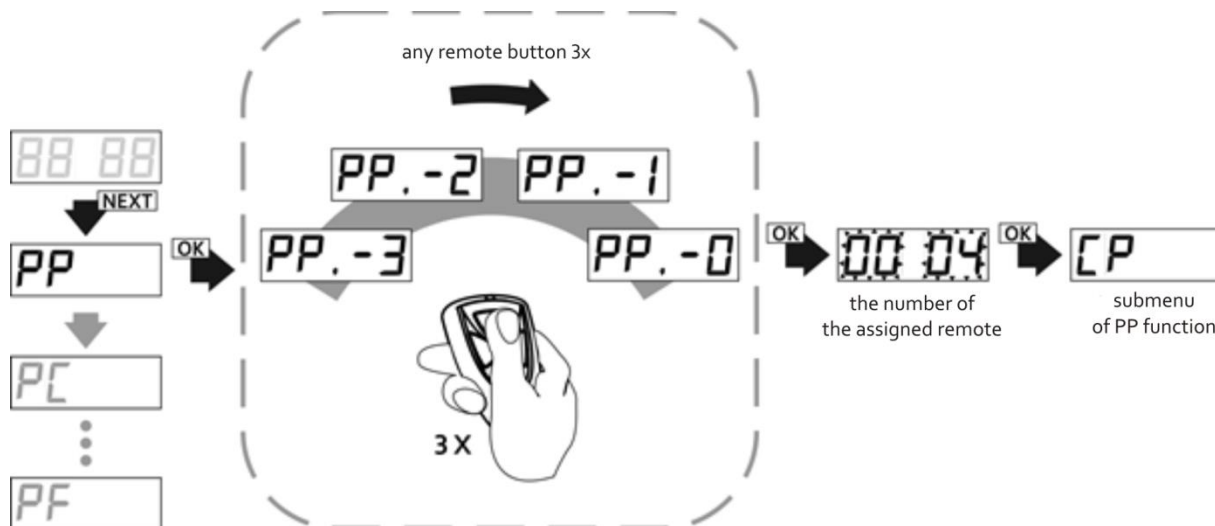


Fig. 8 Programming/declaring owned remote to edit with the use of PP function in the main menu of the receiver.



In the case of programming the remote with more buttons/channels it is necessary to pay attention to different numbering of the buttons/channels of the remote assigned to the channels of the receiver.

After assigning the new remote we are in PP sub option which allows to::

- CP – copying of the remote settings to the other remote in the memory of the receiver. Its number should be given during the process;
- Pn – association of the channels with the remote buttons;
- bc - blockade/admin blockade of remote assigning of the remote (individual for given remote);
- UP – removing of the edited remote.

If we want to return to the main menu or to operating mode we must press and hold accordingly one or two times OK/ESC button.

### 5.1.2. Owned remote edition

To conduct owned remote edition it is necessary to (Fig.8):

- with the display showing 'PP' PRESS OK/ESC button of the receiver; the display shows 'PP-3';
- 3 times press the button of the remote to be edited until 'PP-0' is shown;
- press OK/ESC button to confirm, remote reference number is shown;
- press OK/ESC button of the receiver to confirm;

At this time we are in sub options of PP function (see pt. 5.1.4-5.1.6).

### 5.1.3. Remote control edition without its physical presence

To conduct remote control edition without its physical presence it is (Fig.9):

- when the display shows 'PP', press OK/ESC button of the receiver, the display shows 'PP-3';
- press OK/ESC button again;
- the value '0000' is shown and the receiver waits for reference number of the remote which is to be edited; the number is entered with the use of the button NEXT;
- confirm the number of the remote with the OK/ESC button;

At this time we are in sub options of PP function (see pt. 5.1.4-5.1.6).

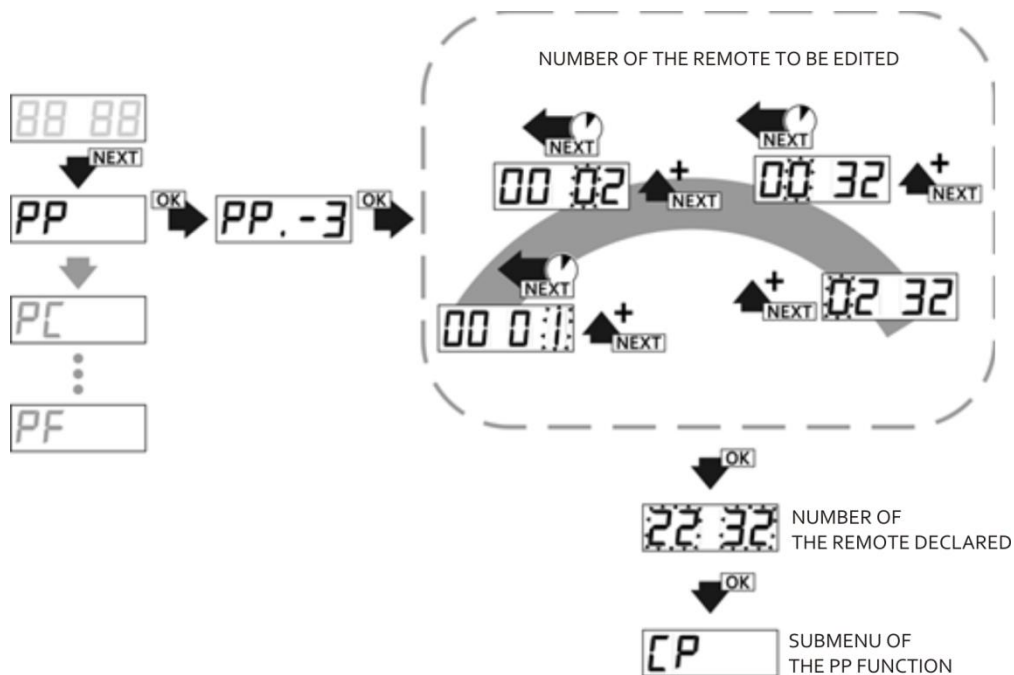


Fig. 9 Declaring the absent remote to be edited with the use of the function PP in the main menu.



It is necessary to have remotes evidence as in the example in pt. 11 to manage the remote without its physical presence.

### 5.1.4. CP option – copying of the remote settings from the other remote programmed earlier

Using the option of copying the settings from the other remote programmed earlier (Fig.10) significantly quickens the edition when more than one remote is supposed to have settings different from the factory settings. To copy the settings it is necessary to:

- when the display shows CP press OK/ESC button of the receiver;
- with the NEXT button set the number of the remote from which the settings are to be copied (short pressing enlarges the value, holding the button moves to the next position);
- press OK/ESC button – the remote edited gets the configuration of the buttons as the remote from set position;

Pressing and holding OK/ESC button of the receiver it is possible to return to the menu of the receiver.

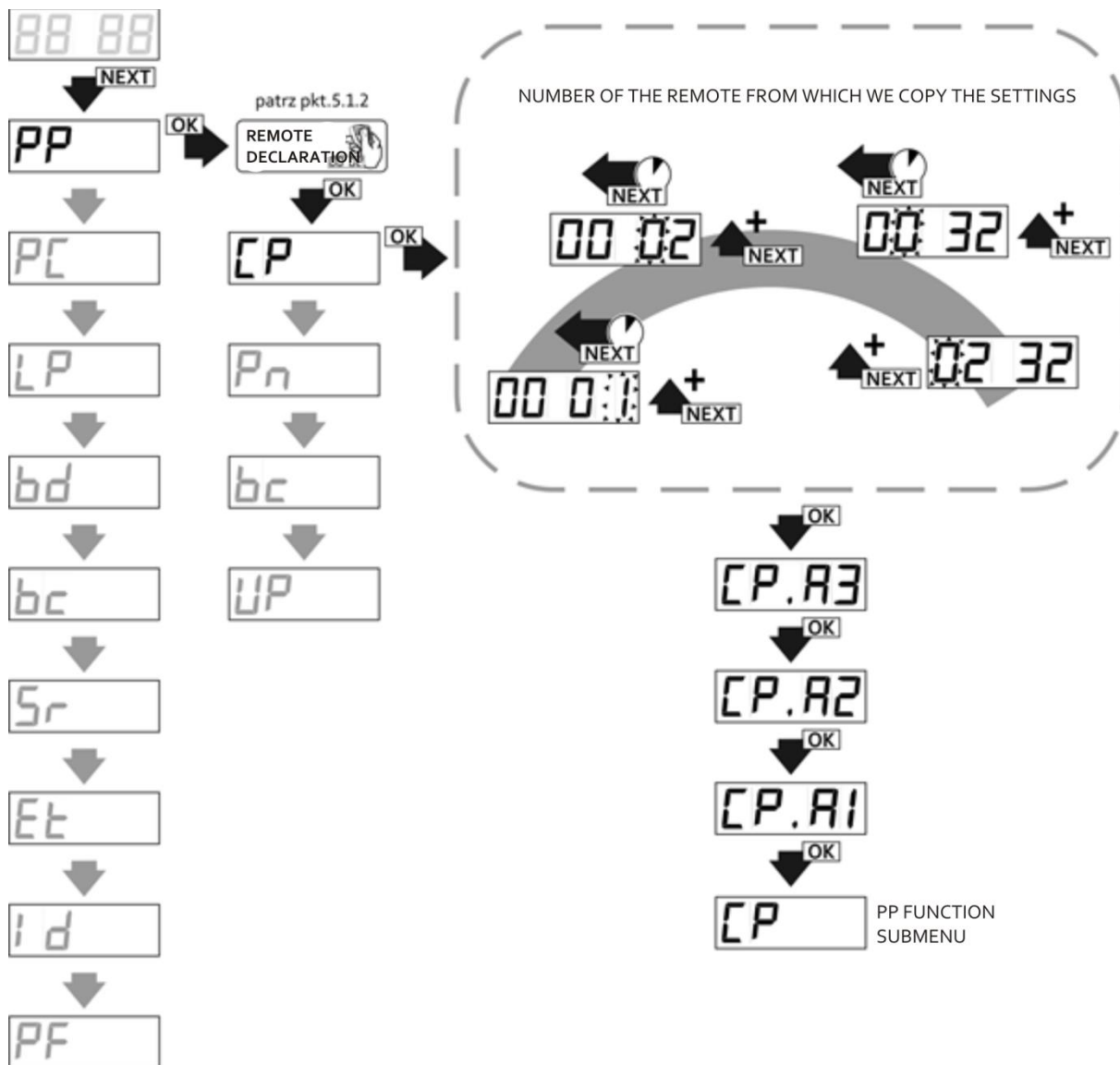


Fig. 10 Copying the settings of the remote with the function CP in submenu PP of the receiver.

### 5.1.5. Pn option – assigning of the receiver channels to the remote buttons

To change assigned channels to the buttons of the remote it is necessary to (Fig. 11):

- when in remote edition mode (PP) with NEXT button set Pn and press OK/ESC button – the number of the button to assign with the receiver channels is shown;
- when the display shows 'Pn.1', with NEXT button set the number of remote button (depending on the remote type the available number of buttons is different) and confirm with OK/ESC button;
- the receiver alternately shows the number of the receiver and the number given to assign with the channels of the receiver – confirm by pressing OK/ESC button
- the display shows 'Cn.Cx', where 'x' is a number of channel which is assigned with declared button, if declared button has to control the chosen channel with NEXT button we set "C" in front of the channel number ('Cn.Cx'), if the channel is not to be switched on we must set "\_" ('Cn.\_x'); the changes are done with NEXT button by pressing it longer;
- to accept it is necessary to press OK/ESC button shortly; the receiver returns to show the number of button 'Pn.', it is possible to change the number of edited button with the NEXT button and continue assigning the channels for further buttons or return to menu of PP sub option by pressing and holding OK/ESC button.

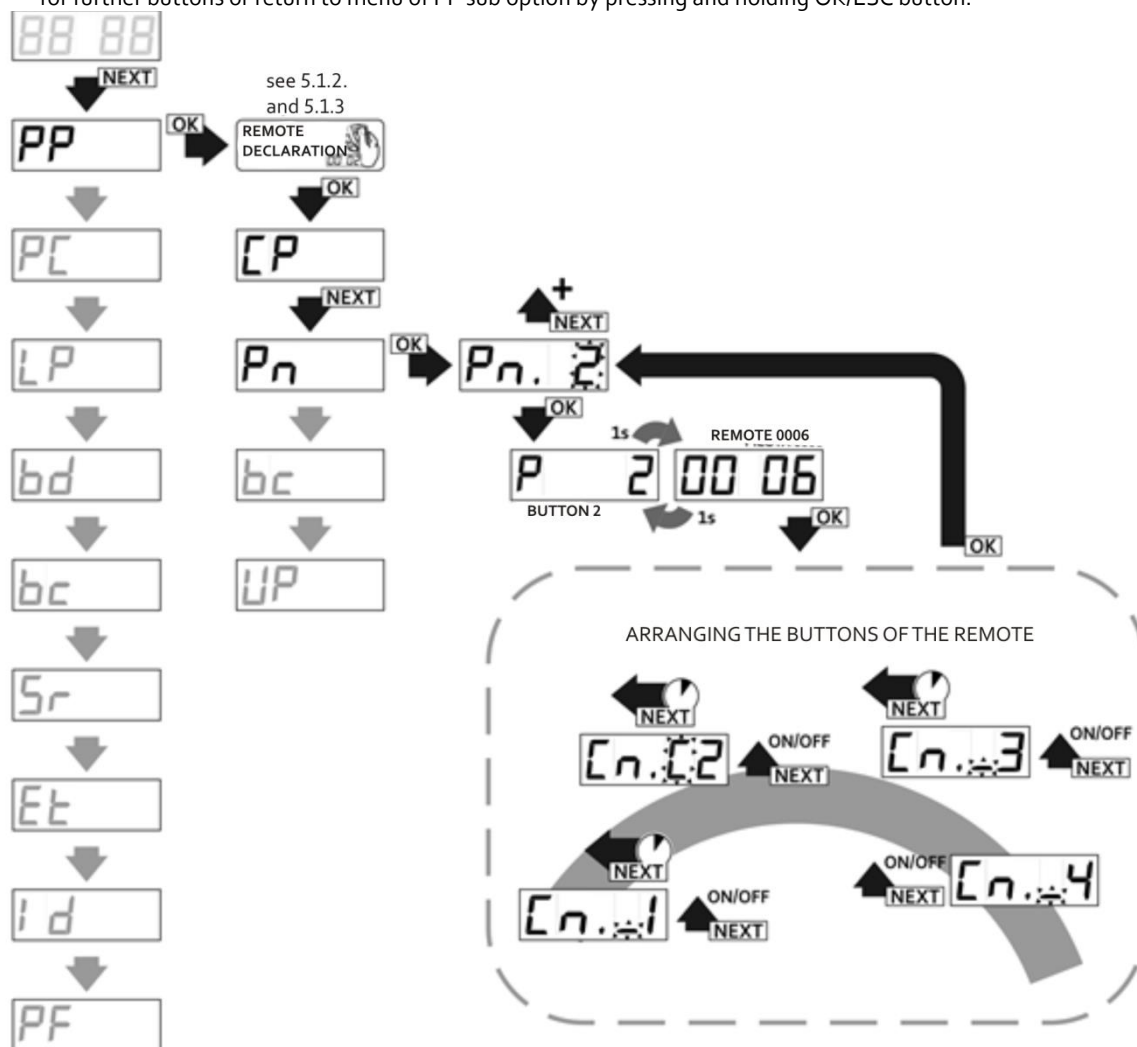


Fig. 11 Arranging the buttons of the remote to the channels of the receiver, Pn function in PP submenu of the receiver.

### 5.1.6. Bc option – individual blockade of remote assigning function

There are three possible settings of the blockade (Fig.12):

- bc.on – the remote doesn't have the possibility to take part in remote assigning process;
- bc.bA – admin blockade – all the remotes assigned remotely with the use of that remote have 'bc.on' function on automatically (they cannot be used to assign next remote controls remotely);
- bc.oF – no blockade – the remote can take part in remote assigning process of new remotes.

Default setting is 'bc.oF' option.

To change the settings of the blockade of remote assigning it is necessary to:

- in remote edition mode (PP) with NEXT button set bc option and press OK/ESC button of the receiver;
- with NEXT button set the necessary value of the parameter and press OK/ESC button of the receiver.

At any time it is possible to withdraw from the edition by pressing and holding OK./ESC button of the receiver.

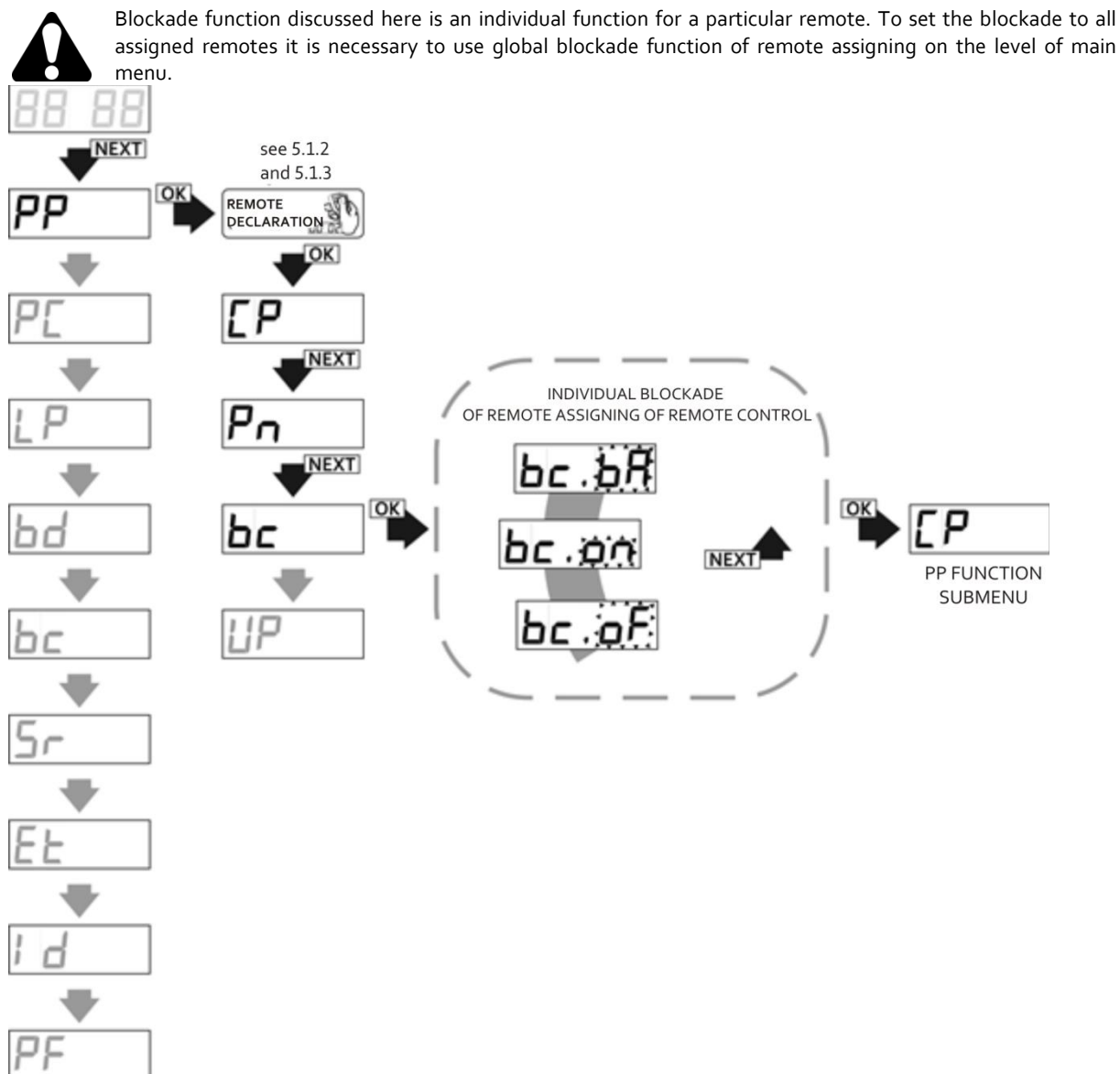


Fig. 12 Activating the individual blockade of remote assigning function of remote controls within the radio range of the receiver , bc function in the PP submenu of the receiver.

### 5.1.7. UP sub option – removing the remote from the receiver memory

To remove the remote from the receiver memory it is necessary to (Fig.13):

- when in edition mode of the remote (PP) with NEXT button set UP option and press OK/ESC button of the receiver;
- when the display shows 'UP.A3' press three times OK/ESC button of the receiver to confirm.



Reference number of removed remote left is attached to other remote entered in the future. Numbering of the rest of the remotes doesn't change.

In the case when the remote is to be switched off temporarily it is possible to keep the reference number of this remote in the receiver memory, switch off all the channels assigned to the buttons (P1...P4 options) instead of removing this remote completely from the receiver memory.

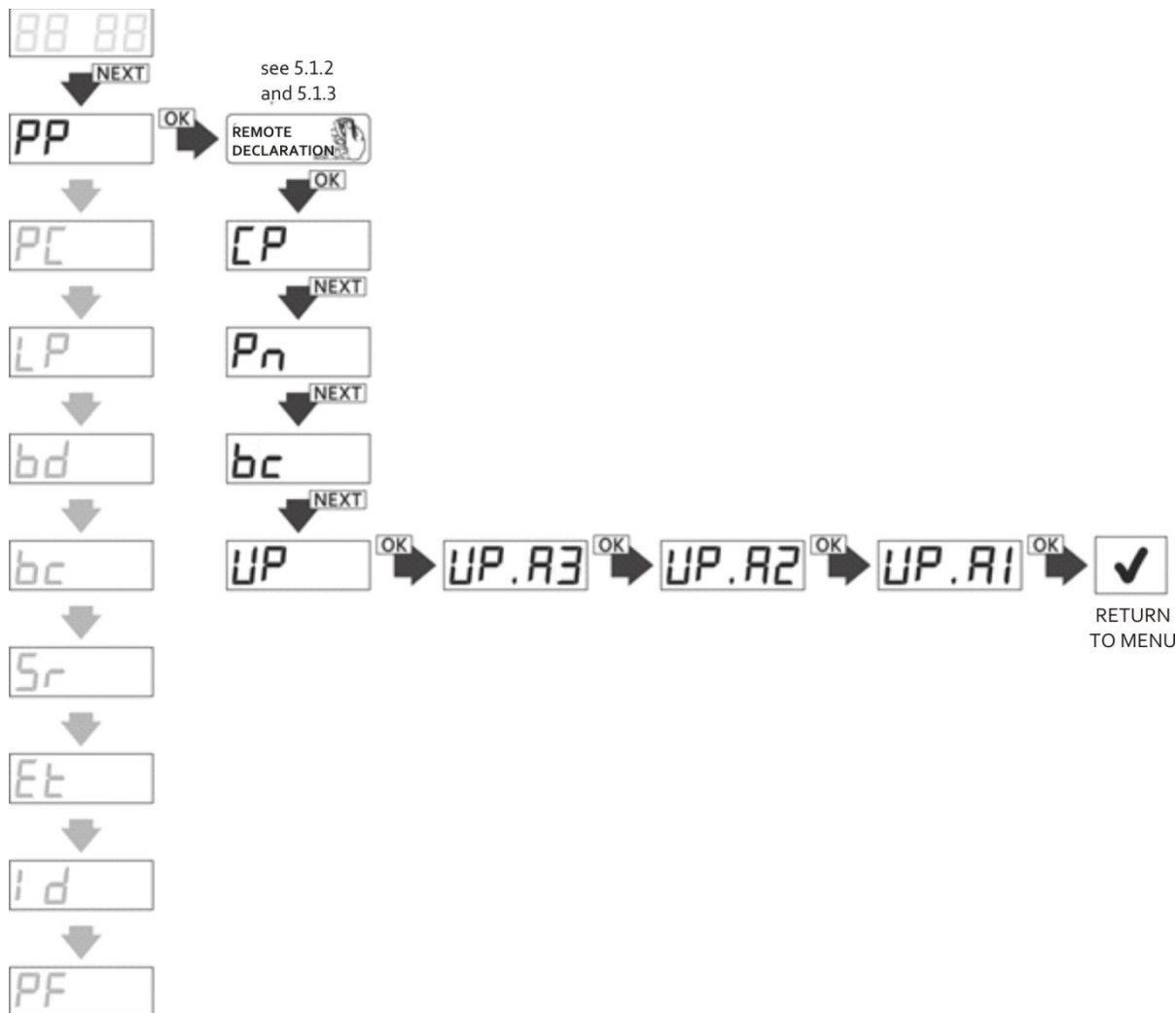


Fig. 13 Removing of declared remote, UP function in PP submenu of the receiver.

## 5.2. PC option –receiver channels programming

### 5.2.1. Bistable and monostable (connection time) programming mode

The time in monostable mode possible to set is between 0,1 sec to 6553,5 sec (about 110 min). The channel connection time can be changed with the resolution of 0,1 sec.

Setting the time 0sec causes the channel to operate in the bistable mode and setting the time bigger than zero switches on operation in monostable mode.

According to factory settings every channel has 0 000.5 – which is equal to 0,5 sec and operation in monostable mode.

To change the channel connection time it is necessary to (Fig. 14):

- in main menu with NEXT button choose PC option and press OK/ESC button of the receiver; the display shows 'PC.C1';

- with NEXT button choose needed channel and press OK./ESC button of the receiver;
- short pressing of NEXT button causes the change of value, long – change of digit edited; accept the time set by pressing OK/ESC button;

At any time it is possible to withdraw from the edition by pressing and holding OK./ESC button of the receiver.

If the channel given is set in the pulse mode '----' are shown. Setting the time causes automatic switching off of pulse mode.

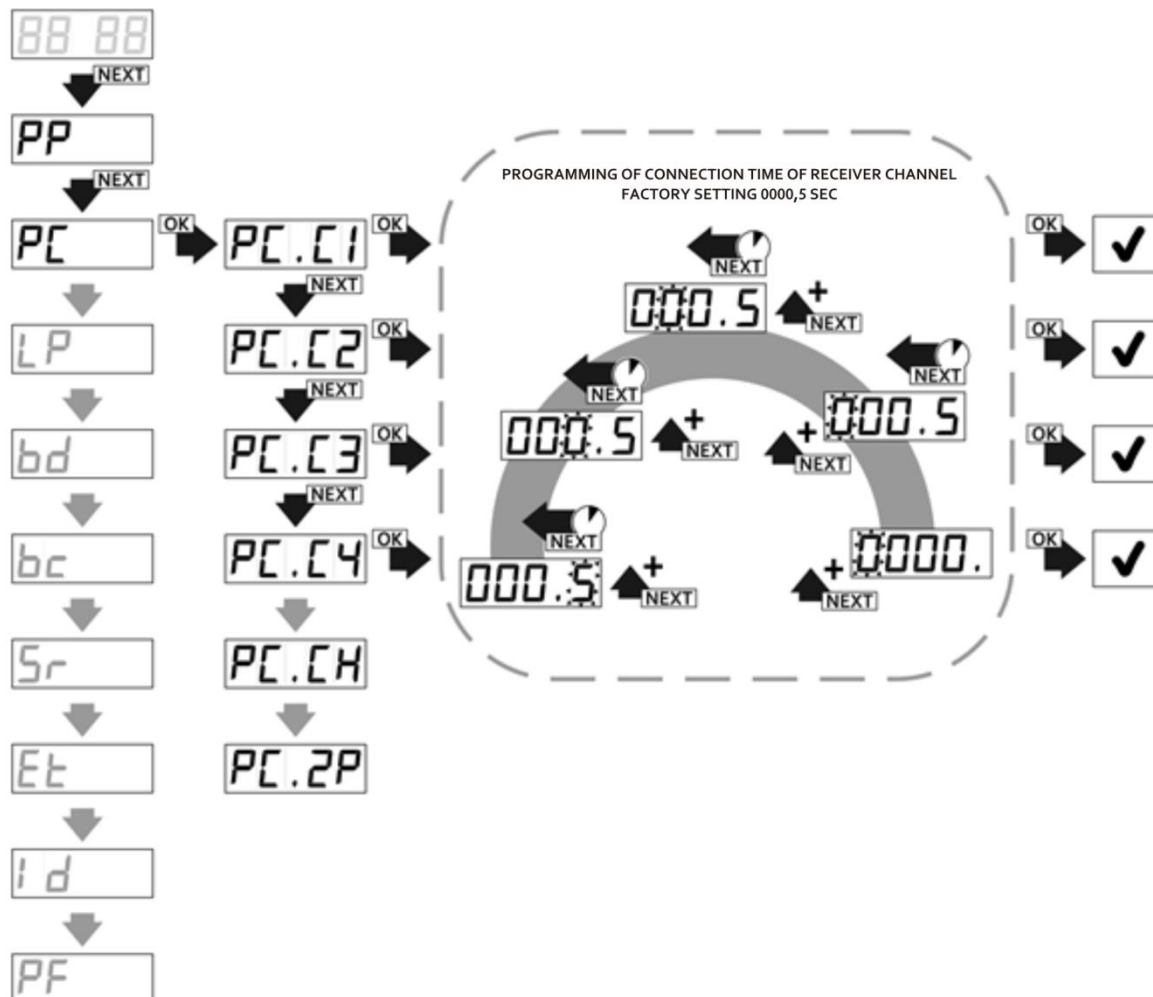


Fig. 14 Programming of monostable/bistable modes of receiver channels, PC.C1...4. function.



### 5.2.2. PC.CH – Pulse mode programming

Activating this function (Fig.15) causes setting the chosen channel into the pulse mode i.e. transmitter is activated for the time of pressing the button of the remote. In case of channel operating in pulse mode, one-time activating of the channel can take place to a maximum of 2 minutes. After this time the signal transmission from the remote is stopped to protect the battery. In order to continue the operating of the channel it is necessary to press the button of the remote again.

To activate pulse mode it is necessary to:

- in main menu with NEXT button choose PC option and press OK/ESC button of the receiver, the display shows 'PC.C1';
- with NEXT button choose PC.CH option and [press OK/ESC button];
- the display shows 'CH.Cx' where 'x' is a number of configured channel. If the channel is to operate in pulse mode it is necessary to set 'C' in front of the channel number (e.g. 'Cn.Cx' with the NEXT button), if the channel is not to operate in pulse mode it is necessary to set '-' ('CH.\_x'); the change of edited channel number is done with longer pressing of NEXT button.

At any time it is possible to withdraw from the edition by pressing and holding OK./ESC button of the receiver.

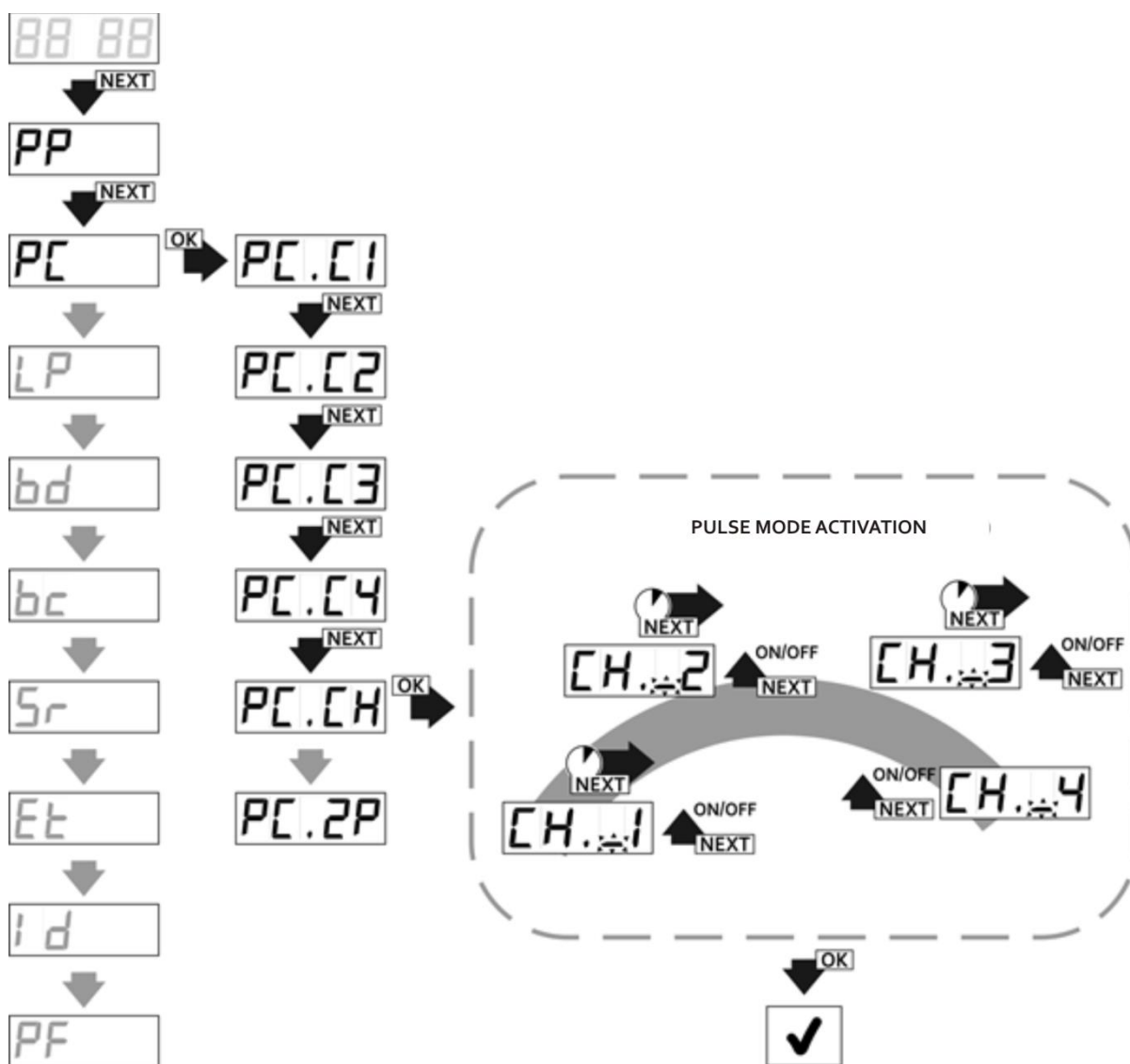


Fig. 15 Programming of pulse mode of receiver channels, PC.CH function in main menu of the receiver.

### 5.2.3. PC.2P – Double click function programming

Activating this function causes activation of the chosen channel only after second pressing the button in the remote what makes the probability of accidental triggering of the channel smaller. Second pressing of the button must take place in the time to 3 seconds after first pressing of the button.

To switch on the function of double click it is necessary to (Fig. 16):

- in main menu with NEXT button choose PC option and press OK/ESC button of the receiver;
- the display shows 'PC.C1';
- while in PC option with NEXT button choose PC.2P and OK/ESC button;
- the display shows '2P\_x' where 'x' is a channel number which is configured, if the channel is to have double click function switched on, with NEXT button set in front of the channel number "C" ('2P.Cx'), if the channel is not to have double click function switched on, set "\_" ('2P.\_x'); the change of edited channel number is done by longer pressing of NEXT button.

At any time it is possible to withdraw from the edition by pressing and holding OK./ESC button of the receiver.



This function concerns only radio receiver control. It does not concern control from the level of CloudFlex and V-remote applications.

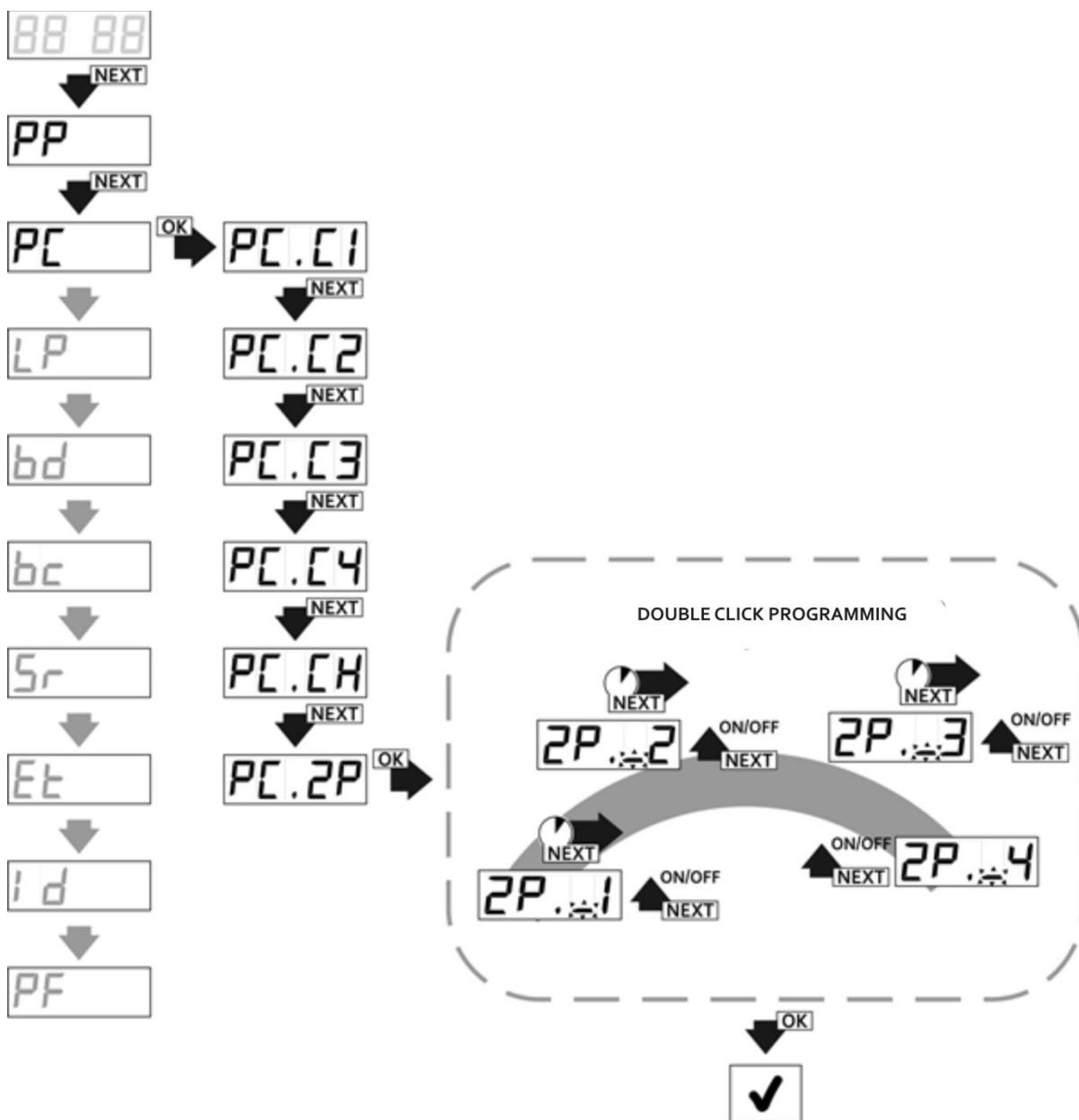


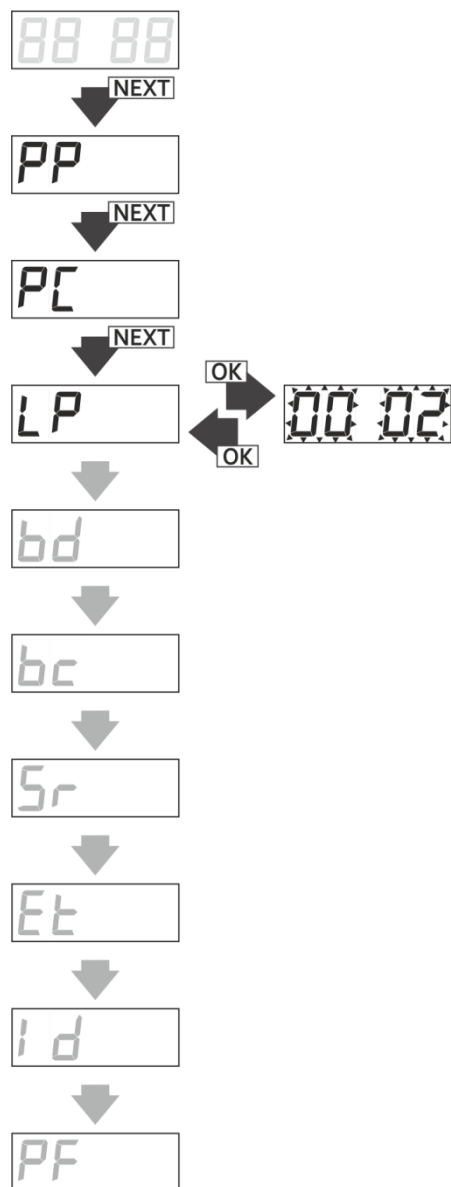
Fig. 16 Double click programming, PC.2P function in main menu of the receiver.

### 5.3. LP option –the number of remotes assigned to the receiver

LP option is to see the number of remotes assigned to the receiver.

To check the number of assigned remotes it is necessary to (Fig. 17):

- from main menu level with the NEXT button choose LP option and press OK/ESC button of the receiver;
- the number of programmed remotes is shown;
- to return to main menu press OK/ESC button.



**Fig. 17** Control of the number of remotes in the memory of the receiver, LP function in main menu of the receiver

#### 5.4. bd option – main menu access blockade of the receiver (PIN code)

bd option is used to set the main menu access blockade of the receiver. After activating the blockade every attempt to enter demands PIN code (Fig.18).

To switch on main menu access blockade of the receiver it is necessary to (Fig.19):

- from main menu with NEXT button choose bd option and press OK/ESC button of the receiver;
- with NEXT button set the value of parameter on 'on' and press OK/ESC button of the receiver;
- first digit of the PIN code blinks on the display;
- choose the value for the first digit of PIN code by pressing NEXT button
- press and hold NEXT button to edit next digit of PIN code;
- set the rest of the digits in the same manner;
- after entering the code press OK/ESC button of the receiver;;
- 'on' symbol starts to blink on the display;
- press OK/ESC button again to confirm PIN code;
- set identical PIN code again and accept with OK/ESC button;
- when the display shows 'on.A3', press OK/ESC button three times to accept the blockade with PIN number.

To switch off the blockade it is necessary to (Fig.20):

- from main menu with NEXT button choose bd option and press OK/ESC button of the receiver;
- with NEXT button set the value of parameter on 'of' and press OK/ESC button of the receiver;
- when the display shows 'bc.A3', press OK/ESC button three times

By pressing and holding OK/ESC button of the receiver it is possible to return to the menu.



**THE LOSS OF PIN CODE PERMANENTLY BLOCKS THE ACCESS TO THE MENU OF THE PROGRAMMENU. TO REMOVE THE ACCESS BLOCKADE REQUIRES THE INTERFERENCE IN EEPROM BY THE PRODUCER. It is possible to remove the blockade from the level of CloudFlex application (see pt.8)**

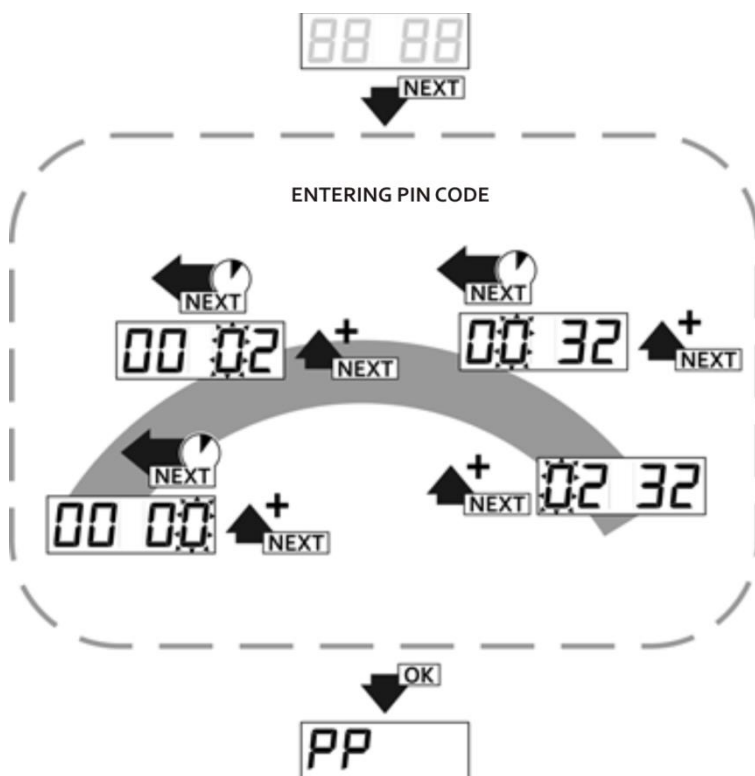


Fig. 18 Entering the main menu of the receiver secured with PIN code.

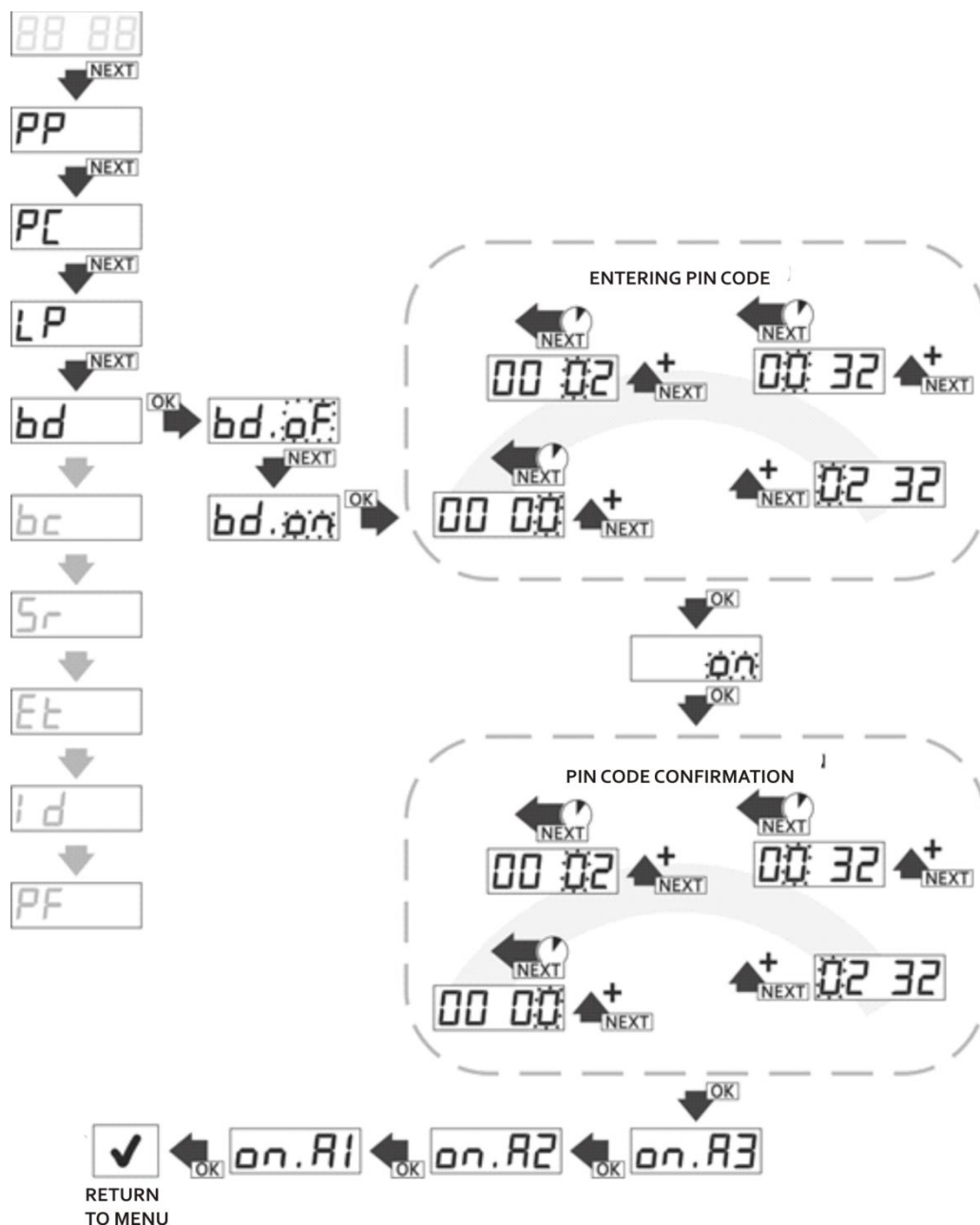


Fig. 19 Securing the menu of the receiver with PIN code, bd function in main menu of the receiver.

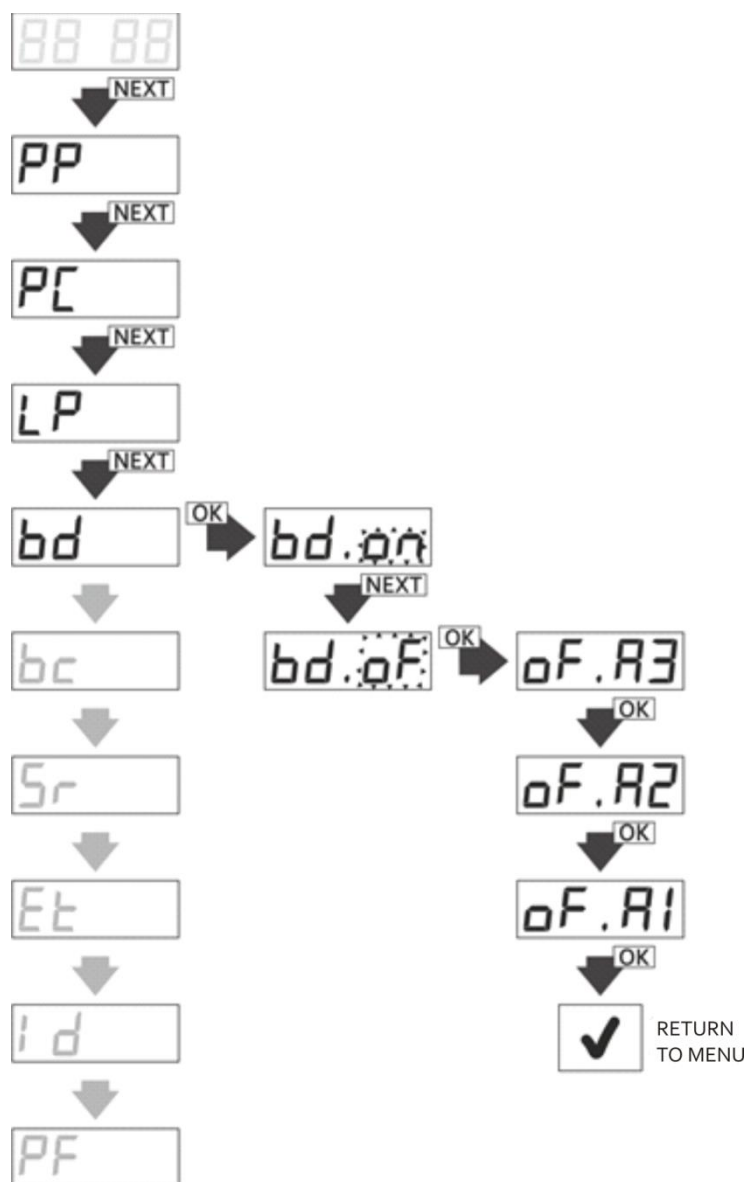


Fig. 20 Switching off the security code of main menu, bd function in main menu of the receiver.

### 5.5. bc option – global blockade of the remote assigning function

bc option in main menu is to block completely the remote assigning function in the receiver. To switch on/off the blockade it is necessary to (Fig.21):

- from main menu with NEXT button choose bc option and press OK/ESC button of the receiver;
- with NEXT button set 'on' – blockade activated or 'of' – blockade switched off and press OK/ESC button of the receiver

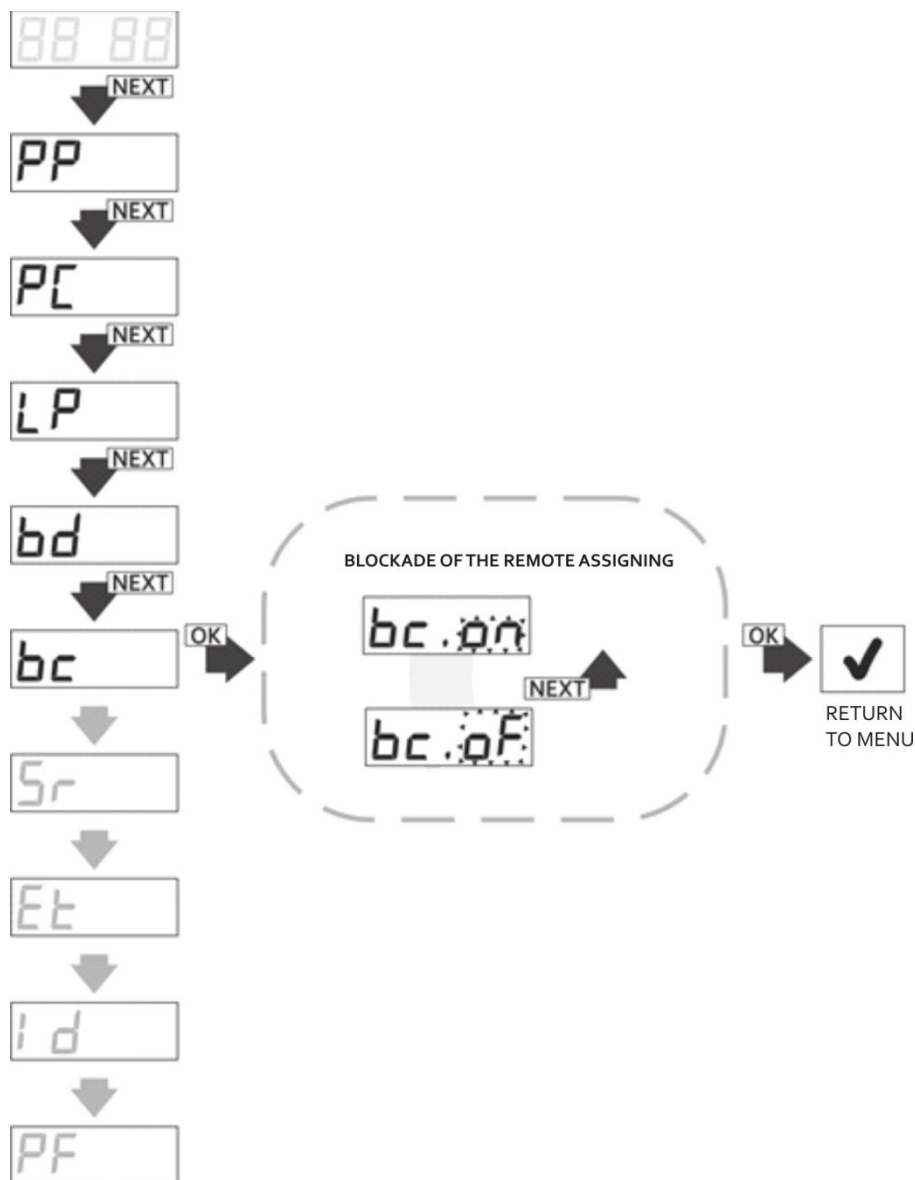


Fig. 21 Global blockade of the remote assigning function.



Switching on/off of the global 'bc' function does not influence the local settings of 'bc' function of the remotes. The setting is superior to remote assigning blockade set for individual remotes.

### 5.6. Sr option – settings for manual control output

FLEX868 receiver was equipped in manual control output (Fig.2). Output parameters which can be changed are:

- Sr.CA – assigning of the channels which are to be released with this output (there can be few at a time);
- Sr.In –output type - NO/NC;
- Sr.tl –time needed to breach for activation of the output.

To set the parameters of manual control output it is necessary to:

- from main menu with NEXT button choose Sr option and press OK/ESC button of the receiver; the display shows 'Sr.CA' (Fig.22);
- press OK/ESC button
- the display shows 'Sr\_x' where 'x' is a channel number assigned with manual control output, if the manual control output is to control the chosen channel with NEXT button we set in front of the channel number "C" ('Sr.Cx'), if the channel is not to be activated put "\_" ('Sr.\_x'); the change of edited channel number is done with NEXT button by its longer pressing;
- accept the channel configuration by pressing OK/ESC button
- with NEXT button go to 'Sr.In';
- press OK/ESC button the display shows 'In.no' (Fig.23);
- with NEXT button set demanded output type (NC type - 'In.nc', NO type - 'In.no'), accept by pressing OK/ESC button of the receiver
- with NEXT button go to Sr.tl function; with OK/ESC button enter the function – the display shows 'tl.0' (Fig.24);
- with NEXT button set demanded time in the range of 0...9s and accept with OK/ESC button;
- By pressing and holding OK/ESC button of the receiver it is possible to return to the menu.



The change of Sr.In parameter can result in immediate release of channel(s)



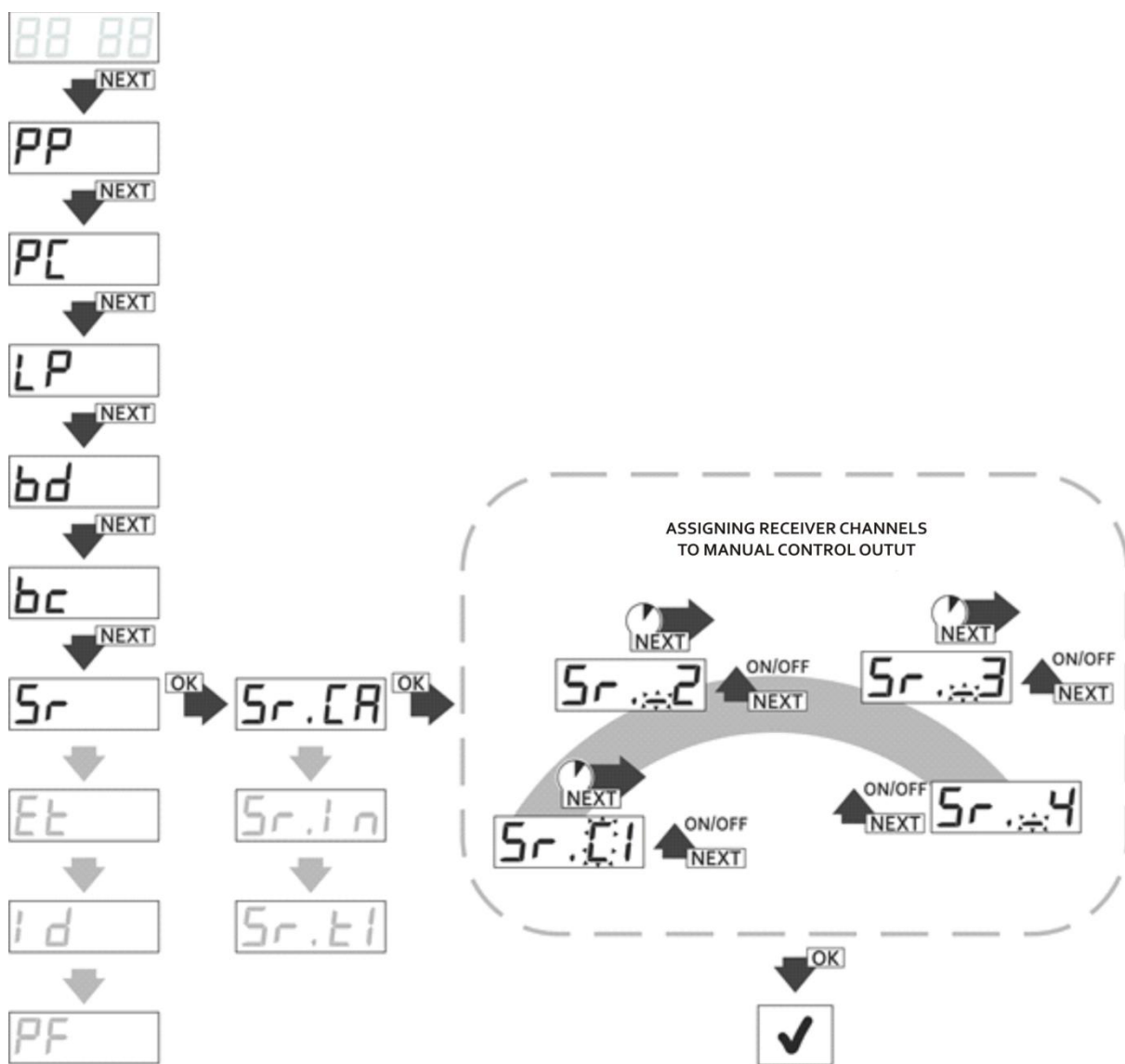


Fig. 22 Assigning receiver channels to the manual control output, Sr.CA function.

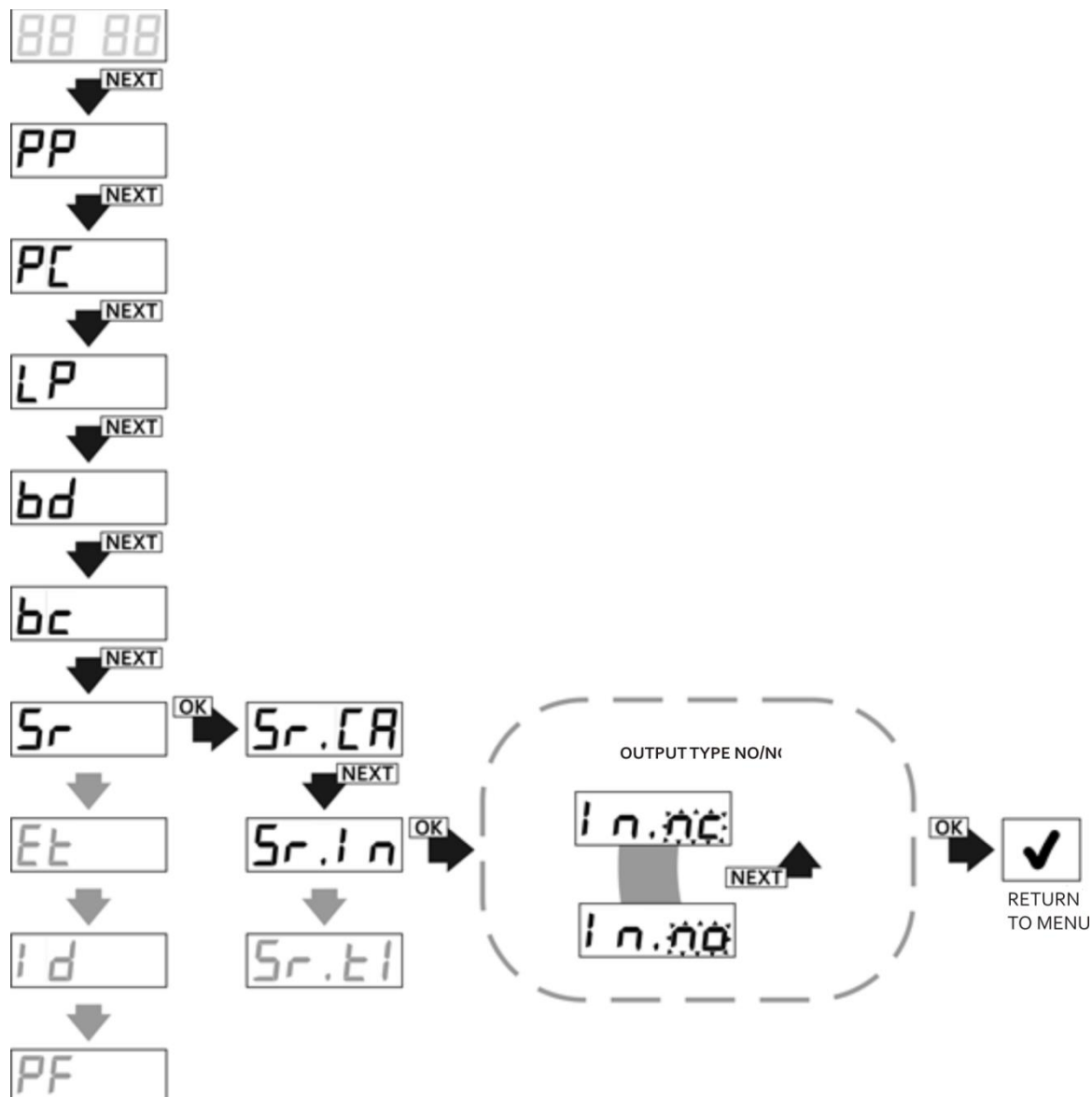


Fig. 23 Programming of manual control output type, Sr.In function.

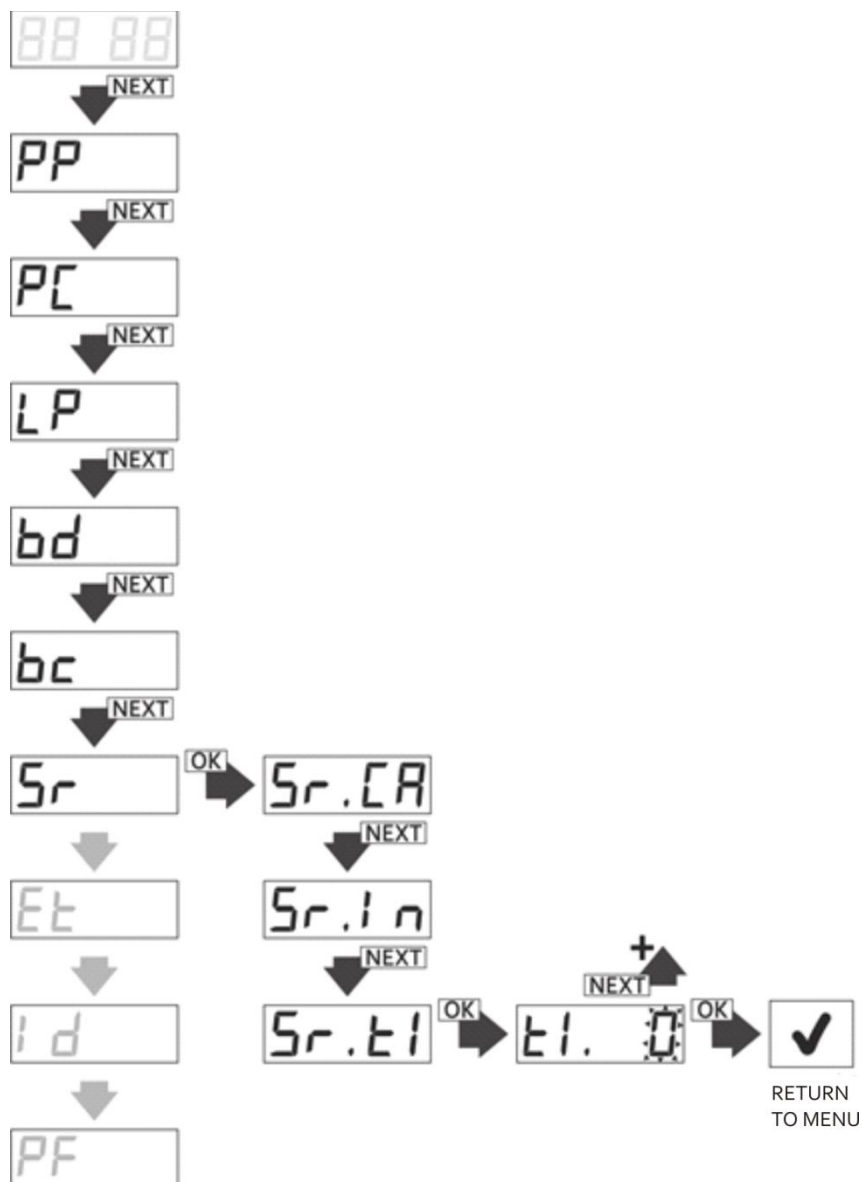


Fig. 24 Programming of breach time of manual control output, Sr.ti function.

### 5.7. Et option – settings of ethernet network

This option is intended for users of FLEX868 receiver equipped with WL card (Fig.1) which enables to control and manage the receiver through Wi-Fi network and dedicated CloudFlex application. Suboptions available: tP – communication switch on/off Wi-Fi, AF – checking the physical address of the card/ MAC address, SI – signal strength.

The sequence of activities for switching on/off the communication on Wi-Fi of the receiver (Fig.25):

- from main menu of the receiver with NEXT button choose Et option and press OK/ESC button of the receiver;
- the display shows 'Et.tP', press NEXT button, choose Et option and press OK/ESC of the receiver;
- the display shows 'Et.tP', press OK/ESC button of the receiver
- with NEXT button activate 'nC' communication or switch off 'oF' communication on Wi-Fi;
- accept with OK/ESC button.

At any time it is possible to withdraw from the edition by pressing and holding OK./ESC button of the receiver.

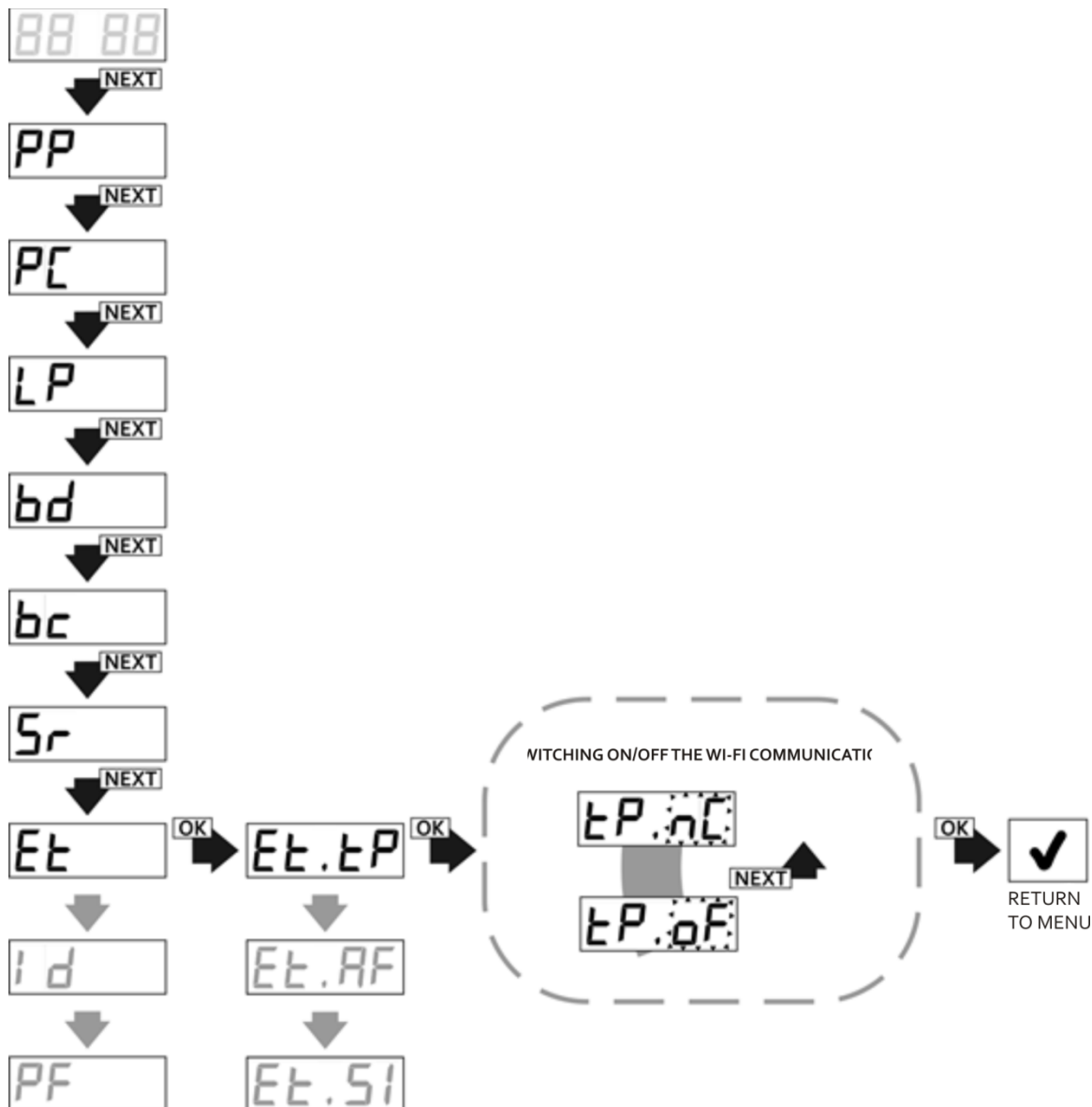


Fig. 25 Switching on/off the Wi-Fi communication, Et.tP function.

To check physical address (MAC address) of the WL card it is necessary to (Fig.26):

- from main menu of the receiver with NEXT button choose Et option and press OK/ESC button of the receiver;
- with NEXT button choose Et.AF option and press OK/ESC of the receiver;
- physical address is shown in three phases: : 'xxxx', next 'yyyy' and 'zzzz', which indicates MAC: xxxxyyyzzzz; after displaying the address the receiver returns to main menu of the receiver



Physical address MAC of the WL card is also placed directly on the WL card.

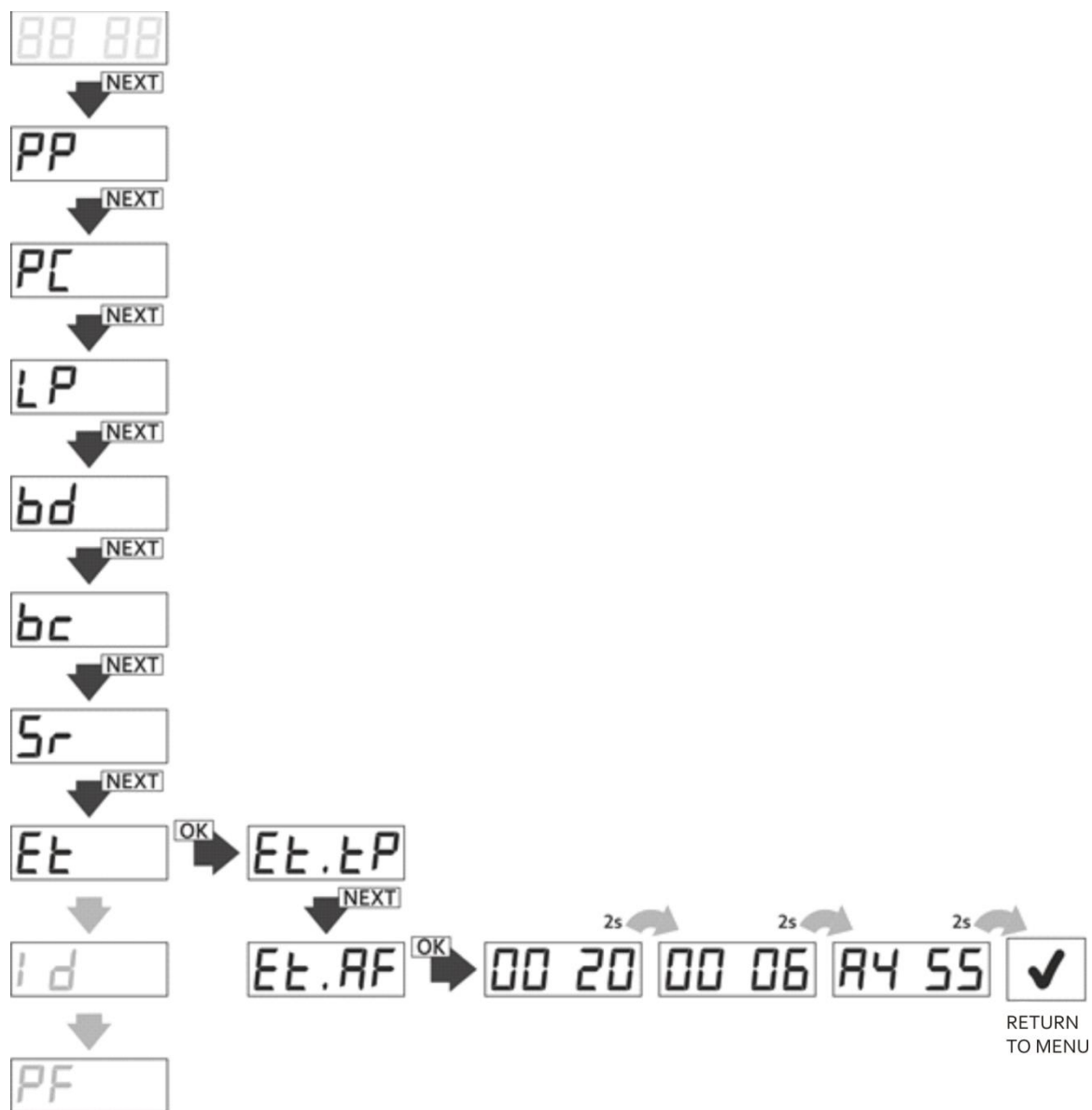


Fig. 26 Displaying physical address of the WL card, Et.AF function.

In order to make installation works of the receiver with wireless WL card easier it is possible with the help of the SI function in the submenu of the Et function obtain information about the strength of the signal which reaches the receiver from the transmitting device (AccessPoint/router). In order to obtain such information it is necessary to (Fig.27):

- from main menu of the receiver with NEXT button choose Et option and press OK/ESC button of the receiver;
- with NEXT button choose Et.SI option and press OK/ESC button of the receiver; the strength of the signal is shown in dBm;
- to return to submenu of Et" function press OK/ESC button again.

By pressing and holding OK/ESC button of the receiver it is possible to return to the menu.



The strength of the signal given in SI function is approximate value. The closer it is to "0" the stronger is the strength of the signal. The value of the signal is updated every 1sec.

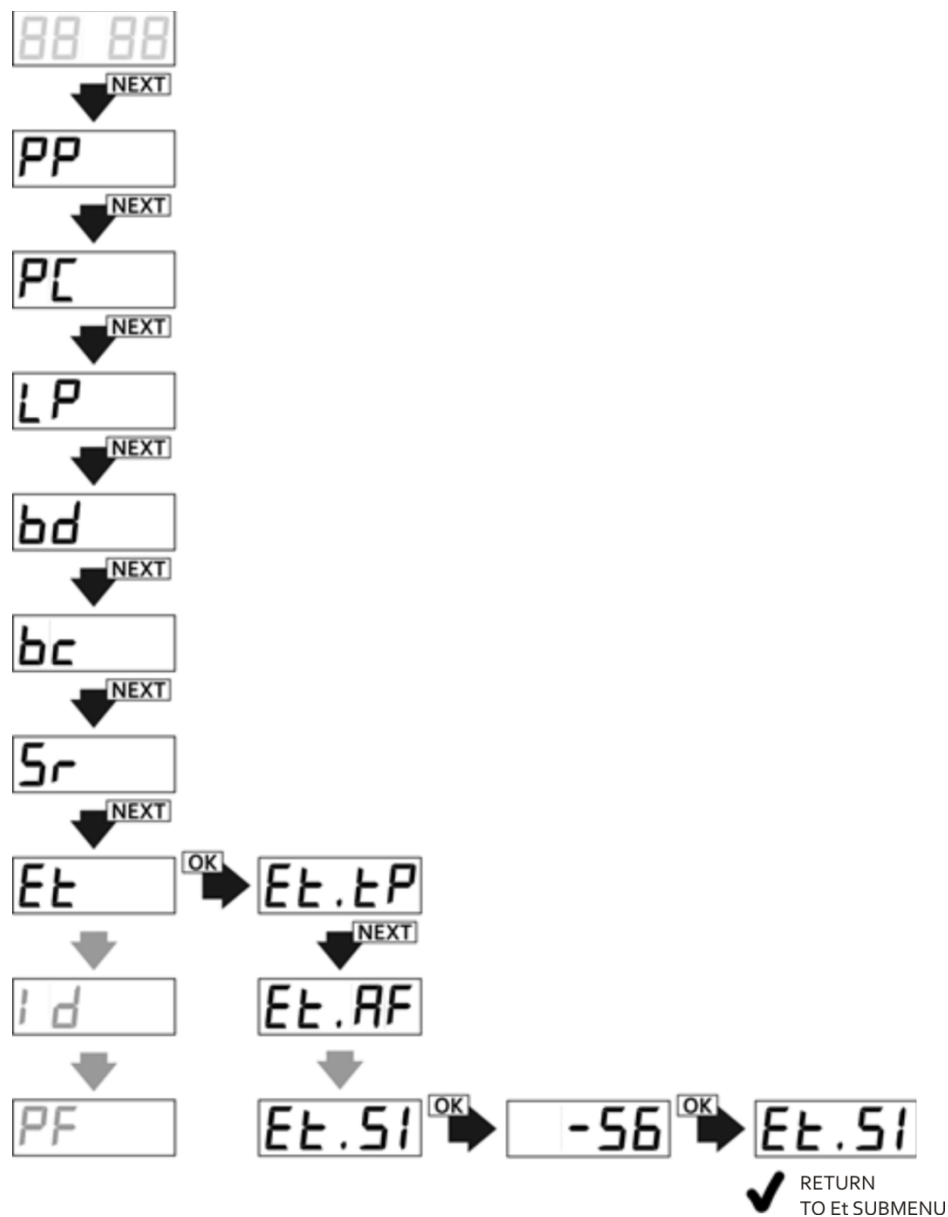


Fig. 27 Displaying the strength of radio signal of the transmitter (routera).

### 5.8. Id option – displaying receiver identification

Every of FLEX868 receivers has its own unique ID number. To check the ID number it is necessary to (Fig.28):

- from main menu of the receiver with NEXT button choose Id option;
- press OK/ESC button of the receiver – ID number is shown in three phases: 'Id.xx', next 'yyyy' and 'zzzz', which means Id number: xyyyyzzzz.

After displaying the address the receiver returns to main menu of the receiver

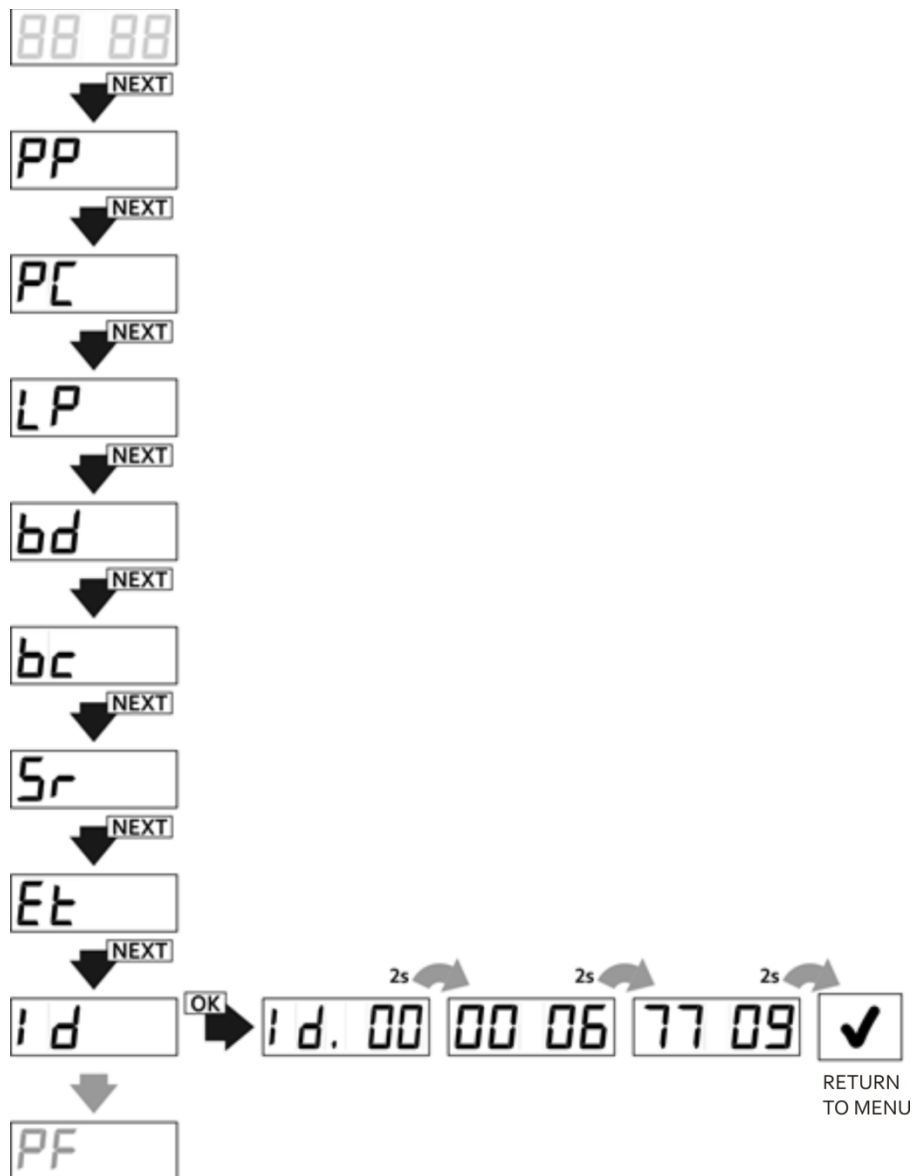


Fig. 28 Displaying ID number of the receiver, Id function.

### 5.9. PF option – deleting of memory and factory reset.

This option is used to restore factory settings and deleting all assigned remotes. Factory settings after acceptance of PF function

- no remotes assigned to the receiver
- all the channels operate in monostable mode of connection time 0,5 sec;
- copying blockade switched off;
- access blockade switched off ( no PIN code);
- double click function switched off;
- manual control output NO type assigned to C1 channel in breach time 0s.

To restore factory settings it is necessary to (Fig.29):

- with NEXT button choose PF option;
- press OK/ESC button of the receiver;
- when display shows 'PF.A3' press OK/ESC button three times – wave animation is shown on the display – after it is finished the receiver is formatted.

To quit formatting in any moment, but before its beginning press and hold OK/ESC button of the receiver.



The process of formatting causes irreversible removing all entered data by the user so as: memory of remotes, configuration of the receiver.

There is a possibility of creating and restoring the copy of data, from the level of the CloudFlex web application (pt 8).

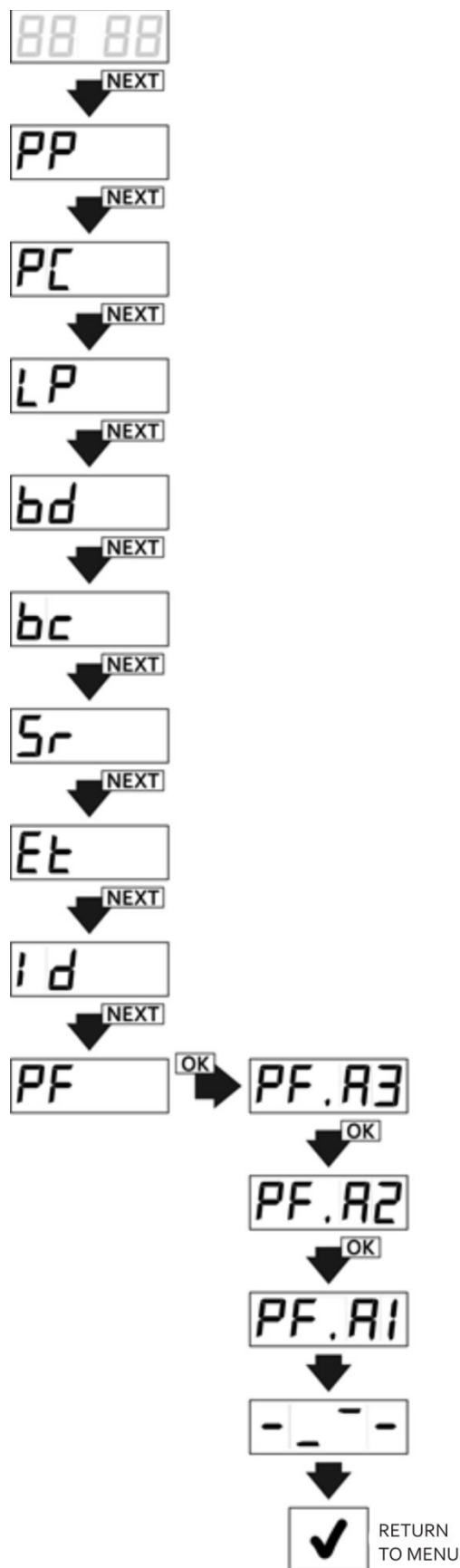


Fig. 29 Restoring- formatting the memory of the receiver, PF function in main menu of the receiver.



## 6. M2 module

M2 is module of FLASH memory intended for chosen devices of the DTM company System (Fig.30). Its presence is necessary for functioning of the FLEX 868 receiver. This memory contains configuration data of the receiver and the base of assigned remotes.

The standard receiver already has such a module installed. Installing the module on the stand makes it easier to transfer it to other receiver, for example at the breakdown of the device.

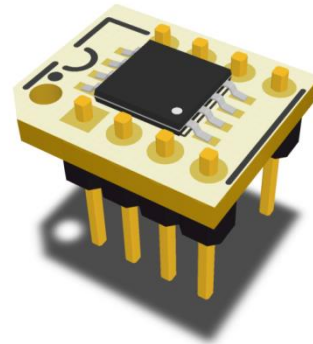


Fig. 30 View of the memory M2 module.

## 7. REL-2 / REL-2 PWR optional module

### 7.1. General information

REL-2 (Fig.31) and REL-2 - PWR (Fig.32) modules are extensions by two relay outputs. They are intended for DTM System devices equipped with 20-pin output (2x10-pin connector). REL-2 and REL-2 PWR models differ with acceptable electricity of switching and the type of joints led out of the transmitter. Their assembly and the service is the same. Connecting REL-2/ REL-2 - PWR module to the FLEX 868 receiver causes its the automatic extension for additional channels C3 and C4.

### 7.2. Technical and service data

- Two relay outputs: NC/NO 1A/24V (REL-2), NO 5A/230VAC (REL-2-PWR);
- Operating temperature from -20°C to +55°C;
- Size [mm]: 27x35x23 (27x40x26 - REL-2-PWR model).

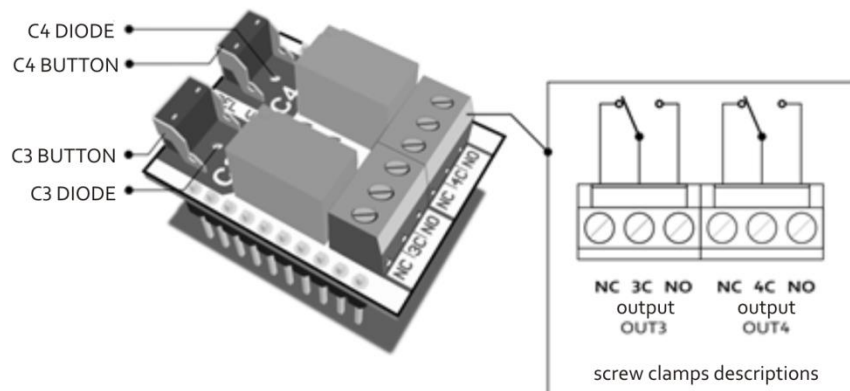


Fig. 31 View of the REL-2 module.

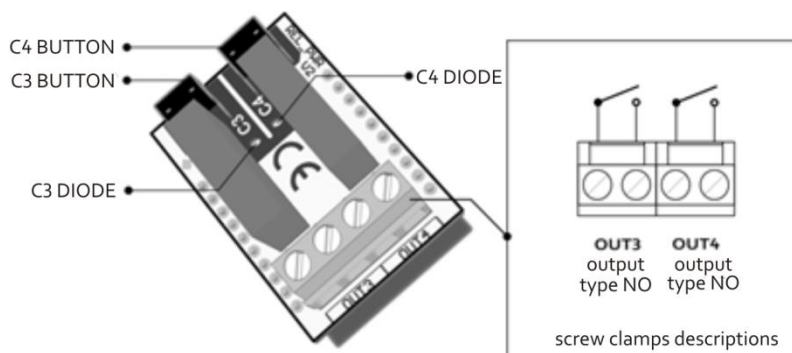


Fig. 32 View of REL-2-PWR module.

## 8. Optional module of the wireless Wi-Fi WL card

### 8.1. General information

Radio WL card enables wireless managing of DTM System's device which is equipped with the special connector to the card. The connection is held via the wireless Wi-Fi network which is made available by the user.

Remote control of the FLEX868 receiver is by the Internet application [www.cloudflex.dtm.pl](http://www.cloudflex.dtm.pl).

Thanks to this application the operation of the receiver is much simpler and more comfortable than in case of the traditional management. The application allows to assign/edit/remove remotes, configure the receiver, create the copy of data, look through the register of events or carry out reports and a lot of other activities and everything from the any place in the world through the Internet. Additionally activating of the channels can take place from the application level on mobile devices.

To learn all the details and information concerning the WL card read the manual of installation and service of the WL card (available on: [www.dtm.pl](http://www.dtm.pl))

### 8.2. Technical and usage data

- Frequency: 2.412 to 2.462 GHz;
- Modulation: 802.11b Compatibility: DSSS (CCK-11, CCK-5.5, DQPSK-2, DBPSK-1) 802.11g: OFDM;
- Wireless security: WEP, WPA-PSK (TKIP), WPA2-PSK (AES);
- Power consumption 700mW;
- Cooperation with DTM System devices equipped with WL cards connector;
- Possibility of easy configuration of Wi-Fi connection – WPS function(PBC);
- Card Power supply by WL connector;
- Operational temperature from -20°C to +55°C;
- WL card size [mm]: 68x26x6;

## 9. Optional external aerial

If there is a need of increasing the range instead of the inside wire aerial, outside aerial should be installed. It is possible to use the optional ANT868 aerial - OB. The casing of the FLEX868 receiver is adapted to the installation of such an aerial on the up edge (side), Fig.34.



Fig. 33 View of WL card .

Fig. 34 View of FLEX868 receiver with optional aerial ANT868-OB. nstalled on the casing

### 10. FLEX868 receiver error codes

FLEX868 receiver programme after identifying the error or breakage shows on the LED display appropriate error code, according to tab.1.

Error number	Description
Err.1	In CP option if we choose different type of copied remote than the one to be copied
Err.2	In CP option if we choose to copy the record number where there is no remote or it is its own record number
Err	Invalid PIN. Error of physical address readout (MAC address)of WL card (there is no card or it is switched off (Et.tP=oF).
Er.14	No memory or damage of the memory (M2)
Er.15	No memory or damage of the internal memory
Er.16	RTC clock damage

Tab. 1 FLEX868 receiver error codes

### 11. Exemplary table of remotes evidence

To manage the remotes especially without physical access to them it is necessary to start and evidence of remotes assigned to the receiver memory. The example of a table is shown in Table 2. Flex868 receiver in additional wireless managing option through Wi-Fi WL card (pt. 8) offers modern and comfortable way of managing the evidence of remote controls and many additional functions.

Reference number	User	Channel C1	Channel C2	Channel C3	Channel C4
0001	name	button(s)	button(s)	button(s)	button(s)
0002	name	button(s)	button(s)	button(s)	button(s)
0003	name	button(s)	button(s)	button(s)	button(s)
0004	name	button(s)	button(s)	button(s)	button(s)
0005	name	button(s)	button(s)	button(s)	button(s)
0006					
0007					
0008					
0009					
0010					
0011					
0012					
0013					
0014					
0015					
0016					
0017					
0018					
0019					
0020					

Tab. 2 Exemplary table of remotes evidence.

## UTILIZATION



Electrical devices cannot be thrown with municipal waste. Proper utilization of the devices gives the possibility of saving the Earth's natural resources for longer and prevents the degradation of the Environment.



## WARRANTY

DTM System provides operational and ready to use devices. The producer gives 24 months warranty from the selling date to the end customer. This time is counted according to the producer warranty labels or serial numbers placed on every product. Producer obliges himself to repair the device for free if during the warranty period there are problems which come because of his fault. Broken device should be supplied on customer's expense to the place of purchase and enclose clear and brief description of the breakage. The cost of mount/dismount is covered by the user. The warranty does not cover: batteries in the remote controls, faults caused by improper usage, user self repairs and adaptations, lightning strikes, voltages or short circuits in the electrical grid. Appropriate legal acts regulate details of the warranty.



DTM System hereby declares that the radio receiver complies with Directive 2014/53 / EU. The full text of the EU

Declaration of Conformity is available at the Internet address.

**www.dtm.pl**