

# NANO 868

## ONE CHANNEL RADIO RECEIVER

installation manual

v. 1.5



### GENERAL INFORMATION

NANO receiver is DTM remote control system additional device. It is a simplified one channel receiver designed to work with gates, roller shutter and other devices where remote control impulse is required.

NANO receiver is a simple and inexpensive device to expand functionality of simpler installation with remote control.

GALACTIC function allows to add remotes programmed and configured outside of the installation, without need to use receiver button.

### TECHNICAL SPECIFICATIONS

- ▶ clear and simple user interface based on single button with built-in LED;
- ▶ easy remote registering and GALACTIC function allows to add remotes without need to use receiver button;
- ▶ verifying number of registered remotes;
- ▶ complimentary 104-bit IRS variable rolling code;
- ▶ power supply 12...24V AC/DC  $\pm 10\%$ ;
- ▶ max current consumption 60mA (relay on);
- ▶ memory up to 200 remotes DTM868MHz series;
- ▶ one separate NO relay output, permissible resistive load 1A/24V AC/DC;
- ▶ monostable mode backup time 1s;
- ▶ superheterodyne receiver, frequency: 868 MHz;
- ▶ work temperature  $-20^{\circ}\text{C}$  to  $+55^{\circ}\text{C}$ ;
- ▶ IP-20 protection, designed to be installed in gate drivers or indoors;
- ▶ dimensions / with mounting brackets  
[mm]: 48 x 42 x 22 / 64 x 42 x 22.

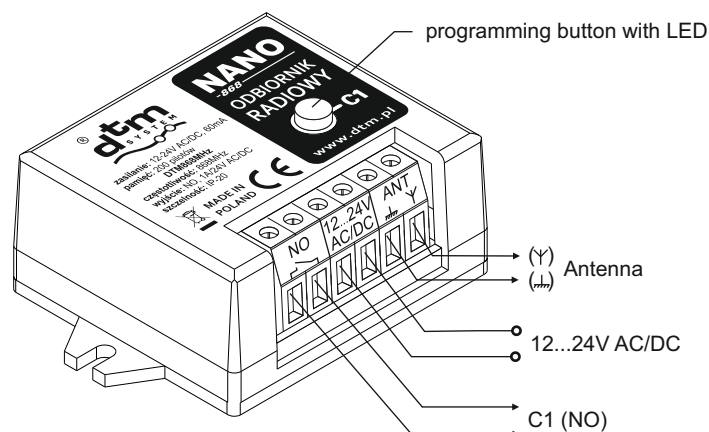


Fig.1. NANO868 receiver electric connection description

## 1. Installation

Receiver designed for use inside buildings or inside other automation equipment. Ensure proper working conditions in line with technical parameters. Do not mount in locations exposed to high humidity and frequent sudden changes of temperature.

Due to externally accessible screw connection provide galvanic isolation from other devices and wires.

Attention to thermal insulation of automation elements which can reach high temperatures (motors, transformers, circuits implementing, heat sink etc.). For electrical connection see Fig. 1.

Factory wire antenna connected to antenna terminal. Optionally external antenna can be used. Connect external antenna with 50Ω impedance coaxial cable to (Y) terminal - center core, to (≡) terminal - shield.

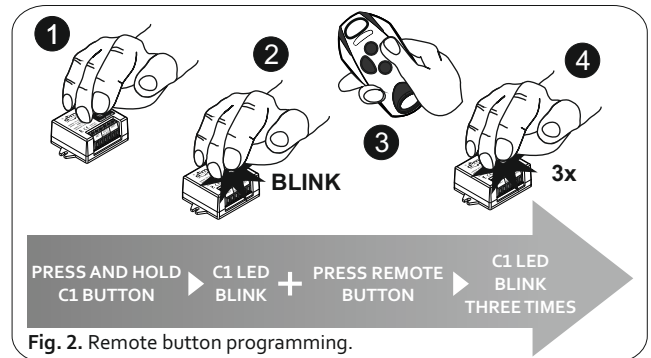
## 2. Receiver programming

### 2.1. Registering remote to receiver's memory

While holding receiver button press remote button. LED blink. Selected button will control the output channel of receiver. Any remote button can be registered.



- ▶ Registering another button does not erase previously registered button.
- ▶ Holding receiver button for more than 15 seconds will erase memory.
- ▶ Attempt of registering 201 transmitter will fail. LED will not blink.



### 2.2. Easy remote registering

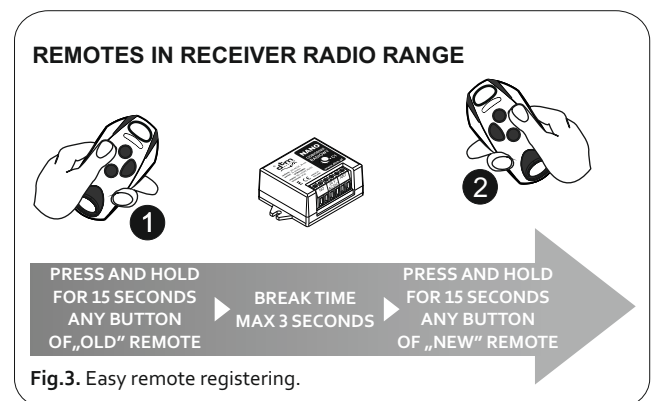
Easy remote registering function allows registering new remotes without access to receiver button. Previously registered remote is needed.

- ▶ press and hold for 15 seconds previously registered remote button in receiver radio range,
- ▶ in no more than 3 seconds press and hold new remote button for 15 seconds, new remote is registered with the same active button as in the previously registered remote.



Failure in registering may be caused by:

- ▶ low battery of the remote,
- ▶ radio interference during the procedure,
- ▶ full memory of the receiver.



### 2.3. Easy remote registering function LOCK / UNLOCK

To protect receiver against unauthorized attempts of registering remote (important in access protected user zones) easy remote registering function must be locked. To lock/unlock easy remote registering function:

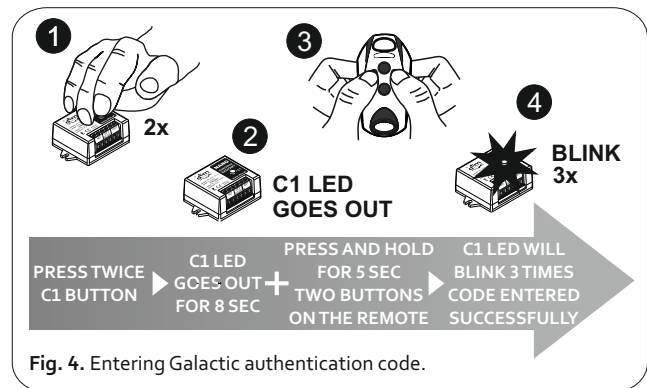
- ▶ turn off receiver power supply;
- ▶ press and hold C1 button;
- ▶ turn on receiver power supply;
- ▶ While holding the button, C1 LED will alternately light on and light off every 5 seconds. To lock/unlock easy remote registering release button when:  
**LED light on** - easy remote registering **locked**,  
**LED light off** - easy remote registering **unlocked**.

## 2.4. Entering Galactic authentication code to NANO receiver

To enter an authentication code to receiver it is necessary to have remote with programmed authentication code.

To enter an authentication code to receiver press the C1 button twice. LED goes out for 8 seconds. During this time press and hold for 5 seconds two buttons of the remote. Successful entering of the code indicates the C1 LED that blinks three times. From that moment the receiver has authentication code set and programmable remotes with Galactic function can be added.

If within 8 seconds after pressing C1 button twice, the code is not entered, or code entering fails, the LED will not blink three times but immediately light up.



## 2.5. Removing Galactic authentication code from NANO receiver

To remove the authentication code it is necessary to have a remote which the code has been entered.

To remove the authentication code press C1 button twice. LED goes out for 8 seconds. During this time press and hold two buttons of the remote. Successful removing of the code indicates the C1 LEDs blink three times. If within 8 seconds after pressing C1 button twice, the code is not removed, or code removing fails, the LED will not blink three times but immediately light up.



Memory format removes the authentication code from receiver.

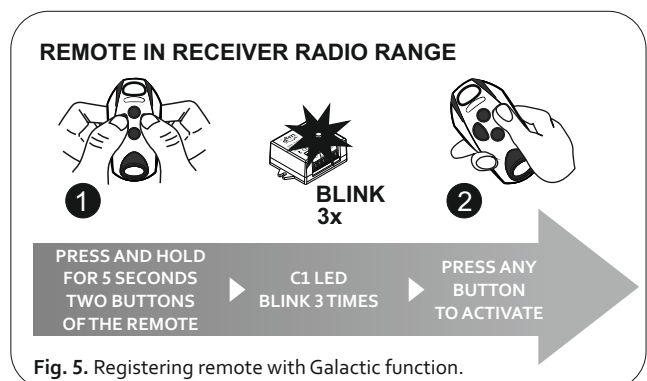
## 2.6. Registering remote with Galactic function

To register remote with Galactic function authentication codes of the receiver and remote must be compatible.

To register remote press and hold for 5 seconds two buttons of the remotes, in receiver radio range. Successful registering indicates C1 LED blink three times. To activate the remote at the receiver's memory, press any button on the remote.

Failure in registering may be caused by:

- ▶ incompatibility of authentication codes in receiver and remote,
- ▶ low battery of the remote,
- ▶ radio interference during the procedure,
- ▶ full memory of the receiver (attempt to enter 201 remote).



## 2.7. Removing single remote

While holding receiver C1 button, press active button on the remote. If removing is valid, LED goes out.



Holding receiver button for more than 15 seconds will erase memory.

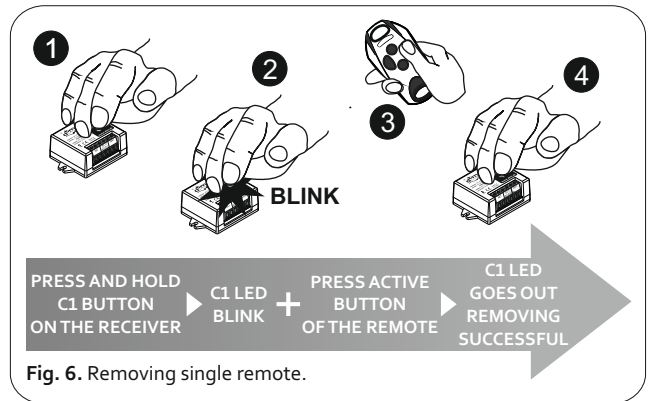


Fig. 6. Removing single remote.

## 2.8. Memory format.

To format receiver memory, press and hold for 15 seconds receiver C1 button. Release the button when LED light goes out.



Memory format:

- removes all remotes from the receiver,
- sets easy remote registering function unlocked,
- removes the authentication code from the receiver.

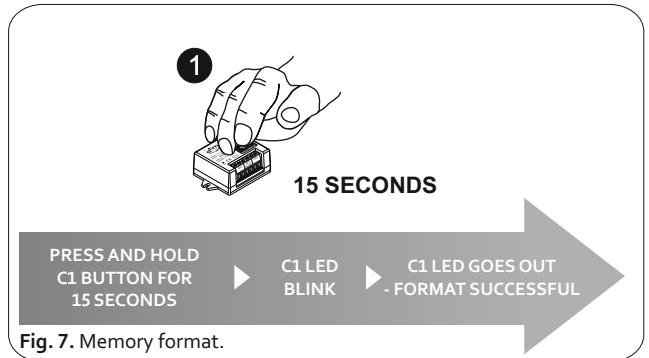


Fig. 7. Memory format.

## 2.9. Verifying number of registered remotes

To verify number of registered remotes, prior registering or removing remote is required.

After registering or removing remote, hold receiver button for 5 more seconds. LED will blink showing number of registered remotes. First number of tens (from 0 to 20 long pulses), then number of units (from 0 to 9 short pulses).

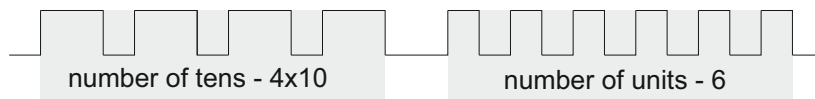


Fig. 8. Pulses example, showing number of registered remotes - 46.

## 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](http://www.dtm.pl)



The intention of the WEEE Directive (Directive 2002/96/EC on waste electrical and electronic equipment) is to reduce the amount of hazardous substances in waste. The underlying purpose is to promote the avoidance, recovery and risk-free disposal of waste.

DTM System spółka z ograniczoną odpowiedzialnością spółka komandytowa

ul. Brzeska 7  
85-145 Bydgoszcz

TEL:  
+48 52 340 15 83

FAX:  
+48 52 340 15 84

E-MAIL:  
serwis@dtm.pl