

# ARNAVI PLC

## User Manual



# Contest



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## General information

**ARNAVI PLC** is a set of interlocking wireless relay and control module. The kit is designed for the equipment of any security systems on all types of vehicles, additional locking circuit controlled by standard wiring, powered by the on-board network rated voltage +12V and grounded negative output of the battery.

This solution increases the anti-theft ability of the security complex of the car. The blocking relay has small dimensions and allows to mask it in a harness of regular wiring.

### Functionality:

- Digital communication with the relay on the power wire
- Compatible with any car alarm system
- Intellectual system of protection from code scanning
- Large switching current
- Wide operating temperature range

### Opportunities:

- Interrupting the vehicle's electrical circuit on command
- Interruption of the electrical circuit of the car when the communication with the control module is lost
- Hidden installation of the relay in the regular wiring of the car
- Compact size

## 1. Technical specifications

Please see table 1 for main specifications

Dimensions of blocking relay, mm (excluding harness)	64 x 23.5 x 15
Dimensions of control module, mm	32 x 27.5 x 4
Weight of blocking relay, gram	15
Weight of control module, gram	2.5
Voltage, V	7 - 15
Current consumed by the control module, mA	$\leq 5$
Maximum switching current blocking relay, A	20
Working temperature	From -40oC to + 85oC
Response time of the blocking relay on command, seconds	$\leq 3$
Response time of the blocking relay in case of loss of communication with the control module, seconds	$\leq 30$

## 2. Principle of operation and appearance of the device

After power is supplied to the devices, the blocking relay synchronizes with the control module. If the synchronization is not completed within 30 seconds, the relay goes into lock mode.

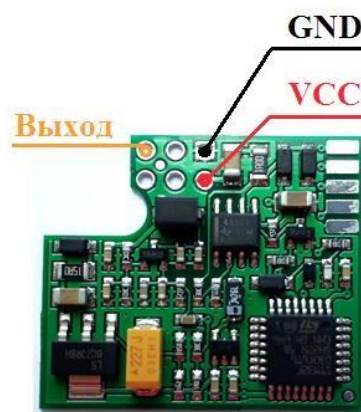
The control module analyzes the status of the tracker output (OUT) and sends the corresponding signal to the relay. If the output of the tracker is closed to "ground" – the relay is open. If the output of the tracker is not closed to "ground" – the relay is closed. Thus there is a control (short circuit / break) of the protective (blocked) circuit.

The signal is transmitted through the regular wiring of the car. Physical removal (disconnection) of the control module from the circuit will cause the blocking relay to lock mode (within 30 seconds).

The appearance of ARNAVI PLC devices is shown in pictures 1 and 2.



*Picture 1. Blocking relay*



*Picture 2. Controlling part*

# Connecting guidelines

## CONNECTING THE CONTROL MODULE

The control module is installed on the board of navigation tracker Arnavi Integral 3 by point soldering to the main connector of the tracker as shown in picture 3.



*Picture 3. Navigation tracker Arnavi Integral 3 with the installed control module*

Connection of the control module to other trackers is carried out as follows:

**VCC point:** +12V DC with battery. Connect to the power line of the tracker, which is constantly present voltage +12V.

At this point, the control module transmits signals to the blocking relay. To ensure reliable control, the relay and control module must be electrically connected via this wire.

**GND point:** "MASS". Connect to the "GND" (minus) line of the tracker, which is connected to the negative terminal of the battery.

**Exit point:** Connect to the tracker's "out" pin.

## CONNECTING THE BLOCKING RELAY

**Red wire:** + 12V DC with battery. Connect to the battery or

to the wire of the car, which is constantly present voltage +12V.

On this wire, the control module transmits signals to the blocking relay. To ensure reliable control, the relay and control module must be electrically connected via this wire

**Black wire:** MASS. Connect to the negative terminal of the battery.

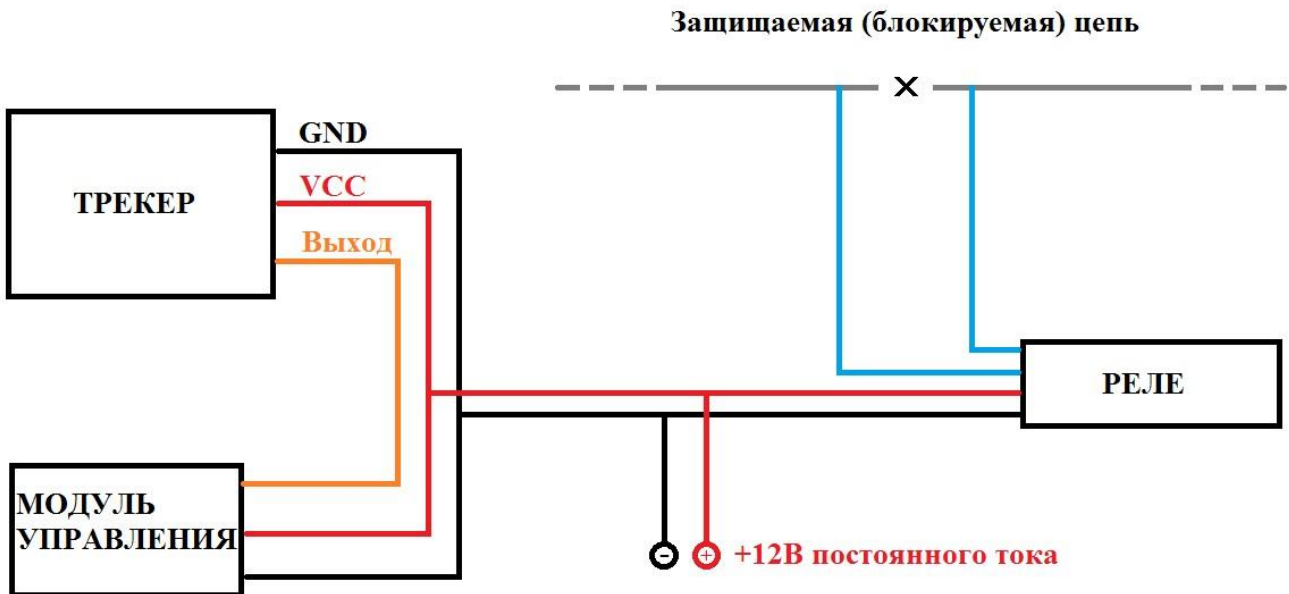
**Two wires of larger cross-section:** connect to the protected (blocked) circuit in the area of its rupture as shown in picture 4.



It is possible to block any electrical circuit whose characteristics do not exceed the values specified in table 1.

The connection diagram of the Arnavi PLC wireless relay kit is shown in picture 4.

Picture 4. Arnavi PLC connection diagram



## Warranty

The equipment is designed for long-term operation in Autonomous maintenance-free mode.

The warranty period for the equipment is 5 years and is counted from the date of initial installation, provided it is carried out by the installer authorized by the manufacturer of the equipment. The date of initial installation and information about the installer must be specified in the warranty card and stamped by the installer.

THE PRODUCT IS NOT SUBJECT TO WARRANTY REPAIR / REPLACEMENT IN CASES:

- \* violations of the rules of operation of the product;
- the presence of mechanical damage (external or internal);
- \* malfunctions caused by ingestion of foreign objects, insects, liquids;
- \* presence of chemical, electrochemical, electrostatic, extreme thermal damage;
- \* damage caused by non-compliance with state standards of power, communication, cable networks;
- \* damage caused by the installation of components that do not meet the manufacturer's specifications;
- if repair or maintenance work during the warranty period was carried out by a person (s) not authorized by the manufacturer;
- in case of violation of the manufacturer's seals on the equipment;
- in cases of equipment malfunction due to external influences on the equipment and the electrical circuit to which the equipment is connected;
- \* in case of violations caused by the actions of third parties or other unforeseen circumstances not related to the obligations of the equipment manufacturer.



## Package contents

The package set of PLC relay is presented in the table 2.

Table 2 – package set

№	Title	Quantity	Notes
1	Control module	1	
2	Blocking relay	1	

For further information please see the website [www.arusnavi.com](http://www.arusnavi.com)