



NEOMATICA

RFID-tag ADM21

Operation manual

Edition 1.1

EAC

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This Operation Manual relates to the compound identifying RFID-tag ADM21 (hereinafter referred as RFID-tag, tag) and defines installation and connection procedure, as well as describes the device function.

The Operation Manual is designed for professionals familiarized with the rules of repair and installation works execution related to vehicles and having special knowledge in electronics and electrical equipment of various vehicles.

To ensure proper function, the reader's installation and setting should be performed by qualified professionals. To properly use the equipment, it is necessary to familiarize with the monitoring system operation principles and understand the function of all its particular components.

1. Application and Operation principles

RFID-tags ADM21 (see the Figure 1) are used for installation on moving and stationary objects and setting the subsystem of objects radiofrequency identification (up to 100 m) together with RFID-reader ADM20 (see the Figure 2).

RFID-tags ADM21 might be used for fixing identification problems related to extra equipment, towed vehicles control, etc.

The Radio Frequency Identification system based on RFID-tags ADM21 might be used both within a monitoring unit or independently. When using the system within a monitoring unit, the data received from the tags and cards are transmitted to the tracker via RS-485 interface.



Figure 1 – General view of ADM21



Figure 2 – General view of ADM20

2. Technical Features

- Radio channel frequency: 868 MHz
- Coverage: 100 m in line-of-sight
- Radiotransmitter power: at most 25 mW
- Autonomous operation time: up to 3 years
- IP65 case
- Case material: ABS plastic
- Operation temperature: -40..+60°C.
- Dimensions: 71x51x27 mm
- Weight: at most 100 g

3. System design and operation based on RFID-tags ADM21

During its work the telematic tracker interrogates the RFID-reader ADM20. If there are active tags ADM21 within its range, the reader transmits their identification numbers to the tracker. Then the tracker uploads data onto telematic server.

4. Installation and setting procedure

4.1 RFID-tag ADM21 installation

ADM21 tag installation is feasible in any site where its mechanical damage will not be possible. It is not recommended to install the tags near big metallic constructions because they may attenuate the signal.

To get the maximum coverage and the maximum receiving range of the signal, it is recommended to install ADM21 tag in relation to the reader ADM20 so that the vertical axis directions in the reader and the tag would be in the same direction (see the Figure 3).

The reader ADM20 is mounted on an object with two screws with a pressure-pad.



Figure 3 – Tag installation

4.2 RFID-tag ADM21 setting

Connect the RFID-reader ADM20 to the computer where the “RFID Configuration” application is installed. The connection is described in the Operation Manual for ADM20.

To set the RFID-tag ADM21 it is necessary to apply and hold the magnet, for example, the one of GPS-antenna as it is shown in the Figure 4. If the magnet is well placed, there will be a soft click. This operation makes pass the tag to the setting mode. After passing the tag ADM21 to the setting mode, it is necessary to indicate in the Configurator the address of the reader connected to the computer, and press the button “search”. After a successful search, Configurator will display the serial number, tag ID, signal power, subnet and tag period. You may change tag parameters and write the new ones. If the period is not installed, the tag will be on without signals transmission.

Tag serial number is the unique factory number of the tag put during its production and is not subject to change. It might be from 0 up to 4294967295.

Tag identifier is an identification number of the tag. It might be from 0 up to 4294967295 and is set by the system user, for example, when replacing an old tag by a new one.

Net identifier is an identification number of the net. It is used for useless tags ADM20 filtration. It might be from 0 up to 65535.

Transmission period is a time interval between sending data from a tag. It might be from 00:00:00 to 23:59:55. The value 00:00:00 means that the tag is not active.

Transmitter power is the power of tag signal transmitted. It might be from at least 0 up to the most – 7.



Figure 4 – Tag setting activation

5. Storage and transportation requirements

Equipment should be stored in a warehouse at a temperature of +5°C to +40°C and relative humidity at most 85 %.

After trackers' transportation in sub-zero temperatures, they should be stored at room temperature within 24 hours.

6. Warranty

The manufacturer guarantees the RFID-tags ADM21 proper function within 12 months from the day of its sale if consumer meets all the requirements and follows all the rules of transportation, storage, installation and handling.

The warranty does not cover:

- a device with mechanical damages and defects (cracks and chips, dents, signs of impacts, etc.) caused by consumer as a result of handling, storage and transportation rules violation. When there are signs of oxidation or other proofs of liquid penetration in the device housing;
- a device without case;
- a device with signs of repair performed beyond the manufacturer's service center;
- a device with signs of electrical and/or other damages caused as a result of unacceptable changes in external power network parameters or improper use of the tracker;
- a device disabled because of an unauthorized software upgrade.

The device software is licensed, terms related to the manufacturer's limited liability in the framework of the License Agreement are provided at the web site: https://neomatica.com/upload/docs/license_en.pdf

7. Marking and packaging

Marking is placed on the device case. The devices are packed in individual boxes, which protect them during transportation and storage. Multipack is possible.

8. Disposal

Device recycling is performed according to national and local norms and requirements.

9. Scope of supply

Item name	Quantity	Note
Reader ADM20		
Tag ADM21		
Card 125kHz		
Card 13,56MHz		