EYWA READERS

Mifare / Em-Marine cards with DIP switches

Installation and Operation Manual

WE'RE TRANSFORMING SECURITY

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Thank you for purchasing an AGRG® EYWA® device. We are making continuous efforts to produce the highest quality products and we hope that you will enjoy using our devices. We strive to ensure that AGRG® EYWA® products to serve you well for many years, so please read this manual carefully before starting installation and operation.

With gratitude and appreciation.

Yours,
AGRG

1. About the manual

1.1. Purpose of the manual

Thank you for the purchase and use of our products! This manual is created for technical specialists who install products of the following name:

EYWA Classics
Product name: AGRG Reader EYWA Classics Brick Proximity-card

Function type: Readers for use in ACS (e.g., Castle ACS)

EYWA Art
Product name: AGRG Reader EYWA Art Brick Proximity-card

Function type: Readers for use in ACS (for example, Castle ACS)

The current models of all EYWA reader lines can be found on our website:

This document describes all versions of the product as well as a complete list of additional accessories and functions.

> **Additional accessories and features may not be available at the time of document release. Their appearance will be announced on the official websites of the manufacturer.**

1.2. The term of the manual

This document is valid until a new version is published in the appropriate section on https://agrg.design.

1.3. Task force

The descriptions are intended for qualified specialists trained by the manufacturer. Descriptions do not replace training in product handling.

For safety reasons, installation and equipment maintenance described in this manual should only be performed by qualified specialists in accordance with **GOST IEC 62368-1-2014** (Russian standard) ("Audio/video, information and communication technology equipment" - "Part 1: Safety requirements").

Skilled specialists are personnel who have received appropriate technical training and have experience in setting up equipment. The specialist should use his knowledge and experience to detect the risks that may arise during these actions, as well as to minimize their impact on themselves and others. During the

technical work the specialist is obliged to provide conditions specified by the manufacturer and to comply with applicable norms and standards.

This documentation is also used to provide information to persons who planning, designing and implementing the project.

1.4. Content and purpose of the document

The content of the document is limited to describing the process of assembly, installation, commissioning and basic use of the product.

1.5. Additional documents

The device works with any Access Control Systems (ACS) according to the Wiegand-26 and Wiegand-34 protocols (which are implemented in absolutely all access control systems). However, it is recommended to review the documentation for the following components of your system:

- System software
- ACS Controller
- System Administration Manual
- Guidance on executive equipment (e.g., door locks, turnstiles, power supplies, etc.)

It is recommended to use Castle ACS with these readers (skud.agrg.ru), as the most functional and proven access control system.

1.6. Warnings

Warnings containing information/instructions and prohibitions to prevent injury or damage are specially marked.

Please pay attention to the warnings! They are developed to avoid accidents, prevent injuries and damage.

1.6.1. Classes of danger

Warnings fall into the following categories:

	**WARNING**	Low level of risk. Indicates a potentially dangerous situation that may lead to minor physical injuries.
	**NOTE**	Important information on the correct use of the product. Failure to comply with these instructions may result in defects or damage to the product.

1.6.2. Symbols

	**GENERAL DANGER**

1.6.3. Notes

	**TIPS AND USEFUL INFORMATION**	Such information helps to maximize the use of the product and its functions.

2. Basic safety instructions

The product is manufactured according to modern standards and safety regulations. The reader design meets the requirements of fire and electrical safety, including in the emergency mode according to GOST 12.2.007.0-75 and GOST 12.1.004-91. However, when using it, dangerous human and property situations may arise.

Read the following safety rules and follow them before using the product.

2.1. Target assignment

This product is intended only for the purposes given and described in the “Product Description” section. Any other use is considered as improper use. The manufacturer is not liable for any damage or injury caused by improper use. The user/operator of an object is the only person bearing the risks of misuse.

2.2. Assembly and installation

Check the device for visible damage during transportation or improper storage. Do not switch on the device if there is damage!

The assembly and installation of a product can only be performed by qualified specialists (see section 1.3 Task force). All requirements of the mentioned test standards shall be met when installing/integrating a product into the final equipment.

The product should be installed only in places that comply with the environmental and technical conditions specified by the manufacturer.

The manufacturer shall not be liable for damage caused by improper handling or installation.

2.3. Service and maintenance

Transformation, modification, repair and maintenance of the product can only be performed by qualified specialists (см. раздел 1.3 Task force). Any changes or modifications made by other persons absolve the manufacturer of any liability. The manufacturer is released from any liability in case any changes and modifications carried out by other persons.

2.4. Accessories and spare parts

Accessories and spare parts shall meet the specifications of the manufacturer. The warranty for the product remains only if original accessories and spare parts manufactured by AGRG are used.

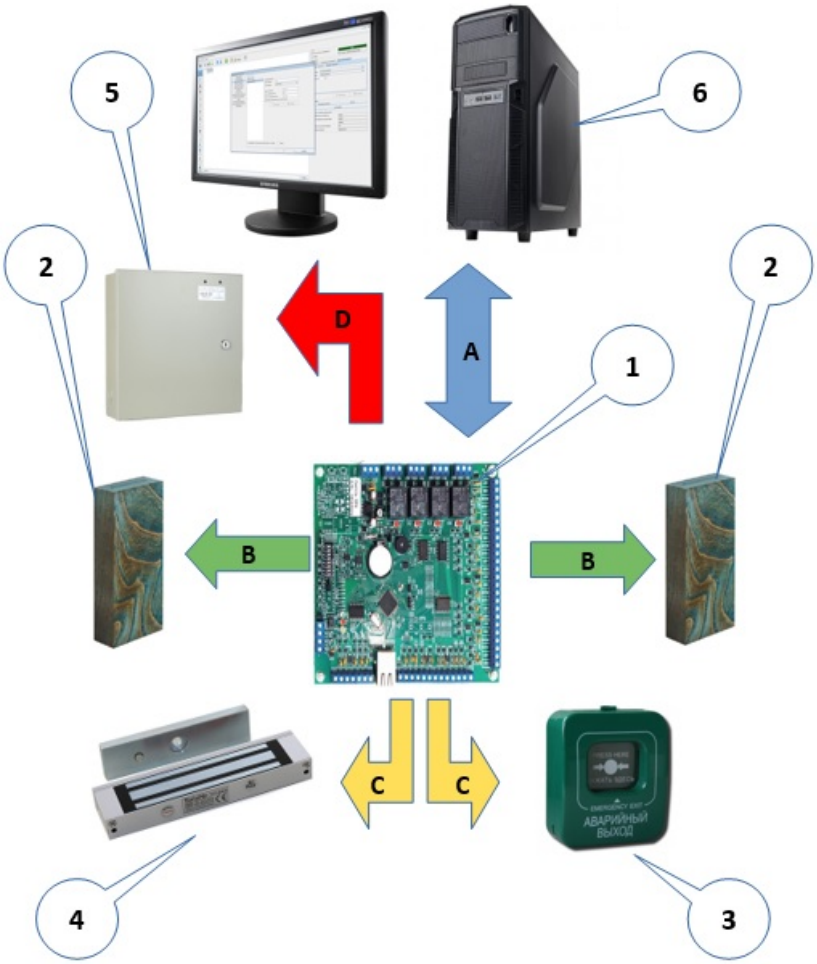
2.5. Environment protection

Recycling of household waste device is prohibited. Used devices contain valuable materials that must be recycled. End-of-life devices should be disposed of properly.

3. Product description

3.1. Overview

The present item (hereinafter - a reader) is a complex electronic device made in a casing of valuable wood species. The electronic part of the reader is filled with a special compound to protect against environmental impacts.



Arrangement of access control system and AGRG EYWA reader role by example ACS Castle

1. EP4 ACS controller.
2. RFID reader.
3. Door unlock device.
4. Electromagnetic lock.
5. Power supply.
6. ACS Server/Remote Workstation.

A. Ethernet Network.

B. Wiegand Line.

C. Control Line.

D. Power Line

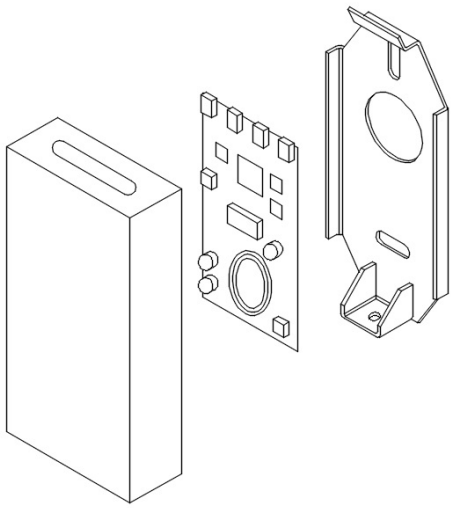
3.2. Area of application

The reader is intended for work in the Access Control System (ACS) and provides for the contactless reading and transmission of identifier data to the ACS controller (e.g. Proximity cards or contactless cards).

The reader can also reproduce the response signals of the ACS controller on the authorization or prohibition of access by means of light and sound signals.

The reader is designed for indoor installation and continuous 24-hour operation.

3.3. Composition



- Natural wood of valuable species body
- Printed board with attached connection cable (filling into the body with compound).
- Mounting plate

3.4. Operating principle

During operation, the reader creates a low-power electromagnetic field of a certain frequency in front of its working surface (antenna inside the body). When an identifier is inserted into this electromagnetic field, in other words, when a card is added to the reader, data is exchanged (obtaining the identifier code) between the card and the reader. The reader then converts and transmits the data to the ACS controller for processing and subsequent authorization or denial of access.

Signaling of authorization and denial of access is carried out by signals LED-G and LED-R, respectively. These signals are sent to the reader from the ACS controller.

The active level of LED-R and LED-G signals is low. In the absence of both signals (high level), a white indicator with periodic 2-fold flashes is activated. White indication means the on-call mode (ID reading mode).

The sound accompaniment of LED-R and LED-G signals is played once and only after the ID has been read, i.e. if the ID has not been read, the sound will not be played when LED-R and LED-G signals are changed.

When LED-R or LED-G signals are switched on for a long time (for example, the "Locked" or "Unlocked" modes), the identifier is read without light and sound signaling.

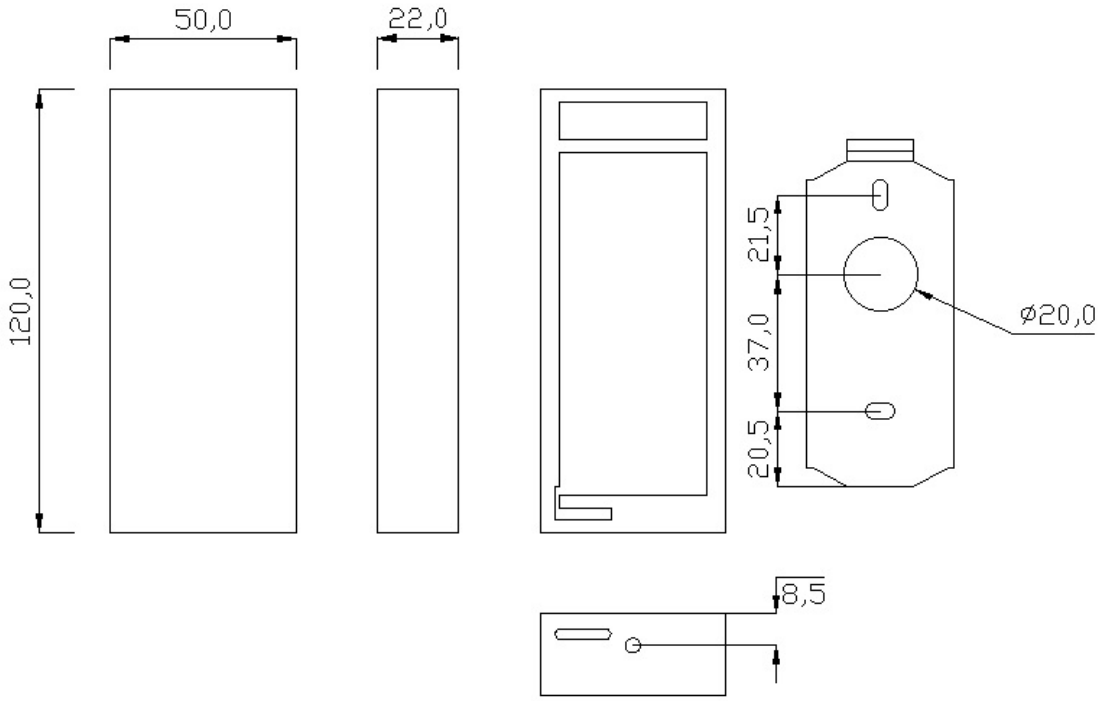
3.5. Technical specifications

Body material	Stabilized solid block of valuable tree species
Data transmission	RFID
UID card reading range USO14443a	to 4 cms
UID card reading range Em-marine	to 4 cms
Supply voltage	9...15V
Average current consumed, not more than	30 mA
The highest current consumed, not more than	150 mA
Operating temperature	0°C...+40°C
Relative humidity	0-95%, excluding condensation
Protection class according to BS EN 60529	IP54
Dimensions	EYWA Classics - 50 mm x 120 mm x 21 mm. EYWA Art - 50 mm x 173 mm x 21 mm
RFID Card Formats	125 KHz Em-marine (EM41XX), 13.56 MHz Mifare. (ISO14443A)
ACS Controller interface	Wiegand-26/34
Sound event notification	12 bits, 22kHz PCM. Multi-voice, depending on event type, 8bit
Light notification	RGB-LEDs, 16 million color. combinations. Depending on the event
Interface cable length (Wiegand)	200 mm
Coefficient of thermal expansion	(1.0 0.2) 10-6 1/K
Hardness of reader by Shore D reader (HDS)	≥ 45
Axial shear endurance limit	≥ 5 MPa (≥ 50 kgs/cm^2)
Speaker	Broadband acoustic speaker

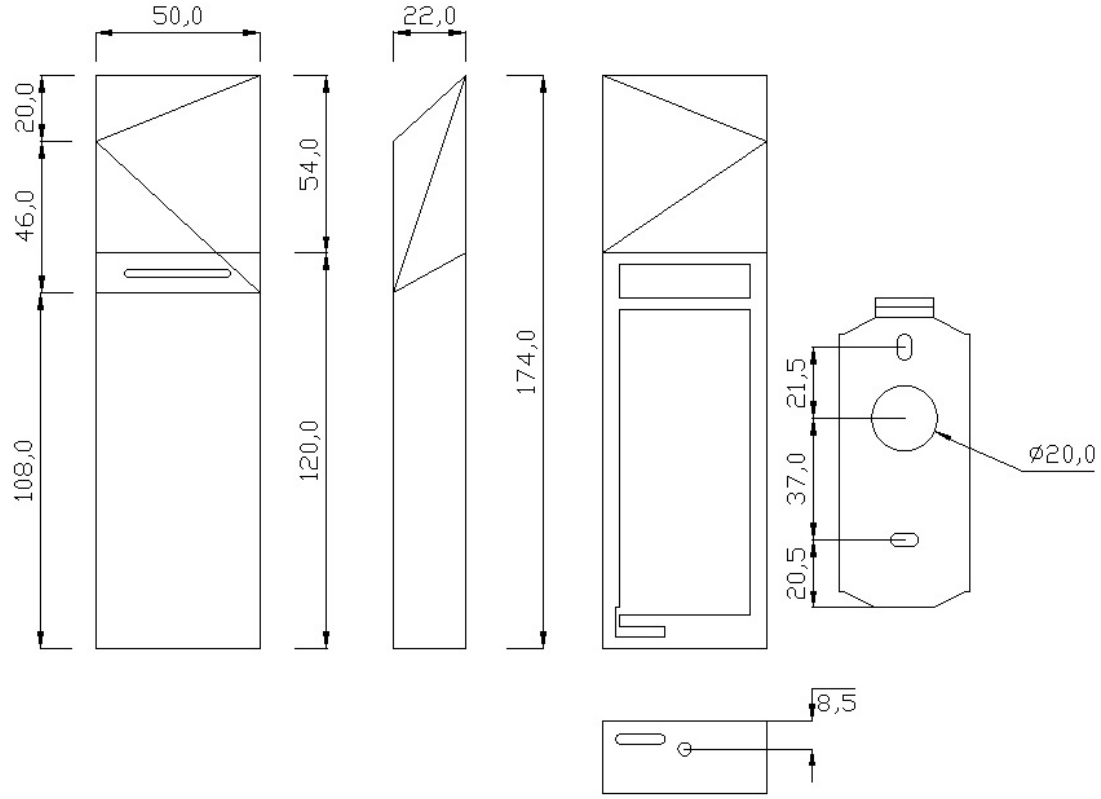
Use only power supplies that comply with the following requirements: LPS (Limited Power Supply) and SELV (safety extra-low voltage) in accordance with GOST IEC 60950-1-2014.

3.5.1. Dimensions

3.5.1.1. EYWA Classics



3.5.1.2. EYWA Art



All dimensions are indicated in millimeters. The length of the connector cable is 15 cm.

3.6. Conformity

This product complies with Directive 2011/65/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment. This device complies with Part 15 of the FCC Rules.

The operation of the device depends on the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference, including those that may cause malfunctions.

Any changes or modifications that are clearly not approved by the party responsible for compliance may deprive the user of the right to operate the equipment.

3.7. Designation

The passport plate is located on the back of the device and contains the following information:

- Manufacturer's logo
- Indication of the country of manufacture
- EAC mark
- QR code for detailed information about the reader

3.8. Shipment content

1	AGRG EYWA reader	1 pc
2	Mounting plate	1 pc
3	Fixing screw	1 pc
4	Hexagonal L-shaped key	1 pc
5	Woolen napkin	1 pc

4. Installation

4.1. Installation requirements

4.1.1. General information

The exact installation of all components is a basic prerequisite for the correct functioning of the device. The following installation instructions must be followed.

4.1.2. Installation location

The compact reader is installed in a place convenient from the point of view of ergonomics, for example, in the entrance area (door). The compact reader is mounted directly on the wall or door box (undesirable). An important aesthetic issue is the hidden installation of cables in the wall, it is highly undesirable to connect readers with cable-channels.

Place of installation must be protected from unauthorized access. The product is intended for stationary use in buildings. The product is not suitable for use in vehicles or outdoor installations.

The electromagnetic fields of readers in close proximity can influence each other, thereby reducing the reading distance of the access cards. There must be a 20 cm gap on all sides between two RFID reader devices.

Installation height

The recommended installation height is 110 cm from the top edge of the reader. The mounting height of the connector should not exceed 2 meters.

Electromagnetic fields

Do not install the device in close proximity to strong electromagnetic fields, such as around a switchable power supply, power lines, phase adjustments, etc. Electromagnetic fields can adversely affect reading efficiency or cause failures, especially in contactless RFID readers.

The mounting plate is fixed directly on the wall or door box.

For fixing to the wall, two elongated openings are provided in the supporting frame (see arrows). It is attached by means of screws and locks or self-cutting screws, depending on the material of the subsurface zone.

The mounting plate must not be deformed in no case. The plate is attached to a flat surface. Do not overtighten the screws.

Take appropriate measures to compensate for roughness (e.g., use gasket), in which case the device may have gaps between the wall. In the case of a soft mounting plate, make sure that the mounting plate does not press into it.

4.1.3. Connection diagram

The connecting cable must ONLY be inserted behind through the wall. Installation cables should be mounted flat or in a secure location.

4.2. Fixing of the mounting plate

4.2.1. Positioning of the mounting plate

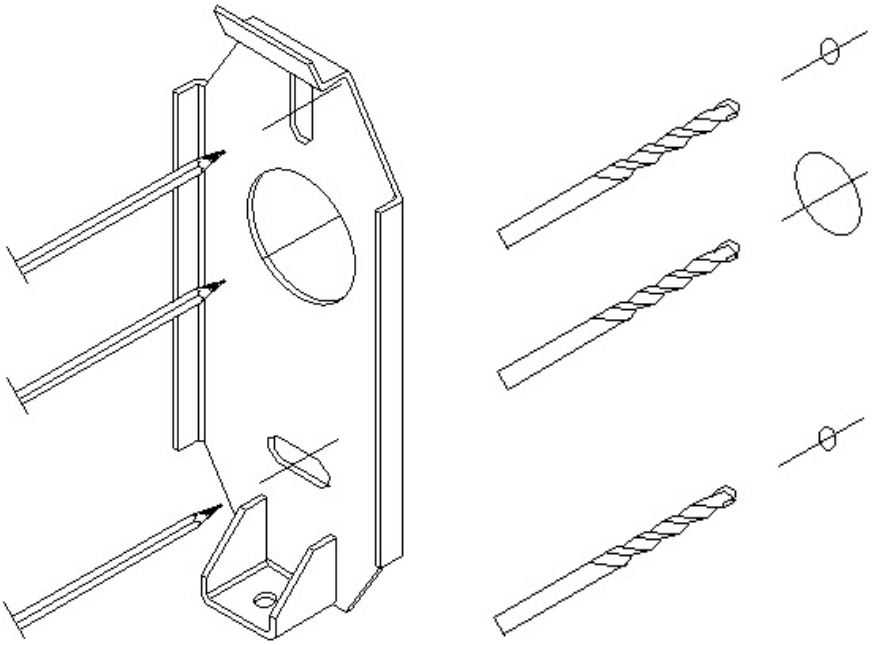
The reader is mounted on a flat vertical surface by means of a special mounting plate which is part of the supply.

The mounting plate is fixed to the surface by means of two screws or screws (depending on the type of surface) with a diameter not exceeding 3.5 mm (not included in the supply). For this purpose, it is necessary to apply a plate to the mounting surface and mark two holes for fixing the plate and one for laying the cable.

	**DEFORMATION OF THE PLATE WHEN ATTACHING TO THE SURFACE IS NOT ACCEPTABLE!**

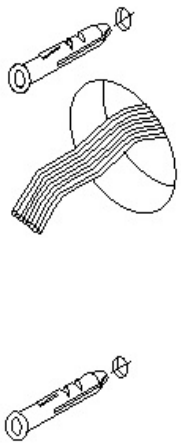
4.2.2. Drilling of holes

Drill holes for mounting screws and wires. In some cases, you will need a drill crown to make a hole under the wires.



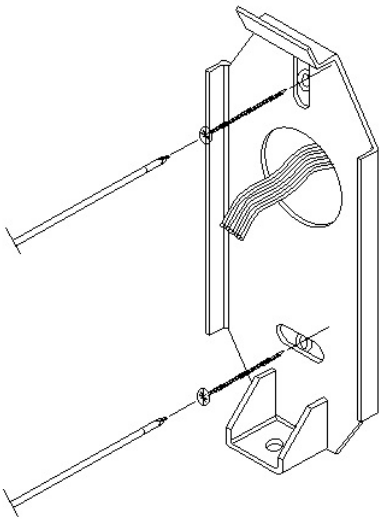
4.2.3. Installation of dowels

Place the dowels into the holes made for the screws. (The dowels included into supply). It is possible to use a hammer to more securely position the dowels in the wall. Run the wires from the wall to the outside.



4.2.4. Completing the mounting plate installation

Place the mounting plate on the wall and tighten the screws about halfway. Adjust the vertical and horizontal position of the plate and tighten the screws all the way.

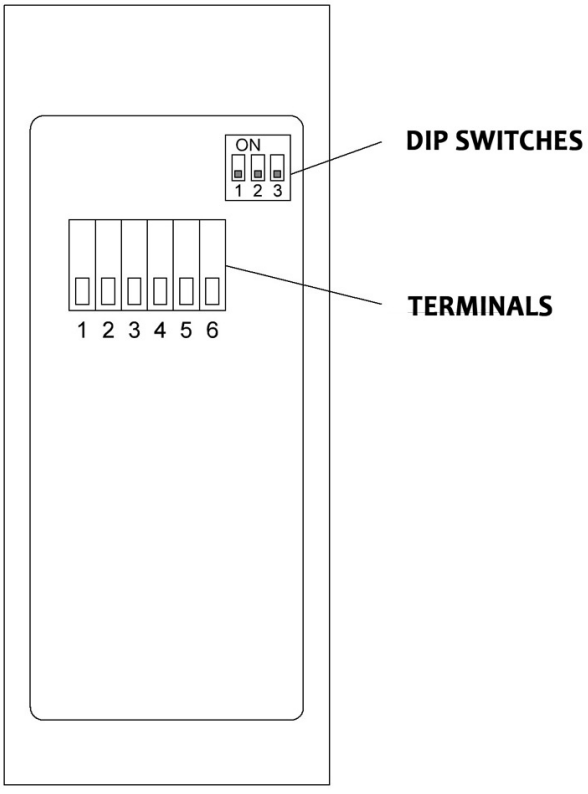


4.3. Reader connection

To connect the reader to the ACS controller, use a multicore cable with copper stranded conductors with a cross-section of 0.2 mm^2 up to 0.3 mm^2 (AWG24-AWG22) not long more than 30 meters.

4.3.1. Wire connection

Terminal number	Purpose
1	+12V
2	GND
3	Green LED, signal "Access allowed" (LED-G)
4	Red LED, signal "Access forbidden" (LED-R)
5	Data line, D1 Wiegand
6	Data line, D0 Wiegand



4.3.2. Reader setting

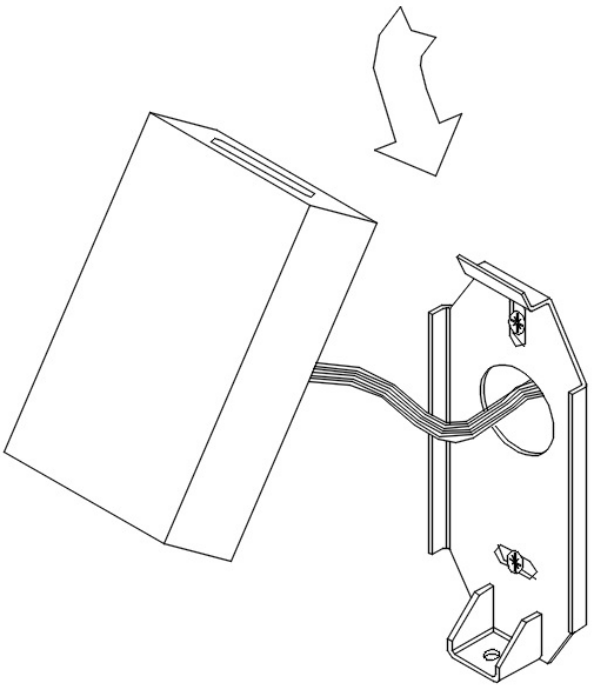
The reader setting consists of choosing the output data format - Wiegand-26 or Wiegand-34 with micro-switches on the back side (see figure in section 4.3.1).

Micro-switch number	Purpose		
1	Reserve		
2	Reserve		
3	Wiegand data format	ON	Wiegand-34
		OFF	Wiegand-26

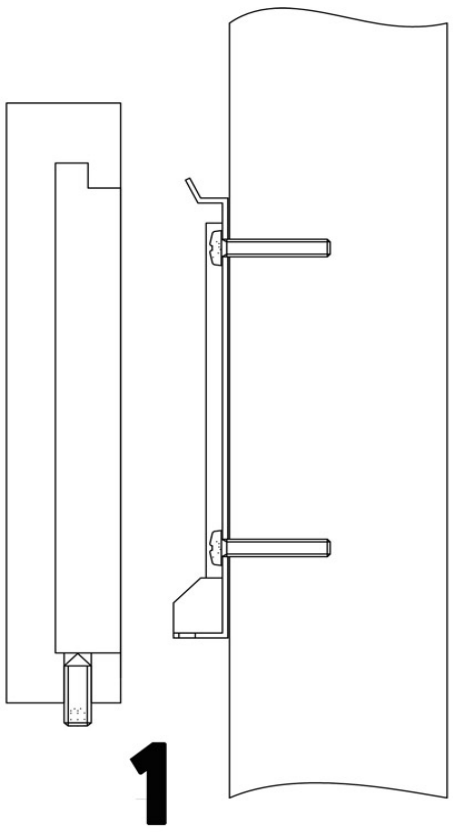
For the correct operation of the reader light-sound signaling it may be necessary to adjust «Access denied» and «Access permitted» signals in ACS controller. They must be in the form of a single pulse with a duration not more than 1 second, or a series of pulses with a total duration not exceeding 1 second with an active low level.

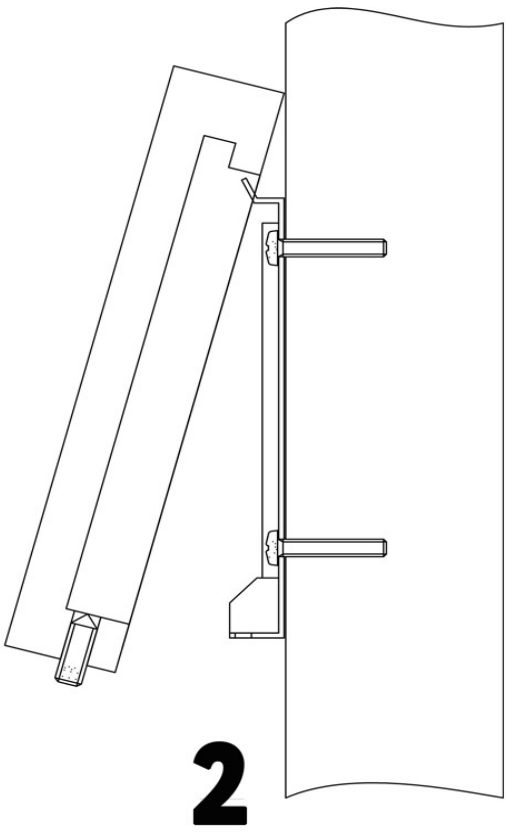
4.3.3. Reader connection to mounting plate

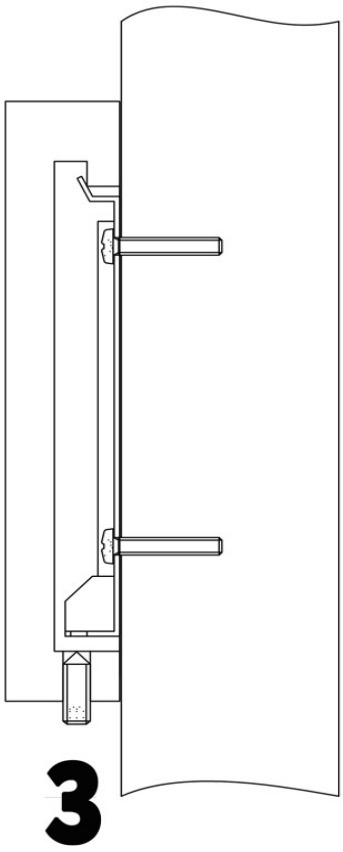
After the reader is connected and configured, it must be fixed to the mounting plate. For this purpose, first put the upper part of the reader with the back side on the upper ledge of the plate, then carefully tighten the cable in the hole and press the reader to the surface. After that you must inject the screw on the lower end of the reader before the vertical and lateral play of the reader body disappears (use a hexagonal L-shaped key from the delivery set).

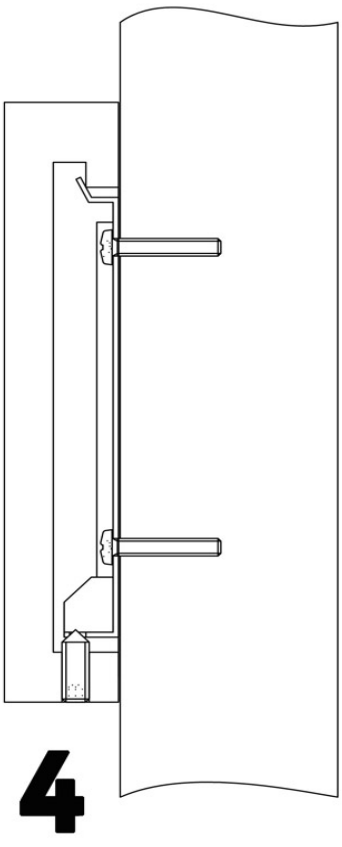


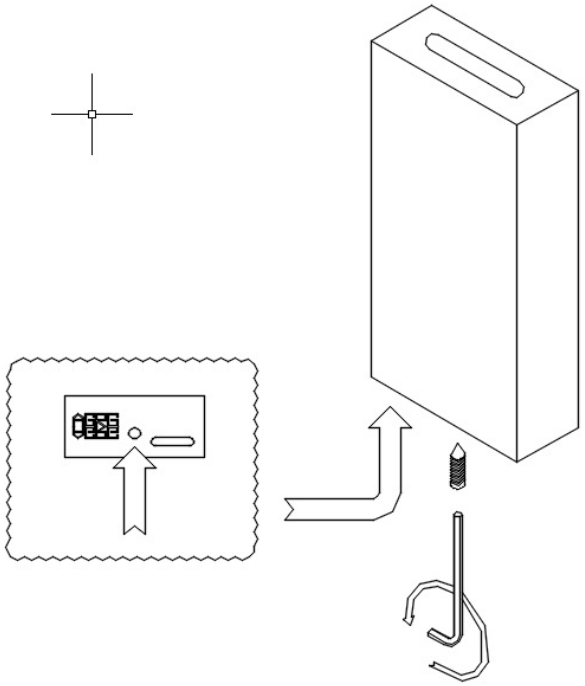
With proper installation and compliance with the above requirements, the entire body of the reader should fit tightly to the surface without distortions and plays. The fastening screw shall be blurred with the lower end of the reader body.









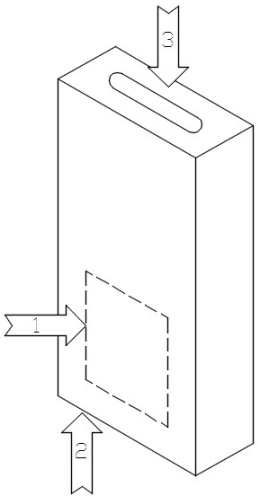


Do not tighten the screw too hard as the body of the reader is made of wood!

5. Operation

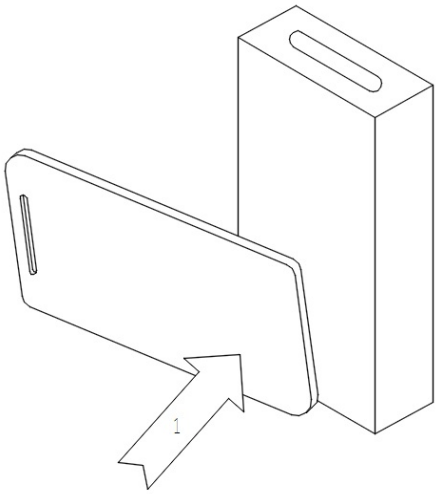
The reader is activated as soon as the voltage is applied to the reader and a welcoming sound signal is reproduced. Then the reader goes into standby mode, with a constant low glow of the light indication and periodic flashes of high brightness.

5.1. Controls



1. Input field for RFID media.
2. Audio transmitter.
3. Location of light signal.

5.2. Registration with the medium



When the identifier (card) is placed on the front surface of the reader, a sound signal is played, accompanied by an increase in the brightness of the light indication with a change in colour of the light. This means that the identifier is recognized by the reader and its data is transferred to the ACS controller.

After the identifier has been processed, the ACS controller issues an authorization or prohibition signal, whereby the reader switches on a green or red light signal with a corresponding sound accompaniment.

5.2.1. Crossover protection

The reader only considers the first available user card. All other cards are ignored.

5.3. Signal

The signals described are the diagrams posted on the site at the time of this writing. In the future, the library of schemes will be supplemented with new signals, which can be found on the website page (readers.agrg.ru/demo) using the QR code below.

EYWA Wave is a library of specially selected audio-visual effects. With the help of multi-color (256 colors) LEDs, you can choose exactly the right light for your interior. And that sound will increase the impression. EYWA Wave is your personality embodied in our readers.

	Theme name	Colors and visual effects	Watch and listen
1	Night city	Smoothly Catching and Fading (decorative lighting) is white. Read the ID - flickering white. Access allowed - orange. Denial of access - flickering red.	
2	Magical winter	Faintly burning purple, with rare flashes of brightness (decorative illumination). Read the ID - shimmering blue. Access allowed - white. Denial of access - shimmering red.	

5.4. Maintenance

The reader does not require maintenance. Clean the surface of the reader with a dry soft cloth. After cleaning, you can polish the surface with a wool napkin from a delivery set.

6. Disassembly

Disassembly of is carried out in the reverse order specified in the sections Fixing of the mounting plate and Reader connection:

1. Unscrew the DIN914 set screw counterclockwise from the bottom of the hull using the supplied Hexagonal key.
2. Pull the body towards you, simultaneously lifting it up, and remove the body from the mounting plate.
3. Use side cutters to cut the wires.
4. Remove the screws holding the mounting plate to the wall.
5. Remove the mounting plate from the wall.

7. Packing / Return

Improper packaging of the device may result in additional costs due to transport damage. Please follow the following instructions when transporting/sending the reader. «Aggregator» LLC is not liable for damage caused by incorrect packaging and transportation.

7.1. Packing the device in transit / shipment

The original packaging is specially made for the device. It provides optimal protection against damage during shipment.

Always use the original packaging when returning products! If this is not possible, ensure that the packaging prevents any damage to the device:

- Use a sturdy box with thick walls or a box for transportation. The shipping box shall be large enough to leave a free space of 3-5 cm between the device and the wall of the container.
- Wrap the device in a suitable wrap or place it in a package.
- Cover the device tightly with foam pads or, for example, air bags. The device shall not be able to move inside the package.
- Use an environmentally friendly, dust-free filler.

8. Recycling

The device must not be disposed of with household waste.

The internal components of the device must be separated before disposal or reuse. Old and used devices contain valuable recyclable materials that must be disposed.


The body of the device is made of environmental materials and must be recycled properly. Recycle packaging in an environmentally friendly manner.


Packaging materials are recyclable. Do not dispose of packaging with household waste; take it to a recycling center instead.

9. Warranty

1) Agregator LLC provides a limited one-year warranty for the device, which is a voluntary manufacturer's warranty. It provides rights regardless of the rights established by Consumer Protection Act, including, but not limited to, rights regarding non-compliant products.

	**FULL TERMS OF LIMITED ANNUAL WARRANTY ARE SPECIFIED ON AGRG EYWA HTTPS://READERS.AGRG.RU/RU/PARTNERS/WARRANTY IN SECTION «LEGAL INFORMATION»**

2) All AGRG® EYWA® devices have a unique digital code from which to define a warranty period. Guarantee checking for users anywhere in the world at any time excludes the risk of loss, forgetting, not completing or falsifying of physical warranty cards.

3) The warranty check is available on the Internet at https://readers.agrg.ru/en/partners/warranty. To check, you must enter the unique digital code of the device in a special field and click the "Validate" button. The verification process is carried out using Waves blockchain technology, which confirms the authenticity of the warranty certificate and excludes the possibility of falsification. All warranty information is placed on the Waves blockchain and is not stored anywhere on the servers of Agregator LLC.

4) Agregator LLC does not collect customer data. The warranty is not tied to the name or any other data of the owner (mail, company, address, etc.).

5) Agregator LLC disclaims responsibility for possible harm directly or indirectly caused by the products of Agregator LLC to people, pets, property, if this happened as a result of non-observance of the rules of operation, installation of the device, intentional or careless actions of the consumer or third parties.

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