



## **VOZROZHDENIE, LLC**

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APPROVED

VZR.235900.000 LU

### **TURNSTILE MODEL CUBE C-04**

C-04-c, C-04-K, C-04-Kc, C-04-H, C-04-Hc, C-04-HK, C-04-HKc

### **VZR.235900.000 IG INSTALLATION GUIDELINES**

Sheets 40

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These Installation Guidelines (IG) apply to Turnstile Oxgard Cube C-04 and its modifications (hereinafter referred to as “the product”). The firmware version of the product: FW v2.2

These Installation Guidelines specify rules and procedure for installation and startup of the product.

Prior to installing the product, the personnel should additionally read Operational Manual VZR.235900.000 OM.

Due to continuous work on the improvement of the product, its design might be subject to changes that have not been reflected in this IG revision.

A card collector can be integrated into the turnstile’s design.

The following abbreviations have been adopted for use herein:

OM — Operational Manual;

IG — Installation Guidelines;

PSU — Power Supply Unit;

RC panel — Remote Control Panel;

AMCS — Access Monitoring and Control System;

SAFAS — Security and Fire Alarm System;

NC — Normally Closed Connection;

NO — Normally Open Connection.

## 1. GENERAL GUIDELINES

When assembling and installing the product, please consider all the recommendations and guidelines detailed herein for overall safety reasons.

Prior to starting the installation works, fully de-energize the product.



**DO NOT:**

INSTALL THE POWER SUPPLY UNIT INSIDE THE TURNSTILE CASING, BECAUSE THIS MAY CAUSE ELECTROCUTION.

INSTALL THE TURNSTILE ANYWHERE OUTSIDE DRY AND HEATED ROOMS.

OBSTRUCT OR ACCELERATE THE MOVEMENT OF THE TURNSTILE BARS.

USE FOR CLEANING ANY PASTES OR FLUIDS THAT ARE CHEMICALLY AGGRESSIVE TO MATERIALS OF THE HOUSING.

## 2. SAFETY PRECAUTIONS

When carrying out the installation, “Rules for Technical Operation of Consumers' Electrical Installations” and “Safety Rules for Operating Consumers' Electrical Installations” shall be respected.

Qualified personnel duly trained for operating electrical appliances and instructed on the safety rules to follow when working with electrical installations of up to 1000V, shall be permitted to install the product.



**ATTENTION:** FAILURE TO COMPLY WITH SAFETY REQUIREMENTS SPECIFIED IN THIS SECTION MAY CAUSE DAMAGE TO HUMAN LIFE AND HEALTH AND FULL OR PARTIAL LOSS OF THE FUNCTIONABILITY OF THE PRODUCT AND / OR AUXILIARY EQUIPMENT.



**ATTENTION:** IN CASE OF FAILURE TO COMPLY WITH SAFETY REQUIREMENTS SPECIFIED IN THIS SECTION, THE MANUFACTURER SHALL NOT BE HELD LIABLE FOR DAMAGE TO HUMAN LIFE AND HEALTH, AND FULL OR PARTIAL LOSS OF THE FUNCTIONABILITY OF THE PRODUCT AND / OR AUXILIARY EQUIPMENT, AND TERMINATE THE PRODUCT'S WARRANTY.

### **3. PREPARING THE PRODUCT FOR INSTALLATION**

#### **3.1 Procedure for transporting the product to installation site**

The product in factory packaging can be transported by air, closed motor and railroad transport means when fitted with protection against direct exposure to precipitation and dust without distance limitation.

After shipment under subzero temperature, the product shall be kept in a room under normal climatic conditions during 12 hours to avoid moisture condensation.

When carrying out handling operations, safety requirements shall be observed.

#### **3.2 Product unpacking rules**

3.2.1 Inspect the package externally. The package shall have no visible damages.

3.2.2 Open the transportation box, unpack it and examine the product composition:

- 1) turnstile stand;
- 2) RC panel with cable;
- 3) latch keys (4 pcs).

#### **3.3 Product inspection rules**

3.3.1 Check the completeness of the set.

Check the completeness of the set in accordance with Datasheet VZR.235900.000 DS.

3.3.2 Inspect the product externally. The product shall have no visible damages.

3.3.3 Should any damages be revealed, prepare a Damage Claim.

3.3.4 Figure 1 – Turnstile's overall dimensions.

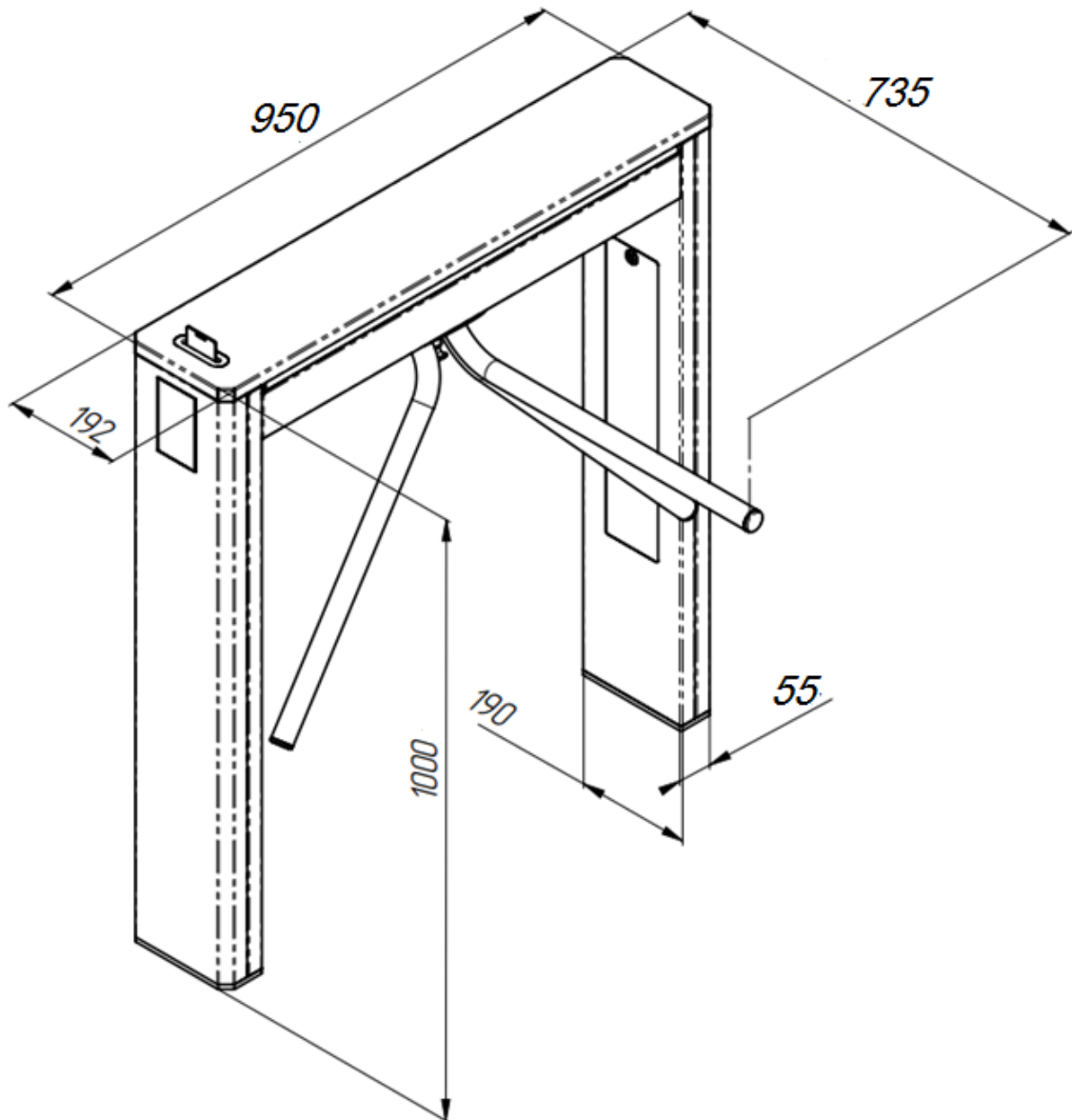


Figure 1 – Turnstile's overall dimensions

### 3.4 Requirements for the product's installation site



ATTENTION: TO PREVENT THE TURNSTILE SWINGING AND (OR) TILTING IN THE COURSE OF OPERATION, INSTALL IT SECURELY. IN CASE OF TURNSTILE INSTALLATION ON LOW-STRENGTH FLOOR, TAKE MEASURES TO FLOOR STRENGTHENING ON INSTALLATION SITE.

Figure 2 – During the installation of the turnstile, possible free travel of the arm should be considered. In “STOP” mode, it makes 6 degrees on each side.

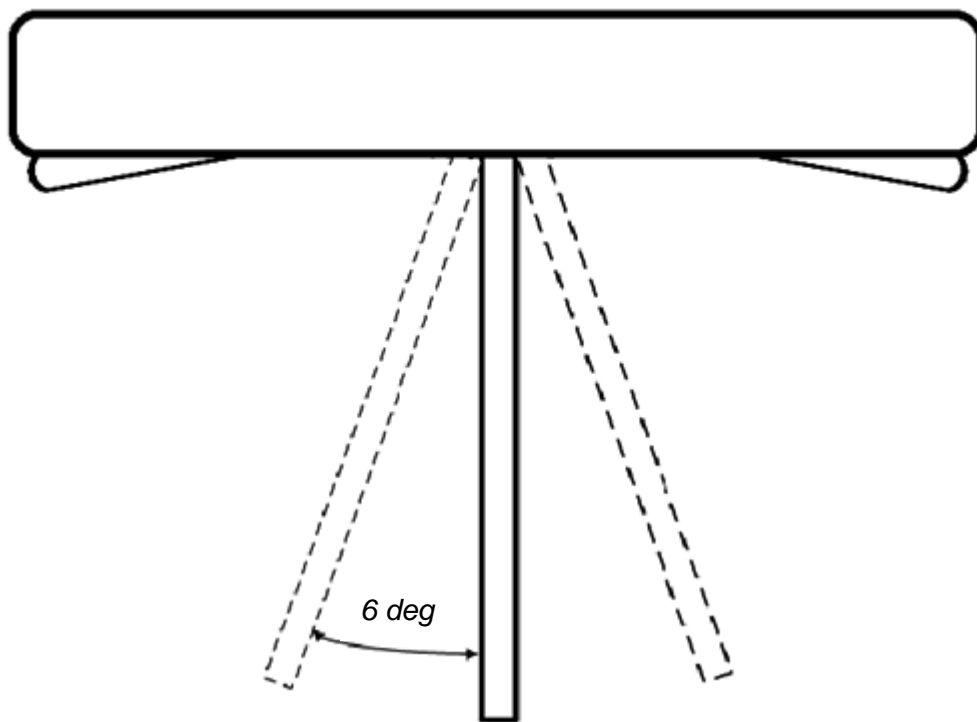


Figure 2 - Possible free travel of the arm in “STOP” mode

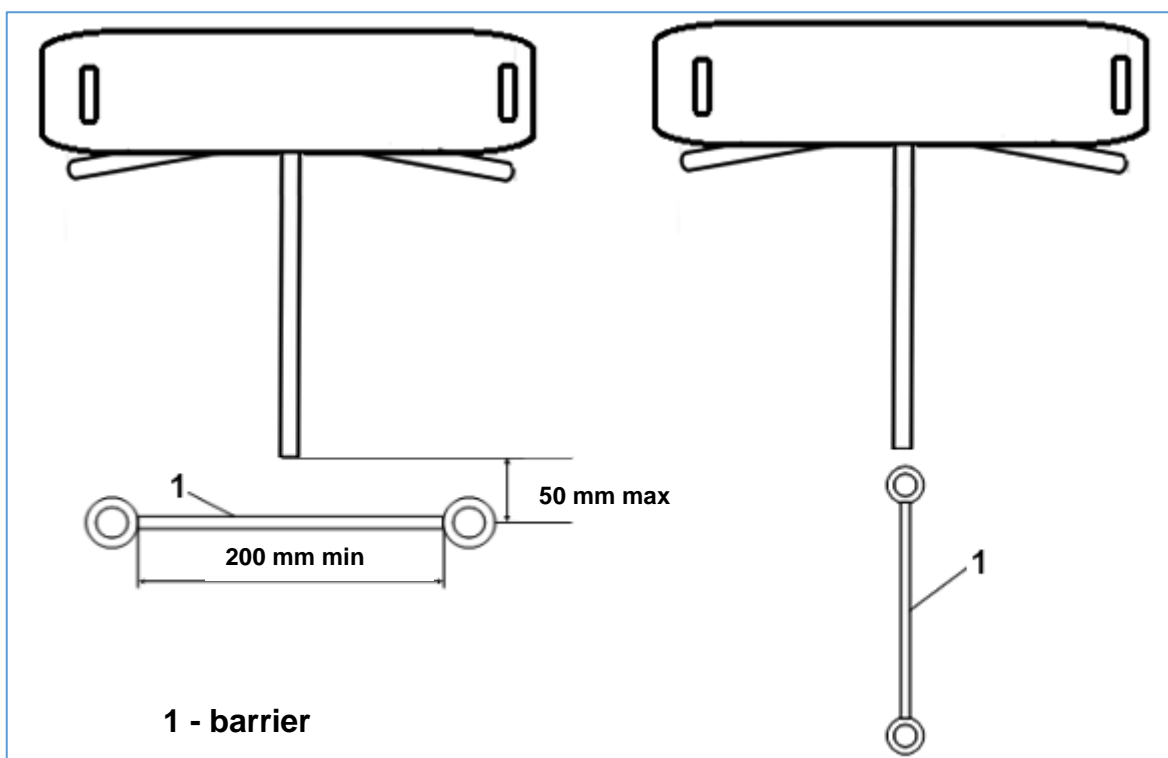


### 3.5 Procedure for checking installation site for compliance



**ATTENTION:** PASSAGE ZONES SHALL BE PROVIDED TO ALLOW RECORDING OF PASSAGES DURING TURNSTILE OPERATION UNDER AMCS CONTROL AND TO AVOID UNAUTHORIZED PASSAGES.

3.5.1 Figure 3 – Arrangement of turnstile’s passage zone and instructions for orienting the product.



**Recommended diagram**

**Not recommended diagram**

Figure 3 - Turnstile passage zone arrangement.

## **4. MOUNTING AND DISMOUNTING OF THE PRODUCT**

### **4.1 Required Equipment**

The equipment used during turnstile installation:

- 1) electric puncher;
- 2) 10mm dia solid-carbide drill for drilling holes in the floor for anchors (recommended anchor with screw type FH 10/10 SK);
- 3) Allen key S5;
- 4) straight-blade screwdriver;
- 5) plumb or level;
- 6) steel pads for turnstile alignment;
- 7) round file;
- 8) side cutting pliers.

## 4.2 Mounting the Product



**ATTENTION:** PLEASE READ THIS SECTION THOROUGHLY PRIOR TO MOUNTING THE PRODUCT.

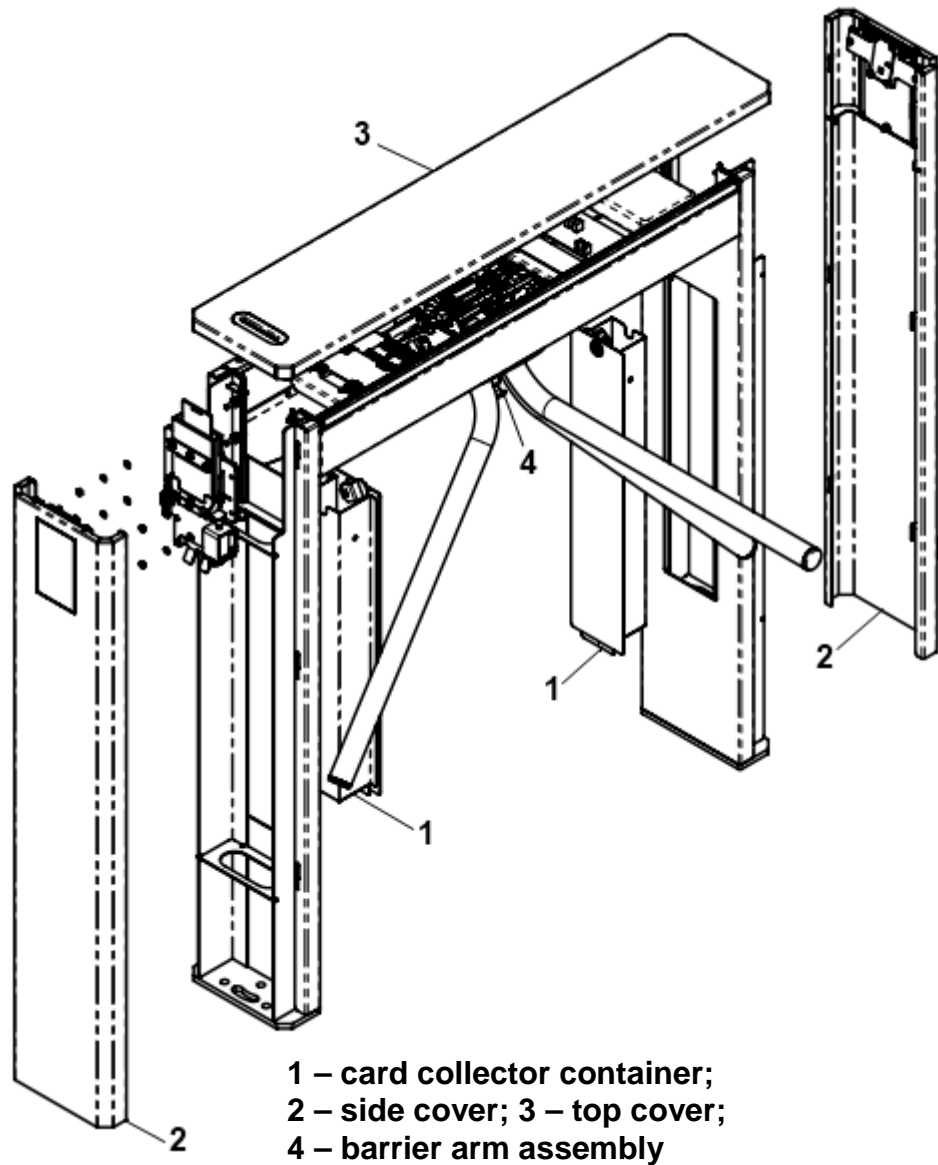


Figure 4 – Turnstile's main panels

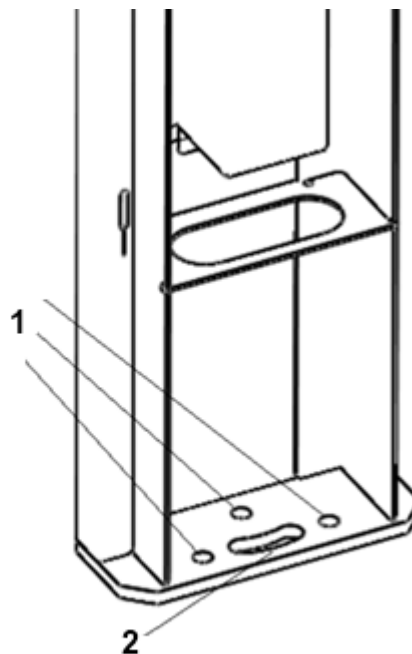
Figure 4 – to access all required turnstile assemblies, the turnstile should be partially disassembled – dismounting of the card collector containers (1), the turnstile top (3) and the side covers (2), as specified in OM Section 3.5.

4.2.1 Prepare a horizontal platform on the turnstile installation site.

4.2.2 Provide a cable conduit or a cable channel from the platform to where the PSU and RC panel will be installed and, where necessary, to AMCS and SAFAS connection location.

4.2.3 Turnstile's installation site.

Figure 5 – prepare 6 holes, 11 mm diameter, in the floor for two turnstile stand anchors.



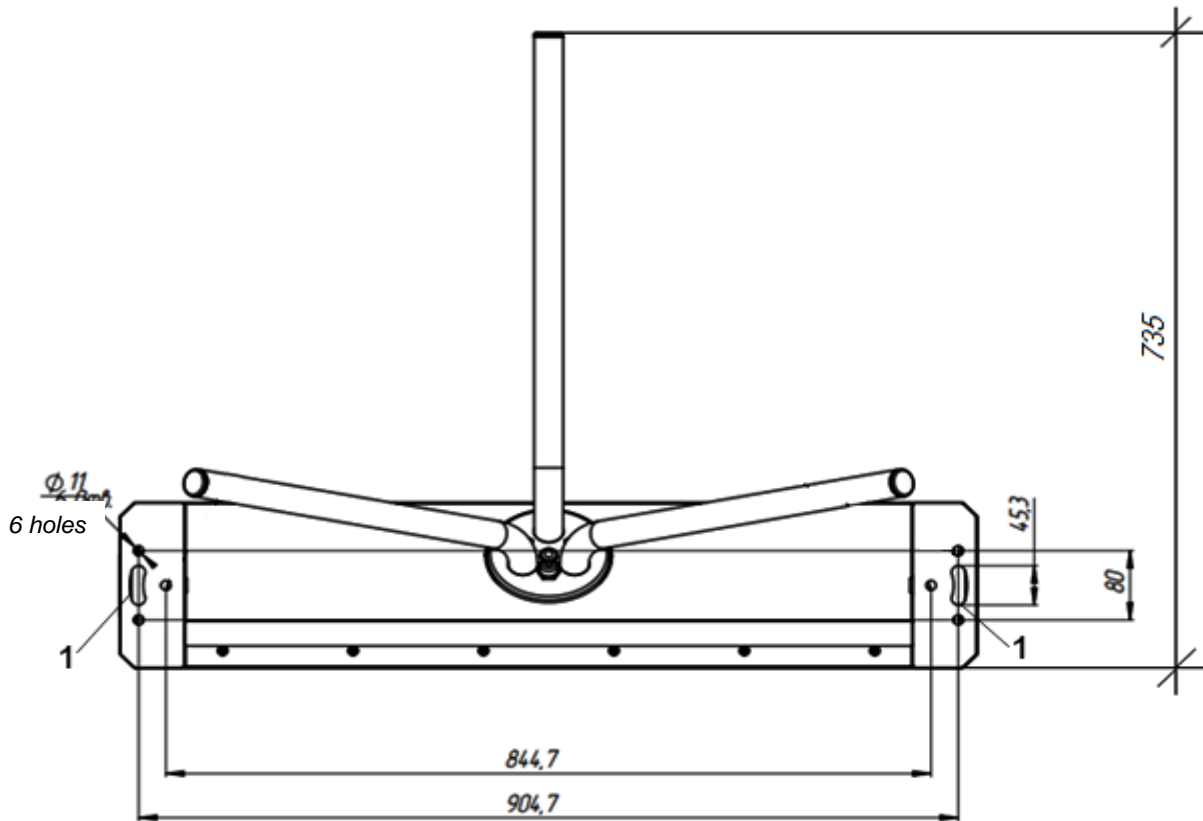
**1 - turnstile fixing holes;  
2 - hole for cable input**

Figure 5 - Turnstile stands

The layout of mounting holes in relation to the turnstile external overall dimensions is shown in Appendix B.

Embedded hole depth, 120 mm, shall exceed the anchor length by 5 mm. Insert the anchors into the holes.

Figure 6 – Turnstile's installation dimensions.



**1 – cable input holes**

Figure 6 – Turnstile’s installation dimensions

4.2.4 Figure 6 – wire the cable through the hole (1) in the bottom plate of the turnstile stands.

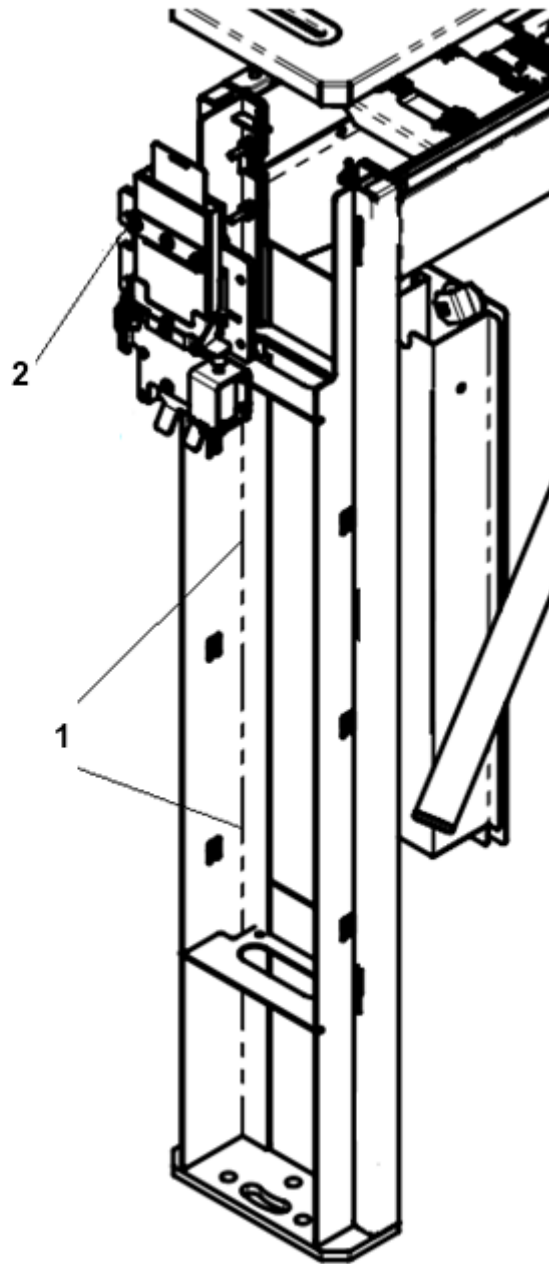
4.2.5 Route the RC panel’s cable, PSU’s cable, and, where provided, AMCS and SAFAS’ cables in the cable conduit or cable channel.

4.2.6 Install the turnstile on the prepared platform.

4.2.7 Pull the RC panel and PSU cables, and, where necessary, AMCS and SAFAS cables into turnstile housing.

Fix the cables using cable ties.

Figure 7 - routing of cables (1) is indicated with dashed lines, the cable input hole under the top cover (2).



- 1 - cable routing locations;
- 2 - cable input hole

Figure 7 – Routing of control and power supply cables

4.2.8 Match the holes in the turnstile stands with anchors in the floor.

Check the verticality of the installation in 2 planes; where necessary, use steel pads of the required thickness for correct installation of the turnstile.

Fix the turnstile stands using 6 screws, turning them into corresponding anchors and using the wrench or spanner key with a nut width across flats of 10 mm.

Figure 4 - Install the side (2) and top (3) covers, the turnstile card collector containers (1).

4.2.9 Remove the protective film from the turnstile housing.

### **4.3 Dismounting the product**

4.3.1 Dismounting of the product when sending it for verification and repair shall be carried out in the following manner:

- 1) switch off the power supply of the product;
- 2) disconnect the product from the power supply;
- 3) disconnect the product's cable part from the auxiliary cables;
- 4) dismount the product from the installation site.

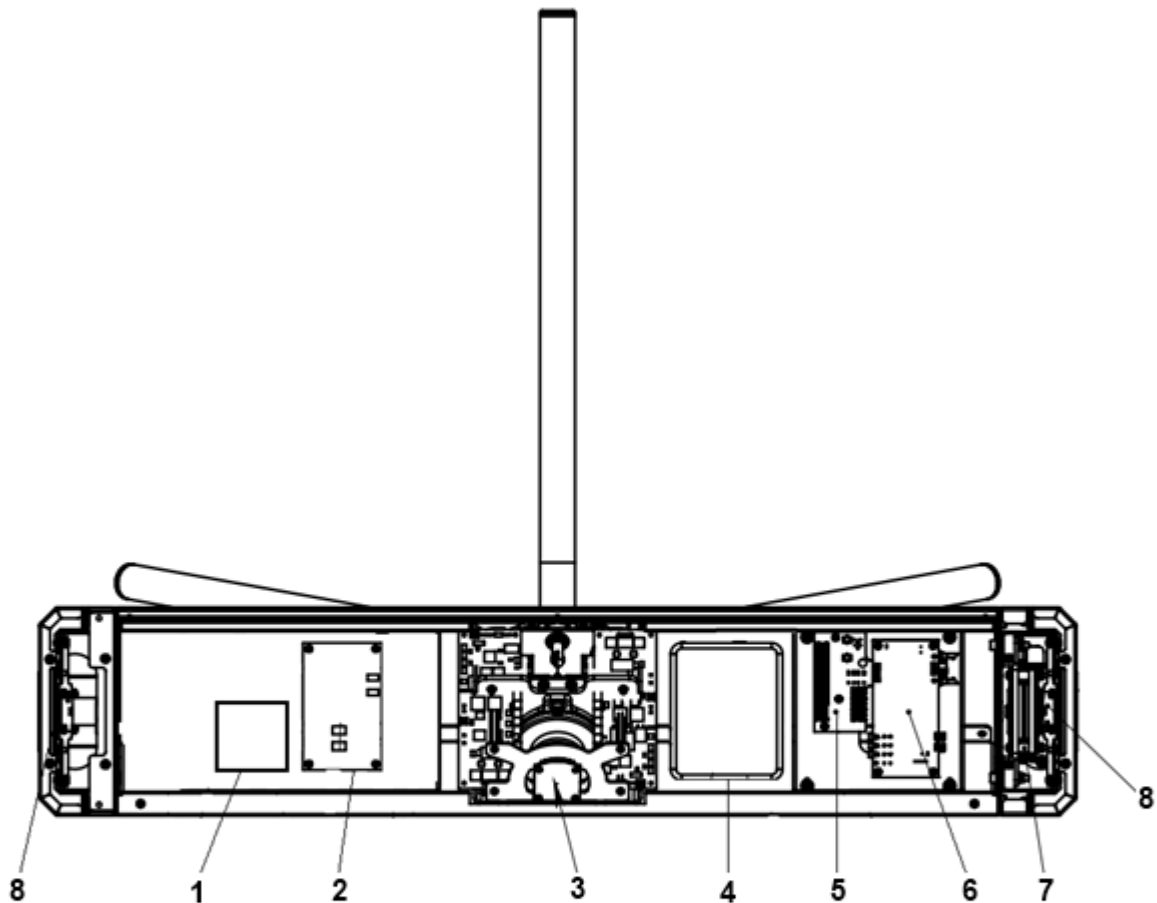
4.3.2 Prior to packaging, remove dust and any contaminations from the product.

4.3.3 Pack the product into the packing box.

## 5 CONNECTING AND ADJUSTING THE PRODUCT

APPENDIX C - Turnstile Connection Diagram. PSU, RC panel and AMCS shall be connected using the motherboard.

Figure 8 - Layout of boards under top cover on turnstile stand.



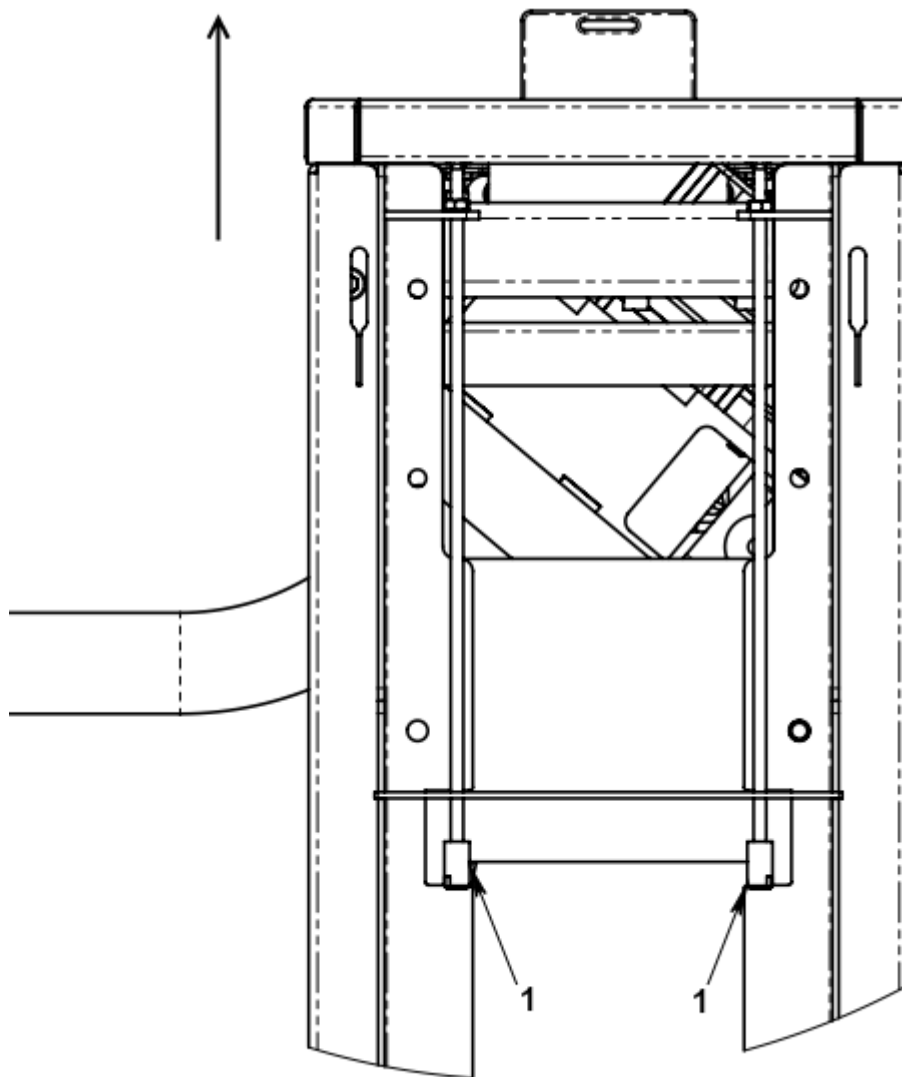
- 1 - *Display Control Board;*
- 2 - *Card Collector Control Board;*
- 3 - *Encoder Board;*
- 4 - *Controller Installation Location;*
- 5 - *Motherboard;*
- 6 - *Control Mainboard;*
- 7 - *Card Collector;*
- 8 - *Readers*

Figure 8 - Layout of boards under top cover



For turnstile connection and access to all required contacts, the top cover shall be removed.

To do that, use the key to open and remove the both containers located inside the turnstile stand, then release 4 mounting studs of the top cover (Figure 9 - 1) and remove the cover in the shown direction.



**1 – cover mounting studs**

Figure 9 - Dismounting of turnstile top cover

Figure 10 - The appearance of the motherboard and the layout of connectors for PSU, RC panel, AMCS and SAFAS connection are depicted. Motherboard location (Figure 8 - 5).

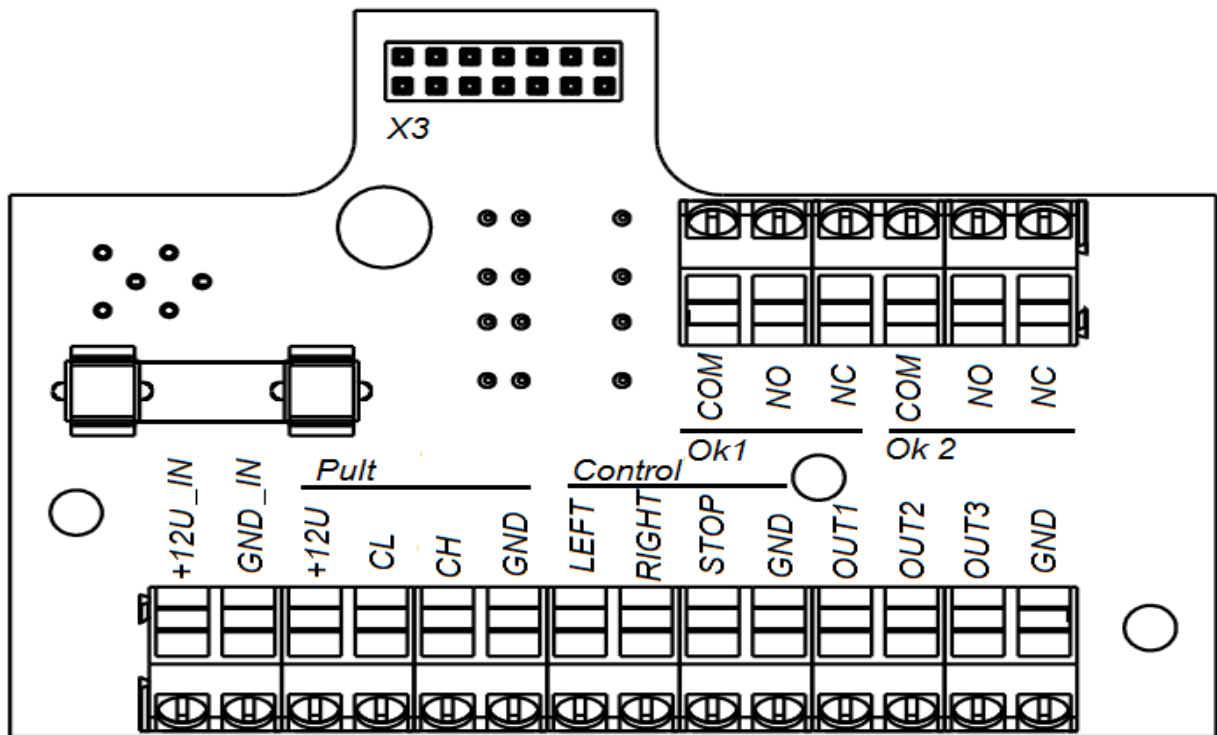


Figure 10 - Motherboard appearance

The turnstile’s modes of operation with different positions of jumpers on the mainboard are detailed in Table 1.

Table 1 Turnstile’s mode of operation

Jumper positions		Turnstile’s mode of operation
<i>Potential Mode</i>	X1 “On” position	Potential Mode (p. 5.3)
	X1 “OFF” position	Pulse mode (p. 5.3)
<i>Remont Control</i>	X3 “On” position	The turnstile does not respond to panel’s commands, the status of buttons is transmitted to the outputs OUT1 through OUT 3 (para 5.4)
	X3 “OFF” position	The turnstile is controlled by the panel, the status of buttons is transmitted to the outputs OUT1... OUT 3 (para 5.4)

## 5.1 Power supply connection



**DO NOT:**

USE POWER SUPPLY UNITS WITH AN OUTPUT CURRENT OF LESS THAN 3.0 A.

ENERGIZE THE TURNSTILE USING A POWER SUPPLY CABLE WITH A CROSS SECTION OF LESS THAN 1.5 MM<sup>2</sup> WITH THE FEEDER CABLE BEING MORE THAN 10M LONG – A 2.5 MM<sup>2</sup> CROSS-SECTION CABLE IS RECOMMENDED.



**ATTENTION:** INSTALLING THE POWER SUPPLY UNIT AT A DISTANCE OF OVER 25 M FROM THE TURNSTILE IS NOT RECOMMENDED.

The turnstile is powered by a 12 VDC unit. Max consumption – 3.0 A. PSU shall be selected based on these parameters.

Also, it should be considered that when increasing the feeder cable length, the voltage drop increases (operating voltage range is specified in Operational Manual VZR.235900.000 RE).

Install PSU in a location easy to access for the operator.

Connect PSU cable to the group of contacts +12U\_IN and GND\_IN on the motherboard. Connect PSU's (+) and (-) contacts to (12V\_IN) and (GND\_IN) contacts accordingly.

Make sure the cable is secure.

## 5.2 Control Panel Connection

Connect RC panel to the group of contacts *Pult* on the motherboard. Labeling of contacts: 12V, CL, CH, GND.

The RC panel shall be connected using the labeling of contacts in Table 2.

Table 2 - Labeling of contacts for RC panel connection

Labeling of contacts	Wire color
12V	Red
CL	Yellow
CH	Green
GND	Blue

### 5.3 Connecting Access Monitoring and Control System (optionally)

Connect AMCS controller to the group of contacts *Control* on the motherboard.

Labeling of contacts: LEFT, RIGHT, STOP, GND. Purpose of contacts is specified in Table 3.

Table 3 - Purpose of AMCS contacts

Labeling of contacts	Purpose of contacts
LEFT, RIGHT	left/right single passage (lowest priority)
STOP	no passage is allowed ("Stop" mode) (highest priority)
GND	common contact

Inputs for AMCS connection differ by priorities:

- 1) STOP input is of the highest priority. When closing this input to GND contact, the turnstile switches to "Stop" mode and does not respond to other effects;
- 2) LEFT and RIGHT are of equal low priority and include the single passage in one or other direction. If both inputs are closed, the passage is allowed in the direction, under which the input was closed first. In case no passage was performed, the turnstile switches to "Stop" mode automatically after 5 seconds.



**ATTENTION:** IN CASE OF CLOSING ONE OF INPUTS, THE STOP-COMMANDS FROM THE PANEL ARE NOT ACCEPTED, BECAUSE AMCS IS OF THE HIGHER PRIORITY.

The STOP input is potential, i.e. as long as the the input is closed to GND contact, the turnstile operates in the corresponding mode. After opening the contacts, the turnstile switches to “Stop” mode regardless of the mode that has been on before AMCS operation.

LEFT and RIGHT inputs can operate both in potential and pulse mode (actuation based on the evidence of closing to GND contact). The pulse mode is set by default.

For switching to potential mode of operation, a jumper (Figure 11 - X1) shall be set to “ON” position on the mainboard. In this case, the left/right passage mode is switched on only for the time of the control signal supply to the LEFT/RIGHT inputs.

The free passage mode can be set by simultaneous issue of control signals to both inputs. Priority of LEFT and RIGHT inputs during switching to the pulse mode remains unchanged.

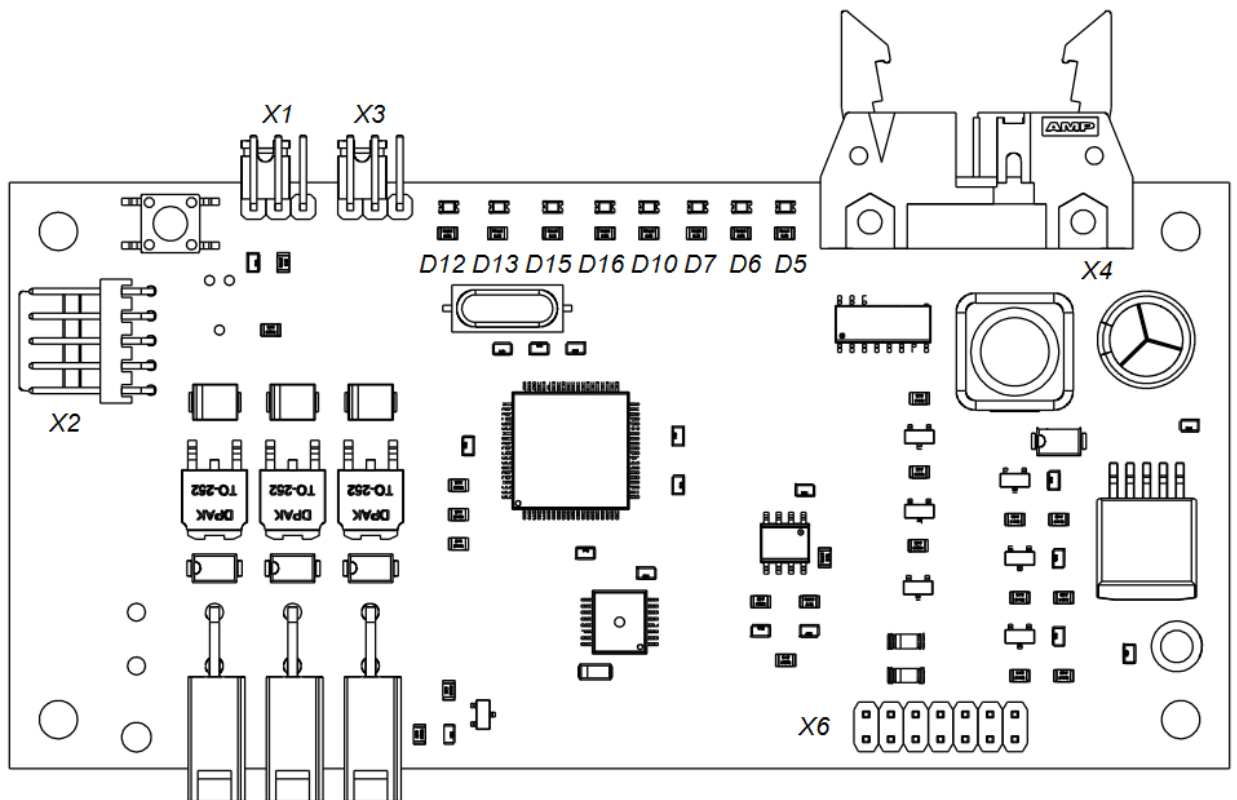


Figure 11 - Mainboard appearance

Figure 11 - The mainboard appearance is shown. Mainboard location (Figure 8 - 6).

Two relay outputs for AMCS operating according to “dry contact” principle – Ok1 and Ok2 - are implemented in the motherboard. NO and COMM – normally open connection, NC and COMM – normally closed connection.

Actuation of one of the group of contacts indicates performance of passage in the respective direction (Ok1 – right, Ok2 – left). The “dry contact” closes/opens during the turning of the arm to a 60-degree angle and returns in the initial position after the passage is entirely complete.

Figure 11 - LEDs are installed in the mainboard to check its operation.

- 1) D5 indicates the command issued to “LEFT” input.
- 2) D6 indicates the command issued to “RIGHT” input.
- 3) D7 indicates the command issued to “STOP” input.
- 4) D10 indicates the right passage performed and the relay actuation (Ok1 – right).
- 5) D16 indicates the left passage performed and the relay actuation (Ok2 – left).
- 6) D15 indicates the 12V power supplied to the mainboard
- 7) D12 EncDec and D13 EncInc indicate the correctness of magnet location in relation to the magnetic position sensor of barrier arms. When in correct location, D12 and D13 are not illuminated.

#### **5.4 Connecting control panel to AMCS controller**

In some cases, the RC panel of the turnstile shall be connected directly to AMCS controller as the passages authorized from the panel (without controller participation), are perceived by the system as “hacking”.

For using this scheme, set the jumper on the mainboard (Figure 11 - X3) to the “On” position.

With the set jumper X3, the turnstile does not respond to panel’s commands, but only transmits their status to the contacts of the motherboard terminal blocks (Figure 10 - OUT1...OUT3), which are the outputs with open collector.

Purpose of contacts is given in Table 4, Figure 12 - numbering of panel’s buttons. For this group of contacts, the maximum output current is 150 mA max, permissible voltage is 24V max.

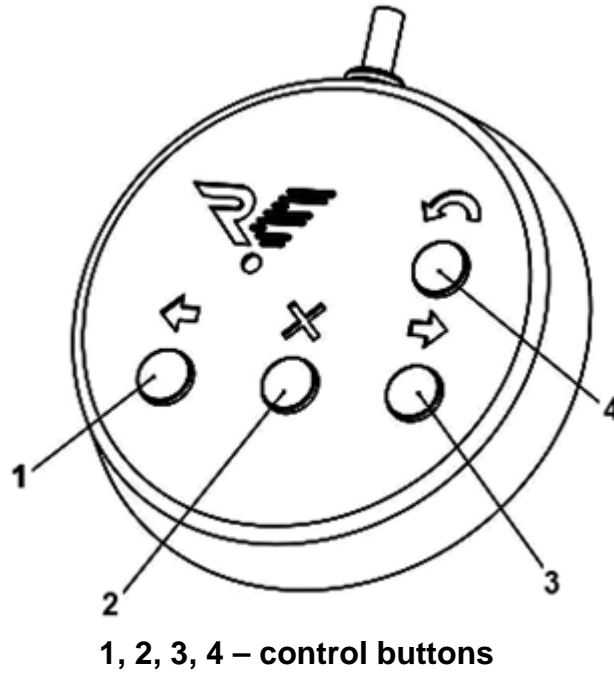


Figure 12 - Numbering of RC panel's buttons

Table 4 - Purpose of OUT group of contacts

Labeling of contacts	Purpose of contacts
OUT1	“Left” button status (1)
OUT2	“Right” button status (3)
OUT3	“Stop” button status (2)

Outputs OUT1...OUT3 reflect current status of RC panel's buttons – transistor opens upon pushing the relative button.



Outputs OUT1...OUT3 can be connected both to AMCS controller directly, and via the relay. Figure 13 - when using the relay, the diode connection in parallel to winding **IS OBLIGATORY (!)**.

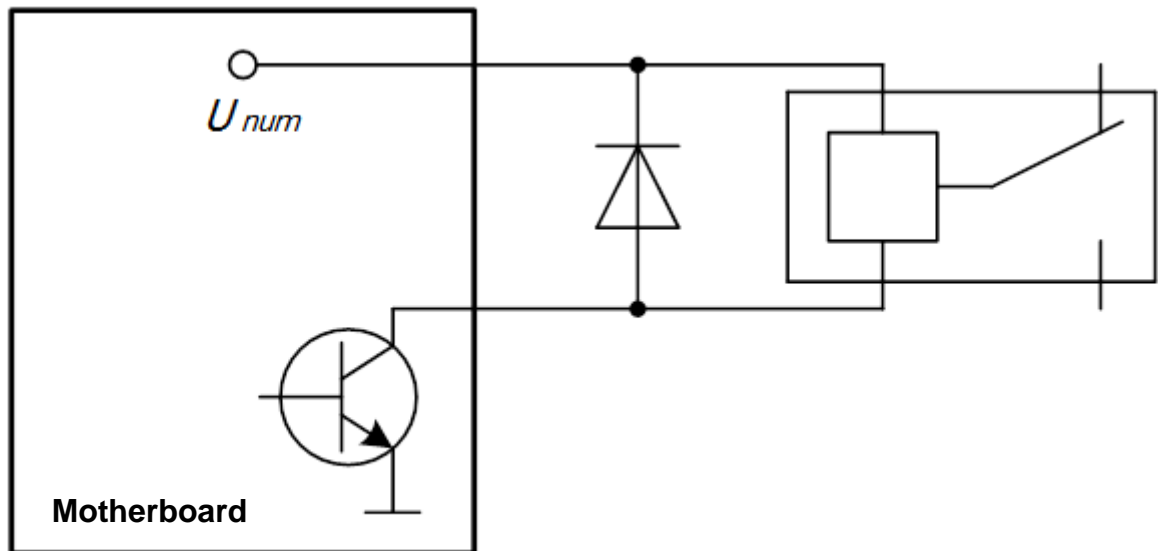


Figure 13 - Wiring diagram for connecting the diode in parallel to the relay winding

Figure 14 - Wiring Diagram of connecting the RC panel to AMCS controller.

In this option, the controller operates the turnstile by means of “LEFT”, “RIGHT” and “STOP” contacts.

The essential feature of RC panel connection via AMCS controller is the impossibility for using the turnstile modes that are set by means of the panel’s button combinations (except the free passage mode in the potential mode of operation, Section 5.3 hereof). In this case, AMCS is responsible for these modes.

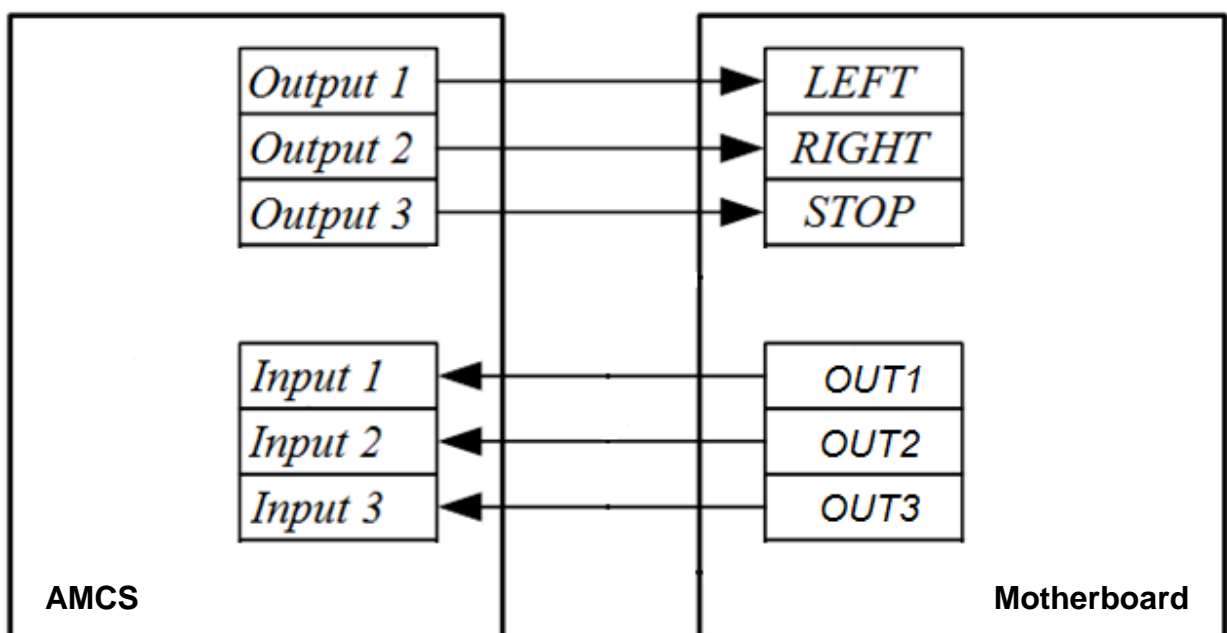


Figure 14 - Wiring diagram for connecting the RC panel to AMCS controller

### 5.5 Card Collector Connection

The inner side of the stands of the card collector houses two containers with locks for fast access to withdrawn cards, as well as for access to the top cover fixing screws.

The card collector board is located under the turnstile’s top cover. Remove the top cover to connect the card collector.

Figure 15 – Card collector board appearance and layout of connectors for PSU, AD and AMCS connection.

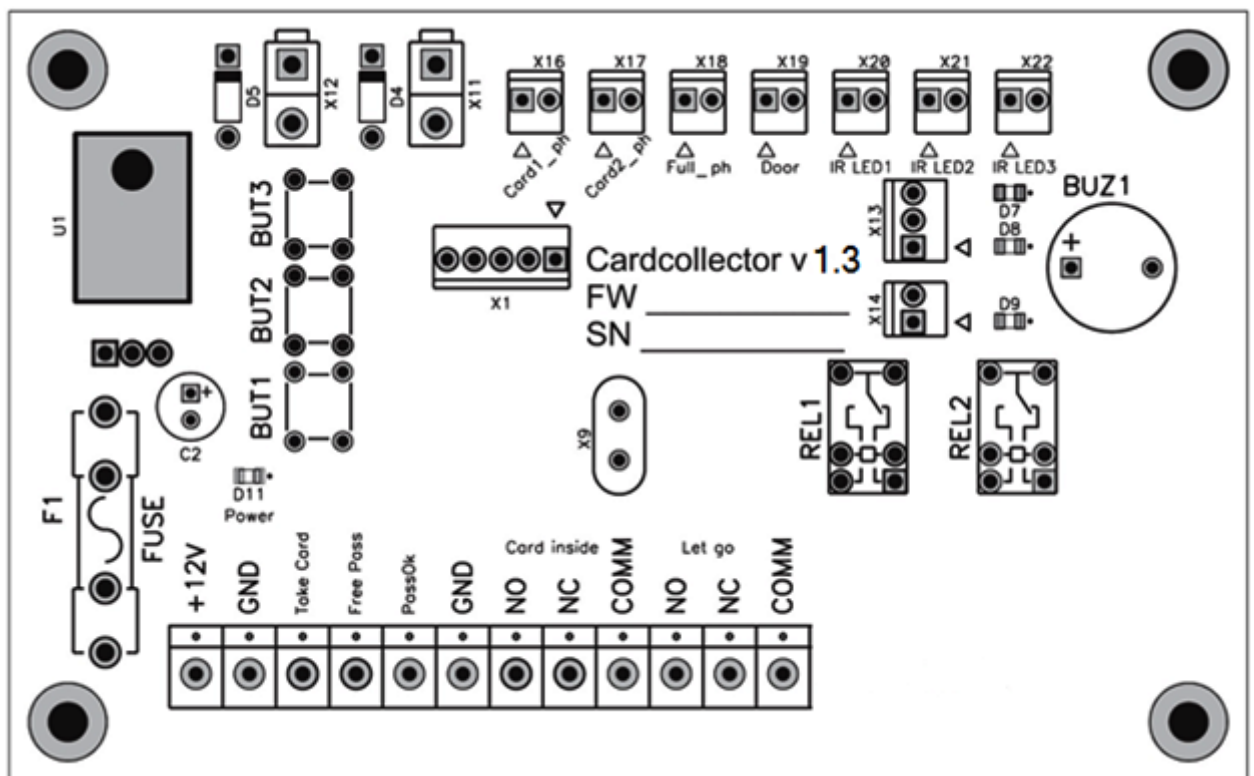


Figure 15 - Cardcollector board appearance

### 5.5.1 Cardcollector power supply connection.

The card collector operates from 12 VDC power supply. Maximum consumption is observed in the card withdrawal mode – 1.5A. If the card collector is installed on the turnstile, it is necessary to increase PSU capacity by the card collector consumption value.

Using one PSU to connect the card collector and turnstile is allowed. Connect the PSU cable to the card collector's board. Connect PSU's (+) and (-) contacts to contacts (+12V) and (GND) on the board accordingly.

With available power supply, D11 LED will go on the card collector board. Make sure the cable is secure.

### 5.5.2 Actuation device connection.

Figure 15 – The actuation device (AD) is connected to the card collector using two groups of contacts: the output signal for passage authorization Let Go and the input signal confirming passage performance Ok-GND.

#### Let Go Group of Contacts

NC, NO and COMM contacts. The relay output operating by “dry contact” principle, which closes/opens transmitting the passage authorization signal to AD. NC and COMM – normally closed connection, NO and COMM – normally open connection.

#### Pass Ok-GND Group of Contacts

Pass Ok and GND contacts. The pulse input which receives signal from AD and confirms passage performance. Logic behavior – normally open contacts. The passage evidence is determined by closing the contacts for at least a 200ms time period.

Upon presentation of the authorized card, the card collector transmits the signal and unlocks AD for 5 seconds. During this time interval the other cards are not accepted.

In case of receiving the signal (closing of PassOk and GND to each other), confirming the passage, the card collector switches to suspended mode and may accept the next card. For these reasons, connection of this group of contacts is particularly important for the system throughput capability.

### 5.5.3 AMCS controller connection.

AMCS controller Block Schematic Diagrams with the use of card collector are given in Appendix D.

Figure 15 - AMCS controller connection to the card collector is carried out by means of three groups of contacts: Take Card-GND, Free Pass-GND and Card Inside.

#### Take Card-GND Group of Contacts (guest card withdrawal signal)

Take Card and GND Contacts. The pulse input, which receives the signal from AMCS controller and authorizes card withdrawal (visitor pass).

Logic behavior – normally open contacts. The passage evidence is determined by closing the contacts for at least 200 ms period.

The withdrawal signal shall be given no sooner and no later than 2 seconds after card insertion into the card collector slot. Otherwise, it will be ignored.

After receiving the signal in the set time interval, the card collector opens the door and the card is withdrawn.

In case of confirming the card withdrawal evidence by the internal sensors, the card collector generates the signal for AD by means of the group of contacts Let Go and by means of the group of contacts Card Inside for AMCS. At that, the side display panel illuminates green light.

Free Pass-GND Group of Contacts (signal for passage authorization without card withdrawal)

FreePass and GND Contacts. The input, which receives the signal from AMCS controller and authorizes passage without card withdrawal (permanent pass).

In case of receiving the signal for passage authorization without card withdrawal, the card collector generates the signal for AD by means of group of contacts Let Go. At that, the side display panel illuminates green light.

The Cardcollector Free Pass Input can operate both in potential and in pulse mode (actuation by the evidence of contact closing).

The pulse mode is set by default. At that, upon starting, the card collector issues 1 sound signal.

For switching to the potential operating mode, it is necessary:

- 1) to disconnect power supply;
- 2) to wait for D11 LED on the card collector board going off;
- 3) to push and hold BUT1 button on the card collector board;
- 4) to switch on the power supply;
- 5) to hold BUT1 button until the card collector emits 2 sound signals, which indicate its switching to potential operating mode.

Setup of the set mode remains when switching off the power supply. To return to the pulse mode, repeat the above sequence of operations.

Card Inside Group of Contacts (card withdrawal confirmation signal)

NC, NO and COMM contacts. The relay output operating by “dry contact” principle, which closes/opens for 1 second transmitting the card withdrawal confirmation signal to AMCS controller. NC and COMM – normally closed connection, NO and COMM – normally open connection.

## **6 INTEGRATED INSPECTION**

### **6.1 Inspecting and checking the product's readiness for use**

6.1.1 Check that the turnstile's parts and assemblies are tightly fastened

6.1.2 Make sure all cables are secure.

6.1.3 Switch on the turnstile's power supply and check for serviceability by making some test passages.

6.1.4 With no foreign noise and any operating disturbances, the turnstile is ready for operation.



## 7 COMMISSIONING THE MOUNTED PRODUCT

The mounted product shall be commissioned as follows:

- 1) the representative of the installing organization demonstrates that the product is secure;
- 2) records on the product installation are made into Datasheet VZR.235900.000 DS in the Section "Product Historical Record";
- 3) "Installation Information" Section in the product's Datasheet VZR.235900.000 DS is filled in;
- 4) Acceptance Commission Certificate is prepared.

## APPENDIX A — SHORT DESCRIPTION OF DATA TRANSFER BUS CAN2.0

For the operation of the RC panel, an advanced CAN2.0 standard interference-free bus is used. According to CAN2.0 standard, the signal cable length may reach the above one kilometer values. However, the correct operation at such distances depends on many factors.

At distances above 25 m – using of Cat5e or Cat6 twisted pair is obligatory. The total DC resistance of the RC panel power supply wire shall not exceed 50  $\Omega$ .

In case this requirement fails to be met where the panel is installed, an auxiliary 12V/100mA PSU (RC panel's minimum operating power supply voltage is 7.5V) can be installed. At that, 3 wires from the turnstile – CL, CH, GND - are sufficient for correct operation.

Two panels can be connected to one turnstile.

The available 120  $\Omega$  resistors on the bus ends is the essential feature of CAN2.0 bus. Such resistor has been already installed in standard RC panel.

## APPENDIX B — LAYOUT OF MOUNTING HOLES IN RELATION TO TURNSTILE EXTERNAL DIMENSIONS

Figure 16 - Layout of mounting holes in relation to turnstile external dimensions.

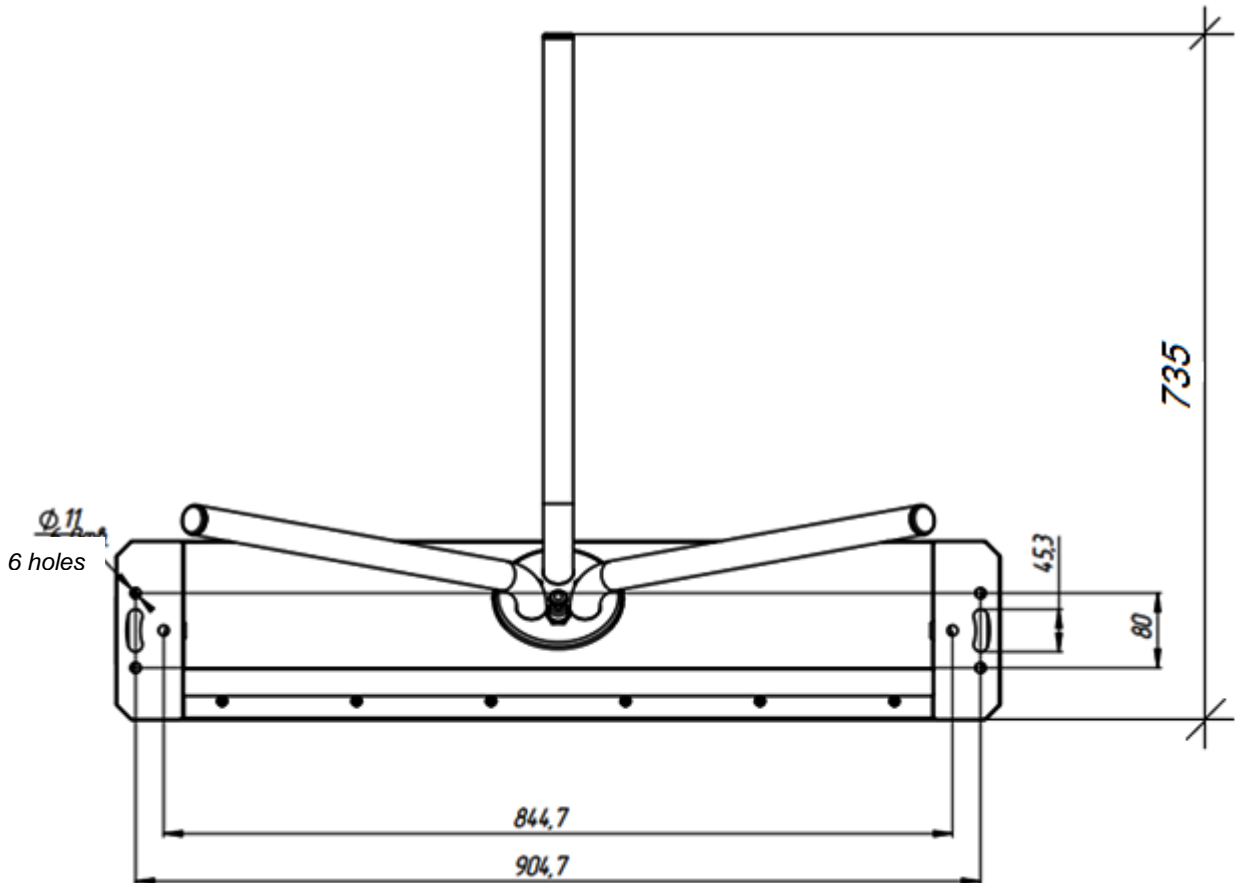


Figure 16 - Layout of mounting holes in relation to turnstile external dimensions

## APPENDIX C — TURNSTILE CONNECTION DIAGRAM

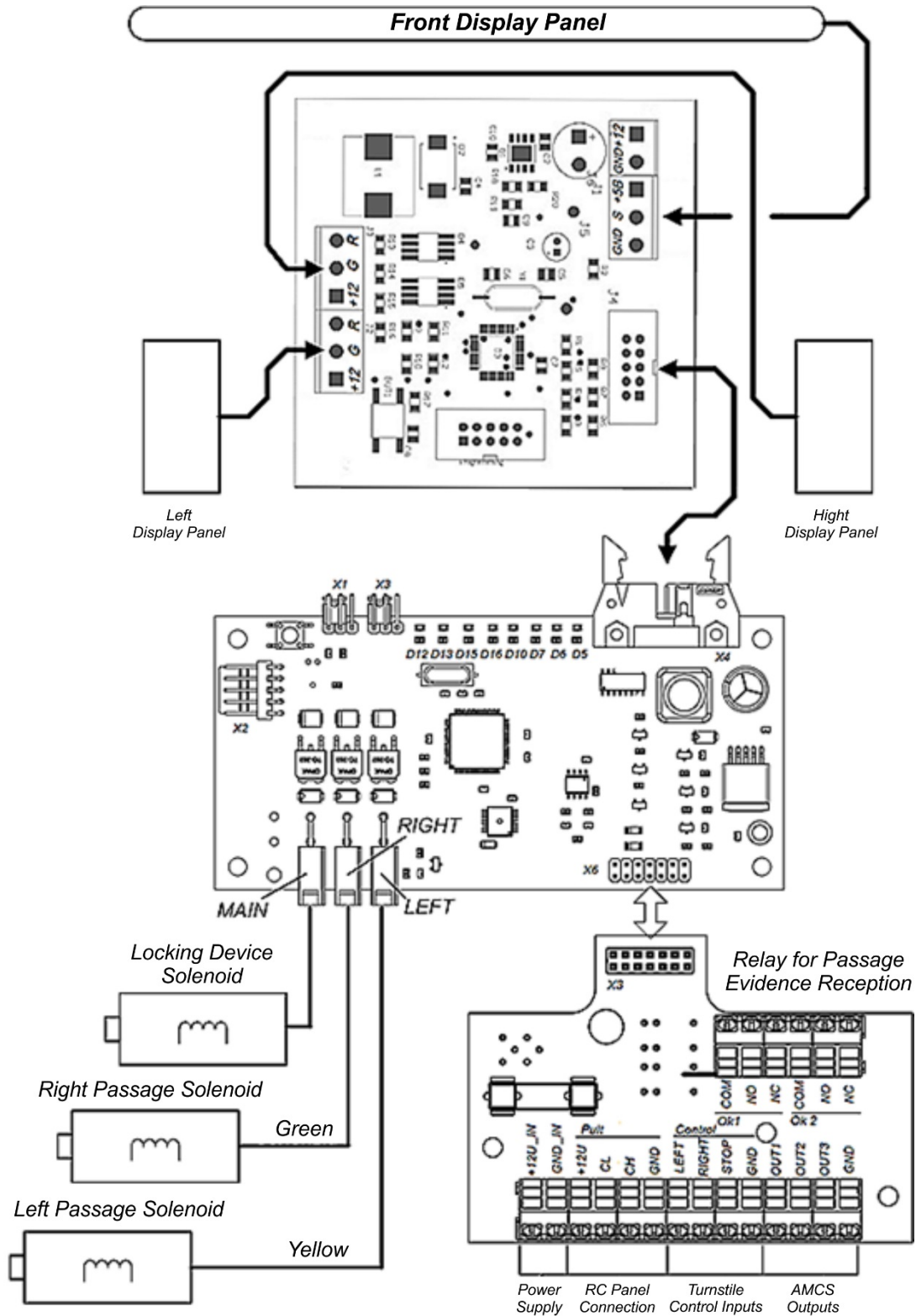


Figure 17 - Turnstile Connection Diagram

## APPENDIX D — STRUCTURAL FLOWCHARTS FOR AMCS USING CARD COLLECTOR

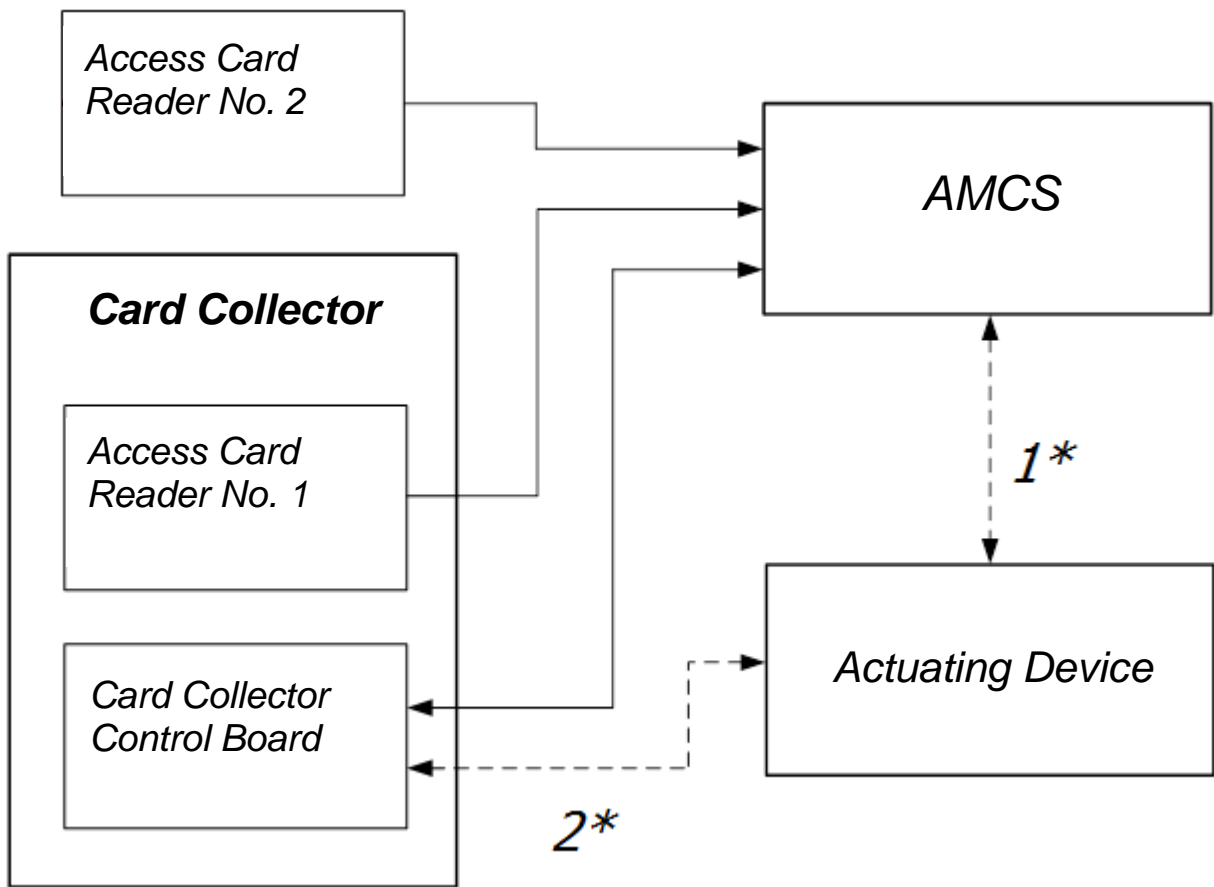


Figure 18 - Structural Flowchart No.1

Figure 18 - The most widely used Cardcollector Wiring Diagram is depicted. Both AMCS controller and the card collector properly can control the actuating device, therefore, 1\* and 2\* links are drawn as dashed lines. This Diagram feature – two available readers.

It is necessary to install the second reader outside the card collector, which is not always acceptable aesthetically and practically. Upon close proximity, the readers may obstruct each other creating mutual interference.

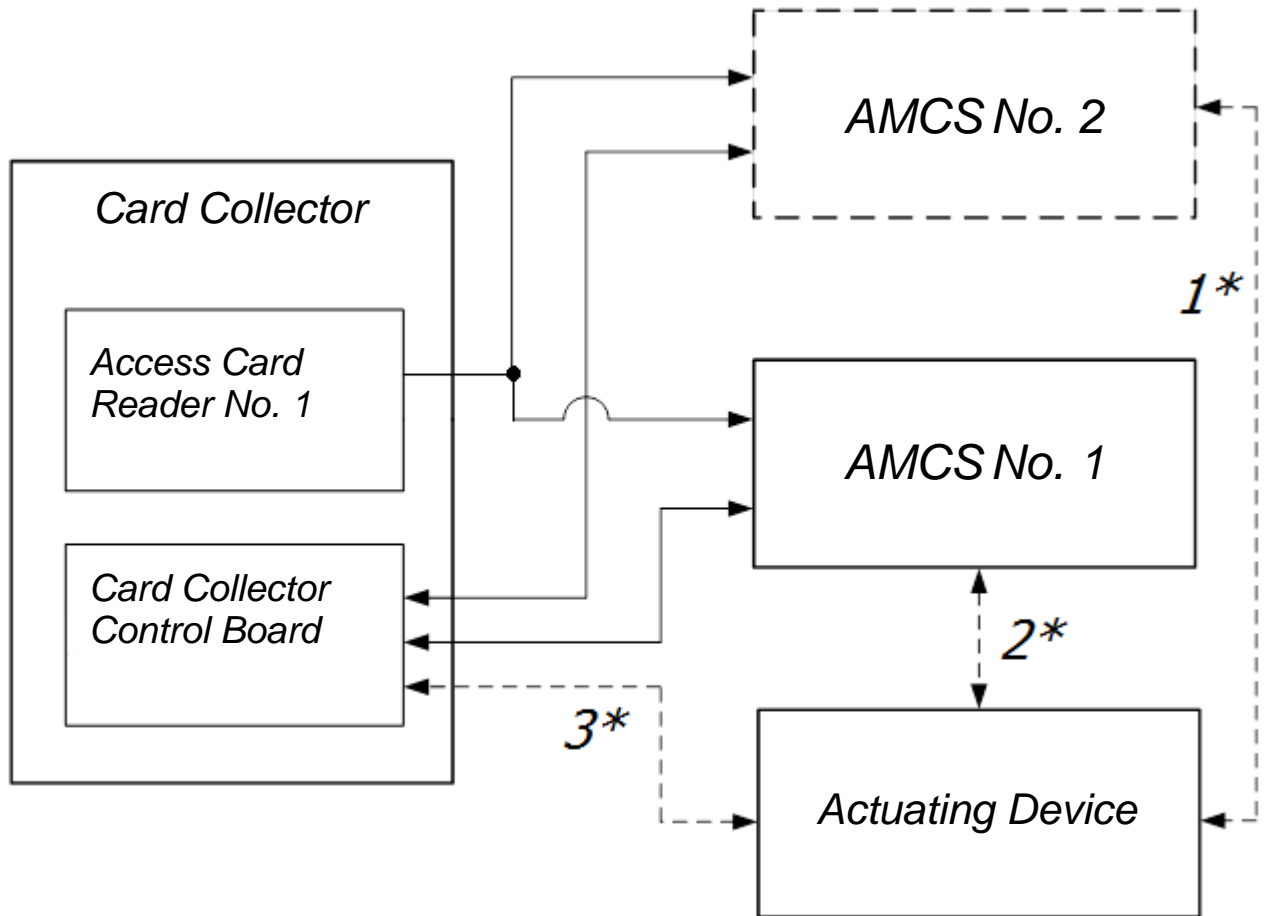


Figure 19 - Structural Flowchart No.2

Figure 19 - The more promising but higher according to value iring Diagram is given. This diagram advantage lies in the fact that one reader installed in the card collector is used. The Wiegand interface allows for parallel connection of several AMCS controllers to one reader.

AMCS controllers are connected to different card collector inputs. Data on permanent keys is contained in the memory of one of controllers; the data on the visitors' keys is in the second controller memory. The reader transmits the card code to two controllers at once and, depending on the card type, the relative signal is issued to the card collector.

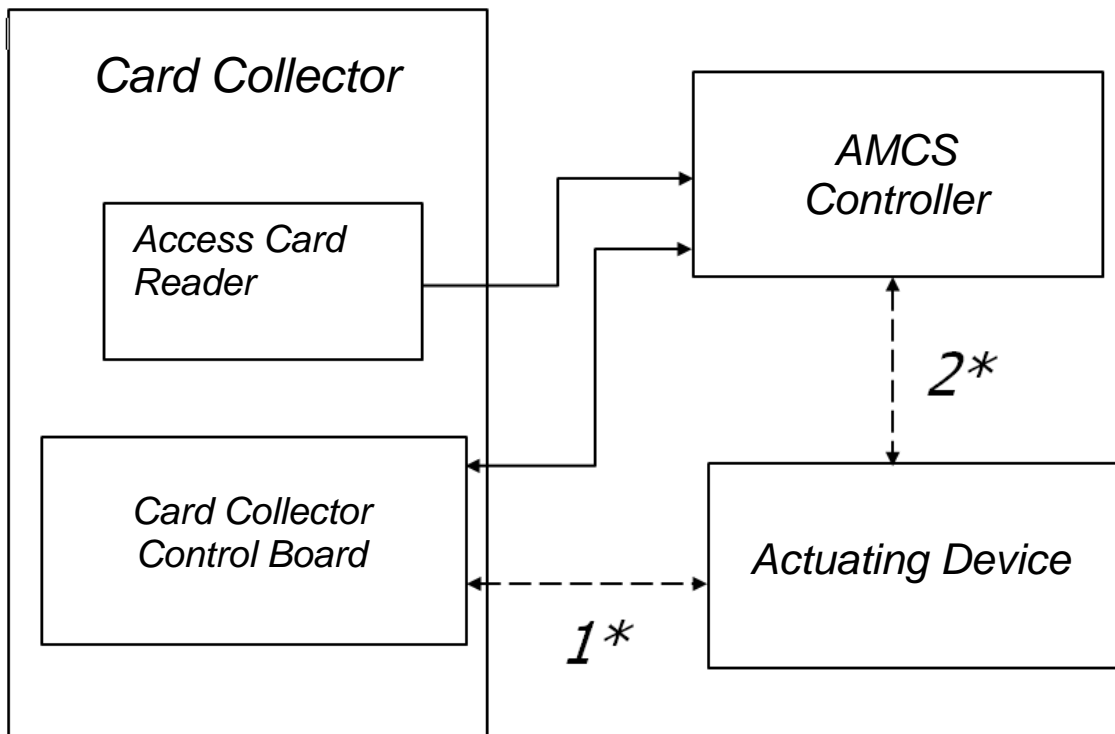


Figure 20 – Structural Flowchart No.3

Figure 20 - Structural Flowchart No. 3 (Diagram No. 3 logical progressing) reduces the cost of the system being installed.

A controller with two output signals to one reader input is used for that purpose (the controller can differentiate the visitor and the permanent cards issuing the signal to the corresponding output).

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