VOZROZHDENIE LLC

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APPROVED by

VZR.245500.010LU

TURNSTILE

MODEL PRAKTIKA QL-05

QL-05-SM-660, QL-05-SM-900, QL-05-SMK-660, QL-05-SMK-900, QL-05-SMR-660, QL-05-SMR-900, QL-05-SMRK-660, QL-05-SMRK-900,

QL-05-CM-660, QL-05-CM-900, QL-05-CMK-660, QL-05-CMK-900, QL-05-CMR-660, QL-05-CMR-900, QL-05-CMRK-660, QL-05-CMRK-900,

QL-05-GCM-660/900, QL-05-GCMR-660/900

VZR.245500.010 IM

INSTALLATION MANUAL

52 sheets

2020

CONTENTS

This Installation Manual (IM) applies to Oxgard Praktika QL-05 turnstile and its variants (hereinafter referred to as the product). Product firmware version:

FW v1.2

1) Software version for turnstile with 660mm flaps – FW v2.6;
2) Software version for turnstile with 900mm flaps – FW v2.7.

IM defines rules and a procedure for installation and commissioning of the product.

Before installing the product, please read the Operation Manual VZR.245500.010 (OM) as well.

Due to constant work on improving the product, changes to its design may be made which are not represented in this version of product.

A card collector can be integrated into the turnstile.

The following abbreviations are used in this document:

OM — Operation Manual;

IM — Installation Manual;

PSU - power supply unit;

CP - control panel;

ACS - access control system;

SFAS - security and fire alarm system;

NC - normally closed connection;

NO - normally open connection;

AD -actuating device (turnstile).

1 GENERAL PROVISIONS

For general safety when assembling and installing the product, take into account all the recommendations and instructions contained herein.

Before starting installation work, completely de-energize the product.

DO NOT:

INSTALL THE POWER SUPPLY UNIT INSIDE THE PRODUCT AS IT MAY CAUSE ELECTRIC SHOCK TO PEOPLE.

INSTALL THE PRODUCT OUTSIDE DRY AND HEATED ROOMS.

PREVENT OR ACCELERATE MOVEMENT OF THE TURNSTILE FLAPS.

APPLY PASTES AND LIQUIDS CHEMICALLY AGGRESSIVE TO MATERIALS OF THE HOUSING WHEN CLEANING THE PRODUCT.

2 SAFETY PRECAUTIONS

Installation should be carried out with observance of "Regulations for Operation of Consumer Electrical Installations" and "Safety regulations for Operation of Consumer Electrical Installations".

The product should be installed by qualified personnel, trained to work with electrical devices, instructed on safety when working with electrical installations with voltages of up to 1000 V.

 **ATTENTION:** FAILURE TO COMPLY WITH THE SAFETY REQUIREMENTS SPECIFIED IN THIS SECTION CAN RESULT IN DEATH AND DAMAGE TO HEALTH, COMPLETE OR PARTIAL LOSS OF PERFORMANCE OF THE PRODUCT AND/OR AUXILIARY EQUIPMENT.

 **ATTENTION:** MANUFACTURER WAIVES ANY RESPONSIBILITY FOR DEATH AND DAMAGE TO HEALTH, COMPLETE OR PARTIAL LOSS OF PERFORMANCE OF THE PRODUCT AND/OR AUXILIARY EQUIPMENT IF USER FAILS TO COMPLY WITH THE SAFETY REQUIREMENTS SPECIFIED IN THIS SECTION, AND ALSO VOIDS THE PRODUCT WARRANTY.

3 PREPARING THE PRODUCT FOR INSTALLATION

3.1 Procedure for transporting the product to the installation site

The product in the original package can be transported without limiting the range by air, closed motor road and rail transport provided it is protected against direct exposure to precipitation and dust.

In order to avoid condensation of moisture after transportation at negative temperatures, the product should be held in a room with normal climatic conditions for 12 hours.

Loading and unloading operations should be carried out in compliance with safety regulations.

3.2 Rules for unpacking the product

3.2.1 Perform visual inspection of the packaging. There should not be visible damage on the package.

3.2.2 Open the transportation box, unpack and check completeness of the product:

1) turnstile modules;
2) CP with cable;
3) keys for locks (4 pieces).

3.3 Rules for visual inspection of the product

3.3.1 Check completeness of the product.

Completeness should be checked according to the Logbook (LB).

3.3.2 Visually inspect the product. There should not be visible damage on the product.

3.3.3 If damage is found, prepare a Claim Report.

3.3.4 Overall dimensions of the turnstile.

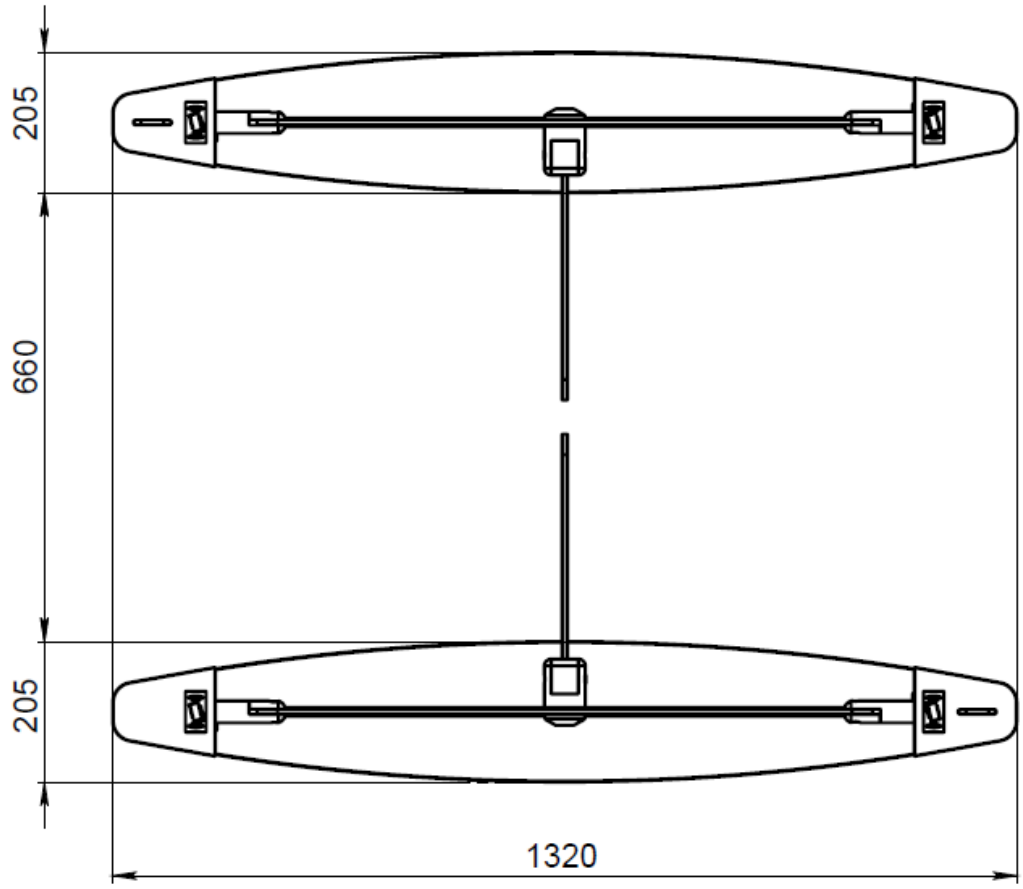


Figure 1 – Overall dimensions of the turnstile

3.4 Product installation site requirements

ATTENTION: TO AVOID WAVING AND/OR OVERTURNING DURING OPERATION, INSTALL THE PRODUCT SECURELY. IN CASE OF PRODUCT INSTALLATION ON LOW STRENGTH FLOOR - TAKE MEASURES FOR FLOORS STRENGTHENING IN THE PLACE OF INSTALLATION.

3.5 Procedure for checking compliance of the installation place

 **ATTENTION:** WHEN INSTALLING THE TURNSTILE MODULES, CONSIDER THAT THE GLASS FLAPS CANNOT BE ADJUSTED. THEREFORE, IT IS RECOMMENDED TO CHECK CORRECTNESS OF INSTALLATION BEFORE ATTACHING THE MODULES.

 **ATTENTION:** WHEN PREPARING THE TURNSTILE INSTALLATION SITE, CONSIDER THAT A SEPARATE POWER SUPPLY UNIT SHOULD BE USED FOR EACH FLAP.

 **ATTENTION:** WHEN INSTALLING THE TURNSTILE, IT IS NECESSARY TO PREPARE A TRENCH FOR LAYING CAN-BUS CABLE WHICH CONNECTS THE TURNSTILE MODULES AND SIX-WIRE DISPLAY BUS CABLE.

4 INSTALLATION AND DISMANTLING OF THE PRODUCT

4.1 Equipment required

Equipment to be used for the turnstile installation:

1) electric perforating machine

2) 2) 16mm carbide drill bit for drilling anchor holes in the floor (we recommend to use SORMAT PFG for ES10 sleeve anchor);

3) wrench for screws DIN 933 M10x60 S17;

4) slot head screwdriver;

5) plumb or level;

6) steel shims for turnstile leveling;

7) round file;

8) side-cutting pliers.

4.2 Installing the product

ATTENTION: CAREFULLY READ THIS SECTION OF THE MANUAL BEFORE INSTALLING THE PRODUCT

4.2.1 Prepare a horizontal area at the product installation site.

4.2.2 Prepare a chase or cable conduits going from the site to the place of installation of PSU, CP and, where necessary, to ACS and SFAS connection point.

4.2.3 Turnstile installation site:

Figure 2 – according to the installation dimensions, prepare 8 holes, 16mm in diameter, in the floor for anchors of the turnstile stand.

Position of mounting holes relative to the overall dimensions of the turnstile is shown in Appendix B.

The depth of holes for embedded parts should exceed the anchor's length by 5 mm. Insert anchors into the holes.

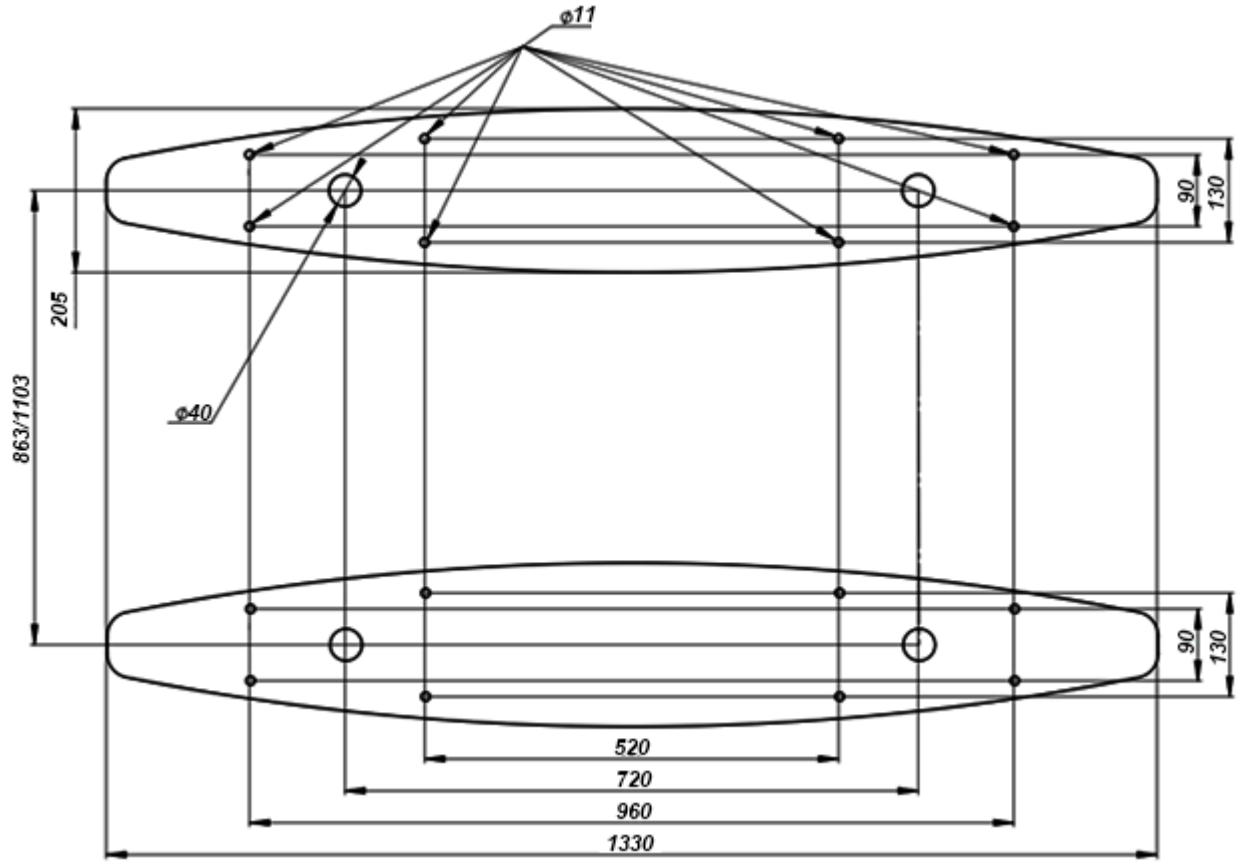


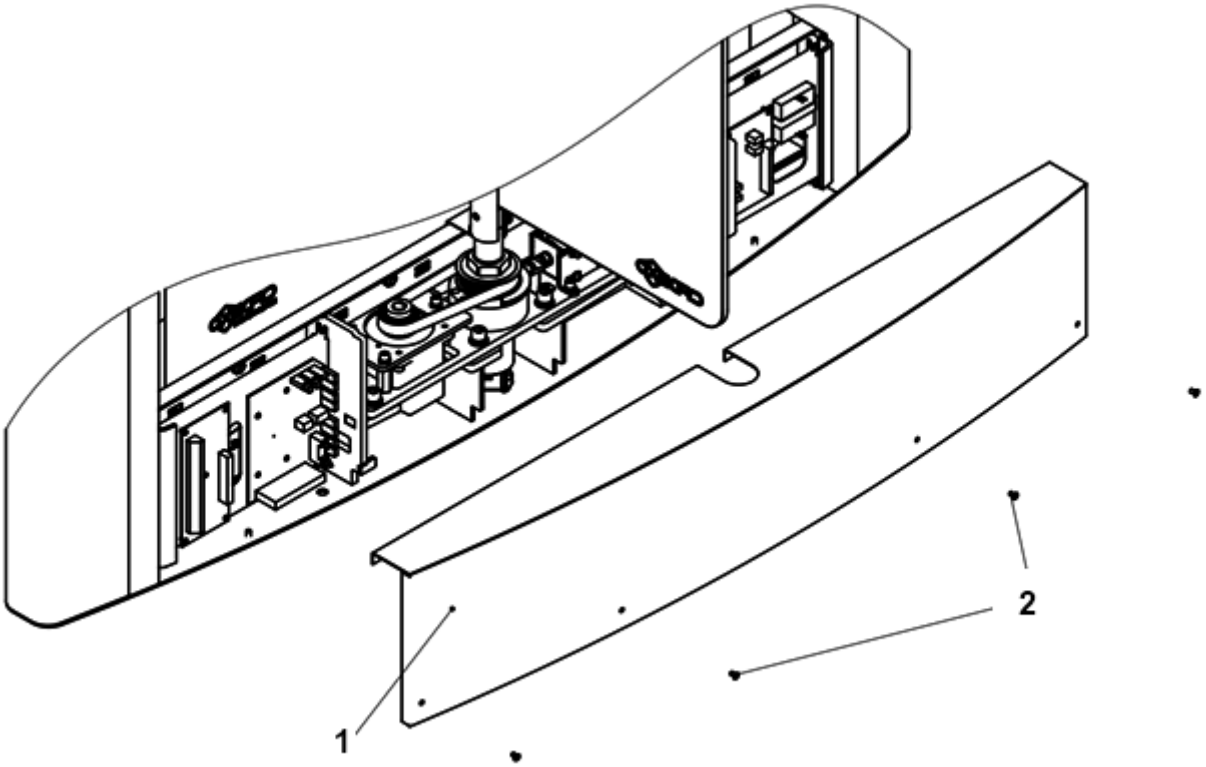
Figure 2 – Installation dimensions of the turnstile site with a passage width of 660 (900) mm

4.2.4 Figure 2 –The cables should be connected through a 40mm dia hole in the lower plates of the turnstile modules.

4.2.5 Lay the PU connection cable, PS cable, CAN bus cable, display bus cable and, if provided, the ACS and OPS cables in the cable conduit or chase.

4.2.6 Install the stands of the turnstile modules onto the prepared site.

Figure 3 – unscrew 4 M4 screws (2) and remove base cover (1).



1 - крышка основания; 2 - винты M4 (4 шт.)

Figure 3 – preparing to install the turnstile

4.2.7 Insert into the turnstile body: cables from the CP, PSU, CAN bus, display bus cable and, if necessary, ACS and SFAS cables.

4.2.8 Align the holes in the turnstile module lower plates with the floor anchors.

Check turnstile verticality in 2 planes, if necessary, use steel shims of required thickness for the turnstile correct installation.

Fasten turnstile modules with 8 M10 screws by screwing them into appropriate anchors using the S17 wrench.

4.2.9 Connect necessary cables (Section 5) and secure them with cable ties.

4.2.10 Set base cover to its initial position.

4.2.11 Remove protective film from the turnstile body.

4.3 Dismantling the product

4.3.1 When sending the product for calibration or repair, the product should be dismantled as follows:

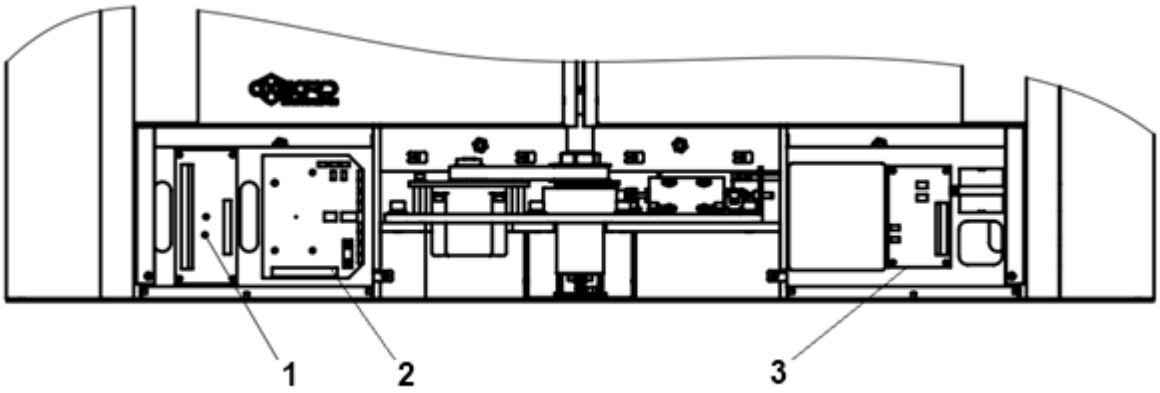
1) power off the product;
2) disconnect the product from the power supply source;
3) disconnect the cable part of the product from auxiliary cables;
4) remove the product from the installation site.

4.3.2 Before packing, clean the product from dust and dirt.

4.3.3 Put the product in a packing box.

5 CONNECTING AND SETTING THE PRODUCT

Connecting PSU, CP and ACS should be made by means of cross-board. **Ошибка! Источник ссылки не найден.** The boards location on the turnstile odule stand.



1 - кросс-плата; 2 - материнская плата; 3 - плата картоприемника

Figure 4 – The boards location on the turnstile module stand.

ATTENTION: TURNSTILE OPERATION MODE IS SET BY INSTALLING JUMPERS ON THE CROSS-BOARDS OF BOTH TURNSTILE MODULES.

Figure 5 – Appearance of the cross-board and layout of connectors for connecting PSU, CP, ACS, and SFAS.

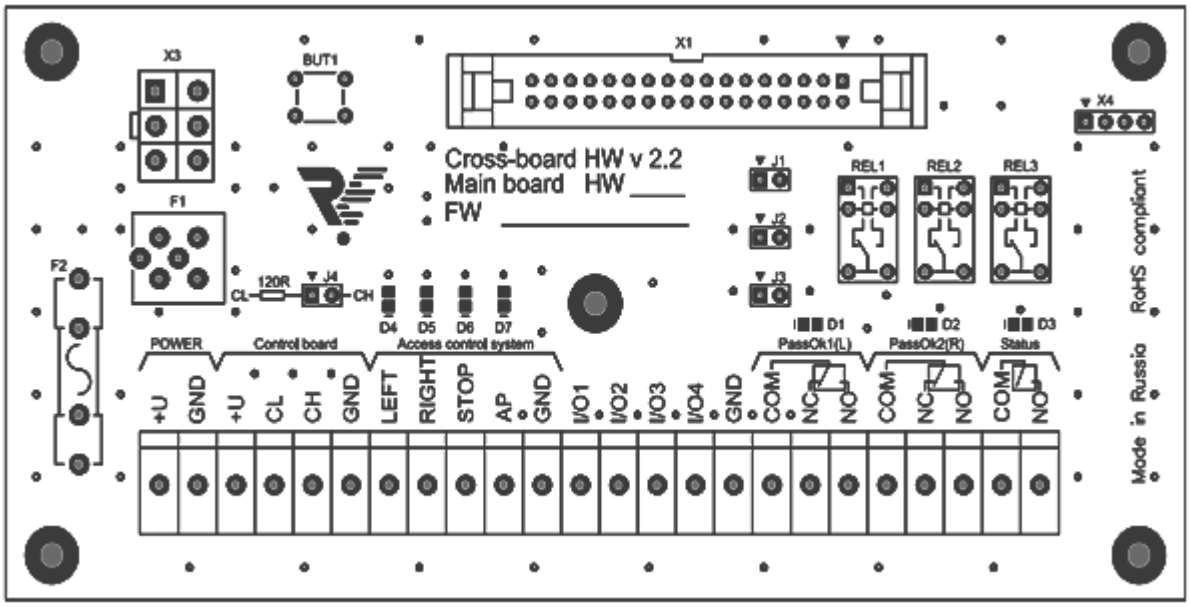


Figure 5 – Appearance of the cross-board

Table 1 shows operation modes of the turnstile for different jumper positions.

Table 1 – The turnstile operation mode

Jumper position	The turnstile operation mode
J1 is removed	Pulse mode (p. 5.3)
J1 is present	Potential mode (p. 5.3)
J2 is present	Turnstile does not respond on the control panel commands, the buttons status is transmitted to outputs I/O1...I/O4 (p. 5.4)
J2 is removed	Turnstile is controlled by a control panel, the buttons status is transmitted to outputs I/O1...I/O4 (p. 5.4)

- J3 jumper is not used;

- J4 jumper is used for normal operation of CAN2.0 bus (Appendix A).

5.1 Power connection

DO NOT:

USE POWER SUPPLIES WITH OUTPUT CURRENT OF LESS THAN 10 A.

TO CONNECT THE TURNSTILE USING POWER CABLE SECTION LESS THAN 1.5 MM^2 WHEN LENGTH OF THE SUPPLY CABLE IS MORE THAN 5 M – IT IS RECOMMENDED TO USE CABLE WITH CROSS-SECTION OF 2.5 MM^2.

ATTENTION: IT IS NOT RECOMMENDED TO INSTALL POWER SUPPLY UNIT AT A DISTANCE OF MORE THAN 25 M FROM THE TURNSTILE.

ATTENTION: USE A SEPARATE POWER SUPPLY UNIT FOR EACH TURNSTILE FLAP.

Each passageway (2 flaps) is powered by 2 DC sources with a voltage of 12 V.

It should also be taken into account that voltage drop increases when the supply cable length is increased (operating voltage range is detailed in the Operation Manual VZR.245500.010 (OM)). For a list of recommended power supplies, see Appendix B

Install PSU in a place providing easy operator access. Connect PSU cable to POWER contact group on the cross-board.

Connect (+) and (-) terminals of PSU to (12V) and (GND) terminals respectively. Make sure that the cable is securely connected.

5.2 Connecting the control panel

Connect CP to *Control Board* contact group on the cross-board. Identification of terminals: 12V, CL, CH, GND.

Connecting the turnstile CP should be made according to contact identifications given in Table 2.

Table 2 – Identifications of terminals for connecting PU

Identification of terminals	Wire color
12V	Red
CL	Yellow
CH	Green
GND	Blue

5.3 Connecting access control and management system (optional)

ACS controller should be connected to *Access Control System* group of contacts on cross-board.

Identification of terminals: LEFT, RIGHT, STOP, AP, GND. Terminal assignment is shown in Table 3.

Table 3 – Assignment of ACS terminals

Identification of terminals	Assignment of terminals
LEFT, RIGHT	one-time passing left/ right (lower priority)
STOP	passing forbidden (Stop mode) (Medium priority)
AP	folding doors (Anti-panic mode) (highest priority)
GND	Common terminal

Inputs for connecting ACS differ by priority:

1) AP input has the highest priority. As long as this input is closed to GND terminal, the turnstile is open and does NOT REACT (!) to other commands, except for AP;

2) STOP input is of medium priority. When this input is closed to GND terminal, the turnstile switches to STOP mode and does not respond to other commands, except of AP;

3) LEFT and RIGHT have the same low priority and include a one-time one side passing. If both inputs are closed, passing is allowed in the side whose input closed first. If pass is not completed, the turnstile will automatically switch to STOP mode after 5 seconds.

ATTENTION: IF ONE OF THE STOP AND/OR AP INPUTS IS CLOSED, COMMANDS FROM THE CONTROL PANEL ARE NOT ACCEPTED, SINCE ACS HAS A HIGHER PRIORITY.

The STOP and AP inputs operate only in potential mode (they are potential and unchangeable), i.e. as long as the input is closed to GND terminal, the turnstile operates in the corresponding mode, after opening the contacts, the turnstile goes to STOP mode, regardless of mode in which it was before ACS operation.

LEFT and RIGHT inputs can operate in both potential and pulse mode (they trigger when closed to GND terminal). Pulse mode is set by default.

To switch to potential operation mode, it is necessary to insert a jumper (Figure 5 – J1). Moreover, J1 should be inserted on two cross-boards of the selected passageway.

In this case, left/right passing mode is enabled only for the time when control signal is acting to LEFT/RIGHT inputs.

Free passing mode can be set by sending control signals to both inputs simultaneously. Priority of LEFT and RIGHT inputs remains unchanged when switching to pulse mode.

Two dry contact relay outputs for ACS are installed on the cross-board - Pass Ok1 and Pass Ok2. NO and COMM – normally open connection, NC and COMM - normally closed connection.

When one of the contact groups is triggered, this indicates that a pass has been made in appropriate direction (PassOk1 - to the right or to the left, PassOk2 - to the left or to the right).

Triggering of corresponding relay depends on the turnstile location and is determined experimentally.Triggering of corresponding relay depends on the turnstile location and is determined experimentally. Corresponding LEDs light up, either D1 - to the right or D2 – to the left, depending on passing direction.

The cross-board has a dry contact relay output for ACS - Status. NO and COMM - normally open connection, its contacts are closed when the turnstile switches to AP mode and D3 diode lights up.

There are also LEDs on the cross-board which indicate closing of corresponding inputs to GND terminal:

1) D4 indicates that input signal arrived to LEFT input;
2) D5 indicates that input signal arrived to RIGHT input;
3) D6 indicates that input signal arrived to STOP input;
4) D7 indicates that input signal arrived to AP input;

J4 jumper should be inserted – it is used to connect 120 Ohm resistor to CAN 2.0 bus to ensure its normal operation.

When using two control panels, J4 should not be inserted, since 120 Ohm resistors are located on CL and CH terminals in the panels themselves.

5.4 Connecting the control panel to ACS controller

In some cases, turnstile CP should be connected directly to ACS controller, since the system responds to passing allowed from the control panel (without using the controller) as on "hacking".

To use this turnstile connection scheme, it is necessary to install jumper (Figure 5 – J2) on both cross-boards of the selected passageway. When J2 jumper is installed, the turnstile does not respond to PC commands, but only transmits their status to terminal block contacts (Figure 5 – I/O1...I/O4), which are open collector outputs.

Terminal assigning is shown in Table 4, Figure 6 – numbering of control panel buttons. For this group of contacts, maximum output current is not more than 150 mA, and permissible voltage is no more than 24 V.

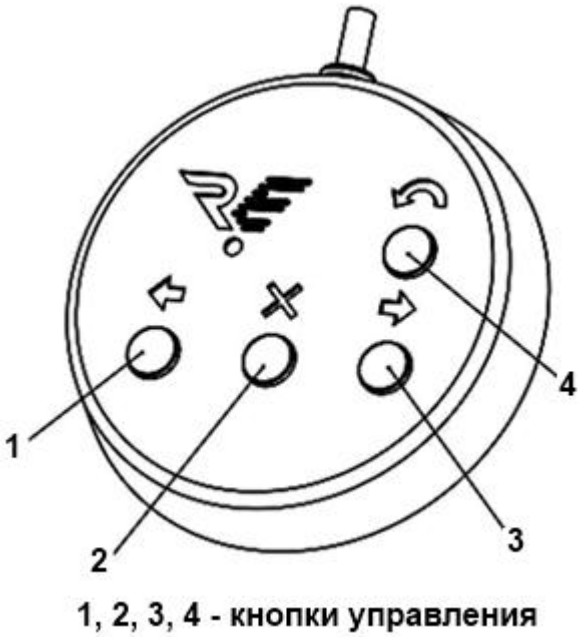


Figure 6 – Numbering of CP buttons

Table 4 – Assigning an I/O contact group

Identification of terminals	Assignment of terminals
I/O1	Status of LEFT button (1)

I/O2	Status of RIGHT button (3)
I/O3	Status of STOP button (2)
I/O4	Status of Anti-panic button (4)

I/O1...I/O3 outputs reflect current state of CP buttons – transistor opens when corresponding button is pressed. I/O4 output changes its state to the opposite every time when Anti-panic button is pressed.

Outputs I / O1...I / O4 can be connected whether directly to ACS controller, or via a relay. Figure 7 – When using a relay, it is **MANDATORY (!)** to connect diode in parallel to the winding.

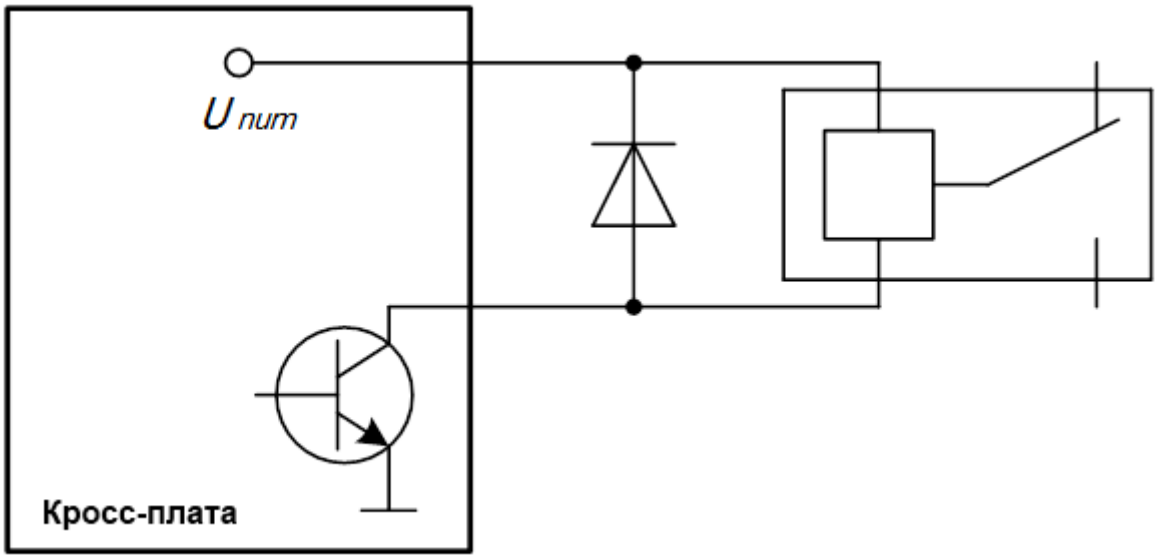


Figure 7 – Wiring diagram for diode connecting in parallel to the relay winding

Figure 8 – Wiring diagram for CP connecting to ACS controller.

In this variant, controller controls the turnstile using LEFT, RIGHT and STOP terminals, while AP terminal is switched on and switched off by the control panel.

An important feature of connecting CP through ACS controller is inability to use turnstile modes which are set by means of combinations of control panel button (except for free passing of potential control mode, Section 5.3 of this Manual). In this case, ACS is responsible for these modes.

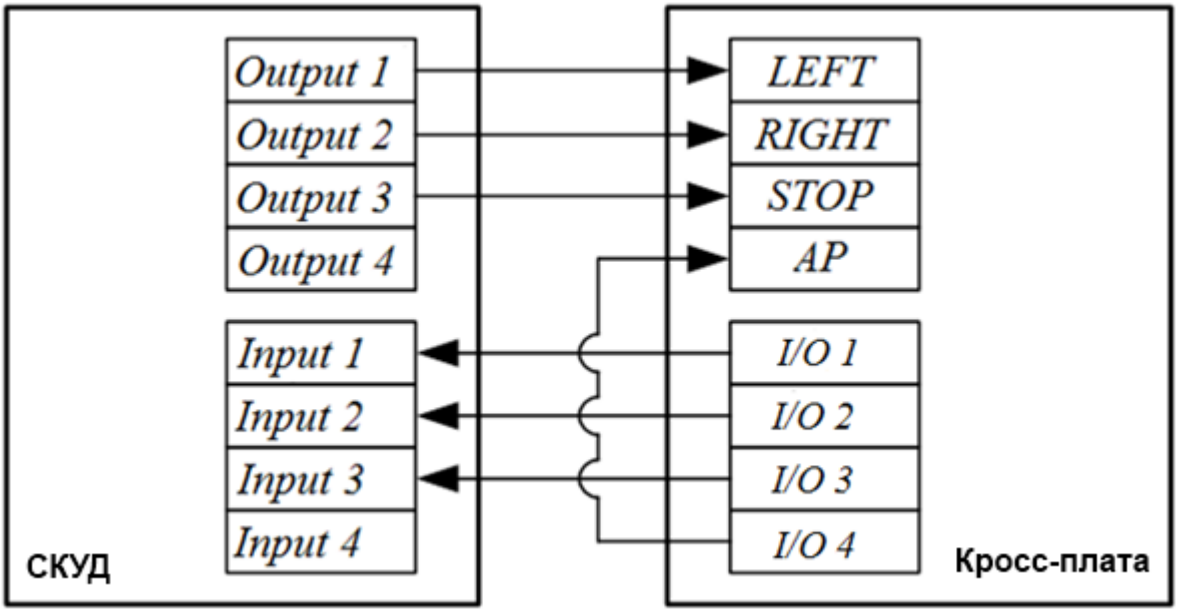


Figure 8 – Wiring diagram for CP connecting to ACS controller

5.5 Connecting turnstile modules

Figure 9 – Wiring diagram for two-passageway checkpoint. To increase number of passes, the should be cascaded.

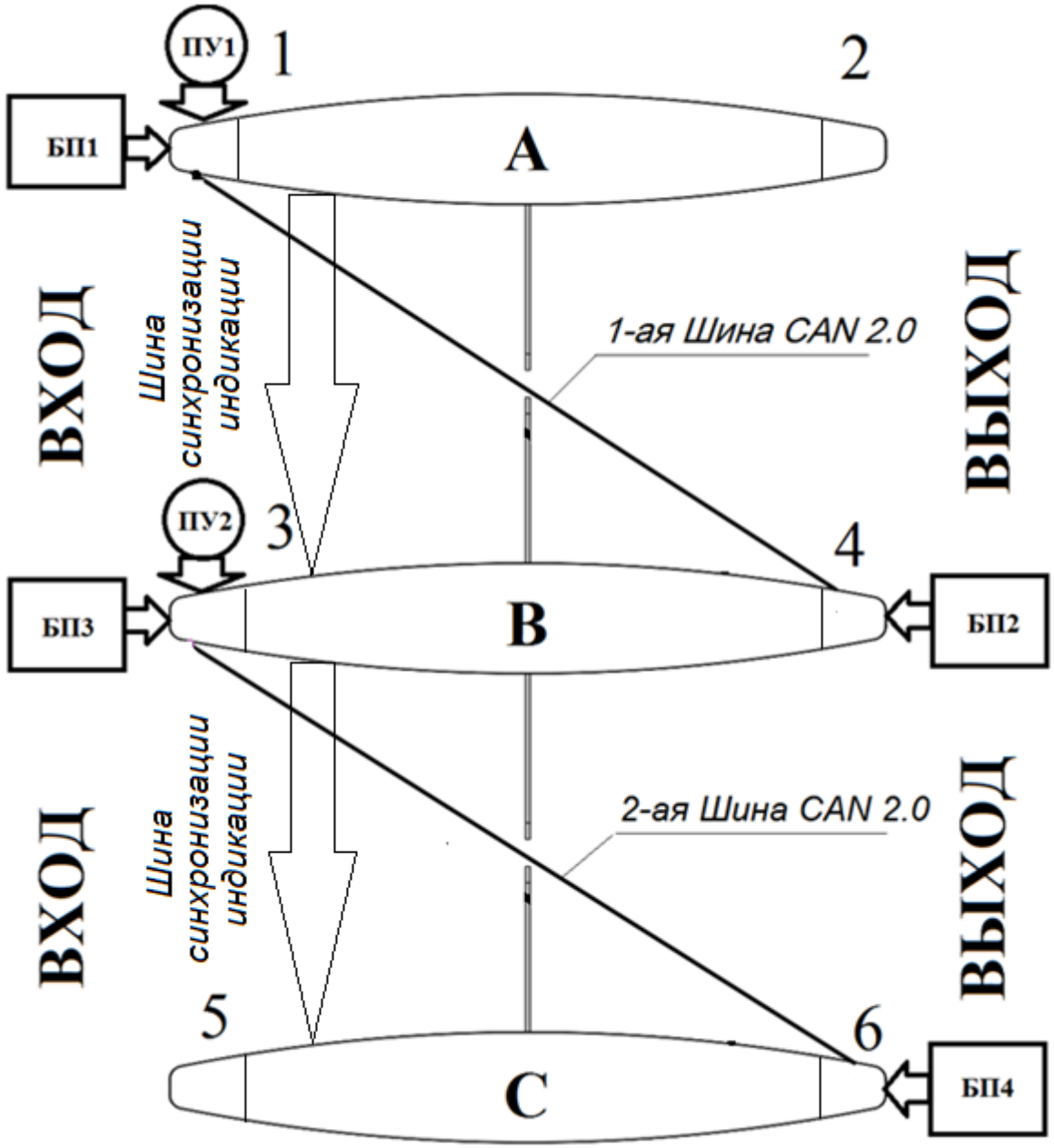


Figure 9 – Turnstile modules connection diagram

Figure 9 – For normal operation of entrance checkpoint with two passageways, it is necessary to:

Connect two outermost (one-way) modules (A) and (C) and one two-way module B, with two three-wire CAN-2 buses (1st bus of CAN2.0 and 2nd bus of CAN2.0).

Connect CL and CH, GND terminals of cross-boards located in the stand (marked with 1) of module A with the same contacts cross–board circuit located in the stand (marked with 4) of module C.

CL, CH and GND terminals of cross-boards located in the stand (marked with 3) of module B are connected with similar terminals of cross-boards located in the stand (marked with 6) of module C.

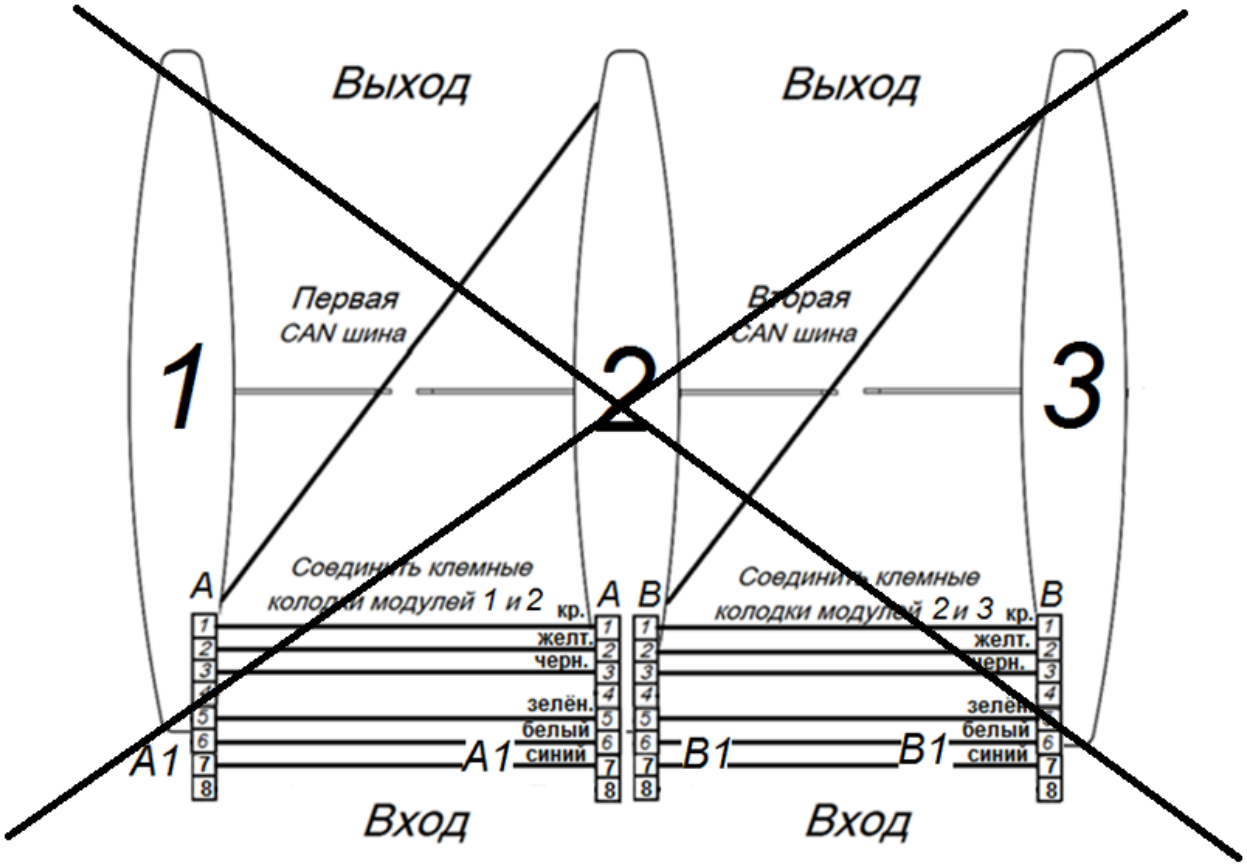
Control panels PU1 and PU2 are connected to +U, CL, CH and GND terminals of the corresponding module.

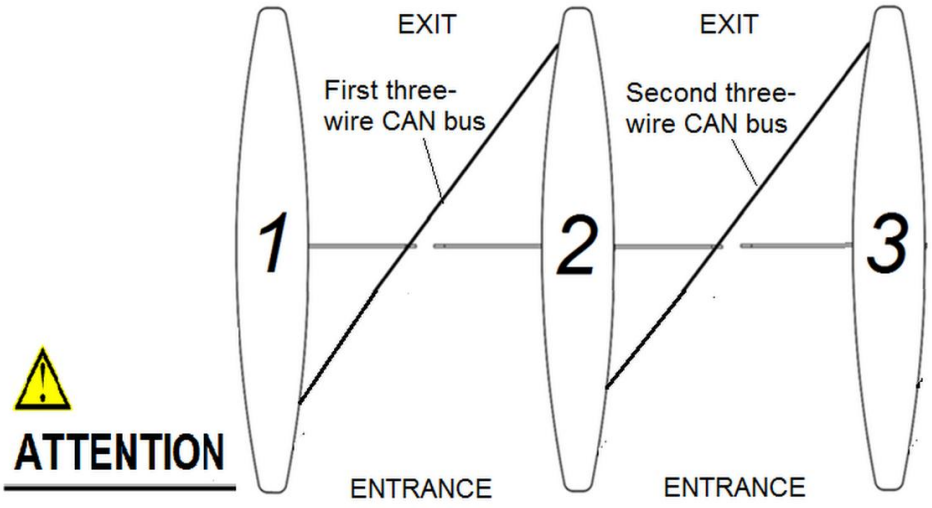
If the panels are connected as shown in Figure 9, J4 jumpers should be installed as follows to ensure that the CAN2.0 bus works:

– J4 on cross-board 1 is open, J4 on cross-board 4 is closed;

– J4 on cross-board 3 is open, J4 on cross-board 6 is closed.

Figure 10 – for synchronous operation of the neighboring modules indication bands, they should be connected by the display synchronization bus (using terminals of A, B and A1, B1 terminal blocks of neighboring modules).





ATTENTION

On this turnstile model it is not necessary to connect indication buses of neighboring modules, it is necessary to connect neighboring modules only via CAN bus, three-wire cable:
It is necessary to connect cross-card contacts CL, CH, GND of module No.1 with contacts CL, CH, GND of module No.2.
Connect cross-circuit board contacts CL,CH,GND of module No.2 with contacts CL,CH,GND of module No.3

Connect cross-circuit board contacts CL,CH,GND of module No.3 with contacts CL,CH,GND of module No.4

Figure 10 – Wiring diagram of turnstile module terminal blocks

ATTENTION: IT IS FORBIDDEN TO CONNECT TURNSTILE MODULE TERMINAL BLOCKS WITH A CABLE LONGER THAN 2.5 M

A detailed wiring diagram for two turnstile modules is shown in Appendix E.

To ensure operation of checkpoint with two passageways, four 12V 10A power sources are required.

At that, central (two-way) module is powered by two 12V 10A sources.

A card collector can be integrated into the passageway, it can be installed in any outermost or central module. In this case, the card collector is supposed to be installed right hand, on exit side.

ATTENTION: THE CARD COLLECTOR CAN BE INSTALLED ONLY AT THE FACTORY! IF CARD COLLECTORS ARE INSTALLED ON THE TURNSTILE, IT IS NECESSARY TO INCREASE POWER OF POWER SOURCES BY AMOUNT OF EACH CARD READER POWER CONSUMPTION

5.6 Connecting the card collector

Figure 11 – The card collector can be installed right hand (2), or left hand (1). Its location should be determined by customer at the designing stage.

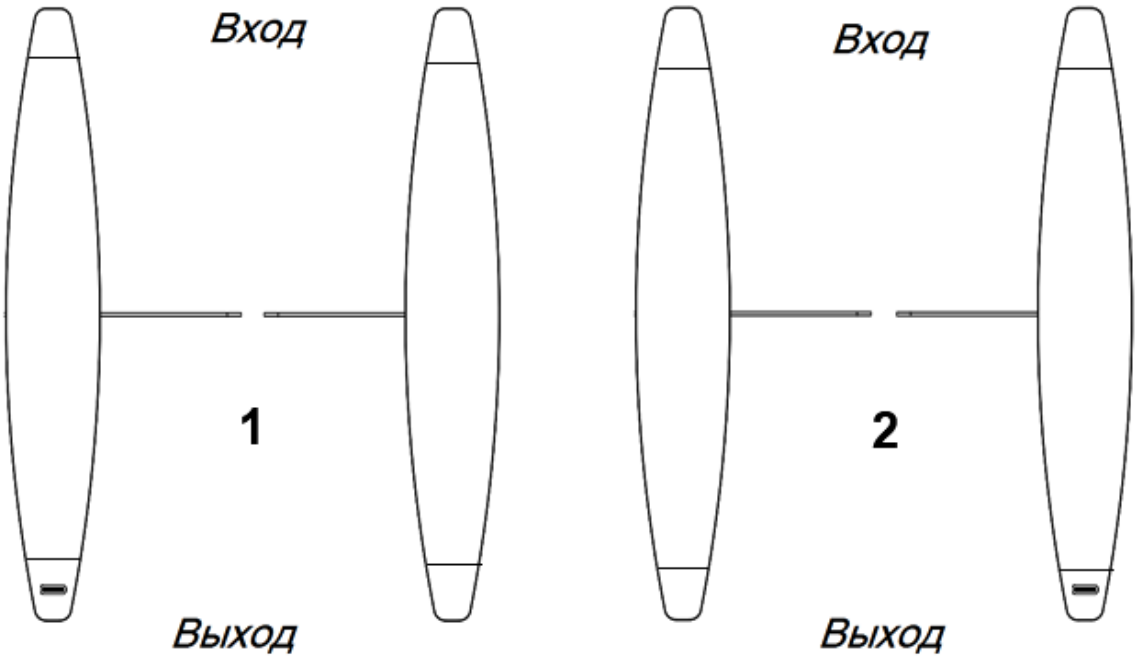
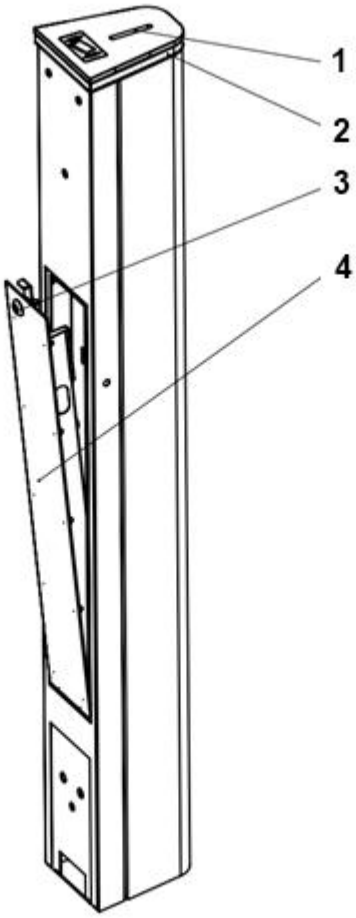


Figure 11 – Possible options for the card collector location

ATTENTION: CARD READER IS SUPPLIED WITH A CONTACTLESS ACCESS CARD COLLECTOR. IT IS POSSIBLE TO INSTALL TWO TYPES OF READERS: PROX13 ИЛИ PROX125. WEBSITE OF THE READER MANUFACTURER: WWW.PROX.RU

Customer selects appropriate reader for its system and specifies the type when ordering. Appendix G - Assignment of reader terminals.

Figure 12 – General view of the card collector stand and location of the card collector board.



1 - щель для карт; 2 - стойка; 3 - замок контейнера;
4 - контейнер картоприемника

Figure 12 – General view of the card collector stand

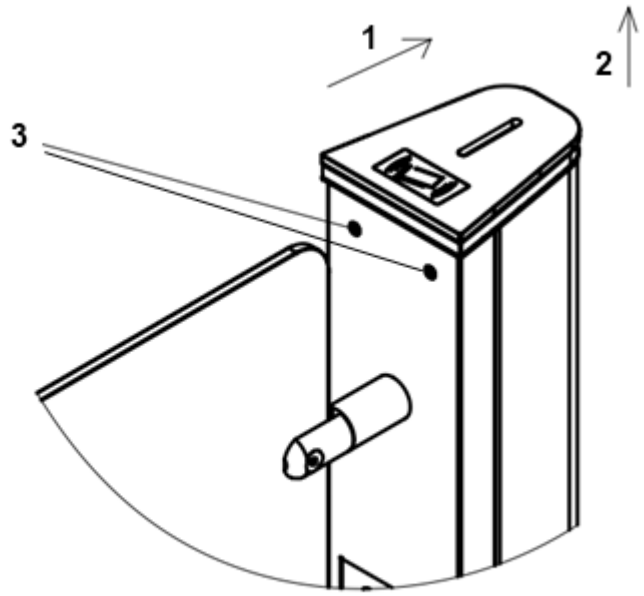


Figure 13 – Removing top cover of the card collector

Figure 14 – Removing top cover of the card collector: remove the cover mounts (3), move the cover in the direction (1), then in the direction (2).

PSU, AD, and ACS are connected using the card collector board. To do this, remove lower cover of the turnstile base.

Figure 14 – Appearance of the card collector board and layout of connectors for connecting PSU, AD and ACS.

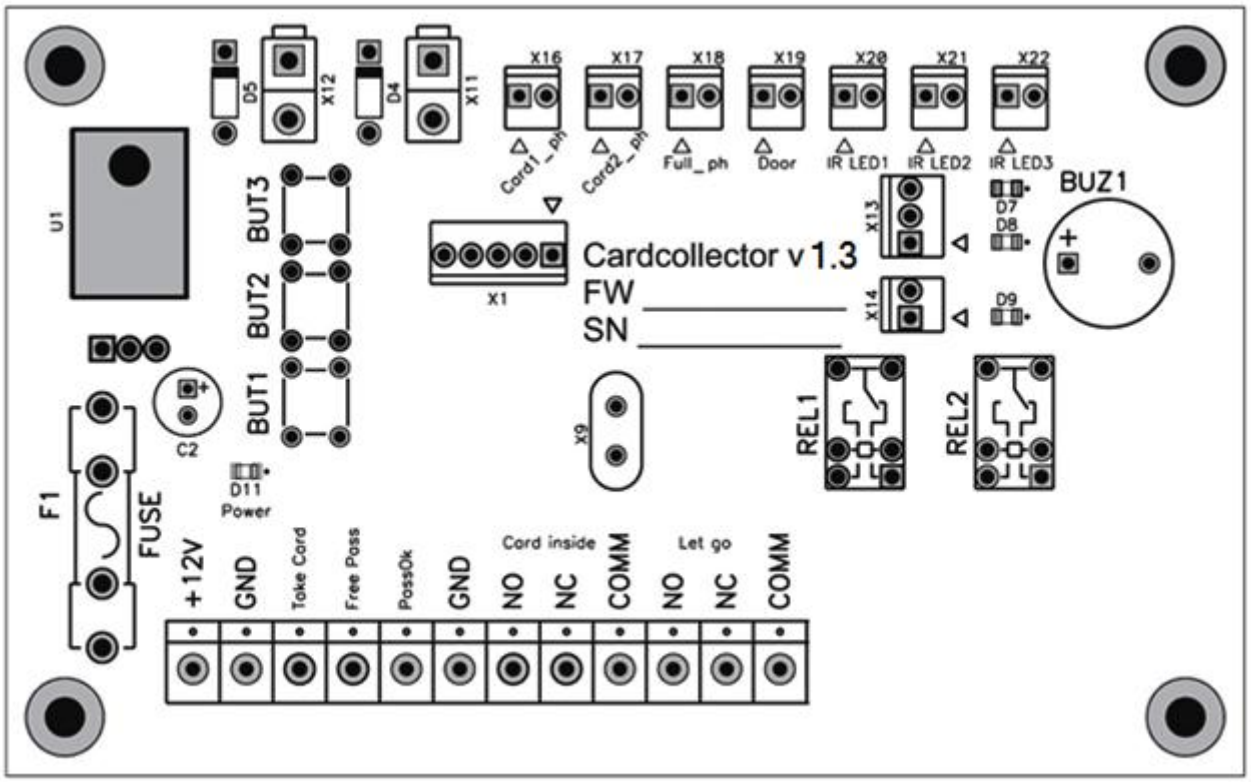


Figure 14 – Appearance of the card collector board

5.6.1 Connecting power supply to the card collector.

The card collector is powered by 12 V DC power supply. Maximum consumption is achieved in the card withdrawal mode-1.5 A.

Connect (+) and (-) terminals of PSU to (+12V) and (GND) terminals on the card collector board, respectively.

When the card collector board is powered, D11 LED lights up. Make sure that the cable is securely connected.

5.6.2 Connecting the actuating device.

Figure 14 – AD is connected to the card collector using two groups of contacts: Let Go and Pass Ok-GND.

Let Go contact group

NC, NO and COMM terminals. A dry contact relay output which closes/opens and transmits a pass permission signal to AD. NC and COMM – normally closed connection, NO and COMM - normally open connection.

Pass Ok-GND contact group

Pass Ok and GND terminals. A pulse input which receives a signal from AD, confirming that a pass has been made. The operation logic is normally open contacts. Fact of passing is determined by closing the contacts for a time of at least 200 ms.

When a permitted card is presented, the card collector transmits a signal and unlocks AD for 5 seconds. No other cards will be accepted during this time period.

If a signal is received (shortage of Pass Ok and GND terminals) confirming the pass, the card collector goes into standby mode and can accept the next card. For these reasons, connecting this group of contacts is crucial for system throughput.

5.6.3 Connecting ACS controller.

Block diagrams of ACS controller using a card collector are given in Appendix D.

ATTENTION: ACS CONTROLLER IS CONNECTED TO ONLY ONE TURNSTILE MODULE, AND CONNECTION BETWEEN THE MODULES IS PROVIDED BY CAN BUS.

Figure 14 – ACS controller is connected to the card collector using three groups of contacts: Take Card-GND, Free Pass-GND and Card Inside.

Take Card-GND contact group (guest card withdrawal signal)

Take Card and GND terminals. Pulse input which receives a signal from ACS controller that allows card withdrawal (guest pass).

The operation logic is normally open contacts. Fact of passing is determined by closing the contacts for a time of at least 200 ms.

Withdrawal signal should be formed no earlier than 2 seconds after the card is inserted into the card reader slot, otherwise it will be ignored.

After receiving the signal in the specified time interval, the card collector opens the shutter and the card is withdrawn.

If internal sensors confirm that the card has been withdrawn, the card collector generates a signal for AD using Let Go contacts group, and a signal for ACS using Card Inside contacts group, while activating a green light traveling wave on the indication band.

Free Pass-GND contact group (signal for permission to pass without withdrawal the card)

FreePass and GND terminals. Input which receives a signal from ACS controller that allows passing without card withdrawal (permanent pass).

If a signal is received to allow passage without withdrawal of the card, the card collector generates a signal for AD using Let Go contacts group, while activating a green light traveling wave on the indication band.

Free Pass input of the card collector should operate in pulse mode (triggered when the terminal is closed).

In pulse mode, voltage is briefly applied to Free Pass input and it allows passing. It forbids passing after the passing, or after 5 seconds

Pulse mode is set by default, and the card collector emits 1 beep when turned on.

If the card collector emits 2 beeps when turned on, it means that it operates at potential mode.

To switch to pulse mode, it is necessary to:

1) turn power off;
2) wait until D11 LED on the card collector board turns off;
3) press and hold BUT1 button on the card collector board;
4) turn on power;
5) hold BUT1 button until the card collector emits 1 beep that indicates that it is switching to pulse mode.

The preset mode is saved when the power is turned off.

Card Inside contact group (card withdrawal confirmation signal)

NC, NO and COMM terminals. Dry contact relay output which closes / opens for 1 second and transmits the card withdrawal confirmation signal to ACS controller.

NC and COMM – normally closed connection, NO and COMM - normally open connection.

6 COMPREHENSIVE INSPECTION

6.1 Visual inspection and verification of the product's readiness for use

6.1.1 Check mounts of the turnstile parts and assemblies

6.1.2 Check that all cables are securely attached.

6.1.3 Turn on turnstile and perform a health check by performing several test passes and switching to the Anti-panic mode.

6.1.4 If extraneous noise and any violations of operating modes are absent, the turnstile is ready for operation.

7 ACCEPTANCE OF THE INSTALLED PRODUCT

Acceptance of the installed product to be carried out as follows:

1) a representative of the organization which performed installation demonstrates reliability of the product installation;

2) notes on the product installation are made in “Product Service Record” Section VZR.245500.010 of the Logbook (LB);

3) "Installation Information” Section of the product's VZR.245500.010 LB is filled in;

4) Certificate of acceptance for operation is issued.

APPENDIX A — Brief description of CAN2.0<2 data bus

A modern noise-resistant CAN2.0 standard bus is used for CP operation. According to CAN2. 0 standard, length of the signal transmission cable can reach values of more than a kilometer, but correct operation at such distances depends on many factors.

For distances more than 25 meters, it is mandatory to use a Cat5e or Cat6 twisted pair. Total electrical resistance of CP DC power supply wire of should not exceed 50 Ohms.

If this requirement cannot be met, additional 12V/100mA PSU can be set at CP place (minimum operating voltage of PSU is 7.5 V). At that, 3 wires from the turnstile - CL, CH, GND – are sufficient for correct operation. Figure 15 – In this case, power supply wire from CP to the turnstile is not required.

Two control panels can be connected to one turnstile.

An important feature of the CAN2.0 bus is the presence of 120 Ohm resistors at the ends of the bus. In a standard CP, such a resistor is already installed.

When using one control panel, it is recommended to connect an additional (second) 120 Ohm. Resistor installed on the cross board connects to CL and CH terminals with J4 jumper installed.

If two control panels are to be connected this is not required – necessary resistors are already installed at the bus ends. Remove J4 jumper.

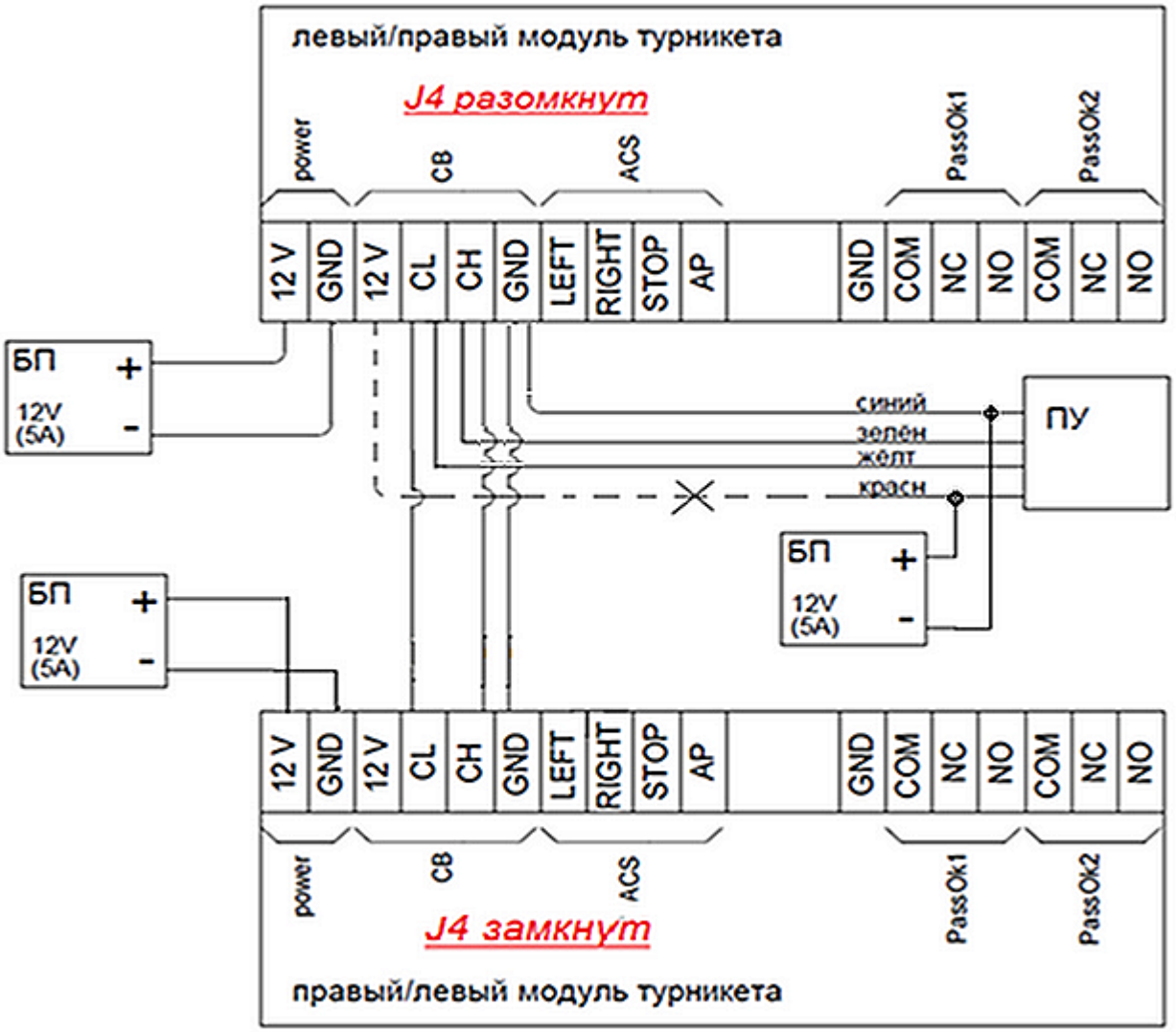


Figure 15 – Connecting power supply to the turnstile modules

APPENDIX B — Power supplies and controllers

Use of recommended power supply units and tested controllers guarantees a smooth operation of the product.

Recommended power supplies

– MEAN WELL DR-120-12;
– MEAN WELL EDR-120-12.

Tested controllers:

– ERA-2000 (ERA-10000).

APPENDIX C — Location of turnstile mounting holes

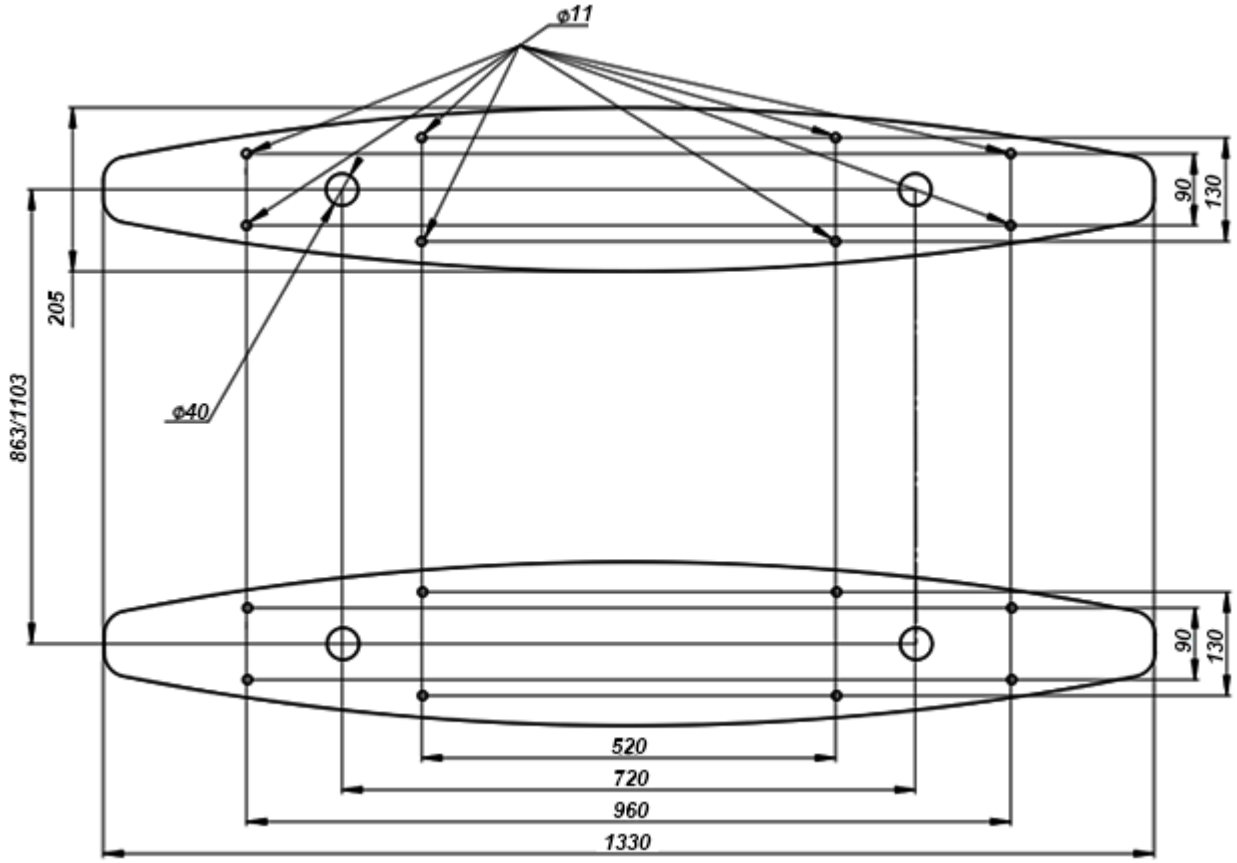


Figure 16 – Location of the turnstile mounting holes

APPENDIX D — Block diagrams of ACS using a card collector

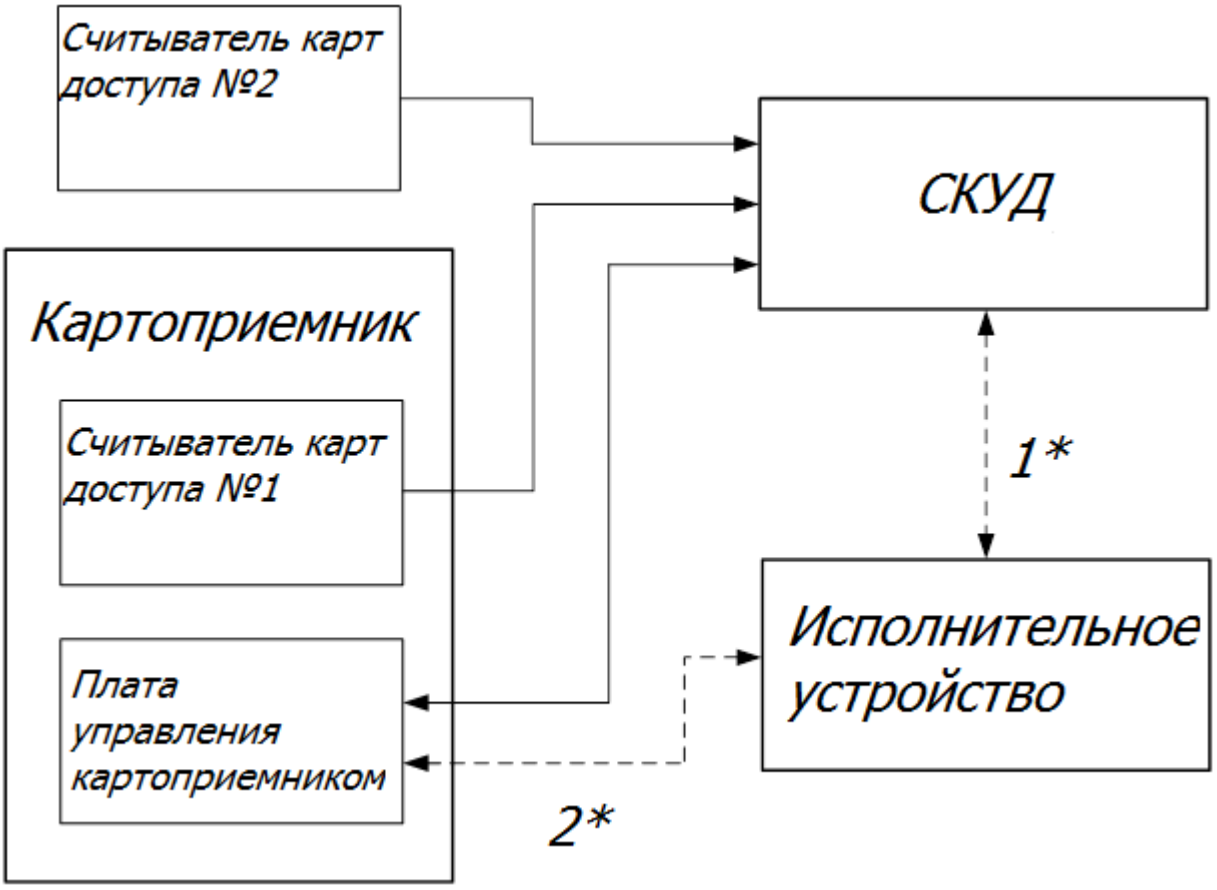


Figure 17 – Block diagram No.1

Figure 17 – The most common connection diagram for a card collector is shown. The actuating device can be controlled both by ACS controller and directly by card collector, so 1* and 2* links are drawn with a dotted line. Specificity of this scheme is presence of two readers.

The second reader should be installed outside the card collector, which is not always aesthetically and practically acceptable. If the readers are close together, they can interfere with each other and create mutual interference.

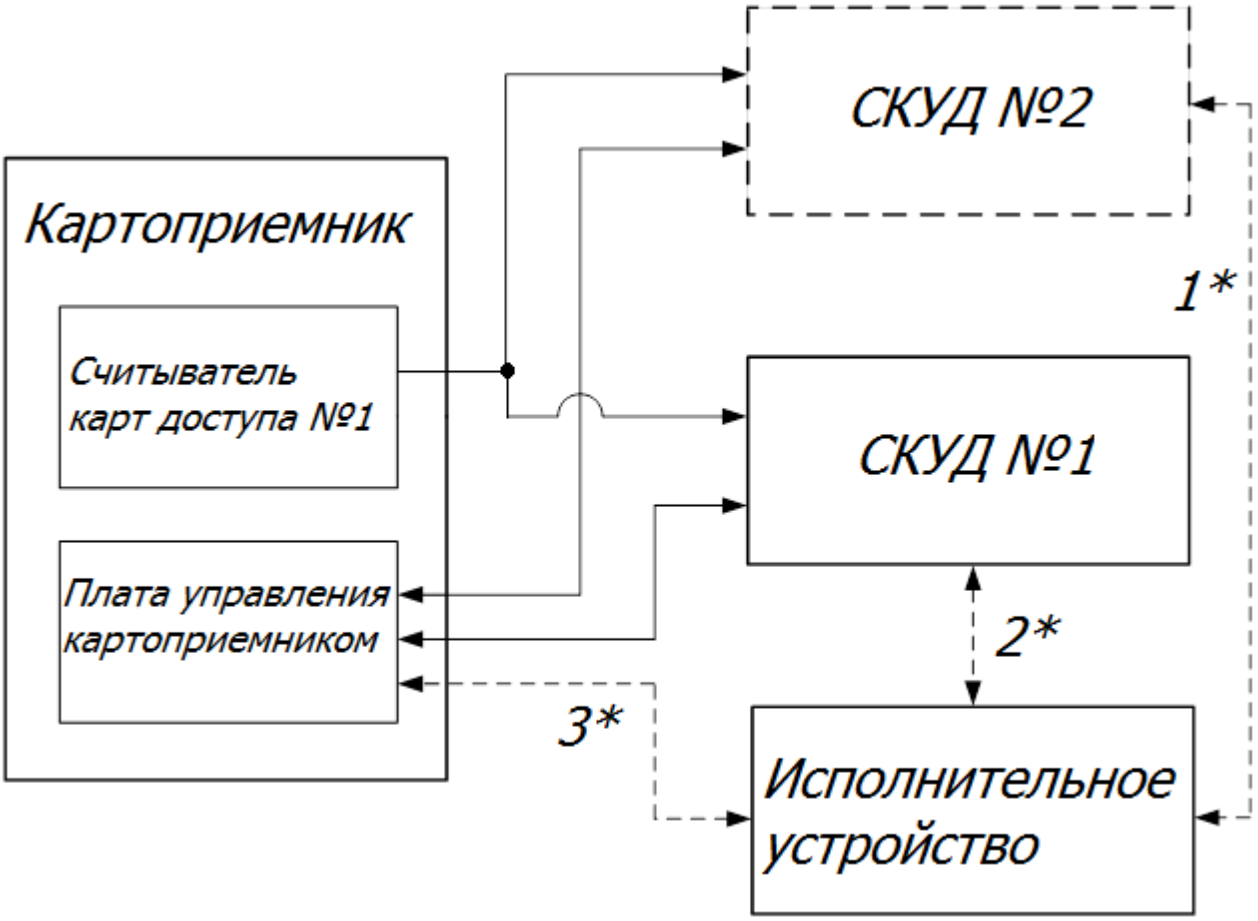


Figure 18 – Block diagram No.2

Figure 18 – a more promising, but also more expensive, connection scheme is presented. This scheme advantage is that it uses a single reader installed in the card collector. Wiegand interface allows connecting several ACS controllers to a single reader in parallel.

ACS controllers are connected to different inputs of the card collector. Memory of one of the controllers contains data about permanent keys, and memory of the second one - guest keys. The reader transmits the card code to two controllers at once and, depending on the card type, corresponding signal is issued to the card collector.

Figure 19 – Block diagram No.3

Figure 19 – Block diagram No.3 (logical development of scheme No. 2) reduces the installed system cost.

For this, a controller with two output signals per reader input is used (controller can distinguish between guest and permanent cards by issuing a signal to corresponding output).

APPENDIX E — DIAGRAM OF MINIMUM CONNECTIONS FOR SYNCHRONOUS OPERATION OF TURNSTILE LEAVES

Figure 20 – Diagram of minimum connections for synchronous operation of turnstile leaves

For stable operation of the turnstile, it is necessary to connect GND terminals of one turnstile module to GND terminal of another turnstile module.

For stable indication, it is necessary to connect indication synchronization pad of one module with indication synchronization pad of the neighboring module.

It is also necessary to ensure that the cables are not connected according to star scheme. **Ошибка! Источник ссылки не найден.** Connections ensure ormal operation of CAN-2 bus.

APPENDIX F — Example of installing multiple turnstiles

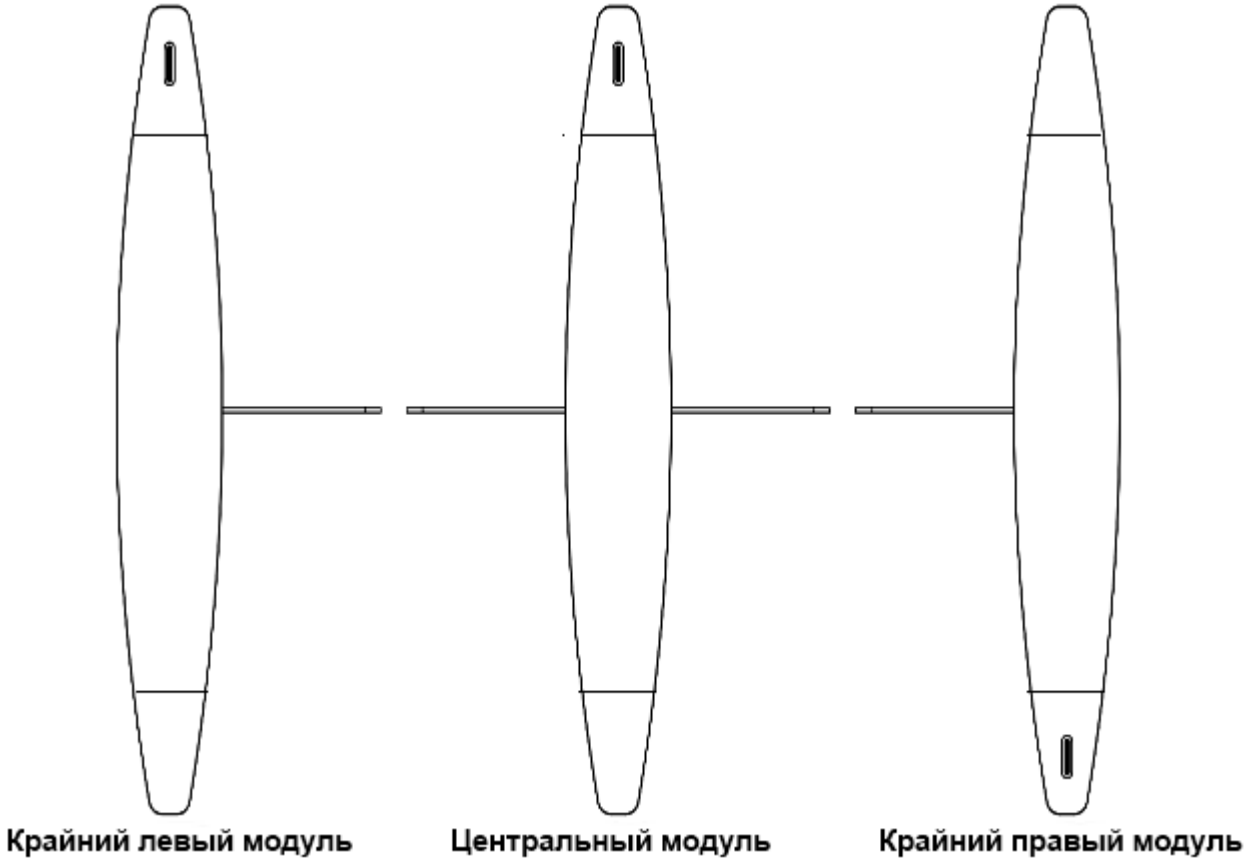


Figure 21 – Example of a checkpoint project (top view)

Figure 21 – When installing several turnstiles in a row, it is possible to create desired passageway zone; in this case, one-way and two-way turnstile modules should be used.

ATTENTION: IF TWO WAY MODULE IS USED, RUNNING INDICATION ON IT IS DISPLAYED ONLY UP TO MIDDLE OF THE TURNSTILE PASSAGEWAY

 **ATTENTION:** ANY MODULE CANNOT BE USED INDEPENDENTLY. WHEN THE TURNSTILE MODULE IS USED IN THIS NON-STANDARD MODE, MANUFACTURER DOES NOT BEAR RESPONSIBILITY FOR ITS OPERATION.

APPENDIX G — Assignment of PROX reader terminals

removing top panel for installing readers

Table 5 – Assignment of PROX-125 reader terminals

Name	Assignment	Wire color
SYNC	Readers synchronization	Yellow
D0/TM	Data "0" or "touch memory"emulation	Green
D1	Data “1”	White
SP	Enabling audio signal	-
LG	Turning on green LED	Orange
LR	Turning on red LED	Brown
PWR	Supplied voltage (8..15B)	Red
GND	Common - GND	Black

Table 6 – Assignment of PROX-13 reader terminals

Name	Assignment	Wire color
D0/TM	Data "0" or "touch memory"emulation	Green
D1	Data “1”	White
SP	Enabling audio signal	-
LG	Turning on green LED	Orange
LR	Turning on red LED	Brown
PWR	Supplied voltage (8..15B)	Red
GND	Common - GND	Black

PRODUCT IS CERTIFIED

Voltage: 12V DC
Current: 5A

Importer: VZR System OU
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www.oxgard.com

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