



"TiSO-PRODUCTION" LTD

**FULL-HEIGHT TURNSTILES WITH SERVO DRIVE**  
**single "GLASSGO" of AUIA.436-03 and AUIA.436-04 series**



**OPERATION AND INSTALLATION MANUAL**  
**Combined, rev.1.3.1**

**2024**  
**UKRAINE**

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**INTRODUCTION**

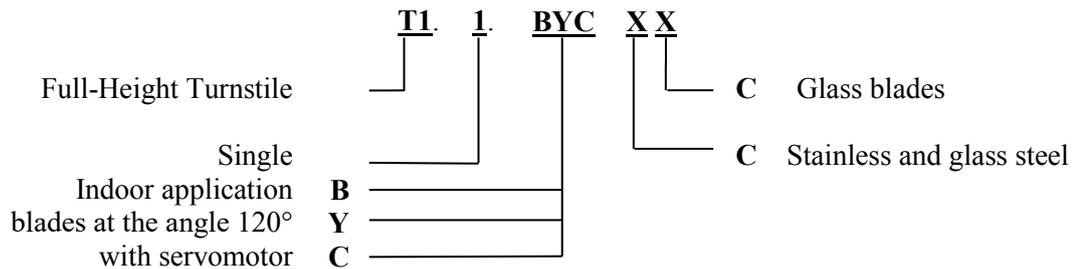
This Operation Manual (hereinafter referred to as OM) covers the with servo drive indoor (or outdoor) single full-height turnstiles "GLASSGO" (hereinafter referred to as the "turnstile"). The Operation Manual contains information about design, specifications, installation for proper operation and maintenance of the turnstile

This Operation Manual is prepared in compliance with the specification requirements TU U 28.9-32421280-004:2018.

The turnstile shall be serviced only by the qualified staff having the relevant class of permit to work with electrical facilities with voltage up to 1000V and scrutinized this Operation Manual, instructed in safety and trained for operation and maintenance of the turnstile.

Reliability and durability of the turnstile operation is provided with observation of modes and conditions of transportation, storage, installation and operation. So, fulfillment of all requirements specified in this document is mandatory.

Depending on the purpose and design features of the turnstile, the following pattern of reference designation is accepted:



Example of reference designation of the Single Full-Height Turnstile with servomotor, glass blades and stainless steel and glass housing when the turnstile *T1.1.BYC.CC* TU U 28.9-32421280-004:2018 is ordered.

*Due to regular improvement of the product its design can be modified without degradation of the product features and quality not covered by this Operation Manual.*

**CUSTOMER WARNINGS ON SAFE OPERATION OF THE TURNSTILE**

*These warnings are designed to ensure safety during operation of the turnstile to prevent violation of safety features by improper installation or operation. These warnings are aimed at drawing attention of the customer to safety problems.*

**GENERAL WARNINGS**

Safety measures and requirements specified in this OM must be observed:

- the turnstile must be connected to ground loop prior to operation;
- the turnstile should be connected to AC network with parameters specified in paragraph 1.2 "Specifications";
- inspection, adjustment and repair should be performed only after the turnstile is deenergized.

After purchasing of the turnstile it should be unpacked and its integrity should be checked. In case of doubt in integrity of the turnstile it should not be used and the customer should refer to the supplier or the manufacturer.

Packing accessories (wooden pallet, nails, clips, polyethylene bags, cardboard etc.) as potential sources of hazard must be removed to unacceptable place prior to proper use of the turnstile.

As electric shock protection device the turnstile is related to 01 protection class according to GOST (State Standard) 12.2.007.0-75 and is not intended for operation in explosive and fire-hazardous areas by the "Rules for design of electrical installations".

Using of the turnstile for unintended purpose, improper installation, nonobservance of conditions of transportation, storage, installation and operation, specified by this OM, may result in damage to people, animals or property for which the manufacturer is not responsible.

## 1. DESCRIPTION AND OPERATION

### 1.1 General Information and Purpose.

#### 1.1.1 Turnstile purpose:

The turnstile is designed for pedestrian movement control at access points of industrial enterprises, banks, stadiums, administrative facilities etc. due to command signals of access control system (from keypad, proximity card readers) or manually (from manual control panel).

The turnstile traffic flow capacity without personal identification is at least 20 persons per minute.

#### 1.1.2. The turnstile dimensions and weight correspond to the values specified in Table 1.

Table 1 - The turnstile dimensions and weight

Model	Code	Rotor type	Dimensions, mm			Access width, mm	Max. weight*, kg
			H	L	B		
GLASSGO (A) AUIA.436.03	TI.1.BYC.CC	«Y-type » (120°)	2310	1175	1442	620	470*
GLASSGO (B) AUIA.436-04	TI.1.BYC.CC						

\* Weight will depends on the shape of barrier rods and on the material of manufacture

#### 1.1.3. The parameters defining operation conditions according to GOST 15150-69

Table 2 - The parameters defining operation conditions

Operational conditions	The parameters for climate version
	NF4 (for indoor application)
<i>I</i>	<i>2</i>
Ambient temperature	from + 1 to + 40 °C
Relative humidity	80 % if plus 25 °C (non-condensing)
Permissible ambient air pressure	from 84 to 106,7 kPa
Temperature range during transport	From - 50 to + 50 °C
Temperature range during storage	From - 5 to + 40 °C
Mechanical design group	L3
Altitude above sea level	up to 2000 m
Environment	Explosion-proof, does not contain conductive dust, corrosive gases and vapors in concentrations that destroy insulation and metals that disrupt the normal operation of the equipment installed in the turnstile
Place of installation	in closed rooms in the absence of direct impact of atmospheric precipitation and solar radiation
Operational position	vertical, not more than 1 ° of deviation from a vertical position in either direction is allowed

#### 1.1.4 Reliability performances:

Table 3 - Reliability performances

Reliability performances	Parameter value
- average recovery time of the operable condition (omitting the spare parts' delivery time)	no more than 6 hours
- mean time between failures	at least 10 000 000passes
- average life of the turnstile till overhaul	not less than 10 years.

## 1.2. Specifications

The main parameters of the turnstile are given in Table 4.

Table 4 - The main parameters of the turnstile

	GLASSGO (A)	GLASSGO (B)
Modification of model	AUIA.436-03	AUIA.436-04
Designation of modification type	T1.1.BYC.CC	
Turnstile type	full-height, rotary	
Installation type	floor	
Type of drive	servodrive	
Technical Specifications		
Traffic flow capacity: - in controlled access mode - in free access mode	>= 20 person/min >= 30 person/min	
Power supply voltage: - AC mains (primary) - DC power supply (secondary)	100 ÷ 240 V~ 50/60 Hz 12 V	
Power consumption	160 W	
Ingress Protection	IP41	
Working temperature range	from +1°C to +40°C	
Emergency mode in case of power failure	- fail-secure (rotor is locked – standard) - fail-safe (option)	
Housing modification	standard / mirrored	
Material and coating	- AISI 304 / AISI 316 – polished stainless steel - AISI 304 / AISI 316 – brushed stainless steel - powder coated RAL	
Angle between leaves	Y-type / 120°	
Type of rotor leaves	9 glass leaves	3 curved solid glass leaves
Light indication	- LED display (standard) - LED lane light (option)	

## 1.3 Product components and scope of delivery

### 1.3.1 The turnstile modifications

Design of the Single Full-Height Turnstile includes the following principal devices and components (see Fig 1):

- walls;
- rotor;
- rotor leaves (9 glass leaves or 3 curved solid glass leaves)
- container with control mechanism;;
- LED displays;
- electrical equipment;
- control panel.

Optionally the turnstile can be equipped with battery.

The turnstile is manufactured from polished or brushed stainless and glass steel (reference designation T1.1.BYC.CC).

### 1.3.2 Turnstile Scope of Delivery

The turnstile is supplied disassembled (by components) or ready-to-install (ready to install).

*Scope of Delivery:*

- Turnstile;
- Control panel AUIA.114;
- Anchor Redibolt (16×120 M12) with jacket and screw;
- Battery – 1pcs (\*is not included in the turnstile scope of delivery - to be equipped by the customer on recharge basis, when applicable
- Packing;

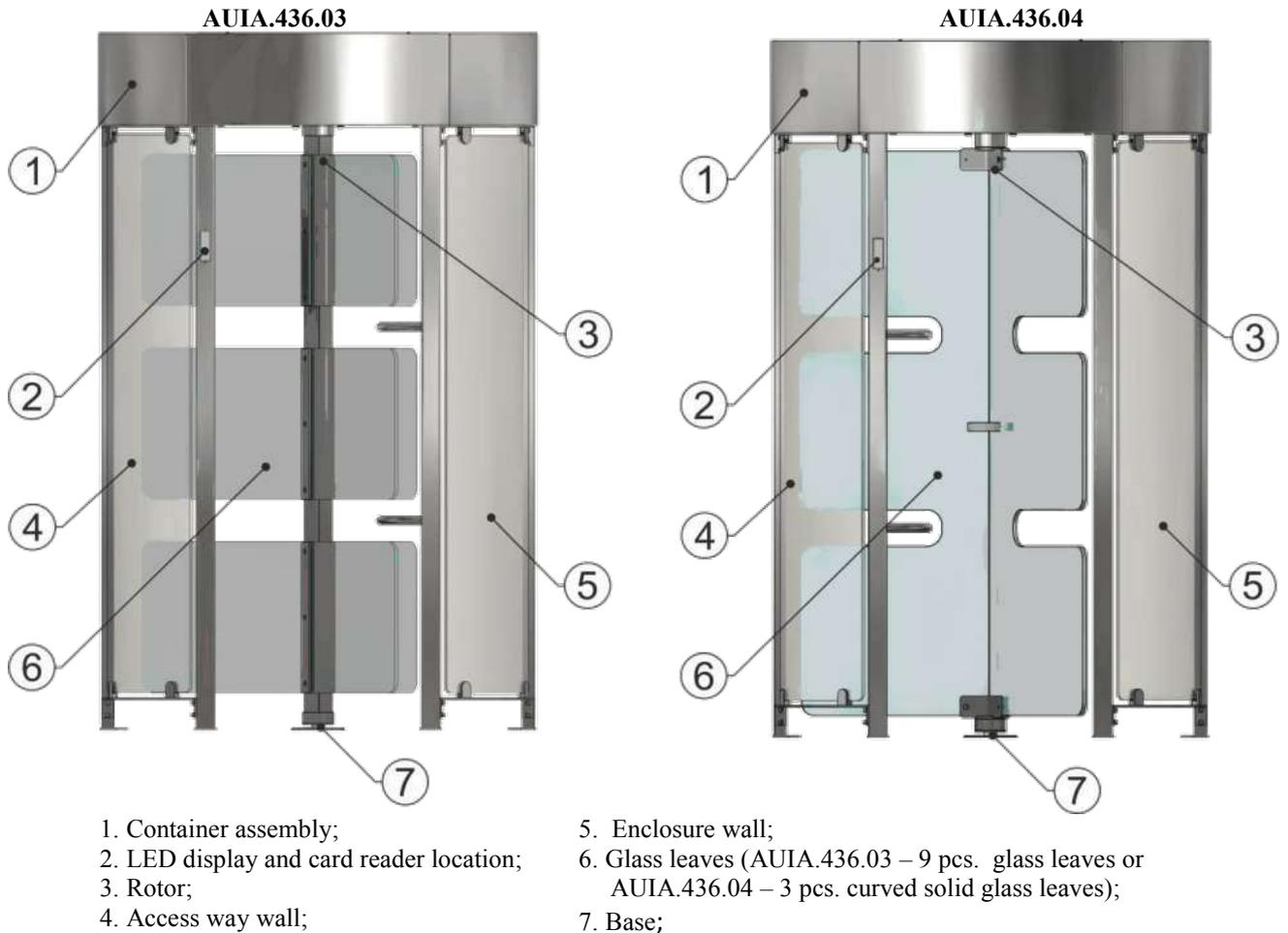


Fig. 1 – Design and general appearance of the «GlassGO»

## 1.4 Design and operation

### 1.4.1 Turnstile design

The turnstile design (See Figure 1) consists of enclosure wall 5, access way wall 4 and rotor 3. The baseline of design is container 1, inside which the turnstile control mechanisms, electrical equipment (power supply and control unit, controllers, battery, heating system etc.) are installed.

The revolving rotor 3, divided into three sectors, each of 120°, is located between access way and enclosure walls. The rotor upper part is linked with shaft of rotor control mechanism via elastic half coupling. The revolving rotor 3 support 7 and walls 4,5 are fixed to the floor by means of anchors Redibolt.

### 1.4.2. The control mechanism design

The control mechanism design (see Figure 4) consists of top and bottom plates 1 and 2, on which the design major components are located. On the shaft between the plates ratchet gears 3 and 4 are located, which are locked with latches 5 and 6. In the interlocking position with ratchet gears the latches are pushed by springs 7 and 8. Ratchet gears are disconnected by means of solenoids 9 and 10, which at actuation provide rotor release in the authorized direction.

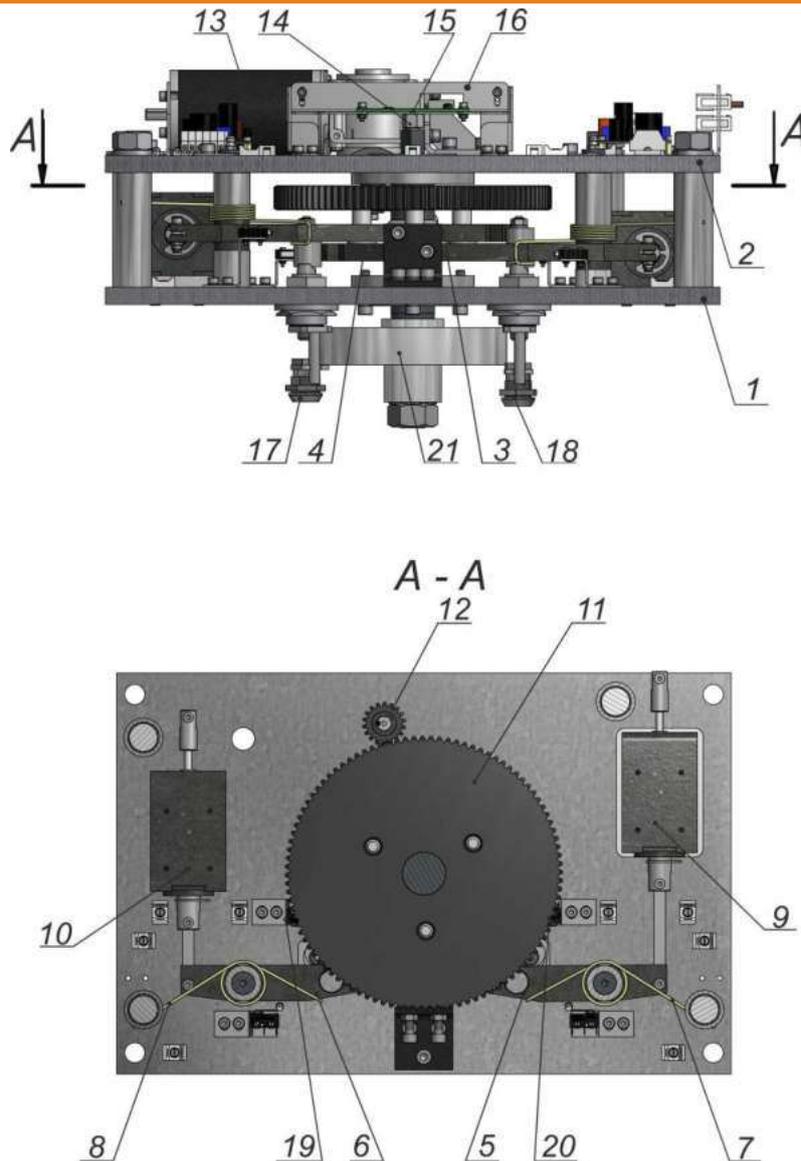
The rotor is brought to initial position by gearbox 13. The rotor initial position and direction of its rotation is controlled by position magnetic sensor 15.

Locks 17 and 18 are designed for the turnstile mechanism manual release.

Position of mechanical release locks is controlled by microswitches 19 and 20.

The turnstile electrical equipment, installed and located inside container, is designed for operation control of actuating mechanisms and LED display of the turnstile both as a part of access control system (ACS) and by means of control panel.

The turnstile electrical equipment includes: heating system\* of control mechanism and electronic components located in container (resistors of thermal elements and thermostat board) as well as controller, power supply, battery\*, wired and distribution electrical accessories



- 1 – Bottom plate;
- 2 – Top plate;
- 3, 4 – Ratchet gears;
- 5, 6 – Latches;
- 7, 8 – Springs;
- 9, 10 – Solenoids;
- 11 – Closer profile cam;
- 12 – Closer lever;
- 13 – Gear motor;
- 14 – Position sensor magnet;
- 15 – Position sensor;
- 16 – Magnetic sensor fixation bracket;
- 17, 18 – Locks;
- 19, 20 – Microswitches;
- 21 – Half-coupling;

Fig. 2– Turnstile operating mechanism

The controller controls the turnstile motor by analyzing the signals from the position sensor, in addition, it protects the motor from overloads. Receiving control commands from external devices (control panel, ACS, etc.), the controller controls the indication and generates feedback signals for the ACS (access control and management system).

LED displays are located on the turnstile posts at the entrance and they are designed for visual display of information about definition and execution of instructions coming from control system (ACS, control panel or keypad) to the turnstile actuating mechanisms.

Control panel is made as small desktop device in plastic case designed for setting and indication of operation modes when the turnstile is operated manually. Control panel and its connection diagram are shown in Annex B.

To ensure operation of the turnstile as a part of access control system (ACS) the following components are used as elements of this system:

- ACS hardware kit;
- ACS software;
- Card\*, badge etc. readers;
- Cards, badges etc.;
- Technical means of permit issuance.

*The Manufacturer shall deliver the listed above as agreed by the parties under separate contract.*

**1.4.2 Principle of turnstile operation (fail secure – standard)**

In the initial state (when solenoids of control mechanism are deenergized) rotor is locked against rotation in both directions.

When access enabling command is issued to controller in one of directions:

- Green arrow is lit on LED display;
- The relevant solenoid is energized;
- The turnstile is unlocked in the relevant direction and the turnstile accessor is able to revolve rotor to 120° for Y-shape turnstile (or to 90° for X-shape turnstile).

As soon as rotor starts revolving the red symbol "X" is lit on LED display (See Figure 5).

Rotor is brought to initial (zero) position by closer of control mechanism and after that the turnstile is automatically locked against rotation in both directions.

More detailed description of the turnstile operation modes is given in the paragraph 1.6 "Description and operation of controller as component of the turnstile".

12V DC power voltage is provided by power supply unit.

When mains power supply is off, the turnstile is automatically switched to power supply from 12V, 7-17 A·h battery\* (optional), which ensures the turnstile's operation within at least 2-4 hours..

The turnstile wiring diagram is shown in Annex C.



Fig. 3 - Turnstile status display

**1.5. Instrumentation, tools and accessories**

Special-purpose tools are not required for the turnstile installation (multi-purpose measurement instrumentation and installation tools are enough). (See Figure 4).

- puncher;
- concrete drills (according to diameter of anchors included in the turnstile scope of delivery);
- extension cord;
- kit of end and pin wrenches;
- kit of hexagons;
- kit of screwdrivers;
- hammer;
- multimeter (tester);
- measuring tape;
- marker;
- pliers, side cutters;
- builder's level.



Fig.4 – Tools and accessories for layout and installation

**1.6. Description and operation of controller as an integral component of the turnstile**

**1.6.1 Turnstile rotor mechanism controller PCB.201.01.00.00**

1.6.1.1 Purpose of the turnstile rotor mechanism controller PCB.201.01.00.00

The controller is designed for acquisition of commands from the turnstile controller PCB.112.21.20.01 and generation of the motorized mechanism motor control signals.

The Controller is assembled on the (85x70)mm card, on which electronic components and connectors for external connections are installed.

On controller card 13 LEDs are installed. Their purpose is as follows:

- 8 LEDs indicate condition of inputs «IN1» ÷ «IN8»;
- «POWER» LED indicates availability of supply voltage 5V;
- 4 LEDs indicate condition of outputs for connection of motor.

24 terminals are installed on the card: 2 of them are designed for external connections, the rest are designed for connection to turnstile units or are standby.

1.6.1.2 Technical features of the turnstile rotor mechanism controller PCB.201.01.00.00

Table 5 - The controller technical features are show

Parameter description	Parameter description
Number of inputs	2
Number of outputs	4
Type of inputs	logical
Type of outputs «GRN1», «RED1», «GRN2», «RED2»	open collector
Logical «1» voltage	(3,7 ÷ 5) V
Logical «0» voltage	(0 ÷ 1,7) V
Peak voltage, applied to inputs «INP1» ÷ « INP5»	15 V
Peak voltage switched by outputs «GRN1», «RED1», «GRN2», «RED2»	30 V
Peak current switched by outputs «GRN1», «RED1», «GRN2», «RED2»	2 A
Peak voltage switched by outputs «-MG1»,«-MG2»	50 V
Peak current switched by outputs «-MG1», «-MG2»	5 A
Peak voltage switched by outputs «MOT1», «MOT2»	27 V
Peak current switched by outputs «MOT1», «MOT2»	< 4 A
Controller supply voltage	(10 ÷ 27) V
Consumption current when outputs «MOT1» and «MOT2» are OFF	≤0,15 A
Climatic modification and category of location according to GOST15150-69	NF4

1.6.1.3 Description of rotor motorized mechanism controller PCB.201.01.00.00

The controller operates according to the program entered into memory of microprocessor. The turnstile mechanism and LED display are controlled depending on commands coming from the controller PCB.112.21.20.01 rotor of position, rotation speed and based on the logic entered into program. Control commands are generated to controller via serial interface.

Waiting for a permission command, the controller holds the rotor in its original position. After permission command is sent, controller via electromagnet "-MG1" and "-MG2" unlocks the rotor in one direction and with a light push of the rotor with your hand in the direction of passage through the outputs "MOT1" and "MOT2" (X2 / 9 and X2 / 10) supplies current to the motor winding and rotates the rotor in a given direction.

Speed and position of rotor is controlled during rotation. After pedestrian turnstile access rotor continues to turn smoothly forward (turn additionally), gradually slowing down, and when the angle 120° is reached rotor is held in this position by means of servo drive.

The purpose of controller PCB.201.01.00.00 (for rotor motorized mechanism) contacts designed for connection of peripherals is shown in Table 6.

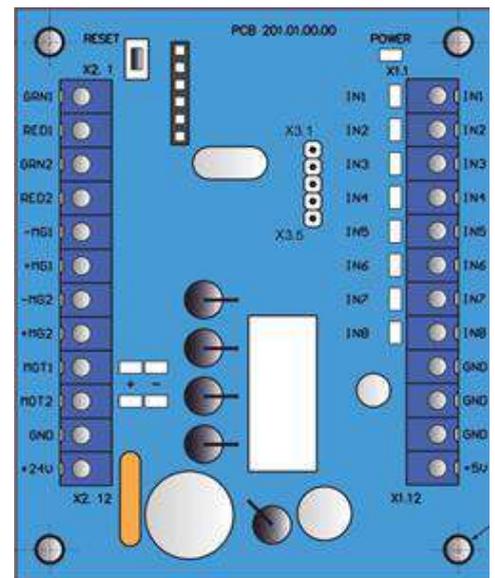


Fig. 7 – Appearance of the controller PCB.201.01.00.00 for the rotor motorized mechanism

Table 6

Connector/ contact No	Designation	Direction	Purpose	Signal parameters and description
X1/1	IN1	ENTRY	Not applicable	1) logical «0» (0 ÷ 1,7) V; 2) logical «1» (3,7 ÷ 5) V; 3) active level of signal – logical «0»; 4) voltage on open input ≤ 5 V
X1/2	IN2	ENTRY		
X1/3	IN3	ENTRY	Mechanical release signal	
X1/4	IN4	ENTRY		
X1/5	IN5	ENTRY	Connection of rotor position sensor	
X1/6	IN6	ENTRY		
X1/7	IN7	ENTRY		
X1/8	IN8	ENTRY		
X1/9	GND		«-» power supply (common wire)	
X1/10	GND			
X1/11	GND			
X1/12	+5 B	EXIT	Not applicable	
X2/1	GRN1	EXIT		
X2/2	RED1	EXIT		
X2/3	GRN2	EXIT		
X2/4	RED2	EXIT		
X2/5	-MG1	EXIT	Not applicable	1) type of output – open collector; 2) peak voltage on privacy – 50 V; 3) peak current of public key – 5 A;
X2/6	+MG1	EXIT	Not applicable	
X2/7	-MG2	EXIT	Not applicable	1) type of output – open collector; 2) peak voltage on privacy – 50 V; 3) peak current of public key – 5 A;
X2/8	+MG2	EXIT	Not applicable	
X2/9	MOT1	EXIT	Motor connection	1) voltage (10 ÷ 27) V; 2) current ≤ 4 A
X2/10	MOT2	EXIT		
X2/11	GND		«-» power supply (common wire)	
X2/12	+24 B	EXIT		1) voltage (10 ÷ 27) V; 2) current ≤ 4 A
X3	X3	EXIT / ENTRY	Communication port	1) logical «0» (0 ÷ 1) V; 2) logical «1» (3,5 ÷ 5) V

**1.6.2 Turnstile controller PCB.112.21.20.01**

1.6.2.1. Purpose of controller PCB.112.21.20.01

The controller PCB.112.21.20.01 is designed for control of the full-height turnstile operation both under control of authorized access system (hereinafter referred to as AAS) and independently. It provides the required logic of the turnstile operation in various operating modes as well as compliance of control commands from peripherals and generation of report signals.

It provides the required logic of the turnstile operation in various operating modes as well as compliance of control commands from peripherals and generation of report signals.

The controller is assembled on the 104x68 mm board (See Figure 6). Field-effect transistors are used to control solenoids and LED displays.

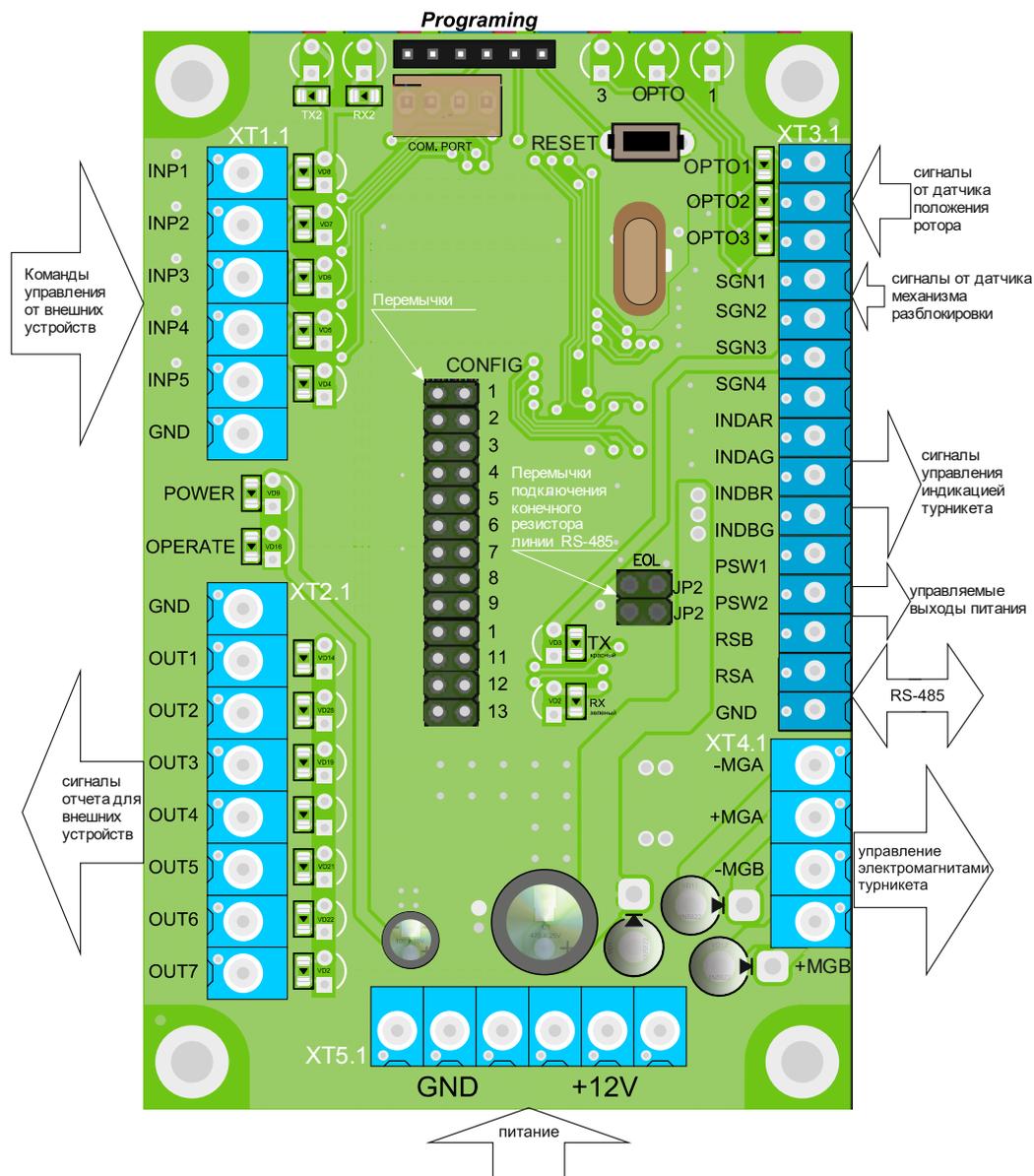


Fig. 6 – Appearance of controller PCB.112.21.20.01

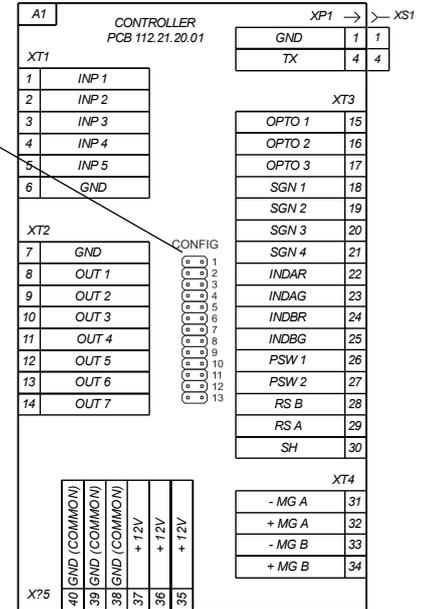
19 light emitting diodes are installed on the controller board. Their purpose is as follows

- 5 light emitting diodes display state of the external connection inputs “INP1” ÷ “INP5”;
- The light emitting diode “POWER” displays existence of 5V power supply voltage;
- The light emitting diode “OPERATE” displays operating capacity of microprocessor;
- 7 light emitting diodes display state of the external connection outputs “OUT1” ÷ “OUT7”;
- 3 light emitting diodes “SENSOR” display state of rotor position sensor;
- The light emitting diodes “RX” and “TX” display transceiving on serial port.

On the board there are 13 jumpers, 40 terminal clamps for connection of wires, 14 of them for external connections, another- for connection to the turnstile units or can be standby.  
Application of jumpers on the controller board PCB.112.21.20.01:

Table 7 - Application of jumpers

№	Description	State	State value
1	Turnstile type		Full height /Rotary
			
2	Mechanism type		426/429
			
3	Lock mode in A direction		Normally Open Fail safe (NO)
			Normally Closed Fail secure (NC)
4	Lock mode in B direction		Normally Open Fail safe (NO)
			Normally Closed Fail secure (NC)
5	Change of direction Entrance/Exit (A/B)		Standard
			Mirrored
6	Active state of output signals OUT 1-7		Normally Open (NO)
			Normally Closed (NC)
7	Active state of output signals Panic (INP 1)		Normally Open (NO)
			Normally Closed (NC)
8	Reserved		
9	Airlock function		No Airlock function
			With Airlock function
10	Reserved		
11	Reserved		
12	Reserved		
13	Reserved		



-  - jumper is installed;
-  - jumper is removed;
- NO - (normally open)- normally open position of contacts;
- NC - (normally closed)- normally closed position of contacts;
-  - must be installed for this type of turnstile
-  - must be based on ordered options
-  - selected by installer (customer) depending on ACS requirements or installation conditions

## 1.6.2.2. Technical features

The controller specifications are given in Table 8.

Table 8

<i>Parameter name</i>	<i>Value of the parameter</i>
<i>1</i>	<i>2</i>
Number of inputs for receiving control commands	5
Number of signal outputs	7
Type of inputs	logic
Type of outputs	open collector
The voltage of the logic "1"	(3 ÷ 5) V
Voltage of the logic "0"	(0 ÷ 2,2) V
Maximum voltage applied to the inputs «INP1» ÷ «INP5», not more than	15 V
Maximum voltage, switched by transistors of signal outputs	50 V
Maximum switching current on signal outputs	0,1 A
Supply voltage controller	(9 ÷ 15) V
Maximum current consumption	0,15 A
Number of serial ports for receiving and transmitting signals (RS-485)	1
Climatic execution and category of accommodation in accordance with State Standard GOST 15150-69	NF4

## 1.6.2.3. Description of operation

The controller operates according to the program entered into memory of microprocessor.

The turnstile mechanism and LED display are controlled depending on control commands and rotor position sensors based on the logic entered into program. Control commands can be transmitted via RS-485 (from control panel) or logical inputs by means of closing and opening “INP1” ÷ “INP5” on “GND”.

The controller (and therefore the turnstile) can be in “INITIAL STATE” (closed for access) or in one of the following access modes:

- SINGLE ACCESS IN ONE DIRECTION;
- FREE ACCESS IN ONE DIRECTION;
- ACCESS LOCKING.

The rest operating modes are combinations of various or identical basic modes in different directions:

- Single access in one direction and any mode in opposite direction.
- Free access in one direction and any mode in opposite direction.
- Locking of access in one direction and any mode in opposite direction.
- “PANIC” function.

**“INITIAL STATE”**

The controller is in this mode, if there are no commands “TO BE OPENED A/B” and the turnstile rotor is set to the point 0°, 90°, 180 or 270° for X-shape turnstile (or 0°, 120° or 240° for Y-shape turnstile). In this mode solenoids are deenergized locking rotor. Red inhibit LED display is lit in both directions.

**“SINGLE ACCESS IN ONE DIRECTION”**

In this mode the controller unlocks rotor through solenoid in one direction with the possibility of revolving to 120°. It enables access of one pedestrian through the turnstile.

The controller is switched to “SINGLE ACCESS IN ONE DIRECTION”, if in the INITIAL STATE it receives “TO BE OPENED A/B” command (i.e. active level of signal is sent to the input “INP4” or “INP5”). In this case the turnstile is open within signal action period. The command can also be sent delay of WAITING FOR START OF ACCESS. Sequence of controller operations after reception of “TO BE OPENED A/B” command is as follows:

- Delay of WAITING FOR START OF ACCESS is initiated (Factory setting 5 sec.).
- Controller deenergizes solenoid and rotor is unlocked in the relevant direction.
- LEDs are switched from red to green according to the authorized access.

Then two alternatives of events are possible.

1) First alternative: If within active status of “TO BE OPENED /B” (“INP4”/“INP5”) or during delay of WAITING FOR START OF ACCESS rotation of rotor is not started, then controller is reset to “INITIAL STATE”;

2) Second alternative: If in the above mentioned cases rotation of rotor is started, then further behavior of controller depends on angle of rotor rotation.

• When rotor rotates to 6° (or 5° for the X-shaped turnstile), LEDs are switched from green to red, indicating that access is occupied. Output signal START OF ACCESS “A/B” (“OUT1” or “OUT2”) becomes active.

- When rotor rotates to 54° (40°), the output signal "START OF ACCESS A/B" ("OUT1" or "OUT2") is removed. Delay of WAITING FOR START OF ACCESS is reset;
- When rotor rotates to 64° (48°), ACCESS DETECTION (OUT3 or OUT4) signal is generated.
- When rotor rotates to 120° (90°), OCCUPIED ACCESS A/B and ACCESS DETECTION (OUT3 or OUT4) signals are reset and then availability of "TO BE OPENED A/B" (INP4 or INP5) command, conforming to the current, is checked. If by this moment the command remains active, the controller switches to FREE ACCESS mode and if not, then it is reset.

#### **"FREE ACCESS IN ONE DIRECTION"**

In this mode rotor can easily rotate in free access direction. In the FREE ACCESS mode green LED of the relevant direction is blinking. In this mode the controller transition is occurred in two cases:

- First: when "TO BE OPENED A/B" (input INP4 or INP5) command is maintained in active status at the moment of rotor crossing the point 120° (90°) upon termination of SINGLE ACCESS.
- Second: after reception of FREE ACCESS command in the relevant direction via RS 485. After the controller is switched to FREE ACCESS mode, output signals of "OCCUPIED ACCESS", "ACCESS DETECTION" of the relevant direction are generated as described in Table 9.

Exit from this mode into INITIAL STATE is taken place after cancellation of "TO BE OPENED A/B" command or reception of FREE ACCESS CANCELATION command via RS485. But it will happen not instantly and only when rotor reaches one of the starting points 0°, 120° or 240° (0°, 90°, etc. for the X-shaped type of turnstiles), i.e. if free access cancellation arises during started access it will be completed as free.

#### **"FREE PASSAGE IN ONE DIRECTION"**

In this mode, the rotor can rotate freely in the direction of the free passage. In the opposite direction, the rotor can only rotate to the nearest blocking point, that is, 60° (Only for the Y-shaped type of turnstiles). In the mode "FREE PASS", the corresponding direction indicator flashes green.

The controller goes into this mode in two cases:

- The first is when holding the command "OPEN A / B" (the input "INP4" or "INP5") in the active state when the rotor intersects the point 120° (90°) at the end of the "BREAKDOWN".
- The second - instantly, after receiving the command "FREE PASS" in the appropriate direction via RS-485.

After transition of the controller to the "FREE PASSWORD" mode, the state of the "Gateway" command of the corresponding direction does not matter, and the "GETTING STARTED", "PASSOUT DETECTION" and "POINT OF GATEWAY" signals are not generated.

Exit from this mode to "INITIAL STATUS" occurs after removing the command "OPEN A / B" or receiving the command "CANCEL FREE PASS" by RS-485. But this will happen not immediately, but only when the rotor reaches one of the starting points 0°, 120° or 240° (0°, 90°, etc. for the X-shaped type of turnstiles), that is, if the abolition of free occurs during the beginning of the pass, then it will be finished as free.

#### **"AUTHORIZATION OF A VARIOUS PASSAGE IN BOTH DIRECTIONS"**

Since the turnstile having one rotor can't rotate in two directions simultaneously, the controller can only unlock rotor in two directions and after access in one of directions is started, the reverse direction will be closed. The controller is switched to this mode if in the INITIAL STATUS it simultaneously acquires "TO BE OPENED A" and "TO BE OPENED B" commands. The second signal also can come during the time when the first signal is already active, but rotation of rotor did not start yet. In this case:

- 1) The controller unlocks rotor in two directions via electromagnets.
- 2) Switches both LEDs from red to green.
- 3) Initiates two delays of "WAITING FOR START OF ACCESS A and B" for each access individually, which are counted from the moment of acquisition of commands.
- 4) Controller waits for start of access. After rotor is revolved to 6° in any side, opposite direction will be locked LED is switched to red.
- 5) After the rotor is rotated by 6° (or 5° for the X-shaped turnstile) in any direction, the electromagnet of the opposite passage will be turned off, the indication.

Then the controller is operating as described in section "SINGLE ACCESS IN ONE DIRECTION".

If during active status of the "TO BE OPENED A" and "TO BE OPENED B" signals or during WAITING FOR START OF ACCESS rotor has not been revolved in any side to the angle more than 6°, the controller is switched to the INITIAL STATE.

#### **"PANIC" FUNCTION**

The turnstile is switched to "PANIC" state:

- After keeping active state on input ("INP5" "PANIC") more than 1,5 sec;
- After sending "PANIC" command by control panel (command is sent after "PANIC"

button is hold more than 7 sec). After activation of "PANIC" function the barrier rod, which is in horizontal position, will be lowered, output ("OUT7" "PANIC") will be switched to active state during the function action. Barrier rod is lowered after power supply is fed to magnet from output "PSW1" "PANIC". The "PANIC" function is canceled:

- After active state is released on input "INP5" "PANIC");
- After command "CANCELATION of PANIC" is sent from control panel (repeated pushing of "PANIC" button);

#### “LOCKING OF ACCESS”

The locking function can be activated by control panel only. After activation of “LOCKING OF ACCESS A or B” the turnstile rotor is blocked in the relevant direction and access authorization commands will be ignored in the locked direction; The locked direction is indicated by blinking red color. The purpose of controller’s contacts, designed for connection to peripherals, is given in Table 9.

Table 9

Connector / pin number	Name	Direction	Purpose	Name and parameters of the signal
1	2	3	4	5
XT1/1	INP1 («PANIC»)	ENTRY	The command "TRANSITION IN THE STATE OF PANIC"	1) the logical "0" (0 ÷ 2,2) V; 2) the logical «1» (3 ÷ 5) V; 3) active signal level (factory setting) - logical "0"; 4) the voltage at the open input < 5 V
XT1/2	INP2 ("OPEN A")	ENTRY	The command "OPEN FOR SINGLE PASSING "in pulsed mode. When the command is given, the input is activated for a period of 5 seconds	
XT1/3	INP3 ("OPEN B")	ENTRY		
XT1/4	INP4 («OPEN A»)	ENTRY	The command "OPEN FOR SINGLE // FREE PASS » The passage remains open while you hold it. (in hold mode);	
XT1/5	INP5 («OPEN B»)	ENTRY		
XT1/6	GND (common)		«-» power supply (common wire)	
XT2/1	GND (common)			
XT2/2	OUT1 ("START PASS A")	EXIT	Signal is generated by controller when “TO BE OPENED” command is received and rotor rotation in the same direction is detected	1) type of output - open collector; 2) maximum voltage on the closed key 55 V; 3) the maximum current of the open key is 100 mA; 4) open key resistance (5 ÷ 7) Ohm; 5) active signal level (factory setting) - logical "0"
XT2/3	OUT2 ("START PASS B")	EXIT		
XT2/4	OUT4 ("DETECTION PASSAGE A ")	EXIT	Signal is generated by controller when rotor revolves from 64° to 120° in the relevant direction (or 48° to 90 ° for the X-shaped turnstile)	
XT2/5	OUT4 ("DETECTION PASSAGE B ")	EXIT		
XT2/6	OUT5 («ACCESS IS OCCUPIED»)	EXIT	Signal is generated by controller when rotor reaches the angle 58° (or 43° for the X-shaped turnstile)	
XT2/7	OUT6 ("ERROR")	EXIT	Signal is generated by controller when violation of operation logic is detected	
XT2/8	OUT7 («PANIC»)	EXIT	Signal is generated by controller when “PANIC” function is activated	
XT3/1	OPTO1	ENTRY	It is used for acquisition of data about the turnstile rotor position	1) logic «0» (0 ÷ 2,2) V; 2) logic «1» (3 ÷ 5) V; 3) active signal level (factory setting) - logical "0"; 4) the voltage at the open input <5 V
XT3/2	OPTO2	ENTRY		
XT3/3	OPTO3	ENTRY		
XT3/4	SGN1	ENTRY	It is used for acquisition of data about the mechanical unlocking of the turnstile rotor	
XT3/5	SGN2	ENTRY		
XT3/6	SGN3	ENTRY	Not applicable	
XT3/7	SGN4	ENTRY		

Continued Table 9

1	2	3	4	5
XT3/8	INDAR	EXIT	It is used for the turnstile LED display control	1) type of output - open collector; 2) maximum voltage on the closed key 30 V; 3) maximum current of the open key 2 A; 4) open key resistance 0.1 Ohm;
XT3/9	INDAG	EXIT		
XT3/10	INDBR	EXIT		
XT3/11	INDBG	EXIT		
XT3/12	PSW1	EXIT	Used to supply power to external nodes	1) type of output - open emitter; 2) the output voltage in the switched-on state is 12 V; 3) the maximum current consumed from the output 1 A; 4) resistance of the open key 0,25 Ohm
XT3/13	PSW2	EXIT		
XT3/14	RSB		It is used for data transmission via serial port RS-485 SCREEN	Interface RS-485
XT3/15	RSA			Interface RS-485
XT3/16	GND			
XT4/1	- MGA	EXIT	It is used for to control the electromagnets of the rotor mechanism	1) type of output - open collector; 2) maximum voltage on the closed key 50 V; 3) the maximum current of the open key is 9 A; 4) open key resistance 0,11 Ohm
XT4/2	- MGB	EXIT		
XT4/3	+ MGA		Connecting the cathodes of protective diodes to the positive terminal of the magnet power supply	
XT4/4	+ MGB			
XT5/1	+ 12 V		«+» power supply (controller energization)	1) the supply voltage is 12 V; 2) Consumed current < 150 mA
XT5/2	+ 12 V			
XT5/3	+ 12 V			
XT5/4	GND (common)		«->» power supply (common wire)	
XT5/5	GND (common)			
XT5/6	GND (common)			
XP1	XP1	ENTRY / EXIT	Communication port with PCB.201	1) logical «0» (0 ÷ 1) V; 2) logical «1» (3,5 ÷ 5) V

## 2 USE ON PURPOSE

### 2.1 Operational limitations

2.1.1 The product should be operated under the conditions specified in 1.1.4 of this document, while keeping the specifications given in section 1.2.



#### THE FOLLOWING ARE PROHIBITED:

- 1) TO USE THE TURNSTILE NOT FOR APPOINTMENT (see section 1 "DESCRIPTION AND OPERATION");
- 2) OPERATE A TURNSTILE WITHOUT EARTHING;
- 3) USE FOR EARTHING PIPES AND BATTERIES OF HEATING SYSTEMS, CENTRAL WATER SUPPLY;
- 4) TO PRODUCE ADJUSTMENT AND REPAIR WORKS WITHOUT DISCONNECTION OF POWER SUPPLY;
- 5) TO MOVE THROUGH THE PASSAGE ZONE AREAS OBJECTS EXCEEDING THE PASSAGE WIDTH;
- 6) STIKE ON ENCLOSURE WALL, LIGHT INDICATION BOARD OR OTHER PARTS OF THE PRODUCT;
- 7) TO APPLY THE EFFORT TO THE PASSES WHEN ACCESS DENIED MORE THAN 400 N (40 KG)

2.1.2 Do not operate the turnstile with:

- the presence of mechanical gritting in the moving parts of the turnstile;
- mechanical damage of the metal structure of the turnstile, its devices and components;
- mechanical damage of electrical cables;

2.1.3 List of specific operating conditions

- The average time of a person's passage through the turnstile (in the mode of a single pass) is 3 seconds.
- The turnstile mechanism allows emergency access by means of function "PANIC".
- To increase the capacity of the turnstile in case of abnormal situations, a door, gate or emergency door can be installed aside to the turnstile.

### 2.2 Layout and installation

The turnstile and other products of the delivery set must be delivered to the installation site in the manufacturer's packaging. Unpack the turnstile only at the installation site.

Preparation of the turnstile for installation (dismounting) and commissioning to be performed according to this OM with mandatory observation of safety measures specified in p. 2.1 and general electrical safety code.



#### WARNING:

**The turnstile damage occurred during transportation is not covered by the manufacturer's warranty obligations.**

#### Safety cautions:

- Only people who have passed the Safety Instruction and have studied this manual and have an appropriate group of permits for work with electrical installations with voltages up to 1000 V, familiar with the OM, the structure and the principle of operation of the turnstile, should be allowed to install.
- when installing the turnstile, use only a serviceable tool;
- connect all cables only when the power sources are disconnected from the mains and switched off;
- **cabling should be carried out in accordance with the Rules for the operation of electrical installations;**
- installation of the turnstile should be carried out by a team of installers, consisting of not less than 2 people.

**2.3. Procedure for the installation**

Install the product in the following order:

- 1) The package integrity to be checked prior to unpacking. If package is damaged, then damages to be fixed (picture to be taken, damage report to be made).
- 2) The turnstile to be unpacked and inspected for defects and damages as well as completeness to be checked according to the turnstile data sheet;



**WARNING:**

**When the turnstile damages are detected or in case of shortage of delivery, installation work to be stopped and the turnstile supplier to be referred to. The turnstile shall be fixed by means of Redibolt (with jacket and screw) included in the scope of delivery.**

3) Make sure that the turnstile installation area is ready as follows:

- The installation site surface should be plain, hard and without defects (corrugations, overlaps etc.);and provide vertical position plus or minus 1°;
  - Thickness of concrete blinding coat under site to be at least **150 mm**.
  - Concrete blinding coat along the perimeter should overhang the project turnstile for **100 mm**.
- 4) The turnstile fixation holes to be marked on the area surface according to the drawing (See Fig.7 and Annex A).

The turnstile components, placed upright on the installation site, marking can be used as a template.

**2.3.1 Installation of the turnstile**

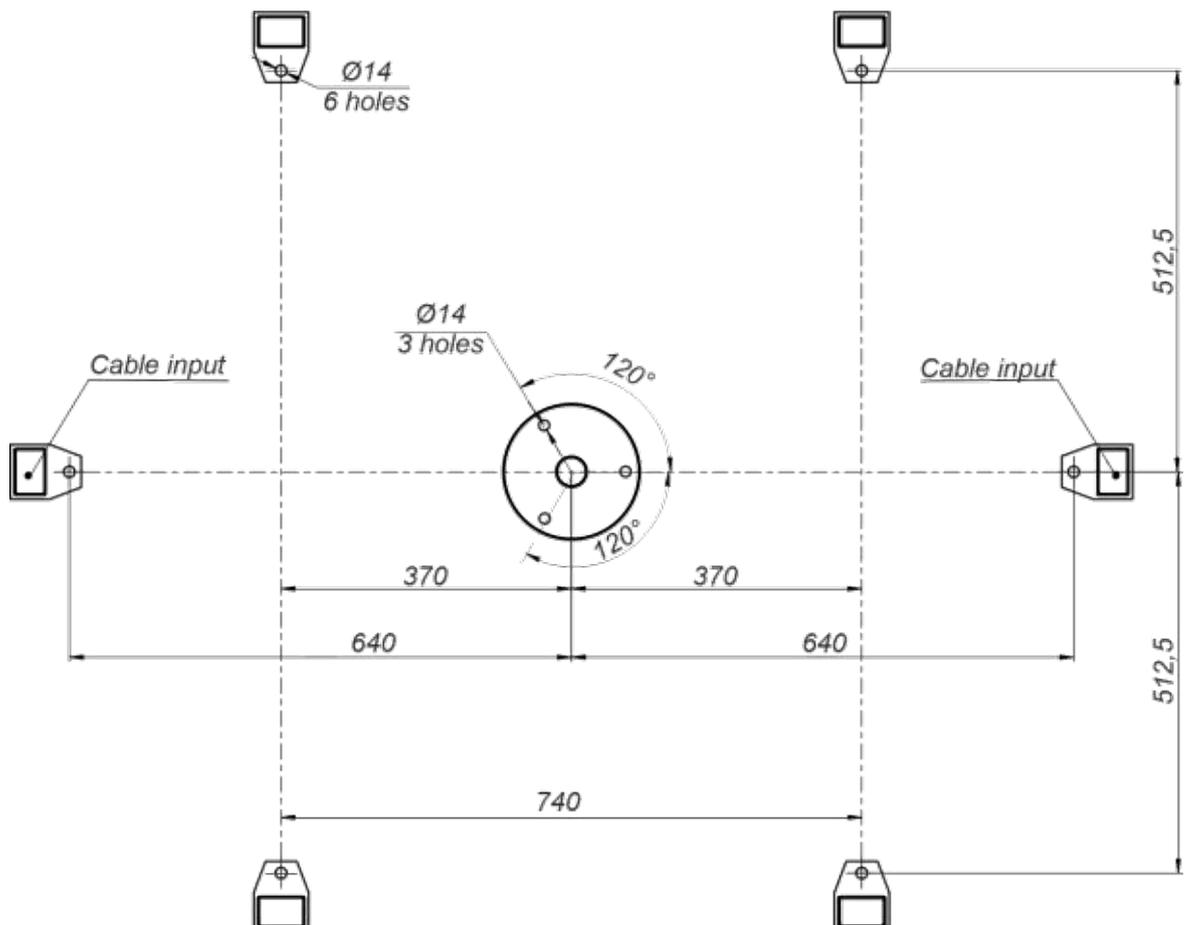


Fig.7 – Installation drawing of Full-Height Turnstile "GlassGo"

**2.3.2 Installation of the turnstile**

- Install enclosure wall, rotor support and access way wall in the design position;
- Lay electrical cables through existing production openings in access way wall or enclosure wall to the container;
- Fix the turnstile parts by means of anchors;
- Install rotor\* assembly on rotor support;

\* For correct installation, the rotor must be turned so that the glass leaves should close the passage of the turnstile in both directions (zero rotor position), i.e. should correspond to the "CLOSED" turnstile mode (see Fig.11); From this position it is possible to set the standard operating modes of the turnstile;

The glass fixation to the access way wall and enclosure wall only after the turnstile has been fully installed!

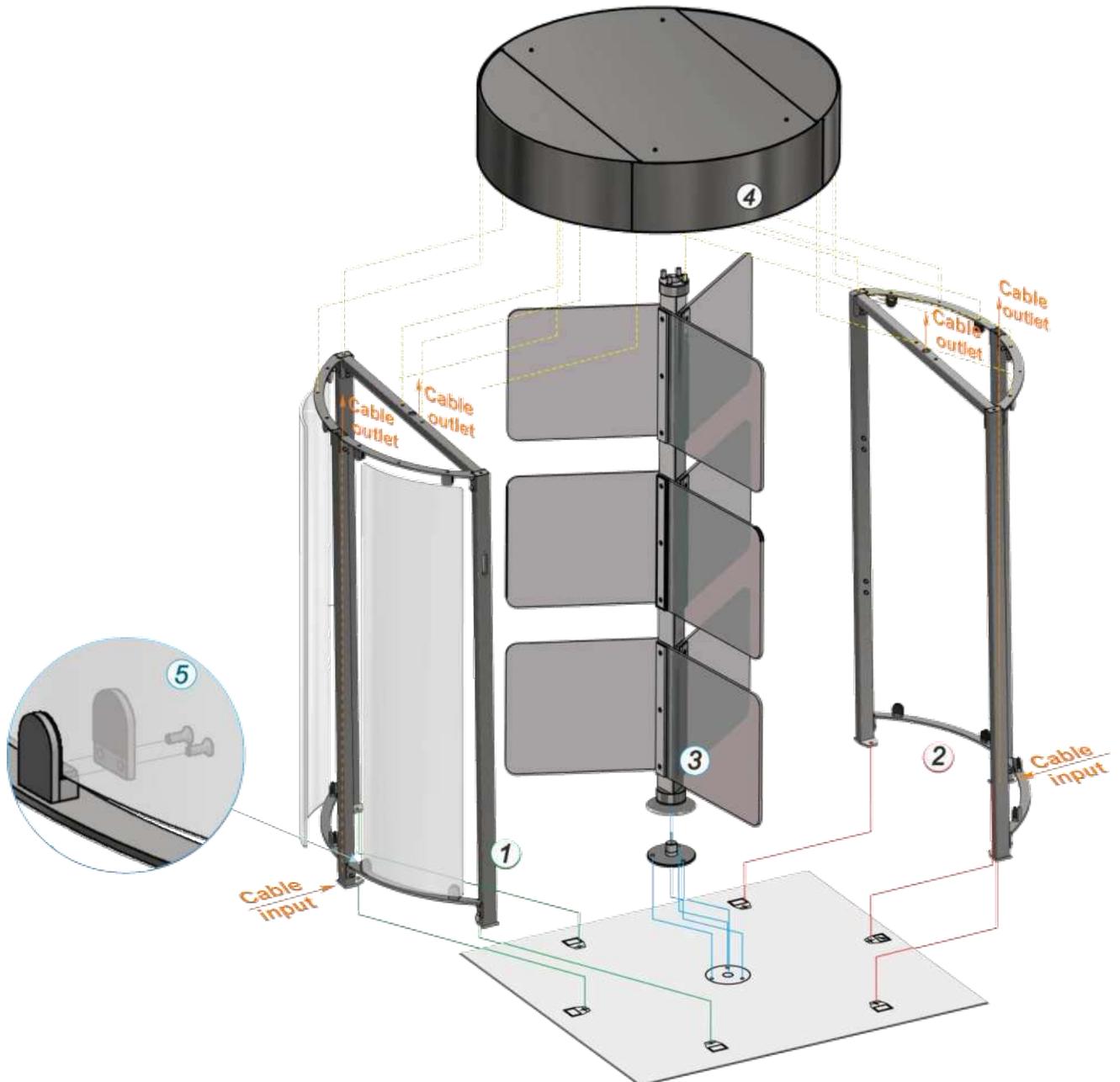


Fig.8 – General view of installation of the turnstile "GlassGo" in the design position

**2.3.3 The sequence of assembly of the major components of the full-height turnstile "GlassGo" when the turnstile is delivered by components**

a) Assembly and installation of access way wall and enclosure wall (when the turnstile is delivered disassembled)

- Connect the structural elements of access way and enclosure wall, and set in the design position for marking holes (see Figure 9);
- Lay electrical cables through existing production openings in access way wall and fix the turnstile walls with anchors;



The glass fixation to the access way wall and enclosure wall only after the turnstile has been fully installed

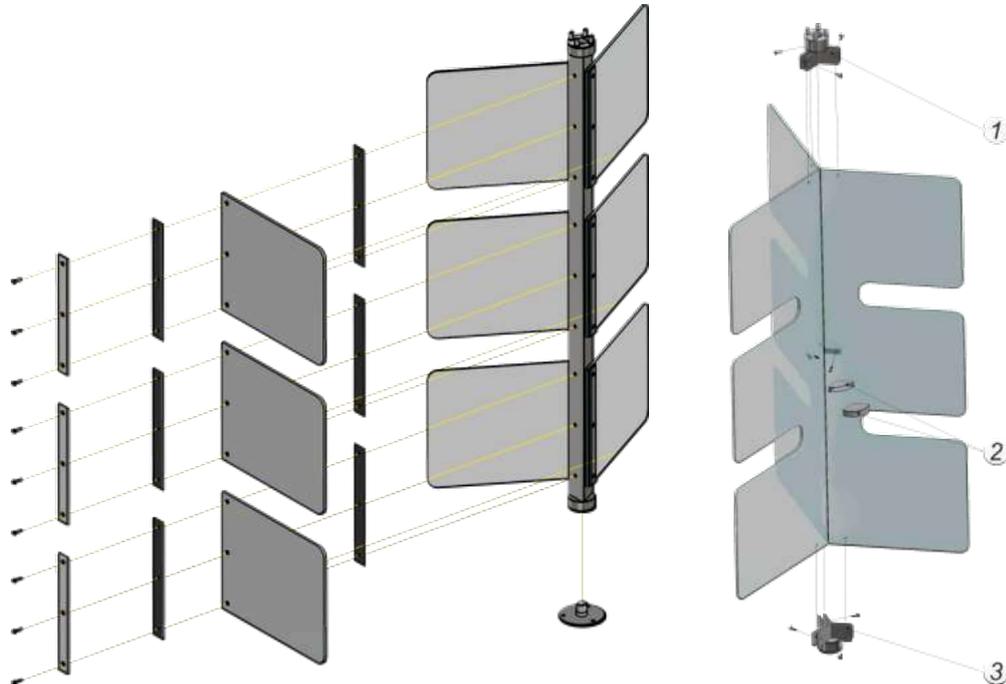


Fig.9 - Assembly of access way wall and enclosure wall

**б) Assembly of rotors**

Assemble and install the turnstile rotor (see Fig.10);

- Install a row of rotor leaves (if the rotor is supplied disassembled) and fasten with screws;



Legend:

- 1 – half-coupling with glassholder
- 2 – leaves coupler (3 sets)
- 3 - Rotor support with glassholder

a) Assembly of 9 rotor leaves in "GlassGO" AUIA.436.03

b) Assembly of 3 rotor leaves in "GlassGO" AUIA.436.04

Fig.10 - Assembly of rotor leaves and installation of rotor on turnstile support



For correct installation, the rotor should be turned in such a way (Fig. 11) so that a glass leave aligned at the same axis with the rotor pin lock the turnstile access way, i.e. the rotor should correspond to the "CLOSED" turnstile mode

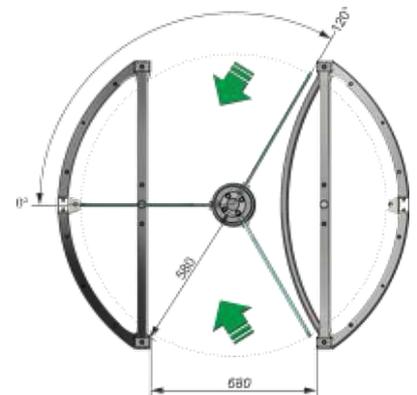


Fig.11 – Initial position of leave турникета (top view)

**c) Installation of turnstile container:**

A container with a control mechanism is installed on top of the installed access way wall, enclosure wall and rotor (see Fig. 12)

To access the container, it is necessary:

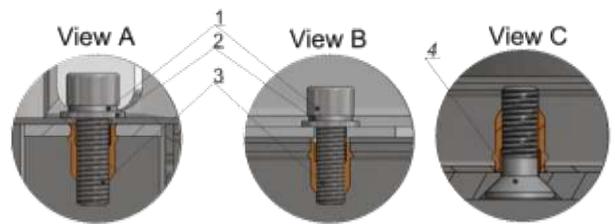
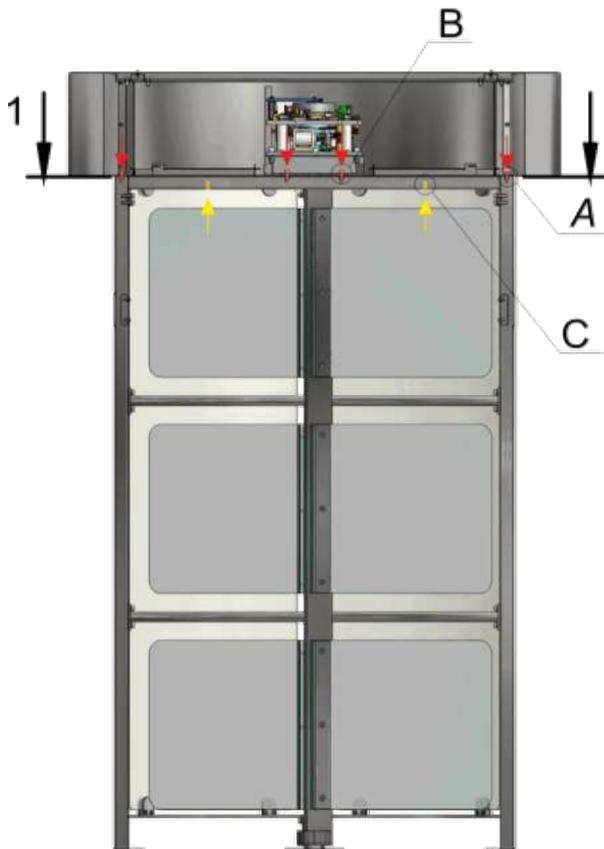
- a) to open 2 lower service panels of the container “at entrance” and “at exit”
- b) or remove one top service panel of container by unscrew 4 screws of EN ISO 4762 M4 x16 with a hex key.

In this case, it is necessary to combine along one axis and connect the control mechanism and the rotor by means of a half-coupling, lay the cable of connection, reader and indication;

Container to be fixed to the turnstile enclosure wall and access way wall by means of screws (Fig.13).



Fig.12 – Installation of the turnstile container



Symbol:

- 1 - Spring washers GOST 6402-70 (8 pcs.)
- 2 - Screw (bolt) ISO 4762 - M8 x 25 - (8 pcs.)
- 3 - Flat washer ISO 7089 - 140 HV (8 pcs.)
- 4 - Hexagon socket countersunk head screws ISO 10642 - M8 x 25 (4 шт.)

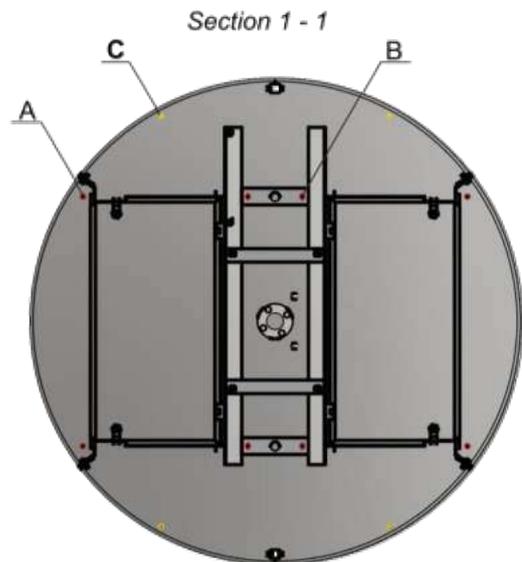


Fig.13 – Container fixation

For secure fixation the turnstile base to be tightly retained against the foundation with the entire plane. The structure to be checked for vertical and horizontal position..



**WARNING:**

The turnstile to be installed and fixed only after all turnstile electric connection cables are pulled. The turnstile to be fixed on installation site by means of Redibolt (anchor with jacket and screw). Make sure that the installed turnstile is stable and then both locks of mechanical release to be unlocked by keys and rotor revolving to be checked manually: rotor should revolve smoothly on either side.

**d) Framework arch installation and wall glass fixation on enclosure and access way wall (see Fig. 14)**  
Glass installation on enclosure and access way wall should be done only after turnstile container to be fixed!



**2.3.4 Installation of proximity card reader upon the availability of Access Control System (ACS)**

- Holes (3) to be made in the access way wall butt (See Figure 15) next to LED display according to the card reader size chosen by the customer. Cable to be pulled to container, card reader (2) to be fixed on the rack and connected;
- LED display bracket (1) to be mounted (4) in the access way wall, cable to be pulled to container, plate to be installed on LED display and fastened with screws;

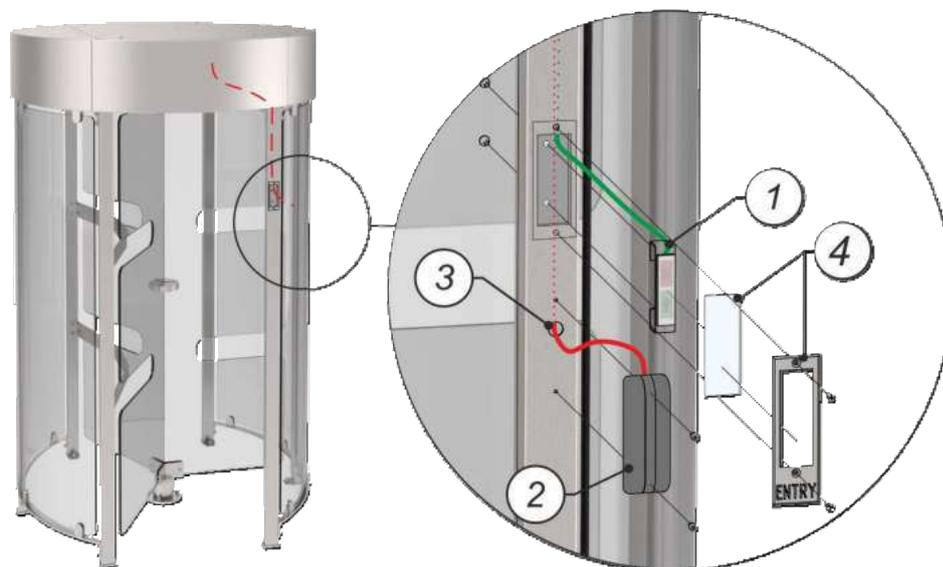


Fig. 15 - Installation of proximity card reader and LED display



**WARNING:**

Upon the availability of access control system (ACS) proximity card reader and LED display cables to be pulled prior to installation of container!

**2.3.5 Turnstile connection**

Fixation of structure, final installation of minor components and electrical wiring to be performed according to the wiring diagram (See Annex C); a) ~230 V power supply cable to be connected:

- Phase L to be connected to the circuit breaker
- Neutral (N) to be connected to terminal ~230V;
- Earth (PE) to be connected to earthing terminal (PE);
- b) Control panel cable to be connected to terminals:
  - **P** (Power) - control panel power supply +12V;
  - **G** (GND) - common wire of control panel;
  - **A** (RSA) – RSA wire of control panel link
  - **B** (RSB) - RSB wire of control panel link;
- c) The turnstile performance to be checked. 230 V supply voltage to be provided.

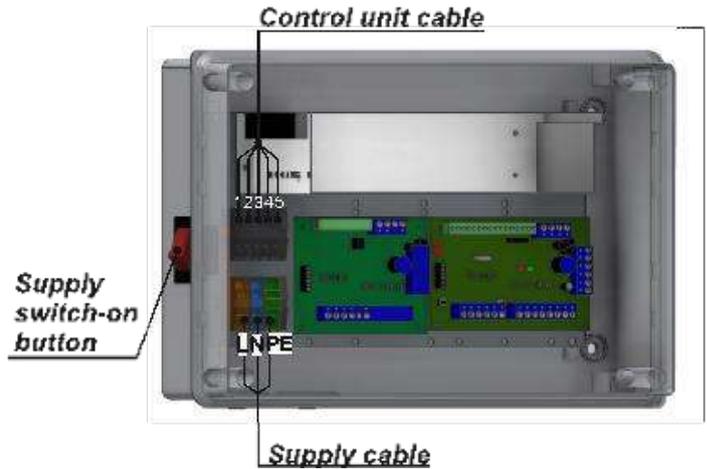


Fig.16 – Electronic control unit - turnstile connection



**WARNING:**

The turnstile performance verification from control panel (it is necessary to perform at least 3 consecutive accesses (See Figure 17) in either direction.

**2.4 Preparation for use**

**2.4.1 Commissioning guide lines**

Prior to the turnstile energization:

- 1) Make sure of proper connection and good condition of all connecting cables;
- 2) Clear the turnstile barrier rod turning area from foreign particles;
- 3) Verify by keys that locks of the turnstile mechanical release are closed (turnstile is mechanically locked).

When mains cable of power supply unit is connected to network of the turnstile control mechanism solenoids are energized; rotor is locked from rotation in both directions barring access.

The turnstile is set in the initial state: red cross is displayed for entry and exit (« × » is lit).

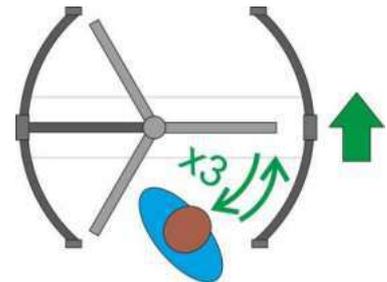


Fig.17 - Turnstile performance verification

**2.4.2 Required inspections**

Then the turnstile is commissioned it is necessary to perform the inspections specified in Table 10. The wiring diagram according to Annex C and the control panel according to Annex B to be used during inspection.

Table 10

Operation Mode	Mode Setting	LED display	Functional check
1	2	3	4
1. Turnstile is closed in both directions (initial state)	–	Red LED is lit	Make sure that rotor can't be turned in neither direction
2. Single access in one direction	SINGLE button to be pushed for access in chosen direction ("A" or "B")	Green arrow of authorized single access is lit in chosen direction and red LED in opposite direction is lit	Make sure that rotor starts turning to 120° when it is gently pushed in authorized access direction and stops after it is turned to 120°. Rotor should not start turning independently

Continued Table 10

1	2	3	4
3. Single access in both directions	Both SINGLE buttons to be pushed for access in both directions ("A" and "B")	Green arrows of authorized single access in both directions are lit	Make sure that rotor starts turning when it is gently pushed in authorized access direction and stops after it is turned to 120°. Rotor should not start turning independently. To be rechecked for opposite direction
4. Free access in one direction	FREE button to be pushed for access in chosen direction ("A" or "B")	Green arrow of authorized free access is blinking in chosen direction and red LED is lit in opposite direction	Make sure that rotor turns to 120° in free access direction at every push and stops. Rotor should not start turning independently
5. Free access in both directions	Both FREE buttons to be pushed for access in both directions ("A" and "B")	Green arrows of authorized free access are lit in both directions	Make sure that rotor turns to 120° at every push in any direction and stops. Rotor should not start turning independently
6. Single access in one direction and free access in opposite direction	"SINGLE" button to be pushed for access in chosen direction («A» or «B») and FREE button to be pushed for access in opposite direction	Green arrow of authorized single access is lit in chosen direction and green arrow of authorized free access is blinking in opposite direction	Make sure that rotor can be turned to 120° in single access direction only once and it can be turned repeatedly in free access direction. Rotor should not start turning independently
7. Single access in one direction and locked access in opposite direction	SINGLE button to be pushed for access in chosen direction ("A" or "B") and LOCK button to be pushed to lock access in opposite direction	Green arrow of authorized single access is lit in chosen direction and red LED is lit in locked access direction	Make sure that rotor can be turned to 120° in single access direction only once and it can't be switched neither to "SINGLE" access mode nor "FREE" access mode in locked access direction
8. Free access in one direction and locked access in opposite direction	FREE button to be pushed for access in chosen direction ("A" or "B") and LOCK button to be pushed to lock access in opposite direction	Green arrow of authorized free access is lit in chosen direction and red LED is lit in locked access direction	Make sure that rotor can be turned to 120° repeatedly in free access direction and it can't be switched neither to "SINGLE" access mode nor "FREE" access mode in locked access direction
9. Locked access in one direction	LOCK button to be pushed to lock access in chosen direction ("A" or "B")*	Red LED of locked access in one chosen direction is blinking	Make sure that in locked direction rotor can't be switched neither to "SINGLE" access mode nor "FREE" access mode
10. Locked access in both directions	Both LOCK buttons to be pushed to lock access in both directions ("A" and "B")**	Red LED of locked access in both directions is blinking	Make sure that rotor can't be switched neither to "SINGLE" access mode nor "FREE" access mode in any direction
11. Activation of "panic" mode	PANIC button to be pushed and hold within at least 7 sec.	Green arrows of authorized free access in both directions are blinking	Turnstile rotor will be released in both directions

The turnstile is ready for long-term operation.

**2.5 Contingency actions**

• **In case of emergency people evacuation** (in case of fire, natural disasters, etc.) and providing free pass, the turnstile must be unlocked:

- from control panel by sending the command (holding the button «PANIC» more than 7 s);
- “INP1” turnstile controller input signal (holding more than 1.5 s);
- manually by turning *mechanical release locks* with key in the bottom part of container;

The availability of two built-in locks of mechanical release (individual lock for each access direction) allows, if necessary (for example, in the case of power failure), promptly open the turnstile for free access by means of key providing free rotation of barring rods in this direction.

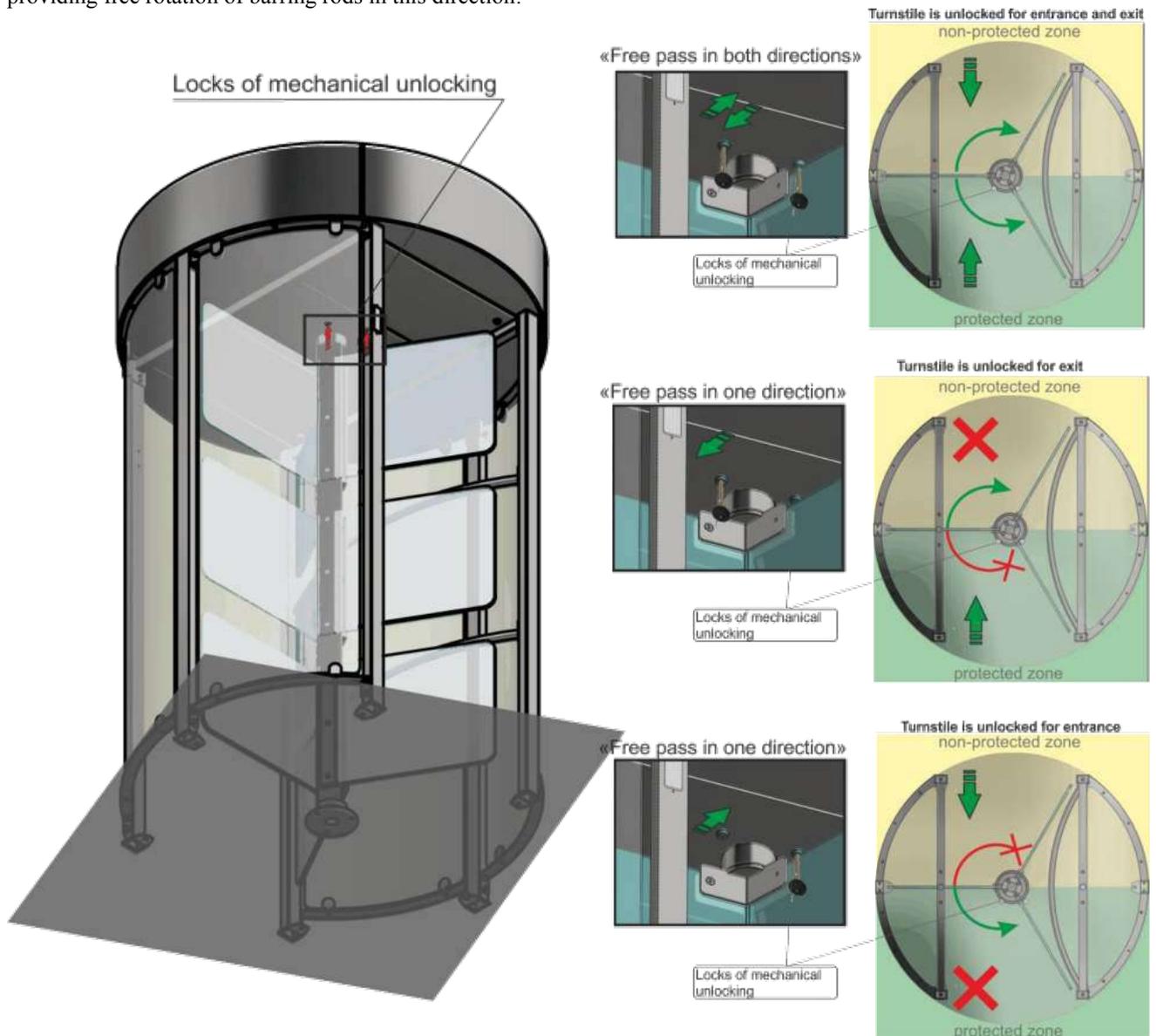


Fig.18– Principle of operation of mechanical unlocking of full height turnstiles

• **In case of turnstile power failure**, emergency mode (fail secure) will be activated and turnstile rotor will be locked in two directions automatically

**3. MAINTENANCE**

**3.1 General guidelines**

The turnstile commissioning and subsequent maintenance to be performed only by the staff to be in charge of the turnstile.

The turnstile to be serviced only by the staff having the relevant electrical safety qualification level according to the national requirements.

The turnstile to be installed and operated only by the qualified and instructed in safety staff having the relevant class of permit to work with electrical facilities with voltage up to 1000V, being aware of this OM, the turnstile design and principle of operation.

**3.2. Safety Measures**

During maintenance of the turnstile the relevant safety measures according to p. 2.1 to be observed.

When instrumentations are prepared for operation it is necessary to strictly comply with the safety requirements specified in instrumentation instruction manuals.



**IT IS FORBIDDEN:  
TO USE DEFECTIVE APPLIANCES, TOOLS, FUSES, INSTRUMENTATION THE SERVICE LIFE OF WHICH EXPIRED.**

**3.3 Maintenance procedure**

The turnstile maintenance includes preventive measures which are taken according to the established frequency to maintain the turnstile in operational condition, decreasing of component wearing and prevention of faults and malfunctions.

Daily and periodic maintenance of the turnstile are recommended.

Normally the daily maintenance is carried out before the beginning of operation or during operational timeout and includes visual inspection of the turnstile's housing and, if required, troubleshooting of mechanical damages, surface corrosion and contamination.



**IS FORBIDDEN:  
TO USE ABRASIVE AND CHEMICALLY ACTIVE SUBSTANCES DURING CLEANING OF CONTAMINATED EXTERNAL SURFACES OF THE TURNSTILE.**

The means recommended for cleaning stainless steel products are given in Table 11.

Table 11

<i>Name of means</i>	<i>Manufacturer Company</i>	<i>Manufacturer country</i>
Spray for cleaning stainless steel products Stainless steel cleaner Polich	3M	Group of European companies
Cleaning fluid WellDone	Well Done	Hungary
Emulsion SANO MULTI METAL	SANO	China
Foam Dr.BECKMANN	Dr.Beckmann	Germany
Emulsion Reinex Edelstahlreiniger	Reinex	Germany
Spray for cleaning Stainless steel cleaner	Onish	United Kingdom

Visual inspection of the turnstile body, control mechanism and other components for absence of corrosion, warps and other mechanical defects and pollutions;

- visual inspection of connecting, network and earthing cables condition;
- verification of the turnstile performance during manual control in the modes specified in Table 12 or as part of ACS when pendants, identification cards are used;
- verification of reliability of the turnstile screw joints and earthing connections - to be tightened, if applicable;
- lubrication of all rubbing stop levers, wheel and pinion teeth of the turnstile control mechanism at least monthly with lubricant OKB-122-7 according to GOST 18179-72 or LITOL 24, Ciatim or engine oil.

Table 12- Periodic maintenance by technical staff

<i>Component</i>	<i>Period</i>	<i>Action</i>
Fixation screws	6 months	Checking/Tightening
Mechanical screws	6 months	Checking/Tightening
Actuator	12 months	Control
Controller	12 months	Checking + Cleaning
Sensors (position / speed / IR)	6 months	Checking + Cleaning
Cable joints and sockets	12 months	Control
Locking device	6 months	Checking + Cleaning



**WARNING:**

The turnstile not to be washed with water under pressure.  
There are no user-serviceable parts inside the turnstile. Do not attempt to perform repair such as lubrication, component replacement and adjustment inside the device. All such work to be performed only by qualified technical personnel!

**4 CURRENT REPAIR**

**4.1 General instructions**

Minor malfunctions of the turnstile listed in Table 13 are remedied by the customer. More complicated malfunctions are remedied by the manufacturer’s representative.



**ATTENTION:**

**INSPECTION, CLEANING, REPAIR OF Tournstile Elements to be carried out only after disconnecting the equipment from electrical network!**

**4.2 List of possible malfunctions**

Table 13- The list of possible malfunctions and ways of their elimination

<i>1</i>	<i>2</i>	<i>Cause of malfunction</i>	<i>Action</i>
<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
1	Increased vibration during turnstile operation	Tightening of arched structure screw joints is loosened Bearing of rotor support is out of order	Screw joints of framed elements to be tightened Bearing to be replaced
2	LED display does not operate in the preset mode	Electric circuit is broken Fault of controller operation LED is out of order	Malfunction to be identified and remedied Supplier to be consulted LED to be replaced
3	Turnstile does not provide unlocking of rotor	Voltage on solenoids is absent Electric circuit is broken Solenoid is out of order Adjustment of solenoid is disrupted	Voltage 12V in circuit of solenoids to be checked. If voltage is lower than 12V – refer to p.4 of this table Malfunction to be detected and remedied Solenoid to be replaced Stroke of solenoid stem to be adjusted
4	Voltage 12V is not provided	Power supply unit is out of order Electric circuit is broken Low voltage in circuit	Power supply unit to be replaced Malfunction to be detected and remedied Voltage in the power network to be checked and origin of voltage drop to be remedied
5	The turnstile does not work when power on.	No AC power supplied to unit. Loose power cable Faulty power supply unit	Check the power supply switch Restore AC power. Connect power cable. Replace power supply unit
6	Rotor(arms) is free rotated when power is ON	Damaged wires No DC power +12V Faulty power supply unit Faulty The PCB.201.01.00.00	Check wires Check power supply unit Replace power supply unit Replace PCB.201.01.00.00
7	Rotor is not rotated	Faulty locking mechanism No communication between controllers (boards) The position sensor is set wrong The position sensor is faulty	Check connections and movement of latches Check the connectors and wires between controllers (boards) Adjust or replace the position sensor
8	Rotor is not locked	Faulty locking mechanism	Check and clean fault latches Adjust or replace the position sensor Check and clean the locking solenoids

Continued Table 13

1	2	3	4
9	Turnstile is not unlocked	Have no a communication between controllers The turnstile is not receiving an activation signal from the Access Control System.	Check the connectors and wires between controllers (boards) Check and clean fault latches Adjust or replace the position sensor Check and clean the locking solenoid Check that the access control system is properly connected to the Entry Accept terminal(s) on the controller board. Check that the access control system is providing a proper activation signal to PCB 112
10	The Control panel beeps "Communication"	The Control panel have no communication with the controller	Check the wires Check the control panel Check the controller Change the controller/ control panel
11	The Indication does not work	Have no a communication with the controller Damaged the wires The LED indicator is faulty	Check the wires Check the LED indicator Replace the faulty LED indicator
12	Rotor stays in half opened position.	The position sensor is set wrong The position sensor is faulty Jamming in the mechanism	Adjust the position sensor Replace the faulty position sensor Check the mechanism parts
13	The rotor rotates slowly	Jamming in the mechanism The sensor of position/speed is set wrong	Check for rubbing and damages at the mechanism Check the rotor parts Adjust or replace the position sensor Check the wires
14	Rotor do not return to center (standby) position following a passage	Jamming in the mechanism The position sensor is set wrong The PCB.201.01.00.00 is faulty	Check for mechanical jamming and damages at the mechanism Check the mechanism parts Adjust or replace the position sensor Check the connectors and wires
15	Rotor gets stuck intermittently during rotation	Jamming in the mechanism The position sensor is set wrong The PCB.201.01.00.00 is faulty	Check for mechanical jamming and damages at the mechanism Check the mechanism parts Adjust or replace the position sensor Check the wires Check or replace PCB.201.01.00.00
16	Turnstile unlocks but motor does not work	The position sensor is set wrong The PCB.201.01.00.00 is faulty	Adjust or replace the position sensor Check and adjust the driving belt tension Check or replace PCB.201.01.00.00 Check or replace gear motor
17	Rotor keeps moving without stop at center (standby) position	The position sensor is set wrong Damaged wires between sensor and controller The position sensor is faulty	Adjust or replace the position sensor Check the connectors and wires

#### 4.3 Checking the product after repair

The turnstile is checked for operability with the help of the remote control after the repair according to *Table 10*.

## 5. STORAGE AND TRANSPORTATION

Do not subject the product to sudden shocks or impacts during storage. You need to use transport trolleys to lift or move the product. There should be no corrosive gases and vapors that cause corrosion of the metal in storage rooms,

The temperature of the air during storage should not exceed the limits below plus 5 and above plus 40 °C and relative air humidity not more than 80% at a temperature of 20 °C.

Transportation of the turnstile in assembled form in accordance with the rules of transportation operating on each mode of transport is carried out:

- in railway or special containers;
- in covered cars;
- by water transport (in ship holds).

It is allowed to transport on open platforms. In this case, the container with the product must be covered with tarpaulin.

The ambient temperature during transportation should not exceed the limits below minus 50 C and above plus 50 °C.

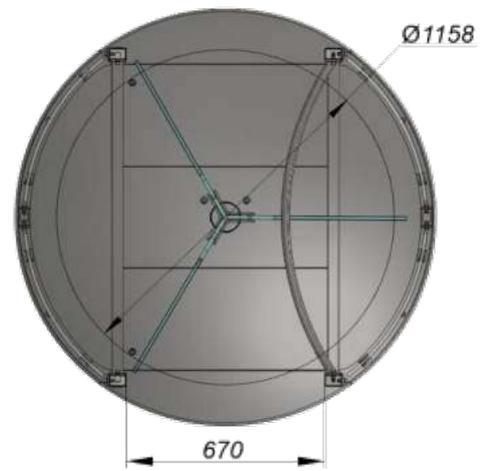
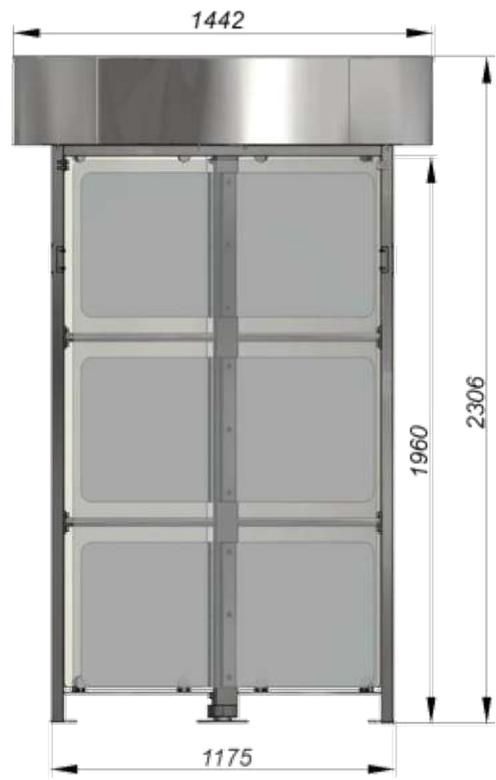
After transportation or storage of the turnstile at negative temperatures or high humidity of the air, the turnstile should be kept before startup without the original packaging for 12 hours in an enclosed space with normal climatic conditions:

- 1) ambient temperature - from plus 15 to plus 35 ° C;
- 2) relative humidity - from 45 to 80%;
- 3) atmospheric pressure - from 84.0 to 106.7 kPa (630-800 mm Hg).

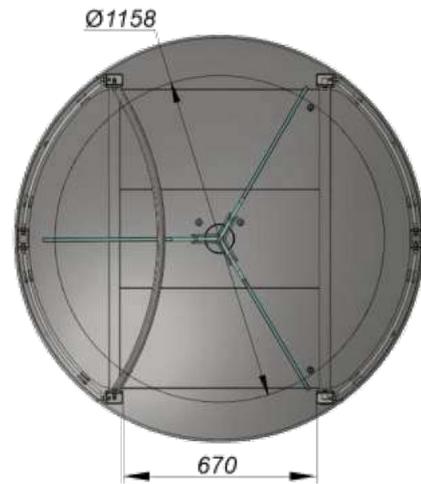
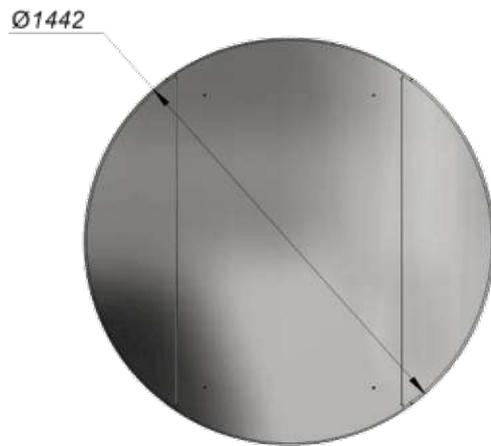
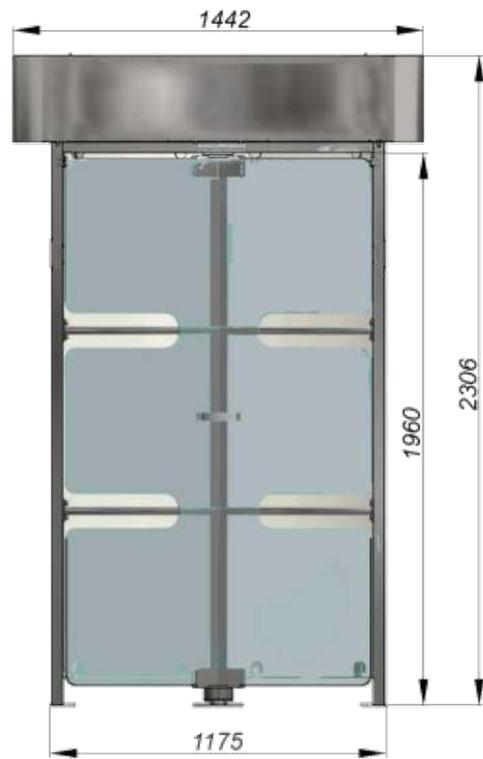
## 6. DISPOSAL CONSIDERATIONS

The turnstile does not contain in its structure materials that are hazardous to the environment and human health, and does not require special measures for its disposal.

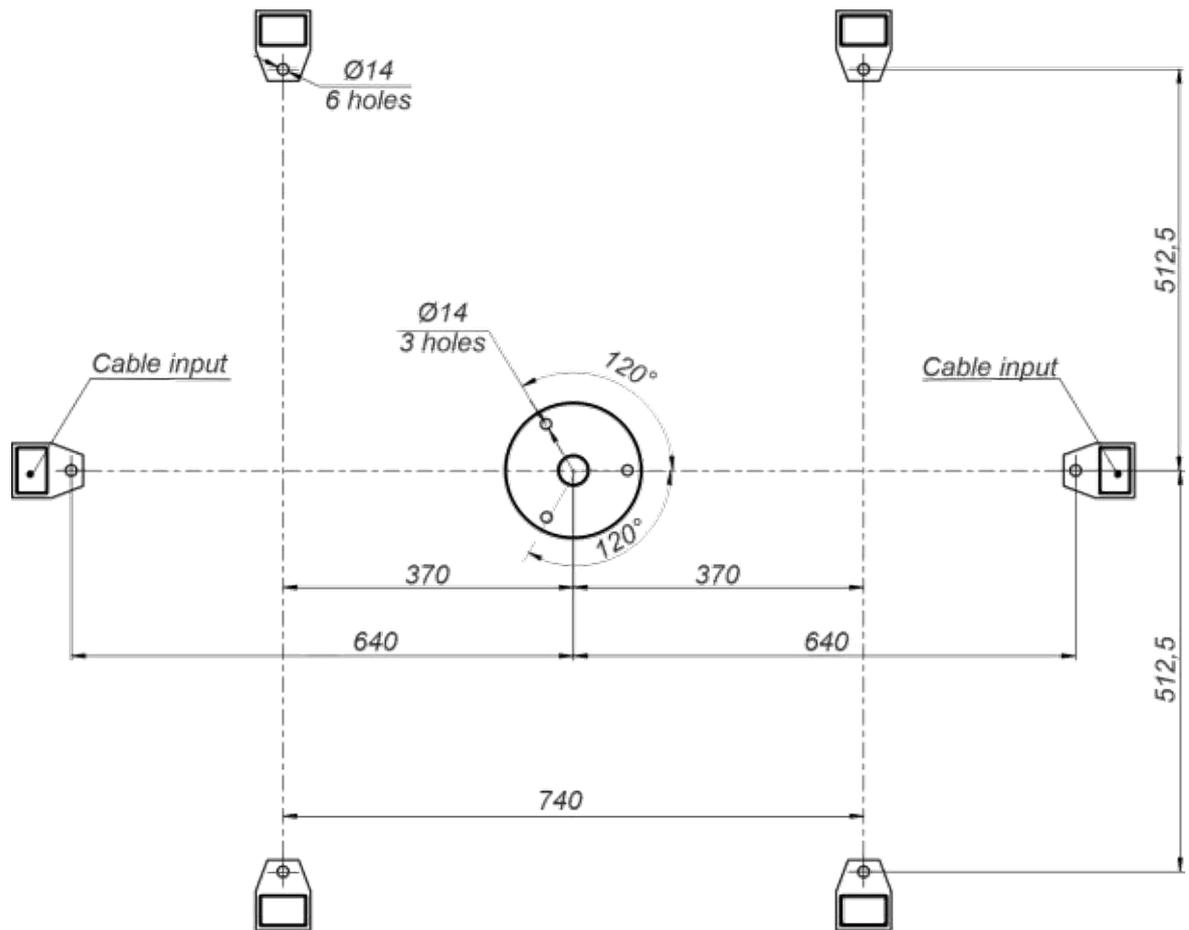
Annex A.1. Overall and installation dimensions of the Full-Height Turnstile "GlassGo" AUIA.436-03



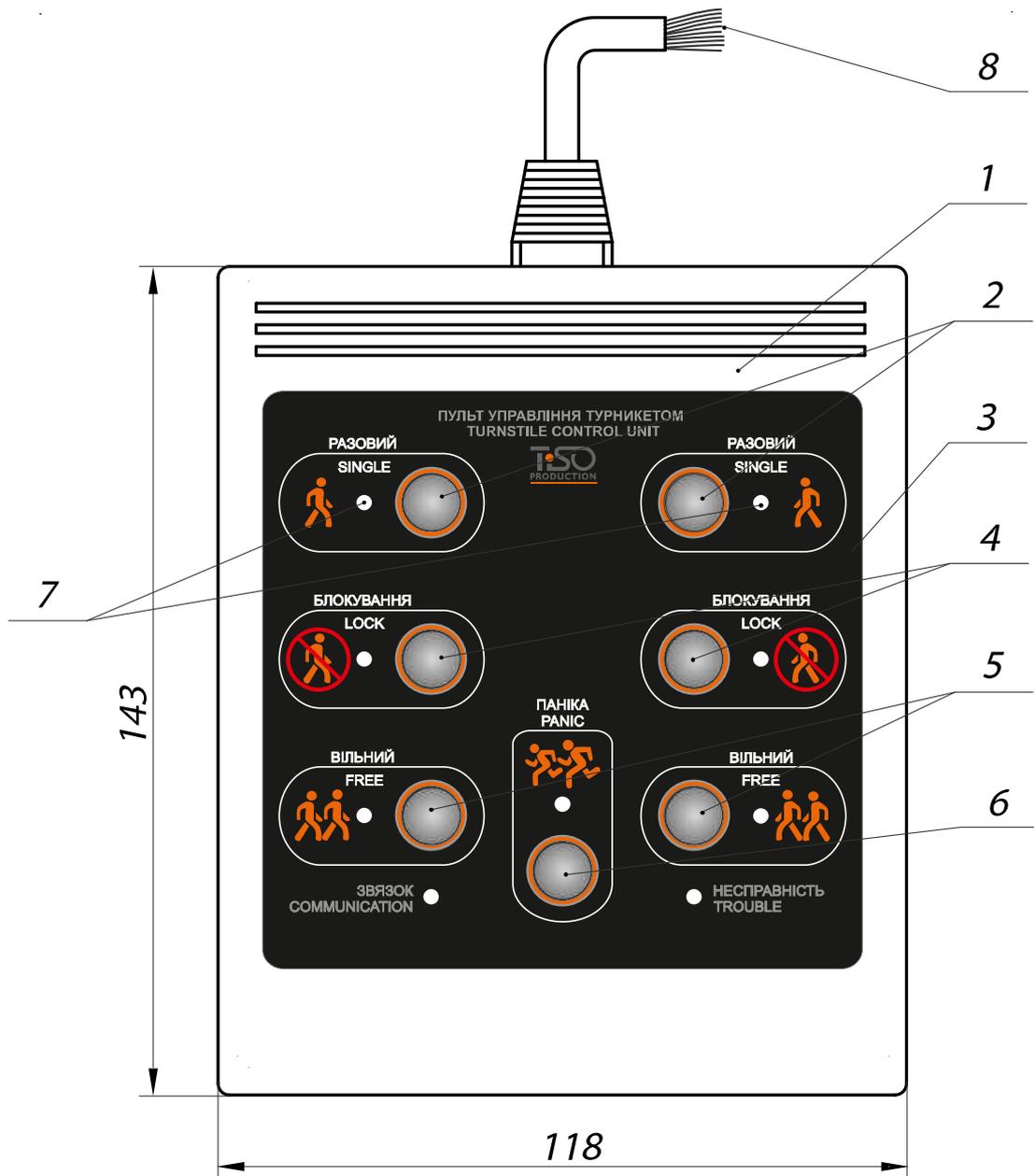
Annex A.2. Overall and installation dimensions of the Full-Height Turnstile "GlassGo" AUIA.436-04



Annex A.3. Installation dimensions of the Full-Height Turnstile "GlassGO" AUIA.436.03 and "GlassGO" AUIA.436.04



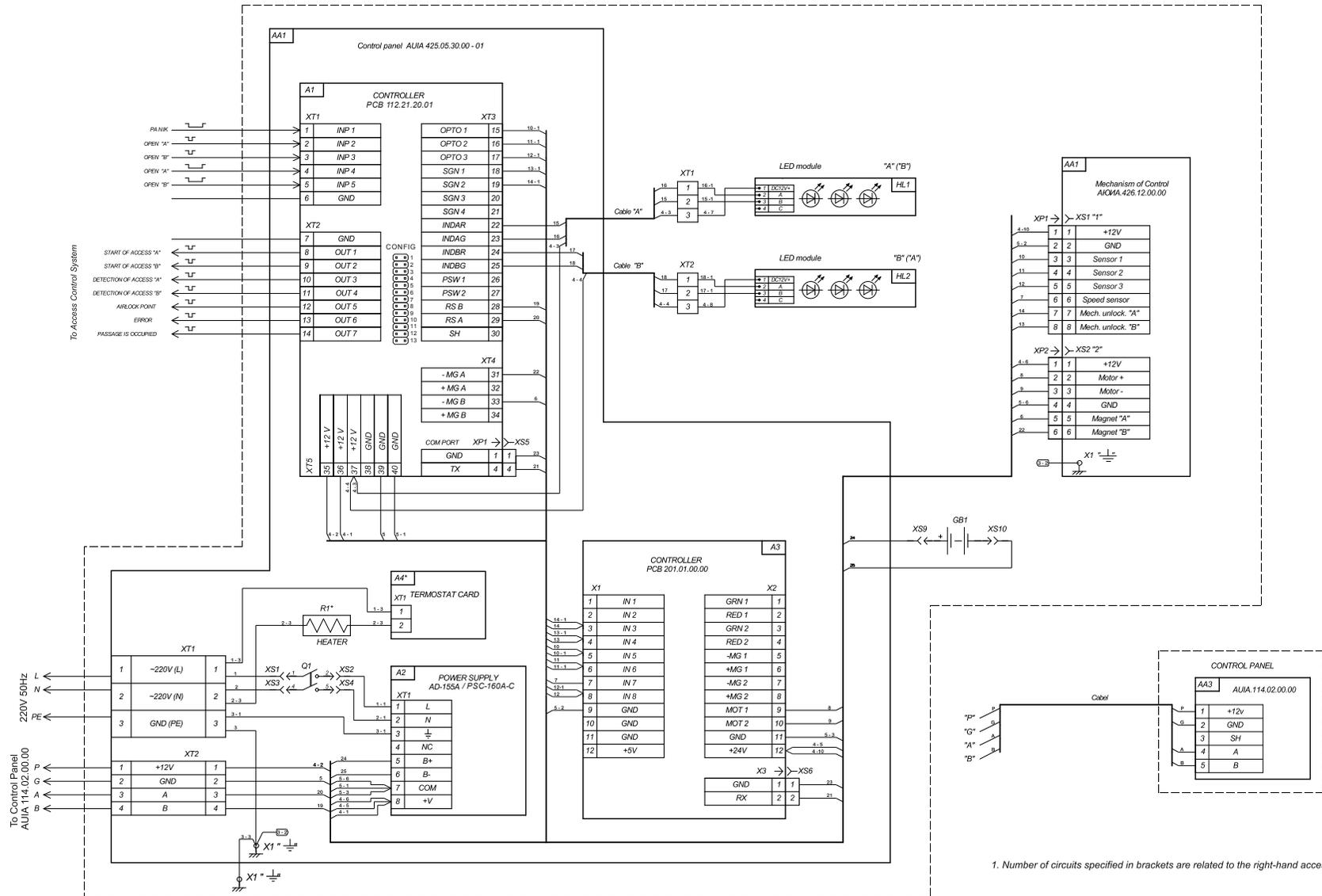
## Annex B. Control panel and connection diagram



- 1 – control panel body;
- 2 – "SINGLE ACCESS" mode control button
- 3 – front plate;
- 4 – "LOCK" mode control button;

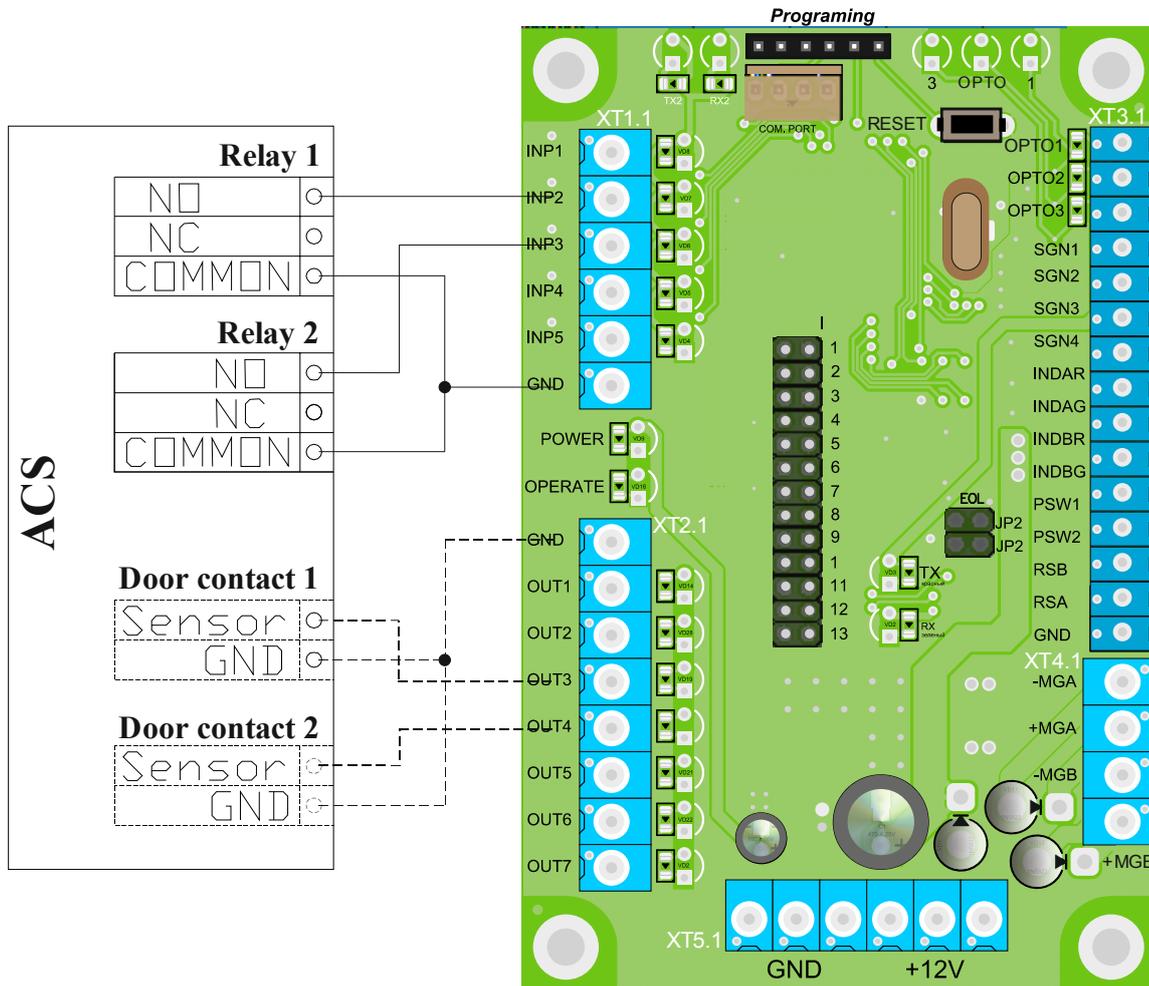
- 5 – "FREE ACCESS" mode control button control button
- 6 – "PANIC" mode control button
- 7 – access direction LED display;
- 8 – controller connection terminals

## Annex C. Wiring Diagram of the turnstile



1. Number of circuits specified in brackets are related to the right-hand access

### Annex D.1. Wiring diagram of the turnstile connection to access control system (ACS) in pulse mode



*inp1* - "PANIC"

*inp2* - "TO BE OPENED A" in pulse mode.

When command is issued entry is activated for 5 sec.

*inp3* - "TO BE OPENED B" in pulse mode. When command is issued entry is activated for 5 sec.

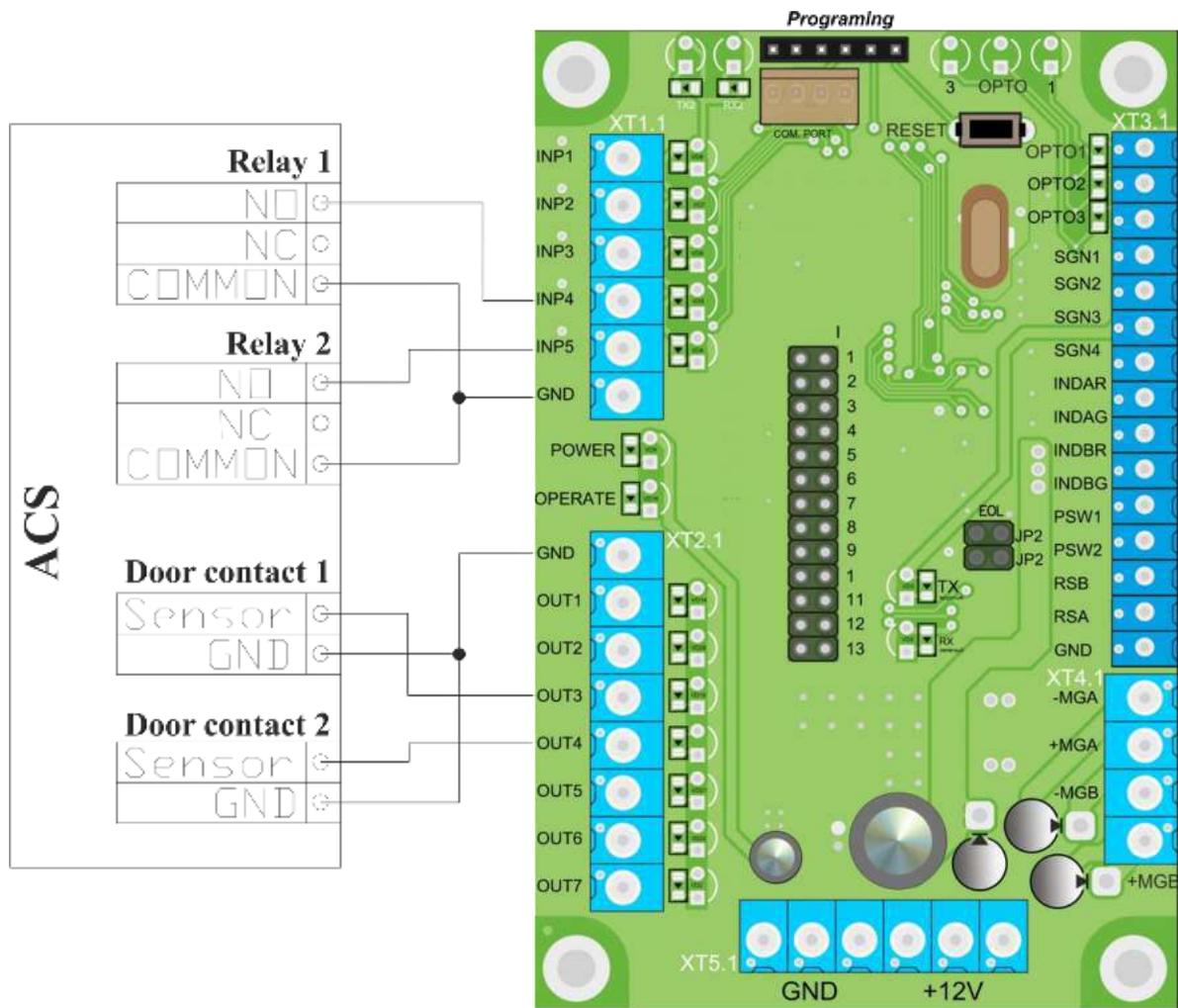
*inp4* - "TO BE OPENED A". Entry is activated for the time of keeping in active state

*inp5* - "TO BE OPENED B". Entry is activated for the time of keeping in active state

GND- "-" of power supply (common wire)

*out3* - "DETECTION OF ACCESS A" } Signal is generated by controller when rotor is  
*out4* - "DETECTION OF ACCESS B" } rotating from 64° to 120° in the relevant direction

## Annex D.2. Wiring diagram of the turnstile connection to access control system (ACS) in hold mode



*inp1* - "PANIC"

*inp2* - "TO BE OPENED A" in pulse mode.

When command is issued entry is activated for 5 sec.

*inp3* - "TO BE OPENED B" in pulse mode. When command is issued entry is activated for 5 sec.

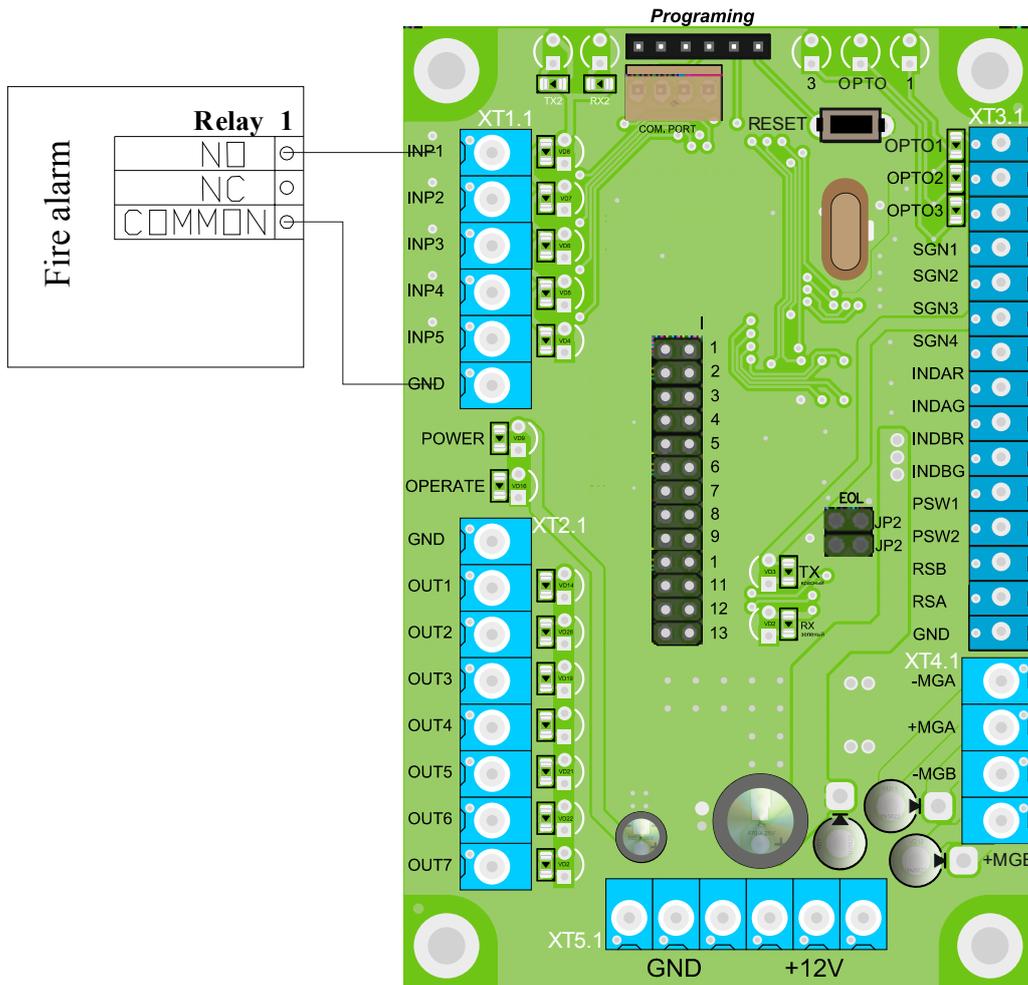
*inp4* - "TO BE OPENED A". Entry is activated for the time of keeping in active state

*inp5* - " TO BE OPENED B". Entry is activated for the time of keeping in active state

GND- "-" of power supply (common wire)

*out3* - "DETECTION OF ACCESS A" } Signal is generated by controller when rotor is  
*out4* - "DETECTION OF ACCESS B" } rotating from 64° to 120° in the relevant direction

**Annex D.3. Wiring diagram of the turnstile connection to fire alarm system (FAS)**



*inp1 - "PANIC"*

*inp2 - "TO BE OPENED A" in pulse mode.*

*When command is issued entry is activated for 5 sec.*

*inp3 - "TO BE OPENED B" in pulse mode. When command is issued entry is activated for 5 sec.*

*inp4 - "TO BE OPENED A". Entry is activated for the time of keeping in active state*

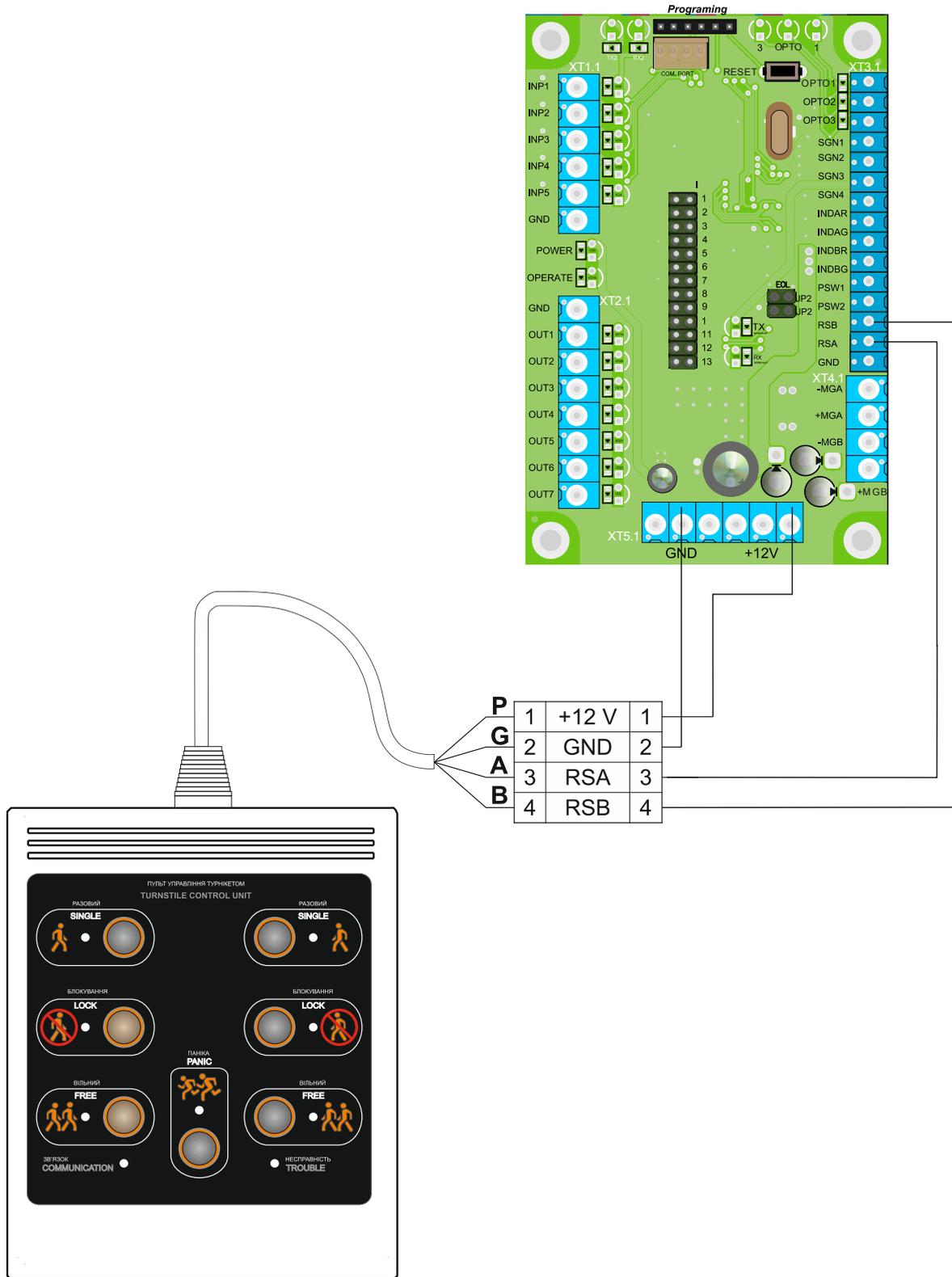
*inp5 - " TO BE OPENED B". Entry is activated for the time of keeping in active state*

*GND- "-" of power supply (common wire)*

*out3 - "DETECTION OF ACCESS A" } Signal is generated by controller when rotor is*  
*out4 - "DETECTION OF ACCESS B" } rotating from 64° to 120° in the relevant direction*



Annex D.5. Wiring diagram of the turnstile connection to control panel



Manufacturer:

**LLC TiSO-PRODUCTION**

14, Promyslova Street, Kyiv, 02088, Ukraine

Phone: +38 (044) 291-21-11

Tel./fax: +38 (044) 291-21-02

E-mail: [sales@tiso.global](mailto:sales@tiso.global)

WEB [www.tiso.global](http://www.tiso.global)

**SERVICE CENTER**

e-mail: [service1@tiso.global](mailto:service1@tiso.global)

Our equipment meets the requirements of European standards:

EN ISO 12100:2010, EN ISO 14118:2018, EN 60204-1:2018, EN ISO 13857:2019,

EN 61000-6-1:2007, EN 61000-6-3:2007/A1:2011/AC:2012

and meets the requirements of the following EU Directives: 2014/30/EU;

2014/35/EU, 2006/42/ EC

The manufacturer's quality management system is certified according to the international standard ISO 9001:2015 - Certificate № UA 18 / 819942484.

R-code to be used to download the Operation Manual via Internet

