TTR-04CW All-weather tripod turnstile

PERCo



+50
-40
temperature range

12V
operating voltage

mechanical unlocking

2
passage directions

30
persons/min

Application

The TTR-04CW Tripod turnstile is a normally closed electromechanical turnstile designed for outdoor operation under shelter.

The turnstile housing features an anti-corrosion coating, heating system, and special thermal insulation, which allow the use of the device at temperatures of down to -40°C.

The delivery set includes an RC panel. The orientation of its buttons relative to passage directions is set when connecting the panel to the turnstile. It is recommended to install one turnstile per 500 people who work in the same shift or assuming that the peak load totals 30 persons/minute. Turnstiles can come complete with railings.



RC panel

Operation modes

The turnstile ensures access control in two directions; its operation mode can be set independently for each passage direction. Available operation modes:

- passage denial in both directions
- single passage in one direction and passage denial in the other direction
- single passage in both directions
- free passage in one direction and passage denial in the other direction
- free passage in one direction and single passage in the other direction
- free passage in both directions

When the power is turned off, both passage directions remain in the state they were at the time of the power-off.

Main features

- operation of the turnstile via its RC panel, WRC, or ACS
- electronic board integrated into the turnstile housing
- anti-corrosion coating of the turnstile housing
- heating system of the turnstile housing

- thermal insulation of the turnstile housing
- the turnstile is powered by an external 12 V DC power supply unit
- the turnstile's heating system is powered by an external 24 V AC power supply unit
- automatic reset of the barrier arms to their initial position after each passage
- the turnstile's damper facilitates its smooth and silent operation
- optical sensors for rotation of the barrier arms ensure correct registration of the fact of passage
- built-in indication of operation modes
- integrated mechanical release lock
- two control modes – pulse and potential
- galvanically isolated outputs
- the Fire Alarm control input enables connection of a device that sends an emergency unlocking command
- relay outputs for connecting additional remote indicators of passage permission / denial



Indication block with pictograms



Mechanical unlocking with a key

Design

Housing – powder-coated galvanized steel.



Light beige with pearl mica effect

Upon request, the turnstiles can be painted in other colors according to the RAL color chart.

Operating conditions

In terms of resistance to environmental exposure, the turnstile complies with GOST 15150, category N2 (outdoor application under shelter or indoor application without climate control). Its operation is allowed at an ambient air temperature from -40°C to +50°C and relative air humidity of up to 98% at +25°C.

When calculating the required quantity of the turnstiles, please note that it is recommended to install one turnstile per 500 people who work in the same shift or assuming that the peak load totals 30 persons/minute.

The TTR-04CW turnstile is serially produced and has a TR CU Certificate of Conformity (EAC).

Delivery set

Turnstile housing with a built-in electronic board and heating system	1
Barrier arm	3
RC panel with a cable (cable length of 6.6 m)	1
Mechanical release key	2
Mounting kit	1
Documentation set	1
Additional equipment (upon request)	
WRC (includes a receiver and two transmitters designed as radio fobs) with an operating range of up to 40 m	1
M10 anchor with a bolt and washers	4
Siren*	1

Technical specifications

Operating voltage of the turnstile housing	12±1.2 V DC	
Power consumption of the turnstile (excluding the heating system)	max. 8.5 W	
Operating voltage of the heating system	24 V AC	
Power consumption of the heating system	max. 60 W	
Overall dimensions of the turnstile housing with installed barrier arms (LxWxH)	855x810x1050 mm	
Housing weight	37 kg	
Passageway width	600 mm	
Packaging dimensions	114x32x32 cm	
Throughput rate	in the single passage mode	30 persons/ min
	in the free passage mode	60 persons/ min
Mean time to failure	min. 15 000 000 passages	

Connection

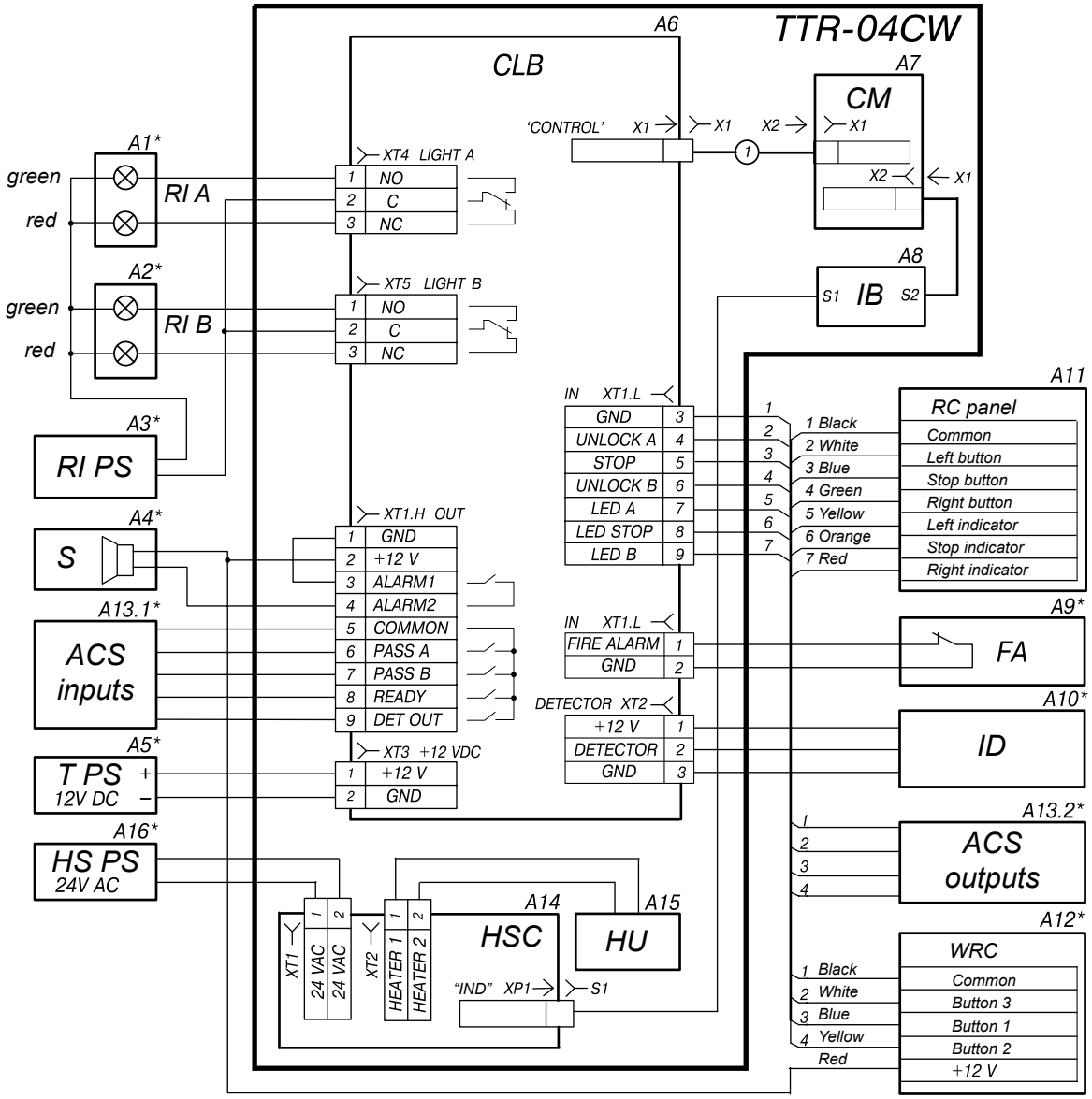
The TTR-04CW turnstile is equipped with the integrated CLB electronic board. All connections are made to contacts of this board. The microcontroller installed on the board controls the turnstile's operating mechanism, processes signals from optical sensors for rotation of the barrier arms and commands from external devices, and generates signals about passage through the turnstile.

Description of contacts of the built-in electronic board by connectors

Connector	Contact	Electrical circuit	Function
XT1.L	1, 2	Fire Alarm, GND	Emergency unlocking input
	3	GND	Negative terminal of the power supply unit
	4, 5, 6	Unlock A, Stop, Unlock B	Turnstile control inputs
	7, 8, 9	Led A, Led Stop, Led B	RC-panel indication outputs
XT1.H	1	GND	Negative terminal of the power supply unit
	2	+12 V	Positive terminal of the power supply of the Siren device
	3, 4	Alarm 1, Alarm 2	Alarm relay contacts
	5	Common	Common contact for the PASS A, PASS B, Ready, and Det Out signals
	6	PASS A	PASS A relay contact (passage in direction A)
	7	PASS B	PASS B relay contact (passage in direction B)
	8	Ready	Ready relay contact
	9	Det Out	Det Out relay contact
XT2	1, 2, 3	+12 V, Detector, GND	Intrusion detector connection
XT3	1, 2	+12 V, GND	External power supply connection
XT4	1, 2, 3	NO, C, NC	Light A relay contacts – connection of a remote indicator for direction A (not included in the standard delivery set)
XT5	1, 2, 3	NO, C, NC	Light B relay contacts – connection of a remote indicator for direction B (not included in the standard delivery set)

Description of the heating system's controller board contacts by connectors

Connector	Contact	Electrical circuit	Function
XT1	1, 2	~24 V	Connection of the power supply unit
XT2	1, 2	Heater 1, Heater 2	Connection of the heating unit
XP1	1	IND	Connection of the heating system's indicator



Layout of external connections to the CLB board

Layout elements	
Item	**Name**
A1*, A2*	Remote indicators
A3*	Power supply unit of remote indicators
A4*	Siren
A5*	Power supply unit of the turnstile
A6	CLB board
A7	Turnstile control mechanism
A8	Indication module (on the turnstile's top cover)
A9*	Device that sends an emergency unlocking command
A10*	Intrusion detector
A11*	RC panel
A12	WRC device
A13*	Access control system
A14	Heating system's controller
A15	Heating unit
A16*	Power supply unit of the heating system

* Not included in the standard delivery set

Operation algorithm

The turnstile can be operated via its RC panel (included in the delivery set), WRC, or ACS controller.

The turnstile is controlled by applying a low-level signal to the Unlock A, Stop, and Unlock B contacts relative to the GND contact. The response to these signals depends on the control mode selected with the J1 jumper.

In the pulse control mode, a pulse is applied to the Unlock A/B input so that the turnstile automatically unlocks for a single passage in the selected direction. The passage waiting time does not depend on the control pulse duration and amounts to 5 seconds. A pulse sent to the Stop input blocks both passage directions. Pulses sent simultaneously to the Unlock A/B and Stop inputs switch the turnstile to the *Free passage* operation mode in the selected direction.

The pulse mode is recommended for operation from the RC panel. The orientation of RC-panel buttons relative to the turnstile's location (if the operator faces the rear side of the turnstile rather than the front side) can be changed by swapping the RC-panel wires connected to the Unlock A and Unlock B contacts as well as Led A and Led B respectively.

In the potential control mode, if a control signal is applied to the Unlock A/B input, the turnstile remains unlocked in the selected direction for as long as the signal is held. The control signal sent to the Stop input blocks both passage directions regardless of the signals at the Unlock A/B inputs.

The potential mode is recommended for operation from the ACS controller.

Regardless of the selected control mode, when the turnstile's barrier arms are rotated in either direction, passage signals are generated – PASS A or PASS B respectively. These signals can inform the ACS controller of the fact of passage.

In emergencies, the turnstile is unlocked by removing a low-level signal from the Fire Alarm contact relative to the GND contact.

Note

When operating the turnstile via the ACS controller, it is recommended to connect the RC panel to the ACS controller.

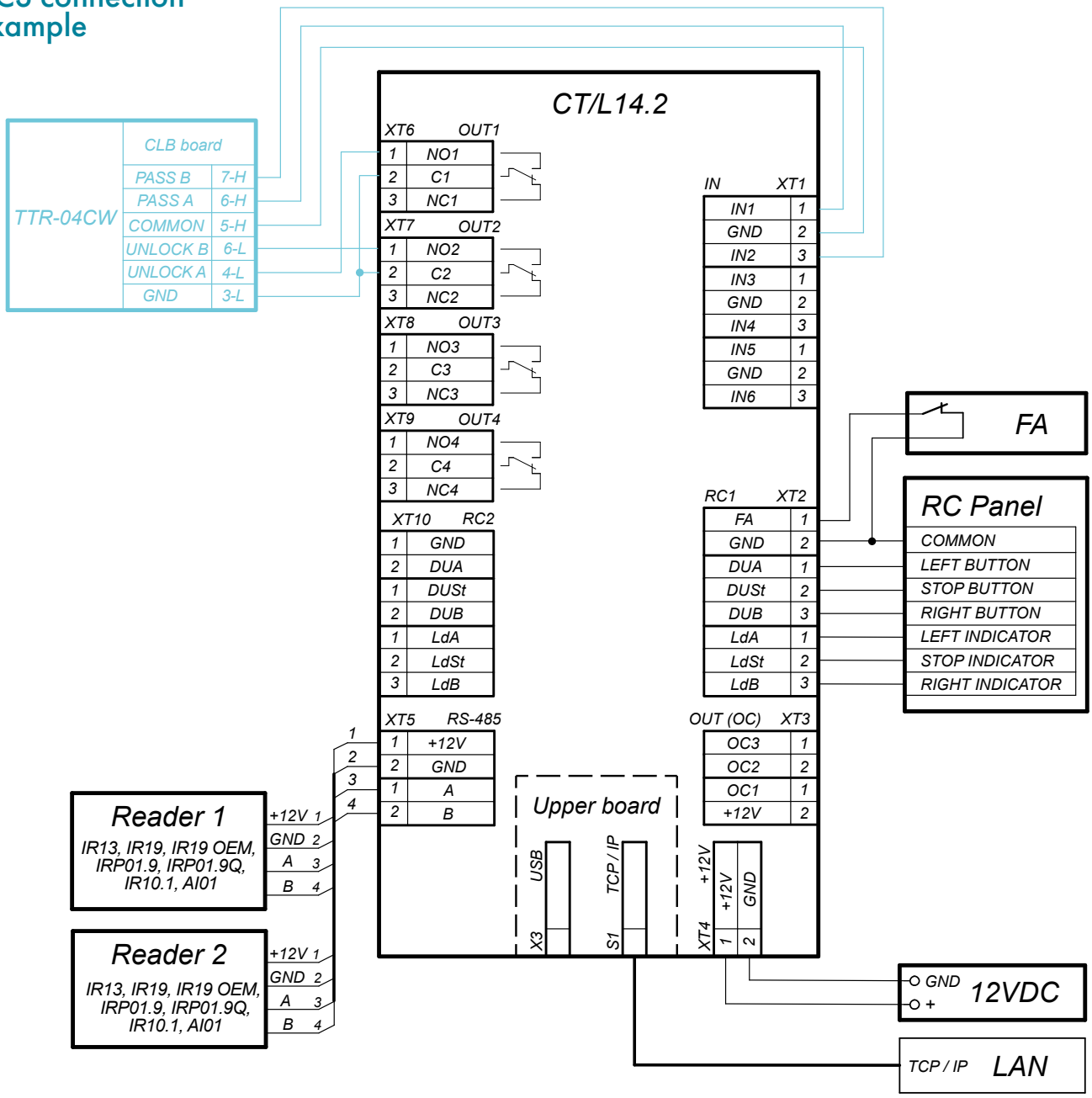
The maximum allowable length of the RC-panel (ACS-controller) cable must not exceed 40 meters. Recommended cable type: CQR CABS8 (8x0.22c).

The allowable length of the cable from the turnstile's power supply unit depends on its cross-section and must not exceed:

- for a cable with a cross-section of 0.2 mm² – 10 meters;
- for a cable with a cross-section of 0.75 mm² – 25 meters;
- for a cable with a cross-section of 1.5 mm² – 50 meters.

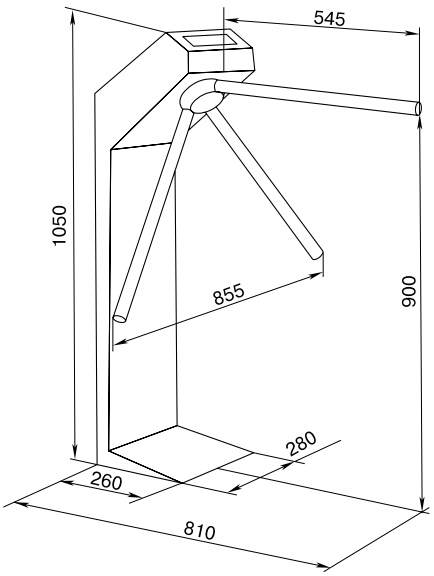
Recommended cable type: 2x0.75 flat PVC-insulated cable.

ACS connection example



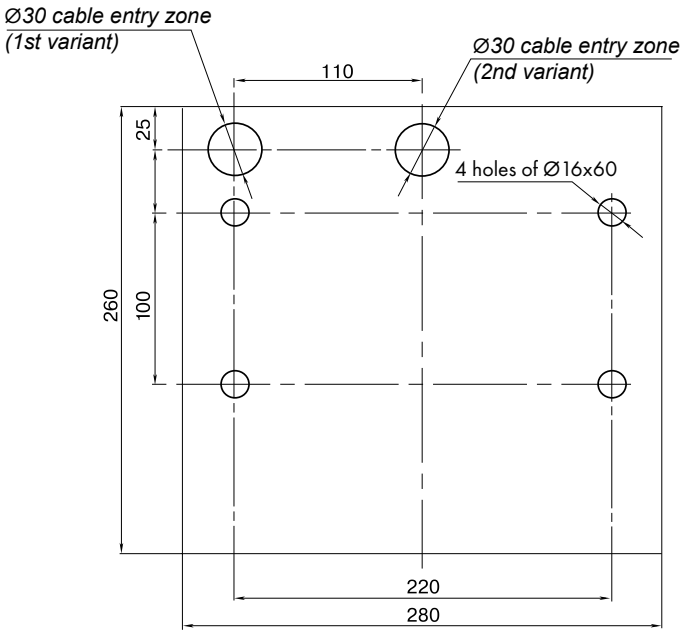
Example of connection of the turnstile to the ACS controller

Overall dimensions



Overall dimensions

Installation

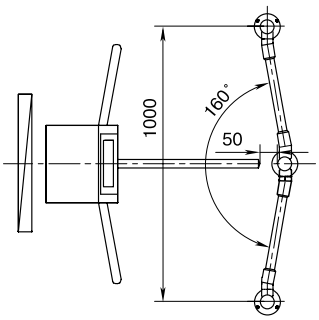


Marking of housing mounting holes on the floor and cable entry holes

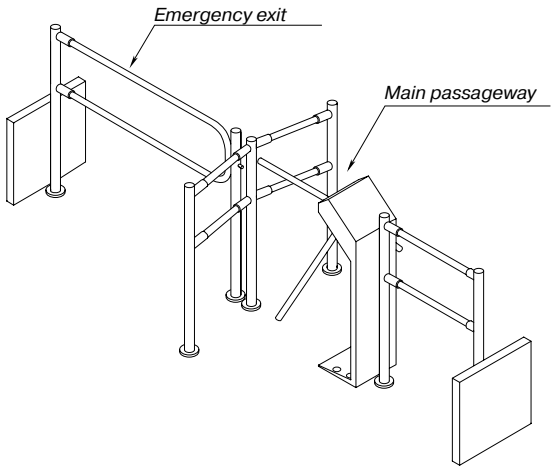
Foundation requirements: concrete (grade 400 or higher), stone, and similar foundations with a thickness of at least 150 mm; when installing the housing on a less steady foundation, one should use embedded reinforcing elements (300x300x300 mm).

Passage zone formation

When the turnstile is operated from ACS, it is recommended to place card readers on the railings that form the passage zone. The BH01 0-03 bracket is used for mounting readers on railings of the BH02 series.



Top view of the turnstile



Example of a checkpoint project

Warranty

The warranty period amounts to 5 (five) years commencing from the date of sale, unless otherwise stipulated in the product delivery contract. In case of sale and installation of the equipment by authorized PERCo dealers and service centers, the warranty may start from the date of commissioning.

If there is no date of sale in the warranty card, the warranty period shall commence from the date of manufacture specified in the Certificate and on the label of the product.