# TTR-04.1 Tripod Turnstile for indoor application

+50
+1
temperature range

12V
operating voltage

mechanical unlocking

2
passage direction

30
persons/min

## Application

TTR-04.1 tripod turnstile is a normally closed electromechanical turnstile designed for indoor application.

The delivery set includes an RC-panel; the orientation of the RC-panel buttons relative to the directions of passage is set when connecting to the turnstile. It is recommended to install one turnstile per 500 people working the same shift based on a maximum working load of 30 persons/min. Turnstiles can be equipped with railings.

RC-panel

## Operating modes

The turnstile provides passage control in two directions; the turnstile operating mode may be set independently for each passage direction. Supported operating 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 as before the power loss.

## Main features

- operation of the turnstile from RC-panel, WRC, ACS
- built-in electronic board
- safe voltage – max. 14 V
- and low power consumption – max. 8.5 W
- automatic reset of the barrier arms to the home position after each passage
- damping device provides smooth silent operation

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- barrier arm rotation optical sensors record correctly the fact of passage
- built-in indication of operating modes
- integrated mechanical release lock
- possibility to connect an intrusion detector and a siren to the turnstile
- two control modes – pulse and potential
- galvanically isolated outputs
- Fire Alarm control input that allows connecting the emergency unlocking device
- relay outputs for connecting additional external indicators of the passage grant / denial

Pictogram indication block

Mechanical unlocking with a key

## Design

Housing – powder coated steel. Barrier arms – stainless steel.

Housing finish options:

light beige with pearl mica effect

dark grey with pearl mica effect

glitter black

| Item | Housing finish |
|---|---|
| TTR-04.1R | Sandpaper powder coating with pearl mica effect; light beige colour |
| TTR-04.1G | Sandpaper powder coating with pearl mica effect; dark grey colour |
| TTR-04.1E | Powder coating with lacquered finish; glitter black colour |

Powder coating to RAL colours is available on order. The turnstile can be equipped with two types of barrier arms.

| Item | Description |
|---|---|
| AS-04 | Standard barrier arms |
| AA-04 | Mechanical anti-panic barrier arms |

Mechanical anti-panic barrier arms

## Operating conditions

The turnstile, with regard to resistance to environmental exposure, complies with GOST 15150-69 category NF4 (operation in premises with climate control).

Operation of the turnstile is allowed at ambient temperature from +1°C to +50°C and relative air humidity up to 80% at + 25°C (non-condensing).

It is a serially produced product certified for compliance with applicable Russian and European CE standards.

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## Delivery set

| | |
|---|---|
| Turnstile housing with built-in electronic board | 1 |
| Barrier arm (type to be chosen when ordering) | 3 |
| Key to mechanical unlocking | 2 |
| RC-panel (cable length of 6.6 m) | 1 |
| Mounting kit | 1 |
| Documentation set | 1 |

| Optional equipment (upon request) | |
|---|---|
| WRC (consisting of a receiver and two transmitters in the form of key fobs) with a range of up to 40 m | 1 |
| Intrusion detector (installed upon request at the manufacturing site) | 1 |
| Siren (for signalling that an unauthorized passage has been attempted) | 1 |
| PFG IR 10-15 anchor (SORMAT company, Finland) | 4 |
| Turnstile power supply | 1 |

## Technical specifications

| | | |
|---|---|---|
| Operating voltage | | 12±1.2 V DC |
| Current consumption | | max. 700 mA |
| Power consumption | | max. 8.5 W |
| Overall dimensions with installed barrier arms (LxWxH) | | 855x810x1050 mm |
| Passageway width | | 600 mm |
| Turnstile weight | | max. 30 kg |
| Package 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 | | 4,000,000 passages |

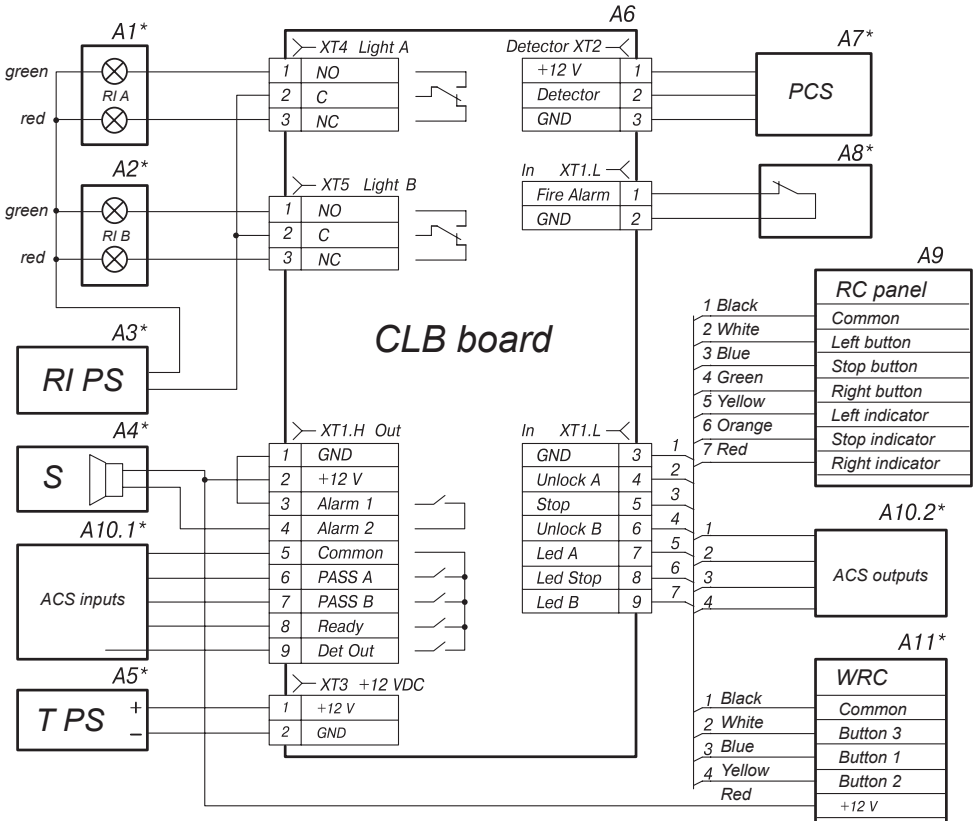
## Connection

TTR-04.1 is equipped with integrated CLB electronic board. All connections are made to the board contacts. The microcontroller installed on the board controls the turnstile's actuating mechanism, processes signals from optical sensors for moving the barrier arms, processes commands received from external devices, and generates signals about passages through the turnstile.

T5, TTD-03.1, TTD-03.2 also feature given electronic board thus this section content is applicable to the abovementioned turnstiles.

| Built-in electronic board contacts description by connectors | | | |
|---|---|---|---|
| **Connector** | **Contact** | **Electrical circuit** | **Designation** |
| XT1.L | 1, 2 | Fire Alarm, GND | Emergency unlocking input |
| | 3 | GND | Power supply negative terminal |
| | 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 | Power supply negative terminal |
| | 2 | +12 V | "Siren" device power supply positive terminal |
| | 3, 4 | Alarm 1, Alarm 2 | Alarm relay contacts |
| | 5 | Common | Common contact for PASS A, PASS B, Ready, Det Out signals |
| | 6 | PASS A | PASS A relay contact (passage in the direction A) |
| | 7 | PASS B | PASS B relay contact (passage in the 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 |

| Built-in electronic board contacts description by connectors | | | |
|---|---|---|---|
| Connector | Contact | Electrical circuit | Designation |
| 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 the remote indicator for direction B (not included in the standard delivery set) |




Wiring diagram of external connections to the CLB Board

| Diagram description | |
|---|---|
| Item | Description |
| A1*, A2* | Remote indicators |
| A3* | Power supply for remote indicators |
| A4* | 12V DC siren |
| A5* | Turnstile power supply |
| A6 | CLB board |
| A7* | Intrusion detector |
| A8* | Device that gives an emergency unlocking command |
| A9 | RC-panel |
| A10* | Access control system |
| A11* | WRC |

* The equipment is not included in the standard delivery set

## Operation algorithm

The turnstile can operate from the RC-panel (included in the delivery set), WRC or ACS controller.

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

Pulse control mode is when a pulse is applied to the Unlock A (B) input, the turnstile will automatically open for a single passage in the selected direction. The waiting time for the passage being completed does not depend on the duration of the control pulse and lasts 5 seconds. Sending a pulse to the Stop input locks both passage directions. Simultaneous sending of pulses to Unlock A (B) and Stop inputs places the turnstile in the "Free passage" mode in the selected direction.

Pulse mode is recommended when operating from the RC-panel. The orientation of RC-panel buttons (if the turnstile is facing the operator not with the front side, but with the rear side) can be changed by swapping the wires from the RC-panel that are connected to the Unlock A and Unlock B, as well as Led A and Led B, respectively.

Potential control mode is when the control signal is applied to the Unlock A (B) input, the turnstile remains unlocked in the selected direction during the entire holding signal time; Sending control signal to the Stop input locks both passage directions regardless of the signals at the Unlock A (B) inputs.

Potential mode is recommended during operation from the ACS controller.

Regardless of the selected control mode, PASS A or PASS B signals are generated when moving the barrier arms in one direction or the other. These signals can inform the ACS controller of the fact of passage.

Emergency passage opening is performed by removing a low-level signal from the Fire Alarm contact relative to the GND contact.

**Note:**

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

Recommended cable type: CQR CABS8 8x0.22c.

The maximum allowed cable length from the power supply depends on its cross section and must be:

- 0.2 mm² cable cross-section – 10 m
- 0.75 mm² cable cross-section – 25 m
- 1.5 mm² cable cross-section – 50 m

Recommended cable type: power cable (2x0.75)

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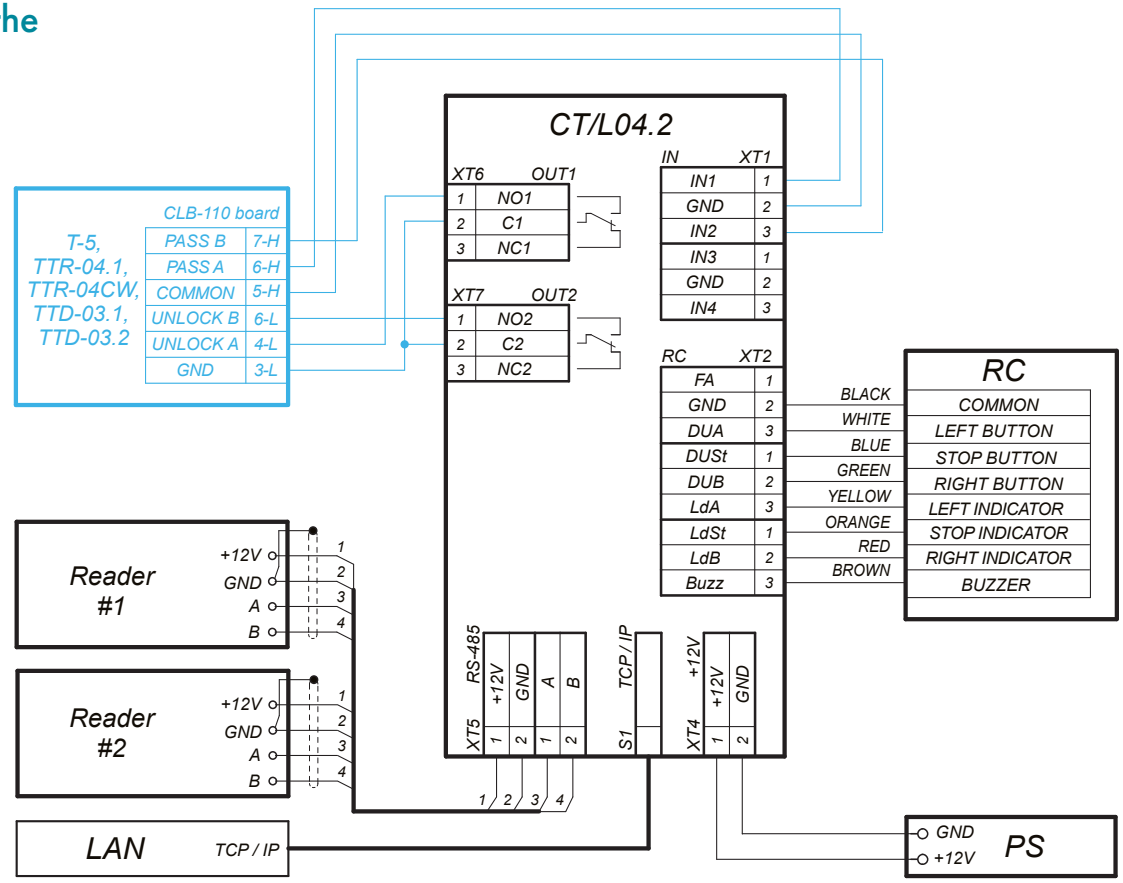
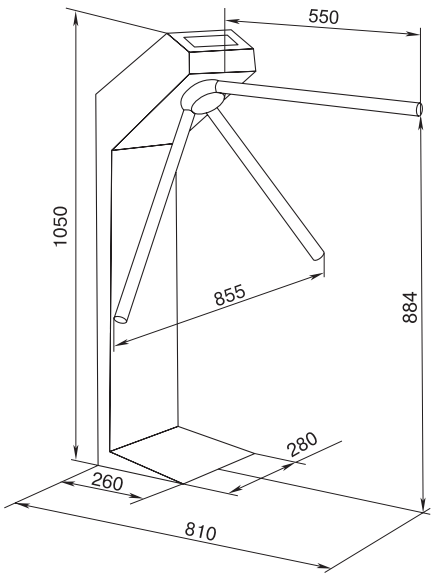
## Example of connection to the ACS




*1 - jump wire when there is no Fire Alarm device*

Example of turnstile connection to the ACS controller

## Overall dimensions




Overall dimensions

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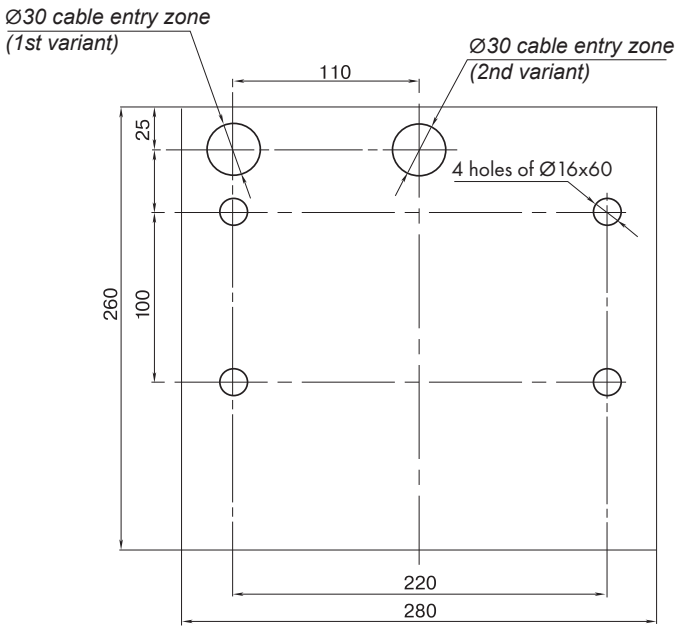
## Mounting

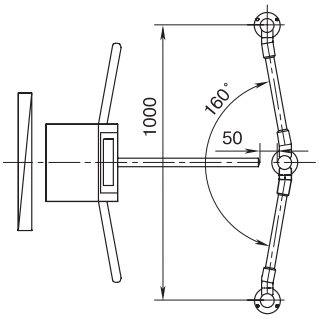



Hole marking for housing mounting and cable entry zone

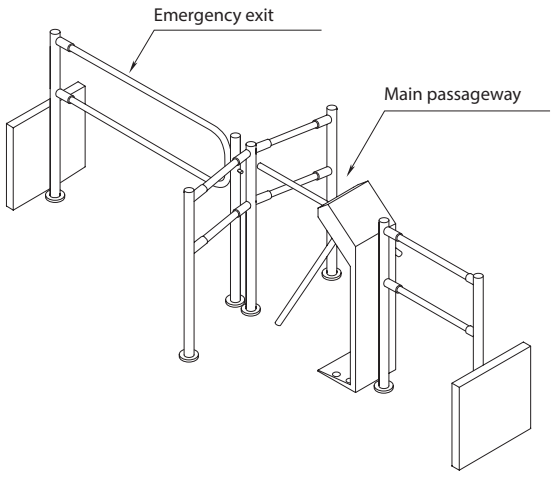
Foundation requirements: concrete (not lower than 400 grade), stone, etc. foundation of at least 150 mm thick, use reinforcing elements (300x300x300 mm) when installing turnstile housing on a less steady foundation.

## Passage zone modeling

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




Turnstile top view




Example of an entrance zone project

## Warranty

The warranty period is 5 (five) years commencing from the date of sale, unless otherwise determined in the delivery contract of the Product. In case of sale and installation of the equipment by authorized PERCo dealers and service centers, the warranty starts from the date of commissioning.

Should there be no date of sale on the warranty card, the warranty period shall commence from the date of manufacture specified in the Certificate and on the Product label.