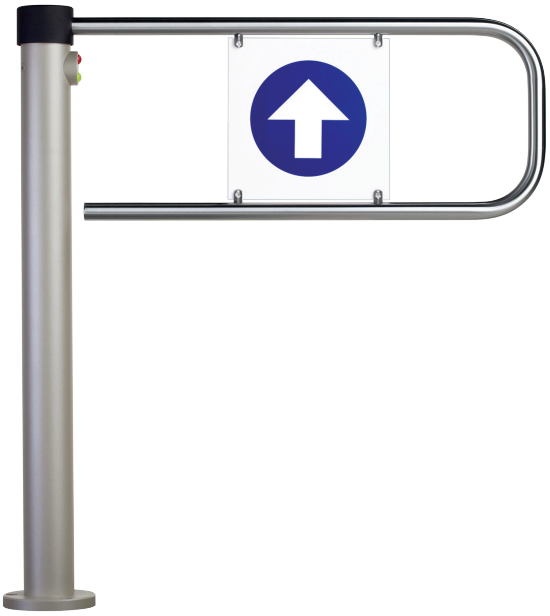
WHD-05 Electromechanical swing gate

PERCo



+50
+1
temperature range

20
persons/min

12V
operating voltage

2
passage directions

Application

The WHD-05 swing gate is a normally open electromechanical gate designed for indoor operation.

The delivery set includes a remote control (RC) panel. The orientation of RC-panel buttons relative to passage directions is set when connecting the panel to the turnstile. It is recommended to install swing gates assuming that the peak load amounts to 20-22 persons/min per device. The gates can come complete with railings.

RC panel

Operation modes

When operated via the RC panel, the swing gate supports three operation modes:

- passage denial
- single passage in any direction
- free passage in any direction

When all power supply units are turned off, the gate's swing panel rotates freely.

Main features

- operation of the swing gate via its RC panel, WRC, or ACS
- built-in LED indication module for display of the Open / Closed status of the swing gate
- one of the passage directions can be blocked with a removable mechanical limiter included in the standard delivery set
- a hydraulic damper ensures smooth return of the swing panel to the initial position
- possibility of connecting an intrusion detector and siren to the swing gate
- the Fire Alarm control input enables connection of a device that sends an emergency unlocking command (e.g., from the fire alarm system)

LED indication

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Design

The gate post is made of powder-coated steel. Its available design options:

Light beige with pearl mica effect

Dark grey with pearl mica effect

Swing gate type	Gate post design
WHD-05R	Sandpaper powder coating with pearl mica effect; light beige color
WHD-05G	Sandpaper powder coating with pearl mica effect; dark grey color

Upon request, the gate post can be painted in other colors according to the RAL color chart. The swing panel is made of polished stainless steel. The filler panel is produced of reinforced plastic. Passage permission/denial pictograms are applied by screen printing.

Swing panel type	Description
ASG-650	650 mm swing panel
ASG-900	900 mm swing panel

Operating conditions

In terms of resistance to environmental exposure, the swing gate post complies with GOST 15150-69, category U4 (operation in rooms with climate control). The swing gate post may operate at an ambient air temperature from +1°C to +50°C and relative air humidity of up to 98% at +25°C.

The WHD-05 gate is serially produced and has a TR CU Certificate of Conformity (EAC).

Delivery set

Gate post	1
Swing panel with a filler panel and set of clips; its type (650 or 900 mm) is to be selected by the customer when placing an order	1
RC panel (cable length of 6.6 m)	1
Documentation set	1
Spare parts kit	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
Intrusion detector	1
Siren (to signal unauthorized passage attempts)	1
M10 anchor with a bolt and washers	3

Technical specifications

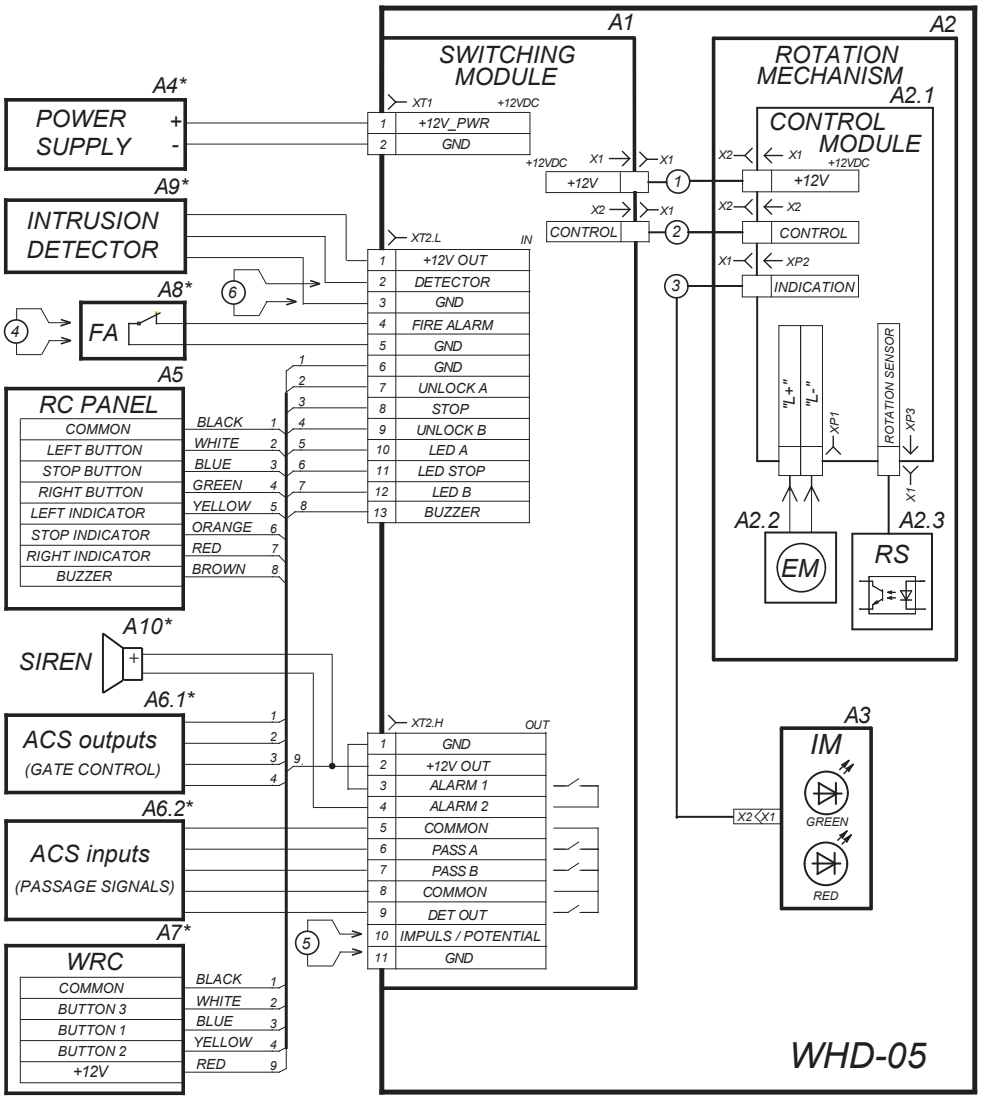
Operating voltage	10.8 – 13.2 V	
Consumption current	max. 1.2 A	
Power consumption	max. 14 W	
Passageway width	for a 650 mm swing panel	700 mm
	for a 900 mm swing panel	950 mm
Throughput rate in the single passage mode	for a 650 mm swing panel	22 persons/min
	for a 900 mm swing panel	20 persons/min
Mean time to failure	min. 1 500 000 passages	
Average daily throughput in the single passage mode	3000 passages	
Overall dimensions (LxWxH)	for a 650 mm swing panel	1040x780x160 mm
	for a 900 mm swing panel	1040x1030x160 mm
Packaging dimensions (LxWxH)	Gate post	110x22x23 cm
	Swing panel with a filler panel	97x39x7 cm

Connection

For easy connection, the swing gate's electronics are divided into control and switching modules. The control module is rigidly fixed inside the post. The switching module is secured on a removable bracket inside the lower part of the post. All external connections are made to the switching module's contacts.

Description of contacts of the switching module's terminal blocks

Connector	Contact	Electrical circuit	Function
XT1	1	+12 V	+12 V from an external power supply unit
	2	GND	Common
XT2L	1	+12VOut	Intrusion detector input
	2	Detector	
	3	GND	
	4	FA	Fire Alarm device input
	5	GND	
	6	GND	Common
	7	Unlock A	Gate control inputs
	8	Stop	
	9	Unlock B	
	10	Led A	RC-panel indication outputs
	11	Led Stop	
	12	Led B	
	13	ZUM	RC-panel sound signal output
XT2H	1	GND	Common
	2	+12VOut	Siren
	3	Alarm 1	
	4	Alarm 2	
	5	Com	PASS A relay output
	6	Pass A	
	7	Pass B	PASS B relay output
	8	Com	
	9	Det Out	Intrusion detector status output
	10	Imp/Pot	Pulse Mode / Potential Mode jumper
	11	GND	



Connection layout of the WHD-05 gate

Layout elements	
Item	**Name**
A1	Switching module
A2	Rotation mechanism
A2.1	Control module
A2.2	Electromagnet assembly
A2.3	Rotation sensor
A3	Indication module
A4*	Power supply unit
A5	RC panel
A6*	ACS controller
A7*	WRC device
A8*	Device that sends an emergency unlocking command (Fire Alarm)
A9*	Intrusion detector
A10*	12 V DC siren
1	Power patch cable of the control module
2	Control patch cable of the control module
3	Indication cable
4**	Jumper wire if there is no FA (A8) device
5**	Imp/Pot jumper wire for selection of the gate operation mode
6**	Jumper wire if there is no intrusion detector (A9)

* Not included in the standard delivery set

** Jumper wires are installed by default

Operation algorithm

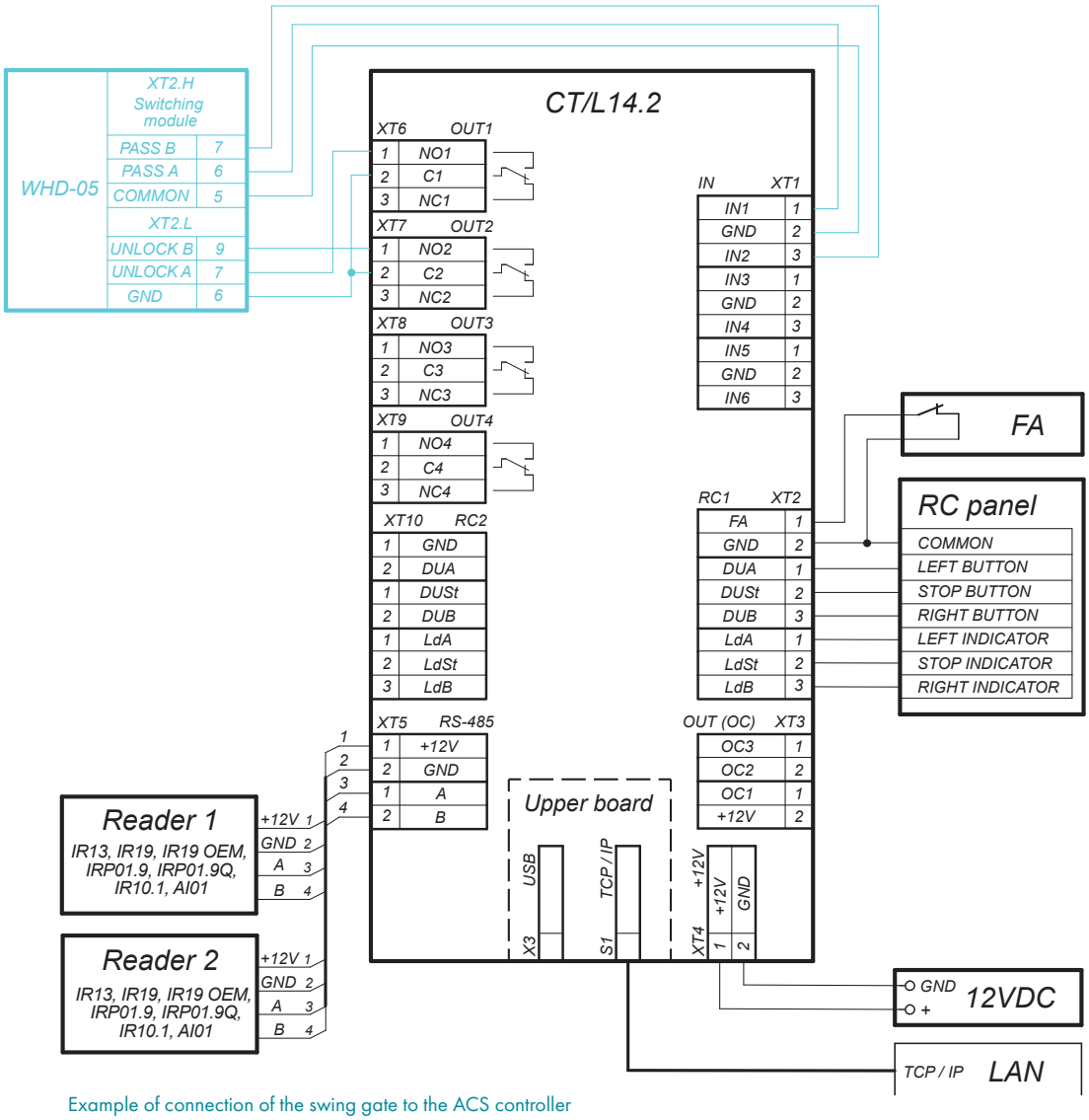
The swing gate can be operated via its RC panel (included in the delivery set), WRC, ACS controller, or intrusion detector.
The swing gate is controlled by applying a low-level signal to the Unlock A, Stop, and Unlock B contacts relative to the GND contact. The response to these signals depends on the control mode selected with jumper 5 (see the connection layout).
In the pulse control mode, a pulse is applied to the Unlock A/B input so that the swing gate 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 gate to the *Free passage* operation mode.
The pulse mode is recommended for operation from the RC panel or WRC.
In the potential control mode, a control signal is applied to the Unlock A/B input, and the swing gate remains unlocked in the selected direction all the time while the signal is held. The control signal sent to the Stop input blocks both passage directions regardless of signals at the Unlock A/B inputs.
The potential mode is recommended for operation from the ACS controller or intrusion detector.
Regardless of the selected control mode, passage signals are generated when rotating the swing panel in either direction – PASS A or PASS B respectively. These signals can inform the ACS controller of the fact of passage.
In emergencies, the swing gate is unlocked by removing a low-level signal from the Fire Alarm contact relative to the GND contact.

Note

When operating the swing gate 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 amounts to 40 meters. Recommended cable type: CQR CABS8 (8x0.22c).
The allowable length of the cable from the gate'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.

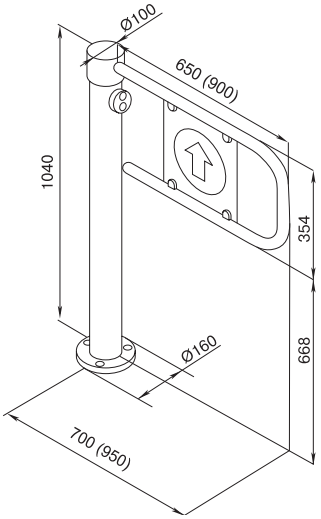


Example of connection of the swing gate to the ACS controller

The maximum allowable length of the cable from the RC panel / WRC / ACS controller amounts to 30 meters.

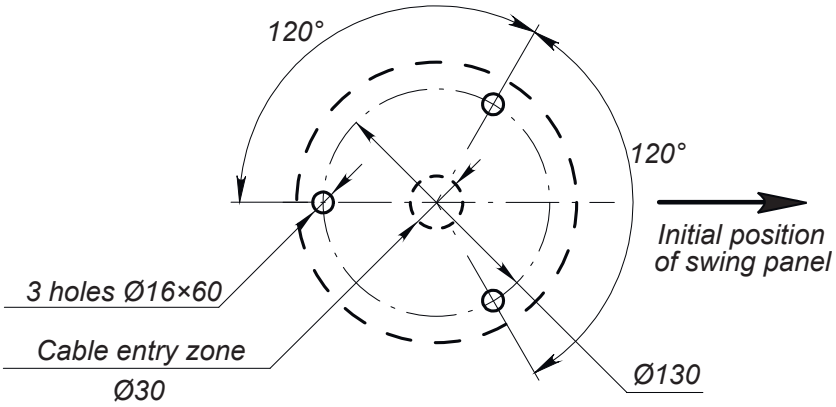
The maximum allowable length of the power and control cables from the control unit to the gate post amounts to 30 meters.

Overall dimensions



Overall dimensions

Foundation requirements: concrete (grade 400 or higher), stone, and similar foundations with a thickness of at least 150 mm. When installing the device on a less steady foundation, one should use a reinforcing element (450x450x200 mm).

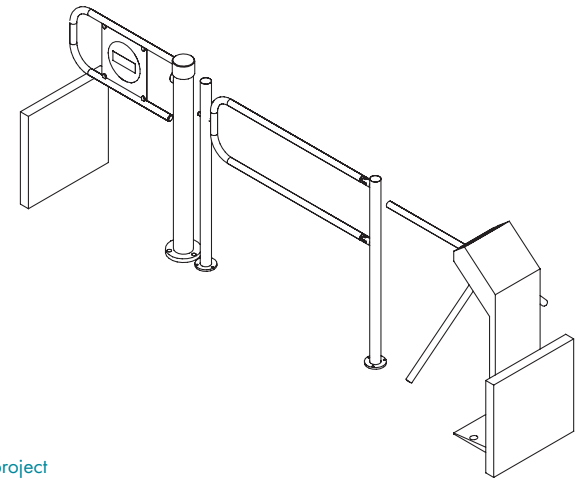


Hole marking layout

Prior to installation of the swing gate, it is required to prepare a cable duct from the post center to the control unit (gate control and power cables)

When the swing gate is operated via ACS, it is recommended to place card readers on the railings that form the passage zone. When mounting readers on BH02 railings, the BH01 0-03 bracket is to be applied.

Passage zone formation



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.