

Motorized Electromechanical Wicket Gate



WMD-04.3S

Assembly and operation manual



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Dear Customer,

Thank you for purchasing a PERCo product. Please follow instructions given in this Manual carefully, and this quality product will provide many years of trouble-free use.

The Assembly and Operation Manual (the Manual) contains the instructions you need for safely transportation, storage, installation, operation and maintenance of the WMD-04.3S motorized wicket gate.

The product installation should be carried out with strict accordance to the Manual.

Abbreviations adopted in the Manual:

- CU — control unit;
- SPS — standby power supply;
- ACS — access control system

1. APPLICATION

The **WMD-04,3S** motorized electromechanical wicket gate (the wicket gate) is designed for management of pedestrian flows at entrance points of industrial facilities, banks, administrative buildings, retail outlets, railway terminals, airports, etc.

To ensure fast and convenient passage it is recommended to install one wicket gate per every 500 entrants.

2. OPERATION CONDITIONS

2.1 The wicket gate, in accordance with the resistance to environmental exposure, is compliant with GOST 15150-69, category NF4 (artificially controlled climate conditions).

Operation of the wicket gate is allowed at ambient temperatures from +1°C to +45°C and relative air humidity of up to 70% at +27 °C.

2.2 The control unit (the CU), in accordance with the resistance to environmental exposure, is compliant with GOST 15150-69, category NF 4 (artificially controlled climate conditions).

Operation of the control unit is allowed at ambient temperatures from +1°C to +35°C and relative air humidity of up to 60% at +20 °C.

3. TECHNICAL SPECIFICATIONS

Power to the CU:

- from the AC mains 220±22 V / 50 Hz
- from an external power supply 24 ±2.4 V DC

Operational voltage to the gate post 24 V DC

Max power consumption 60W

Number of operating modes 3

Throughput in the single passage mode 12 persons/min

Minimal duration of operation /number of passages

when powered by the SPS 1.5 hrs / 1,200 passages

Rotation force (at the center of the swing panel) no more than 1 kgf

Mean time to failure, min 500,000 passages

Mean lifetime, min 8 years

Overall dimensions (Height x Width x Depth):

- CU	75.5x295x290 mm
- remote control panel.....	30x127x84 mm
- wicket gate with standard swing panel	1012x774x145 mm
- wicket gate with extended swing panel	1012x924x154 mm

Passageway width:

- wicket gate with standard swing panel	700 mm
- wicket gate with extended swing panel	850 mm

Net weight, max:

- CU	9.6 kg
- remote control panel.....	0.35 kg
- wicket gate with standard swing panel	23.5 kg
- wicket gate with extended swing panel	23.9 kg

Electric shock protection class:

- CU	I according to GOST R IEC 335-1-94
- gate post.....	III according to GOST R IEC 335-1-94

4. DELIVERY SET**4.1. Standard delivery set:**

Gate post	1
Swing panel with fasteners	1
Double-sided plastic info sign	1
Control unit CU-05.1 with 1.5 m power cable	1
Remote control panel with no less than 6.6 m cable	1
Control cable (4 m).....	1
Power cable (4 m*).....	1
Mechanical release key	2
Manual	1
Certificate.....	1
Shipping box	1

4.2. Spare parts, tools and accessories:

Fuse:

- - 1 A (5x20 mm)	1
- - 2 A (5x20 mm)	2

ACS plug connector:

- - cable receptacle DBH 15-F.....	1
- - connector housing H9	1

Plug cable connector XLR3 for external power supply	1
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Screw 4x20	3
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Plastic dowel	3
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Hex-nut wrench S5	1
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4.3. Optional tools and accessories:

- wireless remote control kit with 2 tags (operational range up to 40 m) 1
- intrusion detector..... 1
- siren..... 1

*

Power and control cables up to 30 m available on request.

5. DESIGN AND OPERATION

5.1. Main features

5.1.1 The wicket gate can be operated autonomously from the remote control panel or wireless remote control as well as from access control system (ACS) via an ACS controller.

5.1.2 When operated from the ACS, there are two variants of the gate control — pulse and potential.

5.1.3 The wicket gate is a normally closed unit, i.e. the reset state of the wicket gate is “closed for entry and exit” — the swing panel is locked in the home position.

5.1.4 Main features of the wicket gate:

- low power consumption — max 60W;
- safe operational voltage — 24 V DC;
- a built-in SPS to keep the wicket gate operative during a mains failure (uninterrupted operation is no less than 1.5 hours or 1,200 passages);
- optical rotation sensors activated / inactivated in a certain sequence during the swing panel turn to track real passage events through the wicket gate thus ensuring accurate data input into T&A systems;
- a mechanical release lock built in the gate post to unlock the wicket gate with a key and provide free rotation of the swing panel in emergency cases;
- “Always free” passage mode for convenience of people in wheelchairs, mothers pushing prams or shoppers carrying bulky goods;
- easy to install and maintain.

5.2. Design

5.2.1 Design of the wicket gate is shown in Figure 1. The numbers of the positions in brackets are given according to Figure 1 unless stated otherwise.

Overall dimensions are given in Figure 2.

5.2.2 The WMD-04.3S consists of a gate post, a swing panel (3) with an info sign (4), a remote control unit (8) with a built-in standby power supply and batteries, a remote control panel (9) and a set of cables.

5.2.3 The gate post consists of a rotary post (1) and a stationary post with flange (2) to be floor installed by screws M10x70 with recessed hexahedron.

5.2.4 In the gate post there are a rotor electric drive, an electromagnetic locking device, optical rotation sensors, bearing units, a power module to control the electric drive and transmit the rotation sensors signals, and a block of cable connectors (16).

5.2.5 On the rotary post cover (5) there is a mechanical release lock (6) intended for unlocking the wicket gate in emergency cases with a mechanical release key (7).

5.2.6 The double-sided plastic info sign (4) is set into the swing panel (3) with fastenings (15).

5.2.7 The remote control unit (the CU) (8) is connected to the gate post with a DC power cable (11) and a control cable (10). The remote control panel (9) is connected to the CU with a cable (12).

The CU (8) is responsible for the wicket gate powering and control.

The CU (see Fig. 3) comes as a stand-alone device in a metal case with the pull-resistant fasteners for wall mounting. The CU can also be desk-mounted.

5.2.8 The remote control panel (9) serves for manual setting of the operating modes and indication thereof.

It comes as a compact desktop device with a shockproof plastic case and a flexible multicore cable (12) to connect to the CU (8) via the «RC» cable entry (see Fig. 3 and Fig. 1A, Appendix A). The massive steel base to compensate for the cable weight and small antifriction feet do not let the remote control panel skid.

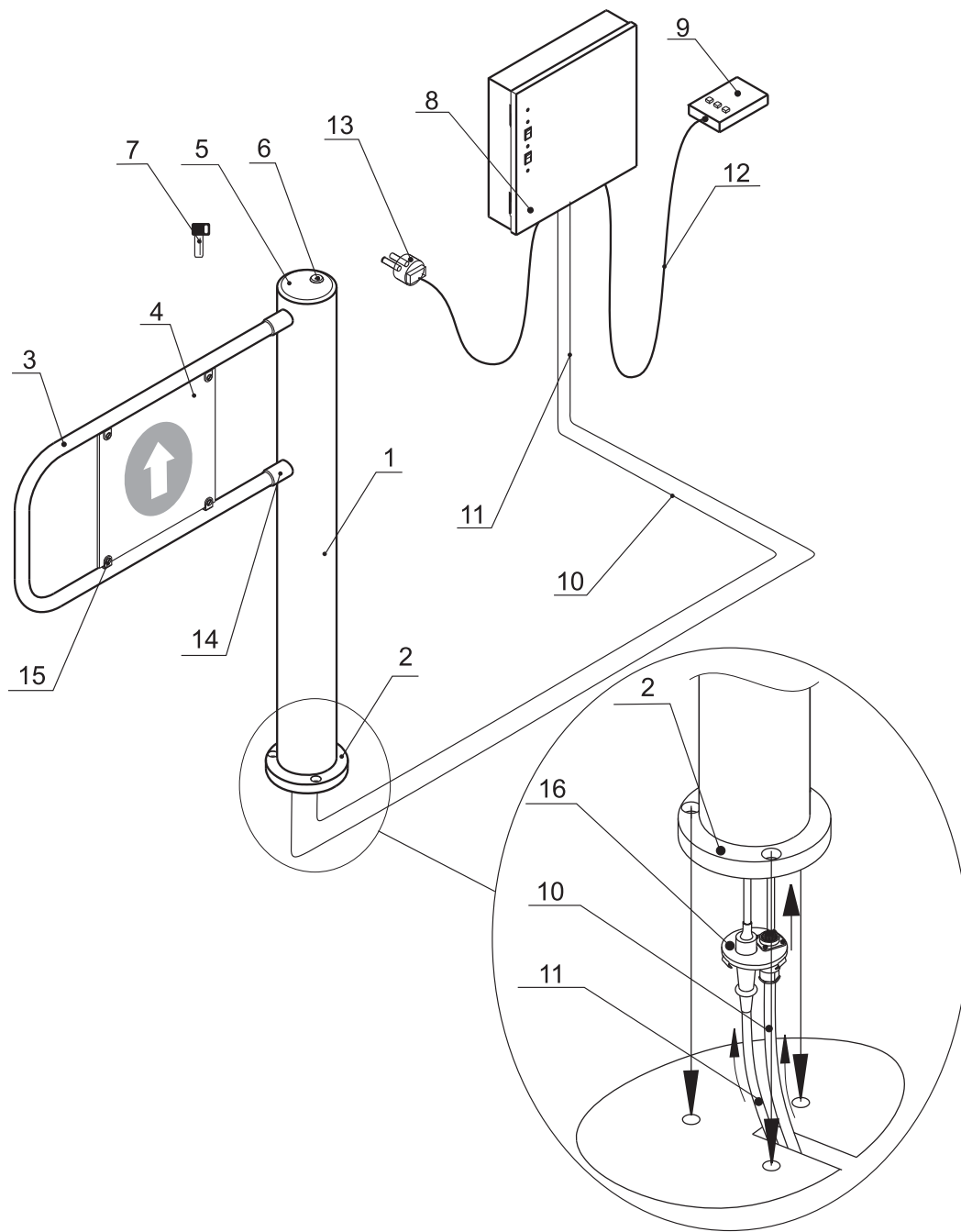


Figure 1. WMD-04.3S general view

- 1 — rotary post; 2 — stationary post with flange; 3 — swing panel; 4 — double-sided plastic info sign; 5 — cover; 6 — mechanical release lock; 7 — mechanical release key; 8 — control unit; 9 — remote control panel; 10 — control cable; 11 — power cable; 12 — remote control panel cable; 13 — AC mains cable; 14 — coupling fitting; 15 — fastening; 16 — cable connector block.

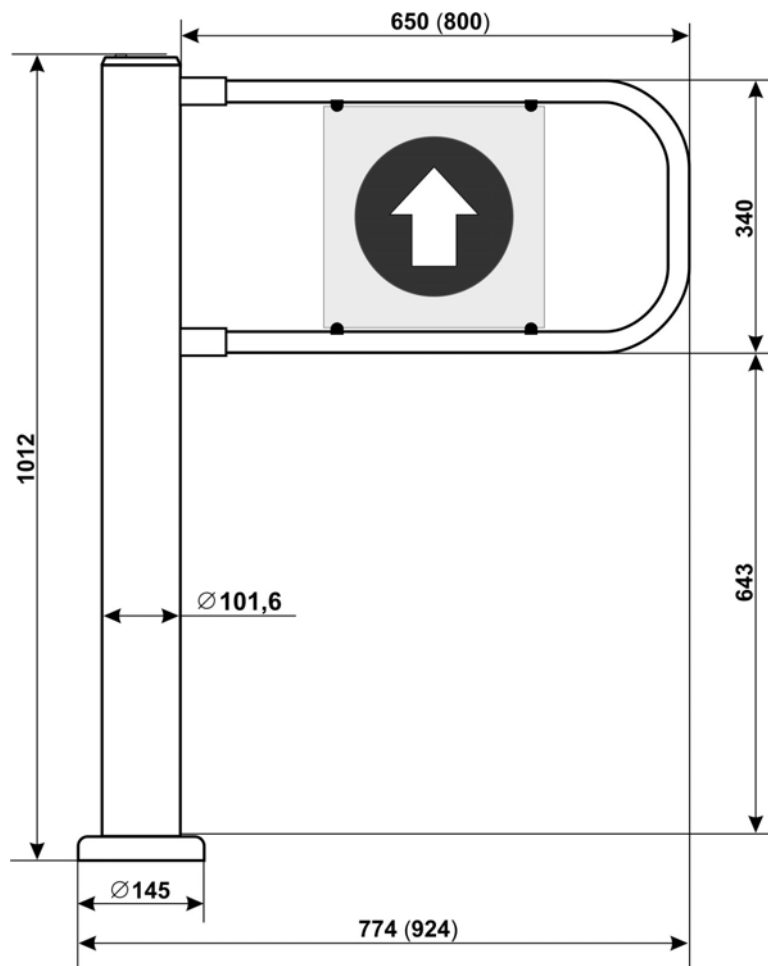


Figure 2. WMD-04.3S overall dimensions*

* Figures in brackets refer to the WMD-04.3S with extended swing panel

The front of the remote control panel houses three control buttons. The «**STOP**» in the middle serves for setting the «**Always locked**» operating mode, the right and left buttons — for allowing passage in either chosen direction to one person or a group.

LED indicators are located above the buttons. The remote control panel features a built-in piezoelectric buzzer for audio signals generation.

If the wicket gate installation is not standard (e.g. the operator's terminal is placed at the backside of the wicket gate), the remote control panel orientation towards the wicket gate can be changed (sect.5.4.2).

5.2.9 The CU (8) is designed as a separate device in a powder coated metal case with pull-resistant fasteners for wall mounting. Alternatively, it can be desk-mounted.

The CU case contains a power transformer, a DC power supplies module, a Control Logic Board (CLB) and two 12 V SPS batteries.

Located on the CU front panel (Fig. 3) are the following LED indicators:

- «**Power**» — AC mains (green);
- «**24V**» — gate post power supply 24 V DC (green);
- «**Battery**» — the CU changeover to the SPS/external power supply (red);
- «**24V/2A**» — 24V/2A fuse failure (red).

Besides the LED indicators, there are the following toggle switches:

- «**Power**» (ON/OFF) — to turn AC power on/off;
- «**Battery**» — to turn the respective standby DC power supply on/off.

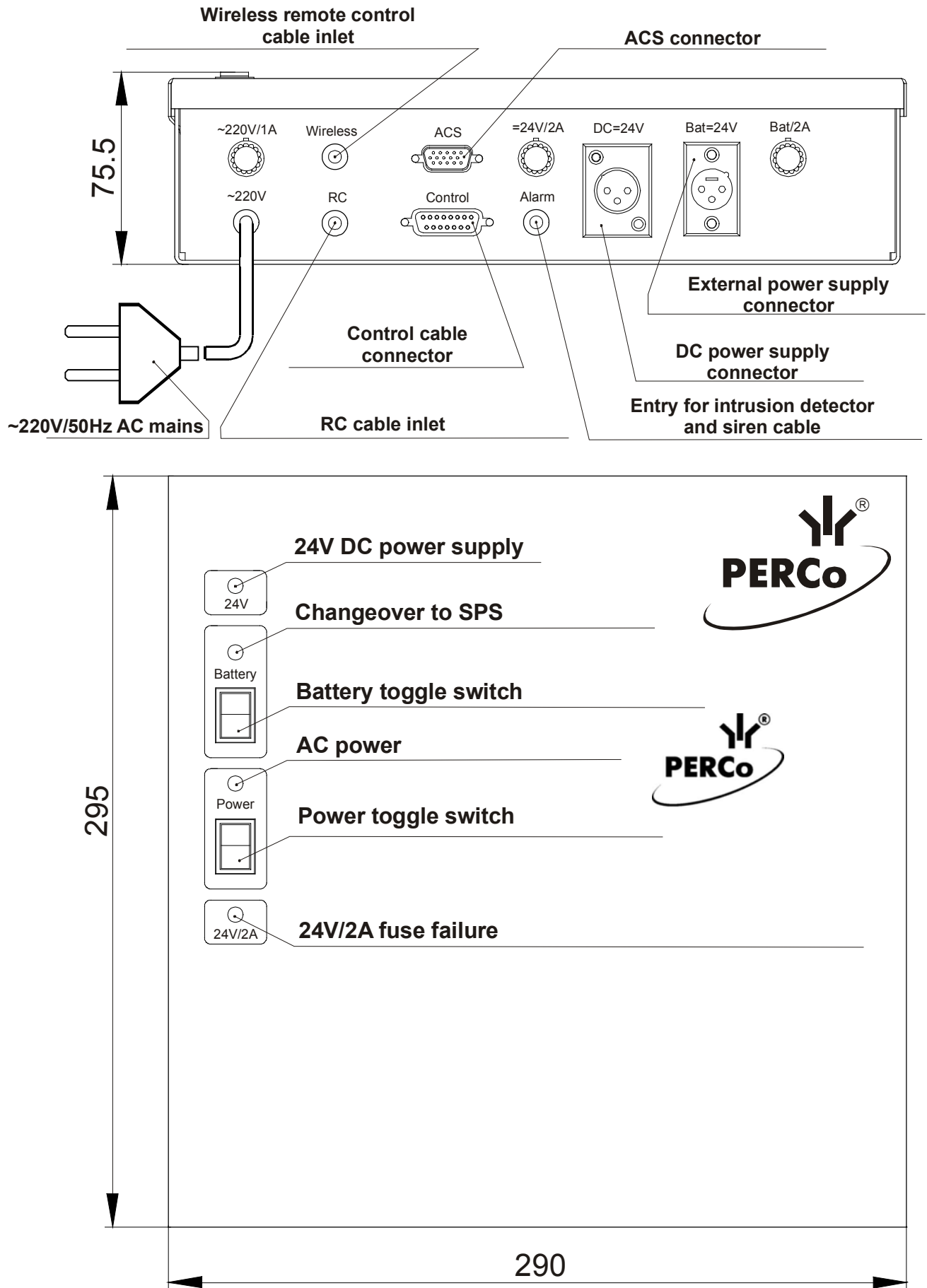


Figure 3. Control unit

The CU case houses the following:

- AC power cable input “~220V”;
- cable entry for wireless remote control “**Wireless**”;
- cable entry for remote control panel “**RC**”;
- ACS socket connector “**ACS**”;
- control cable socket connector “**Control**”;
- cable entry for intrusion detector and siren “**Alarm**”;
- gate power supply socket connector “**DC=24V**”;
- external power supply socket connector “**Bat = 24V**”;
- fuseholder with “~220V/1A” fuse;
- “**Bat/2A**” fuseholder *;
- fuseholder with “**=24V/2A**” fuse.

***WARNING! To prevent accidental power-up of the CU when in transit, the "Bat/2A" fuse is not installed and it is provided together with the set of spare parts.**

Connections for an intrusion detector and a siren are given in Fig. 1A (Appendix A).

5.3. Control over the wicket gate

5.3.1 The wicket gate is a normally closed unit, i.e. the swing panel is locked in the home position and blocks the passageway (the reset state is “Closed for entry and exit”).

5.3.2 The wicket gate can be operated from:

- the remote control panel;
- a wireless remote control;
- an access control system via an ACS controller.

Operating modes are shown in Table 1 and described in section 5.4 herein.

5.4. Operation from the remote control panel

5.4.1 To set the gate operating modes, press the buttons on the remote control panel according to Table 1.

5.4.2 If the operator's terminal is placed at the backside of the wicket gate, the remote control panel orientation towards the wicket gate can be changed. Proceed as follows when it is necessary to change orientation of the control panel:

- set the CU (8) toggle switches «Power» and «Battery» into the «0» position (Fig. 3);
- disconnect the power cable (13) from the mains;
- exchange the wires of the remote control panel cable (12) on the connector blocks X3, X4 of the CU processor module (Fig. 1A of Appendix A and Fig. 1B of Appendix B) in the following way: the white wire with the green one and the yellow wire with the red one, i.e. connect the wires as follows:

- a) the white — to the contact 3 on the connector block X3;
- b) the green — to the contact 1 on the connector block X3;
- c) the yellow — to the contact 3 on the connector block X4;
- d) the red — to the contact 1 on the connector block X4;

Check whether all the wires are connected properly. Turn the power on as per sect. 8.2. Check operation of the gate as per sect. 5.4.3 and Table 1.

5.4.3 Principle of operation in the single passage mode:

- when the button corresponding to the chosen passage direction is pressed on the remote control panel, the electromagnetic locking device unblocks the rotary post (1) and the swing panel (3) automatically rotates 90° in the direction of the permitted passage;

- the wicket gate remains open within the passage waiting time (the factory-set time interval of 3 sec over which the passage through the wicket gate is allowed);
- at the end of the passage waiting time the rotor electric drive realizes smooth automatic return of the swing panel to its secured home position; the wicket gate switches into the "Always locked" mode.

Commentary:

- the passage waiting time is counted from the moment the swing panel turns at 90°;
- the passage waiting time can be changed by installation of jumpers on the CLB of the CU (see Fig. 1A, Appendix A);
- if the passage is not effected within the passage waiting time, the electric drive returns the swing panel to the reset state and the wicket gate switches into the "Always locked" mode.

TABLE 1

OPERATING MODE		YOUR ACTIONS	INDICATION ON THE REMOTE CONTROL PANEL	WICKET GATE STATUS
1	Single passage	Press the button corresponding to the chosen passage direction	Green light above the button responsible for the chosen passage direction, red light above the " STOP " button	Open for a single passage
2*	Always free	Press the " STOP " button and the button corresponding to the chosen passage direction simultaneously	Green light above the button responsible for the chosen passage direction	Open for multiple passage in both +directions
3	Always locked	Press the " STOP " button	Red light above the " STOP " button	Closed for entry and exit

* **Note.** In order to **avoid overheating** of the magnet winding when it is desired to arrange more than one-hour free passage mode, de-energize and unlock the wicket gate (sect. 5.7), then turn the swing panel in either direction at 90° relatively to the home position and leave it open.

5.4.4 When the "**STOP**" button on the remote control panel is pressed, the wicket gate is switched into the "Always locked" operating mode, and the swing panel automatically returns to the reset state.

5.4.5 In the "Always free" operating mode the passage waiting time is not counted and the wicket gate remains open until the "**STOP**" button is pressed on the remote control panel.

5.4.6 When a new operating mode is set while the swing panel has not yet returned to the reset state:

- if the new passage direction is the same as the one set before, the wicket gate starts carrying out the operating mode immediately, without resetting the swing panel;
- if the new passage direction is opposite to the one set before, the operating mode is recorded into the memory buffer register of the CU and the wicket gate starts carrying out the operating mode only after the swing panel has returned to the reset state;
- if the "Always free" mode is set while the wicket gate is still in the "Single passage" mode, the wicket gate switches into the "Always free" mode but the swing panel holds the same open position, irrespective of the direction chosen for the "Always free" mode.

5.5. Operation from a wireless remote control

5.5.1 Operation of the wicket gate from a wireless remote control is similar to that from the remote control panel (sect. 5.4).

Note. Contact PERCo Technical Support Department if you need further consulting on connection of a wireless remote control to the CU processor module of the WMD-04.3S.

5.6. Operation from ACS via an ACS controller

5.6.1 An ACS controller is cabled to the «**ACS**» socket connector of the CU (Fig. 3). The ACS plug connector is included in the set of spare parts.

5.6.2 Assignment of the contacts on the «**ACS**» socket connector is given in Figure 4. 5.6.3 Control over the wicket gate can be carried out in either pulse or potential control mode.

Pulse control mode: the wicket gate is operated by input of a low-level signal, i.e. by closing of the contacts «**RIGHT**»/«**LEFT**» and «**STOP**» with the «**GND**» contact (Fig. 4). The minimum control signal duration is 100 ms.

Potential control mode: the wicket gate is operated by input of a low-level signal, i.e. by closing of the contacts «**RIGHT**»/«**LEFT**» and «**GND**» (Fig. 4). The «**STOP**» contact of the «**ACS**» socket connector is not used.

The set operating mode is cancelled by removal of the low-level signal, i.e. by breaking of the contacts «**RIGHT**»/«**LEFT**» and «**GND**».

5.6.4 Either control mode is set by a jumper on the X5 connector of the CU control logic board (the CLB) (see Fig. 1A, Appendix A). The pulse control mode is preset at the factory.

5.6.5 The control element in the ACS can be a normally open relay contact or a circuit with open collector output and the following signal characteristics:

- voltage at the open contact — 5 ± 0.5 V;
- low-level voltage at the closed contact — max 0.8 V;
- current via the closed contact — max 1.5 mA.

5.6.6 The turn of the swing panel (3) is registered by the optical rotation sensors inside the stationary post with flange (2). The turn direction is determined by the order the sensors respond.

The «**PASS R1(R2)**» and «**PASS L1(L2)**» contacts of the CU «**ACS**» connector (see Fig. 4) are open in the reset state. At the swing panel turn, depending on the set passage direction, either the contacts «**PASS R1**» and «**PASS R2**» or the contacts «**PASS L1**» and «**PASS L2**» are closed. Duration of the signals generated at the contacts depends on the time period the wicket gate is open.

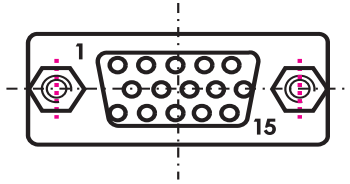
5.6.7 Additionally, the ACS is provided with the following status signals:

- «**Pwr failure**» — AC mains failure (a high-level signal, closed transistor);
- «**Bat failure**» — the SPS or external power supply failure. If the SPS voltage falls below 22.5 V, a high-level signal is generated (closed transistor).
- «**Pass Sensor**» — status of infrared intrusion detector* (relay output contacts Pass Sensor 1 and Pass Sensor 2). The data is transmitted to the ACS directly from the detector.

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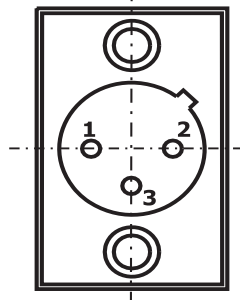
Not included in the standard delivery set.

Pin assignments for CU "ACS" connector



RIGHT	1
STOP	2
LEFT	3
GND	5
PASS R1	7
PASS R2	10
PASS L1	6
PASS L2	9
Pwr Failure C	8
Pwr Failure E	4
Pass Sensor 1	11
Pass Sensor 2	14
Bat Failure C	12
Bat Failure E	13

Pin assignments for CU "Bat=24V" connector



+ 24 V	1
GND	2
GND	3

Figure 4. Control unit socket connectors

5.6.8 The CU output cascades, generating the signals «**Pass R**», «**Pass L**», «**Pass Sensor**», «**Pwr failure**» and «**Bat failure**», have the galvanic decoupling.

5.6.9 To generate the signals «**Pass R**», «**Pass L**» and «**Pass Sensor**», the CU output cascades have the relay output circuits with the following signal characteristics:

- max voltage — 50 V;
- max current — 200 mA.

5.6.10 To generate the signals «**Pwr failure**» and «**Bat failure**», the CU output cascades have the optoelectronic decoupling with the following signal characteristics:

- max collector-emitter voltage — 25 V;
- max current — 50 mA.

5.7. Key override control

The key override allows mechanical unlocking of the wicket gate in the event of emergency or malfunction (e.g. outage of an external power supply or the SPS batteries discharge below 22 V) by means of a mechanical release key.

The mechanical release lock (6) is built in the gate post as standard and provided with a set of keys. To unlock the wicket gate it is necessary to insert the key (7) into the lock (6) (see Fig. 1) and turn it at 90° clockwise.

When unlocked, the swing panel could be easily turned in each direction and left open. The mechanical locking of the wicket gate is performed in the reverse order.

6. SAFETY REQUIREMENTS

Safety requirements for the wicket gate comply with the GOST R IEC 730-1. For electrical safety, the wicket gate falls under Class III products.

6.1. Installation safety

- Installation should be performed by qualified personnel **ONLY**, in strict accordance with the Manual and general electrical safety requirements for electrical and installation work.
- Only serviceable instruments should be used.
- All the connections should be performed **ONLY** after the CU is disconnected from the power supply.

6.2. Safety during operation

6.2.1 Observe general safety requirements for use of electrical equipment.

6.2.2 The wicket gate is designed to use 220 ± 22 V AC / 50Hz mains. Use a voltage stabilizer to prevent possible malfunction in the event of a voltage surge.

6.2.3 **DON'TS:**

- Do not install the CU on electrically conductive floors and in damp areas, or use it in environments different from those given in sect. 2 of the Manual.
- Do not take the cover off the CU or change the fuses unless the CU is disconnected from the power supply.
- Do not let bulky objects with overall dimensions exceeding the passageway width be carried through the passageway area. The swing panel should be dismantled when it is necessary to completely clear the passageway.
- Do not let the swing panel or the gate post be subjected to jerks and jolts that can cause mechanical deformation.
- Do not use abrasive or chemically active substances to clean surfaces.

7. ASSEMBLY AND INSTALLATION

7.1. General recommendations

7.1.1 Proper installation is critical to performance and serviceability of the wicket gate. We strongly advise to study this Manual before installation work and follow the instructions to the letter.

7.1.2 We recommend:

- to mount the wicket gate on flat, solid concrete floors (grade 400 or higher), stone or similar foundations at least 150 mm thick;
- to make sure the mounting foundation is horizontal and flat, so that all the mount points lie in the same plane;
- to employ reinforcing elements 300x300x300 mm for softer grounds;
- to mark the mounting holes according to the enclosed installation instructions (see Fig.5);
- to control the vertical position of the gate post during installation.

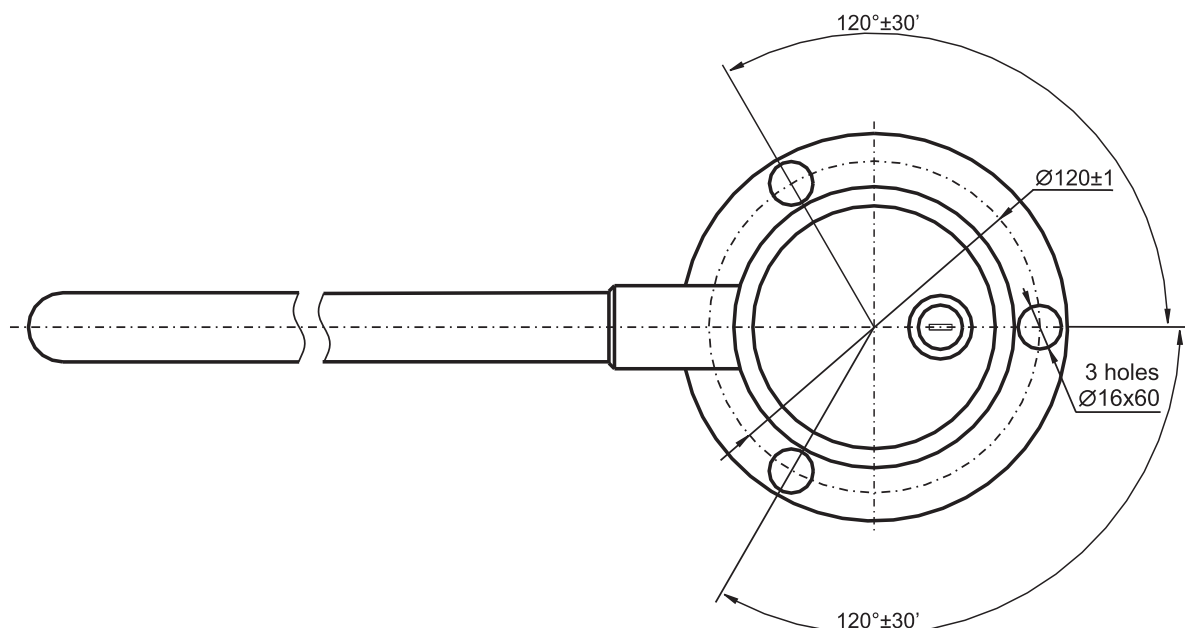


Figure 5. Mounting hole pattern

7.1.3 Use the following tools for the installation work:

- 1.2÷1.5kW perforator;
- Ø16 mm hard-alloyed drill;
- Ø 5 mm hard-alloyed drills for wall mounting dowels;
- Crosshead screwdriver №2;
- Hex-nut wrenches S=5, S=8;
- Knife;
- Plumb-line and level;
- Measuring tape 3m.

7.2. Assembly and installation sequence

ATTENTION!

The manufacturer shall not be liable for any damage caused in the result of improper installation and declines any claims arising thereof in case if the installation is not in compliance with the instructions provided in this Manual.

7.2.1 Position numbers in the installation sequence are given according to Figure 1.

7.2.2 Recommendations how to prepare mounting holes in the foundation (the mounting surface) are given with regard to metal anchor bolts for solid concrete floors or similar foundations. Use relevant mounting hardware for installation on different foundations.

7.2.3 Assembly and installation of the wicket gate

We recommend the following work sequence:

- unpack the box with equipment, check carefully the delivery set (sect. 4);
- prepare the installation surfaces as recommended in sect. 7.1;
- prepare mounting holes according to the Figure 5;
- prepare electric raceways for the control cable (10) and the power cable (11);

- lay out the control cable (10) and the power cable (11) from the control unit to the gate post (1);
- take the cable connector block (16), mounted on the spring pins, out of the stationary post with flange (2);
- connect the control cable and the power cable to the cable connector block (16);
- install the cable connector block (16) into the stationary post with flange (2) at height suitable for further installation;
- install the gate post (2) upright into the run position (it is recommended to use joint liners if need be);

CAUTION! The gate post is heavy, hold it to prevent the fall!

- fix the gate post flange with three screws M10x70;
- take the swing panel (3) out of the shipping box;
- mount the swing panel into the coupling fittings (14) of the rotary post (1); tighten the mounting screws through the coupling fittings' holes with the S=5 hex-nut wrench;
- check the strong fastening of the swing panel (3);
- set the double-sided plastic info sign (4) into the swing panel (3) and fix it with the fastenings (15).

The wicket gate is assembled.

7.2.4 Unlock the wicket gate with the mechanical release key (7) (sect. 5.7)

Check free rotation of the swing panel. The swing panel should be turned by hand easily in either direction. The rotation force at the center of the swing panel should not be more than 1 kg. (The rotation force can be measured by a dynamometer or a domestic spring balance.)

Lock the wicket gate with the key after the check.

7.2.5 *Installation of the CU:*

Installation of the control unit (8) should be carried out considering that the convenient access to the **“Power”** toggle switch is provided (Fig. 3). The CU (8) should be mounted on the wall upright with the connectors down. The AC power cable should easily touch the mains plug.

- mark out the holes for wall mounting of the control unit (8) as shown in Figure 6;
- drill the holes and insert the plastic dowels included in the delivery set (sect. 4.2);
- mount the CU (8) using the two 4x20 mm screws and fix it with the bottom screw to prevent accidental pulling off.
- connect the control cable (10) to the CU **“Control”** socket connector (Fig. 3);
- connect the power cable (11) to the CU **“DC=24V”** socket connector (Fig. 3);
- pull the remote control panel cable (12) through the RC cable entry inside the CU and connect to the X3, X4 connector blocks of the processor module (Fig. 1A, Appendix A; Fig. 1B, Appendix B).
- set the CU **“Power”** toggle switch and the CU **“Battery”** toggle switch to the **“O”** position.

7.2.6 Prior to the wicket gate power-up check thoroughly the cables serviceability and accuracy of all the connections.

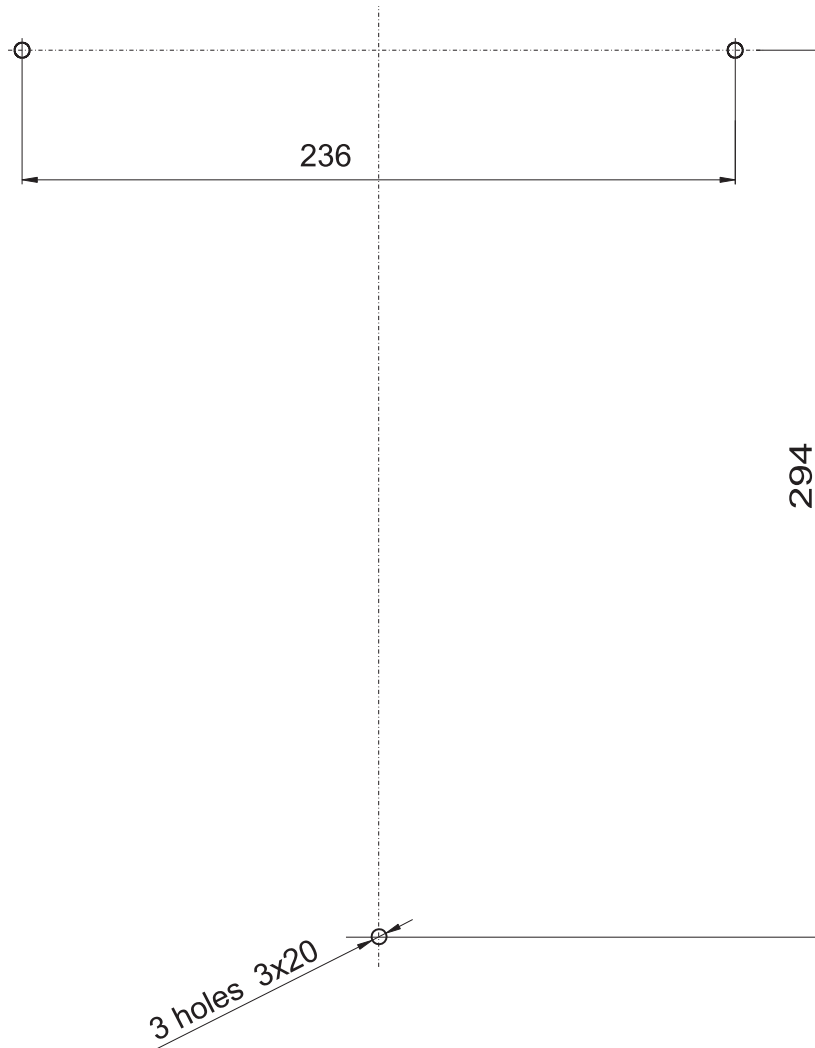


Fig. 6. Hole pattern for CU mounting

7.2.7 Connection of an intrusion detector^{*} and a siren^{*} to the CU (8) is carried out in accordance with Figure 1A, Appendix A. The equipment location depends on the entrance layout.

We recommend you to mount the intrusion detector on a stationary railing post or a security officer cabin, the siren can be mounted inside the security officer cabin near the control unit. For additional info please apply to the PERCo Technical Support Department.

8. OPERATING THE WICKET GATE

8.1. General guidelines

ATTENTION!

- 1) Always observe general electric safety requirements when operating the wicket gate.
- 2) Make sure the power cable is intact, all the connections are correct and safe.
- 3) Clear the passageway area of foreign items.
- 4) **DO NOT** connect the CU to the mains with characteristics that differ from those given in the Certificate.

- Not included in the standard delivery set.

8.2. Operation from 220 V / 50 Hz AC mains

8.2.1 Prior to the wicket gate power-up, set the CU «**Power**» toggle switch and the CU «**Battery**» toggle switch to the “**O**” position.

8.2.2 Put the “Bat/2A” fuse included in the set of spare parts into its place.

8.2.3 Plug the CU power cable (13) into a 220 V / 50 Hz AC outlet.

8.2.4 Set the CU «**Power**» toggle switch and the CU «**Battery**» toggle switch to the “**I**” position.

At the same time:

- the indicators «**Power**» and «**24V**» on the CU light up;
- the indicator above the “**STOP**” button on the remote control panel light up.

The wicket gate is ready for operation.

8.3. Operation from external 24 V DC power supply

8.3.1 An external power supply is connected via the CU “**Bat=24V**” socket connector (see Fig. 3). Pin assignments for the “**Bat=24V**” socket connector is shown in Figure 4.

8.3.2 The plug cable connector for external power supply is included in the set of spare parts.

8.3.3 To connect the external power supply:

- set the CU toggle switches “**Power**” and “**Battery**” to the “**O**” position;
- remove the “**Bat/2A**” fuse from its fuseholder on the CU panel;
- connect the external power supply to the “**Bat=24V**” socket connector;
- set the “**Battery**” toggle switch to the “**I**” position.

The wicket gate is ready for operation.

8.3.4 Operation from the external power supply is similar to operation from the built-in SPS as given in Clause 8.5 of the Manual.

8.4. Reset state of the wicket gate after the CU power-up

(the wicket gate should be locked with the mechanical release key):

- the swing panel blocks the passageway;
- red light above the “STOP” button on the remote control panel is on;
- the respective indicators on the CU are on;
- the reset state of the wicket gate is the “Closed for entry and exit”.

8.5. Operation from the built-in SPS

8.5.1 In case of AC mains failure the wicket gate remains in operation, the CU switches to the built-in SPS (the CU “**Battery**” toggle switch is due to be in the “**I**” position).

8.5.2 When operating from the SPS, the CU “**Power**” light indicator goes out, the “**Battery**” light indicator on the CU is on.

The “**Pwr failure**” signal, notifying of the AC mains failure, is transmitted to the CU “**ACS**” connector. In about 5 seconds an intermittent light indication at 1 sec intervals is generated on the remote control panel.

8.5.3 At the SPS battery discharge down to 22 ± 0.5 V, the “**Bat failure**” signal is transmitted to the CU “**ACS**” connector. An intermittent audio signal with 30 seconds interval (six short audio signals per every 30 sec), warning about the discharge, is generated from the remote control panel.

8.5.4 At the SPS battery discharge down to $20\pm 5V$, the wicket gate switches to the malfunction mode:

- the swing panel returns to the home position where it is blocked with the locking device;
- the indicator above the **“STOP”** button on the remote control panel starts blinking with interval of 2 seconds, the other indicators go out;
- any setting of the operating modes from either the remote control panel or ACS is blocked.

At the further battery discharge the CU will automatically switch off.

8.5.5 When the AC mains is restored, the wicket gate returns to normal operation if the **“Power”** toggle switch is in the **“I”** position.

8.5.6 The built-in SPS battery will recharge automatically if the **«Battery»** toggle switch is in the **“I”** position.

Operation time with the built-in SPS is 1.5 hours or 1,200 passages provided that the battery is fully charged.

CAUTION!

The CU SPS contains the lead-acid batteries, which are not recommended to be stored for a long time without recharge.

For recharge during the storage period the CU should be switched on for 24 hours every 8 months or every 2 months when stored at temperatures above $+30^{\circ}C$.

There is no need to connect the wicket gate or the remote control panel to the CU during recharge. Sequence of actions is given in Clause 8.2.

9. TROUBLESHOOTING

Possible faults to be corrected by the user themselves are listed in Table 2.

TABLE 2

FAULT	MOST POSSIBLE CAUSE	REMEDY
When powered-up, the wicket gate does not work, lights on the remote control panel and the CU are off	The power cable is broken	Repair the cable
	No supply voltage	Restore the supply voltage
	The “220V/1A” fuse is burnt out	De-energize the CU, replace the fuse
The CU indicators “Power” and “24V/2A” are on but the “24V” indicator on the CU and indication on the remote control panel are off	The “=24V/2A” fuse is burnt out likely due to external short circuit	De-energize the CU, remove the short circuit and replace the fuse
When operated from the built-in SPS, the wicket gate does not work, the CU indicators are off	The “=Bat/2A” fuse is burnt out	De-energize the CU, replace the fuse
When operated from an external power supply, the wicket gate does not work, the CU indicators are off	External power supply failure	De-energize the CU, remove the failure

In the unlikely event of other faults consult with the PERCo Technical Support Department or your local dealer.

10. MAINTENANCE

The wicket gate technical maintenance should be performed only by the manufacturer.

11. MARKING AND PACKAGING

11.1 The standard delivery set is packed into one shipping box (1076x436x300 mm) that protects the wicket gate against damage during transportation and storage.

11.2 The box marking contains the serial number of the wicket gate, also entered into the warranty coupon.

11.3 Marking on the CU (8) and under the cover (5) of the gate rotary post (1) contains the product name, the date of manufacture, the serial number, the technical characteristics, the warranty term.

11.4 Marking of components by other manufacturers corresponds with their technical documentation.

12. TRANSPORTATION AND STORAGE

12.1 The wicket gate in the original package should be transported **ONLY** in closed freight containers or other closed type cargo transport units.

12.2 The wicket gate should be stored in dry indoor facilities at ambient temperatures between $-40\text{ }^{\circ}\text{C}$ and $+45\text{ }^{\circ}\text{C}$ and at relative air humidity of up to 98% at $+25\text{ }^{\circ}\text{C}$.

12.3 After transportation or storage at below-zero temperatures or high air humidity, the wicket gate should be kept unpacked for no less than 24 hours under normal climate conditions (temperature of $+18\text{ }^{\circ}\text{C}$, relative air humidity of 60%) prior to installation.

12.4 During storage and transportation the boxes can be stacked no more than 3 layers high.

APPENDIX A

The CU contains the Control Logic Board (the CLB) shown in Fig. 1A that performs the wicket gate control.

1. Change of the passage waiting time

The passage waiting time is preset by the manufacturer and equals 3 sec. The timeout period can be put to 3 sec, 4 sec, 5 sec or infinity and changed by the user themselves.

To change the passage waiting time, it is necessary to fix jumpers on the X6 connector as shown in Fig. 1A.

2. The control mode setup

When operated from the ACS, control over the wicket gate can be carried out in either pulse or potential control mode. Either control mode is set by a jumper on the X5 connector of the CU CLB as shown in Fig. 1A.

3. Connection of the remote control panel, an intrusion detector and a siren

The remote control panel is connected to the connector blocks X3 and X4 as shown in Fig. 1A.

The CLB also contains the connector blocks for an intrusion detector (X11) and a siren (X10).

Note. Contact PERCo Technical Support Department if you need consulting on connection of your wireless remote control to the CU processor module.

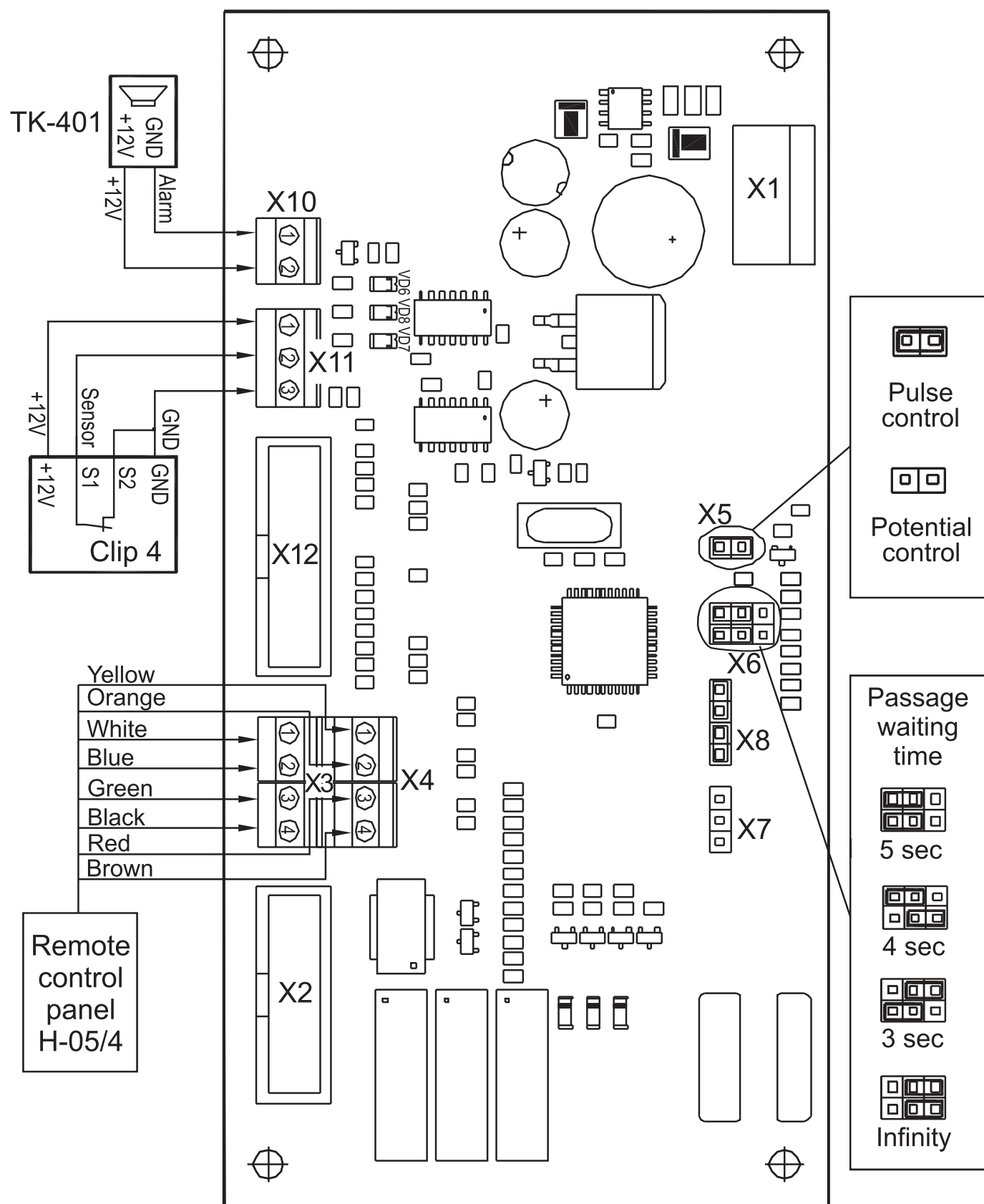


Figure 1A. Control Logic Board of the CU

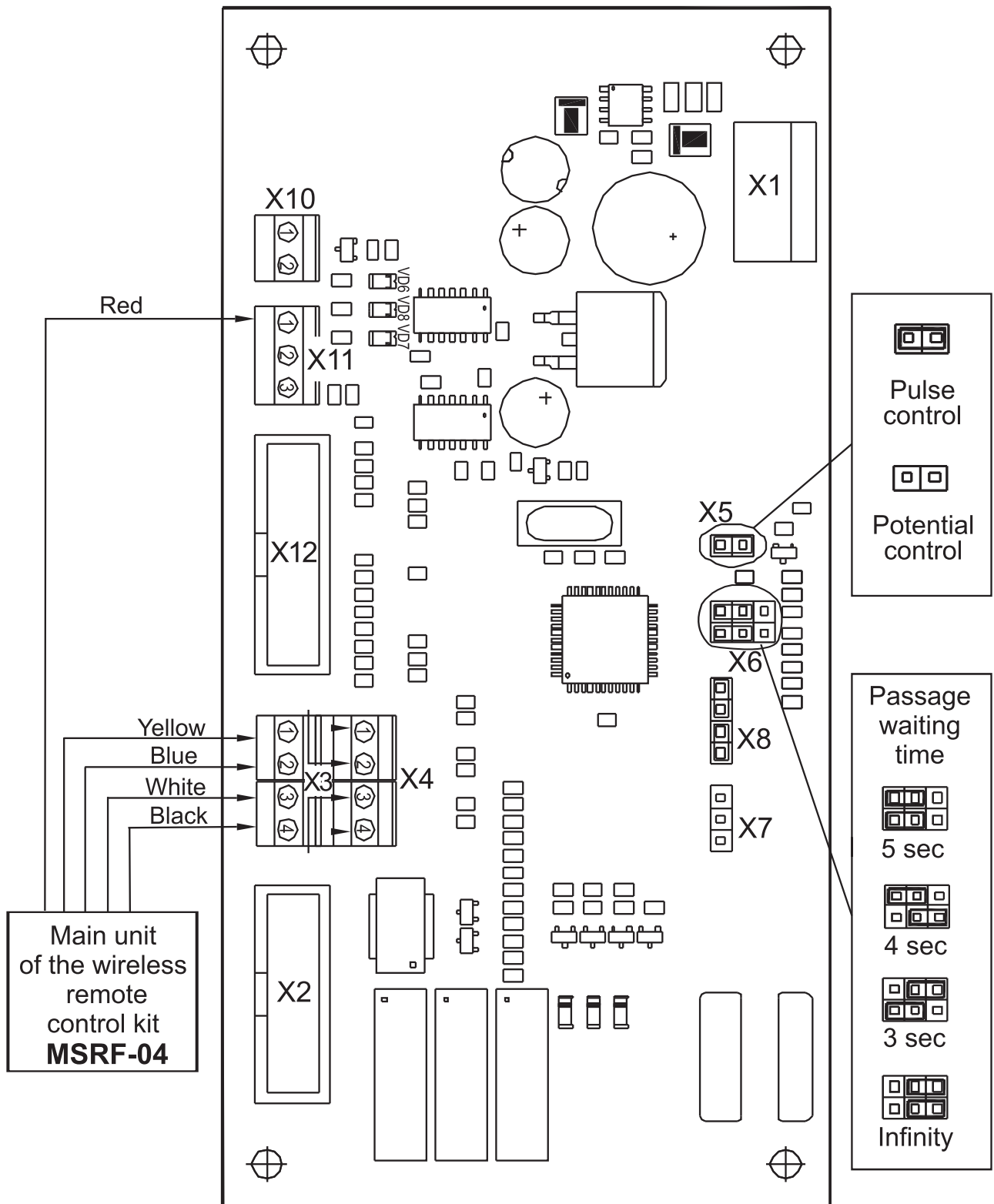


Figure 2A. MSRF-04 connection layout for CU

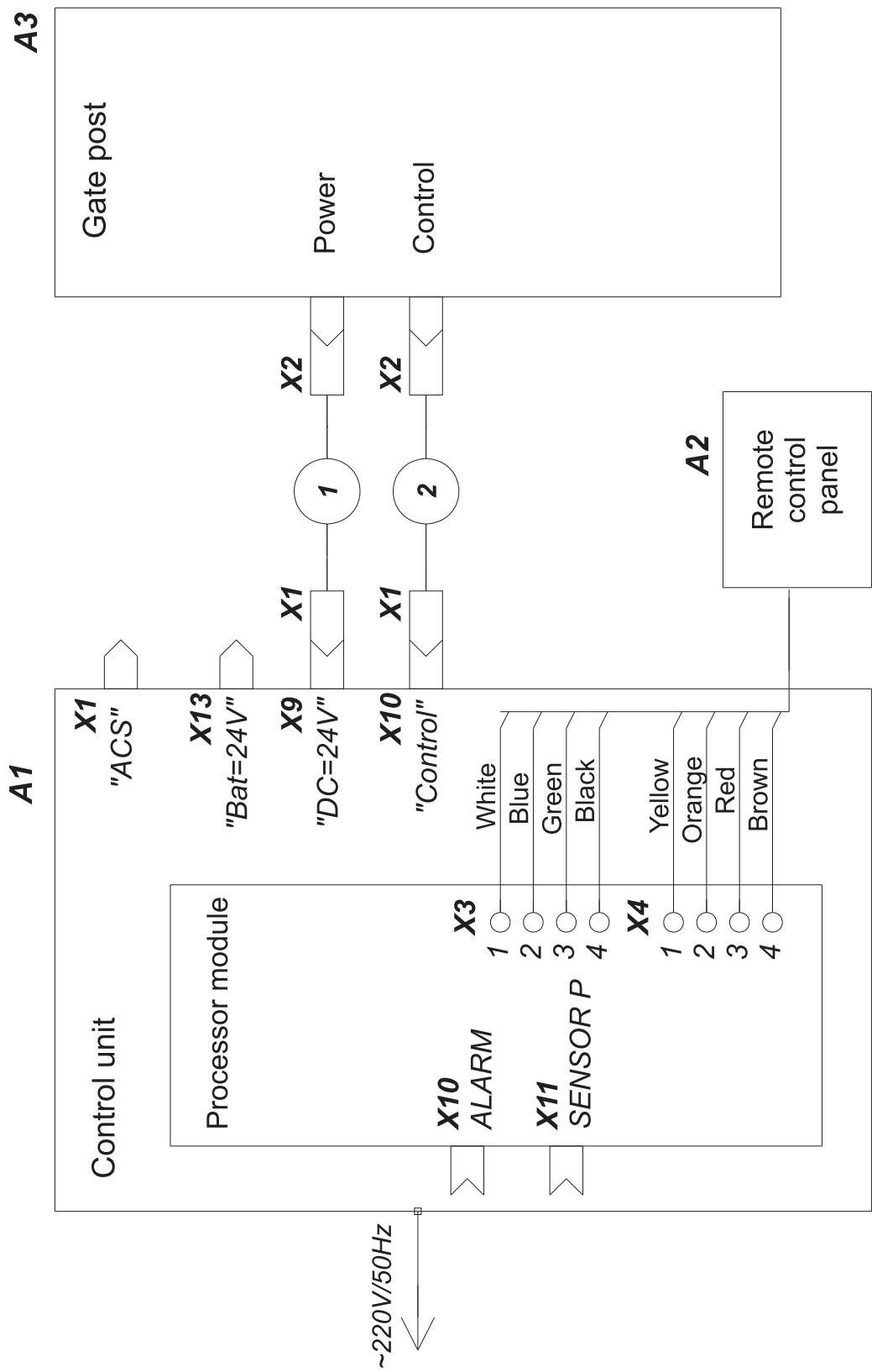


Figure 1B. WMD-04.3S connection layout

Legend	Item	Qty.
A1	Control unit (CU)	1
A2	Remote control panel H-05/4	1
A3	Gate post	1
1	Power cable	1
2	Control cable	1