

1. APPLICATION

LBP-85.1 is a normally-closed electromechanical mortise lock for profile doors (hereinafter – the lock), designed to be used as an operating device as a part of access control system (hereinafter – ACS) to control light and medium office profile doors.

Lock features:

- the lock can be installed in profile doors;
- the lock has a unique construction, allowing to connect lock control cable through the strike plate in the door frame, not through the door leaf, which makes installation easier;
- the lock is designed for use with standard lock cylinders;
- a universal lock construction enables its installation on both right-handed and left-handed doors;
- the lock closes automatically at shutting the door;
- the lock can be released with the key or by a signal from ACS;
- de-energized lock can be released with the key only;
- all components of the lock and strike plate have corrosion-resistant coating;
- the lock is resistant to self-opening (for instance, as a result of a hard kick on the door);
- the design of the lock does not require preventive maintenance and lubrication from the customer for the entire period of operation;
- the lock has low power consumption (max 2 W).

The lock with regard to resistance to environmental exposure complies with GOST15150-69, category NF4.1 (operation in premises with climate control).

Operation of the lock is allowed at ambient air temperature from +1°C to +40°C and at relative air humidity of 75% at +15°C.

Lock storage is allowed indoors at ambient air temperature from -50°C to +50°C. Storage time in closed package is 12 months.

The lock has a marking in the form of label located on its housing. The label contains product name, its serial number, the manufacture date, supply voltage, power consumption and manufacturer contact information.

In standard delivery set the product is packed in two carton boxes, protecting it from being damaged during transportation and storage.

Box dimensions (L × W × H), cm:

Lock box	22×12×4
Terminal block box	19×6×4

Gross weight, kg:

Lock box	max 0.6
Terminal block box	max 0.3

The lock in the original package can be delivered by means of land (railway and road), sea and air transport. It is allowed to stack the boxes while in transit.

2. TECHNICAL SPECIFICATIONS

⚠ Attention!

Due to the continual product improvement the manufacturer reserves the right to introduce amendments in product design without previous notice.

Technical parameters of the lock comply with GOST538-2001 and GOST5089-2011.

DC voltage	11 - 13V
Operational current	0.08 - 0.12A
Power consumption	2W max.
Type (fail-safe performance)	normally-closed
Bolt throw, not less than	14 mm
Centre-to-centre spacing	85 mm
Backset (dormmass)	30 mm
Square hole dimensions for handle pivot	8 mm
Dimensions	46×25×210 mm
Weight	not more than 0.5 kg
Lock type	cylinder ¹
Unauthorized access protection (UAP)	normal, GOSTR 51241-2008
Resistance to opening	I as per GOST5089-2011
Safety requirements	IEC 335-1-94
Electric shock protection class	III as per IEC 335-1-94
MTBF	200 000 number of operations
Average lifetime	8 years

Design and composition of the lock are shown in Fig. 1

3. DELIVERY SET

3.1 Standard delivery set:

Box №1 includes:

Lock	1
Certificate and operation manual	1
Installation template	1

Box №2 includes:

Strike plate with the terminal block (assembled)	1
Assembly set for lock and strike plate installation	1

ⓘ Note:

Strike plate type is chosen by a customer at the time of order. Lock can be supplied with one of the following strike plate types with terminal blocks: **BP-1** or **BP-2**.

¹ The universal construction provides use of standard pin-type lock cylinders, standard EuroDIN (V DIN 18254), e.g. type 8809, 8209, 8259 produced by company ISEO (Italy), or lock cylinders of D series by Wilco Supply (type 254 – 274 – 294, 453, 454, 554). The length of lock cylinder fastening screw should not exceed 50 mm.

⚠ Attention!

For safety purposes in emergency situations the manufacturer recommends to use the lock cylinder with the locking knob from one door side (for exit the premises).

Strike plate BP-1 is used for installation in the following profile doors:

- Door leafs T34, T53, T81, T85 and the door frame T72-14 (manufactured by «Petralyum» LLC) or equivalent dimensionally (Fig. 2).

Strike plate BP-2 is used for installation in the following profile doors:

- Door leafs AGS68_6863, AGS50_5213 and door frames AGS68_6864, AGS50_5215 (manufactured by «Agrisovgaz») or equivalent dimensionally (Fig. 3).

Assembly sets compound for lock and strike plate installation:

Assembly set for the lock with the strike plate **BP-1**:

plate	2
threaded rivet nut M4 FTS/C	2
screw M4×10 DIN965	4
screw M4×16 DIN965	2

Assembly set for the lock with the strike plate **BP-2**:

lock post of 5.5 mm height	2
strike plate post of 7.5 mm height	2
strike plate post of 14 mm height	2
threaded rivet nut M4 FTS/C	4
screw M4×16 DIN965	2
screw M4×25, DIN965	2

3.2 Optional equipment:

The following items are not included in the delivery set and can be purchased optionally:

Lock cylinder with a set of keys	1
Levers with escutcheon plates	1 set
Reed switch	1
Control cable	1
Reed switch cable	1

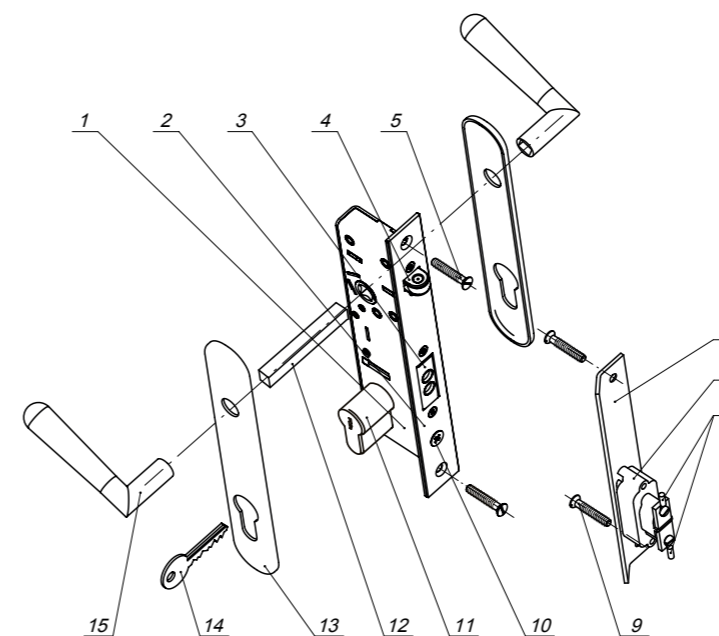


Fig. 1. LBP-85.1 electromechanical lock design

1. Lock
2. Forend plate
3. Bolt throw
4. Locking mechanism roller
5. Lock fixing screw
6. Strike plate
7. Terminal block
8. Terminal clamps
9. Strike plate fixing screw
10. Lock cylinder fastening screw²
11. Lock cylinder²
12. Handle pivot²
13. Escutcheon plate²
14. Key²
15. Lever²

² Not included in the delivery set.

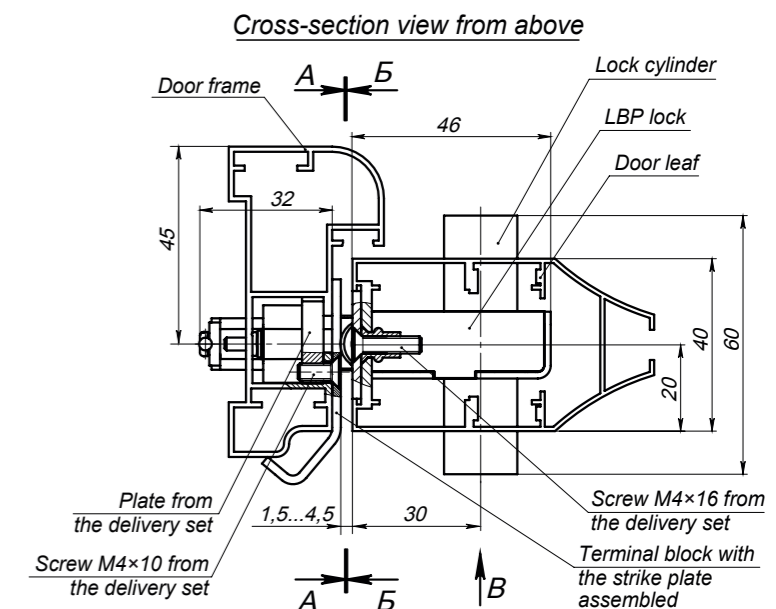


Fig. 2. Lock with the terminal block BP-1 assembled (views A, B and B are indicated in the installation templates)

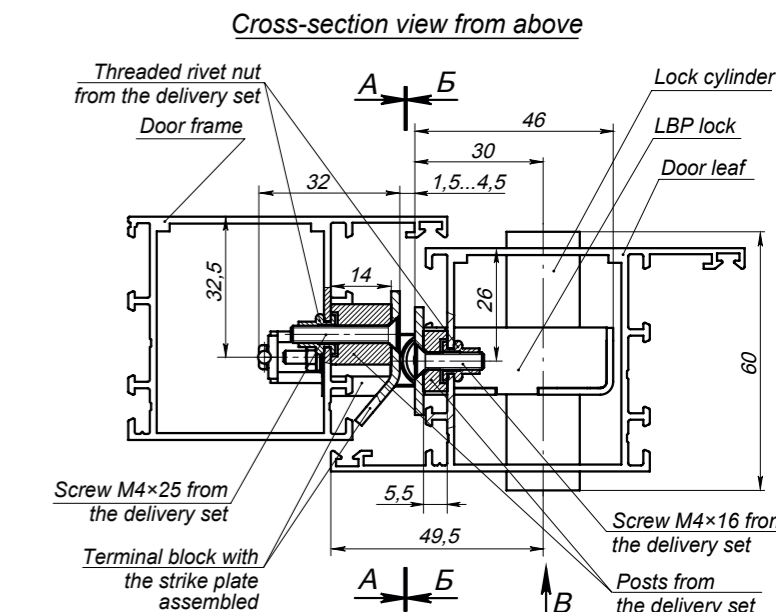


Fig. 3. Lock with the terminal block BP-2 assembled (views A, B and B are indicated in the installation templates)

4. ASSEMBLY AND INSTALLATION

4.1 General recommendations

The lock shall be installed by qualified professionals who have studied this Manual before the installation work.

4.2 Instruments and equipment necessary for installation

The following instruments are recommended for installation:

- Rivet gun;
- Contact clip pliers;
- Cross head screw driver;
- Fishing wire of 1.5 m length.

It's allowed to use other instruments which do not compromise the installation quality.

Table 1. Cables used

	Application	Max length	Type of cable	An example of cable
1	ACS controller cable	30 m	Twin cable with 0.75 mm ² cross-section minimum	HO3VV-F, HO5VV-F 2×0,75
2	Reed switch cable	30 m	Twin cable with 0.2 mm ² cross-section minimum	RAMCRO SS22AF-T 2×0,22 or CQR-2

WARRANTY CARD

Cutting line

Warranty Repair Coupon

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4.3 Installation order

! Attention!

Install the lock and the strike plate according to templates from the delivery set. Make the holes and the location slot as indicated in the templates. The lock operates normally if the spacing between the forend plate and the strike plate is 3 ± 1.5 mm.

Reference numbers are given in accordance with Figure 1. Cables used at the installation are stated in Table 1.

Install the lock in the following order:

1. Unpack the lock and the terminal block (assembled), check the delivery set according to section 3.
2. Set up the threaded rivet nuts in ready-made holes in the door leaf with a rivet gun.
3. **For the lock with the strike plate BP-1.** Mount the lock (1) in a location slot in the door leaf and fix it with two screws M4×16 (5) from the delivery set. (Fig. 2).
4. **For the lock with the strike plate BP-2.** Mount the lock (1) in a location slot in the door leaf. Enclose posts from the delivery set under the lock attachment points and fix the lock with screws M4×16 (5) (Fig. 3).

i Note:

If the posts from the delivery set do not match the used aluminum profile, you can purchase the posts of the necessary height locally.

5. Mount the lock cylinder (11) inside the lock and fix it with the screw (10) through the hole on the lock forend plate (**the screw length is 35-45 mm**).
6. Adjust the door levers (15) with escutcheon plates (13) in accordance with manufacturer recommendations. After the installation levers are to turn easily.
7. Lay the control cable from the ACS to the terminal block installation place inside the door frame. Use cable №1 (Table 1). The cable laying method is determined by lock installer and the Customer.
8. Connect the control cable with terminal clamps (8) from the terminal block. In order to do that, tighten cable ends into terminal clamps.

! Attention!

If the lock is operated as a part of access control system (ACS) it is recommended to install voltage regulator diode BZW06-15B or P6KE16CA, or another model with equal parameters on contact clips (Fig. 4). The voltage regulator diode is used for maintaining the device which sends the control signal.

9. Mount the strike plate with the terminal block in the door frame providing 2-4 mm spacing between the strike plate and the forend plate when the door is closed. The slot of the strike plate must lay symmetrical to bolt's cross-section.

- **For the Strike plate BP-1.** Mount two plates from the delivery set in the door frame and fix them with screws M4×10 (Fig. 2). Mount the strike plate (6) assembled with the terminal block (7) in a ready-made location slot in the door frame. Fasten the strike plate with two screws M4×10 (9) from the delivery set.
- **For the Strike plate BP-2.** Mount the strike plate (6) assembled with the terminal block (7) in a ready-made location slot in the door leaf. Enclose posts from the delivery set under the strike plate attachment points and fix the strike plate with screws M4×25 (9).

i Note:

If the posts from the delivery set do not match the used aluminum profile, you can purchase the posts of the necessary height locally.

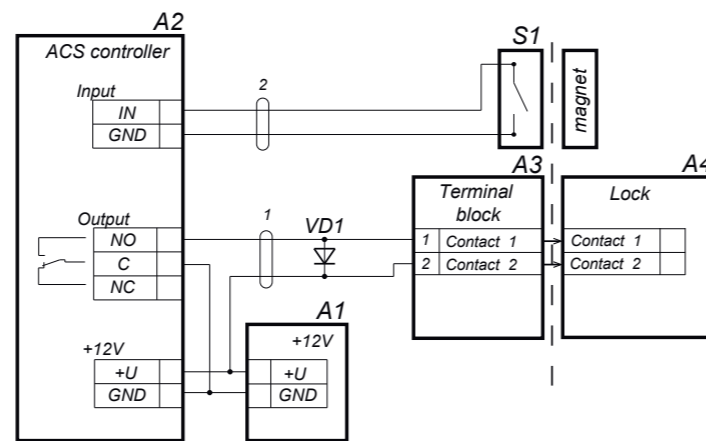
10. Install and connect the reed switch if needed. Use cable №2 in table 1 for connection. Installing the reed switch ensure firm contact closure at closing the door.

11. Connect the terminal block and the reed switch with the ACS controller according to the marking (Fig. 4).

12. Check the lock operation:

- At the opened door sink the locking mechanism roller (4) inside the lock housing. The bolt will move out of the lock housing (3). The lock will be closed.
- Insert the key (14) inside the lock cylinder and turn it against stop to check the mechanical unlocking. The bolt will return into the initial position inside the lock housing.
- Close the door; the lock will lock the door automatically. Energize lock flank contacts with 12V power supply to check the automatic unlocking. Open the door by pressing the lever - the bolt will return into the initial position inside the lock housing and the locking mechanism roller will move out of the lock housing.
- Check several times.

Disassembling of the lock should be made in the reverse order.



Pos.	Unit	Note
1	Control cable of the ACS controller	
2	Reed switch cable	
A1	Power supply unit	12 V, 0,5 A
A2	Lock controller	
A3	Terminal block	
A4	Lock	
S1	Reed switch	
VD1	Suppressor	15-18 V (BZW06-15B, P6KE16CA)

Fig. 4. Lock connection layout

5. MAINTENANCE

✗ Warning!

- Do not use the lock at power supply voltage other than specified in its technical specifications.
- Do not use the lock in operation conditions other than specified in the following Manual.
- Do not use the lock in hostile environment with atmospheric content of acids, bases, oils, etc.

The lock is a normally-closed device, which means that in normal condition de-energized lock is blocked at the closed door.

At door opening the locking mechanism roller automatically moves out of the lock housing. At door closing the locking mechanism roller is sunk into the lock housing, which initiates bolt moving-out and automatic locking. In this case lever turning is blocked.

Unlocking is performed by:

- Turning the key in the lock cylinder. The key is to be turned against stop and kept in such position until the door opens;
- Terminal block clamps' energizing until the door opens. Energizing is operated by the ACS controller. At that the potential operation mode should be set for lock control output.

After lock release the door is opened by turning the lever (approximately at 20°). At lever turning the bolt moves inside the housing and the door can be opened. Door opening detection is performed according to the reed switch status.

6. PERCO WARRANTY

PERCO (the Manufacturer) warrants that the **LBP-85.1** electromechanical mortise door lock (the Product) for profile doors complies with applicable statutory safety requirements, electromagnetic compatibility provided that the instructions on storage, installation and operation, given in the Assembly & Operation Manual are observed. The warranty period is 5 (five) years commencing from the date of sale.

Should there be no date of sale on the warranty card, the warranty period shall commence from the date of manufacture

Within the warranty period the Product is repaired free of charge at the Manufacturer's site.

The Warranty does not cover Products with external mechanical damages or disassembled by the Customer.

Transportation cost to and back from the place of repair shall be borne by the Customer.

Upon lock purchase request the date of sale stamp in the warranty certificate and check the completeness of the delivery set as per the Manual.

In case any questions arise during the Product assembly or operation, PERCO Company is always ready to give you necessary technical support.

Electromechanical Mortise Lock for Profile Doors

LBP-85.1



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Certificate and Operation Manual

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TY 4981-049-88226999-2014



WARRANTY CARD



Electromechanical Lock LBP-85.1
with strike plate

BP-1	
BP-2	

Serial number **6 5 1**

Date of manufacture _____ 201__

Quality Control Seal

Date of sale « ____ » _____ 201__

(signature, seal)

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Warranty repair coupon



Electromechanical lock LBP-85.1
with strike plate

BP-1	
BP-2	

Serial number **6 5 1**

Date of manufacture _____ 201__

Quality Control Seal

Date of sale « ____ » _____ 201__

(signature, seal)