

# HERCULES-10



**UNICONT**

**POWER SUPPLY UNIT HERCULES-10  
OPERATIONS MANUAL**

**POWER SUPPLY  
220AC/24DC 10A**

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## 1 Application

Power Supply Unit (PSU) HERCULES-10 is designed for power supply of different radio- and navigational equipment (current consumption up to 10A) with unregulated voltage 24VDC from power line, 220VAC.

At power drop or significant supply voltage downfall, PSU automatically switches to backup supply from the battery, 24VDC. Switch to backup supply mode is followed by LED indication at PSU case and closing the contacts of relay to output a signal to external device of the alarm system.

## 2 Delivery set

1. Power supply HERCULES-10	- 1 pc.
2. Operations manual	- 1 pc.
3. SPTA: Fuse 3A	- 1 pc.
Fuse 10A	- 1 pc.

## 3 Specifications

Power supply voltage	220VAC $\pm$ 10%, 50/60Hz
Output voltage	24VDC, $\pm$ 15%
Rated load current	10A (the load current is counted in accordance with <b>rated</b> load current value)
Rated power	190W
Ripple	2V
Number of terminals for switched loads	2 pcs
Galvanic isolation of output power from supply main	yes
Operating temperature	-15.. +55 C°
Storage temperature	-60.. +70 C°
Dimensions, mm	263 x 158 x 75
Protection	IP 42
Weight	3.5 kg

## 4 Main features and description

PSU is connected to the power line with voltage 220VAC, 50Hz and supplies load voltage with unregulated voltage 24VDC and rated load current 10A. At power drop or supply voltage downfall below the allowable (critical) level, PSU switches automatically to external battery backup supply of the load. Level of allowable (critical) line voltage drop is controlled by output voltage on the load and is set on the printed circuit by adjustable resistor R4. This level

can be adjusted within the range from 12 to 17.5V with the resistor, if needed. Default factory setting is 16.5VDC.

Power Supply Unit consists of the case and cover. In order to access to terminal assembly you should detach the cover. 2 terminals for connecting loads are available (Fig. 2, XS3 and XS4).

The switch, LED indicators, 2 fuses and terminal box are positioned at the lower panel of the PSU.

LED indicators are assigned to the following functional purposes:

- LINE – indicates line voltage 220VAC (red LED of the switch);
- BATT – is ON in the operational mode from the backup supply 24VDC (red LED);
- OUTPUT – indicates that output voltage 24VDC is ON (green LED).

2 fuses:

- Supply Line Fuse, 3A;
- Fuse at load, 10A.

The Unit is supplied with the built-in alarm system control device, which emits control signal to external executive units of visual/audible alarm equipment. The functioning is based on «dry contacts» closing of the relay in the circuit with supply voltage up to 250VAC and load current up to 8A. Variants of wiring as closing or opening of the external alarm system circuit are available.

## 5 Installation and wiring

Installation and wiring of the Unit should be performed as follows:

1. Detach the cover of the Unit.
2. Fix the PSU to the wall **vertically**. Layout of case mounting should be performed in accordance with Fig.1
3. Connect the ground wire to the ground screw, positioned at the lower right part at the case of the Unit.
4. Insert line power cables, backup supply cables, load cables and alarm system cables inside the device via corresponding cable entries.

**Caution: Unit wiring should be performed when line and backup voltage are deenergized!**

5. Connect line wires 220VAC, 50Hz to mains terminals XS1 in accordance with phasing indicated in Fig. 2.
6. **Check the polarity** when wiring load supply leads to terminals XS3 and XS4.
7. **Check the polarity** of power when wiring backup supply to the terminals XS2.

**Caution: when wiring backup supply (battery), voltage will be applied immediately to the «load» output.**

8. Connecting the Unit to the external alarm system should be performed in accordance with Fig. 3. Connect alarm wire assembly to the terminals XS5. In variant when alarm system operates at closing of the circuit, connect terminals X12, X14 (Fig.3 “A”). In variant when alarm system operates at opening of the circuit, connect terminals X12, X13 (Fig. 3 “B”).
9. Attach the cover of the Unit.

Apply line and backup voltage to check the performance of the Unit. Set the switch of PSU to ON. When voltage is applied to input, red LED of the switch will turn ON (LINE). Green LED (OUTPUT) should also be ON. Turn off the line voltage and make sure that the Unit switched to backup power (red LED indicator (LINE) will turn OFF, red LED BATT will turn ON).

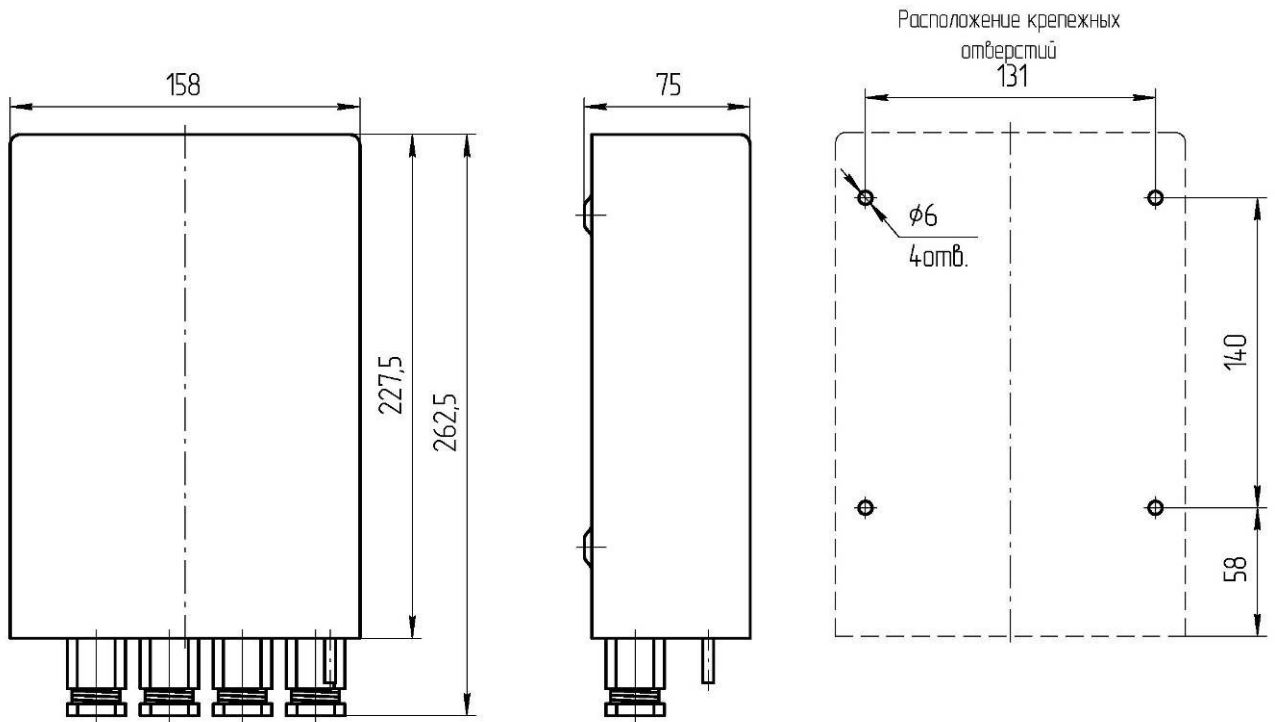


Fig. 1. Mounting dimensions of PSU

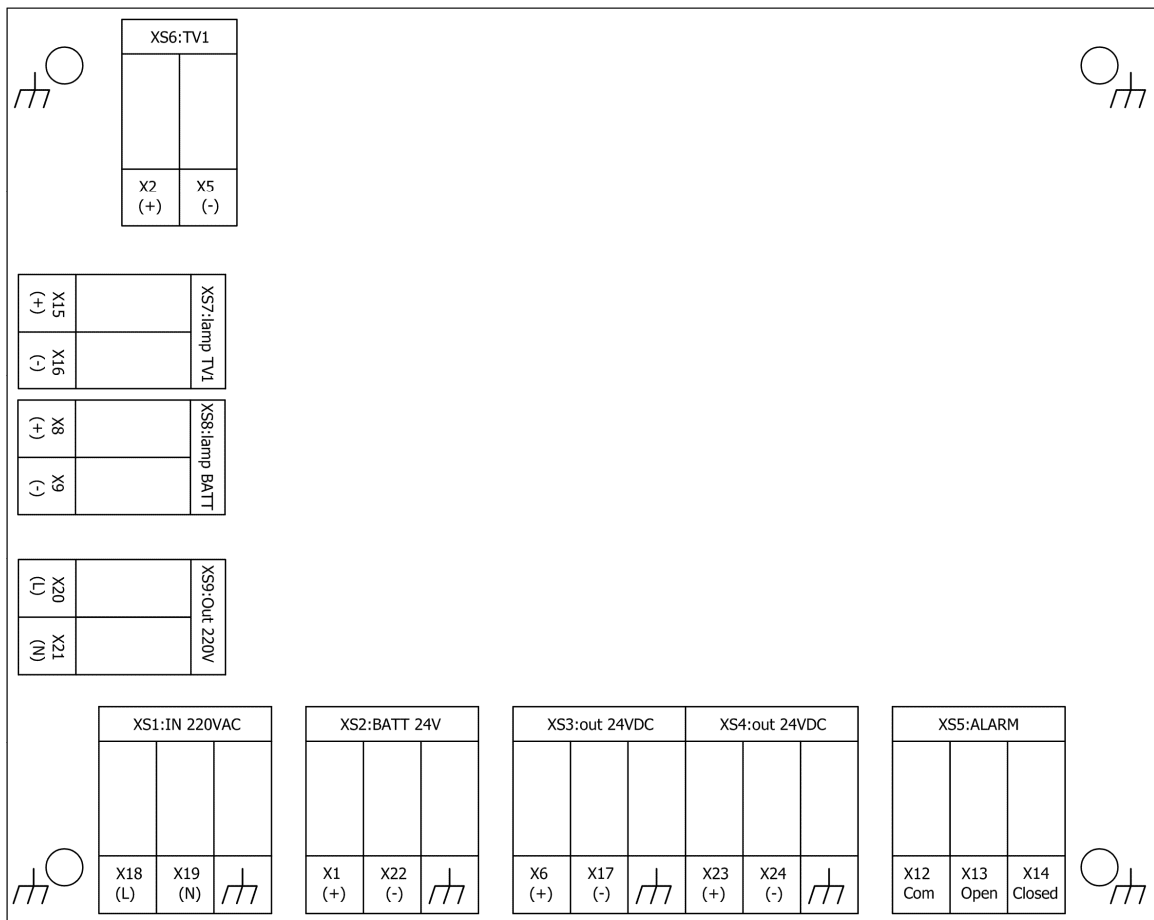


Fig. 2. Terminal assembly layout on the printed circuit of PSU

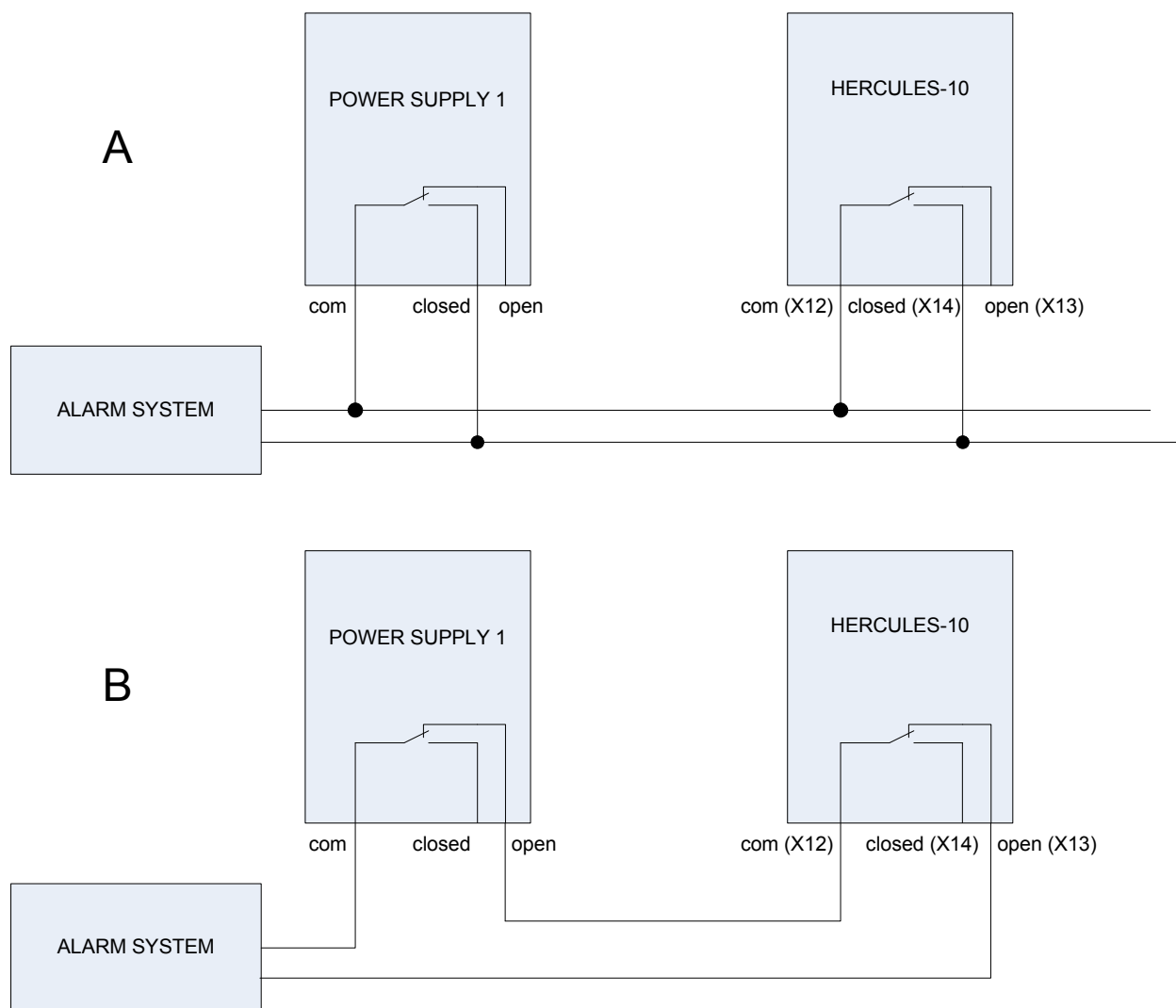


Fig. 3. Connection diagram of the alarm system, operating at closing (A) / opening (B) of the circuit.

## 6 Safety precautions

At installation and operation of the Power Supply it is necessary to follow «Operating rules and regulations of consumer's electric installation» and «Power systems safety standards».

**It should be remembered that, the Unit uses the voltage 220VAC, that might be dangerous and cause an electric shock. Mounting, demounting and repairs of the Power Supply should be performed when the power 220VAC is OFF. Backup power 24VDC should also be OFF.**

**It is prohibited to:**

- operate PSU without protecting grounding;
- insert fuse links to the fuse block exceeding ratings, mentioned at the present Manual;
- expose the Unit to impacts and to stretch the connected cables;

- wire PSU to supply mains with characteristics, different from mentioned in the present Manual;
- operate the Unit when it is out of order;
- mount PSU closer than 2.5 meters from the magnetic compass.

Don't place the Unit into the water. Don't use organic solvents to avoid inflicting damage to the applied images when cleaning the surface of the Unit.

## **7 Maintenance**

In order to keep PSU properly functioning during operational period, routing maintenance should be performed.

Type 1 Routing maintenance includes periodical (no less than once per half-year) visual inspection with dust removal using soft tissue and a brush and performance monitoring on the visual basis: LEDs glowing, voltage at load, switching to the backup mode.

Type 2 Routing maintenance should be performed when faults of PSU are detected and includes performance check of the Unit in compliance with corresponding sections of the present Manual.

If it's impossible to fix the faults of PSU on the spot, it should be forwarded to repairs.

## **8 Transportation and storage**

Transportation is performed using the cardboard wrapper at any enclosed vehicle.

## 9 Warranty

The manufacturer guarantees normal operation of the HERCULES-10 in case of compliance with transportation, storage, mounting and operation rules and regulations.

Warranty period of the Unit shelf life is 18 months from the date of selling.

Warranty period of operation is 12 months from the date of commissioning of the Unit.

During warranty period the owner can claim a free repair or separate block replacement, if the defect is due to manufacturer's fault. Warranty repairs are performed if the following documents are present:

- given Operations Manual;
- Approval certificate;
- Commissioning report.

Manufacturer can not be held liable for Unit malfunctioning and suspends any warranty liabilities in the following cases:

- noncompliance with rules of mounting, operation and transportation;
- applying of the non-standard electric apparatus;
- an attempt to perform repair by any person who is not an authorized representative of the Manufacturer;
- loss of marketability, and case integrity and for reasons beyond the control of the manufacturer.

If the commissioning mark is absent, period of warranty repairs is reckoned from the date of selling of the Unit.

Should the present Operations Manual be lost, duplicates of acceptance report and commissioning report are not issued, and the Owner forfeits his right for free repair during the warranty period.



## 10 Purchase information

Serial number \_\_\_\_\_

Packing date \_\_\_\_\_

Supplier: **UNICONT Ltd. Co.**

Stamp here

## 11 Approval certificate

Power Supply Unit HERCULES-10 is in accordance with documentation and is considered in working order.

Serial number \_\_\_\_\_

### **Delivered by:**

Name of Organization \_\_\_\_\_

Full name \_\_\_\_\_ signature \_\_\_\_\_

### **Accepted by:**

Name of Organization \_\_\_\_\_

Full name \_\_\_\_\_ signature \_\_\_\_\_

Acceptance date \_\_\_\_\_

## 12 Commissioning report

Power Supply Unit HERCULES-10

Serial number \_\_\_\_\_

The Unit has been commissioned.

Date \_\_\_\_\_

Place of installation

\_\_\_\_\_  
\_\_\_\_\_

Installed by \_\_\_\_\_  
(full name, signature)

