BATTERY BACKED POWER SUPPLY

RIP-24 model 01 (RIP-24-3/7M4)

ИСО 9001

INSTRUCTION MANUAL

1 TECHNICAL INFORMATION

1.1 General

1.1.1 Battery Backed Power Supply RIP-24 model 01 (RIP-24-3/7M4) (referred to as the RIP below) is designed to provide electric power to various fire and intrusion detectors as well as control and indicating equipment which require uninterrupted 24 VDC for operation.

1.1.2 The RIP is round-the-clock operating device with specified output parameters and sealed backup batteries which are tested and charged automatically. The RIP provides shutting the batteries off from the load circuit to avoid their unacceptable discharge.

1.1.3 The RIP provides light and audible indication of its current status, i.e. of normal or no voltage, battery charge, output short failure or overload, battery missing or shutting down when discharged.

1.1.4 When operated, the RIP should be protected against atmospheric fallout and mechanical damage. The RIP is not designed to be used in explosion-hazardous premises.

1.1.5 In terms of climate tolerance, the RIP meets the conditions of moderately cold climate, installation Category III as per GOST 15150-69, but to be used within temperature ranges of 263 K to 313 K (-10°C to +40°C) and ambient humidity of up to 90% at 298 K (25°C).

1.1.6 In terms of mechanical tolerance, the RIP corresponds to Category LX in accordance with GOST 12997-84: vibration within 1Hz to 35 Hz when accelerated up to 4.9 m/s^2 (0.5 g).

1.2 Specifications

1.2.1 The main power supply is the mains power 150…253 V, 50Hz.

1.2.2 The backup battery power supply is represented by two batteries «Delta» DTM1207 (12 V, 7 Ah) or similar with equivalent parameters (with five-year life time at least).

The RIP is supplied with no batteries!

1.2.3 The rated output voltage is 27.0±1.2 V when powered by mains and the batteries are charged (if the batteries are discharged the minimum output voltage is 22.0±1.0 V).

1.2.4 The rated load current is 3 A.

1.2.5 The maximum load current (for short-duration periods once per an hour) is 4 A/2 minutes (when powered by mains and the batteries are connected).

1.2.6 The current consumed from mains at rated load and maximum battery charging rate:

- 1.3 A max at 150 V input voltage;
- 0.9 A max at 220 V input voltage.

1.2.7 The current consumed by the RIP itself from the battery doesn't exceed 30 mA.

1.2.8 Ripples of the output voltage (peak-to-peak) at normal load current don't exceed 60 mV.

1.2.9 The low battery shutdown voltage is 20.4±1.2 V.

1.2.10 The backup operating time of the RIP in case of charged batteries at load current 1 A is 5 hours minimum (if the load current decreases, the operating time increases proportionally).

1.2.11 Overall dimensions: 340 mm × 270 mm × 100 mm max.

1.2.12 Weight with batteries: 8 kg max.

1.2.13 The RIP provides protecting its output against short circuit failures with recovering output voltage automatically after repairing the failures while being powered by mains and by batteries.

1.2.14 The RIP-24 provides output of information to the NPN output in case of switching to powering by the backup batteries (in state of no mains power) or a short failure in the load circuit. The NPN output is opened when AC line fails and the RIP is operating in battery mode or in case of a short load circuit failure, and it is closed when the RIP is powered by mains power. The maximum NPN output permissible voltage and switching current are 30 V and 100 mA respectively.

1.2.15 The RIP provides connecting two extra 12 V batteries of 17 Ah each placed in a special Box-24 Mod.0 to increase the time of operation from the batteries (with total capacity of all RIP batteries being equal to 2×24 Ah).

1.2.16 The RIP provides immunity to electromagnetic interference of the third severity level according to Russian Standard GOST R 50009-2000.

1.2.17 Radio disturbances from the RIP operation do not exceed the values specified in GOST R 50009-2000.

1.2.18 The average lifetime of the RIP is at least 10 years provided that batteries are replaced at least once per 5 years.

1.2.19 The pre-operation time of the RIP after powering up is 10 s maximum.

1.2.20 The RIP is designed to provide its fire safety while emergency operating and on violations of operation rules as per GOST 12.1.004-91.

1.2.21 The ingress protection rating of the RIP is IP30 as per GOST 14254-96.

1.2.22 According to the content of precious materials the product does not require accounting for storage, writing-off, and/or disposal.

1.3 Standard Delivery

1) Battery Backed Power Supply RIP-24 mod.01	– 1 pc.
2) Instruction Manual	– 1 copy
3) Fuse 2 A	– 1 pc.
4) Woodscrew	– 3 pcs.
5) Wall Plug 8x40	– 3 pcs.
6) Grommet	– 2 pcs.
7) Wire	– 1 pc.
8) Key	– 2 pcs.
9) Packaging	– 1 pc.

2 OPERATION INSTRUCTIONS

2.1 Safety Precaution

2.1.1 The current carrying circuits connected with mains power 220 V are a source of potential hazard.

2.1.2 Measures for Safety:

1) Do periodically inspect proper RIP grounding;

2) Regularly ensure that the nominal of the fuse is the same as specified in operation documentation;

3) Never open the RIP unless AC line is shut off.

2.1.3 While operating, the RIP must be grounded properly to protect a person against electric shock in accordance with protection Class I as per GOST R IEC 60950-2002.

2.1.4 Do shut off AC line power prior to mounting, installing or maintaining the RIP.

2.1.5 Only qualified staff certified with the third or higher safety qualification level can mount and maintain the RIP.

CAUTION! Connecting the RIP to the mains utility power please KEEP UP the correct coupling of LINE and NEUTRAL TERMINALS in agreement with the picture located inside the cabinet closely to power terminal block.

2.2 Mounting and Preparing for Operation

2.2.1 The RIP is to be installed on walls or other structures in the protected premises in places protected against atmospheric precipitations, mechanical damage, and unauthorized access.

2.2.2 Attach the RIP at the selected location. Overall and mounting dimensions are shown in Figure 1.

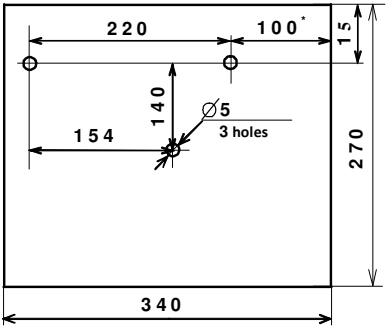

Figure 1

2.2.3 As shown in the RIP connection diagram attached on the internal side of the cabinet door:

a) **Ground the RIP** by connecting the terminal «⏚» (XT1/5) of the input terminal block with the grounding circuit;

b) Connect mains wires with the input terminal block of the RIP, the F1 (2 A) fuse being preliminary removed from the terminal block. The **LINE wire must be connected to the terminal XT1/4**;

c) Connect the load to the output terminal block observing polarity (XT2/7,8 to «+» and XT2/4,5,6 to «-»). If several load devices are to be connected then Bolid manufactured BZK DC Power Modules are recommended to be used;

Note: The rated load current is 3 A. Short-term operation of the RIP is allowed once per hour at a load current of up to 4 A (2 min) when sound alarms, extinguishing control units, control appliances, etc. are turned on.

d) In order to indicate remotely switching the RIP to backup power or a short circuit failure, connect the RIP to the alarm loop of the devices to be powered. An example of connecting the RIP with alarm loops of such devices as Signal-20P, S2000-4, and similar is shown in Figure 2. A termination resistor 4.7 K provided with the devices is to be installed inside the RIP.

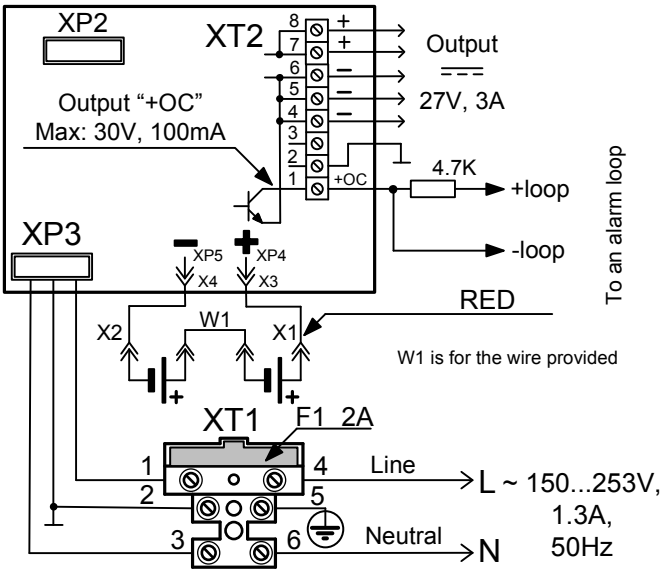

Figure 2

2.3 Usage

2.3.1 Starting the RIP

Attention! Prior to turning the RIP on, ensure that it is mounted properly!

a) Connect the batteries to the terminals observing polarity (the red wire is to be connected to the positive lead of the battery).

б) Insert the fuse F1.

в) Switch on mains power 220 V, 50 Hz.

2.3.2 Operating the RIP

a) When mains power is on, the LEDs POWER, 24 V, and CHARGE are lit while RIP sounder remains in silence.

Note: If the batteries are charged (the battery voltage exceeds 26 V) then the CHARGE LED is off.

b) After applying mains power to the RIP its batteries are tested. If no batteries are connected (or are out-of-service, or battery voltage is below 20 volt) then the sounder and the CHARGE indicator turn on in interrupted mode for 8-10 seconds. After that the sounder is hushed, but CHARGE indicator flashes until batteries are connected. Battery testing procedure is carried out periodically (at least once every 8 hours). If no batteries are found, then CHARGE indicator flashes again.

c) In the events of a short load circuit failure or a prohibitive output overload (in AC line operating mode), after 3 s the RIP turns on in the interrupted mode with the interval of 1 -2 second until the trouble disappears. The 24 V and CHARGE indicators are off. The POWER indicator and the sounder turn on in interrupted mode. After failure's disappearing the RIP automatically continues normal operating.

d) When mains power supply fails the batteries begin to power the load circuit, the 24 V indicator being turned on and the sounder going off periodically. The POWER and CHARGE indicators are off.

e) If the voltage of the batteries has dropped to 22 V the sounder switches on and off five to ten times more rapidly. It is necessary to take measures to restore mains power line as soon as possible.

f) If the voltage of the batteries has dropped below 20 V, then, to avoid deep discharge of the batteries, the batteries are shut off from the load. In such case the POWER and 24 V indicators are off, the CHARGE indicator is flashing, and audible alarm is sounding within two first hours. In 2 hours the RIP will be transferred to low battery powering mode, with the CHARGE indicator and sounder turning on once every 10 seconds.

If the AC power is expected to be not available for more than 7 days, then, to avoid an overdischarge of the batteries, disconnect them from the RIP board.

Performance of LED indicators and the sounder as well as actions of the staff depending on various circumstances are shown in Table 1.

Table 1

RIP Current Status	POWER LED	CHARGE LED	24 V LED	Sounder	Human Action
Mains power are applied, no batteries are connected	ON	Turns on every 1-2 s	ON	Turns on every 0.5-1 s within 8-10 s	Connect the battery
Normal mains power, the batteries are not charged	ON	ON	ON	OFF	–

RIP Current Status	POWER LED	CHARGE LED	24 V LED	Sounder	Human Action
Normal mains power, the batteries are charged	ON	OFF	ON	OFF	–
Normal mains power, a short circuit failure (overload) at the output for more than 3 s	Flashes every 1-2 s	OFF	OFF	Beeps twice every 1-2 s	Repair load failure
AC power failed, an output short failure or overload	OFF	OFF	OFF	OFF	Repair load failure
AC power failed, the battery voltage is above 22 V	OFF	OFF	ON	Beeps once every 4-5 s	Check operability of the F1 fuse and repair mains power
AC power failed, the battery voltage is above 22 V	OFF	OFF	ON	Beeps once every 0.5-1 s	Repair mains power
AC power failed, the batteries are discharged	OFF	Flashes once every 1-2 s	OFF	On	After recovering mains power, test the battery charge-discharge cycle *

Note: – * After disconnecting the batteries from the load circuit and recovering utility power it is recommended to check the battery charge-discharge cycle. If the CHARGE LED has been still lit after 24 hours since having restored power then the battery operability has been to be checked. If extra batteries are connected the charge time will be increased.

2.3.3 How to Turn the RIP Off

а) Turn off the mains power 220 V.

б) Disconnect the batteries.

в) Remove the fuse F1.

г) Disconnect the load.

3 MAINTENANCE

Preventive maintenance of the RIP should be carried out at least annually. Maintenance works are to be performed by a service company employee and include:

1) Visual inspection of the RIP;

2) Checking the output voltage value when the load is connected as specified in Section 1.2.3 of this Manual and checking the output voltage value when the RIP is powered by batteries;

3) Testing LED and sound indication as per Table 1 of this Manual;

4) Inspection of proper fastening of the RIP, tightening of contacts, and wire integrity;

5) Replacing the batteries when necessary but at least once per 5 years.

4 MANUFACTURER WARRANTY

4.1 The manufacturer guarantees that the RIP meets technical requirements specified in the manuals if the user follows the instructions for shipment, storage, installation, and usage.

4.2 Warranty period is 18 months but no more than 24 months from the manufacturer's date of issue.

4.3 In case of any issue related to setting and use of the product, please contact the technical support: +7 (495) 775-71-55 or e-mail: support@bolid.ru.

4.4 When submitting the product for repair, it shall be accompanied with descriptions of possible fault.

Claims shall be submitted to the following address:

NVP BOLID CJSC, Pionerskaya #4, Korolyov city, Moscow region, Russia, 141070.

Phone/fax: (495) 775-71-55 (multiline), 516-93-72.

E-mail: info@bolid.ru; Support : **support@bolid.ru**, **http://bolid.ru**.

5 CERTIFICATES

5.1 Battery Backed Power Supply RIP-24 model 01 (RIP-24-3/7M4) meets the requirements of technical regulations of the Custom Union TR CU 004/2011; TR CU 020/2011. Approved by Conformity Certificate № RU C-RU.ME61.B01270.

5.2 Manufacture of RIP-24 model 01 (RIP-24-3/7M4) is approved by Conformity Certificate GOST R ISO 9001-2015 № РОСС RU.АБ66.К00003.

6 ACCEPTANCE AND PACKAGING CERTIFICATE

6.1 Battery Backed Power Supply RIP-24 model 01 (RIP-24-3/7M4), Serial Number _____, is manufactured and accepted in accordance with requirements of state standards and applicable technical documentation and approved as ready for operation.

6.2 Battery Backed Power Supply RIP-24 model 01 (RIP-24-3/7M4) is packaged by CJSC NVP Bolid in line with the requirements provided in the current technical documentation.

Responsible for acceptance and packaging

QCD _____ _____

Full Name Data, Month, Year