

## SHUTTING OFF RIP-24

1. Shut off the mains power supply 220 V.
2. Detach the batteries.
3. Remove the fuse F1.
4. Disconnect the load circuit.

## MAINTENANCE

The maintenance of the RIP-24 is to be carried out annually. The maintaining operations include:

- 1) Visual inspection of the RIP-24 to discover mechanical injuries and to clean any dirt or dust if presented.
- 2) Checking the output voltage value when the load is connected as specified in SPECIFICATION and checking the output voltage value when the RIP-24 is powered by batteries.
- 3) Testing LED and sound indication to meet the requirements of Table above.
- 4) Inspection of proper attaching of the RIP-24, tightening of contacts, and wire integrity.
- 5) Replacing the batteries when necessary but at least once per 5 years.

## MANUFACTURER

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# BATTERY BACKED POWER SUPPLY

## RIP-24 model 01

### INSTRUCTION MANUAL

#### GENERAL

Battery Backed Power Supply RIP-24 model 01 (referred to as RIP-24 below) is designed to provide electric power to various fire and intrusion detectors as well as control and indicating equipment suited for uninterrupted 24 VDC. The RIP-24 is round-the-clock operating device with specified output parameters and sealed backup batteries which are tested and charged automatically. The RIP-24 provides shutting the batteries off from the load circuit to avoid their unacceptable discharge.

The RIP-24 provides light and audible indication of its current status, i.e. normal or no voltage, battery charge, output short failure or overload, battery missing or shutting down when discharged.

Being powered by mains power and by backup batteries, the RIP-24 provides its outputs against short circuit failures with automatic recovering output voltage after repairing the failures.

When operated, the RIP-24 should be protected against atmospheric fallout and mechanical damage. RIP-24 is not designed to be used in explosion-hazardous premises.

#### SPECIFICATION

AC Input Voltage Range:	(220+22-33) VAC
Backup Power Supply:	two batteries «Delta» DTM1207 12 V @ 7 Ah or analogous (with the lifetime of at least 5 years)
	<b>No batteries are provided with the power supply</b>
Output Voltage Range:	27.0 ± 1.2 VDC at both AC and charged battery powering; 22.0 ± 1.0 VDC min provided the battery is discharged
Load Current Rating:	3.0 A
Maximum Load Current:	4.0 A for 2 min, once an hour, at both mains and battery power
Input Current Consumption:	0.7 A max at rating load
RIP-24 Consumption From the Battery:	30 mA max
Ripple (mVp-p)×2:	30 mV maximum at rating load current
Battery Low Shutdown:	20.4±1.2 VDC
On Battery Run-Time:	at least 5 hours for 1 A load current at 25°C (the run-time increases in inverse proportion to the load current)
Pre-Operation Time:	3 seconds max
Operating Temperature Range:	from -10°C to +40°C
Relative Humidity:	up to 90% at +25°C
Overall Dimensions:	340 mm × 270 mm × 100 mm
RIP With Batteries Weight:	12 kg maximum
Typical Lifetime:	10 years, the batteries being to be replaced once every 5 year

The RIP-24 provides outputting a signal 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-24 is operating in battery mode or in case of a short load circuit failure, and it is closed when the RIP-24 is powered by mains power. The maximum NPN output permissible voltage and commutation current are 30 V and 100 mA respectively.

The RIP-24 provides connecting two extra 12 V batteries of 17 Ah each placed in a special Box 2x17Ah to increase the time of operation from the batteries (with total capacity of all RIP-24 batteries being equal to 2×24 Ah).

#### STANDARD DELIVERY

Battery Backed Power Supply RIP-24 mod.01	1
Instruction Manual	1
Fuse 2A	1
Round Head Wood Screw	3
Wall Plug	3
Plastic Bushing	2
Wire	1
Lock Key	2

## SAFETY PRECAUTIONS

Current-carrying RIP-24 circuits at 220 V are dangerous and can bring human injury.

Ground the RIP-24 properly before operating.

Do periodically inspect proper RIP-24 grounding and fuse operability.

Never open the RIP-24 unless AC line is shut off.

Do shut off AC line power before mounting, installing or maintaining the RIP-24.

Only skilled personnel trained in electric codes and work safety rules should service the device.

**ATTENTION! Connecting the RIP-24 to the mains utility power supply please KEEP UP the correct coupling of LINE and NEUTRAL TERMINALS in agreement with the picture located inside the cabinet close to power terminal block.**

## MOUNTING AND WIRING

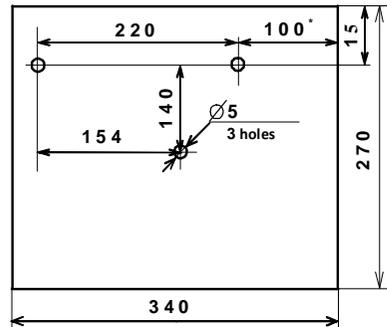


Figure 1

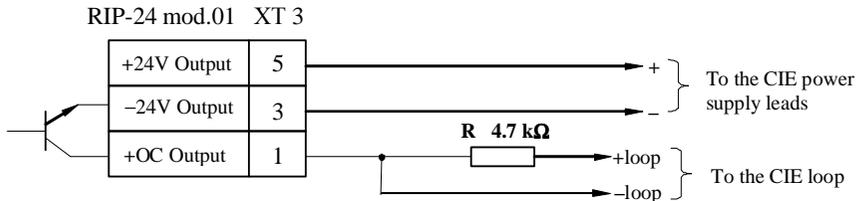
The RIP-24 is to be mounted on a wall or another construction on premises protected against atmospheric fallout, mechanical damage and unauthorized access. The RIP-24 mounting dimensions are shown in Figure 1.

Attach the RIP-24 at the selected location.

Then, in accordance with wiring diagram fixed at internal side of the RIP-24 door do the following:

- 1) **Ground the RIP-24** coupling the contact "⚡" (XT1/5) located on the input terminal block with a ground network.
- 2) Having removed F1 (2 A) fuse, connect mains power supply wires to the input block terminals. **LINE must be connected to XT1/4.**
- 3) Connect load circuits to the output terminal block keeping the proper polarity (contacts XT3/4,5 to "+" and XT3/2,3 to "-"). If several load circuits are to be connected to the RIP-24, you are recommended to use Bolid manufactured BZK DC power distribution modules.

**Note:** Load current rating is 3 A. The maximum current consumption from RIP-24 can reach up to 4 A within 2 minutes once per hour in case of activating sound alarms, executive devices, and automated fire extinguishing systems.



R is the Loop End-Of-Line Terminator provided with the CIE; it is to be installed within the RIP-24 enclosure

Figure 2

4) To transmit RIP-24 trouble messages about mains power failures or load circuit short failures remotely, connect the RIP-24 open collector transistor, or NPN output (+OC output) to an alarm loop of a powered control and indicating equipment, e.g. S2000-4, Signal-20P, etc. The example of such wiring is demonstrated in Figure 2.

## STARTING UP

Before the first turning on ensure the RIP-24 mounting has accomplished correctly.

Firstly, connect the batteries to the terminals taking into account the polarity (the red wire is connected to the positive lead of the battery).

Then, insert the fuse F1.

Finally, turn on mains power 220 V @ 50 Hz.

## OPERATION

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

**Note:** The batteries being completely charged and their voltage being over 26 V, CHARGE LED will not be lit.

- b) After powering up the RIP-24, its batteries are tested. If the batteries are not connected or their voltage is below 20 volt then the sounder and CHARGE indicator go off in interrupted mode within 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.
- c) In the events of a short load circuit failure or an output overload (in AC line operating mode), after 3 s the RIP-24 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 begins to flash once every 1-2 seconds, the sounder being sounding in interrupted mode. After failure's disappearing the RIP-24 automatically continues normal operating.
- d) When mains power supply fails the batteries begin to power the load circuit, 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-24 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-24 PCB.**

LEDs and sound indicator behavior along with required human actions are shown in Table below.

RIP-24 Current Status	POWER LED	CHARGE LED	24V LED	Sounder	Human Actions
Mains power is starting up, no batteries are connected	ON	Flashes once every 1-2 s	ON	Sounds for 8-10 seconds in interrupted mode	Connect the batteries
Normal AC line voltage, the batteries are not charged	ON	ON	ON	OFF	-
Normal AC line voltage, the batteries are charged	ON	OFF	ON	OFF	-
Normal AC line voltage, an output overload / short failure for more than 3 s	Flashes once every 1-2 s	OFF	OFF	Beeps twice every 1-2 s	Repair load failure
AC line failed, an output short failure or overload	OFF	OFF	OFF	OFF	Repair load failure
AC line failed, the battery voltage is above 22 V	OFF	OFF	ON	Beeps once per 4-5 seconds	Inspect fuse F1 operability and recover the mains line
AC line failed, the battery voltage is below 22 V	OFF	OFF	ON	Beeps once per 0.5-1 second	Repair the AC line
AC line failed, the batteries have been discharged	OFF	Flashes once every 1-2 s	OFF	ON	After recovering mains power, test the battery charge-discharge cycle *

## Note:

\* After detaching the battery from the load circuit and recovering utility power it is necessary 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 to be checked. If extra batteries are connected the charge time will be increased.