

## 24 V DC UPS FOR EXTERNAL BATTERY 17-130 AH. 10 A

UB10.242  
 DC UPS 24V dc I/P 24V dc 10A O/P 17-130Ah

- Load current 10 A
- Requires just one 12 V dc battery
- Battery charging with temperature compensation
- Electronic overload/short-circuit protection
- Relay outputs for status



### PRODUCT DESCRIPTION

UB10.242 is primarily intended for use where there are requirements for long back-up times with relatively low current. A complete DC-UPS system consists of a control unit and battery, and power supply with suitable power for the application. In the event of a power outage, the battery is automatically switched in and supplies the connected loads. The control unit requires just (1) 12 V battery that then transforms the battery voltage up to 22.3 V dc. Two batteries do not need to be matched with one another and the output voltage does not follow the battery's discharge curve but is instead constant at 22.3 V. The battery capacity is utilized 100 % compared with two batteries connected in series, where one of the batteries is not fully charged.

Two relay outputs indicate status; the module is ready (battery capacity >85 %) and the module is active (back-up mode). The control unit tests the battery's condition in cycles. When it is time to replace the battery, a relay output is activated (replace battery). The control unit has an integrated temperature sensor to optimize the final charging voltage. If the battery is placed at another location and the ambient temperature differs from the control unit, a compensation must be set, which is done using a switch on the front. To attain the longest lifetime for the battery, we recommend placing the battery in the coolest part of the cabinet. The back-up time is dependent on the capacity and performance of the battery and the load current. On the data sheet, we show some times for different standard batteries. The control unit protects the battery from deep discharge. The control unit shuts off the back-up function when the battery voltage drops under a given value. There is also an input, Inhibit, for external shut-off of the back-up time.

In the event of a battery fuse fault, the "ready" output is deactivated and a red LED lights on the control unit. The output is current limited and turns itself off after about 5 seconds after a short circuit to spare the battery and at the same time, avoids tripping the battery fuse. In the event of a short circuit in the battery mode, the module supplies about 20 A, which helps trip any secondary fuses.

Monitoring of the battery fuse and current limitation in the event of short circuits provides increased reliability and guarantees that the UPS will function after a short circuit. The input is galvanically isolated from the output side.

#### Backup times

|                                       |  |
|---------------------------------------|--|
| Discharge curve with 2 A load current | Discharge curve with 10 A load current |
|---------------------------------------|--|

## TECHNICAL DATA

### INPUT DATA

|                                       |         |
|---------------------------------------|---------|
| <b>Input voltage from the unit</b>    | 24 V DC |
| <b>Input voltage from the battery</b> | 12 V DC |

|                                      |           |
|--------------------------------------|-----------|
| Input voltage for battery connection | 22.8 V DC |
| Input current during charging        | 2 A       |

## OUTPUT DATA

|  |                   |
|--|-------------------|
| Output current at 24 V dc                | 10 A              |
| Output voltage for battery operation     | 22.25             |
| Output voltage normal operation          | 24 V DC           |
| Output voltage at buffering              | 22.25 V DC        |
| Output current for battery operation max | 10 A (15 A @ 5 s) |
| Output current during operation max      | 15 A              |

## EFFICIENCY / LIFETIME / MTBF

|                  |                         |
|------------------|-------------------------|
| Efficiency       | 97.8 %                  |
| Life span        | 114 000 h @ 10 A, 40 °C |
| MTBF (IEC 61709) | 886 000 h @ 10 A, 40 °C |

## DIMENSIONS

|        |          |
|--------|----------|
| Width  | 49 mm    |
| Height | 124 mm   |
| Depth  | 117 mm   |
| Weight | 0.545 kg |

## OTHER

|                                      |   |
|--------------------------------------|---|
| Approvals                            | ABS, CB, CE, CSA, CSA US, EX, GL, IECEx, UL |
| IP class                             | IP20  |
| Charging the battery type            | 3 A   |
| Material protection                  | Aluminium                                   |
| Ripple max                           | 20 mV pp                                    |
| Voltage level for battery connection | 22.3 V DC                                   |
| Temperature min without derating     | -25 °C                                      |
| Temperature max without derating     | 50 °C                                       |
| Permitted battery sizes              | 17-130 Ah                                   |
| Type Power Supply                    | DC-UPS                                      |

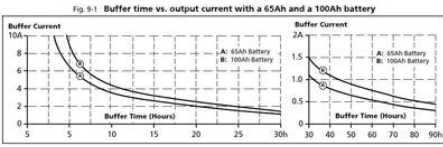


Fig. 25-2 Front view

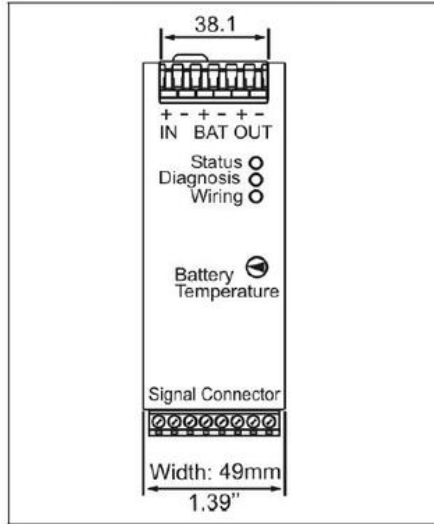


Fig. 24-1 Side view

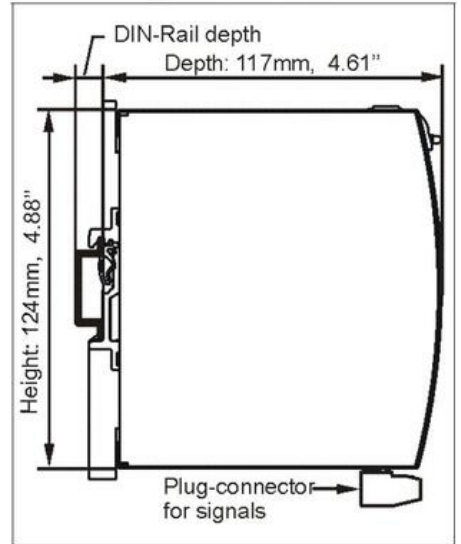


Fig. 25-1 Typical wiring diagram

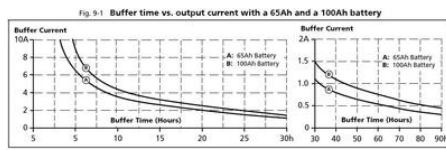
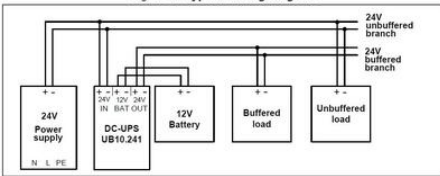


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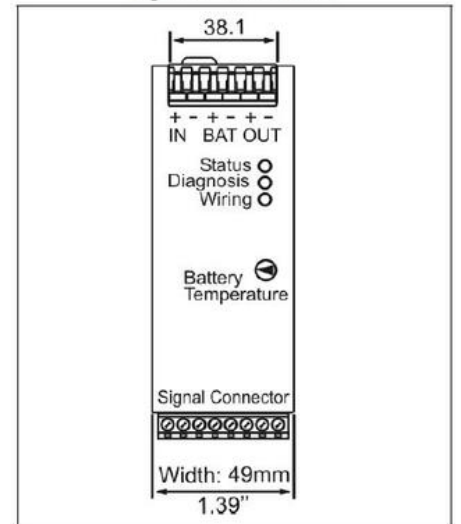


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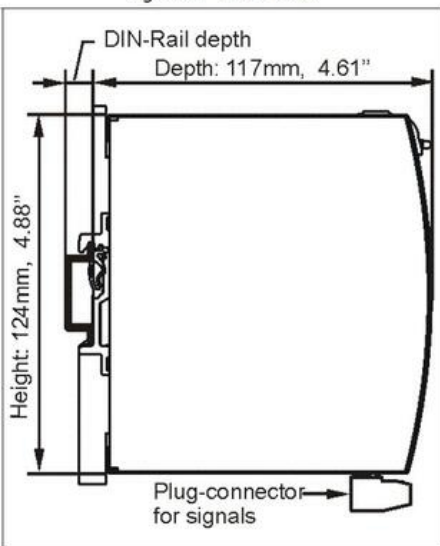


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