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DCUPSDC

DC Uninterruptible Power Supply System
with Nominal Input Voltage 48VDC
with Nominal Output Voltage 12VDC
with Output Power up to 92W

Uninterruptible power supply system **continues to supply DC output power during a loss of input DC power**. This system is created with a DC/DC converter with some additional electronic circuits and with an external back-up battery. **If the input DC power is present** the DC/DC converter feeds the supplied device and the back-up battery is charged with a defined charging current at the same time.

After input DC power outage the device is powered from the battery. There is no voltage outage on the output of the power supply system, because the **transition from DC/DC converter to battery power is continuous and without any interruption**. If the battery voltage decreases below the certain minimum value, the battery is disconnected from the powered device automatically. The system is activated again after input DC power recovery.

The system is equipped with a temperature compensation of the battery charging voltage and with circuits for signaling and LED indication of input DC power outage (PON Signal), decrease of the battery voltage below the set limit (BOK Signal), state of the fully battery recharging (BF Signal), indication of the defective battery (BL) and indication of the output voltage presence (OUTOK).

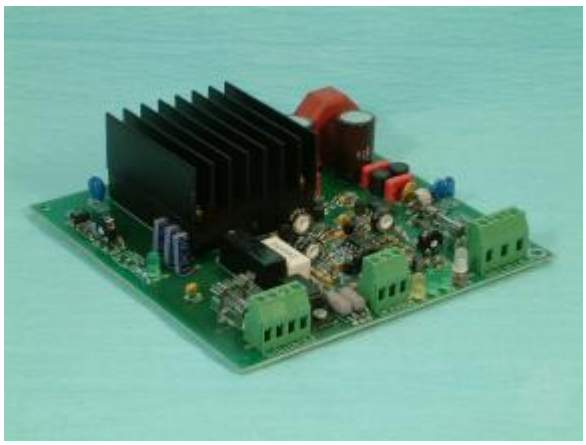
Specification:

- Input Voltage Range: **36VDC to 75VDC**
- Nominal Output Voltage of the System and the Battery:
  12VDC for type: DCUPSDC-4812
- Recommended type of the battery: **maintenance-free sealed lead-acid battery with the nominal voltage 12V**. The capacity of the battery to be chosen in dependence on the output power and the requested battery run time after input DC outage.
- Maximum Output Voltage of the System: **14.0V**
- Minimum Output Voltage of the System: **10.0V**
- Maximum Charging Current of the Battery: adjustable, set at **2.0A** at factory (rectangular constant current – constant voltage charging characteristic curve)
- Maximum Output Current to the powered Device: **5A** (simultaneous battery charging with the current up to **2A** is possible at the same time).
- Maximum Total Output Current of the Power Supply/Battery Charger: **7A**
  (There is possible to set the battery charging current share and the maximum output current to the powered device according to customer's wish and in dependence on device consumption, battery type and demand on speed of recharging the battery after input DC power recovery).
- Maximum Total Output Power of the Power Supply/Battery Charger: **92W**
- Minimum Battery Voltage, when the battery is disconnected from the powered device automatically: adjustable, set at **10.0V** at factory
- Maximum Battery Charging Voltage set at **13.8V** (for ambient temperature +25^{o}C), compensation of the temperature dependence of the battery voltage: **-24mV/ ^{o}C**

- **PON** Signal: open collector output (NPN type transistor), if the input DC power present – the transistor is switched-on (maximum load current 10mA), after input DC power outage the transistor is switched-off
- **BOK** Signal: open collector output (NPN type transistor), if the battery voltage higher than **11.0V**, the transistor is switched-on (maximum load current 10mA), otherwise the transistor is switched-off
- **BF** Signal: open collector output (NPN type transistor), switched-on for the battery charging current lower than **100mA** (there is possible to set this value)
- indication with LEDs:
  - **L/B**: **green:** operation from input DC / **red:** operation from battery
  - **BOK**: **green** for battery voltage higher than **11.0V**
  - **BF**: **green** for battery charging current lower than **100mA**
  - **BL**: **yellow** for voltage of the battery with no-load lower than **10V** - in this case the battery is not connected to the system – it is charged with the current 200mA. The battery is connected to the system after its voltage recovery only.
  - **OUTOK**: **green** for output DC voltage presence
- EMI/RFI: EN55022, Level B
- Safety: EN60950, for building-in
- Isolation Voltage: Input/Output: 1500 VDC
  Input/Chassis: 1500 VDC
- Thermal protection: +110°C (baseplate of the DC/DC Converter, automatic recovery)
- Protections: input undervoltage and overvoltage, against reversing of input voltage polarity, output overcurrent and overvoltage
- open frame design
- Dimensions (without a battery):
  W = 145 mm (5.71") , H = 40 mm (1.57") , D = 145 mm (5.71")
- Weight (without a battery): 0.35 kg (12.3 oz)
- Operating Ambient Temperature Range: -25°C to +70°C

Interface connection (screw terminals):

Designation	Meaning:
L-	Output voltage return
L+	+ backed-up output voltage 12VDC
B+	Positive battery terminal
B-	Negative battery terminal
BF	Battery Full signal
PON	Input DC Voltage present signal
BOK	Sufficient battery voltage signal
+U1	+ Input voltage
-U1	- Input voltage
⏚	Chassis



Application:

DCUPSDC System is designed for battery back-up feeding of a device from nominal input voltage 48VDC with nominal output voltage 12VDC. It can be also used as a Battery Charger. Maximum total output power of the Power Supply/Battery Charger is 92W.