

UPSDC-40W

DC Uninterruptible Power Supply System with Nominal Output Voltage 12VDC, 24VDC or 48VDC with Output Power up to 40W

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

After input AC 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 AC/DC power supply 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 AC 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 AC power outage (PON Signal), decrease of the battery voltage below the set limit (BOK Signal), state of the fully battery recharging (BF Signal) and the defective battery (BL).

Specification:

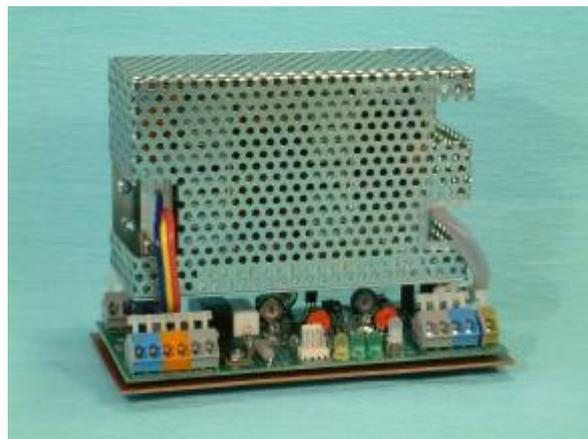
- Input Voltage Range: **90VAC to 264VAC / 47Hz to 440Hz or: 120VDC to 370VDC**
- Nominal Output Voltage of the System and the Battery:
 - 12V for type: UPSDC-1240**
 - 24V for type: UPSDC-2440**
 - 48V for type: UPSDC-4840**
- Values on the first place are valid for 12V version, values on the second place for 24V version and values on the third place are valid for 48V version.**
- Recommended type of the external battery: **maintenance-free sealed lead-acid battery**.
The capacity of the battery to be chosen in dependence on the output power and the requested battery run time after input AC outage.
- Maximum Output Voltage of the System: **14.0V / 28.0V / 54.0V**
- Minimum Output Voltage of the System: **10.0V / 20.0V / 42.0V**
- Maximum Charging Current of the Battery: adjustable, set at **1.0A / 0.5A / 0.2A** at factory
(rectangular constant current – constant voltage charging characteristic curve)
- Maximum Output Current to the powered Device: **2.3A / 1.1A / 0.5A** (simultaneous battery charging with the current up to **1.0A / 0.5A / 0.2A** is possible at the same time).
- Maximum Total Output Current of the Power Supply/Battery Charger: **3.3A / 1.6A / 0.7A**
(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 AC power recovery).
- Maximum Total Output Power of the Power Supply/Battery Charger: **40W**
- Minimum Battery Voltage, when the battery is disconnected from the powered device automatically: adjustable, set at **10.0V / 20.0V / 42.0V** at factory
- Maximum Battery Charging Voltage set at **13.8V / 27.2V / 54.0V** (for ambient temperature +25°C), compensation of the temperature dependence of the battery voltage: **-24mV/°C /**

- **-48mV/°C / -** (for 12V and 24V models only)
- **PON** Signal: open collector output (NPN type transistor), if the input AC power present – the transistor is switched-on (maximum load current 10mA), after AC power outage the transistor is switched-off
- **BOK** Signal: open collector output (NPN type transistor), if the battery voltage higher than **11.0V / 22.5V / 45.0V** 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 **50mA / 50mA / 40mA** (there is possible to set this value)
- **BL** Signal: open collector output (NPN type transistor), for voltage of the battery with no-load lower than **10V / 20V / 42V** the transistor is switched-on (maximum load current 10mA), otherwise the transistor is switched-off
- indication with LEDs:
 - **L/B: green:** operation from AC / **red:** operation from battery
 - **BOK: green** for battery voltage higher than **11.0V / 22.5V / 45.0V**
 - **BF: green** for battery charging current lower than **50mA / 50mA / 40mA**
 - **BL: yellow** for voltage of the battery with no-load lower than **10V / 20V / 42V** - in this case the battery is not connected to the system – it is charged with the current **200mA / 160mA / 30mA** . The battery is connected to the system after its voltage recovery only.
- EMI/RFI: EN55022, Level B
- Safety: EN60950 (SELV Output, Protection Class I), for building-in
- Isolation Voltage: Input/Output: 3000 VAC
Input/Chassis: 1500 VAC
- Metal Cover and a Mechanism for fixing on DIN-Rail as a standard
- Dimensions (without a battery):
W = 150 mm (5.9") , H = 115 mm (4.53") , D = 80 mm (3.15")
- Weight (without a battery): 0.67 kg (1.48 lbs)
- Operating Ambient Temperature Range: 0°C to +50°C, -25°C to +50°C for –T version, up to +70°C with output power derating

Interface connection:

K2, K4 and K5:WAGO Connectors, K3: plug 4 terminal

Pin number	Designation	Meaning:
K2/1, 2	L-	Output voltage return
K2/3, 4	L+	+ backed-up output voltage
K2/5	B+	Positive battery terminal
K2/6	B-	Negative battery terminal
K3/1	PON	Input AC Voltage present signal
K3/2	BF	Battery Full signal
K3/3	BOK	Sufficient battery voltage signal
K3/4	BL	Low Battery voltage signal
K4/1, 2	U	AC Live (90VAC – 264VAC)
K4/3, 4	N	AC Neutral (90VAC – 264VAC)
K5		PE = Protective Earth



Fuses: F1 (connected in L+), F2 (connected in B+), see printed circuit board for the value

Application:

The DC Uninterruptible Power Supply System is designed for battery back-up feeding of a device with nominal voltage 12VDC, 24VDC or 48VDC. It can be also used as a Battery Charger. Maximum total output power of the Power Supply/Battery Charger is 40W. There is also possible to change the maximum battery charging current and/or low and high limits of the battery voltage.