



CAPACITOR-BASED DC-UPSs

- Built-in Capacitors as Energy Source (EDLC Electrochemical Double Layer Capacitors)
- Wide Temperature Range from -40°C to +60°C
- Typically >10 Years Operational Lifetime Expectancy
- Regulated Output Voltage in Buffer Mode
- No Ventilated Cabinets Required (No Generation of Hydrogen as VRLA batteries do)
- Active Balancing for Longest Life and Buffer Times
- Short Charging Time, Unit is Rapidly Back in Ready Mode
- Output is Decoupled from the Input to Separate Load Circuits into Buffered and Non-buffered Sections
- Supports PC-Mode Function
- 3 Year Warranty

GENERAL DESCRIPTION

The DIMENSION UC-Series are DC-UPSs utilizing Electrochemical Double Layer Capacitors (EDLC), commonly known as Ultracapacitors or Supercapacitors, which are installed inside the DC-UPS. They can bridge power failures or voltage fluctuations and supply voltage to the DC 24V bus for a certain period, which allows for a safe shut-down of the system. Expensive downtimes, long restart cycles and loss of data can be avoided.

In times when the power supply provides sufficient voltages, the DC-UPS stores energy in the capacitors. In case of a mains voltage fault, this energy is released to the DC bus in a regulated process.

The DC-UPSs are maintenance-free and have a similar lifetime expectancy as power supplies. No regular replacement of the capacitors is necessary as is required for battery based DC-UPS systems. The wide temperature range from -40°C to +60°C makes the unit suitable for many applications.

The DC-UPSs come in two versions which differ in the size of the installed capacitors.

SHORT-FORM DATA

Nominal voltage	DC 24V	
Output current	15A	continuous
Buffer voltage	22.0 - 22.65V	fixed, 15A – 0A
Input current	typ. 1.1A	during charging, output current not included
Capacitor size	6kWs 12kWs	UC10.241 UC10.242
Charging time	16 minutes 32 minutes	UC10.241 UC10.242
Buffer time	16.5s at 10A 33s at 10A	UC10.241 UC10.242
Power losses	4.6W	in normal mode at 10A output current
Temperature range	-40°C to +60°C	operational
Dimensions	126x124x117mm	UC10.241
W x H x D	198x124x117mm	UC10.242
Weight	1150g / 2.54lb 1720g / 3.79lb	UC10.241 UC10.242

ORDER NUMBERS

DC-UPS	UC10.241 UC10.242	6kWs energy storage 12kWs energy storage
Accessory	ZM2.WALL	Panel/ wall-mount bracket

MARKINGS



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TERMINOLOGY AND ABBREVIATIONS

Normal mode	Describes a condition where the capacitor is charged, the input voltage is in range and the output is loaded within the allowed limits.
Buffer mode	Describes a condition where the input voltage is below the transfer threshold level, the unit is running on capacitor (buffering) and the output is loaded within the allowed limits.
Charging mode	Describes a condition where the capacitor is being charged, the input voltage is in range and the output is loaded within the allowed limits.
Inhibit mode	Describes a condition where buffering is disabled on purpose (e.g. for service actions)
T.b.d.	To be defined, value or description will follow later.
AC 24V	A figure displayed with the AC or DC before the value represents a nominal voltage with standard tolerances included. E.g.: DC 12V describes a 12V battery disregarding whether it is full (13.7V) or flat (10V)
24Vac	A figure with the unit (Vac) at the end is a momentary figure without any additional tolerances included.
may	A key word indicating flexibility of choice with no implied preference.
shall	A key word indicating a mandatory requirement.
should	A key word indicating flexibility of choice with a strongly preferred implementation.

1. INTENDED USE

This device is designed for installation in an enclosure. Use an appropriate enclosure which protects against mechanical, electrical and fire hazards.

This device is intended for professional use in areas such as in industrial control, office, communication, and instrumentation equipment.

Do not use this device in equipment or systems where malfunction may cause severe personal injury or threaten human life.

2. INSTALLATION NOTES

This device may only be installed and put into operation by qualified personnel.

The input must be powered from a SELV or PELV power source.

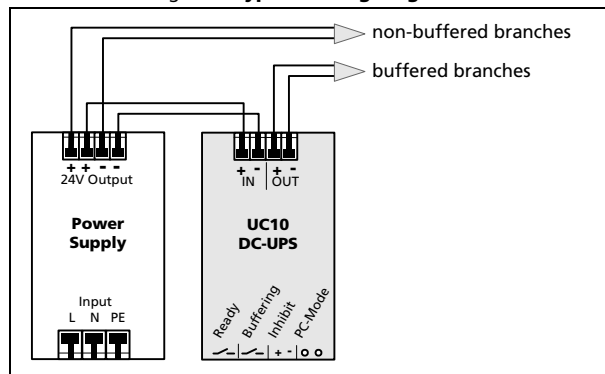
This device does not contain serviceable parts. The tripping of an internal fuse is caused by an internal defect. If damage or malfunction should occur during installation or operation, immediately turn power off and send unit to the factory for inspection.

Mount the unit on a DIN-rail so that the power terminals are located on the top of the unit.

This device is designed for convection cooling and does not require an external fan. Do not obstruct airflow and do not cover ventilation grid (e.g. cable conduits) by more than 15%!

Keep the following installation clearances: 40mm on top, 20mm on the bottom, 5mm on the left and right sides are recommended when the device is loaded permanently with more than 50% of the rated power. Increase this clearance to 15mm in case the adjacent device is a heat source (e.g. a power supply).

Fig. 2-1 **Typical wiring diagram**



The EDLC (storage capacitors) contain Acetonitrile and Tetraethylammonium-tetrafluoroborate. These components are declared as non-dangerous goods in regards to shipment. A safety datasheet can be provided when required.

⚠ WARNING Risk of electrical shock, fire, personal injury or death.

- Turn power off before working on the device. Protect against inadvertent re-powering.
- Make sure that the wiring is correct by following all local and national codes.
- Do not modify or repair the unit.
- Do not open the unit as hazardous energy may be present inside.
Info for service personnel: Before opening the unit, wait at least 45 minutes after disconnecting the unit from input power so that the remaining capacitor charge has completely been discharged.
- Use caution to prevent any foreign objects from entering the housing.
- Do not use in wet locations or in areas where moisture or condensation can be expected.
- Do not touch during power-on, and immediately after power-off. Hot surfaces may cause burns.