



## DC-UPS

### NCPA0727G10002

### 1 Short description

The DC-UPS of the series C-TEC includes ultra-capacitors as energy storage inside the housing. This capacitor is charged with the system voltage ( $U_e$ ) during normal operation. The connected loads are supplied as well from the system voltage. In case of an interruption of the system voltage the energy of the ultra-capacitors is released in a regulated way. With a dc dc converter, the load is supplied by the capacitor until it is discharged. The back-up time depends on the state of charge of the capacitors and on the discharge current.

The DC-UPS has the following characteristics:

- Maintenance-free because of long-life ultra-capacitors
- Microcontroller based charging and discharging of the ultra-capacitors
- Control of operation and status of charge with potential-free contacts and LED
- $U_e$  o.k. message via potential-free relay contact
- Capacity extension possible with external capacitor extension modules (CEM)

### 2 Technical Data

Nominal input voltage	12VDC-1,7%/25% SELV/PELV according to EN 60204-1
Input voltage range	11,8 V ... 15,0 V DC
Min. charging voltage	11,8 V DC
Nominal input current	3,1 A DC
Output voltage in back-up operation	11,5 V DC $\pm$ 2 %
Max nominal output current	2 A DC (with nominal capacity) 3 A DC (with reduced capacity)
Current limitation	1,05 ... 1,2 x $I_{Nom}$
Max power loss "worst-case"	7 W
Efficiency at $U_c >$	>90% @ ( $U_e=12,0$ V DC; $U_a=11,5$ V DC; $I_a=I_{Nom}$ )
Internal device protection (internal)	4A(T)
fusing DC-output circuit (external)	3A(T)
Parallel operation	Yes
Serial operation	Yes
Max. load message contact ( $U_e$ -OK <sup>1</sup> )	30 V/ 0,5 A potential-free relay-contact
Max. load message contact ( $U_e$ -OK <sup>2</sup> )	30 V/ 0,5 A potential-free relay-contact
Protective system	IP20 a. EN 60529
Operational temperature	-20 °C ... 60 °C
Storage temperature	-20 °C ... 60 °C
Rel. humidity	$\leq$ 95% non condensing
Max. mounting height (without load reduction)	2000 m above sea level
dimensions (HxWxD)	92,5 mm, 60 mm, 116 mm
weight	0,6 Kg

<sup>1</sup> The message contacts are coupled with LED display. (see section 4.1). The illumination of a LED effects the activation of the corresponding relay.

<sup>2</sup> The message contacts are coupled with LED display. (see section 4.1). The illumination of a LED effects the activation of the corresponding relay.



### 3 Norms and regulations

Terminal voltage	SELV / PELV according to EN 60204-1
Emitted interference	EN 6100-3-2 EN 6100-3-3 class A EN 55011 class B EN 62040 -2
Noise immunity	EN 61000-6-2 EN 62040-2  EN 61000-4-2 (Static discharge ESD) 8kV/6kV EN 61000-4-3 (Electromagnetic fields) 10V/m 27 – 1000MHz 3V/m 1400 - 2700MHz EN 61000-4-4 (fast transients / Burst) DC IN, DC OUT 2kV others 1kV EN 61000-4-5 ( Surge) DC IN 0.5kV EN 61000-4-6 (conducted immunity) 10V 150kHz – 80MHz EN 61000-4-11 (voltage interruptions) back-up with ultra capacitor
Total unit	EN 50178 EN 61010-1 / EN 61010-2-201 EN 62368-1