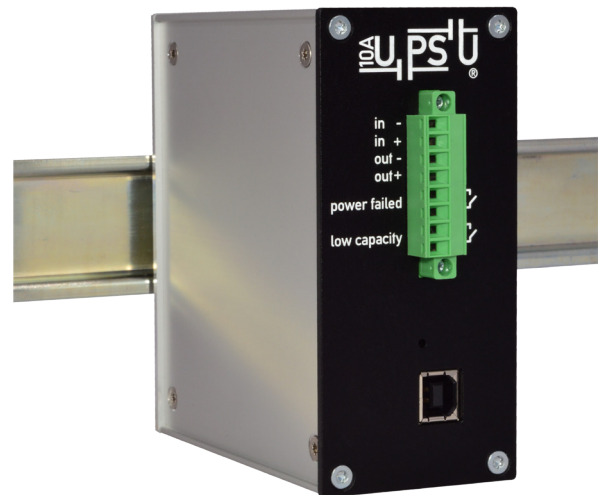
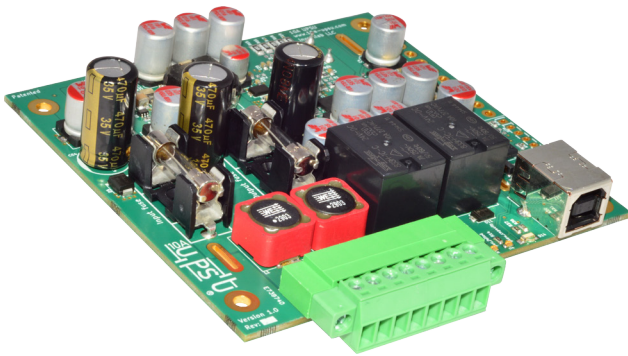


10A UPS¹t[®]

Datasheet

Observe safety instructions on page 3



10A UPSU features

- ▶ UPS with Ultracapacitors or Batteries
- ▶ Maintenance-free (Ultracapacitor variant)
- ▶ Extended operating temperature range
- ▶ 12V or 24V variant available
- ▶ 160W (24V variant) / 120W (12V) output power
- ▶ As PC104 (95.89 x 90.17 mm) version or as DIN-Rail case (48.5 x 105.5 x 92.4 mm) version available
- ▶ USB communication
- ▶ Relais outputs: Power failed and low capacity signal
- ▶ No additional „Battery pack“ or „Ultracapacitor module“ required (Energy storage is already included on 10A UPSU)
- ▶ High accurate cell balancing technique

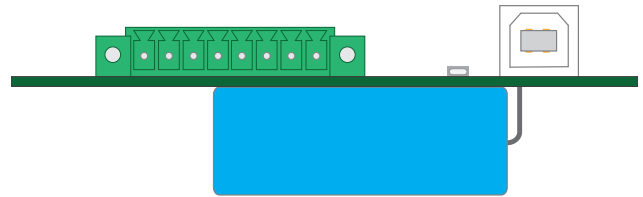
Applications

- ▶ Medical
- ▶ Defence
- ▶ Telecommunication
- ▶ Industrial computers (IPC)
- ▶ PLC (SPS)
- ▶ Embedded systems
- ▶ Automation systems
- ▶ ...

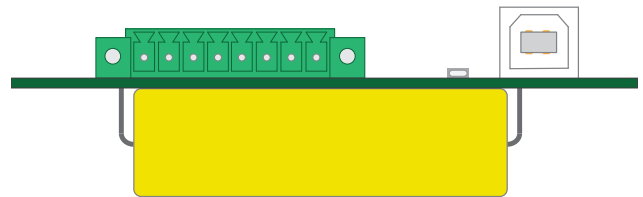
Variants

- ▶ 10A UPSU 12V: 12V UPS with Ultracapacitors
- ▶ 10A UPSU 24V: 24V UPS with Ultracapacitors
- ▶ 10A UPSU 12V B: 12V UPS with Batteries
- ▶ 10A UPSU 24V B: 24V UPS with Batteries
- ▶ 10A UPSU 12V DIN: 12V UPS with Ultracapacitors in DIN-Rail case
- ▶ 10A UPSU 24V DIN: 24V UPS with Ultracapacitors in DIN-Rail case
- ▶ 10A UPSU 12V B DIN: 12V UPS with Batteries in DIN-Rail case
- ▶ 10A UPSU 24V B DIN: 24V UPS with Batteries in DIN-Rail case

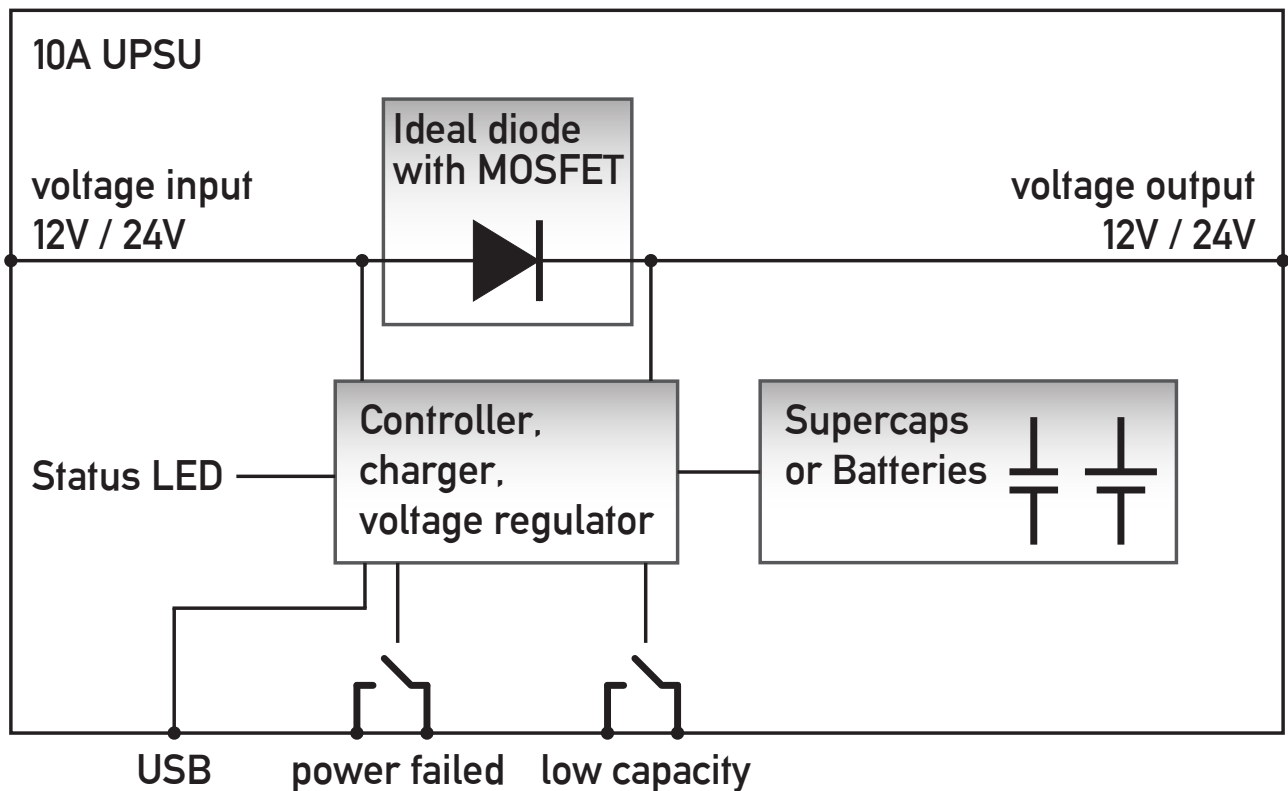
10A UPSU xxV (Ultracapacitor):



10A UPSU xxV B (Battery):



Block diagramm



Safety instructions

The manufacturer declines any liability for damage to humans and machines. In particular, damage arising from the non-observance of the following safety regulations!

All work on the device must be carried out only by qualified and trained personnel!

Keep conductive parts away from the 10A UPSU, risk of short circuit!

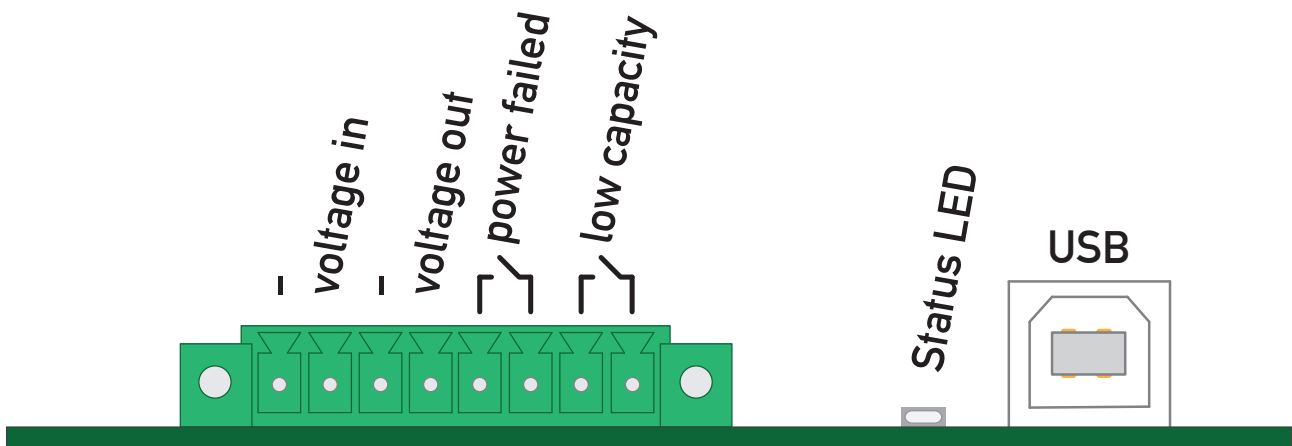
If the device has visible defects or status LED lights red, disconnect the 10A UPSU and return it to manufacturer for repair.

Fuse, reverse polarity protection

The 10A UPSU has a suppressor diode and a 15A fuse at its voltage input. A 15A fuse is also placed on the voltage output rail.

Reverse polarity or short circuit may blow the fuse. Take care, due to 10A UPSU is not rated as „short circuit“ or „reverse polarity“ protected.

Connectors



Status LED

- ▶ Green blinking: Charging
- ▶ Green: Charged, normal state
- ▶ Red blinking: Input voltage failed
- ▶ Red: Error occurred

Running time in the case of power failure

Load [W]	10A UPSU type (Applies also to DIN variants)	Running time [s]
10	10A UPSU 12V	60.00
10	10A UPSU 24V	60.00
10	10A UPSU 12V B	2940.00
10	10A UPSU 24V B	3930.00
120	10A UPSU 12V	2.64
160	10A UPSU 24V	1.30
120	10A UPSU 12V B	245.00
160	10A UPSU 24V B	245.00

Running time tolerance: $\pm 40\%$

Electrical Specifications / Absolute Maximum Ratings

Symbol	Parameter	Condition ¹	Min.	Typ.	Max.	Units
U _{IN}	Input voltage	12V types (below the min-Value, an input voltage failure will be detected)	11	12	30	V
U _{IN}	Input voltage	24V types (below the min-Value, an input voltage failure will be detected)	22	24	30	V
P _{outmax}	Output power	12V types on voltage input failure			120	W
P _{outmax}	Output power	24V types on voltage input failure			160	W
U _{out}	Output voltage	When input voltage is not below the U _{IN} min-Value		U _{IN}		V
U _{out}	Output voltage	12V types, when input voltage is failed	11.4	12	12.6	V
U _{out}	Output voltage	24V types, when input voltage is failed	22.8	24	25.2	V
I _{outmax}	Output current	All types, When input voltage is available			10	A
I _{inmax}	Input current	All types			11	A
I _{charge}	Charge current	All types	0		2.7 ²	A
I _{relais}	Relais current	All types, all relais signals			10	A
T _A	Temperature range	10A UPSU xxV (Ultracapacitor types), Storage	-40	20	60 ³	°C
T _O	Temperature range	10A UPSU xxV (Ultracapacitor types), Operating	-40	20	60 ³	°C
T _A	Temperature range	10A UPSU xxV B (Battery types), Storage	-30	20	60	°C
T _O	Temperature range	10A UPSU xxV B (Battery types), Operating	-30	20	60	°C
-	Cycle life	10A UPSU xxV (Ultracapacitor types)		500000		cycles
-	Cycle life	10A UPSU xxV B (Battery types)		1000		cycles

¹ 10A UPSU type applies also to 10A UPSU DIN-Rail variant types.

² Charge current will automatically be reduced, when the input current reaches ~7.5A and will be limited to 0A, when the input current reaches ~11A, to provide the required current to the connected load.

³ Life 2000h at maximum operating temperature. Over 10 years at room temperature.

Weight

10A UPSU Type	Weight
10A UPSU 12V	170g
10A UPSU 24V	170g
10A UPSU 12V B	250g
10A UPSU 24V B	280g
10A UPSU 12V DIN	400g
10A UPSU 24V DIN	400g
10A UPSU 12V B DIN	470g
10A UPSU 24V B DIN	500g

USB communication

10A UPSU will be detected as a virtual COM port when connecting the USB device to a computer.

Use a standard USB B <-> USB A cable to connect 10A UPSU to a computer.

All commands to 10A UPSU have to end with <CR> or <LF> (return/enter).

Set-commands need a whitespace between the command and the parameter value. See examples.

All return values end with <CR> and <LF>. BaudRate 9600, DataBits 8, StopBits 1, Parity none

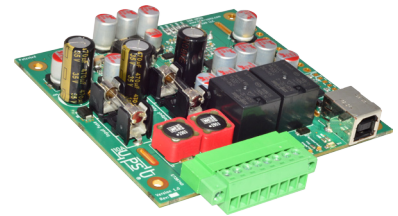
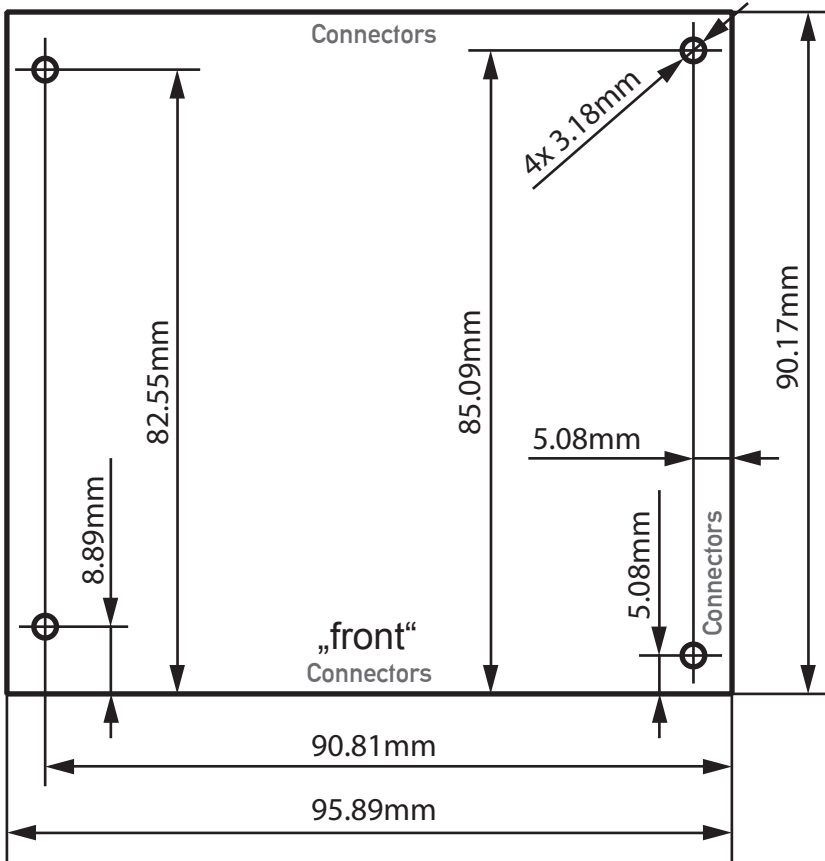
USB communication protocol to 10A UPSU

Command	Possible parameters	Return value range	Unit	Description
?t		-40 to 100	°C	What is the actual temperature?
?i		0 to 30000	mV	What is the actual input voltage?
?s		0 to 15000	mV	Returns the actual supercap/battery voltage
?v		0-99	Version	Returns Firmware-Version
#debug#				Switches debug output informations on until next power-off.
!eoff				Disables/disconnects the energy storage until next powering. Important: This is necessary for all 10A UPSU battery types before they are stored or are taken out of operation.

USB communication protocol from 10A UPSU

Trigger	Command sent by 10A UPSU	Value unit	Description
Startup trigger	s	-	Is fired, when 10A UPSU input voltage rises above 11V (12V types) or 23V (24V types)
Shutdown trigger	!	-	Is fired, when 10A UPSU input voltage falls below 11V (12V types) or 23V (24V types)

10A UPSU PCB variants - PC104 Mechanical dimensions



10A UPSU PCB versions

Note: 10A UPSU has only on the „front“ connectors.

All dimensions in mm

10A UPSU DIN variants - Mechanical dimensions

Dimensions:
48.5 x 105.5 x 92.4 mm
(width x height x depth)



10A UPSU DIN
Front view



10A UPSU DIN
Rear view

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Product website

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Patent information

Patented

Your specific requirements

Please contact inventlab LLC if your project has special 10A UPSU requirements. Our engineers look forward to hearing from you.

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