



SITOP UPS1600/DC/24VDC/10A/USB

SITOP UPS1600 10 A USB uninterruptible power supply with USB interface input:  
24 V DC output: 24 V DC/ 10 A \*Ex approval no longer available\*

Input	
supply voltage at DC rated value	24 V
voltage curve at input	DC
input voltage range	21 ... 29 V DC
adjustable response value voltage for buffer connection preset	21.5 V
adjustable response value voltage for buffer connection	21 ... 25 V; Adjustable: 21 V, 21.5 V, 22 V, 22.5 V, 23 V, 24 V, 25 V DC or via software
input current at rated input voltage 24 V rated value	14 A; for max. charging current (3 A)
Mains buffering	
type of energy storage	with batteries
design of the mains power cut bridging-connection	Adjustable range using rotary coding switch: 0.5 min, 1 min, 2 min, 5 min, 10 min, 20 min, max. buffering time or via software
charging current	0.1 A, 3 A
adjustable charging current maximum note	Automatically depending on battery module
Output	
output voltage	
• in normal operation at DC rated value	24 V
• in buffering mode at DC rated value	24 V
formula for output voltage	$V_{in} - \text{approx. } 0.2 \text{ V}$
startup delay time typical	60 ms
voltage increase time of the output voltage typical	60 ms
output voltage in buffering mode at DC	18.5 ... 27 V
output current	
• rated value	10 A
• in normal operation	0 ... 30 A
• in buffering mode	0 ... 30 A
peak current	30 A
property of the output short-circuit proof	Yes
design of short-circuit protection	Limitation to 3 x I rated for 30 ms/min; through-conductivity for 1.5 x I rated for 5 sec/min
supplied active power typical	240 W
Efficiency	
efficiency in percent	
• at rated output voltage for rated value of the output current typical	97.5 %
• in case of operation on rechargeable battery typical	97.5 %
power loss [W]	
• at rated output voltage for rated value of the output current typical	6 W
• in case of operation on rechargeable battery typical	6 W
Protection and monitoring	

product function	
<ul style="list-style-type: none"> <li>reverse polarity protection against energy storage unit polarity reversal</li> </ul>	Yes
<ul style="list-style-type: none"> <li>reverse polarity protection against input voltage polarity reversal</li> </ul>	Yes
<b>Signaling</b>	
display version	
<ul style="list-style-type: none"> <li>for normal operation</li> </ul>	Normal operation: LED green (OK), floating changeover contact "Bat/OK" to setting "OK" ("OK" means: Voltage of the supplying power supply unit is greater than cut-in threshold set at the DC UPS module); Lack of buffer standby: LED red (alarm), floating changeover contact "Alarm/Bat" to setting "Alarm"; Battery replacement required: LED red (alarm) flashing with approx. 0.25 Hz, floating changeover contact "Alarm/Bat" switching with approx. 0.25 Hz; Energy storage > 85%: LED green (Bat > 85%), floating NO contact "Bat > 85" closed; Permissible contact current capacity: DC 60 V/1 A or AC 30 V/1 A
<ul style="list-style-type: none"> <li>in buffering mode</li> </ul>	Buffered mode: LED yellow (Bat), floating changeover contact "OK/Bat" to setting "Bat"; Prewarning battery voltage < 20.4 VDC: LED red (alarm), floating changeover contact "Alarm/Bat" to setting "Alarm"; Energy storage > 85%: LED green (Bat > 85%), floating NO contact "Bat > 85" closed
<b>Interface</b>	
product component PC interface	Yes
design of the interface	USB
<b>Safety</b>	
galvanic isolation between input and output	No
operating resource protection class	Class III
protection class IP	IP20
<b>Approvals</b>	
certificate of suitability	
<ul style="list-style-type: none"> <li>CE marking</li> </ul>	Yes
<ul style="list-style-type: none"> <li>UL approval</li> </ul>	Yes
<ul style="list-style-type: none"> <li>as approval for USA</li> </ul>	cULus-Listed (UL 508, CSA C22.2 No. 107.1), File E197259
<ul style="list-style-type: none"> <li>CSA approval</li> </ul>	Yes
<ul style="list-style-type: none"> <li>cCSAus, Class 1, Division 2</li> </ul>	No
<ul style="list-style-type: none"> <li>ATEX</li> </ul>	No
type of certification CB-certificate	Yes
certificate of suitability	
<ul style="list-style-type: none"> <li>EAC approval</li> </ul>	Yes
<ul style="list-style-type: none"> <li>C-Tick</li> </ul>	Yes
<ul style="list-style-type: none"> <li>shipbuilding approval</li> </ul>	Yes
shipbuilding approval	ABS, DNV GL
Marine classification association	
<ul style="list-style-type: none"> <li>American Bureau of Shipping Europe Ltd. (ABS)</li> </ul>	Yes
<ul style="list-style-type: none"> <li>DNV GL</li> </ul>	Yes
<b>EMC</b>	
standard	
<ul style="list-style-type: none"> <li>for emitted interference</li> </ul>	EN 55022 Class B
<ul style="list-style-type: none"> <li>for interference immunity</li> </ul>	EN 61000-6-2
<b>environmental conditions</b>	
ambient temperature	
<ul style="list-style-type: none"> <li>during operation</li> </ul>	-25 ... +70 °C; with natural convection
<ul style="list-style-type: none"> <li>during transport</li> </ul>	-40 ... +85 °C
<ul style="list-style-type: none"> <li>during storage</li> </ul>	-40 ... +85 °C
environmental category according to IEC 60721	Climate class 3K3, 5 ... 95% no condensation
<b>Mechanics</b>	
type of electrical connection	screw-type terminals
<ul style="list-style-type: none"> <li>at input</li> </ul>	24 V DC: 2 screw terminals for 0.2 ... 6 mm <sup>2</sup> /24 ... 13 AWG
<ul style="list-style-type: none"> <li>at output</li> </ul>	24 V DC: 2 screw terminals for 0.2 ... 6 mm <sup>2</sup> /24 ... 13 AWG
<ul style="list-style-type: none"> <li>for rechargeable battery module</li> </ul>	24 V DC: 2 screw terminals for 0.2 ... 6 mm <sup>2</sup> /24 ... 13 AWG
<ul style="list-style-type: none"> <li>for control circuit and status message</li> </ul>	14 screw terminals for 0.2 ... 1.5 mm <sup>2</sup> /24 ... 16 AWG
width of the enclosure	50 mm
height of the enclosure	139 mm
depth of the enclosure	125 mm
required spacing	
<ul style="list-style-type: none"> <li>top</li> </ul>	50 mm

<ul style="list-style-type: none"> <li>• bottom</li> <li>• left</li> <li>• right</li> </ul>	50 mm
	0 mm
	0 mm
net weight	0.4 kg
product feature of the enclosure housing can be lined up	Yes
fastening method	Snaps onto DIN rail EN 60715 35x7.5/15
electrical accessories	Battery module
MTBF at 40 °C	364 153 h
reference code according to IEC 81346-2	RB
other information	Specifications at rated input voltage and ambient temperature +25 °C (unless otherwise specified)

