



DCU20 is a microprocessor controlled DC-UPS rated 20A usable in 12V or 24V systems.

DCU20 monitors the voltage supplied by a DC source and in case of power failure a backup battery is connected to the load. When powered externally the unit charges the battery by an integrated battery charger supporting various battery chemistries.

■ **Main Features**

- Digital Power regulation, LCD interface
- Multiple user settable parameters
- BI VOLTAGE: 12V or 24V (intermediate voltages possible)
- Battery chemistry: Lead acid, nickel and lithium
- Maximum battery capacity 150Ah
- Load current: 20 A Max.
- Multiple protections
- Remote ON/OFF or other remote control functions possible through INHIBIT input
- Cold start
- Automatic sensing of input voltage, load current and battery current
- Battery protection against reverse polarity connection and overcurrent
- Battery health monitoring system: measuring battery internal resistance, battery temperature, charge/discharge cycles and Coulomb counter
- User settable maximum backup time

■ **Embedded user interface**

- 4 keys and 1 color graphic CSTN LCD display
- Allows online device configuration
- Displays the DCU20 status and alarms
- USB communication port for remote monitoring and configuration
- Dry contacts

■ **Suitable for POWERMASTER software**

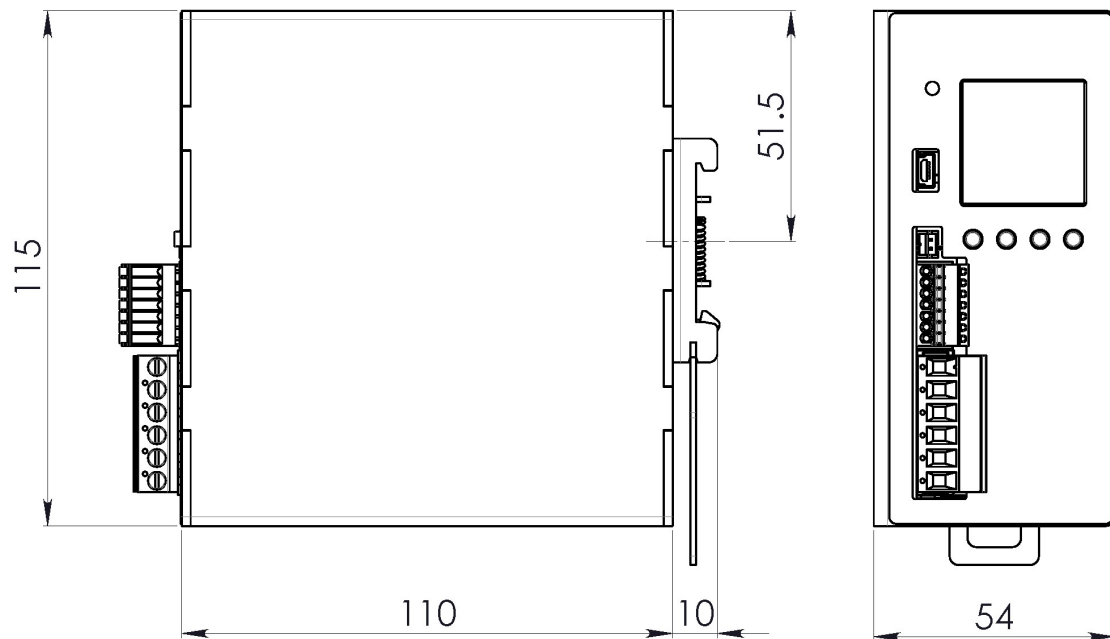
- Connection through USB interface
- Remote monitoring and configuration
- Firmware upgrade
- Same functionalities of the embedded user interface with the ease of the PC benefits
- available for Windows and Android

TECHNICAL DATA

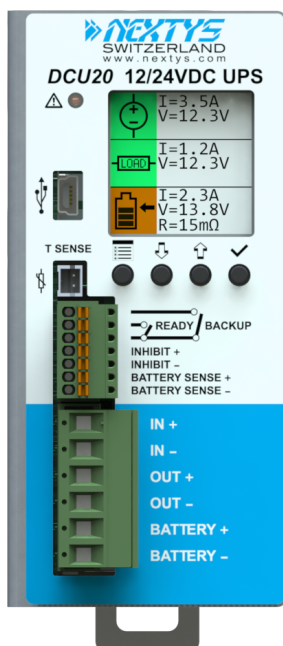
Model type	DCU20
INPUT DATA	
Input DC rated voltage	Nominal: 11...28Vdc (UL certified) Range: 10...29Vdc
Input DC rated current	20A
Standby power	< 3W
BATTERY SECTION	
Rated battery voltage	<ul style="list-style-type: none"> ▪ 12 or 24Vdc ▪ Other voltage possible by request
Battery chemistries	<ul style="list-style-type: none"> ▪ Lead Acid ▪ Nickel ▪ Lithium
Maximum battery charge current	5A
Allowed battery capacity	up to 150Ah
Maximum battery current	20A (up to 35A for 5s)
Load to Battery switch time	< 5 μ s
Battery protections	<ul style="list-style-type: none"> ▪ Overcurrent ▪ Deep discharge ▪ Reverse polarity
BATTERY HEALTH MONITORING	
Battery internal resistance range	1m Ω ...300m Ω (using Kelvin connection)
Additional monitoring functions	<ul style="list-style-type: none"> ▪ Coulomb counter ▪ Battery temperature through 10kΩ NTC sensor (optional) ▪ Battery operating time since installation ▪ Number of cycles
USER INTERFACE	
1.5 inch color graphic LCD	Used to display the unit's status and to access the configuration menus
4 keys	Used to program the unit and to access various menus
Red LED	<ul style="list-style-type: none"> ▪ Constantly ON: generic failure on the system, details on the LCD ▪ Blinking: battery backup function active
2 dry contact (relays) NO, 24Vdc / 1A	<ul style="list-style-type: none"> ▪ May indicate units status (READY or on BACKUP model), battery failure (by toggling at 1Hz) ▪ Configurable for remote PC shutdown
Other interfaces	<ul style="list-style-type: none"> ▪ INHIBIT - Isolated remote ON/OFF input, active for 5...30Vdc ▪ BATTERY SENSE - recommended to have an accurate measurement of the battery internal resistance ▪ Mini USB-B - connector to be used with POWERMASTER software ▪ T SENSE - optional, remote temperature sensor for battery charging (WNTC-2MT)
GENERAL DATA	
Efficiency at full load	> 97.5%
Power loss (on power supply)	< 13W
Efficiency at full load	> 96.5%
Power loss (on battery)	< 18W
Battery charge efficiency	> 90%
Power loss	< 16W
Maximum backup time	User programmable, up to battery deep discharge threshold
Operating temperature ^{1,2}	- 40°C...+ 60°C UL certified up to 60°C
Storage temperature	- 40°C...+ 80°C
Humidity	5...95% r.H. non condensing
Life time expectation	253'142h (28.9 years) at 25°C ambient full load
MTBF	<ul style="list-style-type: none"> ▪ MIL-HDBK-217F > 600'000h at 25°C ambient full load
Overvoltage category	<ul style="list-style-type: none"> ▪ EN50178 1
Pollution degree	<ul style="list-style-type: none"> ▪ IEC60664-1 2
Isolation against enclosure	0.75kVdc
Safety Standards	<ul style="list-style-type: none"> ▪ UL508 (certified E356563) ▪ IEC/EN61010 ▪ IEC/EN61010-2-201 ▪ IEC/EN60950
EMC Emission	<ul style="list-style-type: none"> ▪ EN61000-6-4
EMC Immunity	<ul style="list-style-type: none"> ▪ EN61000-6-2
Protection degree	<ul style="list-style-type: none"> ▪ EN60529 IP20
Vibration sinusoidal	<ul style="list-style-type: none"> ▪ IEC 60068-2-6 (5-17.8Hz: \pm1.6mm; 17.8-500Hz: 2g 2hours / axis (X,Y,Z)
Shock	<ul style="list-style-type: none"> ▪ IEC 60068-2-27 (30g 6ms, 20g 11ms; 3 bumps / direction, 18 bumps total)
IN/Battery/OUT Connection terminals	2.5mm ² , screw type pluggable (24...12AWG)
Auxiliary connection terminals	Up to 0.5mm ² , Fast pluggable type (20AWG)
Temperature sensor connector	Friction lock connector
Communication interface connector	Mini USB-B type

Case material	Aluminum
Weight	0.50kg
Size (W x H x D)	54.0 x 115.0 x 110.0mm
1) Start-up type tested: - 40°C, possible at nominal voltage with load deration. 2) For temperature ≤ - 20°C the LCD is not operating, but the unit will operate correctly.	
Notes: - For more details, performance and descriptions regarding all parameters not indicated in the above table, please refer to the user manual downloadable from www.nextys.com - Technical parameters are typical, measured in laboratory environment at 25°C, 24Vdc input and 24V lead acid battery, at nominal values, after minimum 5 minutes of operation. - Power rating, losses, efficiency, ripple, thermal behaviour and start-up may change outside of the nominal rated input range. Contact factory for details. - Data may change without prior notice in order to improve the product.	

DIMENSIONS



CONNECTION



IN/Battery/OUT Connection:

IN: (connect to power supply)

- += Positive DC
- -= Negative DC

Battery: (connect to battery)

- += Positive DC
- -= Negative DC

OUT: (connect to load)

- += Positive DC
- -= Negative DC

Auxiliary Connections:

BATTERY SENSE: (connect to battery)

- += Positive DC
- -= Negative DC

INHIBIT: (5...30Vdc)

- += Positive DC
- -= Negative DC

READY: (programmable dry contact)

- NO
- COM

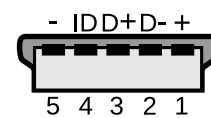
BACKUP: (close when running on Battery)

- NO
- COM

T SENSE: (remote temperature sensor for battery charging)

- Optional WNTC-2MT

Mini USB-B Type



- 1 = VBUS (+5V)
- 2 = Data (D-)
- 3 = Data (D+)
- 4 = Not connected (ID)
- 5 = GND