POWERMASTER · Windows · Google Play · DIGITAL POWER · c UL us LISTED · CE · RoHS 2011/65/EU · Pb lead-free

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

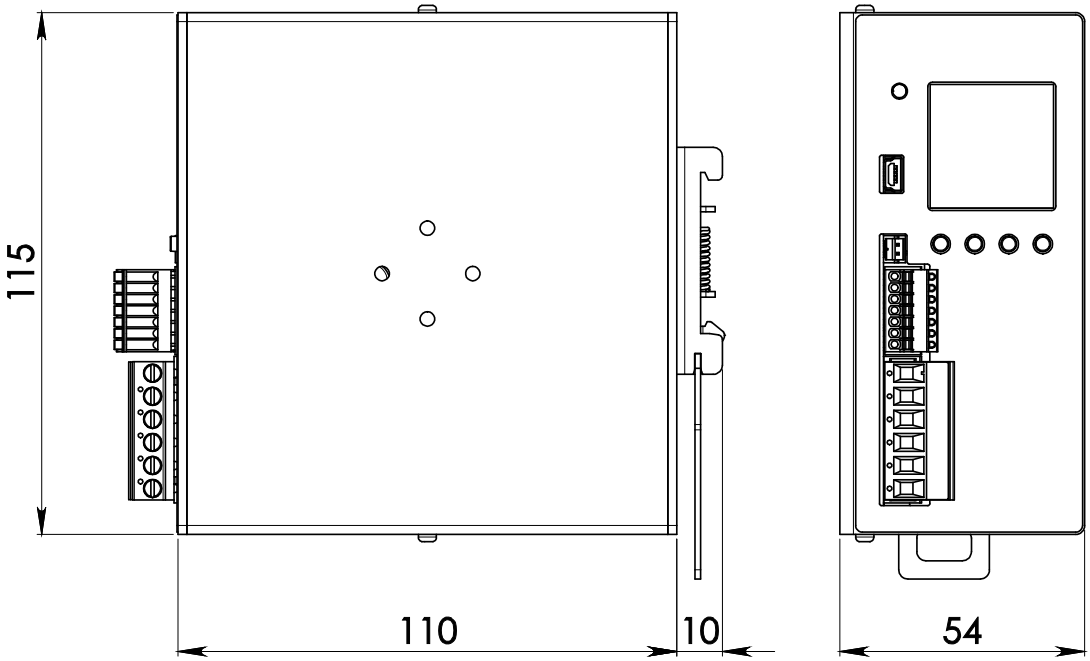
Model type	DCU20	
INPUT DATA		
Input DC rated voltage	Nominal: 11…28Vdc (UL certified) Range: 10…29Vdc	
Input DC rated current	20A	
Standby power	< 3W	
BATTERY SECTION		
Rated battery voltage	▪ 12 or 24Vdc ▪ Other voltage possible by request	
Battery chemistries	▪ Lead Acid ▪ Nickel ▪ Lithium	
Maximum battery charge current	5A	
Allowed battery capacity	up to 150Ah	
Maximum battery current	20A (up to 35A for 5s)	
Load to Battery switch time	< 5µs	
Battery protections	▪ Overcurrent ▪ Deep discharge ▪ Reverse polarity	
BATTERY HEALTH MONITORING		
Battery internal resistance range	1mΩ…300mΩ (using Kelvin connection)	
Additional monitoring functions	▪ 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	▪ Constantly ON: generic failure on the system, details on the LCD ▪ Blinking: battery backup function active	
2 dry contact (relays) NO, 24Vdc / 1A	▪ May indicate units status (**READY** or on **BACKUP** model), battery failure (by toggling at 1Hz) ▪ Configurable for remote PC shutdown	
Other interfaces	▪ **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 Power loss (on power supply)	> 97.5% < 13W	
Efficiency at full load Power loss (on battery)	> 96.5% < 18W	
Battery charge efficiency Power loss	> 90% < 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	▪ MIL-HDBK-217F	> 600'000h at 25°C ambient full load
Overvoltage category Pollution degree	▪ EN50178 ▪ IEC60664-1	I 2
Isolation against enclosure	0.75kVdc	
Safety Standards	▪ UL508 ▪ EN60950	(certified E356563) (reference)
EMC Emission	▪ EN55011 (CISPR11) ▪ EN55022 (CISPR22)	Class A Class A
EMC Immunity	▪ EN61000-4-2 ▪ EN61000-4-3 ▪ EN61000-4-4 ▪ EN61000-4-5	Level 3 Level 3 Level 3 Level 1
Protection degree	▪ EN60529	IP20
Vibration sinuosoidal	▪ IEC 60068-2-6	(5-17.8Hz: ±1.6mm; 17.8-500Hz: 2g 2hours / axis (X,Y,Z)
Shock	▪ IEC 60068-2-27	(30g 6ms, 20g 11ms; 3 bumps / direction, 18 bumps total)
IN/Battery/OUT Connection terminals	2.5mm², screw type pluggable (24...12AWG)	
Auxiliary connection terminals	Up to 0.5mm², 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

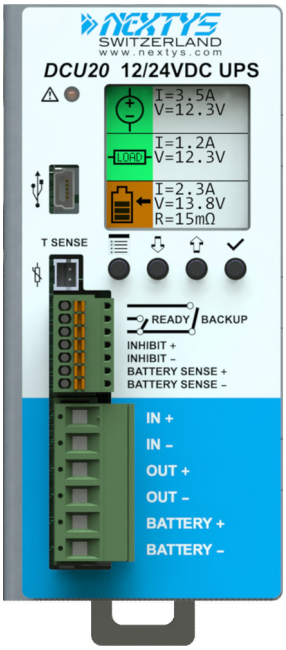
1) Start-up type tested: - 40°C, possible at nominal voltage with load deration.
2) For temperature ≤ - 20°C the LCD is not operating, but the unit will operate correctly.

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

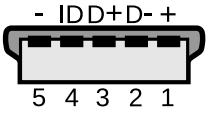
INHIBIT: (5…30Vdc)
- + = Positive DC
- - = Negative DC

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