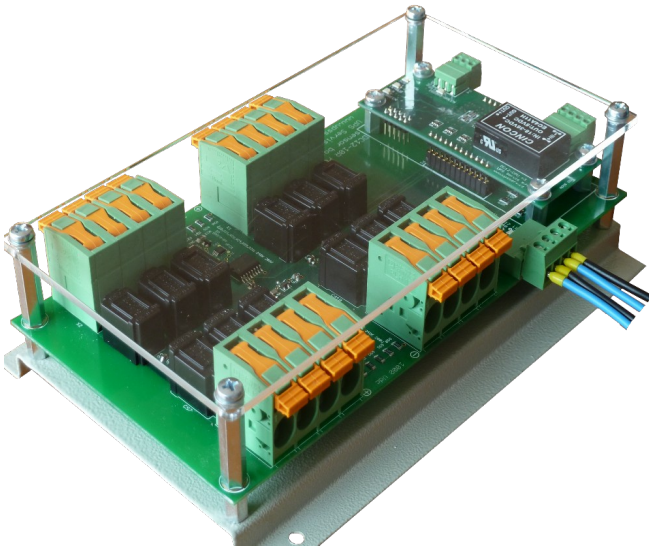


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# DC12-10R



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## Purpose of DC12-10R measurement board

- DC12-10R is designed to measure AC and DC current on its 12 current inputs. In addition it measures power supply voltage up to 60 VDC and DC voltage to 1000 VDC on two isolated channels. To provide additional monitoring capabilities, the board has two self-powered digital inputs used to monitor voltage free contacts in switchboard.
- The DCxx boards are produced in several modifications which share the same controller and software. These boards can be used to measure DC current from 10A to 800A.
- The measurements are presented on galvanically isolated two wire RS485 port with Modbus RTU protocol.
- DC12-10R can be used in many applications:
  - telecom DC power distribution -48VDC
  - solar power stations inside junction boxes.
  - in power utilities to monitor 110 VDC a 220 VDC control power distribution.

## DC12-10R advantages:

- High measurement density.
- Bi-directional current measurement.
- AC current measurement mode: RMS current measurements are available.
- Fast response on serial port: 1 ms response time, 5 modbus transactions per second with default port speed (depends on number of registers read).
- Wide input power voltage 10 VDC do 68 VDC (needed power option needs to be specified on order).
- Low power 1,5W.
- Built-in signal processing. Short voltage and current fluctuations can be detected using min and max values.
- Isolated serial port – better reliability.
- Isolated current sensors can measure on high voltage circuits up to 1000 VDC.
- Both floating point and integer values on MODBUS for compatibility with PLCs.

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## Specifications

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### *Power supply*

Input voltage options	12V: 9-20 VDC 24V: 18-36 VDC 48V: 36-68 VDC
Power consumption	1.5W
Overvoltage protection	Built-in transil diode
Recommended fuse	0.5A (standard fuse, is not supplied with the board)
EMI	Built-in LC filter

### *Current measurement*

Number of channels	12
Measurement range	-20..+20 A
Nominal current	10 A
Permanent overload	16A (this is recommended fuse/breaker rating)
Max overload	80A for 1 s with no damage to sensors
Input conductor	16 mm <sup>2</sup> hard wire, 10 mm <sup>2</sup> stranded wire with ferrule
Non-linearity	<1% of measured value in range of -20A..+20A
Accuracy	0.5% range
Series resistance	<2.5 mΩ

### *Voltage measurement on sensor board*

Channels	2
Range	0 .. 1050 VDC
Accuracy	0.2 % range
Permanent overload	-1200 VDC .. +1200 VDC
Isolation	2500 VDC from each current input
Impedance	1440 kOhm

### *Voltage measurement on power supply input*

Channels	1
Range	0-120 VDC
Accuracy	0.2% range
Impedance	99 kOhm
Digital inputs	
Number of inputs	2
Input voltage	-30 VDC .. +30 VDC

### *Communications port*

Interface	Isolated two wire RS485
Speed	9600, 19200, 38400 or 57600 bps
Default settings	19200 bps, 1 start bit, 8 bit data, even parity, 1 stop bit
Protocol	Modbus RTU to published standard V1.02 - 2006

## Producer and supplier:

UPS Servis spol. s r.o.

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