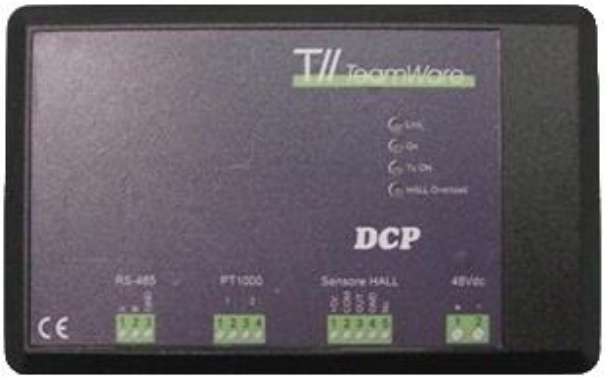

DC voltage and current, temperature measurement device

General features

DCP is a multifunction device for measuring electrical quantities on DC lines.
The voltage measurement is done directly by the power line of the DCP.

The current measurement is performed by Hall effect transducer that provides an analog signal precise, repeatable and fast. Transducer allows an immediate installation, without supply interruption, because it is has to be fixed with a plastic clamp, at cable conductor or at the copper bar. Once fixed on the conductor, the Hall transducer must be calibrated with the measured current value.

DCP can be optionally equipped for the acquisition of up to 2 temperature measurements from environmental probes PT1000. The temperature measurements are carried out every second.

DCP communicates with Modbus RS485 network; all the communication parameters (address, baud rate, stop bits, parity bits) can be programmed.

Main measures

- DC voltage in range: 15 ÷ 60 Vdc
- DC current in range: 0 ÷ 1000 A
- Environmental temperatures (Option)

DC measures

- Power
- Total energy from power-on
- Partial energy (from last reset command)
- Min, average and max values of:
  - voltage
  - current
  - power

  in the integration period programmed

Parameters

- Voltage and current sampling time: 0,1 ÷ 60 sec.
- Power calculating interval: 0,1 ÷ 60 sec.
- V, A, P average values calculating integration period: 1, 5, 10, 15, 30 , 60 minutes
- Hall transducer offset and gain

User Interface

- 4 functional status leds

Communication

- RS485 Network, half duplex
- Network protocol: Modbus RTU

Technical specifications

DCP

Power supply
Voltage: 15 ÷ 60 Vdc
Note: reverse polarity protection
Consumption: < 2 W

Capturing
Analog conversion: 12 bit

Voltage measure (from supply terminal)
Measure range: 10 ÷ 60 Vdc
Precision: < ± 20 mV
Measure error: < ± 100 mV

Current measure
Transducer: HALL effect
Measure range: 0 ÷ 1000 A
Measure error: 1% f.s.

HALL effect current transducer
Sensitivity:
S = 300 S/T in the range of linear response
Magnitude:
Sensitivity Vs Temperature ΔS/SΔT = ±0,02%/ºC
Linearity range: BL = ± 5 mT
Non linearity: NL = 0,1%
Noise spectral density magnetic input:
ΔBnoise = 125 nT/√Hz (f=10Hz ÷ 10kHz)
Note: outside the range of linearity of the sensor, it saturates but it is not damaged
HALL sensor size: 30 x 25 mm
HALL sensor cable length: 2 mts

Temperature measure (optional)
Channels: 2
Transducer: PT1000 - 2 wires
Measure range: -50°C ÷ 100°C
Precision: < ± 0.1°C
Measure error (excluding PT1000 error):< ± 0.5°C

Field connection
Pluggable terminal blocks

Enclosure
Size: 145 x 90 x 30 mm
Enclosure: ABS
IP grade: IP54 (IP20 terminal blocks)
Weight: 0,2 Kg
Mounting: wall, with screws

EMC
Emissions: EN61000-6-3
Immunity: EN61000-6-2

Environmental conditions
Operating temperature: -10 ÷ +60 °C
Storage temperature: -25 ÷ +70 °C
Humidity: 90% non-condensing

Software tool included
Free software tool (Windows o.s.) for parameters programming

DCP product code: 104 S4 12
DCP with temperatures product code: 104 S4 13

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