Quick Installation & Configuration manual

DC current sensor & DC current converter

Installation Manual DC measurement

Functional description & components

Function
Simple open loop DC current sensor can measure DC currents in range of 0-100A. To transfer data to the monitoring system it can be used together with DC current converter.

Components

The sensor consists of a plastic housing with open/closed DC current loop and 4 pins terminal connector. Current converter is a simple plastic case with 4 pins input, power 12V socket and analog 0-5V RJ12 output.

Safety instructions

- Please observe the valid regulations for installation in the country in which current transducer is installed and operated, and the national regulations for accident prevention. Please also observe any internal company regulations, such as work, operating and safety regulations.
- The technical specifications and limit values stated must not be exceeded under any circumstances. In particular, this applies to the specified ambient temperature range and IP protection category.

Siting location requirements

To ensure proper functionality, the conditions specified in section "Technical specifications" must be observed.

Installation procedure

Notes on assembly
- Be careful, sensor's max. voltage for isolation is 2kV.
- The sensor can measure DC current on any current wire, not more then 10 mm in diameter. Just open the cover, insert the wire and close.

- Max. distance for DC current sensor from monitoring unit is 50 meters.

Installation

The sensor and the converter installed together.

- Mount the sensor using M4 screws and M4 nuts. Distance between mounting holes is 50 mm.
- Mount current converter using M4 screws and M4 nuts. Distance between mounting holes is 60 mm.
- Use a 4-core flat cable and two green connectors supplied with the converter and the sensor to assemble the connecting cable.

Testing transducers

Upon a time, the Hall sensor readings may vary due to physical reasons. On a sensor head You can see the two variable resistors, which can customize measuring. Change can be done only like a last resort!

Technical specifications

DC current sensor

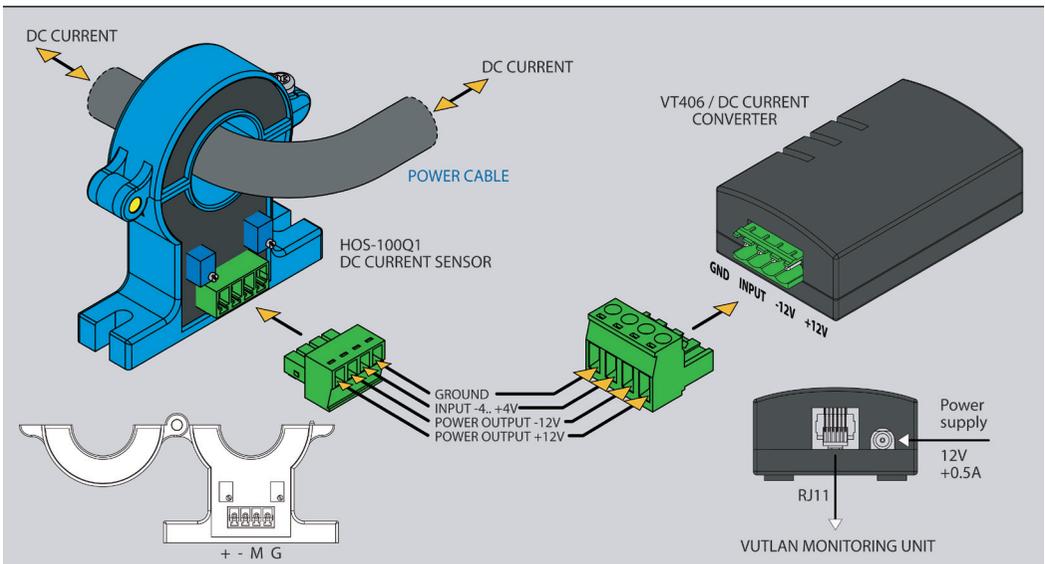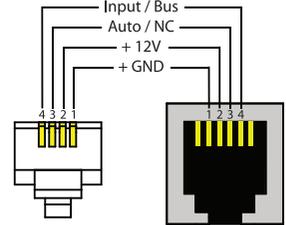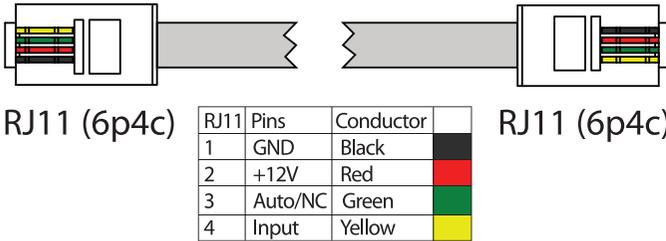|	
Dimensions	$60 \times 61 \times 16$ mm
Weight	150 g
Power input	-12V / +12V
Operating temperature	Min. -10° C, Max.80° C
Operating humidity	Min. 5% - Max. 95% (Non-Condensing)
Outputs	4 pin terminal
Power Consumption	1 Watt
Max. distance	50 m
Special Features	Frequency 0-20 kHz, Isolation - 5kV, Measured current • 0-100 A, Accuracy - 1%, Output -4 ... +4 V

DC current converter

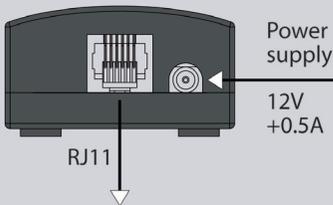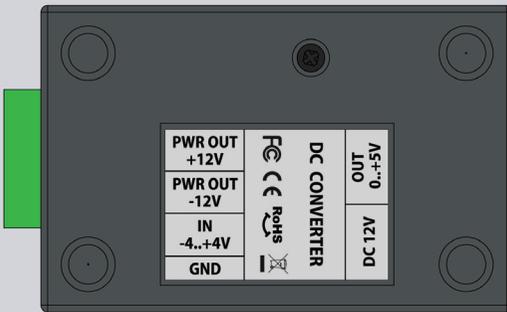|	
Dimensions	68 × 47 x 26 mm
Weight	160 g
Inputs	RJ-12 / RJ-11
Operating temperature	Min. -10° C, Max.80° C
Operating humidity	Min. 5% - Max. 95% (Non-Condensing)
Power input	12V DC, 1A
Power Consumption	100 mW
Max. distance	50 m
Special Features	Frequency - 50(400) Hz, Isolation - 2,5 kV, Measured range 0-120 A, Accuracy - 1%, Output 0-5 V.

Connection

Connect one end of RJ11 / RJ12 cable to monitoring unit and the other end to analog output of converter. Connect the converter to power adapter 12V. Connect the converter and the sensor with connecting wires. The monitoring system will automatically sense current sensor as a sensor.
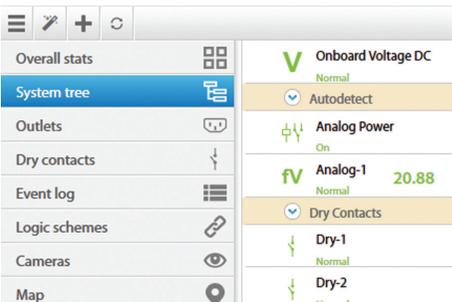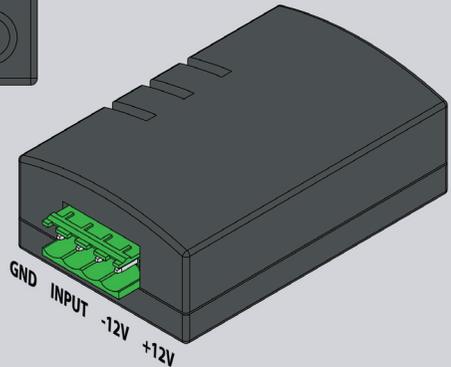
The new sensor will appear in the web interface of the system. Click on "System tree" menu and you will find a new sensor marked by an icon "fV" (abreviation from: Voltage function, used for sensor monitors and converters). Click on the sensor to open it's properties.

RJ11 (6p4c)   RJ11 (6p4c)

RJ11	Pins	Conductor	
1	GND	Black	
2	+12V	Red	
3	Auto/NC	Green	
4	Input	Yellow	

Input / Bus
Auto / NC
+ 12V
+ GND

DC CURRENT

DC CURRENT

POWER CABLE

VT406 / DC CURRENT CONVERTER

HOS-100Q1 DC CURRENT SENSOR

GND   INPUT   -12V   +12V

GROUND
INPUT -4.. +4V
POWER OUTPUT -12V
POWER OUTPUT +12V

Power supply

12V +0.5A

RJ11

VUTLAN MONITORING UNIT

+ - M G

VT406 / DC CURRENT CONVERTER

A modal window with sensor properties will pop up.

1. Change type of the sensor by choosing "Current". Choosing any type of the sensor does not affect sensor properties, it only changes sensor icon for comfort of usage.

2. Change the name of sensor, for example "AC current".

3. Use "Expression formula": 20*x-50, where K=20 and b=50.

Put in the threshold levels by dragging: Low alarm, Low warning, High warning, High alarm levels.

For example, graph above shows that the state of the sensor at the moment is "Normal" because 20.4 is between "Low warning" and "High warning" states, which is considered "Normal" state.

Click "Save" or "Apply" at the bottom of the "Properties" window. The page will reload and the sensor will update by changing it's icon type to "A" (abreviation from: "Ampers").

Voltage converter

Settings | Charts | All data

Name	Analog-1
ID	204001
Type	fvoltage
User defined type	current
Class	analog
Hardware port	1
Current state	Normal
Current value	20.9
Additional fields	expr = 20*x

Low alarm level	1.0
Low warning level	15.1
High warning level	49.5
High alarm level	61.4

0   100

Hysteresis type	time
Low alarm	1
Low warning	1
Normal	0
High warning	1
High alarm	1

Expression (f(x), for instance: 2*x+123)   20*x

operators: +, -, *, /, %, ^
functions: abs(), sqrt(), exp(), ln(), log(), sin(), cos(), tan(), asin(), acos(), atan()
constants: pi, e

OK   Apply   Cancel