PRODUCT DESCRIPTION

Converter Web Sensor P2520 is designed for the connection two sensors with current output into Ethernet network. The measured current (0-20mA or 4-20mA) can be converted to the physical quantity that is measured by the connected sensor. The converter is galvanically isolated from the Ethernet communication lines, current inputs and power supply are not galvanically isolated.

Measured values can be read using an Ethernet connection. The following formats of Ethernet communication are supported: www pages with user-design possibility, Modbus TCP protocol, SNMPv1 protocol, SOAP protocol and XML. The instrument may send also a warning message if the measured value exceeds adjusted limit. The messages can be sent up to 3 e-mail addresses or to Syslog server and can be sent by SNMP Trap too. The alarm states are also displayed on the websites. The device setup can be made by the *TSensor* software (see http://www.cometsystem.cz/products/reg-TSensor) or using the www interface.

INSTALLATION AND OPERATION

Devices are mounted on a flat surface with two screws or bolts. The connecting terminals are accessible after unscrewing four screws in corner of case and removing the lid. Pass cables (external diameter 3 to 6.5 mm) through released glands and connect wires according the schematic diagram. Wire cross-section choose from 0.14 to 1.5 mm². Tighten glands and screw the lid. Devices don´t require any special operation and maintenance. We recommend you periodic calibration for measurement accuracy validation.
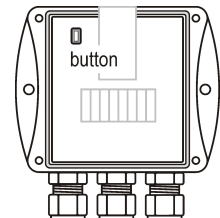
DEVICE SETUP

Contact your network administrator to obtain necessary information for the converter connection into the network (IP address, default gateway, subnet mask) and check if there is no IP address conflict when you connect the device into network for the first time. IP address of each device is set by manufacturer to **192.168.1.213**. Install the latest version of TSensor to your PC, connect the Ethernet cable and connect the power supply.

Run the configuration software *TSensor*. Set the „*Ethernet*" communication interface and press „*Find Device*" button. According to MAC address (see device label) select converter for configuration and by „*Change IP Address*" button set new address according to network administrator instructions. Gateway IP address may not be entered if you want to use the device only in local network. After changing of IP address the device is restarted and new IP address is assigned. Restart of the device takes about 10 seconds.

The device setup can be made by the web interface. Main page will be shown when you insert device address into address bar of your web browser. Access to device setup is possible via tile **Settings** (see next page).

To restore the converter to the **factory default settings** use the button inside the device (see picture). Turn of the power and unscrew upper cover of the device case. Press the button, turn on the power and keep the button pressed for 10 sec. Close the device.

button

ERROR STATES

Devices continuously check its state during operation and if the error appears, it is displayed relevant code: **Error 1** – parameters for linear conversion are set incorrectly, **Error 3** – measured value can not be shown at 16bit register, please use 32bit register or change constants for conversion, **Error 7** – measured value is over the upper limit, please check the current loop wiring and check the correct function of the sensor, **Error 2, Error 4, Error 5** and **Error 6** – it is a serious error, please contact technical support

SAFETY INSTRUCTIONS

- Installation, electrical connection and commissioning should be performed by qualified personnel only.
- Don't connect or disconnect device while power supply voltage is on, don't use the device without the cover.
- Use the power supply according to technical specifications and approved according to relevant standards.
- Never expose the converter to higher or lower temperatures than is allowed.
- Don't use the device, if it doesn't work correctly.
- If it is necessary connect the device to the Internet network, properly configured firewall must be used.
- The device should not be used for applications, where malfunction could cause to injury or damage to property.
- Devices contain electronic components, it needs to liquidate them according to legal requirements.
- **To supplement the information** provided in this data sheet, use the manuals and other documentations which are available at www.cometsystem.cz.

Electrical wiring

connection of terminals

CPU

20Ω
20Ω

RJ45

+U1
+I1
GND
+U2
+I2
GND
+Ucc
GND

active current source

+U
+I
GND

power
Iout
GND

shielding

passive two-wire transmitter

+U
+I
GND

+I
−I

shielding

73
40
ø 4,2
76,5
89.
(94)

Device setup

Settings

Back
Exit to main menu

General
General device settings

General device settings - device name can be changed to user specified name using the item **Device name**. History values will be cleared after changing **History storage interval**.

Network
Basic setting of the network interface

Basic settings of the network interface - parameters required for network setting are **IP address, Default gateway** and **Subnet mask.** Network parameters can be also obtained automatically from DHCP server using option **Obtain an IP address automatically.**

Alarm limits
Configuration of the alarm limits

Configuration of the alarm limits - for each measurement channel it is possible to set upper limit **High limit**, lower limit **Low limit, Time delay** for alarm activation and **Hysteresis** of alarm clearing.

Channels
General settings of the channels

General settings of the channels - for each channel it is possible to set name and unit. Measured current is recalculated (linear equation) to output value according settings (**Current ... will be shown as ...**). Output value is rounded according selected **Number of decimal places.**

SOAP protocol
Setup SOAP protocol for database system

SOAP protocol - can be enabled by option **SOAP protocol enabled.** Device send SOAP message according selected **Sending interval.** Sending of SOAP messages when alarm occurs or when alarm is cleared can be enabled by **Send SOAP messages when alarm occurs.**

Email
Alarm emails configuration

Email sending - device can send warning email when alarm occurs. Email is also sent when alarm condition is cleared. For proper email sending it is necessary to setup SMPT server connection, sender address and up to three addresses of email recipients.

Protocols
Syslog and ModbusTCP protocol settings

ModbusTCP and Syslog protocols - Modbus server is enabled by default. Deactivation is possible via **Modbus server enabled** option. Syslog protocol can be enabled using **Syslog enabled** option. Alarm messages are sent to **Syslog server IP address.**

SNMP
SNMPv1 protocol and SNMP Traps

SNMP protocol - for reading actual measured values using SNMP it is necessary to know password - **SNMP read community.** When alarm or error state occurs a warning message (Trap) can be sent (option **Trap enabled**) up to three IP addresses of the Trap recipients.

Time
Synchronization with NTP server

Synchronization with SNTP server - time can be synchronized according the SNTP server. It is necessary to set **GMT offset [min]** and **SNTP server IP address.** The default synchronization interval (24 hours) can be changed to one hour interval.

www and security
Web server and Security configuration

Web server and Security - security features can be enabled by the **Security enabled** option. Port of the www server can be changed from the default value 80 using **WWW port** option. Web pages with actual values are refreshed according to **Web refresh interval** option.
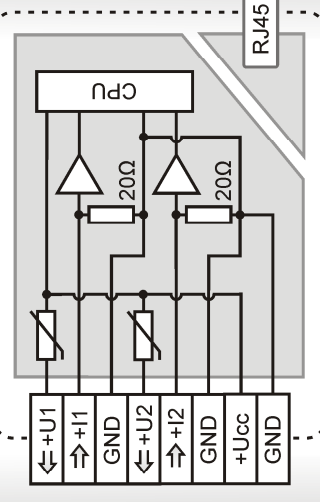
Maintenance
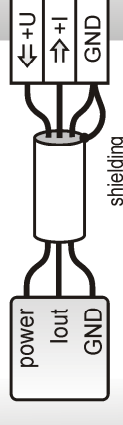Factory defaults, info, etc.

Factory defaults - device is restored to factory settings using the **Factory defaults** option. Network parameters like a IP address, subnet mask and gateway will not be changed. For a complete factory settings use the small button inside the device.
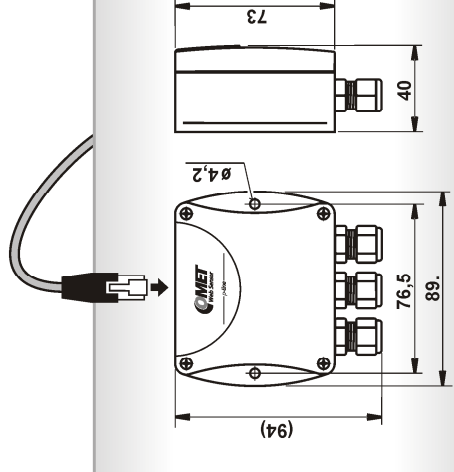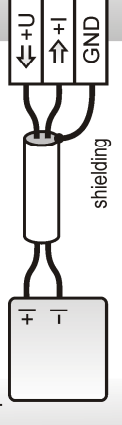
Technical specifications

Supply voltage +Ucc	9 to 30Vdc
Power consumption *	max. 1W
Current load of the U1,U2 terminals	max. 40mA (protected with PTC thermistor)
Current measuring range	0 to 25mA (max. input current 30mA)
Accuracy of current measurement	±0.1% of measuring range from 0 to +50°C
	±0.3% of measuring range from -30 to +80°C
Resolution	1µA
Input impedance	20Ω
Communication port	RJ45 connector - galvanically isolated from communication line, 10Base-T/100Base-TX Ethernet (Auto-Sensing)
Memory	1000 values for each channel (non-backup RAM memory)
Screen resolution	minimum 1024 x 768
Supported protocols	TCP/IP, UDP/IP, ARP, ICMP, DHCP, HTTP, SMTP, SNMPv1, ModbusTCP, SNTP, SOAPv1.1, Syslog
Supported web browsers	Internet Explorer 9, Mozilla Firefox 12 and later, Google Chrome 18 and later, Opera 11 and later, Safari 5 and later
Protection class	IP30
Temperature operating range	-30 to +80°C
Humidity operating range	0 to 100%RH (no condensation)
Electromagnetic compatibility	EN 61326-1, EN 55011, EN 55022
Mounting position	any position
Recommended calibration interval	2 years
Weight	150 g
Dimensions [mm]	see dimensional drawing

* device consumption without sensors powering