

## PRODUCT DESCRIPTION

**Converter P2520** is designed to connect two sensors with current output into Ethernet network. Measured current (0-20mA or 4-20mA) can be recalculated to value of physical quantity 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, ModbusTCP, SNMPv1 protocol, SOAP protocol and XML. The converter 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** is made using the web 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 mm<sup>2</sup>. Tighten glands and screw the lid. Devices don't require special operation and maintenance. We recommend you periodic calibration for measurement accuracy validation.

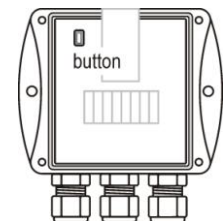
## DEVICE SETUP

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. TSensor software can be free downloaded from the [www.cometsystem.cz](http://www.cometsystem.cz).

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 factory default settings use the button inside the device (see picture). Turn off 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.



## 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. It is not recommended to use the device for long time under condensation conditions.
- 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.
- For more information, please use detailed manuals and other documentation which are available at [www.cometsystem.cz/manuals.htm](http://www.cometsystem.cz/manuals.htm) or [www.cometsystem.cz/software.htm](http://www.cometsystem.cz/software.htm).

## Device setup

### Settings

**Back**  
Exit to main menu

#### General

General device settings

#### Network

Basic setting of the network interface  
Network parameters can be also obtained automatically from DHCP server using option **Obtain an IP address automatically**.

#### Alarm limits

Configuration of the alarm limits  
**Time delay** for alarm activation and **Hysteresis** of alarm clearing.

#### 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 SMTP 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.

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**.

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**.

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.

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 - 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 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 SMTP server connection, sender address and up to three addresses of email recipients.

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 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.

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.

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.

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	9 to 30Vdc	Protection class	IP30
Power consumption *	max. 1W	Temperature operating range	-30 to +80°C
Current load of the U1,U2 terminals	max. 40mA (protected with PTC thermistor)	Humidity operating range	0 to 100%RH (no condensation)
Current measuring range	0 to 25mA (max. input current 30mA)	Electromagnetic compatibility	EN 61326-1, EN 55011, EN 55022
Accuracy of current measurement	±0.1% of measuring range from 0 to +50°C	Mounting position	any position
Resolution	±0.3% of measuring range from -30 to +80°C	Recommended calibration interval	2 years
Input impedance	1µA 20Ω	Weight	150 g
		Dimensions [mm]	see dimensional drawing

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

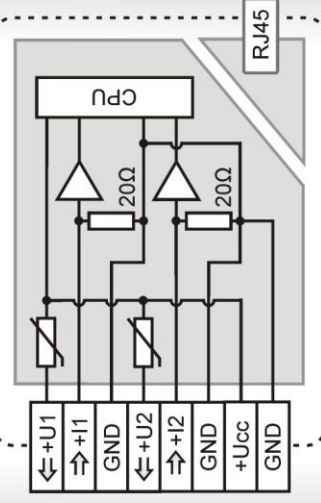
Supported protocols - TCP/IP, UDP/IP, ARP, ICMP, DHCP, HTTP, SMTP, SNMPv1, ModbusTCP, SNTP, SOAPv1.1, Syslog

Supported web browsers - Internet Explorer 9, Mozilla Firefox 12 and later, Google Chrome 18 and later, Opera 11 and later, Safari 5 and later

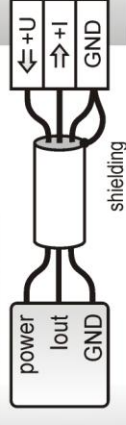
\* device consumption without sensors powering

## Electrical wiring

connection of terminals



active current source



passive two-wire transmitter

