PRODUCT DESCRIPTION

Programmable transmitters with Ethernet connection are designed to measure temperature and relative humidity of air and to measure concentration of CO_2 in the air. Transmitters can be used in a chemically non-aggressive environment.

The CO_2 concentration is measured using the maintenance free sensor. The unique patented auto-calibration procedure compensates aging of the sensing element and guarantees outstanding high reliability and long-term stability.

Digital conception with microprocessor allows to determine the other computed humidity values, like dew point temperature, absolute humidity, specific humidity, mixing ratio and specific enthalpy. Measured and calculated values are displayed on a two-line LCD display or can be read and then processed via Ethernet interface. The visual indication of the concentration of CO_2 is provided by three-color LED. The instrument may send a warning message if the measured value gets out of adjusted limits. The reports can be: sent up-to 3 e-mail addresses, sent by SNMP trap up to 3 IP addresses, displayed on the device www page or sent to syslog server.

The supported Ethernet communication formats: www pages with user-design possibility, Modbus TCP protocol, SNMPv1 protocol and SOAP.

For setting of all parameters including alarm limits you can use *TSensor* software (see *www.cometsystem.cz/software*.htm).

type *	measured values	construction	mounting
T5540	CO_2	ambient air	wall
T6540	T + RH + CO_2 + CV	ambient air	wall

* models marked Txxxx**Z** are custom - specified devices   T…temperature, RH…relative humidity, CO_2…concentration CO_2 in air, CV…computed values

INSTALATION AND OPERATION

The transmitters have to be mounted on a flat surface to prevent deformation. Pay attention to mounting of the device, because incorrect choice of working position or measuring point could adversely affect accuracy and long-term stability of measured values.

After switching the device starts internal test. During this time (about 20 s) LCD display shows ---- instead of CO_2 concentration value.

Devices don´t require special maintenance. We recommend you periodical calibration for validation of measurement accuracy.

DEVICE CONNECTION AND CONFIGURATION

For network device connection it is necessary to know new suitable IP address (you can get it automatically from DHCP server or from your network administrator) and to have *TSensor* software installed. According to the "Device connection procedure" (see next page) you connect Ethernet cable, power adapter or PoE splitter. Then you run *TSensor* program, set the new IP address, configure the device in accordance with your requirements (alarm conditions, limits of CO_2 indication, sending of e-mail, traps …) and finally store the settings. The IP address of each device is set by the manufacturer to **192.168.1.213**.

ERROR STATES

Device continuously checks its state during operation and if an error appears, it is displayed relevant code: **Err 1** - measured value (except of CO_2 concentration) or calculated value is over the upper limit, **Err 2** - measured or calculated value is below the lower limit or concentration CO_2 measurement error occurred, **Err 0, Err 3** and **Err 4** - it is a serious error, please contact distributor of the device.
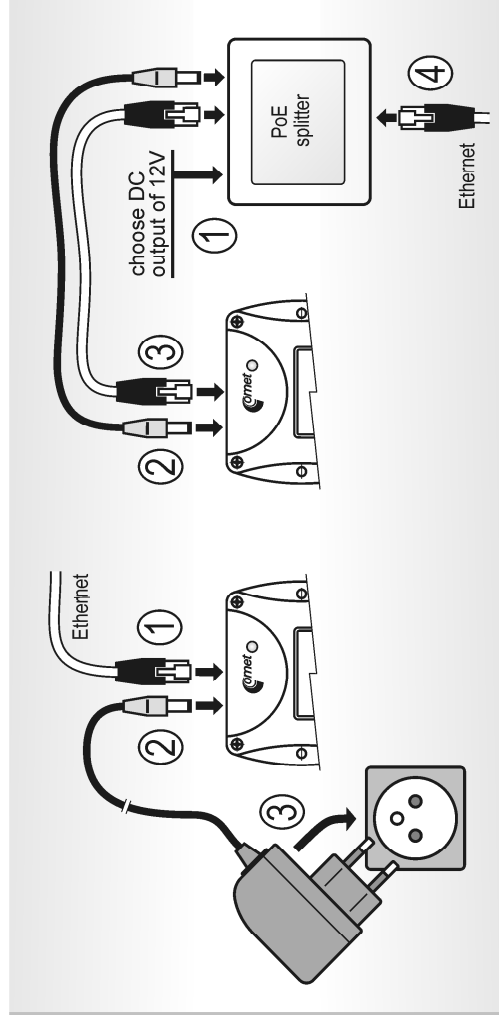
SAFETY INSTRUCTIONS

- Humidity and temperature sensors of the transmitters can not be operate and store without a filter cap.
- Temperature and humidity sensors have not to be exposed to direct contact with water and other liquids.
- It is not recommended to use the humidity transmitters for long time under condensation conditions.
- Take care when unscrewing the filter cap as the sensor element could be damaged.
- The regulator must be turned on for at least 24 hours in order to start the automatic calibration of the CO_2 sensor
- Use only the power adapter according to technical specifications and approved according to relevant standards.
- Don't connect or disconnect transmitters and transducers while power supply voltage is on.
- Installation, electrical connection and commissioning should be performed by qualified personnel only.
- Devices contain electronic components, it needs to liquidate them according to currently valid conditions.
- For more information, please use detailed manuals and other documentation which are available at *www.cometsystem.cz/manuals.htm* or *www.cometsystem.cz/software.htm*

Technical specifications

Device type	T5540	T6540
Supply voltage - power coaxial connector, diameter 5.1 x 2.1 mm	9 to 30Vdc	9 to 30Vdc
Power consumption	1W	1W
Temperature measuring range	—	-30 to 80 °C
Accuracy of temperature measurement	—	± 0,4°C
Relative humidity (RH) measuring range	—	0 to 100 %RH
Accuracy of humidity measurement from 5 to 95 %RH at 23°C	—	± 2,5 %RH
CO_2 concentration measuring range	0 to 2000 ppm	0 to 2000 ppm
Accuracy of CO_2 concentration measurement at 25°C and 1013 hPa	±(50ppm+2% of measuring value)	±(50ppm+2% of measuring value)
Temperature dependence of CO_2 concentration measurement at 0 to 50°C	typ. 2 ppm CO_2/°C	typ. 2 ppm CO_2/°C
Other calculated humidity variables	—	yes
Recomended calibration interval	2 years	1 year
Protection class of the case with elektronics	IP30	IP30
Protection class of the sensors cover	—	IP40
Temperature operating range of the case with electronics	-30 to +60°C	-30 to +60°C
Temperature operating range of the sensing element (sensors)	—	-30 to +80°C
Humidity operating range	5 to 95%RH	5 to 95%RH
Barometric pressure operating range	850 to 1100 hPa	850 to 1100 hPa
Mounting position	connectors upwards	sensor cover downwards
Storage temperature range (5 to 95%RH, no condensation, barometric pressure 700 to 1100 hPa)	-40 to +60°C	-40 to +60°C
Electromagnetic compatibility according to	EN 61326-1 EN 55011	EN 61326-1 EN 55011
Weight	140 g	160 g
Dimensions [mm]		

Housing dimensions and location of the connectors

39,5
Φ 4,2
88,5
76,5
72,5

RJ-45
9-30 Vdc

Device connection procedure

Ethernet

① ② ③

choose DC output of 12V

① ② ③ ④

PoE splitter

Ethernet