Transmitters and transducers Web Sensor Tx64x with power over Ethernet - PoE

PRODUCT DESCRIPTION

Transmitters Web Sensor Tx64x with Ethernet connection are designed to measure concentration of CO_2 in the air and to measure temperature and relative humidity of air. Devices can be powered from power supply adapter or by using power over Ethernet - PoE.

The CO2 concentration is measured using the dual wavelength NDIR sensor with the multipoint calibration. This principle compensates aging of the sensing elements and offers maintenance free operation and outstanding long term stability.

Relative humidity transmitters allows to determine other calculated humidity variables 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 following formats of Ethernet communication are supported: www pages with user-design possibility, Modbus TCP protocol, SNMPv1 protocol, SOAP protocol, XML and JSON. The instrument may send also a warning message if the measured value exceeds adjusted limit. The possible ways to sending messages: sending e-mails up to 3 e-mail addresses, sending SNMP traps up to 3 configurable IP addresses, sending messages to Syslog server. The alarm states are also displayed on the web page.

The device setup can be made by the *TSensor* software (see www.cometsystem.com) or using the www interface.

type *	measured values	version	mounting
T5640	CO_2	ambient air	wall
T5641	CO_2	with probe on a cable	wall
T6640	T + RH + CO_2 + CV	ambient air	wall
T6641	T + RH + CO_2 + CV	with probes on a cable	wall

* models marked Txxxx**Z** are custom - specified devices T…temperature, RH…relative humidity, CO_2…concentration of CO2 in air, CV…computed values

INSTALLATION AND OPERATION

The mounting holes and connection terminals are accessible after unscrewing four screws in the corners of case and removing the lid. Devices have to be mounted on a flat surface to prevent their deformation. The external probe place in a measured environment. Pay attention to the location of the device and probe. Incorrect choice of working position could adversely affect accuracy and long-term stability of measured value. All cables should be located as far as possible from potential interference sources.

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

DEVICE SETUP

For network device connection it is necessary to know new suitable IP address. The device can obtain this address automatically from a DHCP server or you can use the static IP address, which you can get from your network administrator. Install the latest version of *TSensor* software to your PC and according to the "Electrical wiring" (see next page) connect the Ethernet cable and the power supply adapter. Then you run *TSensor* program, set the new IP address, configure the device in accordance with your requirements and finally store the settings. The device setup can be made by the web interface too (see manual for devices at www.cometsystem.com).

The default IP address of each device is set 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 or calculated value is over the upper limit
Err 2 – measured or calculated value is below the lower limit or CO_2 concentration measurement error occurred
Err 0, Err 3, Err 4 – it is a serious error, please contact distributor of the device

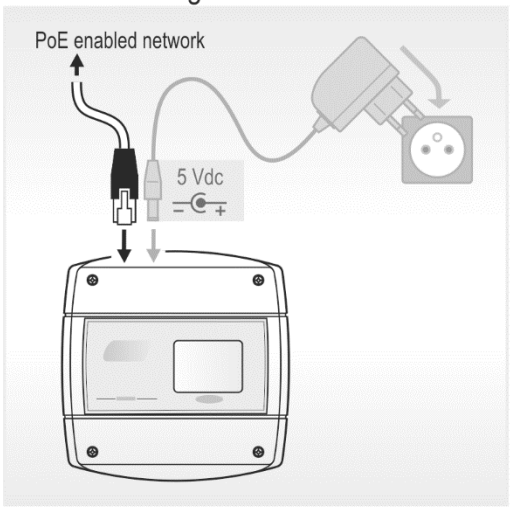
SAFETY INSTRUCTIONS

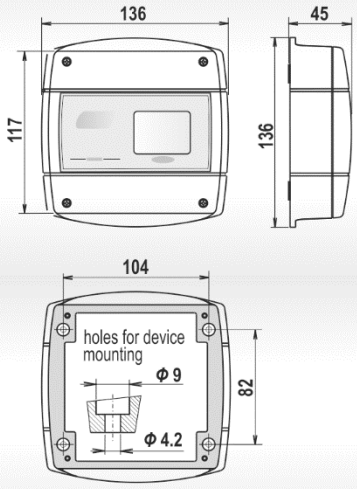
- Humidity and temperature sensors cannot be operate and store without a filter cap.
- Temperature and humidity sensors have not to be exposed to direct contact with water and other liquids.
- It is not recommended to use the humidity transmitters for long time under condensation conditions.
- Take care when unscrewing the filter cap as the sensor element could be damaged.
- Use only the power adapter according to technical specifications and approved according to relevant standards.
- Don't connect or disconnect devices while power supply voltage is on.
- If it is necessary connect the device to the Internet, properly configured firewall must be used.
- The device should not be used for applications, where malfunction could cause to injury or damage to property.
- 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.
- **To supplement the information** provided in this data sheet, use the manuals and other documentations which are available in the "Download" section for a particular device at www.cometsystem.com.

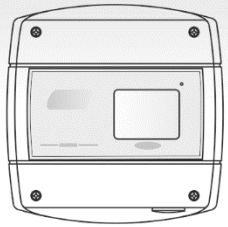
Technical specifications

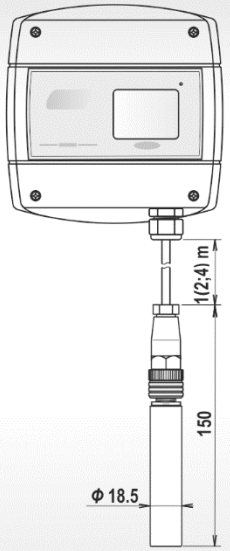
Web Sensor device type	T5640	T5641	T6640	T6641
Supply voltage (coaxial connector 5.1x2.1mm)	5.0 to 6.1 Vdc			
Power over Ethernet	according to IEEE 802.3af, PD Class 0 (max. 15.4W), voltage from 36Vdc to 57Vdc			
Power consumption	approximately 1W continuously, max. 4W for 50 ms with 15 s period			
Temperature measuring range	—	—	-20 to +60°C	-30 to +105°C
Accuracy of temperature measurement	—	—	± 0.6°C	± 0.4°C
Relative humidity (RH) measuring range *	—	—	0 to 100 %RH	0 to 100 %RH
Accuracy of humidity measurement from 5 to 95 %RH at 23°C	—	—	± 2.5 %RH	± 2.5 %RH
CO_2 concentration measuring range **	0 to 2000 ppm	0 to 10 000 ppm	0 to 2000 ppm	0 až 10 000 ppm
Accuracy of CO_2 concentration measurement at 25°C and 1013 hPa	±(50ppm+2% of measured value)	±(100ppm+5% of measured value)	±(50ppm+2% of measured value)	±(100ppm+5% of measured vakue)
Recomended calibration interval of the device ***	5 years	5 years	1 year	1 rok
Protection class - the case with elektronics / the CO_2 probe / the RH+T probe / the measuring end of stem	IP30 / — / — / —	IP30 / IP65 / — / —	IP30 / — / — / IP40	IP30 / IP65 / IP40 / —
Temperature operating range of the case with electronics	-20 to +60°C	-30 to +80 °C	-20 to +60°C	-30 to +80°C
Temperature operating range of the CO_2 probe	—	-40 to +60 °C	—	-40 to +60°C
Temperature operating range of the measuring end of stem	—	—	-20 to +60°C	—
Temperature operating range of the RH+T probe	—	—	—	-30 to +105°C
Atmospheric pressure operating range	850 to 1100 hPa	850 to 1100 hPa	850 to 1100 hPa	850 to 1100 hPa
Humidity operating range (no condensation)	0 to 95%RH	0 to 100%RH	0 to 95%RH	0 to 100%RH
Mounting position	sensor cover downwards	any position ****	sensor cover downwards	any position ****
Storage temperature range and storage relative humidity range	same as the operating range	same as the operating range	same as the operating range	same as the operating range
Electromagnetic compatibility according to	EN 61326-1 EN55011	EN 61326-1 EN55011	EN 61326-1 EN55011	EN 61326-1 EN55011
Weight	300 g	380 (420, 500) g	320 g	470 (540, 680) g
Dimensions [mm]				

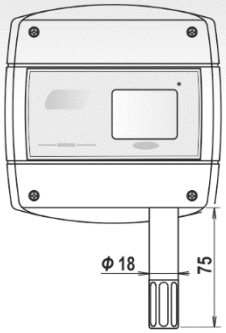
Electrical wiring

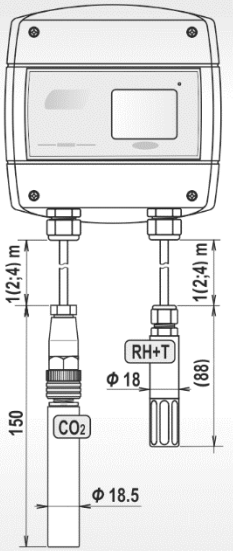












* The relative humidity measuring range is limited at temperatures above 85°C, see manuals for devices.
** LED indication (preset by manufacturer): **green** (0 to 1000 ppm), **yellow** (1000 to 1200 ppm), **red** (1200 to 2000/10000 ppm)

*** Recomended calibration intervals: relative humidity - 1 year, temperature - 2 years, CO_2 concentration - 5 years
**** if it can lead to long term condensation of water, it is necessary to use the RH+T probe at position with sensor cover downwards