PRODUCT DESCRIPTION

Programmable transmitters and transducers with Ethernet connection are designed to measure temperature, relative humidity and barometric pressure of air in non-aggressive environment. Transmitters and transducers are available in wall-mount version or with probe on a cable. For measuring temperature and relative humidity of compressed air is used type TxxxxP.

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

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

type *	measured values	construction	mounting
T0510	T	ambient air	wall
T4511	T	external probe Pt1000/3850 ppm	wall
T2514	P	ambient air	wall
T3510	T + RH + CV	ambient air	wall
T3511	T + RH + CV	probe with a cable	wall
T3511P	T + RH + CV	probe with a cable – pressure up to 25 bars	wall
T7510	T + RH + P + CV	ambient air	wall
T7511	T + RH + P + CV	probe with a cable	wall

* models marked Txxxx**Z** are custom - specified devices   T…temperature, RH…relative humidity, P…barometric pressure, CV…computed values

INSTALATION AND OPERATION

The transmitters and transducers designed for mounting on the wall are mounted on a flat surface with two screws or bolts. The probe with a cable probe is placed into a measured environment. Pay attention to device mounting, because incorrect choice of working position or measuring point could adversely affect accuracy and long-term stability of measured values.

The terminal for external probe Pt1000 connection is accessible after unscrewing four screws in the corners of case and removing the lid. The Probe Pt1000 is connected by shielded cable with a length up to 10 m so that, the external probe cable shielding is connected to proper terminal device only and cable should be located as far as possible from potential interference sources.

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

DEVICE CONNECTION AND CONFIGURATION

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. According to the "Device connection procedure" (see next page) you connect Ethernet cable, power adapter and external probe. Then you run *TSensor* program, set the new IP address, configure the device in accordance with your requirements (alarm conditions, 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 or calculated value is over the upper limit, **Err 2 –** measured or calculated value is below the lower limit or pressure 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.
- 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.
- If the sensing probe of T3511P device is installed, make sure that measured area is without pressure.
- 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	T2514	T4511	T0510	T3510, T7510	T3511, T7511	T3511P
Supply voltage - power coaxial connector, diameter 5.1 x 2.1mm	9 to 30 Vdc	9 to 30 Vdc	9 to 30 Vdc	9 to 30 Vdc	9 to 30 Vdc	9 to 30 Vdc
Power consumption	approximately 1 W	approximately 1 W	approximately 1 W	approximately 1 W	approximately 1 W	approximately 1 W
Temperature measuring range	—	-200 to 600°C	-30 to +80°C	-30 to +80°C	-30 to 105 °C	-30 to 105 °C
Accuracy of temperature measurement	—	±0.2°C (without probe)	± 0.6°C	± 0.6°C	± 0.4°C	± 0.4°C
Relative humidity (RH) measuring range *	—	—	—	0 to 100 %RH	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	± 2.5 %RH
Barometric pressure measuring range	600 to 1100 hPa	—	—	600 to 1100 hPa (T7510)	600 to 1100 hPa (T7511)	—
Accuracy of barometric pressure measurement at 23°C	±1.3 hPa	—	—	±1.3 hPa (T7510)	±1.3 hPa (T7511)	—
Other calculated humidity variables (dew point temperature, absolute humidity, ...)	—	—	—	yes	yes	yes
Recomended calibration interval	1 year	2 years	1 year	1 year	1 year	1 year
Protection class of the case with elektronics	IP30	IP30	IP30	IP30	IP30	IP30
Protection class of the sensors cover	—	—	IP30	IP40	IP40	IP40
Temperature operating range of the case with electronics **	-30 to +80°C	-30 to +80°C	-30 to +80°C	-30 to +80°C	-30 to +80°C	-30 to +80°C
Temperature operating range of the sensing element (sensors)	—	—	-30 to +80°C	-30 to +80°C	-30 to +105°C	-30 to +105°C
Humidity operating range	0 to 100%RH	0 to 100%RH	0 to 100%RH	0 to 100%RH	0 to 100%RH	0 to 100%RH
Mounting position	any position	any position	connectors upwards	connectors upwards	any position ***	any position ***
Storage temperature range (environment without condensation)	-30 to +80°C	-30 to +80°C	-30 to +80°C	-30 to +80°C	-30 to +80°C	-30 to +80°C
Electromagnetic compatibility according to	EN 61326-1	EN 61326-1	EN 61326-1	EN 61326-1	EN 61326-1	EN 61326-1
Weight	130 g	140 g	150 g	160 g	210 (250, 330) g	260 (300, 380) g
Dimensions [mm]						

Housing dimensions and connectors

Device connection procedure

T0510, T3510, T7510, T2514, T3511, T3511P, T7511

T4511

* The relative humidity measuring range is limited at temperatures above 85°C, see manuals for devices.
** It is recomended to switch off the LCD display at ambient temperature above 70°C.
*** if it can lead to long term condensation of water, it is necessary to use the probe at position with sensor cover downwards