



## COMET Tx4xx Industrial Transmitters and Transducers with RS458 Serial Interface Instruction Manual

[Home](#) » [COMET](#) » COMET Tx4xx Industrial Transmitters and Transducers with RS458 Serial Interface Instruction Manual 

COMET Tx4xx Industrial Transmitters and Transducers with RS458 Serial Interface



## **Tx4xx industrial transmitters and transducers with RS485 serial interface**

### **Contents**

- 1 PRODUCT DESCRIPTION**
- 2 INSTALATION AND OPERATION**
- 3 COMMUNICATION PROTOCOLS AND ERROR STATES**
- 4 SAFETY INSTRUCTIONS**
- 5 Technical specifications**
- 6 Electrical wiring**
- 7 Documents / Resources**
  - 7.1 References**
- 8 Related Posts**

## **PRODUCT DESCRIPTION**

Programmable transmitters and transducers with RS485 galvanic isolated serial interface are designed to measure temperature, relative humidity and barometric pressure of air in non-aggressive environment. Transmitters and transducers are available in wall-mount, duct-mount and bar versions 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. Devices support Modbus RTU protocol, protocol compatible with standard Advantech-ADAM, ARION protocol and communication with HWg-Poseidon devices. For set of all parameters you can use TSensor software (see [www.cometsystem.com](http://www.cometsystem.com)).

Durable plastic case of the device contains electronic and connection terminals. For easy connection/disconnection of the output cable is used TxxxxL version with Lumberg connector (IP67) instead of a cable gland.

Type *	measured values	ambient air	mounting
T0410	T	external probe Pt1000/38 50 ppm	wall
T4411	T	ambient air	wall
T2414	P	ambient air	wall
T5410	T + RH	ambient air	wall
T3411	T + RH + CV	ambient air	wall
T3413, T3413D	T + RH + CV	bar type	fix by means of the gland
T3417, T3417D	T + RH + CV	bar type	fix by means of the gland
T3419	T + RH + CV	probe with a cable	wall
T3419P	T + RH + CV	probe with a cable – pressure up to 25 bar	Wall
T7410	T + RH + P + CV	ambient air	Wall
T7411	T + RH + P + CV	probe with a cable	Wall

- \*models marked TxxxxZ 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 duct mount and bar types of transmitters install by clamping a metal stem into the gland or flange PP4 or PP90 (optional accessory). The probe with a cable 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 connecting terminals are accessible after unscrewing the four screws in the corners of case and removing the lid. Communication cables, preferably shielded (external diameter 3 to 6.5 mm) with wire cross-section from 0.14 to 1.5 mm<sup>2</sup> pass through the released glands and connect wires according to diagram. The Probe Pt1000 is connected by shielded cable with a length up to 10 m. Pass the cable through released gland and connect according to diagram so that, the shielding is connected to proper terminal device only. Do not connect it to other circuitry and do not ground it. Tighten glands and screw the lid. For TxxxxL devices and external probe connections is recommended to use shielded cable (external diameter 3 to 6.5 mm) with wire cross-section 0.75 mm<sup>2</sup> (TxxxxL) or 1.50 mm<sup>2</sup> (external probe). All cables 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.

## COMMUNICATION PROTOCOLS AND ERROR STATES

Description of communication protocols you can download from [www.cometsystem.com/manuals.htm](http://www.cometsystem.com/manuals.htm) Device setting from the manufacturer is ModBus RTU, address 1, communication speed 9600 Bd (no parity, 2 stop bits). To restore these settings, please unscrew the lid of case, close the jumper and press the button (next to connection terminal) for longer than six seconds.

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.

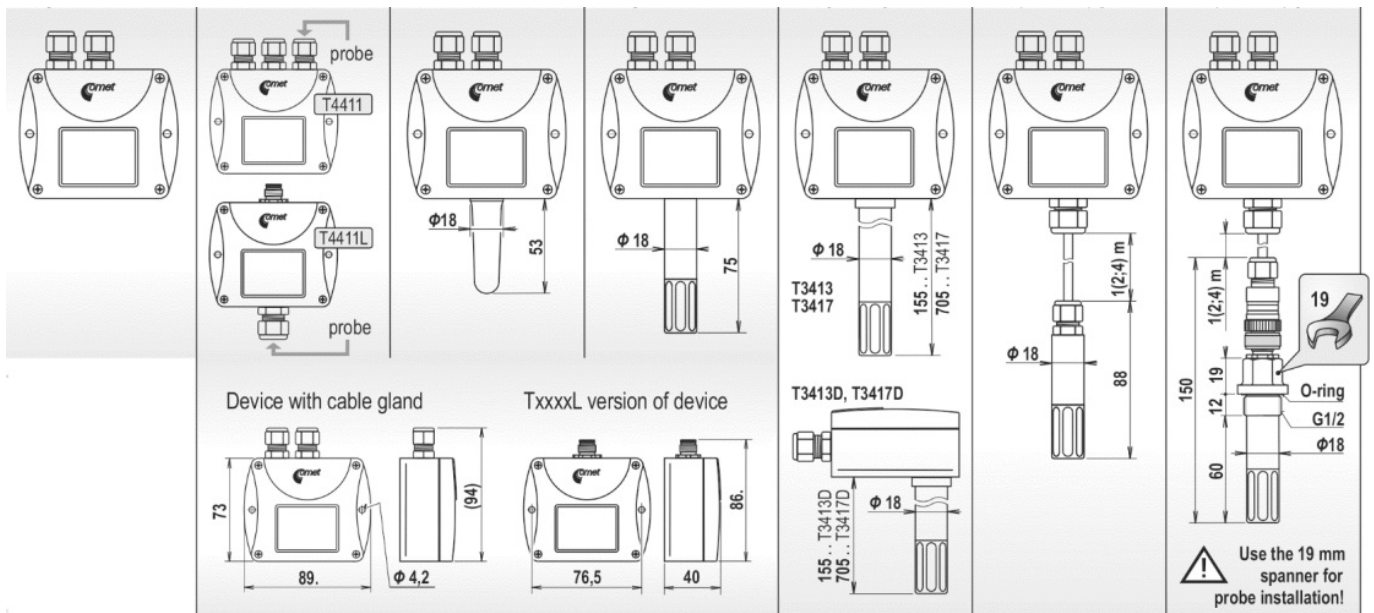
## SAFETY INSTRUCTIONS

-  Humidity and temperature sensors of the transmitters 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.
- Don't connect or disconnect transmitter and transducers while power supply voltage is on.
- If the sensing probe of T3419P 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. – To complement the information in this data sheet read the manuals and other documentations that are available in the Download section for a particular device at [www.cometsystem.com](http://www.cometsystem.com)

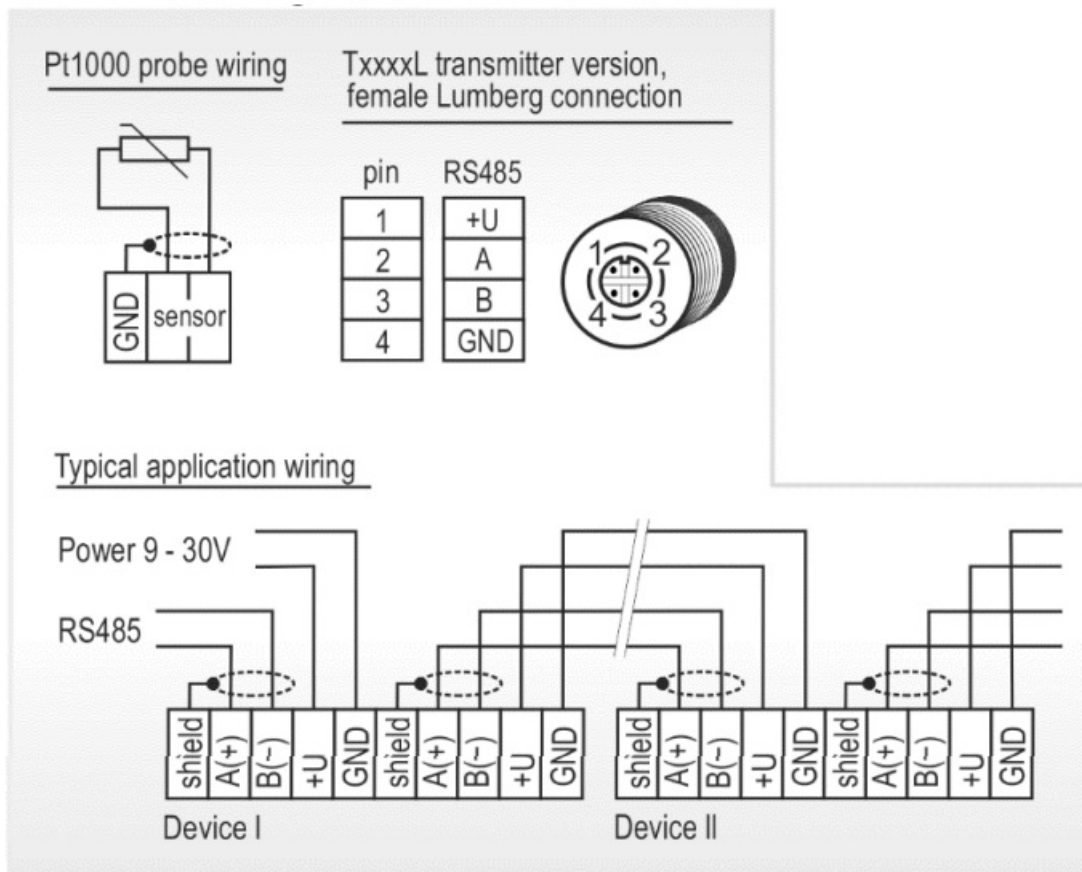
## Technical specifications

Device type	T2414	T4411	T0410, T5410	T3411, T7410	T3419, T7411	T3419P
Supply voltage	9 to 30V	9 to 30V	9 to 30V	9 to 30V	9 to 30V	9 to 30V
Power consumption	max. 0.5W	max. 0.5W	max. 0.5W	max. 0.5W	max. 0.5W	max. 0.5W
Temperature measuring range	–	-200to600°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)	± 0.4°C	± 0.1°C	± 0.1°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	–	1600 to 1100 hPa (T5410)	1600 to 1100 hPa (T7410)	600 to 1100 hPa (T7411)	–

Accuracy of barometric pressure measurement at 23°C	±1.3 hPa	—	±1.3 hPa (T5410)	±1.3 hPa (T7410)	±1.3 hPa (T7411)	—
Other calculated humidity variables (dew point temperature, ..)	—		—	yes	yes	yes
Recommended calibration interval	1 year	12 years	12 years (T5410 ... 1 year)	1 year	1 year	1 year
Protection class of the case with electronics	IP54	IP65	IP65 (T0410) IP54 (T5410)	IP65 (T3411) IP54 (T7410)	IP65 (T3419) IP54 (T7411)	IP65
Protection class of the sensors cover	—	—	IP65	IP40	IP40	IP40
Temperature operating range of the case with electronics**	-30 to +80°C	-30 to +50°C	-30 to +80°C	-30 to +80°C	-30 to +80°C	-30 to +50°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	cable glands upwards	any position	cable glands upwards	cable glands 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 +50°C
Electromagnetic compatibility according to	EN 61326-1	EN 61326-1	EN 61326-1	EN 61326-1	EN 61326-1	EN 61326-1
Weight	140 g	150 g	150 g	230 g / 580 g	210 (250,330) g	260 (300, 380) g
Dimensions [mm]						




## Electrical wiring



- The relative humidity measuring range is limited at temperatures above 85°C, see manuals for devices .
- It is recommended to switch off the LCD display at ambient temperature above 70°C. mounting position "cable glands upwards" is recommended for free space, in the air-conditioning duct you can place the device in any position
- if it can lead to long term condensation of water, it is necessary to use the probe at position with sensor cover downwards



## Documents / Resources

	<p><a href="#">COMET Tx4xx Industrial Transmitters and Transducers with RS458 Serial Interface</a> [pdf]   nstruction Manual</p> <p>Tx4xx Industrial Transmitters and Transducers with RS458 Serial Interface, Tx4xx Industrial Transmitters, Industrial Transmitters and Transducers with RS458 Serial Interface, Industrial Transmitters, Transmitters</p>
---	--

## References

- [Manufacturer of Dataloggers, Thermometers, Hygrometers, CO2 meters](#)
- [Manufacturer of Dataloggers, Thermometers, Hygrometers, CO2 meters](#)
- [Support](#)