

## TEMPERATURE, HUMIDITY, BAROMETRIC PRESSURE TRANSMITTERS with serial RS485 output

temperature \* barometric pressure \* relative humidity \* dew point temperature \* absolute humidity \* specific humidity \* mixing ratio \* specific enthalpy



- APPLICATIONS
- server rooms
- telecommunication devices
- warehouses
- manufacturers
- museums, archives, galleries
- air-conditioned rooms
- weather stations

Measured temperature, barometric pressure, relative humidity, dew point temperature, absolute humidity, specific humidity, mixing ratio or specific enthalpy is converted to digital serial output with the RS485 link parameters. Transmitter circuitry is **galvanically isolated** from power circuitry to prevent collision in RS485 network. Degrees Celsius and Fahrenheit are user selectable. Large dual line LCD for display of temperature, humidity, pressure or other calculated humidity interpretation is an advantage. Computerized design ensures maximum long term stability and fail indication. The transmitter works with ModBus RTU communication protocol or with Advantech ADAM compatible protocol. Protocol is user selectable in special configuration mode by means of the PC. Serial link enables to read actual readings and modify transmitter configuration. Instrument works always in slave mode, i.e. responds only to master device query. Transmitters have the address space available from 1 to 255.

### TECHNICAL PARAMETERS

Applied temperature sensor:	RTD, Pt1000-3850ppm/°C
Supported temperature units:	degrees Celsius, degrees Fahrenheit
Operating temperature range of the electronics:	-30 to +80 °C, switch OFF the display over +70 °C
Accuracy of temperature measurement:	±0.4 °C, accuracy of T4411 transducer input is ±0.2 °C
Range of temperature measurement:	0 to 100%
Accuracy of relative humidity measurement:	±2.5%RH from 5 to 95% at 23 °C
Accuracy and range of dew point temperature:	±1.5 °C at ambient temperature < 25 °C and RH>30%, range -60 to +80 °C
Accuracy and range of absolute humidity:	±3g/m <sup>3</sup> at ambient temperature T < 40 °C, range 0 to 400 g/m <sup>3</sup>
Accuracy and range of specific humidity:	±2g/kg at ambient temperature T < 35 °C, range 0 to 550 g/kg
Accuracy and range of mixing ratio:	±2g/kg at ambient temperature T < 35 °C, range 0 to 995 g/kg
Accuracy and range of specific enthalpy:	± 3kJ/kg at ambient temperature T < 25 °C, range 0 to 995 kJ/kg
Accuracy and range of barometric pressure:	± 1.3hPa at 23 °C, range: 600 to 1100hPa
Supported pressure units:	hPa, kPa, mbar, mmHg, inHg, inH <sub>2</sub> O, PSI, oz/in <sup>2</sup>
Range of temperature compensation of RH sensor:	-30 to +125 °C
Power:	9 to 30 V DC, consumption approximately 0.5W
Protection - temperature and humidity transmitters:	IP65 electronics with terminals, IP40 humidity and temperature sensors
Protection - transmitters measuring pressure:	IP54 electronics with terminals, IP40 humidity and temperature sensors
Filtering ability of sensor cover:	0,025mm
Communication protocols:	ModBus RTU, ADAM Advantech
Communication speed:	110 to 115200 Bd
Dimensions of the case without cable glands:	89 x 73 x 39.5 mm
Warranty:	two years

**AVAILABLE MODELS** - electronic circuitry GALVANICALLY ISOLATED from power:

MODEL	MEASURED VALUE	MAXIMUM TEMPERATURE AND PRESSURE MEASURING RANGE	STEM LENGTH	DESCRIPTION	Figure
T4411	T	-200 to +600 °C	-	Temperature transducer for external probes with Pt1000-3850 sensor (not included), input accuracy ±0.2 °C	1
T0410	T	-30 to +80 °C	53mm	Thermometer - outdoor, indoor use	2
T3411	T+H	-30 to +80 °C	75mm	Thermometer-hygrometer - outdoor, indoor use	3
T3413	T+H	-30 to +125 °C <sup>1)</sup>	150mm	Thermometer-hygrometer - duct mount	4
T3417	T+H	-30 to +125 °C <sup>1)</sup>	700mm	Thermometer-hygrometer - bar type	4
T3419	T+H	-30 to +105 °C <sup>1)</sup>	probe cable including cable 1,2,4m	Thermometer-hygrometer - T+RH probe with 1 m cable, diameter 18mm. Available also with cable lengths 2m or 4m.	5
T5410	T+P	-30 to +80 °C 600 to 1100hPa	53mm	Thermometer-barometer - outdoor, indoor use	2
T7410	T+H+P	-30 to +80 °C 600 to 1100hPa	75mm	Thermometer-hygrometer-barometer - outdoor, indoor use	3
T7411	T+H+P	-30 to +105 °C <sup>1)</sup> 600 to 1100hPa	probe cable including cable 1,2,4m	Thermometer-hygrometer-barometer - T+RH probe with 1 m cable, diameter 18mm. Available also with cable 2m or 4m.	5
T2414	P	600 to 1100hPa	-	Barometer - outdoor, indoor use	6

T - temperature H - humidity P - barometric pressure

1) Maximum temperature only at the measuring end with sensors. Maximum temperature +105 °C is allowed also for the cable. Relative humidity at temperature over +85 °C is limited in accordance with the graph. Near plastic case with electronics maximum temperature is +80 °C.

Barometer enables to measure sea level pressure by setting of correction to altitude above sea level.



Fig. 1 Transducer T4411



Fig. 2 Transmitter T0410, T5410



Fig. 3 Transmitter T3411, T7410



Fig. 4 Transmitter T3413 length 150mm  
Transmitter T3417 length 700mm



Fig. 6 Barometer T2414



Fig. 5 Transmitter T3419, T7411

**Included accessory:**

Traceable calibration certificate from the manufacturer, instruction manual. Calibration certificate with declared metrological traceability of etalons is based on requirements of EN ISO/IEC 17025 standard.

Free program TSensor for configuring of the transmitter is ready to download from [www.cometsystem.cz](http://www.cometsystem.cz).

Free program SensorReader for logging values from one thermometer to a PC disk file is ready to download. Recorded values in CSV format are easy to process in e.g. Excel.

**Optional accessory:**

Comet probes with Pt1000 sensors are directly connectable to T4411 transducer - see further. There is a symbol /O behind probe name.

Other accessories - see further

**Transmitters are directly compatible with sixteen channel Comet data acquisition system MSx.**