PRODUCT DESCRIPTION

Programmable transmitters with 4 - 20 mA or 0 - 10 V output are designed to measure temperature, relative humidity and barometric pressure in exacting interiors in building energy management and HVAC systems.

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. Using *TSensor* software (see www.cometsystem.com) can be for each output assigned any measured or computed value or selected the measurement range. To connect to PC is used USB adapter SP003 (optional accessories).

Transmitters are designed for easy installation on ordinary KU68 wiring boxes with using two enclosed mounting screws.

type *	output **	measured values	construction	mounting
T0118	1 x 4-20mA	T	ambient air	wall
T0218	1 x 0-10V	T	ambient air	wall
T2118	1 x 4-20mA	P	ambient air	wall
T2218	1 x 0-10V	P	ambient air	wall
T3118	2 x 4-20mA	T + RH + CV	ambient air	wall
T3218	2 x 0-10V	T + RH + CV	ambient air	wall

*   models marked Txxxx**Z** are custom - specified devices
** The current loops 4-20 mA are galvanic isolated. The current loop I1 has to be connected always!

T…temperature, RH…relative humidity,
P…barometric pressure, CV…computed values

INSTALATION AND OPERATION

For correct function there is necessary to find proper device place. It shouldn't be placed at places where it can be affected by sunshine, near radiators, heating elements and other heat sources, air handlers, windows, doors, into racks and shelves and similar places. For buildings with less thermal insulation there is not suitable to place them on external walls of building. If there are communication conductors placed into conduit, there is strongly recommended make it caulk, to restrict air flow around device.

Firstly mount back part of device onto wiring box with two holding screws. Connect cables to terminals and finally insert front part of device (installation procedure see next page). For transmitter connection it is recommended to use shielded cable. Maximum cable length of the current loop is 1200m, maximum voltage output cable length is 15m. 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.

INFO MODE

The output range settings can be verified without a use of the computer by pressing button on the left side of the device (see picture). For button pressing use thin instrument (paper clip etc.). First short press shows low range and type of measured value for I1 output. Next button press shows values for upper scale limit (the same channel, the same value). I2 output settings are displayed similarly. No measurement and communication is possible during info mode. If device stays in info mode for longer than 15 s, device automatically returns to measuring cycle.
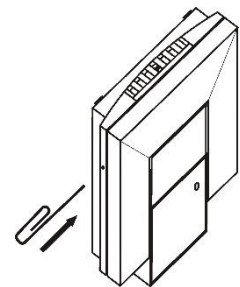
ERROR STATES

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.
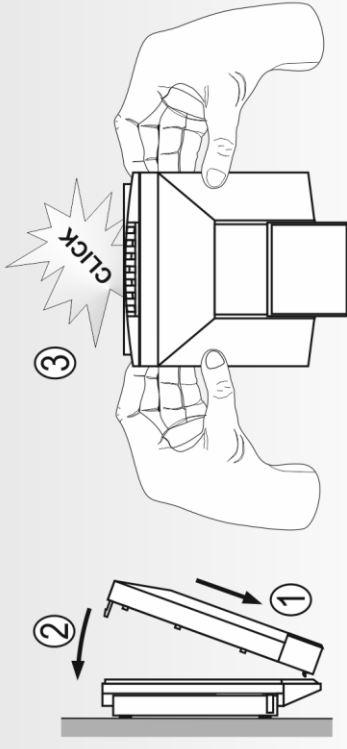
SAFETY INSTRUCTIONS

- 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.
- Do not use the device in an explosive environment
- Devices are not designed for locations with chemically aggressive environment.
- 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 at www.cometsystem.com.

Technical specifications

4 - 20 mA analog output
supply voltage Vdc = 9 - 30V
output in case of error < 3.8mA or > 24mA

0 - 10 V analog output
supply voltage Vdc = 15 - 30V
output in case of error < -0.1V or > 10.5V

	T0118	T2118	T3118
	T0218	**T2218**	**T3218**
Temperature measuring range	-10 to +50°C	—	-10 to +50°C
Accuracy of temperature measurement	± 0.5°C	—	± 0.5°C
Relative humidity (RH) measuring range	—	—	5 to 95 %RH
Accuracy of humidity measurement from 5 to 60 %RH at 23°C	—	—	± 2.5 %RH
Accuracy of humidity measurement from 60 to 95 %RH at 23°C	—	—	± 3.0 %RH
Barometric pressure measuring range	—	600 to 1100 hPa	—
Accuracy of barometric pressure measurement at 23°C	—	±1.3 hPa	—
Other calculated humidity variables (dew point temperature, ...)	—	—	yes
Recomended calibration interval	2 years	1 year	1 year
Protection class of the case with elektronics	IP20	IP20	IP20
Temperature operating range of the case with electronics	-10 to +50°C	-10 to +50°C	-10 to +50°C
Humidity operating range	0 to 100%RH	0 to 100%RH	0 to 100%RH
Storage temperature range (0 - 100%RH, no condensation)	-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
Weight	150 g	150 g	150 g

Electrical wiring

Factory settings of the outputs

device type	output 1	output 2
T0118, T0218	temperature	---
T2118, T2218	barometric pressure	---
T3118, T3218	relative humidity	temperature

4 - 20 mA output
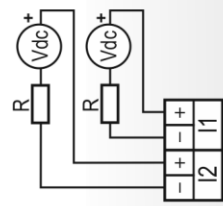
0 - 10 V output
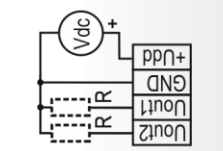
$Rc[\Omega] < 40 * Vdc[V] - 360$

$R > 20\ k\Omega$

Rc = R + resistance of the wires

Device installation

Device mounting

Device demounting

3,5 mm max

Dimensions