Manuals+ — User Manuals Simplified.

COMET SYSTEM T2214 Programmable Atmospheric Pressure Transmitter Instruction Manual

COMET SYSTEM T2214 Programmable Atmospheric Pressure Transmitter Instruction Manual

Contents

Instruction manual for use of T2214 device

Device is designed for measurement of atmospheric pressure at hPa, PSI, inHg, mBar, oz/in2 , mmHg, inH2O and kPa. It is possible to set pressure correction for altitude (offset). Device setting is provided by user's software, see latter. Pressure sensor is placed inside the electronic case. Measured value is optionally shown on LCD display. Display can be switched OFF too. Please read instruction manual before the first device connection. Measured value is assigned to output Uout1, it has common ground with power source (GND terminal). All transducer setting is performed by means of the PC connected via the optional SP003 communication cable (not included in delivery). Program TSensor for transducer setting is available to download free at **www.cometsystem.com**. Program enables to set pressure measuring range of current output. It supports make the adjustment of the device too. This procedure is described at file „Calibration manual.pdf" which is installed commonly with the software. Transmitter version TxxxxL with watertight male connector instead of a cable gland is designed for easy connection/disconnection of the output cable. The protection of male Lumberg connector RSFM4 is IP67. Models marked TxxxxZ are non-standard versions of the transmitters. Description is not included in this manual. Please read instruction manual before the first device connection

Device setting from the manufacturer
If special setting was not required in the order device is set from the manufacturer to the following parameters: output Uout1: atmospheric pressure, range from 0 to 10 V corresponds with 800 to 1100 hPa 1 correction for altitude: 0 hPa (absolute pressure) LCD display: switched ON Change of this manufacturer device setting is possible with the PC connected via the optional SP003 communication cable and User's software TSensor as described at the end of this document

Device installation

Device is designed for wall mounting. There are two mounting holes at the sides of the case. It is NOT recommended to use the device for long time under condensation conditions. Don'tconnect devices while power supply voltage is on. Interconnection terminals of T2214 are accessible after unscrewing four screws and removing the lid. Lace the cable through a gland at the case wall. Connect the cable to terminals with respecting the signal polarity (see figure). Terminals are self-clamping and can be opened by a suitable screwdriver. For the opening, insert the screwdriver to upper terminal hole and lever by him. Do not remember to tighten glands and case lid with inserted packing after cables connecting. Connect complementary female connector for T2214L transmitter in accordance with the table in Appendix A of this manual. It is recommended to use shielded twisted copper cable, maximal length 15m. The cable must be located at indoor rooms. The cable should not be led in parallel along power cabling. Safety distance is up to 0.5 m, otherwise undesirable induction of interference signals can appear. Outside diameter of the cable for T2214 device must be from 3,5 to 8 mm (e.g. SYKFY), for device T2214L with respect to the female connector. Do NOT connect shielding at connector side. Electrical system (wiring) may do only worker with required qualification by rules in operation.

Setting of pressure correction for altitude
If there is necessary to read value of atmospheric pressure corrected with respect to altitude, it is possible to set corresponding pressure offset for this altitude. It is possible to do it with Users software. This value is then automatically added to measured pressure value. The resultant value of pressure with added correction for altitude must be between 300 hPa and 1350 hPa (from 4.351 PSI to 19.580 PSI). Outside this range device sends value of Error 2!
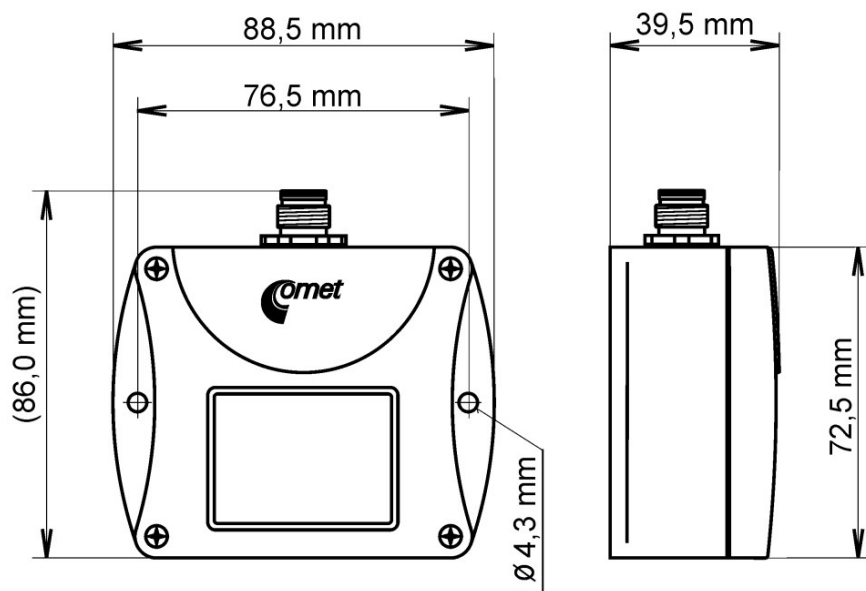
Dimensions – T2214

Connection
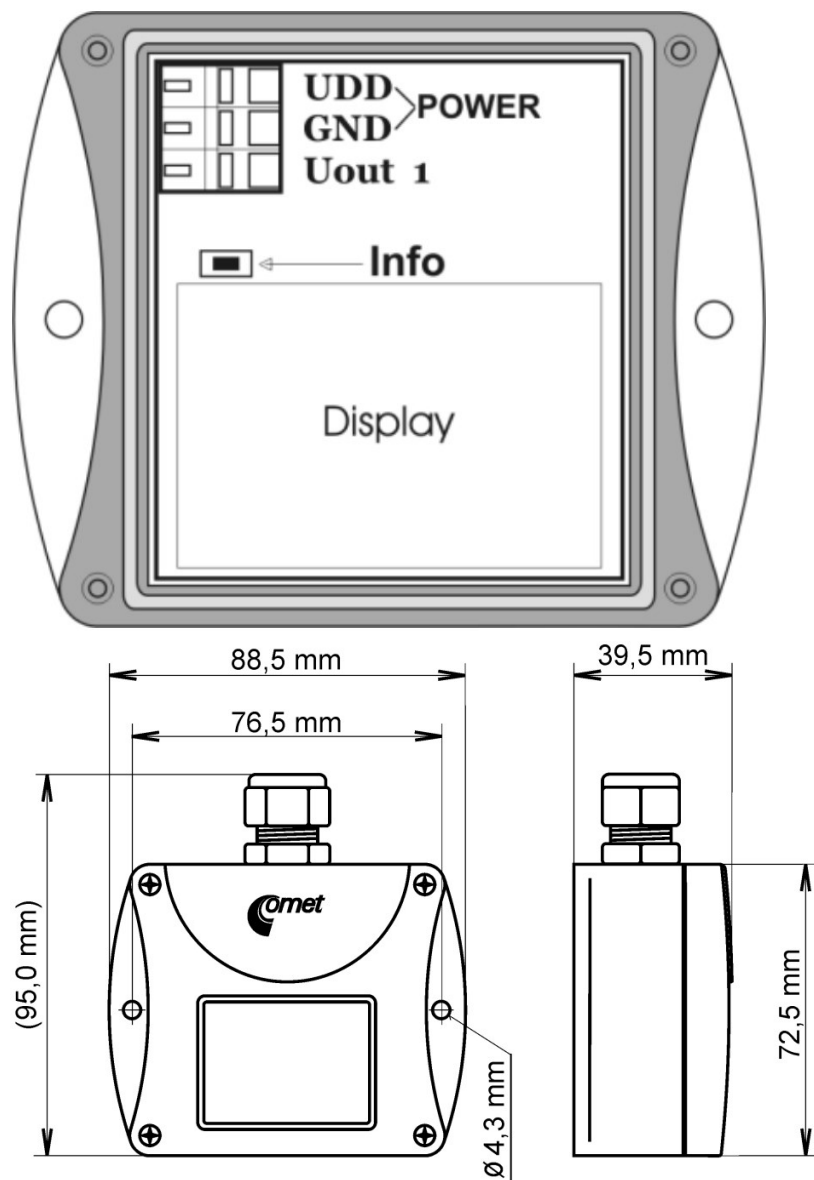
Dimensions – T2214L

Connection: see Appendix A

Typical application wiring
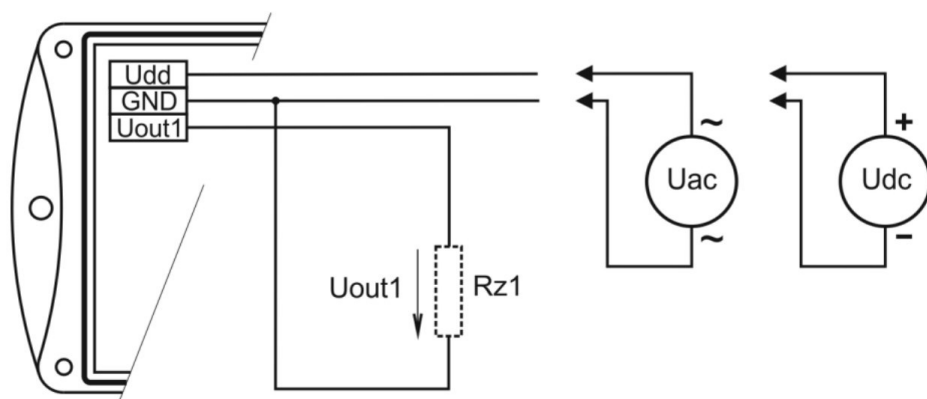
Uac = 24 Vac
Udc = 15 to 30 Vdc maximum load current of voltage output is 0.5 mA

LCD Info mode
It is possible to check stored output scale without using of computer. It is necessary to connect the power. Unscrew the device lid and shortly press button between display and interconnection terminals by means of a tool (e.g. screwdriver).

It shows preset value of pressure for voltage output Uout1. Lower LCD line shows voltage value (at V) which is associated to the lowest pressure output (value displayed at upper LCD line). Here 0 V corresponds to 800 hPa.

Press button again to get value for upper point similarly as at previous point. Here 10 V corresponds to 1100 hPa.
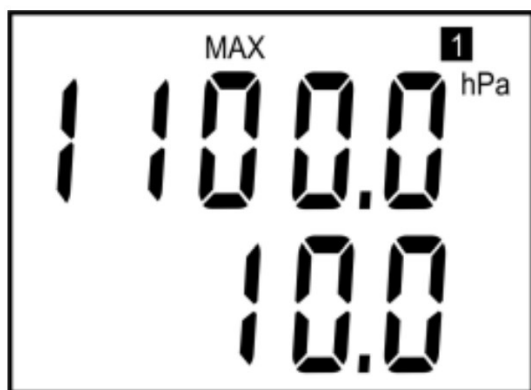
Notice: during info mode no measurement and no output current generation proceed. The device stays at info mode 15 s and then automatically goes back to measuring cycle.

Readings on LCD display

hPa, PSI, inHg,
Reading next to this symbol is measured pressure or error state of value. If selected pressure unit is mBar or oz/in2 or mmHg or inH2O or kPa, there is shown only value (number) without corresponding pressure unit! symbol 3 near by left display margin Is on if jumper is closed.

Technical parameters:

Power:

- 15 to 30 Vdc
- 24 Vac

Measuring parameters:
Atmospheric pressure:
– accuracy of value shown on LCD display:

Unit	hPa, mBar	PSI	mmHg	inHg	inH2O	oz/in2	kPa
Range	600	8.70	450.0	17.72	240.9	139.2	60.00
	1100	15.95	825.1	32.48	441.6	255.3	110.00
accuracy							
T=23 °C	±1.3	±0.02	±1.0	±0.04	±0.5	±0.3	±0.13
0≤T≤40°C	±1.5	±0.02	±1.1	±0.04	±0.6	±0.3	±0.15
Else	±2.0	±0.03	±1.5	±0.06	±0.8	±0.5	±0.20

Response time2: 09<44s

There is possible to change response time. For more details see file "Description of calibration and adjustment procedure.pdf", which is installed together with Users software.

Analog output:

Range: from 0 to 10 V
Output load capability: min. 20 k
Output accuracy: ±(accuracy of value shown on LCD display + 0.06 % FS) hPa
Voltage output in case of error: approximately –0.1 V or >10.5 V

Recommended calibration interval: 1 year
Measuring interval and LCD display refresh: 2 s
Communication with computer: via USB port by means of USB communication cable SP003 (option)

Protection: IP54
Operating conditions:
Operating temperature range: -30 to +80 °C, over +70 °C switch LCD display OFF
Operating humidity range: 0 to 100 %RH Outer characteristics in accordance with Czech National Standard 33-2000-3: normal environment with the specifications: AE1, AN1, BE1
Working position: communication cable is entering from the top side
Electromagnetic compatibility: complies EN 61326-1
Not allowed manipulations: It is not allowed to operate the device under other than specified conditions in technical parameters. Devices are not designed for locations with chemically aggressive environment. Do not use the device in an explosive environment.

Procedure of modification of device adjustment:

- Device adjustment is performed by means of the optional SP003 communication cable, connected to USB port of the PC.
- It is necessary to have installed configuration program TSensor on the PC. It is free to download at **www.cometsystem.com**. During installation please take care about installation of driver for USB communication cable.
- Connect SP003 communication cable to the PC. Installed USB driver detect connected cable and create virtual COM port inside the PC.
- Unscrew four screws of the device lid a remove the lid. If device is already installed to measuring system, disconnect leads from terminals.
- Connect SP003 communication cable to the device. Display must light up, or at least must light up all symbols for one second (if LCD was switched OFF by program before).
- Run installed TSensor program and select corresponding communication COM port (as described above).
- When new setting is saved and finished, disconnect the cable from the device, connect leads into its terminals and place the lid back to the device.

Error States of the device

Device continuously checks its state during operation. In case error is found LCD displays corresponding error code:

Error 0
There is a reading „Err0" on LCD display. Check sum error of stored setting inside device's memory. Output value is <-0.1 V. This error appears if incorrect writing procedure to device's memory occurred or if damage of calibration data appeared. At this state device does not measure and calculate values. It is a serious error, contact distributor of the device to fix.

Error 2
There is a reading „Err2" on LCD display. Atmospheric pressure measurement error occurred. Output value is

about 3.8 mA. Measured pressure value with added correction for altitude is outside of range from 300 hPa to 1350 hPa(from 4.351 PSI to 19.580 PSI) or the pressure sensor is damaged. Please check setting of pressure correction for altitude with User's software.

Error 4

There is a reading „Err4" on LCD display. It is internal device error during pressure sensor initialization. Under this condition device does NOT measure atmospheric pressure Output value is about 3.8 mA. Pressure sensor is probably damaged. It is a serious error, contact distributor of the device.

End of operation

Device itself (after its life) is necessary to liquidate ecologically!

Technical support and service

Technical support and service is provided by distributor. For contact see warranty certificate.

Appendix A
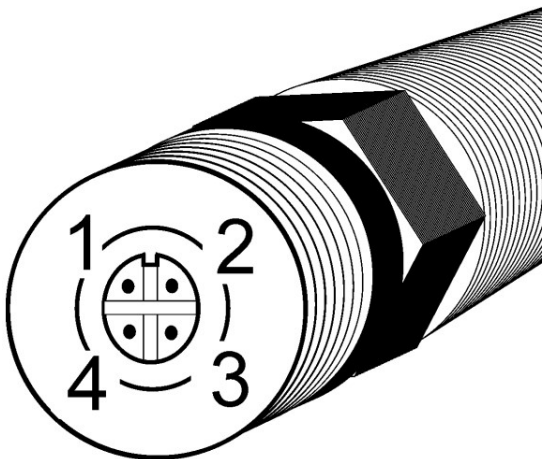
Female Lumberg connector	Transmitter Tx1xxL with 4-20 mA outputs	Transmitter Tx2xxL with 0-10 V outputs	Trunsmitter Tx3xxL with RS 232 output	Transmitter Tx4xxL with RS 485 output
1	+1	Udd	RTS	+U
2	+2	Uout1	Rx	A
3	-2	Uout2	Tx	B
4	-1	GND	GND	GND

Documents / Resources

	COMET SYSTEM T2214 Programmable Atmospheric Pressure Transmitter [pdf] Instruction Manual
Programmable atmospheric pressure transmitter **T2214** with 0 to 10 V output **Instruction Manual**	T2214 Programmable Atmospheric Pressure Transmitter, T2214, Programmable Atmospheric Pressure Transmitter, Atmospheric Pressure Transmitter, Pressure Transmitter

References

- 🅾 **Manufacturer of Dataloggers, Thermometers, Hygrometers,CO2 meters**
- 🅾 **Manufacturer of Dataloggers, Thermometers, Hygrometers,CO2 meters**

Manuals+,