Sensors Wx7xx with WiFi interface
QUICK START MANUAL

PRODUCT DESCRIPTION

Sensors Wx7xx with WiFi interface are designed to measure temperature, relative humidity, barometric pressure, CO_2 concentration of the air in the non-aggressive environment. Communication with the sensor is done via wireless WiFi network. Sensor is designed to send measured values to online portal COMET Cloud or COMET Database. It can provide values via www pages and by the Modbus TCP protocol, JSON and XML as well. Sensors continuously evaluate measured values, in case of limits are exceeded, alarm e-mail is sent and set acoustic or optical signalisation. Measured values and alarm states are shown at the LCD display.

Device type	Measured values	Construction
W0710	T	With connected temperature sensor
W0711	T	Connector for external Pt1000/C probe
W0741	T	Connectors for up to four external Pt1000/C probes
W3710	T + RH + CV	With connected temperature and relative humidity sensors
W3711	T + RH + CV	Connector for external Digi/E probe
W3721	T + RH + CV	Connectors for two external Digi/E probes
W3745	T + RH + CV	Connector for external Digi/E probe and connectors for up to three external Pt1000/C probes
W4710	T + RH + P + CO_2 + CV	With connected temperature, relative humidity sensor, internal sensors for barometric pressure and CO_2 concentration
W5714	CO_2	Internal sensor CO_2
W7710	T + RH + P + CV	With connected temperature, relative humidity sensors and internal barometric pressure sensors

T…temperature, RH…relative humidity, P…barometric pressure, CO_2… concentration of CO_2 in the air
CV…computed values (dew point, absolute and specific humidity, mixing ratio, specific enthalpy, humidex)

INSTALLATION AND CONNECTION

Fasten the sensor directly to the wall using two screws or insert it into the lockable holder LP100 (optional accessories). The sensor is designed for a fixed installation. Keep the probes and device away from sources of electromagnetic interferences.

- always install the devices vertically with the antenna upwards in places with sufficient quality of the WiFi signal (check e.g. via a WiFi-enabled cell phone). Please make sure that the environmental characteristics correspond to the operating conditions
- connect the probes. The maximum cable length of the Digi/E probe is 15 m. Recommended cable length of the Pt1000/C probes is up to 15 m (max. 30 m)
- connect supplied power source into plug socket (use supplied cable to connect device into USB-C connector)

DEVICE SETUP

To be able use all features of the device, it is mandatory to setup device. This task can be done by wireless connection via integrated access point or via USB cable. Setup via USB cable can be done from software which is free for download at www.cometsystem.com. Setup procedure via integrated access point:

- newly purchased device is set into access point mode. This is signalised by symbol **AP** at the LCD display. In case of this symbol is not shown or there is symbol **CL** shown, please switch device mode manually by the buttons (see chapter "Buttons control").
- enable WiFi inside your laptop or cell phone and connect to access point with name **WiFiSensor_xxxxxxxx**. In case of cell phone is used, it is recommended to switch off mobile data connection.
- open web browser and insert address **http://192.168.3.1** or **www.wifisensor.net**
- press setup button ⚙ at the main page to start device configuration. At the first step select **Network - Wifi client - Scan** and insert SSID a password for your WiFi network.
- activate connection into COMET Cloud at the menu item **Cloud - Cloud mode** and select COMET Cloud mode. Registration card for adding device into your account under COMET Cloud is a part of shipment.
- at the menu **Channels** it is possible to set alarm limits
- to be all changes applied it is mandatory to **save settings**. After setup of SSID and saving settings is symbol **CL** shown.

BUTTONS CONTROL

- **switching between client (CL) / access point mode (AP)** – press button MODE for longer than 3 seconds and after that confirm by button SET
- **showing current IP address of the WiFi sensor** – short press ot the MODE button

The sensors do not require any special operation and maintenance. We recommend doing regular verification of the accuracy of calibration measurements.

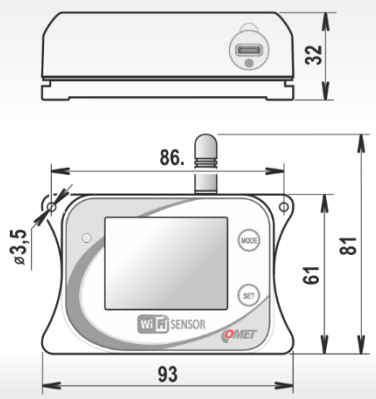
SAFETY INSTRUCTIONS

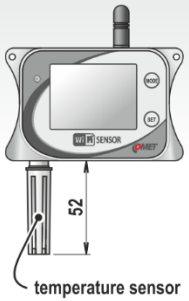


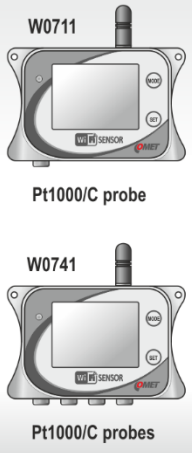
- read the **Safety Instructions** for Wx7xx series sensors carefully before using and follow them during device operation
- the devices contain electronic parts and must be disposed of according to local and currently valid legal conditions
- to complete the information provided in this manual, use the detailed manuals and other documents available in the "Download" section of the specific device at www.cometsystem.com

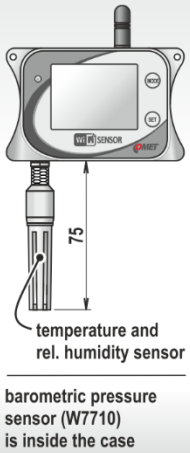
Technical specifications

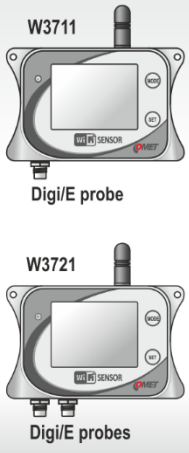
Device type	W0710	W0711, W0741	W3710, W7710	W3711, W3721	W4710	W5714	W3745
Power supply	supply voltage: 5.0 to 5.4VDC • consumption: typ. 150 mA (max. 500 mA) • connector: USB-C						
USB communication interface	connector USB-C						
Radio section	frequency: 2,4 GHz • max. transmit power: 18 dBm • standard: IEEE 802.11 b/g/n • contain CC3220MODSF with FCC ID: Z64-CC3220MOD						
Internal temperature measuring range	-30 to +60°C	—	-30 to +60°C	—	-30 to +60°C	—	—
Accuracy of internal temperature measurement	± 0.4°C	—	± 0.4°C	—	± 0.4°C	—	—
External temperature measuring range	—	-90 to +260°C	—	according to the probe	—	—	see below
Accuracy of external temperature measurement	—	± 0.2°C / ± 0.002 x MV *	—	according to the probe	—	—	see below
Relative humidity measuring range (without condensation)	—	—	0 to 95%RH	according to the probe	0 to 95 %RH	—	according to Digi/E probe
Accuracy of the relative humidity sensor	—	—	± 1.8 %RH **	according to the probe	± 1.8 %RH **	—	according to Digi/E probe
Dew point temperature measuring range	—	—	-60 to +60 °C	according to the probe	-60 to +60 °C	—	according to Digi/E probe
Accuracy of dew point temperature measurement	—	—	± 1.5°C ***	according to the probe	± 1.5°C ***	—	according to Digi/E probe
CO_2 concentration measuring range	—	—	—	—	0 to 5000 ppm ****		—
Accuracy of CO_2 concentration measurement (25°C • 1013 hPa)	—	—	—	—	±(50ppm + 0.03 x MV) ppmCO_2 *MV - measured value*		—
Temperature dependence of CO_2 measurement (-20 to 45°C)	—	—	—	—	±(1 + MV/1000) ppmCO_2 /°C *MV - measured value*		—
Barometric pressure measuring range	—	—	600 to 1100 hPa **(W7710)**	—	700 to 1100 hPa	—	—
Accuracy of barometric pressure measurement at 23°C	—	—	± 1,3 hPa **(W7710)**	—	± 1.3 hPa	—	—
Recommended calibration interval	2 years	2 years	1 year	1 year	1 year	5 years	1 year
Protection class of the case with electronics	IP30	IP30	IP30	IP30	IP30	IP30	IP30
Temperature operating range	-30 to +60°C	-30 to +60°C	-30 to +60°C	-30 to +60°C	-30 to +60°C	-30 to +60°C	-30 to +60°C
Relative humidity operating range (without condensation)	0 to 95%RH	0 to 95%RH	0 to 95%RH	0 to 95%RH	0 to 95%RH	0 to 95%RH	0 to 95%RH
Barometric pressure operating range	—	—	—	—	700 to 1100 hPa	700 to 1100 hPa	—
Recommended storage temperature range at 5 to 90 %RH	-30 to +60°C	-30 to +60°C	-30 to +60°C	-30 to +60°C	-30 to +60°C	-30 to +60°C	-30 to +60°C
Recommended storage barometric pressure range	—	—	—	—	700 to 1100 hPa	700 to 1100 hPa	—
Electromagnetic compatibility according to	ETSI EN 301 489-1	ETSI EN 301 489-1	ETSI EN 301 489-1	ETSI EN 301 489-1	ETSI EN 301 489-1	ETSI EN 301 489-1	ETSI EN 301 489-1
Weight	117 g	115 g	125 g	115 g	125 g	115 g	115 g
Dimensions [mm]							

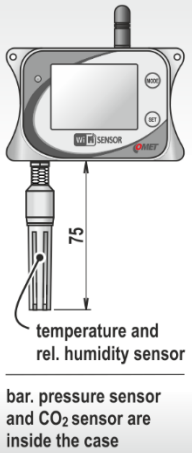


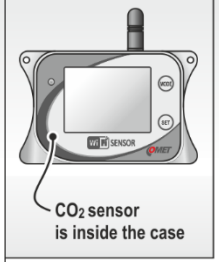


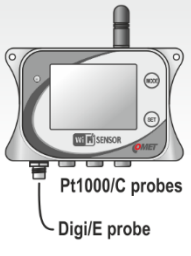












Pt1000/C probe
- temperature measuring range: -90 to +260°C
- accuracy of temperature measurement: ± 0.2°C / ± 0.002 x MH *

Digi/E probe
- temperature measuring range: according to the probe
- accuracy of temperature measurement: according to the probe

* accuracy of the device without probe in range -90 to +100 ºC is ±0.2 ºC, accuracy of the device without probe in range +100 to +260 ºC is ±0,002 x MV (*measured value in ºC*)
** at temperature 23 ºC in the range of 0 to 90 %RH (hysteresis ±1 %RH, non-linearity ±1 %RH, temperature error 0.05 %RH/ºC at 0 to 60 ºC)
*** at ambient temperature T < 25ºC and RH > 30 % (for details see graphs at instruction manual)
**** the device it is possible to deliver with a range of 0 to 10 000 ppm