

## U0111 • U0121 • U0122 • U0141 • U2422 • U3121 • U3631

## PRODUCT DESCRIPTION

The dataloggers Uxxxx with connectors for external probes connection are designed for measuring and recording physical and electric quantities with an adjustable logging interval from 1 second to 24 hours. The measured values, or the average values and min/max values over a recording interval are stored into the internal non-volatile memory. The data logging mode can be cyclic (when the data memory is completely full, the oldest data are overwrite by the new ones), or non-cyclic (the recording will stop once the memory is full). The device also allows to the evaluation of alarm states - exceeding the limit of the measured value or falling below this limit, exceeding the limit of memory filling, technical defects of the instrument or probes. The alarm signalling can be realised visually, optionally by a symbol appearing on the display or by a short blink of an LED, or acoustically. The data recording can be performed continuously or only when an alarm occurs. The devices are powered by internal a replaceable lithium battery (U2422 is powered by internal Li-Ion accu-pack).

Device setting, recorded data downloading and online monitoring is carried out using the computer with the **COMET Vision** software installed (see [www.cometsystem.com](http://www.cometsystem.com)). The USB interface is used to communicate with the computer.

Device type	Measured values	Construction
<b>U0111</b>	Te	Connector for external Pt1000/E probe connection
<b>U0121</b>	2 x Te	Connectors for up to four external Pt1000/E probe connection
<b>U0122</b>	Ti + Te	Internal temperature sensor and connector for external Pt1000/E probe connection
<b>U0141</b>	4 x Te	Connectors for up to four external Pt1000/E probe connection
<b>U2422</b>	P + CO <sub>2</sub>	Internal barometric pressure sensor and connector for external CO <sub>2</sub> probe connection
<b>U3121</b>	Te + RH + Td	Connector for Digi/E probe connection
<b>U3631</b>	Ti + Te + RH + Td	Internal temperature/humidity sensor and connector for external Pt1000/E probe connection

Ti ... Internal temperature, Te...External temperature, RH...Relative humidity, P... Barometric pressure, Td...Dew point temperature

## INSTALLATION AND OPERATION

**Fasten the device** on the wall with two screws or insert it into the wall holder **LP100** (optional accessory). Working position of the device is arbitrary with the exception of the U3631, which place the USB connector facing down. Dataloggers can also be operated as a portable, in this case protect them from falling and try to adhere to the working position.

- Please pay attention to the device and probes mounting. Inappropriate selection of the working position and the measurement location may adversely affect the accuracy and long-term stability of the measured values.
- Connect the probes to the device (maximum cable length of the Digi/E probe should not exceed 30 m, recommended maximum cable length of the Pt1000/E probe is 15 m, maximum cable length of the CO<sub>2</sub> probe is 4 m)
- The devices with all cables should be located as far as possible from potential interference sources
- Remove the transport protection foil from the front panel of the U3631 datalogger

**Set-up the device**

- Device setup can be performed using the computer with the Windows 7 operational system or higher. Minimum HW requirements are 1.4 GHz processor and 1 GB memory.
- Install the **COMET Vision** software into computer (the program is available free of charge at [www.cometsystem.com](http://www.cometsystem.com))
- Connect the datalogger to the computer. Use an USB cable with USB-C connector (max. cable length 3 m).
- Click on the **Configuration** button. The device configuration will be downloaded and you can change the settings of some items
- Save the new configuration into the device and disconnect the device from the computer (close USB connector with a closing cap)

**Operating the device from the keypad**

- Press and hold the lower key. After the light up the row with menu items, release the key and briefly press the upper key.
- Press the upper key to scroll through the menu items (device turning On/Off, deleting the Min/Max values in the device, ...)
- Press the lower key to confirm (SET)

The devices do not require special maintenance. We recommend that you regularly verify the accuracy of the measurement with calibration.

## SAFETY INSTRUCTIONS



- Installation, electrical connection and commissioning should only be performed by qualified personnel in accordance with applicable regulations and standards
- The datalogger **U2422** is equipped with an internal **Li-Ion accumulator**. Observe the recommended operating and storage condition. Should the battery casing get damaged or should the whole device get destroyed, carry it outside the fire, high temperature or water affected area to a safe fire-protected place. Protect yourself and the environment against escaping gases and against being soiled with the battery electrolyte.
- The accumulator charging of the **U2422** device will proceed at an indoor temperature ranging between 0°C and +40°C (the device has to be located in an indoor room with a relative humidity up to 85%)
- 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 documentation, which are available in the **Download** section for a particular device at [www.cometsystem.com](http://www.cometsystem.com)

## Technical specifications

Device type	U0111	U0121	U0141	U0122	U3121	U3631	U2422
Power batteries	Lithium battery 3.6 V	Lithium battery 3.6 V	Lithium battery 3.6 V	Lithium battery 3.6 V	Lithium battery 3.6 V	Lithium battery 3.6 V	Li-Ion accu pack 3,6V
Recording interval	(1 - 2 - 5 - 10 - 15 - 30) s • (1 - 2 - 5 - 10 - 15 - 30) min. • (1 - 2 - 3 - 4 - 6 - 8 - 12 - 24) h						
Memory capacity	500 000 values in non-cyclic record mode • 350 000 values in cyclic record mode						
Internal temperature measuring range	—	—	—	-30 to +70°C	—	-30 to +70°C	—
Accuracy of internal temperature measurement	—	—	—	± 0.4°C	—	± 0.4°C	—
External temperature measuring range	-90 to +260°C	-200 to +260°C	-200 to +260°C	-90 to +260°C	according to the probe	-90 to +260°C	—
Accuracy of external temperature measurement	± 0.2°C *	± 0.2°C *	± 0.2°C *	± 0.2°C *	according to the probe	± 0.2°C *	—
Relative humidity measuring range (without condensation)	—	—	—	—	according to the probe	0 to 100 %RH	—
Accuracy of relative humidity sensor	—	—	—	—	according to the probe	± 1.8 %RH **	—
Dew point temperature measuring range	—	—	—	—	according to the probe	-60 to +70 °C	—
Accuracy of dew point temperature measurement	—	—	—	—	according to the probe	± 1.5 °C ***	—
Barometric pressure measuring range	—	—	—	—	—	—	700 to 1100 hPa
Accuracy of barometric pressure measurement at 23°C	—	—	—	—	—	—	± 1.3 hPa
Range and accuracy of CO <sub>2</sub> concentration measurement	—	—	—	—	—	—	according to the probe
Recommended calibration interval	2 years	2 years	2 years	2 years	according to the probe	1 year	1 year
Protection class - case with electronics / CO <sub>2</sub> probe / T+RH sensor	IP67 / — / —	IP67 / — / —	IP67 / — / —	IP67 / — / —	IP67 / — / —	IP67 / — / IP30	IP54 / IP65 / —
Temperature operating range of the case with electronics	-30 to +70°C	-30 to +70°C	-30 to +70°C	-30 to +70°C	-30 to +70°C	-30 to +70°C	-30 to +70°C
Temperature operating range of the external CO <sub>2</sub> probe	—	—	—	—	—	—	-20 to +60°C
Relative humidity operating range (without condensation)	0 to 100%RH	0 to 100%RH	0 to 100%RH	0 to 100%RH	0 to 100%RH	0 to 100%RH	0 to 100%RH
Recommended storage temperature	-20 to +45°C	-20 to +45°C	-20 to +45°C	-20 to +45°C	-20 to +45°C	-20 to +45°C	-20 to +45°C
Recommended storage relative humidity	5 to 90 %RH	5 to 90 %RH	5 to 90 %RH	5 to 90 %RH	5 to 90 %RH	5 to 90 %RH	5 to 90 %RH
Electromagnetic compatibility according to	EN 61326-1	EN 61326-1	EN 61326-1	EN 61326-1	EN 61326-1	EN 61326-1	EN 61326-1
Weight (without the probes)	120 g	120 g	130 g	120 g	120 g	130 g	260 g
Dimensions [mm]							
	<p>the Pt1000/E probe</p>	<p>the Pt1000/E probes</p>	<p>the Pt1000/E probes</p>	<p>the Pt1000/E probe</p> <p>temperature sensor (inside the case)</p>	<p>the Digi/E probe</p>	<p>the Pt1000/E probe</p> <p>temperature and rel. humidity sensor</p>	<p>1(2,4) m</p> <p>150</p> <p>∅ 18,5</p>
	<p><b>CO<sub>2</sub>R1-x probe, range 0 to 1 %CO<sub>2</sub></b></p> <ul style="list-style-type: none"> <li>accuracy at 23 °C and pressure 1013 hPa : ±(0,01+0,05xMV) [%CO<sub>2</sub>]</li> <li>temperature error at range -20 to +45°C: ±(0,0001+0,001xMV) [%CO<sub>2</sub>/°C]</li> </ul> <p><b>CO<sub>2</sub>R5-x probe, range 0 to 5 %CO<sub>2</sub></b></p> <ul style="list-style-type: none"> <li>accuracy at 23 °C and pressure 1013 hPa : ±(0,075+0,02xMV) [%CO<sub>2</sub>]</li> <li>temperature error at range -20 to +45°C: ±(0,003xMV) [%CO<sub>2</sub>/°C]</li> </ul> <p>x ... the probe cable lenght [m]      MV ... measured value [%CO<sub>2</sub>]</p>						

\* the accuracy of the device without probe in the range to +100 °C (in the temperature range of +100 to +260 °C is accuracy ±0,2 % of measured value)  
 \*\* at temperature 23 °C in the range of 0 to 90 %RH (hysteresis ±1 %RH, non-linearity ±1 %RH, temperature error 0.05 %RH/°C at 0 to 60 °C)

\*\*\* at ambient temperature T < 25°C and RH > 30 %RH (for more details see graphs at device manual)