U0110M • U0141M • U3120M • U3121M • U3631M • U4440M • U8410M

PRODUCT DESCRIPTION

The dataloggers UxxxxM are designed for measuring and recording physical and electric quantities with an adjustable logging interval from 1 second to 24 hours. The measured values (the average values or min/max values over a recording interval) are stored in 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). For each measured value it is possible to set two alarm limits. The alarms are signalled by the symbols on the LCD display, by flashing the LED, by acoustic or by sending a warning SMS message. The data recording can be performed continuously or only when an alarm occurs.

GSM modem is a part of each datalogger. Modem is used to send SMS messages to up to four selected recipients and to send the measured values using JSON messages. In addition to warning messages the information SMS messages containing current measured values and alarm status can be sent at a preset interval. These messages may be of two kinds: user readable (suitable to be displayed on a mobile phone), or machine readable (suitable for automated data processing in a database or a cloud).

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

The internal LiIon battery is designed to power the datalogger. The battery charging is activated immediately after connecting the device to the computer, or after connecting an usual USB charger.

Device type	Measured values	Construction
U0110M	Ti	Internal temperature sensor
U0141M	4 x Te	Connectors for up to four external Pt1000/E probe connection
U3120M	Ti + RH + Td	Internal temperature and relative humidity sensor
U3121M	Te + RH + Td	Connector for an external Digi/E probe connection
U3631M	Ti + Te + RH + Td	Internal temperature and relative humidity sensor and connector for Pt1000/E probe connection
U4440M	Ti + RH + Td + P + CO_2	Internal sensors of temperature, relative humidity, barometric pressure and CO_2 concentration
U8410M	CO_2	Internal sensor of CO_2 concentration

Ti, Te…Temperature, **RH**…Relative humidity, **Td**…Dew point temperature, **P**… Barometric pressure, **CO_2**… CO_2 concentration

INSTALLATION AND OPERATION

Insert the micro-SIM card into the device (see the other side of this sheet). Proceed with care and avoid contact of the external conductive parts with the electronics of the device (the datalogger is constantly supplied from the internal battery). The SIM card have to support the required services (the sending SMS messages, data transfers) and if it is protected by a PIN code, it is necessary before inserting the card to enter this code into the device (use the COMET Vision program). Otherwise, the SIM card will be locked and display show "**card Loc**"

Fasten the device on the wall with two screws or insert it into the wall holder **LP100** (optional accessory). Datalogger may be operated as a portable one. In this kind of operation avoid the device falling down. Try to maintain the proper working position.

- The dataloggers always install vertically (with the antenna facing up) into locations with sufficient GSM signal quality. Insufficient signal level can be in reinforced concrete buildings, metal chambers and other shielded areas.
- Connect the probes to the device (maximum length of cables should not exceed 30 m, recommended cable length of the Pt1000/E probe is 15 m)
- The devices with all cables should be located as far as possible from potential interference sources
- For the **U3120M, U3631M** and **U4440M** devices it is necessary to remove the transport protection foil from the front panel

Set-up the device
- Install the **COMET Vision** software into your computer (the program is available at www.cometsystem.com)
- Connect the datalogger with attached probes 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 setup of some items.
- Finally save the new configuration into the device

The devices do not require special maintenance. We recommend verifying the measurement accuracy regularly by calibration.

SAFETY INSTRUCTIONS

- Read carefully the **Safety information for dataloggers with GSM modem** before operating the device and observe it during use!
- Installation, electrical connection and commissioning should only be performed by qualified personnel in accordance with applicable regulations and standards
- 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

Technical specifications

Device type	U0110M	U0141M	U3120M	U3121M	U3631M	U4440M	U8410M
Power batteries	Li-Ion accu pack 5200 mAh						
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	-20 to +60°C	—	-20 to +60 °C	—	-20 to +60 °C	-20 to +60 °C	—
Accuracy of internal temperature measurement	± 0.4°C	—	± 0.4°C	—	± 0.4°C	± 0.4°C	—
External temperature measuring range	—	-90 to +260°C	—	according the probe	-90 to +260°C	—	—
Accuracy of external temperature measurement	—	± 0.2°C *	—	according the probe	± 0.2°C *	—	—
Relative humidity measuring range (without condensation)	—	—	0 to 100 %RH	according the probe	0 to 100 %RH	0 to 100 %RH	—
Accuracy of the relative humidity sensor	—	—	± 1.8 %RH **	according the probe	± 1.8 %RH **	± 1.8 %RH **	—
Dew point temperature measuring range	—	—	-60 to +60°C	according the probe	-60 to +60°C	-60 to +60°C	—
Accuracy of dew point temperature measurement ***	—	—	± 1.5°C	according the probe	± 1.5°C	± 1.5°C	—
Barometric pressure measuring range	—	—	—	—	—	700 to 1100 hPa	—
Accuracy of barometric pressure measurement at 23°C	—	—	—	—	—	± 1,3 hPa	—
CO_2 concentration measuring range	—	—	—	—	—	0 to 5000 ppm	0 to 5000 ppm
Accuracy of CO_2 concentration measurement (25°C •1013 hPa) ****	—	—	—	—	—	±(50ppm+3% of measured value)	±(50ppm+3% of measured value)
Recommended calibration interval	2 years	2 years	1 year	according the probe	1 year	1 year	5 years
Protection class of the case with elektronics	IP67	IP67	IP67	IP67	IP67	IP20	IP20
Temperature operating range	-20 to +60°C	-20 to +60°C	-20 to +60°C	-20 to +60°C	-20 to +60°C	-20 to +60°C	-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 95%RH	0 to 95%RH
Recommended storage temperature range	-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 humidity range (without condensation)	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	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	260 g	270 g	260 g	260 g	260 g	270 g	270 g
Dimensions [mm]							

53 2 86. 120 ⌀3,5 61 93

Pt1000/E probes

temperature and rel. humidity sensor

Digi/E probe

temperature and rel. humidity sensor

Pt1000/E probe

temperature and rel. humidity sensor

bar. pressure sensor and CO_2 sensor

CO_2 concentration sensor

notice:
the CO2 concentration measuring range can be changed for extra fee to 0 to 10,000 ppm, accuracy ± (100 ppm + 5% of measured value)

SIM card installation

Insert the SIM card into the holder

Unscrew the rear cover of the device (use the TORX T10 key)

Screw up the rear cover of the device • check the seal in the nut for integrity • the screws tighten carefully

* the accuracy of the device without probe in the range of -90 to +100 ºC (in the range of +100 to +260 ºC is accuracy ±0.2 % of measured value)
** 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 < 25 ºC and relative humididty RH > 30 %RH (for details see graphs in the instruction manual)
**** temperature dependence in the range -20 to +60 ºC is typ. ±(1+MV/1000) ppmCO₂/ºC, where MV is measured value