PRODUCT DESCRIPTION

The dataloggers Ux8xxM equipped with a two-part self-locking terminal block are designed for measuring and recording physical and electric quantities with an adjustable logging interval (1 sec. to 24 hours). The measured values (instantaneous or the average, minimum and maximum values detected during the 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, e.g. to the COMET Cloud. In addition to alarm warning messages, SMS messages containing current measured values and alarm statuses can be sent at regular intervals.

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 is used to communicate with the computer.

The datalogger is powered by an internal **LiIon battery**. The device includes a charging circuit, which is activated automatically when a standard USB charger is connected or after connecting a device to a computer. The charging takes place if the battery condition requires it and the internal temperature of the device is in the range 0 and 40 ºC.

Device type	Measured values	Construction
U0843M	2 x Te + 2 x BIN + 1x cc	Terminal block for connection of two external Pt1000 probe and two binary inputs
U5841M	3 x U + 1 x BIN + 3x cc	Terminal block for connection of three voltage inputs 0-10 V and one binary input
U6841M	3 x I + 1 x BIN + 3x cc	Terminal block for connection of three current inputs 0-20 mA and one binary input
U7844M	4 x BIN	Terminal block for connection of four binary inputs (two of them can work as a counter)

Te…External temperature, **U**…Voltage, **I**…Current, **BIN**…Binary input

cc… calculated channel, ie the channel that can be used to calculate and record the value calculated from the measured quantities according to the selected formula

INSTALLATION AND OPERATION

Insert the micro-SIM card for the 2G network into the device (see other side of this sheet). Use a card with parameters conforming to the expected number of sent SMS messages and amount of received and transmitted data. If the SIM card is protected by PIN code, make a note it, and later insert this code into the device configuration. 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). An optional accessory is a prepaid IoT SIM card (order code **LP105**) for sending data to the COMET Cloud. Please note that this card does not support the sending of SMS messages. The **UxxxxMsim** kit (datalogger with built-in IoT SIM card) allows the instant connection to the COMET Cloud.

Fasten the datalogger on the wall with two screws or insert it into the wall holder **LP100** (optional accessory). The device 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. The device can be operated as a portable – in this case the device protect from falling and try to maintain the proper working position. The device should be located as far as possible from potential interference sources.

Connect input cables
- Remove the terminal block from the device, connect the wires (maximum wire cross-section 1.5 mm^2) with either the supplied **SP013** tool or a screwdriver corresponding to the size and the terminal block again push to the device
- The maximum length of input cables should not exceed 30 m (recommended cable length of the Pt1000 probe is 15 m).
- The voltage, current and binary inputs **are not** each other **galvanically isolated**.
- The current inputs (U6841M) are **passive**. The current loops cannot be powered from datalogger directly (use external power source)
- The device with all cables should be located as far as possible from potential interference sources

Set-up the device
- Connect the datalogger with attached cables to the computer. Use an USB cable with USB-C connector (max. cable length 3 m).
- Run the installed **COMET Vision** software and from the device list select the datalogger you want to set up
- Click on the **Configuration** button. The device configuration will be downloaded and you can change the setup of individual items.
- Finally save the new configuration into the device (**Apply changes**)

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

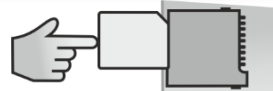| Device type		U0843M	U5841M	U6841M	U7844M
Power batteries		Li-Ion accupack 5200 mAh			
Recording interval		(1 - 2 - 5 - 10 - 15 - 30) s • (1 - 2 - 5 - 10 - 15 - 30) min. • (1 - 2 - 3 - 4 - 6 - 8 - 12 - 24) h			
Memory capacity		500 000 values in non-cyclic record mode • 350 000 values in cyclic record mode			
Temperature measuring range		-90 to +260°C	—	—	—
Accuracy of temperature measurement		± 0.2°C *	—	—	—
DC voltage measuring range		—	0 to 10 V	—	—
Accuracy of DC voltage measurement		—	± 10 mV	—	—
DC current measurement range		—	—	0 to 20 mA	—
Accuracy of DC current measurement		—	—	± 20 uA	—
Binary input configured for dry contact	Excitation voltage	approx. 3 V	approx. 3 V	approx. 3 V	approx. 3 V
	Contact resistance for the „switched-on" state	< 10 kΩ	< 10 kΩ	< 10 kΩ	< 10 kΩ
	Contact resistance for the „switched-off" state	> 2 MΩ	> 2 MΩ	> 2 MΩ	> 2 MΩ
Binary input configured for voltage measurement	Input voltage range	0 to 30 V	0 to 30 V	0 to 30 V	0 to 30 V
	Input voltage for the „L" level	< 0.8 V	< 0.8 V	< 0.8 V	< 0.8 V
	Input voltage for the „H" level	> 2.0 V	> 2.0 V	> 2.0 V	> 2.0 V
Protection class of the case with elektronics		IP20	IP20	IP20	IP20
Temperature operating range		-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
Working position		with antenna facing up	with antenna facing up	with antenna facing up	with antenna facing up
Recommended storage temperature range (5 to 90 %RH, without condensation)		-20 to +45°C	-20 to +45°C	-20 to +45°C	-20 to +45°C
Electromagnetic compatibility according to		ETSI EN 301 489-1	ETSI EN 301 489-1	ETSI EN 301 489-1	ETSI EN 301 489-1
Weight		270 g	270 g	270 g	270 g

Dimensions
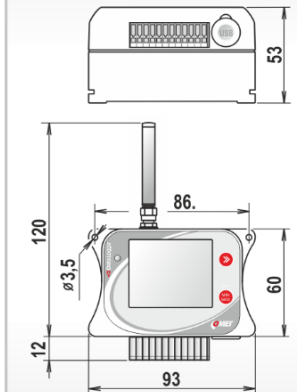
dimensions are given in [mm]

SP013
tool for WAGO connector

SIM card instalation

1. Unscrew the rear cover of the device (use the TORX T10 key)
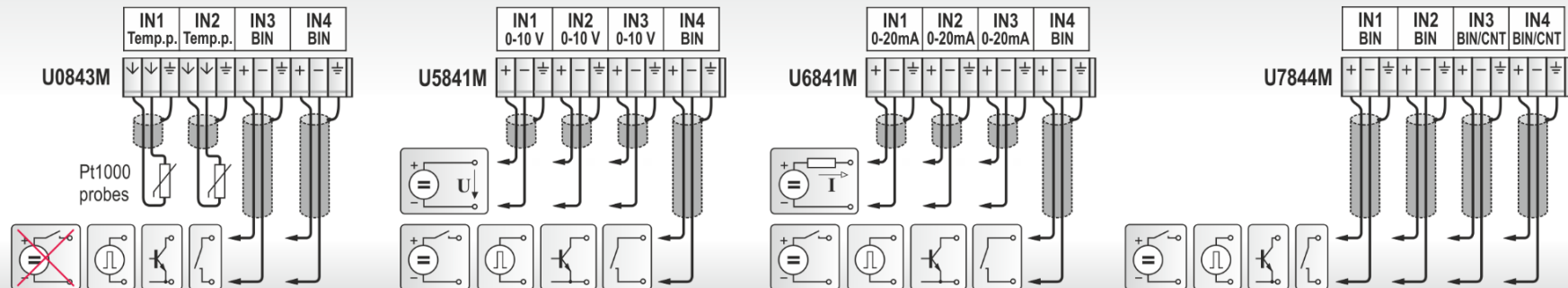2. Insert the SIM card into the holder
3. Srew up the rear cover of the device
   • check the seal in the nut for integrity
   • the screws tighten carefully

Electrical connection

U0843M

IN1 Temp.p.	IN2 Temp.p.	IN3 BIN	IN4 BIN

Pt1000 probes

U5841M

IN1 0-10 V	IN2 0-10 V	IN3 0-10 V	IN4 BIN

U6841M

IN1 0-20mA	IN2 0-20mA	IN3 0-20mA	IN4 BIN

U7844M

IN1 BIN	IN2 BIN	IN3 BIN/CNT	IN4 BIN/CNT

* the accuracy of the device without probe is ± 0.2 °C in the range of -90 to +100 °C , in the range of +100 to +260 °C is accuracy of the device without probe ±0.2 % of measured value