Manuals+ — User Manuals Simplified.

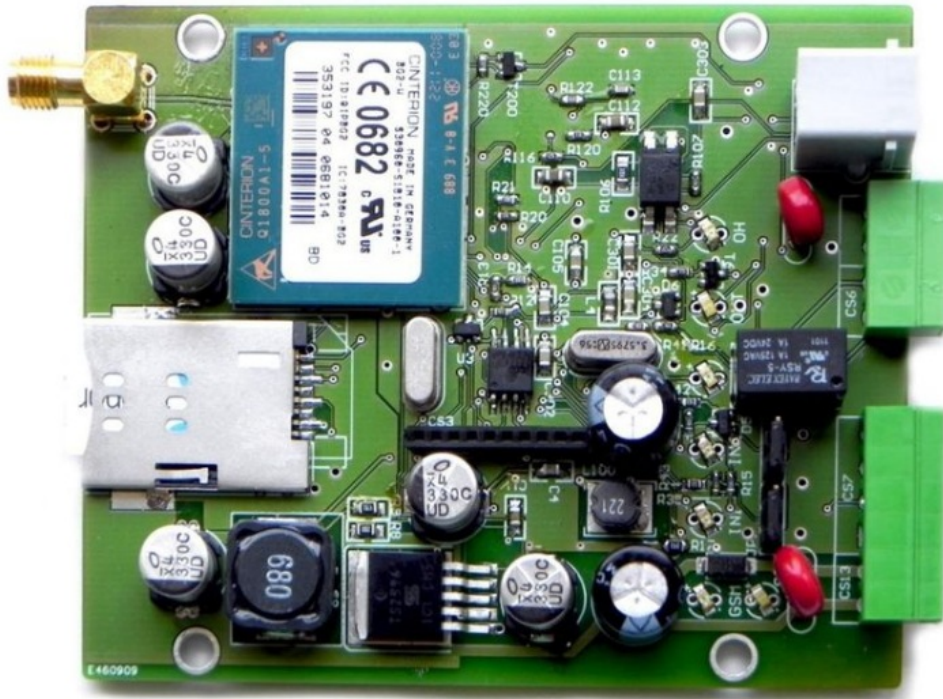# WM Systems M2M Easy 2S Security Communicator Installation Guide

Contents

WM Systems M2M Easy 2S Security Communicator

CONNECTORS
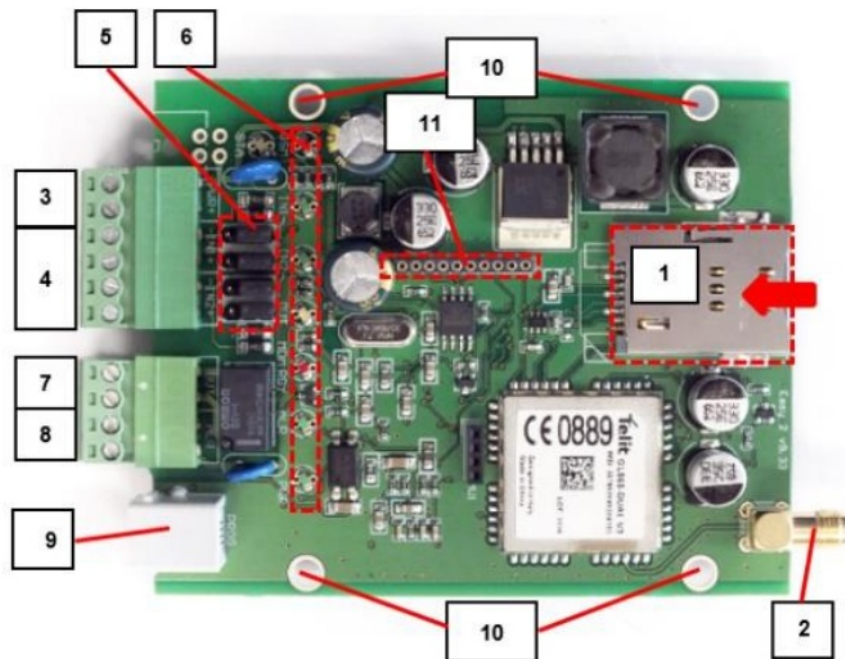
1. SIM card slot (2FF type, push-insert)
2. Antenna connector (SMA-50 Ohm, female)
3. PWR -/+: Power cable connector (8-24VDC, 1A), battery connection 4 – IN1, IN2 -/+: input cable connectors (for sensors, sabotage detection) 5 – Jumpers for choosing the input line modes (for IN1, IN2):
   - galvanically indepentent voltage inputs
   - contact inputs (detecting wire cut (by using a 10kΩ EOL resistor), or short)
4. Status LEDs
5. **OUT:** relay output (for control: gate opening or siren/bark)
6. **ALR:** Alarm (TIP RING) line for connecting alarm center (emulated analog phone line)
7. **PROG:** RJ11 connector (for configuration, software refresh)
8. Holes for fastening the PCB board (into alarm safety box, etc.)

9. Expansion board connector (for IO-expander)

Input line operation mode selection (by jumpers [5]):

Contact input mode (for cable cut / short detection or sensors)

- Related jumper pairs (closer 2-pins, beside the input connector)
- The ground point of the input lines (-) are common
- The connection of input lines (independent polarity)

Voltage

- Related jumper pairs (closer 2-pins at the input LEDs)
- Galvanical independent, individual input lines
- Make attention to the polarity when wiring!

POWER SUPPLY AND ENVIRONMENTAL CONDITIONS

- **Power supply:** 8-24 VDC
- **Input signal:** high level 2-24V (IO-expander: 2-32V), low level: 0-1V
- **Current in active state:** 0.33mA
- **Switchable voltage on output:** 2A / 120VAC; 1A / 24VDC
- **Protection:** IP21
- Operation temperature between -40°C and+70°C, storage between -40°C and+80°C, with 0-95% humidity
- **Size:** 96 x 77 x 22mm, weight: 160 gr
- **Fastening** / **mount:** it may be fixed by 4 screws / plastic spacers through the 4 holes on the PCB

INSTALLATION STEPS

- **Step 1:** Place the SIM into the SIM tray [1] (the chip side looks down and the cutted edge of the SIM is facing into the PCB side).
- **Step 2:** Push the SIM until it will be fixed.
- **Step 3:** Wire and connect the input line(s) (use them for sensors or sabotage detection) in voltage/contact mode – by wiring the cables to the IN1, IN2 [4]. Choose the operation mode of the input line, select the jumper position [5] (voltage/contact). Connect the output (for switching external device/gate opening system) to the OUT [7].
- **Step 4:** If you want to connect an alarm center to our safety transmitter, then connect TIP RING of the alarm center to ALR [8] port.
- **Step 5:** Connect the antenna to the SMA connector [2].
- **Step 5:** In the communication menu of the alarm center, enter at least 1 digit to remote surveillance phone number. If you wish to use M2M Easy 2 in GSM mode as well (as primary or secondary route), enter the GSM phone nr. of the dispatcher service into the alarm center.
- **Step 6:** Connect the RJ11-RS232 cable's RJ11 side to the PROG titled port [9], connect to the cable's other side (RS232 coonector) to an RS232-USB adapter cable to able to connect to the PC. Perform the configuration by the EasyTerm application according to the related part of the User Guide.

- **Step 7:** Download the EasyTerm software by this link (Windows® 7/8/10 compatible): **https://www.m2mserver.com/m2m-downloads/EasyTerm_v1_3_5__EN.zip**
- **Step 8:** Download the latest device firmware for the software refresh: **https://www.m2mserver.com/m2m-downloads/EASY2S_V21R08C02.bin**
- **Step 9:** Extract the EasyTerm .ZIP file and execute the EasyTerm_v1_3_5.exe file. Follow the steps of the Installation manual Chapter 4, 5.
- **Step 10:** Connect the 12V/24V DC power cable of the alarm center's power wires to the PWR titled port [3]. (Pay close attention to wire polarity! The left side wire of the PWR input is the positive (+), the right is the negative (-). You can use a 124V DC 1A a power adapter too.)
- **Step 11:** Then the device will be under voltage, and it will be turning on and starting its operation. The green PWR LED will be continuously lighting. Any further operation LED status is listed hereby.

IMPORTANT! If there is no available PC, you can setup the device parameters with SMS text messages (by using compatible commands).

STATUS LED SIGNALS

LED	Function	Meaning	LED colour	Behavior
GSM	Cellular network signal strength	Signing the available signal strength – more flashes = better signal strength	red	flashing
STA	Modem status	In case of normal operation it signs the mobile network communication status	yellow	flashing/lights
IN1	Input nr.1	Signs the status of the #1 input line (I1INV or IDELAY parameters are applied) The LEDislightingiftheinputwiresareclosed(active)	green	lights
IN2	Input nr.2	Signs the status of the #2 input line (I2INV or IDELAY parameters are applied) The LEDislightingiftheinputwiresareclosed(active)	green	lights
OUT	Output relay	The LEDislightingwhentherelay is closed, not lighting: when the relay is opened	yellow	lights
MDM RDY	Modem operation	Modem status. Flashes intermittentlyifthemodemoperatesand accessible.	red	flashing
ALR	Alarm center	Status of the alarm center line (Tip-Ring) Speaker on: not lighting, Speaker off: no alarm center	green	flashing
PWR	Power	Signs the presence of the processor power supply	green	lights

STA LED – has three modes:

- lighting continuously: the last GPRS signaling was successful,
- turned off: GSM operation mode, no error

- 'x' number of flashes at a 3 second interval: error code:
  1. **flash:** Module failure
  2. **flashing:** SIM card failure
  3. **flashing:** PIN authentication failure
  4. **flashing:** Device cannot login to the GSM network
  5. **flashing:** Device cannot login the cellular network
  6. **flashing:** Connected to the cellular network, but cannot login to the server

- **GSM LED:** The counts of LED flashings are signing the signal strength of the cellular network (more flashing means better signal reception). There are 10 second pauses between two flashing sequences. A flash takes 50 msec, then half second breaking comes, etc.
- **Meaning of flashings (counts):** 0: Fault, 1: Weak, 2-3: Average, 4-5: Good, 6-7: Excellent
- **IN1, IN2 LED:** When the input is active (if two pair of wires are closed; or in power mode at 5-24VDC voltage presence) the related INx LED will lighting.
- **OUT LED:** Lighting when the output is active (the relay pair of wires are closed). It shows the status of the primer-side of the relay.
- **MODEM RDY LED:** Module operation LED, which blinks quickly at the initialization of the Easy2S (ca. twice per seconds). When the modem is already accessible and operating and has an active communication on the GSM network, then it will flashing less frequently.

OPERATION MODES

The device is capable of configuring and using for the following operating moddes and tasks:

1. **GSM transmitter (pre-configured to this mode, by default):** the alarm system is connected to the TIP-RING input, the incoming Contact ID codes will be forwarded and transmitted through the GSM network to the remote dispatching centre.
2. **Signaling to an Enigma IP receiver / SIMS Could®:** the alarm system is connected to the TIP-RING input, the incoming Contact ID codes will be forwarded and transmitted through the 2G/3G cellular network by Enigma protocol to an Enigma IP receiver or signaled into the SIMS® software.
3. **Transmitting through cellular network to the dispatching centre:** the alarm system is connected to the TIP-RING input, sabotage switch is connected to the input for monitoring, incoming signals are converted to Contact ID codes will be transmitted through the cellular network to the IP address of dispatch centre.
4. **Standalone alarm system – with SMS notification only:** sensor or sabotage detection. Sensors are connected to the input lines (for 2 inputs / by the IO-expansion max. 8 inputs); an alarm siren can be connected to the output. Signals will be transmitted via cellular network to a server IP.
5. **Input monitoring, gate opening:** sensors or sabotage detection. Sensors are connected to the 2 voltage/contact inputs (with the IO-expansion max. 8 inputs). Input short/wire cut can be detected on the inputs. The relay output(s) is remotely controlled (the output nr.#1. is for gate opening, further outputs (nr. 2-4) are presented for switching external devices). The devices uses the cellular network in this mode for remote control. The GSM network is used for SMS notification and ringing. The signaling through the cellular network (to an IP address) is still there as an option.

CONFIGURATION THROUGH SERIAL CONNECTION

The device is shipped with uploaded firmware and factory configuration. By default, the Easy2S is operating as a GSM transmitter (signals of connected alarm system (on Tip-Ring) will be transmitted via GSM network – with Contact ID codes – to dispatcher center).

Further configuration needs can be configured with the EasyTerm® software. Connect the RJ11-RS232 cable's RJ11 side to the device's RJ11 port and use the RS232-USB adapter cable to connect it to your computer.

CONFIGURATION BY SMS COMMANDS

- You can send more commands in the same SMS text message. Query commands cannot be mixed with control commands!

- Max. 158 characters can be used in one SMS message. Messages must contain English capital alphabetical letters only or numbers.

- The order and divide of the commands is possible with comma sign without a space character. The parameter value (after the = character) can be empty.

- In every SMS message (!) you have to use the password parameter (PW) at the first command position.

- You have to use the RESET command in the last SMS parameter message, at last the position – as PW=ABCD,……,RESET

- The new configuration values become active only after reboot. After – a couple of minutes – you have sent the last parametring message you will receive a response from the device that how many parameters were processed (e.g. „Settings OK!" text message response)

- The default password is ABCD, which can be changed (PWNEW param.) which can be max. 16 chars.

- Example: PW=ABCD,APN=TELEMATICS.NET,SERVER1=1.1.1.1,RESET Text message response: Settings OK!

MAIN COMMANDS	Description
PW	Connection / authentication password (default: ABCD)
PWNEW	Password change, adding the new password for connection authentication
APN	The name of the APN network required for cellular network connection, which is given by the operator providing the SIM card
SERVER1	The primary fixed IP address of the remote surveillance (dispatcher center) for receiving the transmitting signals
PORT1	The port number for the primary fixed IP address of the dispatcher center, where the signals will be received (default=9999)
GPRSEN	Enabling cellular network communication. Values: 1=enable, 0=disable (default=0)
SWPROTO	Which protocol is used for signaling. Values: 2=Enigma (*standard Contact ID protocol*), 1=M2M (default=2) *(M2M means the modified Contact ID protocol, which can only be used with the following IP receivers (as Enigma II®, Enigma IP2® receivers) remote* *dispatcher software (as AlarmSys® and SIMS® software)).*
ACCOUNT	The client identification code, object number to be used for own signals, signals (of the inputs) which is sent by the device (default=0001). It is recommended to set up the same object number as set in the alarm center!
SFUNCT	You can choose that the primary or secondary server IP address will be the first in the signaling sequence
DTMFTIME	DTMF pause between the TIP-RING Contact ID signals
IPPROTO	TCP or UDP communication protocol according to compatibility needs
LFGSMREQ	The frequency of the GSM life signal – value in seconds (default=60)
LFFREQ	The frequency of the cellular network life signal – value in seconds (default=300)

QUERY COMMANDS	Response content
INFDEV (or) **DEVSTAT**	It will response an SMS report with the current status of the *Easy 2*: account nr. (customer ID), signal strength, software version, hardware ID, device IMEI, SIM ICC, battery level, IP address (**ACCOUNT, SQ, SWVER, HWID, IMEI, SIMICC, VBATT, IP**)
INFIO	Current status of the input lines and the output line. *Contains*: **ACCOUNT, SQ, current status of the inputs** / **output lines**
INFTEL	Configured voice/SMS notification settings, phone numbers and notification (SMS text message) order sequence, voice call (ringing) order sequence will be response. *Contains*: **ACCOUNT, SQ, TEL1, TEL2, TEL3, TEL4, I1S, I2S, I1V, I2V**
INFSMS	Input SMS notification settings. *Contains*: **ACCOUNT, SQ, I1ON, I1OFF, I2ON, I2OFF**
INFIP	Server connection settings. *Contains*: **ACCOUNT, SQ, IMEI, IP, SERVER1, PORT1, SWPROTO**

SMS MESSAGE (COMMAND SEQUENCE) EXAMPLES:

- **GSM signaling/transmitting:**

  PW=ABCD,GPRSEN=0,SYS1=1,ACCOUNT=1130,LFGSMFREQ=60,DTMFTIME=60,RESET

- **Signaling through cellular network to an IP-receiver:**

  PW=ABCD,GPRSEN=1,SFUNCT=1,ACCOUNT=1130,LFFREQ=300,APN=NET,SERVER1=89.133.189.139,

  PORT1=9999,IPPROTO=UDP,RESET

For other available parameters, read the Installation Guide which can be downloaded with the necessary software and firmware from our website: **https://m2mserver.com/en/product/wireless-safety-transmitter/**

This product is marked with the CE symbol according to the European regulations.

Documents / Resources

	WM Systems M2M Easy 2S Security Communicator [pdf] Installation Guide M2M Easy 2S Security Communicator, M2M, Easy 2S Security Communicator, 2S Security Communicator, Security Communicator, Communicator

References

- ᴹ²ᴹ **WIRELESS SAFETY TRANSMITTER - WM Systems LLC - M2M / IoT Communication Solutions**
- ᴹ²ᴹ **m2mserver.com/m2m-downloads/EASY2S_V21R08C02.bin**