

GSM/IO (v1.0)

8 OPTOISOLATED INPUTS
4 OPEN-DRAIN TRANSISTOR OUTPUTS
SMS CONTROL AND ALARM NOTIFICATIONS
USB CONFIGURATION

Instruction manual
Configuration software manual



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1. Technical parameters

Dimensions	81x77mm
Weight	45g
Supply voltage	12VDC typ. (9 - 16VDC)
Power consumption	40mA (500mA peak with GSM activity)
Operation temperature	-30°C / +70°C
Number of inputs	8
Input type	Phototransistor
Number of outputs	4
Output current	2A max.
Output type	Open-drain MOSFET transistor
Configuration/PC connector	USB-B (printer cable type)
GSM module	SIM900D

2. Device description

GSM/IO is a simple GSM device designed for remote control of digital inputs and outputs. It can be used for switching external devices with a single SMS command. GSMIO is also capable of sending an alarm SMS to configured administrator telephone numbers when there is a change on one of its inputs.

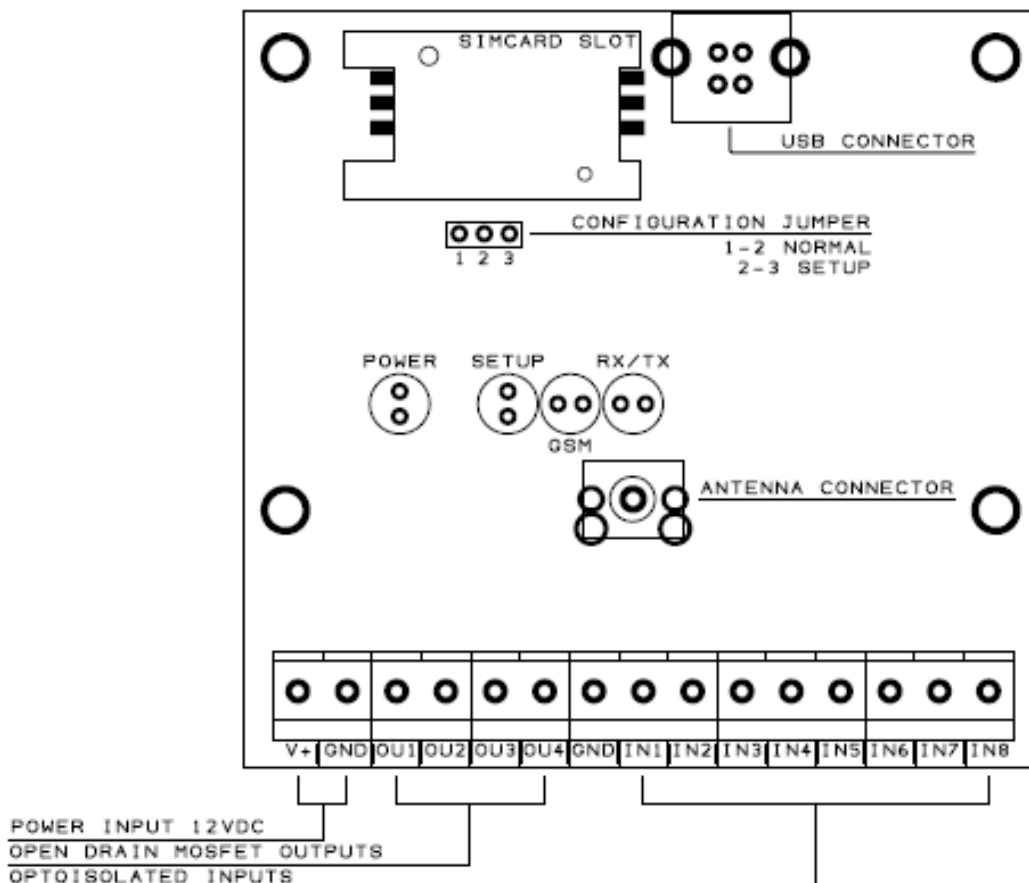
GSM/IO can be used as a simple control panel for a home or storehouse security. You can simply connect intrusion or motion sensor to one of its inputs and configure it to send SMS to your telephone number when sensor violation is detected.

GSM/IO can also be used as a remote switch or reset for other devices. For example you can connect it to a network router and remotely cut power when it hangs up for some reason.

Please remember that you need to use an external relay if you want to control high voltage or AC devices. GSM/IO inputs and outputs are designed to work with passive devices or devices with voltage levels of 0-12VDC.

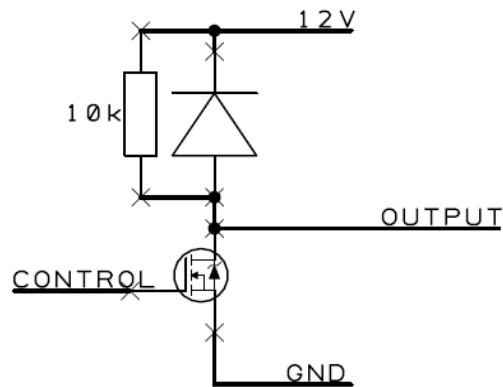
2.1. User accessible connectors and leds

User accessible connectors are shown below.



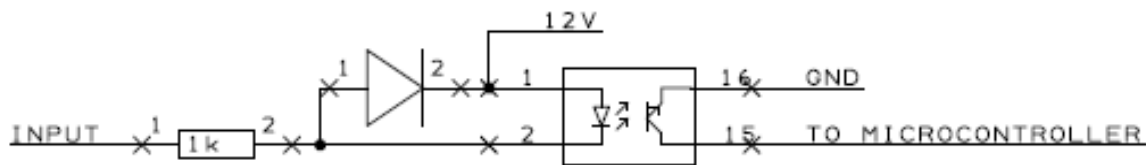
2.2. Output pin schematic

GSM/IO outputs are based on N-MOSFET transistor. When activated, it will connect output pin to ground.



2.3. Input pin schematic

GSM/IO inputs are based on phototransistor. It will signalize input activation when shorted to ground by external device, for example a simple switch connected between input and ground.



3. USB driver installation

USB communication is based on widely used FT232RL integrated circuit from FTDI. FTDI provides and frequently updates drivers for all Microsoft operating systems so GSM/IO is fully compatible with newer and older versions of Windows operating system. Driver installation procedure:

- do not connect GSM/IO to PC before installing drivers, disconnect it if it is already connected,
- run the driver package .exe file from GSM/IO archive,
- after driver installation you can connect GSM/IO to USB,
- after a short while device should be detected and visible in Windows system.

4. GSM/IO Configurator application

4.1. Entering configuration

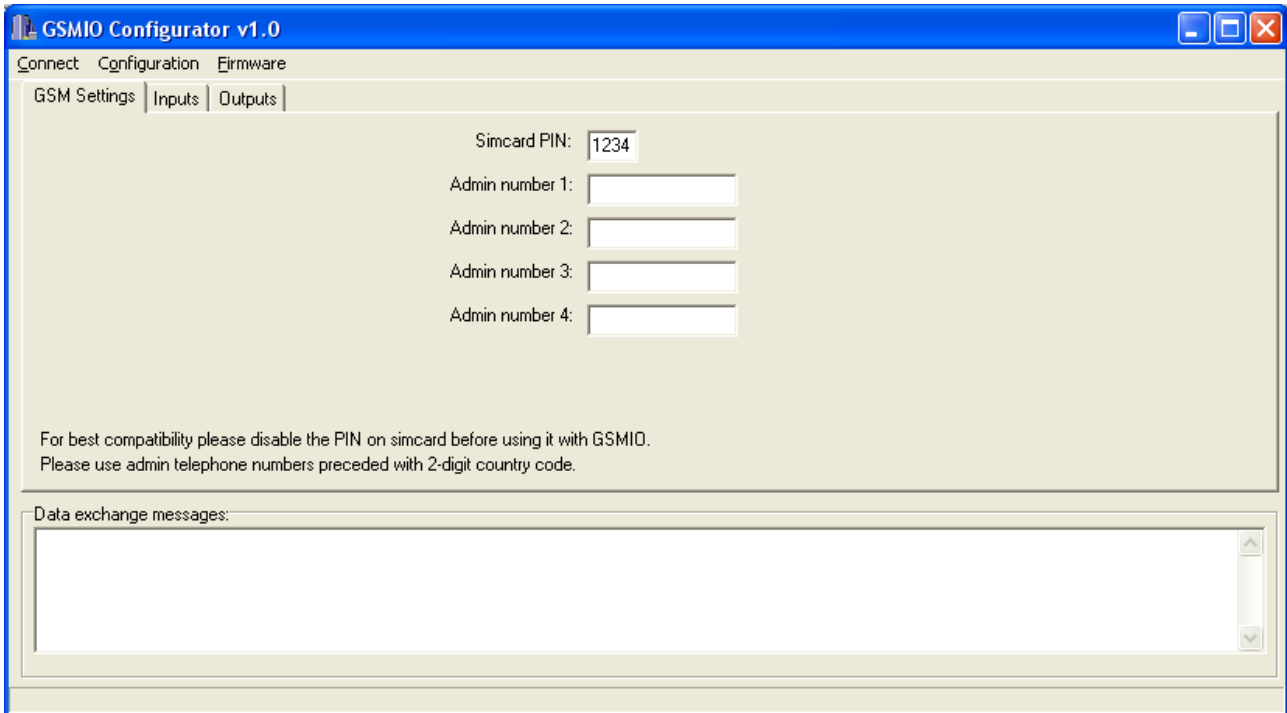
To enter configuration please follow this procedure:

- disconnect GSM/IO from USB and power source,
- move the configuration jumper to position 2-3 (setup),
- connect power and USB,
- red SETUP led should start blinking signaling that the device is in configuration

- stage,
- Now you can run GSM/IO Configurator application.

4.2. GSM/IO Configurator main window

Main Configurator window is presented below:



Application menu options:

- Connect - click to open connection with GSM/IO,
- Configuration/Write to device - writes current configuration data from application fields to the device,
- Configuration/Read from device - reads current configuration from the device and displays it in application window,
- Configuration/Save to file - writes current configuration data from application fields to the device,
- Configuration/Read from file - reads current configuration from file and displays it in application windows,
- Firmware/Write to device - writes a new firmware file to the device, this function can be used when new device firmware will be published.

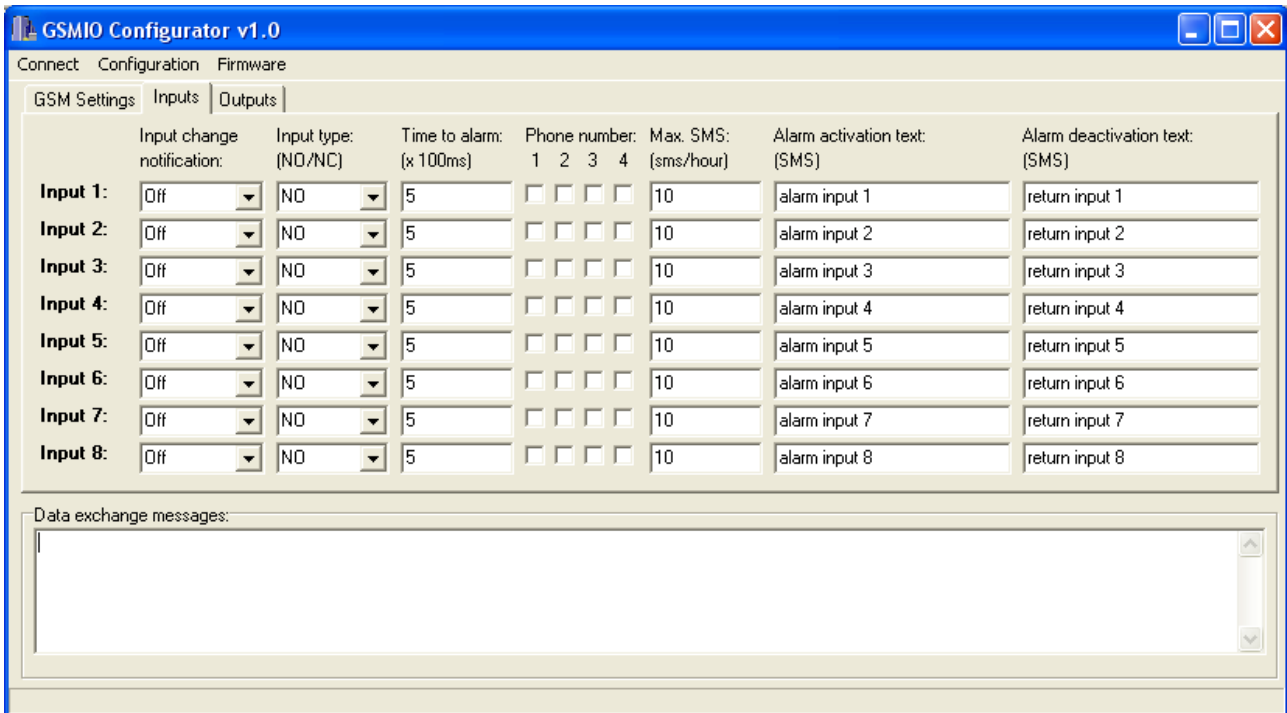
Application tabs:

- GSM Settings - PIN and phone numbers settings,
- Inputs - input configuration,
- Outputs - output configuration,
- Data exchange messages - this field displays information about data exchange between GSM/IO and Configurator application.

4.3. GSM Settings tab

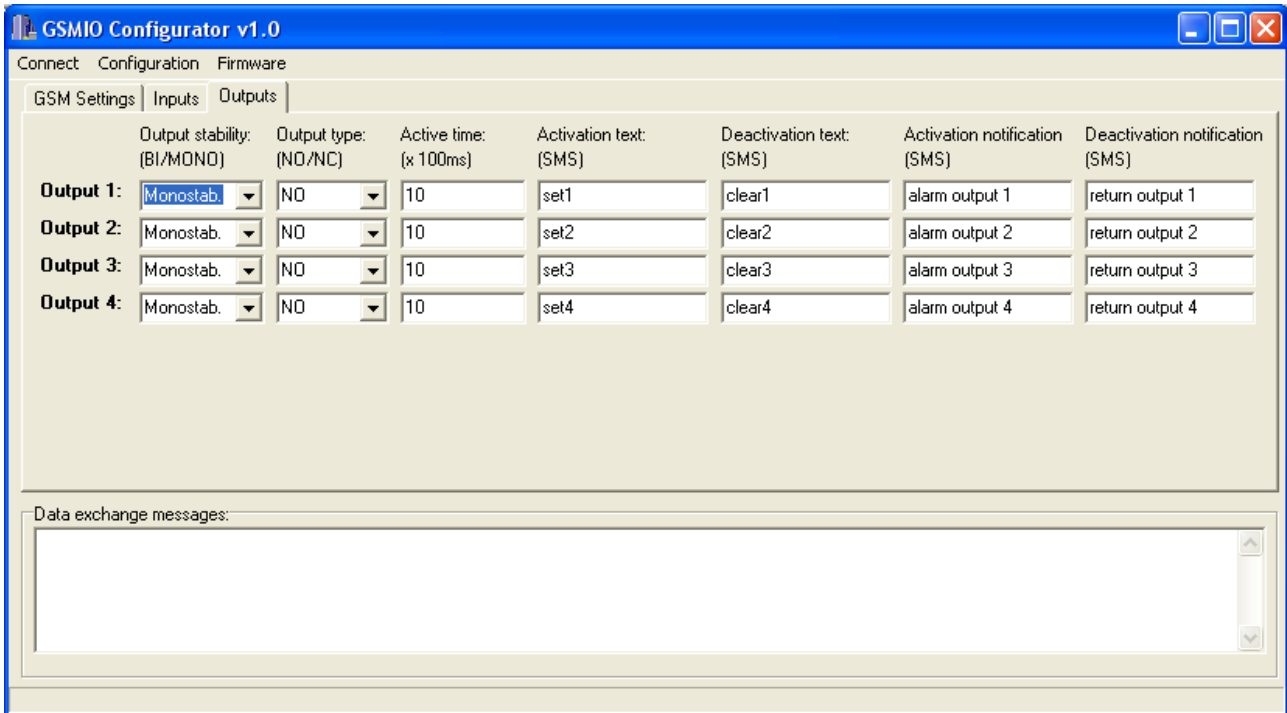
- Simcard PIN - please enter you cards PIN number,
- Admin number 1, 2, 3, 4 - These telephone numbers are administrator numbers which can issue commands and receive alerts from device. It is necessary to enter these numbers with country code at the beginning (ex. for Poland the country code is 48, and example phone number is 665122147 so we can write: 48665122147).

4.4. Inputs tab



- Input change notification - if set to “Off”, input changes will be ignored. Set to “On” to use this input,
- Input type - if set to “NO” the input will be normally open, it will signal the alarm when connected to ground. If set to “NC” the input will be normally open, it will signal the alarm when left unconnected or connected to 12V,
- Time to alarm - this setting will change the amount of time before alarm detection. For example if set to 5, the input must be shortened for at least 500ms to signal alarm,
- Phone number - these checkboxes select administrator phone numbers on which the SMS alarm messages will be sent,
- Alarm activation text (24 symbols max. only letters, digits, and spaces) - this SMS content will be sent on alarm activation. Leave blank if you don't want to send alarm SMS,
- Alarm deactivation text (24 symbols max. only letters, digits, and spaces) - this SMS content will be sent on alarm deactivation, when input will return to open state. Leave blank if you don't want to send alarm SMS.

4.5. Outputs tab



- Output stability - if set to Monostability, this output will be set on activation for time set in Active time and then return to inactive state. If set to Bistability, this output will be set on activation and will stay in this state until deactivation SMS reception,
- Output type - if set to "NO" this output inactive state will be not shortened and active state will be shortened. If set to "NC" this output inactive state will be shortened and active state will not be shortened,
- Activation text (24 symbols max. only letters, digits, and spaces, case insensitive) - this is the SMS content which will activate the output,
- Deactivation text (24 symbols max. only letters, digits, and spaces, case insensitive) - this is the SMS content which will deactivate the output in bistable mode,
- Activation text (24 symbols max. only letters, digits, and spaces) - this SMS content will be sent back to sender as a confirmation of output activation. Leave blank if you don't want to send activation confirmation SMS,
- Deactivation text (24 symbols max. only letters, digits, and spaces) - this SMS content will be sent back to sender as a confirmation of output deactivation. Leave blank if you don't want to send deactivation confirmation SMS.

5. Date and time configuration

Date and time is stored in GSM module hardware and real-time clock. It must be set manually with special SMS sent from one of admin numbers:

- `setdate:YY/MM/DD, hh:mm:ss`

where YY is year, MM is month, DD is day, hh is hour, mm is minute, ss is second.

After that the module should store the time and should remember it even after power-off.