MultiOne GSM

GSM GATE OPENER AND REMOTE CONTROLLER

Version: 1.2
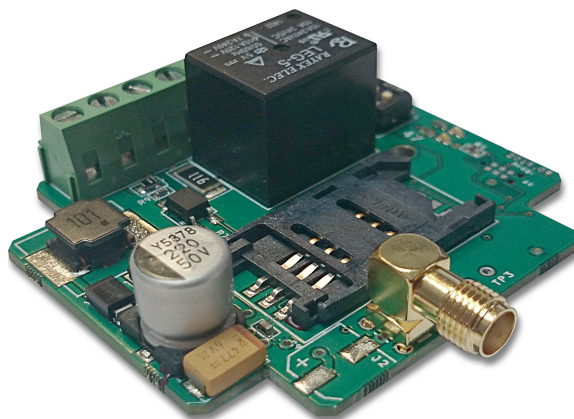
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General description

MultiOne GSM is a GSM communicator that can be used for remote controlling and for notification sending. The device has an optocoupler input and a potential independent relayed output that has normally closed (NC) and normally open (NO) terminals as well. If there is a change on the input it will send only SMS or an SMS and a call to a phone number. Output control is achieved by calling the module. Depending on the setting controlling can be made with or without caller identification. Output can be set to switch to its other state when called or to switch for a given time to its other state from its default. Module settings can be adjusted by using DIP switches and SMSs.

SMA antenna connector

SIM card slot

DIP switch

Series terminal
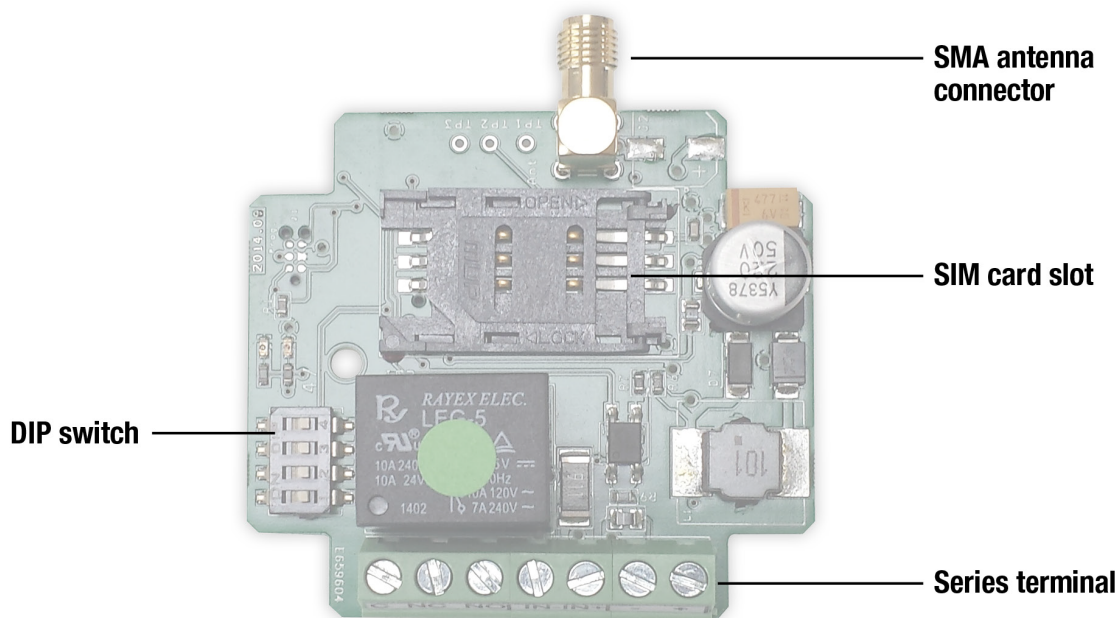
Power supply

GSM module requires 12-24 VAC or 10-35 VDC that has to be connected to the + and – terminals of the module.

If the module is connected to the gate control unit directly, make sure that the power source is not over 24 VAC. In case of the power source is higher than 24 VAC, the module can be damaged.

Input

The GSM module has an optocoupler input with IN- and IN+ terminals. Maximum input load is 24 VAC or 35 VDC. The module will send notification when DIP switch 2 in OFF state is powered. DIP switch 2 in ON state will send notification when the connected voltage disappears.

Notification is defined by the state of the DIP 3 switch. It will send SMS only in OFF state and it will send SMS and also initiate call in its ON state.

Saving the telephone number for notification is carried out with the SMSTEL command:
Format: <password>SMSTEL=<telephone number>*
Ex.: 1234SMSTEL=+36701234567*

SMS text saving is carried out with the SMSTEXT command:
Format: <password>SMSTEXT=<text>*
Ex.:1234SMSTEXT=Alarm*

Confirmation of the notification call is made by answering the call. Call can be stopped after 1 second. The module will try 50 times to have the call accepted.

Contact wiring

If there is a potential independent contact the wiring has to be made by using the power voltage of the GSM module. Depending on the contact type which can be closer or opener Figure 1 or Figure 2 must be used. DIP 3 switch should be set according to the type of control.
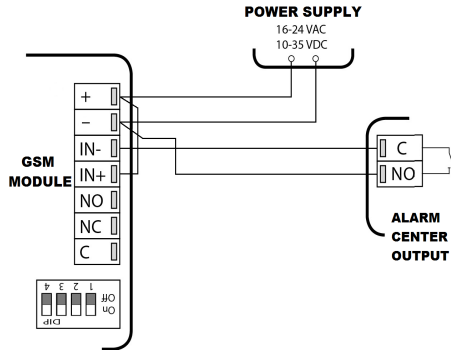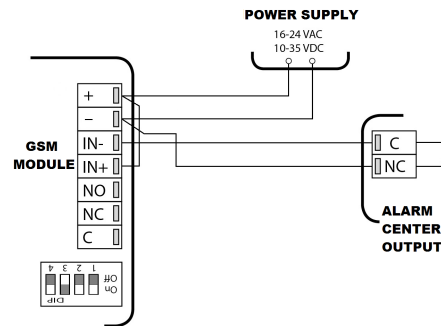
Figure 1.

Figure 2.

NPN and PNP wiring

If there is an npn or pnp output the power voltage of the GSM module has to be used to power the opto input. In this case the power source of the module can have only direct voltage. DIP 2 switch should be set according to the type of control.
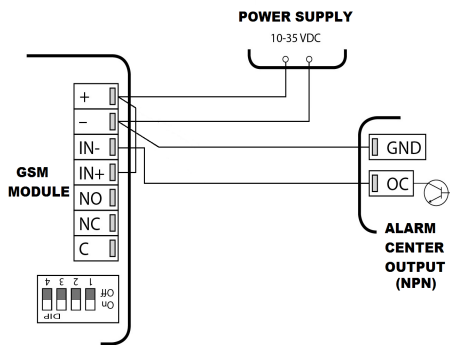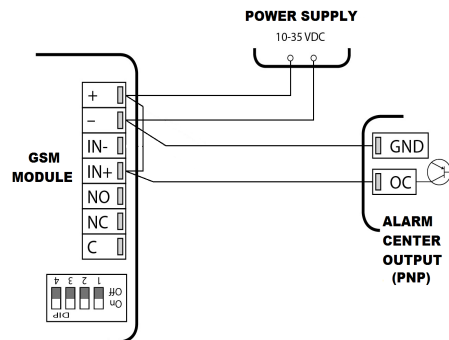
Figure ..

Figure 3.

Controlwith AC/DC voltage

The opto input can be controlled independently from the power supply of the module which cannot be greater than 24 VAC or 35 VDC. For AC voltage, electrical parts are necessary to connect. (not included in package).
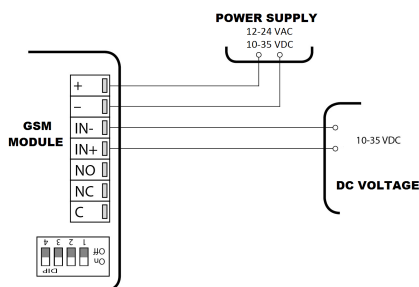
Figure 0.

Output settings, wiring

The device has a potential independent relayed output that has normally closed (NC) and normally open (NO) terminals as well. Its terminals are C, NC, NO. Output maximum load is 5A.

4.

Output can be adjusted to switch from its current sate to its other state (bistable controlling) or to switch to the other state (monostable controlling) when called. The DIP 1 switch OFF state means monostable and the ON state means bistable controlling. The default monostable control time is 3 seconds. This can be modified with the MONOTIME command.

Format: <password>MONOTIME=<time>
Ex.: 1234MONOTIME=025
Time parameters: between 001 and 250 and always completed up to 3 digits.
Ex.: 8 seconds will be 008, 45 seconds will be 045

Output control

Output control is carried out by calling the module. Module only registers the call (not answering) and it controls the output.

If DIP 4 switch is in ON state any call is allowed to control the output. In its OFF state only the numbers saved on the SIM card are allowed for control.

Telephone number saving is achieved with the ADD command:
Format: <password>ADD=<3 characters of the position>=<telephone number>*
Ex.: 1234ADD=001=+36701234567*
Position is the address of the telephone number and name stored on the SIM card.

Deleting telephone number from a position is carried out with the DEL command:
Format: <password>DEL=<3 characters of the position >
Ex.: 1234DEL=001

Status check

We can receive module information by using the INFO command:
Format: <password>INFO
Ex.: 1234INFO

The reply SMS contains the following details:

- input state of the module

- output state of the module

- gsm signal strength

- date and time of the module

- IMEI number

- software version

- hardware version

Module restart

Module can be restarted:
Format: <password>RESTART
Ex.: 1234RESTART

Password set

The GSM module programming is protected by a 4 digit security code which is 1234 by default. This code can be modified with the SMSPIN command:
Format: <old password>SMSPIN=<new password 4 characters>
Ex.: 1234SMSPIN=5678

Forwarding SMSs arriving to the module

Module might receive SMSs that are not containing information for the module (ex. credit balance notification). These SMSs can be redirected by the module to a telephone number with the REDIR command:
Format: <password>REDIR=<telephone number>
Ex.: 1234REDIR=+36301234567

Forwarding can be stopped by using the following REDIR command:
Format: <password>REDIR=D
Ex.: 1234REDIR=D

Reverting module settings back to factory default

1. Switch the module off (no power supply)

2. Switch the DIP 4 switch to ON state

3. Switch on (provide the power supply). Red LED starts to flash rapidly.

4. While red LED flashes rapidly, switch off the DIP 4 Switch (so its state will be off)

5. Red/green LED starts to flash in turns which is the feedback sign of the MASTER RESET

LED signs

There are 2 LEDs on the module, one for operational status (ACT, red) and one for GSM state (STATUS, green). At module power-up initiation is in progress and red LED is lit then it starts to establish a connection with the GSM network carrier. The whole process can be 30-60 seconds depending on the GSM network. Thereafter red LED is not lit and depending on signal strength green LED starts to flash. If green LED is lit the connection did not succeed.

Numbers of flashes	Signal strength
- .	Bad
3	Decent
0	Good
4	Excellent
LED lit	GSM connection rejected

If the module is already operating red LED flashes communicates an event.

Flash type	Meaning
Short flash	Change in input state if SMS sending is not set
Light for long once	Received SMS successfully interpreted
	Sending notification SMS
Lit for long several times	Received SMS cannot be interpreted – in this case in the text messages menu of the phone change the input mode to „Automatic".

If red and green LED flashes simultaneously an error occurred. Errors are enumerated in the following chart:

Numbers of flashes	Error code
-	Error during initiation
.	Faulty GSM module
3	SIM card is not inserted
0	SIM card protected with PIN code

- .

Technical details

GSM module power supply	12-24 VAC or 10-35VDC
Standby current consumption	12V@25mA/700mA
Maximum power consumption	24V@15mA/350mA
Operating temperature	-20 - +50 ˚C
Output relay load	max. 230@5A
GSM module	SIMCOM 800H
Antenna connection	SMA nut connection
GSM frequencies	GSM 850 / EGSM 900 / DCS 1800 / PCS 1900 (Multi-Band)
GSM module size	59 x 53 x 21 mm
Package size	132 x 128 x 32 mm

Sending multiple commands in one SMS

The module can interpret if it receives multiple commands in one SMS. The SMS has to be started with the security code then followed by the commands separated with a space character. This way the module can be fully programmed with a single SMS. Divided SMSs cannot be joined together by the module.

Format:<password><1st command><space><2nd command><space><3rd command>
Ex.:1234SMSPIN4321 SMSTEL=+36701234567* SMSTEXT=Alarm* ADD=001=+36301234567*
ADD=002=+367076543210* REDIR=+36301234567

INFO and RESTART command cannot be coupled in the same SMS.

SMS commands

Command	Format	Function	Example	Reply
INFO	<password>INFO	State check	1234INFO	IN1: On Out1: off Network: 3 Date: 11.45 01/16/2015 IMEI: 862950024571179 SW: 03.1 HW: 077
SMSTEL	; password >SMSTEL=<phone number>*	Notification telephone number setup	1234SMSTEL=+36701234567*	Stored: 1 Error: 0 V3.1
SMSTEXT	< password >SMSTEXT=<text>*	Setup notification text	1234SMSTEXT=Kinyílt a bejárati ajtó*	Stored: 1 Error: 0 V3.1
ADD	; password >ADD =<3 characters of the position> =< phone number >*	Controlling telephone number setup	1234ADD=001=+36301234567*	Stored: 1 Error: 0 V3.1
DEL	; password >DEL =<3 characters of the position >	Deleting controlling telephone number	1234DEL=001	Stored: 1 Error: 0 V3.1
SMSPIN	; password >SMSPIN=<new password>	Modifying security code	1234SMSPIN=5678	Stored: 1 Error: 0 V3.1
REDIR	; password >REDIR=<telephone number>	Forwarding SMS to the given number	1234REDIR=+36301234567	Stored: 1 Error: 0 V3.1
	; password >REDIR=D	Cancelling SMS forwarding	1234REDIR=D	Stored: 1 Error: 0 V3.1
MONOTIME	< password >MONOTIME=<time>	Setting monostable time	1234MONOTIME=010	Stored: 1 Error: 0 V3.1
RESTART	; password >RESTART	Module restart	1234RESTART	Stored: 1 Error: 0 V3.1

If module receives multiple commands in one SMS in its reply after Stored it will count the executed commands, after Error it will count the unexecuted commands. INFO and RESTART command cannot be coupled in the same SMS.

DIP switch allocations

Switch	On	Off
1.	Output is bistable	Output is monostable
2.	Input is NC as default	Input is NO as default
3.	At input event voice call enabled	At input event voice call disabled
4.	Output control without caller identification	Output control with caller identification