GMT-RC11

GSM Switch for controlling your electronics
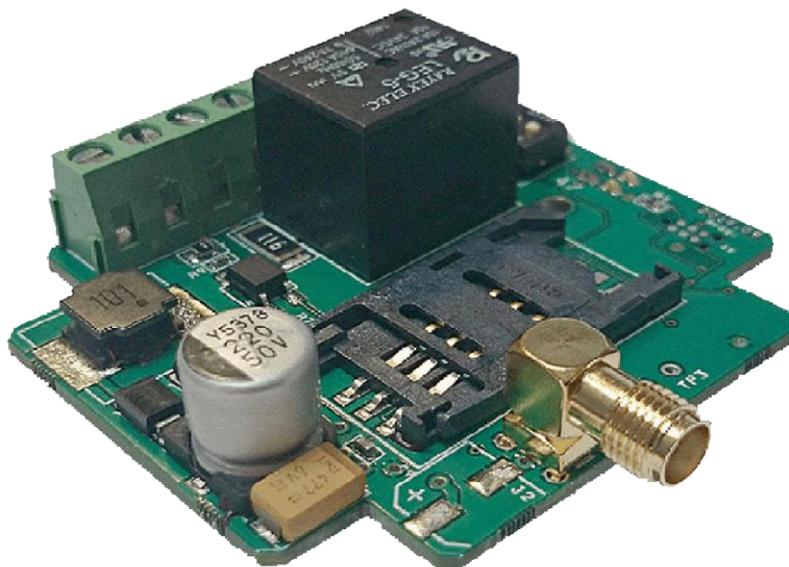

INSTALLATION AND USER GUIDE

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General Description

GMT-RC11 is a GSM communicator that can be used for remote controlling and for notification sending. The device has a low voltage input and an independent relayed output that has normally closed (NC) and normally open (NO) terminals. If there is a change on the input it will send an SMS or an SMS and a call to a pre-defined phone number. Output control is achieved by calling the module. Depending on the settings controlling the output can be made with or without caller identification. The output can be set to switch to its other state when called or to switch for a pre-defined time to its other state from its default. Module settings can be adjusted by using DIP switches and SMS.
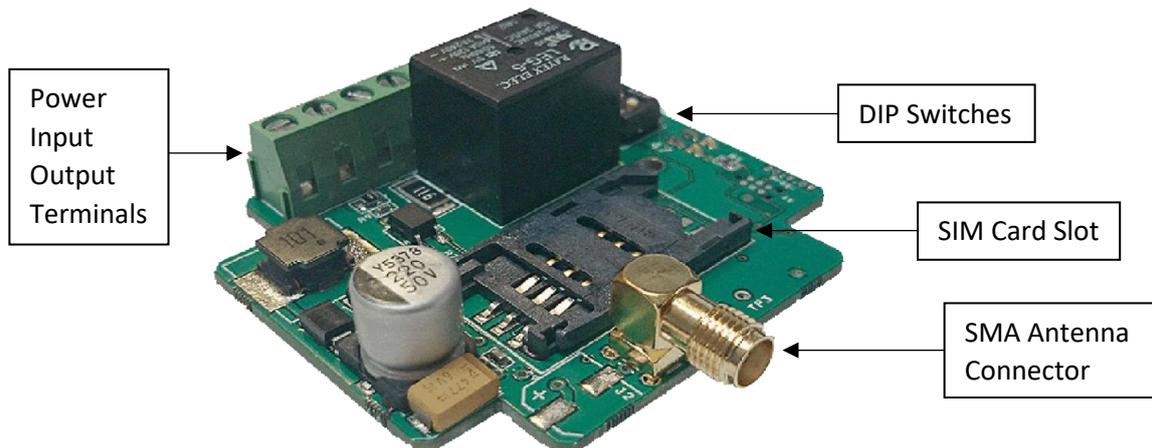
Input contact wiring

Wiring should be made by using the power voltage of the GSM module. Depending on the contact type which can be opened or closed Figure 1 or Figure 2 must be used. DIP switch 3 should be set according to the type of input controlling.

Power supply

GSM module requires 16-24 VAC or 10-35 VDC that has to be connected to the + and - terminals of the module.
Please ensure a regulated power supply is used to avoid damaging the GSM switch.

Input

The GSM module has a low voltage input with IN- and IN+ terminals. Maximum input load is 24 VAC or 35 VDC. The module will send a notification on voltage input when DIP2 switch is in the OFF state. DIP3 switch in the ON state will send notification when the connected voltage disappears. Notification is defined by the state of the DIP3 switch. It will send an SMS only in the OFF state and will send an SMS and also initiate a 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=+447012345678
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.

The module will try up to 50 times to have the call accepted if not answered

Contact wiring

If there is a potention 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 2 switch should be set according to the type of controlling.
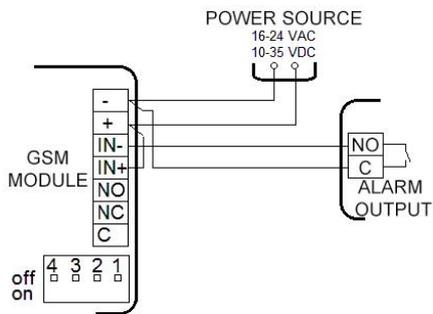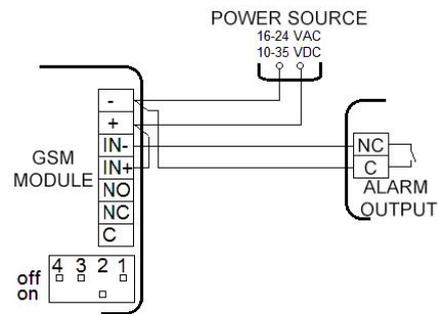
FIGURE 1.   FIGURE 2.

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 controlling.
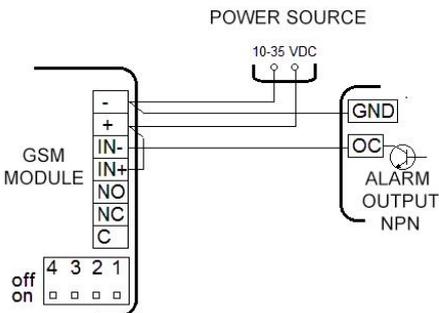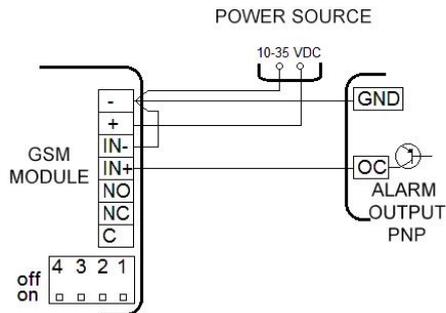
FIGURE 3.   FIGURE 4.

Controlling with 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.
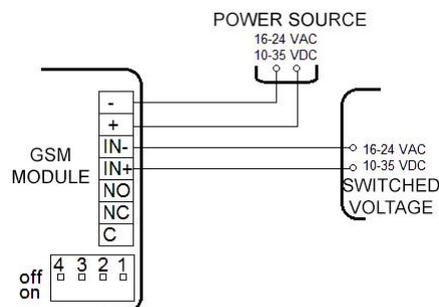
FIGURE 5.

Output settings, wiring

The device has an independent relayed output that has normally closed (NC) and normally open (NO) terminals. Its terminals are C, NC, NO.

Output maximum load is 5A.

Output can be adjusted to switch from its current state to its other state (bistable controlling) or to switch to the other state (monostable controlling) when called. 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 it's OFF state only the numbers saved on the SIM card are allowed TO control.

Telephone number saving is achieved with the ADD command:

Format: <password>ADD=<3 characters of the position>=<telephone number>•

Ex.: 1234ADD=001 =+447012345678

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
- date and time of the module
- IMEI number
- hardware version
- software version
- gsm signal strength

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 SMS arriving to the module

Module might receive an SMS 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=+443012345678

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 DIP4 in state ON (1st state)
3. Switch on (provide the power supply). Red LED starts to flash rapidly.
4. While red LED flashes rapidly switch off Switch 4 (so its state will be 0)
5. Red/green LED starts to flash in turn, this is the feedback confirming reset

LED indications

There are 2 LEDs on the module, one for operational status (ACT, red) and one for GSM state (STATUS, green). On 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.

NUMBER OF FLASHES	SIGNAL STRENGTH
1	POOR SIGNAL
2	
3	AVERAGE SIGNAL
4	GOOD SIGNAL
5	EXCELLENT SIGNAL
SOLID	GSM CONNECTION REJECTED

If the module is already operating red LED flashes indicates events as listed below:

FLASH TYPE	MEANING
1x SHORT FLASH	CHANGE OF INPUT STATE IF SMS SENDING NOT SET
1x LONG FLASH	SENDING OR RECEIVING SMS
SEVERAL LONG FLASHES	RECEIVED SMS NOT UNDERSTOOD

Error indication

If red and green LED flashes simultaneously an error occurred as listed below:

NUMBER OF FLASHES	ERROR CODE
1	ERROR DURING INITIATION
2	FAULTY GSM MODULE
3	SIM CARD NOT DETECTED
4	SIM CARD PIN ERROR

Technical details

GSM MODULE POWER SUPPLY	16-24V AC or 10-35V DC
CURRENT DRAIN	12V @ 25mA PEAKS @ 700mA
	24V @ 15mA PEAKS @ 350mA
OPERATING TEMPERATURE	-20 > +50 °C
OUTPUT RELAY LOAD	MAX. 230V @ 5A
GSM MODULE	800 SIMCOM
ANTENNA CONNECTION	SMA CONNECTION
GSM FREQUENCIES	GSM 850 / EGSM 900 / DCS 1800 / PCS 1900 (MULTI-BAND)
GSM MODULE SIZE	59x53x21 mm
PACKAGE SIZE	132x128x32 mm

Sending multiple commands in one SMS

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 SMS cannot be joined together by the module.

Format: <password><1 st command><space><2nd command><space><3rd command>

Ex.:1234SMSPIN4321 SMST EL=+36701234567* SMSTEXT=Alarm• ADD=001=+36301234567*

ADD=002=+36707654321 o• 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	IN/OUT/SIGNAL/DATE/IMEI/SW/HW
SMSTEL	<PASSWORD>SMSTEL=<TEXT>	NOTIFICATION TELEPHONE NUMBER SETUP	1234SMSTELL=+447712345678	STORED:1 ERROR:0 V3.2
SMSTEXT	<PASSWORD>SMSTEXT=<TEXT>	SETUP NOTIFICATION TEXT	1234SMSTEXT=INPUT 1 ACTIVATED	STORED:1 ERROR:0 V3.2
ADD	<PASSWORD>ADD=<3 DIGIT POSSITION>=<PHONE NUMBER>	ADDING PHONE NUMBER	1234ADD=001=+447712345678	STORED:1 ERROR:0 V3.2
DEL	<PASSWORD>DEL=<3 DIGIT POSSITION>	DELETE PHONE NUMBER	1234DEL=001	STORED:1 ERROR:0 V3.2
SMSPIN	<PASSWORD>SMSPIN=<NEWPASSWORD>	CHANGE PASSWORD	1234SMSPIN=4567	STORED:1 ERROR:0 V3.2
REDIR	<PASSWOR>REDIR=<PHONE NUMBER>	FORWARD SMS RECEIVED	1234REDIR=+447712345678	STORED:1 ERROR:0 V3.2
REDIR=D	<PASSWORD>REDIR=D	CANCEL SMS FORWARDING	1234=REDIR=D	STORED:1 ERROR:0 V3.2
MONOTIME	<PASSWORD>MONOTIME=<TIME>	MONOSTABLE TIME SETTING	1234MONOTIME=010	STORED:1 ERROR:0 V3.2
RESTART	<PASSWORD>RESTART	MODULE RESTART	1234RESTART	STORED:1 ERROR:0 V3.2

DIP switch allocations

SWITCH	ON	OFF
4	OUTPUT CONTROL WITHOUT CALLER ID	OUTPUT CONTROL WITH CALLER ID
3	INPUT EVENT VOICE CALL OUT	INPUT EVENT NO VOICE CALL
2	INPUT IS NC AS DEFAULT	INPUT IS NO AS DEFAULT
1	OUTPUT IS BISTABLE	OUTPUT IS MONOSTABLE

GMT-RC11

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