

PGM1-E

Micro GSM Communicator

Instructions: July 20, 2013, refers to the firmware version: 1.017

Pacific GSM company expanded its range of miniature GSM communication module, which is available in an plastic enclosure version - that is designed to be built into other devices.

Through PGM1-E GSM module can be remotely controlled such as lighting, pumps, garage doors and gates or reboot servers.

May indicate a malfunction Alarms or loss of liquid in tanks, emergency conditions, or simply using a suitable sensor to watch object or temperature limits with thermostat function.

All easily through standard mobile phone.

PGM1-E GSM module is a fully pre-programmed, for most common function (alarm report), you just call the unit SIM number from phone which you want to contact if a PGM1-E input connected to GND, PGM1-E will send you confirmation SMS with saved number and that is all. If the PGM1-E input will connect to a GND the stored number will receive SMS "Alarm Activated". If you need custom setting we can pre-program for you before shipping or can be done simple via SMS command.



Basic specification:

- PGM1-E GSM module dimensions: 37 x 75 x 26 mm (H x W x D)
- PGM1-E include aerial dimensions: 37 x 99 x 26 mm (H x W x D)
- GSM/GPRS Quad Band 850/ 900/ 1800/ 1900 MHz
- Power supply voltage: 5-15V DC
- Current consumption - GSM Module connected to network, standby: approx 6 mA
- Max current consumption (GSM module transmits): peak of 500mA max.
- Max current start consumption (GSM module logs in to the network module power up): peak max 2A max.

The power adapter must be able to deliver a peak current of at least 2A, otherwise it can lead to problems with PGM1-E connecting to the GSM network. If you testing PGM1-E using laboratory power supply, set the current limit minimum (maximum current) and source terminals to connect the parallel capacitor 1000uF or greater.

- Operating temperature: -20°C to +50°C
- **1 logic input, active level GND.**

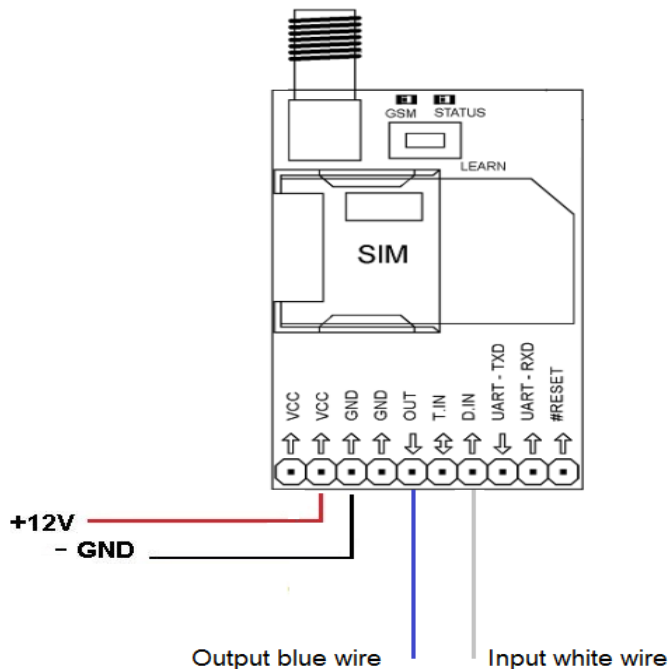
Input is designed for connection of potential-free contacts!

- **1 input for digital temperature sensor** with a measuring range from -20°C to 125°C.
(Temperature sensor sold separately with cable length 2m or 5m)
- **1 output transistor open collector with load max 100 mA 12V**
- UART interface voltage level 3V3 and 5V0
- PGM1 is designed in a dry environment. For outdoor installation, use the box with corresponding protection.
- 6 authorized phone numbers can be set up

Basic Features:

- one universal input with adjustable reaction to change, connection or disconnection of the loop.
- input can be named (SMS text).
- in case it is necessary to have an input permanently enabled (the watchdog state), can be switched into mode 24h. loop.
- input for digital temperature sensor with automatic output control (thermostat).
- Information SMS in case of exceeding the set temperature or the temperature drops below the set limit.
- Device Status, you can always check the status via SMS.
- Easy configuration via SMS commands
- Automation status SMS function available

Wiring Connection PGM1-E



* LEARN button has no function now is intended for use in future firmware versions.

LED indicator:

ARM(Green)	Green flashing slowly - the communicator is activated * Green LED off – communicator is deactivated *
GSM (Blue)	Blue lights - GSM is not ready / no signal Blue flashing rapidly - a weak signal (<20%) Blue flashing slowly - a good signal

* The communicator is activated means that the logic input mode ARM / DISARM is Armed

Normal operating status:

- Green LED flashes (ARM), blue LED flashes (device has GSM signal).

Process or the inability to start up networking, respectively. another problem:

- The green and blue LEDs ON.

New Zealand Pre Pay SIM Card Activation

- It is recommended to only use new SIM cards with no data stored. The unit has been tested and approved with all standard SIM cards provided by Vodafone NZ and 2Degrees.
- Place the new SIM card in an existing mobile phone.
- Make a call to 777 Vodafone or 200 2Degrees and follow the voice prompts to set up your PIN number to activate the service and SIM, then it's ready to use.
- We recommended register SIM online to manage SIM quick and easy any time.** Registration process is quite quick. Click on the Register for my account tab from the www.vodafone.co.nz or www.2degreesmobile.co.nz website and to follow the prompts and fill in the required details. Wait to receive a validation TXT to complete the registration.
- Insert the SIM card into the GSM Communicator.

PGM1-E Communicator Installation

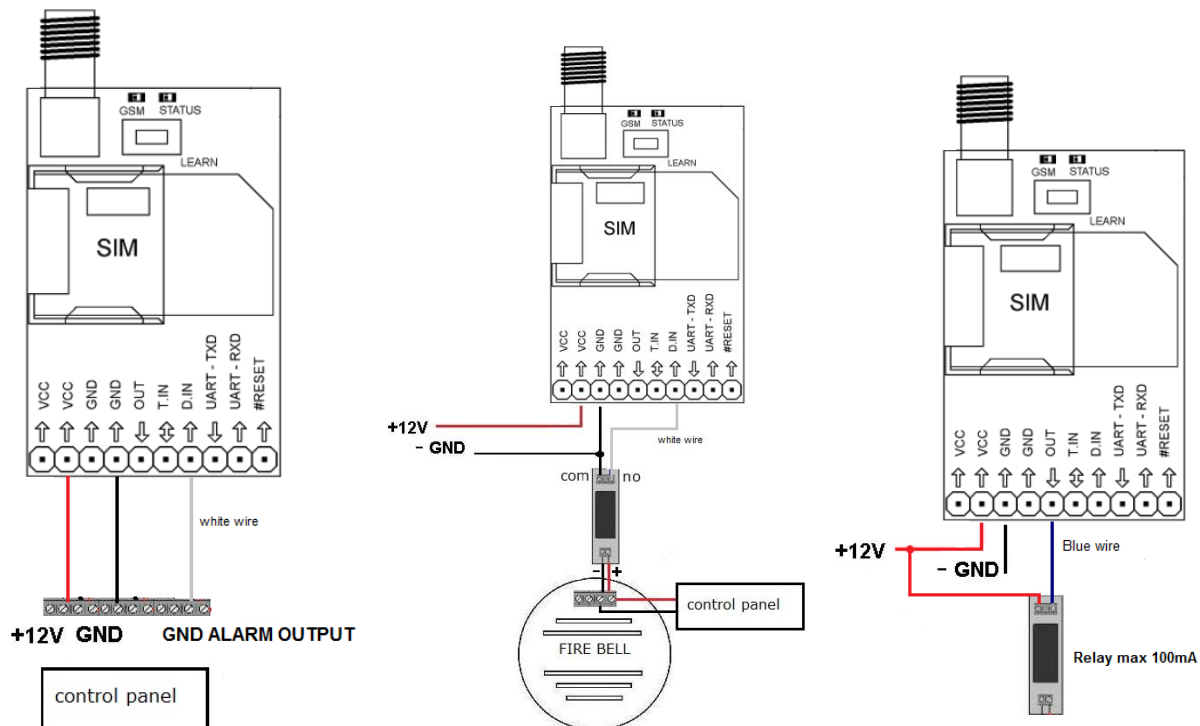
The GSM Communicator PGM1-E series is user friendly and easy to set up.

- 1) Before connecting the power, connect the corresponding GSM antenna.
- 2) After connecting the power supply and SIM card, the module will go undergo a self-test cycle. While in this cycle, the PWR/BAT and GSM Led's continuously on. After unit successfully connects to the GSM network the blue GSM LED will flash and PWR/BAT continuously on. Now the unit is ready for programming.
- 3) Send TXT report command to the unit **1234 stat?** If the command was correct, you will receive a TXT confirmation containing GSM signal strength. If the GSM signal is not sufficient (below 40%), the move unit to better GSM signal area or use of an external aerial.

The GSM Communicator PGM1-E series is a fully pre-programmed from manufactory, just call the PGM1-E SIM phone number from phone which you want to receive in future report, the PGM1-E will automatically save called number under position 1 (NUMBER1).

From this moment if the input connected to GND the PGM1-E module will send the pre-programmed SMS (Alarm: Activated) to this number, you can easily add additional phone numbers (up to 6) via simple SMS command. Output will switch on via command 1234 OUTPUT ON or 1234 OUTPUT OFF

Example of PGM1-E Communicator Connection



Default setting

Password	1234
Digital input	010200
Output	01000000
Thermostat and temperature info	0+320+25000+300+1801
Automatic SMS and status after reboot	011122
Telephone numbers 1 settings	100100
SMS – module name	Alarm:
SMS – input name	Activated
SMS – command to activate digital input	ARM
SMS - command to deactivate digital input	DISARM
SMS – output name	OUTPUT
SMS – command to switch output on	OUTPUT ON
SMS - command to switch output off	OUTPUT OFF

SMS commands

Principles for using SMS commands:

The GSM Communicator is programmed via TXT message from any mobile phone from any GSM network. All commands and setting must always start with a four digit security PIN, pre-set by the manufacturer to 1234. The PIN is followed by a space and the appropriate TXT command. It is necessary to adhere to correct spacing (PIN – space – command – space – indication)

- PIN space command space indication -

Examples: 1234 arm or 1234 ARM (arming the unit)

All commands are confirmed and acknowledged by the GSM Communicator with a reply TXT confirmation. Even if the command was incorrect the unit will send an error message.

- SMS commands are not case sensitive. Eg. command to determine the status, you can send STAT? / stat? / StAt?

STAT?	Determines the current status of the communicator (GSM operator, signal strength, temperature)
NPIN	Changes the password for. Example.1234 NPIN 1111 changes the original password to1111.
SET DEFAULT VALUES	Restores the default settings of communicator. The phone numbers is not deleted.
CLEAR ALL NUMBERS	Clears all programmed phone numbers.
NUMBER1	Stores the phone number to the list. Example.: 1234 NUMBER1 +642123456
NUMBER1 DELETE	Clears the number 1 from the list.
OUTPUT ON	Command to switch output on Example.: 1234 OUTPUT ON
OUTPUT OFF	Command to switch output off Example.: 1234 OUTPUT OFF

Table 1- Storing phone numbers which would be inform when the input is triggered:

The GSM Communicator is able to contact up to six different mobile numbers via TXT or call.	
Command:	NUMBER1 to NUMBER6, send SMS: 1234 NUMBERX
NUMBER1 DELETE	Delete the number1 from the list.
CLEAR ALL NUMBERS	Clears all programmed phone numbers.
Example :	1234 NUMBER1 +6421123456 means that the number one receives alarm information from input 1,

* A new number will overwrite old number

Table 2 - Setting of telephone numbers:

Command:	SNUMBER1 to SNUMBER6, send SMS: 1234 SNUMBERX ABCDEF
Parameter A	A=1 – input1 report alarms to phone number, A=0 – input1 alarms does not reported to phone number
Parameter B	B=1 – phone number control output by dialling, B=0 - phone number not control output by dialling.*
Parameter C	C=1 – alarm are reported to phone number via call, C=0 – alarm not reported via call.
Parameter D	D=1 – alarm are reported to phone number via SMS, D=0 – alarm not reported via SMS.
Parameter E	E=1 – phone number control activation and deactivation by dialling, E=0 - phone number not control activation and deactivation by dialing.*
Parameter F	F=1 – phone number receive service SMS, F=0 – phone number not receive service SMS.
Example :	1234 SNUMBER1 100100 means that the number one receives alarm information from input 1, dial control output is off, the alarm reported via SMS, dial control ARM/DISARM is off, service SMS deactivated

* The call control can operate output 1 or the activation / deactivation of the communicator.

These functions can not be the used on the one phone numbers at the same time.

Table 3 - Automatic SMS status setting and the status after reset:

Command:	SETSYS, send SMS: 1234 SETSYS ABCDEF
Parameter A	A=1-Sending automatic status SMS enabled, A = 0 - automatic status SMS sending is disable.
Parameter B	Specifies which day SMS sent. You can enter 1 to 9
Parameter C	Tens of hours. You can enter 0-2. *
Parameter D	Units of hours. You can enter 0-9. *
Parameter E	E = 0 - communicator is arm after the restart, E = 1 - communicator is disarm after restart, E = 2 – communicator status is same like last status before restart.
Parameter F	F = 0 - output 1 is switched on after the restart, F = 1 - output 1 is switched off after restart, F = 2 - Output 1 status is same like last status before restart.
Example:	1234 SETSYS 011122 means automatic SMS deactivated, if activated will sent each day at 11:00 hours. After restart the communicator last status will be restored.

* Clock can be set from 0 to 23

Table 4 - Digital input setting:

Command:	SETIN1, send SMS: 1234 SETIN1 ABCDEF
Parameter A	A = 0 - input reacts to a connection to GND, A = 1 - input reacts to a disconnect GND, A = 2 – input reacts to the any change
Parameter B	B = 0 – input is subject to activation / deactivation communicator, B = 1 - input is a 24-hour loop (permanent watch).
Parameter C	Input delay – unit seconds. You can enter 0-9. *
Parameter D	Input delay - tenth seconds. You can enter 0-9. *
Parameter E	E = 1 - when the input is activated the output will switch , E = 0 - input activation does not switching output
Parameter F	F = 1 - after the input is activated the reporting will be blocked for 15 min, F = 0 – the reporting does not blocked
Example:	1234 SETIN1 010200 means that input react to connection of GND, input is under continuous monitoring (24h loop), delay input is 0.2 seconds, when input activated does not switch output and after an alarm no blockage of input.

* Input delay (transient treatment) can be adjusted from 0.2 to 9.9 seconds

Table 5 - Output settings:

Command:	SETOUT1, send SMS: 1234 SETOUT1 ABCDEFGH
Parameter A	A = 1 – after the output switched on or off via dialling or SMS the unit will confirm switching via call back to the same number, A = 0 – unit does not confirm switching via call.
Parameter B	B=1 - after the output switched on or off via dialling or SMS the unit will confirm switching via SMS to the same number, A = 0 – unit does not confirm switching via SMS.
Parameter C	Timer output - tens of hours. You can enter 0-1. *
Parameter D	Timer output - unit of hours. You can enter 0-9. *
Parameter E	Timer output - tens of minutes. You can enter 0-5. *
Parameter F	Timer output - tens of minutes. You can enter 0-9. *
Parameter G	Timer output - tens of seconds. You can enter 0-5. *
Parameter H	Timer output - tens of seconds. You can enter 0-9. *
Example:	1234 SETOUT1 01000000 means that a change in the output is only confirmed by SMS, timer output is set to 00hour, 00minutes and 00 seconds.

* The timer output can be set from 0 to 10 hours. If you do not use a timer, entre value to 0

Table 6 - Setting the thermostat: NOTE: the thermostat function only available with connected temperature sensor

Command:	SETTHERM, send SMS: 1234 SETTHERM ABCDEFGHIJ
Parameter A	A = 1 - thermostat controls output 1, A = 0 - thermostat does not control output 1
Parameter B	Upper thermostat limit - mark. You can set the + or -
Parameter C	Upper thermostat limit - tens ° C. You can set 0-9. *
Parameter D	Upper thermostat limit - units ° C. You can set 0-9. *
Parameter E	Upper thermostat limit - tenths ° C. You can set 0-9. *
Parameter F	Lower thermostat limit - mark. You can set the + or -
Parameter G	Lower thermostat limit - tens ° C. You can set 0-9. *
Parameter H	Lower thermostat limit - units ° C. You can set 0-9. *
Parameter I	Lower thermostat limit - tenths ° C. You can set 0-9. *
Parameter J	K = 0 - thermostat is in the heating mode, K = 1 - thermostat is in cooling mode
Example:	1234 SETTHERM 0+320+2500 means that the thermostat does not controls output 1, the upper limit is set to +32.0 ° C, lower at +25.0 ° C and the thermostat is in heating mode. In other words: the thermostat stops heating to 32.0 ° C and starts heating at 25.0 ° C.

* The temperature can be controlled in the range of -20 to +99.9 ° C.

Table 7 - Setting the SMS temperature limits:

Command:	SETTEMP, send SMS: 1234 SETTEMP ABCDEFGHIJ
Parameter A	A = 1 - Exceeding temperature SMS information limits is ON A = 0 - Exceeding temperature SMS information limits is OFF
Parameter B	Upper limit of temperature monitoring - mark. You can set the + or -
Parameter C	Upper limit of temperature monitoring - tens ° C. You can set 0-9. *
Parameter D	Upper limit of temperature monitoring - units ° C. You can set 0-9. *
Parameter E	Upper limit of temperature monitoring - tenths ° C. You can set 0-9. *
Parameter F	Lower limit of temperature monitoring - mark. You can set the + or -
Parameter G	Lower limit of temperature monitoring - tens ° C. You can set 0-9. *
Parameter H	Lower limit of temperature monitoring - units ° C. You can set 0-9. *
Parameter I	Lower limit of temperature monitoring - tenths ° C. You can set 0-9. *
Parameter J	Hysteresis temperature setting ° C. You can set 1 to 9
Example:	1234 SETTEMP 0+300+1801 means that the exceeding temperature SMS information limits is OFF upper limit is 30.0, lower limit is 18.0 Again, sending SMS exceeding the upper limit is possible if the temperature drops below 29 ° C and lower limits when it goes above 19 ° C (set hysteresis).

* The temperature can be monitored in the range of -20 to +99.9 ° C.

Reset a forgotten password:

If you forget the password for SMS, you can reset default password (the default password is 1234) as follows:

- Send SMS to the number of the SIM card in PGM1, which contains only IMEI number.
- No password or command only IMEI number.
- Wait until the PGM1 blue LED will flash quickly (SMS was received)
- Disconnect power from PGM1 within 20 seconds.
- PGM1 password is restored to 1234
- If the power not disconnect within 20 seconds after PGM1 receive an SMS with the IMEI number, password will not be restored.

Guidelines for Safe and efficient use:

Please read this information before using your GSM Communicator. These instructions are intended for your safety. Please follow these guidelines. If the product has been subject to any of the conditions listed below or you have any doubt as to its proper function, make sure you have the product checked by a certified service partner before using it. Failure to do so might entail a risk of product malfunction or even a potential hazard to your health.

Recommendations for Safe use of product:

- Always treat your product with care and keep it in a clean and dust-free place.
- Do not expose your product to liquid or moisture or humidity.
- Do not expose your product to extreme high or low temperatures.
- Do not drop, throw or try to bend your product.
- Do not attempt to disassemble or modify your product. Only authorised personnel should perform service.
- Do not use your product in an area where a potentially explosive atmosphere exists.

Antenna:

The GSM Communicator has an antenna. Use of antenna devices not marketed by Pacific GSM Limited specifically for this model could damage your GSM Communicator, reduce performance, and produce SAR levels above the established limits (see below).

Radio Frequency (RF) Exposure and Specific Absorption Rate (SAR):

The GSM Communicator is a low-power radio transmitter and receiver. When it is turned on, it emits low levels of radio frequency energy (also known as radio waves or radio frequency fields).

Governments around the world have adopted comprehensive international safety guidelines, developed by scientific organizations, through periodic and thorough evaluation of scientific studies. These guidelines establish permitted levels of radio wave exposure for the general population. The levels include a safety margin designed to assure the safety of all persons, regardless of age and health, and to account for any variations in measurements. Specific Absorption Rate (SAR) is the unit of measurement for the amount of radio frequency energy absorbed by the body. The SAR value is determined at the highest certified power level in laboratory conditions, but the actual SAR level of the GSM Communicator while it is operating can be well below this value. This is because the GSM Communicator is designed to use the minimum power required to reach the network. Variations in SAR below the radio frequency exposure guidelines do not mean that there are variations in safety. While there may be differences in SAR levels among GSM Communicators, all Pacific GSM communicator models are designed to meet radio frequency exposure guidelines.

Disposal of old Electrical and Electronic Equipment:

This symbol indicates that all electrical and electronic equipment included shall not be treated as household waste. Instead it shall be left at the appropriate collection point for recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. The recycling of materials will help to conserve natural resources. For more detailed information about recycling this product, please contact your local city office, your household waste disposal service or the shop where you purchased the product.



End User Licence Agreement:

This wireless device, including without limitation any media delivered with the device, ("Device") contains software owned by Pacific GSM Limited and its third party suppliers and licensors ("Software"). As user of this Device, Pacific GSM Limited grants you a non-exclusive, non-transferable, non-assignable license to use the Software solely in conjunction with the Device on which it is installed and/or delivered with. Nothing herein shall be construed as a sale of the Software to a user of this Device. You shall not reproduce, modify, distribute, reverse engineer, decompile, otherwise alter or use any other means to discover the source code of the Software or any component of the Software. For avoidance of doubt, you are at all times entitled to transfer all rights and obligations to the Software to a third party, solely together with the Device with which you received the Software, provided always that such third party agrees in writing to be bound by these rules. You are granted this license for a term of the useful life of this Device. You can terminate this license by transferring all your rights to the Device on which you have received the Software to a third party in writing. If you fail to comply with any of the terms and conditions set out in this license, it will terminate with immediate effect.

Disclaimer:

This device is designed for indoor use only unless protected in appropriate enclosure. The GSM Communicator is reliant on adequate GSM coverage. In the event of inadequate or no GSM coverage, Pacific GSM Limited cannot be held liable for any damages.

The GSM Communicator was tested with SIM cards provided by "Vodafone Global". Pacific GSM Limited cannot be held liable for any malfunction with the use of other SIM cards.

Only use auxiliary equipment tested and approved by Pacific GSM Limited. Do not attempt to take apart, open, service, or modify the hardware device. Doing so could present the risk of electric shock or other hazard. Any evidence of any attempt to open and/or modify the device, including peeling punching, or removal of any labels, will void the Limited Warranty.

Never pass security code or the mobile number of the GSM Communicator to an unauthorised third party.

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Visit the Pacific GSM Web site (www.pacificgsm.co.nz) for current updates and supplemental information concerning the use and operation of this and other Pacific GSM products.

Warranty:

Subject to the condition of this Limited Warranty, Pacific GSM Limited warrants this product to be free from defects in design, material and workmanship at the time of its original purchase by a customer. This Limited Warranty will last for a period of two year as from the original day of purchase and for a period of one year for all original accessories (such as microphone, GSM aerial).

The warranty does not cover any damages caused due incorrect installation and the use of any auxiliary devices not approved by Pacific GSM Limited.

New Zealand Supplier Code Number (SCN): Z1262



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