

Micro GSM Communicator

PGM-3

Manual



Pacific GSM company has expanded its range of GSM communicators in a micro version – in robust metal enclosure with 3 inputs and 3 outputs, audio input and output. We have designed a multifunctional communication device that offers a simple yet flexible method of transmitting critical data via the GSM network.

Triggering of any of the inputs will cause the sending of a reporting SMS message to pre-programmed phone numbers or a direct call. By using SMS text messages, you can switch the remote controlled outputs on and off. Through the PGM3 GSM communicator you can remotely control lighting, pumps, gates and machinery. Inputs may indicate faults, loss of liquid in tanks, emergency conditions, reboot in servers. It can also with the use of suitable sensors, report any condition in seconds. All done easily through a standard mobile phone. The setup is very simple – just store phone numbers to which text messages are to be sent to and which are also authorized to communicate with the communicator. Furthermore, the protocol allows you to edit commands, and define a number of properties that all have the aim of maximum adaptation to your application. The options are twofold: either via USB-PC or SMS commands.

Basic specification

- PGM-3 GSM communicator dimensions: 48 x 48 x 15 mm (H x W x D)
- GSM/GPRS Quad Band 850/ 900/ 1800/ 1900 MHz
- Power supply voltage: 12V DC (10 - 14V)
- Current consumption – communicator connected to network: 20mA, all port active 170mA.
- Max current consumption (GSM module transmits): peak of 1A max.
- Operating temperature: -20°C to +50°C
- Operating humidity 20-80% RH
- 3x universal input
- 3x universal output
- 3x information LED
- SIM card slot
- Universal audio input / output (jack 3.5mm)
- Micro USB-PC port for configuration with PC software (cable include in package)
- Input - triggered when connected or disconnected from GND (**Input is designed for connection of potential-free contacts! minimum activation power 0.15mA**)
- Output - transistor output (**max. 12V 50 mA**), switches to GND
- PGM-3 is designed in a dry environment. For outdoor installation, use the box with corresponding protection.

Package

Communicator PGM-3, microUSB cable for connecting in to PC, GSM aerial and manual. Configuration software for PC download from www.pacificgsm.com

First activation

PGM-3A communicator is activated by inserting SIM card and connecting power 12VDC or connecting USB in to PC. If no SIM card is inserted, the device will not work and will not operate and can't be configure through PC. If connected only via USB cable PGM-3 will not connect in to GSM network.

1. Before connecting the power, connect the corresponding GSM antenna.
2. After connecting the power supply and insert SIM card, the module will go undergo a self-test cycle. After unit successfully connects to the GSM network the Green and Blue LED will be ON. Now the unit is ready for programming.
3. Send TXT report command to the unit **1234 status** 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.

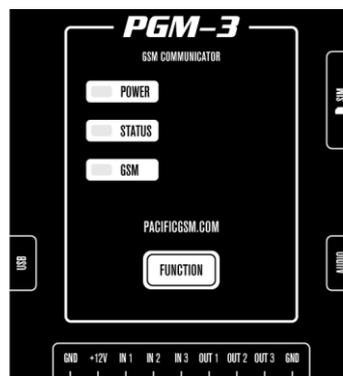
LED indicator

POWER	Green permanently ON – all ok Red permanently ON - Equipment out of service,(GSM signal lost longer than 5 min, NO SIM or SIM failure, No Green or Red - not functional: the power is not present, or other critical condition
STATUS	Yellow permanently ON - ARM Yellow flashing – Entry or exit time timer Red permanently ON – Alarm activated. Unit sending TXT or calling NO Yellow or Red - DISARM
GSM	Blue permanently on - GSM signal ok more than 20% Blue flashing - Low GSM signal, but the device is functional. NO Blue – No SIM or GSM problem

Function button

Pressing 4s	Activates / deactivates the input monitoring (ARM / DISARM)
Pressing 10s	Perform a factory reset. Confirmed by the flash all led.

Terminal connections



Description from left

- **GND** - GND 0V power supply connection (or negative pole of the battery).
- **12V +** - + 12V power connection
- **IN1-IN3** - inputs
- **OUT1-OUT3** - outputs
- **GND** – GND do not use this terminal for power supply

Example of connection , control

Communicator PGM-3 (read Pacific GSM module 3) is useful in many cases where it is necessary to remotely evaluate and transmit information about the failure, or control other devices via SMS or ringing. They are an ideal complement to a variety of devices, machines and sensors.

Configuration is very simple using computer and micro USB connector with free downloadable software. Configuration is intuitive and very fast. Partial setting can also be done via SMS from your mobile phone.

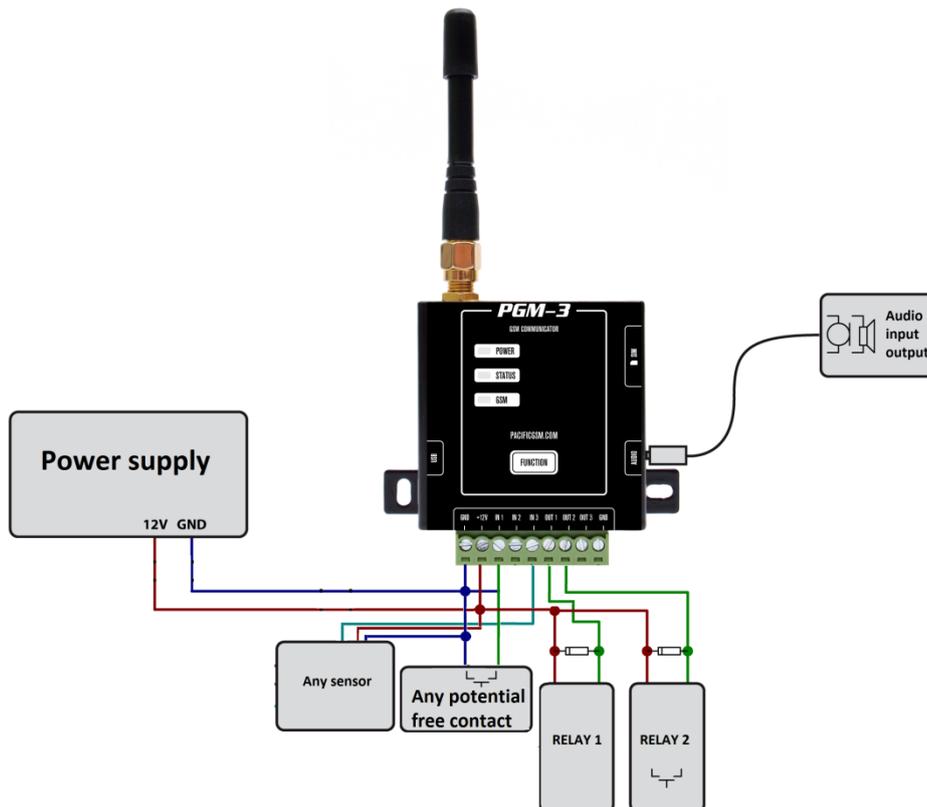
Basic recommended setting

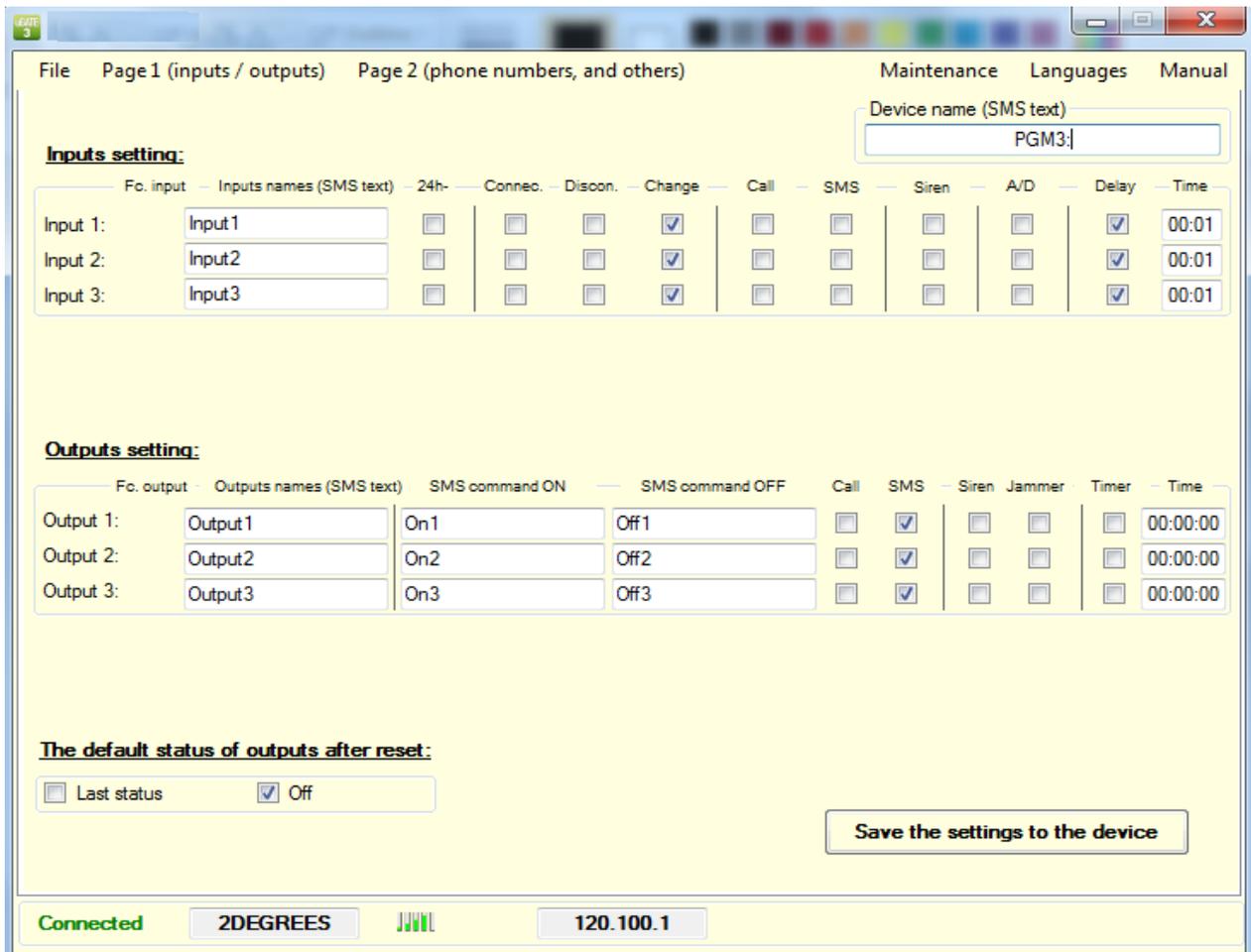
- Set the authorized phone numbers that will be informed by SMS or by calling disruption.
- Set the input response (most sensors closes after disruption contacts - response to input disconnection) .
- The method of activation and deactivation Watch - eg . SMS message or ringing.
- When the sirens in use, this setting should turn on.
- It is recommended to change the password. It is common for SMS for SW.

Installation of PGM-3 configuration software

From the pages www.pacificgsm.com download free program PGM3Config (under downloads tab of PGM-3 product page) , run the installer and follow the instructions . After successful installation, the desktop icon is created on your PC PGM3 Config , run the configuration program . Connect the communicator PGM3 in to PC using the included micro USB cable. Enter the password (the default password for the program and for SMS 1234).

Example of connection





Inputs setting

Input name	Text SMS that is sent when the input is activated, for example .: " machine fault " or "movement hall-way."
24h	Input monitoring mode - When enabled, input is monitored constantly. If disabled, the input is monitored only if the input monitoring has been enabled (ARM).
Connection Disconnection change	Setting the reaction to which the input response. Connection - input responds only to the GND connection, Disconnection - input responds only to disconnect from GND, Change – input responds to the connection and disconnection GND.
Call	When the input is activated, a call is made (see. Settings of the numbers)
SMS	When the input is activated, a SMS is sent (see. Settings of the numbers)
Siren	When the input is activated, the input will switch outputs, which have enabled the function Siren (see. Settings of the outputs).
A/D	If enabled, you can turn this input in to activation / deactivation input monitoring mode (ARM / DIS-ARM).
Delay and time	<p>If enabled, the delay time set will apply. If disabled or the time is set to 00:00, the default delay time is set to 200ms. The maximum delay time is 60:00, (60 minutes, 0 seconds).</p> <p>The delay time is always active for the set input, for stabilizing the input delay time is always 200ms (except for the reaction of Change). If setting set to the changes, the delay time applies for both the connection and disconnection of input.</p> <p>Example: input set to connection GND, the delay is set for 5 seconds. If input connected in to the GND the counted time is 5s, after the input disconnected from GND the counted time is 200ms.</p>

Output setting

Output name	Naming the output that is displayed in the SMS and on the display. For example. "Heating" or "Server 01".
Command ON	SMS command to turn on the output, eg. "HEATING ON "or "Open gate."
Command OFF	SMS command to turn off the output, eg. "Heating OFF " or " Close gate ".
Call	When control output is switched the confirmation of switching will be confirmed via short ring to the phone which switches the output.
SMS	When control output is switched the confirmation of switching will be confirmed via SMS to the phone which switches the output.
Siren	Output in this mode is automatically turned on when the input in siren mode is triggered (see. Input setting). The output will switch off when deactivating the input monitoring (disarm), a timer (if set), SMS command or call .
Jammer	Output in this mode is automatically turned on when detecting GSM jammer. The output will switch off when deactivating the input monitoring (disarm), a timer (if set), SMS command or call
Timer and time	If the output switched via (SMS, phone call, or siren) has enabled the timer, the output is automatically switched off after a set time. The time is set as HH:MM:SS, and the maximum time can be set to 24 hours. If the timer is not enabled, or the time is set to 00:00:00, the output will be permanently switched on / off until the next command to change.
The default state after reset	Sets whether the outputs after device reboot will stay at the last known state, or disabled. This setting applies only to outputs that don't have set the timer these are always disabled after reset.

Program description PGM3 config: Page2 phone numbers, and others

Phone numbers:

Phone numbers:	Block	Call	SMS	Arm/Di	Mic	Service	No.1	No.2	No.3	No.4	No.5	No.6
Number 1: 021476747	<input type="radio"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>							
Number 2:	<input type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Number 3:	<input type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Number 4:	<input type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Number 5:	<input type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Number 6:	<input type="radio"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Service (set report)

- Power monitoring Drop below 10 V interval 1 days Tim 14 hour
- Automatic SMS
- Credit monitoring Drop below 50 0 1st digit position
- Report if jammer detected
- GSM signal failure
- Daily SMS limit maximum 50 Send today 0

Input control and characteristics:

ARM SMS command: ARM

DISARM SMS command: DISARM

- Control by call ARM / DISARM
- Exit time 0 seconds
- Entry time 0 sec.
- Input block 15 min. (after alarm)

Password setting:

Current: **** New: confirm:

Save the settings to the device

Connected 2DEGREES 120.100.1

Phone numbers settings

Number 1-6	The phone numbers in international format (+6421476747) .
Blockage	If blockage is set the phone number it will not receive any messages, it can not control outputs and status input monitoring and can not use audio .
Call	The phone number will be called when an alarm goes off
SMS	The phone number will receive SMS when an alarm goes off
Arm/Disarm	The phone number has the possibility to change the status input monitoring (ARM / DISARM) via call. This option is only available in conjunction with settings of the "control and input".
Microphone	The phone number can use the <i>audio surveillance option</i> through microphone(max. for 5 minutes)
Service	The phone number receives service messages. Linked with the "Service report"
No.1 to No.6	Assigning inputs and outputs to the phone numbers, more setting under "input/output setting".

Service setting

Power monitoring	It allows sending SMS when battery voltage drops below the set level. This feature is useful when the device is powered from battery or solar panel. If the supply voltage drops below the set limit, this information is sent to the phone numbers with the "Service", and then if supply rises above the set limit + 1V, it sends another message with this information. Monitor of the supply voltage can be set from 8-12V.
Automatic SMS	This setting allows you to receive status SMS at regular intervals. For example, set the interval time 1 days and 14 hours, every day at 14:00 device will send status SMS to the numbers.
Credit monitoring	Setting of monitoring pre pay credit. More description under automatic credit monitoring
GSM jammer	Upon detection of GSM jammer (after restoration GSM signal) the number enabled by setting "Service" will receive SMS on GSM interference detected with the time of the start and end jamming.
GSM signal failure	If within 24 hours, there are three more outages signalled by GSM , SMS will be sent. This feature is useful for verifying the reliability of the GSM network after installing Communicator.
Alarm from the analogue input	Enables sending SMS to the phone numbers with the "Service" setting if the set limits reach on the analogue input. More description under Analogue Input Settings.
Daily SMS limit	Set the maximum number of outgoing SMS within 24 hours. When it exceeds the daily limit the phone numbers with the "Service" will receive SMS message limit is exceeded and outgoing SMS are blocked. SMS block can then unlock with the SMS command "unlock " . Daily SMS limit can be set from 1 to 250

Inputs control and characteristic

SMS command ARM	SMS command to enable monitoring of inputs
SMS command DISARM	SMS command to disable input monitoring
Control by call ARM/DISARM	Enables call control of inputs ARM/DISARM from phone numbers that are allowed to control via call
Exit time	Allows set the exit time. Settings 0 to 250 seconds .
Entry time	Allows set the entry time. Settings 0 to 250 seconds
Input block	Allows set the blocking time after input triggered. Settings 0 to 250 minutes.

Password setting

Password change	New : enter the new password (four-digit, numeric) Check: Enter the password again for verification. The password will be changed after saving the settings to the device. Password is the same for SMS and SW.
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SMS command control

Principles for using SMS commands

- Each SMS command must include the password at the beginning. Eg. to determine the status send SMS: "1234 status?"
- SMS commands are not case sensitive. Eg. command to determine the status, you can send STATUS / status / Status
- If possible, always use the PGM-3 PC configuration software, it's easy and intuitive

SMS commands

STATUS?	Determines the current status of the communicator
INPUTS	Determines the current status of the inputs and outputs.
UNLOCK	Unlocks sending SMS if they have been blocked by exceeding the daily limit.
ON1	Output port 1 default activation command

Configuration SMS

- Configuration SMS used as an emergency solution when you need to change configuration without using a PC and USB cable

NUMBER1 XXXXXXXX	Change the phone number at position 1, XXXXXXXXX represents phone number. To change phone number 2 use number2 XXXXXXXXX.
NUMBER1DELET E	Clears the number 1 from the list.
SETNUMBER1 ABCDEFGHIJKL	Change setting for number1
NEWPIN XXXX	Changes the password for the SMS commands and PC. Example. "NPIN 1111" changes the original password to1111.
SAUTSMS ABCDE	Change the setting to automatic SMS.

Setting of phone numbers viaSMS

SETNUMBER1	Parameters: ABCDEFGHIJKL
A	A = 1 : the number is blocked, A = 0: the number is not blocked
B	B = 1: when an alarm call to this number , B = 0: do not call
C	C = 1: when the alarm send SMS to this number , C = 0: Do not send SMS
D	D = 1: number can control by call status monitoring, ARM/DISARM D = 0: number can control
E	E = 1: number can use audio , E = 0: not allowed audio
F	F = 1: number will receive service message , F = 0: not enabled service reports
GHIJKL	1: Input / output are assigned to that number, 0: Input / output are not assigned to this number. more under "input/output setting".
Example	SETNUMBER1 011010110011 - the number is not blocked when the alarm number will receive call and SMS, can not control via call monitored inputs ARM/DISARM , number can use audio , service SMS are not allowed. the number assigned to 1,2,5,6 ports

SAUTSMS	Parameters: ABCDE
A	A=1-Sending automatic status SMS enabled, A = 0 - automatic status SMS sending is disable.
B	Interval automatic SMS: ten days. You can enter 0-1 *
C	Interval automatic SMS: Unit days. You can enter 0-9 *
D	Interval automatic SMS Tens of hours. You can enter 0-2. *
E	Interval automatic SMS Units of hours. You can enter 0-9. *
Example	SAUTSMS 10214 - automatic SMS enabled, send every second day at 14:00

* The maximum interval for days is 01 to 14, for hours 00 to 23

Control by call

Control inputs ARM/DISARM and status outputs can be operated free of charge via call. By call means dialling phone number of communicator and wait for one or two whole tones, then it is necessary to end the call.

Function of call control can be used after the following settings:

Condition monitoring of inputs ARM/DISARM:

- In the "Input control and characteristic "enable "Control by call ARM / DISARM"
- In number, enable "ARM/DISARM"

When ARM, the input monitoring communicator will call back for confirmation, deactivation not confirmed.

Status outputs:

- In number, enable corresponding output OUT1 to OUT.3
- In the output, set back a confirmation SMS or call

If it is allowed confirmation call, the communicator will call back when you turn the output ON when the output turn OFF this is not confirmed call back. When confirmation SMS set, will send SMS in both ON and OFF.

Assignment of the inputs / outputs

This setting allows you to define links between phone numbers and inputs / outputs.

For example:

If reports from input 1 and 2 reported only on phone No. 1, allow in phone number 1 only for IN1 and IN2.

If you want only phone numbers 2 and 3 control output 3, allow in phone numbers 2 and 3 only for OUT.3.

PrePay credit monitoring

Used for monitoring and reporting low credit prepaid SIM cards. Credit check done always after switching on / restart and at regular intervals every hour.

When enabled, recent credit status is reported in the status SMS (which a user may request via command), or in an automatic status SMS .

If the credit under the set limit, communicator will send this information to phone numbers with the "Service".

The drop below - set minimum credit limit, for example. \$2

1st digit position - determines at which position in the message sent by the operator is the first digit of the value credit (including spaces). For example 2Degrees operator. " BALS: \$13.83 See 2dm.co.nz" enter the position of the first digit as the 8th

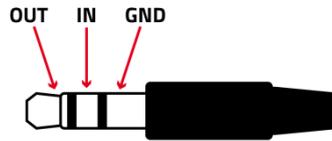
Number of credit - operator code, which is determined by dialling credit, such. 2Degrees *100*1#

Audio input output

Phone numbers that are set to call when the alarm has enabled two-way audio communication after the activation of one of the inputs. Microphone must be connected, or even audio amplifier and speaker to the audio jack.

Phone numbers with "Mic" setting enable audio communication if dialling the phone number of the communicator, after the third ring communicator will answer the call .

Input: 2,2k Ω , voltage 1.2 - 2V
Output: 32 Ω ,
Voltage 1,1V



The audio input can be directly connected to microphone and earphone output to 32 Ω .

Connecting stereo jack 3.5 mm:

Note: Do not audio tape people without their knowledge, PGM3 is not a bugging device. Audio time is limited to 5 minutes.

Reset to default values

To restore the factory settings (including passwords) hold the FUNCTION button for about 10 seconds. Restoring the factory setting is indicated by text on the screen.

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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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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