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JVA SMS Gateway User Manual

PTE0319



Introduction

The PTE0319 JVA SMS Gateway enables a group of JVA Z Series energisers to be controlled and monitored by SMS from anywhere in the world.

With a short SMS, users can obtain an up-to-date status report of all their energisers, turn on (arm) or off (disarm) all the energisers at once, as well as switch convenient output relays for custom applications.

If an energiser goes into alarm, or one of two inputs are triggered, an SMS will be automatically generated and sent to up to 10 stored numbers.

Designed with ease of use in mind, all configuration is via SMS to the unit. Commands are secured with a user definable PIN.

The JVA SMS Gateway communicates on the widely supported and robust GSM or 3G mobile phone networks, and will work in any country. Simply insert a valid topped-up SIM card from your preferred carrier and you are ready to remotely control and monitor your energisers from anywhere in the world.

Features

- Works with entire JVA Z range of energisers and monitors, including the ZM1, ZM20, ZM50 and ZLM4
- Can monitor and control up to 15 devices (linked via Keypad bus) , as well as two dry contact inputs and two 30Vdc 8A relays
- Produces an up-to-date status report including arm state, alarms and primary voltages of each device, and input and output states
- Responds to status request by SMS
- Can store up to 10 phone numbers to be notified if a device goes into alarm, or one of two inputs are triggered
- All commands secured by user configurable PIN
- Easily configurable by SMS
- Compatible with the all types of JVA Keypad
- Works in conjunction with Perimeter Patrol

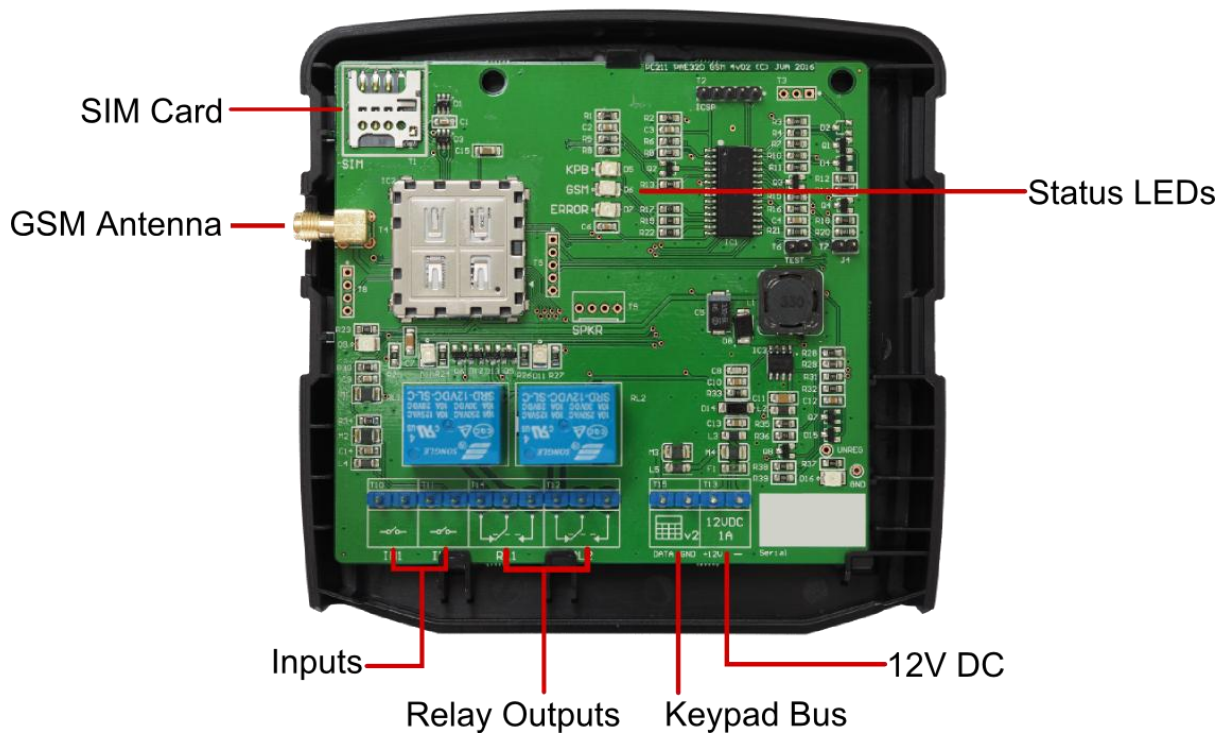
Specifications

Power supply	12 V DC 1A
Inputs	Dry contact or active pull-down
Outputs	30Vdc 8A SPDT
SIM	Micro
Antenna connector	Female SMA

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Overview



LED Indicators

KPB	Blink when the unit is communicating with Z series devices
GSM	Blinks when the processor is communicating with the GSM module
ERROR	Flashes when there is a problem with the SIM (faulty or PIN locked)

Inputs

Two dry contact inputs are provided. If the unit sees a short circuit between the input terminals it will register the input as being 'On'.

Just like the inputs on all JVA Z series devices, the input can also be triggered by PLC or alarm panels by connecting the right-hand terminal to 0V.

Outputs

Two SPDT relays are available as general purpose outputs. These relays can switch DC voltage up to 30V and 8A. The outputs can be switched on or off by SMS, and are ideal for connection to external lights, pumps, electric motors, gate openers, or interfacing to an existing alarm or control system.

Antenna

A GSM antenna is supplied and must be connected to the unit for it to communicate on the mobile network. If mobile reception in the area is particularly weak, the antenna can be substituted for a more powerful one provided it has a compatible SMA connector.

Ensure the antenna is mounted away from any high voltage cables or AC power cables which could cause interference. If the unit is mounted inside a metal enclosure, the antenna should be mounted externally and the cable entry hole be sealed against water ingress.

Power and Keypad Bus

The keypad bus enables digital communication between the SMS Gateway and connected devices. Connect the DATA and GND terminals to the respective terminals of all connected devices.

The SMS Gateway requires 12V dc to operate. This power may be supplied from the keypad bus of a connected energiser, or for best results a separate 12V 1A power supply may be used. Do not connect the unit to a separate power supply **and** keypad bus +12V of an energiser at the same time.

The SMS Gateway operates as a keypad with keypad ID 6. Keypad ID 3 is reserved. If other keypads or keypad devices are to be used with the group, they should be set to a keypad ID other than 3 or 6.

SIM card

The unit does not use data or voice calls, only SMS. A suitable pre-paid or post-paid plan should be chosen that offers cheap or unlimited SMS messages for sites requiring frequent status updates, or long credit expiry time for sites requiring infrequent updates.

Installation

Detach the front of the case by gently lifting the side clips. Unclip the top of the circuit board to remove from the case back. Mount the case back using suitable screws. Be sure the screw head will not contact the PCB when it is re-installed. The unit must be mounted indoors or in a suitable enclosure to protect it from moisture. It is NOT water proof and damage due to moisture is not covered by the warranty.

The SMS Gateway requires a micro SIM card. Activate it according to the instructions, either via the internet or by phone, and make sure it has credit available. The SIM card should first be tested in a phone to ensure it can send and receive text messages.



Insert the SIM card into the unit, contact side down with the notched corner to the lower right. Clip the circuit board into the case back.

Connect the antenna. Mount the antenna away from high voltage and mains power cables, vertically if possible. If the unit is housed in a metal enclosure, the antenna should be mounted outside the enclosure and the enclosure earthed.



Connect 12V plus and minus to an external power supply. Connect Data and Ground wires from the unit to a JVA energiser. Power on the unit first, then the energiser(s).

Confirm the KPB and GSM lights are flashing, and ERROR light is not flashing. Clip the case front back on. Your JVA SMS Gateway is ready to use.

Energiser Configuration

If the SMS Gateway is being used with a stand-alone energiser, the energiser may need to be reconfigured to operate correctly. If the energiser has firmware earlier than 8v20, it must be programmed to ID 1. This will require the use of a keypad. Refer to the energiser manual for more information.

Operation

SMS Commands

The unit is controlled and configured by SMS. All commands are of the format

PIN command parameter

with spaces separating each part. The commands and parameters are not case sensitive. Many commands may be replaced with only their first letter.

A help message can be requested by issuing the **help** command. The unit will reply with a summarised list of available commands.

PIN

All commands are prefixed by a PIN number, to secure the unit against unauthorised changes. The PIN must be between 4 and 12 digits long. **The default PIN is 1234.** The PIN can be changed by issuing a **changePIN** command, with the new PIN as the parameter. If successful the unit will reply and inform everyone on the report list of the new PIN.

If you forget the PIN, a factory reset must be performed. See the section 'Factory Reset' for more information.

Querying the Status

The SMS Gateway can be queried to return the status of the inputs, outputs and all Z series devices connected to it via the Keypad Bus by issuing a **status** command. The response will take the following format:

```

Model(ID) <On (V1, V2, ...) or Off> <Alarms>
Model(ID) <On (V1, V2, ...) or Off> <Alarms>
...
In1 <on|off> In2 <on|off> Out1 <on|off> Out2 <on|off>

```

Model	Energiser model eg Z14, ZM20
ID	Keypad bus device ID (1-15)
V1, V2, ...	Primary voltages, usually feed and return, in kV, V or A. Device dependent. ZM1: Feed, Return, Ground, Current ZM20: Feed, Ground, Current 1, Current 2 ZLM4: Zone Voltages 1-4 Z1x: Return, Feed Z2x: Return 1, Return 2
Alarms	CommsFail OR FenceAlarm1 FenceAlarm2 AcFail LowBatt BadBatt Tamper Fault GateAlarm OR No Alarms

Querying the GSM signal

The GSM status of the unit can be requested by issuing a **gsm** command. The unit will reply with signal strength from 1 to 30, and the firmware version.

Report List

The unit can store up to 10 phone numbers which it will SMS if a device goes into alarm or an input changes. This list is configured and maintained using the **add** and **remove** commands. You can retrieve the current list of numbers using the **numbers** command.

Issuing an **add** command with no further parameters will add the sending number to the report list. Issuing an **add** command, followed by a valid number, will add the supplied number to the report list. Numbers can be in either the national format, eg 0412 345 6789, or international dialling format, eg +61 412 345 6789. International format is recommended, as this reduces the chance of adding duplicate numbers to the list. If this were to happen, that number would receive two messages each time an SMS is broadcast. After successfully adding a number the unit will reply with a confirmation message.

Numbers can be removed by issuing the **remove** command. If no parameter is supplied, the sending number is removed. If the parameter is supplied it can be either the number you wish to remove, or the position of the number in the report list. If entering a number, it must be in the same format as it is stored in the list. After successfully removing a number the unit will issue a confirmation message.

Controlling Energisers and Outputs

The unit can turn all energisers on (arm) or off (disarm) by issuing the **on** or **off** commands. When arming, the unit will arm in high power only, and arm both channels of any dual channel energisers. When the unit has confirmed the new arm state it will reply to the sender with a confirmation message, or a message indicating it was unable to control all devices (in the case of a device being offline).

The unit has two relays than can be turned on or off. Issue an **output1** or **output2** command with the parameter **on** or **off**. Note there is no space between "output" and the number "1" or "2". The unit will reply with a confirmation message.

Alerting users

The unit monitors the connected energisers and will send a SMS to everyone on the report list if the following things occur:

- A fence alarm occurs, usually due to a short on the fence
- An energiser stops communicating
- An input changes

If multiple energisers report changes at the same time, the unit will send one SMS for each change.

Basic Commands

The following is the minimum commands you will need to know to get your JVA SMS Gateway working. It assumes the PIN is still set to the default of 1234.

When you have installed and powered on your unit for the first time, the connected energiser(s) are powered on, and the GSM light is flashing once every 2 seconds, issue a status command

1234 s

The unit will reply with a summary of all connected energisers. Next, add your number to the report list. Send

1234 a

The unit will reply with "<your number> has been added to the report list"
Now try arming you energiser(s) by sending

1234 on

You should see the energiser(s) arm, and receive an sms saying "Energiser(s) are on". Now disarm the energiser(s) by sending

1234 off

You will see the energiser(s) disarm and receive another confirmation message. For a complete list of commands, refer to the section "Command Summary".

Command Summary

The table below summarises all available SMS commands. The default PIN is used in examples but you should replace this with your own PIN if it has been changed.

Command	Description	Example	Response
changePIN <PIN> or c <PIN>	Changes the PIN	1234 changePIN 4321	PIN is now 4321
		4321 c 1234	PIN is now 1234
		1234 c 123	Invalid PIN
add or a or add <number> or a <number>	Adds your number, or the specified number, to the report list	1234 a	+61412345678 has been added to the report list
		1234 a +61 41 234 5678	
		1234 a 555JVAROCKS	Invalid phone number
numbers or n	Requests the report list	1234 numbers 1234 n	1.+61412345678
remove or remove <index> or r <index> or remove <number> or r <number>	Removes your number, the number at the given index, or the specified number from the report list	1234 r	+61412345678 has been removed from the report list
		1234 remove 1	
		1234 r +61412345678	Number not found in report list
gsm or g	Requests GSM status	1234 gsm	Signal: 25 Fw: 2v00
		status or s or ?	Requests energiser/monitor primary voltages, arm and alarm state, and unit input and output state
help or h	Requests a command summary	1234 help 1234 h 1234	This table, summarised
on or arm	Arms all devices	1234 on	Energiser(s) are on
off or disarm	Disarms all devices	1234 off	Energiser(s) are off
output1 <on off> or out1 <on off> or 1 <on off> or aux <on off> output2 <on off> or out2 <on off> or 2 <on off> or gate <on off>	Controls relay 1 or 2	1234 output1 on	Output 1 is now on
		1234 1 off	Output 1 is now off
		1234 out2 on	Output 2 is now on
		1234 gate off	Output 2 is now off

Troubleshooting

The JVA SMS Gateway is designed to work straight out of the box with little set up or configuration. The only crucial step is to ensure the unit has good mobile reception and an activated SIM card with credit. Refer to the troubleshooting table below for more information.

Fault	Likely Cause	Remedy
No lights are on	Power is not connected Power wires are reversed	Check power connections Check voltage at power connections with a multimeter
KPB light not flashing	Keypad bus is not connected	Check the keypad bus DATA and GND connections
Error light flashing	SIM card not inserted, not activated, or PIN locked	Confirm SIM is activated by inserting into a mobile phone and sending and receiving texts
Unit does not respond to SMS	Poor signal strength	Check antenna connection Move antenna mounting place
Unit responds to SMS commands but does not reply	Insufficient or expired credit	Check the SIM card has credit available
Unit does not control energisers	Another keypad or keypad device is connected with keypad ID 6	Disconnect the other keypad, or change its ID to something other than 3 or 6
	Master energiser did not see device at start-up	Reset the master energiser
	Energiser malfunction	Confirm a JVA keypad can control the energiser using the same connections
	Group configured incorrectly	If there is more than one energiser, ensure one is configured as master (device ID 1) and the others have unique device IDs of 2 or more

If the unit is still not working correctly, contact your nearest JVA distributor for technical support.

Support

Factory Reset

If the PIN has been changed from its default setting and has been forgotten, the unit will need to be factory reset. A factory reset will also clear the memory of seen devices, necessary if devices have been added or removed.

To reset, remove power from the unit. Remove J4. Apply power to the unit, wait 5 seconds, then re-apply J4. This will reset the PIN to default, clear the report list, and clear the memory of seen devices.

JVA Distributors

If you have any questions or need further assistance, please email us at

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Australia	07 3103 0582
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