



SECURITY ENERGIZER

Installation and User Manual



Edition 2.3, July 2019



JVA ELECTRIC FENCE SYSTEMS



Thank you for choosing our product. The JVA brand is a range of electric fencing products carefully selected from leading manufacturers around the world to meet the needs of perimeter security.

THE JVA Z RANGE ENERGIZER CONCEPT

The JVA Range of Energizers has been collaboratively designed and manufactured by an international team with over 30 years of electric fence experience earned in some of the most testing security environments in the world. It aims to provide the very best low-cost, high-voltage security energizers in the world. They are compact, integrated and fully programmable electric fence energizers with built-in alarm units and LCD *out* and *return* voltage display. They also have the option of being controlled from a remote LCD keypad.

State-of-the-art energizer design IP4 x and ABS plastic

Unique LCD display depicting fence out and return voltage



Unique LCD keypad option depicting fence and alarm condition

Wall-mountable, robust energizer housing with easily detachable PCB chassis for ease of installation and repair

**2-yr
WARRANTY**

TWO-YEAR WARRANTY

All JVA products carry a 2-year warranty against defective components and workmanship. The warranty excludes damage caused by acts of Nature such as lightning or flooding, power supply surges, rough handling, malicious action or incorrect wiring.

Please retain your invoice as proof of purchase and fill in the warranty form on [page 39](#).

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1. INTRODUCTION

Welcome to the world of JVA monitored electric security fences. The proliferation of non-lethal, monitored, electric security fences in our towns and cities is indicative of the confidence the public has in this form of perimeter security. The reason for this popularity is simple – monitored electric security fences are effective, economical, simple to install, and they offer more D's of security than any other perimeter system:

DEMARCATION – The JVA fence around your property shows you mean business.

DEFLECTION – Would-be intruders will be deflected to softer targets.

DETERRENCE – The safe, powerful JVA shock is a strong deterrent to intruders.

DELAY – The physical barrier will delay an intruder, something they do not like.

DETECTION – The JVA's voltage monitor warns you of any tampering with the fence.

DENY – A well-erected electric security fence will deny entry.

DEPENDABLE – 60 seconds a minute, 60 minutes an hour, 24 hours a day, 365 days a year, your JVA electric security fence is monitored by an alert, sober, electronic watchman.

Every second, the JVA Z energizer discharges a very short-duration, safe, high-voltage pulse down the fence live wire. The JVA Z energizer then monitors the voltage at the end of this live wire, thereby checking that the voltage is being maintained along the entire fence line. In the event of a voltage drop caused by either shorting, cutting or poor maintenance, the monitor will trigger an alarm, thus alerting you.

Manufactured to meet the most stringent international safety standards, the JVA Z energizer is in a class of its own when it comes to features and benefits at an affordable price.

An electric fence system which meets current safety regulations



2. FEATURES

2.1 Power

- 8 joules peak output energy (4 + 4 Joules = 8 Joules total)
- Mains powered via external transformer (16–18Vac)
- Battery charger with space for internal 7A/H 12V rechargeable back up battery

NOTE: A 9 A/h battery may be used as it is the same size as a 7 A/h battery

2.2 Control / Monitoring

- 3 Control inputs which can be configured to take N.O. or N.C. control contacts.
- 3 12V driven outputs (also referred to as relays), high side switched (common negative)
- All relays may be assigned to any alarm function
- LCD voltage display
- LED status lights
- Internal beeper
- AC fail, Low Battery and Bad Battery detection
- Keypad programmable options
- Low power mode – ensures detection together with public safety during the day
- Adjustable energizer power output level

2.3 Safety

- Designed to pass IEC60335.2.76 and EMC standards (reports available on request)
- Enclosed fence terminals
- Wall mountable, robust enclosure with detachable PCB chassis for ease of installation and repair

2.4 Reliability

- Microprocessor controlled.
- Pluggable screw terminals
- State of the art, robust, case design IP4x ABS
- Built-in lightning protection from both mains and fence sides, external fence lightning protection is still advised in high lightning prone areas
- All inputs and outputs protected against stray fence voltage

3. SPECIFICATIONS

Specification Name	Specification
Energizer Output Voltage	8.5kV peak no load
Peak Output Energy	2 × 4 Joules
Pulse Rate	Locked at 0.9 Hz
12v DC Power Consumption	Energizer On – 1005mA average, 1220mA peak Energizer Off – 28mA Not including keypad or Auxiliary power
AC Power Input	16-18Vac 1.5A*
Battery Charger Output	Float voltage 14V, 700mA, short circuit protection, reverse battery protection
Switched Outputs	Three 12V 2.5A maximum combined load powered output.
Recommended Operating Temperature	-15°C to +50°C
Enclosure	IP4x ABS Plastic
Size	300mm high, 190mm wide, 115mm deep
Weight – packed, no battery	2.5kg

* A 24Vdc 1.5A supply can be used in place of the 16Vac. The correct connection is +24V to the right AC pin, GND to the left AC pin. Due to the stored energy in a 24Vdc plug-pack, an AC Fail could occur 5 minutes before the Energizer reports this fault

- There are no user-serviceable parts in this unit.
- There are potentially lethal high voltages inside the Z Series energizers.
- The high voltage inside the Z Series Energizers may take a long time to discharge. Wait at least 10 minutes after turning off before opening the case.
- Before working on the high voltage wiring of an electric fence, it is recommended that the energizer be disarmed and an intentional short circuit is placed from the fence live wires to earth. This is a sensible precaution against the energizer being turned on by others or malfunctioning while working on the fence.
- If an electric fence is part of a multiple energizer system and the distance between two separate electric fences, each powered by separate energizers, is less than 2.5 meters, the energizers must be configured to operate in group mode.



4. DESCRIPTION

The Z28 is a dual channel standard (non Bi-Polar) 8 Joule (4 per channel) security energizer.

This manual relates to:

- PCB versions: 7.51 and higher
- Firmware versions: 7.50 or higher (the firmware version is shown on the LCD on reset)



Figure 1: Z28

4.1 JVA Z28 Exterior

4.2 JVA Z28 – High Voltage Terminals

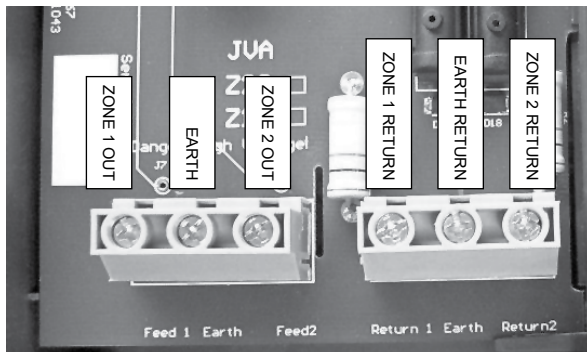


Figure 2: Output Terminals

4.3 LCD Voltage Display

The display on the JVA Z28 shows the voltage at the feed out and return terminals.

Left side = Return zone 1, Right side = Return zone 2.

The Stored Joules will be displayed every approximately 4–5 seconds. The reading will vary depending on the load on the fence. Stored Joules displayed is the current stored joules to generate the output voltage as programmed. If the fence is in good condition, this value will be low. As more load comes onto the fence, the amount of joules will increase to meet the requested voltage.

The LCD also shows the programming option and current setting when in programming mode. This allows the programming options settings to be checked easily.

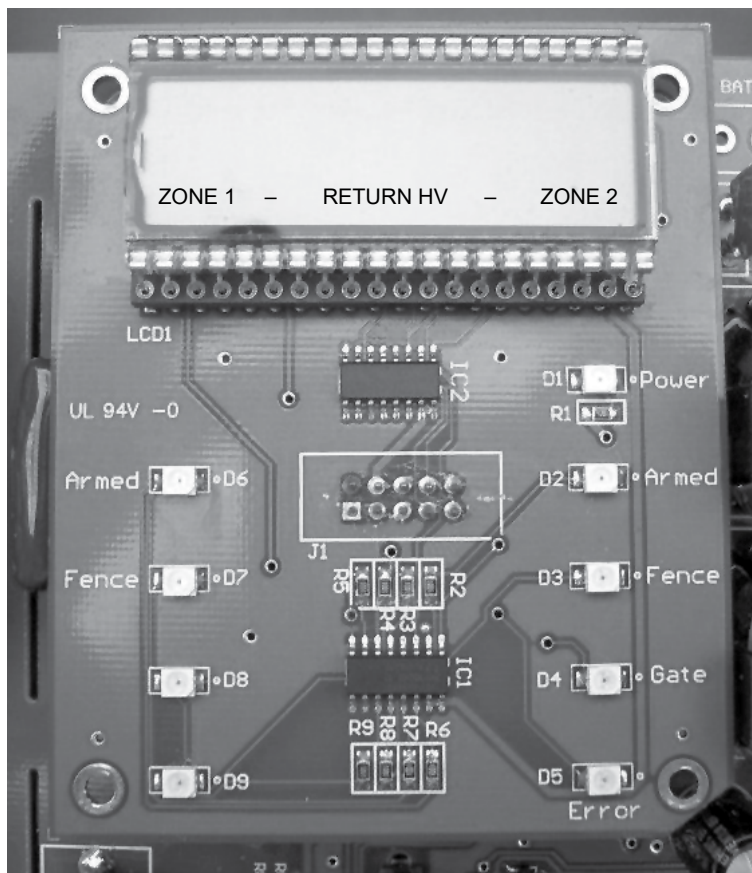


Figure 3: LCD Display and Status LEDs

4.4 Status Lights

Left side Z28

Armed 1	On when Zone 1 of the energizer is armed (pulsing), will flash when in low power mode.
Fence 1	Flashes if the return voltage falls below the Fence Alarm Voltage, stays on when there is a Zone 1 fence alarm.
Gate 1	Flashes Red when the Gate is open, stays Red when there is a Gate 1 alarm.

Right side Z28

Power	On whenever the energizer has power.
Armed 2	On when Zone 2 is armed (pulsing), will flash when in low power mode.
Fence 2	Flashes if the return voltage falls below the Fence Alarm Voltage, stays on when there is a Zone 2 fence alarm.
Gate 2	Flashes Red when the Gate is open, stays Red when there is a Gate 2 alarm.
Status	Flashes an error code for energizer (service) errors. See the table in section 7.2 Status LED Error Codes.

NOTE: Fence and Gate LEDs are latched on (like the strobe) until cleared using the clear alarm memory sequence (*1#) or the Energizer is re-armed.

4.5 Inputs and Outputs

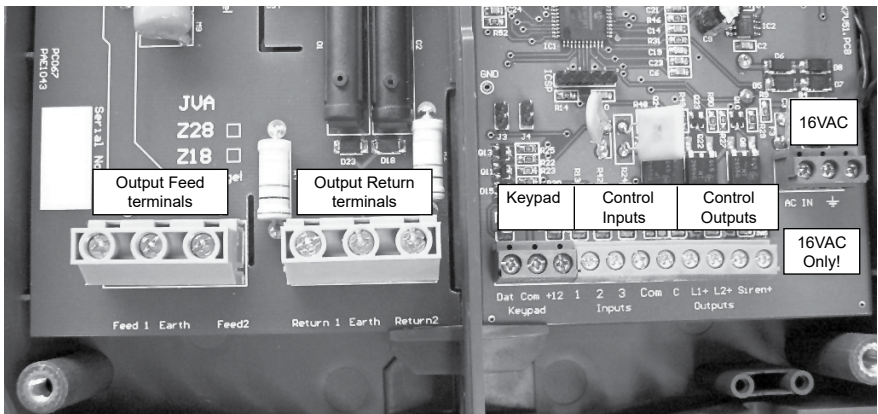


Figure 4: Connection Terminals

4.5.1 Relay Functions

All relays can be set to any of the available functions (user assignable).

Relay 1 is (**21x#**)

Relay 2 is (**22x#**) etc.

The modes are explained in the table below.

The defaults for the Z28:

Relay 1 Strobe 1

Relay 2 Strobe 2

Relay 3 Siren.

Value (x)	Mode
0	Zone 1
1	Zone 1 or Disarmed
2	Armed 1
3	Zone 2
4	Zone 2 or Disarmed
5	Armed 2
6	Zone 1 or Zone 2
7	General
8	Siren
9	Strobe 1
10	AC Fail
11	Low/Bad Battery
13	Strobe 2
14	Gate 1 or 2
15	Siren caused by Gate 1 or 2
16	Armed in Low Power Mode
17	Group Armed (Note 3)
18	Group General

Relay Functions

NOTES:

1. These defaults were different in pre 7V64 firmware.
2. The siren and strobe switched 12V outputs can be used to drive external buffer relays.
3. Group relay functions are only operable on the group master.

4.6 4-Line LCD Keypad (PTE0240)

Introduction

The JVA 4-Line LCD Keypad is an integral component in the JVA Security Electric Fence product range. Providing a centralised interface between the Customer and their Perimeter Security Solution; it displays the current condition of each security device connected and can draw attention to adverse fence conditions. The keypad is used to control individual fence Energizers, Monitors or the entire site. The Customer has access to all of these features via a Menu Driven system or by entering key sequences. Security Installers also use the keypad to configure the JVA Security devices to the customer's needs.

Features and Benefits

The PTE0240 LCD keypad is a second generation Z-Series Keypad

- Menu driven interface
- 4-line Backlit LCD display
- Quick arm / disarm keys
- 500-entry Event-Log
- Battery-Backed Real Time Clock
- Control, monitor and program any Z-Series device
- Displays arm/disarmed status and any trouble or alarm
- Shows fence voltages for Z-Series electric fence energizers and monitors
- Programmable zone names
- Key area glows red on alarm
- Event Log stores Date and Time of Alarm or Trouble

Limitations

1. The Menu-driven programming requires 8v20 or higher firmware in Energizers.
2. As the firmware is upgraded from time to time, an older keypad may not be compatible with the latest Z-Series devices. The firmware version can be seen by pressing *9#.

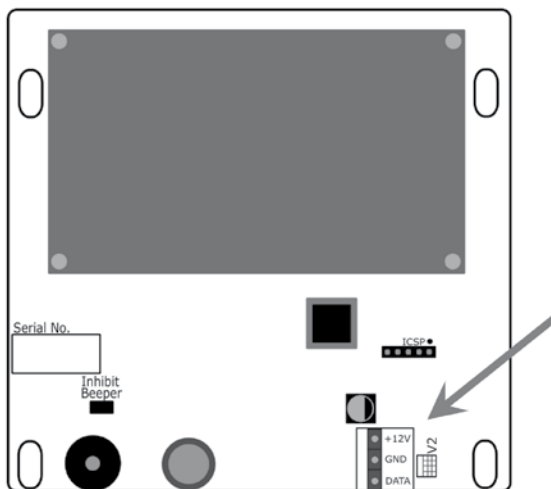
Opening the Keypad

Push the 4 side tabs in to release the cover from the base. This can be done one side at a time. Once the cover has been removed from the base plastic, the keypad hardware will slide up to release it from the base.



Installation

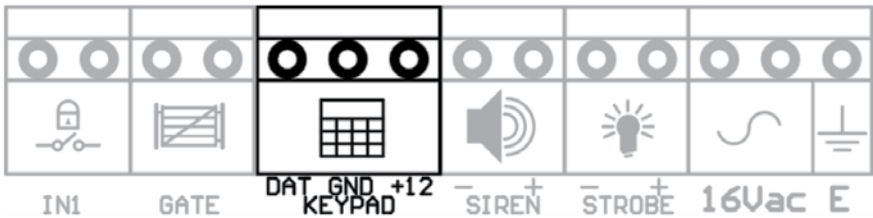
The Keypad only requires three wire connections to JVA Energizers or Monitors. This is the +12V, GND and DATA connections on the back of the Keypad circuit board.





When connecting a Group of Energizers together, the +12V wire is only required between the Keypad and Energizer. The other Energizers are connected together using the GND and DAT terminals only.

Description



Keypad terminals on a JVA Single Zone Energizer

Keypad Operation

Note: Z-Series Energizers/Monitors have the following Default PINs
 User PIN: 1234
 Installer PIN: 012345




Discovering Energizers

Function	Key 1	Key 2	Key 3	Key 4
Discover Devices connected to the Keypad	*	6	8	#

The Keypad needs to discover all of the Energizers/Monitors connected to the Keypad for it to work properly. This is best achieved after each Energizer/Monitor has been configured and wired together in a group. The display will show "Analysing" followed by the device type connected at each zone.

NOTE: All Energizers/Monitors need to be Disarmed before starting the Discovery process.

Arming/Disarming the Site Using the Keypad

<p>To Arm the site, press the Lock button. It will ask for your PIN. Enter the USER PIN and press #</p>	
<p>To Disarm the site, press the Un-Lock button. It will ask for your PIN. Enter the USER PIN and press #</p>	
<p>To Silence a Siren on an Energizer/Monitor press the Menu Button. It will ask for your PIN. Enter the USER PIN and press # Press the # key on the Menu item "Silence Siren" A short-cut for this is to just enter 1470# directly.</p>	

Keypad Status Display

In normal operation the keypad shows a Summary Page followed by the status of each device connected to the Keypad.

Summary page:

```
JVA Security
13:17 01/11/2015
Disarmed
All OK
```

The Installer's Details (Dealer Message)
24hr Clock and Date
If the site is Armed/Part Armed or Disarmed
If the site is in Alarm/Trouble or All OK

Z14 page:

```
ZONE 1
Feed:8.6kV Ret:7.5kV
Alarm: Fence
```

The Name of the Zone (Zone Label)
The Energizer Voltages
Alarms/Troubles are displayed here


The keypad will automatically scroll the display through all relevant information on each connected Energizer/Monitor. Each screen is shown for about 5 seconds. To pause this, press # and the auto scrolling will stop for 20 seconds.

Pressing the # key again will advance the display one step.



The keypad will automatically display a new Zone Alarm or Trouble and it will remain on this page for 3 minutes. Pressing # again will advance the screen. If the Keypad beeper is sounding, any key press will silence it.

Keypad Menu

<p>The Keypad Menu system can be accessed by pressing the Menu key. Key in either the USER PIN or INSTALLER PIN followed by the Enter key to proceed.</p> <p>To access the Menu items below Exit Menu the Installer PIN is required.</p>	
---	--

Main Menu

Menu	Function (when # key is pressed)												
Mute Siren	Mutes Energizer or Monitor Sirens currently sounding												
Clear Alarms	Sends the Clear Alarm Memory command to the Energizers/Monitors. This will clear "Latched Fence Alarms" if the problem has been cleared.												
Show Event Log	Displays the Event Log. Use Up/Down keys to scan through events. The # key will exit the Log												
Arm Low Power	Arm the Site in Low Power Mode												
Arm High Power	Arm the Site in High Power Mode												
Test Menu	See <i>Test Menu</i>												
Keypad options	See Test Menu <table border="1" style="margin-left: 20px; width: 80%;"> <thead> <tr> <th style="width: 25%;">Menu</th> <th>Function (when Enter key is pressed)</th> </tr> </thead> <tbody> <tr> <td>Analyse group</td> <td>Discovers the Energizers connected to the Keypad</td> </tr> <tr> <td>Siren Test</td> <td>Turns on the Energizer/Monitor Siren Outputs for 2 seconds</td> </tr> <tr> <td>Battery Test</td> <td>Triggers the Battery Test in connected Energizers/Monitors. See the LCD display of the Energizer for the results.</td> </tr> <tr> <td>Show Model</td> <td>Displays the Keypad Version</td> </tr> <tr> <td>Reset Energizers</td> <td>Forces the Energizers to reset</td> </tr> </tbody> </table>	Menu	Function (when Enter key is pressed)	Analyse group	Discovers the Energizers connected to the Keypad	Siren Test	Turns on the Energizer/Monitor Siren Outputs for 2 seconds	Battery Test	Triggers the Battery Test in connected Energizers/Monitors. See the LCD display of the Energizer for the results.	Show Model	Displays the Keypad Version	Reset Energizers	Forces the Energizers to reset
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Battery Test	Triggers the Battery Test in connected Energizers/Monitors. See the LCD display of the Energizer for the results.												
Show Model	Displays the Keypad Version												
Reset Energizers	Forces the Energizers to reset												
Set Clock	Keypad Options Displays the current clock for editing. See <i>Event Log</i> . The Event log contains information about Alarms, Troubles and Arm/Disarm commands. Each event is displayed on a separate page. Press the Up or Down key to change pages. Press # to exit the Log. The most recent entry is displayed when the log is first opened. Setting the Clock												

Menu	Function (when # key is pressed)
Show Shortcuts	Displays commonly used Key Sequences for reference
Remember User PIN / Forget User PIN	This will 'save' the USER PIN entered. From now on, the Quick Arm/ Disarm buttons will not require a PIN to operate. Pressing Menu button immediately enter the Menu system as well. Delete the 'saved' USER PIN
Exit Menu	Exits the Keypad Menu
Program Device	
Program Sectors	
Clear Log	Requires Installer PIN to access. Clears the Event Log
Program this Keypad	<p>Requires Installer PIN to access. See Program Device: Requirements for Menu Driven Programming</p> <p>For this system to work effectively, all connected Energizers/Monitors need to be Mk2 protocol compliant. This version is usually found in the Black Plastic box, rather than a Silver Plastic box.</p> <p>Procedure The Keypad takes around 10 seconds to enter Menu Driven Programming mode. Once entered, the list of connected devices will be listed. Use the Up/Down arrow to choose the device to be configured. Press # and the Keypad will Load the configuration from the Energizer. Use the Up/Down arrows to move around the options and the Left/ Right arrows to change the selected value.</p> <p>Options with >> displayed have a SubMenu that is accessed by pressing the Right Arrow. Use the Up/Down arrows to select the new options and Left/Right to change the selected value. To exit this SubMenu, press the Up arrow till the cursor is at the << line. Now press the Left Arrow.</p> <p>Press # at any time to Save the new configuration to the Device. Press * at any time to Discard the configuration.</p> <p>Exiting Device Programming Press the Menu at any time to completely exit Device Programming.</p> <p>Program Sectors Program this Keypad</p>
Default Keypad	Returns the keypad to Factory Defaults



Event Log

The Event log contains information about Alarms, Troubles and Arm/Disarm commands. Each event is displayed on a separate page. Press the Up or Down key to change pages. Press # to exit the Log. The most recent entry is displayed when the log is first opened.

```
Log Entry: 37
14:35 13/02/15
Zone 1
Fence Alarm
```

Setting the Clock

The clock is formatted to 24 hour time followed by the Day/Month/Year.

Use the number keys to set the new value for the current cursor location. Each number pressed will move the cursor to the right. If the keypad detects an error, the cursor will return to the first location and the original date time will be displayed again.

```
Set Time and Date
hh:mm dd/mm/yy
14:35 13/02/15
--:-- --/--/--
```

The entire Time and Date needs to be entered before the new value is saved. Pressing the Enter Key at any time during the process will cancel the update.

Test Menu

Menu	Function (when Enter key is pressed)
Analyse Group	Discovers the Energizers connected to the Keypad
Siren Test	Turns on the Energizer/Monitor Siren Outputs for 2 seconds
Battery Test	Triggers the Battery Test in connected Energizers/Monitors. See the LCD display of the Energizer for the results
Show Model	Displays the Keypad Version
Reset Energizers	Forces the Energizers to reset

Keypad Options

Menu	Function (when Enter key is pressed)
Press Beeps	Turns ON/OFF the key press beeps
Chime Sounds	Turns ON/OFF the Gate Chime Sounds
Error Sounds	Turns ON/OFF the Error Sounds when entering a PIN for Energizer control
Alarm Sounds	Turns ON/OFF the Keypad Beeper sounding for a new Alarm/Trouble
Backlight	Cycles through the Backlight options (ON / Timeout / OFF)

Program Device

Requirements for Menu Driven Programming

For this system to work effectively, all connected Energizers/Monitors need to be Mk2 protocol compliant. This version is usually found in the Black Plastic box, rather than a Silver Plastic box.

Procedure

The Keypad takes around 10 seconds to enter Menu Driven Programming mode. Once entered, the list of connected devices will be listed.

Use the Up/Down arrow to choose the device to be configured. Press # and the Keypad will Load the configuration from the Energizer.

Select Device...
ID: 1-Z25
ID: 2-Not Connected
ID: 3-Z18

Use the Up/Down arrows to move around the options and the Left/Right arrows to change the selected value.

High Power	8.5
Low Power	1.1.
Fence 1 Alarm	4.0
Fence 2 Alarm	4.0

Options with >> displayed have a SubMenu that is accessed by pressing the Right Arrow. Use the Up/Down arrows to select the new options and Left/Right to change the selected value.

Unused	
Group ID	1
Input 1	>>.
Input 2	>>

To exit this SubMenu, press the Up arrow till the cursor is at the << line. Now press the Left Arrow.

<< Input 1	.
Trigger	N/Open
Function	Arm All

Press # at any time to Save the new configuration to the Device.

Press * at any time to Discard the configuration.

Exiting Device Programming

Press the Menu at any time to completely exit Device Programming.

Program this Keypad

This menu allows the Zone names, and Dealer/Service messages to be altered. It also contains the Keypad Address.

The menu order is:

- SERVICE MESSAGE
- DEALER MESSAGE
- ZONE NAMES (1 – 16)
- BAUD RATE
- KEYPAD ADDRESS

The Dealer Message, Service Message and each of the 16 Zone Labels can be changed using a Multi- Touch Entry System

- The Dealer Message is displayed on the Summary page
- The Service Message is displayed on the Summary page during AC failure, communication failure, or low battery
- Zone Labels are displayed at the top of each Device Page.

The keypad will also exit the programming mode if you do not press any key in five minutes.

Key values (Multi-Touch Entry)



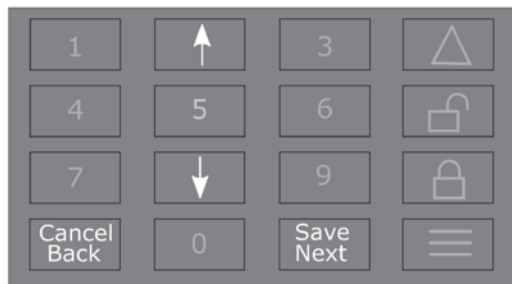
“See Below” – The Zero key has the following characters:

space 0 . ! @ # \$ % ^ & * () - +

The Multi-Touch entry system is based on the system older mobile phones used for text entry. Pressing a key more than once will change the character based on the values assigned to that number. When the correct letter is displayed, either press a different Key or Pause for 2 seconds before pressing the same Key.

- For example:
- To enter the letter **R**, you would press Key 7 three times.
 - To enter **JVA**, you would press 58882
 - To enter **ACE**, you would press 2 (pause for 2 seconds) 22233

Changing the Keypad Number options (Arrow Keys)



The Keypad BAUD and Keypad ID options can be changed using the Up/Down Arrow Keys. Press # when the correct value has been selected. Pressing the * key will discard any changes and the display will show the previous option.

Group Connection

Using more than one Keypad

Function	Key 1	Key 2	Key 3	Key 4	Key 5	Key 6	Key 7	Key 8
Re-analyse the keypad group	USER PIN				*	6	8	#

Up to three keypads may be used to remotely monitor and control Z-Series devices.

To operate correctly, each keypad must be configured to use a unique **keypad address**. This is achieved by connecting one keypad (at a time) to the master Z-Series device and updating the **keypad address**. Once all keypads have a different address, all can be connected to the system. A recommendation is that one keypad is kept at **address 1**.

If the security system is to use a PC based interface such as Perimeter Patrol, **keypad address 2** should not be used by a keypad. The PC software uses this address to control the Z-Series devices. Once all Keypads are connected, enter the **Re-analyse the keypad group** command listed above.

Notes

Things to remember when configuring/using the keypad.

- Zone 1 must be connected to the group. If it is not connected, the other Z-Series devices in the group will not send their data to the keypad generating Coms Fail alarms on the keypad.
- If the keypad is unresponsive, this is likely due to the Z-Series device looking for other keypads in the group. Be patient. Wait a few seconds and try again.
- A slave Z-Series device disconnected from the Group will only talk to a keypad if it has a **keypad address** of 1 or 8.




Summary of Keypad Key Sequences

Default INSTALLER PIN 012345
 Default USER PIN 1234

1. To change the Installer PIN, the Energizer needs to be in Energizer Programming Mode first. ("Start Programming the Z-Series energizer" function)

Energizer Function	Key 1	Key 2	Key 3	Key 4	Key 5	Key 6	Key 7	Key 8	Key 9	Key 10	Key 11	Key 12
Arm/Disarm	1	4	7	0	#							
Silence the Energizer Siren												
Start Programming the Z-Series energizer				INSTALLER PIN		*	0	#				
Start Programming the Keypad				INSTALLER PIN		*	0	1	#			
Exit Programming (any mode)	*	#										
Change a User PIN, 4 Digits				USER PIN	*	0	#	NEW USER PIN				#
Change the Installer PIN, 6 Digits NOTE1	0	0	NEW INSTALLER PIN					#				
Arm All Zones (Multi-zone groups)				USER PIN	*	1	0	#				
Arm Specific Zone (up to Zone 15)				USER PIN	*	1	Zone Number	#				
Disarm All Zones				USER PIN	*	2	0	#				
Disarm Specific Zone (up to Zone 15)				USER PIN	*	2	Zone Number	#				
Switch All Zones to low power mode				USER PIN	*	4	1	#				
Switch Specific Zone to low power mode				USER PIN	*	4	1	Zone Number	#			
Switch All Zones to high power mode				USER PIN	*	4	2	#				
Switch Specific Zone to high power mode				USER PIN	*	4	2	Zone Number	#			
Arm Gate circuits only				USER PIN	*	4	#					
Bypass Siren (All Zones)				USER PIN	*	5	2	#				
Bypass Specific Zone Siren				USER PIN	*	5	2	Zone Number	#			
Re-enable Siren (All Zones)				USER PIN	*	5	1	#				
Re-enable Specific Zone Siren				USER PIN	*	5	1	Zone Number	#			
Bypass Gate Alarm (All Zones)				USER PIN	*	5	4	#				
Bypass Specific Gate Alarm				USER PIN	*	5	4	Zone Number	#			
Re-enable Gate Alarm (All Zones)				USER PIN	*	5	3	#				
Re-enable Specific Gate Alarm				USER PIN	*	5	3	Zone Number	#			

Energizer Function	Key 1	Key 2	Key 3	Key 4	Key 5	Key 6	Key 7	Key 8	Key 9	Key 10	Key 11	Key 12
Arm in Agricultural Mode (No Alarms)		USER PIN			*	9	Zone Number	#	#			
Reset and Display firmware version number		USER PIN			*	6	8	#				
Reset and return to factory defaults		INSTALLER PIN										

Energizer Function	Key 1	Key 2	Key 3	Key 4
Clear Alarm memory	*	1	#	
Display the Group ID of the Energizer	*	2	6	#
Siren test	*	6	3	#
Battery test	*	6	4	#
Display the Stored Joules	*	6	7	#
Re-analyse the group	*	6	8	#
Panic – The Energizer/Monitor will react depending on its Panic settings				

Keypad Specific Function	Key 1	Key 2	Key 3	Key 4
Change the Keypad Messages to English	*	3	1	#
Change the Keypad Messages to Spanish	*	3	2	#
Keypad Audible Feedback On/Off	*	5	1	#
Keypad Chimes On/Off	*	5	3	#
Keypad Error Tones On/Off	*	5	4	#
Local Keypad Alarms On/Off	*	5	5	#
Backlight mode On/Timeout/Off	*	8	#	
Display Keypad Model	*	9	#	

4.7 Internal Beeper/Keypad Beeper

Depending on the *chime* mode setting, the internal beeper and keypad beeper will sound when there is a fence alarm, a gate alarm or a general alarm or a door chime. On flat battery the keypad will always beep 4 times before the energizer automatically enters low voltage mode to preserve the battery. On AC Fail it will beep.

4.8 Cabling

High voltage cabling (fence lead out and returns) should be run using suitably rated cable. Double insulated electric fence *underground* cable is suitable. High Voltage Cables must **never** be run within the same conduit as Low Voltage Cables. A minimum distance of 30mm should be kept between High Voltage and Low Voltage cables.

4.9 Lightning Protection

Although the Z28 contains internal lightning protection elements, external lightning protection elements such as additional external lightning kits available from your local dealer, are recommended as they would help to reduce lightning damage even further.

4.10 Earth Loop Monitoring

The Z28 has two fence earth terminals which when wired into a series looped fence system enable the energizer to monitor the earth circuit. In this configuration, only one earth spike location must be used. If this is not required the installer can loop the two earth terminals at the energizer and then connect the earth spikes to one of the parallel earth terminals.

4.11 Noise and Interference

The Z28 contains a microprocessor. Extreme electrical noise can upset microprocessors. The most likely cause of such noise is the high voltage output from the unit itself. In the event of erratic behaviour, check that the high voltage wiring is firmly connected to the terminals and that no sparking is seen. The Z28 is designed to self-recover from interference, powering off (both AC and battery) should not be necessary.

4.12 Programmable Options

The Z28 has many programmable options. These are also known as *setup parameters*. To alter these options a keypad must be used. The options are explained in the 4 line keypad section on page 20. Each parameter has a factory set default.

4.13 Low Power Mode

Z28 energizers can be switched into low power mode. Low Power mode may be used in situations where the fence is not required to be a deterrent but is still required to actively detect intrusion. In Low Power mode the fence live wires operate at a much lower voltage, typically 900V peak. See *Programming Options* on page 20 for details on using the keypad to set low voltage mode.

4.14 Control Inputs

4.14.1 Control Inputs

The Z28 has 3 control inputs. These default to:

Input 1 – Arm/Disarm

Input 2 – Gate 1

Input 3 – Gate 2 or low voltage mode input.

The gate inputs may be wired to a gate switch to trigger an alarm when a gate is opened.

If the unit is disarmed, the gate input may be set to chime mode. See *Programming Device* on page 17.

NOTE: If not used, the Gate 1 and Gate 2 inputs must be bridged to the *Com* terminal.

Inputs 2 and 3 can be configured for other functions. See *Programming Device* on page 17.

4.14.2 Control Input Functions

On/Off (Arm/Disarm)

When configured as an On/Off Input, the Control Input Arms or Disarms the Fence Zone. On/Arm will make the Fence Live (High Voltage on the Fence), while Off/Disarm will make the fence Safe (No fence voltage)

Gate Input

When configured as a Gate Input, the Control Input may be wired to a gate switch to trigger an alarm when the gate is opened for longer than the Gate Entry/Exit Delay time (Option 13). The timer will reset to zero when the gate closes. If the energizer is disarmed, the Gate Input may be set to Chime Mode. See section 9, option 14.

High/Low Power Control

When configured to control High/Low Power mode, the Control Input is able to change the Energizer Output (While Armed) to either High Power or Low Power modes. It is also used to determine what Power Mode to start in when the energizer is Armed using a Control Input.

4.14.3 Keyswitch Inputs

By default one keyswitch is used to arm and disarm both zones. The Z28 can be configured for two keyswitches to arm and disarm individual zones.

4.15 Group Simultaneous Pulse Feature

All JVA Z Range models may be linked to form a group to power multiple zones. See *Group Mode*, page 31.

5. INSTALLATION

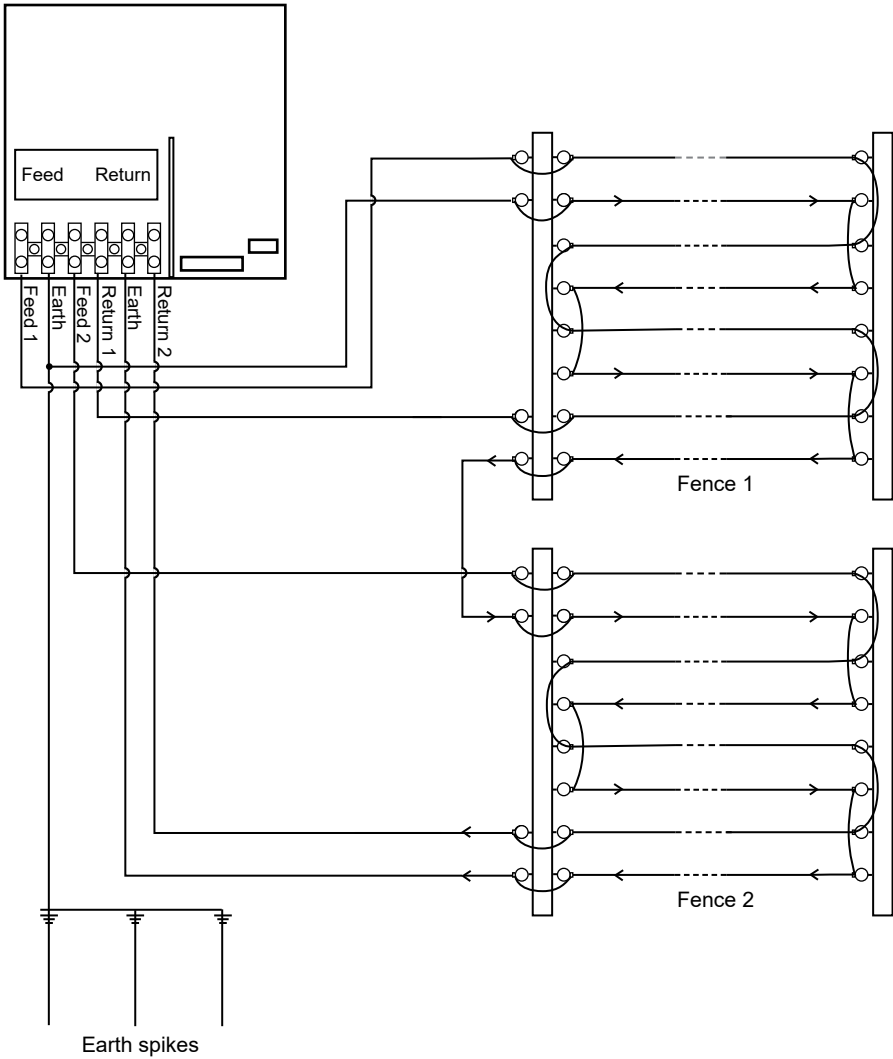
JVA recommends installation by qualified technicians.

5.1 Installation Steps

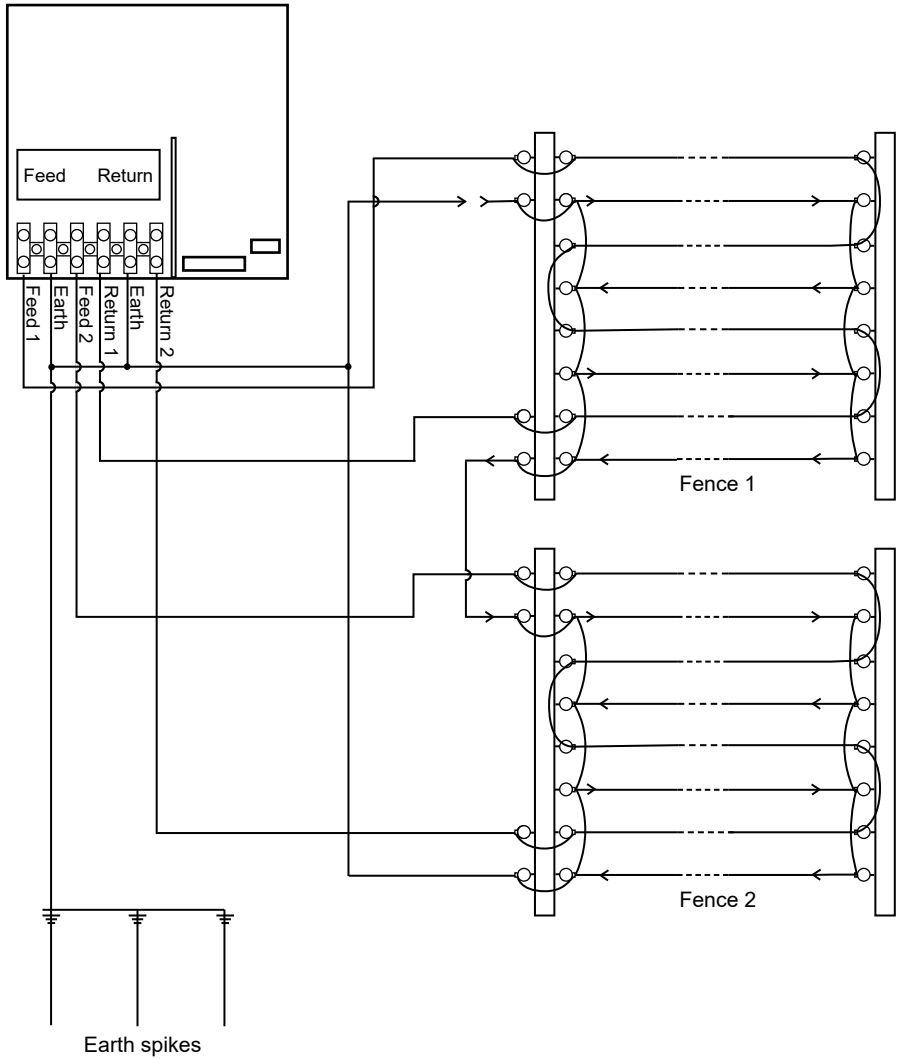
1.	Read the entire manual first!
2.	Design and build the fence. (Beyond the scope of this manual.)
3.	Decide where the JVA Z28 is to be mounted. If on an external wall it should be housed within a waterproof equipment box and definitely not in direct sunlight.
4.	Mount the unit by hanging the housing on the two nail-in anchors provided. If necessary, two extra mounting holes can be used at the bottom of the housing.
5.	If using a keypad, remove the rear housing of the keypad and fix it to the wall.
6.	Wire the low voltage cables to the PCB terminals (right side)*. (See page 8)
7.	Wire the high voltage cable to the PCB terminals*. (See page 8) If earth monitoring is not going to be used on the fence, connect a bridge wire from <i>earth out</i> to <i>earth return</i> .
8.	Fit the battery leads to the battery. The <i>Status</i> LED should blink twice to show mains fail.
9.	Mount the 220 – 16V transformer and connect the 16V side to the Z28 16V input terminals. (AC is not polarity sensitive.) Do not connect a <i>live</i> or <i>neutral</i> to the earth terminal.
10.	The unit is designed not to start when first powered up irrespective of the state of the inputs.
11.	Replace the front cover.
12.	Turn AC power on.
13.	Arm and disarm the energizer via the keyswitch or keypad, if fitted. The <i>Status</i> LED should stop blinking.
14.	If using a keypad, type *68#. The keypad will analyse the zones.
15.	Arm the unit. The LCD display will now show the fence voltage.
16.	Check to ensure that a short anywhere on the fence triggers the alarm.
17.	On handing the system over to the owner/user, explain how to change the user PIN. Leave a User Manual with the user.

***NB** Keep high voltage and low voltage cables at least 100mm apart.
Do not run high and low voltage cables in the same conduit.

5.2 Example Fence Wiring Diagrams



JVA Z28 Energizer Fence Wiring, Including Earth Monitoring



JVA Z28 Energizer Fence Wiring, without Earth Monitoring

6. OPERATION

6.1 Arm/Disarm Control

The unit can be controlled by the keyswitch, control input 1 or via a keypad. The keypad also allows instant audiovisual indication of the state of the energizer and therefore the fence it is powering.

If there are two ways to control the energizer both connected at once, i.e. keypad and control inputs, then the last change will determine the result. So if the unit is armed via the keypad and then disarmed at the control input it will disarm.

6.2 Arming the Fence Using the Keypad

- Enter your **USER PIN** number (four digits long; default is 1 2 3 4) and push the # key.
- Make sure the red ARM light comes on.
- The keypad will beep twice to confirm that the system is armed.
- The fence will power up and if all is well (no faults) the system will be ready to deter and detect.
- If there is a fault on the fence and it cannot achieve full voltage, zone 1 or zone 2 LEDs will flash.
- To disarm the system, enter your **USER PIN** and press #. This will also clear any fault lights and zone lights which may have been on.

6.3 Turning to Low Power mode

To switch to Low Power mode, enter your **USER PIN** and press ***41#**. In Low Power mode the fence will still be powered and any breach will be detected, but the voltage will be much lower than normal operation. The ARM light will flash in Low Power mode.

Enter your **USER PIN** and press ***42#** to switch back to Full Power mode.

Alternatively, the unit can be switched to Low Power mode using control input 2, if it has been programmed accordingly.

6.4 When an Alarm Occurs

If the system is armed and the fence is tampered with, the corresponding *Zone Light* will flash on the energizer and then remain on. Relays assigned to alarms will turn on. If the energizer is connected to a building alarm system for monitoring, an alarm signal may be sent to the alarm company monitoring the alarm system.



An alarm will also sound if input 2 is assigned to the “gate input” function and the gate input is opened and the entry/exit delay time has elapsed.

After the siren has cycled on and off according to the times and numbers set in options, the siren will stop sounding. The on and off timing is able to be set in the options. The Strobe will remain on. After a further delay (Auto Rearm Time) the siren will again respond to the next alarm condition with a new set of on / off cycles.

If the alarm condition (low fence voltage or gate input) is removed, the siren will stop after the end of the current “on” time (Siren On Time).

If the siren is muted by (entering **PIN#**) then the siren will enter the next “off” cycle (Siren Off Time). If the alarm condition is still present (voltage is low) the siren will sound again after the preset “off” time. If the alarm condition is not present the energizer is instantly rearmed, irrespective of the auto-rearm setting.

6.5 To Silence the Alarm

- Enter your **USER PIN** and press **#**. This will silence the alarm but not disarm the system; the *Armed Light* will still be on. If *Auto-Rearm* is set, the system will be ready for the next alarm. Note that the following functions have an effect on alarm timing: Siren On time, Siren Off time, Siren Cycles, Auto Re-arm time.
- The zone lights on the keypad will flash to show where the breach occurred.
- The siren and strobe are ready to respond again if triggered.
- To disarm the system, enter your **USER PIN** and press **#** again. The zone light will remain lit until the Clear Alarm Memory command (*1#) is entered.
- Alternatively, disarming using the key switch will reset the alarm.

6.6 Changing the USER PIN Number

- Enter the old 4-digit **USER PIN** and press ***0#**. This enters User Programming mode.
- Enter your new **USER PIN** (must be 4 digits) and then **#**.
- Press ***#** to exit User Programming mode.
- Make sure your new **USER PIN** works by using it to arm the energizer.
- The default PIN is 1 2 3 4.

6.7 Standby Battery

Should there be a loss of mains power, the *Power Light* on the keypad will go off. If the loss of power is prolonged, the battery may discharge power and become ineffective. The *Power Light* will start to flash indicating a battery low power problem. If the standby battery requires replacement, the *Status Light* will flash three times.

6.8 Status Light

If the energizer develops an internal fault, the *Status Light* will flash a code. See section 7.2 (page 30).

7. TECHNICAL INFORMATION

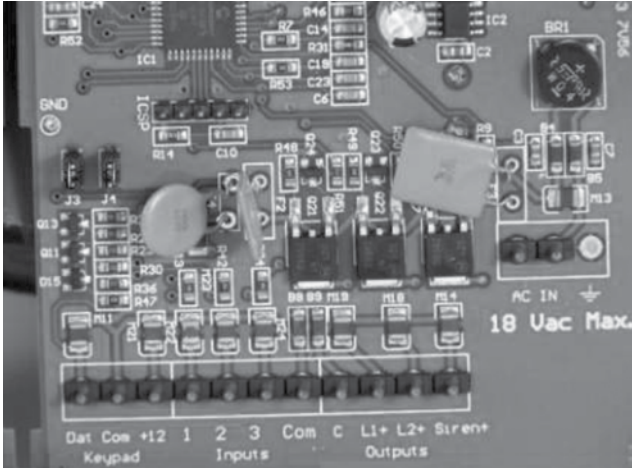


Figure 6: Low Voltage Terminals

Label	Type	Description
Keypad	3 Way	Supplies power and data line for an external keypad. The +12 source on these terminals is protected with a 1A self-resetting fuse.
Inputs	4 Way	Energizer control inputs (dry contact). Defaults to normally open. Can be used for a remote switch or a radio receiver. The receiver may be powered from the keypad +12V terminal. See section 4.
Outputs	4 Way	Siren and Strobe or other programmable outputs. See section 4 and 8 (Programming Options).
AC IN	3 Way	16Vac power input. Fused via F3 3A self-resetting fuse.
Batt	Leads	12V dc or battery connection via F1 (3 Amp self-resetting fuse).

Low Voltage Terminals

NOTE: To reset the fuse, remove power for a few seconds and then reapply power.

7.1 Power Options

The unit has 2 sources of power, 16VAC and 12VDC (Battery).

NOTE: Use only rechargeable batteries. Always ensure adequate ventilation is available for the housing if it contains a battery. Lead acid batteries may emit explosive gases while charging! Always make sure that a battery is connected to the energizer before applying 16 VAC.

7.2 Status Codes

Status LED Number of Flashes	Interpretation	Corrective Action
1	Not used	
2	16 VAC Mains fail	Restore mains power. Can be bypassed by fitting J3
3	Low battery, bad battery	Charge or replace battery
4	PCB service fault	Return to repair/service centre

Status Codes

If an error occurs, the relay assigned to general alarm will go into alarm state. Minor errors will self clear if the error condition is removed. If the mains power fails, it will not disarm the energizer, nor will low battery. However, without mains power, the battery will eventually be depleted and the energizer will attempt to maintain operation by entering low power mode after 4 warning beeps. If the battery charge continues to fall, the energizer will eventually stop. Once mains power has been restored and the battery has recovered, the energizer will re-arm itself automatically after 4 warning beeps. A PCB fault will disarm the energizer. If an error disarms the energizer, the general and fence alarms will activate.

If an error has momentarily caused the energizer to stop pulsing, this can be corrected by disarming and rearming the unit. Should the error recur, return the unit for service.

7.3 Jumpers

The unit has two special purpose jumpers (links). These are listed in the table below.

Jumper	Function	Purpose
J3	DC only jumper	Fit J3 to inhibit mains fail errors, if the intention is to operate the unit on DC only (as in Solar Power systems)
J4	Factory default jumper Off to return programmable options to factory defaults upon power up	If the energizer needs to be defaulted to factory settings, remove all power – AC and battery and remove the J4 jumper. Reapply the battery power first, then 16 VAC power. Reapply the J4 jumper and the unit will be reset to default settings.

Jumpers

7.4 Multiple Keypads

All Z series energizers have support for up to three keypads provided the Energizers firmware version is 7v66 and above. If more than one keypad is desired one of the keypads must have an ID of 2, the other keypads can have an ID number from 1 to 8 but excluding ID 2. If only one keypad is desired any ID number from 1 to 8 can be used.

8. GROUP MODE (26X#)

A group must have only 1 master. The other Energizers in the group are slaves. Since the keypad bus is common among the group, one keypad can be used to program all Energizers for all Options except Group Mode (for obvious reasons).

If there is no Master, each Slave will electrify the fence (pulses) when Armed. However, the simultaneous pulse feature will NOT be operating.

Connect the keypad to each Energizer in turn, before linking all Energizers into a group. Set this option, one unit as master the other as slaves.

NOTE 1: Do not interconnect the energizers via the keypad bus until after they are programmed.

NOTE 2: If more than one keypad is used, they will need different addresses.

NOTE 3: If Perimeter Patrol is used, any keypad in the system should not have address 2, (see page 18 Program this Keypad).

For all Energizers that will be part of a group, the procedure is as follows:

1. Make sure the key switch is turned off and *Input1* is not connected to the *Com* terminal.
2. Connect the battery.
3. Connect the keypad.
4. On the keypad, enter [Installer's code] [*] [0] [#], then [26].
5. Enter the required value (e.g. [1] for master) then [#].
6. Enter [*] [#] to exit programming.
7. Connect the group using the keypad bus as per Figure 7.

NOTE: At this time groups are limited to a master and 14 slaves (15 zones total). If more zones are required, PAE 212 LAN boards can be used.

In Group Mode, only one keypad can be used.

NOTE: In some markets Group Mode may not be available. For details on group wiring and operation Figure 7.

Value	Mode
0	No Group
1	Master
2	Slave 1
3	Slave 2
4	Slave 3
5	Slave 4
6	Slave 5
7	Slave 6
etc.	etc.
15	Slave 14

Group Mode (26x#)

Group linking via the Keypad “bus”

The keypad terminals on all Energizers in the group are linked, see Figure 17. Since only one Energizer needs to power the keypad, 3 wires are linked from one Energizer (preferably the Master) to the keypad (optional) and 2 wires to every other Energizer in the group. Do not connect the + lines between Energizers as this could result in some strange behaviour and possibly damage. Note the connections can be a star or daisy chain or any mixture. It is possible for a PC to be added to the group using a keypad to RS232 adaptor (PAE051).

We recommend following these steps in the right order:

1. Disarm all energizers in the group. If energizers are not disarmed Step 10 may not work correctly.
2. Program the keypad address using one of the energizers.
3. Program each energizer with its required address (Master address = 1, Slave 1 address = 2...). Refer to note 4 below.
4. Connect any control/monitoring unit 12V, GND and Data to the Group Master.
5. Connect all the slaves Data and GND to the Group Master.
6. Connect the battery and AC power of the Group Master but do not arm.
7. Connect the battery and AC power of each slave Note: Do not arm them until all the Energizers in the group are connected
8. Wait 5 minutes for all the Energizers to synchronise with the Master
9. If there are more than one keypad or control unit, make sure they have a different ID then reset the group using keypad code: [user pin] [*] [6] [8] [#] or Perimeter Patrol “Reset All” this will allow both keypads to be recognised by all energizers in the group.
10. If using a PTE0210 keypad (refer to Appendix I), enter the key sequence [*][6][8] [#] to automatically re-scan the group and check what energizers are connected.
11. Arm the group using keypad [1] [2] [3] [4] [*] [1] [0] [#] or Perimeter Patrol, make sure all Energizers are activated.

NOTES:

1. Members of a group can be individually switched on and off; even the master can be turned off via input or key switch (note that the Z14R does not have a key switch).
2. A slave will generate a General alarm if the keypad bus is broken between it and the group master.
3. After programming the Keypad may be disconnected, it is not required for group operation.

4. As of energizer firmware 7v83 and keypad firmware 1v09, Z28's should have an 'empty' ID between each Energizer. This means if the Z28 master ID=1, then the ID of the first slave should be 3, not 2.
5. When connected to Perimeter Patrol, the arm/disarm function of a keypad is disabled. Control of these functions is through the Perimeter Patrol interface.
6. A Keypad that is connected to a Slave Energizer (that is disconnected from the Group) must have a KEYPAD ADDRESS set to 1 or 8. Otherwise the Energizer will not respond to commands.

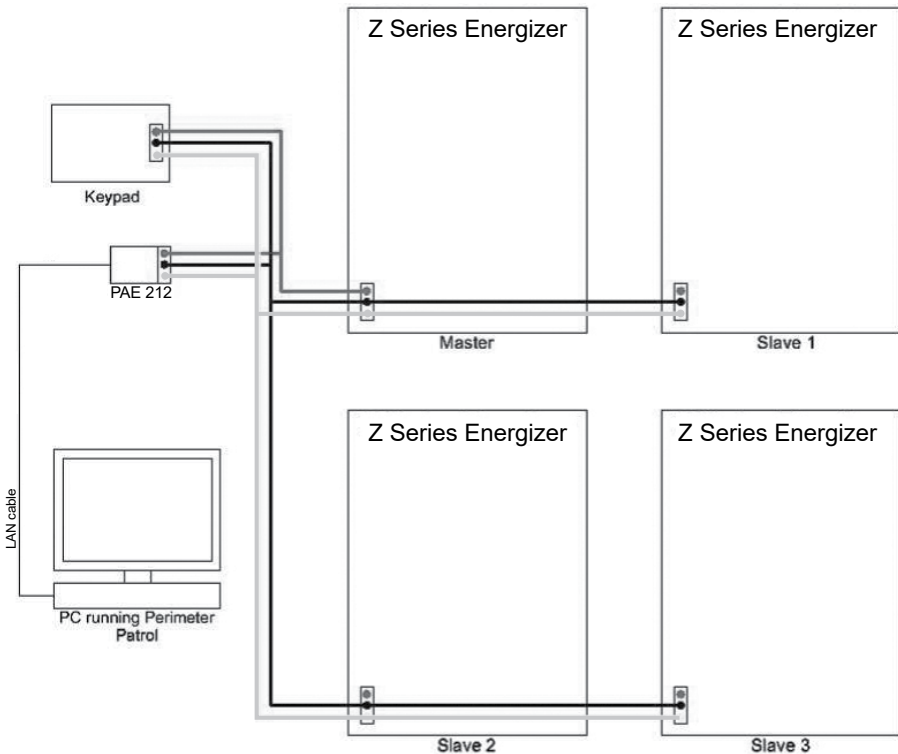


Figure 7: Group Mode Linking

Group Installation notes

1. If an Energizer hasn't been programmed as a Master or a Slave, it is set as "Stand alone" by default.
2. All energizers need an appropriate high voltage circuit earth connection.
3. Allow for the heat load of multiple Energizers mounted inside a cabinet, approx. 10W each.
4. Use shielded or twisted pair cable for the group keypad wiring.

9. SECTOR SETUP TESTS AND ADJUSTMENT

With a single sector system there are three considerations for the electric fence monitor voltage level:

1. The monitor should trigger the alarm if one of the live wires is shorted to ground.
2. The monitor should trigger the alarm if one of the live wires is cut.

Use common sense and turn the energizer off when making changes to the fence, then turn the energizer back on to check the effects.

9.1 Basic Fence Tests

1. Energise the newly-completed fence.
2. Use an Electric Fence Power Probe to find any construction faults.
3. Check that there is voltage on all live wires (continuity) and that there are no shorts from live to earth.
4. Check the electric fence earth. (See electric fence manuals.) One method is to make an intentional short from live wire to earthed metal. The voltage at the earthed point should be less than a few hundred volts; the voltage on the earth stake with respect to any nearby earthed metal should be less than a few hundred volts.
5. Record the start and end of fence live wire voltages.
6. Record the live wire currents going out from the energizer to the fence.

At this point there must be a reasonable voltage on all parts of the fence. To be an effective barrier, the Power Probe (or voltmeter) readings between wires (live to earth) must be greater than 5.0kV. If they are not, a larger energizer may be required.

9.2 Fault Condition Tests

1. To simulate a break, disconnect a joint in the live wires at some convenient point on the fence, making sure that the wires do not short to ground or between +ve and -ve wires.
2. Check that the energizer fence alarm activates. If not, check the voltage (using an electric fence voltmeter) at the inputs to the monitor. Set the fence alarm voltage level higher than this voltage. If there is still considerable voltage, you may have induced voltage in the live return wires. If so, reduce the induced voltage by placing a 3000 Ohm, 10 Watt resistor between the live return and earth return terminals at the monitor.
3. Reconnect the live wires.
4. Place a short on the fence live wires.
5. Check that the monitor goes into alarm.
6. Remove the short.
7. Do Steps 4 – 6 for both zones.

10. SOME STANDARD REQUIREMENTS FOR ELECTRIC SECURITY FENCES

The JVA range of energizers has been extensively tested and certified in accordance with international standards. JVA does not take responsibility for the erection standards of the fence. It is the responsibility of the erector to consult and comply with the Standards and Codes of Practice for the installation and erection of electric security fences. For the user's convenience, we include some Standard Requirements here but the installer also needs to consult standards such as SABS 1063, 0142, SABS IEC 60335-2-76.

10.1 Definitions

Physical Barrier

A barrier of not less than 1.5m in height and intended to prevent inadvertent contact of persons with the conductors of the electric fence.

NOTE: Physical barriers are typically constructed from vertical sheeting, rigid vertical bars, rigid mesh or rods of chain wire mesh.

Public Access Area

Any area where persons are protected from inadvertent contact with pulsed conductors by a physical barrier (see above).

Pulsed Conductors

Conductors that are subjected to high voltage pulses by the energizer.

Secure Area

An area where a person is not separated by a physical barrier (see above) from pulsed conductors (see above) below 1.5m.

10.2 Installation, Operation and Maintenance

- 10.2.1 Electric security fences and their ancillary equipment shall be installed, operated and maintained in a way that minimises danger to persons, and reduces the risk of persons receiving an electric shock unless they attempt to penetrate the physical barrier, or are unauthorised to be in the secure area.
- 10.2.2 A space of 2.5m shall be maintained between uninsulated electric fence conductors or uninsulated connecting leads that are supplied from different energizers. This space can be less where the conductors or the connecting leads are covered by insulating sleeving, or consist of insulated cables that are rated to at least 10kV.

- 10.2.3 The requirement in 10.2.2 does not apply in cases where the separately energised conductors are separated by a physical barrier that has no openings greater than 50mm.
- 10.2.4 A vertical separation of not less than 2m shall be maintained between pulsed conductors fed from different energizers.
- 10.2.5 Mains supply wiring shall not be installed in the same conduit as signalling leads associated with the electric security fence installation, but shall be installed in accordance with the requirements given in SABS 0142.
* NB. (Fence HT leads must under no circumstances be routed in the same conduit as any other wiring.)

10.3 Warning Signs

NOTE: Regulation warning signs are available from all JVA Electric Fence centres and all JVA certified dealers.



- 10.3.1 Electric security fences shall be identified by prominently placed warning signs that shall be legible from the secure area and from the public area.
- 10.3.2 Each side of the electric security fence will have at least one warning sign.
- 10.3.3 A warning sign shall be placed:
 - a. at each gate
 - b. at each access point
 - c. at intervals not exceeding 10m
 - d. adjacent to each sign with regard to chemical hazards, for emergency services information.

10.4 Gates

Gates in electric security fences shall be capable of being opened without the person who is operating the gate receiving a shock.

10.5 Earthing

- 10.5.1 Where an electric security fence passes below bare power line conductors, the highest metallic element shall be effectively earthed for a distance of not less than 5m on either side of the crossing point.
- 10.5.2 The distance between any electric fence earth electrode and other earth systems shall be not less than 10m, except when the earth system is associated with a graded earth mat. The earth electrode shall comply with SASS 10611. Amendment 1, Deco 2000 1.
- 10.5.3 All exposed conductive parts of the physical barrier shall be effectively earthed.

Figure 2
 Typical fence constructions where the electric security fence is installed in windows and skylights.

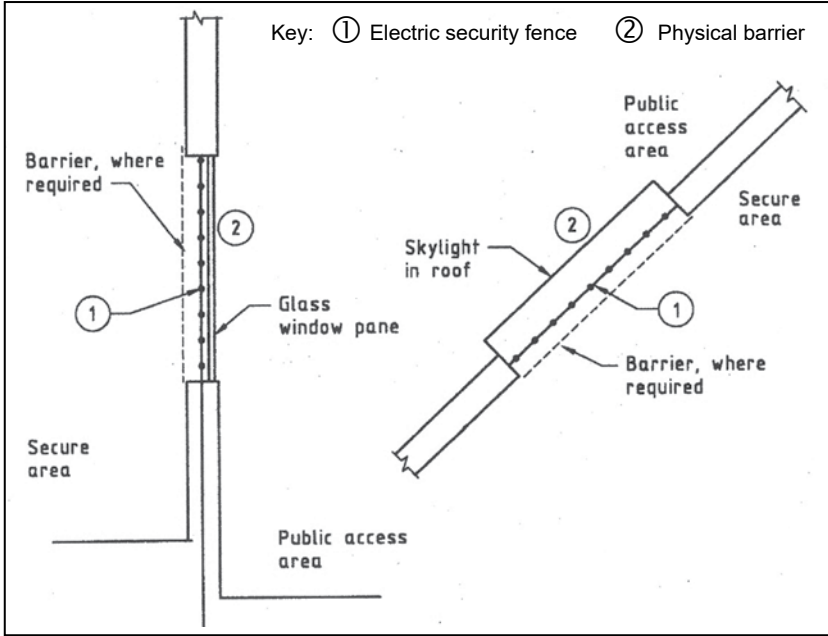
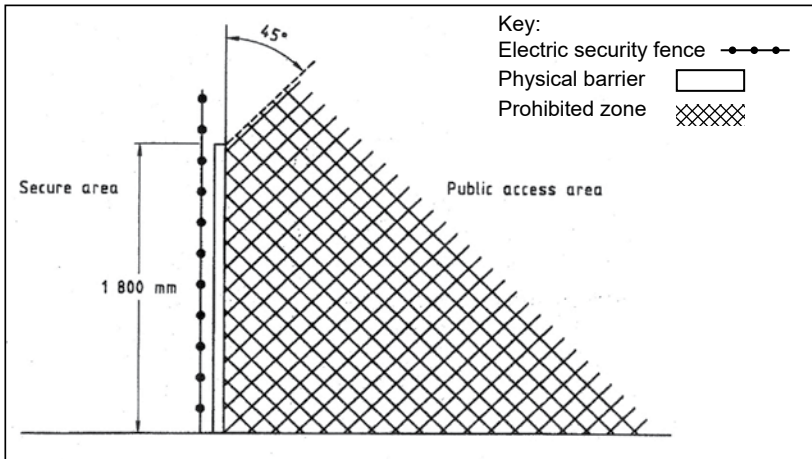


Figure 3
 Prohibited zone for pulsed conductors.



11. WARRANTY

All JVA products carry a **2-year warranty** against defective components and workmanship. The warranty excludes damage caused by acts of Nature such as lightning or flooding, power supply surges, rough handling, malicious actions or incorrect wiring.

Whilst every effort has been made to check that the information contained is accurate, JVA Technologies Pty Ltd will not be liable to loss or damage resulting from construction, operation or failure of any installation or system. Installation of security electric fences should be made by trained professionals with regard to the relevant local standards and workplace health and safety requirements.

Product model purchased: Serial No:

Customer Name:

Address:
.....
.....

Postal Code:

Tel. No: Cell: Landline:

email:

Date purchased:

Invoice No:

Dealer Name:


Dealer's Stamp



Mail to: SA JVA Service Department
P.O. Box 13898, Cascades 3202



12. COMPLIANCE CERTIFICATE



TEST Africa
The Leader in Safety Testing

Company : **Ndlovu Fencing (Pty) Ltd t/a
JVA Technologies**

Sample : JVA, Z13 / Z18 / Z28 Fence Energizers

Specification: SANS 60335-2-76:2006 & IEC 60335-2-76:2002 & A1:2006
SANS 60335-1:2007 & IEC 60335-1:2006

Report Number: WCT 10/1472

Date of Issue: 2010-12-14

The sample complied with all the requirements of the above- mentioned specification.

CUSTOMISED CODES

Customer Pin No.

Installer Pin No:

INSTALLER DETAILS

Name

Phone No.

Date Of Installation

Z-RANGE



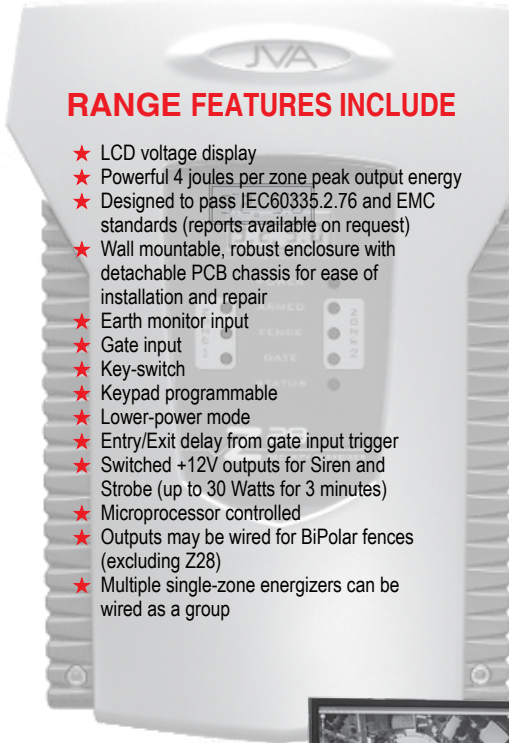
Z14 STANDARD AND BI-POLAR ENERGIZERS



Z18 STANDARD AND BI-POLAR ENERGIZERS



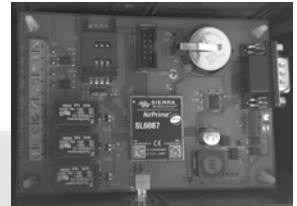
Z28 STANDARD ENERGIZER



RANGE FEATURES INCLUDE

- ★ LCD voltage display
- ★ Powerful 4 joules per zone peak output energy
- ★ Designed to pass IEC60335.2.76 and EMC standards (reports available on request)
- ★ Wall mountable, robust enclosure with detachable PCB chassis for ease of installation and repair
- ★ Earth monitor input
- ★ Gate input
- ★ Key-switch
- ★ Keypad programmable
- ★ Lower-power mode
- ★ Entry/Exit delay from gate input trigger
- ★ Switched +12V outputs for Siren and Strobe (up to 30 Watts for 3 minutes)
- ★ Microprocessor controlled
- ★ Outputs may be wired for BiPolar fences (excluding Z28)
- ★ Multiple single-zone energizers can be wired as a group

PERIMETER PATROL COMPLETE CONTROL SYSTEM MONITORING EVENT LOGGING



GSM MONITORS AND CONTROLS JVA ENERGIZERS USING A CELL PHONE



WEB SERVER MONITORS AND CONTROLS JVA ENERGIZERS VIA THE INTERNET



Customer Support

For assistance: If you have any questions or need further assistance, please call your nearest JVA dealer. SA Tel. No.: 0861 782 349.

For service or repairs: If a service or repair is required, please package and label your energizer carefully and return it to your local JVA Service Centre.

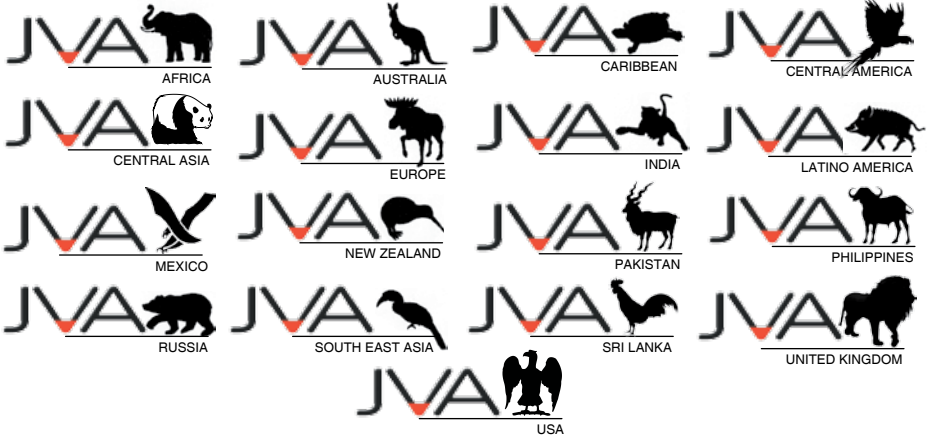
For warranty repairs: Include proof of purchase, e.g. invoice.

Note: Repair centre details are displayed on the back cover of this manual.



JVA ELECTRIC FENCE SYSTEMS

JVA products are designed by JVA Technologies, Queensland, Australia and distributed to:



JVA RSA SERVICE CENTRES

Bloemfontein

36 Kolbe Lane, Oranjesig
Tel: 051 448 6695

Cape Town

Unit 15, Viking Business Park
Park Road (off Viking Way)
Epping Industria
Tel: 021 534 5056

Centurion

74 Cantonments Road, Lyttleton
Tel: 012 880 0222

Durban North

Unit B, 13 Kenneth Kaunda Road
(Old Northway)
Tel: 031 563 0274

East London

Shop 8 & 9, Paphos Park
Devereaux Avenue
Tel: 043 726 6652/60

East Rand (Jet Park)

Aerostar Business Park
219 Jet Park Road, Jet Park
Tel: 011 397 3507

George

Shop 3, 57 York Road, George
Tel: 044 874 0669/ 044 873 2958

Kimberley

29 Schmidtsdrift Road
Rhodesdene
Tel: 053 861 5631

Klerksdorp

72 Central Avenue, Flamwood
Tel: 018 468 8273

Nelspruit

Unit 4, 20 Rapid Street
Riverside Industrial Park
Tel: 013 752 7152/55

North Rand (Kya Sand)

174 Bernie Street, Randburg
Tel: 011 708 6442

Paarl

Shop 2, Huguenot Park,
Cnr Klein Drakenstein Road and Van
Der Merwe St., Paarl
Tel 021 862 0886

Pietermaritzburg

51 Winston Road
Tel: 033 342 6722/27

Pinetown

Unit 1, 7 Suffert Street
Tel: 031 702 6351

Polokwane

9 Suez Street, Nirvana
Tel: 015 292 6273

Port Elizabeth

45 Mangold Street, Newton Park
Tel: 041 365 7178/9

Potchefstroom

35 Dr James Moroko Street
Tel: 018 297 1488

Pretoria

1185 Steve Biko Road, (977
Voortrekker Road), Wonderboom
South
Tel: 012 335 4290

Rustenburg

Shop 7, Waterfall Mall
1 Howick Avenue
Tel: 014 537 2884

Somerset West

4 Broadway Centre
Urtel Crescent
Tel: 021 851 1978

Uppington

Unit 2B, Industria Business Park
4 Progressus Street
Tel: 034 332 1458

Vanderbijlpark

5 Prime Business Park
Rabie Street
Tel: 016 931 0408

Vryheid

Unit F, 153 President Street
Cnr. Hlobane Street
Tel: 034 981 0318

West Rand (Roodepoort)

599 Ontdekkers Road
Delaréy
Roodepoort
Tel: 011 472 8823