



# FLCM User Manual



## Introduction

The JVA "[Boundary Rider](#)" Fence Line Communications Monitor (FLCM) is an electric fence Monitor. When paired with a FLC enabled energiser or FLC Receiver the FLCM will allow you to check the voltage on your fence from anywhere in the world. It will give you the peace of mind that your property's electric fence is working. It can also send you an alert if a fault occurs.

The FLCM part of JVA range of Monitored Electric Fencing Products. This range includes IP-Energisers® and Monitors.

## Features

- Electric fence voltage monitoring
- Communicates on the electric fence live wires
- Solar powered with integrated panel and bracket
- Start picket mounting bracket included
- Inbuilt Li-ion battery
- Compatible with all medium to high powered JVA energisers
- Auto power up / down
- Simple LED display
  - Power LED (Green) – indicates solar and battery status
  - Fence Status LED (Green or Red) – indicates fence voltage level

## Models

FLCM (PTE0352) Mini - Voltage monitor

FLCM-T (PTE0352-T) As above with digital input

FLCM-L (PTE0xxx) Current and Voltage Monitor with LCD and VKP

## Compatible Receivers

You must use the FLC in conjunction with a JVA FLC Receiver.

- JMB range of Electric Fence Energisers
- PTE0354 Fence Line Coms Interface (Gateway)

## Safety

Do not connect to mains power equipment!

Use only on electric fences powered by energisers which comply with the latest electrical safety standards such as IEC 60335.2.76.

Do not connect this device to any other source of high voltage. Doing so could be extremely dangerous.

# JVA FLC System

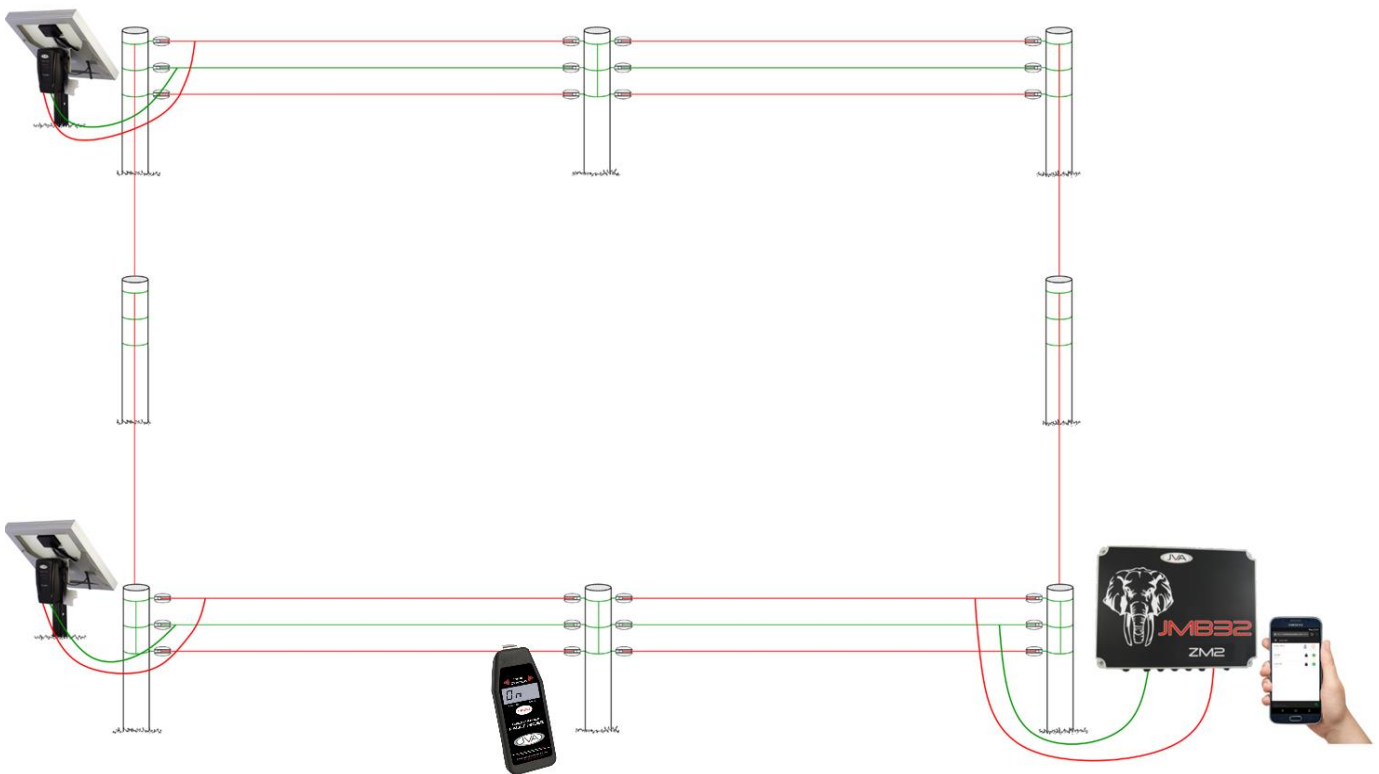
A JVA Fence Line Communications (FLC) system contains one or more Monitors, Remote controls and one Receiver. See the list of compatible Receivers

The Receiver is usually placed at the "Start" of the fence and the Monitor(s) at various points, or at the extreme ends. You can have up to fifteen FLC Monitors reporting to one receiver. All JVA FLC Receivers and Monitors are compatible with JVA Remote Control.

The FLCM reports the fence voltage via the fence live wire using a radio frequency signal injected onto the fence live wires. The fence live wires carry the signal back to the energiser / Receiver. FLC uses the same tried and proven method as electric fence remote controls.

The Receiver picks up these signals and forwards them to a User Interface via the Internet. The Receiver may be connected to the Internet directly (Wi-Fi) or via a Cloud Router Cellular Gateway.

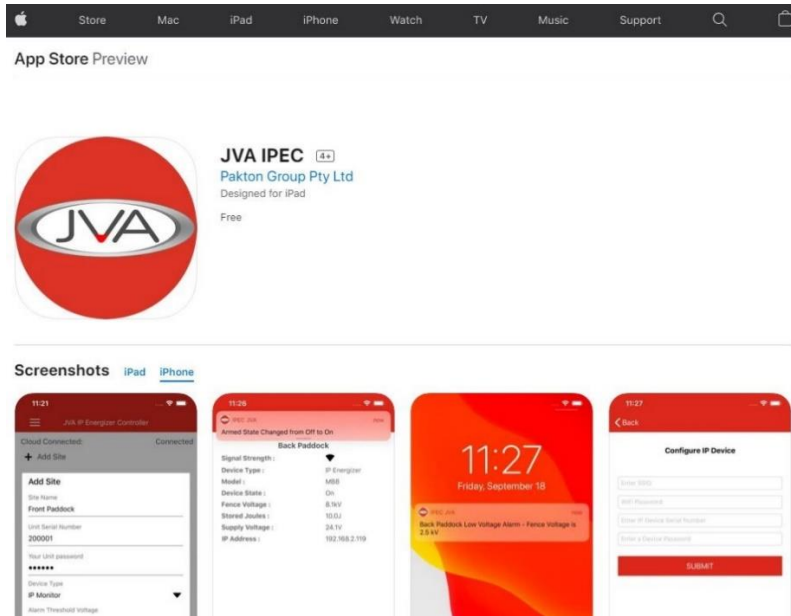
Fence Line Coms means that there is no need for a Wi-Fi or 4G router at each of the monitoring locations.



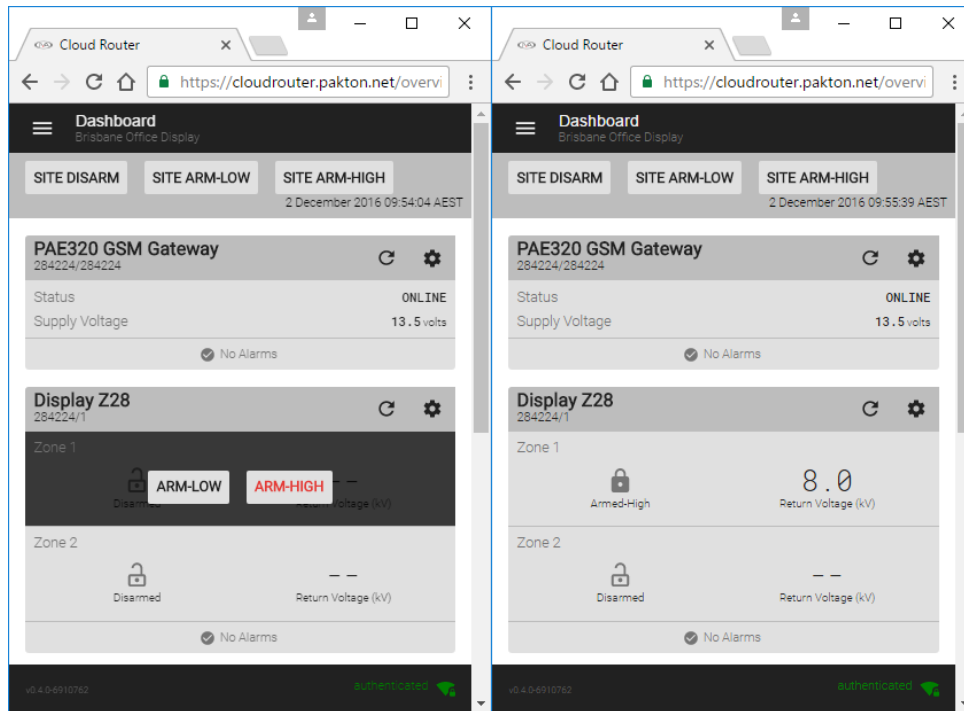
# JVA User Interface Options

You can check your electric fence voltages reported by your FLCM using the Virtual Keypad (VKP) of your Receiver / Energiser. The VKP however, only works when you have your smart phone close to the receiver. If you want to enjoy being able to check your fence from further afield, you will need to connect your Receiver to the Internet (Wi-Fi) and then download and setup one of JVA's User Interfaces.

IPEC – Free to use App for Android or IOS see:



Cloud Router – Subscription based App and Web page available for Android, IOS or PC. See:



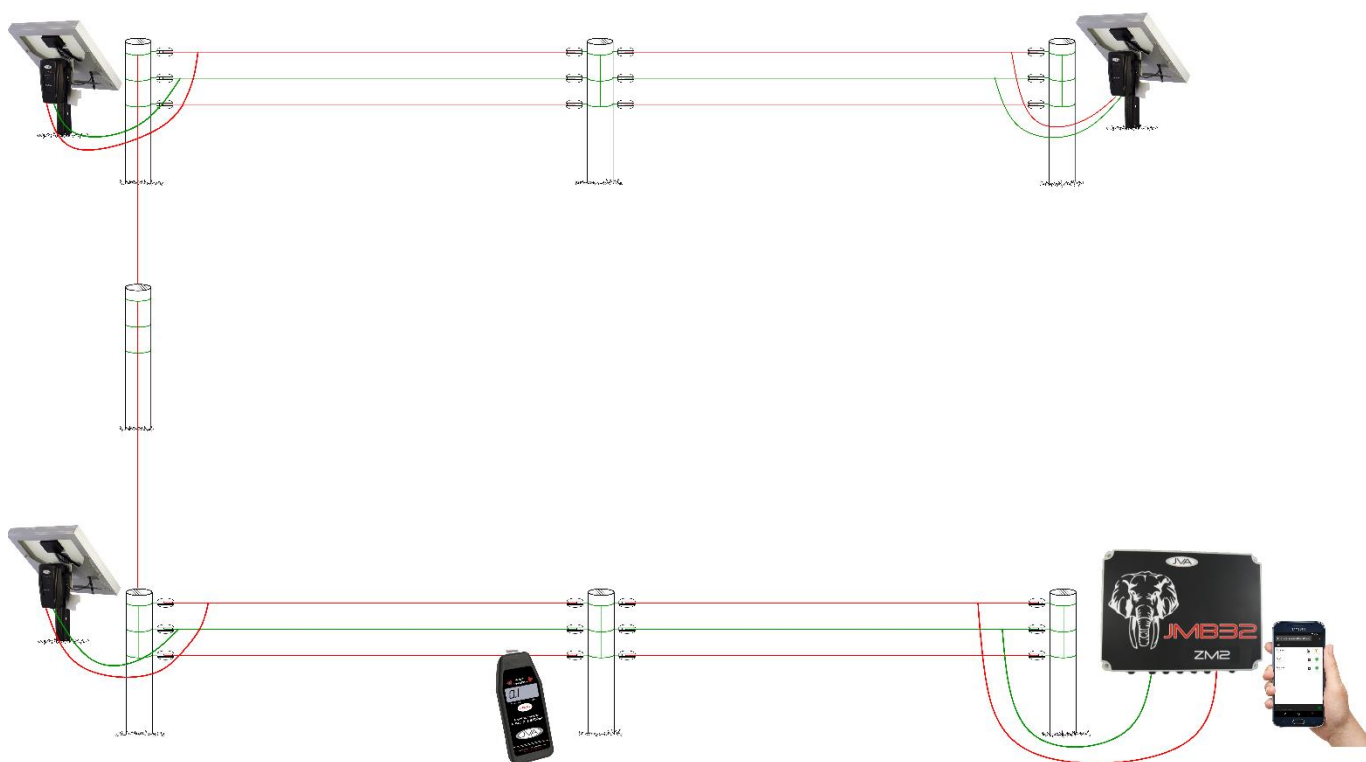
Since it is the Receiver in the FLC system that connects to the User Interface of your choice, you will need to read the Receiver Manual for more information.

## Fence Voltage Monitoring Methods.

The simplest method of using FLCM(s) to monitor your fence is to place one at each extremity of your farm. This is known as “End of Fence Monitoring”. By doing so you can check the voltage at the end and be assured that power is flowing all the way from the energiser to this point. I.e. your whole fence is fine.

An alternative is to use more Monitors to create “Sectors” within your fence system. The easiest way to think about this is to imagine a vary long boundary fence. If you placed a FLCM at regular intervals you will create a sector between each FLCM. If FLCM 2 says the fence is ok, but FLCM 3 says it isn’t, then the fault is in sector 3.

Note that the FLCM has been designed to operate at maximum distance of up to 8km away from the receiver.



## Parts of the FLCM



1. Solar Panel
2. Solar panel lead and plug
3. Mounting bracket
4. Power Button
5. LED display
6. Earth terminal and lead
7. Fence terminal and lead

## LED Display

### Power LED (Green)

Off	FLCM is powered off
Short Flash	Battery is low
Long Flash	Unit is on, Battery is charging
Firmly on	Battery is fully charged

### Fence Status LEDs (Red/Green)

Off	No Fence Voltage
Single Flash Green	Fence Pulse seen over threshold
Single Flash Red	Fence Pulse seen under threshold
Multiple Flashes	Error code.

### Error codes:

- 2 No serial number (factory use only)
- 3 Battery flat or failed – Place the solar panel in the sun or replace the battery
- 4 General fault – return the product for service

### Power Button

Press the power button once to wake the FLCM up.

### On/Off/Sleep

The FLCM has three modes (similar to a smart phone).

Off: (no LEDs and will only respond to a long key press).

On: (Green LED on or flashing)

Sleep: (no LED's, will wake on short keypress, solar power or fence voltage)



## Steps from unboxing to operation (summary)

1. Wire the Receiver to the fence (see Receiver / Energiser instructions)
2. Mount the Monitor(s)
3. Wire them to the fence
4. Check the FLCM is working
5. Pair the FLCM(s) with the Receiver
6. Connect the Receiver to the Internet (see Receiver / Energiser instructions)
7. Download the User Interface of your choice
8. Add the Receiver to your IPEC or Cloud Routed Site (See UI Instructions)

## Mounting the FLCM

Mount the FLCM monitor on a star picket or sturdy pole, near the electric fence, do not place it on the ground! Face the Solar Panel towards the equator (north if you are in the Southern Hemisphere).

Make a note of the Serial number of this Monitor, you can use it to give it a location or name later. For example, serial number 123456 = Western fence end.





## Wiring Instructions

1. Turn the energizer off.
2. Using high voltage cable, wire the Monitor “Fence” terminal to the electric fence live wire. If there are more than one live wire on the fence, connect them all together at this point.
3. Wire the Monitor “Earth” terminal to a suitable Earth stake.
4. Plug the solar panel into the socket on the side of the FLCM.
5. If there is any sunlight the FLCM will automatically power up, if not press the switch on the front of the case.

## Optional Input

The “T” version of the FLCM, has an input that may be used to monitor a gate or a tank (water level) via a pressure probe or float switch. The input is designed to be wired to a voltage free contact (relay contact or switch). The single wire input is activated by closing the contact wired between this input and the fence earth. Take care to ensure that the Earth terminal of the Monitor is not “hot” due to an insufficient earth.

## Check it is working

After mounting and connecting the Monitor. Turn the electric fence energiser on. If you are using a FLCM enabled energiser as the Receiver, and you have a Remote control use it to turn the energiser on. Use your Electric Fence Fault Finder to check the voltage at the fence where it connects to the Monitor the fence voltage must be over 1kV to proceed.

The Monitors Fence status LED should now be flashing green with each fence pulse seen.

## Pairing the FLCM with a Receiver

Pairing is done via the VKP (Virtual Keypad) of the Receiver. Download the JVA VKP App and use your phone to connect to the Receiver. Open the Settings screen and scroll to the “FLC Monitors” section.

You should see the Serial Numbers of all the FLCM’s that are active on your fence listed here. Select and name each of the Monitors.

If you do not see a FLCM’s serial number listed, this means that the signal from the FLCM has not reached the receiver. See the fault finding section of this manual.

Read the User manual for your chosen Receiver for more information.

## User Interface Setup

You will need to choose one of the available options for User Interfaces. Download the App and setup your Site.

See [www.jva-fence.com/agric/ipenergizer](http://www.jva-fence.com/agric/ipenergizer) for information on setting up IPEC.

See [www.jva-fence.com/CloudRouterGuide](http://www.jva-fence.com/CloudRouterGuide) for information on setting up Cloud Router.

## Operation

Use the JVA IPEC or Cloud Router to check your fence on a regular basis. You will get to know what the normal running voltages are at the various points on your fence.

If there is a fault on your fence, for example the voltage at a FLCM falls below the set threshold, you should receive a notification. This is dependent on the setup of your chosen User Interface.

If the fence is damaged to the extent that FLC signals cannot get back to the Receiver the system will generate a coms fail alarm. Again you will receive a notification.

## Fault Finding

1. Coms Fail Alarm / Receiver does not see the FLCM. This means that the RF signals from the FLC are not making it back to the Receiver.
  - a. There could be a break or short in the live wire somewhere between the Receiver and the FLCM. Check your fence for faults
  - b. Try moving the FLCM closer to the Receiver
2. If the FLCM flashes a low / bad battery code
  - a. Make sure the solar panel is not shaded. It should get full sun from at least 10am to 4pm each day.

## Limitations

The FLCM (PTE0352) will only read electric fence voltage for positive pulsed energisers. All JVA Agric and Security energisers produce a positive pulse. Some other brands use a negative pulse.

There is no galvanic isolation from the Fence Ground to the solar panel power input. This means that the solar panel and bracket become live if the Earth connection is lost or is inadequate.

If you have any questions or need further assistance, please contact us at [sales@jva-fence.com.au](mailto:sales@jva-fence.com.au). For more information on our complete electric fencing products please see the JVA website at <http://www.jva-fence.com.au/>

## Notes



[jva-fence.com.au](http://jva-fence.com.au)

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