



Pesense

# TERMISENSOR

## MANUAL

*TermiSensor*

[www.pesense.com.au](http://www.pesense.com.au)

[info@pesense.com.au](mailto:info@pesense.com.au)



## TABLE OF CONTENTS

---

Introduction .....	3
Who is Pesense? .....	3
What is a TermiSensor? .....	3
1. Terms Explained.....	4
2. TermiSensor System .....	5
3. System Components .....	6
4. Installation .....	8
5. Accessory Components.....	9
7. Caring for the System.....	10
8. Troubleshooting.....	11
9. Specification .....	12

# INTRODUCTION

---

## **Who is Pesense?**

Pesense is an Australian company, focused on designing pest detection products with unique sensor technologies remotely monitored using the internet to deliver protection 24-hour a day, 365 days a year whether the pest be rodents, termites or some other asset or business damaging pest.

Pesense protects your assets and your business.

## **What is a TermiSensor?**

TermiSensor is a World-patented termite sensor that works in conjunction with a termite monitoring station.

The TermiSensor reports many times daily via the internet. The status of your TermiSensor is remotely monitored, reporting system alerts to the Pest Management Company on any positive Termite activity. Just days after detection, once an appointment is made, the Pest Management Company can commence treatment, quickly and effectively... maybe months earlier than usual.

TermiSensor is always at work, delivering an environmentally responsible solution.

# 1. TERMS EXPLAINED

---

**Monitoring Station** – A unit placed in or on the ground containing cellulose based material e.g. wood or cardboard acting as an attractant for foraging termites.

**Concrete Monitor / Cap** – A core hole is drilled (80~82mm D) penetrating a paved area down to soil level. The hole is covered using a Pesense “Concrete Monitor / Cap” fitted with an integrated TermiSensor.

**Active Ingredient** – Termite treatment can take different forms. The “active Ingredient” in the termite treatment is often a proprietary formulation. Your Pest Manager will have a preferred affiliation and termite treatment protocol.

**Remote Monitoring** – the ability to see information or a sensor status without being at the location of the sensor. TermiSensor sends each sensor status via the internet, to a remote computer or server. The remote server and data base runs software developed by Pesense to the Pest Management Company.

**Universal Diaphragm** - a Patent Pending apparatus which positions the TermiSensor over a detection aperture while the concentric grooves on the underside of the Diaphragm provide easy fitment of the TermiSensor into most In-ground Termite Monitor / Stations.

## 2. TERMISENSOR SYSTEM

There are two key components in TermiSensor System. The TermiSensor modules of which there are typically 16~20 and one Gateway.

The TermiSensor is a Patented, battery powered sensor, which uses a wireless communications system (LoRa) to transmit its status to a Pesense Gateway. The Gateway provides connectivity to the internet to transfer the data from the TermiSensor to the Pesense cloud-based management system.

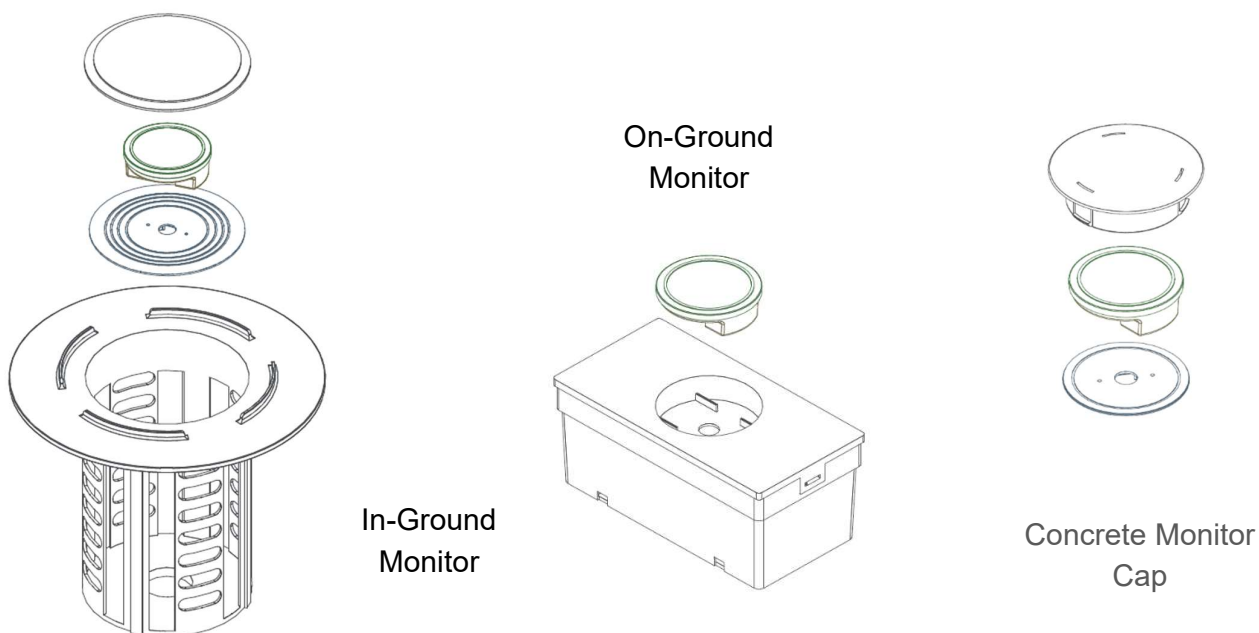
The TermiSensor modules are designed to be mounted in termite Monitors. There are three common types:

1. In Ground Monitors
2. On Ground Monitors
3. Concrete Monitors Caps

Any combination of these mounting methods may be used in any installation. The Pesense accredited Pest Management Company will determine the optimum TermiSensor locations and monitor styles.

Pesense also offers a Patented adaptor or diaphragm, which enables TermiSensor to be mounted in most termite monitoring stations.

Typically, termite monitors are included as part of the TermiSensor installation. If termite monitoring stations have been previously installed, Pesense offers a Patented adaptor system that enables TermiSensors to be mounted in most termite monitoring stations.



### 3. SYSTEM COMPONENTS

---

Typical TermiSensor system:

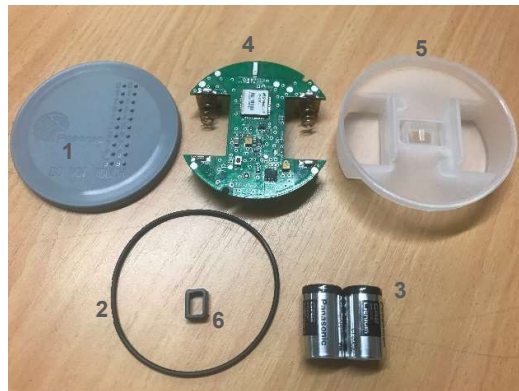
1. 1 x Power Supply Unit (PSU)
2. 1 x Gateway / Base Station
3. 1 x Network Cable
4. Typically, 16~30 x TermiSensors

Batteries are included.



## The TermiSensor components

1. Lid
2. O-ring
3. CR2 Batteries x2
4. TermiSensor PCB
5. TermiSensor Enclosure base
6. Collimator



The TermiSensor is preassembled, except for the Batteries and O-ring.

The 2 x CR2 Batteries offer greater than 2 years of operation. Remove lid and fit batteries. Polarity orientation of the batteries follows conventional rules: the negative to the battery spring and the positive to the dimple plate. **See + marking on PCB.**

When fitting the first battery the TermiSensor will power up and the LED will flash. Install second battery.

Whilever the lid is off the TermiSensor, care should be taken to avoid contaminating the enclosure with dirt and/or moisture.

The TermiSensor O-ring is seated inside the outer rim as shown below prior to fitting the lid to the TermiSensor base.

It is highly recommended that the O-ring is lightly lubricated. This enhances the water-resistant seal and facilitates an easier lid-fitting.



## 4. INSTALLATION

---

### PLANNING

Recommended checks before offering a TermiSensor system.

1. Verify the client has internet service with an available internet cable connection (RJ45 internet port).
2. TermiSensor to Gateway distance should not exceed 75m.
3. Develop a plan, assessing the most suitable termite monitor style for each location e.g. In-ground, On-Ground or Concrete
4. Number of TermiSensors: as a guide, measure perimeter of property ("P")  $"P"m / 3 =$  approximate number of TermiSensors required.
5. Obtain appropriate contact details from the client and of the property manager if appropriate.

Schedule installation date.

### Register, Pair and Deploy

Refer to the Pesense "Installation Quick Guide"

This Guide steps through the three key installation processes

1. Installation Registration
2. Allocating Hardware and Pairing
3. On Site Deployment

These three steps are completed utilising the Pesense webpage and the Pesense Android App. Refer to Pesense **guide**: "Pesense App" as required.



## 5. ACCESSORY COMPONENTS

---

### Universal Diaphragm

A number of accessories / components are available to enable easy fitment of the TermiSensor into In-Ground Termite Monitors while enhancing the performance to the TermiSensor System.

The Universal Diaphragm is a key component, used in all In-Ground and Concrete Monitor Cap monitor configurations.

The Universal Diaphragm is a Patent Pending apparatus which positions the TermiSensor over a detection aperture while the concentric grooves on the underside of the Diaphragm provide easy re-sizing fitment of the TermiSensor into most In-Ground Termite Monitor / Stations.

### Slats

The use of Hardwood (Tasmanian Oak) Slats are recommended in all TermiSensor In-Ground and Concrete Monitor Cap configurations.

6 x Slats are used and held in place by the protruding fingers on the underside of the Universal Diaphragm. These slats enhance the detection speed of all intrusions, while in particular they are highly beneficial when less aggressive termite species are present.

Slats and Universal Diaphragm



Slats fitted to Universal Diaphragm



## 7. CARING FOR THE SYSTEM

---

Caring for the TermiSensor system is straight forward.

There is nothing to do once the system has been installed, however:

- Avoid interfering with the termite monitoring stations
- Do not remove lids, covers or caps
- Do not remove the sensors from their mounting positions.
- Ensure the Gateway remains powered and connected to the internet.

If a TermiSensor has been disturbed or damaged, which may happen from time to time the homeowner should contact the Pest Management Company for advice.

TermiSensors log and report movement, temperature, and termite activity as part of their daily updates. This information allows technicians to understand the system status more readily.

When the system detects termite activity, the Pest Management Provider will receive notification and in turn advise the owner and schedule a service.

**NOTE:** Advise the owner/tenant not to disturb the termite monitors during this interim period. Any disturbance will impact the effectiveness of the treatment.

The Pesense Gateway must remain powered and always connected to the internet... “connect and forget”. The amount of Data used by the Gateway is very small and is typically equivalent to a single email each day.

## 8. TROUBLESHOOTING

---

### **Gateway**

Check Gateway Operation.

- 1- View LEDs on front panel during power up.
- 2- Verify Power LED is on
- 3- Verify “WiFi” LED appears after 40 seconds and remains on.
- 4- Check Pesense WiFi is identified on your android WiFi list.
- 5- Check you can join WiFi?
- 6- Verify Internet cable is connected to the Internet Modem or Router.
- 7- Do you have Internet access?
- 8- Try alternative port in Modem?
- 9- Replace modem.

### **TermiSensor**

Check TermiSensor Operation.

1. Confirm polarity of Battery
2. Replace battery
3. Press the “Wakeup” button:
  - Dose the Sensor LED Flash?
  - Does the Gateway Sensor Communication LED Flash?
4. Connect Pesense App to Gateway
5. Press the wakeup button again and observe the latest data table.  
Is there any communication?

## 9. SPECIFICATION

---

### Gateway

Power Supply CE, UL Listed	9~12VDC
Current Typical:	<100ma
Communications System:	WiFi
	LoRa
	RJ45 Internet TCIP
Gateway to TermiSensor:	=/<75m
Dimensions:	85 x 135 x 40mm (LxWxH)
Regulatory Certifications:	RCM, CE and FCC

### TermiSensor

Power:	3 VDC
Battery:	CR2 x 2
Communication System:	LoRa Platform
Dimensions:	75 x 24 mm (Dia x H)
Regulatory Certifications:	RCM, CE and FCC