

TDS-II PROFESSIONAL



**TERMITE AND BED BUG
DETECTOR**

OPERATOR'S MANUAL

The **TDS-II** uses infrared optics with a lifetime sensor to create a portable system that will detect the extremely small amounts of gases put off by termites and bed bugs. Its superior combination of sensitivity, speed, flexibility and portability provides a highly accurate detection capability for both dry-wood and subterranean termites as well as bed bugs.

Termite detection and isolation of as few as 2 or 3 termites to full colonies is achieved and as few as one bed bug may be detected with the unit in the Turbo mode. The TDS-II operates on a rechargeable lithium ion polymer battery that gives the user over 8 hours of use before recharging. When charging is needed both an AC wall charger and a DC vehicle charger is provided for user's convenience.

Three levels of sensitivity are provided to aid the user in isolation of small and large concentrations of termites. The fourth setting, the TURBO setting, is super sensitive and is recommended for the detection of Bed Bugs. Since the TDS-II is self calibrating, no special set up is required. The detector is ready for use within 30 seconds after being turned on. A standard 9 inch wand is used to test into suspected areas, but a needle probe extension tip and a flexible wand extension are provided to assist testing in suspected areas that are difficult to reach.

Specially designed disposable filters are used in the wand or probe to keep out foreign material and water. Additional features provided to the user are a convenient audio MUTE button to minimize noises in testing area when desired, and a PEAK button to capture the high point of a signal upon detection to provide the user an indication of strength of the detected signal.



OPERATION

ON/OFF Protection

To turn the TDS-II on or off, press and hold the ON/OFF button for one second. This slight delay protects against inadvertently triggering. If you forget to turn it off, the TDS-II will automatically turn itself off after 10 minutes of no activity to conserve battery charge life.

LED Bar Graph Display

The eight segment LED display indicates the degree of detection. As the concentration of termite off gases detected increase so will the number of lit bars on the display.

L/M/H Buttons (Sensitivity)

Set the sensitivity level by pressing the L/M/H button. The desired sensitivity level will be indicated by its respective LED. The TDS-II starts in medium (M) level, which is a sufficient sensitivity for normal colonies of termites commonly found in the subterranean species. The high sensitivity (H) is reserved for more difficult detections of small swarms such as dry-wood termites. The low (L) sensitivity is used when large concentrations are present and the user is trying to isolate to specific areas of a concentration. The TURBO super high sensitivity is recommended when testing for bed bugs.

MUTE Button

Pressing the MUTE button toggles the audio of the TDS-II off and on.

PEAK Button

The PEAK button holds the highest LED lit during a detection event. Press PEAK again to toggle this function on and off. Turning the PEAK function off will clear the peak bar graph LED that is lit. The PEAK LED will light when this function is on. The peak button is also used to put the unit into TURBO mode. Pressing this button 4 times rapidly sets the TURBO mode and the LED lowest green light will appear to shimmer.

LOW-BATT LED

The LOW-BATT LED will become lit when there is approximately one hour left on the current battery charge. During the charging process, this LED will blink off and on until the battery is fully charged; at that time the LED will turn off and it will signal a fully charged unit.

(NOTE: If desired the TDS-II will fully operate when the battery is being charged)

TERMITE DETECTION PROCEDURE

The TDS-II electronics warm-up and self calibration takes 30 seconds. Completion of this start up process is signaled by a rapid flashing of the bar graph LEDs followed by a continuous 1 second beep. The unit will default to medium (M) sensitivity at start up. The user may chose to change the sensitivity, MUTE or PEAK functions at this time or at any time during operation and the change will take place instantaneously.

The TDS-II will equalize to its current background (or ambient) condition. So even with an elevation of termites' gases in the surrounding air it will only detect on areas that exceed this current background. This will enable the user to detect the location of large concentrations and not trigger on false signals.

Detection of Termites in Closed Spaces

Often large concentrations of termites can be found in wall spaces. Here the gases they produce will be largely trapped and creating a different atmosphere than the surrounding area. This is the easiest type of termite infestation to detect. Since the gases given off are heavier than air they will tend to sink to the bottom of the enclosed area. If this area is wall space detection may be triggered by checking along base boards or in electrical outlet boxes. Move the TDS-II probe tip slowly along a suspected area (2-3 inches per second). If a signal occurs go back to the area and check closer. Subsequent positive signals at suspected area strongly suggests the presents of termites.

If closer inspection of the area is warranted, a small 1/8 - 5/32 inch hole can be drilled into the wall space for inspection. Using the needle nose probe insert it in the hole for inspection of any termite gases. If termites are detected an audio signal will sound and the graph bar LEDs will be lit up. The higher the concentration the more LEDs lit and the longer the duration of the audio signal and lights.

Detection of Termites in Open Areas

Termites are often found in small concentrations in attic rafters, door or door frames, and wood furniture. Telltale signs are seen by suspicious holes or droppings. Location of the presence of termites in these areas can be done with the TDS-II. Use the TDS-II termite detector to probe these suspicious areas with the needle probe. Termites off gases will escape from there active channels and will be detectable. In a suspected area a small hole 1/8 - 5/32 inch may be drilled to attempt to bisect an active chamber. Follow this by inserting the needle probe to look for a signal. If present both an audio signal and graph bar LEDs will light.

BED BUG DETECTION PROCEDURE

Bed Bugs also produce large amounts of Carbon Dioxide from their digestion of blood.

To begin testing for bed bugs, your TDS-II unit needs to be set in the super sensitive TURBO mode. To put the TDS-II unit into this mode of operation, first turn the unit on and allow it to warm up and be ready for detection. Once it is ready quickly press the PEAK button four times. The TURBO mode is indicated when the lowest LED green light appears to shimmer. Now the unit is in the highest sensitivity setting. This setting is super sensitive and will easily alert to the small amount of CO₂ produced by the bed bugs.

To test for bed bugs move the probe slowly near the areas being checked for bed bugs. (Do not block the probe tip) If a bed bug is hiding within six inches of the probe the TDS-II will indicate its presence. The audible alarm and lights will be triggered as the air pump draws in an air sample. Once all the air in the bed bugs hiding place is drawn through the sensors the alarm will stop. It will take 5-10 minutes for the bed bugs to produce enough gases to set the alarm off again. When the TDS-II indicates a bed bug, further investigation should be performed. We recommend the method used by most bed bug dog handlers. Mark the spot where the alarm sounded and continue checking other areas. Come back to the spot where the alarm sounded in a few minutes and if the alarm sounds again this strongly indicates a bed bug presence.

If a bed bug is out in the open air its gases will dissipate too rapidly for the TDS-II to detect them. If a bed bug is in the open it can be seen and does not need detecting.

A bed bug must be hiding where its emissions can build up for about 5-10 minutes to be detected.

TDS-II will help you determine where to target your treatment and also help determine if your treatment is successful.

In the high sensitivity mode the unit will react to a pocket of as few as one to three hidden bed bugs. The high sensitivity setting may give some false alarms due to the operators breathing and the probe extension should be used in the TURBO mode to keep the probe away from the operator's exhaled breath.

POST TREATMENT USE

The TDS-II is an excellent tool to aid the user in verification of a successful treatment of an infected area. After the prescribed timeframe for a successful eradication of the termites or bed bugs the TDS-II can be used to determine if it was completely successful. Although there may still be the tell tale signs infestation, if no live termites or bed bugs are present there will be no detection signal. If the TDS-II was used for the initial detection, its use for post inspection provides an additional validation to the user that the infestation is gone.

TDS-II USE AND CARE

- Although the TDS-II is stable it can be set off by excess turbulent air currents around its nozzle. Due to this, use of the TDS-II outside may lead to mixed results and can result in false signals on the most sensitive levels.
- The TDS-II is a very sensitive instrument that can detect extremely small concentrations of CO₂. User must take care in trying to minimize a stable atmosphere around the area of testing to avoid false signals.
- The TDS-II has several safeguards built in to protect it from infusion of debris and water, but it is extremely important that the termite detector never be run without an approved filter installed in the nozzle or needle probe or it could damage the unit. Eight (8) filters are provided with the TDS-II and additional may be purchased.

Filter Maintenance and Replacement

The filter found in the nozzle is a throw-away filter that traps debris and water from getting into the TDS-II instrument. Replacement of the filter should be done after extensive use. A dirty filter will decrease the sensitivity and responsiveness of the TDS-II.

Needle Probe Maintenance

The needle probe has been designed to be easily cleaned and also ease of filter replacement. The needle stem can be unscrewed from its base. By use of a wire (like a paper clip), any debris can be dislodged from the stem. If the filter is desired to be replaced, the same wire may be used to push out the old filter. A new filter must replace the old one. Running the unit without an approved filter may damage the unit.

Battery Charging

The battery supplied with the TDS-II is a rechargeable lithium ion polymer battery that will run continuously for 8 eight hours before a charge is needed. Recharging to a full state requires about 3 hours. Dispose of old batteries properly and never in a fire.

SPECIFICATIONS

Sensing element: Enhanced infrared photo optics-sensor never needs replacing and is good for the life of the TDS-II.

Sensitivity:

- HIGH (dry) - small concentrations of dry- wood or subterranean termites.
- MED (subs) - small concentrations of subterranean or medium to large concentrations of dry-wood termites.
- LOW (major) - large concentrations of either subterranean or dry-wood termites.
- TURBO (super sensitive) - Used for bed bug detection

Warm up time: 30 seconds

Response time: less than 1 second

Battery charge life: 8 hours continuous

Auto off: 10 minutes of inactivity

Battery: 3.7V, 1800 mAh rechargeable Li-ion polymer (Compatible models include - Fujifim NP120, Pentax DLi7, or Richoh DB43)

Re-charge time: approximately 3 hours to full charge

Operating environment: 32⁰F (0⁰C) to 122⁰F (40⁰C) at 75 %RH

Storage environment: <80% RH for detector and battery; storage temperatures are recommended to be the same as operating temperatures to maximize battery life.

Weight: 14.4 oz (.9 lb)

REPLACEMENT PARTS AND ACCESSORIES

<u>Part Number</u>	<u>Product/Description</u>
600-001	TDS-II Wand Extension
600-002	TDS-II Needle Probe
600-003	TDS-II Vehicle Charger
600-004	TDS-II Wall Charger
600-005	TDS-II Filters & O-Ring Gaskets (Pkg of 10 each)
600-007	TDS-II 3.7V 1800 mAh Li-ion Battery

TROUBLESHOOTING GUIDE

Problem	Cause	Solution
1. Detector will not detect termites	<ul style="list-style-type: none">- Detector not through start up cycle- Termites not present in area being inspected- Nozzle filter has become clogged.	<ul style="list-style-type: none">- Wait until start up complete- Try other suspected areas- move wand closer and slower to suspected area- replace filter and/or clean probe
2. TDS-II will not turn on	<ul style="list-style-type: none">- ON/OFF button not held for 1 second to turn on- Battery is discharged or dead	<ul style="list-style-type: none">- Hold ON/OFF button down for 1 second- Recharge battery. If it will not hold charge replace battery
3. The TDS-II will trigger inadvertently	<ul style="list-style-type: none">- Turbulent surrounding air can cause detector to trigger- Large	<ul style="list-style-type: none">- Attempt to avoid areas and activity around the test area that would cause air flow

	concentrations of termites can cause the unit to trigger close to inspection area	- Run detector at a less sensitive setting
Problem	Cause	Solution
4. The TDS-II does not detect again at the same spot	- On strong detected signals the TDS-II needs about 3 -5 seconds to settle down	- Pull TDS-II away from the detected area for 3 -5 seconds before repeating to that location again
5. The TDS-II appears to be taking longer to detect than	- The wand tip or needle probe filter has become constricted due to moisture or dirt	- Replace the filter with a new one and discard the old one. -Check and clean needle probe

previously		
6. The TDS-II appears to have lost some of its sensitivity	- The wand tip or needle probe filter has become constricted due to moisture or dirt	- Replace the filter with a new one and discard the old one. -Check and clean needle probe

For a more detailed and up to date list of questions and answers as to the proper use of the TDS-II visit our site at www.termitedetector.com

WARRANTY AND SERVICE

The TDS-II is warranted to the original purchaser against defects in material or workmanship for a period of one (1) year from the date of purchase by Termite Detection Systems, Inc.(TDS)

During this warranty period, TDS will at its option, replace or repair the defective unit. The warranty does not apply to defect resulting from abuse, neglect, accident, unauthorized repair, alteration, or unreasonable use of the instrument.

Any implied warranty arising out of the sale of this product, including but not limited to implied warranties of merchantability and fitness for purpose are limited to the above. TDS shall not be liable for incidental or consequential damages.

Any defective TDS-II should be returned to TDS for warranty service along with original proof of purchase and return material authorization (RMA) number. An RMA may be obtained by contacting TDS at the number below. Repair or replacement of the unit is at the sole discretion of TDS.

For out of warranty service, obtain an RMA number and send unit to the following address:

Termite detection systems, Inc.

333 N.E. 46th Street, Oak Island, N.C. 28465

Phone: (910) 933-4218

Fax: (910) 933-4219

Email: sales@termitedetector.com

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Each TDS-II Contains:

- TDS-II Infrared Termite and Bed Bug Detector
- 9" Flexible Extension Wand and 5" Needle Probe
- A/C Wall Charger & 12V Car Charger
- Disposable Replacement Filters and "O" Rings
- Operator's Manual