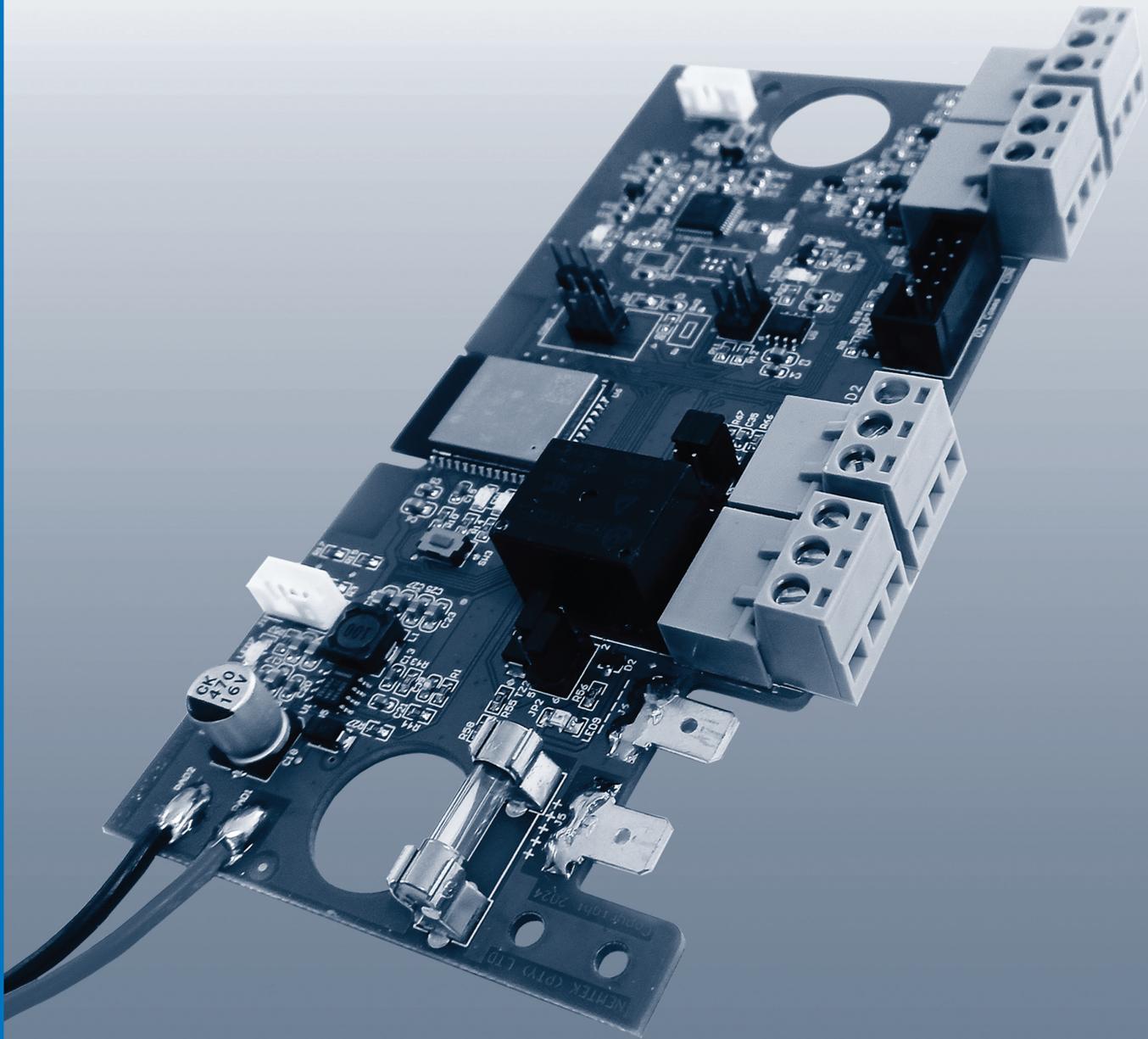


NEMTEK Connect Device Gateway WiFi

Instruction Manual



The Nemtek Device Gateway WiFi PC Board models included in this manual:

- **IOT24032JM** Onboard PCB Antenna
- **IOT24032JM-U** External Antenna (u.fl to SMA)

Foreword

Thank you for choosing our product. The **NEMTEK Connect Device Gateway WiFi** is designed and manufactured to provide many years of reliable use, if installed and maintained correctly. The guidelines provided in this manual will assist you with the basic operation and maintenance of your unit. Currently this product is designed and manufactured in South Africa for South African and international markets. More information on our products and general information is available on our website at: <http://www.nemtek.com>

The **NEMTEK Connect Device Gateway WiFi** provides connectivity to your supported NEMTEK devices by allowing for connectivity to the **NEMTEK Connect** platform. Together with the **NEMTEK Connect App**, you can remotely monitor and control your NEMTEK devices, as well as receive notifications and alerts.

Supported Nemtek Devices

The **NEMTEK Connect WDGW** (also referred to as the **NEMTEK Connect WGDG**) works with the following Nemtek products:

- **Wizord 2i***
- **Wizord 4i***
- **Merlin 4**
- **Merlin Stealth M15S, M18S, M25S, M28S**
- **Druid D13, 15, 18**
- **Druid D114**
- **Druid D25, D28****
- **Agri150, Agri200**

Note: This list may be changed without prior notice.

Please see the hardware installation section for more details on how to set up your specific device.

* For any Wizord energizer manufactured before 2019, a hardware update may be required.

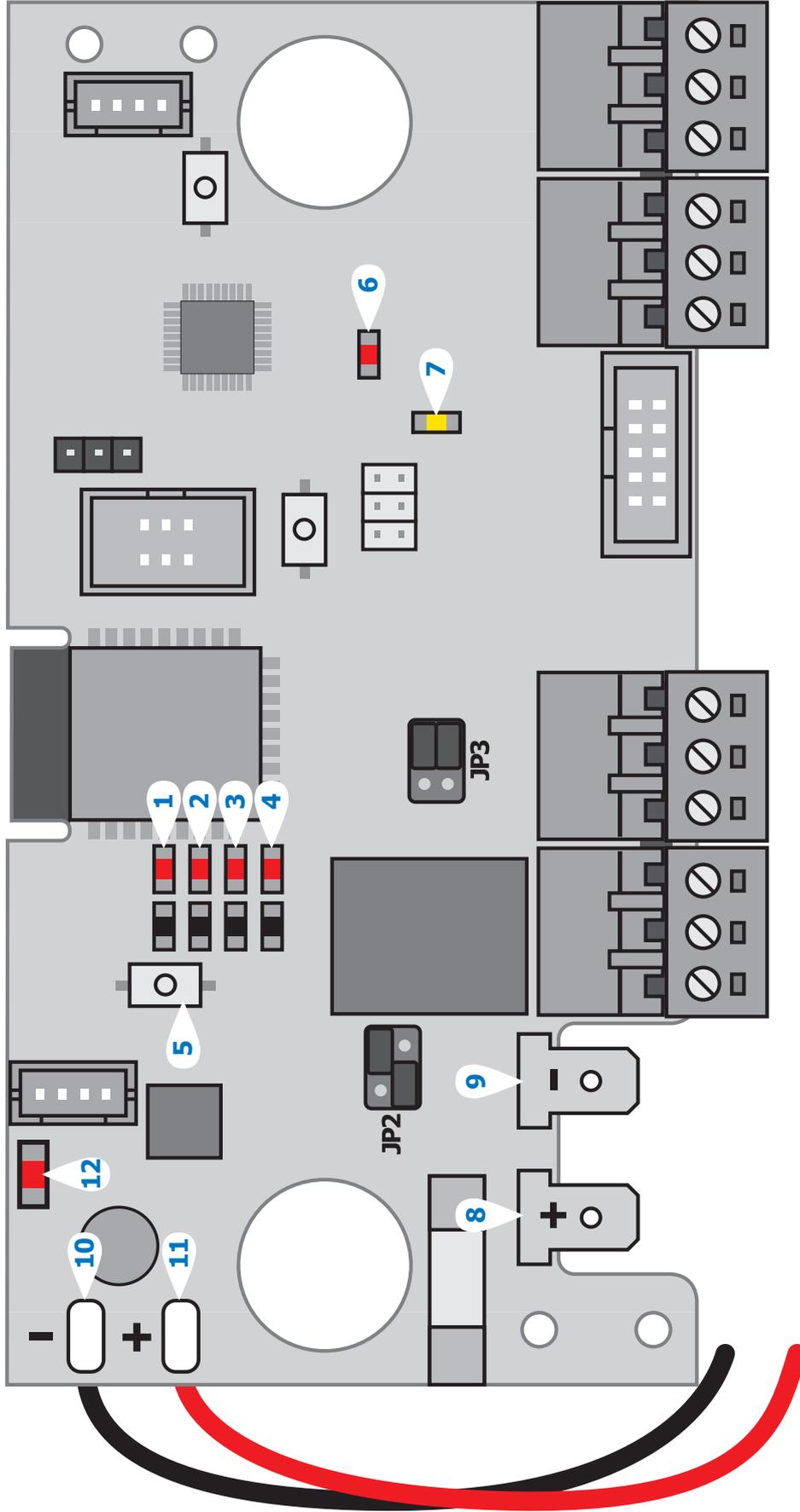
** For Druid D25, D28 with firmware January 29, 2021 or later.

Hardware Overview

The **NEMTEK Connect WDGW** features:

- **WiFi 2.4GHz Modem**
- **D2x comms support for Nemtek Druid D2x range**
- **Databus comms support for Nemtek Druid D2X and Agri 150, 200 range**
- **Keypad bus support for Nemtek Druid D1x, Merlin and Merlin Stealth ranges**
- **IO support for Nemtek Wizord Range**

Board Connections



- | | | |
|-----------------------------------|---------------------------------|-----------------------------|
| 1. Excellent signal LED indicator | 5. User button | 9. Negative Spade Connector |
| 2. Good signal LED indicator | 6. Activity LED | 10. Negative Battery Lead |
| 3. Fair signal LED indicator | 7. Network status LED indicator | 11. Positive Battery Lead |
| 4. Weak signal LED indicator | 8. Positive Spade Connector | 12. Network Power LED |

Hardware Installation

- The **NEMTEK Connect WDGW** has been designed to be installed onto the battery brace inside of the enclosure of a supported NEMTEK energizer.

Please Note: For Agri energizers the WDGW board is placed on mounts at the top of the Agri casing that are behind the main Agri PC board. The main board has to be removed before the WGDW board can be installed.

- To install the WDGW, unplug the energizer from mains and disconnect the energizer's battery leads from the battery. You may need to remove the battery brace to get better access to the battery terminals to remove and plug in the cables onto the battery terminals.
- For Wizard, Keypad, and Druid energizers, plug the energizer battery leads directly into the **Battery Power Out** terminals (8, 9) of the WDGW board. Be careful to ensure you connect the correct polarity wires to the correct terminal. Make sure the terminal connectors are plugged in completely and firmly onto the battery terminals on the board.

Please Note: For Agri energizers the WDGW power leads are connected at the top of the Agri main PC board.

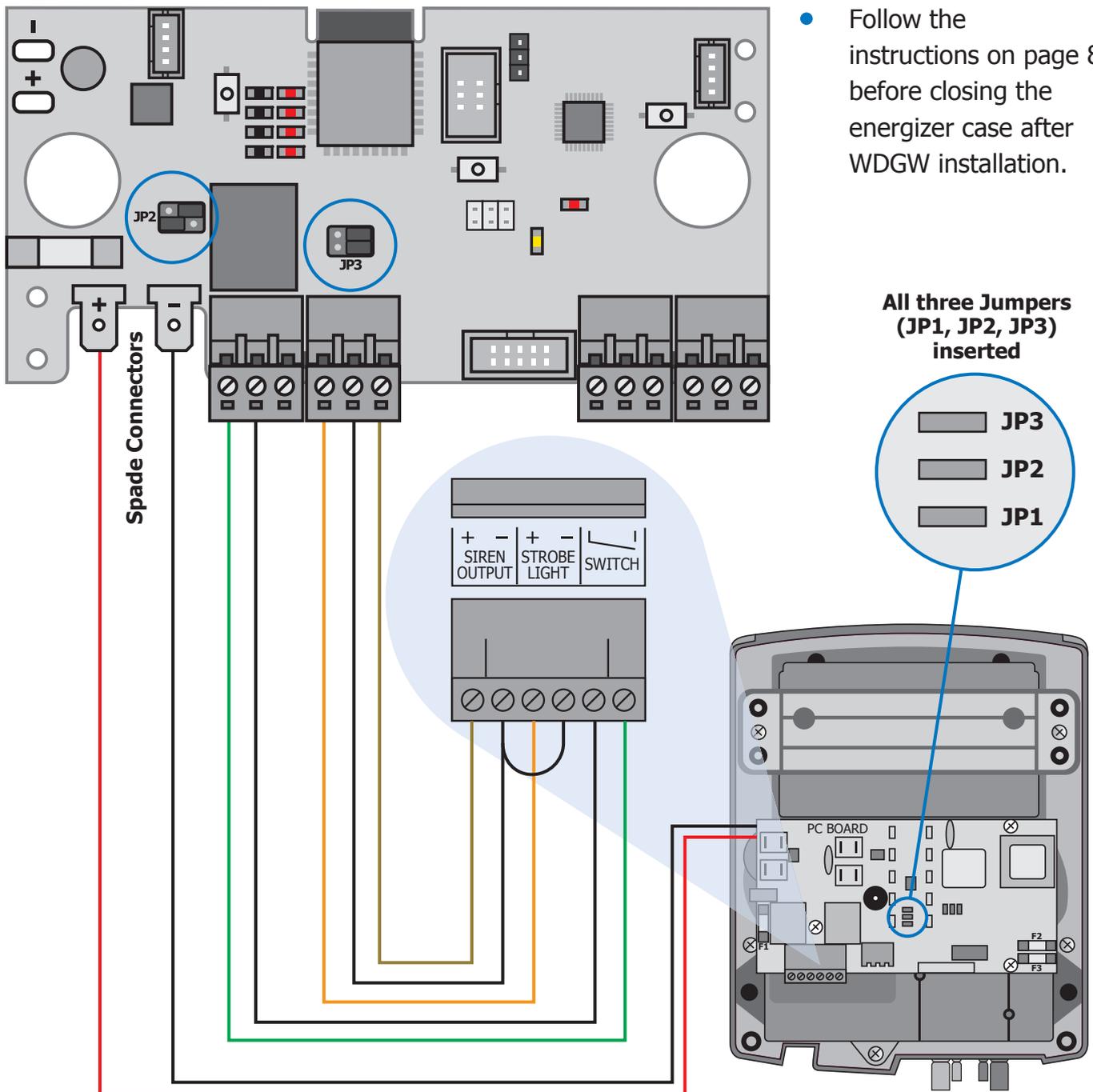
- Connect the furthest away battery wire to the battery. This is usually the negative terminal and wire, unless the battery is orientated differently. Take care to ensure you connect the correct polarity wires to the correct battery terminals. Do not connect the second wire yet, as this will apply power to both the WDGW and energizer.
- Make sure the battery is firmly in place and screw the battery brace back over the battery. Be sure that no wires or obstacles are between the battery brace and the battery and that the battery brace goes over the battery without any force, otherwise this may cause a crack in the battery which could cause a leak of battery acid.
- Align and screw in the WDGW board on the battery brace. Two screws are supplied for this purpose.
- Connect up the WDGW to your energizer as is necessary (see following section for details for each of the supported Nemtek products).
- Once everything is wired up and setup, plug in the second lead to the battery to power up the system. Screw the lid of the enclosure back into place and plug the energizer back into the mains. Reconnect the mains supply.

Connecting to Supported Nemtek Products

Connecting to a Wizord Energizer

Both Nemtek Wizord 2i and Wizord 4i Energizers are supported by the **NEMTEK Connect WDGW**. Update the Wizord energizer's jumper configuration. Make sure all the jumpers **JP1**, **JP2** and **JP3** are all inserted on the Wizord PC board and set **JP2** and **JP3** on the **NEMTEK Connect WDGW** as indicated in the diagram below. In this mode, the state of the Wizord energizer is controlled by the **Switch Input**, the state of the energizer is indicated on the **Strobe Output** and the alarm is indicated on the **Alarm Output**.

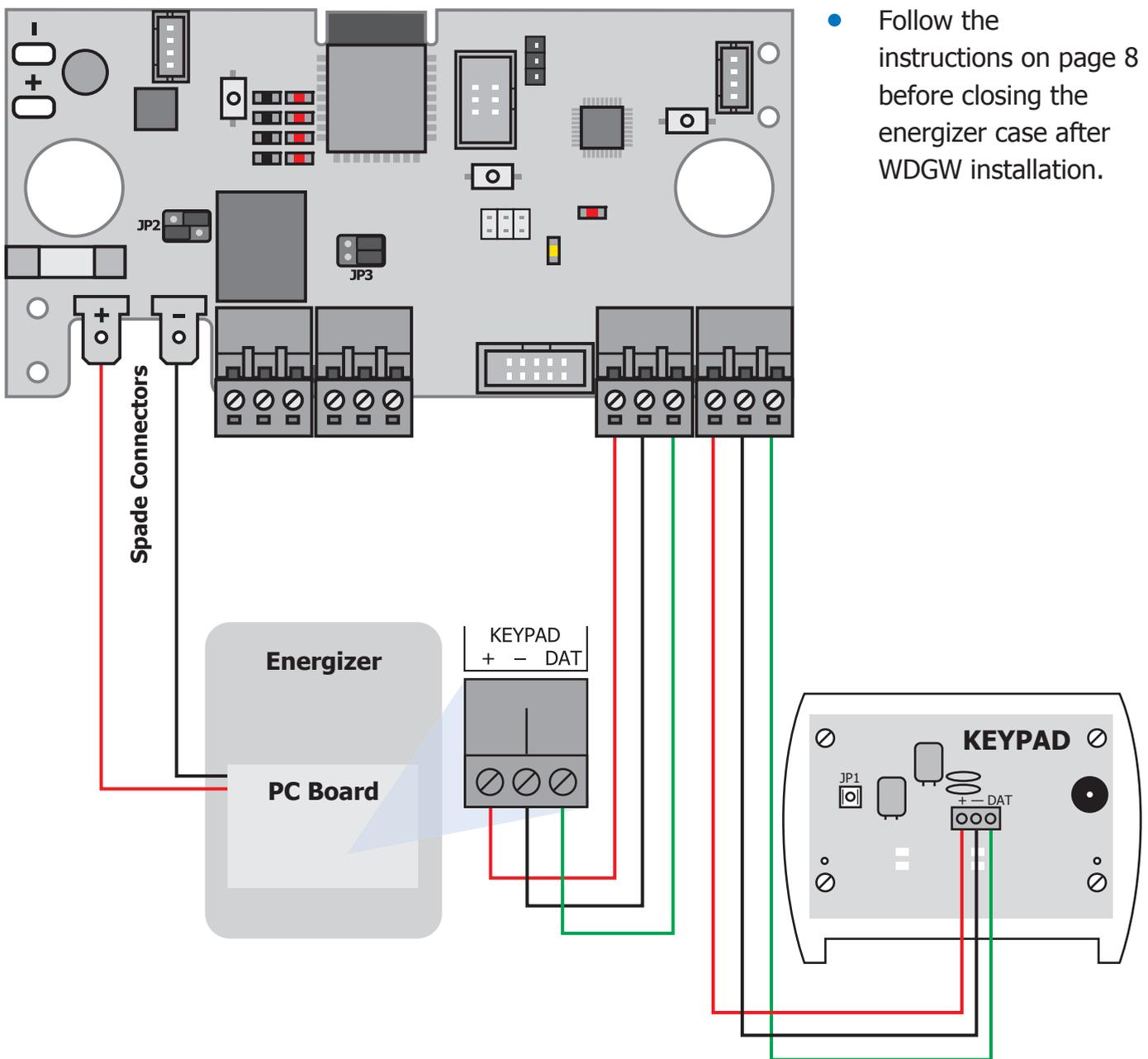
- Follow the instructions on page 8 before closing the energizer case after WDGW installation.



Connecting to Supported Nemtek Products

Connecting to a Keypad Energizer

- The following NEMTEK energizers are supported by the **NEMTEK Connect WDGW** over the Keypad Bus: Merlin 4; Merlin Stealth M15S, M18S, M25S, M28S; Druid 13, 15, 18, 114
- To setup the keypad interface, connect a comms cable to the keypad connector of the energizer to the **Keypad IN** connector of the WDGW. Next connect any external keypads, if you have any, to the **Keypad OUT** connector on the WDGW.
- When using the WDGW with the keypad bus connection, you can still use the NEMTEK keypads to monitor and control your energizer.



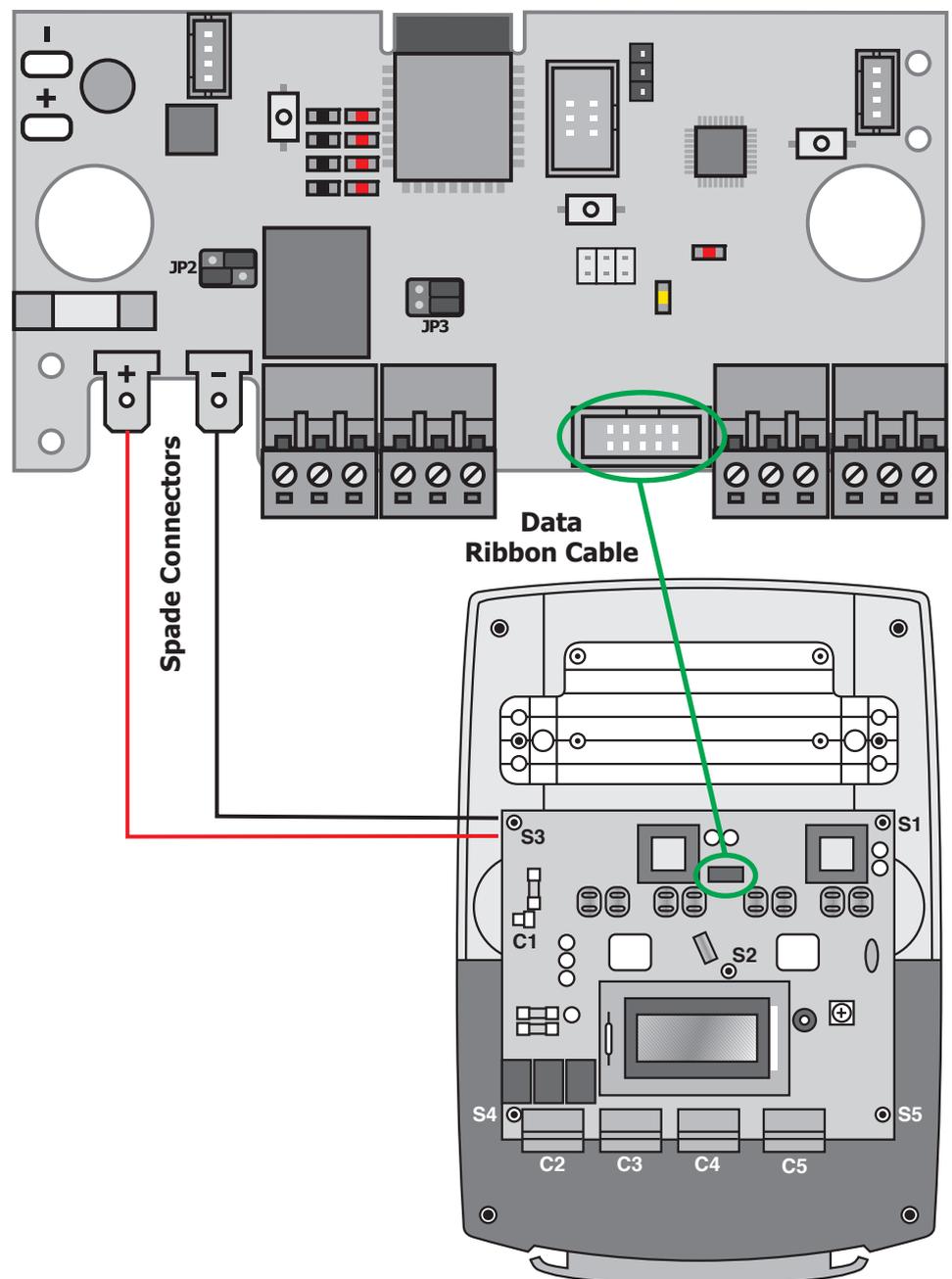
Connecting to Supported Nemtek Products

Connecting to a Druid D2x Energizer

- The Druid D2x (D25 and D28) is connected to the **NEMTEK Connect WDGW** via the data ribbon cable included.
- Connect the ribbon to the relevant connectors on the WDGW and the energizer as shown below.
- Set the energizer up to network address number 1 using the keypad. This is done by entering programming mode (**INSTALLER_PIN*0#**) and the address change command (**5101*#**), then exit programming mode (***#**).

This can also be done via the **WDGW Web Interface**, see **Set Energizer Address** on page 15.

- Follow the instructions on page 8 before closing the energizer case after WDGW installation.



Connecting to Supported Nemtek Products

Connecting to an AgriXXX Energizer

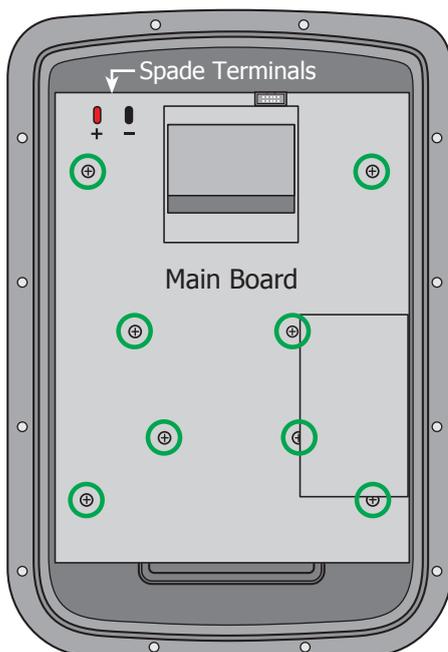
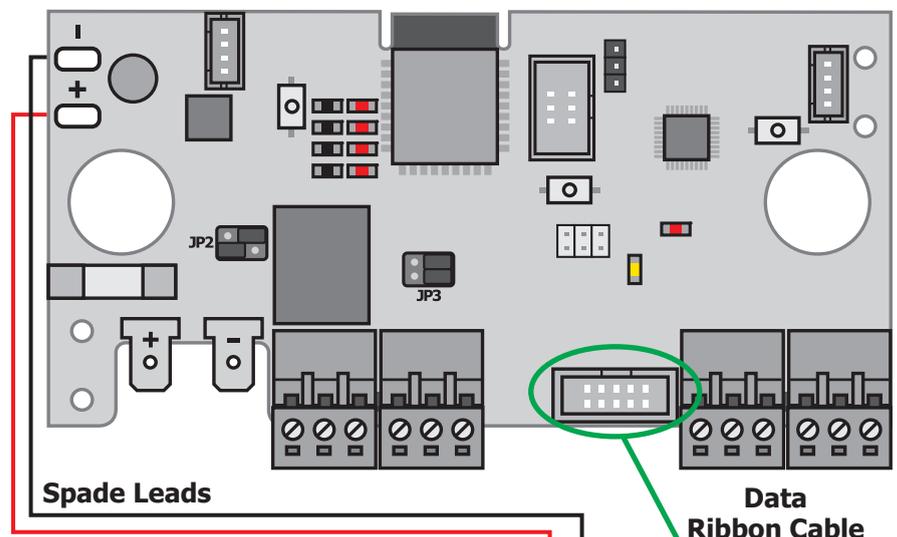


WARNING: High Risk of Electrocution. The AgriXXX Energizer series delivers high energy output, which poses a significant risk of serious injury or death from electrocution, even when the unit is powered off. Only licensed, trained, and certified professionals should handle the installation, maintenance, or adjustment of this equipment. For further assistance or to arrange for professional installation, please contact your local Nemtek branch.

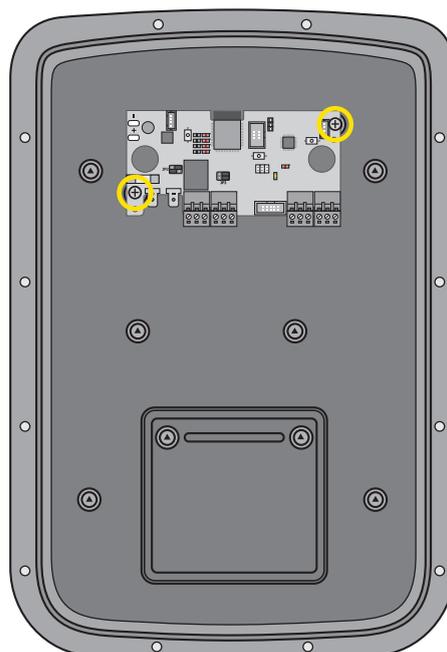
- Using an external 12V power source, configure the WDGW as per the instructions on page 8.
- Open the energizer enclosure by unscrewing the 8 screws on the rear of the enclosure.
- The AgriXXX (150 and 200) is connected to the **NEMTEK Connect WDGW** via the data ribbon cable included.
- Connect the ribbon cable to the relevant connectors on the WDGW and the energizer as shown below. The WDGW board is placed on mounts at the top of the Agri casing that are behind the main Agri PC board.

The main board has to be removed before the WGDW board can be installed.

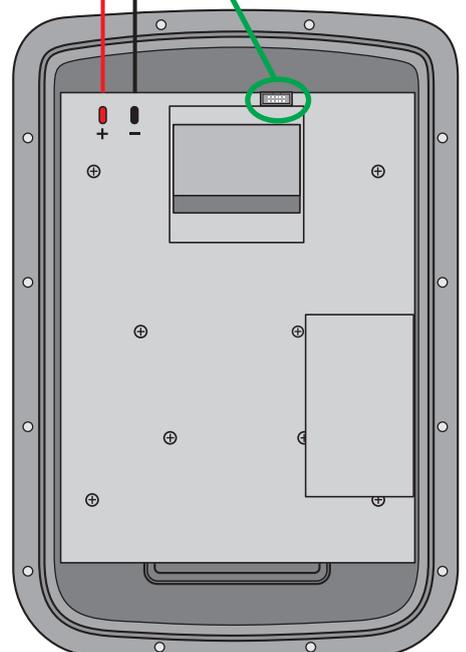
- Reinstall the main PC board and close the energizer enclosure. Take care to ensure the spade terminals mate up correctly with the transformer under the main PC board.



Remove 8 screws to take out the main board.



Mount the WDGW board.



Remount the main board.

Network Status and Web Interface

Network Status LED4

The LEDs are on a 1 second interval per blink repeated every 20 seconds.

- One blink: Power on
- Two blinks: In Access Point Mode and ready for configuration
- Three blinks: Searching for an access point to connect too
- Four blinks: Connected to the access point
- Five blinks: IP Address acquired / set
- Six blinks: Connected to the server
- Rapid blinking: Indicates checking for / downloading an update

Signal Strength LED1-4

Once the WDGW has established connection to an access point the signal strength indicators will flash. The flash will occur in conjunction with the fourth flash indicating connection to the access point. Only one of the four LEDs will flash to show the current strength of the signal.

User Button SW3

The User button can be held for 3-5 seconds to put the WDGW into fallback mode and bring up the default access point. To exit fallback mode, hold the button again for 3-5 seconds. The Excellent Signal LED indicator will blink rapidly when switching in and out of fallback mode.

Holding the button for 10 seconds will factory reset the WDGW and delete all current settings. All Signal LEDs and the network status LED will turn on when factory reset starts. There is a 10 second delay before the default access point will broadcast.

Web Interface

In **Access Point Mode** the WDGW can be accessed by connecting to the **NEMTEK-WDGW-XXXXXXXX** WiFi network using the password **12345678**. The web interface can then be accessed at <https://192.168.4.1>

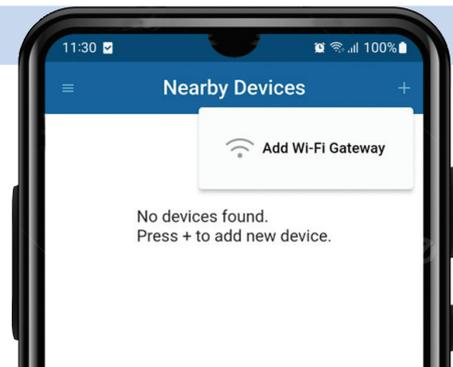
If the WDGW is in **Station Mode** (i.e. already connected to an existing WiFi network) it can be accessed from its assigned IP address.

Note: Some browsers do not use HTTPS by default. Please ensure you are accessing the device from HTTPS and not HTTP.

Quick Start Nemtek Connect

NEMTEK Connect Mobile Application

The WDGW can be configured using the **Nemtek Connect Mobile** application. Click on **Nearby Devices** on the bottom left of the sign in screen. Press the **+** on the top right corner and continue following the on-screen instructions.



Web Interface

- From your device (mobile/laptop/PC) connect to the **NEMTEK-WDGW-XXXXXXXX** WiFi network
- Enter the password for the network as **12345678**
- Open the following link in the browser <https://192.168.4.1>
- Once the WDGW page loads, enter a username and password for your device
- Click apply
- The WDGW will take you to the login screen after successfully adding a username and password
- On the login screen enter the username and password you set for the WDGW
- Click login
- The WDGW will take you to the settings page on successful login
- Under **Connection Mode** select **Nemtek Connect**
- Click apply
- Under **Station Settings** enter the network name (SSID) and password you want the WDGW to connect to.
- Click apply
- Scroll to the bottom of the page and click reboot
- A pop up will appear: **Please confirm all your settings are correct**
- Click **OK** on the popup once you have confirmed all your settings are correct
- Once the WDGW has rebooted, please confirm that there are 5 flashes from the **Network Status LED**

Notes:

1. Please select **Automatically Reconnect / Always Connect** when connecting to the network. Your device may drop the connection otherwise due to you not having internet access.
2. For best performance an RSSI signal of -70dB or lower should be targeted. Excellent to Fair signal on the LED indicators (LED1-3 on the diagram on page 2).

Login Setup Page

First Login

On first access or after a factory reset you will be prompted to set the username and password for the WDGW. The minimum length is 5 and maximum length 63 characters for both the username and password.

Please Set Your User Login Credentials

Username

 1

Confirm Username

 2

Password

 3

Confirm Password

 4

5

1. Set the login username for the WDGW
2. Confirm the username for the WDGW
3. Set the login password for the WDGW
4. Confirm the password for the WDGW
5. Apply the new username and password for the WDGW

Login Page

When the WDGW is accessed via the web interface you will be prompted to login. On successful login you will be taken to the settings page.

A login session is valid for 30 minutes and only for a single device and application. Any successful login from another device or application will revoke the current session.

Login

Username 1

Password 2

3

1. Enter username for the WDGW
2. Enter password for the WDGW
3. Login to the WDGW

Settings Page

All settings are applied immediately when configuring the WDGW. For the settings to take effect the WDGW must first be rebooted. Any incorrect input can be corrected by putting the WDGW into access point fallback mode or by doing a factory reset.

Device Information

Device Information

ID 1
D8132AC38D8C

Version 2
3.0.1.12

Hash 3
29456D101B988F81644B59210292E00A81C45C303939F356D02400A2

1. Device Identification number
2. Version the device is running
3. Version Identification number

Note: Version and hash values are not displayed in access point mode.

Connection Mode: Nemtek Connect

Settings

Connection Mode

Connection Settings

- Nemlink
- Nemtek Connect 1

Apply 2

1. Select Nemtek Connect mode
2. Apply Setting

Configure the WDGW to be used with the Nemtek Connect Mobile Application.

Settings Page

Connection Mode: NemLink

Settings

Connection Mode

Connection Settings

- Nemlink **1**
 Nemtek Connect

Serial Settings

Baud Rate

19200 **2**

Data Bits

8 **3**

Stop Bits

1 **4**

Parity Bits

None **5**

Connection Socket

- TCP
 UDP **6**

Connection Type

- Server **7**
 Client

Connection Port

53012 **8**

Apply **9**

Configure the WDGW to be used as a Wireless NemLink.

1. Select NemLink mode
2. Select the UART baud rate
3. Select UART data bits
4. Select the number of UART stop bits
5. Select the UART parity bits
6. Select the socket type
7. Select server or client socket type
8. Select the socket access port
9. Apply Setting

Default setting works with both Druid 2 Zone and Agri energizers.

Settings Page

Login Settings

Change the username and password of the WDGW. This setting will apply immediately and will maintain the current login session.

Login Settings

Username 1

Confirm Username 2

Password 3

Confirm Password 4

5

1. Set the login username for the WDGW
2. Confirm the username for the WDGW
3. Set the login password for the WDGW
4. Confirm the password for the WDGW
5. Apply the new username and password for the WDGW

Station Settings

A network can be selected by either scanning for a network or by manually entering your network SSID and password.

Station Settings

1

2

SSID 3

Password 4

Confirm Password 5

6

1. Start a scan for nearby WiFi networks
2. WiFi network scan results
3. Network Name (SSID), the WDGW should connect to
4. Password for the network
5. Confirm password
6. Apply network settings

Click Scan (2) will change to Scan Ready once a network scan is complete and a network SSID can be selected from the found list.

Settings Page

IPv4 Settings: DHCP

Configure the WDGW to obtain its network addresses automatically.

IPv4 Settings

Use DHCP: 1

2

1. Tick to use DHCP mode
2. Apply Setting

Note: Your network must support automatically assigning network addresses.

IPv4 Settings: Static IP

In the event your network does not support automatically assigning IP address or you wish the WDGW to have a static address, the WDGW can be assigned an IPv4 address, Subnet Mask, default Gateway and DNS server.

IPv4 Settings

Use DHCP: 1

IP
10 . 0 . 0 . 104 2

Subnet Mask
255 . 255 . 255 . 0 3

Gateway
10 . 0 . 0 . 1 4

DNS
10 . 0 . 0 . 1 5

6

1. Untick Use DHCP
2. Static IP address
3. Subnet mask
4. Gateway IP address
5. Primary DNS server
6. Apply Setting

Settings Page

Set Energizer Address

Set the address of a defaulted energizer.

Set Energizer Address

Please refer to your energizer manual first

Energizer:

Druid

New Address:

1

1. Select Energizer type.
2. Set Energizer address.
3. Apply Setting.

Notes: The WDGW only supports addresses from 1-10 in Nemtek Connect mode.

For the best results use address 1 in Nemtek Connect mode.

Both Druid 2 Zone and Agri energizers are supported.

System

Reboot (1) will restart the gateway and apply all settings that have been configured.

1. Reboot the WDGW
2. Factory reset WDGW

Notes: Factory reset will delete all configurations and reboot the WDGW.

In both cases you will be prompted to confirm your settings before applying new ones.

Errors

All settings will produce an error code after clicking apply. OK means the setting has been accepted, any other error means the setting has been rejected.

Settings

Connection Mode

Connection Settings

Nemlink

Nemtek Connect

OK

1. Error code

GUARANTEE & DISCLAIMER

The NEMTEK Connect Device Gateway WiFi, manufactured by NEMTEK (Pty) Ltd, is guaranteed for a period of two years from date of sale against defects due to faulty workmanship or materials. NEMTEK will, at its discretion, either repair or replace a product that proves to be defective. NEMTEK guarantees that the product, when properly installed and used in line with the specification as determined by NEMTEK from time to time, will execute its function of generating a suitable potential.

NEMTEK (Pty) Ltd does not guarantee that the operation of the product will be uninterrupted and totally error free. Faulty units must be returned to one of the NEMTEK Group outlets. The buyer shall pay all shipping and other charges for the return of the product to NEMTEK or NEMTEK Security Warehouse. Specifications may be altered without prior notification.

LIMITATION OF GUARANTEE

The guarantee does not apply to defects resulting from acts of God, modifications made by the buyer or any third party, misuse, neglect, abuse, accident or mishandling.

EXCLUSIVE REMEDIES

The remedies provided herein are NEMTEK (Pty) Ltd's sole liability and the buyer's sole and exclusive remedies for breach of warranty. NEMTEK shall not be liable for any special, incidental, consequential, direct or indirect damages, whether based on contract, tort, or any other legal theory. The foregoing guarantee is in lieu of any and all other guarantees, whether expressed, implied, or statutory, including but not limited to guarantees of merchantability and suitability for a particular purpose.

COMPANY PROFILE

The NEMTEK Group of Companies manufacture and distribute intelligent electronic agricultural fencing systems, security and perimeter control systems and have been involved in the security industry since 1990. We have our own research and development team, designing and manufacturing a full range of globally competitive electric fence energizers and related products. NEMTEK is continually updating its products according to South African and international standards in order to ensure the highest quality products and continuous customer satisfaction.

