FIELDNET

PIVOT WATCH

User Manual

P/N 1615937 Rev D ECN 60974

English – Scan code to Access Manual	French (Français)– Scanner le code pour accéder aux manuels
Portuguese (Português) – Escaneie o código para acessar o manual	Spanish (Español) – Escanear el código para acceder al Manual
Russian (русский)– Отсканируйте код, чтобы получить доступ к руководству	

FIELDNET™
BY LINDSAY

Date	Revision	ECN	Published ECN	Description
06/24/2019	A	36720	36720	New Release
02/02/2021	B	60203	60203	Updates throughout, translations. pages GS-9, GS-10, pages 11,14,16,17,18,19,21,22,23, and 25. Some content has been moved/ re-organized.
11/12/2021	C	60737	60737	p.10 - updated drawing
04/27/2022	D	60974, 60766	60974	p.28 - BG95 parts

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For Further Information including Lindsay Corporation patents
http://www.lindsay.com

It is your and your employers' responsibility to comply with all applicable local and national safety codes and standards, including but not limited to the requirements of the U.S. Occupational Safety and Health Administration (OSHA), the National Fire Protection Association (NFPA) (including but not limited to the NFPA 70: National Electrical Code (NEC) and NFPA 70E), and other appropriate governmental and industry accepted guidelines, codes, and standards in their entireties.

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Safety and Compliance

General Safety

WARNING

Personal Safety: Through out this manual and on all safety signs, the precautionary statements (**"DANGER"**, **"WARNING"**, **"CAUTION"** and **"NOTICE"**) can be found, followed by a hazard description and preventative actions to be taken. These precautions are intended for the personal safety of the operator and those within the vicinity of the machinery. Please take time to read these precautions.

Hazard Severity Panels			
Background Color of Panel	**Contrast Color**	**Meaning/Use**	**Hazard Severity Panel Illustration**
Red	White	Indicates a hazardous situation, that, if not avoided, will result in death or serious injury.	DANGER
Orange	Black	Indicates a hazardous situation, that, if not avoided, could result in death or serious injury.	WARNING
Yellow	Black	Indicates a hazardous situation, that, if not avoided, could result in minor or moderate injury.	CAUTION
Blue	White	Indicates information considered important, but not hazard- related (e.g. messages relating to property damage).	NOTICE

NOTICE

Machine Integrity: Additional precautionary statements (**"ATTENTION"** and **"IMPORTANT"**) are intended for machine integrity and are followed by specific instructions.

ATTENTION: The word **"ATTENTION"** is used to warn the operator of potential machine damage if a certain procedure is not followed.

IMPORTANT: The word **"IMPORTANT"** is used to provide the reader with information necessary to prevent minor machine damage if a certain procedure is not followed.

WARNING: All maintenance and service must be performed by a Lindsay Dealer.

WARNING

Lock Out/Tag Out: Disconnect all sources of energy and lock out machine before doing any maintenance or repairs to the machine. Proper Lock Out procedures will prevent the energy source from starting the machine or allowing parts to move unexpectedly as well as prevent the machinery from being accidentally turned on or restarted. Shut off and Lock Out all sources of potential or kinetic energy. These may include, but are not limited to, electrical, mechanical or hydro energy sources.

Lock Out is a procedure used for placing an actual locking device on the power source, preventing unexpected start up or accidental release of energy. Lock Out is the preferred method of accident prevention.

Tag Out procedure is used when the power can not be disconnected. Tag Out's do not shut down the power source, Tag Out's only provide a warning about the danger of activating the machine.

Never try to operate machinery that is locked out or tagged out. Never attempt to remove these locks or tags on machinery. Doing so will result in injury to personnel working on the machine. Only the initiator of the Lock Out or Tag Out procedure may remove locks and tags.

WARNING

Main Disconnect: The main power disconnect is located at the main service breaker or generator. The disconnect at the panel is not the main disconnect. A fusible service disconnect device must be placed previous to this panel with the fuses sized for the load being supplied and installed in accordance to NEC codes.

It is important to understand the differences between the Pivot Enable switch (if installed), High Voltage On/Off switch and the service breaker On/Off throw switch.

The power company service disconnect provides the ability to turn off or return full service to the equipment from the power company service line. This switch must be turned off and locked out when performing maintenance and repairs on the system.

The High Voltage On/Off provides the ability to turn off or return power to the equipment from the service disconnect. This switch must be turned off and locked out in conjunction with the service disconnect switch. The High Voltage switch only disconnects the power in the control panel, as energy is still coming in from the main power line.

The Pivot Enable switch (if installed) provides power to the system controls. When enabled, the entire system and the controls will power up. When turned off, the controls and system will not be energized. However, there will be power in the panel circuitry. The Pivot Enable switch is **NOT** a disconnect and should not be treated as such.

WARNING

Training: All individuals involved in the installation, operation or maintenance of this equipment must receive and understand training in the safe and proper methods of performing all duties assigned to them at the time of the initial assignment and at least annually thereafter. Safety messages and appropriate response procedures to emergencies or other situations which may arise should be fully understood.

WARNING

Follow Safety Instructions: Carefully read all safety messages in this manual and safety signs on the machinery. Keep safety signs in legible condition. Replace any missing or damaged safety signs.

Learn how to operate the machine and controls properly. Do not allow anyone to operate the machinery without proper instructions.

Keep the machine in proper working condition. Only have the machine serviced by a trained service technician on a routine basis. Unauthorized modifications to the machine may impair the function and/or safety and reduce the life of the machine.

CAUTION

Practice Safe Maintenance: Understand maintenance procedures before doing work.

Always follow proper Lock Out/Tag Out procedures before performing any maintenance.

Never lubricate or service machine while it is moving. Keep hands, feet and loose clothing from power-driven parts. Disengage all power and operator controls to relieve pressure. Allow all heat-generating units to cool.

Tower alignment must be performed by a qualified service technician.

WARNING

Electric Shock: Follow these precautions to prevent serious injury or death.

DO NOT allow moisture to enter the main panel. Moisture can allow voltage to conduct across surfaces, creating a shock potential.

Dangerous voltage potential may be present at lightning arrester. Visually inspect arrester before each operation. If lightning arrester shows signs of impairment, contact a Lindsay Dealer.

WARNING

Electrical Connections: Keep all sparks and flames away from battery, as gases given off by electrolyte are explosive. Avoid sparks by connecting the ground cable last and disconnecting it first.

CAUTION

Weather Conditions: Always be aware of weather conditions (extreme heat/cold, snow, rain, sleet, heavy precipitation and high winds). Schedule work or maintenance only when the weather conditions are mild and dress appropriately for the climate.

CAUTION

Lightning Strikes: Do not attempt to access the system if lightning or thunder have been detected in the area. Wait 30 minutes after the last sighting of lightning or sound of thunder before accessing the system.

WARNING

Inspecting the System Prior to Operation: Always inspect the system before operation. If the system appears impaired, do not operate the machinery and contact a Lindsay Dealer.

CAUTION

Wear Proper PPE: Always wear appropriate (NFPA 70E and OSHA Compliant) Personal Protective Equipment (PPE) for the task being performed. At a MINIMUM, the following are required equipment:

Ear Protection:
Prolonged exposure to loud noise can cause impairment or loss of hearing. Wear a suitable hearing protective device such as earmuffs or earplugs to protect against uncomfortably loud noises.

The A-weighted emission sound pressure level at the pivot point does not exceed 70 dB.

Eye Protection:
Sharp Objects, debris and explosions can cause severe eye damage or blindness. Wear Safety Standard approved protection that fully shields the eyes. Additionally, wear a clear plastic face shield that fully surrounds the face from brow to chin and covers the entire width of the face.

Foot Protection:
Prevent damage from falling or dropped objects on the feet by wearing steel-toe shoes/boots with metatarsal protection.

Head Protection:
Prevent damage from falling or dropped objects on the head by wearing a Class G Hard Hat for head protection.

Gloves
Prevent electrical shock hazards, cuts and burns to the hands by wearing protective rubber gloves-class 0 with leather protector and cloth liner.

CAUTION

Proper Work Platform: Provide a good work/standing platform for personnel to access the machine. Elevated platforms and ladders must have restraints or railings in place before climbing or lifting.

CAUTION

Proper Area Lighting: The owner shall provide area lighting as may be required.

WARNING

Manual Alignment: Failure to follow these instructions and properly operate the Manual Alignment can cause serious structural damage. Before pressing this button, make sure the system's path is unobstructed. Do not press and hold the Manual Alignment button for longer than three seconds. Disengage the Manual Alignment if the system encounters any obstructions, boundaries or shows signs of oscillation. Contact the Lindsay Dealer if the system fails to run forward or reverse.

WARNING

Repairing the System: In the event that the Zimmatic System needs to be repaired; disconnect the power source, depressurize the system and contact the Lindsay Dealer.

Only a Lindsay Dealer should make necessary repairs to the system.

Ensure that only Genuine Lindsay Parts are used on the system.

WARNING

Overhead Maintenance: Overhead maintenance should be performed by a Lindsay Dealer.

Never attempt to climb on an irrigation machine for any reason.

WARNING

Lifting Components: Extreme care is needed for lifting components during installation/assembly. Only a Lindsay Dealer using the proper lifting equipment may perform this task.

Use caution when lifting heavy objects. Components weighing in excess of 50 lbs. (22.7 kg.) must be lifted with the assistance of another individual or mechanical lifting device.

Do not work or stand under system or components during assembly. Due to the weights involved, severe injury or death can result if components should fall.

WARNING

Dismantling the System: If it is ever necessary to dismantle a Zimmatic System, extreme care must be taken. As with installation and assembly, dismantling must only be performed by a Lindsay Dealer.

WARNING

Impaired Safety Protection: Do not attempt to operate if protection may be impaired. If the equipment appears to have been changed or operates abnormally, protective devices may be impaired. Do not attempt to operate and have the equipment serviced by a Lindsay Dealer.

WARNING: Ensure that power is turned off/disconnected before removing any protective covers.

WARNING: Do not use this product in a manner not specified in this manual.

The following symbols indicate grounding connections that can be found on irrigation systems.

Earth Ground	Protective Earth Ground	Frame or Chassis Ground

CAUTION

Prepare for Emergencies: Be prepared for any emergency that may occur.

Keep emergency numbers for doctors, hospital, ambulance service and fire department near your telephone.

Requirements for Electrical Service

All electrical equipment shall be installed by a qualified electrician. As a result, a correct installation will allow the irrigation system to protect itself from overloads and ground faults with minimal downtime, or possible damage and hazards.

Refer to ANSI, ASAE Standard S397.2 (latest revision) Electrical Service and Equipment for Irrigation for exact requirements.

Compliance Standards

Federal Communications Commission (FCC) Statement

NOTE: This equipment has been tested and found to comply within the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and radiates radio frequency energy and, if not used in accordance with the manufacturer's instruction manual, may cause harmful interference with radio communications.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

These limits are designed to provide reasonable protection against harmful interference. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference with radio or television reception, which can be determined by turning the equipment on and off, try to correct the interference by one or more of the following measures:

- Reorient or relocate the antenna of the radio/television receiver.
- Increase the separation between this equipment and the radio/television receiver.
- Plug the equipment into a different outlet so that the equipment and the radio/television receiver are on different power main branch circuits.
- Consult a representative of Lindsay Corporation for additional suggestions.

Industry Canada Compliance Statement

This Class B digital apparatus meets the requirements of the Canadian Interference-Causing Equipment Regulations.
Cet appareil numerique de la Classe B respecte toutes les exigences du Relement sur le Materiel Brouilleur du Canada.

WEEE Statement

Lindsay Manufacturing, LLC products: Pivot Watch is sold and distributed in the European Union only by:

Lindsay Europe SAS
L'Epinglerie
72 300 La Chapelle d'Aligne
France
Phone: 33 (0)2 43480205

The WEEE directive places an obligation on all EU-based manufacturers and importers to take back electronic products at the end of the useful life. Lindsay accepts its responsibility to finance the cost of treatment and recovery of redundant WEEE in accordance with the specific WEEE recycling requirements.

The "Do not use regular disposal containers" symbol (shown below) is placed on Control Panels and Antennas indicating this product must not be disposed of with other waste. Instead, it is the user's responsibility to dispose of their waste electrical and electronic equipment by handing it over to an approved re-processor, or by returning it to Lindsay for reprocessing. More information about waste equipment recycling locations is available at local City Government Offices or by

contacting Lindsay Europe SAS.

Contact Lindsay Europe SAS with any questions or assistance with returning Pivot Control Panels or GNSS antennas.

REACH Statement of Compliance

REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT
AND OF THE COUNCIL of 18 December 2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH)

Lindsay is neither a manufacturer nor an importer into the EU of chemical substances. REACH defines Lindsay as a “Downstream User” (DU) of chemical related products used in our manufacturing operations. This means that our responsibilities under the legislation particularly those in the short term differ from those of the manufacturers and/or importers of “substances”.

As per REACH legislation Lindsay’s responsibilities are as follows:

1. To have communicated with suppliers to ensure that any substances included in preparations or articles supplied to Lindsay have been pre-registered with the European Chemical Agency (ECHA), either by our supplier(s), or by their supplier(s), whichever is applicable.

2. To ensure that products purchased and used or sold by Lindsay do not contain SVHC (Substances of Very High Concern) substances as defined and listed by ECHA.

3. Communicate that Lindsay falls under the scope of the “below one tonn metric weight exemption”, therefore, MSDS sheets are only made available upon request.

Lindsay confirms that no SVHCs’ are included in chemical preparations and articles supplied to Lindsay in quantities greater than one tonn metric weight as defined and listed by ECHA. At the date of this letter we confirm that Lindsay is compliance with the REACH requirements for downstream users. As our responsibilities change, this statement will be updated accordingly.

ROHS Statement of Compliance

DIRECTIVE 2011/65/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment

According to Article 2, (4) (e) of the Directive 2011/65/EU, the Directive does not apply to large-scale fixed installations.

According to Article 3 (3) of the Directive 2011/65/EU, ‘large-scale fixed installation’ means a large-scale combination of several types of apparatus and, where applicable, other devices, which are assembled and installed by professionals, intended to be used permanently in a pre-defined and dedicated location, and de-installed by professionals.

Lindsay states that the irrigation systems and other devices manufactured by Lindsay fall under the definition of a large-scale fixed installation for the following reasons:

1. An irrigation system consists of a central pivot which, by its very nature, needs to have a water supply (well) . The tower of the pivot is erected on a concrete slab which holds the pipe coming from the well. Also, for safety reasons, the whole system is grounded using a ground rod which is stripped into the ground through the concrete slab.
2. The whole system goes in circles, but the center of the pivot is a fixed point.
3. An installation of an irrigation system typically will be in place for 20 or more years and is not

easily moved to a new location.

4. All devices (including electrical panels and remote telemetry units) are specifically designed and installed as part of the whole system and, because of its special hardware and/or construction, only perform their function when are part of the installation.

Brazil:

Este produto está homologado pela ANATEL, de acordo com os procedimentos regulamentados pela Resolução 242/2000, e atende aos requisitos técnicos aplicados. Para maiores informações, consulte o site da ANATEL www.anatel.gov.br

ANATEL
Agência Nacional de Telecomunicações
05761-20-06254

Mexico:

Exported models utilize the Quectel BG96 radio module. This carries the IFETEL Homologation Certificate number RTIQUBG17-2093.

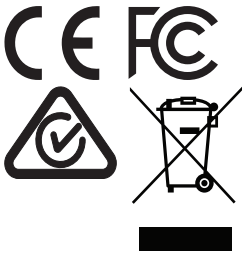
South Africa:

This product carries the ICASA Certification Type Approval Number TA-2020/6245.

ICASA TA-2020/6245 Approved

Product Specifications

Regulatory Compliance Standards



United States & Canada
- UL/CSA 61010-1
- FCC Part 15
- ICES-003

2014/35/EU-LVD
- IEC/EN 61010-1

2014/53/EU-RED
- EN 301 511
- EN 301 908-1
- EN 301 908-13
- EN 303 413
- EN 301 489
- EN 61000-6
- EN 55032
- CISPR 32

RCM
- AS/NZS 3820:2009
- AS/NZS 61000-6-4

Pivot Watch Ratings:

Power:
1.2 to 3.5 VDC, 3.2 VDC Nominal, 3.7 Ah
Self-contained solar powered with battery back-up, no external power connection required
Solar panel: 900mW monocrystalline
Battery: 11Whr LiFePO4

Temperature:
Operating Temperature: 0C to 40C
Storage Temperature: -40C to +85C
Humidity: 0-95% non-condensing
Enclosure: IP55; NEMA 4x; polycarbonate

Dimensions and Weight:
0.68 kg
14 cm x 19 cm x 16 cm
Packaging
20 cm x 17 cm x 12 cm

Introduction

FieldNET Pivot Watch System Overview

FieldNET™ Pivot Watch is a state-of-the-art irrigation monitoring system. It is designed to detect movement of mechanized irrigation systems without needing any electrical connection to the system being monitored. Pivot Watch operates using the power provided by a LiFePO4 (lithium iron phosphate) rechargeable battery. This battery is charged using the small solar panel built into the lid of the product.

Pivot Watch spends most of its time in a low power state. The design allows, when properly secured to the irrigation pipe, the Pivot Watch to detect an irrigation system that stops moving or starts moving. When these events occur, the Pivot Watch will activate its GPS and cellular modem and report this data to FieldNET servers for processing into a status. The FieldNET mobile apps or website then allows customers to use an internet connection to retrieve information about the operation of their irrigation system and receive text messages or push notifications based on changes in operational status. The standard operational status features include: **stopped, running, forward, reverse, percent rate, and position of pivot in the field.**

Great care has been taken in the design to minimize false alarms due to

wind and other environmental factors. Wind, for example, could cause enough vibration on the Pivot Watch to make it appear like the pivot started moving. To optimize the accuracy of a pivot startup, FieldNET will initially report a “Running” status, but will not send an alert until true movement of the pivot is confirmed. FieldNET will evaluate the next data reported from the Pivot Watch over a period of several minutes before updating the status in the FieldNET apps or website to show forward or reverse status. This reporting delay helps to filter out environmental conditions that could have been interpreted as false irrigation startups or shutdowns. Essentially, FieldNET will receive and monitor data from the Pivot Watch over a period of several minutes before sending a text message with a status. This evaluation of using more information over time is intended to significantly minimize any false reporting due to wind.

Pivot Watch irrigation monitoring requires an annual subscription that begins service at the time of installation and configuration. Monitoring irrigation with Pivot Watch is accomplished using FieldNET mobile (Android™ or iOS™ app) or through a web portal at https://app.myfieldnet.com.

The Pivot Watch can be purchased with an optional pressure transducer. The benefits of the pressure transducer includes the additional features of: **water (wet and dry) mode, water pressure reading, and a stopped wet condition.** Using a pressure transducer also provides compatibility with **irrigation scheduling using a FieldNET Advisor™ subscription.**

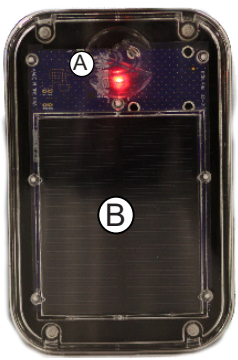
Proper operation of Pivot Watch requires that the installation and configuration instructions are followed properly. Ongoing care and maintenance may be required to keep the lid clean from hard water deposits, bird droppings, dirt, and dust to allow the solar panel to effectively charge the battery.

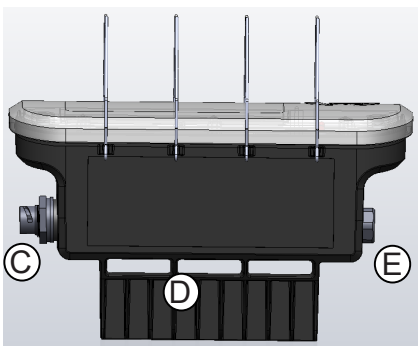
Included with Your Pivot Watch Kit

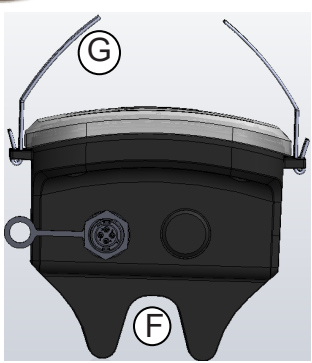
- Pivot Watch (models can be Verizon or AT&T compatible)
- 1 Year Pivot Watch Subscription
- Bag of eight (8) bird spikes
- Band clamp
- Installation and User Manual

Pivot Watch Hardware Overview

A. Status LED
B. Solar panel
C. Pressure transducer connection
D. Slot for band strap
E. Humidity vent
F. Slot for span cable
G. Bird spikes



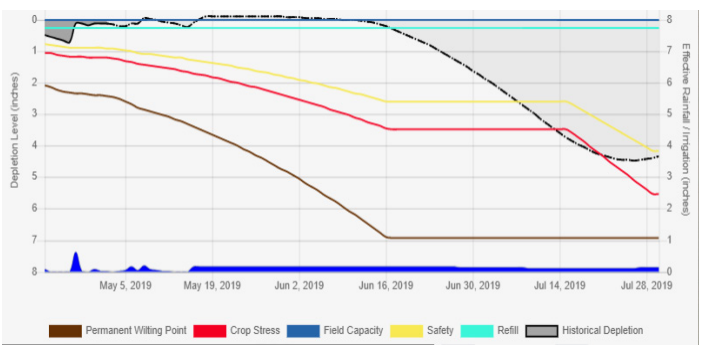




Optional Enhancements (Sold Separately)

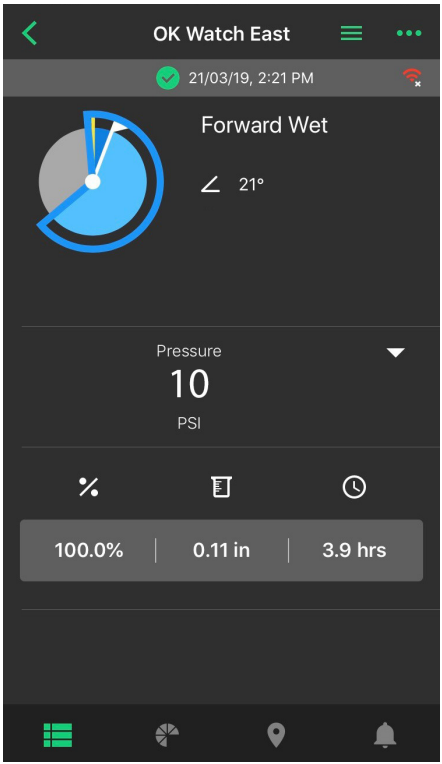
FieldNET Advisor™ by Lindsay is a revolutionary irrigation management solution designed to provide growers with simple, science-based irrigation recommendations to enable faster, better-informed irrigation management decisions. FieldNET Advisor saves time and provides quick and easy-to-understand irrigation management recommendations and alerts. It improves yield and crop performance by providing tools to help avoid crop water stress and nutrient leaching. FieldNET Advisor increases profits and sustainability with powerful tools to reduce over-watering, saving related input costs and wasted resources.

FieldNET Advisor is an optional, additional subscription that can be added to any field after the setup process is complete by using our website. Find out more at http://www.myfieldnet.com/fieldnet-advisor



Pressure Transducer Kit (P/N 1616833) - Allows for monitoring of water pressure remotely using Pivot Watch and FieldNET. Users are able to setup Alerts for pressure and receive notifications on their phone or web enabled device.

A quick look at the FieldNET Application



The following is a brief summary of the Dashboard features of the FieldNET app for Android™ or iOS™.

Back Arrow - Returns to the Equipment List

OK Watch East

Pivot Name - The name you supply during setup will appear here.

Settings Menu - Allows the user to change device configuration settings.

Action Menu - Allows the user to change their Profile Settings and Log Out

Last Update Date & Time - This timestamp tells the user when the Dashboard was most recently updated. If there were issues refreshing the Dashboard a red check-mark will be displayed.

Communication Status - This icon will be displayed only during connection with FieldNET. Pivot Watch disconnects and reconnects as a normal part of it's regular operation to conserve power.

Pivot Status Graphic: This feature will show several pieces of information to the user at a glance. It will display Blue during irrigation, Green when moving dry, Grey when stopped and Red during a fault.

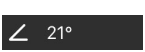
The Blue outline in this example shows the active area defined by soft or hard barriers. A small grey region is outside the irrigation area.

The Yellow line is where irrigation began during this session.

The White Line shows current Position and Direction.

The inner blue region shows the entire active area has been irrigated at least once as part of a multiple pass plan.

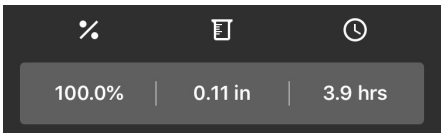
Pivot Status - System direction (Forward, Reverse and Stopped), Alerts and Faults will also display in this line when detected.



Pivot Angle - Current position of Pivot.

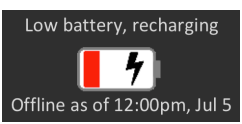
System Pressure - Displayed if Pivot Watch has an optional pressure transducer connected.

Rate, Depth and Full Circle Time



FieldNET Navigation - Use this to switch between the Equipment List, FieldNET Advisor, Maps, and Alerts.

Recharging - Pivot Watch will recharge the device battery as needed using solar power. A low battery icon will be shown at times when extended recharging takes place.



Pivot Watch Features:

Monitoring Features	Pivot Watch w/ pressure transducer	Pivot Watch No pressure transducer
Water pressure reading	Yes	No
Water on indicator	Yes	No
Pivot direction	Yes	Yes
Pivot status icon color reference	Red – pivot stopped wet alert Gray – pivot stopped Blue – pivot running wet Green – pivot running dry	Gray – pivot stopped Green – pivot running
Real time irrigated area indicator	Yes	No
Pivot position (0-359 degrees)	Yes	Yes
Pivot speed	Yes	Yes
Calculated application amount	Yes	Yes
Circle time calculation	Yes	Yes
Low battery indicator	Yes	Yes
Compatible with FieldNET Advisor	Yes	Must add a pressure transducer

Pre-Installation

Installation of Pivot Watch is done in three parts:

1. Pre-Assembly on the ground of the optional Pressure Transducer
2. Pre-Assembly on the ground of Pivot Watch
3. Installation on the tower of the Pivot Watch and optional Pressure Transducer

CAUTION
Review and follow the safety section of this manual before installing Pivot Watch on tower.

Before you Begin

In addition to the Pivot Watch kit you will need the following items:

1. FieldNET App - This can be downloaded to your iPhone™ or Android™ from the Apple iTunes™ store or Google Play™.

2. FieldNET Account - A User Account and Login can be created by speaking with your
   Zimmatic Dealer or calling FieldNET Customer Support at (866) 693-4353 or
   866-MYFIELD.

3. Tools needed for the Pivot Watch installation - Pivot Watch installation will require:
   - A ¼" ratchet or large straight edge screwdriver
   - A small Phillips screwdriver
   - Leather gloves

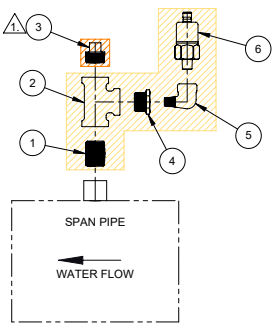
4. Tools/supplies needed for the optional pressure transducer installation
   - Adjustable wrench
   - Pliers with cutters for wire ties
   - Pipe tape

Pre-Assembly (Optional) Pressure Transducer

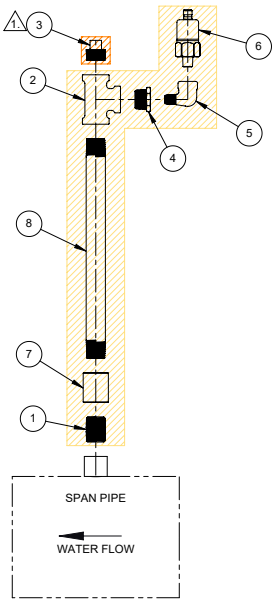
All parts shown in yellow can be pre-assembled on the ground.

NOTE: The plug (orange) **cannot** be pre-assembled.

OPTION A (WITHOUT A RISER PIPE)



OPTION B (WITH A RISER PIPE)



NOTES:

1. DO NOT PRE-ASSEMBLE WITH PLUG UNLESS THE OUTLET DOES NOT HAVE A SPRINKLER OR HOSE DROP.
2. APPLY PIPE SEALING DOPE OR TAPE TO NPT JOINTS PRIOR TO INSTALLATION.
3. USE OPTION B FOR PIVOT WATCH INSTALLATIONS WITH ABOVE PIPE SPRINKLERS.
4. ITEMS NOT SHOWN (N/S) ARE LISTED WITH AN ASTERISK (*) ON THE BOM.

N/S	ITEM	PART NUMBER	DESCRIPTION	QTY	UNIT
	1	0606384	NIPPLE,PIPE,3/4"XCLOSE,GALV	1	EA
	2	0621342	TEE,PIPE,STEEL,3/4",GALVANIZED	1	EA
	3	0614909	PLUG,PIPE,SQ. HD,3/4"GALV	1	EA
	4	0621359	BUSHING,HEX,3/4"X1/4",GALV.	1	EA
	5	0606483	ELBOW,STREET,1/4"X90 DEG,GALV	1	EA
	6	1612382	TRANSDUCER,50 PSI,IFM,W/CONN	1	EA
	7	0602805	COUPLING,PIPE,STEEL,3/4",GALV.	1	EA
	8	1611979	NIPPLE,PIPE,3/4" X 12",GALV.	1	EA
*	9	0990770	TIE,CABLE,PLASTIC,7"LONG	2	EA
*	10	1144609	TIE,CABLE,PLASTIC,30" HD BLK	2	EA

Pre-Assembly - FieldNET Setup

FieldNET Setup

Installation of the Pivot Watch is done through the FieldNET mobile application available for iOS™ and Android™ devices.

Step 1: Install FieldNET from iTunes or Google Play

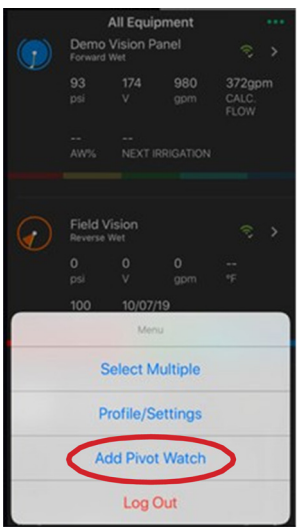
If you have not already done so, install the FieldNET App from Apple iTunes™ or Google Play™ Store. Once installed, launch the app.

Step 2: Login to FieldNET

Use the user account created by your Zimmatic dealer or FieldNET Operations team member. Launch the FieldNET app and enter your username and password on the login screen.

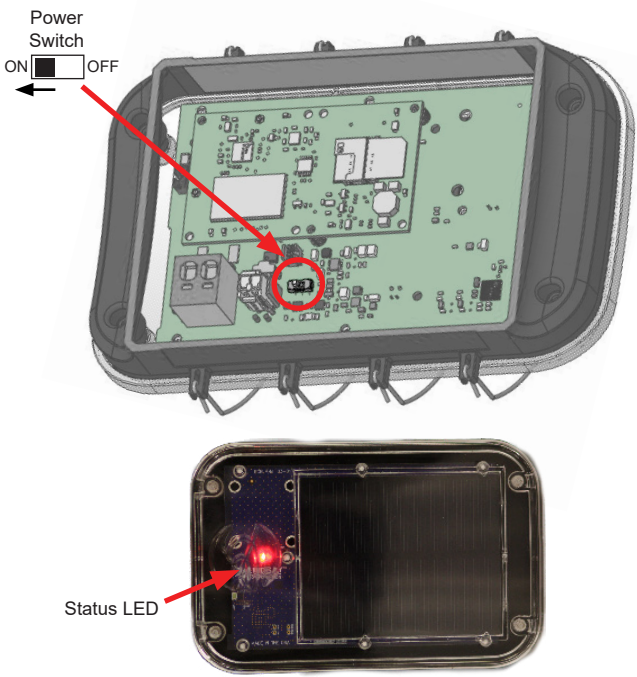
Step 3: Select "Add Pivot Watch" on the Action Menu

After logging in the first screen presented will be the Equipment List. This screen will have three dots ••• in the upper right. Touch this area to see the Action Menu. Select "Add Pivot Watch".



Step 4: Power On Pivot Watch

Pivot Watch is shipped with an internal power switch in the OFF position. The Power switch will need to be turned on for setup. Locate the power switch and move it to the ON position. The status LED will turn on.



After turning on the on/off switch, refer to the Status LED Behavior Table (p.13) to verify successful communication.

Status LED Behavior Table

State	Successful Status LED Behavior	Unsuccessful Status LED Behavior
Powering on with the on/off switch	Red LED turns on solid for approximately 4 seconds	If Status LED does not light up, issues could include: • Battery needs a charge. Allow the device to sit in direct sunlight to recharge battery. • Battery is dislodged. Check that battery is seated and oriented correctly. • Check battery cable to make certain it is plugged in correctly.
Unit is attempting to connect to FieldNET	Red LED flashes rapidly	If unit is in this state for over 5 minutes, verify the following: • Antenna connection • Cellular Coverage • FieldNET activation The LED will turn on solid for 16 seconds after 10 minutes of failed communication
Unit is connected to FieldNET	Red LED flashes slowly	
Communication has completed	Red LED turns off	

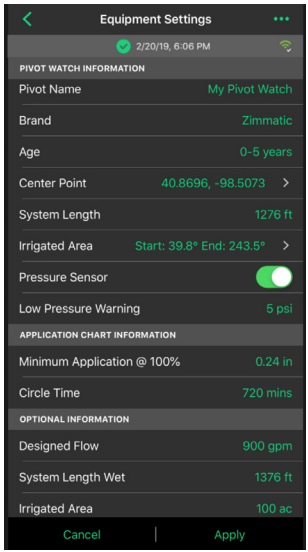
Once the Watch completes its communication, re-attach the lid and secure using the four screws on the bottom of the enclosure. Be careful not to overtighten the screws (6-8 in/lb torque rating).

Step 5: Complete the Equipment Settings screen

Click the settings menu button ••• Select Equipment Settings and enter the requested information.

The Application Chart Information is required and critical for the Pivot Watch to calculate the pivot percentage rate and application amount. Please review your sprinkler chart and/or consult with your Zimmatic dealer to ensure you enter the proper minimum application rate and full circle time.

If you will use the optional Transducer turn the Pressure Sensor ON.



The FieldNET app will assist you in positioning your pivot's Center Point based on your phone's GPS.

(Please enable Location Settings on your phone to use this tool).

Input choices include:

1. Tap on the latitude and longitude numbers and enter manually.
2. "Use my location" – to use this feature, you must be at the Pivot Point.
3. Or slide the map around until the crosshairs are over the pivot point.

Tap "Done" to accept.

For a Partial Circle Pivot, you can use the map to set the Irrigated Area using our simple user interface.

(Please enable Location Settings on your phone to use this tool).

Input choices include:

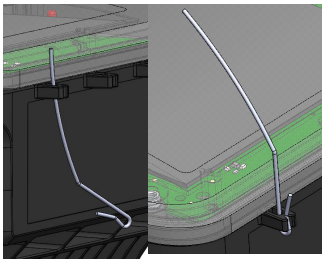
1. Tap on the Start and End numbers and enter manually.
2. Touch the + and - buttons to fine tune numbers to the desired precision or slide the circles around as if positioning hands on a clock face for Start and End. The active Irrigated Area has a green highlight. The inactive area will be red.
3. For pivots without hard or soft barriers you can simply touch the “Use Full Circle” button at the bottom of this screen.

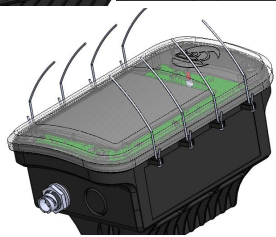
Tap “Done” to accept.

Click “Apply” after all Settings have been selected.

Pivot Watch Hardware Steps

- Uncoil the band clamp.
- Snap in (8) eight bird spikes around upper edge of Pivot Watch solar panel. Slide spike into place from below mount point, twist and click into place as shown.





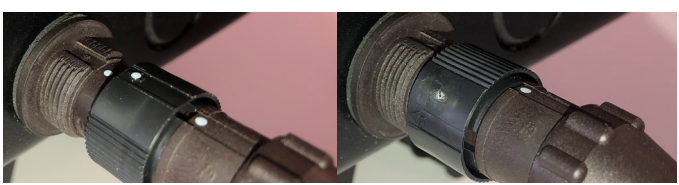
Installation on Last Tower
Pivot Watch

Installation of Pivot Watch on the Last Tower:

1. Strap to pipe using stainless Band Clamp.
2. Use ¼" ratchet or flathead screwdriver to tighten Band Clamp until secure. Overtightening could crack the plastic enclosure.
3. Orientation is important - the solar panel must face straight up towards the sky to optimize the amount of sun coverage
4. **NOTE:** Do NOT remove any of the plugs on the Pivot Watch.
5. **NOTE:** The Pivot Watch should only be installed on the last tower of the pivot to provide the correct position and speed of the system. Do not mount on the corner arm if the pivot has a corner system.

(Optional) Pressure Transducer

There are three potential installation options listed below. Take care to ensure there is enough cable to reach the Pivot Watch and the selected sprinkler outlet.



Align all white dots when attaching the Pressure Transducer cable to the port on Pivot Watch. Then turn the locking collar clockwise about 1/4 turn, until it clicks into place.

Sprinkler Outlet Installation

- Remove ¾" plug
- Follow Pressure Transducer assembly on pg. 10
- Install Pivot Watch

Hose drop

- Remove hose drop
- Follow Pressure Transducer assembly on pg. 10
- Replace hose drop

Above pipe sprinkler or boom back

- Remove sprinkler or boom back
- Follow Pressure Transducer assembly on pg. 10
- Replace sprinkler or boom back

Remove the plastic cap on the Pivot Watch transducer connector. Connect the cable and tighten.
Wire tie the cable to prevent wind from causing it to rub over time.

Maintenance and Care

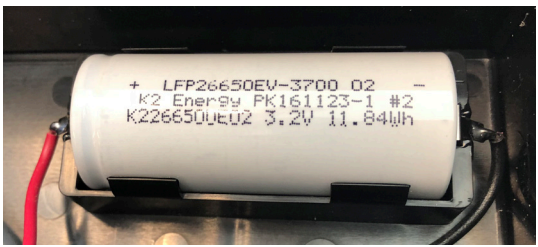
In order for Pivot Watch to recharge and provide maximum performance please keep the area shown below clean and free of the hard water deposits, bird droppings, dirt, and dust. This will allow the solar panel to effectively charge the battery.

Solar Panel Area. Clean as needed.

Battery Replacement

Unscrew the four screws from underneath and open the Pivot Watch lid, taking care to not disconnect any wires or cables.

It is important to install the battery correctly or damage may occur to the Pivot Watch. The battery is marked with Positive (+) and Negative (-) ends. Insert the battery so the Positive (+) end goes to the RED wire and the Negative (-) end goes to the BLACK wire.



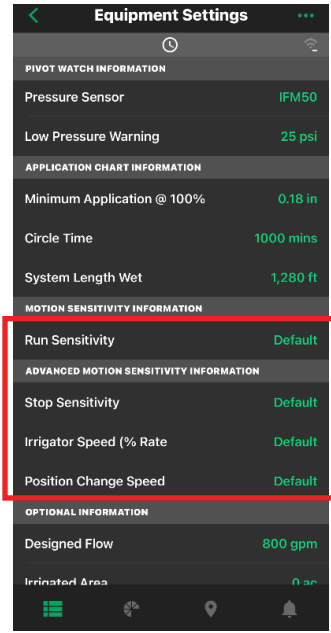
NOTE: If you believe the battery has been fully discharged and is dead, turn the switch inside the Pivot Watch to “OFF” and let it charge 24 hours.

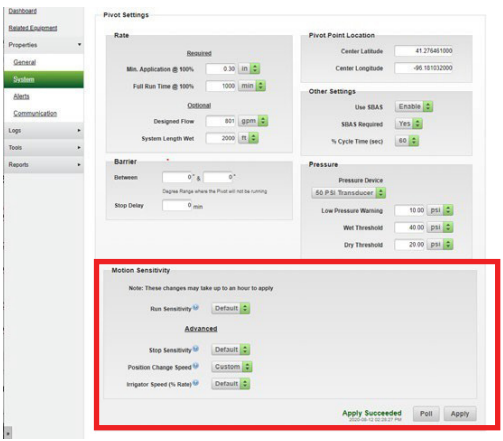
System Sensitivity Settings

The following is an overview of various settings that can be adjusted to manage how the unit will wake up and detect motion. Take care to make sure the changes you make are appropriate for your irrigation system. Re- member, any system/ settings changes made can require up to 1 hour to successfully implement the change.

Adjusting Motion Sensitivity

If the Pivot Watch is registering stopped or running status incorrectly, adjustments to the sensitivity settings may be necessary. These settings are available in the settings page in the mobile app. These settings can also be adjusted in the web version of FieldNET on the System page.





Run Sensitivity

This option relates to how sensitive the system is in detecting the equipment's motion. Most pivots will do very well with the default settings. Continuous movement machines like T+L hydraulic pivots will normally do best at a level "1" or "2" setting. This is the first setting to adjust before attempting changes to any of the advanced settings.

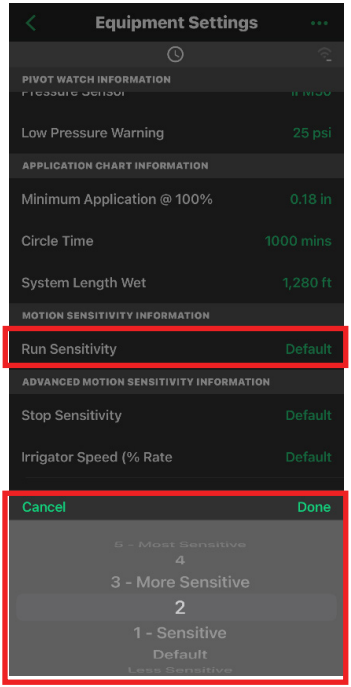
The 7 different settings in the menu go from most sensitive (at the top of the list), to least sensitive (at the bottom of the list). It is uncommon that a Pivot Watch running on a center pivot application would require higher than a setting of "3".

Examples:

If FieldNET shows "stopped" when equipment is running
Resolution: Increase the Run Sensitivity

If FieldNET shows "running" events when equipment is not running

Resolution: Decrease the Run Sensitivity



Advanced Settings for Motion Sensitivity

There may be types of equipment or specific machines that require additional more advanced changes to the sensitivity settings. Consult with your dealer if you have questions on these.

Stop Sensitivity setting

The equipment may continue to have issues registering Stops properly and require further adjustment.

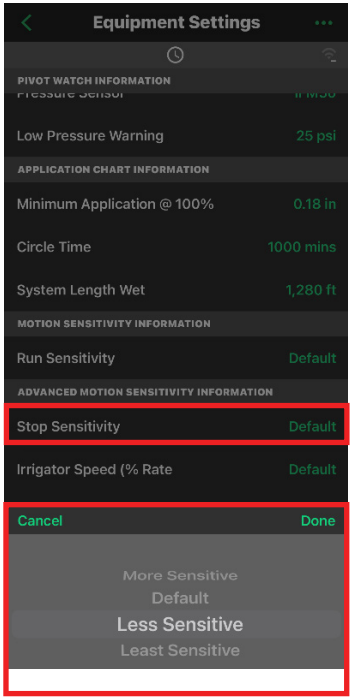
Examples:

If the machine is showing “stops” when running very slow:

Resolution: Adjust the Stop Sensitivity to be less sensitive

If the machine is still showing stopped when equipment is running normally and you have already adjusted the run sensitivity setting:

Resolution: Adjust the Stop Sensitivity to be less sensitive



Position Change Speed setting

The equipment may still continue to show improper stopped occurrences or it may show improper direction events when stopped.

Examples:

If the equipment shows Forward or Reverse when it is actually stopped

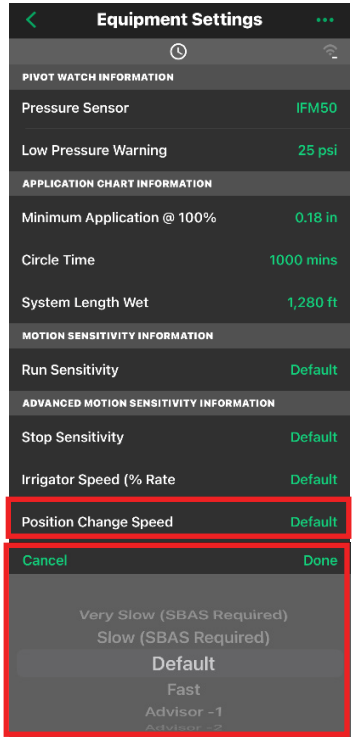
Resolution: Adjust the “Position Change” setting to be fast.

If you have already adjusted the Run Sensitivity and the Stop Sensitivity, and the equipment still shows stops when the machine is running

Resolution: Adjust the Position Change Speed setting to slow or very slow.

Note: When using “Slow” or “Very Slow” setting, it is recommended that you also change the “SBAS Required” to “YES” for increased position accuracy. This setting can only be changed in the web version of FeildNET.

Note: Advisor 1 and Advisor 2 settings are special case settings to handle specific sensitivity issues that may be required for using FieldNET Advisor. Talk to your local dealer or Zimmatic representative before using these settings.



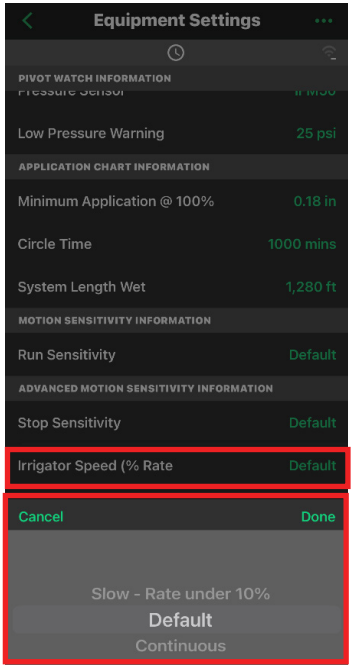
Irrigator speed (% Rate) setting

This setting allows you to adjust for a system that typically runs at a slow speed or is a continuous move system

Examples:

If equipment runs at very slow speeds (less than 10% on Pivots) and still shows stopped when equipment is running:
Resolution: Change the Irrigator Speed setting to “Slow”

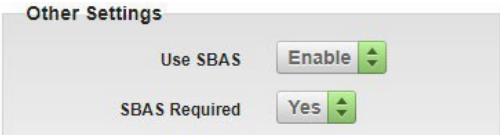
If the system is a continuous move machine (Like a T+L):
Resolution: Change the Irrigator Speed setting to “Continuous”



GPS settings - (change in the web version of FieldNET only)

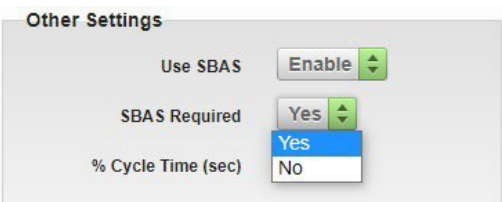
“Use SBAS” setting

SBAS stands for Satellite Based Augmentation System and allows the standard GPS reading to be even more accurate. The standard factory setting for SBAS is “Enabled”. Most of North America has SBAS correction available. This setting can be disabled for other parts of the world that may not have SBAS correction available.



“SBAS Required” setting

By setting SBAS Required to “Yes”, the system will attempt to wait to acquire a SBAS signal before allowing the equipment to start registering motion. This will force the position to be more accurate before allowing the irrigator to show motion.



Pressure Thresholds - (change in the web version of FieldNET only)

Wet/Dry thresholds

These settings will allow you to define the pressure range that the Pivot Watch will consider the equipment running
in a “Wet” or “Dry” condition.

- **Wet Threshold setting -** When pressure climbs over this level, the pivot will be considered in wet condition. The factory defaults are 3 PSI to show the system Wet.

- **Dry Threshold setting -** When pressure falls under this level, the pivot will be considered in “dry” condition. The factory default is 1 PSI to show the system Dry.

Support

If you experience issues with your Pivot Watch please call FieldNET for support:

FieldNET Customer Service:
866-MYFIELD (866-693-4353) (local country codes may apply) or email fieldnet@lindsay.com

Service

For locations of the nearest Lindsay Dealer, visit www.zimmatic.com or write:

Service Department
Lindsay Manufacturing, LLC
214 East Second Street
Lindsay, NE, USA 68644

Zimmatic Customer Service call:
(800) 829-5300 (LAN lines require a local country code)

Model Number Information

Model No.	Carrier Information
1615454	3G, Verizon
1615455	3G, AT&T
1620200	4G, Verizon
1620199	4G, AT&T
1620198	4G, SIM Socket
1622009	4G, AT&T, BG95
1622010	4G, Verizon, BG95
1622011	4G, SIM Socket, BG95