LINORTEK Netbell-2 Network Bell Controller User Manual

Netbell-2 Network Bell Controller
User Manual

Netbell User Manual
www.linortek.com
For Netbell-2, Netbell-8, and all Netbell-K variants

Thank you for purchasing the Linortek Netbell. The Netbell is built on Linortek's existing TCP/IP web-based

product platforms with specialized software designed to provide a web-based bell schedule to control bells and buzzers in your facility. The built-in web interface provides quick access to set up and manage the devices with no additional software or designated computer required. For anyone who has separate areas or multiple buildings where running additional wiring is not an option, but the locations are connected by a network can also use the Netbell to build a Networked bell system. All of our products and designed and manufactured in the USA using the highest quality materials to provide long-lasting and reliable service to you. All of our controllers come complete with all parts and software necessary for installation, operation, and ability to control the devices attached to it. Upon arrival, please inspect the contents of the box to ensure that your kit is complete and contains all necessary components. The contents of your kit will vary depending on which Netbell kit you purchased. This manual will cover the installation and operation of the following Netbell units:

• Netbell-2 • Netbell-8 • Netbell-K • Netbell-K-M2 • Netbell-KL	• Netbell-KL-M2 • Netbell-KB • Netbell-KB-M2 • Netbell-4K • Netbell-KMB

For instructional videos, FAQ and contact information for our technical support team, please visit:
https://www.linortek.com/technical-support
For full instructions on the Web Interface please see the Fargo G2 and Koda Manual available at:
https://www.linortek.com/downloads/documentations/

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Consumer law: For consumers who are covered by consumer protection laws or regulations in their country of residence (“Consumer Law”), the benefits provided in this Linortek One-Year Limited Warranty (“Linortek Limited Warranty”) are in addition to and not instead of the rights provided by Consumer Law and it does not exclude, limit or suspend your rights arising from Consumer Law. You should consult the proper authorities in your country of residence for further information about these rights .
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Disclaimers

1. Read Instructions – Read all the safety and operating instructions before operating the product.
2. Retain Instructions – Retain the safety and operating instructions for future reference.
3. Heed Warnings – Adhere to all warnings on the product and in the operating instructions.
4. Follow Instructions – Follow all operating and use instructions.
5. Cleaning – Unplug the product from power before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning the enclosure only.
6. Attachments – Do not use attachments unless they are specifically recommended by Linortek. Using incompatible or otherwise unsuitable attachments can be hazardous.
7. Accessories – Do not place this product on an unstable stand, tripod, bracket, or mount. The product may fall, causing serious injury to a person and serious damage to the product. Use only with a stand, tripod, bracket, or mount recommended by the manufacturer, or sold with the product. Follow the manufacturer's instructions when mounting the product, and only use mounting accessories recommended by the manufacturer. Be cautious when using an appliance and cart combination. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.
8. Ventilation – Openings in the enclosure, if any, are provided for ventilation and to ensure the reliable operation of the product and to protect it from overheating. Do not block or cover these openings. Do not place this product in a built-in installation unless proper ventilation is provided or the Linortek's instructions have been adhered to.
9. Power Sources – Operate this product only from the power source type indicated in the instruction manual or on the product label. If you are not sure of the type of power supply you plan to use, consult your appliance dealer or local power company – provided that use of any power source type other than indicated in the

instruction manual or marking label will void any warranty. For products intended to operate from battery power, or other sources, refer to the operating instructions [included with the product].

10. Grounding or Polarization – This product may be equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug still fails to fit it is because your outlet is incompatible with the plug. Contact your electrician to replace your outlet with one that is compatible. Do not force the plug to fit into an incompatible outlet or otherwise try to defeat the safety purpose of the plug. Alternately, this product may be equipped with a 3-wire grounding-type plug, a plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature. Do not force the plug to fit into an incompatible outlet or otherwise try to defeat the safety purpose of the plug. If your outlet is incompatible with the plug, contact your electrician to replace your outlet with one that is compatible.
11. Power-Cord Protection – Route power supply cords so that they are not likely to be walked on or pinched by items placed upon or against
    them, paying particular attention to cords and plugs, convenience receptacles, and the point where the cords exit from the appliance.
12. Power Lines – Do not place an outdoor system anywhere in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outdoor system, use extreme care to keep from touching such power lines or circuits as contact with them might be fatal.
13. Overloading – Do not overload outlets and extension cords as this can cause fire or electric shock.
14. Object and Liquid Entry – Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short-out parts which can cause fire or electric shock. Never spill liquid of any kind on the product.
15. Servicing – Do not attempt to service to this product yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing of the product to Linortek.
16. Damage Requiring Service – Unplug the product from the outlet and refer servicing to Linortek Customer Support under the following conditions:
    a. When the power-supply cord or plug is damaged.
    b. If liquid has been spilled, or objects have fallen onto the product.
    c. If the product has been exposed to rain or water.
    d. If the product does not operate normally by following the operating instructions [included with the product]. Adjust only those controls that are covered by the operating instructions, as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation.
    e. If the product has been dropped or the cabinet has been damaged.
    f. If the product exhibits a distinct change in performance.
17. Replacement Parts – If replacement parts are necessary, have a Low-Voltage Electrician replace them using only part specified by the manufacturer. Unauthorized substitutions may result in fire, electric shock or other hazards. Replacement parts can be found at **https://www.linortek.com/store/**
18. Safety Check – Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition.
19. Coax Grounding – If an outside cable system is connected to the product, be sure the cable system is grounded. U.S.A. models only Section 810 of the National Electrical Code, ANSI/NFPA No.70-1981, provides

information with respect to proper grounding of the mount and supporting structure, grounding of the coax to a discharge product, size of grounding conductors, location of discharge product, connection to grounding electrodes, and requirements for the grounding electrode.

20. Lightning – For added protection of this product during a lightning storm, or before leaving it unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the cable system. This will prevent damage to the product due to lightning and powerline surges.
21. Outdoor Use – This product is not waterproof and should not be allowed to get wet. Do not expose to rain or other types of liquid. Do not leave out of doors overnight as condensation may occur.
22. While changing batteries, fuses or handling a board-level product be careful of electrostatic discharge which can damage electronic devices. It is best to use a grounded electronics service bench. If this is not available you can discharge yourself by touching a metal appliance or pipe. While changing the batteries or fuses do not touch i) any wires other than the battery wires and ii) the printed circuit board.

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RELAY VOLTAGE SPECIFICATIONS

Please use caution when connecting devices to electrical circuits or other equipment. This web controller is NOT designed to connect to any voltage greater than 48V. If you want the product to control Line Voltage products and devices, refer to Diagram 1 below. Utilizing this arrangement should allow you to virtually control anything. It is important that you use licensed electricians and comply with electrical codes that are applicable to your location. These codes exist for your safety, as well as the safety of others. Linortek assumes no responsibility for any harm or damage resulting from a failure to adhere to local laws, ordinances, or regulations or failure to follow specified instructions for installation and product usage.

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 This Product may expose you to traces of chemicals including lead which is known to the state of California to cause cancer or birth defects or other reproductive harm. For more information, visit www.p65warnings.ca.gov

Wiring your Netball

Wiring for your Netball device will be different depending on which Netbell product you are using. Please find the section below specific for your Netball device.

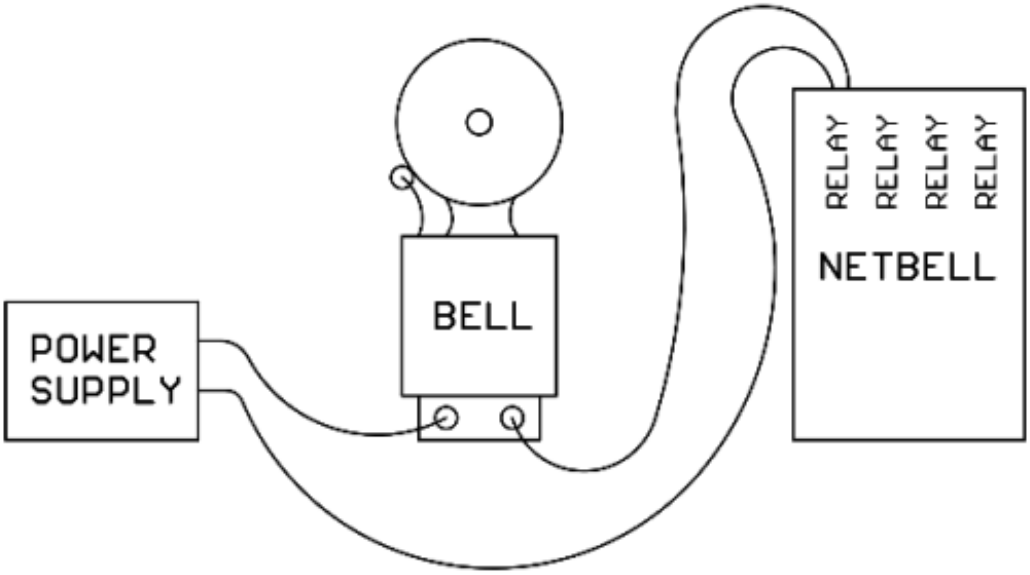
Relay Output Connection

For relay specifications, please see Board Layout Reference Page 15

To wire an external bell or buzzer to your Netball device:

1. Select a suitable power source that meets the requirements of the Bell/Buzzer.
2. Wire one side of the power source to one side of the bell. The other wire from the power supply is connected to the Netball's relay terminal.
3. Finally, connect the other bell wire to the Netbell's relay terminal.

Netball Wiring (simplified)



Note there are variations between different Netball products.

Netbell-2

There are relay outputs on the Netball-2. Each relay output has a removable 2-position connector. These outputs are labeled as “1” and “2” on the top of your Netball-2’s enclosure.

Caution: Do not mix voltages or voltage types (AC or DC) on circuits connected to the relay outputs. All bells/buzzers connected to output 1 must use the same voltage, and all bells/buzzers connected to output 2 must be the same. The voltages on output 1 can be different from the voltages on output 2. Do not exceed 8 amps at 30VDC or 8 amps at 48VAC per output.

Netbell-8

The Netbell-8 has 8 relay outputs. There are 3 terminals for each relay labeled NO (Normally Open), C (Common), and NC (Normally Closed). To wire a bell or buzzer to a Netball-8, wire your circuit to C and NO.

Caution: Do not mix voltages or voltage types (AC or DC) on circuits connected to the relay outputs. All bells/buzzers connected to output 1 must use the same voltage, and all bells/buzzers connected to output 2 must be the same. The voltages on output 1 can be different from the voltages on output 2. Do not exceed 3 amps at 48VDC per output.

Netbell-K, Netbell-KL, Netbell-KB, M2 Variants, Netbell-KMB, and Netbell-4K

The Netball-K series has several products that vary in configuration. Netbell-K, KL, and KB vary by the bell or buzzer built-in to the enclosure and each has one external relay output (2 total). The M2 variants have 2 external relay outputs (3 total). The Netball-K, KL, KB, or M2 variants are designed to use the included power supply to power the built-in bell or buzzer. The Netball-4K does not have a built-in bell or buzzer and has 4 total relay outputs.

The Netball-KMB has no external relay outputs and instead uses its onboard relays to control the tone of the built-in multitone siren.

To wire, an external bell or buzzer follow the above steps connecting the external bell or buzzer to the included bell cable. Then screw the bell cable’s circular connector to the male connector on your Netball-K’s enclosure.

Note: The relays on all Netball devices are dry contact meaning your bells or buzzers require their own power supply separate from the Netball controller’s power supply. These relays do not provide power to the circuit.

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FURTHER NOTICE FOR LIMITATION OF USE

Unless specifically stated, this product is NOT designed to switch line voltage devices. This limitation includes all of FARGO AND KODA products. To control device that operates at line voltages the user MUST install an intermediary device such as a relay. When choosing devices to control, it is best to select low voltage controls

such as a 24VAC Bell or Buzzer.
When wiring a line voltage device using the intermediary device, you MUST either be a qualified electrician or use the services of a qualified electrician. Additionally, local codes must be followed including but not limited to wire gauge size and suitable housing. Linortek cannot assume any responsibility for harm to the user or third parties for improperly using our Fargo product. This liability remains with the user. Linortek cannot assume any responsibility for damage to the device for improperly using our SERVER product.

Power Connection

Your Linortek Netball device is supplied with a suitable power supply. For Netball-K variants, this power supply will also power the built-in bell or buzzer. All external bells and buzzers must have their own power supply.
a) Netball-2 and Netball-8 are supplied with a 12VDC power supply. Simply plug into any 110VAC outlet and plug the barrel end into the 12VDC power connector. See Board Layout Reference page 15. Netbell-2 may also be powered via POE.
b) Netball-K variants are supplied with either a 12VAC or 24VAC transformer and a power cable that will need to be connected to the transformer. Insert the end of one wire into the left terminal, and the end of the other wire into the right terminal. Finally, tighten the terminals onto the wires. For the 24VAC transformer, disregard the middle (gnd) terminal as it is not used by the Netball.

Ethernet Connection

Each Netball device is supplied with an Ethernet cable. The “Connection” LED light on the board will come on if a 100MHz network is available, otherwise, it will remain off and the “Activity” LED should start blinking indicating network activity. This will not be visible on a Netball-K variant unless you open the enclosure. See Board Layout Reference page 15 for more detail.

Digital Input Connection

Netbell-2 and the Netbell-K variants have 2 digital inputs (5-24VDC) built on the board for triggering special notifications/emergency alerts. Netbell-K variants have digital input 1 connected to the enclosure, digital input 2 is accessible inside the enclosure. See Board Reference Layout page 15. A sensor such as a temperature sensor or a push switch can be connected to the digital input. Please note, when connecting a 12VDC-24VDC sensor to the input, an external resistor (provided upon request, 2.2k ohm 0.5watt) must be used.
There are two modes of operation for the digital inputs: ISOLATED and PULL UP
. a) ISOLATED mode allows you to directly drive the Netbell’s optoisolator with an external voltage through and an internal 1K resistor. This voltage may be in the range of 5VDC to 24VDC supplying a minimum of 2mA or a maximum of 30mA to the optoisolator diode. There is no other internal connection to this voltage so it is an isolated input.
b) PULL UP mode connects a 1K resistor to an internal voltage allowing you to use a simple switch (such as a magnetic door switch) across terminals 1 and 2. When the switch is activated a signal is sent to the input. These modes are selected by the switch on the server (see the board layout for reference) marked ISO and PU for isolated or pullup respectively. On the Netball put the switch up for pullup and down for isolated.

Netbell-KMB

The Netball-KMB forgoes the external relay outputs in order to control a multi-tone siren. The siren can play four different tones based on a combination of DIP switches set on the backside of the siren. Each combination changes the four-tone set. When setting a bell schedule, use Bell 1 for the first tone, Bells 1 and 2 for the second tone, Bells 1 and 3 for the third tone, and Bells 1, 2, and 3 for the fourth tone. Please refer to the “Creating a Bell Schedule” section, page 9 for more information on the Bell Schedule page. You may also configure tasks in the Tasks page using relays 1; 1,2; 1,3; and 1,2,3. Please refer to the section “Using an External Trigger”, page 11 for more information on the Tasks. Please view the tables in the Netball-KMB Tones section beginning on page 13 to set the desired tones using the DIP switches on the back of the buzzer. For the location of DIP switches and volume control, please see page 18.

Netbell Clock

The Netbell-KC series can output its time to the Linortek Netbell Clock. To drive the digital clock, Navigate to the Settings drop-down menu and click Settings. At the bottom of the middle column in the UART Usage field, enter the clock. Then click Save. Then plug the clock into the Netball-KC’s clock output and the clock will then obtain the time from the Netball-K’s software.
Note: The Netball clock is set by default for GMT-5. If you are in a different time zone, ensure the clock is plugged into your Netbell-K prior to setting the time and date per the section Setting Time and Date on page 7.

Accessing your Netball Device

Once your Netball is powered on and connected to the network, it will automatically obtain an IP address via DHCP as long as your router is configured to do so. To connect, enter the IP address into your web browser. This

will take you to your Netbell's landing page. To log in, click the login button on the top right of the page. Your browser will prompt you to enter your username and password. By default, these credentials are both set to admin. To find your Netbell's IP address, see below.

Finding your IP Address with Linortek Discoverer

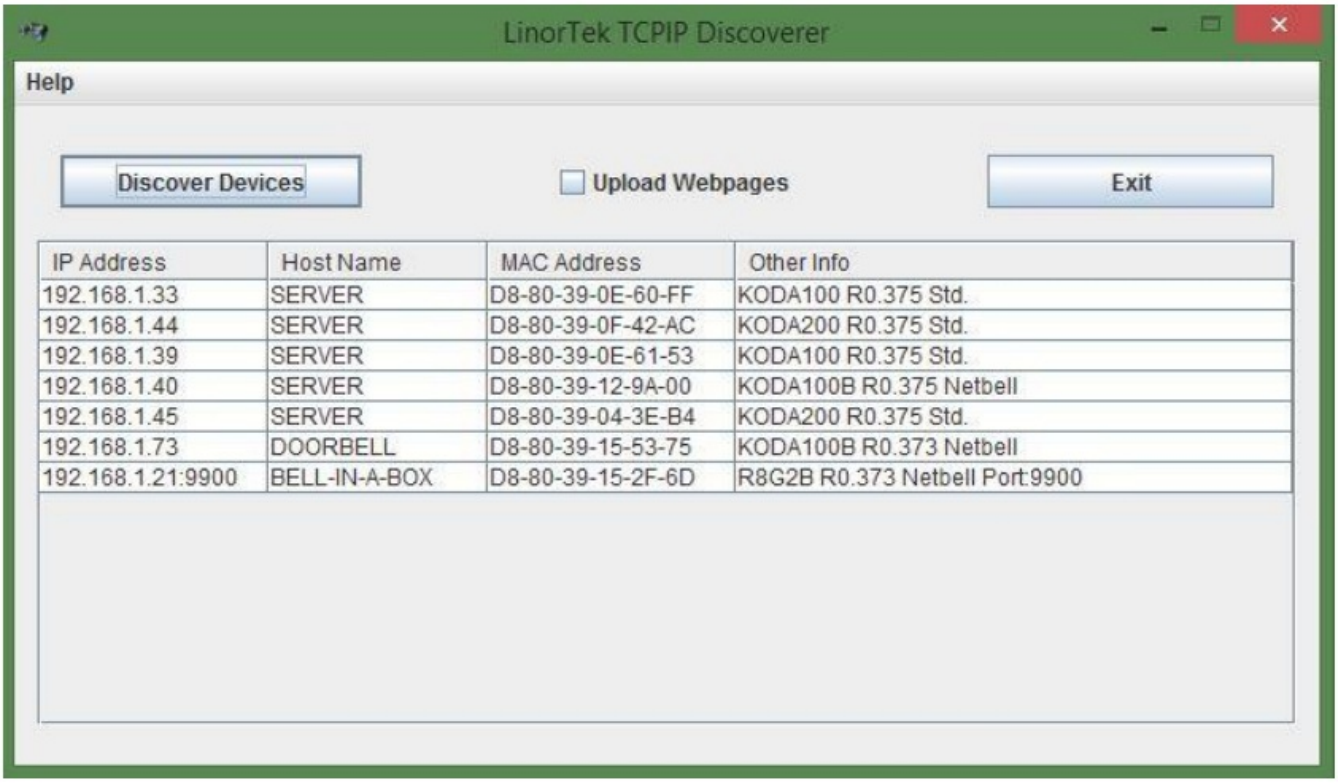
The Discoverer program will automatically locate your Netball SERVER. The Discoverer is a Java program and requires Java Runtime to be installed to use this feature. Java can be found here: **http://java.com/en/download/index.jsp.**

To download the Discover program, please go to: **https://www.linortek.com/downloads/supportprogramming/**

Use of Chrome & Firefox browsers is recommended. Please note: If you prefer to use Internet Explorer, Internet Explorer saves Linortek Discoverer as a Zip file by default. In order to use the Discoverer, you will need to select Save as and rename the file as Linortek Discoverer.jar when you download.

When downloading the Discover program, sometimes you will see a popup warning message depending on your browser security settings, asking if you want to keep or discard this file, please click the Keep button as this is a Java program, it won't harm your computer.

Once Discoverer locates your device, it will display:



1. IP Address
2. Host Name
3. MAC Address
4. Other Info:
   a. Blue LED (if on)
   b. Product Name
   c. Server Software Revisions. Port Number (If ported)

Click the device you want to use shown on the Discoverer program to launch the SERVER web pages in your browser. Click the Login button on the homepage. Default username/password is: admin/admin. You may change these as you desire or disable this feature in the settings menu.

Connecting your Netball Directly to Your PC

You can also plug your Netball directly to your PC in case there is no network connection available. If you plug your Netball into your PC's Ethernet port it will use the default IP address: 169.254.1.1 unless you have previously configured your Netball to use a static IP. Enter 169.254.1.1 into your web browser to connect. No internet connection is required. Once configured, you can then install your Netball where desired.

Server Configuration

If you are configuring your Netball for the first time, or if you are keeping your Netball disconnected from the internet, see the section below to set your time zone or adjust the Netbell's built-in time clock. Otherwise, Skip ahead to the section Creating a Bell Schedule page 9.

Setting Time and Date

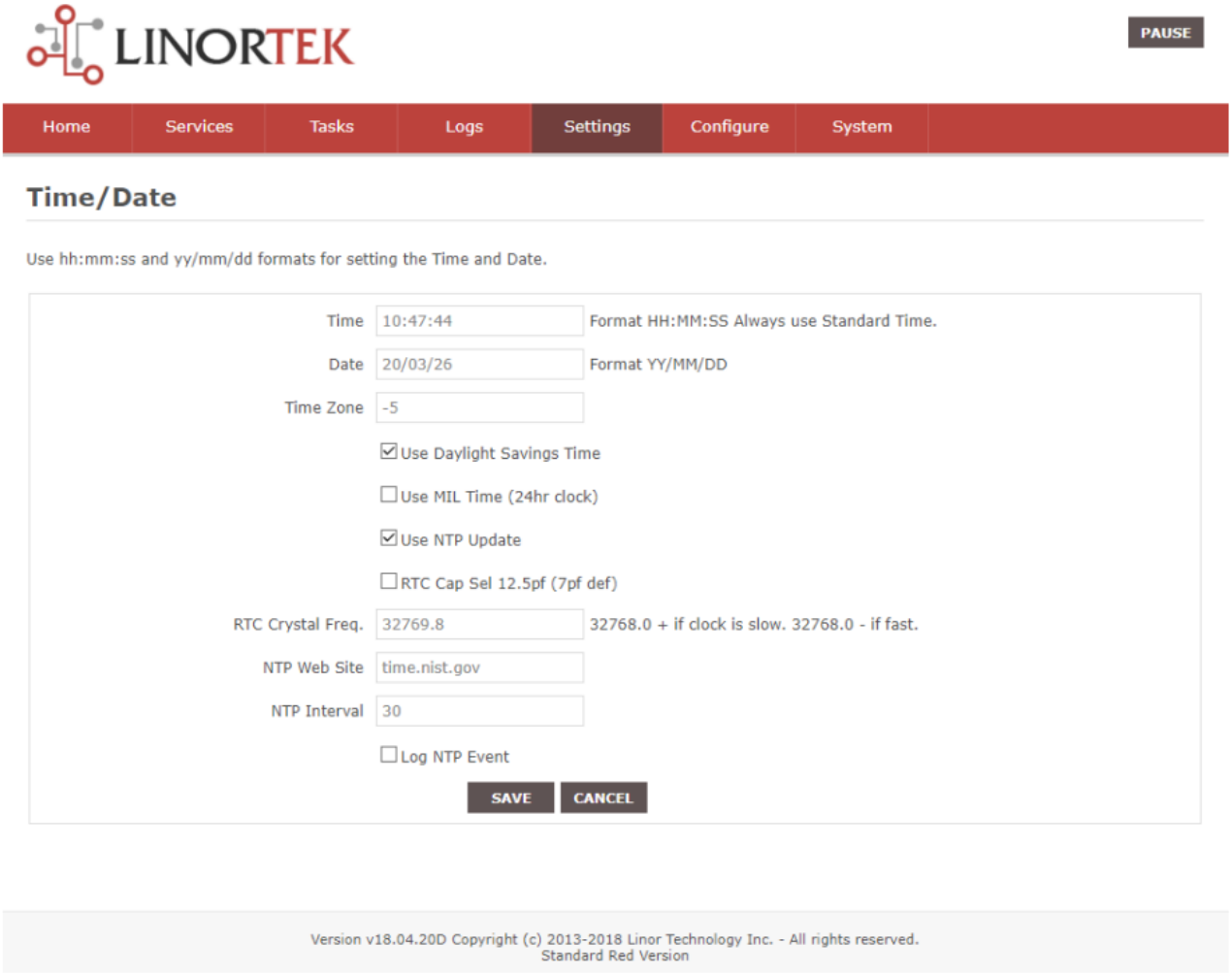
When first configuring your Netball-NTG you will need to verify the time and date on your home page. Your Netball-NTG is configured by default to use Eastern Standard Time (GMT-5) and will apply a correction for Daylight Savings Time. If your location is not in Eastern Time Zone, please make sure to set your Time Zone first.

CAUTION: Incorrect Time Zone may cause the BELLS not to ring at the right time.

To set your Time Zone, go to Settings – Time/Date page from the drop-down menu, and enter your local Time Zone (for example, -5 for Eastern Time Zone, -6 for Central Time Zone, -7 for Mountain Time Zone, -8 for Pacific Time Zone), make sure the Use NTP Update box is checked (when this box is checked, the Netball will update its time from the NTP server every 30 minutes by default.), then click SAVE button. The system will update its time at its next interval (30 minutes). If you want to get an immediate update, you can manually set it to the standard time on the Time box (one hour BEHIND your current time if you use Daylight Savings Time). For example, if your current time is 9:35 am, you should put 8:35 am on the Time box.

If you wish to use your internal NTP server, please check the How to Use Your Internal NTP Server for Linortek Devices for instructions.

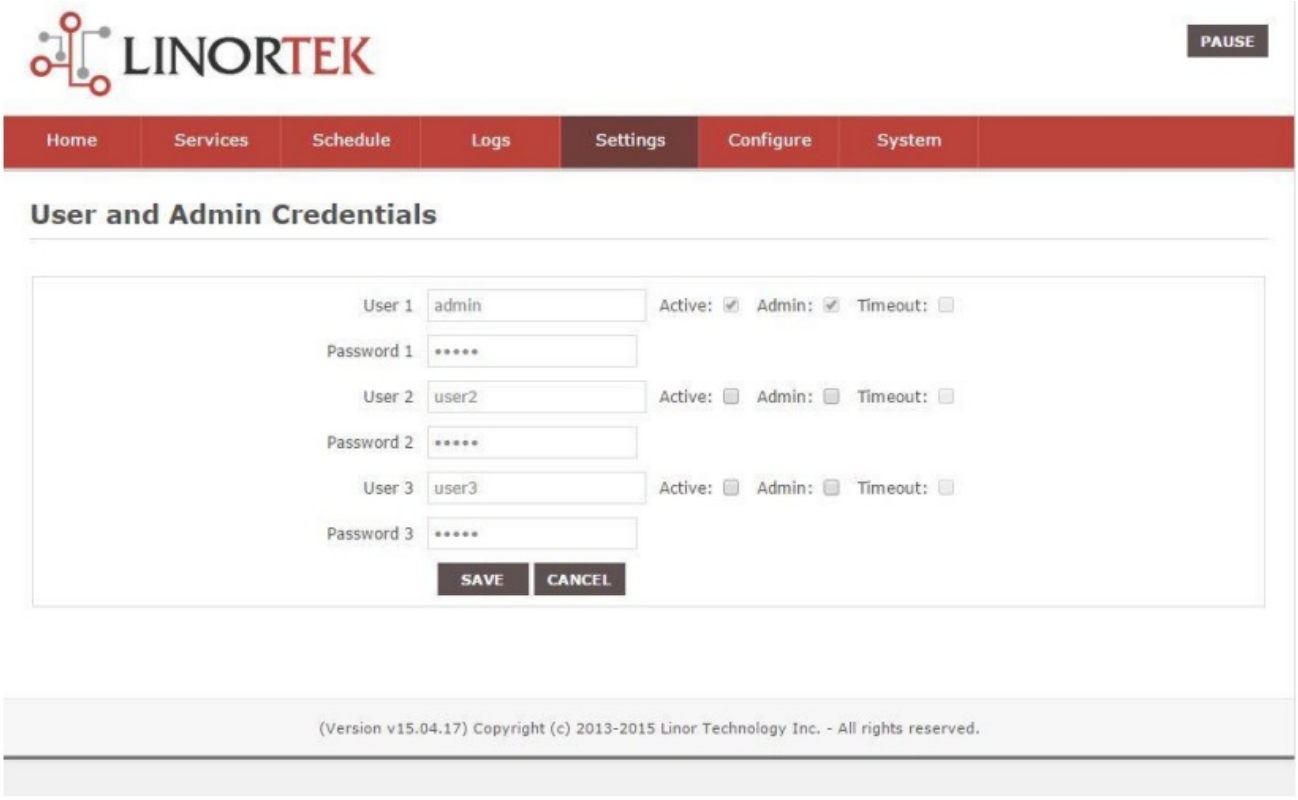
CAUTION: Incorrect settings might cause your devices unable to update the time from the NTP server. The instruction can be downloaded here:
https://www.linortek.com/download/How-to-Use-Your-Internal-NTP-Server-for-Linortek-Devices.pdf If you intend to keep your Netball off your network after configuring, you will need to uncheck Use Daylight Savings Time and Use NTP Update. You will then have to manually set the time to account for daylight savings, and adjust the time period to account for time creep.



User and Admin Credentials Page

Use this page from the Settings drop-down menu. Here you can set up to 3 users for your SERVER system. As a default only User 1 is Active. Here you can:

1. **User Name and Password –** Each user has their own credentials. As a default, these are set to admin/admin, user2/user2 and user3/user3 for Users 1, 2, and 3 respectively. The passwords are never displayed. Note: when you reset the password, it must be less than 13-character.
2. **Active –** Must be checked for this user to sign on, you cannot deactivate User 1.
3. **Admin** – Only the admin can save data on most pages. This protects your SERVER from being changed by an unauthorized person.
4. **Timeout** – Not enabled at this time.

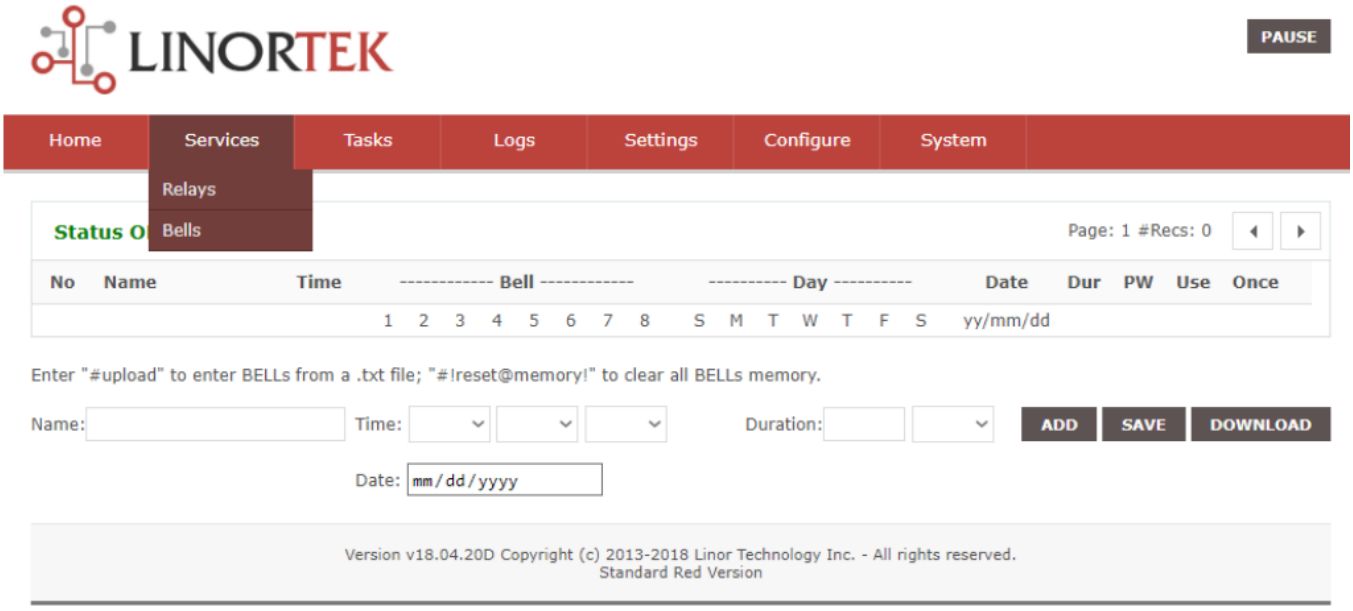


Creating a Bell Schedule

Once your time and other settings are configured, you can then create your bell schedule. This can be done using Netbell's Bell Schedule.

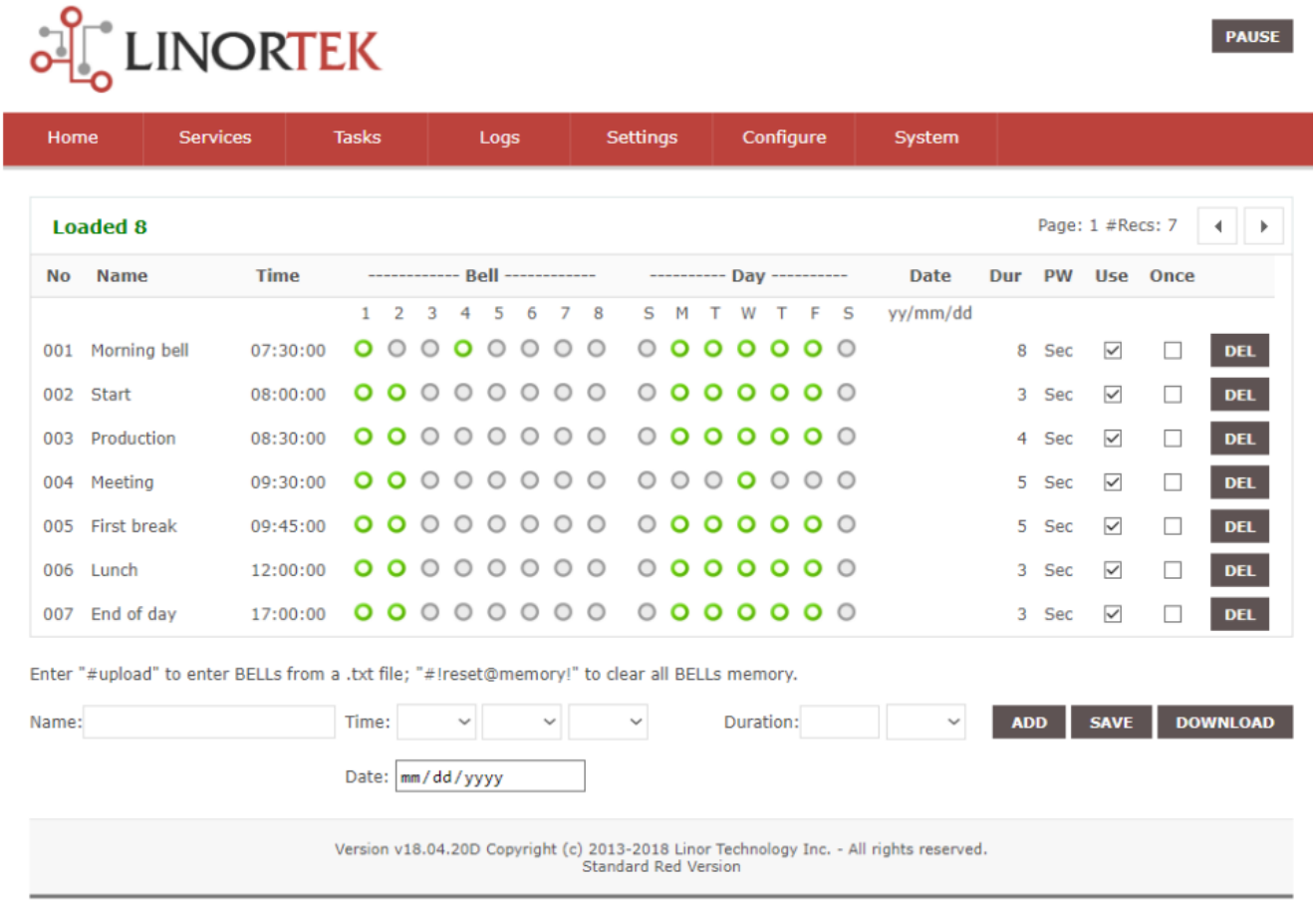
Creating a Bell Schedule from the Bells Page

Each Netball can set up to 500 bell event schedules. To add an event schedule, navigate to the Services dropdown menu, then select Bells. You will see the following page:



You may use this page to enter up to 500 events. An event can be created in 9 simple steps.

1. Enter an event name up to 15 characters long (Use letters and numbers only)
2. Use the 3 fields labeled Time to enter the time in HH:MM: SS **(Note:** the first field to select the hour uses a 24hr format. For 12 AM select 00, for 1 PM select 13)
3. (Optional) Enter a date. This will trigger the event only on this specific date
4. Enter a duration. Open the dropdown menu on the second box and choose either mS, Sec, or Min for milliseconds, seconds, or minutes respectively. In the first box then enter a value determining how many of the chosen units of measurement
5. Click the Add button. You will see this event listed above. Subsequent events will be listed in chronological order
6. Once an event is added, you may adjust which relay output is triggered by selecting pips 1 – 8 under the Bell column. By default, 1 and 2 are automatically selected. Note which numbers you are using as you will need to assign a sound to each one. For numbers 5 – 8 see the section Activating Extended Relay Range on page 19
7. You may choose which days of the week will use this event under the Day column. Days are listed Sunday – Saturday (Note: if a specific date is chosen it will override
   the Day column)
8. Check the Use box to enable this schedule. If you only want it to trigger one time, check the Once box
9. Finally, click Save



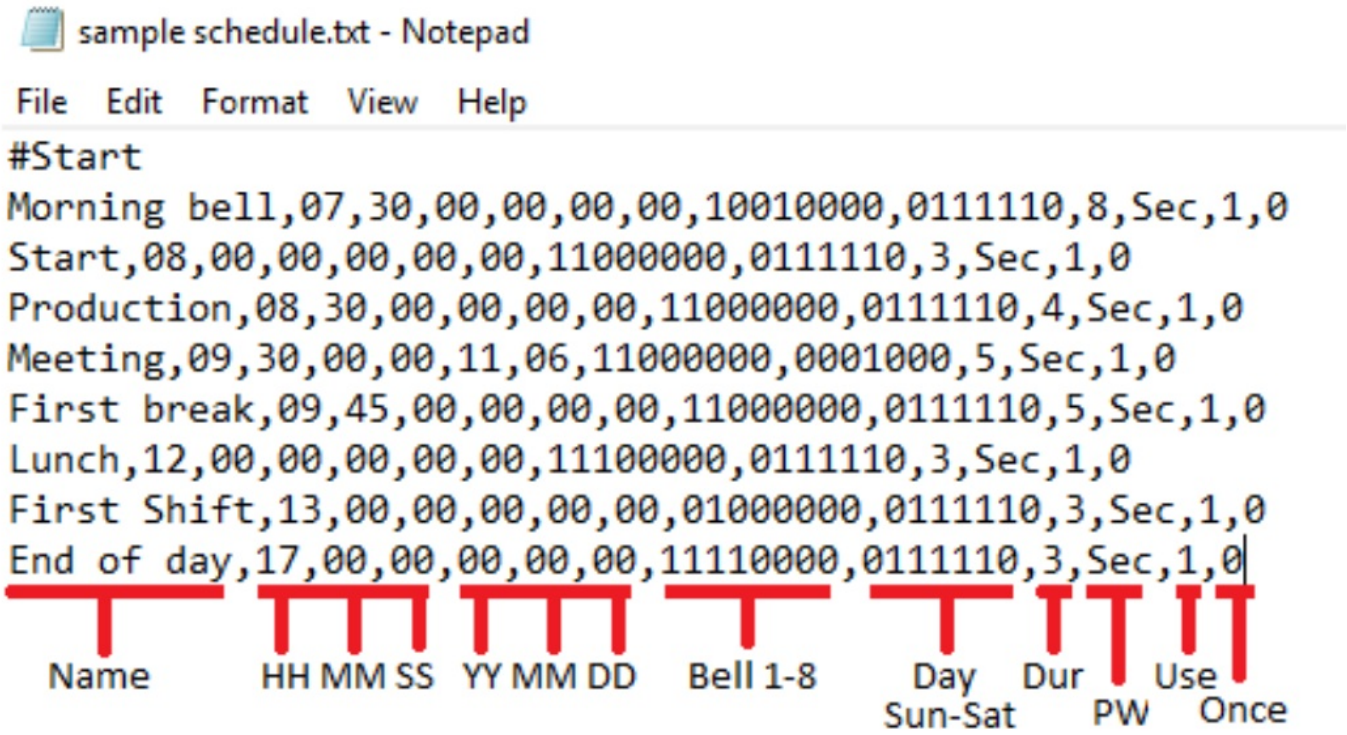
Deleting Items

You can delete an item from your schedule by clicking the DEL button to the right of the list. To clear the entire schedule, enter #!reset@memory!
Into the Name field and click Add.

Uploading a Premade Schedule

You may upload a Premade schedule by entering #upload into the Name field and clicking Add. This will take you

to a new page. Click Choose File to browse your computer for the schedule in either .txt or .csv format. Once selected, click Upload. This will return you to the previous screen with your new schedule listed.
You can create a schedule using a Plain Text editor such as Notepad. Your first line should be #Start – each subsequent line will be a separate entry with 13 items, each separated by a comma. Save this file as Plain Text (.txt).
Below is a sample prewritten bell schedule.

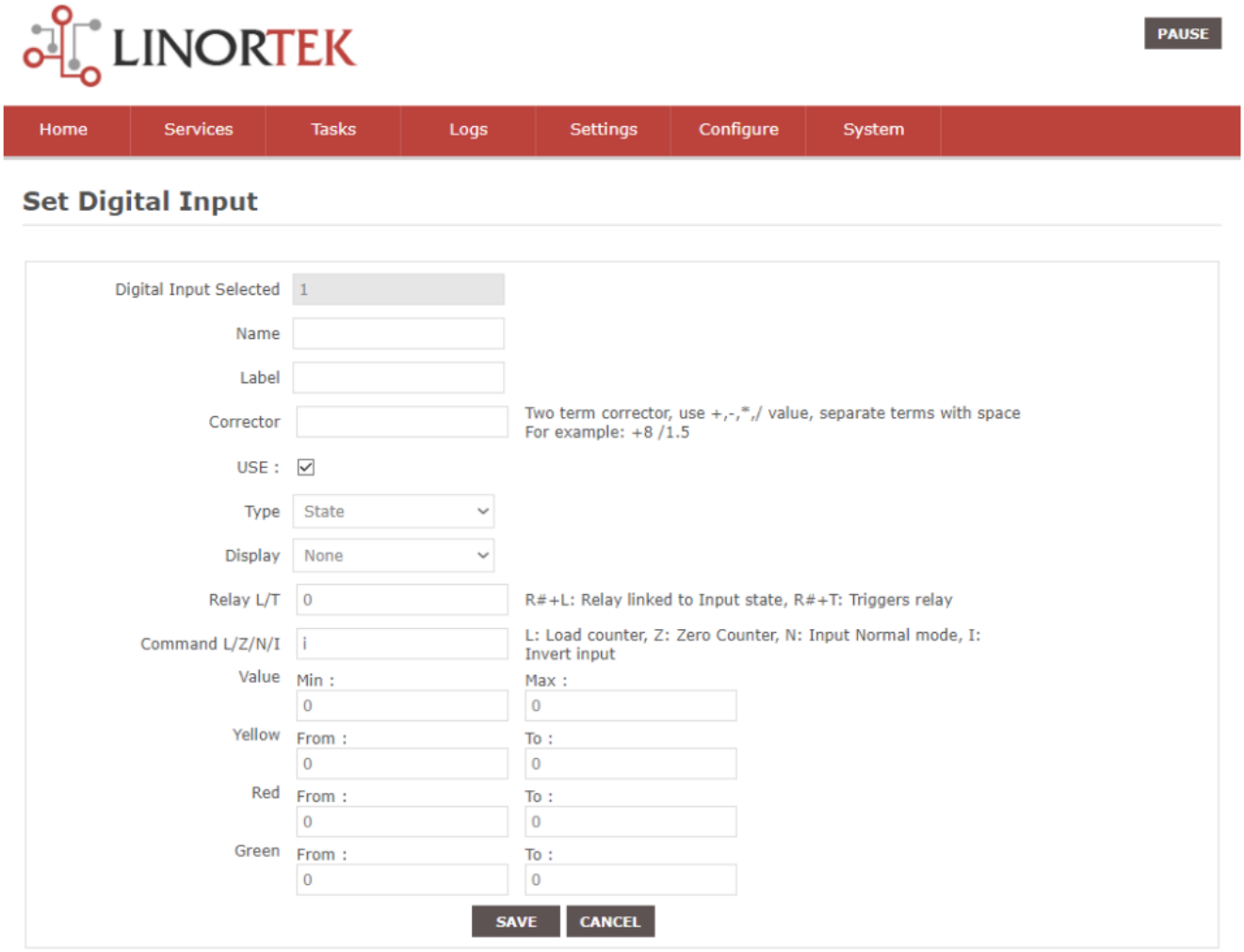


Saving your Bell Schedule
To save the bell schedule on your Netbell, click on the Download button in the bottom right. This will open a new tab in your browser and display the schedule as plain text. Copy and paste this text into a plain text editor such as Notepad and save.
Creating a Bell Schedule Using the Bell Scheduler Desktop App
There is a free desktop app to create a bell schedule available at:
https://www.linortek.com/downloads/support-programming/
Documentation is available at: **https://www.linortek.com/downloads/documentations/**

Using an External Trigger

You may also program your Netball to ring a bell upon input from an external trigger such as a pushbutton or door contact switch.
Note: unless your trigger device supplies its own power, ensure your input switch is set to Pull UP (See Wiring your Netball page 5 and Board Layout Reference page 15)
Setting the Digital Input
Note: The following guide will assume you are using Digital input 1 and using a bell connected to relay 1.
Navigate to the Services dropdown menu and select Inputs or IN/OUT. The Digital inputs will be listed as DIN 1 and DIN 2. Click on the blue pencil icon under DIN 1 and enter the following settings.

1. Enter a name in the Name field (if desired)
2. Enter a label in the Label field (if desired)
3. Check the Use box
4. Set Type to State
5. Set Command L/Z/N/I to i
6. Click SAVE



Setting Task for Digital Input
Now that your external trigger is wired to your Netbell and your digital input is configured, now you will need to set up two tasks.

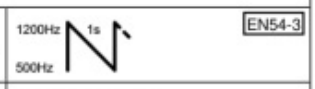
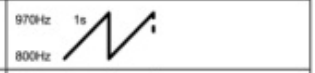
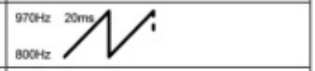
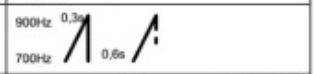
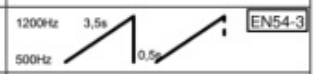
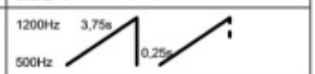
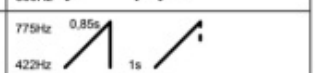
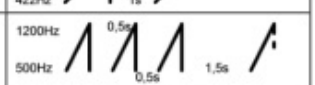
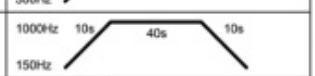
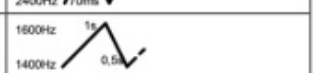
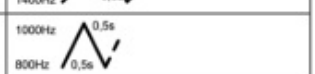
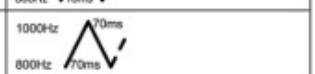
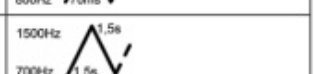
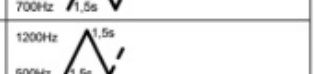
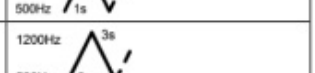
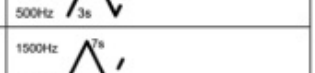
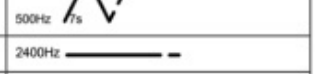
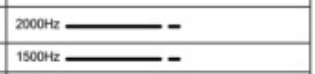
1. Navigate to the Tasks page
2. Click the Edit icon on the first available task
3. Name the task if desired
4. Check the Use box
5. Set Device A to Digital
6. Set Data A to 1S=1 (1 represents the number of the digital input, S signifies to your device to refer to the input state, and the last 1 signifies the state is on)
7. Set Device C to Relay
8. Set Data C to 1
9. Set Action to ON
10. Click Save
11. Next, click the Edit icon on a second available task.
12. Copy the same information from the first task, change Data A to 1S=0 and change Action to OFF

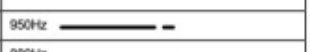
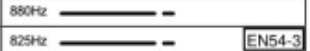
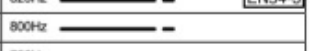
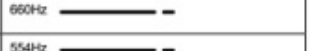
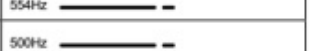
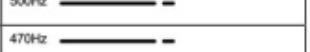
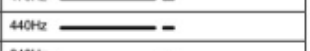
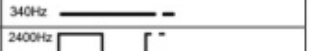
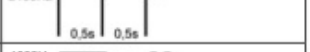
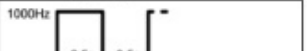
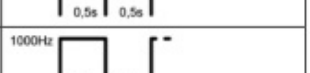
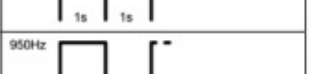
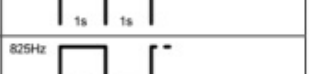
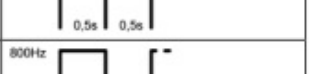
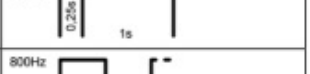
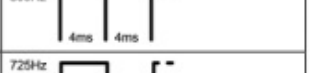
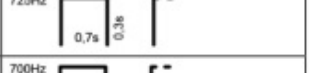
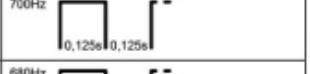
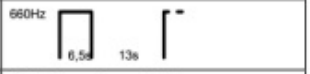
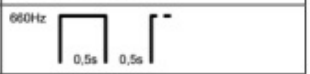
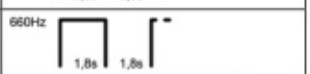
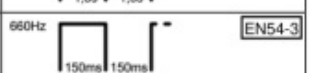
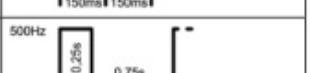
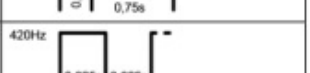
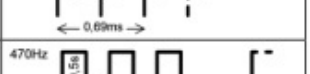
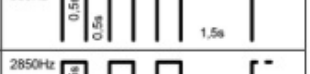
If you are using a trigger such as a door contact switch, set Data A in the example above to 1S=0 in the first task, and 1S=1 in the second task to ring the bell when the contact is broken. You may set multiple relays in Data C by separating the numbers with a comma (ex: 1,2,3).
Additionally, you may wish to turn off the relay timer to keep the bell ringing as long as the button is pressed or door contact is broken by navigating to the Services dropdown menu and selecting Relays or IN/OUT. In the

Relay Control section, click the Edit icon and erase the value in Pulse Width, and set Pulse Width Multiplier to None. Note that your scheduled bells will override this setting.

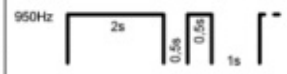
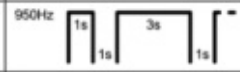
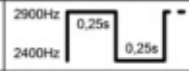
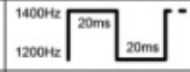
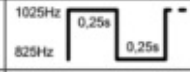
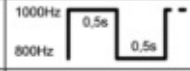
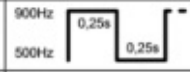
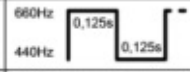
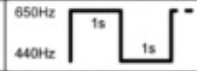
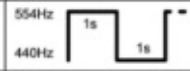
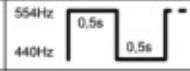
Netbell-KMB Tones

Tone table.

Grund-Ton-Nr. (♪)	Beschreibung/ Description/ Descrizione/ Описание	
1	Kein Ton/ Silence	
2*	Saw tooth, Germany DIN 33404-3 (emergency signal), PFEER PTAP	 EN54-3
9	Slow whoop, fire alarm, UK BS5839-1	
11	Whoop (fast)	
13	Whoop	
15	Slow whoop, evacuation, Netherlands NEN 2575	 EN54-3
16	Slow whoop, evacuation Australia AS2220	
18	Slow whoop, NFPA	
22	Whoop, Australia AS1670, ISO8201	
23	Siren	
24	Siren	
25	Siren	
26	Industrial alarm (Germany)	
27	Sweeping	
29	Sweeping (fast)	
30	Sweeping	
31	Sweeping, France NF C 48-265	
33	Sweeping, UK BS5839-1 (medium sweep)	
34	Sweeping (fast)	
35	Sweeping, UK BS5839-1 (fast sweep)	
36	Sweeping	
43	Sweeping	
44	Sweeping, IMO 3d, Germany KTA3901 evacuation	
45	Sweeping	
46	Sweeping, Finland General Alarm	
52	Continuous	
53	Continuous	
54	Continuous, Finland All Clear	
55	Continuous	

(♪)	Description.	
56	Continuous, PFEER (Gasalarm)	
57	Continuous, UK BS5839-1	
59	Continuous	
60	Continuous	 EN54-3
61	Continuous	
63	Continuous	
65	Continuous, Sweden SS031711 (All Clear)	
66	Continuous	
67	Continuous, Germany KTA3901 (All Clear)	
68	Continuous	
69	Continuous	
71	Continuous	
77	Intermittent	
82	Intermittent, PFEER (General Alarm), UK BS5839-1 (Back-up Alarm)	
83	Intermittent, PFEER (General Alarm)	
88	Intermittent	
90	Intermittent	
91	Intermittent	
92	Intermittent	
93	Intermittent (fast), electromechanical horn	
97	Intermittent	
98	Intermittent, Sweden SS 031711 (Imminent Danger)	
100	Intermittent, Industrial Alarm (Germany)	
101	Intermittent, Sweden SS031711 (Important Message (Pre Mess))	
102	Intermittent, Sweden SS031711 (Local Warning)	
103	Intermittent, Sweden SS031711 (Air Raid)	
104	Intermittent, Sweden SS031711 (Imminent Danger)	 EN54-3
107	Intermittent, Germany KTA3901 (evacuation)	
109	Intermittent, Australia AS2220,AS1610, AS1670	
110	Intermittent (fast variable), Bell	
111	Intermittent, ISO8201 (emergency evacuation signal), USA (evacuation)	
112	Intermittent, ISO8201 (emergency evacuation signal)	
113	Intermittent, ISO8201 (emergency evacuation signal) treble tone	

Appendix

Grund-Ton-Nr. (♪)	Description	
115	Intermittent, IMO (Telefon Call)	
116	Intermittent, IMO (abandon ship)	
117	Intermittent, IMO SOLAS III/50 + SOLAS III/6.4 (General Alarm)	
122	Alternating	
123	Alternating	
124	Alternating, Singapore	
125	Alternating	
128	Alternating	
130	Alternating, UK BS5839-1 (Fire Alarm)	
131	Alternating, UK BS5839-1 (Fire Alarm, Level crossing)	EN54-3 
135	Alternating, UK BS5839-1 (Fire Alarm, increased urgency – Level crossing)	
142	Alternating	
143	Alternating, Germany Industrial Alarm	
144	Alternating	
146	Alternating, France NFS 32-001 (fire alarm)	EN54-3 
147	Alternating, Sweden SS031711 (turn out)	
148	Alternating, Sweden SS031711 (turn out)	
152	Alternating-intermittent	

Ansteuerung der Töne/ Selection of the tones/ Activation des sons/ Controllo dei toni / Управление звуко-выми тонами

Selector –switch							External Tone Control		
							C1	C2	C1+C2
1	2	3	4	5	6	Grund-Ton No.(♪)	Tone No.	Tone No.	Tone No.
						1	2	88	57
ON						2 *	128	112	57
	ON					2	26	100	93
ON	ON					2	61	131	112
		ON				9	57	11	82
ON		ON				15	131	52	112
	ON	ON				16	109	52	56
ON	ON	ON				18	111	57	68
			ON			22	16	109	68
ON			ON			23	131	52	112
	ON		ON			24	131	52	131
ON	ON		ON			25	131	52	92
		ON	ON			26	2	100	93

Selector –switch							External Tone Control		
							C1	C2	C1+C2
1	2	3	4	5	6	Grund-Ton No. (♪)	Tone No.	Tone No.	Tone No.
ON		ON	ON			27	123	52	92
	ON	ON	ON			29	35	52	61
ON	ON	ON	ON			30	27	52	77
				ON		31	131	52	57
ON				ON		33	30	52	35
	ON			ON		34	35	52	93
ON	ON			ON		35	27	52	110
		ON		ON		36	146	67	57
ON		ON		ON		43	131	52	91
	ON	ON		ON		45	2	57	93
ON	ON	ON		ON		52	15	65	82
			ON	ON		54	46	54	131
ON			ON	ON		55	131	52	128
	ON		ON	ON		56	82	35	33
ON	ON		ON	ON		59	143	59	101
		ON	ON	ON		60	131	52	125
ON		ON	ON	ON		65	131	52	93
	ON	ON	ON	ON		66	110	52	107
ON	ON	ON	ON	ON		69	131	52	110
					ON	71	131	52	93
ON					ON	77	61	52	122
	ON				ON	82	131	52	83
ON	ON				ON	83	56	2	82
		ON			ON	88	2	57	128
ON		ON			ON	90	131	52	125
	ON	ON			ON	91	30	52	110
ON	ON	ON			ON	92	33	52	57
			ON		ON	93	2	128	57
ON			ON		ON	97	2	63	93
	ON		ON		ON	100	131	52	125
ON	ON		ON		ON	101	98	102	65
		ON	ON		ON	103	131	65	147
ON		ON	ON		ON	104	103	65	101
	ON	ON	ON		ON	109	16	52	22
ON	ON	ON	ON		ON	110	131	61	91
				ON	ON	112	2	57	128
ON				ON	ON	113	52	123	104
	ON			ON	ON	115	117	116	44
ON	ON			ON	ON	116	117	93	125
		ON		ON	ON	117	93	116	125
ON		ON		ON	ON	123	27	52	77
	ON	ON		ON	ON	124	53	83	2
ON	ON	ON		ON	ON	130	2	107	67
			ON	ON	ON	131	2	112	57
ON			ON	ON	ON	135	16	56	109
	ON		ON	ON	ON	142	2	54	88
ON	ON		ON	ON	ON	143	59	93	33
		ON	ON	ON	ON	144	110	61	2
ON		ON	ON	ON	ON	146	31	67	57
	ON	ON	ON	ON	ON	148	131	52	92
ON	ON	ON	ON	ON	ON	152	110	61	13

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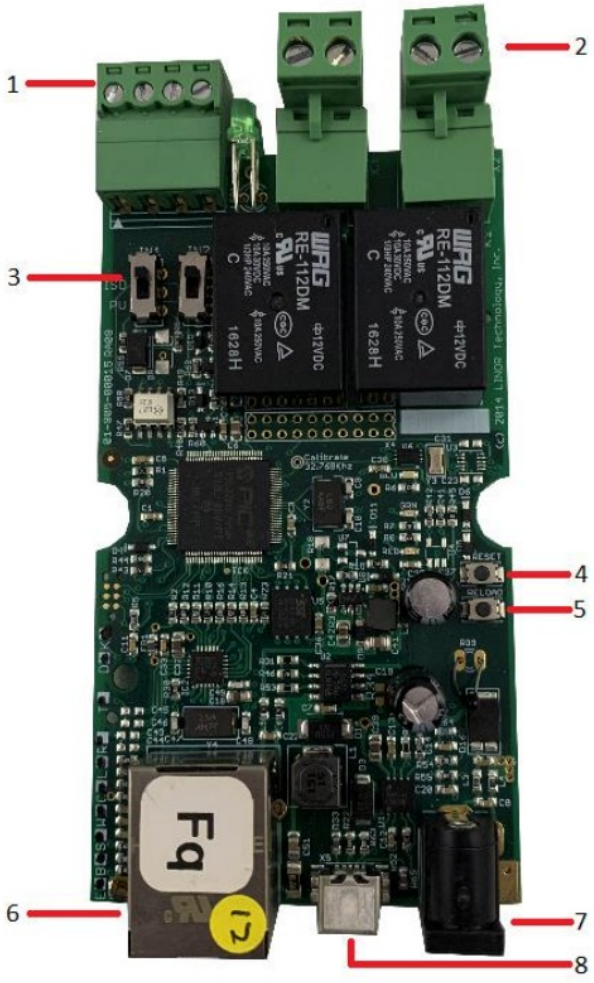
http://www.pfannenberg.com

Board Layout Reference

Netbell-2



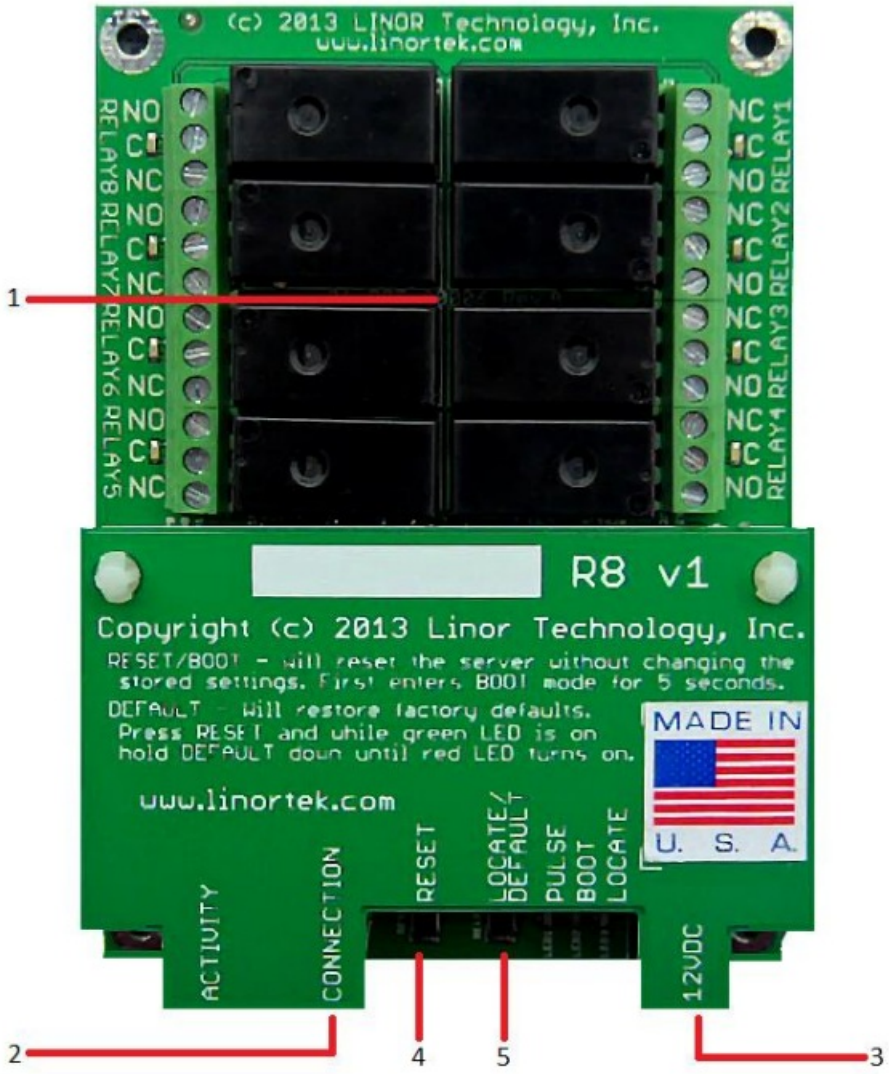
1. Digital Inputs (#1 on the left) 5-24VDC. when connecting a 12VDC-24VDC sensor to the input, an external resistor (provided upon request, 2.2k ohm 0.5watt) must be used.
2. Relay Outputs (#1 is on the right): Dry contact, 8A@30VDC, 8A@48VAC Max **(Caution:** Although the relays are rated for higher voltages, this product is not designed for use at line voltages. You should not use voltages through the SERVER product exceeding 48 volts. IT IS NOT SAFE.)
3. Digital Input Switches (IN 1 on left)
4. Reset Button
5. Reload Button (turns on blue LED – identifies on Discoverer)
6. RJ45 Connector

7. Power Connector (12VDC)
8. USB Mini Connector for Temperature/Humidity Sensor (sold separately)

This is an image of a bare board Netball-2, it explains the inputs and outputs of the device and the ratings for each. A 12VDC power supply is provided with the board, it is also POE (Power Over Ethernet) capable.

Netbell-8

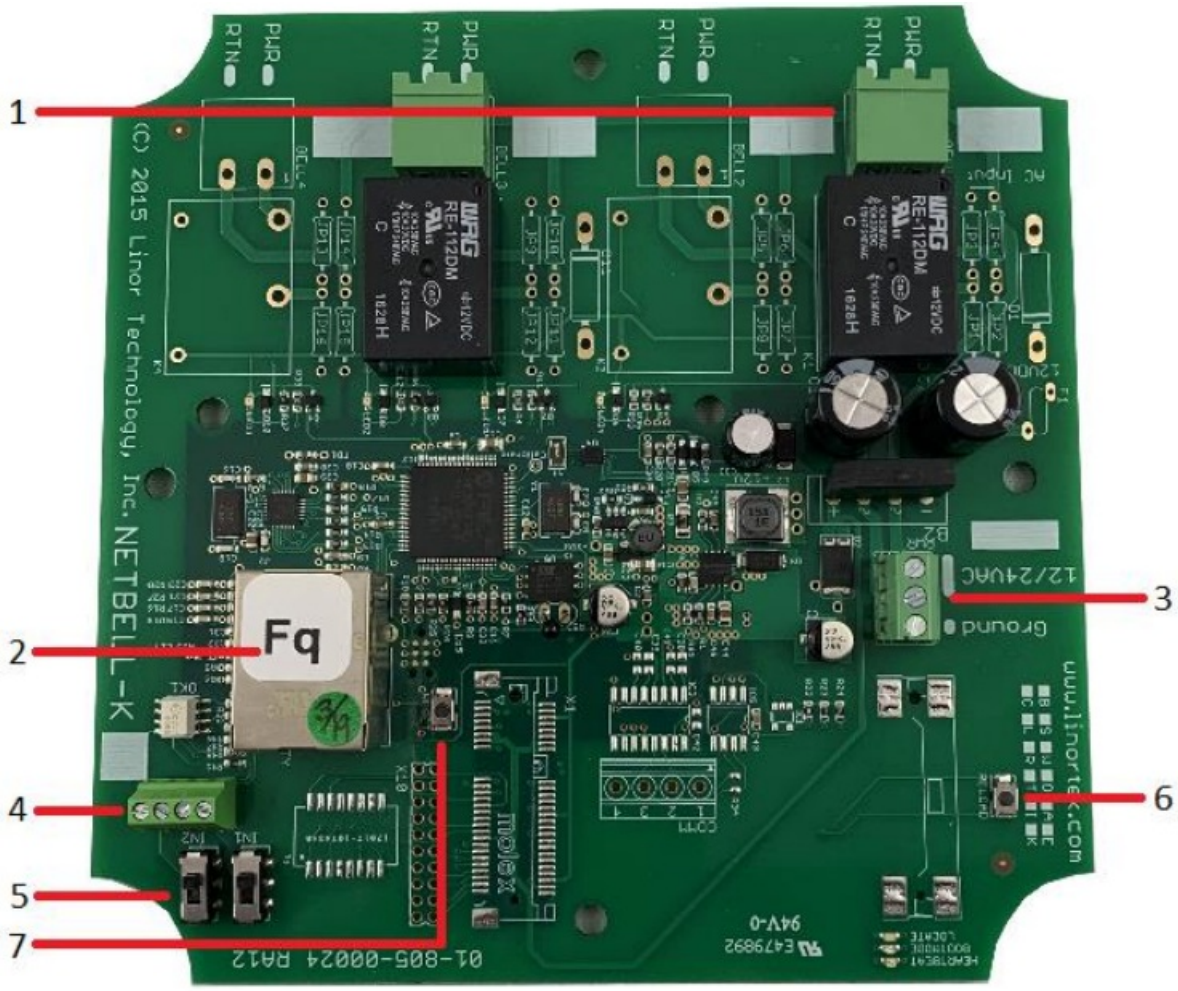
Netbell-8



1. Relay outputs (Relay 1-4 right top to bottom, 5-8 left bottom to top) 12VDC 5A, 24VDC 3A, 48VDC max. (Caution: This product is not designed for use at line voltages. You should not use voltages through the SERVER product exceeding 48 volts. IT IS NOT SAFE.)
2. Rj45 Connector
3. Power Connector (12VDC)
4. Reset Button
5. Reload Button (turns on blue LED – identified on Discoverer)

This is an image of a bare board Netball-8, it explains the inputs and outputs of the device and the ratings for each. Each relay has an NO (Normally Open), C (Common), and NC (Normally Closed) Terminal. A 12VDC power supply is provided with the board.

Netbell-K and Variants



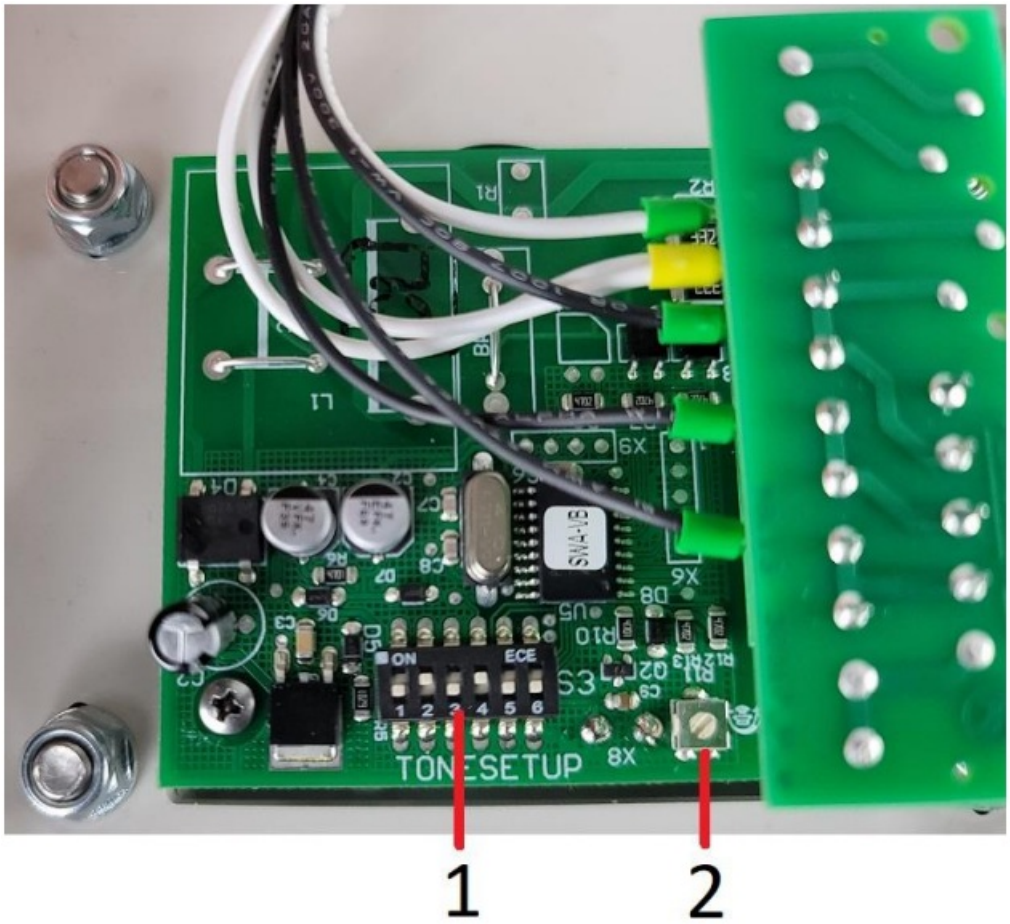
Netbell-K Board Shown

1. Relay Outputs (Pre-wired to Enclosure. 8A@30VDC, 8A 48VAC) Max (Caution: Although the relays are rated for higher voltages, this product is not designed for use at line voltages. You should not use voltages through the SERVER product exceeding 48 volts. IT IS NOT SAFE.)
2. Rj45 Connector
3. Power Connector (12-24VAC)
4. Digital Inputs 5VDC48VDC – 12VDC48VDC must use the external resistor
5. Digital Input Switches (IN 1 on up position PU mode)
6. Reload Button (turns on blue LED – identifies on Discoverer)
7. Reset Button

Netbell-KL-M2 Enclosure shown

1. Relay Outputs (Relay #2 left, #3 right)
2. Power Connector (12-24VAC)
3. Digital Input Connector
4. Rj45 Connector

The above images describe the layouts of the Netball-K, KL, KB, M2 variants, and Netball-4K. Netbell-K, KL, and KB have 2 relay outputs, with relay #1 prewired to the built-in bell/buzzer, and the other prewired to the enclosure. The M2 variants have the third relay and have digital input #1 prewired to the enclosure. Netbell-4K has 4 relays prewired to the enclosure. The Power connector on all models is prewired to the enclosure. The Netball-K and its variants are shipped with the appropriate AC transformer. Please see page 6 for wiring the power transformer. Netbell-K-C units and all variants have an additional connector for the digital clock.
Netbell-KMB and its variants do not have external relay connectors.
Netbell-KMB



Netbell-KMB Control board (Located behind enclosure lid)

1. Tone Setup DIP Switches
2. Volume Control

Factory Reset
To perform a factory reset, push the Reset button. When the green LED turns on, push and hold the Reload button until the flashing red LED turns off and then turns on solid.
This document can be found at **www.linortek.com/downloads/documentations/**
If you need assistance with your device please visit **www.linortek.com/technical-support**

Linear Technology, Inc.
Information is subject to change without notice.
Aug 2022
Printed in the U.S.A

Documents / Resources

	**LINORTEK Netbell-2 Network Bell Controller** [pdf] User Manual Netbell-2, Network Bell Controller, Netbell-2 Network Bell Controller, Bell Controller, Controller, Netbell-K Series