LeafNut

On-site Installation Guide

LeafNut Harvard

Contents

1. Installation

If retrofitting LeafNut Gear please ensure that **ALL POWER** to the column is isolated before continuing installation.

Fit the Node / BranchNode through the 20mm photocell fitting.

The neoprene black washer MUST be located INSIDE the fitting. Fasten the LeafNode/ BranchNode securely by hand.

BranchNode

LeafNode

Make a note of the Node ID number or take the peel off label and mark it against the correct column on your work sheet.

Harvard
ENGINEERING PLC
www.harvardeng.com
+ 44 (0)113 383 1000

EN 300 220
Receiver Classification — Class 2
Equipment Class — Class 2①
Duty Cycle < 10%

WMLN — 868A
LEAF NODE
868MHz

ta − 20/+55 °C

WiMAC

Made in UK
www.leafnut.com

REV 99

CE

12345678

12345678

Please Note, if you are NOT using a WiMac Handheld it is extremely important that the node ID is recorded correctly. The 8 digit Node ID number (found on the base of the LeafNut unit) is vital if the CMS is to work correctly. If not recorded accurately, further site visits will be needed!
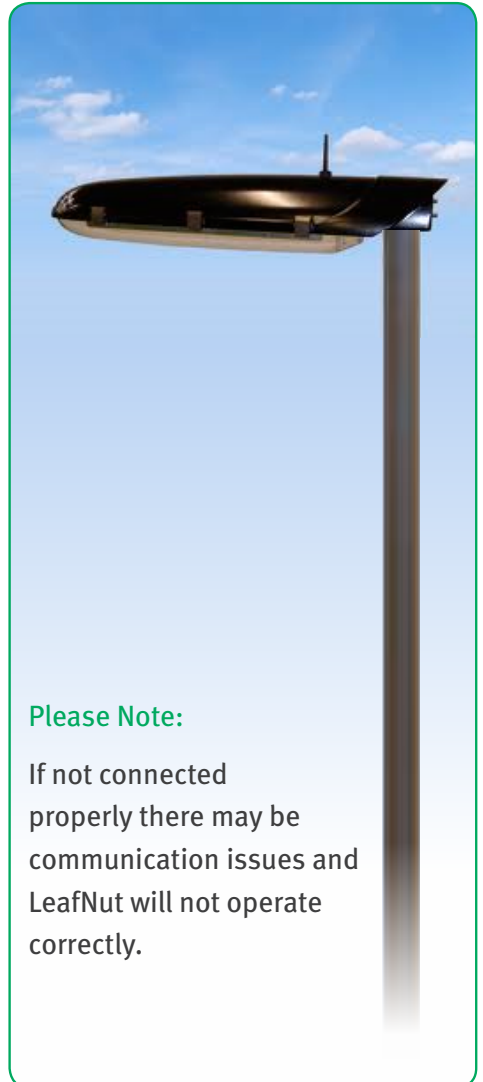
Connect the Node to the Ballast.

If installing WiMac Enabled Ballast the plug connector between the leaf and ballast must be secure – please ensure the 3 small pins within plug are meeting.

Close the lantern.

Ensure all wires / cables are free of obstruction and away from anything that may lead to damage. E.g. the lamp or lantern closing.

Please Note:

If not connected properly there may be communication issues and LeafNut will not operate correctly.

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2. Handheld On-site Tester

To use the Handheld for Node Detection,
you must first **POWER DOWN THE COLUMN!**
Please note, when selecting either Manual or Automatic
the Sniffer will perform a series of Ballast Tests as
well as showing the ID number.

If the use of a Sniffer/ Handheld is available, prepare the device for commissioning and Node Detection.

Please consult the manual of each device for proper use.

16796449
LEAF NODE V2   25

Initialising

Power up the Column.

If you are using a Sniffer/ Handheld the LeafNode ID should appear on the screen after a few seconds.

Make a note of the ID, street name and column number.

Column #	Street	Node ID							
		1	6	8	5	1	0	1	0
14	SMITH STREET	1	6	8	5	1	0	1	1
15	SMITH STREET	1	6	8	5	1	0	2	7
16	SMITH STREET	1	6	8	5	1	1	9	
17	SMITH STREET								

Handheld
Node Sniffer

Please note the column WILL day burn until the ID numbers are added to the LeafNut system and communication between the BranchNode and LeafNode is established.

(This can be up to several hours or even the next day)

1. BranchNode is installed on the column.

2. Communication between the BranchNode and LeafNode has not yet been made.

3. The ID numbers have been added to the LeafNut system and communication between the BranchNode and LeafNode is established.

1.

2.

3.

Finding a strong signal

If the area already has LeafNodes installed use the Sniffer/ Handheld to find the strongest BranchNode Signal.

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3. Hardware Maintenance

BranchNode

Fits in place of a photocell on the top of a lantern (20mm fitting) BUT can be mounted separately with a power pack!

Controls up to 256 LeafNodes through Radio Frequency - up to 1km in an Urban Environment.

Can control the lantern it is installed on (like a LeafNode)

LeafNode

Has a 20mm fitting and fits in place of a photocell, on the top of a lantern.

Receives Time Profiles (when to turn on/off and dim) but also sends back reports of any lamp or ballast issues, such as strike fails or aged lamps that need to be changed!

NemaNode[1] and MagNode[2]

Offer all the same features as a normal LeafNode except for the dimming capabilities.

This is because they can be installed without a WiMac Enabled Ballast. **Installation of these differs slightly to that of a LeafNode

WiMac Enabled Ballast

Electronic Ballast that allows Street Lights to dim down to 75% or 50%.

Plugs directly into a BranchNode or a LeafNode

Handheld Tester A.K.A Node Sniffer

Assists with commissioning and maintenance of existing LeafNut installations by running remote tests and finding the strongest BranchNode signal.

LEAFNUT SUPPORT ON-SITE INSTALLATION GUIDE

Quick Reference

1 Fit the Node/ BranchNode through the 20mm photocell fitting.
The neoprene washer MUST be located INSIDE the fitting.

2 Make a note of the Node ID number and mark it against the correct column on your work sheet.

3 Connect the Node to the Ballast. If installing WiMac Enabled Ballast the plug connector between the leaf and ballast must be secure – please ensure the 3 small pins within plug are meeting.

4 Close the lantern, ensuring all wires/ cables are free of obstruction and away from anything that may lead to damage. E.g. the lamp or lantern closing.

5 If the use of a Sniffer/ Handheld is available, prepare the device for commissioning and Node Detection.
Please consult the manual of each device for proper use.

6 Power up the Column.
If you are using a Sniffer/ Handheld the LeafNode ID should appear on the screen after a few seconds. Make a note of the ID and Column

7 Please note the column WILL day burn until the ID numbers are added to the LeafNut system and communication between the BranchNode and LeafNode is established. (This can be up to several hours).

8 If the area already has LeafNodes installed use the Sniffer/ Handheld to find the strongest BranchNode Signal.

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LEAFNUT SUPPORT ON SITE MAINTENANCE GUIDE

IMPORTANT

THE COLUMN MUST BE FULLY POWERED DOWN BEFORE ANY MAINTENANCE WORK IS STARTED

Remove column door and ensure column is isolated (Following G39 regulations)

Prepare the Sniffer/Handheld for Node Detection (Please consult manual for correct operation)

Power Up the column. Does the LeafNode ID appear on the screen?

Yes
Does it match the ID on LeafNut?

Yes
Check for the strongest BranchNode signal using the Sniffer/Handheld.

No
Record the new number and double check the location and BranchNode Signal.

No
The LeafNode may not have Power. Is the column Day Burning?

Yes
Power down the column and check all the connections in the lantern

No
Check the power supply throughout the column.

THE COLUMN WILL DAY BURN UNTIL THE BRANCHNODE AND LEAFNODE CONNECT

(UP TO SEVERAL HOURS OR THE NEXT DAY)

IS THE COLUMN DAY BURNING WHEN YOU HAVE COMPLETED MAINTENANCE?

Are the connections ok?

Yes

Change the node and record the number using the sniffer

No

Make any changes and reconnect the node.

If the ID does still not appear it is likely to be a ballast issue.
Swap the ballast and repeat the process.

Power up the column and use the Sniffer/Handheld for Node Detection.

Has the LeafNode ID displayed on the Sniffer/Handheld?

Yes

Record the ID number and location.
Perform a search for the strongest Branch Signal

No

Swap the Node and repeat the process with the sniffer

LeafNut

On-site Maintenance

Listed below are several scenarios that you are likely to encounter when returning to site for Maintenance on columns that have LeafNut installed.

If all the steps listed earlier in this guide are followed then the chances of returning will be greatly reduced.

Whole Street is Day Burning:

This likely due to the LeafNodes being out of range of the BranchNode Signal - use the Handheld/ Sniffer to locate the nearest BranchNode (this can take up to several minutes)

Another potential cause is that the LeafNode IDs have not being added to the system yet. Use the Sniffer to record all the LeafNode IDs and forward to the System Administrator.

Whole Street is Working Except for 1 Column that is Day Burning:

It is likely that the LeafNode Id of the Day Burning column is entered wrong on the system. Use the Handheld / Sniffer to record the ID number.

If the ID number matches the one on the system the next step is to check the connections in the lantern and possibly swap the LeafNode. Making sure to record the new ID and pass any changes on to the administrator.

BranchNode Lamp is Day Burning:

The Id has not being entered on to the System – notify the System Administrator for the necessary changes.

Light Reported as Not Coming On at Night:

The default for a LeafNode that has never had any communications is to Day Burn. When a column is reported is not coming on at night it usually indicates there is a power issue with the column itself.

Other causes are likely to be aged Lamps or where the Lamp has failed to strike – these are highlighted by the system.
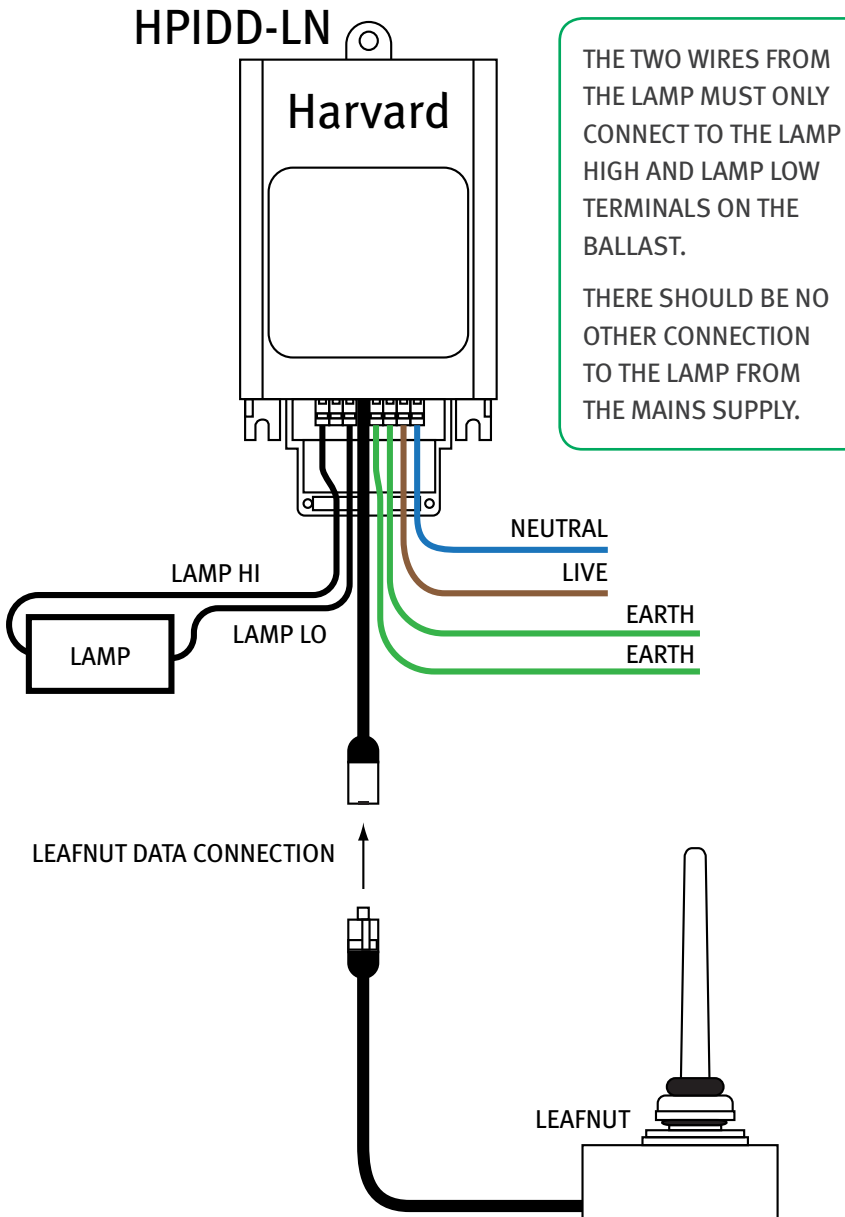
After Previously Working Correctly, a Whole Street is Now Day Burning:

A LeafNode will remember what it did the previous night if it loses communication with its BranchNode. The only time it will revert to Day Burning is when it loses Power and comes back on. This is due to the LeafNode losing its memory and going back to its Default Day Burning.

So it is likely the area had a power cut. The LeafNodes will automatically restart communications with their BranchNode but it can take a few days depending on how many are in the area.

WiMAC Enabled Ballast Wiring Diagram

HPIDD-LN

Harvard

THE TWO WIRES FROM THE LAMP MUST ONLY CONNECT TO THE LAMP HIGH AND LAMP LOW TERMINALS ON THE BALLAST.

THERE SHOULD BE NO OTHER CONNECTION TO THE LAMP FROM THE MAINS SUPPLY.

NEUTRAL

LIVE

LAMP HI

EARTH

LAMP LO

EARTH

LAMP

LEAFNUT DATA CONNECTION

LEAFNUT

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Notes

N.B.

FCC warning statement:

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, and (2) This device must accept any interference received, including interference that may cause undesired operation.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. End users must follow the specific operating instructions for satisfying RF exposure compliance. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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