



# FEBnet Node

FLUORESCENT EMERGENCY BALLAST NETWORK SYSTEM



## Installation Instructions

### !IMPORTANT SAFEGUARDS!

WHEN USING ELECTRICAL EQUIPMENT, BASIC SAFETY PRECAUTIONS SHOULD ALWAYS BE FOLLOWED, INCLUDING THE FOLLOWING:

## READ AND FOLLOW ALL SAFETY INSTRUCTIONS

1. To prevent damage to the FEBnet Node, only use the power supply provided.
2. An unswitched AC power source is required for operation of the FEBnet Node (100-240 VAC, 50-60 Hz).
3. This product is suitable for installation in indoor, dry locations only.
4. The use of accessory equipment not recommended by the manufacturer may cause an unsafe condition.
5. Do not use this product for other than intended use.
6. Servicing should be performed by qualified service personnel.
7. NOTICE: This equipment complies with the FCC RF Exposure Limits. A minimum of 20 centimeters (8 inches) separation between the device and the user and all other persons should be maintained.

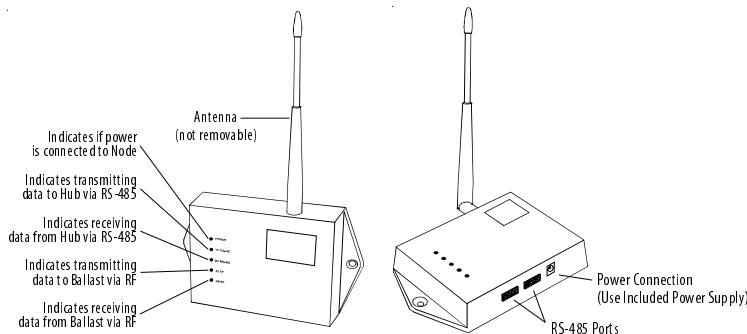
### FCC COMPLIANCE STATEMENT

1. **WARNING:** The antenna used for this device must be installed to provide a separation distance of at least 20cm (8 inches) from all persons, and must not be co-located or operating in conjunction with any other antenna or transmitter other than those contained within this device.
2. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
3. This product has been tested and complies with the specifications for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used according to the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which is found by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
  - Reorient or relocate the receiving antenna
  - Increase the separation between the equipment or devices
  - Connect the equipment to an outlet other than the receiver's
  - Consult a dealer or an experienced radio/TV technician for assistance

## SAVE THESE INSTRUCTIONS

### OVERVIEW

The FEBnet Node is a device intended for use with the FEBnet system. When wired into the network, this device will convert RS-485 information from the FEBnet Hub to wireless information for a FEBnet emergency ballast. Additionally, the FEBnet Node will convert the wireless information from a FEBnet emergency ballast to RS-485 information suitable for the FEBnet Hub. The FEBnet Node is powered by 100 to 240 VAC and can be wall-mounted or placed on a shelf or desktop.



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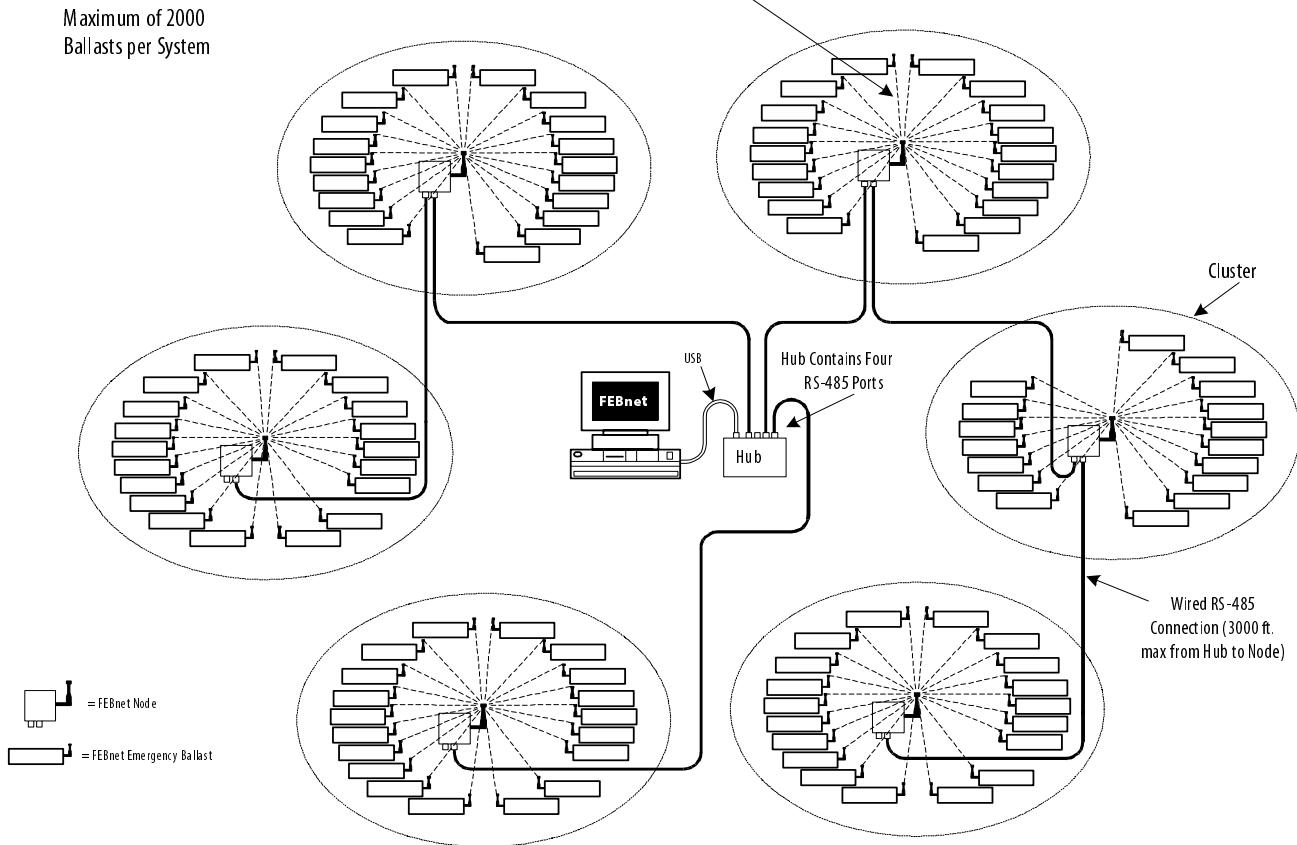
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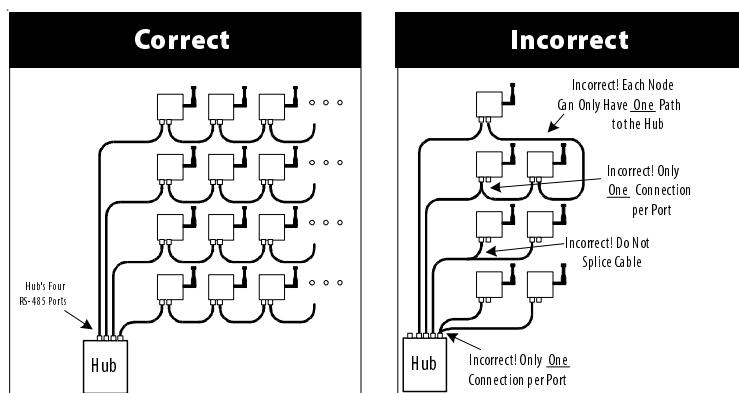
# INSTALLATION

## STEP #1 ► PLANNING THE INSTALLATION

- > FEBnet Node locations will be different for every application. A basic block diagram of the system is shown below.



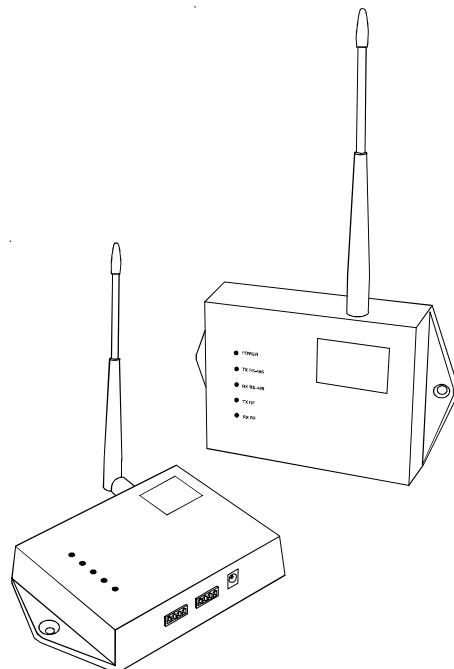
- > Important points to follow when deciding the location of each FEBnet Node:
  - Always mount each FEBnet Node close to the center of the emergency ballast cluster.
  - Each FEBnet Node should be connected to the FEBnet Hub with less than 3000 feet of cable.
  - FEBnet Nodes should be directly connected to no more than two other FEBnet Nodes.
  - Be aware of placing the FEBnet Node in or around metal objects. This can greatly decrease range.
  - Each port on the FEBnet Hub will support no more than 256 FEBnet Nodes.
  - See below for examples of correct and incorrect hub/node installations.



## STEP #2 ► MOUNTING THE FEBnet NODE

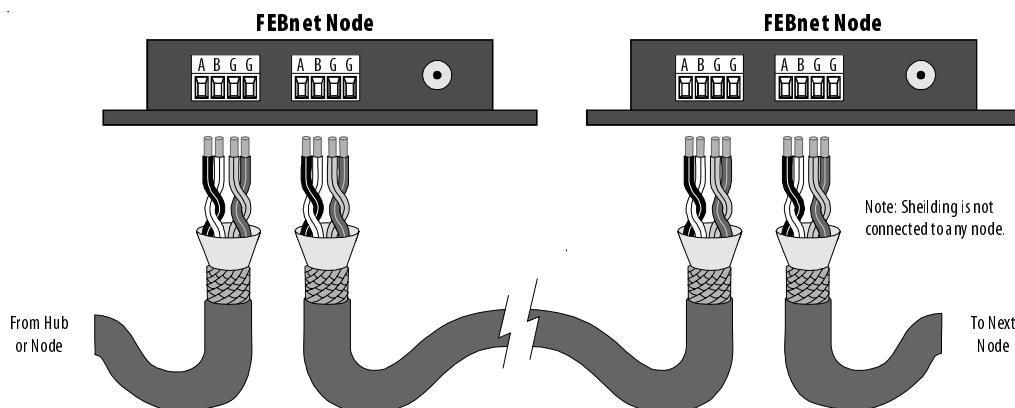
- > The FEBnet Node can be mounted on the wall or it may be placed upon the desktop.

NOTE: The antenna on the FEBnet Node must be positioned vertically (see illustrations). This improves network distance and communication reliability.



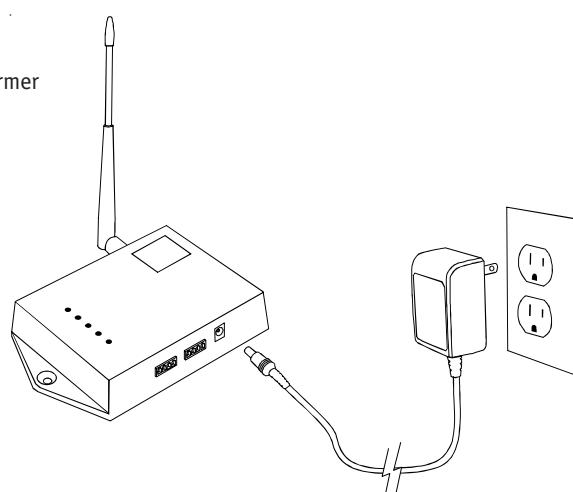
## STEP #3 ► NETWORK WIRING

- > Use 4-conductor, twisted pair, shielded, low-capacitance RS-485 cable (Belden 9842 or similar).
- > Connect wires from A to A and B to B. The grounds are common.
- > Be sure the A and B wires are together in the same twisted pair.



## STEP #4 ► FEBnet NODE POWER UP AND QUICK CHECK

- > Power up the FEBnet Node by connecting the power supply (provided) to the circular jack on the bottom of the FEBnet Node. The wall transformer plugs into a typical AC wall receptacle.
- > The power indicator should illuminate when the power supply is connected to the FEBnet Node and AC power source. If not, see the Troubleshooting section on the next page.
- > Networking functions can only be tested when the system is completely installed and operational. Please see the FEBnet PC Software Manual for more information.



# TROUBLESHOOTING

- > If power indicator does not illuminate, verify the presence of AC power at the input to the power supply.  
Do not plug the FEBnet Node into an outlet that is controlled by an on/off switch.
- > If AC power is present, check that the power supply is operating by measuring the voltage at the circular output jack. It should be 6 VDC.
- > If networking problems occur, test the FEBnet Node network wiring to determine if a short circuit exists. Measure the resistance between the A and B terminals of each FEBnet Node. Also measure between the A terminal and Ground terminals as well as between the B terminal and Ground terminals. A measurement of less than 100 Ohms indicates a possible short circuit. Trace out the cable to locate the short.