

# ***Elliott Bay Engineering, Inc.***

*Professional Electrical Engineering & Power Conversion Services*

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## Wireless Communications and Control with GRID-NODE



**EBE'S GRID-NODE WIRELESS COMMUNICATIONS ASSEMBLIES** are configured to provide seamless connectivity to a broad range of network and machine to machine endpoints. Each assembly incorporates either "off the shelf" or proprietary, custom configured wireless routers, modems, radios and other communications and control components to provide secure communications with and control of network endpoint devices. Typical applications include electric, water and gas metering, transformer monitoring, capacitor bank monitoring and control, distribution re-closers, streetlight controls etc...

With appropriate selection and configuration of components, GRID-NODEs can be configured to provide a range of communications and control capabilities for system endpoint devices. For example, GRID-NODE component devices can be configured to transparently pass data between device endpoints and the network head end systems or they can be configured to capture, store and analyze data at the endpoint and to provide local controls at the endpoints.

Supported wireless router component suppliers include:

Digi International, Sierra Wireless, Net-Com Wireless, Cradlepoint, Connected I/O

Specific, proprietary, custom configured routers can be configured to enable applications to be installed in the GRID-NODE to enable automatic configuration and remote upgrades.

Typical communications options include Cellular, Wifi, 900Mhz RF

Typical connections to endpoint devices include 10/100 Ethernet, RS232/RS485 serial ports, USB, digital and analog I/O.

# Power Supply Specifications

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## **Input Power:**

90Vac – 305Vac, 20 Watts  
100 – 240VAC, 0.6A  
277 – 305VAC, 0.25A

## **Fuse:**

3.15A, 500Vac, Schurter 8020.5016

## **Output Power:**

12VDC (Nominal) 20 Watts

## Features

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### **Gasketed Transitions**

Strain relief cord grip or conduit transitions add flexibility to power and data cable installations.

### **Status Indication**

AC Power On” and “DC Buss Charged”

### **Standard Enclosure**

6in x 8in x 5in, non-metallic enclosure (Standard)

### **Mounting Pans**

Galvanized steel mounting pans with threaded PEM fasteners engineered to accommodate specific device mounting hardware requirements

### **Power Cable**

5 foot (3) conductor 16GA

### **Data Cable**

2ea 5 ft Cat5 with RJ45 Connectors

### **“Hold Up” Power Supply**

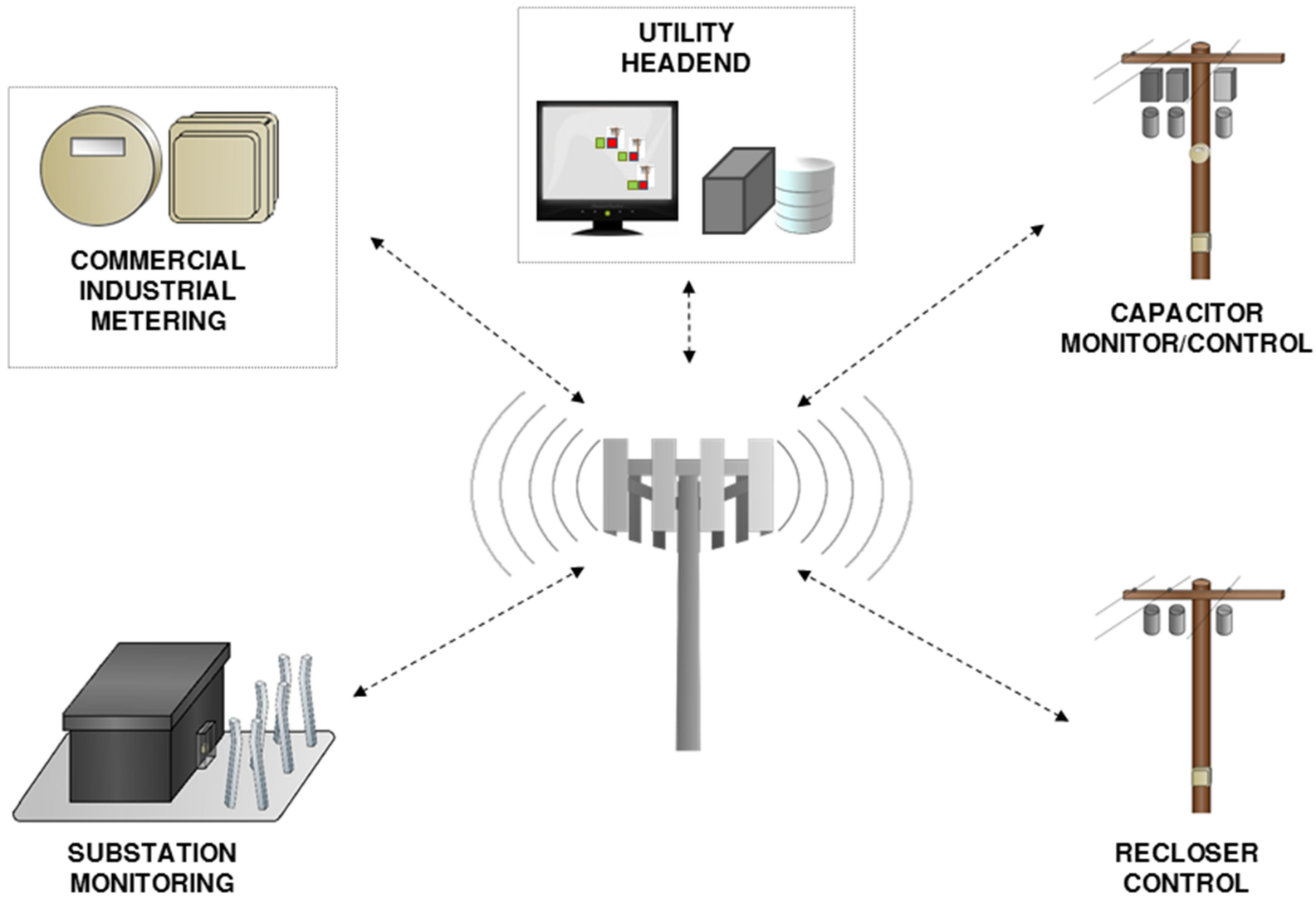
“Hold Up” power supply continues to power the GRID-NODE operation, without batteries, during the first minutes of a power outage to facilitate continued transmission of signals from “last gasp” enabled endpoint devices.

### **Low Voltage Drop Out**

GRID-NODE monitors the DC supply voltage to the supported wireless hardware and automatically disconnects power to the hardware when the DC supply voltage drops below the hardware’s minimum supply voltage level. This feature helps to avoid a “lockup” condition that can occur when the hardware’s supply voltage drops below the minimum operating voltage and power is restored before the device drops out due to low supply voltage. When power has been restored, and the DC power supply buss has been recharged to a level that is safely within the supply voltage range specified by the hardware manufacturer, supply power is reconnected to the GRID-NODE’s “Hold-Up” DC power supply buss.

### **External Antenna Jacks**

GRID-NODE can be supplied with external antenna cable “jack” connections to conform to the customer’s preferred configuration. SMA (Standard)



**EBE GRID NODE WIRELESS COMMUNICATIONS/CONTROL DIAGRAM**