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SENVA IOT-BE IoT Buddy Modbus to Ethernet Instruction Manual

Contents

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INSTRUCTION MANUAL

Higher Reliability, Faster Installation, Superior Accuracy | Sense the Difference

IoT Series

IOT Buddy Device Connectivity Solution

Connects analog or Modbus RTU devices to cloud services, while still allowing BACnet/IP or Modbus/TCP connections for the same points. Facilitates power over Ethernet (POE), Ethernet, or Wireless 2.4 GHz. Small design to allow for installation in sensor housing or junction box. Easy configuration via NFC or the IoTBuddy Hosted Web page.

DESCRIPTION

This a compact communicating device for your API, cloud storage, and communication applications. Convert any Modbus RTU or analog signal to Ethernet, Power Over Ethernet (POE), or 2.4 GHz wireless (Wifi) and connect to IOT cloud services (AWS, Azure, MQTT). This connection also allows for local BACnet/IP or Modbus/TCP point hosting via the local IP network. Its small profile and low power requirements allow for field mounting in device enclosures or junction boxes.

Use pre-configured sensor data for Senva sensors for fast configuration. (BACnet MSTP comms added version available on next release)

APPLICATIONS

- Allows cloud access to sensor data in remote, network-connected spaces or buildings Monitoring of sensors in

network-connected retrofits or additions

- Display data on energy management, tenant, or client-facing dashboards
- Perfect for air quality, occupancy, and energy usage reporting
- Add sensor monitoring to critical infrastructure

Wireless version connections to (2.4 GHz) networks

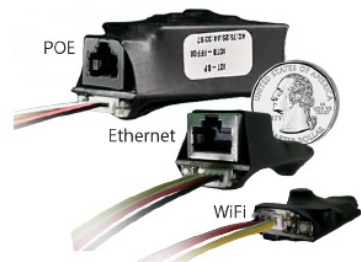Ethernet version connects to ethernet

Option for POE (Power over Ethernet)

Choose pre-configured or configure your own

Fits in slim enclosures and junction boxes

Three options to choose from!

FEATURES

- Allows cloud IOT (MQTT, Azure, AWS) connections for sensors and field devices, with simultaneous BACnet/IP or Modbus/TCP connections across the local IP network.
- Expand your IIOT system!
- Greatly reduces licensing, technician, and panel costs associated with cloud integration of sensors by allowing installation and network connectivity directly at the device location.
- Accepts device connection of either two configurable analog input signals or a single Modbus RTU device. (BACnet MSTP comms added version available on next release 2024)
- Pre-configured setup for Senva sensors and devices can be saved, loaded, and set up via web interface or NFC app. Connect via Ethernet or Wireless 2.4 GHz
- Power over Ethernet (POE) version includes power pass-through for powering sensors and allows the connected sensors to be powered from existing POE equipment, utilizing power backups to allow for critical reporting with no added power cost.
- Easily integrate any sensor to existing IT data/BAS/Cloud Service monitoring.
- Monitored sensor data can easily be added to display on energy management, tenant, or client-facing dashboards. This is perfect for air quality, occupancy, and energy usage reporting. Wireless version hosts a local access point for easy connection and setup!
- Inputs, network, and cloud connection are configured via web page hosted from the IoTBuddy or via NFC app.
- Connectivity Options: Modbus RS485 to Ethernet RJ45 (Cloud and BACnet/IP or Modbus/TCP), Modbus RS485 to Wifi (Cloud and BACnet/IP or Modbus/TCP), Analog to Ethernet or POE (Cloud and BACnet/IP or Modbus/TCP), Analog to Wifi (Cloud and BACnet/IP or Modbus/TCP).
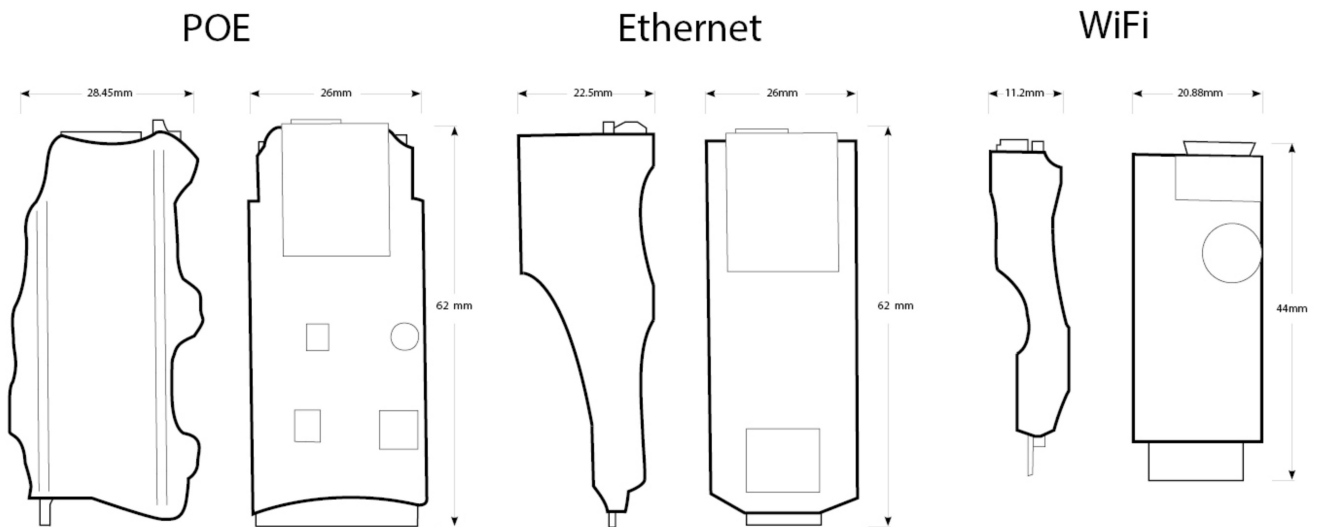
ORDERING

IoT - [ ] [ ]
Input   Output

A = Analog   W = WiFi

B = Comms   E = Ethernet

P = POE

DIMENSIONS

POE   Ethernet   WiFi

28.45mm   26mm   22.5mm   26mm   11.2mm   20.88mm

62 mm   62 mm   44mm

NOT TO SCALE

Warning: The datasheet is designed for reference only. Refer to installation instructions that accompany the product and heed all safety instructions. Product improvement is a continuing process at Senva. Changes may occur to products without prior notice.

SPECIFICATIONS

Note: Features and Specifications are for initial release and may change with subequent releases.

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Power Supply	4 Wire Flying Leads	12-30VDC/24VAC, 1W max, 100mA max. POE power to Sensor: 24vdc 5W max.
Analog Inputs	2 programmable Inputs	0-10V and 4-20mA (selectable)
LED	Red	**Normal Mode:** Off=Not Configured Steady= No Connection Slow Blink = Connected to device Fast Blink= Connected to cloud service **Setup Mode:** Off=Button Held (Hold for 3 seconds) Slow Blink = Commissioning Mode Fast Blink= Hold to Initiate Factory Reset
Ethernet	RJ45	10/100 BASE-TX IPV4 Static or DHCP IPV6 Static or Dynamic via DHCPv6 or SLAAC BACnet/IP, Modbus/TCP (~ 100 Points Maximum) Cloud Service Connection (~20 Points Maximum)
WI-Fi	2.4 GHz	**AP Mode:** Supports Open, WPA2, WPA-WPA2 Mixed, WPA3, WPA2-WPA3 Mixed networks IPV4 DHCP or Static IP One client Wi-Fi Connection with configurable password Uses Fixed IP for access point during initial setup WPA2-PSK (AES) 30M Range, in unimpeded areas. **Station Mode:** Supports Open, WPA2, WPA-WPA2 Mixed, WPA3, WPA2-WPA3 Mixed networks IPV4 Static or DHCP IPV6 Static or Dynamic via DHCPv6 or SLAAC Configurable SSID lookup Auto-reconnect after network or power loss BACnet/IP, Modbus/TCP (~ 100 Points Maximum) Cloud Service Connection (~20 Points Maximum) 30M Range, in unimpeded areas.
Operating Environment	Operating Temperature	-40 to 158°F (-40 to 70°C)
	Storage Temperature	-40 to 185°F (-40 to 85°C)
	Humidity	0 to 95% RH (non-condensing)
	Altitude	3,000 Meters
Enclosure	Wi-Fi Model	~ 1"h x 1"w x 0.5"d
	RJ45 Model	~2.4"h x 1"w x 1"d
	RJ45 POE Model	~2.4"h x 1"w x 1.1"d

* Product improvement is a continual process at Senva and product features and specification may change without prior notice. Refer to instructions that accompany the product for installation and wiring.

Specifications

- Power Supply: 12-30VDC/24VAC, 1W max, 100mA max

- Analog Inputs: 2 programmable inputs (0-10V and 4-20mA selectable)

- POE Power to Sensor: 24VDC, 5W max

- LED: Red (indicating various connection statuses)

- Connectivity: Ethernet, Wi-Fi (2.4 GHz)

- Operating Environment: Temperature, Humidity, Altitude

- Enclosure Dimensions: Vary based on model

The IoT Buddy Device Connectivity Solution is designed for connecting analog or Modbus RTU devices to cloud services while still allowing BACnet/IP or Modbus/TCP connections. Follow the steps below for installation:

1. Choose the appropriate version based on your network requirements: Wireless (2.4 GHz) or Ethernet.
2. Ensure power supply within the specified range (12-30VDC/24VAC).
3. Connect the device to the network using the provided RJ45 port or Wi-Fi connectivity.
4. Configure the device either via NFC or the IoTBuddy Hosted Web page.
5. Place the device in a suitable location such as a sensor housing or junction box.

Configuration

The IoT Buddy offers flexibility in configuration. You can choose between pre-configured settings or customize your own based on your specific needs. The LED indicators provide visual feedback during setup and operation.

Maintenance

Regularly check the device's connection status through the LED indicators. Ensure the device is securely placed to maintain accurate readings and efficient data transmission.

FAQ

Q: Can the IoT Buddy Device Connectivity Solution be used in high-altitude environments?

A: Yes, the device can operate at altitudes of up to 3000 meters.

Q: What are the options for network connectivity with the IoT Buddy?

A: The device supports Ethernet, Wi-Fi (2.4 GHz), and Power over Ethernet (POE) options for connectivity.

Q: How do I reset the device to factory settings?

A: To initiate a factory reset, hold the button for 3 seconds until the LED indicator blinks fast in setup mode.

Documents / Resources

SENVA IOT-BE IoT Buddy Modbus to Ethernet [pdf] Instruction Manual
IOT-BE IoT Buddy Modbus to Ethernet, IOT-BE, IoT Buddy Modbus to Ethernet, Buddy Modbus to Ethernet, Modbus to Ethernet, Ethernet

References

- **Senva inc: Gas Sensors, Toxic Sensors, Dry Pressure Sensors, Wet Pressure Sensors, Humidity/Temp Sensors, Current Switches, Current Transducers, Energy Measurement, Relays, Leak Detection, IoT Solutions, Smart Sensors**
- **User Manual**