



inView and WattNode Installation Manual

Energy Management Systems

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Installation Summary

Provide power to the inGate. Connect this gateway to the network via ethernet or third-party wireless adapter. Install the electricity meter(s). Install the CTs according to the CT schedule, or complete the CT schedule with the circuit and CT information. Wire the WattNode to the inGate. Enter the IP address of the gateway into a web browser to access the gateway's internal webserver. Add the WattNode device. Inform PowerWise support@powerwisesystems.com of the install and share CT schedules. PowerWise configures your dashboard and provides username and password access to <https://app.intellergy.net>.

inView

inView is a hardware and web-based application platform for monitoring and controlling buildings and mechanical systems. Visit <https://app.intellergy.net> to access the application.

inGate -- a Commercial-Grade Ethernet Gateway

The [inGate](#) is a gateway that uses the building's network to send and receive data to and from the cloud. Sensors and meters communicate with the gateway through wired and wireless communications. The inGate supports select Modbus devices.



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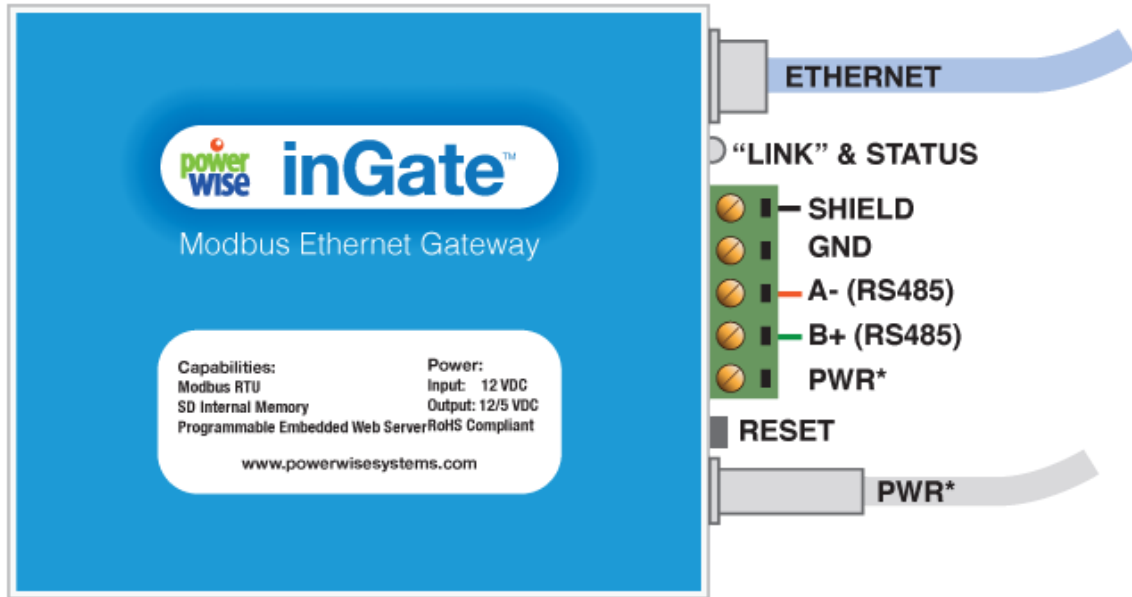


Figure 1. inGate Terminal Connections and Status Lights

*DC power terminals are interconnected. Do not connect to multiple power sources.

Where to Install the Gateway

The inGate needs to connect to the building's network or a cellular modem network, plus communicate with the sensors and meters. All of these communications may involve wired and wireless options. The gateway's location depends on network access, power availability, and sensor/meter communications. Typically, the device is installed in the mechanical room. The inGate can be mounted on DIN rail.

PowerWise recommends installers have laptops with network access.

Power

The inGate can be powered by 12-30 VDC. A 12 VDC power supply is provided. In some cases, the inGate may be installed inside an enclosure, and an electrician will need to bring power to the enclosure.



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The inGate can provide power to other devices via the PWR terminal.

Network

The most reliable network connection is to wire the inGate via ethernet. If the gateway cannot be located where an ethernet connection is available, an ethernet to wireless adapter can connect the inGate wirelessly to the building's network. Generally speaking, the adapter needs the network password and power with the correct voltage.

Wired Communications with Sensors and Meters

The inGate has A and B inputs for Modbus devices. Examples of Modbus devices include electricity meters, flow meters, and sensors. The inGate is the Modbus master, and the sensors and meters are slave devices.

Use CAT5 or better with twisted pair when wiring Modbus devices to the inGate. If wiring multiple Modbus devices to the inGate, daisy chain the devices together to provide the best conditions for data communications.

All of the A terminals are connected together and all of the B terminals are connected together. Using CAT5 or better, PowerWise recommends using one twisted pair for A and B.

Network and Communication Status

The inGate has a link and status light to the left of the "Normal" LEDs. The two lights identify network and communication status.



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LEDs Indicate inGate Status







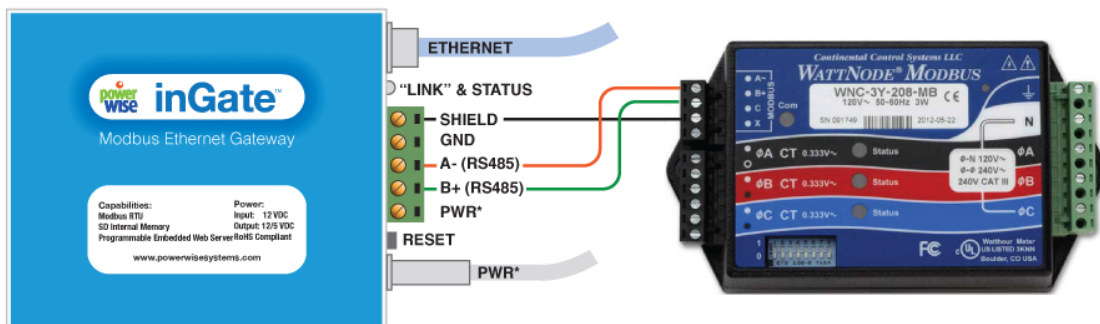
<p>Link  Status </p> <p>Normal Successful communication with servers.</p>	<p>Link  Status </p> <p>Bad Comms No communication. Check ethernet cable and router</p>	<p>Link  Status </p> <p>Internal Error No communication. Check ethernet cable and router</p>
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Figure 2. inGate Status Lights

inGate and WattNode Wiring

The WattNode is an electricity meter that measures energy, power, voltage, current, frequency, and power factor.



* DC power terminals are interconnected. Do not connect to multiple power sources.

Figure 4. inGate wired to WattNode



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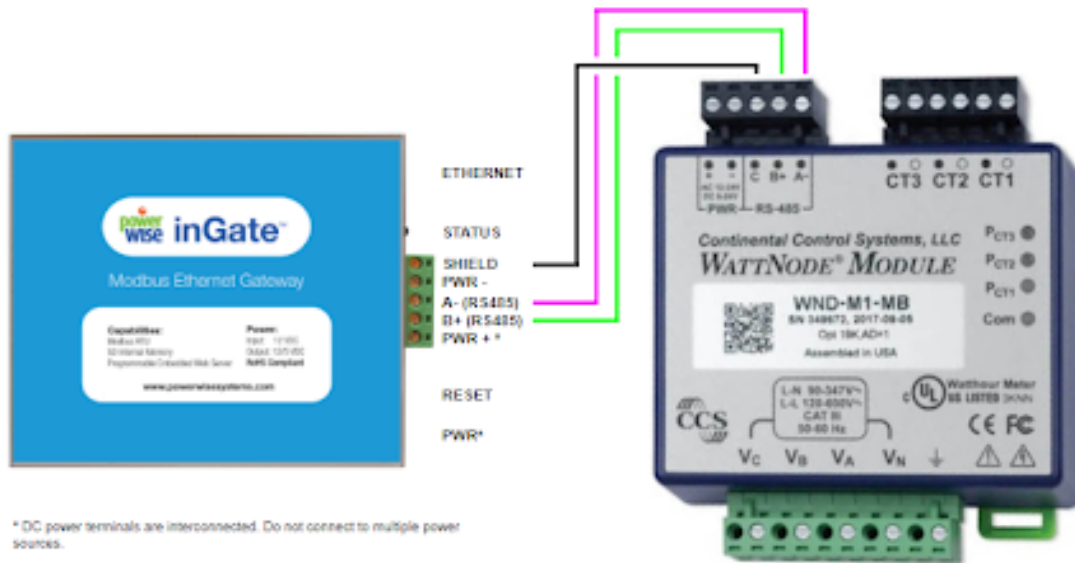


Figure 5. inGate wired to WattNode Module







Refer to the [WattNode Installation Manual](#) or [WattNode Module Installation Manual](#) for further instructions. Refer to the PowerWise CT schedule for the project or complete the CT schedule and share it with PowerWise.

Registration

Upon completing the hardware installation, confirm the inGate communication status.



LEDs Indicate inGate Status

<p>Link  Status </p> <p>Normal Successful communication with servers.</p>	<p>Link  Status </p> <p>Bad Comms No communication. Check ethernet cable and router</p>	<p>Link  Status </p> <p>Internal Error No communication. Check ethernet cable and router</p>
--	--	---

If green, enter the gateway's IP address into a web browser.

To find the gateway's IP address, access your router through a browser. Find the MAC address that matches the label on your gateway, and record the IP address. If you cannot access your router, contact support@powerwisesystems.com or call 1-207-370-6517, and choose Tech Support. We can find the IP address for you.



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The screenshot shows the Powerwise web interface. At the top, there is a green header with the Powerwise logo and the text 'Powerwise'. Below this is a blue navigation bar with the text 'Ethernet – Modbus – Zigbee Gateway'. Underneath the navigation bar are four buttons: 'Overview' (highlighted in orange), 'Devices' (highlighted with a red arrow), 'Zigbee', and 'Settings'. The 'Overview' page is displayed, showing the following information:

Firmware Version:	30159
TCP/IP Stack:	v5.42
MAC Address:	D880397A0AF1
IP Address:	192.168.0.9
ZigBee Radio:	OK
Memory Usage:	Current:2% Max:3%

Below the table is a link for [System Log](#).

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When you are viewing the gateway’s internal server, click on **Devices** to configure Modbus communications. If asked for a username and password, use admin for the username and the last four digits of the MAC address (located on the gateway) as the password. The username and password are case-sensitive.



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Ethernet – Modbus – Zigbee Gateway

Overview Devices Zigbee Settings

T-200 | PVMET-330 330 | **WATTNODE** | **KE2** | TANK LEVEL | STRING COMBINER | DENT POWER METER | DENT HD POWER METER
DCRG | ICPIO

WattNodes

The inGate supports up to 5 WattNodes You must also provide the appropriate Modbus slave address. Each device must have its own unique address. Addresses must be unique to all Modbus devices on the network.

Add Device
 Remove Device

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Select a device to add.



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Ethernet – Modbus – Zigbee Gateway

Overview **Devices** Zigbee Settings

T-200 | PVMET-330 | WATTNODE | KE2 | BTU METER | TANK LEVEL | STRING COMBINER | DENT POWER METER | DENT HD POWER METER
DCRG | ICPIO

Wattnode Meters

The inPower supports up to 5 WattNodes You must also provide the appropriate Modbus slave address. Each device must have its own unique address. Addresses must be unique to all Modbus devices on the network.

50 Add Device
Remove Device

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Enter the Modbus address (located on the CT schedule) of the equipment next to “add device” and click “add device”. Select the Modbus address from the table below.

Device	ID Start
Measurlogic DTS	70
Wattnode/inPower	50
Vaisalas	230-240
inControl	20
inDAC	1-5
Spire BTU Meter	255
Dent	100
Rainwise	60
ICP	35
Onicon	80



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You will get some information including “tx” and “Err”. The tx should be counting up if the device is connected correctly. Otherwise, the Err will be counting up, indicating an error.



Wattnode Meters

The inGate supports up to 5 WattNodes You must also provide the appropriate Modbus slave address. Each device must have its own unique address. Addresses must be unique to all Modbus devices on the network.

WattNode : 50	
Version	1.0
Status	tx:1, Err:0
Energy Sum	0.0 kWh
Energy Pos Sum	0.0 kWh
Real Power	0.0 W
Real Power A	0.0 W
Real Power B	0.0 W
Real Power C	0.0 W
Volts Avg Line	0.0 V
Volts A	0.0 V

User Access

Notify PowerWise support@powerwisesystems.com about the installation. Email the CT schedules and sensor IDs and location information, as well. PowerWise creates usernames and passwords to allow access to the inView application. Login at <https://app.intellergy.net>.