Settler

Remote Monitoring Device

User Manual

APG®

Doc # 9006887
Part # 201180
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CONTENTS

NOTE: Find product specifications, accessories, and more in the Data Sheet. Go to: https://apgsensors.com/settler

INTRODUCTION

Thank you for purchasing a Settler Remote Monitoring Device from APG. We appreciate your business! Please take a few minutes to familiarize yourself with the product and this manual.

Settler is a versatile remote monitoring gateway designed for seamless sensor data acquisition via Modbus RS485 and 4-20mA inputs. It supports up to four 4-20mA sensors and multiple Modbus sensors. Collected data is encrypted and securely transmitted to APG's cloud-based monitoring platform, Explorer, using MQTT with AES (Advanced Encryption Standard). Settler offers three connectivity models to ensure reliable communication across various environments:

1. Ethernet: Connects via a standard network cable
2. Wi-Fi: Supports wireless setup through a secure 2.4 GHz network
3. PoE (Power over Ethernet): Streamlines installation by providing both data connectivity and power through a single cable, eliminating the need for a separate power supply at the installation site.

Reading your label

The Settler label indicates the power, 4-20 mA, and Modbus connector pinouts. The manufacturing label contains the part number and the serial number, which is used to identify your Settler in APG's cloud-based monitoring platform Explorer.

WARRANTY AND WARRANTY RESTRICTIONS

This product is covered by APG's warranty to be free from defects in material and workmanship under normal use and service of the product for 24 months. For a full explanation of our Warranty, please visit apgsensors.com/warranty-returns. Contact Technical Support to receive a Return Material Authorization before shipping your product back.

Repair and Returns

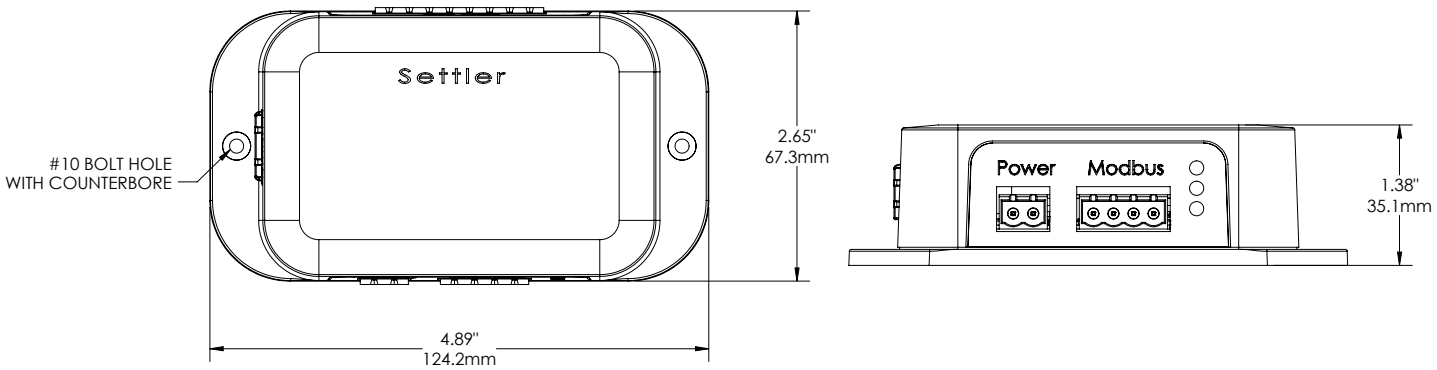
Should your Settler require service, please contact the factory via phone, email, or online chat. We will issue you a Return Material Authorization (RMA) number with instructions. You can also find the form on our website by clicking "RMA" in the web footer, or go to apgsensors.com/RMA-form

- Phone: 888-525-7300
- Email: sales@apgsensors.com
- Online chat: www.apgsensors.com

Please have your part number and serial number available.

CHAPTER 1: DIMENSIONS AND WIRING

Dimensions



Settler

Wiring

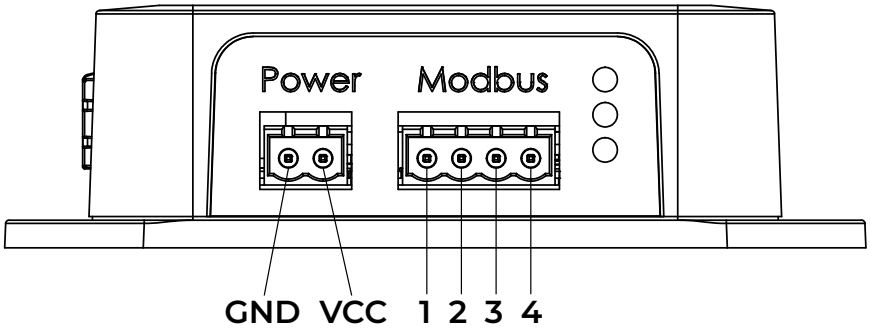
Supply Voltage

- 5 to 32 VDC (Standard) or PoE 802.3af/at (PoE model)
- 10 mA at 24V

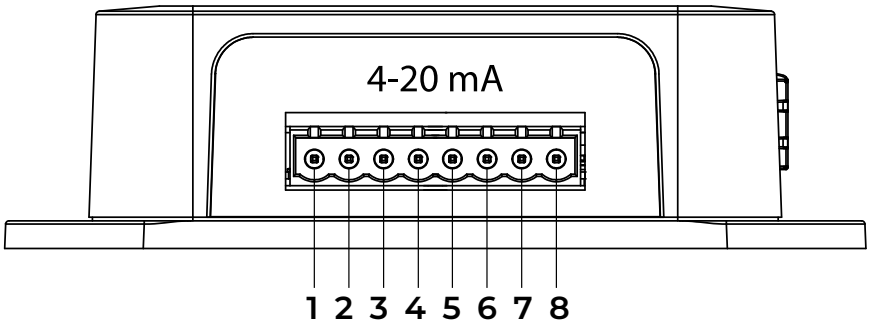
Sensor Power Output:

- 9W (@ 24V) is available to power your 4-20mA or Modbus sensors directly through Settler when using PoE
- 4-20mA Inputs: Active loop power is provided for up to four sensors

Wiring Pinout



Modbus Pinout	
1	A
2	B
3	VCC
4	GND



4-20mA Pinout	
1	4-20 in 4
2	V+
3	4-20 in 3
4	V+
5	4-20 in 2
6	V+
7	4-20 in 1
8	V+

NOTE: For PoE models, the 2-Pin Power connector is optional, as power is supplied via the RJ45 Ethernet port.

CHAPTER 2: INSTALLATION

Physical Installation Notes

Settler is intended for indoor use. It can be installed in environments that meet the following conditions:

- The device is protected from excessive moisture, extreme heat, or corrosive environments.
- Adequate space is provided for wiring connections.
- For Ethernet and PoE models: Ethernet accessibility (wired network access is required).
- For Wi-Fi models: Reliable 2.4 GHz Wi-Fi signal coverage in the installation area.

In the Box

Inside the box you will find:

- Settler Remote Monitoring Device
- Power connector (2-Pin)
- Modbus (RS485) sensor connector (4-Pin)
- 4-20mA sensors connector (8-Pin)

Ensure you have all components before proceeding.

Tools & Materials Required

- A flathead screwdriver is required to make electrical connections.
- Settler can be mounted using size #10 bolts.
- For Ethernet models: Use a CAT5, CAT5e, or CAT6 Ethernet cable.
- For Wi-Fi models: A mobile device (phone, tablet, or laptop) with Wi-Fi is required for initial setup.
- For PoE models: A PoE-enabled switch or PoE injector (802.3af/at) and a CAT5e or CAT6 Ethernet cable.

Connect Settler to Network

Connect to Ethernet Network

- Use a CAT5, CAT5e, or CAT6 Ethernet cable. Settler will automatically request an IP address using DHCP.
- When the device connects successfully, it will establish a secure link with explorer.apgsensors.com where you can configure your Settler and sensors.
- For PoE models: Simply plug your Ethernet cable into the Settler PoE and a PoE-enabled port. The device will power on and the Green LED will illuminate immediately.

> NOTE: Settler Ethernet operates in DHCP–only mode. Ensure your network has an active DHCP server to assign an IP address.

Connect to Wi-Fi Network

- Upon first boot-up, Settler Wi-Fi will broadcast a temporary Wi-Fi access point. The network name will be the device's serial number.
- Use a mobile device (phone, tablet, or laptop) with Wi-Fi to connect to the temporary access point. The password is **12345678**
- Open a web browser and type **http://129.168.4.1** into the address bar to access the configuration page.
- Select your preferred 2.4 GHz Wi-Fi network and enter the credentials. The device will then connect to your selected network and establish a secure link with explorer.apgsensors.com where you can configure your Settler and sensors.

Settler Wi-Fi will automatically connect to the chosen network when it is available. If the network is unavailable, Settler Wi-Fi will broadcast the temporary Wi-Fi access point to allow configuration.

LED Indicators

LED Color	State	Meaning
Green	Solid	Settler is powered on
Yellow	Blinking Fast	Searching for internet connection
Yellow	Blinking Slow	Connecting to explorer.apgsensors.com
Yellow	Solid	Successfully connected to explorer.apgsensors.com
Red	Solid	Error detected — check connections and settings

Once the Yellow LED is solid, Settler is fully operational and is sending data to explorer.apgsensors.com.

Connect Sensors

For 4-20mA inputs:

- Each Settler unit supports up to four 4-20mA sensors.
- Wire each sensor to the corresponding terminals on Settler.
- The number indicated on the pinout (e.g., IN4) refers to the Power Line.

For Modbus RS485:

- Wire sensors according to the pinout on the label.
- If connecting multiple sensors, connect and setup sensors one at a time at explorer.apgsensors.com before adding the next one.

CHAPTER 3: SETUP SENSORS IN EXPLORER

NOTE: For a complete description of the features and tools in Explorer, check out the official **Explorer User Manual** at https://apgsensors.com/explorer-manual

Sign In To Explorer

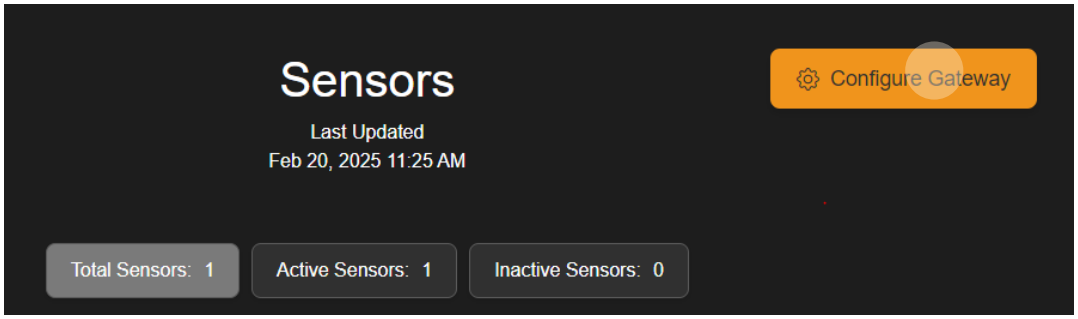
New users are sent an email invitation to sign up in Explorer. Existing users can send invitations to other members of their organization. If you did not receive an invitation email, please contact APG.

Make a new account and sign in at **explorer.apgsensors.com**

Set Up New Sensors

To set up new sensors, make sure they are connected to Settler and the power is on.

1. Go to **explorer.apgsensors.com** and sign in.
2. Click "My View" at the top of Explorer webpage.
3. Click the Group card.
4. Click your Gateway card. Check the label on the side of Settler to identify its unique Gateway ID number (serial number).
5. On the Sensors page, click the "Configure Gateway" button on the right.



6. Follow the steps of the Gateway Configuration Wizard.
   a. Name the Gateway.
   b. Add sensors. For APG sensors*, choose the sensor from the Sensor Model dropdown list. Give the sensor a name. Set the Modbus ID (Modbus sensors) or select the Power Line (4-20mA sensors).
   c. Set Gateway Timings, Alarms (optional), and Location (optional).
   d. Click "Finish" to save the configurations and send any pending commands.
7. To see sensor readings, click on the Sensor card and look at the Chart.

** Note*: For information on how to set up generic sensors, please refer to the **Explorer User Manual.**

CHAPTER 4: TROUBLESHOOTING

Type	Issue	Solution
Power	No LEDs on after power is connected	• Ensure the power source is within 5-32 VDC. • Verify wiring connections (see Wiring Pinout on page 1).
Sensors Not Recognized	Sensors are connected, but no data appears in Explorer	• Check sensor wiring (see Wiring Pinout on page 1). • Ensure the correct Modbus ID or 4-20mA input is assigned in Explorer. • Restart Settler and retry configuration.
Data Transmission Issues	Data is not updating in Explorer	• Verify Settler is online in Explorer. • Check network status and firewall settings (port 1223 needs to be open). • Restart Settler and see if the issue persists.
Ethernet Connection Issues	Yellow LED does not turn on after connecting Ethernet	• Ensure Ethernet cable is plugged in correctly to both Settler and router. • Check if network requires static IP configuration. • Try a different Ethernet cable or port.
Wi-Fi Connection Issues	Cannot see Settler Wi-Fi hotspot	• Ensure Settler is powered on. • Wait up to 60 seconds after powering on. • Restart Settler and see if the issue persists.
Wi-Fi Connection Issues	Cannot access setup page at **192.168.4.1**	• Ensure mobile device is connected to Settler's Wi-Fi hotspot and no other network. • Try a different device or browser.
Wi-Fi Connection Issues	Settler does not connect to selected Wi-Fi network	• Ensure correct Wi-Fi network credentials. • Ensure the Wi-Fi network is 2.4 GHz (5 GHz is not supported).
Wi-Fi Version Explorer Connection	Settler Wi-Fi doesn't appear in Explorer	• Ensure router allows new devices and is not blocking outbound MQTT connections on port 1223.
PoE Sensor Issues	Sensors not getting enough power	• If using PoE to supply power to sensors, ensure total power draw does not exceed 9W.

If additional support is needed, contact APG via:

- Phone: 888-525-7300
- Email: sales@apgsensors.com
- Online chat: www.apgsensors.com

APPENDIX: REGULATORY COMPLIANCE

This device contains a 2.4 GHz Wi-Fi transceiver based on the Infineon CYW43439 chipset. The wireless module is certified under the following regulations:

FCC ID: 2ABCB-RP2040

IC: 20953-RP2040

FCC 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.

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

ISED (Canada) Statement
This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's RSS(s). Operation is subject to the following two conditions:
(1) This device may not cause interference; and
(2) This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil contient des émetteurs/récepteurs exemptés de licence qui sont conformes aux CNR d'Innovation, Sciences et Développement économique Canada. L'exploitation est autorisée aux deux conditions suivantes :
(1) l'appareil ne doit pas produire de brouillage, et
(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

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