# MODBUS SCOUT

## Portable RS485 Modbus Communicator

# User Manual


APG®

Doc # 9006890
Part # 201194
Rev A, 03/2025

# CONTENTS



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

# INTRODUCTION

Thank you for purchasing a Modbus Scout Portable RS485 Modbus Communicator from APG. We appreciate your business! Please take a few minutes to familiarize yourself with your device and this manual.

Modbus Scout is a portable RS485 Modbus device communicator. The simple design allows users to connect to their RS485 Modbus sensors in the field and communicate with them via an easy-to-use app or a convenient USB port. Additionally, Modbus Scout can broadcast simple readings to the app, so users can quickly check the status of several devices within range at once.

**Reading your label**
Every Modbus Scout device comes with a label that includes the devices's wiring pinout, model number, part number, and serial number. Please ensure the model number and part number on the label match your order.

# 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 https://www.apgsensors.com/resources/warranty-certifications/warranty-returns/. Contact Technical Support to receive a Return Material Authorization before shipping your product back.

## Repair and Returns

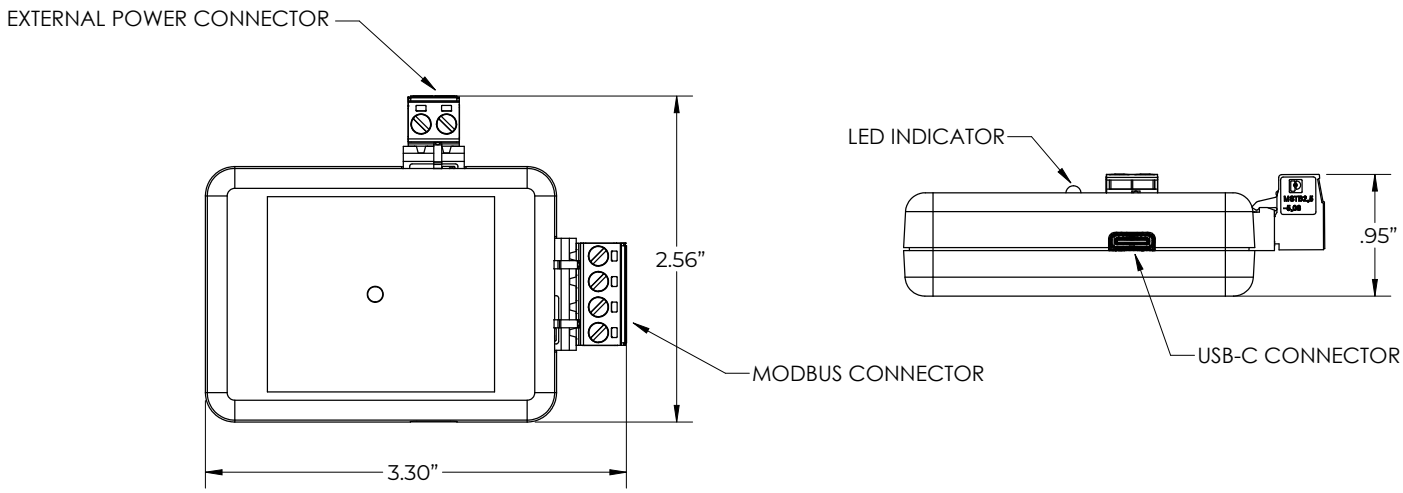
Should your Modbus Scout require service, please contact the factory via phone, email, or online chat. We will issue you a Return Material Authorization (RMA) number with instructions. You can also find the form on our website by clicking "RMA" in the web footer, or go to apgsensors.com/RMA-Form.

- 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




**Modbus Scout**

## Wiring

Modbus Scout can be powered via the 2-Pin External Power connector or the USB connector. If both connectors are plugged in, power will be supplied by the 2-Pin External Power.

**Power In Options**

- 2-Pin Connector: 8 to 30 VDC, 3 Amp max
- USB C

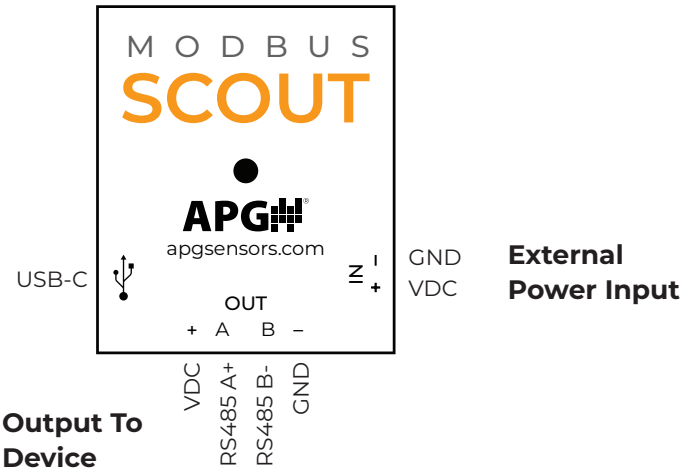
**Power Out (to 4-Pin Modbus Connector)**

- If powered via the 2-Pin connector, the output voltage approximately equals the input voltage*
- If powered via USB-C, the output voltage is regulated to 24V (max 70mA)

> ***Warning**: Due to internal circuitry, the output voltage will be slightly less than the input voltage when using the 2-Pin External Power.

### Wiring Pinout

The wiring pinout is printed on the Modbus Scout label.



# CHAPTER 2: INSTALLATION PROCEDURES

## Physical Installation Notes

Modbus Scout can be used as a portable device to set up a RS485 Modbus sensor or it can be installed and set to broadcast mode, allowing users to view 1-2 registers per device on the Bluetooth app within range without requiring a paired connection.

Modbus Scout should be installed only in environments that meet the following conditions:

- Indoor areas with little to no exposure to water or dust
- Temperature between 0 to 140° F (-18 to 60° C)

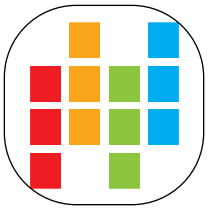
## Tools Needed

A small flathead screwdriver is required to make wire connections.

## Setup

Install the APG Scout Communicator app on a Bluetooth compatible device. Search for "APG Scout Communicator" in the app store or click one of the links below.

- Android: https://play.google.com/store/apps/details?id=com.apg.ble
- Windows: https://apgsensors.com/resources/product-resources/software-downloads/
- Mac and IOS: https://apps.apple.com/us/app/apg-scout-communicator/id6741690341



Connect to Modbus Scout:

- Connect the Modbus sensor to the 4-pin connector following the pinout on the label.
- Connect power via either USB-C or the 2-pin connector following the pinout on the label.

When Modbus Scout is connected via USB to a Windows computer, it will create a virtual COM port. This connection allows the device to be used with other Modbus software products or basic serial terminals.

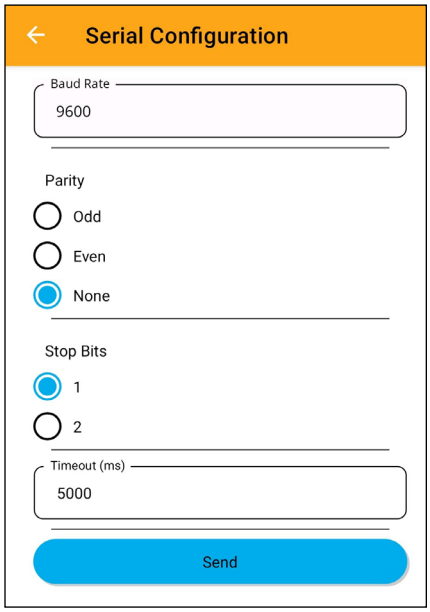
### Interface Platform Options

| | Bluetooth to App | USB to App | USB to virtual comm port |
|---|---|---|---|
| Windows | X | X | X |
| Android | X | X | |
| Mac | X | | |
| IOS | X | | |

# CHAPTER 3: HOW TO USE THE APP

## Connect to the Modbus Scout Device

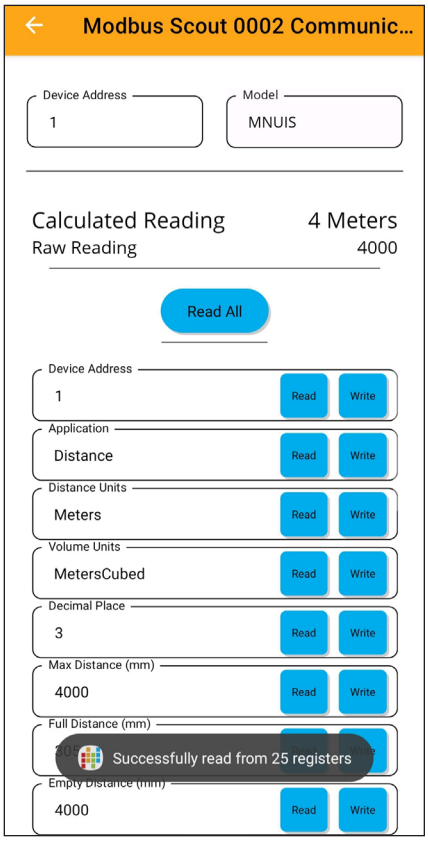
1. Press “Scan for Devices” then press “Scan” to look for available devices.
2. Identify your device and press “Connect.” For first time setup, identify device by the serial number on the label. The LED will turn solidly blue when connected.
3. Press “Configure” to enter the Serial Configuration page.
4. Set the desired Baud Rate, Parity, Stop Bits, and Timeout for your sensor. If you are connecting to an APG Modbus sensor, these will already be set to sensor defaults. Check the sensor’s user manual for more information on RS485 Modbus communication settings.
5. Press “Send.”
6. In the Device Configuration page, change your Device Name and setup the Broadcast Mode settings (optional).
7. Press “Save” to save settings and return to the Scan For Devices page.




## Read/Write Sensor Registers

1. Press “Scan for Devices” then press “Scan” to look for available devices.
2. Identify your device and press “Connect.” The LED will turn solidly blue when connected.
3. Press “Communicate.”
4. Set the Device Address and choose the APG sensor model from the “Model” list.
5. The sensor’s calculated and raw reading will appear, along with the Modbus registers.
6. To change a register value, enter the desired value in the register line. Press “Write” to save changes. Press “Read” to see current sensor values.

For non-APG sensors, select “Generic Modbus” from the “Model” list and read/write the registers individually.

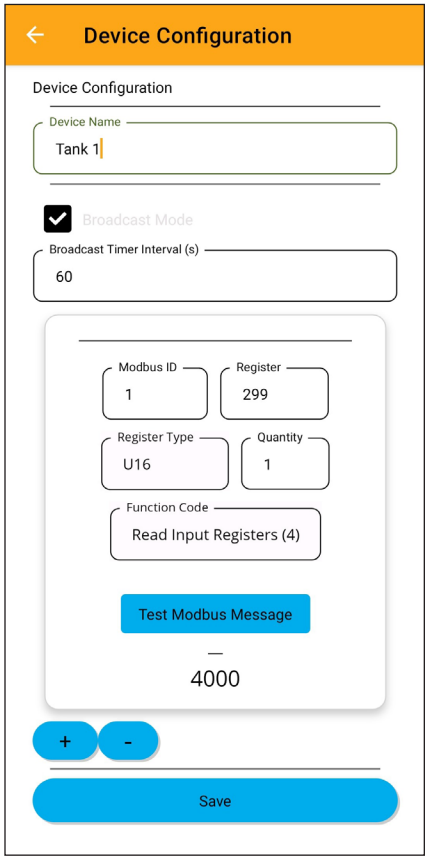


## Broadcast Mode

Broadcast Mode allows users to view readings from multiple Modbus Scout devices in range.

To set a Modbus Scout device to broadcast:

1. Identify your device in the Scan For Devices page and press “Connect.”
2. Press “Configure,” then press “Send.”
3. In the Device Configuration page, set your Device Name to your preferred broadcast name.
4. Check the “Broadcast Mode” box.
5. Set the Broadcast Timer Interval. This is how often Modbus Scout will read the selected register (in seconds).
6. Press the (+) button to setup a register to broadcast.
7. Set the Modbus ID and Register. The register must be an Input register.
8. Choose the Register Type. Options: I16 (signed) and U16 (unsigned).
9. Select the Function Code “Read Input Registers (4).”
10. Press “Test Modbus Message” to read the selected register. If the register is not an input register, a Timeout Error will appear.




Each Modbus Scout can broadcast up to 2 input registers. To add a second register, press the (+) button. To delete a register, press the (-) button.

Press “Save” to return to the Scan For Devices page. Press the left arrow in the top corner to return to the app home page.

To see the available broadcasts, press the “Broadcast Mode” button on the home page. In Broadcast Mode, the Register Type display can be toggled between I16 (signed) and U16 (unsigned).

The “Last Update” and “Reading” boxes will flash red when Modbus Scout communicates with the app, roughly every 5-10 seconds.

# CHAPTER 4: TROUBLESHOOTING

Most issues can be resolved by restarting the app or turning Modbus Scout off and on again.

| Type | Issue | Solution |
|---|---|---|
| Power | LED does not turn on | • Check power supply and connections.<br>• Verify 2-Pin connector pinout. |
| Connection | LED is blinking, but the device isn't appearing in the Scan For Devices list | • Ensure phone's Bluetooth is turned on.<br>• Disconnect from any other devices.<br>• Press "Scan" again.<br>• Restart the app and try again. |
| Connection | LED is solidly blue, but isn't connected to app | • Make sure Modbus Scout isn't connected to another nearby device.<br>• Turn Modbus Scout power off and on again.<br>• Restart the app and try again. |
| Modbus communication | Modbus sensor communication problems | • Check Modbus sensor wiring connections; some sensors use reversed A/B connections.<br>• Ensure Serial Configuration settings matches sensor requirements. |
| Broadcast | Modbus Scout not appearing on Broadcast Mode list | • Confirm device is within range.<br>• Make sure Modbus Scout isn't connected to another nearby device.<br>• Verify Modbus Scout is set up to broadcast. |

If additional support is needed, contact APG via:

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

Automation Products Group, Inc.
Tel: 1 (888) 525-7300 or 1 (435) 753-7300

e-mail: sales@apgsensors.com
www.apgsensors.com

Automation Products Group, Inc.
1025 W. 1700 N.
Logan, UT 84321