Thank You

Thanks for purchasing an MNU Ultrasonic Modbus Sensor from us! We appreciate your business and your trust. Please take a moment to familiarize yourself with the product and this guide before installation. If you have any questions, at any time, don't hesitate to call us at 435-753-7300. You can also find a full list of our product install guides at:

apgsensors.com/resources/install-guides

Table of Contents

MNU
Ultrasonic Modbus Sensor
INSTALLATION GUIDE

![APG Automation Products Group, Inc. logo]

1 Description

MNU ultrasonic sensors are rugged units, with a PC/PBT housing, 1"–3" NPT threads for mounting, and a NEMA 6P rating (protects against ingress of dripping, sprayed, and submersible water). All MNU sensors are fully programmable via RST-485 Modbus communications with APG Modbus software.

2 How to Read Your Label

Each label comes with a full model number, a part number, and a serial number. The model number for the MNU will look something like this:

Sample: MNU-3434-M

The model number correlates with all the configurable options and tells you exactly what you have. Compare the model number to the options on the datasheet to identify your exact configuration. You can also call us with the model, part, or the serial number and we can help you.

The label also includes the pinout.

3 Warranty & Return Information

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

www.apgsensors.com/resources/warranty-returns/

Contact Technical Support to receive a Return Material Authorization (RMA) before shipping your product back.

If your product needs to be returned for evaluation, contact us via email, phone, or online chat on our website. We will issue you an 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: (435) 753–7300
- Email: sales@apgsensors.com
- Online chat at apgsensors.com

Please have your part number and serial number available.

4 Mounting Instructions

Mounting your MNU ultrasonic sensor is easy if you follow a few simple steps:

- Never over-tighten the sensor.
- Always screw in your sensor by hand to avoid cross-threading. Thread failure can be a problem if you damage threads by over-tightening them or by crossing threads.
- Mount your MNU sensor so that it has a clear, perpendicular sound path to the surface being monitored. Your sensor should be mounted away from tank or vessel walls and inlets (see Figure 4.1).
- The sound path should be free from obstructions and as open as possible for the 9° off axis beam pattern.
- If you are using a stand pipe, please see our guide to stand pipes on our website: apgsensors.com/how-to-install-a-standpipe

5 Dimensions

MNU-2424 & MNU-8424

- 3/4" ø NPT Threads
- 2" ø NPT Threads
- 7.21" / 183.13mm
- 5.08" / 129.03mm
- 3.05" / 77.47mm
- 1.47" / 37.34mm
- 1.98" / 50.29mm

MNU-3434

- 3/4" ø NPT Threads
- 3" ø NPT Threads
- 7.76" / 197.10mm
- 2.27" / 57.66mm
- 5.63" / 143.00mm
- 2.80" / 71.12mm
- 3.00" / 76.20mm

MNU-5414

- 3/4" ø NPT Threads
- 1" ø NPT Threads
- 6.10" / 154.94mm
- 3.97" / 100.84mm
- 2.73" / 63.34mm
- 0.68" / 17.27mm

MNU-5424

- 3/4" ø NPT Threads
- 2" ø NPT Threads
- 5.74" / 145.80mm
- 3.61" / 91.69mm
- 3.05" / 77.47mm
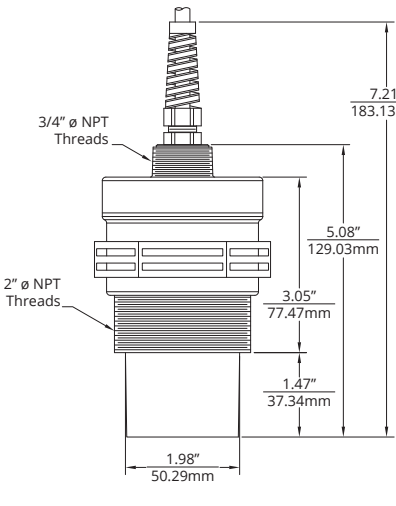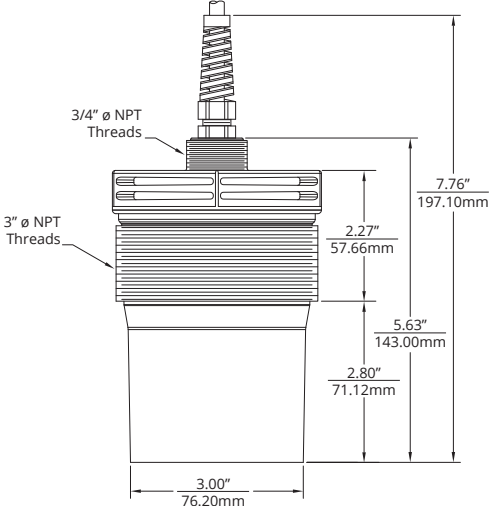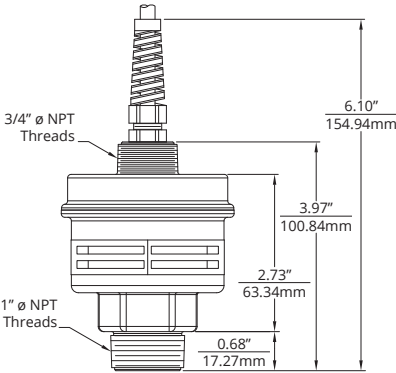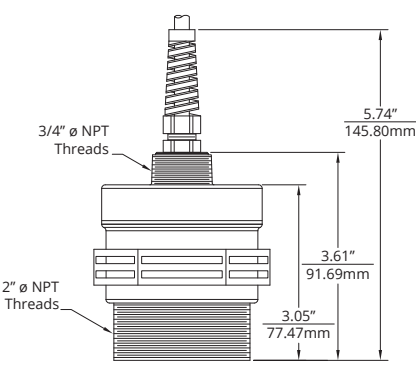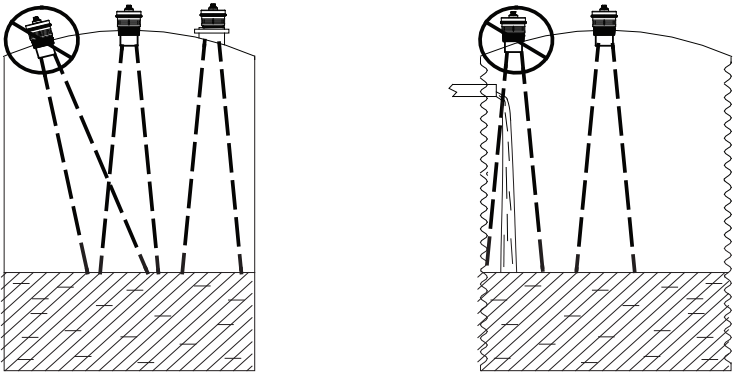
FIGURE 4.1

6 Wiring Information

Pigtail (2 Twisted Pairs)		Modbus
	Red	+ 24 VDC
	Black	DC Ground
	Green	B (TX-)
	White	A (TX+)
	Shield	Case Gn

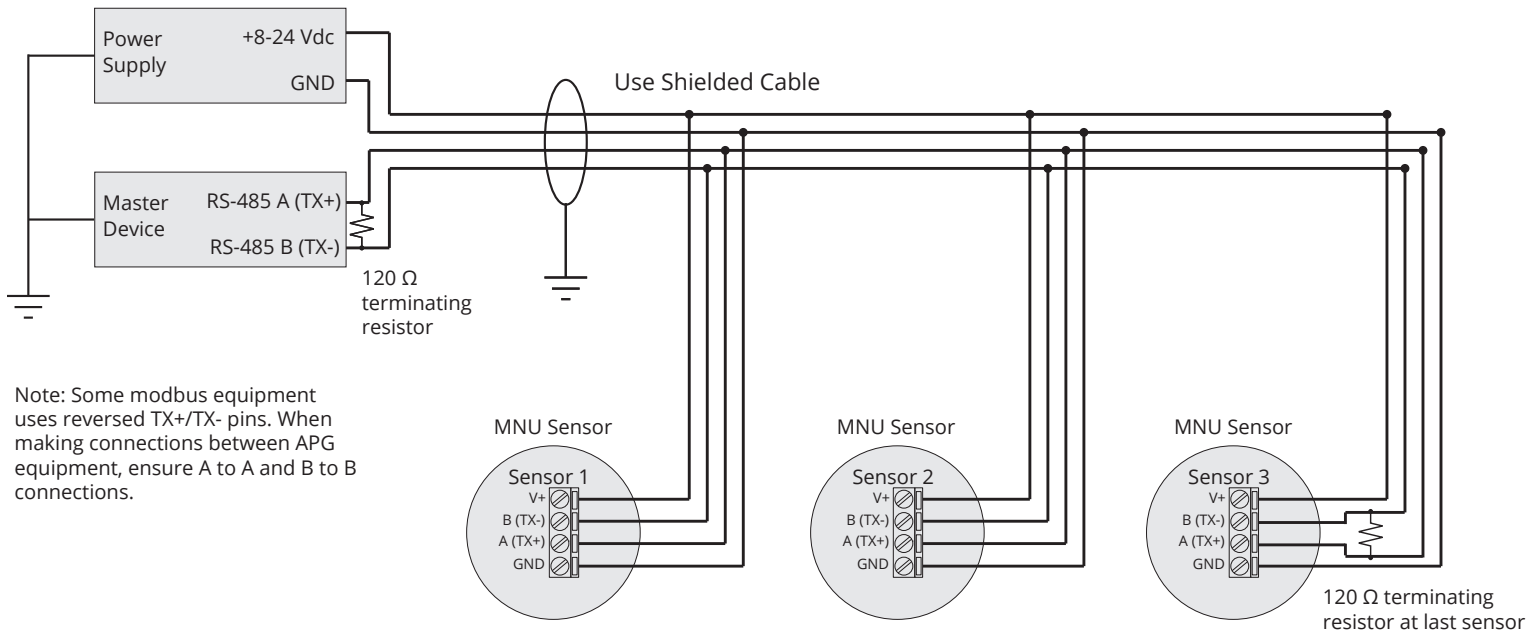| Micro Connector		Modbus
	1 Brown	+24 VDC
	2 White	A (TX+)
	3 Blue	DC Ground
	4 Black	B (TX-)

	Modbus
Power Supply	12–24 VDC

ⓘ **IMPORTANT**: Some modbus equipment uses reversed TX+/TX- pins. When making connection between APG equipment, ensure A to A and B to B connections. When connecting to other systems, if your MNU sensor will not communicate, reverse A & B connections at one end (Master OR Sensor, not both).

7 General Care & Notes

Your MNU ultrasonic sensor is very low maintenance and will need little care as long as it was installed correctly. However, in general, you should:

- Avoid applications for which the sensor was not designed, such as extreme temperatures, contact with incompatible corrosive chemicals and fumes, or other damaging environments.
- Inspect the threads whenever you remove the sensor from duty or change its location.

> ✏ **NOTE**: See your MNU User Manual for Modbus programming instructions and troubleshooting tips.

Note: Some modbus equipment uses reversed TX+/TX- pins. When making connections between APG equipment, ensure A to A and B to B connections.

MNU MODBUS SYSTEM WIRING

8 Removal Instructions

- Ensure that power to the sensor is off.
- Disconnect cable to sensor.
- Remove the sensor and store it in a dry place, at a temperature between -30°F and 140°F.