

# Intrinsically Safe Modbus Network Ultrasonic Sensor Series: MNU IS



MNU IS ultrasonic sensors are rugged units, rated Intrinsically Safe for hazardous location installations. They feature APG's new QuickMode for power-saving, on-demand measurements, and optional GDT surge protection. All MNU IS sensors are fully programmable via RS-485 Modbus communications, and with APG Modbus software and an RS-485-to-USB converter.

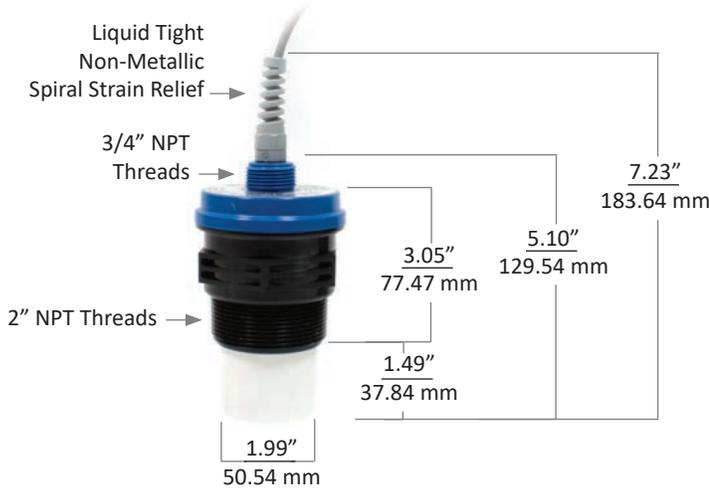
## Features

- Ranges: 1 ft - 25 ft, 5 in - 12 ft
- Self-Contained Sensor
- Multiple Housing Options
- RS-485 Modbus RTU Interface
- Measure Distance, Level, or Volume
- Internal Temperature Compensation
- cCSAus, ATEX, IECEx approved Intrinsically Safe
- 2" NPT and 3/4" NPT mounting options
- QuickMode ready-to-read in as little as 250 ms
- Optional Gas Discharge Tube surge protection

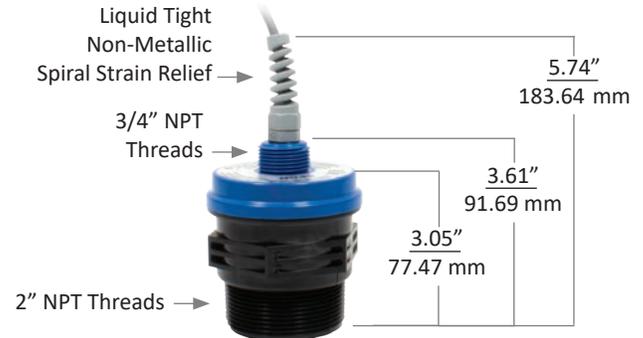


# MNU IS Specifications

Housing Option 2



Housing Option 4



## Performance

- Frequency/Operating Range:
  - 69 kHz: 1 - 25 ft (0.30 - 7.62 m)
  - 81 kHz: 5" - 12 ft (0.13 - 3.66 m)
- Beam Pattern: 9° off axis
- Internal Temperature Compensation
- Accuracy: ±0.25% of detected range
- Resolution: 0.1 in. (2.5 mm)
- Response Time: Programmable

## Connectivity

- Output: Modbus RTU (RS-485)
- Online Access/Control: Via APG's Tank Cloud & RST-5003 or LOE controller

## Environmental

- IP68 (3 meters submerged for 48 hours)  
M12 connector only rated IP67
- Operating Temp:
  - Standard: -30° - 60°C (-22° - 140°F)
  - Alternate: -20° - 50°C (-4° - 122°F)

## Programming

- Interface with RS-485 Modbus RTU  
APG Modbus Windows-compatible software can be provided to adjust internal parameters.
- User selected Units of Measure, Response Rate, Volume Calculations, and more.

## Electrical

- Supply Voltage: 8 - 24 VDC
- Operating Current Draw:
  - 18 - 26 mA @ 24 VDC, Typical 18 mA
  - 32 - 63 mA @ 8 VDC, Typical 37 mA
- Waiting Status Current Draw:
  - 13 mA @ 24 VDC
  - 17 mA @ 8 VDC
- Wiring Connection: 4-conductor shielded, twisted-pair cable
- Gas Discharge Tube Surge Protection: 150 V, 1 kA

## Physical

- Upper Housing: PC/PBT blend
- Transducer Face: PVDF

## Certification

- CSA/cCSAus Contract #237484  
Intrinsically Safe
  - Class I, Div. 1, Groups C & D, T4
  - Class I, Zone 0, AEx ia IIB T4 Ga
  - Ex ia IIB T4 Ga
- ATEX
  - II 1G Ex ia IIB T4 Ga
- IECEX
  - Ex ia IIB T4 Ga
- CE

# Common Model Configurations

<b>Model Number</b>	<b>Model Description</b>
MNU-IS-6424-C6A	<b>1 - 25 ft. range, 69 kHz, 2" NPT, 6 ft cable</b> , Cable Gland with Spiral Strain Relief
MNU-IS-6424-C6M	<b>1 - 25 ft. range, 69 kHz, 2" NPT, M12 Micro Connector w/ mate, 6 ft cable</b>
MNU-IS-6444-C6A	<b>1 - 25 ft. range, 69 kHz, 2" NPT, Recessed Transducer, 6 ft cable</b> , Cable Gland with Spiral Strain Relief
MNU-IS-8424-C6A	<b>5 in. - 12 ft. range, 81 kHz, 2" NPT, 6 ft cable</b> , Cable Gland with Spiral Strain Relief
MNU-IS-8444-C6M	<b>5 in. - 12 ft. range, 81 kHz, 2" NPT, Recessed Transducer, M12 Micro Connector w/ mate, 6 ft cable</b>

## MNU IS Accessories

Please order separately, by part number.

<b>Description</b>	<b>Part Number</b>
<b>Programming Module</b>	
RST-6001	125734
<b>Barrier</b>	
RS-485 Communications Barrier (2-wire)	200186
24 VDC Barrier (2-wire)	200187

# Model Configuration Options



Model Number: MNU - IS -      -      -      -      -      -      -       
                                  A    B    C    D    E    F    G

## A. Range, Frequency

- 2** 1 - 25 ft. (305 - 7620 mm); 69 kHz Transducert
- 6** 1 - 25 ft. (305 - 7620 mm); 69 kHz Transducer
- 8**<sup>▲</sup> 5 - 144 in. (127 - 3658 mm); 81 kHz Transducer

## B. Lid Interface Threads

- 4**<sup>▲</sup> 3/4 in. MNPT

## C. Housing

- 2**<sup>▲</sup> 2 in. MNPT, Valox PBT
- 4** 2 in. MNPT, Valox PBT, Recessed Transducer

## D. Output

- 4**<sup>▲</sup> RS-485 Modbus RTU, Intrinsically Safe
- 5** RS-485 Modbus RTU, Intrinsically Safe w/ Gas Discharge Tube Surge Protection

† Option 2 (1 - 25 ft. / 69 kHz Transducer) has alternate temperature range of -20° - 50°C.

## E. Cable

- C**<sup>▲</sup> Shielded Cable with Flying Leads††
- N** No Cable

## F. Electrical Cable Length

- Specify Length (6 ft. standard length + 5 ft. increments)
- 0** No Cable

## G. Seal

- A**<sup>▲</sup> Cable Gland with Spiral Strain Relief
- B** Cable Gland
- C** Cable Gland (Atex)
- M** M12 Micro Connector (on lid)††

Note: <sup>▲</sup> Indicates this option is standard.

†† For mating connection & cable with M12 Micro Connector, use Cable and Cable Length in sections E & F

Note: Approved mating connector and cable required with M12 Micro Connector for IS use. Contact factory for information.