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

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

Housing Option 2
Liquid Tight Non-Metallic Spiral Strain Relief
3/4" NPT Threads
7.23" 183.64 mm
5.10" 129.54 mm
3.05" 77.47 mm
1.49" 37.84 mm
2" NPT Threads
1.99" 50.54 mm

Housing Option 4
Liquid Tight Non-Metallic Spiral Strain Relief
3/4" NPT Threads
7.74" 191.69 mm
5.05" 129.54 mm
3.05" 77.47 mm
2" NPT Threads
## MNU IS Accessories

Please order separately, by part number.

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Programming Module</strong></td>
<td></td>
</tr>
<tr>
<td>RST-6001</td>
<td>125734</td>
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<tr>
<td><strong>Barrier</strong></td>
<td></td>
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<tr>
<td>RS-485 Communications Barrier (2-wire)</td>
<td>200186</td>
</tr>
<tr>
<td>24 VDC Barrier (2-wire)</td>
<td>200187</td>
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</tbody>
</table>

## Common Model Configurations

<table>
<thead>
<tr>
<th>Model Number</th>
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<tbody>
<tr>
<td>MNU-IS-6424-C6A</td>
<td>1 - 25 ft. range, 69 kHz, 2” NPT, 6 ft cable, Cable Gland with Spiral Strain Relief</td>
</tr>
<tr>
<td>MNU-IS-6424-C6M</td>
<td>1 - 25 ft. range, 69 kHz, 2” NPT, M12 Micro Connector w/ mate, 6 ft cable</td>
</tr>
<tr>
<td>MNU-IS-6444-C6A</td>
<td>1 - 25 ft. range, 69 kHz, 2” NPT, Recessed Transducer, 6 ft cable, Cable Gland with Spiral Strain Relief</td>
</tr>
<tr>
<td>MNU-IS-8424-C6A</td>
<td>5 in. - 12 ft. range, 81 kHz, 2” NPT, 6 ft cable, Cable Gland with Spiral Strain Relief</td>
</tr>
<tr>
<td>MNU-IS-8444-C6M</td>
<td>5 in. - 12 ft. range, 81 kHz, 2” NPT, Recessed Transducer, M12 Micro Connector w/ mate, 6 ft cable</td>
</tr>
</tbody>
</table>
Model Configuration Options

Model Number: MNU - IS - _____ _____ _____ - _____ _____ _____

A. Range, Frequency
- □ 2  1 - 25 ft. (305 - 7620 mm); 69 kHz Transducer†
- □ 6  1 - 25 ft. (305 - 7620 mm); 69 kHz Transducer
- □ 8▲ 5 - 144 in. (127 - 3658 mm); 81 kHz Transducer

B. Lid Interface Threads
- □ 4▲ 3/4 in. MNPT

C. Housing
- □ 2▲ 2 in. MNPT, Valox PBT
- □ 4▲ 2 in. MNPT, Valox PBT, Recessed Transducer

D. Output
- □ 4▲ RS-485 Modbus RTU, Intrinsically Safe
- □ 5▲ RS-485 Modbus RTU, Intrinsically Safe w/ Gas Discharge Tube Surge Protection

E. Cable
- □ ▲ 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
- □ ▲ Cable Gland with Spiral Strain Relief
- □ B Cable Gland
- □ C Cable Gland (Atex)
- □ M M12 Micro Connector (on lid)††

Note: ▲ 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.

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