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 the QuickMode for power-saving, on-demand measurements, and optional GDT surge protection. The MNU IS works with the ViaCell-100 and the ViaSat-100 to provide robust, accurate tank level monitoring for industrial applications.

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) 5" - 12 ft (0.13 - 3.66 m) 81 kHz:

- 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 contoller



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



Nhysical Physical

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



CSA/cCSAus Contract #237484

Intrinsically Safe

- Class I, Div. 1, Groups C & D, T4
- Class I, Zone O, 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

2

Common Model Configurations

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

3

Rev. B, 03/27/2019

Model Configuration Options

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

E. Cable

- □ C 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 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.