# **MNU-IS Series**

Intrinsically Safe Ultrasonic Modbus Sensor

## Datasheet



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



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APG

### **MNU-IS SPECIFICATIONS**

**Housing Option 2** 

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

### 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: – 22° to 140°F (-30° to 60°C)

### 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**

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- 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 Connectio
- 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 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



### **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	<b>5 in. – 12 ft. range, 81 kHz,</b> 2" NPT, <b>6 ft cable</b> , 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

### Model Number Model Description

### **MNU-IS ACCESSORIES**

Please order separately, by part number.

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



### **MODEL CONFIGURATION OPTIONS**

### A. Range, Frequency

- □ 6 1 25 ft. (305 7620 mm); 69 kHz Transducer
- □ 8 ▲ 5 144 in. (127 3658 mm); 81 kHz Transducer □ N

### **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

S RS-485 Modbus RTU, Intrinsically Safe w/ Gas
 M Discharge Tube Surge Protection

### E. Cable

F

Е

- □ C▲ Shielded Cable with Flying Leads†
- 🛛 **N** No Cable

G

### F. Electrical Cable Length

\_\_\_\_ Specify Length (6 ft. standard length + 5 ft. increments)

• **O** No Cable

### G. Seal

- □ A Cable Gland with Spiral Strain Relief
- B Cable Gland
- Cable Gland (Atex)
- 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.





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