



MDI SERIES

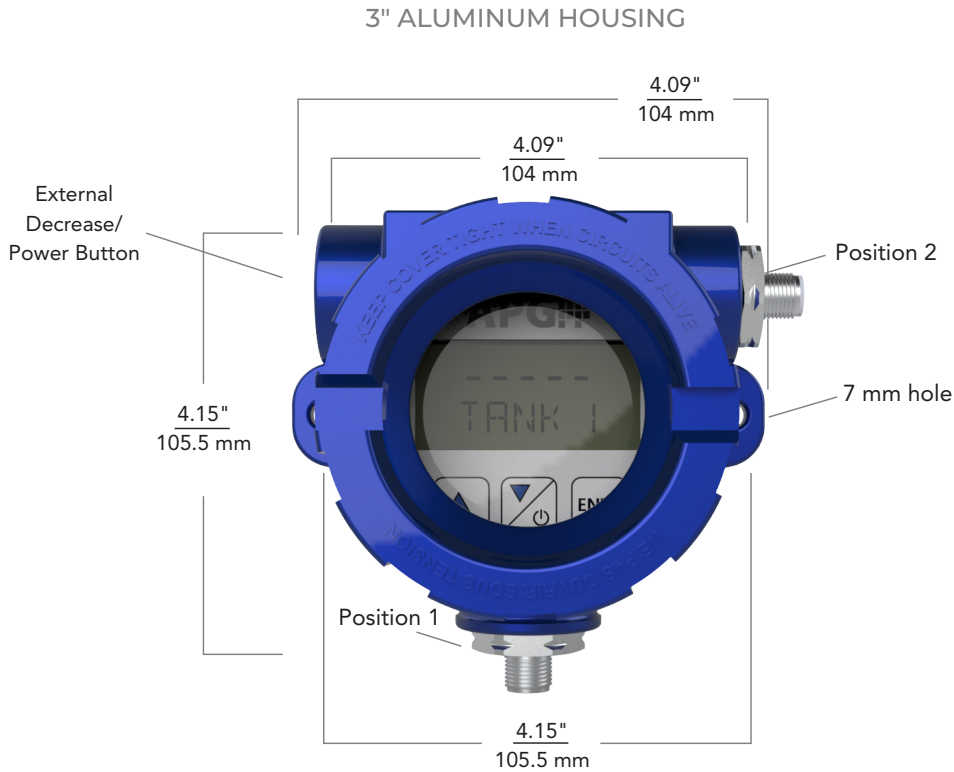


Intrinsically Safe Modbus Display

The MDI Intrinsically Safe Modbus Display provides a local display in a Class 1, Zone 1 hazardous area that can monitor and control a sensor in either a Class 1, Zone 0 or Class 1, Zone 1 area. The MDI can supply power to the sensor it controls, creating a complete monitoring-and-control system within the hazardous area. The MDI can also be connected to monitoring equipment outside the hazardous area through an IS barrier, allowing readings from the sensor to be seen across the monitoring or control network.

FEATURES

- Large, full 5-digit display with 0.4 in. characters
- Environmentally sealed housing; IP66
- User selectable units of measure (barrels, cubic inches, liters, cubic meters, gallons, million cubic feet, cubic feet, custom)
- Software-based switchable power control for connected sensor
- Auxiliary connection allows for remote waking of MDI



MDI SPECIFICATIONS

PERFORMANCE

- **RS-485 (Modbus RTU):**
2400, 9600, 19200, 38400 baud rates
- **Display Readings:**
Volume, Level, Distance, Pressure

CONNECTIVITY

- **Control:** Modbus RTU
- **Online Access/Control:** (non-IS installations only)
LOE Controller
APG's Settler and Explorer

ENVIRONMENTAL

- **Protection Rating:** IP66
- **Storage Temperature:** -45 to 90°C (-49 to 194°F)
- **Operating Temperature:** -30 to 85°C (-22 to 185°F)

PHYSICAL

- **Aluminum Housing**
- **Display:** 5 digit LCD, 0.4 in. digits

ELECTRICAL

- **Battery Voltage:**
(3) AA 3.6V Lithium
Low battery detection with 25% increments

PROGRAMMING

- **Programmable Features:**
User selectable units of measure
Client Mode
Auto-Off

MATERIALS OF CONSTRUCTION

- **Aluminum Housing**
Pressure die casting, 0.5% Mg
Chemically resistant paint

MOUNTING

- **Standard:** No mounting hardware provided

COMPATIBLE INTRINSICALLY SAFE SENSORS

- **Ultrasonic:** MNU-IS
- **Magnetostrictive:**
MPI-E, MPI-R, MPI-E Chemical, MPI-F, MPI-T

CERTIFICATION

- **cCSAus Certificate CSA19CA70219728:**
Ambient: -30° to 85°C
Class I, Zone 1
AEx ib [ia Ga] IIB 142°C (T3) Gb
Ex ib [ia Ga] IIB 142°C (T3) Gb
- **ATEX Certificate Sira 18ATEX2289XX:**
II 2G Ex ib [ia Ga] IIB 142°C (T3) Gb
Ta = -30° to 85°C
- **IECEx Certificate IECEx SIR 18.0076X:**
Ex ib [ia Ga] IIB 142°C (T3) Gb
Ta = -30° to 85°C

MODEL CONFIGURATION OPTIONS

MODEL NUMBER: MDI - $\frac{4}{A}$ $\frac{2}{B}$ $\frac{0}{C}$ $\frac{0}{D}$ $\frac{0}{E}$ - $\frac{0}{F}$ $\frac{0}{G}$ - $\frac{0}{H}$ $\frac{0}{I}$ - $\frac{0}{J}$ - $\frac{B0}{K}$

A. Power

- 9*** Batteries (3) AA 3.6V Lithium Parallel

B. Output

- 4*** Modbus RTU, IS Rated

C. Relays

- 0*** No Relays
- 5** Switch Power

D. Enclosure

- 2*** 3" Aluminum (1/2" NPT cable entry)

E. Mounting/Cover

- 0*** Standard Mounting

F. Main Connection Location**

- 1*** Position 1
- 2** Position 2

G. Main Cable or Connector

- C_** Cable, in feet, with flying leads (ex. C100 = 100 feet, 5 ft increments only)
- M_** Cable, in feet, with connector (ex. M5C5 = 4 pin M12 Female connector with 5 feet of cable, avail. in 5 ft increments only)
- Connector only (select from Connector Table below)

Connector Table

- 2** 4 pin M12 Male
- 5** 4 pin M12 Female

H. Auxiliary Connection Location**

- 0*** No Auxiliary Connection
- 1** Position 1
- 2** Position 2

I. Auxiliary Cable or Connector

- 0*** No Auxiliary Connection
- C_** Cable, in feet, with flying leads (ex. C100 = 100 feet, 5 ft increments only)
- M_** Cable, in feet, with connector (ex. M5C5 = 4 pin M12 Female connector with 5 feet of cable, avail. in 5 ft increments only)
- Connector only (select from Connector Table below)

Connector Table

- 2** 4 pin M12 Male
- 5** 4 pin M12 Female

J. Backlight

- 0*** No Backlight
- 1** Backlight (decreases battery life)

K. Factory Use Only

- B0***

*This option is standard.

**Note: Auxiliary Connection Location (when used) cannot be the same as the Main Connection Location.

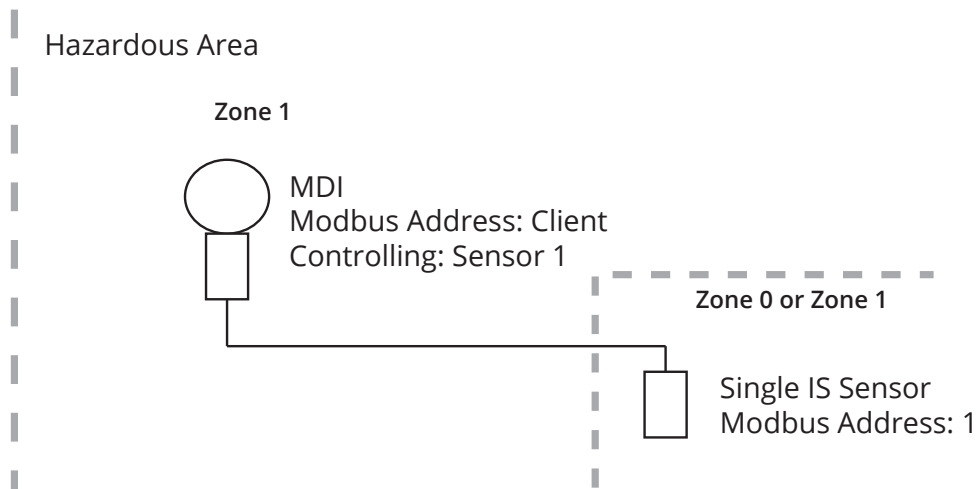
ACCESSORIES

Please order separately, by part number.

Description	Part Number
Settler	201181
Scout	201195
4-pin male M12 micro-connector, Field Wireable	200385
4-pin female M12 micro-connector, Field Wireable	200386
4 Conductor Cable (2 twisted pairs, shielded)	200388
(1) Replacement Battery (Xeno Model XL-060F)	200195

MDI INTRINSICALLY SAFE USE CASE DIAGRAMS

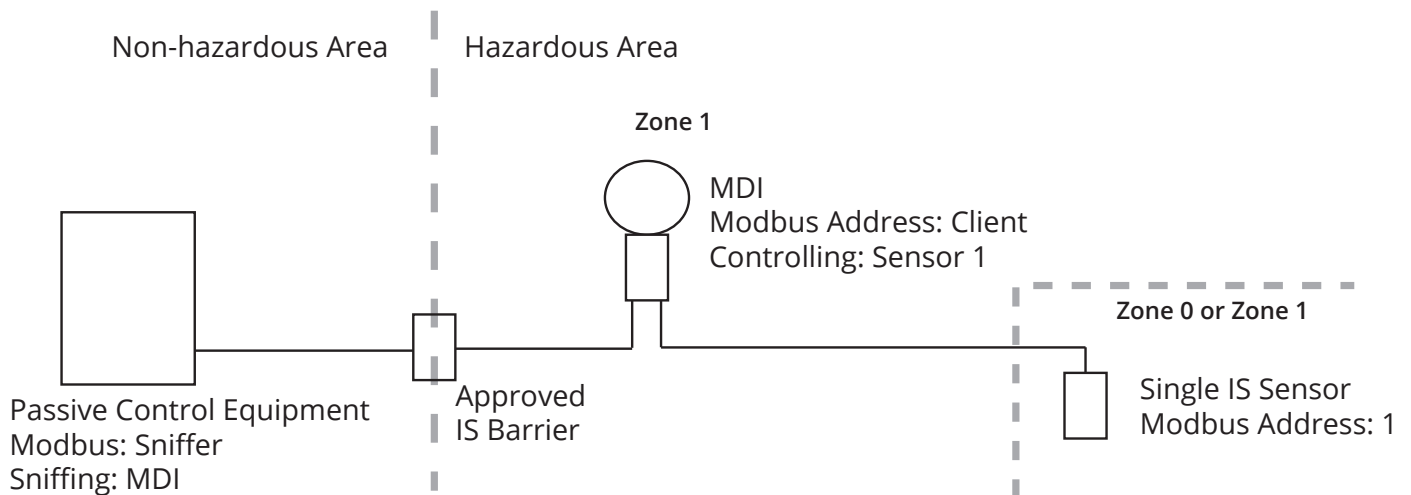
MDI CONTROLLING SINGLE IS SENSOR



Single MDI controlling a single IS sensor

- MDI is located in Zone 1 area. Sensor can be in Zone 0 or Zone 1 without additional barriers.
- MDI is battery powered; allows for software-based switchable power for sensor.
- No external controller.
- Any changes to sensor settings done via MDI buttons.

MDI CONTROLLING SINGLE IS SENSOR



Single MDI controlling a single IS sensor with Passive Control Equipment

- MDI is located in Zone 1 area. Sensor can be in Zone 0 or Zone 1 without additional barriers.
- MDI is battery powered; allows for software-based switchable power for sensor.
- External controller passively reads (Sniffs) readings from MDI.
- External controller can activate MDI.
- Approved IS Barrier required between Passive Control Equipment and MDI.
- Auxiliary connection required for MDI.
- Any changes to sensor settings done via MDI buttons.

SPOTLIGHT ACCESSORIES



SETTLER

Your Gateway to Smarter Monitoring

Settler, APG's next remote monitoring gateway, makes getting real-time level data easier than ever.

Settler seamlessly connects Modbus and 4-20 mA sensors—transmitting encrypted data securely to Explorer, APG's cloud-based interface. View tank and well levels anytime, anywhere, with reliable Ethernet connectivity and robust data security powered by MQTT with AES (Advanced Encryption Standard). Plus, with over-the-air (OTA) firmware updates, your system stays up to date without hassle.

Designed for general-purpose environments, Settler is not intended for use in hazardous areas.

Explorer makes monitoring simple. Access real-time readings, enable datalogging, and set up alarms so you're always informed of critical changes—right from your smartphone, tablet, or desktop.

Save time, reduce costs, and gain peace of mind with remote monitoring powered by Settler and Explorer. Contact us today to learn more or visit apgsensors.com/settler-remote-monitoring-gateway/.



MODBUS SCOUT (SCT-1)

Effortless Modbus to Bluetooth Adapter

Streamline field diagnostics with this portable and user-friendly RS485 Modbus communication tool. APG's Modbus Scout allows users to connect to their Modbus sensor in the field via an easy-to-use app or a USB port. Unlock the ability to configure, communicate with, and broadcast simple in-range readings with your Modbus sensor.

Make your setup easy and save time with APG's Modbus Scout. Get started today at apgsensors.com/product/modbus-scout