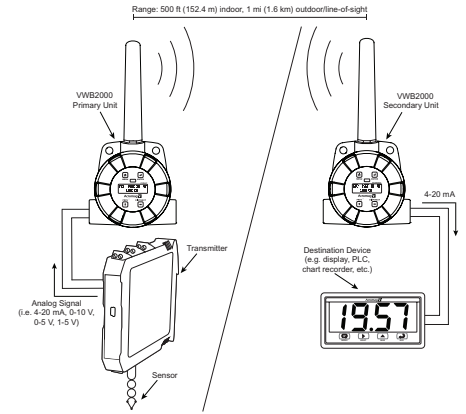
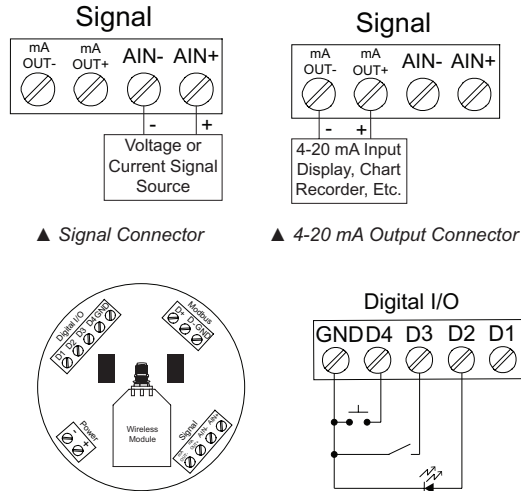


# Wireless I/O: Vertu™ Series

## VWB2000 Series Point-to-Point Wireless Analog and Digital I/O Signal Bridge



Two-way replication of analog, discrete and serial signals ♦ Pre-paired communication ♦ Rugged, water-tight enclosure

### Description

The Acromag VWB2000 wireless I/O system provides a simple solution to reproduce an analog, discrete, or Modbus® signal at a remote location. This point-to-point wireless bridge is enclosed in a rugged, weather-tight housing to meet the demands of industrial installations.

Acromag's wireless bridge system is very easy to set up and quite reliable for your application. The system consists of two pre-paired transmitter/receiver units. You can connect analog, discrete, or Modbus® inputs to one unit and wirelessly broadcast signal data to the other unit. The receiving unit recreates the original signal for output to local instrumentation. Install the units in the factory or field – anywhere you have 12-28V DC power.

Each wireless unit has one analog I/O channel, four discrete digital I/O channels, and RS-485 Modbus communication. If the primary unit's channel is an input, the secondary unit's corresponding channel is an output and vice-versa. Analog voltage input will be converted to a proportional current output.

VWB2000 wireless transceivers are housed in a rugged, IP68, NEMA 4X painted aluminum enclosure. They are a smart, cost-effective solution for interfacing I/O signals across long distances in a harsh industrial environment. Eliminate the expense and hassles of hard wiring your instrumentation throughout your facility or across a field.

This wireless bridge system has a range of 500 ft. indoors at industrial environments and an outside line-of-sight range of 1 mile. Check the installation guide and manual for tips to avoid problems and optimize performance. Certain factors, such as physical obstacles and improper placement, can reduce transmission distances.

The VWB2000 signal bridge is designed for fast and easy setup with just a few pushes of the front panel buttons. Using Acromag's free VWB Config software enables more advanced capabilities when connecting a PC to the unit's USB port. Advanced settings include encryption and analog signal calibration.

### Key Features & Benefits

- Dependable wireless signal interface replaces difficult wiring in tough industrial environments
- Inputs and outputs on both field units
- Simple to order, configure, and install
- 1 mile line-of-sight outdoor, 500 feet indoor range
- Inputs:
  - 1x analog input (4-20 mA, 0-10 V, 0-5 V, 1-5 V)
  - 4x digital inputs
- Outputs:
  - 1x analog output (4-20 mA), 4x digital outputs
- RS-485 Modbus® pass-through communication
- Remote or attached antenna
- Repeaters and directional antennae available
- Flanges for wall or pipe mounting
- Software available for even easier setup
- NEMA 4X, IP68 enclosure



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## Performance Specifications

### General

Except where noted all specs apply to operation at +25°C.

#### Display

32-character dual-line alphanumeric dot matrix LCD display with backlight (4.68mm x 2.21mm characters).

#### Display Orientation

Display may be mounted at 180° from default orientation.

#### Network ID

Field selectable: 0 - 99.

#### Programming Methods

Four programming buttons (behind glass) or PC with VWB Config software.

#### Recalibration

All inputs and outputs are calibrated at the factory. Recalibration is recommended at least every 12 months.

#### Process/Digital I/O Display

Press the display button once to display the present analog input and output. Press the display button again to display digital I/O states.

#### Password

A programmable password restricts modification of program settings.

#### Power

12-28V DC, 5W max.

#### Non-Volatile Memory

All programmed settings are stored in non-volatile memory for a minimum of ten years if power is lost.

#### Isolation

500V.

#### Environmental

Operating temperature range: -40 to 65°C (display inoperable < -20 °C); Storage temperature range: -40 to 85°C; Relative humidity: 0 to 90% non-condensing.

#### Connections

Removable screw terminal blocks accept 16 to 30 AWG wire.

#### Enclosure

Cast aluminum with glass window, 0.30% max copper content, corrosion resistant powder coating, color: blue. NEMA 4X/IP68. Three ½" NPT threaded conduit openings. One ½" NPT stainless steel conduit plug with 10 mm hex key fitting installed.

#### Mounting

May be mounted directly to conduit. Two mounting holes for 1.5" pipe or wall mounting. See manual for mounting space requirements.

#### Signal Connector Tightening Torque

2.5 lb-in (0.28 Nm).

#### Shipping Dimensions

17" x 14" x 9" (43.2 cm x 35.6 cm x 22.9 cm) (L x W x H).

#### Shipping Weight

5 lbs. (2.27 kg).

#### Warranty

3 years parts and labor.

### Wireless Radio

#### Frequency

900 MHz.

#### Range

500 ft (152.4 m) indoor, 1 mi (1.61 km) outdoor (line-of-sight).

#### Encryption

AES 128-bit encryption available using VWB Config software.

#### Interference Reduction

Frequency Hopping Spread Spectrum (FHSS).

#### Power Output

24 dBm (250 mW).

#### Sensitivity

-101 dBm.

#### Antenna Cable Connection

RP-SMA right angle male.

### Analog Input

#### Inputs

Field selectable: 4-20mA, 0-10V, 0-5V, 1-5V.

#### Accuracy

±0.03% of calibrated span ±1 count.

#### Temperature Drift

0.005% of calibrated span/°C max from 0 to 65°C ambient, 0.01% of calibrated span/°C max from -40 to 0°C ambient.

#### Input Impedance

Voltage ranges: greater than 500 kΩ.

Current ranges: 50 to 100 Ω (depending on resettable fuse impedance).

#### Signal Loss

Inputs will remain off (open circuit) until wireless units are reconnected.

#### HART Transparency

Analog input will not interfere with existing HART communications on the wired 4-20 mA signal.

### Isolated 4 to 20mA Transmitter Output

#### Output Source

Analog input from connected wireless unit.

#### Calibration

Factory calibrated: 4.000 to 20.000 = 4-20 mA output.

#### Accuracy

± 0.1% of span ± 0.004mA.

#### Temperature Drift

0.4 µA/°C max from 0 to 65°C ambient,

0.8 µA/°C max from -40 to 0°C ambient

Note: Analog output drift is separate from input drift.

#### Signal Loss

mA output will become 3.2 mA after approx. 25 seconds.

#### Output Loop Resistance

24V DC power supply; 10 Ω min.; 900 Ω max.

### VWB Config Software

#### System Requirements

Microsoft® Windows® XP/Vista/7/8/10.

#### Communications

USB 2.0 (Standard USB A to Micro USB B).

#### Configuration

Configure devices one at a time.

### Digital Input / Output Terminal

#### Channels

Four (4) digital connections, independently field selectable as either inputs or outputs.

#### DI I/O Logic

DI logic high: 3 to 5Vdc, TTL logic level.

DI logic low: 0 to 1.1V DC.

DO logic high: 3.1 to 3.3V DC.

DO logic low: 0 to 0.4V DC.

#### Source Current

10mA maximum output current.

#### Sink Current

1.5 mA minimum input current.

#### Signal Loss

Digital output goes to logic high.

Note: A closed dry contact can be used for the digital inputs.

### RS-485 Modbus® RTU Serial Comms

#### Compatibility

EIA-485.

#### Connectors

Removable screw terminal connector.

#### Max Distance

3,937' (1,200 m) max.

#### Baud Rate

1200 – 57,600 bps.

#### Data

8 bit (1 start bit, 2 stop bits).

#### Parity

Even, Odd, or None with 2 stop bits.

#### Modbus Timeout

0.5, 1, 2, 3, 4, 5 seconds; user selectable.

## Ordering Information

### Models

#### VWB2201

Point-to-Point Industrial Wireless System

### Accessories

#### VWB2130

Point-to-Point Wireless Repeater

#### VWB9121

Yagi 6 dB Antenna for Wireless Unit

#### VWB9131

Yagi 9 dB Antenna for Wireless Unit

#### VWB9221

Wireless Extension Cable, 20', M/M

#### VWB9222

Wireless Extension Cable, 20', M/F

#### VWB9241

Wireless Extension Cable, 40', M/M

#### VWB9242

Wireless Extension Cable, 40', M/F

#### VWB9311

Wireless Unit Pipe Mounting Kit

For further information or pricing, please contact us:

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