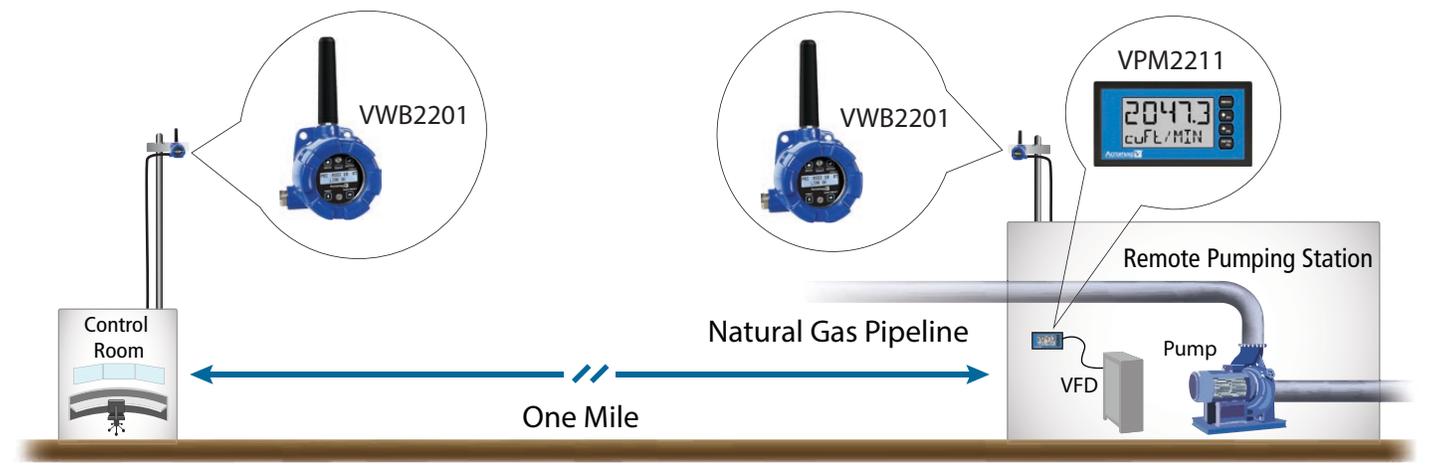# Application Note:

How to Control a Remote Pump for a Natural Gas Pipeline

Defining the Problem:

A natural gas pipeline has a remote pumping station a mile away and they need to be able to adjust the pumping rate without driving to the site. The pump is controlled by a variable frequency drive. Running control wire is too expensive and also undesirable due to potential surges from lightning strikes.

System Requirements:

Must be able produce a 0 to 800 Hz signal wirelessly one mile away in a UL rated Class 1 Division 2 Groups A, B, C & D hazardous area.

Implementing the Solution:

1. To easily and economically solve this problem we can pair the VWB2201 point to point wireless bridge with the VPM2211 input loop powered panel meter.

2. The VWB2201 wireless bridge receives a 4 to 20 mA signal from the SCADA system in the control room and recreates it a mile away above the pumping station.

3. The 4 to 20 mA signal is run down to the VPM2211 which has 2 Open Collector outputs that can be scaled to output a frequency of 0 to 1 kHz based off of the 4 to 20 mA input.

4. The VPM2211 also meets the UL Class 1 Division 2 hazardous location requirements.

5. Its display can be configured for frequency, percentage, or cubic feet per minute so that workers, when onsite can see the pumping rate.

Featured Products:

Vertu Series:

VPM2211: Digital display, IS, loop power

VWB2201: Vertu Point-to-Point Industrial Wireless System

Notes:

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Why Acromag:

The VWB2201 can transmit a 4 to 20 mA signal, 4 discrete I/O points and a Modbus RTU RS485 signal 500 ft. indoors or up to a mile outdoors if there are no obstructions. Optional Yagi antennas can extend those distances. The VPM2211 saves cost by combining a transmitter and display in one unit. There are other models with additional features for relay or analog outputs that were not needed for this application. Not paying for these unneeded features also saves on cost. The VPM2211 also has the important UL certifications required for this installation. Acromag, your I/O experts for over 60 years.