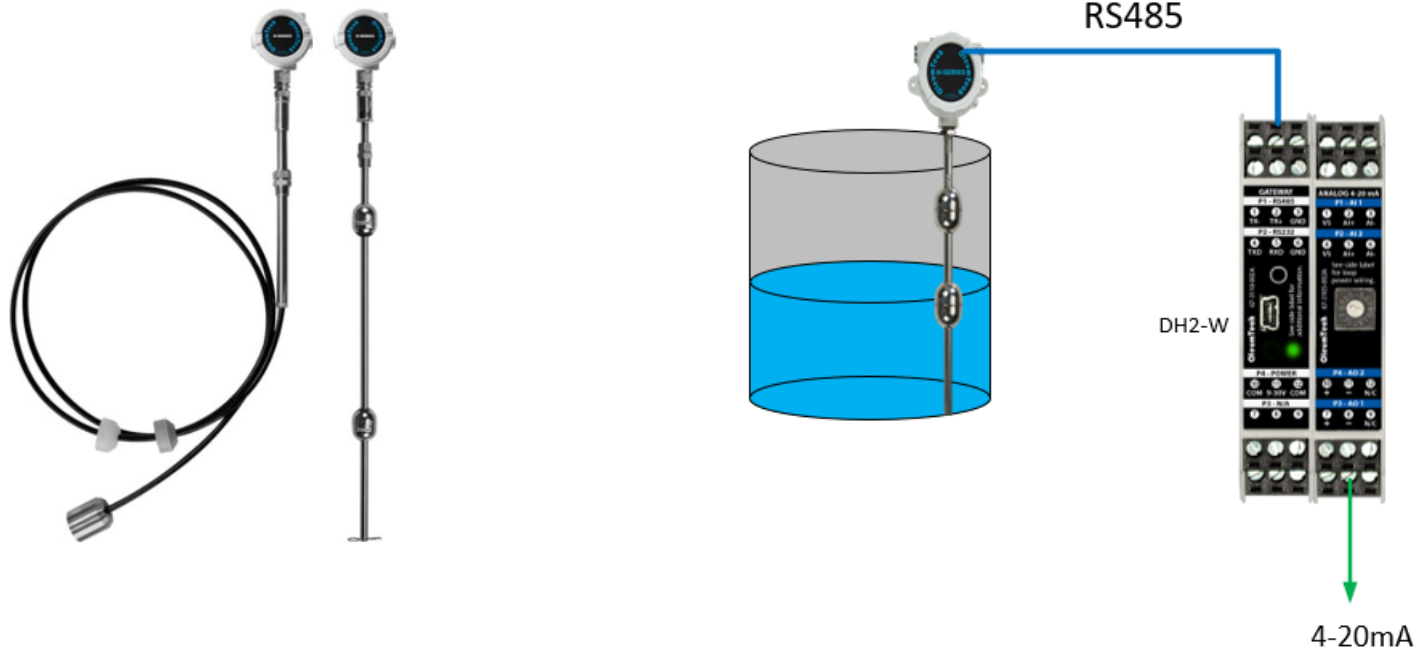


Application Note

Document ID: AN-1136-001_A

H SERIES LEVEL TO 4-20mA OUTPUT



1. INTRODUCTION

The purpose of this application note is to summarize the integration and setup of an OleumTech® H Series level to output a 4-20mA signal. This document assumes the user is already familiar with the OleumTech product line and with BreeZ® Configuration Software. Consult the appropriate gateway User Guide for additional installation and setup instructions.

This document details how to establish communication between an OleumTech Series level and an OleumTech DH2-W. BreeZ Configuration Software and H Series Configuration Software can be downloaded from the OTC Download Center.

2. EQUIPMENT REQUIRED

- OleumTech Wireless Gateway (DH2-W)
- OleumTech H Series Level
- OleumTech Configuration Cable
- External Power Supply/Wall Adapter for all devices
- Insulated wire for RS485 communications
- BreeZ 6.0 or higher
- H-Series Configuration Software
- 4-20mA IO Module (BM-A420-122)
- Datarail for DH2-W and IO Module

3. TYPICAL OPERATION OVERVIEW

In this setup, an OleumTech DH2-W will be configured as a Modbus Master to the H-Series Level device. The DH2-W will convert these level values to a format to output a 4-20mA signal at the IO Module.

4. H-Series Level Setup

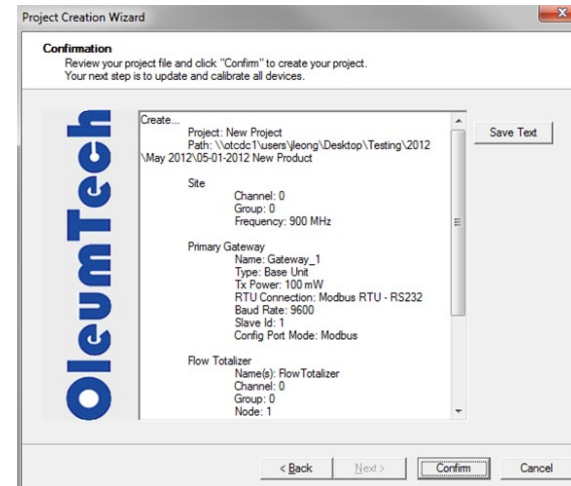
4.1. Hardware/Software Setup

- 4.1.1. Connect the transmitter to the sensor. Tighten the quick connect fitting by hand only.
- 4.1.2. Connect the PC to the transmitter using the SX1000-CC8.
- 4.1.3. Run the H Series Configuration Software on the PC.
- 4.1.4. Must configure the sensor type and length before use.
- 4.1.5. Select the number of floats.
- 4.1.6. Enter the Modbus Slave ID.
- 4.1.7. Select the baud rate.
- 4.1.8. Select 32-bit type.
- 4.1.9. Enter the turnaround delay time in ms. (0 = immediate response when polled)
- 4.1.10. Metric: False = inches.
- 4.1.11. Product offset: read the sensor to determine the offset.
- 4.1.12. Interface offset: read the sensor to determine the offset.
- 4.1.13. Tank height and diameters (entering the values provide tank full % and product/interface volume).
- 4.1.14. Once the sensor parameters are configured, click the Update button to save the settings.
- 4.1.15. Click the Read button to verify sensor output data.

5. DH2-W GATEWAY

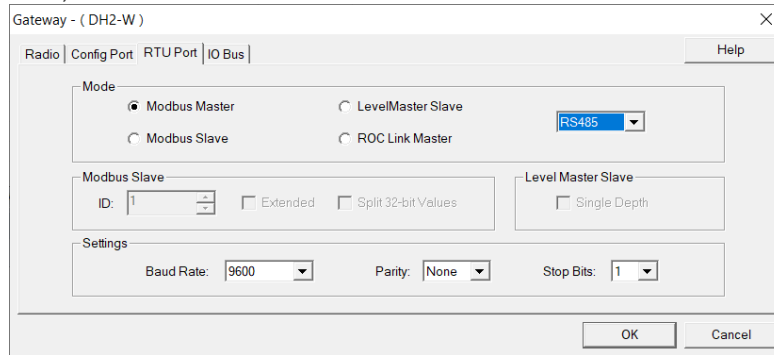
5.1. Create a Project File

- 5.1.1. Add a DH2 wireless gateway.
- 5.1.2. Proceed through the rest of the wizard. Leave all settings as default. No transmitters will be added in this section.

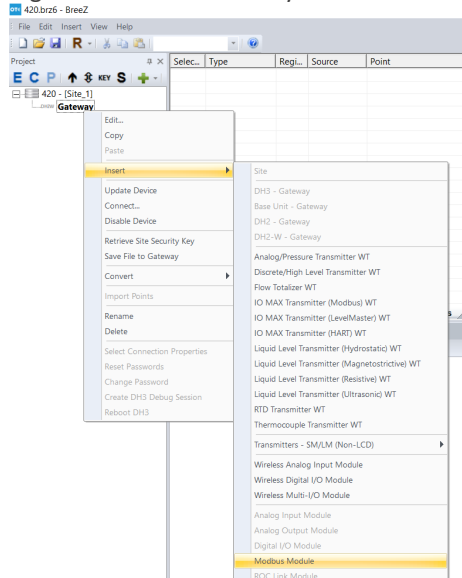


5.2. Edit the DH2-W to read the Modbus registers

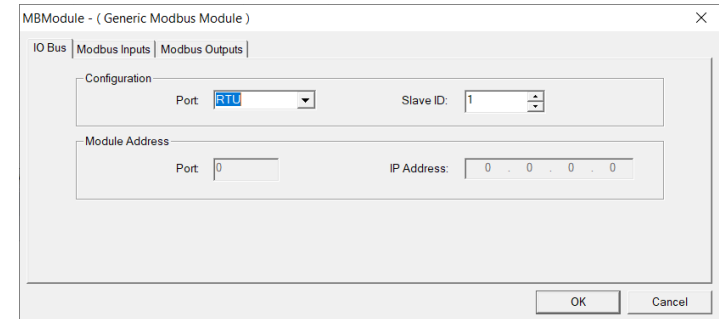
5.2.1. In the RTU tab, select Modbus Master, select RS485, set the baud to 9600, and then click “OK”



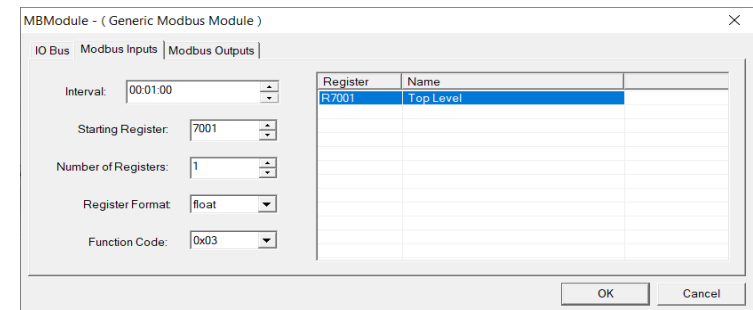
5.2.2. Right click on the Gateway and Insert a Modbus Module



5.2.3. Select the IO Bus tab and select the Slave ID of the H-Series Level device. In this case ID 1.

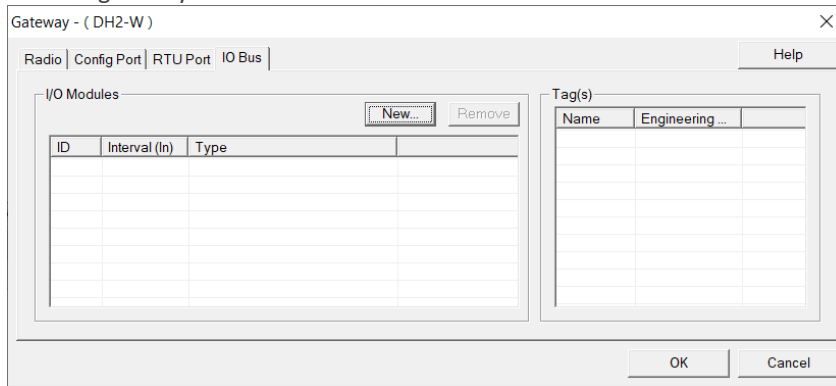


5.2.4. Click on the Modbus Inputs tab. Enter the read Interval. Enter 7001 as the starting register. Number of registers should be 1 and the Register format should be “float.” Double click on the tag name to rename it. Click OK.

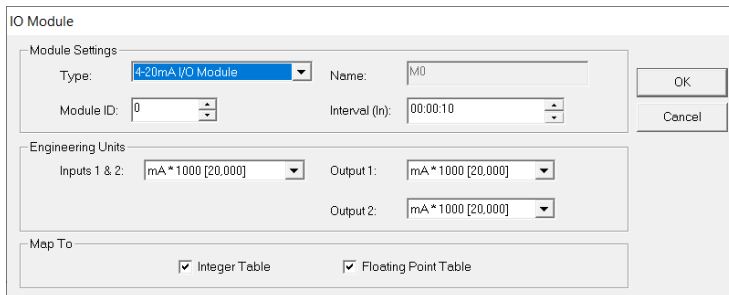


6. Configure 4-20mA Analog Module

6.1. Edit the gateway. Select the IO Bus Tab and click “New.”

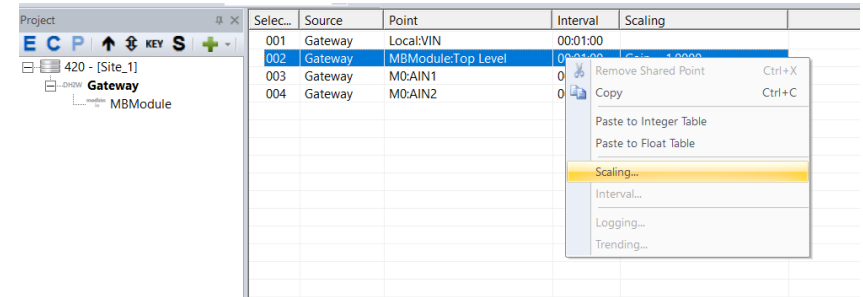


6.2. Select 4-20mA I/O Module. Set ID at 0 (or whatever the dial on the IO

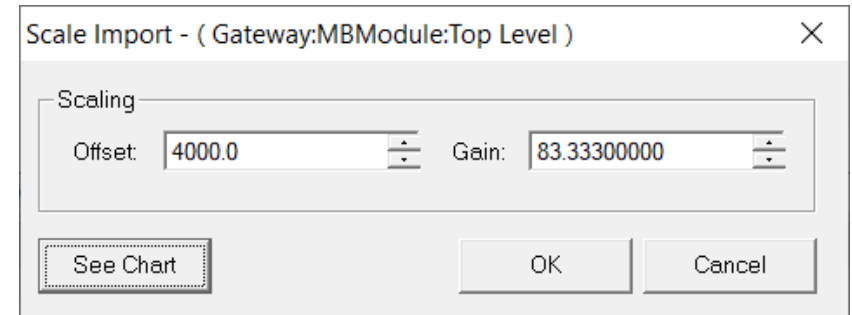


Module is set at), set the write interval and set Output 1 to mA*1000.

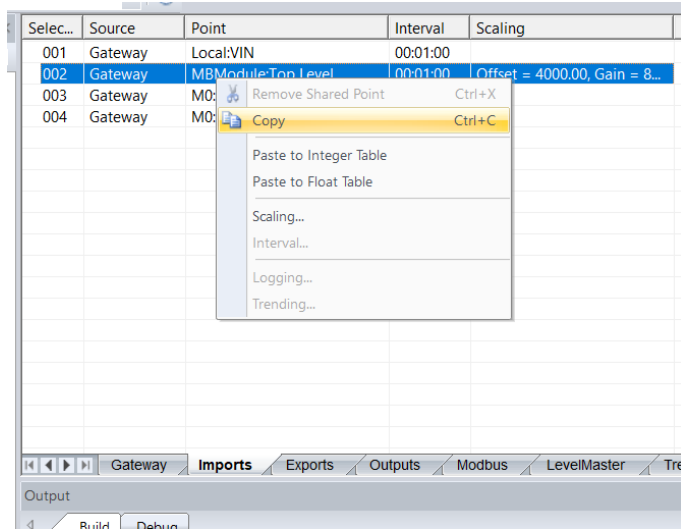
6.3. Click Ok and then select the Imports tab to the right. The gain and offset need to be adjusted to convert the level to an analog value. The formula is: $Gain = 16000 / \text{Max Level (Inches)}$. So for a 16' gauge (192") -> $Gain = 16000 / 192$. $Gain = 83.333$. The Offset will be 4000. Right click on Top Level and select “Scaling.”



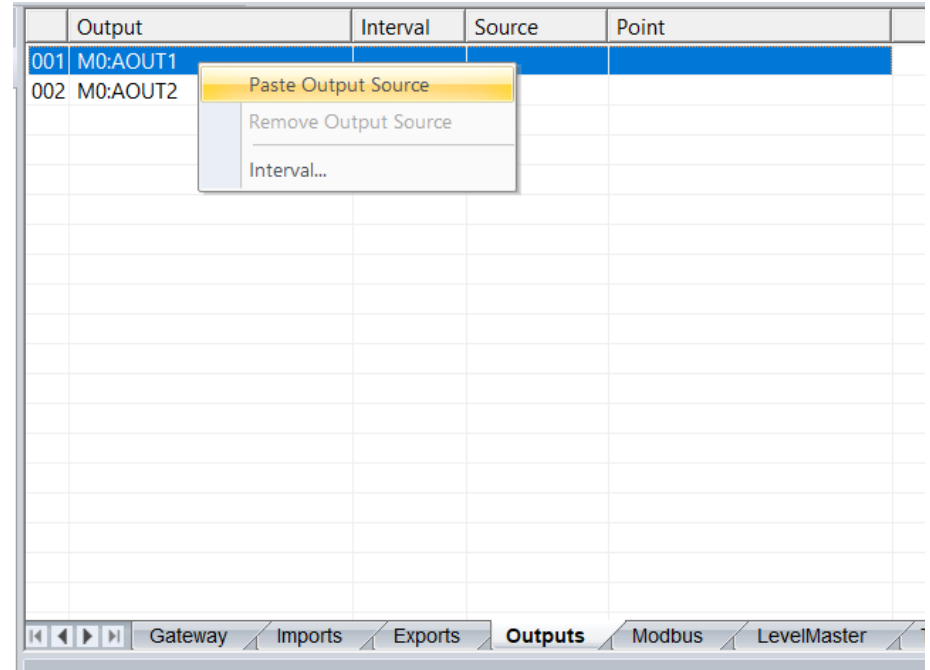
6.4. Enter 4000 for Offset and 83.333 for Gain. Click OK



6.5. Right click on Top Level again in the Imports tab and select “Copy.”



6.6. Select the Outputs Tab, and click on AOUT 1. Right click and select “Paste Output Source.”



6.6.1. Update the Gateway when finished

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