



Quick Install Guide

This Quick Install Guide is applicable for InnovaSonic® 205i

A copy of this Quick Install Guide, the InnovaSonic® 205i Modbus manual and the InnovaSonic 205i product instruction manual are also included on the digital communication information CD included in your shipment. This information is also available for [download](#).

Connecting to a Modbus Network

You will need the following to connect Modbus to your device:

1. A Modbus equipped 205i ultrasonic flow meter.
2. A PC equipped with a 2-wire RS-485 interface card or USB to RS-485 adapter. Sierra recommends our 29-0331 USB/RS-485 adapter.
3. A 2-wire RS-485 network with an end of line terminator with pull up and pull down resistors. This becomes more critical when you have more slaves, longer wires, and higher baud rates. See your RS-485 adapter manual for specific network requirements.
4. Power supply to power 205i instrument, 90-245 VAC 15W or 10-36 VDC at 500mA.

Installation Steps

1. Connect the flow meter to the RS-485 network. A, B, and GND if used.



The RS485 connections are the last 3 connections on the terminal strip. Use the RS232 ground if needed.

2. Power-up the meter.
3. Go to Menu 47 to set the Node ID of your InnovaSonic 205i.
4. Go to Menu 62 to set the baud rate. Parity "None," 8 bits, and 1 stop bit are fixed.
5. Go to Menu 96 and select Modbus-I (standard Modbus RTU protocol).
6. Setup and start your Modbus application and add the InnovaSonic 205i registers you need.
7. All the available registers are listed below.

Holding Registers

| PDU Address | Register | Read | Write | Type | No. Registers* |
|-------------|----------|--------------------|--------------|------|----------------|
| \$0000 | 40001 | Flow/s - low word | 32 bits real | 2 | |
| \$0001 | 40002 | Flow/s - high word | | | |
| \$0002 | 40003 | Flow/m - low word | 32 bits real | 2 | |
| \$0003 | 40004 | Flow/m - high word | | | |
| \$0004 | 40005 | Flow/h - low word | 32 bits real | 2 | |
| \$0005 | 40006 | Flow/h - high word | | | |

| | | | | | |
|--------|-------|-----------------------------|--------------|---|--|
| \$0006 | 40007 | Velocity – low word | 32 bits real | 2 | |
| \$0007 | 40008 | Velocity – high word | | | |
| \$0008 | 40009 | Positive total – low word | 32 bits int. | 2 | |
| \$0009 | 40010 | Positive total – high word | | | |
| \$000A | 40011 | Positive total – exponent | 16 bits int. | 1 | |
| \$000B | 40012 | Negative total – low word | 32 bits int. | 2 | |
| \$000C | 40013 | Negative total – high word | | | |
| \$000D | 40014 | Negative total – exponent | 16 bits int. | 1 | |
| \$000E | 40015 | Net total – low word | 32 bits int. | 2 | |
| \$000F | 40016 | Net total – high word | | | |
| \$0010 | 40017 | Net total – exponent | 16 bits int. | 1 | |
| \$0011 | 40018 | Energy total – low word | 32 bits int. | 2 | |
| \$0012 | 40019 | Energy total – high word | | | |
| \$0013 | 40020 | Energy total – exponent | 16 bits int. | 1 | |
| \$0014 | 40021 | Energy flow – low word | 32 bits real | 2 | |
| \$0015 | 40022 | Energy flow – high word | | | |
| \$0016 | 40023 | Up signal int – low word | 32 bits real | 2 | 0~99.9 |
| \$0017 | 40024 | Up signal int – high word | | | |
| \$0018 | 40025 | Down signal int – low word | 32 bits real | 2 | 0~99.9 |
| \$0019 | 40026 | Down signal int – high word | | | |
| \$001A | 40027 | Quality | 16 bits int. | 1 | 0~99 |
| \$001B | 40028 | Analog output – low word | 32 bits real | 2 | Unit: mA |
| \$001C | 40029 | Analog output – high word | | | |
| \$001D | 40030 | Error code – char 1,2 | String | 3 | Refer to “Error Analysis” for detailed codes meanings. |
| \$001E | 40031 | Error code – char 3,4 | | | |
| \$001F | 40032 | Error code – char 5,6 | | | |
| \$003B | 40060 | Velocity unit – char 1,2 | String | 2 | Currently supports m/s only |
| \$003C | 40061 | Velocity unit – char 3,4 | | | |
| \$003D | 40062 | Flow unit – char 1,2 | String | 2 | Note 1 |
| \$003E | 40063 | Flow unit – char 3,4 | | | |
| \$003F | 40064 | Total unit – char 1,2 | String | 1 | |
| \$0040 | 40065 | Reserved | | | |
| \$0041 | 40066 | Reserved | | | |
| \$0042 | 40067 | | | | |
| \$0043 | 40068 | ID code – low word | 32 bits int. | 2 | |
| \$0044 | 40069 | ID code – high word | | | |
| \$0045 | 40070 | Serial number – char 1,2 | String | 4 | |
| \$0046 | 40071 | Serial number – char 3,4 | | | |
| \$0047 | 40072 | Serial number – char 5,6 | | | |
| \$0048 | 40073 | Serial number – char 7,8 | | | |
| \$0049 | 40074 | Reserved | | | |
| \$004a | 40075 | Reserved | | | |
| \$004b | 40076 | Reserved | | | |