This Quick Start Guide is applicable for InnovaSonic® 207i Ultrasonic Liquid Flow Meters with BACnet Digital Communications Protocol.

This quick start guide is intended to be a summary of the set-up steps for your 207i BACnet digital communications protocol. To get more technical information, refer to the InnovaSonic 207i BACnet Instruction Manual, 207i Smart Interface Portal (SIP) Manual, and InnovaSonic 207i Product Manual. For all 207i downloads, go to sierrainstruments.com/downloads/207i.

Safety

	**WARNING!** Power down the InnovaSonic 207i when installing or removing modules. Failure to comply with this instruction may damage the meter and cause personal injury.

Configure Baud Rate and MAC Address

Smart Interface Portal (SIP) Software or Local Display/Keypad

The baud rate and MAC (MS/TP) addresses can be set by either using the 207i Smart Interface Portal (SIP) software, which is recommended, or the local display and keypads on the meter. Download 207i SIP software at sierrainstruments.com/207isoftware. Complete Instructions for configuring the baud rate and MAC address are in Chapter 3 of the InnovaSonic 207i BACnet Manual.

When configuring BACnet via the SIP or local key pad:

1. It is very important that all of the devices on an MS/TP bus communicate at the same baud rate.
2. Configure the BACnet MS/TP to communicate at one of three different baud rates 9600, 19200 and 38400.
3. Configure the MAC (MS/TP) address between 1 to 127.

	**WARNING**! Because of the way the BACnet token passing works, duplicate addresses may lock up the entire network and require a re-boot to restore full network functions**.**

Set Up BACnet Module Board to Network

BACnet is normally installed in slot 12 of the terminal board (See Figure 1 below). However, the BACnet module can be installed in any free slot on the board. Users may install their BACnet module in the field as standard with other option modules. See InnovaSonic 207i BACnet manual, Chapter 2 (section 2.4) for field set up instructions.

BACnet Module Board Set Up

1. Connect your BACnet MS/TP to the BACnet module terminals. The RS-485 connections are A-,B+ and C, isolated RS-485 ground. Follow best RS-485 wiring practices (See Figure 1).
2. For troubleshooting, the BACnet board has one dual LED that flashes green when the 207i is communicating between the main board and BACnet board. Red indicates BACnet is not configured yet. See Chapter 6 of InnovaSonic 207i BACnet Manual, for more troubleshooting details.

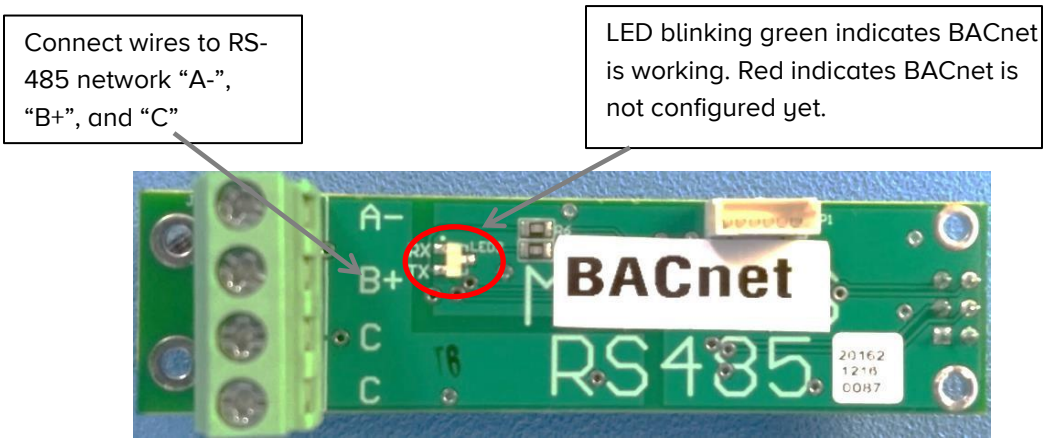

Figure 1. Standard BACnet Module Board Located in Slot 12 of Terminal Board

Supported BACnet Objects

A BACnet object represents physical or virtual equipment information, as a digital input or parameter. The InnovaSonic 207i ultrasonic flow meter uses the following object types (See Chapter 4 of the InnovaSonic 207i BACnet Manual for more details):

- Device Object (1)
- Analog Input (23)
- Analog Value (1)

Each object type defines a data structure composed by properties that allow access to the object information. The tables on the following pages show the implemented properties for each InnovaSonic 207i flow meter.

Supported BACnet Services/Objects		
BACnet Interoperability Building Block	**Services**	**Support**
DS-RP-B	Read Property	Execute
DS-WP-B	Write Property	Execute
DM-DDB-B	Read Property Multiple	Execute
DM-DOB-B	Write Property Multiple	Execute
DM-DCC-B	Who-Is	Execute
DS-RPM-B	I–Am	Initiate
DS-WPM-B	Who-Has	Execute
DS-RP-B	I-Have	Initiate
DS-WP-B	Device Communication Control	Execute

Overview of 207i BACnet Device Object

For complete table of BACnet Supported Device, Object & Properties, see Chapter 4 of the InnovaSonic 207i BACnet Manual.

1) Object Identifier: OBJECT_DEVICE;1
2) Object Name: 207i Ultrasonic Flowmeter
3) Object Type: OBJECT_DEVICE
4) Vendor Name; Sierra Instruments
5) Vendor Identifier; Vendor 722
6) Model Name: 207i
7) Firmware Revision; 1.60
8) Description; Ultrasonic Flowmeter
9) Max Master; 127

Overview of Analog Inputs (AI) Objects

AI, 1 Flow
AI, 2 Velocity
AI, 3 POS Totalizer
AI, 4 NEG Totalizer
AI, 5 NET Totalizer
AI, 6 Energy Flow Rate
AI, 7 Energy POS Total
AI, 8 Energy NEG Total
AI, 9 Energy NET Total
AI, 10 Delta Time
AI, 11 Signal
AI, 12 Quality
AI, 13 Noise
AI, 14 Gain
AI, 15 Fluid Temperature
AI, 16 Inlet Temperature
AI, 17 Outlet Temperature
AI, 18 Fluid Pressure
AI, 19 Fluid Density
AI, 20 Inlet Enthalpy
AI, 21 Output Enthalpy
AI, 22 Error Flag1
AI, 23 Error Flag2

Analog Value (AV) Object

AV-1 Reset Totalizers

Analog Properties Available on Each of the Analog Objects

1) Object Identifier
2) Object Name
3) Object Type
4) Present Value
5) Description
6) Status Flags
7) Event State
8) Out of Service
9) Units
10) Property List

Limited Warranty Policy – Register Online

All Sierra products are warranted to be free from defects in material and workmanship and will be repaired or replaced at no charge to the customer, provided return or rejection of product is made within a reasonable period but no longer than one (1) year for calibration and non-calibration defects, from date of delivery. To assure warranty service, customers must register their products online on Sierra's website. Online registration of all of your Sierra products is required for our warranty process. Register now at www.sierrainstruments.com/register . Learn more about Sierra's warranty policy at http://www.sierrainstruments.com/warranty

Contact Us

Email Technical Support: techsupport@sierrainstruments.com
24 Hour Live Help Online: www.sierrainstruments.com/livehelp
Telephone Technical Support- North America: 800-866-0200 or 831-373-0200
Europe, Middle East, Africa: + 31 72 5071 400
Asia: 8621 5879 8521