

**INSTALLATION INSTRUCTIONS FOR M2 / M3 UNIT CONTROLLER BACNET® MODULE
(59W51) USED WITH ENERGENCE® ROOFTOP UNITS**

⚠ IMPORTANT

Improper installation, adjustment, alteration, service or maintenance can cause personal injury, loss of life, or damage to property.

Installation and service must be performed by a licensed professional installer (or equivalent) or a service agency.

⚠ CAUTION

ELECTROSTATIC
DISCHARGE (ESD)
Precautions and
Procedures

Electrostatic discharge can affect electronic components. Take precautions during unit installation and service to protect the unit's electronic controls. Precautions will help to avoid control exposure to electrostatic discharge by putting the unit, the control and the technician at the same electrostatic potential. Neutralize electrostatic charge by touching hand and all tools on an unpainted unit surface before performing any service procedure

⚠ IMPORTANT

When adding this module to an existing M2 Unit Controller, the M2 firmware must be v7.12 or higher.

Look on DAVENET.COM or LENNOXPROS.COM for the latest firmware, or call Lennox technical support at 800-453-6669 for firmware update information.

General

The intent of this instruction is primary for new BACnet® module installation when purchasing the module using repair part catalog number 59W51. This instruction is not included with the reference repair part. Typically if 59W51 was purchase simply as a replacement module, no additional setup steps would be required. Refer to the Replacement Installation section. If this is a new installation, then refer to the New Installation section.

The M2 / M3 Unit Controller BACnet® Module (BP1) allows communication between the Lennox M2 and M3 Unit Controller and a BACnet® MS/TP network. This module is mounted directly to the M2 or M3 Unit Controller and is not compatible with M1-8 IMC and earlier versions.

The BACnet® Module has been developed to communicate with building automation systems that support the BACnet Application Specific Controller (B-ASC) device profile.

A Lennox room sensor, a BACnet® network room sensor, or a BACnet® thermostat may be used to send the room temperature or thermostat demands to the M2 or M3 Unit Controller.

Network Cable

The BACnet® Module is compatible with MS/TP EIA-485 daisy-chain networks communicating up to 38.4 kbps (M2) and 76.8 kbps (M3). Connect the BACnet® MS/TP network cable to the BACnet® module. The module operates at up to 76.8K baud rate. It is compatible with twisted pair, shielded 22AWG minimum cable such as Belden 8761, 88761 and Lennox catalog numbers 27M19, 94L63 or 68M25. A maximum of 32 M2 / M3 BACnet® modules can be included per network segment. Up to 127 M2 or M3 modules on the same network segment can be connected using repeaters.

The network cable should be routed using best practices to avoid induced noise. Do not route alongside high voltage wiring or in proximity to high-voltage or high-frequency devices, such as ignition controls and variable frequency drives. The BACnet® MS/TP maximum total bus length (without repeater) of 4000 ft. (1219m) applies to this device. Daisy-chain each module to the network and connect the network cable shield to the earth ground at the control panel, and at the G terminal of each BACnet® module in the chain.

Network Bus Termination

When the BACnet® module is at the end of a daisy chain, connect a 120 ohm resistor across the the '+' and '-' terminals for bus termination. Every BACnet® MS/TP chain should have a termination at each end of the chain (exactly two terminations).

⚠ IMPORTANT

A qualified systems integrator with adequate training and experience is required to integrate and commission the M2 BACnet® Module into a third party BACnet building automation system. A BACnet configuration software tool is required to commission the BACnet network.

IMPORTANT - a small flat-head screw driver is required to connect the communication wire to the SmartWire™ connector.

Replacement Installation

1. Remove power to the unit.
2. Open the compressor access doors.
3. Plug the BACnet® module (see BACNET MODULE in figure 1) onto the M2 or M3 Unit Controller. Guide pins will align the module with the M2 or M3 Unit Controller connector.
4. Connect the BACnet SmartWire™ connector as shown in figures 1 or 2.
5. Restore power to the unit controller.

New Installation

1. Remove power to the unit.
2. Open the compressor access doors.
3. Plug the BACnet® module (see BACNET MODULE in figure 1) onto the M2 or M3 Unit Controller. Guide pins will align the module with the M2 or M3 Unit Controller connector.
4. Connect the BACnet SmartWire™ connector as shown in figures 1 or 2.
5. No adjustment is necessary to the BACnet module unless the module is at the end of a daisy-chained configuration. In that case, it is recommended to place a 120 ohm resistor across the '+' and '-' terminals.
6. Upon powering up the unit controller, the following is applicable:

M2 Unit Controller:

This controller will automatically recognize the BACnet module and begin communications provided the network has been correctly configured.

To configure the BACnet® Network, go to **SETTINGS > CONTROL = BACNET > MAC ADDRESS = > BAUD RATE =**

NOTE: Additional settings will be required to complete after entering the baud rate.

M3 Unit Controller:

To **enable** the BACnet module, go to **SETUP > INSTALL** and run the setup wizard. When Configuration ID 1 appears on the screen, configure position 5 as **B**. This will enable the BACnet® module.

To **configure** the BACnet Network, go to **SETUP > NETWORK INTERGRATION = BACNET > BACNET ADDRESS = > BACNET BAUD RATE = >**

NOTE: Additional settings will be required to complete after entering the baud rate.

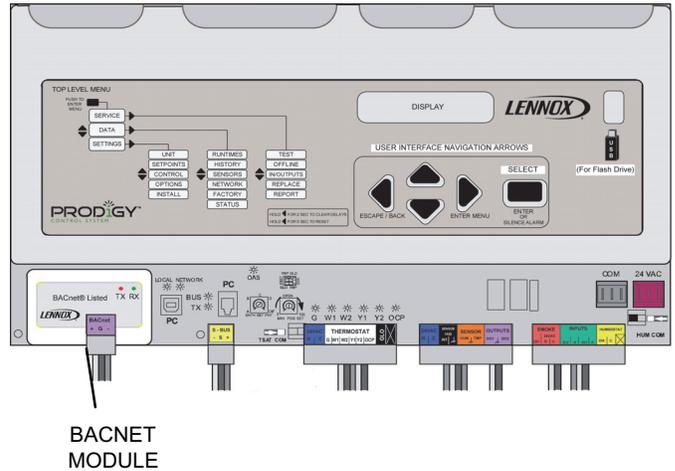


Figure 1. M2 Unit Controller BACnet® Module (BP1)

NOTE - Refer to M2 or M3 BACnet module service literature for BACnet PICS (Protocol Implementation Conformance Statement), application details, recommendations, etc.

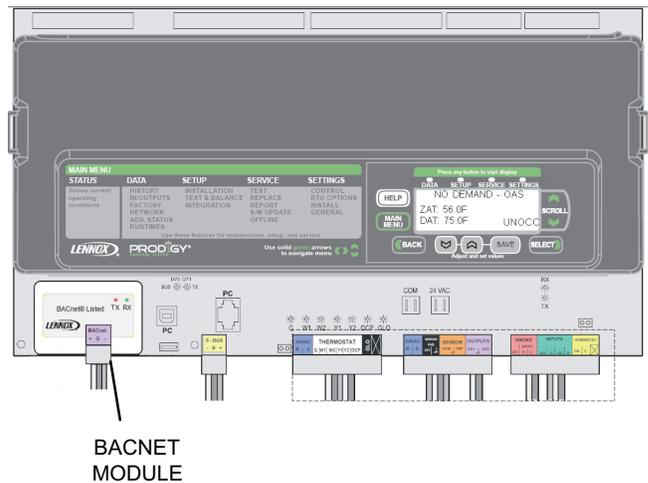


Figure 2. M3 Unit Controller BACnet® Module (BP1)