LENNOX VRF

User and Application Guide

BACnet Gateway

V0CTRL95P-3

Lennox VRF

VRB & VPB Systems

CONTROLS
507951-02
12/2022

THIS MANUAL MUST BE LEFT WITH THE OWNER FOR FUTURE REFERENCE

Equipment List

Package 1 of 1 consists of:
1 - BACnet gateway
1 - DIN rail
1 - Instruction and Application Guide

General

The Lennox VRF, Mini-VRF and Mini-Split BACnet Gateway allows connection of those systems to a building management system (BMS) using BACnet protocols. Setup can be accomplished through the use of a web browser and PC with with a network port.

⚠ WARNING

Improper installation, adjustment, alteration, service or maintenance can cause property damage, personal injury or loss of life. Installation and service must be performed by a licensed professional HVAC installer or equivalent, service agency, or the gas supplier.

⚠ WARNING

Do not operate device with wet hands.

⚠ CAUTION

Before attempting to perform any service or maintenance, turn the electrical power to unit OFF at disconnect switch.

⚠ CAUTION

Do not install device in areas where heavy oil, vapor, or gases containing sulfur may exist or the controller may be damaged.

⚠ CAUTION

Clean device using a clean, damp cloth. Do not spray cleanser on or around device.

⚠ IMPORTANT

These instructions are intended as a general guide and do not supersede local codes in any way. Consult authorities having jurisdiction before installation. Read all of the information in this manual before operating this equipment.

Network Setting

There is an Ethernet interface in the device (Eth0). The factory-set device address is 192.168.1.8.

Security

Default Admin User Name: admin
Default Admin Password: 123456

Specifications

Function	Description
Input Supply Power	24VAC
BACnet Connection	BACnet/IP
I/O	4 port 485 interface
Operating Temperature Range	32°F ~ 104°F (0°C ~ 40°C)
Operating Humidity Range (Rh)	25% ~ 90%
Dimensions	10-1/2 in. X 10 in. X 2-3/8 in. (26 cm X 25 cm X 6 cm)
DIN Mounted	

The V0CTRL95P-3 Lennox BACnet gateway can monitor and control up to 320 VRB & VPB VRF systems with up to 960 VRF outdoor units and 2560 VRF indoor units. See Appendix A.
All Lennox VRF P3 outdoor and indoor units can be connected to the V0CTRL95P-3 Lennox BACnet gateway.
See the LVM and BACnet Gateway installation manual (507897) for instructions for detailed connection information.

System Connections

The BACnet address is a four-digit number that identifies the BACnet gateway bus (port), the type of unit (indoor unit or outdoor unit) and the unit's address. Device ID = XXXX

X	X	X X
BACnet Bus (Port) Number (0-3)	Unit Type 0 Indoor Unit 1 Outdoor Unit	Unit Address (Indoor Unit 0-63) (Outdoor Unit 0-31)

Example - 0001 indicates BACnet device number 0, indoor unit type, indoor unit number 01.

Direct connect with PC from PC network port to the gateway Ethernet connection - Configure PC network port with the proper settings and use a web browser to connect - enter the IP address 192.168.1.8 and you will be prompted to enter name/password. once connected you will see the options for setting up the Gateway to reside on your bacnet network. Once connected you will see the options for setting up the Gateway to reside on your bacnet network.

User name = admin

User Password = 123456

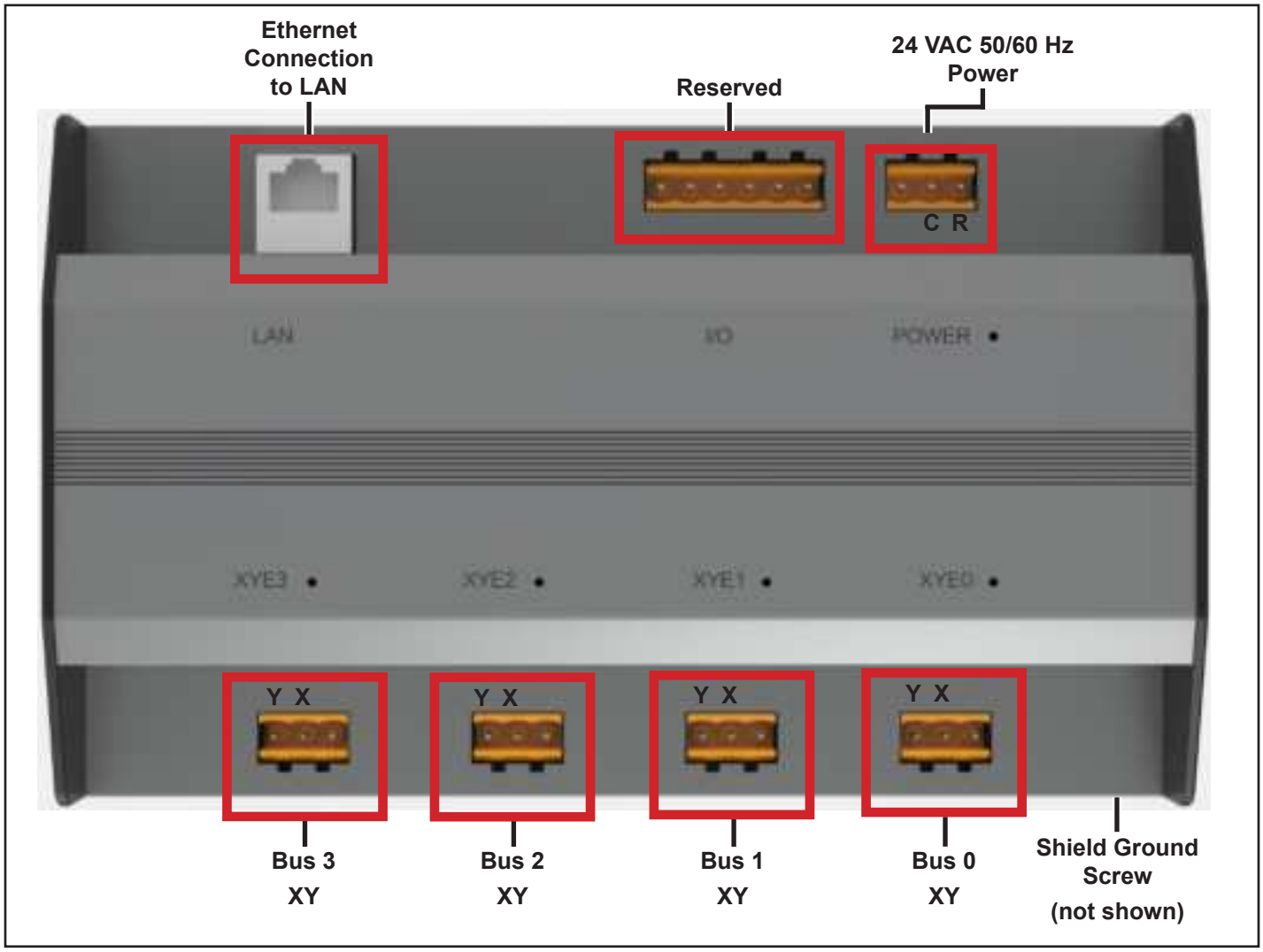

Figure 1. VRF BACnet Gateway Connection Points

Object Type	Abbreviation
Analog Input	AI
Analog Output	AO
Analog Value	AV
Binary Input	BI
Binary Output	BO
Binary Value	BV
Multi-state Input	MI
Multi-state Output	MO
Multi-state Value	MV

BACnet Object Points List

Indoor Units Points List

Object ID	Object Name	Value	R/W	Description
BV 1	On/Off Setting	"0-OFF 1-ON"	R/W	Indoor unit ON/OFF setting
MV 1	Mode Setting	"1-OFF 2-Fan 3-Cooling 4-Heating 5-Auto 6-Dry"	R/W	Indoor unit mode setting
MV 2	Fan Speed Setting	"1/2-Low 3/4-Medium 5/6/7-High 8-Auto 9-OFF"	R/W	Indoor unit fan speed setting
AV 1	Temperature Setting	62~86F(17~30C)	R/W	Indoor unit setpoint for cooling, heating and dry mode
AV 2	Dual Point (Cooling) Setting	62~86F(17~30C)	R/W	Indoor unit auto mode cooling setpoint setting
AV 3	Dual Point (Heating) Setting	62~86F(17~30C)	R/W	Indoor unit auto mode heating setpoint setting
AV 4	Cool Temperature Limit Setting	62~86F(17~30C)	R/W	Indoor unit low limit of cooling, auto cooling and dry setpoint
AV 5	Heat Temperature Limit Setting	62~86F(17~30C)	R/W	Indoor unit up limit of heating and auto heating setpoint
MV 3	Mode Limit Setting	"0-Unlock 1-Locked in cooling mode 2-Locked in heating mode"	R/W	Indoor unit mode lock/unlock setting
MV 5	Fan Lock/Unlock Setting	"1/2-Locked in low speed 3/4-Locked in medium speed 5/6/7-Locked in high speed 8-Unlock"	R/W	Indoor unit fan speed lock/unlock setting
BV 4	Remote Control Lock Setting	"0-Unlock 1-Wireless control locked"	R/W	Wireless controller lock/unlock setting
BV 5	Controller Lock Setting	"0-Unlock 1-Wired control locked"	R/W	Wired controller lock/unlock setting
AI 1	Room Temperature	Actual value	R	Indoor unit room temerature sensor value
BI 2	Alarm Indication	"0-No malfunction code 1-Malfunciton code"	R	If there is error code for indoor unit
AI 9	EXV Opening	Actual value	R	Indoor unit EEV opening
AI 10	Software Version	Actual value	R	Indoor unit software version

AI 11	Indoor type	"1-(V33B)Four-way cassette 2-(VWMB)Wall mounted 3-(VMDB)Medium static pressure duct 5-(VVCB)Vertical air handler 6-(VHIB)High static pressure duct 7-(V22B)Compact four-way cassette 8-(VCFB)Ceiling/Floor 11-(VOSB)Dedicated outside air duct 14-(VOWA)One way cassette 21-AHU control kit"	R	Indoor unit series name
AI 12	Indoor Capacity	"8-7Kbtu/h 10-9Kbtu/h 12-12Kbtu/h 17-15Kbtu/h 20-18Kbtu/h 25-24Kbtu/h 32-30Kbtu/h 40-36Kbtu/h 50-48Kbtu/h 60-54Kbtu/h 65-60Kbtu/h 80-72Kbtu/h 100-96Kbtu/h"	R	Indoor unit capacity

Outdoor Units Points List

Object ID	Object Name	Value	R/W	Description
MI 1	Mode Status	"1-OFF 2-Reserved 3-Cooling 4-Heating 5-Cooling test 6-Mix Cooling 7-Mix Heating 8-Heating test"	R	Outdoor unit operation mode status.
BI 1	On/Off Status	"0-OFF 1-ON"	R	Outdoor unit ON/OFF status
AI 1	Ambient Temperature	Actual value	R	Outdoor unit ambient temperature
AI 2	Compressor 1 Freq.	Actual value	R	Outdoor unit main compressor frequency(Hz)
AI 3	Compressor 2 Freq.	Actual value	R	Outdoor unit sub compressor frequency(Hz)
AI 4	Compressor 1 Discharge Temp.	Actual value	R	Outdoor unit main compressor discharge temperature
AI 5	Compressor 2 Discharge Temp.	Actual value	R	Outdoor unit sub compressor discharge temperature
AI 6	High Pressure	Actual value	R	Outdoor unit discharge pressure (psi)
AI 7	Low Pressure	Actual value	R	Outdoor unit suction pressure (psi)
AI 9	Fan 1 Speed	Actual value	R	Outdoor unit Fan-1 speed step, not the actual RPM
AI 10	Fan 2 Speed	Actual value	R	Outdoor unit Fan-2 speed step, not the actual RPM
BI 2	Alarm Indication	"0-No malfunction code 1-Malfunciton code"	R	If there is an error code for outdoor unit.
AI 11	T3	Actual temperature	R	Outdoor left condenser temperature
AI 12	T3B	Actual temperature	R	Outdoor right condenser temperature
BI 4	SV2	"0-OFF 1-ON"	R	Outdoor SV2(Solenoid valve) status
BI 6	SV4	"0-OFF 1-ON"	R	Outdoor SV4(Solenoid valve) status

BI 11	ST1	"0-Not energized 1-Energized"	R	Outdoor ST1(Reverse valve) status
BI 12	ST2	"0-Not energized 1-Energized"	R	Outdoor ST2(Reverse valve) status
AI 13	Version	Actual value	R	Outdoor unit main PCB software version
AI 14	Outdoor type	"0-Mini VRF 1-VRF"	R	Outdoor unit type
AI 15	Outdoor horses	Actual value	R	Outdoor unit capacity (Ton)
AI 16	Exv1 opening	Actual value	R	Outdoor EEV A opening (pulse)
AI 17	Exv2 opening	Actual value	R	Outdoor EEV B opening (pulse)
BV 1	Emergency Stop	"0-None 1-Energy stop command"	W	Emergency stop command

Technical Support

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Download the VRF and Mini-Split app
from the Apple App Store or the Google Play store.