

Installation Instructions

Part No. 30XV70001701 (BACnet/Modbus)

Part No. 30XV70001901 (LonWorks)

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⚠ WARNING

Electrical shock can cause personal injury and death. Shut off all power to this equipment during installation. There may be more than one disconnect switch. Tag all disconnect locations to alert others not to restore power until work is completed.

SAFETY CONSIDERATIONS

Installation of this accessory can be hazardous due to electrical components and equipment location (such as a roof or elevated structure).

Only trained, qualified installers and service technicians should install and service this equipment.

When installing this accessory, observe precautions in the literature and on labels attached to the equipment, as well as other safety precautions that may apply.

- Follow all safety codes.
- Wear safety glasses and work gloves.
- Use care when handling and installing this accessory.
- Follow proper Lockout/Tagout procedures.

INTRODUCTION

The Carrier CCN BACnet/Modbus Translator Accessory module with RS-485 communication, shown in Fig. 1, is a micro-controller-based module that provides the ability to easily interface Carrier CCN controllers to third party non-Carrier control equipment. The BACnet/Modbus Carrier Translator provides CCN to Modbus Remote Terminal Unit (RTU) and BACnet Master-Slave Twisted-Pair (MS/TP) protocol conversion. See Table 1 for the contents of the Carrier CCN BACnet/Modbus Translator accessory package.

The LonWorks Carrier Translator Accessory module with LON FT-10A communication, shown in Fig. 2, is a micro-controller-based module that provides the ability to easily interface Carrier CCN controllers to third party non-Carrier control equipment. The LonWorks Carrier Translator provides CCN to LonWorks FT-10A ANSI/EIA-709.1 protocol conversion. See Table 2 for the contents of the Carrier CCN LonWorks Translator accessory package.

The 30XV units accept one Carrier CCN BACnet/Modbus or LonWorks Translator accessory. The accessory kit provides all necessary wires and hardware for accessory installation.

Table 1 — Accessory Package Contents (30XV70001701)

ITEM #	ITEM	UNIT USAGE	P/N	QTY
1	BACnet/Modbus Translator Module	All	30XV50122401	1
2	SCREW	All	AC41AA086	4
3	SCREW	All	AL56AU128	4
4	WIRE TIE	All	HY76TB110	4
5	BRACKET	350-500 (30XVA/XVB)	30XV50103201	1
6	HARNESS ASSY	140-325 (30XVA), 350-500 (30XVA/XVB)	30XV50103101 (30XVHLAACL-A00)	1
7	HARNESS ASSY	140-325 (30XVB)	30XV50119801 (30XVHVA AFL-A00)	1
8	INSTRUCTIONS	All	30XV-16SI	1

* BACnet is a registered trademark of ASHRAE (American Society of Heating, Refrigerating and Air-conditioning Engineers).

† Modbus is a registered trademark of Schneider Electric.

** LonWorks is a registered trademark of Echelon Corporation.

Table 2 — Accessory Package Contents (30XV70001901)

ITEM #	ITEM	UNIT USAGE	P/N	QTY
1	LON Translator Module	All	30XV50122501	1
2	SCREW	All	AC41AA086	4
3	SCREW	All	AL56AU128	4
4	WIRE TIE	All	HY76TB110	4
5	BRACKET	350-500 (30XVA/XVB)	30XV50103201	1
6	HARNESS ASSY	140-325 (30XVA), 350-500 (30XVA/XVB)	30XV50103101 (30XVHLAACL-A00)	1
7	HARNESS ASSY	140-325 (30XVB)	30XV50119801 (30XVHVAAFL-A00)	1
8	INSTRUCTIONS	All	30XV-16SI	1

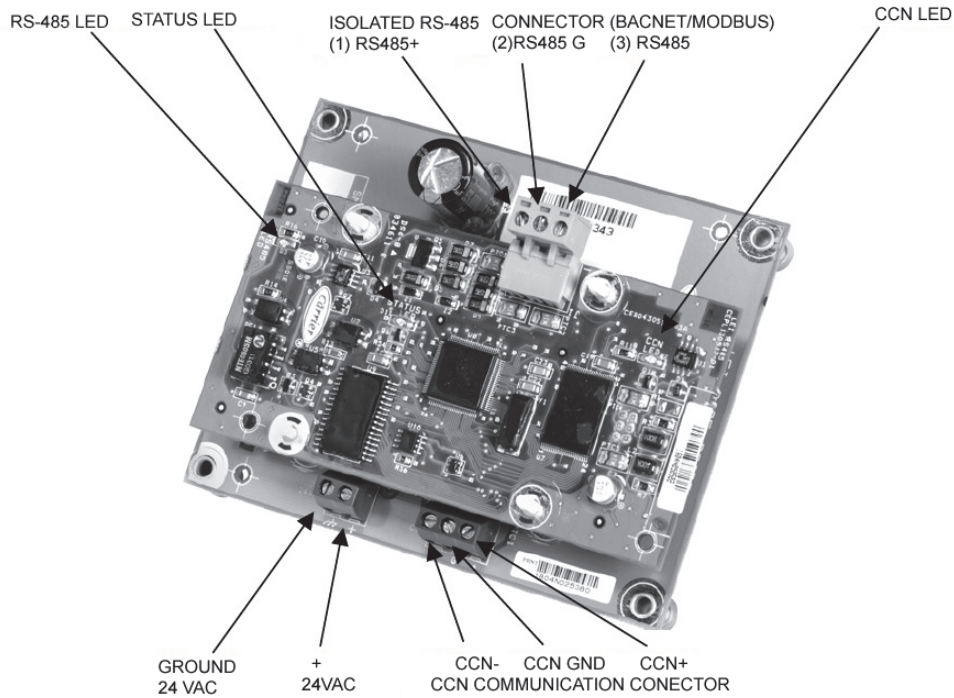


Fig. 1 — BACnet/Modbus Translator Module

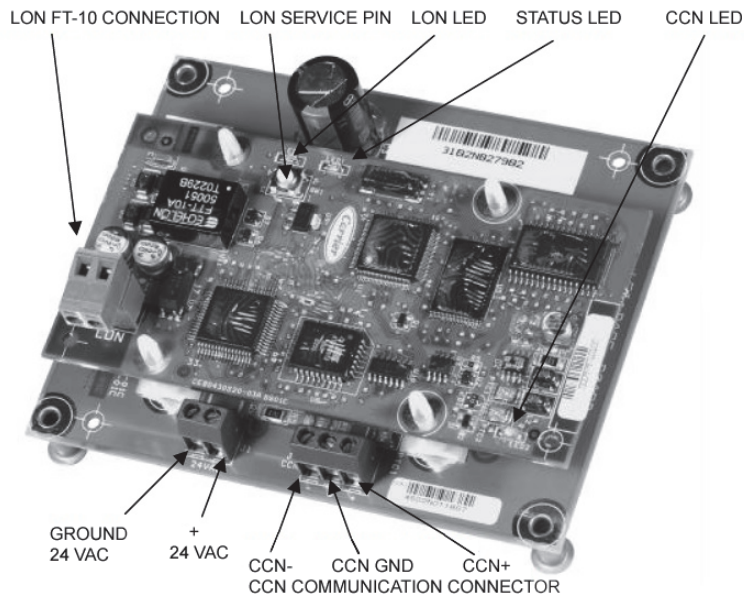


Fig. 2 — LonWorks Translator Module

INSTALLATION

Preliminary Steps

Follow these steps for either the BACnet/Modbus or LonWorks Translator:

1. Inspect package contents for missing or damaged parts. File a claim with the shipping agency if parts are damaged, and notify your Carrier representative if any item is missing.
2. Open and tag all electrical disconnects in accordance with proper Lockout/Tagout procedures.
3. Open the unit control box door.
4. Install the CCN Carrier Translator module in the location shown in Fig. 3, 4 or 5 by using screws (item #2). For unit sizes 350-500 tons (Fig. 5) a bracket (item #5) must be installed first using screws (item #3) and then mounting CCN Carrier Translator module to the bracket.
5. Proceed to the steps outlined in the “BACnet/Modbus Translator” section on this page or the “LonWorks Translator” section on page 4 as appropriate.

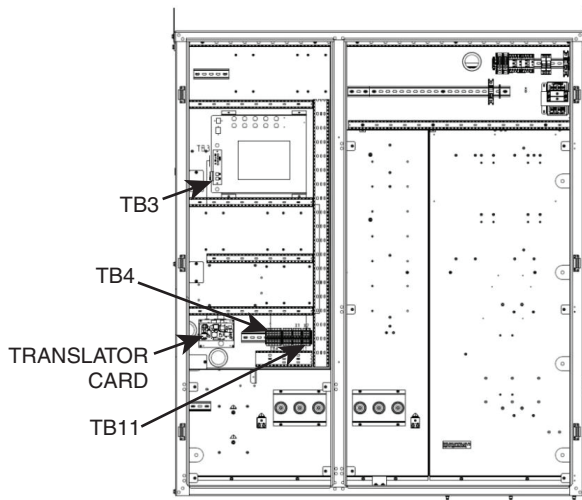


Fig. 3 — Translator Module Installation Location for 30XVA140-325

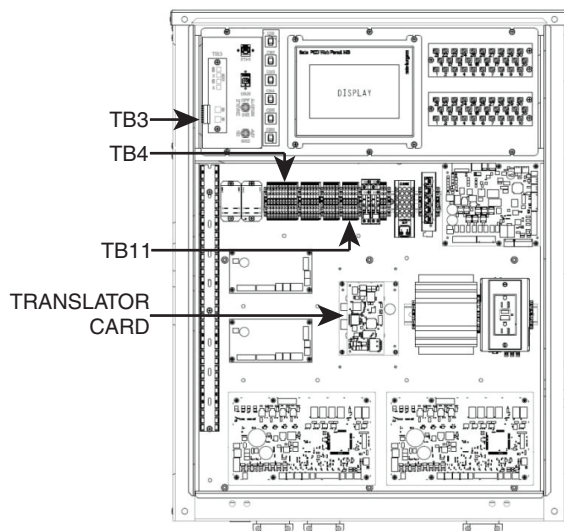


Fig. 4 — Translator Module Installation Location for 30XVB140-325

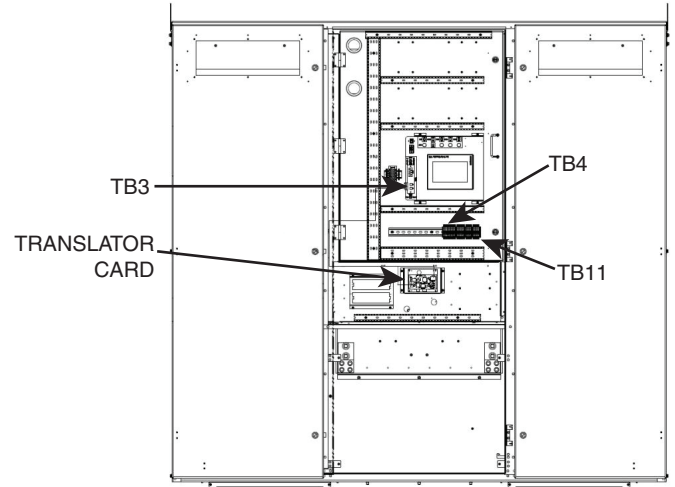


Fig. 5 — Translator Module Installation Location for 30XV350-500

BACnet/Modbus Translator

1. Complete the procedure outlined in the previous “Preliminary Steps” section.
2. Referring to Fig. 6, for 30XVB 140-325 locate wire harness (P/N 3050119801, item #7), for 30XVA 140-325 and 30XVA/XVB 350-500 locate wire harness (P/N 30XV50103101, item #6) in the accessory kit.
3. Connect the red wire labeled TB4-3 to an open connection point on terminal block TB4-3.
4. Connect the other end of the red wire labeled LON/BAC J1-24VAC to the J1-1 terminal on the BACnet/Modbus Translator board.
5. Connect the brown wire labeled TB11-X2 to an open connection point on terminal block TB11-X2.
6. Connect the other end of the brown wire labeled LON/BAC J1-GND to the J1-2 terminal on the BACnet/Modbus Translator board.
7. Referring to Fig. 6, connect black wire labeled LON/BAC J2- to the terminal marked J2- on the BACnet/Modbus Translator board.
8. Connect the white wire labeled LON/BAC J2 G to the terminal marked J2 G on the BACnet/Modbus Translator board.
9. Connect red wire labeled LON/BAC J2+ to the terminal marked J2+ on the BACnet/Modbus Translator board.
10. Connect the other end of the cable which has a 3-position plug and is labeled TB3 into the CCN connection on TB3 located as shown in Fig. 3 for 30XVA 140-325, Fig. 4 for 30XVB 140-325 and Fig. 5 for 30XVA/XVB 350-500.
11. Ensure that electrical connections are tight, and restore power to the unit.
12. With power restored to the unit, the BACnet/Modbus Translator board has three LEDs that are used to indicate operational status. Refer to Table 3 for a description of each LED and what it indicates. For specific setup/configuration and table of points refer to the 30XV Start-up and Troubleshooting guides.
13. Remove tags from disconnects and close the control box door.

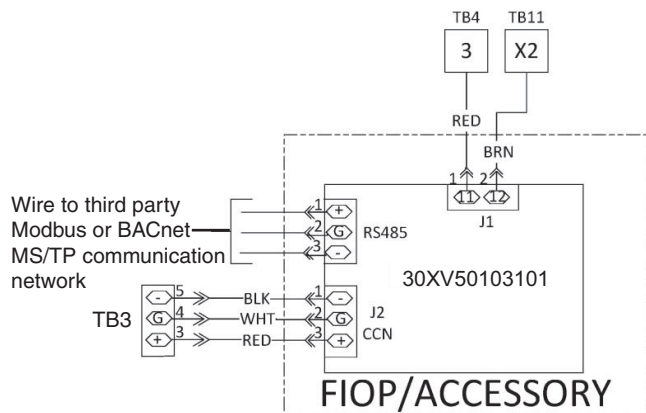


Fig. 6 — BACnet/Modbus Translator Module Wiring Diagram

LonWorks Translator

1. Complete the procedure outlined in the “Preliminary Steps” section on page 3.
2. Referring to Fig. 7, 30XVB 140-325 locate wire harness (P/N 3050119801, item #7) or for 30XVA 140-325 and 30XVA/XVB 350-500 locate wire harness (P/N 30XV50103101, item #6) in the accessory kit.
3. Connect the red wire labeled TB4-3 to an open connection point on terminal block TB4-3.
4. Connect the other end of the red wire labeled LON/BAC J1-24VAC to the J1-1 terminal on the LonWorks Translator board.
5. Connect the brown wire labeled TB11-X2 to an open connection point on terminal block TB11-X2.
6. Connect the other end of the brown wire labeled LON/BAC J1-GND to the J1-2 terminal on the LonWorks Translator board.
7. Referring to Fig. 7, connect black wire labeled LON/BAC J2- to the terminal marked J2- on the LonWorks Translator board.
8. Connect the white wire labeled LON/BAC J2 G to the terminal marked J2 G on the LonWorks Translator board.

9. Connect red wire labeled LON/BAC J2+ to the terminal marked J2+ on the LonWorks Translator board.
10. Connect the other end of the cable which has a 3-position plug and is labeled TB3 into the CCN connection on TB3 located as shown in Fig. 3 for 30XVA 140-325, Fig. 4 for 30XVB 140-325 and Fig. 5 for 30XVA/XVB 350-500.
11. Ensure that electrical connections are tight, and restore power to the unit.
12. With power restored to the unit, the LonWorks Translator board has three LEDs that are used to indicate operational status. Refer to Table 4 for a description of each LED and what it indicates. For specific setup/configuration and table of points refer to the 30XV Start-up and Troubleshooting guides.
13. Remove tags from disconnects and close the control box door.

The LonWorks Carrier Translator’s default CCN address is 0,200 (bus number, system element number). The default CCN baud rate is 9600 bps.

Each LonWorks Carrier Translator has a unique LON address. The LON address can be sent to LON configuration tools when the LON Service Pin is pressed. See Fig. 2 for location of the LON Service Pin.

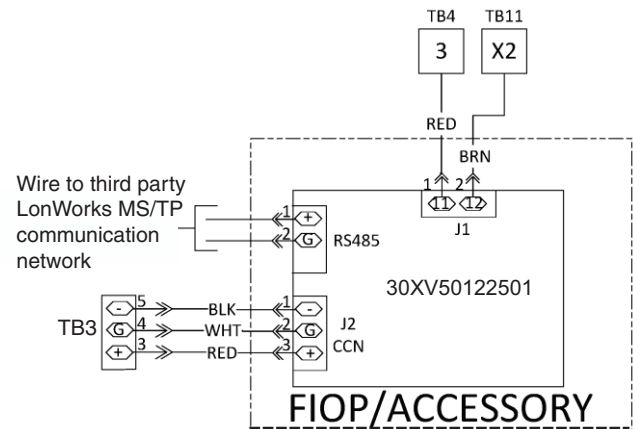


Fig. 7 — LonWorks Translator Module Wiring Diagram

Table 3 — BACnet/Modbus Translator LED Indicators

LED	COLOR	INDICATES
Status	Red	Operating, initialization and configuration status. The LED blinks at a 2 Hz rate when initializing and at 1 Hz when operating correctly.
CCN	Yellow	The Carrier Translator is sending CCN communication messages to the connected CCN controller. If the connected CCN controller is responding, its CCN LED will blink when a message is sent back to the Carrier Translator.
RS-485	Green	The Carrier Translator is sending RS-485 communication messages to the Modbus or BACnet MS/TP network.

Table 4 — LonWorks Translator LED Indicators

LED	COLOR	INDICATES
Status	Red	Operating, initialization and configuration status. The LED blinks at a 2 Hz rate when initializing and at 1 Hz when operating correctly.
CCN	Yellow	The Carrier Translator is sending CCN communication messages to the connected CCN controller. If the connected CCN controller is responding, its CCN LED will blink when a message is sent back to the Carrier Translator.
LON	Green	The Carrier Translator is sending LON communication messages to the third party LonWorks network.