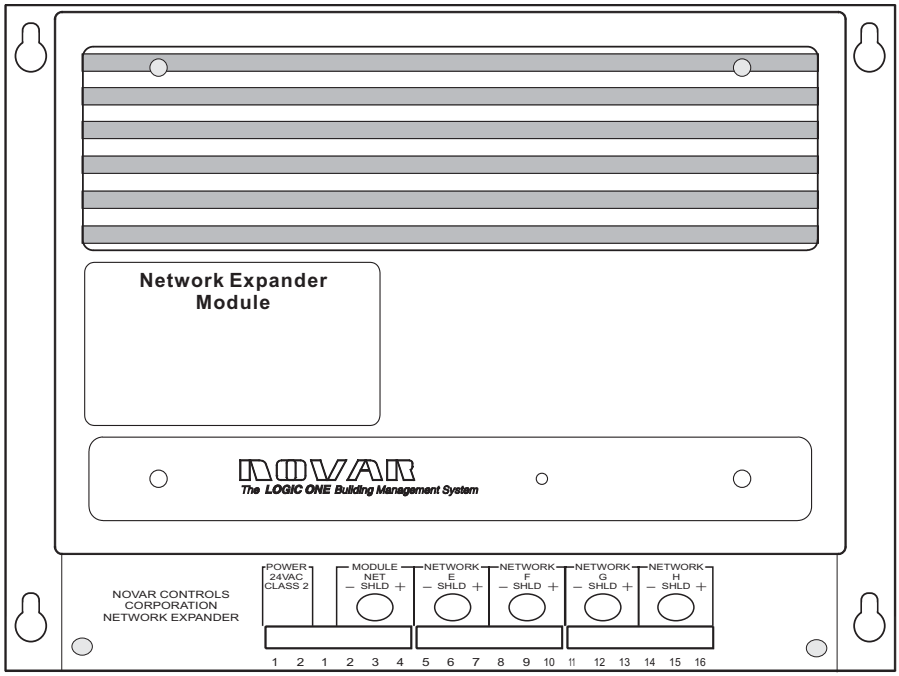

Network Expander Module Installation Instructions

DOC. #560092000—A 7/30/04 PRINTED IN U.S.A.

Regulatory Compliance

Electromagnetic Compatibility (EMC)

Federal Communications Commission (FCC)

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

NOTE! This device has been tested and found to comply with the limits established for Class A digital devices. It is intended to be used in a commercial environment. Operation of this equipment in residential environments may cause harmful interference, in which case the user may be required to correct the interference at his own expense.

CAUTION! Any changes or modifications not expressly approved by Novar Controls Corporation could void your authority to operate this equipment.

Industry Canada

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the interference-causing equipment standard entitled *Digital Apparatus*, ICES-003, of Industry Canada.

Cet appareil numérique respecte les limites de bruits radioélectriques applicables aux appareils numériques de Classe A préscrites dans la norme sur le matériel brouiller: *Appareils Numériques*, NMB-003, édictée par l'Industrie Canada.

Disclaimer

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Description

The Network Expander Module is designed to expand the support capabilities of Novar Controls' Executive Controller (EC) or Executive Processor (EP/2).

- EC Usage

  Depending on the configuration selected, an EC can communicate with any combination of 7, 15, or 31 Logic One® modules (in addition to the IOM portion of the EC, which also occupies one module address). The Network Expander can be used to expand the EC's capacity to 128 modules with the following restrictions:

  — The additional modules must be ETM-3010s, VAV-4020s, UVCs, ETCs, or HPCs.
  — The EC's 128 input or output limit cannot be exceeded.

- EP/2 Usage

  The EP/2 is designed to accept module addresses from 00 to 127 for any type of Logic One module. The Network Expander must be used to communicate with addresses 64 through 127 and the EP/2's 128-input or 128-output limit cannot be exceeded.

NOTE! Additional information about module addresses is provided in "Setting the Module Address" section of this document.

This document provides instructions for mounting, wiring, and configuring a Network Expander Module.

Specifications

Power Requirements

Voltage:	24 VAC, Class 2
Consumption:	30 VA

Operating Environment

Temperature:	32° to 158°F (0° τo 70°C)
Humidity:	0 to 95% Relative, noncondensing

Physical Dimensions

Height:	6 inches
Width:	8.25 inches
Depth:	2 inches
Weight:	1 lb 9 oz

Precautions

Take the following precautions during installation:

- Observe all national and local electrical codes.
- Observe voltage and current limits marked on the module.

Mounting the Module

Use the following procedure and refer to Figure 1, as necessary, to mount the module.

Step	Procedure
1	Select a suitable mounting location that is near the EP/2 or EC.
2	Turn off all power before beginning the installation.
3	Position the module against the mounting surface and mark the surface to show the locations of the four slotted mounting holes on the module's baseplate.
4	Drill a hole at each location marked in Step 3.
5	Insert the mounting screws into the holes and turn them until their heads extend approximately ¼ inch from the mounting surface.
6	Position the baseplate over the screws and slide it down into the slots.
7	Tighten the screws to secure the baseplate.

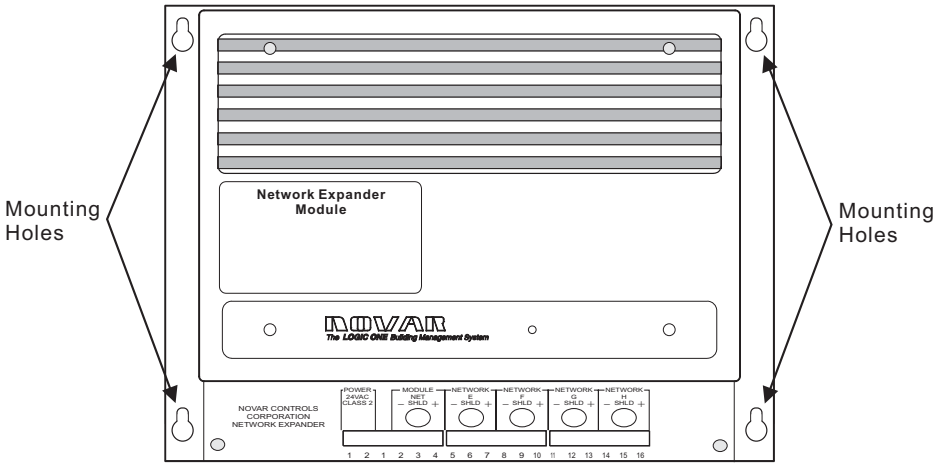

Figure 1. Network Expander Module

Wiring the Network Expander

The Network Expander Module has four ports (Figure 2) labeled:

- E (Terminals 5, 6, and 7)
- F (Terminals 8, 9, and 10)
- G (Terminals 11, 12, and 13)
- H (Terminals 14, 15, and 16)

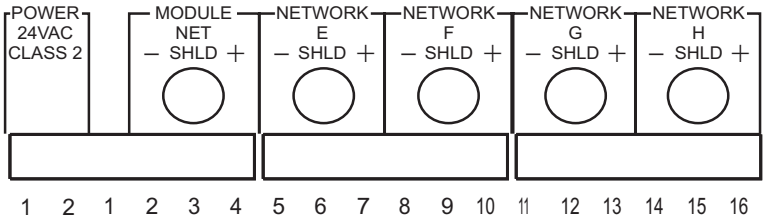

Figure 2. Network Expander Module ports

All Logic One control modules, except the IOM/2, are connected to these ports. The IOM/2 must be connected directly to a communication port of the EP/2 and assigned a module address between 00 and 63.

Each port can support up to 32 modules as illustrated in Figure 3. Ports E and F transmit all data for module addresses 00 through 63 and Ports G and H transmit all data for module addresses 64 through 127.

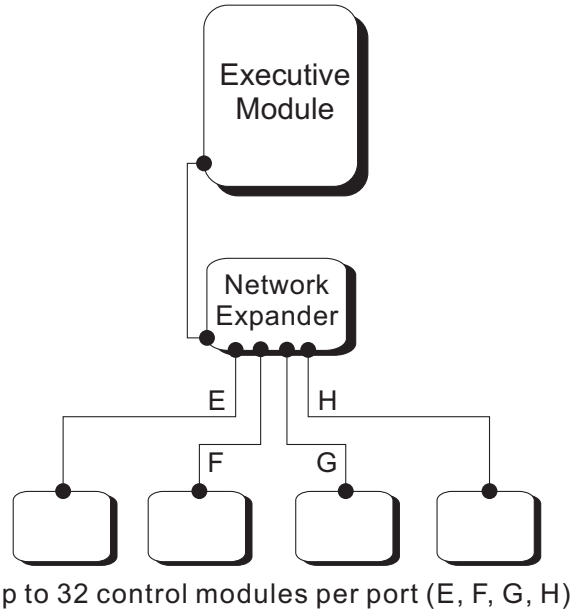

Figure 3. Network Expander Module configuration

Communications Network

A two-conductor shielded cable (Belden #8761, Novar Controls WIR-1010, or equivalent) should be used to make the communication connection between the Network Expander Module Terminals 2, 3, and 4 (under Module Net on the circuit strip) and the module communications terminals of the EP/2 or EC. The polarity should be kept consistent with the other Logic One modules.

CAUTION! Do *not* connect power to these three terminals.

Power Connections

Use the following procedure and refer to Figure 2, as necessary to wire the power connections.

Step	Procedure
1	Locate Terminals 1 and 2 under the 24-VAC, Class 2, label on the Network Expander Module's terminal strip.
2	Connect the 24-volt power source wires to Terminals 1 and 2.

Testing the Wiring

When all of the wiring connections have been completed, use the following procedure and a multimeter set to VDC to check the wiring.

Step	Procedure
1	Make sure that all wiring connections to the terminal strip are correct and secure.
2	Set the VDC mode on a multimeter.
3	Place the common probe on the shield terminal of Port E, F, G, or H.
4	Place the positive probe on the positive (+) and negative (–) terminals respectively.
5	Observe the voltage reading on the multimeter. ■ The reading from each terminal should be a nominal 2.5 VDC.

Setting the Module Addresses

Module addresses are assigned in software. When the module list exceeds the maximum number of addresses allowed for an EC or EP/2, the Network Expander can be used to increase the available number of addresses to 127.

The address settings for addresses 64 through 127 duplicate the address settings used for 00 through 63 (Figure 4).

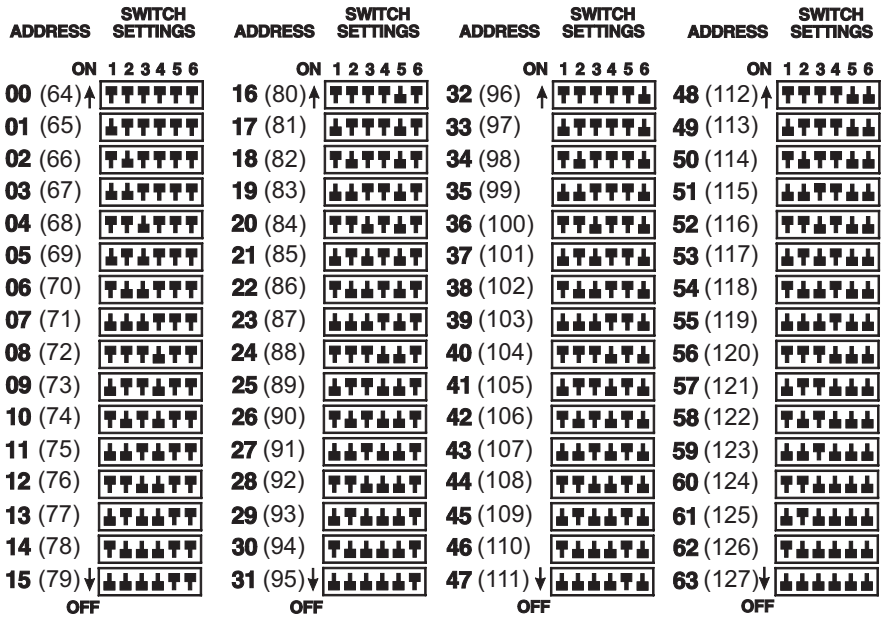

Figure 4. Module address settings using Network Expander Module

Checking the Installation

When the module has been mounted and all wiring connections have been completed, turn on the power and check the following items to ensure proper operation.

- Observe the flashing pattern of the light-emitting diodes (LEDs) to verify proper communications.
  - — If the EP/2 or EC is operating properly, the Network Expander should begin to communicate with the other modules after performing a self-diagnostic check and establishing communications with the EP/2 or EC.
  - — If the system is already downloaded to the EP/2 or EC, the Module Net and Network E, F, G and H light-emitting diodes (LEDs) should be pulsing to indicate data transmission.
- Check the EP/2 or EC status displays or the software for alarm messages, indicating faults or malfunctions that still exist.
- Change the settings in the EP/2, EC, or software and observe the equipment for proper operation.

NOTE! The Network Expander Module *does not* generate module COM Loss alarms.

Model Numbers

Use the model numbers provided in Table 1 to order the necessary Novar Controls parts.

Table 1. Novar Controls Part Numbers

PRODUCT	MODEL NO.	PART NO.
Network Expander Module	VAV-NE	732005
24-VAC, 30 VA Transformer	24V-XFR	730090000
Two-conductor shielded cable (Belden #8761 equivalent)	WIR-1010	709001000