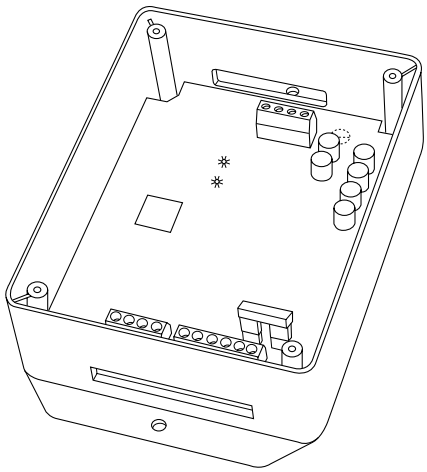
# Installation and Start-Up Instructions

## EVOLUTION NETWORK INTERFACE MODULE SYSTXBBNIM01

Cancels: NEW

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02-04



**Network Interface Module SYSTXBBNIM01**

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**NOTE:** Read the entire instruction manual before starting the installation.

This symbol → indicates a change since the last issue.

### TABLE OF CONTENTS

SAFETY CONSIDERATIONS ..... 1
INTRODUCTION ..... 1
INSTALLATION ..... 1
- Check Equipment and Job Site ..... 1
- Component Location and Wiring Considerations ..... 1
- Install Components ..... 2
- Ventilator (HRV/ERV) Wiring ..... 2
- Dual Fuel with 1-Speed Heat Pump Wiring ..... 2
- Var.-Spd. Indoor Units with 2-Spd. Outdoor Unit Wiring. 2

SYSTEM START-UP ..... 2
LED INDICATORS ..... 2
FUSE ..... 2
24 VAC POWER SOURCE ..... 2

### SAFETY CONSIDERATIONS

Read and follow manufacturer instructions carefully. Follow all local electrical codes during installation. All wiring must conform to local and national electrical codes. Improper wiring or installation may damage Evolution Control System. Recognize safety information. This is the safety-alert symbol ⚠ . When you see this symbol on the equipment and in the instruction manual, be alert to the potential for personal injury. Understand the signal words **DANGER, WARNING**, and **CAUTION**. These words are used with the safety-alert symbol. **DANGER** identifies the most serious hazards, which **will** result in severe personal injury or death. **WARNING** signifies a hazard, which **could** result in personal injury or death. **CAUTION** is used to identify unsafe practices, which **would** result in minor personal injury or product and property damage. **NOTE** is used to highlight suggestions which will result in enhanced installation, reliability, or operation.

### INTRODUCTION

The Network Interface Module (NIM) is used to interface the following devices to the Evolution ABCD bus so they can be controlled by the Evolution System. The following devices do not have communication ability and the NIM is required to control:

- A Heat Recovery Ventilator / Energy Recovery Ventilator (HRV/ERV) (when zoning is not applied).
- A non-communicating single-speed heat pump with a variable-speed furnace (dual fuel application only).
- A non-communicating two-speed outdoor unit (R-22 Series-A unit).

### INSTALLATION

#### I. CHECK EQUIPMENT AND JOB SITE

**INSPECT EQUIPMENT** — File claim with shipping company, prior to installation, if shipment is damaged or incomplete.

#### II. COMPONENT LOCATION AND WIRING CONSIDERATIONS

> ⚠ **WARNING:** ELECTRICAL SHOCK HAZARD
> Failure to follow this warning could result in personal injury or possible equipment damage.
> Disconnect power before beginning installation.

**NOTE:** All wiring must comply with national, local, and state codes.

**LOCATING NETWORK INTERFACE MODULE (NIM)** — Select a location near the variable-speed furnace or fan coil where wiring from equipment can come together easily.

**NOTE: Do not mount NIM in outdoor unit.** The NIM is approved for indoor use only and should never be installed with any of its components exposed to the elements.

The NIM may be installed in any area where temperature remains between 32° and 158° F, and there is no condensation. Remember that wiring access is likely the most important consideration.

> ⚠ **CAUTION:** ELECTRICAL OPERATION HAZARD
> Failure to follow this caution will result in equipment damage or improper operation.
> To prevent possible damage to NIM, do not mount on plenum, duct work, or flush against furnace.

**WIRING CONSIDERATIONS** — Ordinary thermostat wire is ideal when wiring the Evolution System (shielded cable is not necessary). Use 18 - 22 AWG or larger for typical installations. Lengths over 100 ft. should use 18 AWG or larger wire. Cut off or fold back and tape any unneeded conductors. Plan the routing of wiring early to avoid possible problems later.

**NOTE:** ABCD bus wiring only requires a four-wire connection; however, it is good practice to run thermostat cable having more than four wires in the event of a damaged or broken wire during installation.

The following color-code is recommended for each ABCD bus connection:

A — Green = Data A
B — Yellow = Data B
C — White = 24VAC (Common)
D — Red = 24VAC (Hot)

It is not mandatory that the above color code be used, but each ABCD connector in the system **MUST** be wired consistently.

**NOTE:** Improper wiring of the ABCD connector will cause the Evolution System to operate improperly. Check to make sure all wiring is correct before proceeding with installation or turning on power.

## III. INSTALL COMPONENTS

**INSTALL NETWORK INTERFACE MODULE** — Plan wire routing before mounting. The Evolution Network Interface Module is designed so that wires can enter it from the sides.

1. Remove top cover and mount NIM to wall using screws and wall anchors provided.

## IV. VENTILATOR (HRV/ERV) WIRING

**HRV / ERV INSTALLATION** — The NIM can control a Bryant Heat Recovery Ventilator / Energy Recovery Ventilator (HRV / ERV). Connect four wires from ventilator control board (see ventilator installation instructions for details) to connector labeled (YRGB). This label identifies the color of the wire to match the ventilator wire colors (Y=yellow, R=red, G=green, B=blue or black). See Fig. 2 for ventilator (HRV / ERV) connection.

**NOTE:** If system is zoned (contains an Evolution Damper Control Module), the ventilator may be connected either directly to the Damper Control module or to the NIM. In either case, the Evolution Zone Control will properly discover the ventilator.

## V. DUAL FUEL WITH 1-SPEED HEAT PUMP WIRING

**DUAL FUEL INSTALLATION WITH 1-SPEED HEAT PUMP** — The NIM is needed when a variable-speed furnace is applied with a Bryant single-speed (non-communicating) heat pump. See Fig. 3 for wiring details. An outdoor air temperature sensor **MUST** be connected to furnace control board for proper operation (see Fig. 5 for details).

## VI. VARIABLE-SPEED INDOOR UNIT WITH 2-SPEED OUTDOOR UNIT WIRING

**2-SPEED NON-COMMUNICATING OUTDOOR UNIT** — The NIM can control a 2-speed non-communicating air conditioner or heat pump (R-22 Series-A unit) with a variable-speed indoor unit. See Fig. 4 for wiring details.

## SYSTEM START-UP

Follow the system start-up process outlined in the Evolution Zone Control or Evolution Control installation instructions.

## LED INDICATORS

Under normal operation, the Yellow and Green LEDs will be on continuously (solid). If the NIM does not successfully communicate with the Evolution Control, the Green LED will not be on. If there are faults present, the Yellow LED indicator will blink a two-digit status code. The first digit will blink at a fast rate, the second at a slow rate.

| STATUS CODE | DESCRIPTION |
|---|---|
| **16 =** | Communication Failure |
| **45 =** | Board Failure |
| **46 =** | Low Input Voltage |

## FUSE

A 3-amp automotive type fuse is used to protect the NIM from overloading the outdoor unit R output. If this fuse fails, there is likely a short in the wiring to the device being controlled by the NIM. After short in wiring is fixed, fuse should be replaced with an identical 3 amp automotive fuse.

## 24 VAC POWER SOURCE

The NIM receives its 24 VAC power from the indoor unit C and D terminals (via ABCD connector bus). In most applications, there is sufficient power (VA capacity) available from the indoor unit transformer to accommodate a ventilator and / or outdoor unit connection. No additional transformer is required.

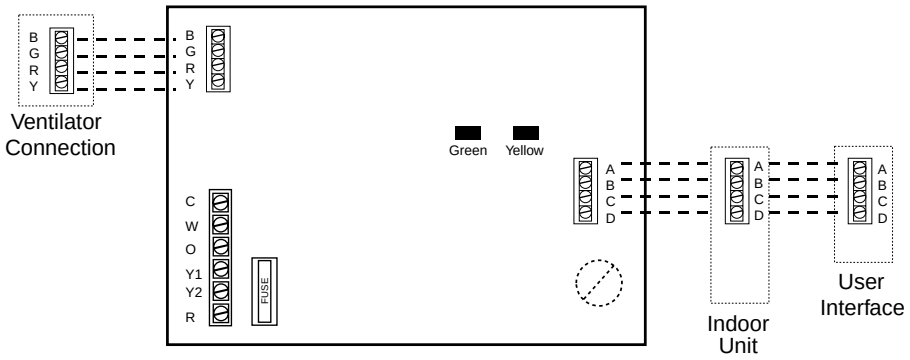



**Fig. 2 — Ventilator (HRV / ERV) Connection**

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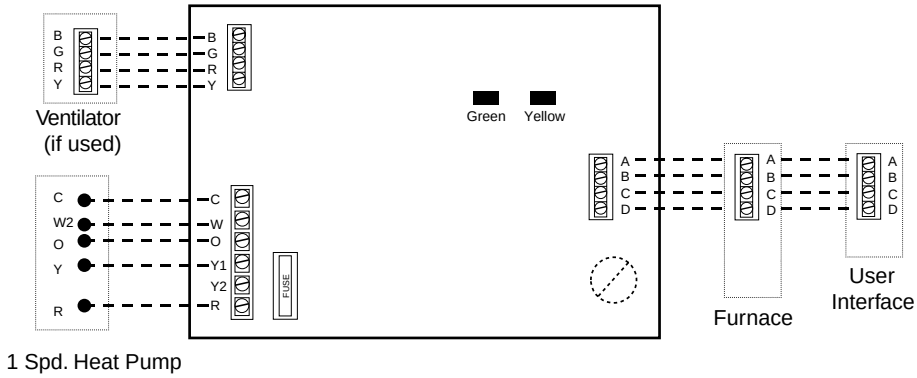



**Fig. 3 — Variable-Speed Furnace with 1-Spd. Heat Pump (Dual Fuel)**

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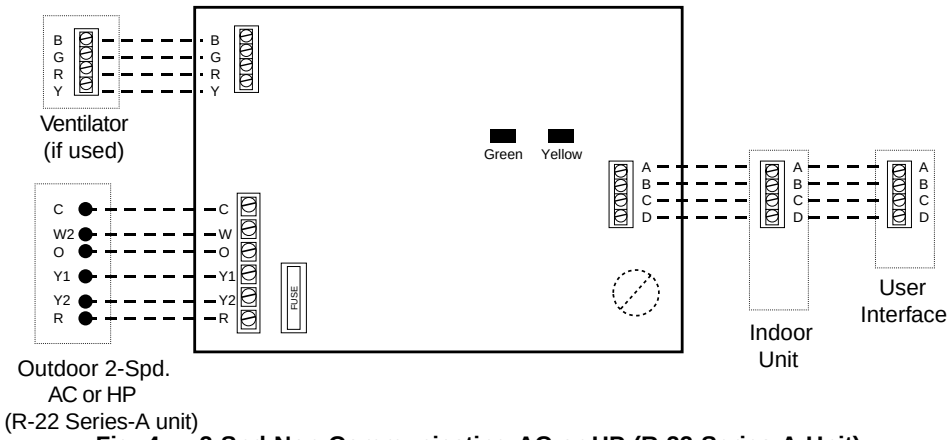



**Fig. 4 — 2-Spd Non-Communicating AC or HP (R-22 Series-A Unit) with Variable-Speed Indoor Unit**

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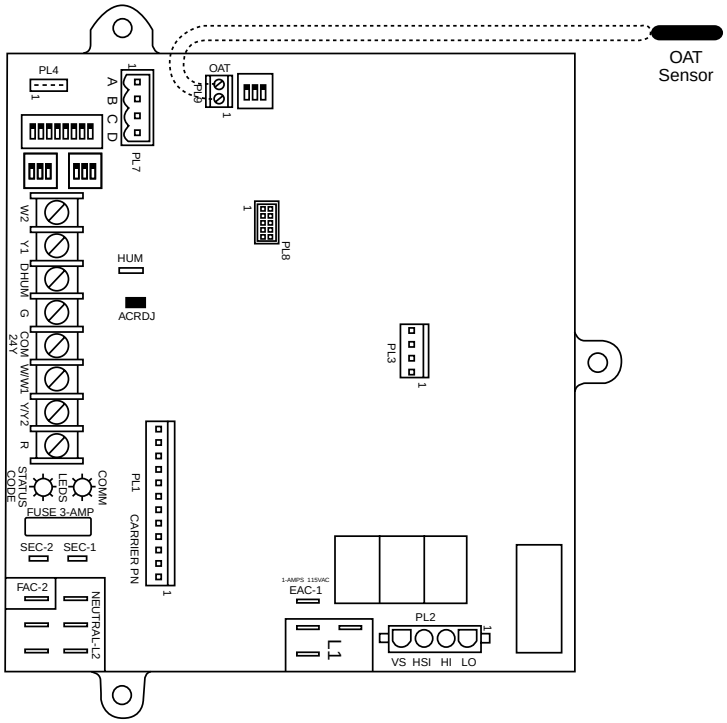



**Fig. 5 — HK42FZ022 Furnace Board with Outdoor Air Temperature Connection**

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