# FAST-STAT
## HVAC WIRING EXTENDER

# Model 1000
Installation Instructions

### Overview

- The Model 1000 provides an additional control wire between a thermostat and indoor unit, or indoor unit and outdoor unit.
- Compatible with all 24VAC heating and cooling systems.
- Can provide a common connection 'C' using a thermostat cable with 3 or more wires. For adding a common with only 2 wires see the FAST-STAT Common Maker.

### Electrical Safety

- This product should only be installed by a qualified technician.
- Requires a Class 2 transformer providing 23-28VAC.
- The total connected load must not exceed 2 amps.
- The connected load cannot operate at more than 30VAC (not designed for direct connection to 120VAC equipment).
- To avoid risk of electrical shock or equipment damage, disconnect power before beginning installation.

### Sender Installation

The Sender is the smaller component and has purple, yellow, and green wires. It is installed in the wall behind the thermostat.

- Remove the thermostat from the wall.
- Place the Sender in the wall and connect the wires to the sub-base according to the relevant wiring diagram (pages 2-4) for the system. The Sender will hang by its wires and does not require any mounting.
- Place the thermostat back on the wall.

If extending the wiring between an indoor and outdoor unit, the Sender can be placed inside the indoor unit cabinet or grouped with other wiring.

### Receiver Installation

The Receiver is the larger component and has red, black, purple, yellow, and green wires. It is typically installed in the indoor unit cabinet, or a location without exposure to liquids or high temperatures.

Find the relevant wiring diagram for the system (pages 2-4) and connect the wires accordingly.

### Testing

After the Model 1000 has been installed, check each control to ensure it is working correctly:

1. Use the thermostat to activate the equipment on the green wire and check that it turns on and off correctly.
2. Use the thermostat to activate the equipment on the yellow wire and check that it turns on and off correctly.

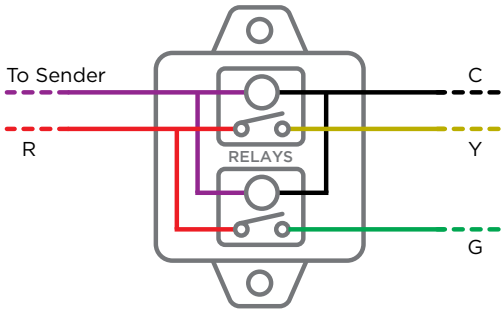
If the Model 1000 does not work as intended, proceed to Troubleshooting to check for manufacturing defects, installation errors, and other issues.

### Troubleshooting

1. Measure the transformer voltage to ensure it is between 23-28VAC. If it is outside this range the Model 1000 may not work as intended.
2. Smart thermostats may not automatically detect the connected equipment when using a Model 1000. These connections must be manually configured in the thermostat's settings.
3. Jumper the Receiver's purple wire to transformer 'R'. Both relays in the Receiver should energize, outputting 24VAC on the Receiver's green and yellow wires. If the relays won't energize from this test, then the Receiver may be faulty.
4. At the thermostat, jumper the thermostat wire connected to the Receiver's purple wire to thermostat 'R'. This should energize both relays in the Receiver and output 24VAC on the Receiver's green and yellow wires. If the relays do not energize, there is an problem with the connection between the Sender's and Receiver's purple wires.
5. Jumper the Sender's green wire to thermostat 'R'. This should output 24VAC on the Receiver's green wire. Repeat the test with the yellow wire. If the output wires do not measure 24VAC when activated, there is a problem with the Sender. If this test was successful then there is a problem with the thermostat.

### Internal Wiring

The Receiver's green and yellow wires are each connected to a relay. One side of the relay is connected to transformer 'R' through the red wire. When a relay is energized, it connects transformer 'R' to the respective green or yellow output wire.



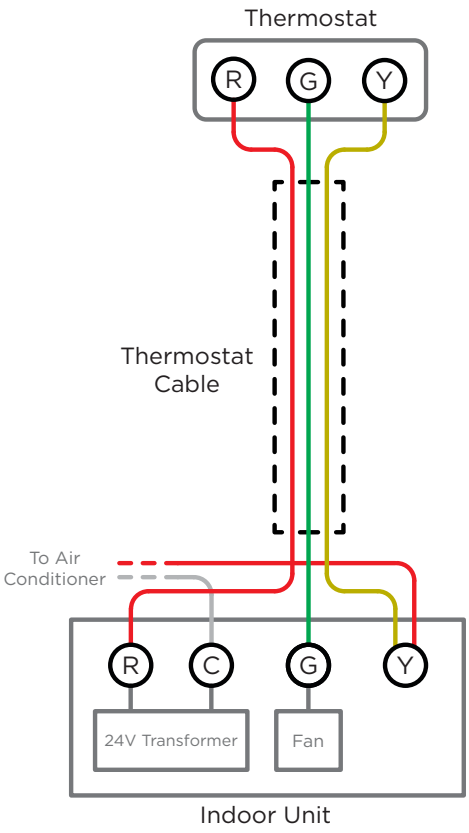

The power for the relay coils travels through the purple and black wires. The load side of the relays is not connected to the coil side.

### Contact Us

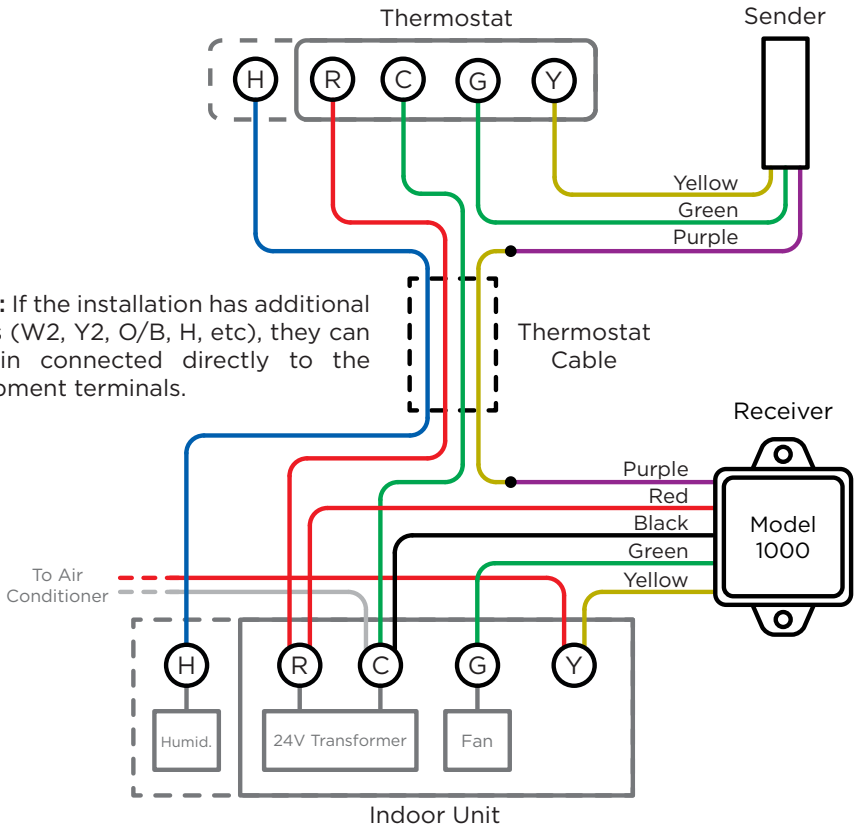
For installation assistance, our technical support line can be reached at 1-800-775-4750, 9am-5pm PST, or emailed at info@nordictech.ca

## A Adding a Common Wire

### Before

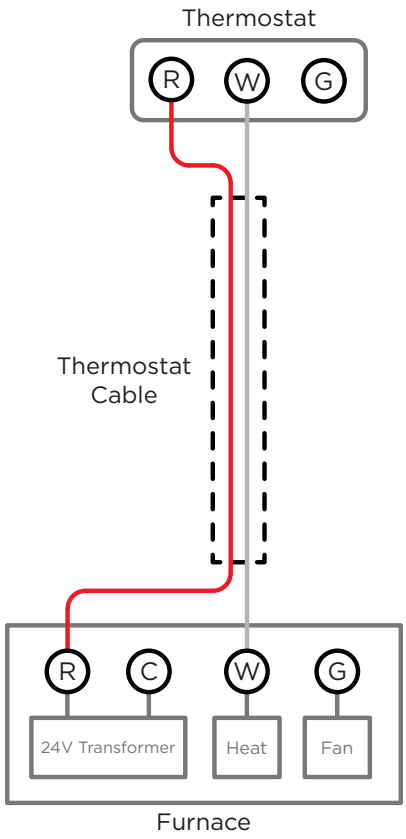



### After

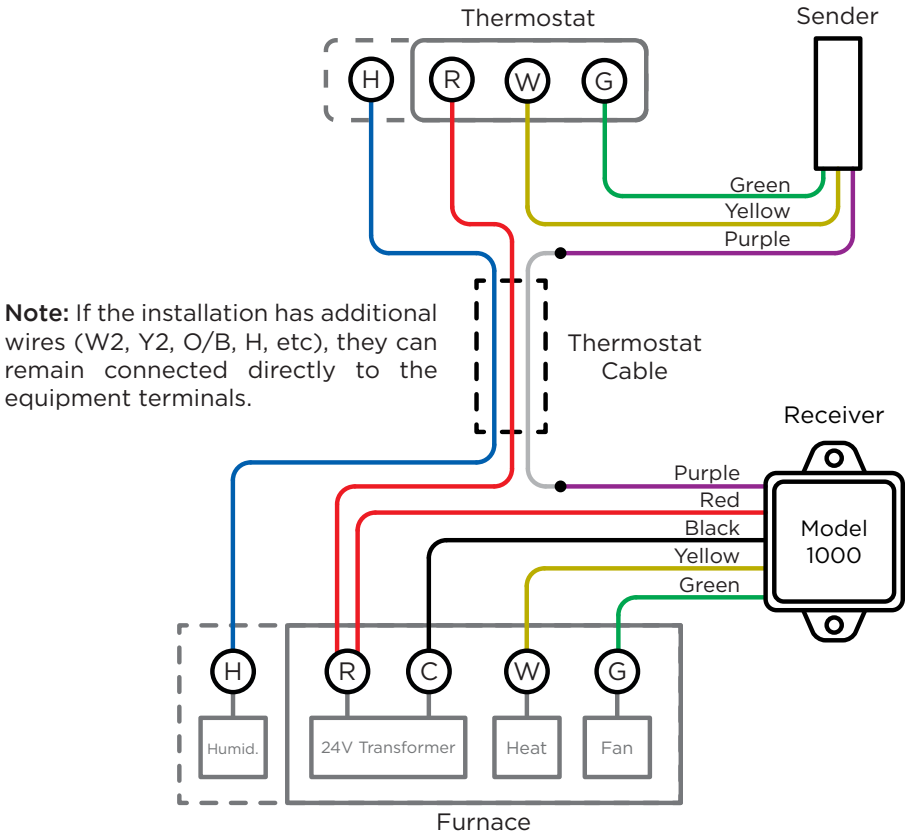



## B Adding Manual Fan Control

### Before




### After





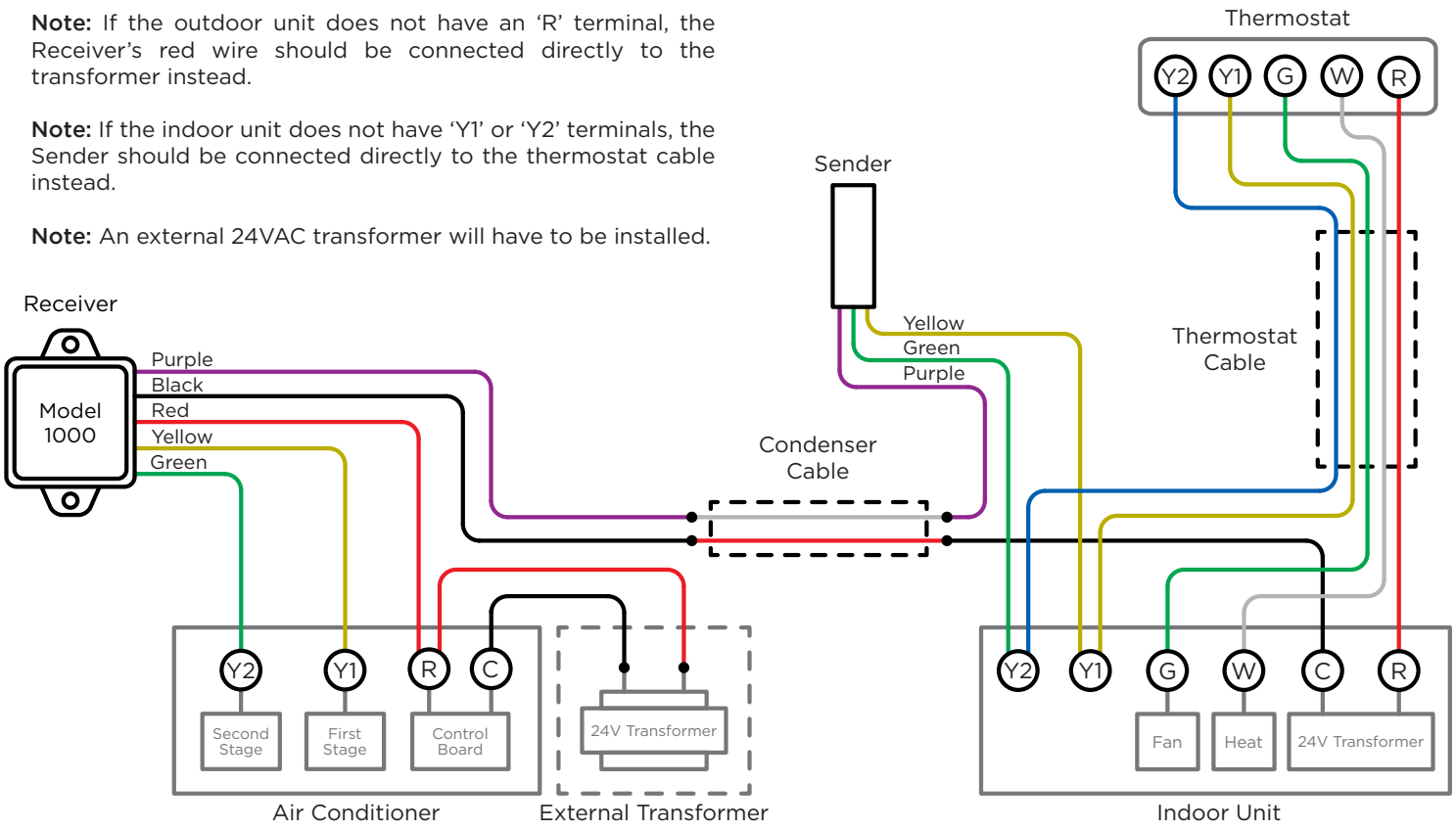

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## C Upgrading to a Two-Stage Air Conditioner

**Note:** If the outdoor unit does not have an 'R' terminal, the Receiver's red wire should be connected directly to the transformer instead.

**Note:** If the indoor unit does not have 'Y1' or 'Y2' terminals, the Sender should be connected directly to the thermostat cable instead.

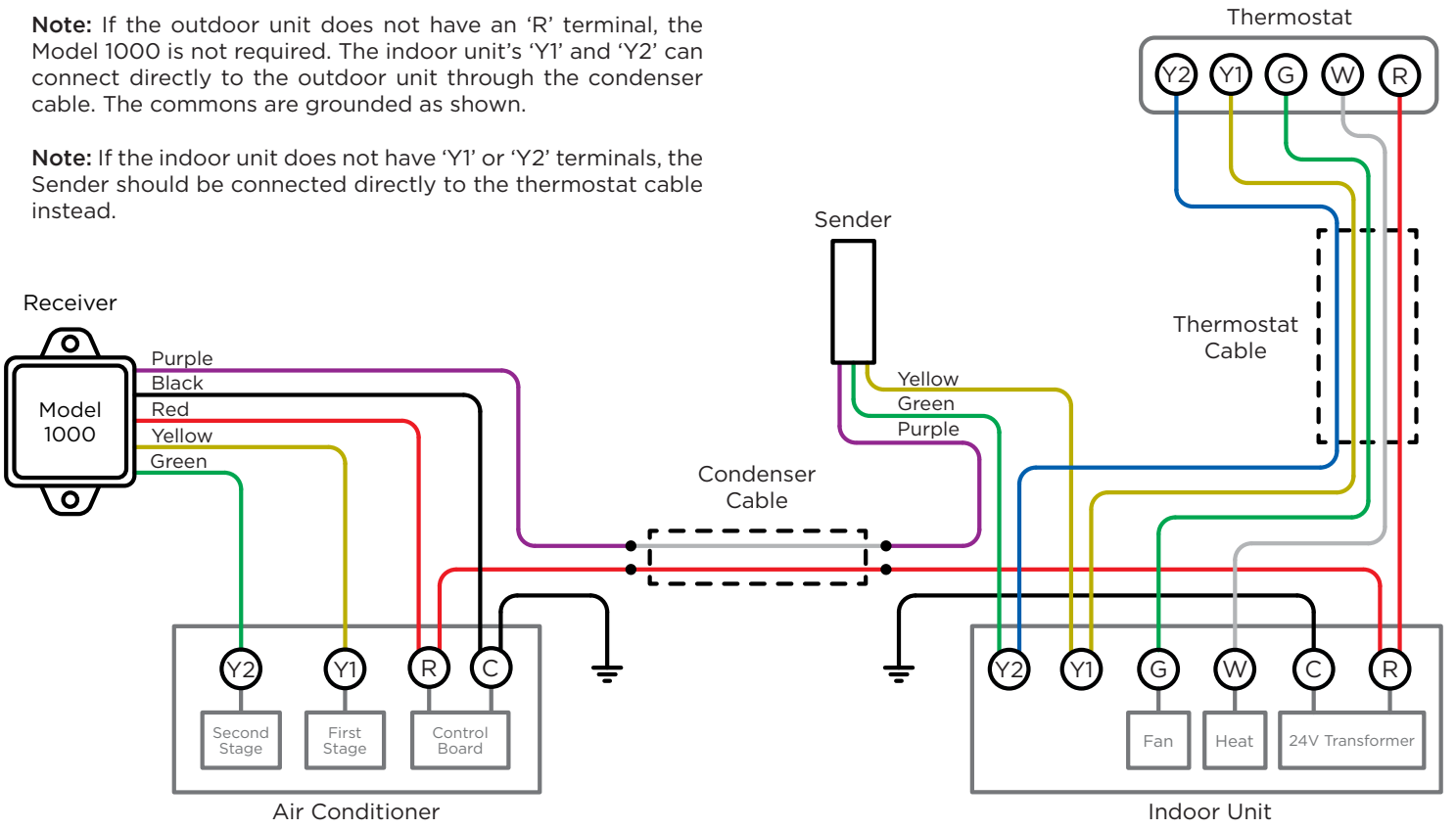
**Note:** An external 24VAC transformer will have to be installed.




## D Upgrading to a Two-Stage Air Conditioner (Grounded Commons)

**Note:** If the outdoor unit does not have an 'R' terminal, the Model 1000 is not required. The indoor unit's 'Y1' and 'Y2' can connect directly to the outdoor unit through the condenser cable. The commons are grounded as shown.

**Note:** If the indoor unit does not have 'Y1' or 'Y2' terminals, the Sender should be connected directly to the thermostat cable instead.





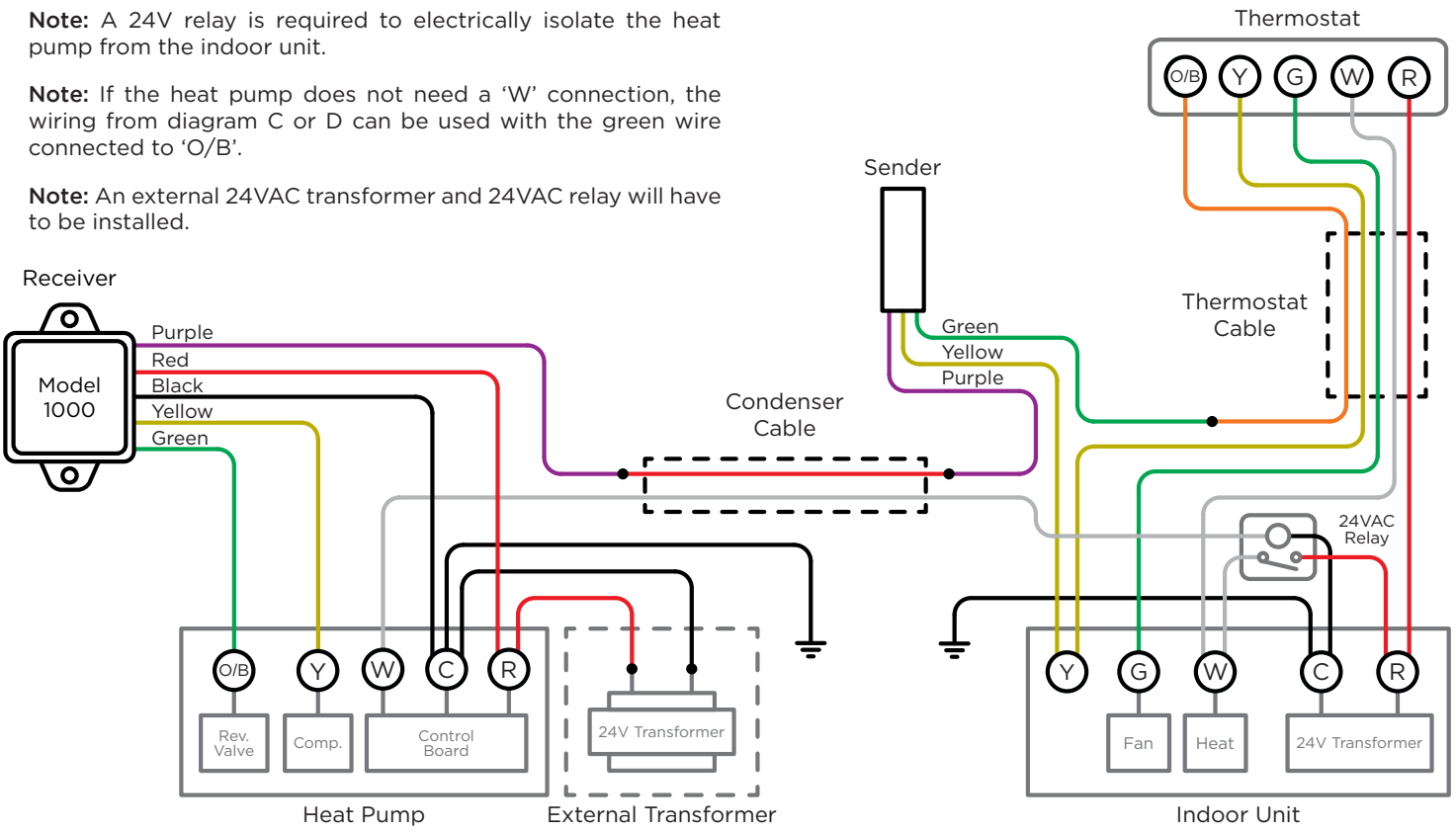

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## E Upgrading from a Single-Stage Air Conditioner to a Single-Stage Heat Pump

**Note:** A 24V relay is required to electrically isolate the heat pump from the indoor unit.

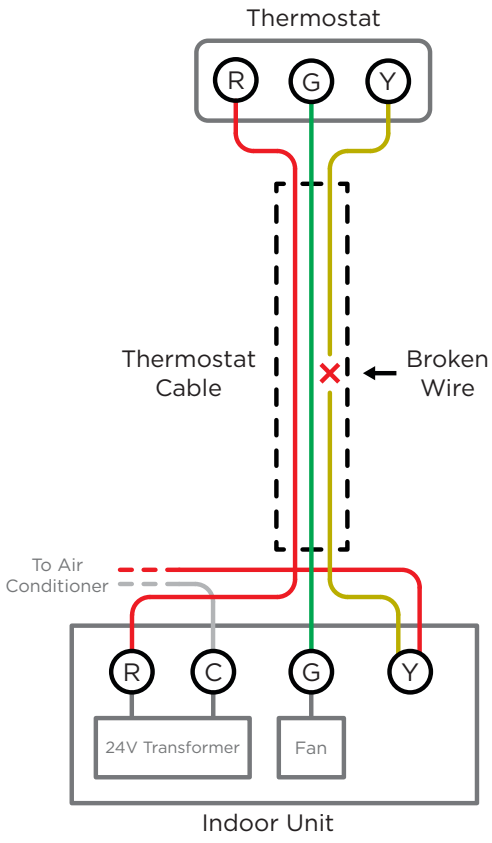
**Note:** If the heat pump does not need a 'W' connection, the wiring from diagram C or D can be used with the green wire connected to 'O/B'.

**Note:** An external 24VAC transformer and 24VAC relay will have to be installed.



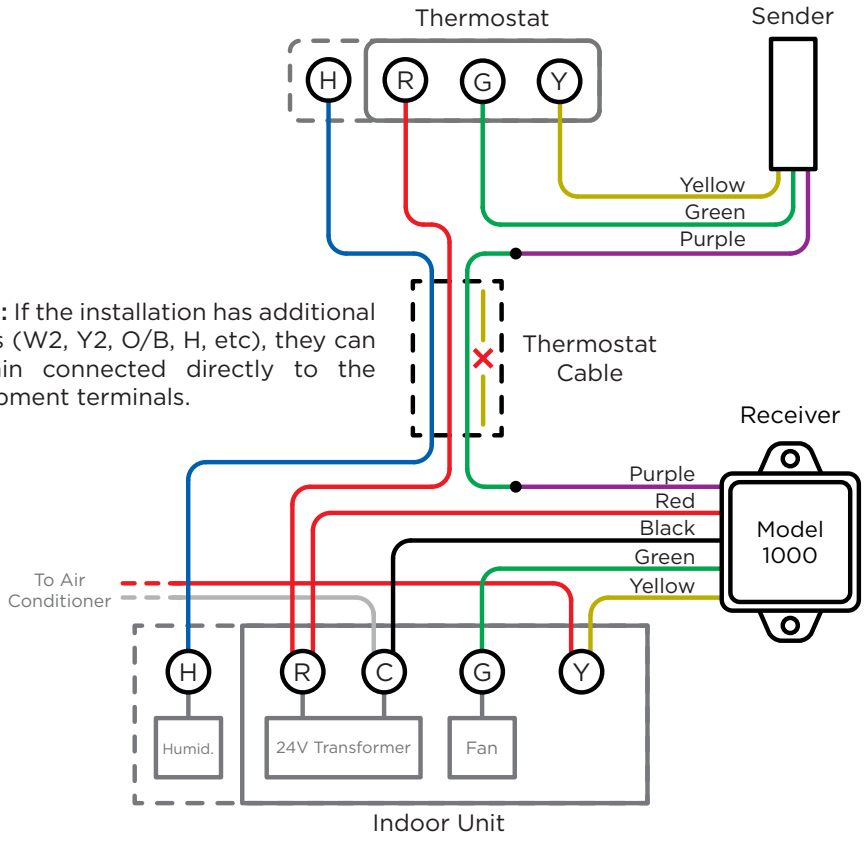

## F Repairing a Broken Wire

### Before




### After

**Note:** If the installation has additional wires (W2, Y2, O/B, H, etc), they can remain connected directly to the equipment terminals.






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