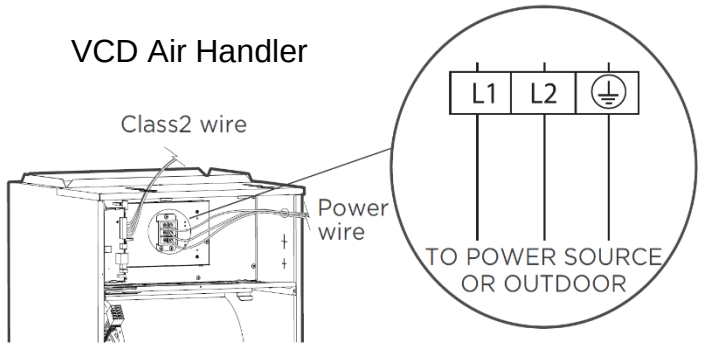
# *VCD-Series Quick-Start Addendum*

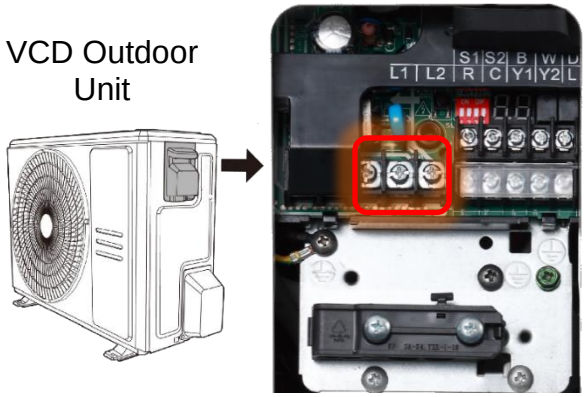
1900 Wellworth
Jackson, MI 49203

**FOR MOST INSTALLATIONS** (Read all steps before installation – not necessarily in order) 10/2024

1. **CONFIRM PROPER CHARGE, AIRFLOW, SYSTEM ORIENTATION** - The VCD-Series of inverter heat pumps are designed and manufactured to meet specific levels of AHRI-Rated efficiency when matched with appropriate Air Handlers and Coils. Failure to confirm may reduce energy efficiency, shorten equipment life, and cause nuisance service calls. Follow IOM information to ensure Air Handlers and Multiposition Coils are oriented in the right direction for airflow and drainage.
   - Systems are pre-charged for 25' of line set. Add 0.69oz per foot of additional line set beyond the factory-charged 25' length.
   - For Systems utilizing outdoor VCD heat pump systems ***without*** the factory match air handler, ensure airflows are nominal to the specific cfm rates in the tables provided in the IOM manual. This includes any furnace used with the match MCD-Series coil, or any other non-OEM air handler.

2. **HIGH-VOLTAGE WIRING** – The VCD-Series outdoor unit requires a dedicated 208/230V-1PH circuit, please refer to the specifications or IOM for minimum ampacity and maximum fuse. The VCD air handler requires another separate dedicated 208/230V-1PH circuit **OR** can be powered by the Auxiliary Heat Kits (sold separately) if necessary. See diagrams below, or for air handler/aux heat single point connections, please review information and diagrams on page 8. Please refer to the specifications or IOM for minimum ampacity and maximum fuse.

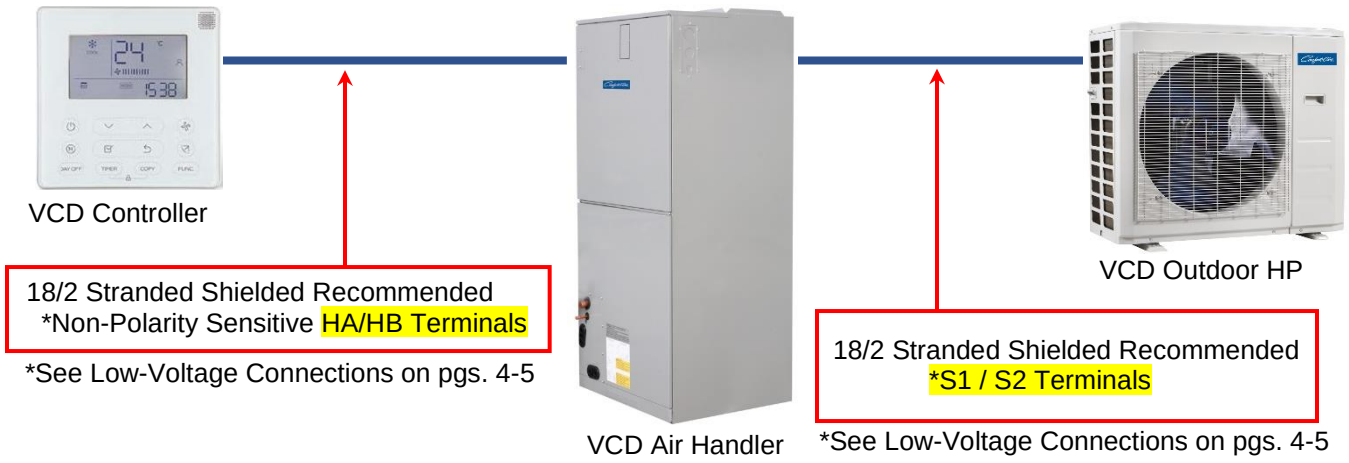



***Note:** Termination may vary by model year

3. **CHOOSE CONTROL AND WIRING STRATEGY** – The VCD-Series can be uniquely fitted to a variety of control options, with designated specific wiring required.

   **A) Complete VCD System + Proprietary Programmable VCD Controller**



1900 Wellworth
Jackson, MI 49203

### B) Complete VCD System + 24VAC Thermostat Recommended 4H/2C HP Enabled

24VAC Stat

18/10 Thermostat Wire Recommended
- "R" 24VAC Hot
- "C" Common
- "G" Fan
- "B" Reversing Valve (ON - Heat)
- "Y1" 1st Stage Compressor
- "Y2" 2nd Stage Compressor
- "W1" 1st Stage Aux Heat
- "W2" 2nd Stage Aux Heat
- "E/AUX" Emergency Heat
- "L" Alarm (Optional)
- "DH" Dehum (Optional)

*See Low-Voltage Connections on pgs. 4-5

VCD Air Handler

VCD Outdoor HP

18/2 Stranded Shielded Recommended
*S1 / S2 Terminals

*See Low-Voltage Connections on pgs. 4-5

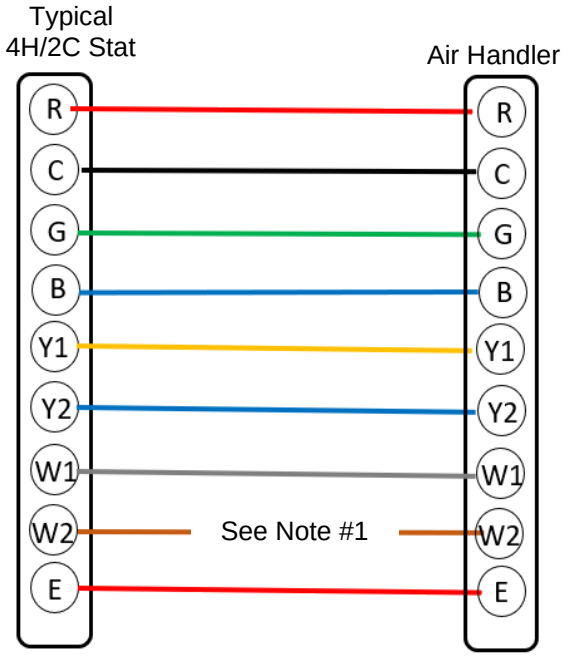
**Notes:**

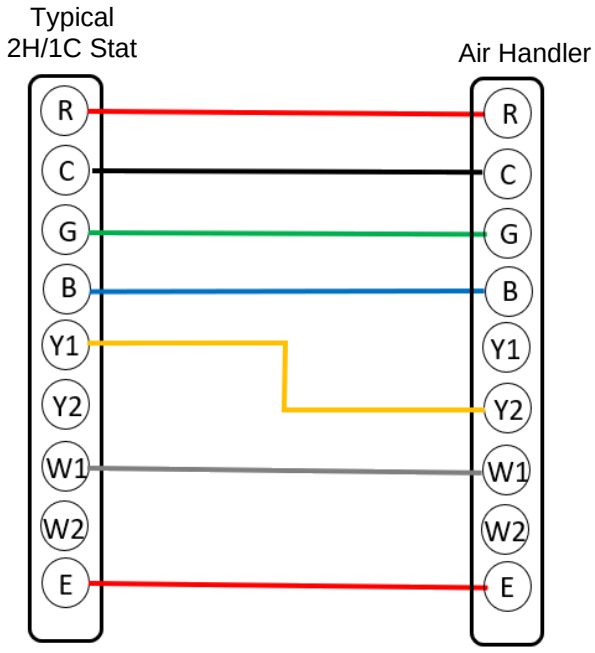
***Not all thermostats work well – some bleed slight voltages which can cause erratic behavior.**

***"W" Terminal is not used.**

### Typical Wiring Diagrams for VCD Outdoor Unit + VCD Air Handler + 24VAC Thermostat

*Verify terminal descriptions and operation with thermostat manufacturer



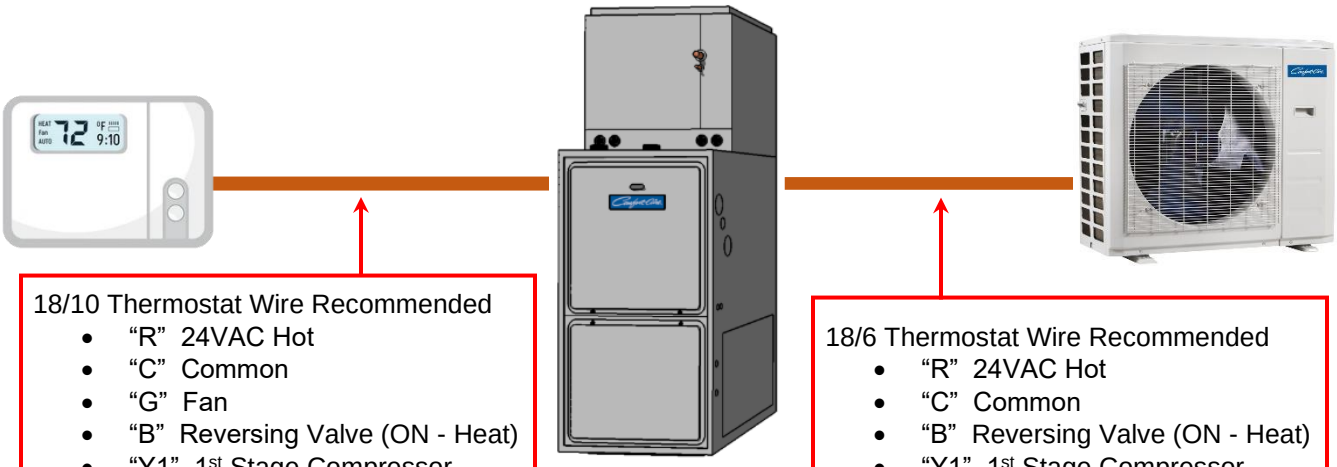




**Note #1:** VCD Air Handler is factory enabled to bring both stages of electric heat (if installed) at the same time. To stage W1/W2 electric heat stages, see S4 dipswitch settings on page 7.

# *VCD-Series Quick-Start Addendum*

1900 Wellworth
Jackson, MI 49203

## C) VCD Outdoor Unit + MCD Coil + Furnace + 24VAC Recommended Dual-Fuel Enabled Stat
***Or 3rd Party Existing Nominal-Size Air Handler**



18/10 Thermostat Wire Recommended
- "R" 24VAC Hot
- "C" Common
- "G" Fan
- "B" Reversing Valve (ON - Heat)
- "Y1" 1st Stage Compressor
- "Y/Y2" 2nd Stage Compressor
- "W1" 1st Stage Furnace Heat
- "W2" 2nd Stage Furnace Heat
- "L" Alarm (Optional)
- "DH" Dehum (Optional)

*See Low-Voltage Connections on pgs. 4-5

18/6 Thermostat Wire Recommended
- "R" 24VAC Hot
- "C" Common
- "B" Reversing Valve (ON - Heat)
- "Y1" 1st Stage Compressor
- "Y/Y2" 2nd Stage Compressor
- "L" Alarm (Optional)

*See Low-Voltage Connections on pgs. 4-5

**Notes:**

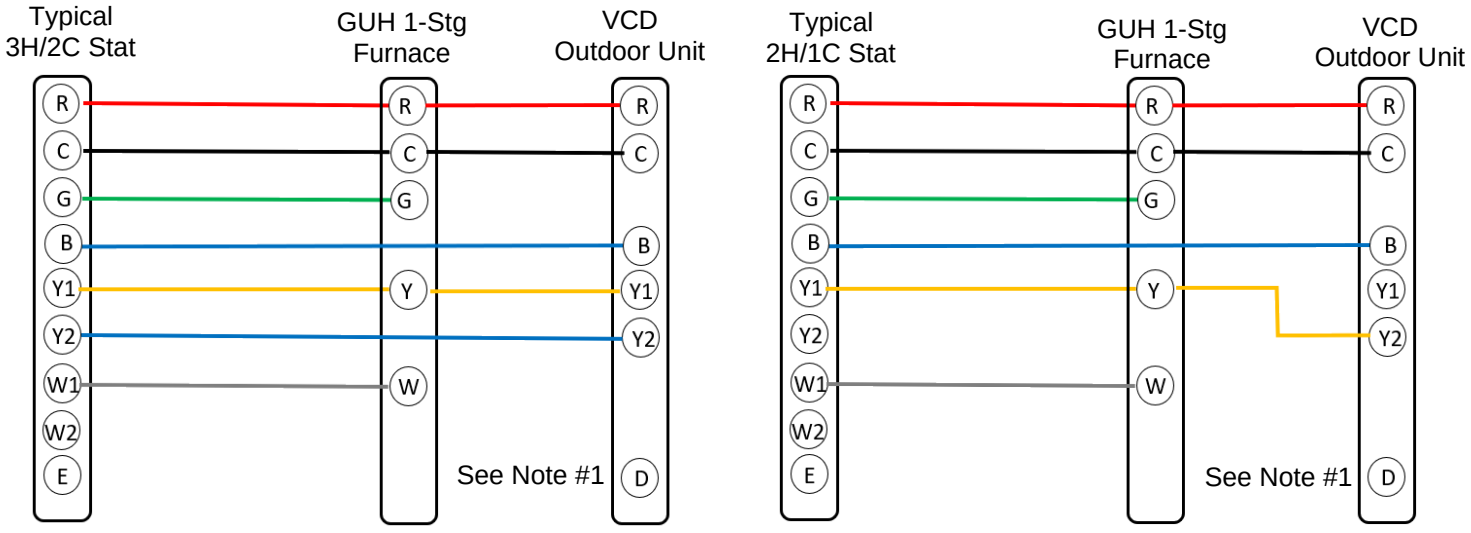
***Not all thermostats work well – some bleed slight voltages which can cause erratic behavior.**

***"W" Terminal on outdoor unit is not used.**

***Must use Dual-Fuel Stat or Fossil Fuel Kit**

**Typical Wiring Diagrams for VCD Outdoor Unit + MCD Coil / Furnace + 24VAC Thermostat (dual-fuel)**

*Verify terminal descriptions and operation with thermostat manufacturer – must be dual-fuel thermostat

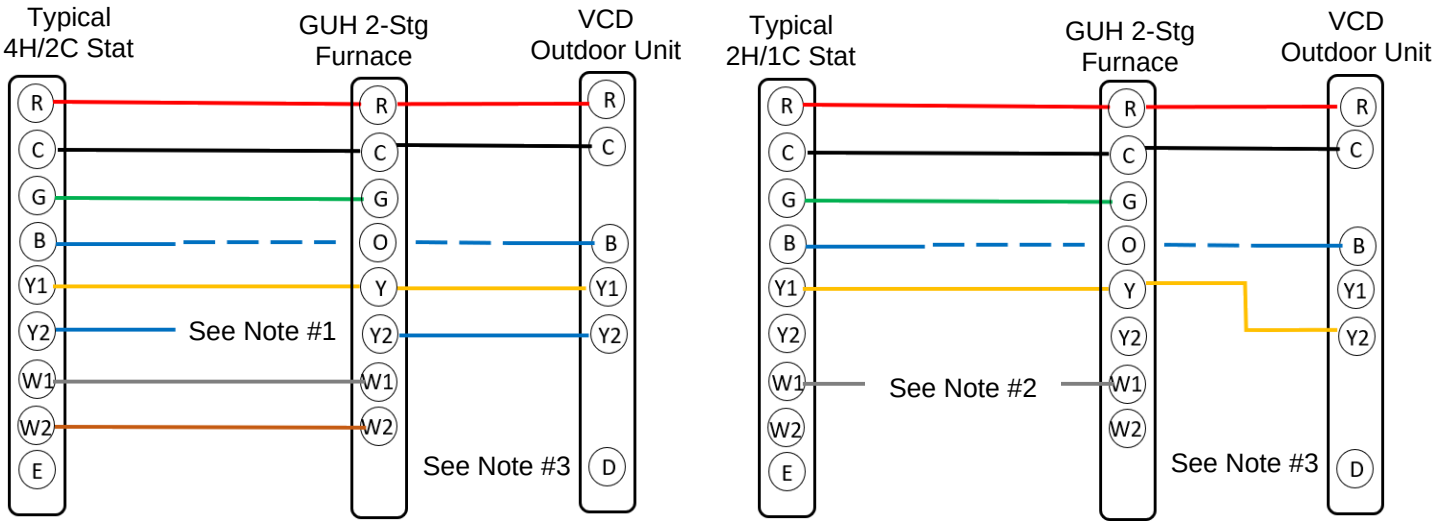



**Note #1:** "D" Terminal on VCD Outdoor Unit becomes active with 24VAC during defrost and may be used to temper the air during the defrost cycle by initiating auxiliary heat source.

# *VCD-Series Quick-Start Addendum*

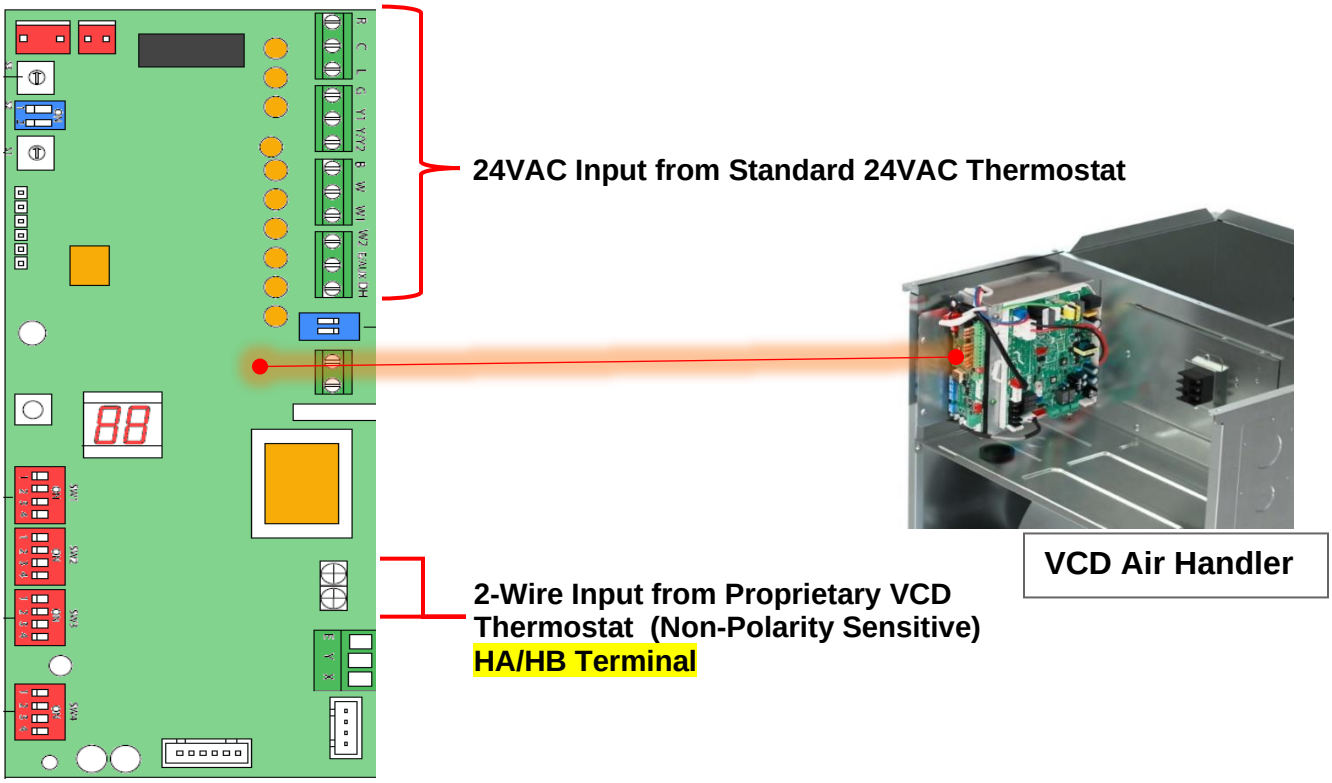
1900 Wellworth
Jackson, MI 49203

**Typical Wiring Diagrams for VCD Outdoor Unit + MCD Coil / Furnace + 24VAC Thermostat (dual-fuel)**
*Verify terminal descriptions and operation with thermostat manufacturer – must be dual-fuel thermostat




**Note #1:** GUH-Series Furnaces have a factory jumper between Y/Y2. Clip for 2-Stg compressor operation.
**Note #2:** GUH**T-Series Furnaces may be set to work with a single-stage heating call and "time" the 2nd stage. Furnace board jumpers must be moved from "None" to "5" or "10" (minutes between stages)
**Note #3:** "D" Terminal on VCD Outdoor Unit becomes active with 24VAC during defrost and may be used to temper the air during the defrost cycle by initiating auxiliary heat source.

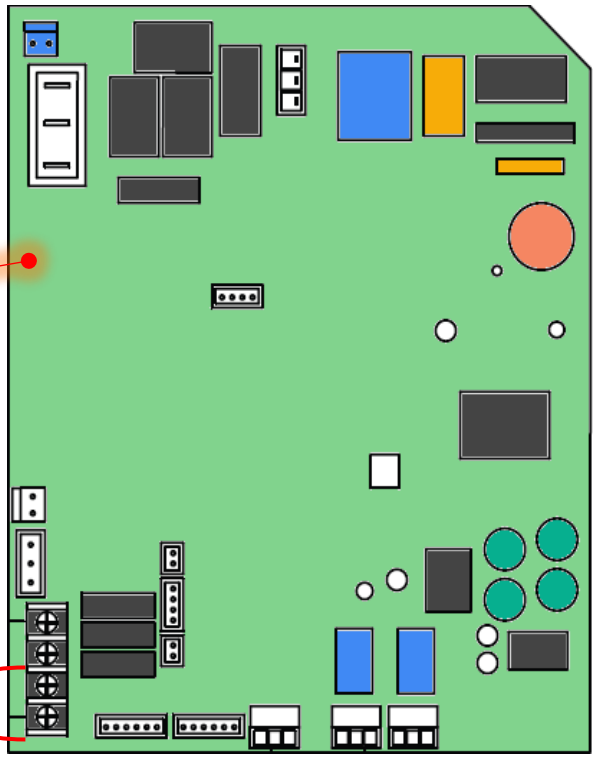
**Low Voltage Connection Points:** **Indoor Unit**



# *VCD-Series Quick-Start Addendum*

1900 Wellworth
Jackson, MI 49203

**VCD Air Handler**



**S1/S2 Output to Outdoor Unit (Polarity Sensitive)**

**Low Voltage Connection Points: Outdoor Unit**



**2-Wire (S1/S2) or Thermostat Wire**

- S1/S2 Polarity-Sensitive 2-Wire Connection
- "W" Heat Call - Not Normally Used
- "D" Defrost Call – Not Normally Used
- "R" 24VAC Hot
- "C" Common
- "B" Reversing Valve (ON - Heat)
- "Y1" 1st Stage Compressor
- "Y2" 2nd Stage Compressor
- "L" Alarm (Optional)

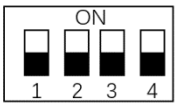
****WARNING: Do not apply 24VAC to S1/S2, irreversible damage will result**

1900 Wellworth
Jackson, MI 49203

**4. SET INDOOR AH DIPSWITCHES FOR APPLICATION** – Power down before switch adjustments

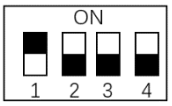
**SW1 Dipswitches (Default ALL OFF)**

- **Proprietary Controller** + **2-Wire S1/S2 to Outdoor**



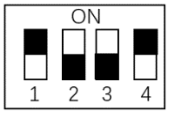

ALL OFF (Default)

- **24VAC Tstat indoor** + **2-Wire S1/S2 to Outdoor**




1 ON (2,3,4 OFF)

- **24VAC Tstat Indoor** + **24VAC Wire to Outdoor**

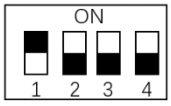



1 & 4 ON (2 & 3 OFF)

NOTE: SW1 dipswitch #2 controls "Anti-Cold" Fan-Stop during heating. To disable Fan-Stop during heating operation, turn switch ON.

**SW2 Dipswitches (Default ALL OFF)**

- Recommended

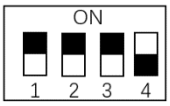



1 ON (2,3,4 OFF)

NOTE: SW2 dipswitch #4 can enable lockout of either auxiliary heat or compressor via outdoor temperatures using Rotary Dial S3. If desired, review Rotary Dial temperature chart in IOM. DEFAULT Position for switch and dial enable NO LIMIT.

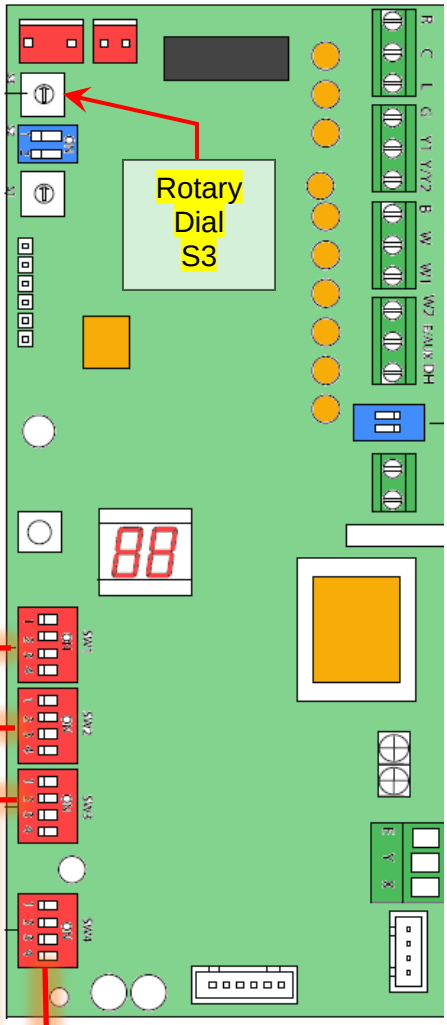
**SW3 Dipswitches (Default ALL OFF)**

- Recommended




1,2,3 ON (4 OFF)

NOTE: SW3 dipswitch #4 can enable TURBO fan speed for cooling in 24VAC thermostats. If desired, turn ON to add approx. 10% more airflow in cooling. For 24VAC Stats + VCD Air Handler ONLY.



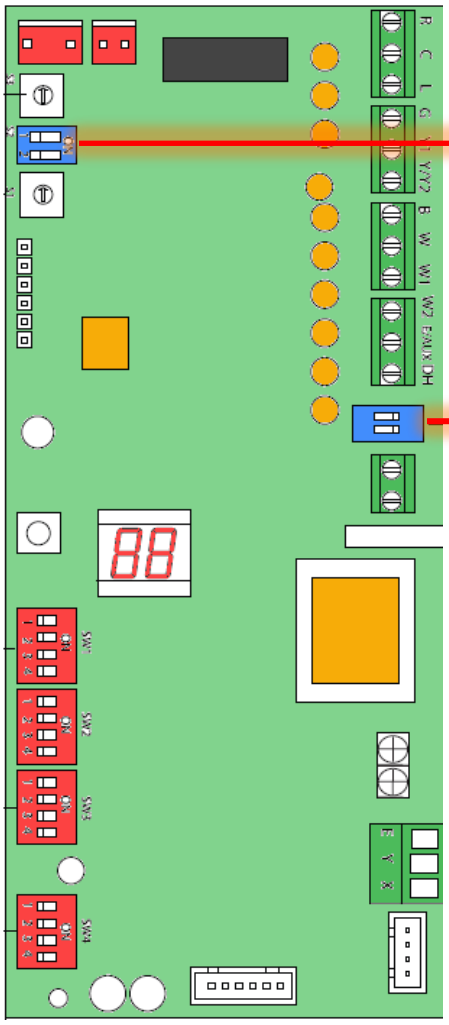

**SW4 Dipswitches (Default ALL OFF)**

- Recommended


ALL OFF

NOTE: SW4 Dipswitches alter fan speed and is not recommended to change from factory settings.

1900 Wellworth
Jackson, MI 49203



**S2 Dipswitches (Default ALL OFF)**


- Recommended ALL OFF

*NOTE: NOT USED

**S4 Dipswitches (Default ALL ON)**


- Recommended ALL ON

*NOTE: Dipswitch #1 in ON position enables W1 and W2 (Electric Heat Stg.1 and Stg 2) to be engaged simultaneously. OFF will stage W1 and W2 separately. Dipswitch #2 in ON position disables dehum feature for slower fan operation. To enable dehum feature, turn Dipswitch #2 OFF. Dehum feature requires 24VAC thermostat with dehum terminal or dehumidistat that removes a 24VAC signal upon a rise in humidity - resulting in lower fan speed during cooling. Warning: cooling may continue past setpoint to meet dehumidification causing some discomfort.

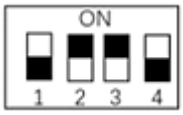
**5. SET OUTDOOR DIPSWITCHES FOR APPLICATION** – Power down before switch adjustments


**CN6 Dipswitches (Default ALL OFF)**

- **2-Wire S1/S2**


**ALL OFF**

- **24VAC Thermostat Wire**

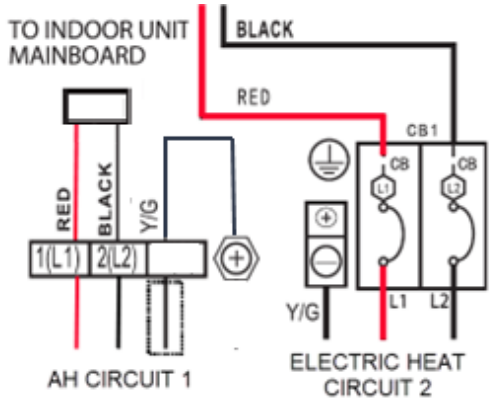



**2,3 ON**
**1,4 OFF**

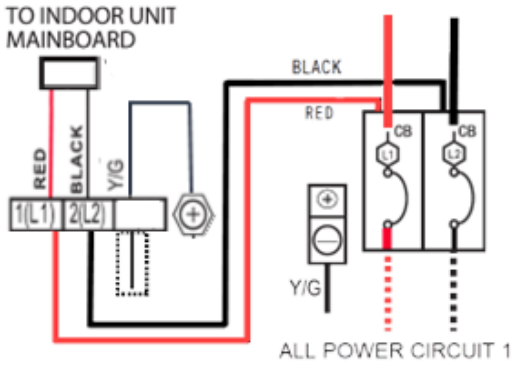
6. **SINGLE-POINT CONNECTION KITS** – where code requires, single-point supply wiring can be achieved through the following means:

   A. **For 5kW, 8kW, and 10kW Electric Heat Kits** – in lieu of a separate circuit for the air handler, wire terminal block with appropriate gauge conductors from load-side of breaker. **Reference IOM and consult local and NEC wiring guidelines/codes.**

*Two-Circuit*

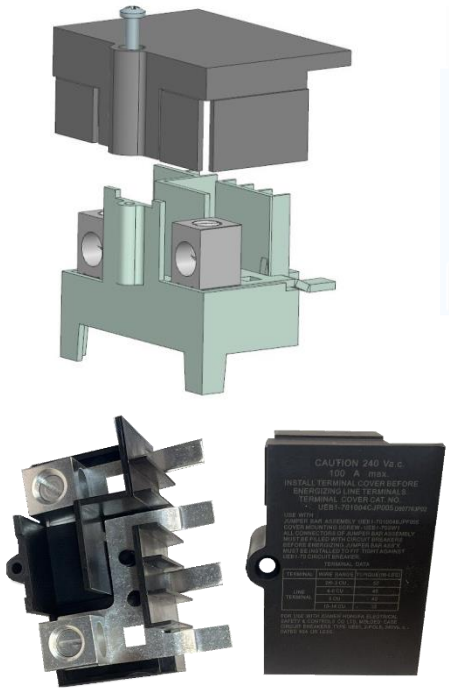



*Single-Circuit*

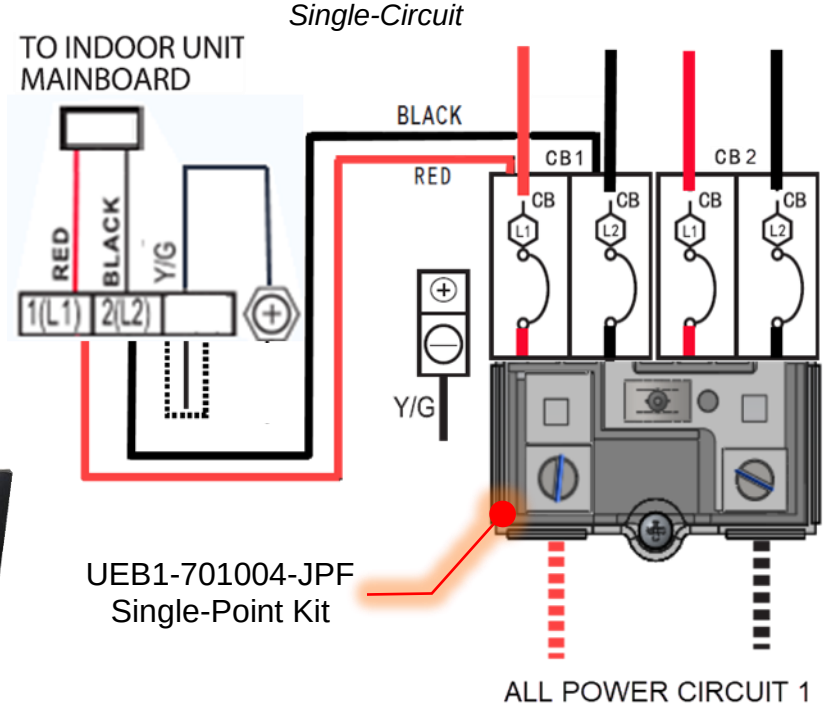



   B. **For 15kW or 20kW Electric Heat Kits** – In lieu of a separate circuit for the air handler, wire terminal block with appropriate gauge conductors from load-side of breaker. Additionally, attach accessory ***UEB1-701004-JPF Single Point Connection Kit*** to line-side of dual breaker assembly. New Single-Circuit conductors must be the appropriate gauge for the requisite load capacity. **Reference IOM and consult local and NEC wiring guidelines/codes**.

- UEB1-701004-JPF Kit contains **Jumper Bar Base**, **Jumper Bar Cover**, and **Cover Screw**.



*Single-Circuit*




**END>**