neptronic®
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HVAC Controls | Electric Actuators | Actuated Valves
Humidifiers | Electric Heaters

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Turn ON / Turn OFF – Depends on Your signal

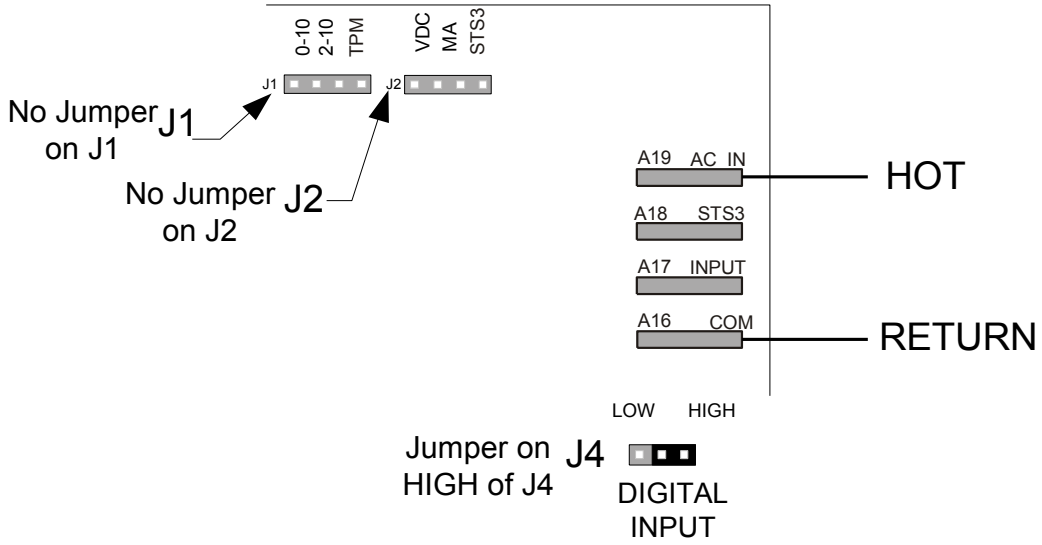
HEC Signal Output and Troubleshooting

Neptronic's universal heater controller, known as the HEC is an integral part of our electric heaters. The HEC accepts any control input signal available in the HVAC industry and converts it to a modulating output to the solid state relays and/or staged ON-OFF signal output to the electric heater relays.

Have a modulating heater, but do not have a modulating signal on site? No problem. Our HEC controller will take care of it. A simple jumper setting and moving the hot & common wires on the HEC will allow a change from modulating to an ON-OFF heater. Below image shows the setting. Note that in this case the heater will operate either fully ON at full capacity or fully OFF.

Connect the control signal wires to terminals A16 and A19 for an AC signal.

AC Digital Input (Hot to 24 VAC)



The position on J1 and J2 will not matter. The signal on A19 will be priority.

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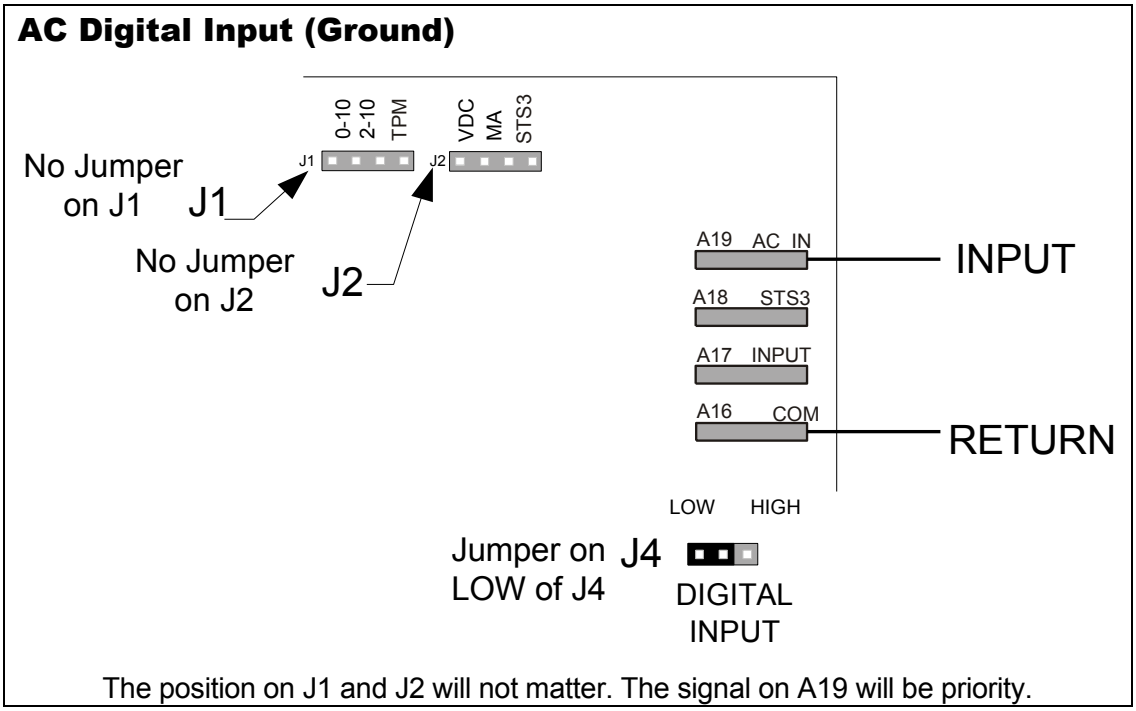

Quick Trouble Shooting Guide for HEC

Risk of electric shock. Disconnect all supplies before any electrical inspection and trouble shooting.
Any service or trouble-shooting should be done by a qualified electrician.
Symptom: Electric heater does not react to heating demand
Trouble shooting steps
Note: following steps should be adhered to as presented, failure to do so will lead to improper and incorrect diagnostic.

Electrical modulating signal

1. Depending on the control signal (refer to the appropriate section from 5.3.3 to 5.3.6 of the installation instructions) verify that control signal jumper(s) setting and connections are correct.

2. Check for control signal to the appropriate control signal input terminal on the HEC Pcb. If control signal is not present, check for control wiring between thermostat and electric heater.

3. Verify the proper operation of the solid state relay(s) (SSR). When the heating demand is at 0% the output voltage to the SSR control terminals should be between 0 - 2vdc.When the demand is 100% the output voltage should be 25vdc.

   If the output voltage to the SSR control terminals does not correspond to these values, the HEC pcb is defective and should be replaced.

4. If the electric heater is equipped with more than one modulating heating stage (typically the 1st stage is modulating and supplemental stages are on/off), verify the operation of the on/off contactor (s). When there is a 100 % heating demand,24 vac should be present at the contactor(s) coil and the contactor(s) contacts should be closed. If control voltage (24Vac) is not present or the contactor is not closing, the HEC Pcb is defective or there is improper wiring.