

HOW it WORKS



Mitsubishi Electric's Auxiliary Electric Heater Kit for SVZ PVA and Models

Auxiliary electric heaters are commonplace accessories in the market today. Mitsubishi Electric provides 8 different models for use with SVZ-KP12/18/24/30/36NA and PVA-A12/18/24/30/36/42AA7 air handling units.

To Install:

- a) SVZ and PVA models default static pressure is set to 0.50 WG. During electric heater operation the fan defaults to high speed to help assure adequate airflow. It is recommended that an additional 0.20 in. WG static pressure drop be added to system ductwork design when using the Electric Heat Kit. For example:
 - If air handler is set for 0.50 in. WG, the maximum ductwork external static pressure should not exceed 0.30 in. WG.
 - If air handler is set for 0.80 in. WG, the maximum ductwork external static pressure should not exceed 0.60 in. WG.

| AHU External Static Pressure Setting | Mode 08 / 108 | Mode 10/110 (default 1) |
|--------------------------------------|---------------|-------------------------|
| 0.3 WG (75Pa) | 1 | 1 (downflow set to 2) |
| 0.5 WG (125 Pa) | 2 | 1 (downflow set to 2) |
| 0.8 WG (150 Pa) | 3 | 1 (downflow set to 2) |

- b) When installing the electric auxiliary heat kit use MA control (PAR-40MAA), MHK1 (mode 111) or RMF-CA100 with North American style thermostat to change following setting:
 - i. mode **11** to **2**. This mode enables aux heater operation.
 - ii. mode **23** to **2**. This mode enables aux heater operation in defrost and error (including cut-out) conditions.
- c) For PVA CN24-1 & 2 use cables provided in heat kit box. SVZ units have the aux heater wire installed in cabinet from factory.

Operation:

- a) Auxiliary heat operation is triggered by a combination of temperature differential AND time delay. Delay timer begins when room temperature equals 0.5°C below set temperature.
- b) If room temperature reaches 1.5°C below set temperature AND time delay condition (24 min default, selectable value - see table below) has been met without a 0.5°C increase in heat, stage 1 auxiliary heat will engage.
- c) If room temperature continues more than 1.5°C below set temperature and time delay condition (7 min) has been met without a 0.5°C rise in temperature, stage two auxiliary heat will engage.
- d) Auxiliary heater (stage 1 / 2) powers OFF when room temperature increases to 0.5°C below set temperature.

Time delay for stage 1 auxiliary heat is selectable using request codes on an MA controller (PAR-40MAA), if customer is using a different controller, set up system with MA controller then reconnect customer controller:

| Request Code | Time Delay: |
|--------------|-------------------------|
| 390 | Display current setting |
| 391 | 14 Minutes |
| 392 | 19 Minutes |
| 393 | 24 Minutes - Default |
| 394 | 29 Minutes |

Why have a Time Delay?

The Time Delay function is an important piece of auxiliary heat activation. The delay timer allows the heat pump time to meet the heating requirement of the space before utilizing the auxiliary heater.

Cut-Out Operation:

If installed properly the auxiliary electric heater will engage when the heat pump cannot meet heat requirement using the above logic or when entering defrost or error conditions. If the outside ambient air temperature causes the outdoor unit to cut-out, stage 1 heat will engage 1 minute after room temperature drops 1.5°C from set temperature. Stage 2 heat will engage 5 minutes after stage 1 starts if temperature has not risen above 1.5°C below set temp. Settings cannot be altered.