MITSUBISHI ELECTRIC SALES CANADA INC.

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# HOW it WORKS

## Testing Mitsubishi Electric's Auxiliary Electric Heat Kit for SVZ and PVA Models

Mitsubishi Electric offers 8 auxiliary electric heat kits of differing kilowatt output for use with SVZ-KP12/18/24/30/36NA and PVA-A12/18/24/30/36/42AA7 air handling units. This document explains how to connect and test auxiliary heaters during installation or troubleshooting.

A PAR controller (PAR-33MAA-J, PAR-40MAAU etc.) is required for this test method. If the customer is using a different controller for their system, use an MA controller for set up, then reconnect customers controller. For time delay setting and normal operating logic detail please refer to manual or How it Works vol. 1.

To properly install the Auxiliary Electric Heat kit please follow the installation manual for proper physical and electrical connection to the air handling unit. Correct Mode settings are required for the indoor unit to activate auxiliary heat logic and output at connector. PAR controller Mode 11 must be set to 2 for the heater to engage when ambient room temp requirement cannot be met by the heat pump alone, and 23 must be set to 2 for the heater to activate during defrost, error and cut-out conditions.

If the outside ambient air temperature causes the outdoor unit to cut-out, enter defrost or the if unit experiences an error, 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 activates if temperature has not risen above 1.5°C below set temp. The below test method is based on this logic.

Test Procedure:
For this test the system will be forced into a communication error (E6). The method tests functionality of the heater (Mode 11), error, defrost and cut-out operation of heater (Mode 23). After specified times have passed the auxiliary electric heater will activate stage 1 and stage 2 if physically connected and Modes are properly set. Heater delays do not apply during error, defrost and cut-out logic and therefore do not apply to this test method. If test is performed in cooling mode heaters will not engage.

Method:

1. IMPOTRANT! Ensure the system is started in HEAT mode and set-point is higher than ambient temperature.
2. Disconnect CN3C connector from control board on indoor unit.
3. Outdoor unit will detect an E6 error on service tool. Outdoor unit will stop less than 15 seconds after error detection.
4. The indoor unit will detect the E6 error on a PAR Controller and stop in less than 3 minutes after error detection.
5. 3 minutes after the indoor unit stops, STAGE 1 heater comes ON in less than 1 minute.
6. STAGE 2 heater comes ON 5 minutes after STAGE 1 heater activates.
7. The PAR controller displays E6 error and option to reset error.
8. Reset the error (press OK, MENU, Return and Power ON/OFF) on PAR controller and re-connect CN3C connector.

If the error is reset on PAR controller after testing but CN3C connector remains disconnected, then steps 3 to 6 will repeat.

Outcome 1: After 10 minutes if heaters do not activate Mode settings are incorrect or physical connections may be loose / unplugged. Please check connections and Modes 11 and 23 are set to 2 on PAR controller.

Outcome 2: Auxiliary heater activates in stages 1 and two. This indicates Mode settings (11 and 23) are set correctly and heaters will work in normal operation, during defrost, error and cut-out operation.

NOTE: In normal operation heater stage 1 will operate after a differential of 1.5°C below set temp and set time delay has expired (default set time delay is 20 minutes) and can be set via PAR controller. See How it Works vol. 1 for detail.