

Application Note 1024: Supplemental Heat Control

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Introduction

MSZ-FH, MFZ-KJ, MLZ, P-Series, SEZ, SLZ, and SVZ indoor units, when installed with MUZ, MXZ, PUZ or SUZ heat pump outdoor units, can interface and enable supplemental and auxiliary heat sources using an indoor board connector (CN-24 or CN-152, depending on the indoor unit). For indoor units connected to PUY outdoor units, external heat control does not function. (Please note that other M-Series indoor units do support supplemental heat control capabilities. If supplemental heat control is required, please provide the MAC-333IF-E System Control Interface, PS5R-A12 Power Supply 12 VDC, and CN24-Relay-Kit-CM3).

Supplemental or auxiliary heat should be sized and selected by the contractor or engineer to provide the necessary capacity to maintain expected comfort in all reasonable low temperature conditions. Any heat source must also be equipped with all required control, safety, and operational devices needed for proper and safe operation. Check your local, state, and federal codes.

Table 1 summarizes which style of indoor unit has either a CN-24 or CN-152 connector to interface with supplemental heat sources.

Table 1. Indoor Unit Models Requiring CN-24 or CN-152 Connector

Applicable Indoor Unit Model	Connector	Requires Part #
MSZ-FH**NA (Wall-mounted) MFZ-KJ**NA (Floor-mounted) MLZ-KP**NA (Ceiling-recessed) PLA-A**EA7 (Ceiling-recessed) PCA-A**KA7 (Ceiling-suspended) SLZ-KF**NA (Ceiling-recessed) PEA(D)-A**AA7 (Ducted) SEZ-KD**NA4 (Ducted) SVZ-KP**NA (Multi-Position) PVA-A**AA7 (Multi-Position)	CN-24	CN24-Relay-Kit-CM3 which includes: <ul style="list-style-type: none"> • Connector with wiring lead <ul style="list-style-type: none"> ○ Colored wires with spade connectors ○ Kit covers both sizes of CN-24 plugs • 12 VDC Relay • CN22/CN4Y fan speed jumper
PKA-A**HA7 and PKA-A**KA7 (Wall Mounted)	CN-152	PAC-SE59RA-E which includes: <ul style="list-style-type: none"> • Connector with wiring lead • Box contains connector for CN-152 which is a 10-pin Molex type with a 2m 2-conductor wire attached to pins 1 & 2 Also need CN24-Relay-Kit-CM3

Supplemental Heat Control via CN-24 for MSZ-FH, MFZ-KJ, MLZ-KP, PLA, PCA and SLZ Indoor Units

CN-24 controls are indicated in Figure 1 and require no setup at the remote controller. This function is only available in heating operation.

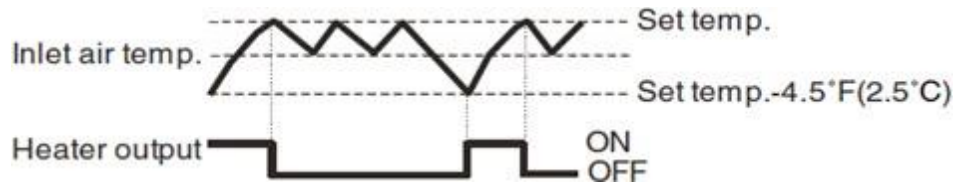


Figure 1. CN-24 controls

Figure 2 illustrates a typical wiring diagram for MSZ-FH, MFZ-KJ, MLZ-KP, PLA, PCA and SLZ indoor units using CN-24:

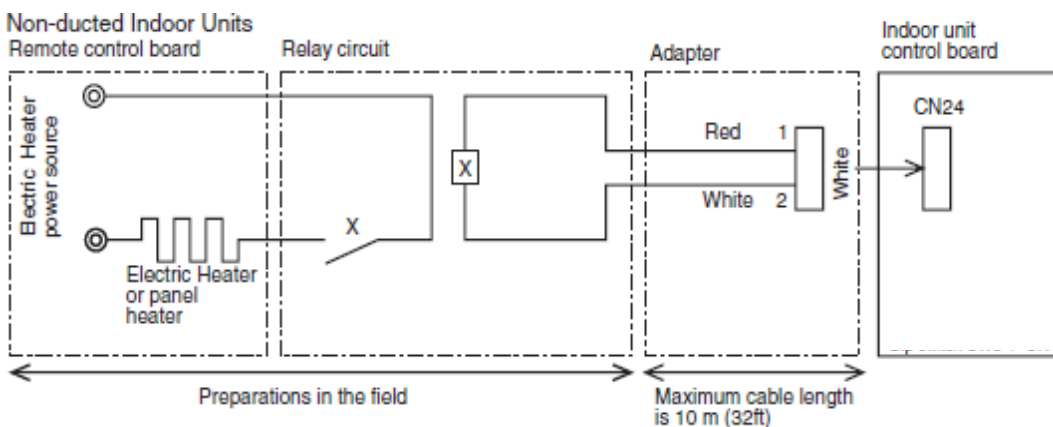


Figure 2. Wiring Diagram for MSZ-FH, MFZ-KJ, MLZ-KP, PLA, PCA and SLZ Indoor Units using CN-24

Supplemental Heat Control via CN-24 for PEA(D), PVA, SEZ and SVZ Indoor Units

CN-24 controls are indicated in Figure 1 and require no setup at the remote controller. This function is only available in heating operation. This default operation is highly recommended.

If desired, the dead-band to energize supplemental heat can be tightened to 1.8° F via remote controller settings. Note: This setting will result in the supplemental heat always being energized any time the indoor unit is actively heating. Via the MHK1 Wireless Remote Controller, enter the Installer Setup Menu and select Setup Function 123 and select setting #2; From the PAR-33MAA Wired Remote Controller select mode 23 and select setting #2. (Controller manuals currently do not label this action for this function).

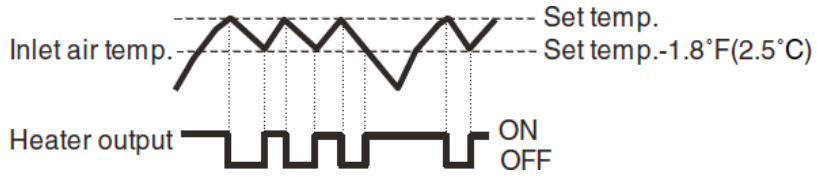


Figure 3. CN4YControls

Selecting setting #2 for Setup Function 123 on MHK1 (or Mode 23 on PAR-33MAA) allows Setup Function 125 on MHK1 (or Mode 25 on PAR33MAA) and CN4Y to be used to control the indoor unit fan during defrost and error conditions as shown in Figure 3. Table 2 and 3 lists the settings to be used to achieve the fan operation desired.

Table 2. Fan Operation Settings Depending on Supplemental Heat Location

	Heater Installed in Duct	No heater installed in Duct
Use of CN4Y	Unused	Used
Heater is off	Fan ON	Fan OFF
Heater is on	Fan ON	Fan OFF

Table 3. Controller Settings for Fan Operation

Mode	Indoor Unit Fan Operation		Setup function for MHK1 (PAR-33)	Setting	Mode no. MHK1 (PAR-33)	Setting	Controller Initial setting
	Heating Thermo - OFF	[DEFROST] or [ERROR]					
Fan control	Very low	Very low	123 (23)	2	125 (25)	1	0
	Stop	Remote controller setting	123 (23)	2	125 (25)	2	.
	Remote controller setting	Remote controller setting	123 (23)	2	125 (25)	3	.

Figure 4 illustrates a typical wiring diagram for PEA(D), PVA, SEZ and SVZ indoor units using CN-24:

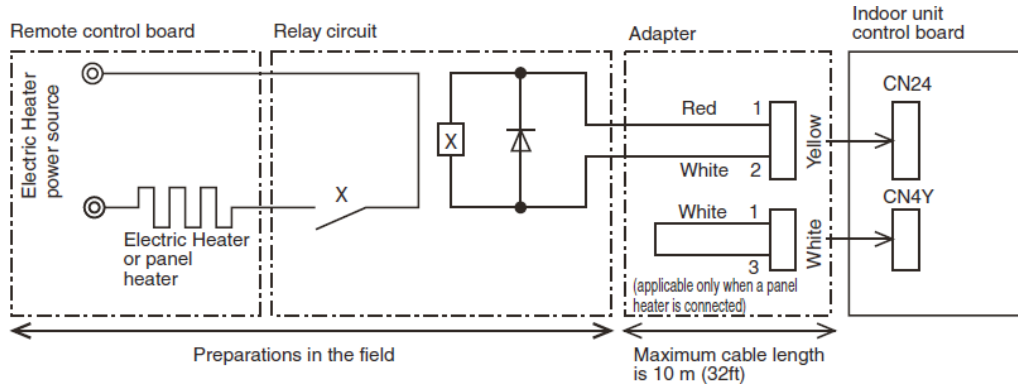


Figure 4. Wiring Diagram for PEA(D), PVA and SEZ indoor units

Supplemental Heat Control via CN-152 for PKA Wall-mounted Indoor Units

CN-152 controls are indicated in Figure 5 and require no setup at the remote controller. This function is only available in heating operation.

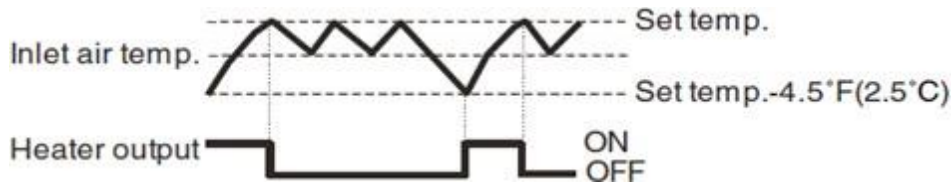


Figure 5. CN-152 Controls

Figure 6 illustrates a typical wiring diagram for PKA wall-mounted indoor unit using CN-152.

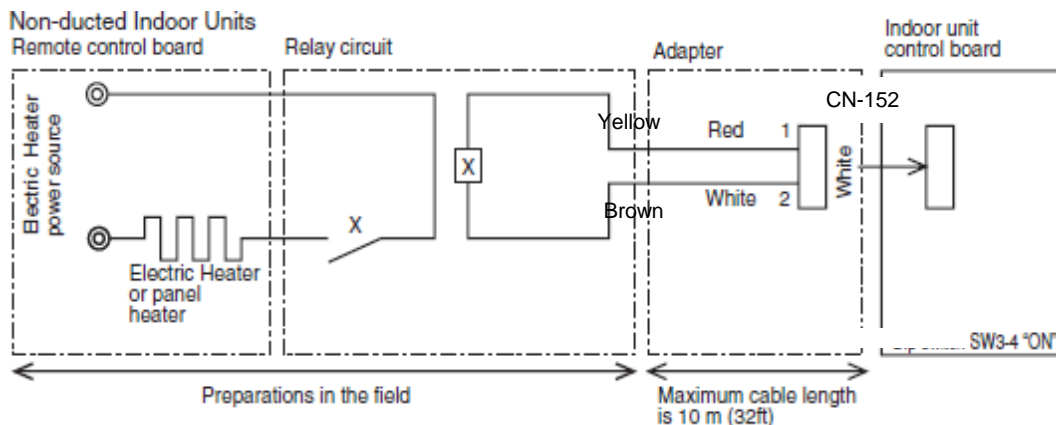


Figure 6. Wiring Diagram for PKA Wall-Mounted Indoor Unit

Wiring Restrictions for ALL Field Wiring in All Diagrams

- Keep the length of the cable connecting to the circuit board of the indoor unit shorter than 32 ft. (10 meters).
- Wire size should be 22 ~ 16 AWG (0.5 mm² ~ 1.25 mm²) stranded depending on length and conditions.
- All wiring should conform to all local codes and the National Electric Code where applicable.