

Application Note: 3051

Demand Response for M- & P-Series Systems

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Overview

The purpose of this Application Note is to illustrate the steps required to enable Demand Response control on M&P systems. The methods for achieving this include controlling the system's ON/OFF state, and limiting the system's maximum operating capacity.

Locate your model type in the chart below to determine the correct method for your system.

Method 1

Indoor Unit ON/OFF Control

Can be used on the following models:

- SEZ
- SLZ
- SVZ
- MVZ
- PCA
- PKA
- PLA
- PEAD
- PVA

Method 2

Outdoor Unit ON/OFF & Capacity Control

Can be used on the following models:

- PUY & PUZ
- MXZ-8C48NA
- MXZ-8C60NA
- MXZ-4C48NAHZ
- MXZ-5C48NAHZ
- MXZ-8C48NAHZ

With a MAC-334IF-E adapter

Can be used on the following models:

- MFZ
- MLZ
- MSZ *excluding the following models:*
 - MSY/Z – A/GA
 - MSZ – HE
 - MSZ – FD
 - MS – WA

Method 3

Thermostat Interface ON/OFF & Capacity Control

Can be used on all indoor units
excluding the following models:

- MSY/Z – A/GA
- MSZ – HE
- MSZ – FD
- MS – WA

M- & P-Series IDU ON/OFF Control

Instructions

Use the diagram to complete the steps listed below.

- 1) Power the outdoor unit **off**.
 - If the indoor unit and outdoor unit are powered separately, then power the indoor unit **off** instead.
- 2) Connect the PAC-715AD adapter to connector CN32 on the indoor unit control board.
- 3) Connect the **red** and **orange** wires to one relay contact, and the **brown** wire to the other contact.
- 4) Connect the Demand Response Control Switch to the relay coil, and power the outdoor unit back on.
 - If the indoor unit and outdoor unit are powered separately, then power the indoor unit(s) **on** first, and power the outdoor unit **on** last.

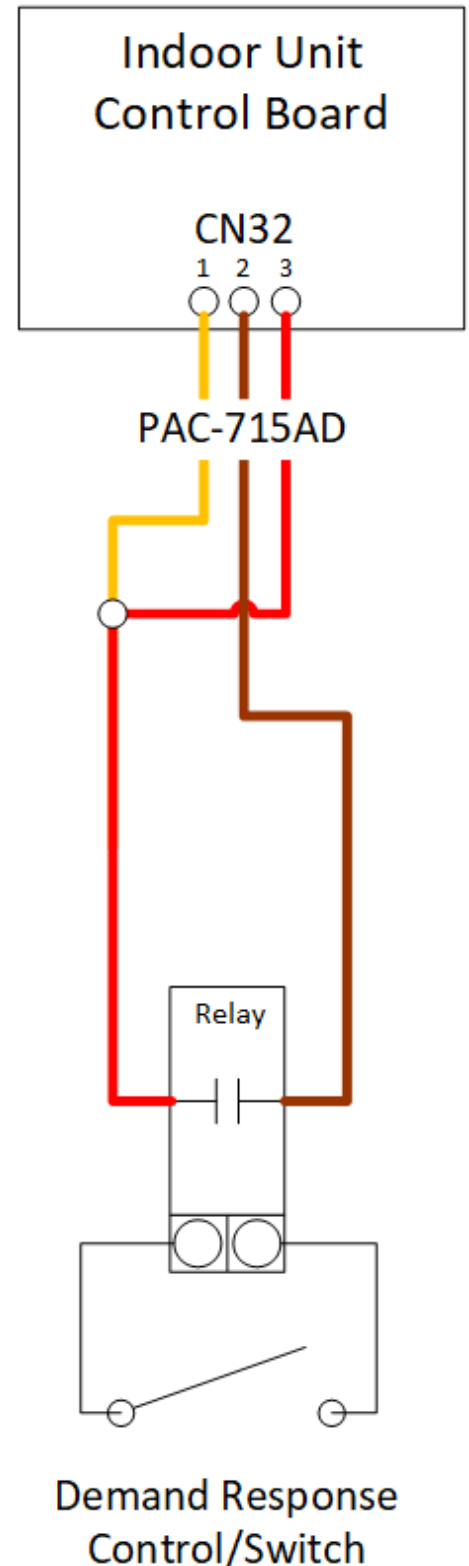
Sequence of Operations

The sequence for ON/OFF Control is as follows:

- 1) When the relay **opens**, the indoor unit will turn **off**.
- 2) When the relay **closes**, the indoor unit will turn **on**.

Important Note

Utilizing the ON/OFF configuration for Demand Response control will remove the ability to turn the indoor unit(s) ON or OFF through any Mitsubishi controllers.



M-Series IDU ON/OFF Control via MAC-334IF-E

Instructions

Use the diagram to complete the steps listed below.

- 1) Power the outdoor unit **off**.
 - If the indoor unit and outdoor unit are powered separately, then power both units **off**.
- 2) Connect the MAC-334IF-E power supply cable to CN105 on the indoor unit control board.
- 3) Connect the three-wire adapter included in the box to CN591 on the MAC-334IF-E interface.
- 4) Connect the **red** and **orange** wires to one relay contact, and the **brown** wire to the other contact.
- 5) Connect the Demand Response Control Switch to the relay coil, and power the outdoor unit back on.
 - If the indoor unit and outdoor unit are powered separately, then power the indoor unit(s) **on** first, and power the outdoor unit **on** last.

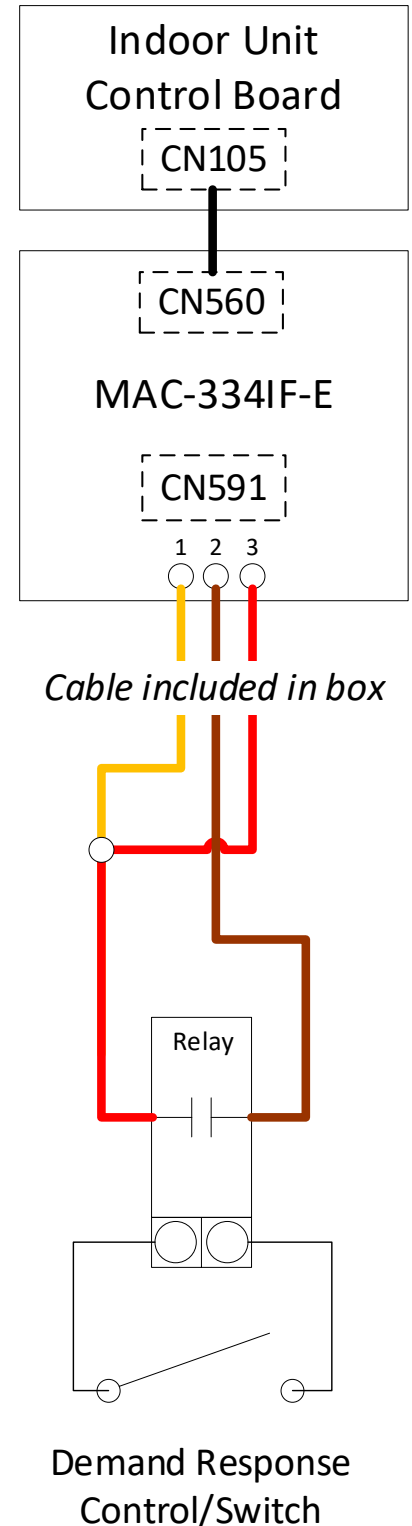
Sequence of Operations

The sequence for ON/OFF Control is as follows:

- 1) When the relay **opens**, the indoor unit will turn **off**.
- 2) When the relay **closes**, the indoor unit will turn **on**.

Important Note

Utilizing the ON/OFF configuration for Demand Response control will remove the ability to turn the indoor unit(s) ON or OFF through any Mitsubishi controllers.

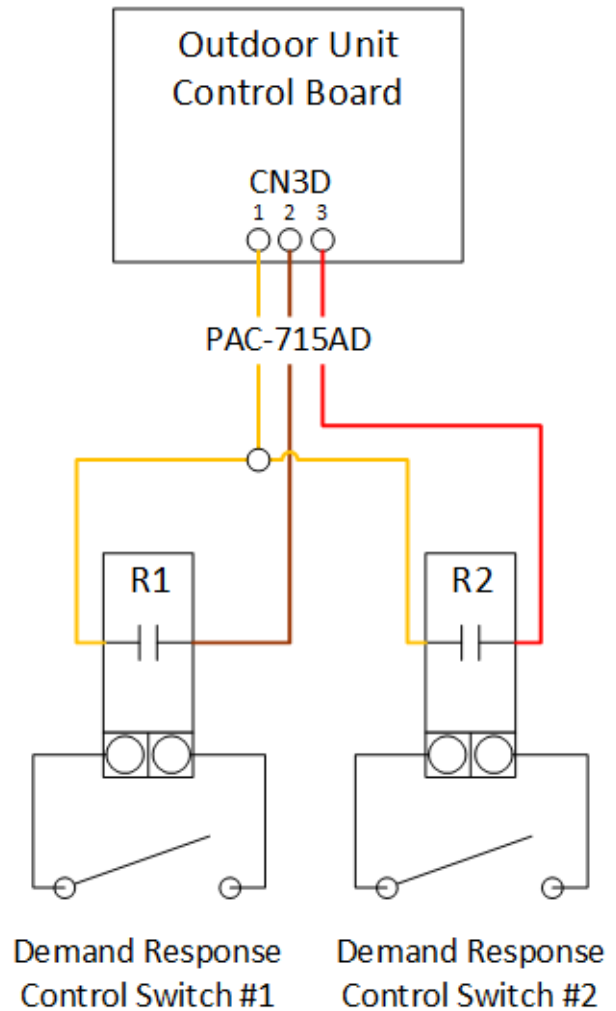


M-Series ODU ON/OFF & Capacity Control

Instructions

Use the diagram to complete the steps listed below.

- 1) Power the outdoor unit **off**.
- 2) Locate dipswitch **SW9-2** on the outdoor unit control board and turn it **on**.
- 3) Connect the PAC-715AD adapter to connector CN3D on the outdoor unit control board.
- 4) Use the table to determine how the **orange**, **brown**, and **red** wires should be connected to R1 and R2.
- 5) Connect the Demand Response Control Switch to the R1 and/or R2 relay coil, and power the outdoor unit back **on**.



Sequence of Operations

The sequence for ON/OFF Control is as follows:

- 1) When only relay R2 is energized, the outdoor unit will cease operating, and turn the compressor **off**.
- 2) When relays R1 and R2 are both de-energized, the outdoor unit will resume normal operation.

The sequence for Capacity Control is as follows:

- 1) When only relay R1 is energized, the outdoor unit will limit the system's maximum capacity to 75%.
- 2) When relays R1 and R2 are both energized, the outdoor unit will limit the system's maximum capacity to 50%.

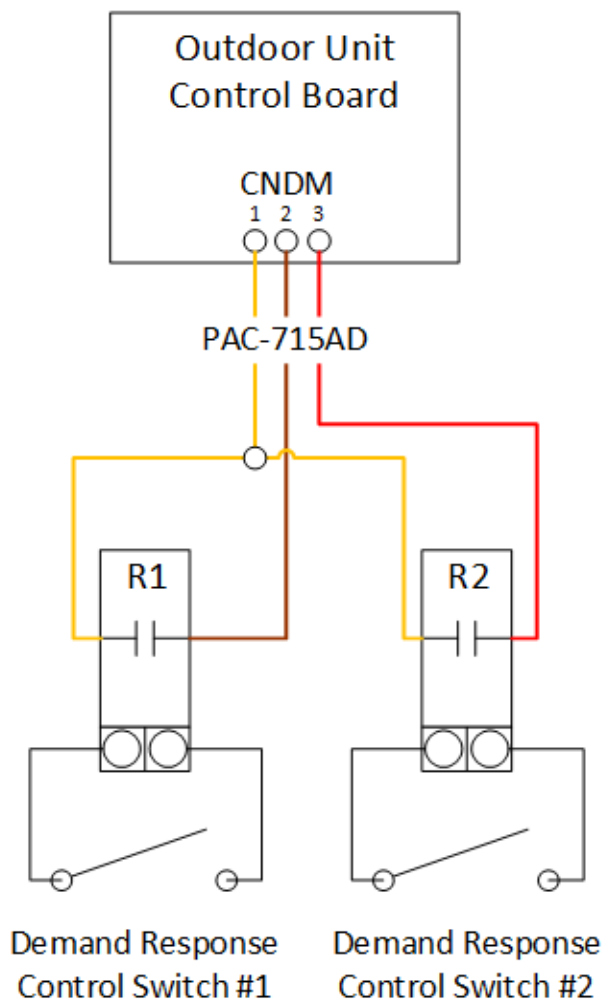
R1	R2	Capacity
OFF	OFF	100% (Default)
ON	OFF	75%
ON	ON	50%
OFF	ON	0% (Stop)

P-Series ODU ON/OFF & Capacity Control

Instructions

Use the diagram to complete the steps listed below.

- 1) Power the outdoor unit **off**.
- 2) Locate dipswitch **SW7-1** on the outdoor unit control board and turn it **on**.
- 3) Connect the PAC-715AD adapter to connector CNDM on the outdoor unit control board.
- 4) Use the table to determine how the **orange**, **brown**, and **red** wires should be connected to R1 and R2.
- 5) Connect the Demand Response Control Switch to the R1 and/or R2 relay coil, and power the outdoor unit back **on**.



Sequence of Operations

The sequence for ON/OFF Control is as follows:

- 1) When only relay R2 is energized, the outdoor unit will cease operating, and turn the compressor **off**.
- 2) When relays R1 and R2 are both de-energized, the outdoor unit will resume normal operation.

The sequence for Capacity Control is as follows:

- 1) When only relay R1 is energized, the outdoor unit will limit the system's maximum capacity to 75%.
- 2) When relays R1 and R2 are both energized, the outdoor unit will limit the system's maximum capacity to 50%.

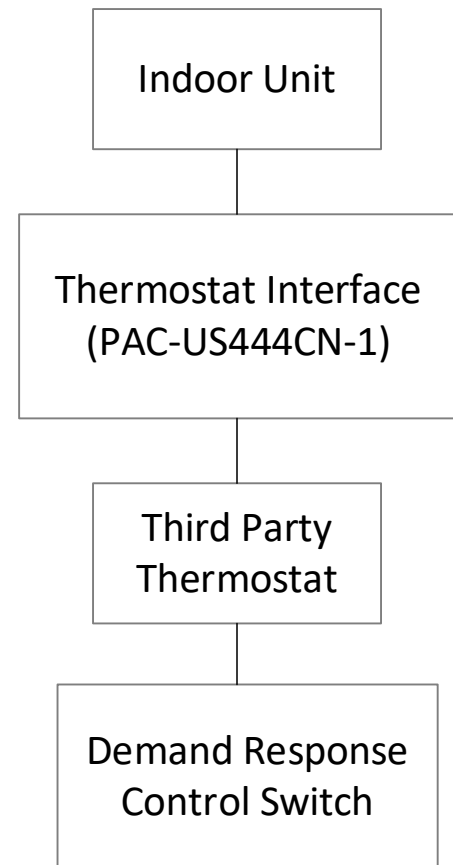
R1	R2	Capacity
OFF	OFF	100% (Default)
ON	OFF	75%
ON	ON	50%
OFF	ON	0% (Stop)

Thermostat Interface ON/OFF & Capacity Control

Instructions

Complete the steps listed below using the following diagram, and the [Thermostat Interface Installation Manual](#)

- 1) Power the outdoor unit **off**.
 - If the indoor unit and outdoor unit are powered separately, then power both units **off**.
- 2) Connect the Thermostat Interface to the indoor unit.
- 3) Connect a third party thermostat to the Thermostat Interface.
- 4) Connect the Demand Response Control Switch to the third party thermostat, and power the outdoor unit back **on**.
 - If the indoor unit and outdoor unit are powered separately, then power the indoor unit(s) back **on** first, and power the outdoor unit back **on** last.



Sequence of Operations

The sequence for ON/OFF Control is as follows:

- 1) When the third party thermostat supplies 24 VAC to the Y1/Y2 or W1/W2 terminals, the indoor unit will turn **on**.
- 2) When the third party thermostat stops supplying 24 VAC to the Y1/Y2 or W1/W2 terminals, the indoor unit will turn **off**.

The sequence for Capacity Control is as follows:

- 1) During peak usage hours when the Demand Response controller adjusts the third party thermostat's setpoint, the indoor unit's capacity will be reduced.
- 2) During regular usage hours when the Demand Response controller stops adjusting the third party thermostat's setpoint, the indoor unit's capacity will return to normal.