Application Note: 3051

Demand Response for M- & P-Series Systems

v1.2

Published 08/05/2025

Specifications are subject to change without notice.

© 2025 Mitsubishi Electric Trane HVAC US LLC. All rights reserved.

Overview

This document illustrates the steps required for Demand Response control on both R410A and R454B M- & P-Series systems. Demand response methods include controlling the system's ON/OFF state and limiting the operating capacity.

Outdoor Unit Methods

M- & P-Series

- Demand response with Outdoor Air Temperature Control
- **PAC-715DLH**

M-Series

- Demand Response & Capacity control
- **PAC-715AD**

P-Series

- Demand Response & Capacity control
- **PAC-715AD**

Indoor Unit Methods

M- & P-Series

(ex. MFZ, MLZ, & MSZ)

- On/Off Control
- **PAC-715AD**

MFZ, MLZ, MSZ

- On/Off Control
- **MAC-333IF-E**
- **MAC-334IF-E**

M- & P-Series + Tstat Interface

- Smart Thermostat API
- **PAC-US445CN-1**
- **PAC-US446CN-1**

Specifications are subject to change without notice.

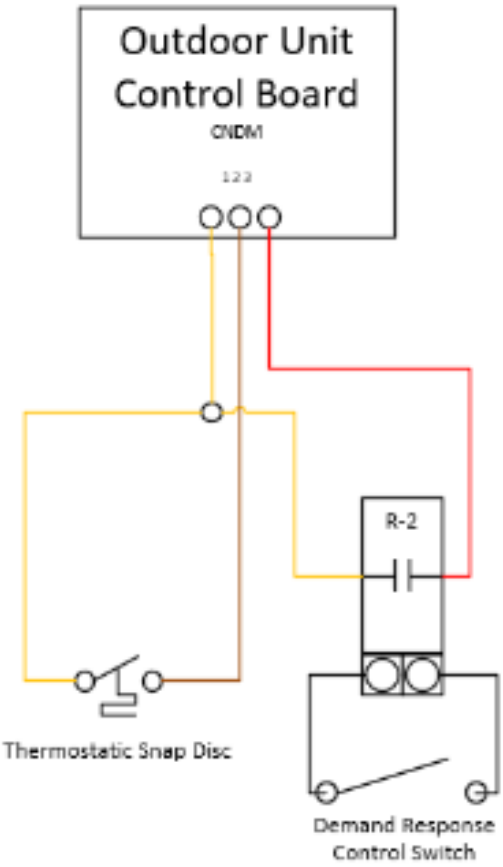
© 2025 Mitsubishi Electric Trane HVAC US LLC. All rights reserved.

PAC-715DLH ON/OFF & Capacity Control

Instructions

Use the diagram to complete the steps listed below.

1) Following the same procedures outlined in the M and P series ON/OFF & Capacity Control sections, install the provided PAC-715DLH harness and dip switch settings appropriate for the ODU.
2) Mount the provided thermostatic snap disc inside the ODU with the provided self drilling screws.
3) Terminate the PAC-715DLH harness as shown.



Sequence of Operations

The sequence for Capacity Control is as follows:

1) Thermostatic snap disc has no effect unless R-2 contacts are closed
2) When the thermostatic snap disc and R-2 are closed(above 70°F and DR event), operation and capacity is limited to 50%.
3) When the thermostatic snap disc is open and R-2 is closed(below 60°F and DR event), operation and capacity is limited to 0%.

*Note: if capacity is set to 0%, CN24 AUX heat will not be energized.

**SUZ 24k BTU and greater

TSTAT	R2	Capacity
ON	OFF	100%
ON	ON	50%
OFF	OFF	100%
OFF	ON	0% (Stop)

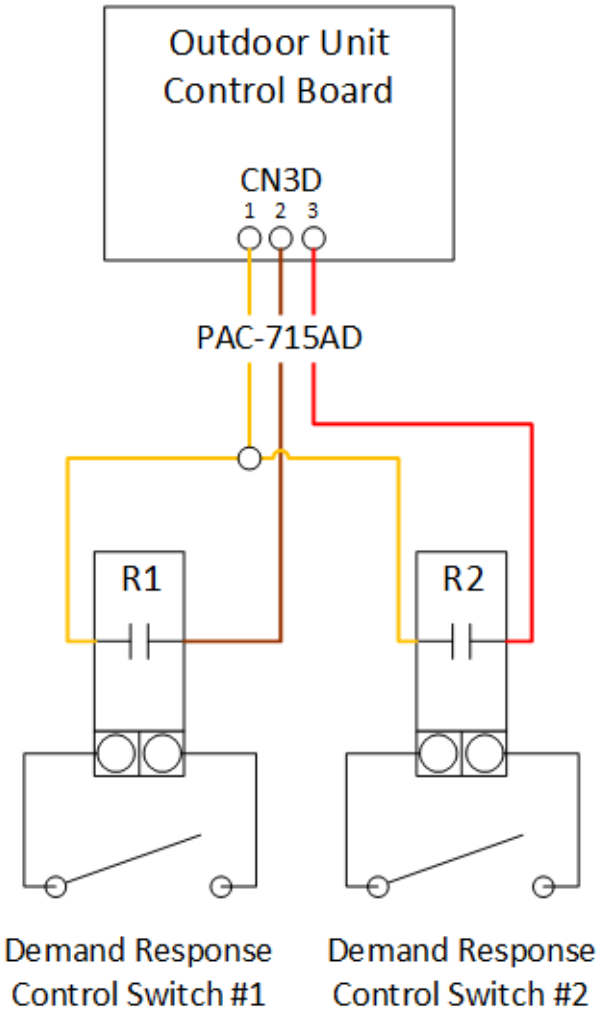
Specifications are subject to change without notice.
© 2025 Mitsubishi Electric Trane HVAC US LLC. All rights reserved.

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)

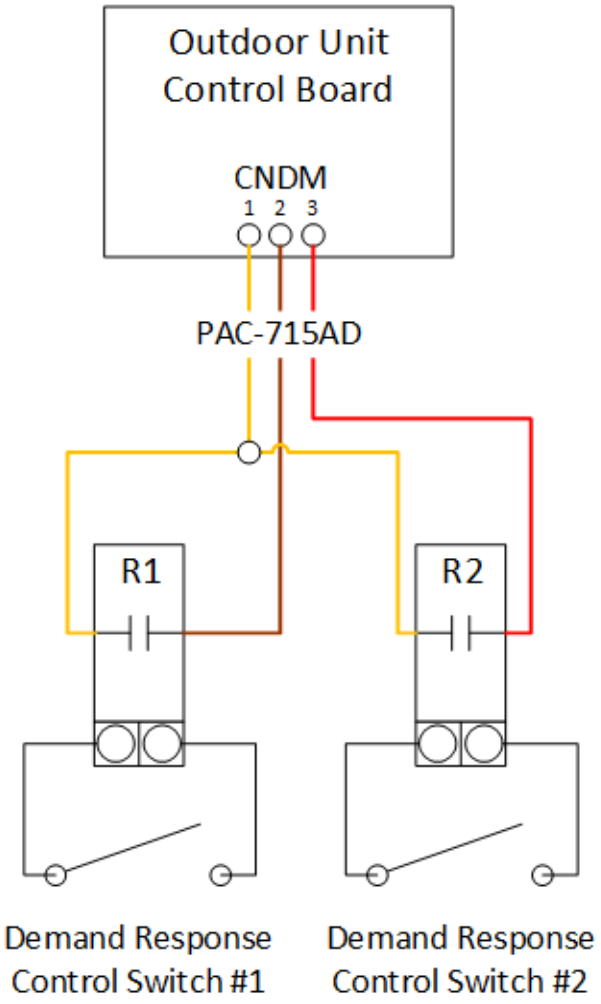
Specifications are subject to change without notice.
© 2025 Mitsubishi Electric Trane HVAC US LLC. All rights reserved.

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)

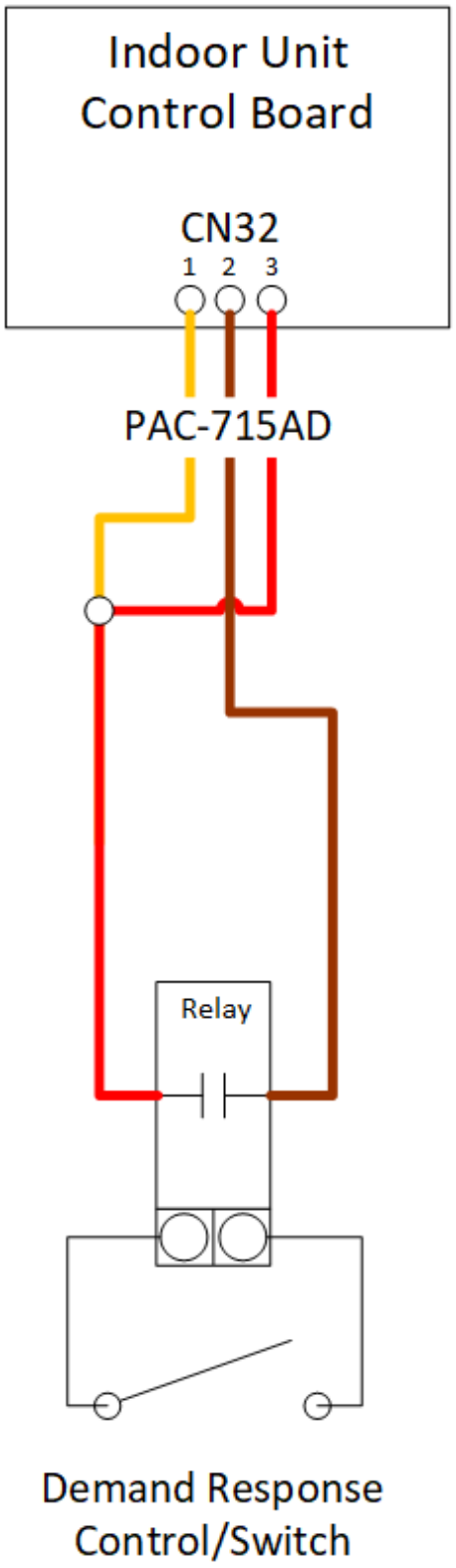
Specifications are subject to change without notice.
© 2025 Mitsubishi Electric Trane HVAC US LLC. All rights reserved.

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.

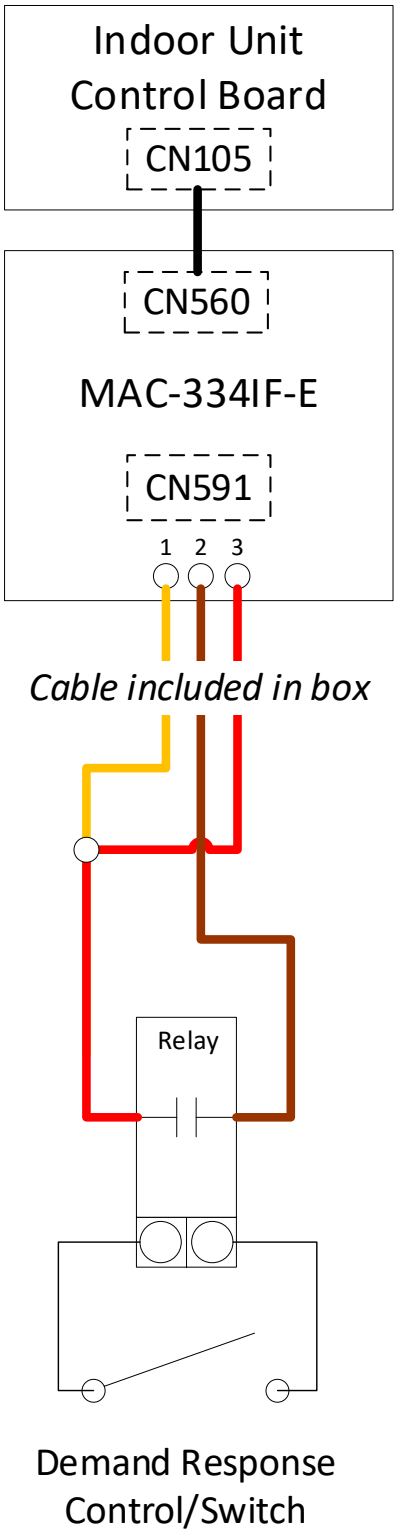
Specifications are subject to change without notice.
© 2025 Mitsubishi Electric Trane HVAC US LLC. All rights reserved.

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

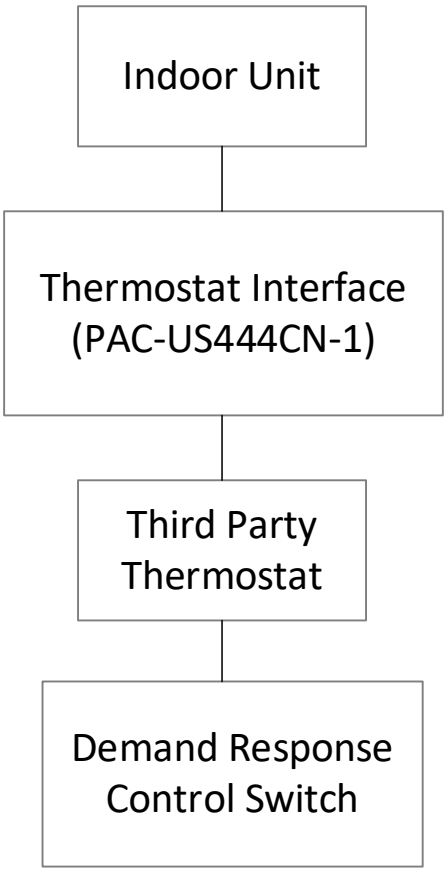
Utilizing the ON/OFF configuration for Demand Response control will remove the ability to turn the indoor unit(s) ON or OFF through any Mitsubishi controllers.

© 2025 Mitsubishi Electric Trane HVAC US LLC. All rights reserved.

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:

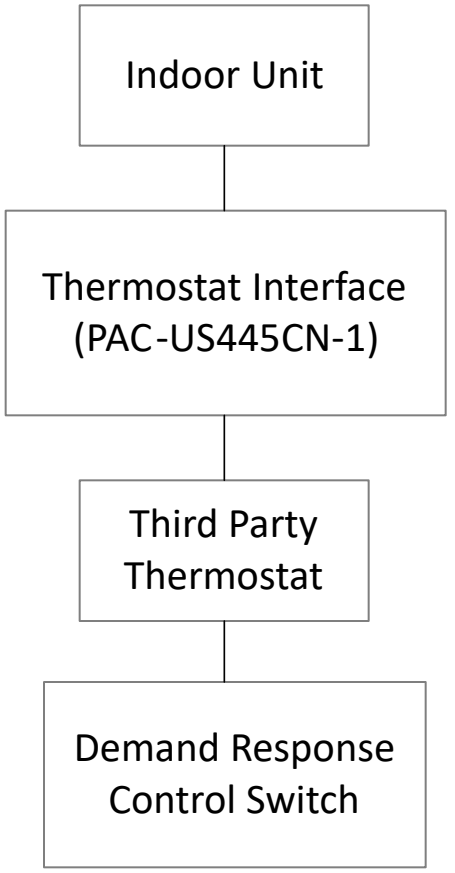
1) During peak usage hours when the Demand Response controller adjusts the third-party thermostat's setpoint, the indoor unit's capacity will be reduced.
2) During regular usage hours when the Demand Response controller stops adjusting the third-party thermostat's setpoint, the indoor unit's capacity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

Specifications are subject to change without notice.
© 2025 Mitsubishi Electric Trane HVAC US LLC. All rights reserved.

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) Locate dipswitch SW1-1 and turn it ON.
3) Connect the Thermostat Interface to the indoor unit.
4) Connect a third-party thermostat to the Thermostat Interface.
5) 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.

Specifications are subject to change without notice.
© 2025 Mitsubishi Electric Trane HVAC US LLC. All rights reserved.