

# RMF-CA200-V2

Installation / Instruction Manual – Read prior to installing / operating device. Retain for future reference.

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## 1.0 Parts

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### 1.1 Supplied Parts

RMF-CA200-V2 thermostat interface (1), Manual (1)

### 1.2 Optional Parts

24VAC Transformer (VPL24-210) sold separately from Mitsubishi Electric

## 2.0 Safety Precautions

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**THOROUGHLY READ THE FOLLOWING SAFETY PRECAUTIONS BEFORE EACH USE OF THIS PRODUCT (THE “DEVICE”).**

WARNING – INCORRECT HANDLING MAY RESULT IN INJURY, MALFUNCTION AND / OR DAMAGE TO DEVICE

- Do not expose the device to or immerse the device in water. Doing so could lead to electrical shock, device malfunction or damage.
- Do not install the device in a bathroom, kitchen, or any room where steam could form. Condensation could develop on or around the device and cause electrical shock, device malfunction or damage.
- Do not install the device in a location where a gas leak could occur.
- Do not expose the device to heat or radiation, including direct sunlight, or install the device in a location where the temperature could be greater than 40°C (104°F) or less than 0°C (32°F). Doing any of these things could result in device deformation or malfunction.
- Always ensure the device is installed in an area without exposure to high frequency noise.
- Power generators, inverters, and high-frequency or radio communication equipment may interfere with the operation of this device.
- All electrical work should be performed by a qualified technician and in accordance with applicable laws and the instructions outlined in this manual.
- Use standard wiring with the proper current capacity to avoid current leak, excessive heat, and fire.
- Use only specified cables and wiring; securely connect each so that the terminals do not bear any weight.
- Include slack in the power supply wiring. Tension in the wiring may cause it to excessively heat up and break, which could result in a fire.
- Improperly connected or short-circuited cables or wiring may produce heat and cause device malfunction, device damage, and fire.
- Capacity shortage to the power supply circuit or improper installation may result in electrical shock or fire.
- Do not modify or alter this device or cable in any manner whatsoever.

### 3.0 Installation

- Thermostat may be configured to operate in conventional or heat pump modes. Use 18 AWG thermostat wire for all connections.
- Wire connection terminals support 20-30 VAC.
- Fan speed (only G signal active) is determined by the DIP switch setting.
- The default vane position is determined by the DIP switch setting.
- If configured for two-stage operation, fan speeds can be configured by DIP switch settings.
- Auxiliary heater control is provided by CN24 connector on indoor units PC Board. The CN24 connector outputs 12VDC at 80mA. Please consult a licensed technician to ensure proper set-up and safety of auxiliary heat source in accordance with auxiliary heat source product documentation and local building codes. Please confirm CN24 availability in the indoor unit manual.
- The device provides two mounting holes to mechanically affix the case to a solid surface. Double-sided tape may be used to affix the device. When using tape, ensure that the tape is approved for use within the anticipated operating temperature ranges.
- Install the transformer as per Canadian Electrical Code, Canadian building code and local codes compliance, and manufacturer's installation instructions.
- Connect the RMF-CA200-V2 cable to the connector CN105 on the indoor unit control board.

STEP 1: Select Single or Two-stage thermostat operation using DIP switch SW1-1:

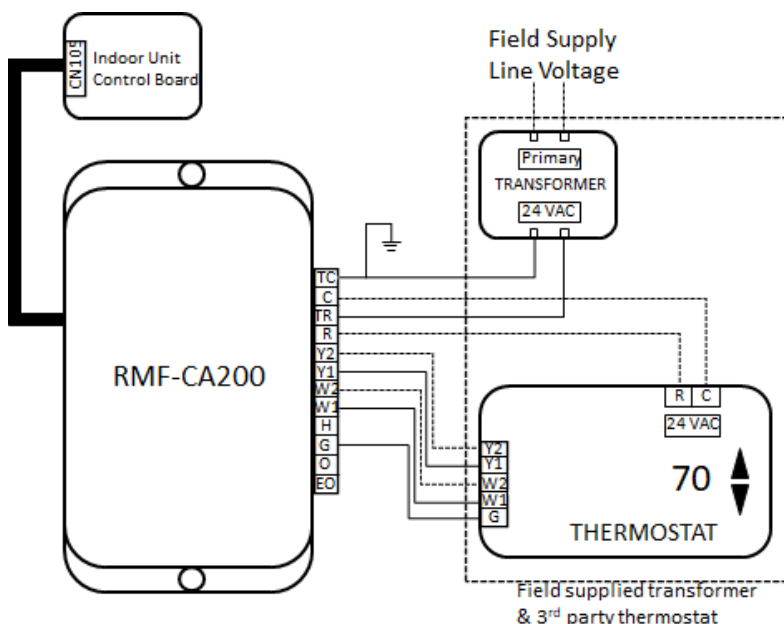
If Y2 or W2 is left unconnected or is unavailable from the thermostat set SW1-1 to the ON position. This configures single stage (simulated VRF) operation of RMF-CA200-V2; simulating multiple stage operation using temperature differential based on W1 / Y1 call and run time.

OFF position (default)	Configured for Two-stage heating and cooling thermostats (Y1, Y2 & W1, W2)
ON position	Configured for use with Single-stage heating / cooling thermostats (Y1, W1)

STEP 2: Select Conventional or Heat Pump Mode using DIP switch SW1-2:

OFF Position (default)	Default - Configures conventional mode
ON Position	Enables heat pump mode

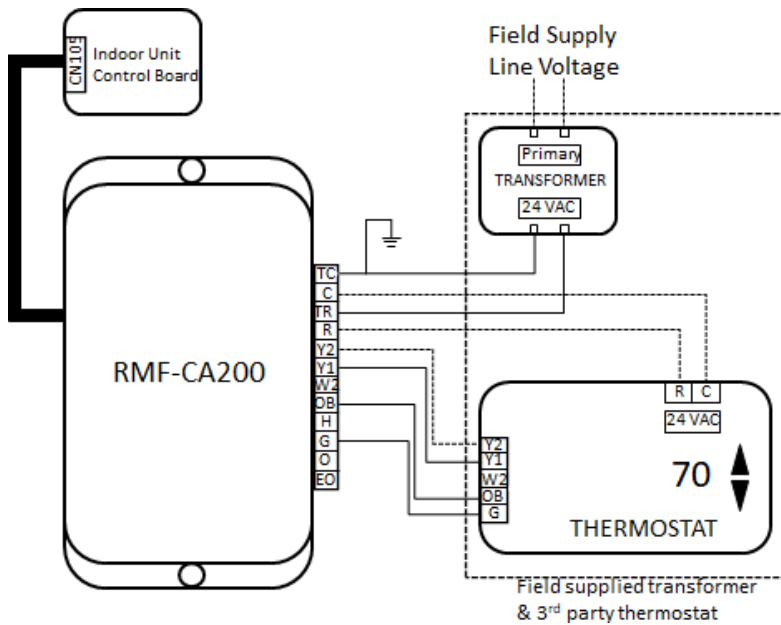
#### 3.1 Single Stage and Two-Stage Conventional Connection Diagram



Thermostat Conventional Mode Connections		
Pin	Signal	Description
1	TC	Common (IN) Transformer
2	C	Common (OUT) To Thermostat
3	TR	24 VAC (IN) Transformer
4	R	24 VAC (OUT) Thermostat
5	Y2	Stage 2 Cooling
6	Y1	Stage 1 Cooling
7	W2	Stage 2 Heat
8	W1	Stage 1 Heat
9	H	Not Available
10	G	Fan
11	O	Not Available
12	EO	Error Output (24 VAC OUT)
In single stage operation Y2, W2 signals are not used		

### 3.2 Heat Pump Mode Connection Diagram


















































When configured as heat pump, set DIP switch SW1-2 to ON.



























































































































Thermostat Heat Pump Mode Connections		
Pin	Signal	Description
1	TC	Common (IN) Transformer
2	C	Common (OUT) To Thermostat
3	TR	24 VAC (IN) Transformer
4	R	24 VAC (OUT) to Thermostat
5	Y2	Heat Pump Stage 2 Heat/Cool
6	Y1	Heat Pump Stage 1 Heat/Cool
7	W2	Not Available
8	OB	Heat pump Heat / Cool select
9	H	Not Available
10	G	Fan
11	O	Not Available
12	EO	Error Output (24 VAC OUT)

STEP 3: Setting DIP Switches (SW1) - Remove the four screws on back-side of RMF-CA200 interface to access DIP switch SW1 bank. The DIP switch can be toggled ON or OFF for configuration setting. The DIP switch settings are defined below:

### 3.3 DIP Switch Settings

DIP switch	Description (DIP switch position represented as [  ] Factory Default Position = OFF)								
SW1-1	<p>If turned ON, do not connect thermostat wire to W2 or Y2 terminals of RMF-CA200; W1 and Y1 MUST be used.</p> <table><tr><th>Dual Stage Operation</th><th>Simulated VRF Operation (Single Stage Heat/Cool)</th></tr><tr><td><div>ON </div><div>OFF </div><div>1</div></td><td><div>ON </div><div>OFF </div><div>1</div></td></tr></table>	Dual Stage Operation	Simulated VRF Operation (Single Stage Heat/Cool)	<div>ON </div> <div>OFF </div> <div>1</div>	<div>ON </div> <div>OFF </div> <div>1</div>				
Dual Stage Operation	Simulated VRF Operation (Single Stage Heat/Cool)								
<div>ON </div> <div>OFF </div> <div>1</div>	<div>ON </div> <div>OFF </div> <div>1</div>								
SW1-2	<p>Conventional (Default - OFF) or Heat Pump (ON) mode selection.</p> <table><tr><th>Conventional</th><th>Heat Pump</th></tr><tr><td><div>ON </div><div>OFF </div><div>2</div></td><td><div>ON </div><div>OFF </div><div>2</div></td></tr></table>	Conventional	Heat Pump	<div>ON </div> <div>OFF </div> <div>2</div>	<div>ON </div> <div>OFF </div> <div>2</div>				
Conventional	Heat Pump								
<div>ON </div> <div>OFF </div> <div>2</div>	<div>ON </div> <div>OFF </div> <div>2</div>								
SW1-3 SW1-4	<p>Defines default fan speed when thermostat G signal is active.</p> <table><tr><th>Low</th><th>Medium</th><th>High</th><th>Quiet*</th></tr><tr><td><div> ON</div><div> OFF</div><div>3 4</div></td><td><div> ON</div><div> OFF</div><div>3 4</div></td><td><div> ON</div><div> OFF</div><div>3 4</div></td><td><div> ON</div><div> OFF</div><div>3 4</div></td></tr></table>	Low	Medium	High	Quiet*	<div> ON</div> <div> OFF</div> <div>3 4</div>	<div> ON</div> <div> OFF</div> <div>3 4</div>	<div> ON</div> <div> OFF</div> <div>3 4</div>	<div> ON</div> <div> OFF</div> <div>3 4</div>
Low	Medium	High	Quiet*						
<div> ON</div> <div> OFF</div> <div>3 4</div>	<div> ON</div> <div> OFF</div> <div>3 4</div>	<div> ON</div> <div> OFF</div> <div>3 4</div>	<div> ON</div> <div> OFF</div> <div>3 4</div>						
*Quiet speeds may not be supported on all models. Available fan speeds can be found in the indoor unit operational manual.									

SW1-5	Simulated VRF capacity increase time-delay when SW1-1 ON is defined below:																																								
SW1-6																																									
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## 4.0 System Configuration

### Device Configuration:

Initial settings can be configured via the DIP switches on the RMF-CA200-V2 controller board. Request codes not addressed by RMF-CA200-V2 may be configured by temporarily connecting an MA remote controller. Please reference product(s) manual for setting details.

For residential systems (M & P-Series): Temporary connection of an MA controller may be required for configuration of function settings.

For City-Multi systems: Configuration of mode settings must be configured with Maintenance Tool, please refer to product manual for details.

### Grouping:

The connection of more than one RMF-CA200-V2 to a single thermostat is **not** supported.

### Temperature Sensing:

The RMF-CA200-V2 relies upon both the dry-contact thermostat inputs and Mitsubishi Electric indoor unit's thermistors to monitor room temperature. The thermostat senses room temperature and establishes indoor unit's set temp. The Mitsubishi Electric indoor unit's return air thermistor is used for cooling and heating set-point calculation.

## 5.0 Operation Instruction

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Operate the third-party thermostat per the manufacturer's instructions. Simultaneous connection and use of RMF-CA200-V2 and Mitsubishi remote controllers (e.g. MA/ME) is not supported as they will interfere with the correct RMF-CA200-V2 operation. Infrared Wireless remote controller operation is NOT recommended after RMF-CA200-V2 installation. RMF-CA200-V2 and thermostat signals take precedence over Mitsubishi wireless remote controller signals.

**Notes:**

The indoor unit will limit the internal temperature control set point based on the indoor unit specification.

Only fan speeds available on the Mitsubishi Electric indoor unit can be used by the Thermostat Interface.

Immediately after cooling thermal OFF and 2 hours after heating thermal OFF, energizing G will place the IDU into fan mode.

Auto mode function is supported on multi-zone (MXZ) systems; however, cooling mode will not be available for 2 hours since the last heat call.

SW1-9 DIP switch is dedicated for toggling ON/OFF Fan mode to allow other unit(s) in heat stand by to operate. Only applicable to MXZ ported systems.