RMF-CA200-V1(A)

INSALLATION / INSTRUCTION MANUAL Read prior to installing / operating device. Retain for future reference.

Contents

1. Supplied Parts.....1
2. Safety Precautions.....1
3. Installation.....1
4. System Configuration..... 3
5. Operation Instructions.....3

1. Supplied Parts

RMF-CA200-V1(A) thermostat interface (1), Manual (1)
Optional transformer (ULP24-210) sold separately from Mitsubishi Electric

2. Safety Precautions

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. 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 20-30VAC.
- G1, G2, G3 Thermostat fan signals are not supported.
- The default fan speed can be set to high, medium, low and quiet speeds using dipswitches. While in FAN mode (only G signal active) the Mitsubishi Electric indoor unit wireless remote controller can be used to adjust the fan speed from the initial default setting to any other fan speed. The RMF-CA200 will retain the new settings until the unit is power cycled at which point it will resume with default dipswitch speed setting.
- The default vane position can be set by using dipswitches. The default vane position can be changed by using the Mitsubishi Electric indoor unit wireless remote controller to any other desired vane. The RMF-CA200 will retain the new vane position until the unit is power cycled at which point it will resume with default dipswitch vane setting.
- Convection auxiliary heater control is provided by CN24 connector on indoor units PC Board. The CN24 connector outputs 12VDC at 80mA. If system does not provide CN24 connector, connect auxiliary heat control directly from thermostat to auxiliary heat source. Any connection to an auxiliary heat source is outside the scope of Mitsubishi Electric products. 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.
- 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-V1 cable to the connector CN105 on the indoor unit control board.

STEP 1: Select 1 or 2 stage thermostat operation using dipswitch 1-1:

OFF position (default)	Configured for 2 stage heating and cooling thermostats (Y1, Y2 & W1, W2)
ON position	Configured for use with single stage heating / cooling thermostats (Y1, W1)

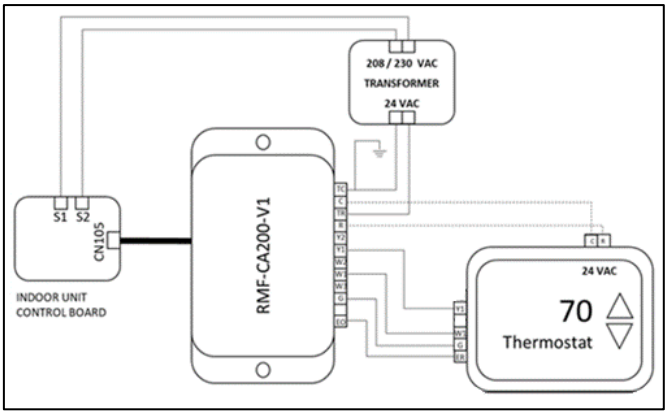
Select Conventional or Heat Pump Mode using Dipswitch 1-2

Single-Stage Operation- Dipswitch 1-1 set to ON position

If Y2 or W2 is left unconnected or is unavailable from the thermostat set SW1-1 to the ON position. This configures single stage operation of RMF-CA200-V1(A) simulating multiple stage operation using temperature differential based on W1 / Y1 call and run time.

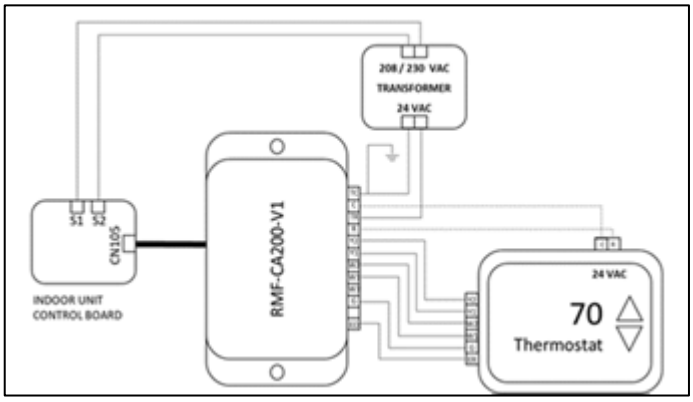
OFF position (Default)	Default OFF position configures conventional mode, ON position enables Heat Pump mode

Single Stage Conventional Interface Connection



TC
C
TR
R
-
Y1
-
W1
-
G
-
EO

Two Stage Conventional Interface Connection



TC
C
TR
R
Y2
Y1
W2
W1
-
G
-
EO

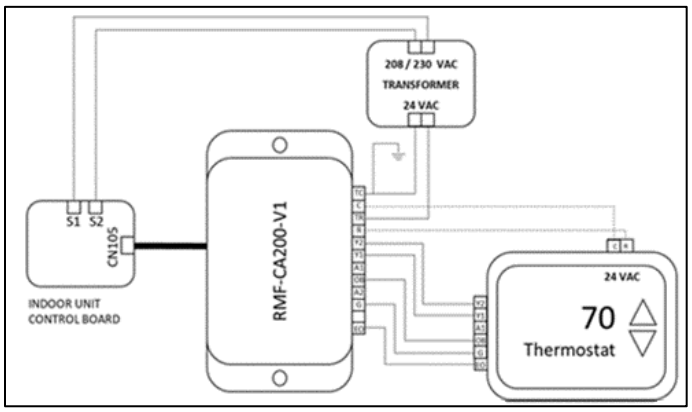
Thermostat Conventional Mode Connections

Pin	Signal	Description
1	TC	Common (IN) Transformer
2	C	Common (Out) To Thermostat
3	TR	24 VAC (IN) Transformer
4	R	24 VAC (IN) Thermostat
5	Y2	Stage 2 Cooling
6	Y1	Stage 1 Cooling
7	W2	Stage 2 Heat
8	W1	Stage 1 Heat
9	W3	Stage 3 Heat
10	G	Fan
11	O	**DO NOT CONNECT TO INTERFACE**
12	EO	Error Output (Out)

In single stage operation Y2, W2 and W3 signals are not used

Example 2:
Conventional Two-Stage Cooling and Heating **- Dipswitch 1-1 set to OFF position (default position)**
RMF-CA200-V1(A) operates in dual stage heat / cool mode using thermostat signals W1, W2, Y1, Y2, and fan signal (G). G1, G2 and G3 are available but not required.

Heat Pump Mode Interface Connection



TC
C
TR
R
Y2
Y1
-
OB
-
G
-
EO

Example 3: Heat Pump Mode Operation - Dipswitch 1-1 set to ON position
If Y2 or W2 is left unconnected or is unavailable from the thermostat set SW1-1 to the ON position. This configures single stage operation of RMF-CA100-V1(A) simulating multiple stage operation using temperature differential based on W1 / Y1 call and run time.

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	AUX1	N/A
8	OB	Heat pump Heat / Cool mode
9	AUX2	Stage 4 Heat
10	G	Fan
11	O	**DO NOT CONNECT TO INTERFACE**
12	EO	Error Output (Out)

STEP 2: Setting DIP Switches

On the PCB, there is a 10-position DIP switch for configuration setting. Each position has two states: ON or OFF. The DIP switch inputs are identified by their reference designator on the PCB followed by their switch position.

DIPSWITCH BANK 1

<table>
<tr><th>#</th><th>Input</th><th>Description (Factory Default - all switches are placed in the OFF position)</th></tr>
<tr><td>1</td><td>SW1-1</td><td>If ON enable single stage heat / cool operation, default OFF (dual stage W1, W2 & Y1, Y2) operation</td></tr>
<tr><td>2</td><td>SW1-2</td><td>Conventional (default OFF) or Heat Pump (ON) mode selection</td></tr>
<tr><td>3

4</td><td>SW1-3

SW1-4</td><td>Defines default fan speed when thermostat G signal is active
a) LOW: SW1-3 is OFF, SW1-4 is OFF (default)
b) MEDIUM: SW1-3 is OFF, SW1-4 is ON
c) HIGH: SW1-3 is ON, SW1-4 is OFF
d) QUIET: SW1-3 is ON, SW1-4 is ON</td></tr>
<tr><td>5

6</td><td>SW1-5

SW1-6</td><td>Simulated 2nd stage heat / cool mode during single stage operation is defined by continuous Y1 / W1 call time:
<table>
<tr><th>SW1-5</th><th>SW1-6</th><th>Simulated Logic Delay</th></tr>
<tr><td>OFF</td><td>OFF</td><td>10 Min (Default)</td></tr>
<tr><td>OFF</td><td>ON</td><td>5 Min</td></tr>
<tr><td>ON</td><td>OFF</td><td>15 Min</td></tr>
<tr><td>ON</td><td>ON</td><td>20 Min</td></tr>
</table></td></tr>
<tr><td>7

8

9</td><td>SW1-7
SW1-8
SW1-9</td><td>Default vane position on power up
a) Automatic: SW1-7 OFF, SW1-8 OFF, SW1-9 OFF
b) Position 1: SW1-7 ON, SW1-8 OFF, SW1-9 OFF
c) Position 2: SW1-7 OFF, SW1-8 ON, SW1-9 OFF
d) Position 3: SW1-7 ON, SW1-8 ON, SW1-9 OFF
e) Position 4: SW1-7 OFF, SW1-8 OFF, SW1-9 ON
f) Position 5: SW1-7 ON, SW1-8 OFF, SW1-9 ON
g) Swing 1: SW1-7 OFF, SW1-8 ON, SW1-9 ON
h) Swing 2: SW1-7 ON, SW1-8 ON, SW1-9 ON</td></tr>
<tr><td>10</td><td>SW1-10</td><td>Diagnostic Mode
a) Default position (OFF)
b) Diagnostic Mode Enabled (ON)</td></tr>
</table>

4. System Configuration

Device Configuration:

Initial settings can be configured via the dipswitches on the circuit board, additional request codes not addressed by RMF-CA200-V1(A) may be configured by temporarily connecting an MA remote controller.

Grouping:

The connection of more than one RMF-CA200-V1 to a single thermostat is not supported.

Temperature Sensing:

The RMF-CA200-V1 relies upon both the dry-contact thermostat inputs and Mitsubishi Electric indoor unit's thermistors in order to monitor room temperature. The thermostat senses room temperature and establishes set temp. The Mitsubishi Electric indoor unit's return air thermistor is used for cooling and heating setpoint calculation.

5. Operation Instructions

Operate the third-party thermostat per the manufacturer's instructions. Simultaneous connection and use of RMF-CA200-V1(A) and Mitsubishi remote controllers (e.g. MA/ME) is not supported as they will interfere with the correct RMF-CA200-V1 operation. Infrared Wireless remote controllers may be used for setting fan speed while only G signal is active and setting vane position. RMF-CA200-V1(A) and thermostat signals take precedence over Mitsubishi wireless remote controller signals other than fan and vane settings.

Notes:

1. The indoor unit will limit the internal temperature control set point based on the indoor unit specification.
2. Only fan speeds available on the Mitsubishi Electric indoor unit can be used by the Thermostat Interface.
3. Fan and vane control can be set using the Mitsubishi Electric indoor unit's infrared wireless remote control. Default is Automatic setting.
4. When all cooling and 2 hours after heating signals is disabled, energizing G will place the IDU into fan mode. Fan speed may be changed from default settings using the wireless remote controller and new setting will remain until unit is powered off.
5. Auto mode function is not supported on multi-zone (MXZ) systems