

Thermostat Adaptor Installation Manual

Document Rev. 2

Model : TADPT1

FOR INSTALLER

Before using the device, carefully read this installation/instruction manual to ensure proper operation. Keep this manual for future reference and give it to the technician when the device is reinstalled or repaired.

Contents

1. Supplied Parts
2. Safety Precautions
3. System Configuration before installing Thermostat Adaptor
4. How to Install
5. About noise filter

1. Confirming the supplied parts

Check that the box includes the following part(s) in addition to this installation manual:
TADPT1 Thermostat Adaptor, Mini USB type noise filter for communication.

2. Safety Precautions

- Thoroughly read the following safety precautions before use.
- Hazards that can occur from incorrect handling are classified by the symbols below:

	Warning	Indicate a potentially hazardous situation which, if not avoided, could result in death or serious injury.
	Caution	Indicate a potentially hazardous situation which, if not avoided, could result in minor or moderate injury. It could also be used to alert against unsafe practices.
	Notice	Indicates a situation that could result in equipment or property-damage only accidents.

- After reading this manual, keep this manual for future reference. When the device is reinstalled or repaired, give this manual to those who provide these services. When the user changes, make sure that the new user receives this manual.

Warning

- **Only a dealer or qualified technician should install, relocate, reinstall, or repair the device.**
Improper installation or repair may result in electrical shock or fire.
- **Properly install the device on a stable, load-bearing surface.**
Device installed on an unstable surface may fall and cause injury.
- **Only use the specified cables; securely connect each so that the terminals do not bear any cable weight.**
Improperly connected or short-circuited cables may produce heat and cause a fire.
- **All electrical work should be performed by an authorized electrician according to local regulations and instructions outlined in this manual.**
Capacity shortage to the power supply circuit or improper installation may result in electrical shock or fire.

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- **Do not make any modifications or alternations to the device.**
Modifications or improper repair may result in electric shock or fire. Consult your dealer for repair.
- **Properly install the device according to the instructions in this Installation/Instruction Manual.**
Improper installation may result in electric shock or fire.

Caution

- **Do not install the device in a location where a flammable gas leak may occur.**
Gas may leak, collect around the device, ignite, and/or explode.
- **Do not install the device in environments where large amounts of oil (including machine), sulfidizing gas, or acidic, alkaline, chemical sprays are present.**
These types of substances may damage internal parts, cause device performance to be reduced, and cause electrical shock.
- **Do not install the device in a bathroom, kitchen, or any room where steam could form.**
Condensation may develop and cause electrical shock and/or the device to malfunction.
- **Do not install the device in a location where there is direct sunlight or where the temperature may become greater than 40°C (104°F) or less than 0°C (32°F).**
If the device is installed in such place, it may result in deformation or malfunctions.
- **When installing the device in a hospital, communication facility, etc., provide sufficient protection against frequency noise.**
Power generators and inverters, high-frequency medical, or radio communication equipment may interfere with the normal operation of this device. Subsequently, the device may also affect medical treatment, image broadcasting, etc., by creating frequency noise.
- **Include some slack in the power supply wires.**
Tension on the wires may cause them to excessively heat up and/or break, resulting in a fire.
- **Use standard wires with the proper current capacity**
to avoid the possibility of current leak, excessive heat, and/or fire.
- **Do not touch the main circuit board; also, make sure that dust does not accumulate on the circuit board.**
- **Do not immerse the device in water.**
Doing so may lead to electric shock or malfunctions.

3. System Configuration before installing Thermostat Adaptor

[Notice] • Change the option code of SAMSUNG AC to enable central control.

- AR models can use the D2 05 10 method must AQN models require the full 020010 -100000-200000-300000 method.
- Chime mute is recommended.
- Refer to indoor unit installation manual and/or <https://dvmdownload.com/Controls/> for more information.

Device Configuration

Initial settings can be configured via the three banks of dip switches and 4 rotary switches on the circuit board. The circuit board can be accessed by unfastening the four screws on the back of the case.

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3.1. Rotary Switch Definitions (Factory default is 0 for all switches)

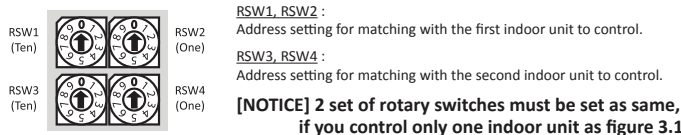


Figure 3.1 : In case of controlling one indoor unit with Thermostat adaptor.

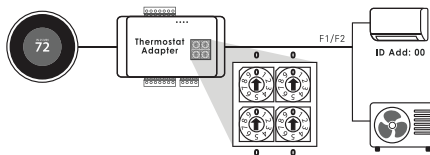
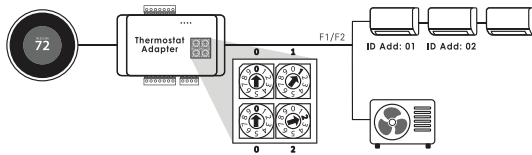
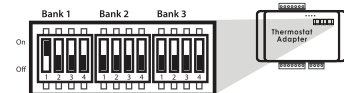


Figure 3.2 : In case of controlling two indoor units simultaneously with one Thermostat adaptor.



3.2 DIP Switch Definitions (Factory default is OFF for all switches except DIP SW1 in BANK 1)



[IMPORTANT] If you set this SW wrong, until will not work or respond.

■ protocol setting to control SAMSUNG AC

DIP SW4 in BANK 3 : Adjusts the initial setting according to the SAMSUNG AC type.

DIP SW4	Type of SAMSUNG Air Conditioners
ON	Model numbers AM*****/AA, AC*****/AA
OFF	Model numbers AR*****/AJ*****/AQN36VFUAGM

※ TADPT1 is not compatible with AR**JSALBWKNCV or AR**JSFLBWKNCV.

■ Firmware update

DIP SW1 in BANK 1 : In case of updating firmware, set this dip switch.

DIP SW1	Firmware update
ON	Disable (Default)
OFF	Enable

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■ Fan speed setting for 'G' terminal

DIP SW2 in BANK 1 : Adjust the initial setting (fan speed) according to the following table.

DIP SW2	In case of using 'G' Input
ON	Fan : Auto
OFF	Fan : High (Default)

※ If user wants to set different fan speed such as Mid or Low, Connect the 'G' wires from the thermostat to 'G2(MID)' or 'G1(LOW)' connector in thermostat adaptor.

■ Delayed Off

DIP SW3&4 in BANK 1 : After reaching thermostat set point, the unit will continue to run for a set period of time in order to improve efficiency. The period of time is set by adjusting SW3 & SW4 according to the following table.

DIP SW3	DIP SW4	Delayed Off
ON	ON	1 minutes
ON	OFF	3 minutes
OFF	ON	4 minutes
OFF	OFF	0 minutes (No delay)

■ Fan speed during Delayed Off (Thermo Off)

DIP SW1,2 in BANK 2 : Adjusts the initial setting (fan speed in thermo off for cooling and heating) according to the following table.

DIP SW1	Fan speed in cooling thermo Off
ON	Set by Thermostat adaptor
OFF	Low (Default)
DIP SW2	Fan speed in heating thermo Off
ON	Set by Thermostat adaptor
OFF	Low (Default)

■ Two stage heating option when hydronic or Electric heater uses

DIP SW3&4 in BANK 2 : Adjusts the initial setting (* Note(1) - Set temperature will be based on SW3 in BANK3) according to the following table.

DIP SW3	DIP SW4	Stage 1, 2 Heat sources option
ON	ON	W1 (Stage 1 heat) energized : SAMSUNG AC OFF W2 (Stage 2 heat) energized : SAMSUNG AC OFF
ON	OFF	W1 (Stage 1 heat) energized : SAMSUNG AC OFF W2 (Stage 2 heat) energized : Turn on SAMSUNG AC with Heat Mode *Note(1).
OFF	ON	W1 (Stage 1 heat) energized : Turn on SAMSUNG AC with Fan Mode W2 (Stage 2 heat) energized : Turn on SAMSUNG AC with Heat Mode *Note(1).
OFF (Default)	OFF (Default)	W1 (Stage 1 heat) energized : Turn on SAMSUNG AC with Heat Mode (Default) W2 (Stage 2 heat) energized : Turn on SAMSUNG AC with Heat Mode (Default)

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Emergency Output

DIP SW 1 in **BANK 3** : Adjust the initial setting (EH+/- 24 VAC output) according to the following table.



DIP SW3	EH output
ON	No EH output during error occurs
OFF	EH output will be activate & system operates with fan mode when error occurs during system operate with heating mode (W1/W2)

Set Temperature Setting

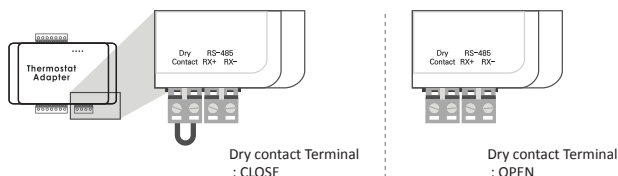
DIP SW2&3 in **BANK 3** : Adjusts the initial 'Set temperature' setting according to the following table.



DIP SW2	Set Temperature in cooling
ON	Y1 / Y2 : 23.3C (74F) / 20.0C (68F)
OFF	Y1 / Y2 : 20.0C (68F) / 17.7C (64F)
DIP SW3	Set Temperature in heating
ON	W1 / W2 : 28.3C (83F) / 30.0C (86F)
OFF	W1 / W2 : 26.1C (79F) / 28.3C (83F)

Dry Contact

Make a closed loop connection in 'Dry contact' terminal, when installing thermostat adaptor.



Dry contact Terminal	State
CLOSE	Air conditioner is available to control.
OPEN	Air conditioner is OFF always.

* If the 'Dry contact' is not used, you must still install a jumper wire.

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4. How to install

[Warning] Thermostat should be configured for use with a conventional system.
(Configure thermostat as electric heater, not heat pump)

1. All wiring shown should be performed with 18 AWG thermostat wire.
2. Terminals on the TADPT1 support 20~30VAC.
3. High/Medium/Low fan signals are optional, and may not be available on all thermostat models.
4. W2 and Y2 signals are optional, and may be omitted for single-stage thermostats.
5. A 24VAC transformer is required and is not included with TADPT1.

[Warning] If TADPT1 does not communicate with SAMSUNG AC,
(RS485 LED will not blink or rarely blink)
Connect enclosed 'Noise filter' to the USB port in Thermostat Adaptor.

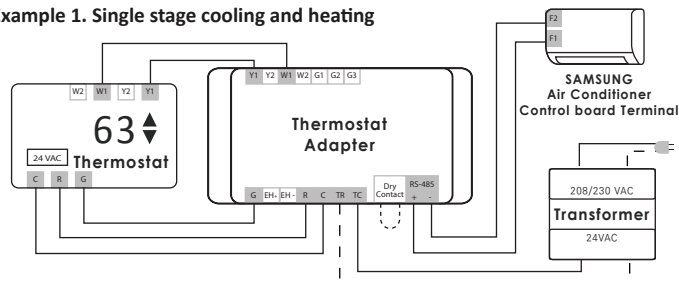
Wire Connections

1. Choose a place where to install the TADPT1. The device provides two mounting holes that can be used 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.
2. Install the transformer, as necessary, per building code and manufacturer's installation instructions.
3. Connect the TADPT1 cable to the terminals F1/F2 on the indoor unit control board.
4. Connect TADPT1 terminals using 18 AWG wire.

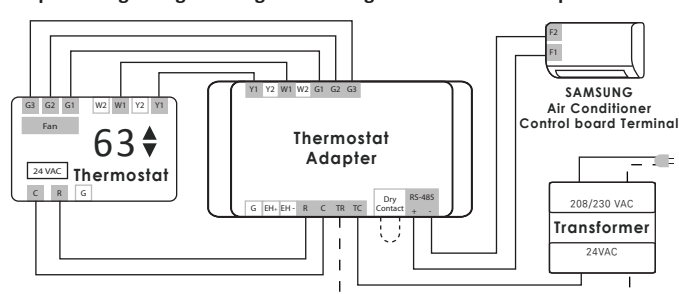
No	Connector	Description
1	Y1	Stage 1 cooling input
2	Y2	Stage 2 cooling input
3	W1	Stage 1 heating input
4	W2	Stage 2 heating input
5	G1	Low Fan input when thermostat has multiple Fan input.
6	G2	Mid Fan input when thermostat has multiple Fan input.
7	G3	High Fan input when thermostat has multiple Fan input.
8	G	Fan
9	EH+	24VAC output
10	EH-	
11	R	24VAC (out) to Thermostat
12	C	Common (out) to Thermostat
13	TR	24VAC (In) from Transformer
14	TC	Common (In) from Transformer
15	Dry Contact	Turn unit ON/OFF with dry contact
16		
17	RS485	Communication port to control indoor unit
18		Connect wires RX+ to F1, RX- to F2 in indoor unit's terminal

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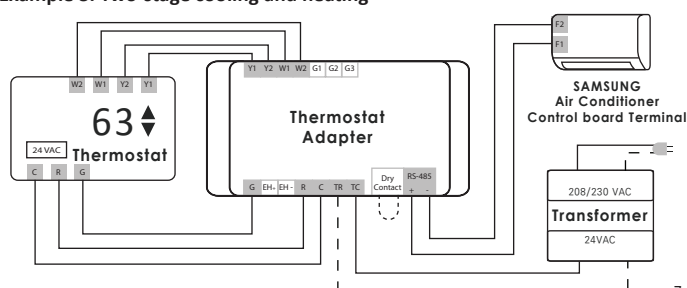
Example 1. Single stage cooling and heating



Example 2. Single stage cooling and heating with dedicated fan speed control



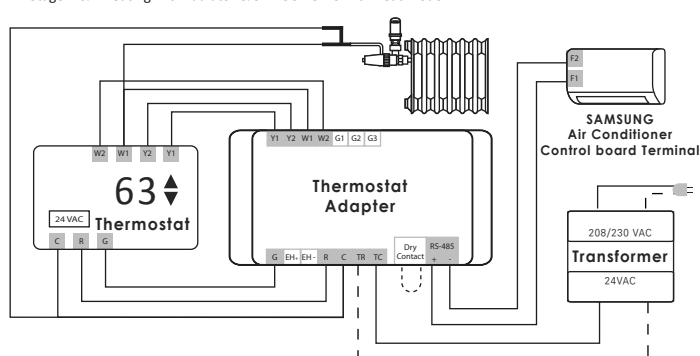
Example 3. Two-stage cooling and heating



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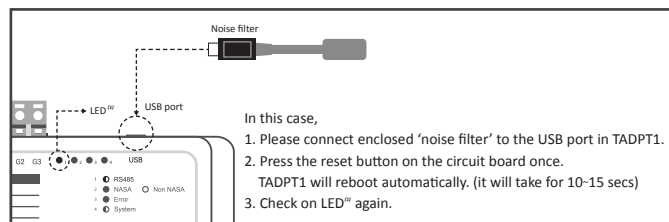
Example 4. Two stage heating with mixed sources

Stage 1 heating with radiator (SAMSUNG AC will not operate).
Stage 1 & 2 heating with radiator & SAMSUNG AC with heat mode.



5. About noise filter

RS485 LEDTM on TADPT1 will not blink or rarely blink, it means that TADPT1 would not communicate with SAMSUNG AC properly.



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TADPT1 Thermostat Adaptor Installation Instructions, Dec. 2016
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