

Auxiliary Heater Control Improvement

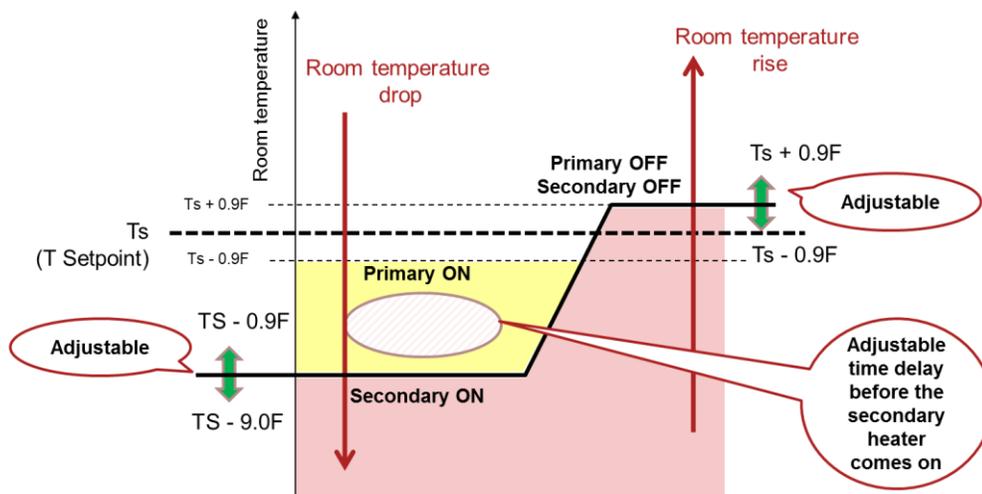
This Application Engineering Bulletin details enhancements made to the auxiliary (secondary) heat control of Airstage indoor units. The 3rd party auxiliary heat source may consist of, but not limited to, a duct mounted hot water coil or electric heat coil, or an airside independent source such as hot water baseboard radiation*. The auxiliary heat source is energized is to be operated through a 3rd party control circuit, via a 12 VDC external output signal from the indoor unit PC board. Please refer to Appendix table 2 for list of function setting.

Auxiliary heat control strategies are selectable by:

1. Auxiliary heater control by set point deviation

Improvement of ON/OFF condition for secondary heater with added control points.

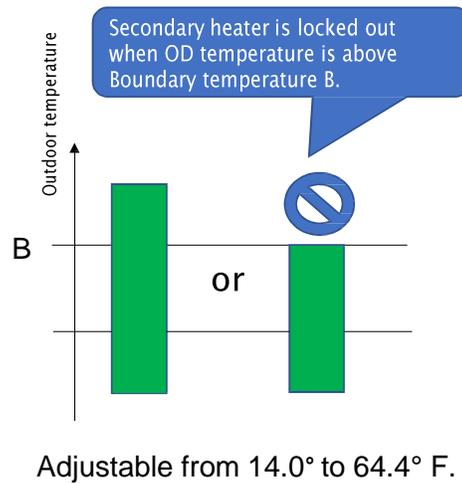
- Adjustable ON/OFF temperature for secondary heater
- Adjustable time delay before the secondary heater is energized.
 - 1-99 minutes (1 min. intervals)



* Indoor fan operation may not be required during auxiliary heat operation, e.g. hot water baseboard. Auxiliary heat fan operation is selectable from the indoor unit PC board DIP switch. See indoor unit Installation Manual for DIP switch setting details.

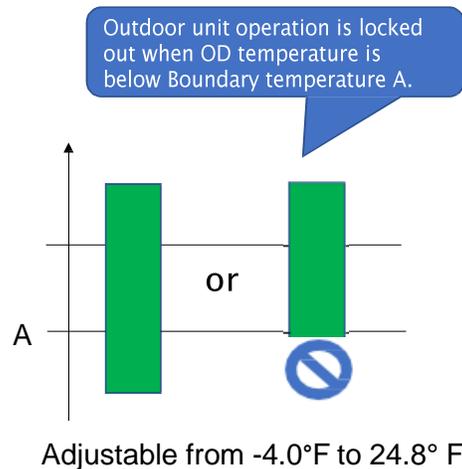
- Auxiliary Heat lockout- Auxiliary heat may be locked out based upon outdoor temperature. This is a balance point setting that will inhibit auxiliary heat operation when the outdoor temperature is above the selectable Boundary Temperature B.

Outdoor temperature zone boundary temperature B	0	0	42.8°F (6°C)	•
	0	1	14.0°F (-10°C)	
	0	2	17.6°F (-8°C)	
	0	3	21.2°F (-6°C)	
	0	4	24.8°F (-4°C)	
	0	5	28.4°F (-2°C)	
	0	6	32.0°F (0°C)	
	0	7	35.6°F (2°C)	
	0	8	39.2°F (4°C)	
	0	9	42.8°F (6°C)	
	1	0	46.4°F (8°C)	
	1	1	50.0°F (10°C)	
	1	2	53.6°F (12°C)	
	1	3	57.2°F (14°C)	
	1	4	60.8°F (16°C)	
	1	5	64.4°F (18°C)	



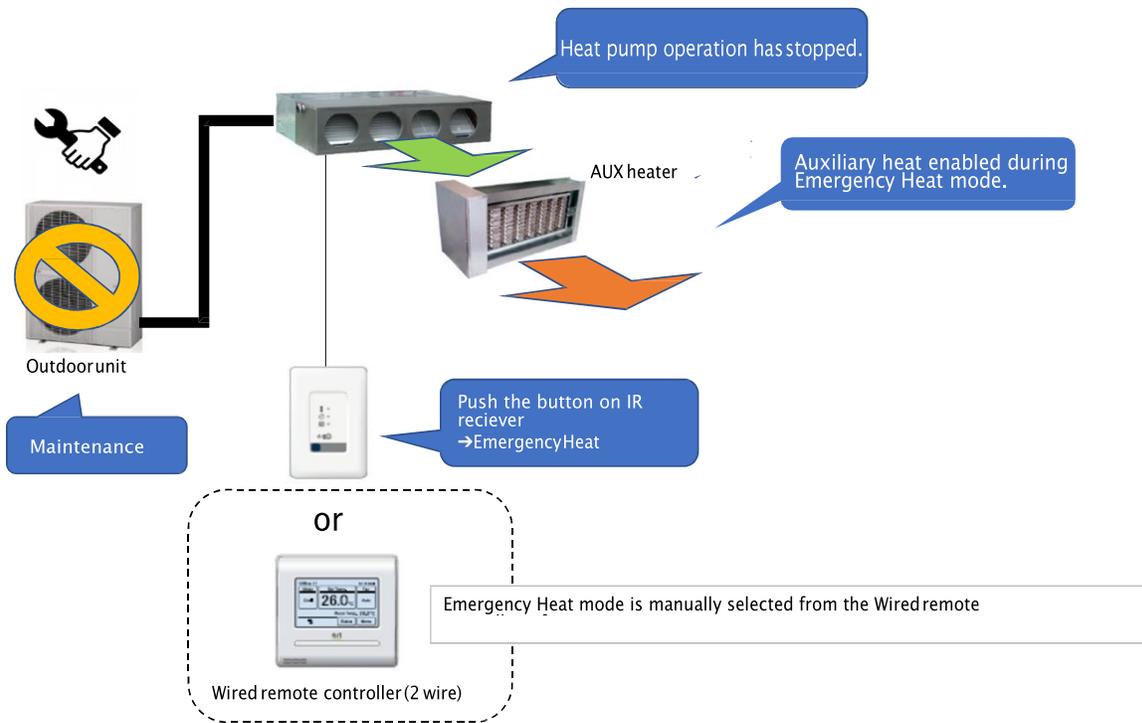
- Heat Pump lockout- Outdoor unit operation may be locked out when the outdoor temperature is below the selectable Boundary Temperature A. Heating will be provided exclusively from the auxiliary heat source.

Outdoor temperature zone boundary temperature A	0	0	-4.0°F (-20°C)	•
	0	1	-0.4°F (-18°C)	
	0	2	3.2°F (-16°C)	
	0	3	6.8°F (-14°C)	
	0	4	10.4°F (-12°C)	
	0	5	14.0°F (-10°C)	
	0	6	17.6°F (-8°C)	
	0	7	21.2°F (-6°C)	
	0	8	24.8°F (-4°C)	



6. Emergency Heat function

In the event the heat pump becomes inoperable, space heating may be provided by the auxiliary heat source only. The Emergency Heat mode is manually selected at the Remote control, where the auxiliary heat is enabled as the exclusive heat source. (Heat pump is locked out)



7. Auxiliary Heat fan OFF delay

When heating operation has stopped, the indoor unit fan will operate until the OFF delay is complete. The delay is selectable between 30 and 60 seconds.

00	1 minute
01	50 seconds
02	40 seconds
03	30 seconds



Brought to you by The Fujitsu logo, consisting of the word "FUJITSU" in a white, sans-serif font with a stylized infinity symbol above the letter "J".

Application Engineering **BULLETIN**

AE031

December 2018

IMPORTANT- Please confirm indoor unit model number to ensure auxiliary heat control compatibility. For complete list of indoor units with new aux heater control, please refer the Appendix.

For complete auxiliary heat wiring details, please see the applicable indoor and outdoor unit Installation Manuals, Design and Technical Manuals, and Service Bulletin S030a, June, 2018.



Application Engineering **BULLETIN**

AE031

December 2018

Appendix

Type	Model name	Serial Number (New AUX heater function)	Service board
Wall mounted	ASUA4TLAV1	T000366	9710744006
	ASUA7TLAV1	T000601	9710744006
	ASUA9TLAV1	T000247	9710744006
	ASUA12TLAV1	000406-	9710873003
	ASUA14TLAV1	000099-	9710873003
	ASUB18TLAV1	000179-	9708981048
	ASUB24TLAV1	000181-	9708981048
	ASUB30TLAV1	T000115	9710649004
Cassette	ASUB36TLAV1	T000232	9710649011
	AUUA4TLAV1	UNB000301	9708970189
	AUUA7TLAV	USA000750	9708970189
	AUUA9TLAV	UTA000822	9708970189
	AUUA12TLAV	UUA000877	9708970189
	AUUA14TLAV	UVA000291	9708970189
	AUUA18TLAV	UWA000438	9708970189
	AUUA24TLAV	UXA000433	9708970189
	AUUB18TLAV1	RTB000071	9710536021
	AUUB24TLAV1	RUB000075	9710536021
	AUUB30TLAV1	RVB000064	9710536021
	AUUB36TLAV1	RWB000071	9710536007
	AUUB48TLAV1	RYB000066	9710536007
Slim Duct	ARUL4TLAV1	VNB326	
	ARUL7TLAV	XNA000523	9708970219
	ARUL9TLAV	XPA000553	9708970219
	ARUL12TLAV	XQA001276	9708970226
	ARUL14TLAV	XRA000577	9708970226
	ARUL18TLAV	XSA000892	9708970233
Duct	ARUM24TLAV	XWA000687	9708970257
	ARUM30TLAV	XXA000501	9708970257
	ARUM36TLAV	XYA000584	9708970257
High static Duct	ARUH36TLAV	T000279	9708970264
	ARUH48TLAV	T000514	9708970264
	ARUH60TLAV	T000521	9708970264
	ARUH72TLAV	T000223	9710054020
	ARUH96TLAV	T000307	9710054020



Application Engineering **BULLETIN**

AE031

December 2018

Ceiling	ABUA12TLAV	T000220	9708970271
	ABUA14TLAV	T000127	9708970271
	ABUA18TLAV	T000204	9708970271
	ABUA24TLAV	T000502	9708970271
	ABUA30TLAV	T000302	9708970288
	ABUA36TLAV	T000152	9708970288
Floor	AGUA4TLAV1	000160-	9710646003
	AGUA7TLAV1	000151-	9710646003
	AGUA9TLAV1	000146-	9710646003
	AGUA12TLAV1	000141-	9710646003
	AGUA14TLAV1	000126-	9710646003
Vertical Air Handler Units	ARUV12TLAV	Not in production yet	9710154041
	ARUV18TLAV	Not in production yet	9710154041
	ARUV24TLAV	AQB000200	9710154041
	ARUV30TLAV	Not in production yet	9710154041
	ARUV36TLAV	Not in production yet	9710154041
	ARUV48TLAV	Not in production yet	9710154041
	ARUV60TLAV	Not in production yet	9710154041

Outdoor unit	Push-SW	F2-36	Outdoor temperature zone boundary temperature A	Same as current control
		F2-37	Outdoor temperature zone boundary temperature B	Same as current control
Indoor unit	Dip-SW	2-3	Indoor unit fan setting for external heater	Same as current control
	Function setting	61	Control switching of external heaters	Add pattern
		62	Operation temperature switching of external heaters	Add pattern
		71	Standby time for auxiliary equipment operation	New
		73	Emergency heat	New
		74	Fan delay time	New
		75	External Heater use in defrosting	New

STEP1. Dip-SW 2-3 setting for indoor unit

Select the type for AUX heater. Ducted type (It is installed to outlet of indoor unit) or Baseboard type (It is not installed to outlet of indoor unit).

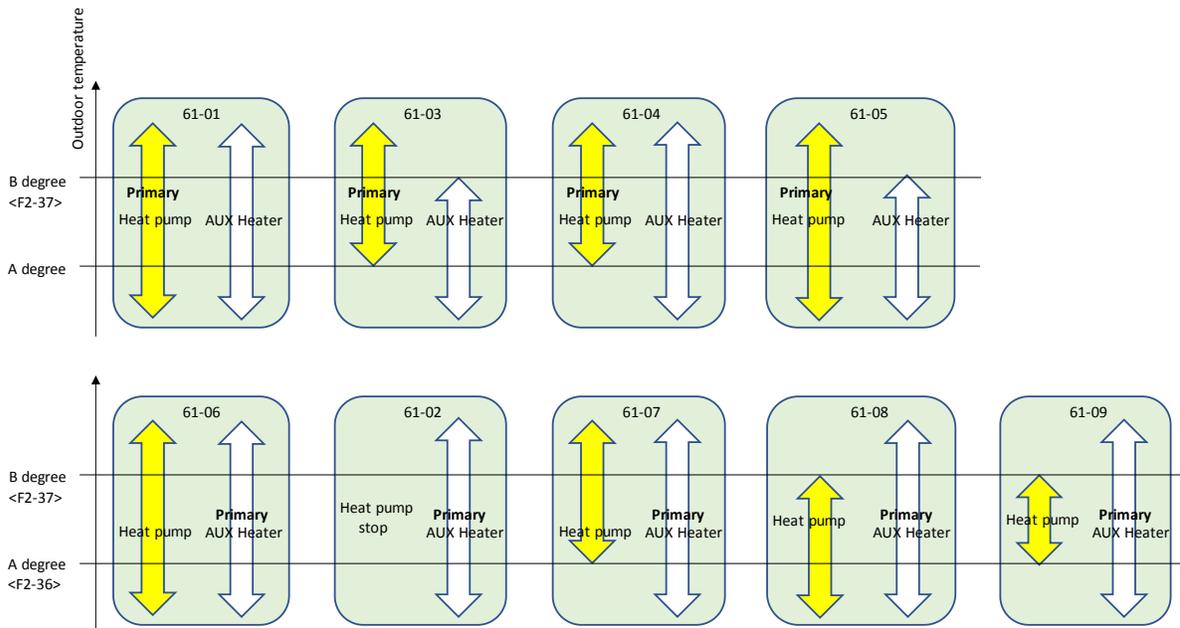
Whether use the indoor unit fan for AUX heater heating.

Ducted type SET2-3: ON

Baseboard type SET2-3: OFF

STEP2. Control switching of external heaters "61" setting

Select primary heater and control pattern by outdoor temperature.



Note - "61-00" control is for Europe. Pattern 61-1 and AUX heater will stop in low indoor temperature.

STEP3. Adjustment for A and B degree. (When the control pattern by the outdoor air temperature is selected (STEP2)).

A degree: Outdoor unit F2-36

B degree: Outdoor unit F2-37

Application Engineering **BULLETIN**

AE031

December 2018

STEP4. AUX heater thermostat control adjustment

select operation of the AUX heater thermostat control by room temperature.

Standby time for auxiliary equipment operation	71	00	Disable	●
		01	1 minute	
		02	2 minutes	
		.	.	.
		.	.	.
		.	.	.
		98	98 minutes	
		99	99 minutes	

STEP5. Select function to use

Emergency heat: Indoor unit function "73"

Emergency heat by ducted indoor unit type. please obtain IR receiver unit (also AUUB). During heating operation, you can operate Emergency heat by pressing the button on IR receiver and push again to reset it).

Fan delay time: Indoor unit function "74"

Fan delay time runs fan for by selected time after thermostat calls for heater off or operation stop.

External Heater use in defrosting: Indoor unit function "75"

Emergency heat	73	00	Disable	●	Enables or disable of emergency heat input
		01	Enable		
Fan delay time	74	00	1 minute	●	Sets the fan delay time when the heater is turned off.
		01	50 seconds		
		02	40 seconds		
		03	30 seconds		
*2 External heater use in defrosting	75	00	Disable	●	Enables or disables the external heater use in defrosting.
		01	Enable		

*1: Function number 68 and 69 will be usable provided that the corresponding operating device is connected.