



Electric Heat Accessory for Split Systems Packaged Air-Handling Units Select 6 to 10 Tons (21 to 35 kW) 50/60 Hz

Installation Instructions

Part Numbers CAELHEAT050A00 - CAELHEAT064A00

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IMPORTANT: Read these instructions completely before attempting to install the electric heat accessory.

SAFETY CONSIDERATIONS

Installation and servicing of air-conditioning equipment can be hazardous due to system pressure and electrical components. Only trained and qualified service personnel should install, repair, or service air-conditioning equipment.

Untrained personnel can perform basic maintenance functions of cleaning coils and filters and replacing filters. All other operations should be performed by trained service personnel. When working on air-conditioning equipment, observe precautions in the literature, tags and labels attached to the unit, and other safety precautions that may apply.

Follow all safety codes, including ANSI (American National Standards Institute) Z223.1. Wear safety glasses and work gloves. Use quenching cloth for unbrazing operations. Have fire extinguisher available for all brazing operations.

It is important to recognize safety information. This is the safety-alert symbol . When you see this symbol on the unit and in instructions or manuals, be alert to the potential for personal injury.

Understand the signal words DANGER, WARNING, CAUTION, and NOTE. These words are used with the safety-alert symbol. DANGER identifies the most serious hazards which **will** result in severe personal injury or death. WARNING signifies hazards which **could** result in personal injury or death. CAUTION is used to identify unsafe practices, which **may** result in minor personal injury or product and property damage. NOTE is used to highlight suggestions which **will** result in enhanced installation, reliability, or operation.

WARNING

ELECTRICAL SHOCK HAZARD

Failure to follow this warning could cause personal injury or death.

Open and tag all disconnects before installing this equipment.

WARNING

PERSONAL INJURY HAZARD

Failure to follow this warning could cause personal injury.

Units equipped with the electric heat accessory may **NOT** use the discharge plenum accessory.

CAUTION

For safety, the ground lug torque for the ground wire must be 50 in.-lb (± 5 in.-lb).

GENERAL

The electric heater accessories are available for 6 to 10 ton (21 to 35 kW) packaged air handlers and have nominal ratings of 5 to 35 kW. The heaters have a multi-stage, open-wire design and are mounted in a rigid frame. Safety cutouts for high temperature conditions are standard. Contactors and pilot duty switches are factory-installed with the capability to wire indoor-fan motors for single-point electrical connections. See Tables 1-2 for electrical data and unit application and Table 3 for heater equivalency.

Table 1 — 40RF/40RL/40RLQ/524F/524L/524H/F*X/FAL/FHL, 6-10 Ton 60 Hz Electrical Heater Data^{a,b,c}

UNIT	NOMINAL VOLTS	IFM TYPE	UNIT VOLTAGE		FAN MOTOR (QTY 1)			ELECTRIC HEATER(S) ^d							POWER SUPPLY ^e	
			RANGE		HP	kW	FLA	CAELHEAT ****00	Heater Voltage	Nom. Cap. (kW)	Actual Capacity (kW)			FLA	MCA	MOCP
			Min	Max							Stage 1	Stage 2	Total			
40RF**07 40RL**07 40RLQ**07 524F*07 524L*07 524H*07 F*X072 FAL072 FHL072	208/230	Med	187	253	2.4	1.76	6.4/5.8	050A	208/240	5	3.8/5.0	—	3.8/5.0	10.4/12.0	21.0/22.3	25/25
			187	253	2.4	1.76	6.4/5.8	052A	208/240	10	7.5/10.0	—	7.5/10.0	20.8/24.1	34.0/37.4	35/40
			187	253	2.4	1.76	6.4/5.8	055A	208/240	15	11.3/15.0	—	11.3/15.0	31.3/36.1	47.1/52.4	50/60
			187	253	2.4	1.76	6.4/5.8	058A	208/240	25	11.3/15.0	7.5/10.0	18.8/25.0	52.1/60.1	73.1/82.4	80/90
		High	187	253	3.0	2.24	7.5/6.7	050A	208/240	5	3.8/5.0	—	3.8/5.0	10.4/12.0	22.4/23.4	25/25
			187	253	3.0	2.24	7.5/6.7	052A	208/240	10	7.5/10.0	—	7.5/10.0	20.8/24.1	35.4/38.5	40/40
			187	253	3.0	2.24	7.5/6.7	055A	208/240	15	11.3/15.0	—	11.3/15.0	31.3/36.1	48.5/53.5	50/60
			187	253	3.0	2.24	7.5/6.7	058A	208/240	25	11.3/15.0	7.5/10.0	18.8/25.0	52.1/60.1	74.5/83.5	80/90
			187	253	3.0	2.24	7.5/6.7	058A	208/240	25	11.3/15.0	7.5/10.0	18.8/25.0	52.1/60.1	74.5/83.5	80/90
	460	Med	414	506	2.4	1.76	3.0	051A	480	5	5.0	—	5.0	6.0	11.3	15
			414	506	2.4	1.76	3.0	053A	480	10	10.0	—	10.0	12.0	18.8	20
			414	506	2.4	1.76	3.0	056A	480	15	15.0	—	15.0	18.0	26.3	30
			414	506	2.4	1.76	3.0	059A	480	25	15.0	10.0	25.0	30.1	41.4	50
		High	414	506	3.0	2.24	3.5	051A	480	5	5.0	—	5.0	6.0	11.9	15
			414	506	3.0	2.24	3.5	053A	480	10	10.0	—	10.0	12.0	19.4	20
			414	506	3.0	2.24	3.5	056A	480	15	15.0	—	15.0	18.0	26.9	30
			414	506	3.0	2.24	3.5	059A	480	25	15.0	10.0	25.0	30.1	42.0	50
			414	506	3.0	2.24	3.5	059A	480	25	15.0	10.0	25.0	30.1	42.0	50
	575	Med	518	632	2.4	1.76	2.5	064A	575	5	5.0	—	5.0	4.8	9.1	15
			518	632	2.4	1.76	2.5	054A	575	10	10.0	—	10.0	9.6	15.1	20
			518	632	2.4	1.76	2.5	057A	575	15	15.0	—	15.0	14.4	21.1	25
			518	632	2.4	1.76	2.5	060A	575	25	15.0	10.0	25.0	24.1	33.3	35
		High	518	632	3.0	2.24	3.0	064A	575	5	5.0	—	5.0	4.8	9.8	15
			518	632	3.0	2.24	3.0	054A	575	10	10.0	—	10.0	9.6	15.8	20
			518	632	3.0	2.24	3.0	057A	575	15	15.0	—	15.0	14.4	21.8	25
			518	632	3.0	2.24	3.0	060A	575	25	15.0	10.0	25.0	24.1	33.9	35
			518	632	3.0	2.24	3.0	060A	575	25	15.0	10.0	25.0	24.1	33.9	35
40RF**08 40RL**08 40RLQ**08 524F*08 524L*08 524H*08 F*X091 FAL091 FHL091	208/230	Med	187	253	2.4	1.76	6.4/5.8	050A	208/240	5	3.8/5.0	—	3.8/5.0	10.4/12.0	21.0/22.3	25/25
			187	253	2.4	1.76	6.4/5.8	052A	208/240	10	7.5/10.0	—	7.5/10.0	20.8/24.1	34.0/37.4	35/40
			187	253	2.4	1.76	6.4/5.8	055A	208/240	15	11.3/15.0	—	11.3/15.0	31.3/36.1	47.1/52.4	50/60
			187	253	2.4	1.76	6.4/5.8	058A	208/240	25	11.3/15.0	7.5/10.0	18.8/25.0	52.1/60.1	73.1/82.4	80/90
		High	187	253	2.4	1.76	6.4/5.8	061A	208/240	32	12.0/16.0	12.0/16.0	24.0/32.0	66.7/77.0	91.4/103.5	100/110
			187	253	3.0	2.24	7.5/6.7	050A	208/240	5	3.8/5.0	—	3.8/5.0	10.4/12.0	22.4/23.4	25/25
			187	253	3.0	2.24	7.5/6.7	052A	208/240	10	7.5/10.0	—	7.5/10.0	20.8/24.1	35.4/38.5	40/40
			187	253	3.0	2.24	7.5/6.7	055A	208/240	15	11.3/15.0	—	11.3/15.0	31.3/36.1	48.5/53.5	50/60
			187	253	3.0	2.24	7.5/6.7	058A	208/240	25	11.3/15.0	7.5/10.0	18.8/25.0	52.1/60.1	74.5/83.5	80/90
	460	Med	187	253	3.0	2.24	7.5/6.7	061A	208/240	32	12.0/16.0	12.0/16.0	24.0/32.0	66.7/77.0	92.8/104.6	100/110
			414	506	2.4	1.76	3.0	051A	480	5	5.0	—	5.0	6.0	11.3	15
			414	506	2.4	1.76	3.0	053A	480	10	10.0	—	10.0	12.0	18.8	20
			414	506	2.4	1.76	3.0	056A	480	15	15.0	—	15.0	18.0	26.3	30
			414	506	2.4	1.76	3.0	059A	480	25	15.0	10.0	25.0	30.1	41.4	50
		High	414	506	2.4	1.76	3.0	062A	480	35	20.0	15.0	35.0	42.1	56.4	60
			414	506	3.0	2.24	3.5	051A	480	5	5.0	—	5.0	6.0	11.9	15
			414	506	3.0	2.24	3.5	053A	480	10	10.0	—	10.0	12.0	19.4	20
			414	506	3.0	2.24	3.5	056A	480	15	15.0	—	15.0	18.0	26.9	30
			414	506	3.0	2.24	3.5	059A	480	25	15.0	10.0	25.0	30.1	42.0	50
	575	Med	414	506	3.0	2.24	3.5	062A	480	35	20.0	15.0	35.0	42.1	57.0	60
			518	632	2.4	1.76	2.5	064A	575	5	5.0	—	5.0	4.8	9.1	15
			518	632	2.4	1.76	2.5	054A	575	10	10.0	—	10.0	9.6	15.1	20
			518	632	2.4	1.76	2.5	057A	575	15	15.0	—	15.0	14.4	21.1	25
		High	518	632	2.4	1.76	2.5	060A	575	25	15.0	10.0	25.0	24.1	33.3	35
			518	632	2.4	1.76	2.5	063A	575	35	20.0	15.0	35.0	33.7	45.3	50
			518	632	3.0	2.24	3.0	064A	575	5	5.0	—	5.0	4.8	9.8	15
			518	632	3.0	2.24	3.0	054A	575	10	10.0	—	10.0	9.6	15.8	20
			518	632	3.0	2.24	3.0	057A	575	15	15.0	—	15.0	14.4	21.8	25
			518	632	3.0	2.24	3.0	060A	575	25	15.0	10.0	25.0	24.1	33.9	35
			518	632	3.0	2.24	3.0	063A	575	35	20.0	15.0	35.0	33.7	45.9	50

Table 1 — 40RF/40RL/40RLQ/524F/524L/524H/F*X/FAL/FHL, 6-10 Ton 60 Hz Electrical Heater Data^{a,b,c} (cont)

UNIT	NOMINAL VOLTS	IFM TYPE	UNIT VOLTAGE RANGE		FAN MOTOR (QTY 1)			ELECTRIC HEATER(S) ^d							POWER SUPPLY ^e	
			Min	Max	HP	kW	FLA	CAELHEAT ****00	Heater Voltage	Nom. Cap. (kW)	Actual Capacity (kW)			FLA	MCA	MOCP
											Stage 1	Stage 2	Total			
40RF**12 40RL**12 40RLQ**12 524F**12 524L**12 524H**12 F*X120 FAL120 FHL120	208/230	Med	187	253	2.4	1.76	6.4/5.8	050A	208/240	5	3.8/5.0	—	3.8/5.0	10.4/12.0	21.0/22.3	25/25
			187	253	2.4	1.76	6.4/5.8	052A	208/240	10	7.5/10.0	—	7.5/10.0	20.8/24.1	34.0/37.4	35/40
			187	253	2.4	1.76	6.4/5.8	055A	208/240	15	11.3/15.0	—	11.3/15.0	31.3/36.1	47.1/52.4	50/60
			187	253	2.4	1.76	6.4/5.8	058A	208/240	25	11.3/15.0	7.5/10.0	18.8/25.0	52.1/60.1	73.1/82.4	80/90
			187	253	2.4	1.76	6.4/5.8	061A	208/240	32	12.0/16.0	12.0/16.0	24.0/32.0	66.7/77.0	91.4/103.5	100/110
		High	187	253	3.0	2.24	7.5/6.7	050A	208/240	5	3.8/5.0	—	3.8/5.0	10.4/12.0	22.4/23.4	25/25
			187	253	3.0	2.24	7.5/6.7	052A	208/240	10	7.5/10.0	—	7.5/10.0	20.8/24.1	35.4/38.5	40/40
			187	253	3.0	2.24	7.5/6.7	055A	208/240	15	11.3/15.0	—	11.3/15.0	31.3/36.1	48.5/53.5	50/60
			187	253	3.0	2.24	7.5/6.7	058A	208/240	25	11.3/15.0	7.5/10.0	18.8/25.0	52.1/60.1	74.5/83.5	80/90
			187	253	3.0	2.24	7.5/6.7	061A	208/240	32	12.0/16.0	12.0/16.0	24.0/32.0	66.7/77.0	92.8/104.6	100/110
	460	Med	414	506	2.4	1.76	3.0	051A	480	5	5.0	—	5.0	6.0	11.3	15
			414	506	2.4	1.76	3.0	053A	480	10	10.0	—	10.0	12.0	18.8	20
			414	506	2.4	1.76	3.0	056A	480	15	15.0	—	15.0	18.0	26.3	30
			414	506	2.4	1.76	3.0	059A	480	25	15.0	10.0	25.0	30.1	41.4	50
			414	506	2.4	1.76	3.0	062A	480	35	20.0	15.0	35.0	42.1	56.4	60
		High	414	506	3.0	2.24	3.5	051A	480	5	5.0	—	5.0	6.0	11.9	15
			414	506	3.0	2.24	3.5	053A	480	10	10.0	—	10.0	12.0	19.4	20
			414	506	3.0	2.24	3.5	056A	480	15	15.0	—	15.0	18.0	26.9	30
			414	506	3.0	2.24	3.5	059A	480	25	15.0	10.0	25.0	30.1	42.0	50
			414	506	3.0	2.24	3.5	062A	480	35	20.0	15.0	35.0	42.1	57.0	60
	575	Med	518	632	2.4	1.76	2.5	064A	575	5	5.0	—	5.0	4.8	9.1	15
			518	632	2.4	1.76	2.5	054A	575	10	10.0	—	10.0	9.6	15.1	20
			518	632	2.4	1.76	2.5	057A	575	15	15.0	—	15.0	14.4	21.1	25
			518	632	2.4	1.76	2.5	060A	575	25	15.0	10.0	25.0	24.1	33.3	35
			518	632	2.4	1.76	2.5	063A	575	35	20.0	15.0	35.0	33.7	45.3	50
		High	518	632	3.0	2.24	3.0	064A	575	5	5.0	—	5.0	4.8	9.8	15
			518	632	3.0	2.24	3.0	054A	575	10	10.0	—	10.0	9.6	15.8	20
			518	632	3.0	2.24	3.0	057A	575	15	15.0	—	15.0	14.4	21.8	25
			518	632	3.0	2.24	3.0	060A	575	25	15.0	10.0	25.0	24.1	33.9	35
			518	632	3.0	2.24	3.0	063A	575	35	20.0	15.0	35.0	33.7	45.9	50

NOTE(S):

- Electrical resistance heaters are rated at 240-v, 480-v, 575-v. To determine heater capacity (kW) at unit nameplate multiply the 240-v, 480-v, or 575-v capacity (kW) by the factor shown in the table below for the unit voltage.
- The following equation converts kW of heat energy to Btuh: kW x 3412 = Btuh.
- Heater contactor coils are 24v and require 8va holding current.
- Electric heaters are tested and UL approved at maximum total external static pressure of 1.9 in. wg.
- MCA and MOCP Values shown are for single-point connection of electric heat accessory and air handler.

HEATER RATING VOLTAGE	ACTUAL HEATER VOLTAGE AT SITE										
	200	208	230	240	400	440	460	480	550	575	600
240	0.694	0.751	0.918	1	—	—	—	—	—	—	—
480	—	—	—	—	0.694	0.84	0.918	1	—	—	—
575	—	—	—	—	—	—	—	—	0.915	1	1.089

LEGEND

- FLA** — Full Load Amps
MCA — Minimum Circuit Amps
MOCP — Maximum Overcurrent Protection (amps)

Table 2 — 40RF/40RL/40RLQ/524F/524L/524H/F*X/FAL/FHL, 6-10 Ton 50 Hz Electrical Heater Data^{a,b}

UNIT	NOMINAL VOLTS	IFM TYPE	UNIT VOLTAGE		FAN MOTOR (QTY 1)			ELECTRIC HEATER(S) ^c							POWER SUPPLY ^d	
			RANGE		HP	kW	FLA	CAELHEAT ****00	Heater Voltage	Nom. Cap. (kW)	Actual Capacity (kW)			FLA	MCA	MOCP
			Min	Max							Stage 1	Stage 2	Total			
40RF**07 40RL**07 40RLQ**07 524F*07 524L*07 524H*07 F*X072 FAL072 FHL072	400	Med	360	440	2.4	1.76	3.0	051A	400	5	3.5	—	3.5	5.0	10.0	15
			360	440	2.4	1.76	3.0	053A	400	10	6.9	—	6.9	10.0	16.3	20
			360	440	2.4	1.76	3.0	056A	400	15	10.4	—	10.4	15.0	22.5	25
		High	360	440	2.4	1.76	3.0	059A	400	25	10.4	7.0	17.4	25.1	35.1	40
			360	440	3.0	2.24	3.5	051A	400	5	3.5	—	3.5	5.0	10.6	15
			360	440	3.0	2.24	3.5	053A	400	10	6.9	—	6.9	10.0	16.9	20
			360	440	3.0	2.24	3.5	056A	400	15	10.4	—	10.4	15.0	23.1	25
			360	440	3.0	2.24	3.5	059A	400	25	10.4	7.0	17.4	25.1	35.8	40
			360	440	3.0	2.24	3.5	062A	400	35	13.9	10.4	24.3	35.1	48.3	50
40RF**08 40RL**08 40RLQ**08 524F*08 524L*08 524H*08 F*X091 FAL091 FHL091	400	Med	360	440	2.4	1.76	3.0	051A	400	5	3.5	—	3.5	5.0	10.0	15
			360	440	2.4	1.76	3.0	053A	400	10	6.9	—	6.9	10.0	16.3	20
			360	440	2.4	1.76	3.0	056A	400	15	10.4	—	10.4	15.0	22.5	25
		High	360	440	2.4	1.76	3.0	059A	400	25	10.4	7.0	17.4	25.1	35.1	40
			360	440	2.4	1.76	3.0	062A	400	35	13.9	10.4	24.3	35.1	47.6	50
			360	440	3.0	2.24	3.5	051A	400	5	3.5	—	3.5	5.0	10.6	15
			360	440	3.0	2.24	3.5	053A	400	10	6.9	—	6.9	10.0	16.9	20
			360	440	3.0	2.24	3.5	056A	400	15	10.4	—	10.4	15.0	23.1	25
			360	440	3.0	2.24	3.5	059A	400	25	10.4	7.0	17.4	25.1	35.8	40
			360	440	3.0	2.24	3.5	062A	400	35	13.9	10.4	24.3	35.1	48.3	50
40RF**12 40RL**12 40RLQ**12 524F*12 524L*12 524H*12 F*X120 FAL120 FHL120	400	Med	360	440	2.4	1.76	3.0	051A	400	5	3.5	—	3.5	5.0	10.0	15
			360	440	2.4	1.76	3.0	053A	400	10	6.9	—	6.9	10.0	16.3	20
			360	440	2.4	1.76	3.0	056A	400	15	10.4	—	10.4	15.0	22.5	25
		High	360	440	2.4	1.76	3.0	059A	400	25	10.4	7.0	17.4	25.1	35.1	40
			360	440	2.4	1.76	3.0	062A	400	35	13.9	10.4	24.3	35.1	47.6	50
			360	440	3.0	2.24	3.5	051A	400	5	3.5	—	3.5	5.0	10.6	15
			360	440	3.0	2.24	3.5	053A	400	10	6.9	—	6.9	10.0	16.9	20
			360	440	3.0	2.24	3.5	056A	400	15	10.4	—	10.4	15.0	23.1	25
			360	440	3.0	2.24	3.5	059A	400	25	10.4	7.0	17.4	25.1	35.8	40
			360	440	3.0	2.24	3.5	062A	400	35	13.9	10.4	24.3	35.1	48.3	50

NOTE(S):

- The following equation converts kW of heat energy to Btuh: kW x 3412 = Btuh.
- Heater contactor coils are 24v and require 8va holding current.
- Electric heaters are tested and UL approved at maximum total external static pressure of 1.9 in. wg.
- MCA and MOCP Values shown are for single-point connection of electric heat accessory and air handler.

LEGEND

- FLA** — Full Load Amps
MCA — Minimum Circuit Amps
MOCP — Maximum Overcurrent Protection (amps)

Table 3 — Heater Equivalency Table

V-Ph-Hz	kW	40RF/40RL/40RLQ 524F/524L/524H F*X/FAL/FHL ELECTRIC HEATER PART NO.
240-3-60	5.0	CAELHEAT050A00
	10.0	CAELHEAT052A00
	15.0	CAELHEAT055A00
	25.0	CAELHEAT058A00
	32.0	CAELHEAT061A00
400-3-50	3.5	CAELHEAT051A00
	7.0	CAELHEAT053A00
	10.5	CAELHEAT056A00
	17.5	CAELHEAT059A00
	25.0	CAELHEAT062A00
480-3-60	5.0	CAELHEAT051A00
	10.0	CAELHEAT053A00
	15.0	CAELHEAT056A00
	25.0	CAELHEAT059A00
	35.0	CAELHEAT062A00
575-3-60	5.0	CAELHEAT064A00
	10.0	CAELHEAT054A00
	15.0	CAELHEAT057A00
	25.0	CAELHEAT060A00
	35.0	CAELHEAT063A00

The electric heat accessory can be used in vertical applications or horizontally suspended applications. For all applications, the installer must allow adequate clearance for access to the heater control box.

PRE-INSTALLATION

Uncrate and Inspect Shipment

Remove unit packaging and inspect shipment for damage. File claim with shipping company if unit is damaged or incomplete.

Consider System Requirements

Consult local building and electrical codes and the NEC (National Electrical Code, U.S.A.) for special installation requirements.

Allow sufficient clearance around the heater for airflow, wiring, and service after mounting on the base unit. Use the minimum clearances shown in Fig. 2. Note that the rear clearance for base units with heaters must be increased from that of base units without heaters to allow access to the heater limit switches.

IMPORTANT: When the electric heater accessory is used on air-handling units in heat pump systems, the minimum airflow requirement through the heater is 400 cfm per ton (54 L/s per kW).

INSTALLATION

Mount Heater

The heaters must be mounted on the supply duct(s) of the air handler for blow-thru operation, as shown in Fig. 1 and 2. Do not install the duct flanges shipped with the unit. Mount the heater as follows:

1. Remove screws from fan deck surrounding the blower outlets (supply ducts). Retain screws.
2. Place heater on top of unit with the heater control box positioned on the left. See Fig. 1 and 2.
3. Reinstall screws through the heater frame's inner flanges and into the fan deck. Tighten screws.

NOTE: Figures 1 and 2 shows vertical installations. For horizontal unit installations, the procedure for mounting the electric heat accessory is similar to the preceding steps; ensure that the heater control box faces down after the heater is installed on the unit.

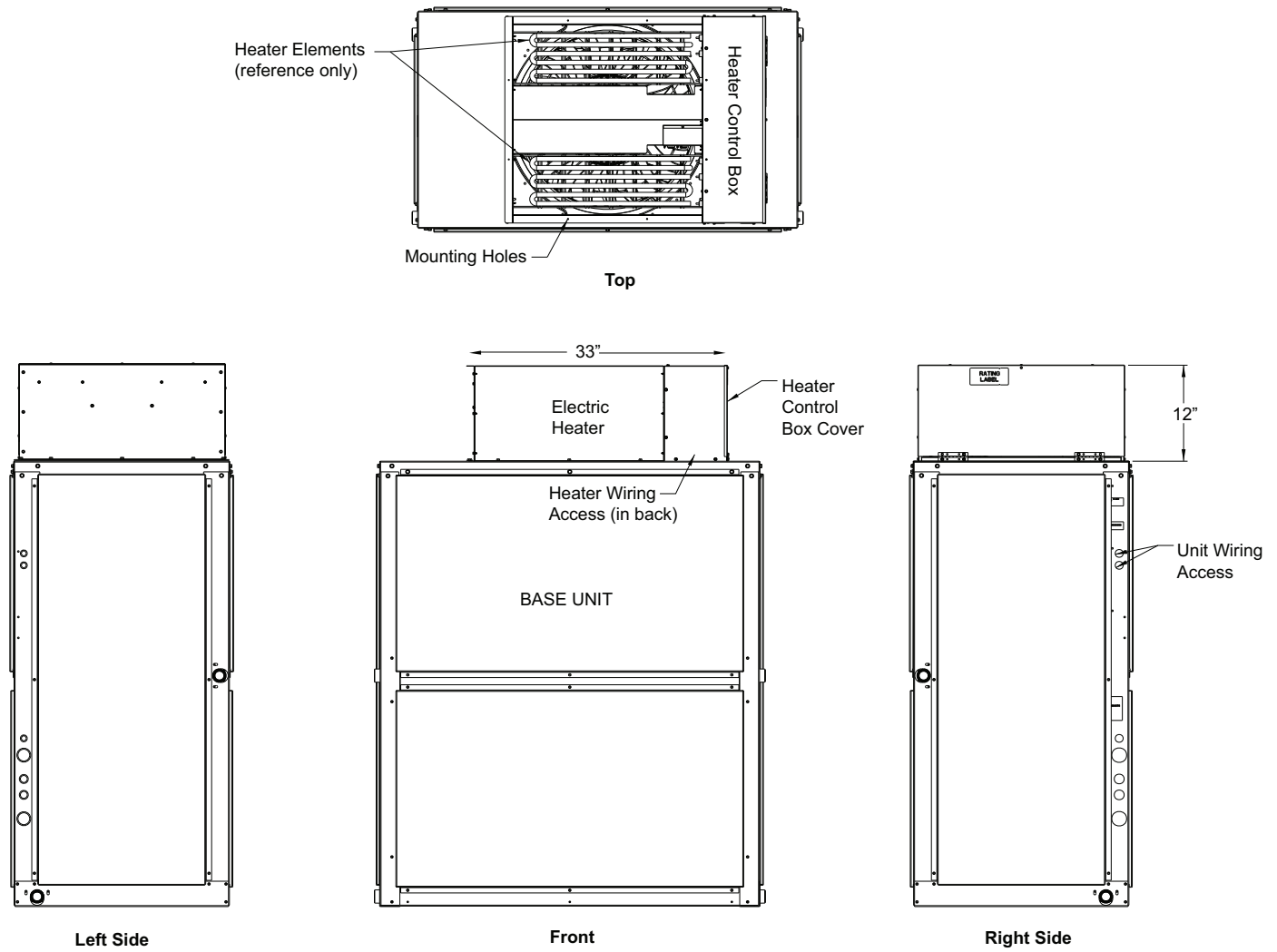


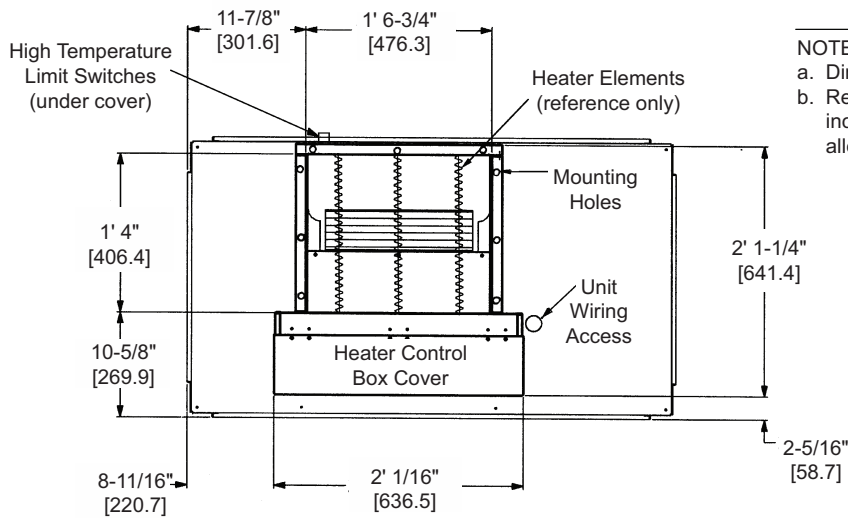
Fig. 1 — Electric Heater Mounted on Unit

Recommended
Unit Service Clearances^{a,b}

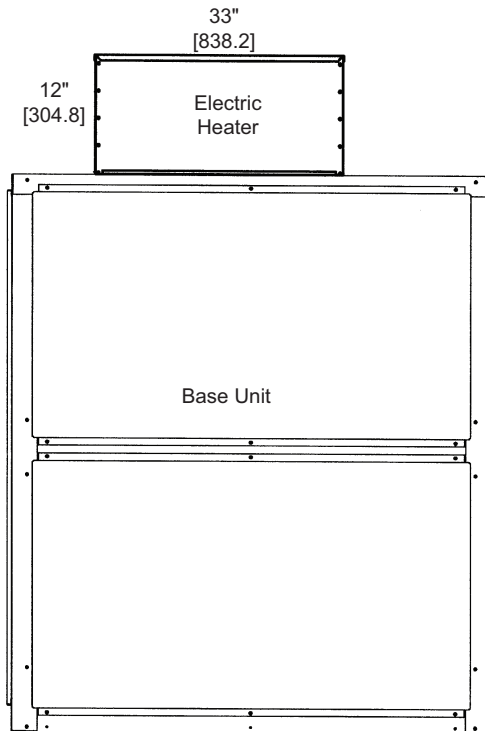
Front	2' 6" [762]
Rear ^b	2' 6" [762]
Right Side	2' 6" [762]
Left Side	2' 6" [762]

NOTE(S):

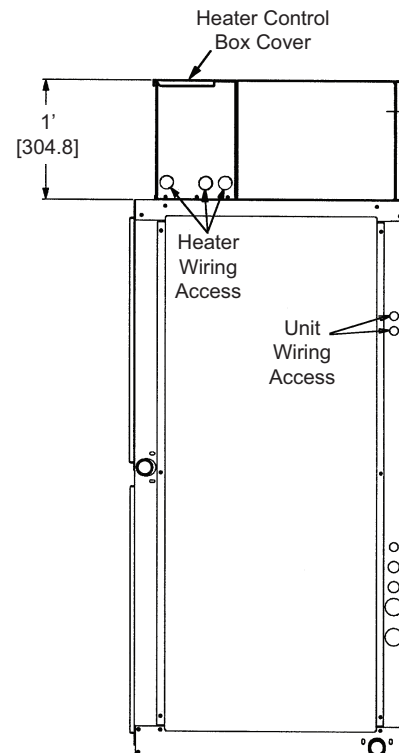
- Dimensions in [] are millimeters.
- Rear clearance for base units with heaters must be increased from that of base units without heaters to allow service access.



Top



Front



Right Side

Fig. 2 — Electric Heater Accessory - 6 to 10 Tons (21-35 kW)

Connect Ductwork

Connect supply duct to the unit and heater assembly as follows:

1. Size the supply air ductwork according to the discharge opening(s) in the top of the heater (see Fig. 1 and 2). A 1 in. (25 mm) flange is provided on each heater discharge for securing the ductwork.
2. Connect the supply ductwork to the heater discharge openings in the top of the heater using field-supplied screws. A flexible duct connector is recommended. Provide an access panel in the supply duct to allow service access to the heater elements.
3. Insulate the outside of the heater (Fig. 3) except the control box, which has internal insulation. Insulation is required to minimize condensation when the unit is in the Cooling mode and to provide additional protection from hot surfaces when the unit is in the Heating mode. Also insulate the supply duct connected to the heater as required by the base unit installation instructions.

Make Electrical Connections

Refer to Fig. 4 for wire routing, Fig. 5-8 for typical heater wiring, and Fig. 9 for typical heater control box component layouts for connections. Wire the electric heater and unit assembly as follows:

1. Remove heater control box cover and unit side access panel.

2. Using correctly sized field-supplied power wire selected from Tables 1-2 and matching conduit, connect heater terminals TB1-L1, L2, and L3 through heater control box to fused disconnect as shown in Fig. 4.
3. Using correctly sized field-supplied power wire selected from Tables 1-2 and matching conduit, run wire from heater to opening in top of unit fan deck or openings in corner post.
4. Run field-supplied control wiring through heater control box to opening in top of unit fan deck or openings in corner post.
5. Run power wiring (see Step 3) inside unit through access hole in bottom of unit control box. Remove unit control box cover.
6. Connect heater terminals TB1-L1, L2, and L3 to unit circuit breaker or fan contactor terminals 11, 12, and 13 using no. 10 ring terminals. (See Fig. 5-7.)
7. Connect control wiring (see Step 4) from heater terminal connections 24V, W1, W2, and C to the unit's Indoor Connection Board (IDCB) terminal strip terminals with the same labels, as shown in Fig. 8.
8. Re-install heater control box panel and unit side panel.

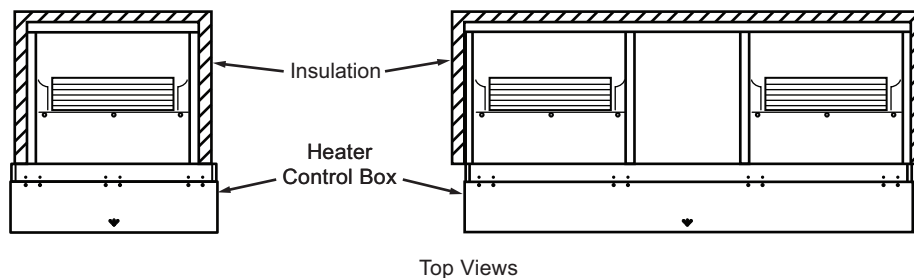


Fig. 3 — Heater Insulation

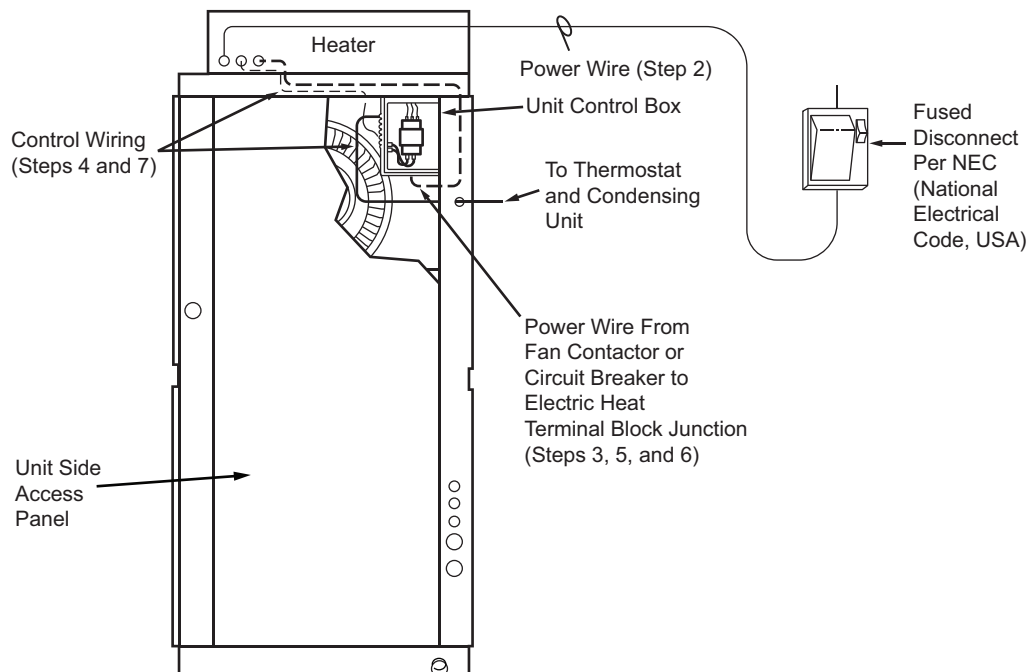
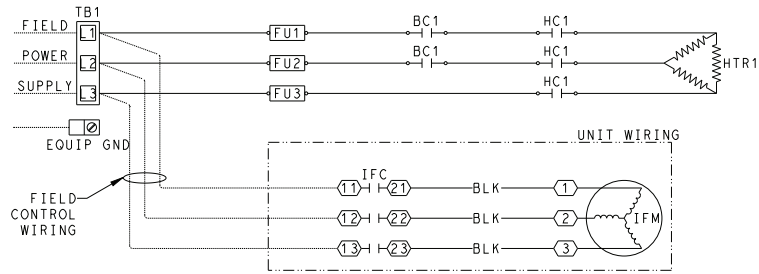


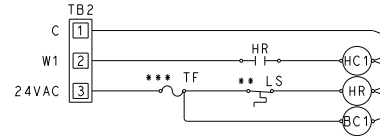
Fig. 4 — Wire Routing

LEGEND
 BC - Backup Contactor
 FU - Fuse
 HTR - Heater
 HC - Heater Contactor
 HR - Heater Relay
 LS - Limit Switch
 TB - Terminal Block
 TF - Thermal Fuse



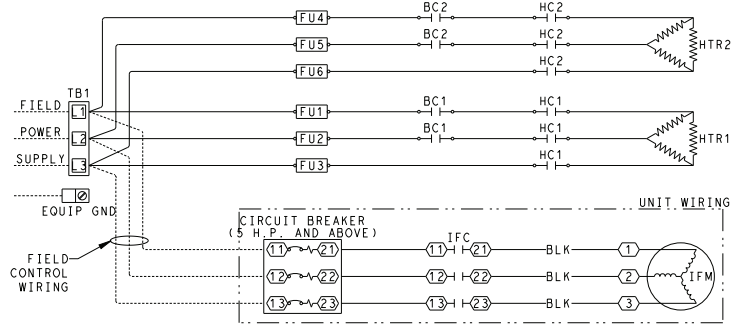
WARNING: ELECTRICAL SHOCK HAZARD
 DISCONNECT ALL POWER BEFORE SERVICING.

NOTES:
 * Power supply wiring per NEC & local codes. Suitable for at least 75°C
 Use copper conductor wiring only. Field wire, NEC Class I
 ** Replace auto reset limit switch with Therm-O-Disc 60TX11 L150-60F
 *** Replace thermal fuse with Therm-O-Disc 61FA14 L185F
 SINGLE POINT CONNECTION



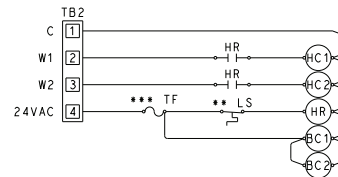
MODEL NO	KILOWATTS	VOLTS	HEATER AMPS	FUSE RATING AND CLASS
CAELHEAT050A00	3.8 / 5.0	208 / 240	10.4 / 12.0	15A - 250V, CLASS RK
CAELHEAT052A00	7.5 / 10.0	208 / 240	20.8 / 24.1	30A - 250V, CLASS RK
CAELHEAT055A00	11.3 / 15.0	208 / 240	31.3 / 36.1	50A - 250V, CLASS RK

LEGEND
 BC - Backup Contactor
 FU - Fuse
 HTR - Heater
 HC - Heater Contactor
 HR - Heater Relay
 LS - Limit Switch
 TB - Terminal Block
 TF - Thermal Fuse



WARNING: ELECTRICAL SHOCK HAZARD
 DISCONNECT ALL POWER BEFORE SERVICING.

NOTES:
 * Power supply wiring per NEC & local codes. Suitable for at least 75°C
 Use copper conductor wiring only. Field wire, NEC Class I
 ** Replace auto reset limit switch with Therm-O-Disc 60TX11 L150-60F (25kW)
 Replace auto reset limit switch with Therm-O-Disc 60TX11 L145-50F (32kW)
 *** Replace thermal fuse with Therm-O-Disc 61FA14 L185F
 SINGLE POINT CONNECTION



MODEL NO	KILOWATTS	VOLTS	HEATER AMPS	FUSE RATING AND CLASS
CAELHEAT058A00	18.8 / 25.0	208 / 240	52.1 / 60.1	50A (FU1,2,3) 30A (FU4,5,6) - 250V, CLASS RK
CAELHEAT061A00	24.0 / 32.0	208 / 240	66.7 / 77.0	50A - 250V, CLASS RK

**Fig. 5 — Wiring Diagrams, 240 V Electric Heat Accessories
 (See Heater Equivalency, Table 3)**

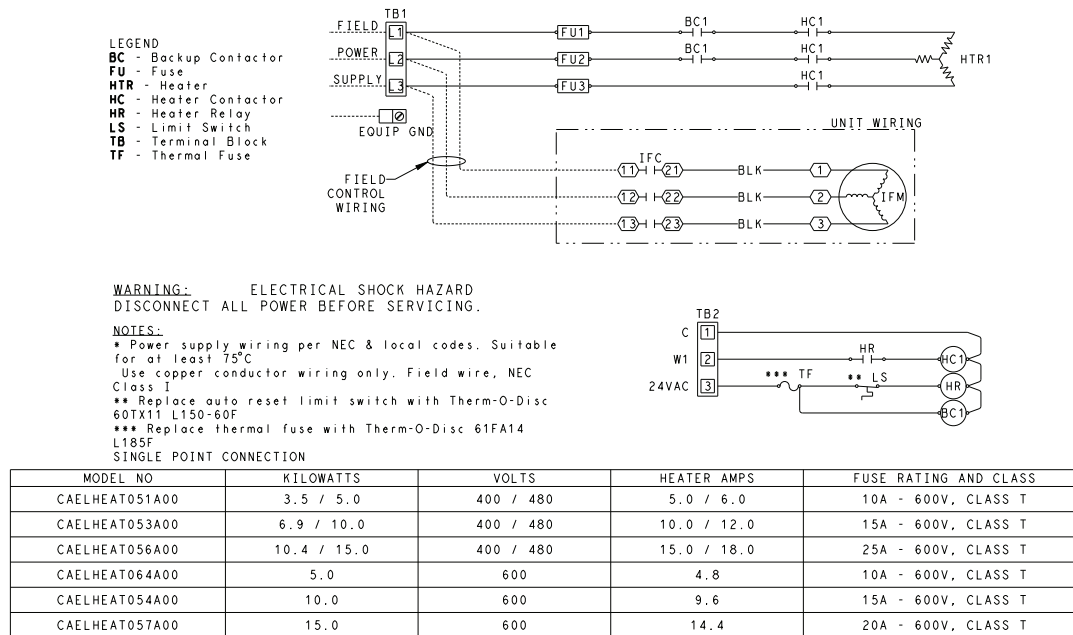


Fig. 6 — Wiring Diagrams, 400 and 480 V Electric Heat Accessories

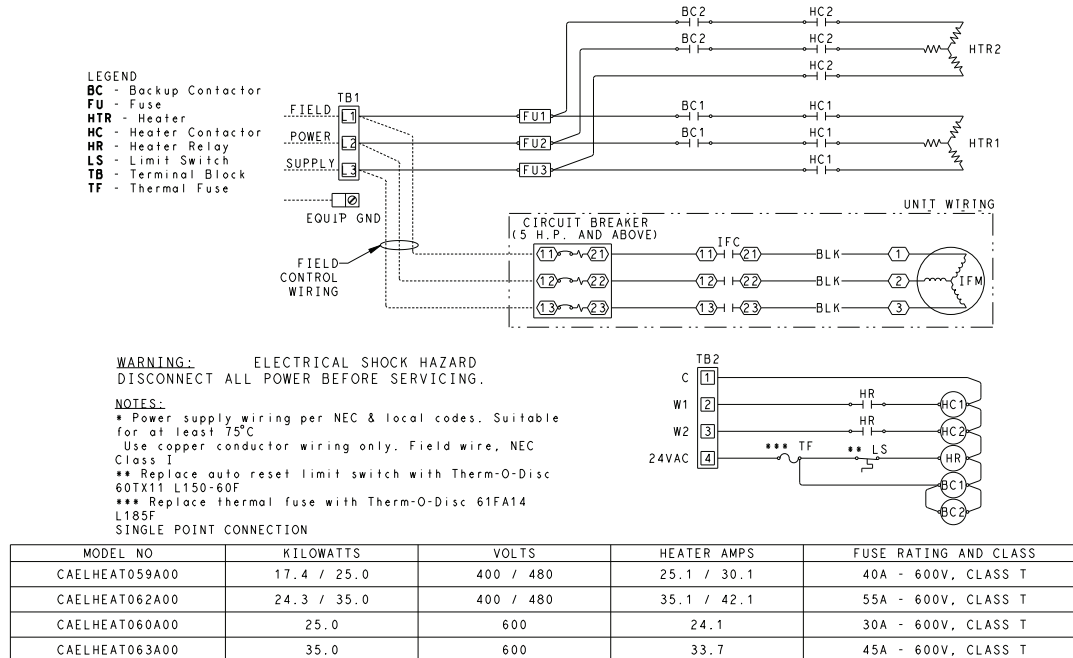


Fig. 7 — Wiring Diagrams, 575 V Electric Heat Accessories

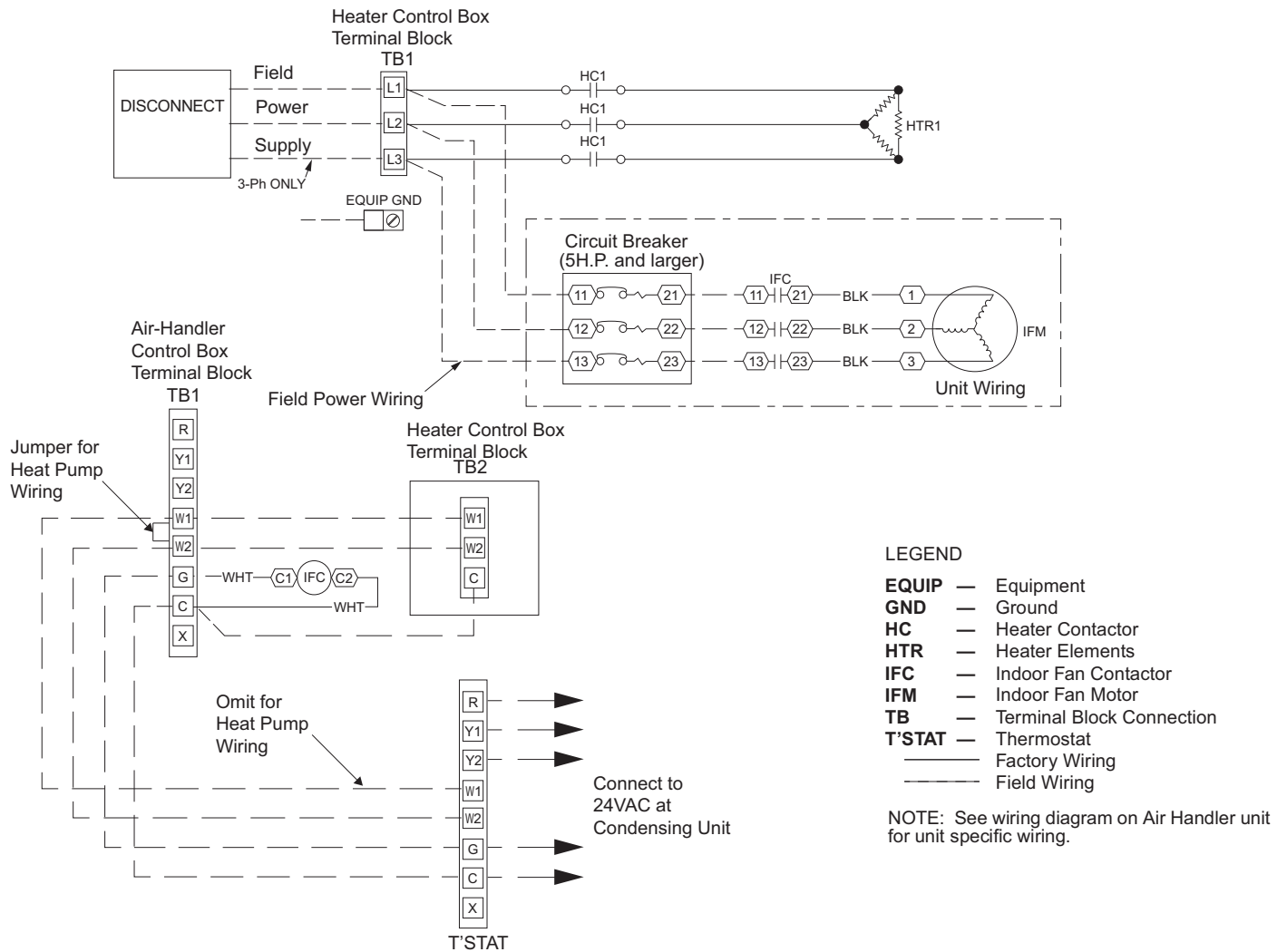
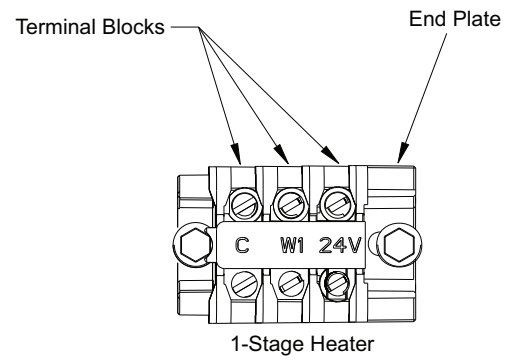
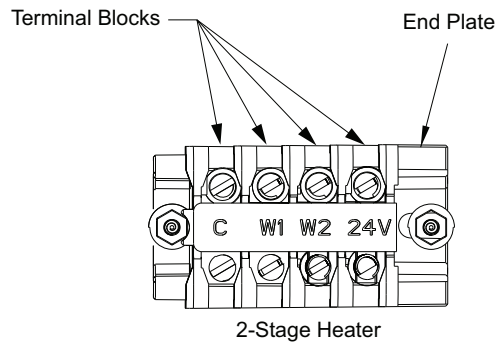
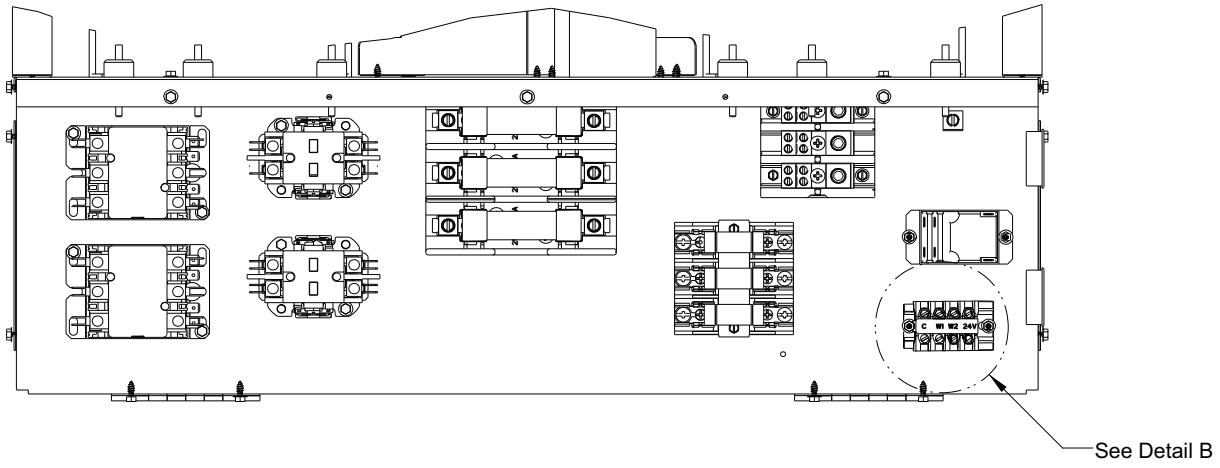


Fig. 8 — Electric Heat and Control Wiring



Detail B

Fig. 9 — Typical Heater Control Box Component Layout for 6 to 10 Ton (21 to 35 kW) Units

Outdoor Thermostat (Econostat™1)

The outdoor thermostat accessory, Part No. HH22YA070, is offered by Replacement Components in packages of 3 (See Fig. 10). The thermostat makes contact on a drop in temperature to permit the strip heat to come on at a predetermined temperature, provided the room thermostat is on the second step of heating. Refer to the instructions packaged with thermostats. Follow these suggestions when installing:

1. Mount thermostats as close to heater assembly as practical.
2. Run capillary tubes to outdoors and mount thermostat bulbs in a permanently shaded location so they sense true outdoor temperature.

NOTE: The capillary tube connecting each bulb and the thermostat is 72 in. (1829 mm) long.

3. Refer to the application data and the heat balance of the building for the correct thermostat settings and set thermostats progressively lower for each stage of strip heat.

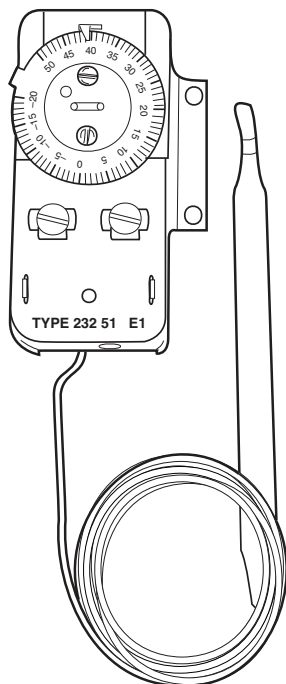


Fig. 10 — Outdoor Thermostat

SERVICE

Controls

Access to the heater contactor(s), fuses (if applicable), and terminal blocks may be gained through the control box hinged top cover panel (see Fig. 1 and 2). Figure 9 shows typical heater control box component layouts.

High Temperature Limit Switches

The accessory heaters use automatic reset limit switch(es). The heaters for the 6 to 10 ton (21 to 35 kW) units contain a single high temperature limit switch. It is located on the rear wall of the heater assembly. See Fig. 1 and 2.

If a problem with the limit switch(es) is suspected, remove the switch(es) and test the switch set points. Table 4 shows the correct set points.

Table 4 — High Temperature Limit Switch Set Points

40RF/40RL/40RLQ 524F/524L/524H F*X/FAL/FHL HEATER PART NO.	CUT-OUT °F (°C)	CUT-IN °F (°C)
CAELHEAT050A00	150	90
CAELHEAT051A00	150	90
CAELHEAT052A00	150	90
CAELHEAT053A00	150	90
CAELHEAT054A00	150	90
CAELHEAT055A00	150	90
CAELHEAT056A00	150	90
CAELHEAT057A00	150	90
CAELHEAT058A00	150	90
CAELHEAT059A00	150	90
CAELHEAT060A00	150	90
CAELHEAT061A00	145	95
CAELHEAT062A00	150	90
CAELHEAT063A00	150	90
CAELHEAT064A00	150	90

Access to the switch(es) is gained from the outside rear of the heater assembly. Sufficient clearance must be provided for service access. See recommended clearances in Fig. 1 and 2. Where this is not possible, the entire heater must be removed from the unit in order to replace the limit switches. Each limit switch is attached with 2 self-tapping screws. The wire connections are made with quick-connect terminals.

Heater Elements

The heater element assemblies are located above each fan discharge opening. When installing ductwork, be sure to provide an access panel to allow heater element servicing. If this is not possible, it will be necessary to remove a section of the supply duct or the entire heater assembly to service the heater elements.

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