

Installation Instructions

TABLE OF CONTENTS

SAFETY CONSIDERATIONS	1
GENERAL	1
PRE-INSTALLATION	6
Uncrate and Inspect Shipment	6
Consider System Requirements	6
INSTALLATION	6
Mount Heater	6
Connect Ductwork	8
Make Electrical Connections	8
Outdoor Thermostat (Econostat)	17
SERVICE	17
Controls	17
High Temperature Limit Switches	17
Heater Elements	17

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 the basic maintenance functions. 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. Wear safety glasses and work gloves.

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, and CAUTION. 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 a hazard 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 result in personal injury and/or death.

Open and tag all disconnects before installing this equipment.

CAUTION

PERSONAL INJURY HAZARD

Failure to follow this caution may result in personal injury.

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

GENERAL

The electric heater accessories are available for 6 to 30 ton (21 to 105 kW) packaged air handlers and have nominal ratings of 5 to 70 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 Table 1 for electrical data and unit application.

Table 1 – Electric Heater Data

HEATER PART NO.	UNIT	V-Ph-Hz	FAN MOTOR			ELECTRIC HEATER(S)					MCA*	MOCP*
						Nominal Capacity (kW)	Actual Capacity (kW)			FLA		
CAELHEAT001A00	6 to 10 Tons (21 to 35 kW)	208-3-60	1.3†	0.97	7.6	5	3.8	—	3.8	10.4	22.5	25
			2.4†	1.79	11.0	5	3.8	—	3.8	10.4	26.8	35
			2.4	1.79	5.2	5	3.8	—	3.8	10.4	19.5	20
			2.9	2.16	7.5	5	3.8	—	3.8	10.4	22.4	25
			3.7	2.76	10.2	5	3.8	—	3.8	10.4	25.8	30
		240-3-60	1.3†	0.97	7.6	5	5.0	—	5.0	12.0	24.5	25
			2.4†	1.79	11.0	5	5.0	—	5.0	12.0	28.8	35
			2.4	1.79	5.2	5	5.0	—	5.0	12.0	21.5	25
			2.9	2.16	7.5	5	5.0	—	5.0	12.0	24.4	25
			3.7	2.76	10.2	5	5.0	—	5.0	12.0	27.8	30
		240-3-50	2.4	1.79	5.2	5	5.0	—	5.0	12.0	21.5	25
			2.9	2.16	7.5	5	5.0	—	5.0	12.0	24.4	25
			5.0	3.73	15.2	5	5.0	—	5.0	12.0	34.0	40
			2.4	1.79	2.6	5	5.0	—	5.0	6.00	10.8	15
CAELHEAT002A00		480-3-60	2.9	2.16	3.4	5	5.0	—	5.0	6.00	11.8	15
			3.7	2.76	4.8	5	5.0	—	5.0	6.00	13.5	15
			2.4	1.79	2.6	5	3.5	—	3.5	5.00	9.5	15
		400-3-50	2.9	2.16	3.4	5	3.5	—	3.5	5.00	10.5	15
5.0			3.73	7.6	5	3.5	—	3.5	5.00	15.8	20	
1.0			0.75	1.4	5	5.0	—	5.0	5.00	8.0	15	
CAELHEAT003A00		575-3-60	2.0	1.49	2.3	5	5.0	—	5.0	5.00	9.2	15
			3.0	2.24	3.8	5	5.0	—	5.0	5.00	11.0	15
1.3†			0.97	7.6	10	7.5	—	7.5	20.8	35.6	40	
CAELHEAT004A00		208-3-60	2.4†	1.79	11.0	10	7.5	—	7.5	20.8	39.8	40
			2.4	1.79	5.2	10	7.5	—	7.5	20.8	32.6	35
			2.9	2.16	7.5	10	7.5	—	7.5	20.8	35.4	40
			3.7	2.76	10.2	10	7.5	—	7.5	20.8	38.8	40
			1.3†	0.97	7.6	10	10.0	—	10.0	24.1	39.6	40
		240-3-60	2.4†	1.79	11.0	10	10.0	—	10.0	24.1	43.8	50
			2.4	1.79	5.2	10	10.0	—	10.0	24.1	36.6	40
			2.9	2.16	7.5	10	10.0	—	10.0	24.1	39.4	40
			3.7	2.76	10.2	10	10.0	—	10.0	24.1	42.8	50
		240-3-50	2.4	1.79	5.2	10	10.0	—	10.0	24.1	36.6	40
			2.9	2.16	7.5	10	10.0	—	10.0	24.1	39.4	40
			5.0	3.73	15.2	10	10.0	—	10.0	24.1	49.1	50
			2.4	1.79	2.6	10	10.0	—	10.0	12.0	18.3	20
CAELHEAT005A00		480-3-60	2.9	2.16	3.4	10	10.0	—	10.0	12.0	19.3	20
			3.7	2.76	4.8	10	10.0	—	10.0	12.0	21.0	25
			2.4	1.79	2.6	10	6.9	—	6.9	10.0	15.8	20
		400-3-50	2.9	2.16	3.4	10	6.9	—	6.9	10.0	16.8	20
5.0			3.73	7.6	10	6.9	—	6.9	10.0	22.0	25	
1.0			0.75	1.4	10	10.0	—	10.0	10.0	14.3	15	
CAELHEAT006A00		575-3-60	2.0	1.49	2.3	10	10.0	—	10.0	10.0	15.4	20
			3.0	2.24	3.8	10	10.0	—	10.0	10.0	17.3	20
			1.3†	0.97	7.6	15	11.3	—	11.3	31.3	48.6	50
CAELHEAT007A00		208-3-60	2.4†	1.79	11.0	15	11.3	—	11.3	31.3	52.9	60
			2.4	1.79	5.2	15	11.3	—	11.3	31.3	45.6	50
			2.9	2.16	7.5	15	11.3	—	11.3	31.3	48.5	50
			3.7	2.76	10.2	15	11.3	—	11.3	31.3	51.9	60
			1.3†	0.97	7.6	15	15.0	—	15.0	36.1	54.6	60
		240-3-60	2.4†	1.79	11.0	15	15.0	—	15.0	36.1	58.9	60
			2.4	1.79	5.2	15	15.0	—	15.0	36.1	51.6	60
			2.9	2.16	7.5	15	15.0	—	15.0	36.1	54.5	60
			3.7	2.76	10.2	15	15.0	—	15.0	36.1	57.9	60
		240-3-50	2.4	1.79	5.2	15	15.0	—	15.0	36.1	51.6	60
			2.9	2.16	7.5	15	15.0	—	15.0	36.1	54.5	60
			5.0	3.73	15.2	15	15.0	—	15.0	36.1	64.1	70
			2.4	1.79	2.6	15	15.0	—	15.0	18.0	25.8	30
CAELHEAT008A00		480-3-60	2.9	2.16	3.4	15	15.0	—	15.0	18.0	26.8	30
			3.7	2.76	4.8	15	15.0	—	15.0	18.0	28.6	30
			2.4	1.79	2.6	15	10.4	—	10.4	15.0	22.0	25
		400-3-50	2.9	2.16	3.4	15	10.4	—	10.4	15.0	23.0	25
5.0			3.73	7.6	15	10.4	—	10.4	15.0	28.3	30	
1.0			0.75	1.4	15	15.0	—	15.0	15.1	20.6	25	
CAELHEAT009A00		575-3-60	2.0	1.49	2.3	15	15.0	—	15.0	15.1	21.7	25
			3.0	2.24	3.8	15	15.0	—	15.0	15.1	23.6	25

* See Legend and Notes

Table 1 – Electric Heater Data (cont)

HEATER PART NO.	UNIT	V-Ph-Hz	FAN MOTOR			ELECTRIC HEATER(S)						MCA*	MOCP*
			Hp	kW	FLA	Nominal Capacity (kW)	Actual Capacity (kW)			FLA			
							Stage 1	Stage 2	Total				
CAELHEAT010A00	6 to 10 Tons (21 to 35 kW)	208-3-60	1.3†	0.97	7.6	25	11.3	7.5	18.8	52.1	74.7	80	
			2.4†	1.79	11.0	25	11.3	7.5	18.8	52.1	78.9	80	
			2.4	1.79	5.2	25	11.3	7.5	18.8	52.1	71.7	80	
			2.9	2.16	7.5	25	11.3	7.5	18.8	52.1	74.5	80	
			3.7	2.76	10.2	25	11.3	7.5	18.8	52.1	77.9	80	
		240-3-60	1.3†	0.97	7.6	25	15.0	10.0	25.0	60.1	84.7	90	
			2.4†	1.79	11.0	25	15.0	10.0	25.0	60.1	88.9	90	
			2.4	1.79	5.2	25	15.0	10.0	25.0	60.1	81.7	90	
			2.9	2.16	7.5	25	15.0	10.0	25.0	60.1	84.6	90	
			3.7	2.76	10.2	25	15.0	10.0	25.0	60.1	87.9	90	
		240-3-50	2.4	1.79	5.2	25	15.0	10.0	25.0	60.1	81.7	90	
			2.9	2.16	7.5	25	15.0	10.0	25.0	60.1	84.6	90	
			5.0	3.73	15.2	25	15.0	10.0	25.0	60.1	94.2	100	
			480-3-60	2.4	1.79	2.6	25	15.0	10.0	25.0	30.1	40.8	50
				2.9	2.16	3.4	25	15.0	10.0	25.0	30.1	41.8	50
		3.7		2.76	4.8	25	15.0	10.0	25.0	30.1	43.6	50	
400-3-50		2.4	1.79	2.6	25	10.4	6.9	17.4	25.1	34.6	25		
		2.9	2.16	3.4	25	10.4	6.9	17.4	25.1	35.6	40		
		5.0	3.73	7.6	25	10.4	6.9	17.4	25.1	40.8	50		
CAELHEAT012A00		575-3-60	1.0	0.75	1.4	25	15.0	10.0	25.0	25.1	33.1	35	
			2.0	1.49	2.3	25	15.0	10.0	25.0	25.1	34.3	35	
			3.0	2.24	3.8	25	15.0	10.0	25.0	25.1	36.1	40	
CAELHEAT013A00		7½ to 10 Tons (26 to 35 kW)	208-3-60	2.4†	1.79	11.0	35	15.0	11.3	26.3	73.0	105.0	110
				2.4	1.79	5.2	35	15.0	11.3	26.3	73.0	97.7	100
	2.9			2.16	7.5	35	15.0	11.3	26.3	73.0	100.6	110	
	3.7			2.76	10.2	35	15.0	11.3	26.3	73.0	104.0	110	
	240-3-60		2.4†	1.79	11.0	35	20.0	15.0	35.0	84.2	119.0	125	
			2.4	1.79	5.2	35	20.0	15.0	35.0	84.2	111.7	125	
			2.9	2.16	7.5	35	20.0	15.0	35.0	84.2	114.6	125	
			3.7	2.76	10.2	35	20.0	15.0	35.0	84.2	118.0	125	
	240-3-50		2.4	1.79	5.2	35	20.0	15.0	35.0	84.2	111.7	125	
			2.9	2.16	7.5	35	20.0	15.0	35.0	84.2	114.6	125	
			5.0	3.73	15.2	35	20.0	15.0	35.0	84.2	124.2	125	
			480-3-60	2.4	1.79	2.6	35	20.0	15.0	35.0	42.1	55.9	60
	2.9			2.16	3.4	35	20.0	15.0	35.0	42.1	56.9	60	
	3.7			2.76	4.8	35	20.0	15.0	35.0	42.1	58.6	60	
	400-3-50		2.4	1.79	2.6	35	13.9	10.4	24.3	35.1	47.1	50	
2.9			2.16	3.4	35	13.9	10.4	24.3	35.1	48.1	50		
5.0			3.73	7.6	35	13.9	10.4	24.3	35.1	53.4	60		
CAELHEAT015A00	575-3-60		2.0	1.49	2.3	35	20.0	15.0	35.0	35.1	46.8	50	
			3.0	2.24	3.8	35	20.0	15.0	35.0	35.1	48.7	50	
			2.9	2.16	7.5	10	7.5	—	7.5	20.8	35.4	40	
CAELHEAT016A00	12½ to 20 Tons (43 to 70 kW)		208-3-60	3.7	2.76	10.2	10	7.5	—	7.5	20.8	38.8	40
				5.0	3.73	14.6	10	7.5	—	7.5	20.8	41.3	50
				7.5	5.59	21.5	10	7.5	—	7.5	20.8	52.9	60
				2.9	2.16	7.5	10	10.0	—	10.0	24.1	39.4	40
		240-3-60	3.7	2.76	10.2	10	10.0	—	10.0	24.1	42.8	50	
			5.0	3.73	12.8	10	10.0	—	10.0	24.1	46.1	50	
			7.5	5.59	19.4	10	10.0	—	10.0	24.1	54.4	70	
			2.9	2.16	7.5	10	10.0	—	10.0	24.1	39.4	40	
		240-3-50	5.0	3.73	13.2	10	10.0	—	10.0	24.1	46.6	50	
			7.5	5.59	19.8	10	10.0	—	10.0	24.1	54.8	60	
			480-3-60	2.9	2.16	3.4	10	10.0	—	10.0	12.0	19.3	20
				3.7	2.76	4.8	10	10.0	—	10.0	12.0	21.0	25
		5.0		3.73	6.4	10	10.0	—	10.0	12.0	23.0	25	
		7.5		5.59	9.7	10	10.0	—	10.0	12.0	27.2	30	
		400-3-50	2.9	2.16	3.4	10	6.9	—	6.9	10.0	16.8	20	
5.0			3.73	7.6	10	6.9	—	6.9	10.0	22.0	25		
7.5			5.59	11.4	10	6.9	—	6.9	10.0	26.8	35		
CAELHEAT018A00		575-3-60	3.0	2.24	3.8	10	10.0	—	10.0	10.0	17.3	20	
			5.0	3.73	5.1	10	10.0	—	10.0	10.0	19.6	20	
			7.5	5.59	7.8	10	10.0	—	10.0	10.0	22.1	25	

* See Legend and Notes

Table 1 – Electric Heater Data (cont)

HEATER PART NO.	UNIT	V-Ph-Hz	FAN MOTOR			ELECTRIC HEATER(S)					MCA*	MOCP*	
			Hp	kW	FLA	Nominal Capacity (kW)	Actual Capacity (kW)			FLA			
							Stage 1	Stage 2	Total				
CAELHEAT019A00	12½ to 20 Tons (43 to 70 kW)	208-3-60	2.9	2.16	7.5	20	14.9	—	14.9	41.5	61.2	70	
			3.7	2.76	10.2	20	14.9	—	14.9	41.5	64.6	70	
			5.0	3.73	14.6	20	14.9	—	14.9	41.5	70.1	80	
			7.5	5.59	21.5	20	14.9	—	14.9	41.5	78.7	80	
		240-3-60	2.9	2.16	7.5	20	19.9	—	19.9	47.9	69.2	70	
			3.7	2.76	10.2	20	19.9	—	19.9	47.9	72.6	80	
			5.0	3.73	12.8	20	19.9	—	19.9	47.9	75.8	80	
			7.5	5.59	19.4	20	19.9	—	19.9	47.9	84.1	90	
		240-3-50	2.9	2.16	7.5	20	19.9	—	19.9	47.9	69.2	70	
			5.0	3.73	13.2	20	19.9	—	19.9	47.9	76.3	80	
			7.5	5.59	19.8	20	19.9	—	19.9	47.9	84.6	80	
			7.5	5.59	19.8	20	19.9	—	19.9	47.9	84.6	80	
CAELHEAT020A00		480-3-60	2.9	2.16	3.4	20	20.0	—	20.0	24.1	34.3	35	
			3.7	2.76	4.8	20	20.0	—	20.0	24.1	36.1	40	
			5.0	3.73	6.4	20	20.0	—	20.0	24.1	39.1	40	
			7.5	5.59	9.7	20	20.0	—	20.0	24.1	43.2	50	
		400-3-50	2.9	2.16	3.4	20	13.9	—	13.9	20.0	29.3	30	
			5.0	3.73	7.6	20	13.9	—	13.9	20.0	45.1	50	
			7.5	5.59	11.4	20	13.9	—	13.9	20.0	49.2	50	
			7.5	5.59	11.4	20	13.9	—	13.9	20.0	49.2	50	
CAELHEAT021A00		575-3-60	3.0	2.24	3.8	20	20.0	—	20.0	20.1	29.9	30	
			5.0	3.73	5.1	20	20.0	—	20.0	20.1	31.5	35	
			7.5	5.59	7.8	20	20.0	—	20.0	20.1	34.9	35	
			7.5	5.59	7.8	20	20.0	—	20.0	20.1	34.9	35	
CAELHEAT022A00		12½ to 20 Tons (43 to 70 kW)	208-3-60	2.9	2.16	7.5	30	15.0	7.5	22.5	62.5	87.5	90
				3.7	2.76	10.2	30	15.0	7.5	22.5	62.5	90.9	100
				5.0	3.73	14.6	30	15.0	7.5	22.5	62.5	96.4	100
				7.5	5.59	21.5	30	15.0	7.5	22.5	62.5	105.0	110
			240-3-60	2.9	2.16	7.5	30	20.0	10.0	30.0	72.2	99.6	100
				3.7	2.76	10.2	30	20.0	10.0	30.0	72.2	103.0	110
				5.0	3.73	12.8	30	20.0	10.0	30.0	72.2	106.2	110
				7.5	5.59	19.4	30	20.0	10.0	30.0	72.2	114.5	125
			240-3-50	2.9	2.16	7.5	30	20.0	10.0	30.0	72.2	99.6	100
				5.0	3.73	13.2	30	20.0	10.0	30.0	72.2	106.7	110
				7.5	5.59	19.8	30	20.0	10.0	30.0	72.2	115.0	125
				7.5	5.59	19.8	30	20.0	10.0	30.0	72.2	115.0	125
CAELHEAT023A00		12½ to 20 Tons (43 to 70 kW)	480-3-60	2.9	2.16	3.4	30	20.0	10.0	30.0	36.1	49.4	50
				3.7	2.76	4.8	30	20.0	10.0	30.0	36.1	51.1	60
				5.0	3.73	6.4	30	20.0	10.0	30.0	36.1	53.1	60
				7.5	5.59	9.7	30	20.0	10.0	30.0	36.1	57.2	60
			400-3-50	2.9	2.16	3.4	30	13.9	6.9	20.8	30.1	41.8	50
				5.0	3.73	7.6	30	13.9	7.9	20.8	30.1	47.1	50
				7.5	5.59	11.4	30	13.9	7.9	20.8	30.1	51.8	60
				7.5	5.59	11.4	30	13.9	7.9	20.8	30.1	51.8	60
CAELHEAT024A00		12½ to 20 Tons (43 to 70 kW)	575-3-60	3.0	2.24	3.8	30	20.0	10.0	30.0	30.1	42.4	50
				5.0	3.73	5.1	30	20.0	10.0	30.0	30.1	44.0	50
				7.5	5.59	7.8	30	20.0	10.0	30.0	30.1	47.4	50
				7.5	5.59	7.8	30	20.0	10.0	30.0	30.1	47.4	50
CAELHEAT025A00	15 and 20 Tons (52 and 70 kW)	208-3-60	3.7	2.76	10.2	50	22.6	15.0	37.6	104.3	143.1	150	
			5.0	3.73	14.6	50	22.6	15.0	37.6	104.3	148.6	150	
			7.5	5.59	21.5	50	22.6	15.0	37.6	104.3	157.2	175	
			7.5	5.59	21.5	50	22.6	15.0	37.6	104.3	157.2	175	
		240-3-60	3.7	2.76	10.2	50	30.0	20.0	50.0	120.3	163.1	175	
			5.0	3.73	12.8	50	30.0	20.0	50.0	120.3	166.4	175	
			7.5	5.59	19.4	50	30.0	20.0	50.0	120.3	174.6	200	
			7.5	5.59	19.4	50	30.0	20.0	50.0	120.3	174.6	200	
		240-3-50	2.9	2.16	7.5	50	30.0	20.0	50.0	120.3	159.7	175	
			5.0	3.73	13.2	50	30.0	20.0	50.0	120.3	166.9	175	
			7.5	5.59	19.8	50	30.0	20.0	50.0	120.3	175.1	200	
			7.5	5.59	19.8	50	30.0	20.0	50.0	120.3	175.1	200	
CAELHEAT026A00		15 and 20 Tons (52 and 70 kW)	480-3-60	3.7	2.76	4.8	50	30.0	20.0	50.0	60.1	81.2	90
				5.0	3.73	6.4	50	30.0	20.0	50.0	60.1	83.2	90
				7.5	5.59	9.7	50	30.0	20.0	50.0	60.1	87.3	90
				7.5	5.59	9.7	50	30.0	20.0	50.0	60.1	87.3	90
			400-3-50	2.9	2.16	3.4	50	20.8	13.9	34.7	50.1	66.9	70
				5.0	3.73	7.6	50	20.8	13.9	34.7	50.1	72.1	80
				7.5	5.59	11.4	50	20.8	13.9	34.7	50.1	76.9	80
				7.5	5.59	11.4	50	20.8	13.9	34.7	50.1	76.9	80
CAELHEAT027A00		15 and 20 Tons (52 and 70 kW)	575-3-60	3.0	2.24	3.8	50	30.0	20.0	50.0	50.2	67.5	70
				5.0	3.73	5.1	50	30.0	20.0	50.0	50.2	69.1	70
				7.5	5.59	7.8	50	30.0	20.0	50.0	50.2	72.5	80
				7.5	5.59	7.8	50	30.0	20.0	50.0	50.2	72.5	80

* See Legend and Notes

Table 1 – Electric Heater Data (cont)

HEATER PART NO.	UNIT	V-Ph-Hz	FAN MOTOR			ELECTRIC HEATER(S)					MCA*	MOCP*
						Nominal Capacity (kW)	Actual Capacity (kW)			FLA		
			Hp	kW	FLA		Stage 1	Stage 2	Total			
CAELHEAT028A00	25 and 30 Tons (87 and 105 kW)	208-3-60	7.5	5.59	19.8	20	14.9	—	14.9	41.5	79.7	90
			10.0	7.46	28.2	20	14.9	—	14.9	41.5	87.1	100
		240-3-60	7.5	5.59	19.4	20	19.9	—	19.9	47.9	81.4	90
			10.0	7.46	26.8	20	19.9	—	19.9	47.9	93.3	110
		240-3-50	7.5	5.59	19.8	20	19.9	—	19.9	47.9	84.6	90
			10.0	7.46	28.0	20	19.9	—	19.9	47.9	94.8	110
CAELHEAT029A00		480-3-60	7.5	5.59	9.7	20	20.0	—	20.0	24.1	42.2	50
			10.0	7.46	13.4	20	20.0	—	20.0	24.1	46.8	50
CAELHEAT030A00		400-3-50	7.5	5.59	11.4	20	13.9	—	13.9	20.0	39.3	40
			10.0	7.46	16.1	20	13.9	—	13.9	20.0	45.2	50
		575-3-60	7.5	5.59	7.8	20	20.0	—	20.0	20.1	34.9	35
			10.0	7.46	10.3	20	20.0	—	20.0	20.1	38.0	40
CAELHEAT031A00		208-3-60	7.5	5.59	19.8	40	15.0	15.0	30.0	83.4	131.1	150
			10.0	7.46	28.0	40	15.0	15.0	30.0	83.4	139.5	150
		240-3-60	7.5	5.59	19.4	40	20.0	20.0	40.0	96.2	144.5	150
			10.0	7.46	26.8	40	20.0	20.0	40.0	96.2	153.8	175
		240-3-50	7.5	5.59	19.8	40	20.0	20.0	40.0	96.2	145.0	150
			10.0	7.46	28.0	40	20.0	20.0	40.0	96.2	155.3	175
CAELHEAT032A00		480-3-60	7.5	5.59	9.7	40	19.9	19.9	39.8	47.9	71.9	80
			10.0	7.46	13.4	40	19.9	19.9	39.8	47.9	76.6	80
		400-3-50	7.5	5.59	11.4	40	13.8	13.8	27.6	39.9	64.1	70
			10.0	7.46	16.1	40	13.8	13.8	27.6	39.9	70.0	80
CAELHEAT033A00		575-3-60	7.5	5.59	7.8	40	20.0	20.0	40.0	40.2	60.0	60
10.0			7.46	10.3	40	20.0	20.0	40.0	40.2	63.1	70	
CAELHEAT034A00		208-3-60	7.5	5.59	19.8	50	22.6	15.0	37.6	104.3	157.2	175
			10.0	7.46	28.0	50	22.6	15.0	37.6	104.3	165.6	175
		240-3-60	7.5	5.59	19.4	50	30.0	20.0	50.0	120.3	174.6	200
			10.0	7.46	26.8	50	30.0	20.0	50.0	120.3	183.9	200
		240-3-50	7.5	5.59	19.8	50	30.0	20.0	50.0	120.3	175.1	200
			10.0	7.46	28.8	50	30.0	20.0	50.0	120.3	185.4	200
CAELHEAT035A00		480-3-60	7.5	5.59	9.7	50	30.0	20.0	50.0	60.1	87.3	90
			10.0	7.46	13.4	50	30.0	20.0	50.0	60.1	91.9	100
CAELHEAT036A00		400-3-50	7.5	5.59	11.4	50	20.8	13.9	34.7	50.1	76.9	80
			10.0	7.46	16.1	50	20.8	13.9	34.7	50.1	82.8	90
		575-3-60	7.5	5.59	7.8	50	30.0	20.0	50.0	50.2	72.5	80
			10.0	7.46	10.3	50	30.0	20.0	50.0	50.2	75.6	80
CAELHEAT037A00		208-3-60	7.5	5.59	19.8	70	30.0	22.6	52.6	145.9	172.8	175
			10.0	7.46	28.0	70	30.0	22.6	52.6	145.9	181.2	200
		240-3-60	7.5	5.59	19.4	70	40.0	30.0	70.0	168.4	192.6	200
			10.0	7.46	26.8	70	40.0	30.0	70.0	168.4	201.9	225
		240-3-50	7.5	5.59	19.8	70	40.0	30.0	70.0	168.4	193.1	200
			10.0	7.46	28.0	70	40.0	30.0	70.0	168.4	203.4	225
CAELHEAT038A00		480-3-60	7.5	5.59	9.7	70	40.0	30.0	70.0	84.2	96.3	100
			10.0	7.46	13.4	70	40.0	30.0	70.0	84.2	100.9	110
CAELHEAT039A00		400-3-50	7.5	5.59	11.4	70	27.8	20.8	48.6	70.2	84.4	90
			10.0	7.46	16.1	70	27.8	20.8	48.6	70.2	90.3	100
CAELHEAT039A00		575-3-60	7.5	5.59	7.8	70	40.0	30.0	70.0	70.3	80.0	90
			10.0	7.46	10.3	70	40.0	30.0	70.0	70.3	83.2	90

LEGEND

FLA – Full Load Amps
Hp – Horsepower
MCA – Minimum Circuit Amps
MOCP – Maximum Overcurrent Protection (Amps)

* Values shown are for single–point connection of electric heat accessory and air handler.

† Single–phase motors. All other motors are 3–phase.

NOTES:

- 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:
 $\text{kW} \times 3,412 = \text{Btuh}$
- Heater contactor coils are 24 v and require 8 va holding current.
- Electric heaters are tested and ETL approved at maximum total external static pressure of 1.9 in. wg.
- MCA and MOCP values apply to both standard and alternate factory supplied motors.

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

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. 1. 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

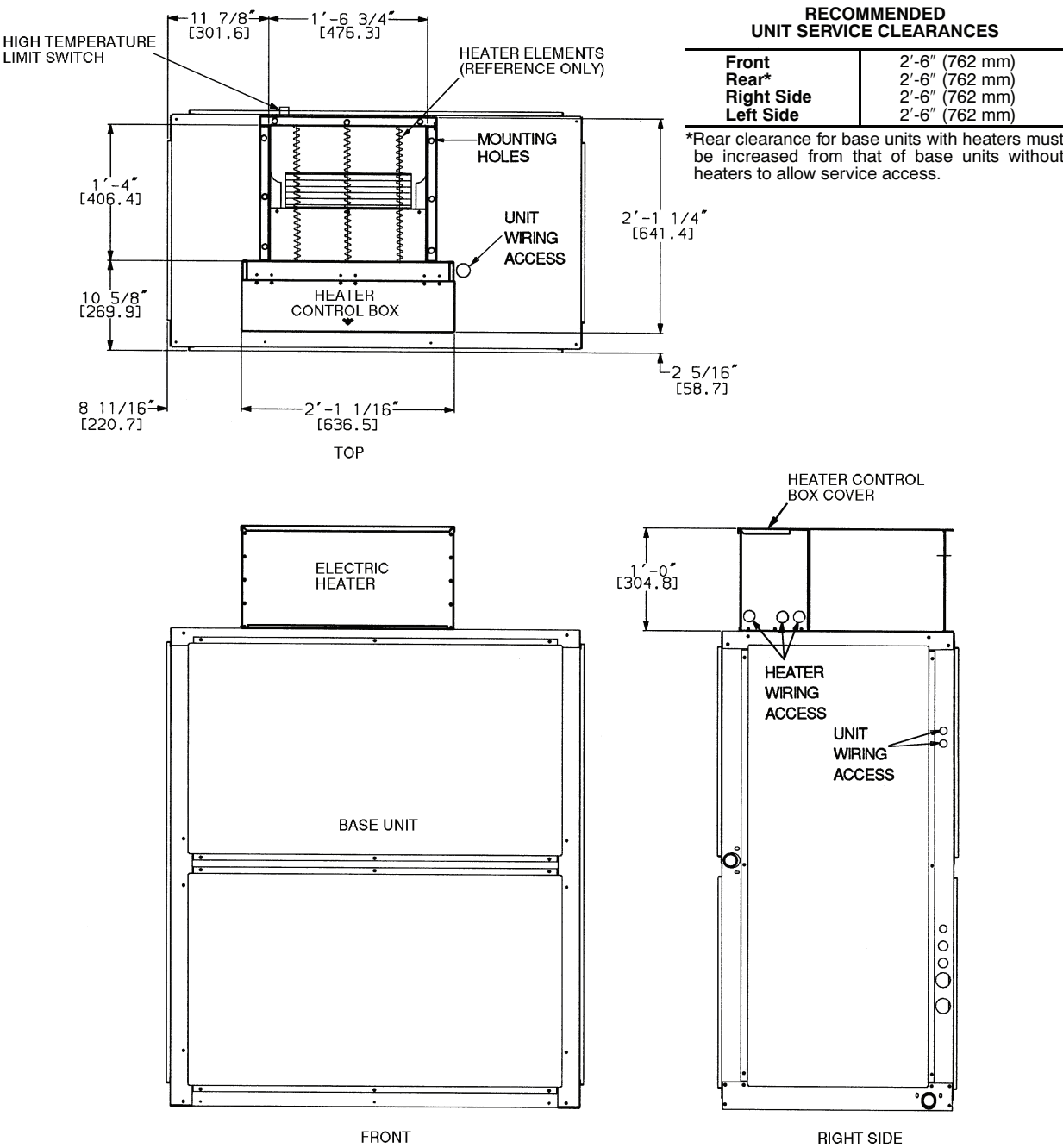
Mount Heater

The heaters must be mounted on the supply duct(s) of the air handler for blow-thru operation, as shown in Fig. 1. 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 heater control box facing front.
3. Reinstall screws through the heater frame's inner flanges and into the fan deck. Tighten screws.

NOTE: Fig. 1 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.

6 To 10 Ton (21 to 35 kW) Units

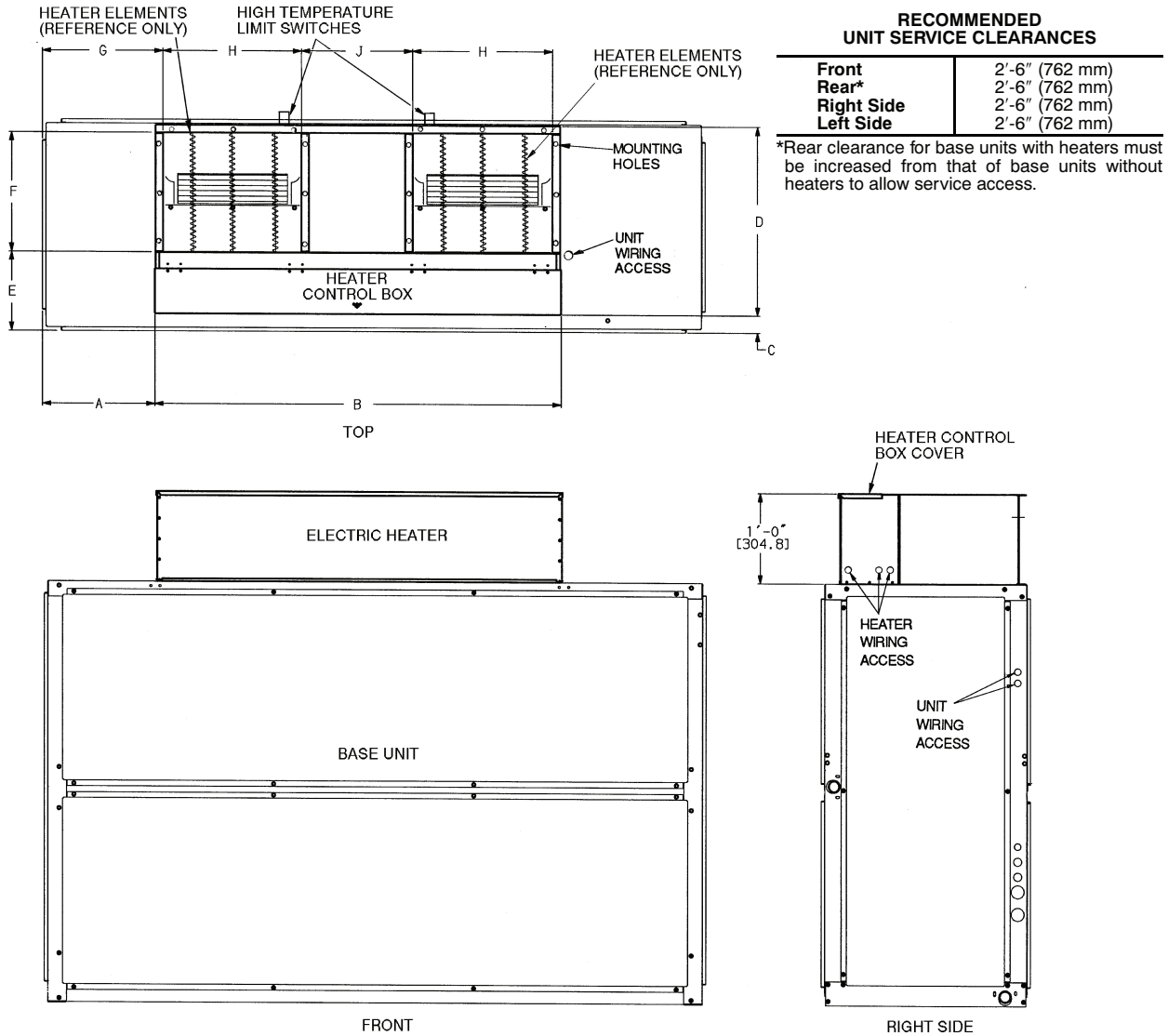


NOTE: Dimensions in [] are millimeters.

Fig. 1 - Electric Heater Mounted on Unit

C09516

12½ To 30 Ton (43 to 105 kW) Units



DIMENSIONS

UNIT SIZES	A	B	C	D	E	F	G	H	J
12½-20 Tons	1'-3¼" [387.4]	4'-6¾" [1381.1]	25/16" [58.7]	2'-1¼" [641.4]	0'-105/8" [269.9]	1'-4" [406.4]	1'-45/16" [414.3]	1'-6¾" [476.3]	1'-07/8" [327.0]
25 and 30 Tons	1'-35/16" [389.6]	5'-47/16" [1647.7]	21/16" [52.3]	2'-63/16" [766.8]	1'-0¼" [311.2]	1'-7" [482.6]	1'-45/16" [414.0]	1'-10" [558.8]	1'-47/16" [448.8]

NOTE: Dimensions in [] are millimeters.

C09517

Fig. 1 – Electric Heater Mounted on Unit (cont)

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.) 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. (See Fig. 2.)

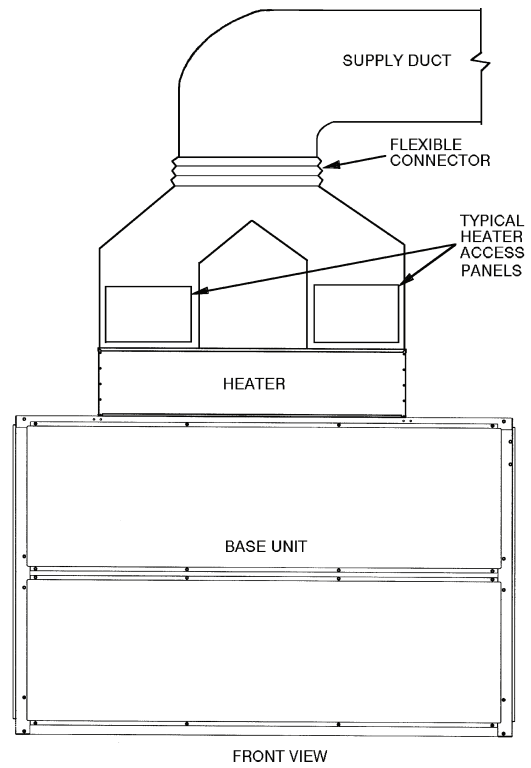
3. Insulate the outside of the heater (Fig. 3) except the control box, which has internal insulation. Insulation is required to minimize condensation when the unit is in the Cooling mode and to provide additional protection from hot surfaces when the unit is in the Heating mode. Also insulate the supply duct connected to the heater as required by the base unit installation instructions.

Make Electrical Connections

Refer to Fig. 4 for wire routing, Fig. 5-7 for typical heater wiring, and Fig. 8 and 9 for typical heater control box component layouts for connections. Wire the electric heater and unit assembly as follows:

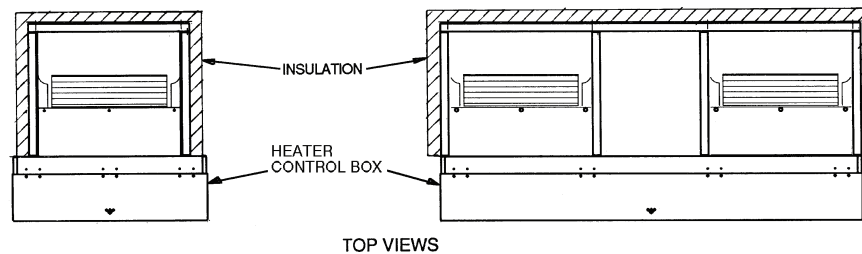
1. Remove heater control box cover and unit side access panel.

2. Using correctly sized field-supplied power wire selected from Table 1 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 Table 1 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 and 6.)
7. Connect control wiring (see Step 4) from heater terminal connections W1, W2, and C to the unit's TB1 terminals with the same labels, as shown in Fig. 7.
8. Re-install heater control box panel and unit side panel.



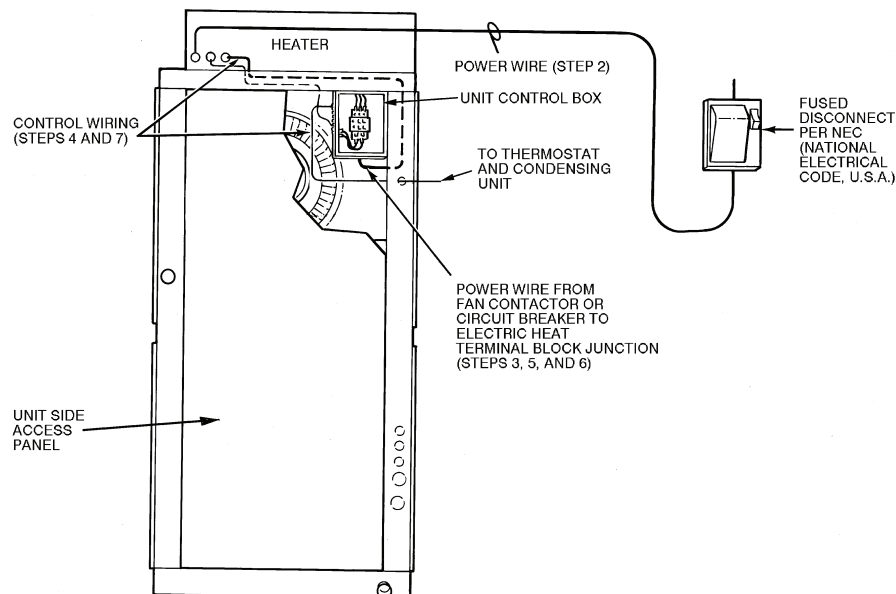
C09518

**Fig. 2 - Typical Ductwork Installation:
12-1/2 to 30 Ton (43 to 105 kW) Unit Shown**



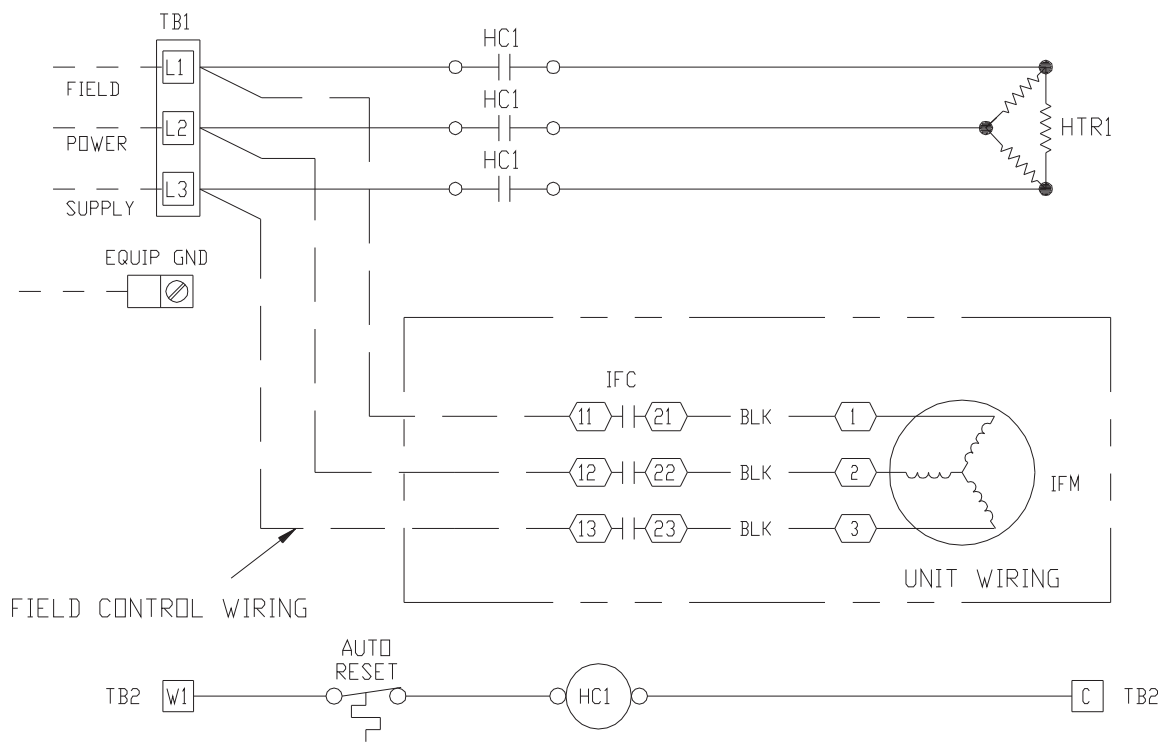
C09519

Fig. 3 - Heater Insulation



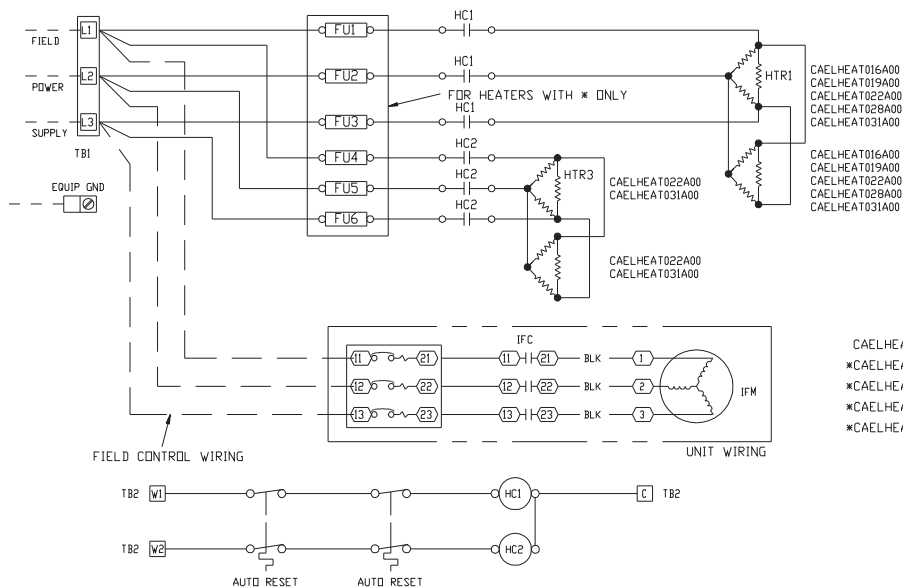
C09520

Fig. 4 - Wire Routing



CAELHEAT001A00	240V	5KW
CAELHEAT004A00	240V	10KW
CAELHEAT007A00	240V	15KW

C14220



EQUIP GND — Equipment Ground
FU — Fuse
HC — Heater Contactor
H.P. — Horsepower
HTR — Heater Elements
IFC — Indoor Fan Contactor
IFM — Indoor Fan Motor
TB — Terminal Block Connection

Terminal Block Connection — (Symbol: Square with a dot)
Marked Connection — (Symbol: Hexagon)
Unmarked Connection — (Symbol: Circle)
High Temperature Limit Switch (Auto Reset) — (Symbol: Switch with a reset button)
Factory Wiring — (Symbol: Solid line)
Field Wiring — (Symbol: Dashed line)

Fig. 5 - Wiring Diagrams, 240 V Electric Heat Accessories

C14224

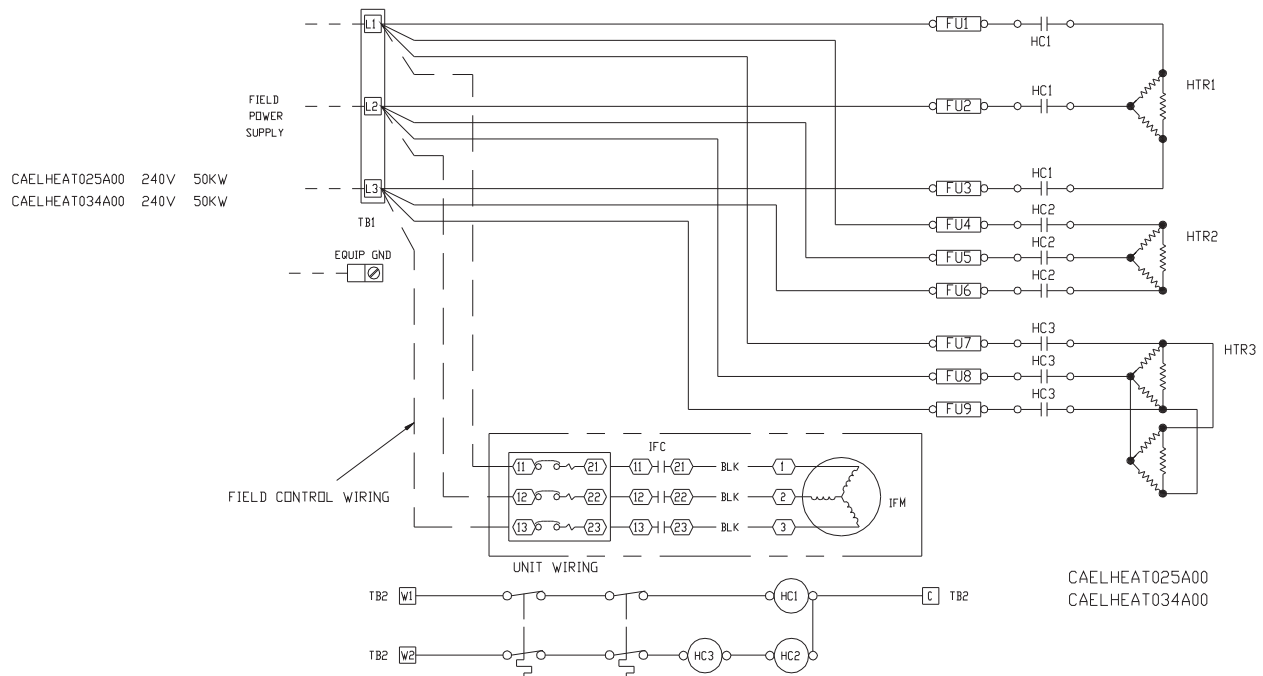
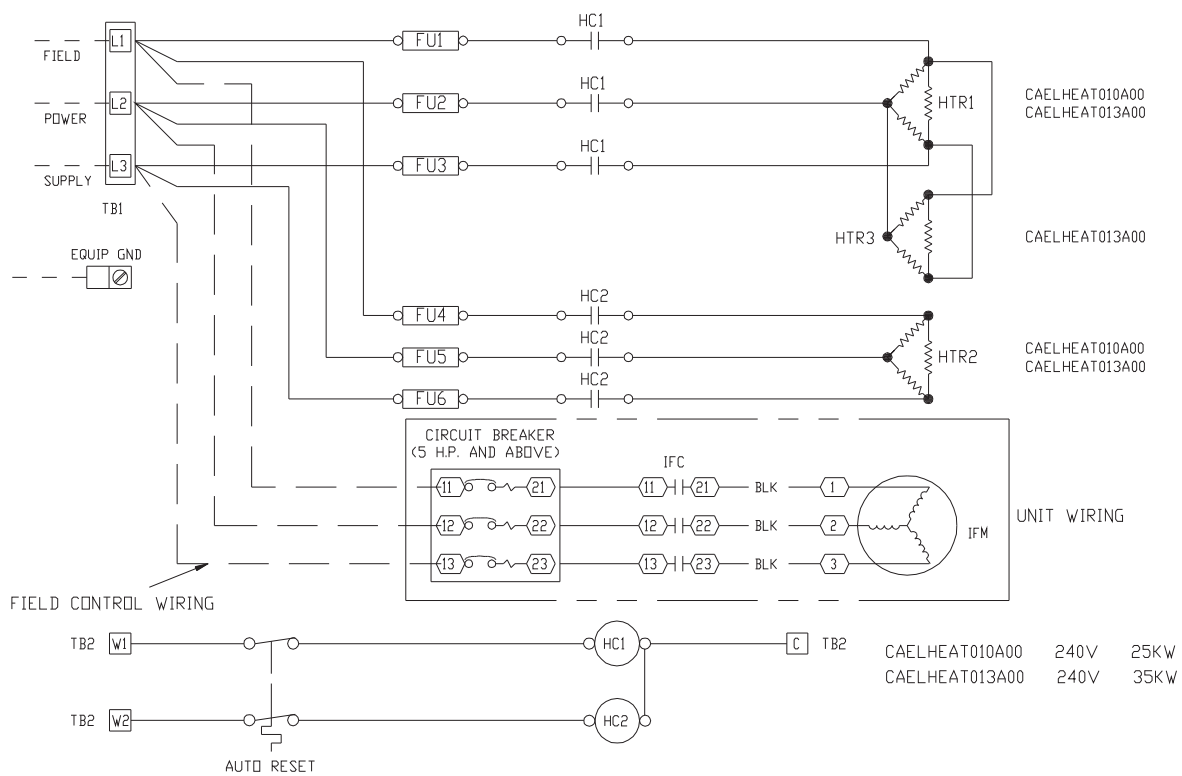


Fig. 5 – Wiring Diagrams, 240 V Electric Heat Accessories (cont)

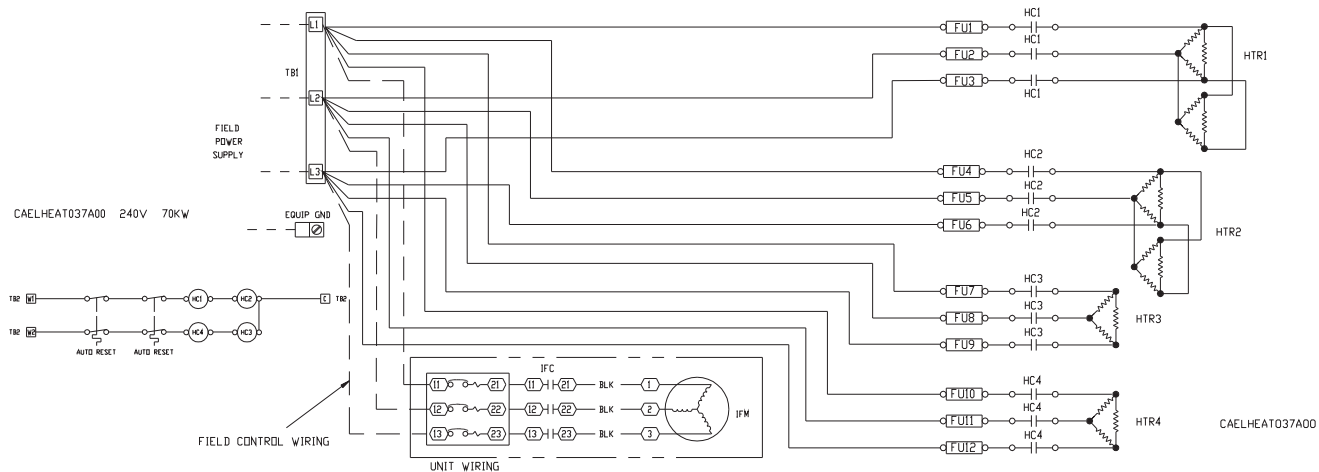
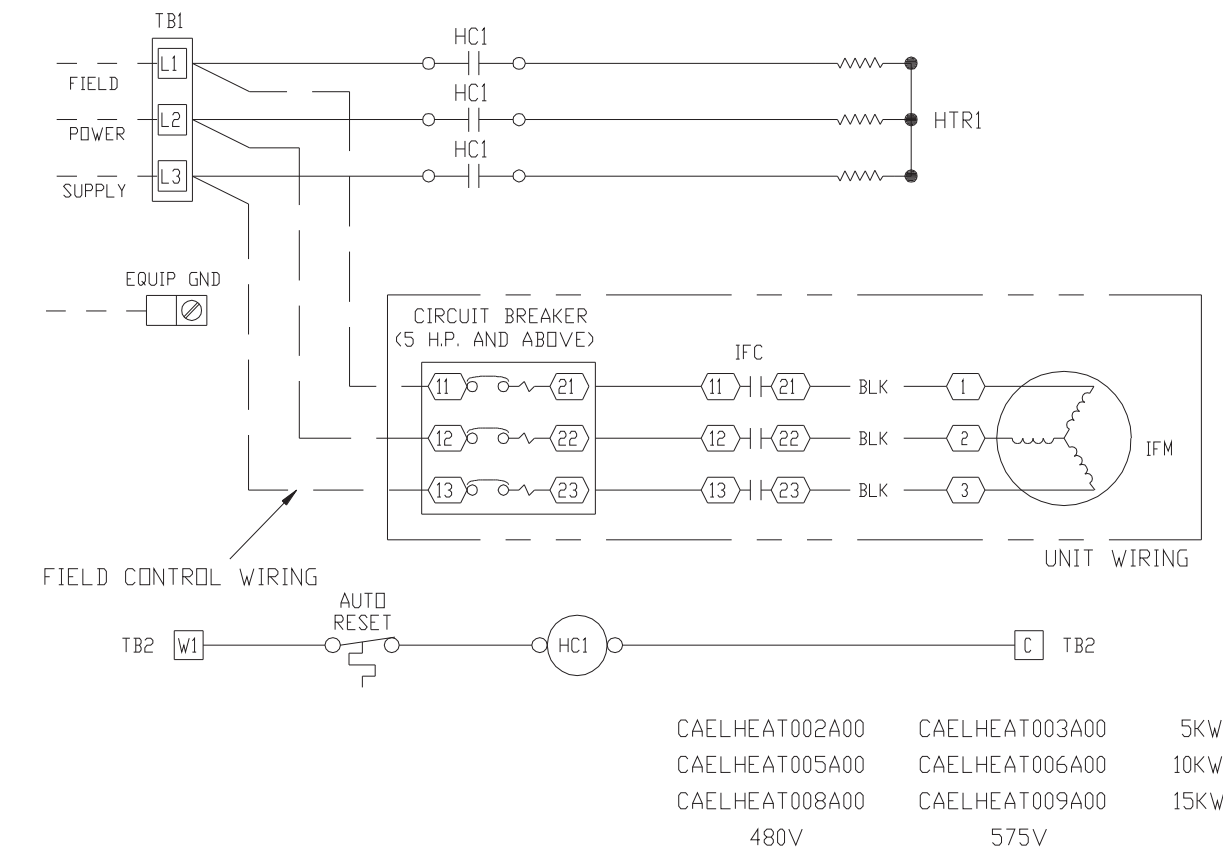
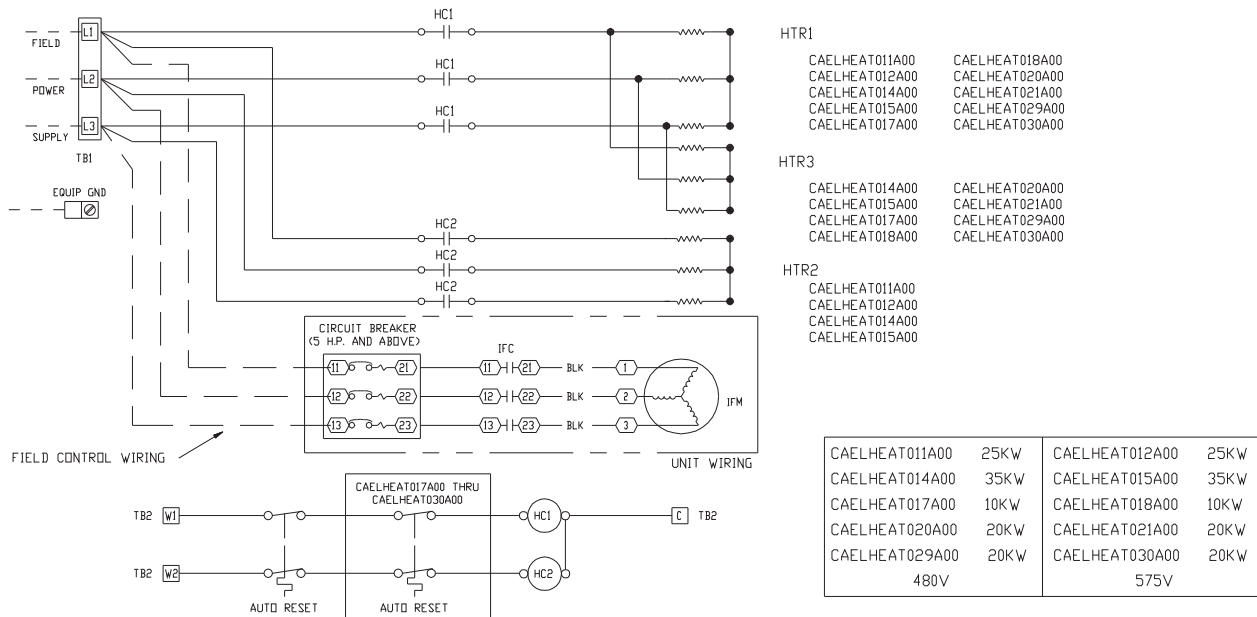


Fig. 5 – Wiring Diagrams, 240 V Electric Heat Accessories (cont)

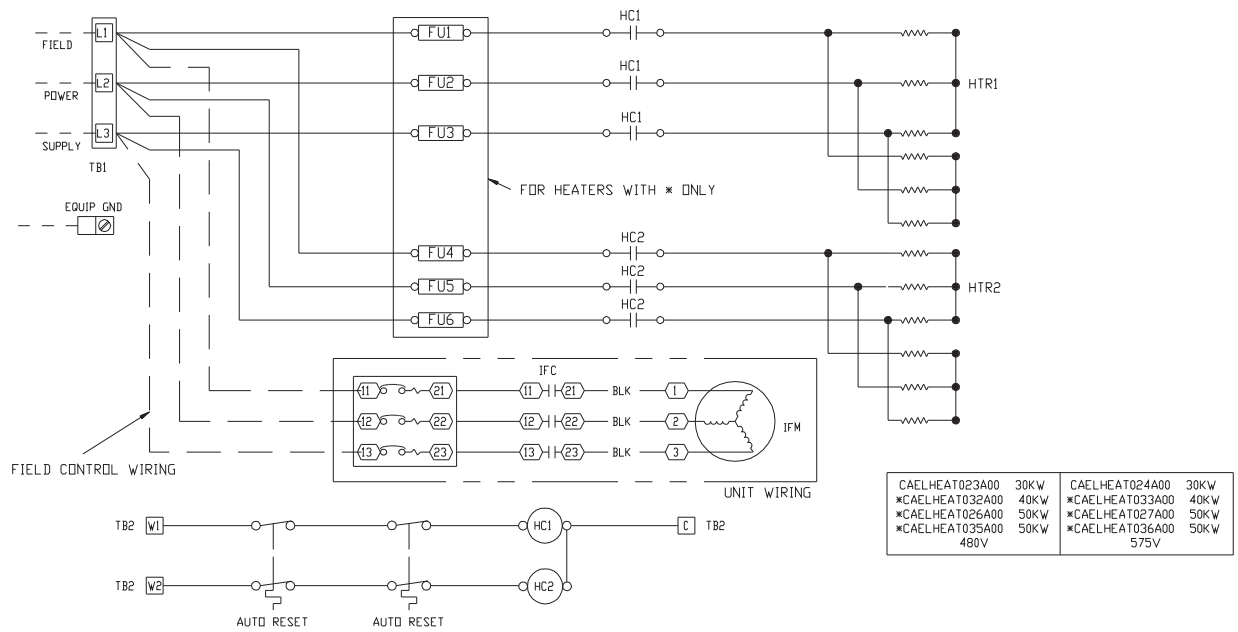


C14223

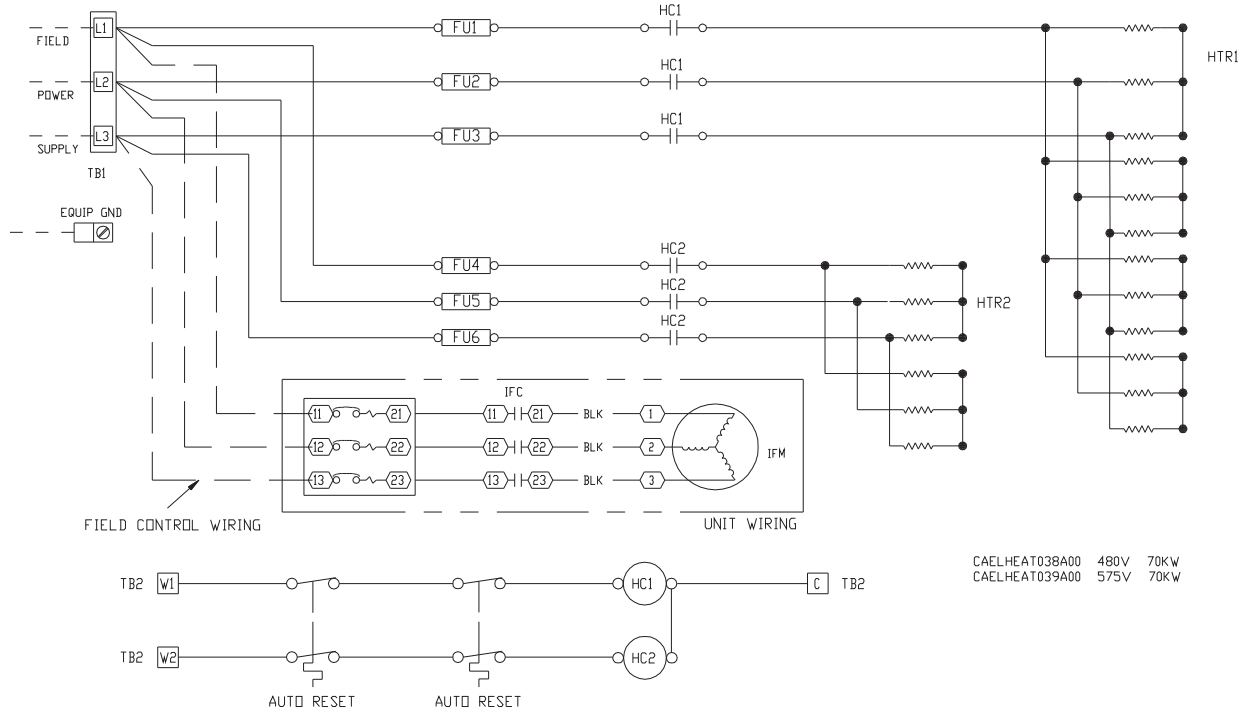


C14222

Fig. 6 - Wiring Diagrams, 480V and 575 V Electric Heat Accessories



C14227



C14228

Fig. 6 – Wiring Diagrams, 480 V and 575 V Electric Heat Accessories (cont)

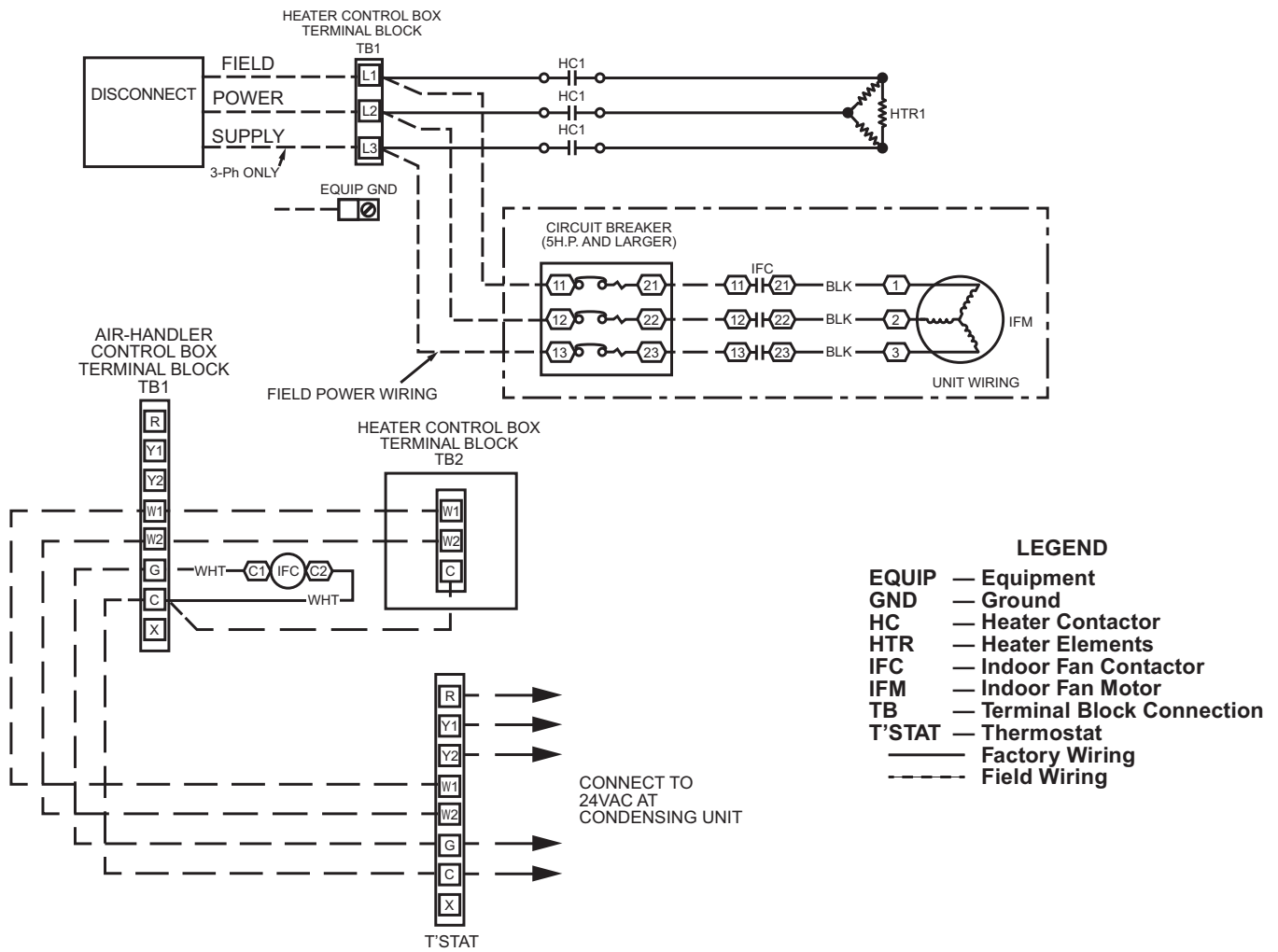


Fig. 7 - Electric Heat and Control Wiring

C14229

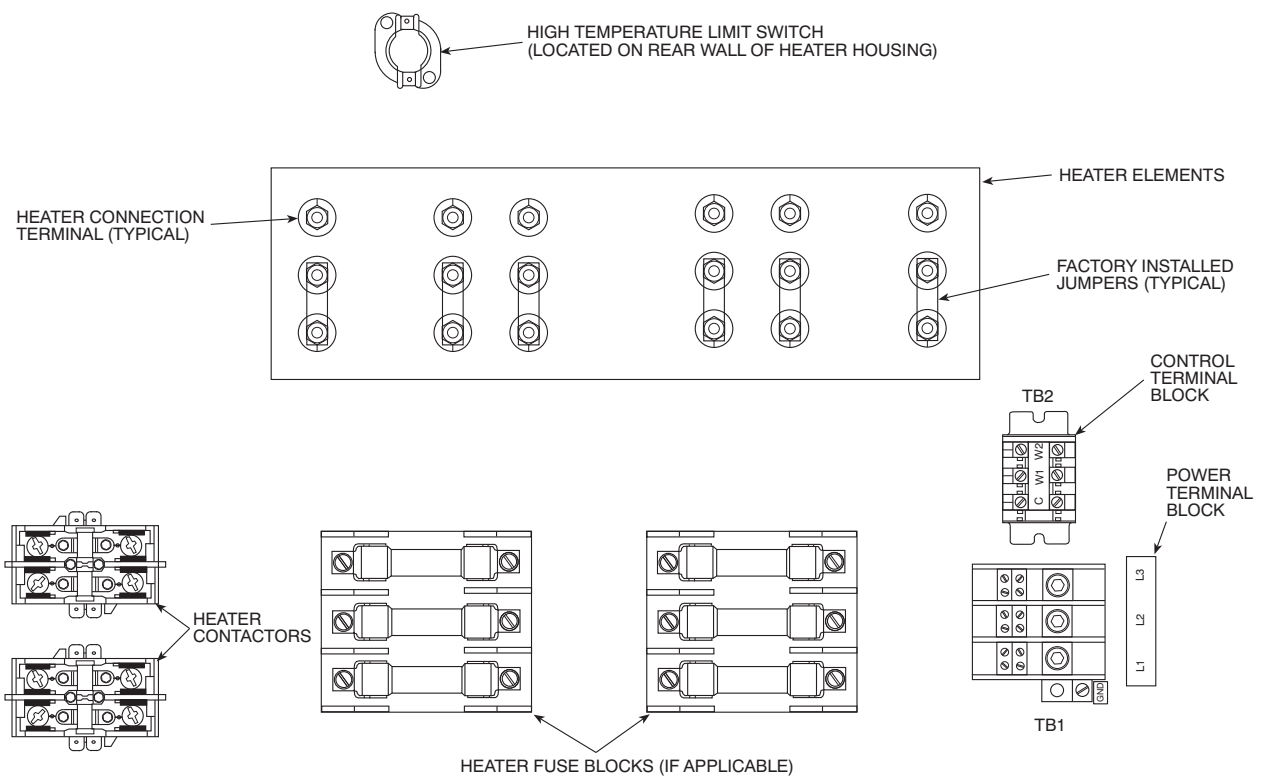


Fig. 8 - Typical Heater Control Box Component Layout for 6 to 10 Ton (21 to 35 kW) Units

C09521

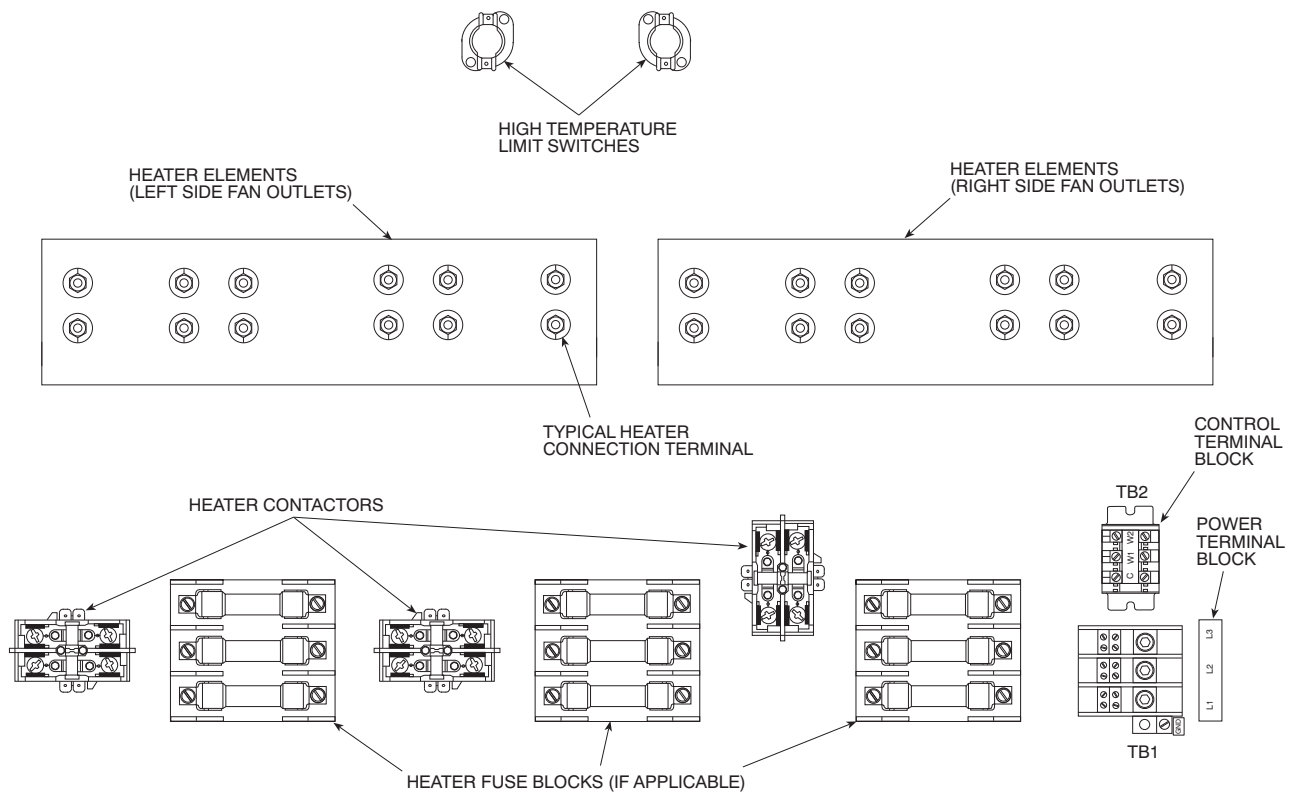


Fig. 9 - Typical Heater Control Box Component Layout for 12-1/2 to 30 Ton (43 to 105 kW) Units

C09522

Outdoor Thermostat (Econostat)

The outdoor thermostat accessory, Part No. HH22YA070, is offered by Replacement Components Division 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.

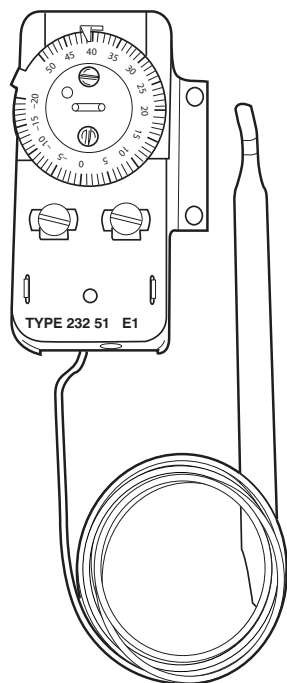


Fig. 10 - Outdoor Thermostat

C09523

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.) Fig. 8 and 9 show 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.)

The heaters for the 12-1/2 to 30 ton (43 to 105 kW) units have two high temperature limit switches; one for each fan outlet. They are located on the rear wall of the heater assembly. (See Fig. 1.)

If a problem with the limit switch(es) is suspected, remove the switch(es) and test the switch set points. Table 2 shows the correct set points.

Table 2 – High Temperature Limit Switch Set Points

UNIT SIZE	CUT-OUT – °F (°C)	CUT-IN – °F (°C)
6 to 10 Ton (21 to 35 kW)	115 (46.1)	85 (29.4)
12-1/2 to 30 Ton (43 to 105 kW)	140 (60)	90 (32.2)

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. 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. (See Fig. 2.) 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.

