



*Quality People. Building Solutions.*

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**Date:** 4/4/2025

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**Supplier:** Airetech

**Manufacturer:** Markel

**Submittal:** Electric Ceiling Heaters O&M

**Submittal Number:** 230000-03

**Drawing # and Installation:** Mechanical Drawings

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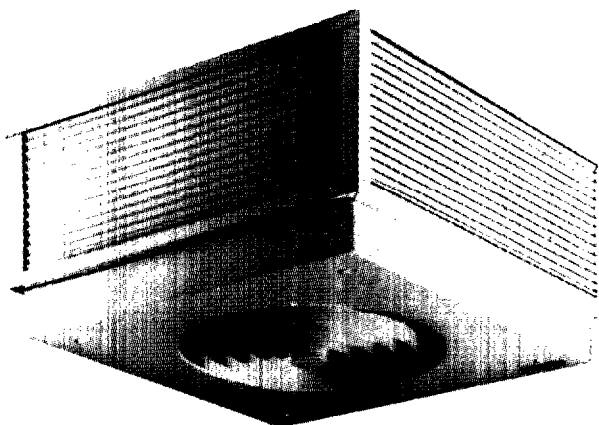


**TRANE®**

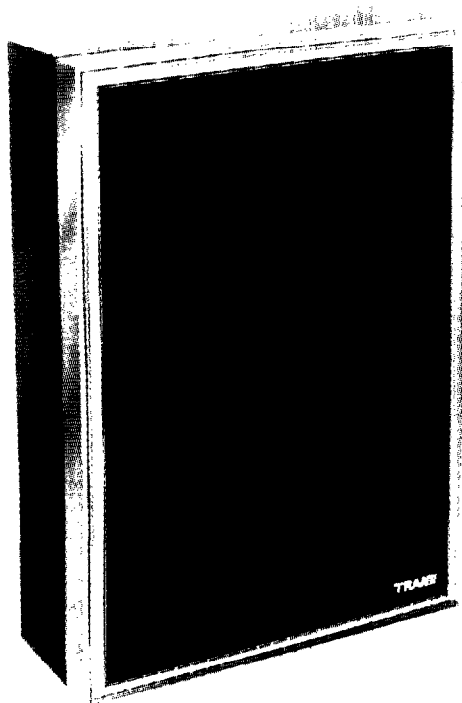
**UH-DS-6**  
**April 1998**

**UH-DS-6**

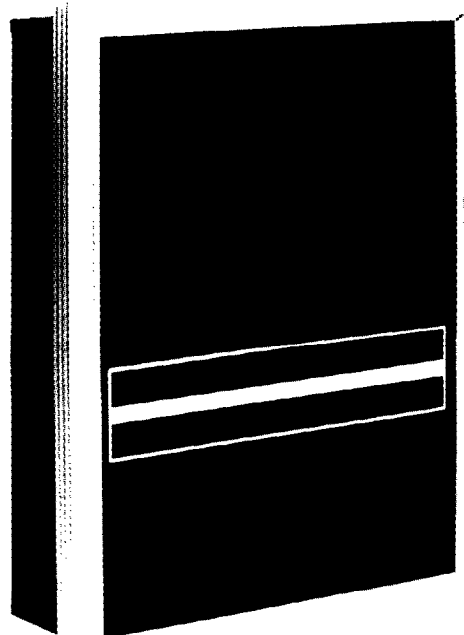
## **Electric Forced Air Wall and Ceiling Heaters**



- Model UHCA
- 2000-5000 Watts
- 208, 240 V Single and Three Phase
- 277 V Single Phase



- Model UHWA
- 2000-5000 Watts
- 208, 240 Volt Single and Three Phase
- 277 Volt Single Phase



- Model UHAA
- Series 3320



## Features and Benefits

### Heavy-Duty Wall Heaters

Trane heavy-duty wall mounted electric forced-air unit heaters are architecturally styled in a vandal-resistant design for all commercial, institutional and many industrial applications. They are particularly suited for schools, office buildings, dormitories, stores, hospitals and other public buildings.

### Solid Construction and Dependable Components

#### Sleeve

Sleeve for surface or semi-recessed installation. 16 gauge (1.5 mm thickness) zinc coated steel.

#### Element

Totally enclosed, corrosion-resistant. Maximum finning for lower operating temperature and longer life. Will not become dust clogged. (No filter required.)

#### Thermal Cut-Out

Exclusive "zero voltage reset" type for high degree of effectiveness if normal operating temperatures are exceeded.

#### Transformer

Optional factory assembled and wired in 50 Series. Choice of 24 or 120 volt secondary.

#### Entrance Terminals

Line side termination enclosed for safe servicing of heaters when supplied with circuit breakers.

#### Circuit Breakers

Reduces installation cost by allowing one or more heaters to be wired from feeder and feeder tap. Separate control circuit switch supplied when required. All power can be turned off before front cover is removed.

The high capacity and wide range of voltage/phase and control systems provides application versatility to meet most installation requirements. A wide selection of built-in factory installed and wired, pre-engineered control systems minimizes system design and installation time.

All units are equipped with zero voltage reset thermal cut-outs for overheat protection and a totally enclosed, permanently lubricated motor. Optional circuit breaker, control transformer and a selection of integral or wall-mounted thermostat controls are part of the unit package.



#### Louvered Grille

Heavy-duty welded steel for maximum impact resistance. Closely spaced (pencil proof), tamperproof.

#### Motor Shield

Protects motor by separating return air from heated air.

#### Motor

Heavy-duty unit bearing, permanently lubricated, totally enclosed, impedance protected.

#### Blade

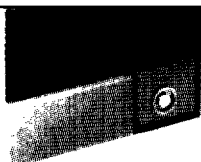
Highly efficient, space saving blade-over-motor design, individually balanced.

#### Contactor

Optional, definite purpose, heavy-duty type with flame path separators and dust covers. Choice of heater voltage, 120 volt or 24 volt holding coil.

#### Thermostat

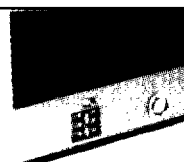
Optional heavy-duty hydraulic snap action type with sensing bulb in return airstream. Disconnects all ungrounded conductors in OFF position.



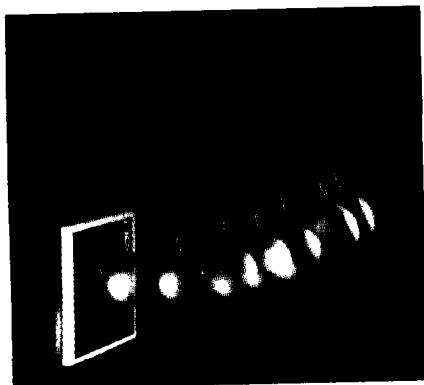
Series 50 with exposed thermostat knob and covered circuit breaker and control switch only



Series 20 and 50 with tamper-resistant thermostat cover plate which is included with each heater.



Series 50 with tamper-resistant cover removed.



- Architecturally styled and vandal-resistant for schools, churches, stores, office buildings, transportation terminals, dormitories, hospitals.
- Use in vestibules, entrance ways, lobbies, corridors, stairways, reception rooms, rest rooms, offices.
- Simple application design — Wide selection of built-in, factory installed and wired, pre-engineered control systems. Saves design and on-the-job time.
- Versatile application — Higher capacity and wider range of voltage/phase and control systems than any similar heaters previously available.
- Heater front withstands with less than  $\frac{1}{16}$ " (1.6 mm) permanent distortion, 10.8 ft lbs (324 poundals) impact and 400 lbs (181.4 kg) static force applied to an 8 sq. in. (5160 sq. mm) area at center grille location.

## Heavy-Duty Wall Mounted Electric Forced-Air Unit Heaters

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# General Data

Model UHWA  
Series 20 and 50

**Table 4-1 — Electric Wall-Mounted Unit Heaters — Series 20**

Watts	Model No. UHWA	Order No. 233	Element + Motor Voltage	Element Phase	Ship Wt. Lbs	Ship Wt. Kg	BTU	Degree F Air Rise	Degree C Air Rise
2000 Watts	021A2AT	-400	208	1	41	18.6	6,826	27	15
	021B2AT	-402	240	1					
	021C2AT	-404	277	1					
3000 Watts	031A2AT	-406	208	1	41	18.6	10,239	41	23
	031B2AT	-408	240	1					
	031C2AT	-410	277	1					
4000 Watts	041A2AT	-412	208	1	41	18.6	13,652	57	32
	041B2AT	-414	240	1					
	041C2AT	-416	277	1					
	043A2AT	-418	208	3					
	043B2AT	-420	240	3					
5000 Watts	051A2AT	-422	208	1	41	18.6	17,065	73	41
	051B2AT	-424	240	1					
	051C2AT	-426	277	1					
	053A2AT	-428	208	3					
	053B2AT	-430	240	3					

Note: ONLY thermostat and/or contactor may be built-in on Series 20 wall heaters.

**Table 4-2 — Electric Wall-Mounted Unit Heaters — Series 50**

Watts	Model No. UHWA	Order No. 233	Element + Motor Voltage	Element Phase	Ship Wt. Lbs	Ship Wt. Kg	BTU	Degree F Air Rise	Degree C Air Rise
2000 Watts	021A5AT	-431	208	1	54	24.5	6,826	27	15
	021B5AT	-433	240	1					
	021C5AT	-435	277	1					
3000 Watts	031A5AT	-437	208	1	55	24.9	10,239	41	23
	031B5AT	-439	240	1					
	031C5AT	-441	277	1					
4000 Watts	041A5AT	-443	208	1	55	24.9	13,652	57	32
	041B5AT	-445	240	1					
	041C5AT	-447	277	1					
	043A5AT	-449	208	3					
	043B5AT	-451	240	3					
5000 Watts	051A5AT	-453	208	1	55	24.9	17,065	73	41
	051B5AT	-455	240	1					
	051C5AT	-457	277	1					
	053A5AT	-459	208	3					
	053B5AT	-461	240	3					

Note: If circuit breaker and/or transformers are required, the Series 50 wall heater must be ordered. 1 Watt Equals 3.413 Btu.



## Controls

## Model UHWA Series 20 and 50

### Control Systems

Type of Control	WD	Heater Type
Built-in thermostat control	1	20 & 50 (1)
Wall mounted thermostat, heater voltage, line duty. For single phase heaters use SP or DP (DP if used as a disconnect) of sufficient capacity. For three-phase heaters use TW1512 which cycles two poles simultaneously.	2	20 & 50 (1)
Wall mounted, heater voltage, pilot duty, one or more heaters. Heater has built-in contactor with heater voltage coil.	3	20 & 50 (1)
Wall mounted, 120 V, pilot duty, one or more heaters. Heater has built-in contactor with 120 V coil.	4	20 & 50
Wall mounted, 24 V, pilot duty, one or more heaters. Heater has built-in contactor with 24 V coil.	4	20 & 50
Wall mounted, 24 V. Heater has built-in contactor with 24V coil and heater voltage/24 V transformer.	5	50 Only
Wall mounted, pilot duty, 120 V. Heater has built-in contactor with 120V coil and heater voltage/120 V transformer.	5	50 Only

(1) If built-in circuit breaker and/or built-in transformer are desired, 50 Series must be ordered.

Transformer with 24 V secondary (A1) available on all models.

Transformer with 120 V secondary (A2) available on following models only:

All three-phase models

277 V one-phase up to 4000 watts

208 and 240 V one-phase up to 3000 watts

### Accessories

#### For accessory built-in controls:

- T Built-in thermostat breaks all ungrounded conductors in OFF position.
- C Circuit breaker (Series 50 only) arranged to be disconnected before removal of front with line side terminals covered for safe maintenance. Additional control circuit switch installed if required.
- R Built-in contactor holding coil same as heater voltage.
- R1 Built-in contactor 24V holding coil.
- R2 Built-in contactor 120V holding coil.
- A1 Built-in control transformer, (Series 50 only) 24V secondary.
- A2 Built-in control transformer, (Series 50 only) 120V secondary available on all three-phase heaters, up to 3000 watts on 208 and 240V, one-phase and up to 4000 watts on 277V, 1-phase.

#### For semi-recessed and surface mounting:

##### 20 Series

- 20 EX 34 Extension sleeve for full surface mounting.
- 20 EX 16 Extension sleeve for extending front additional 2" (50.8 mm) from finished wall. Heater recesses 2 1/4" (57.2 mm).
- 20 EX 8 Extension sleeve for extending front additional 1" (25.4 mm) from finished wall. Heater recesses 3 1/4" (82.6 mm).
- 20 Box Must be used on all heater installations.

##### 50 Series

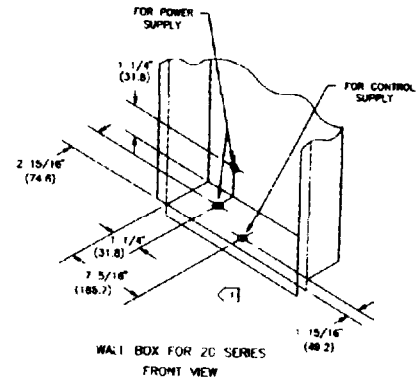
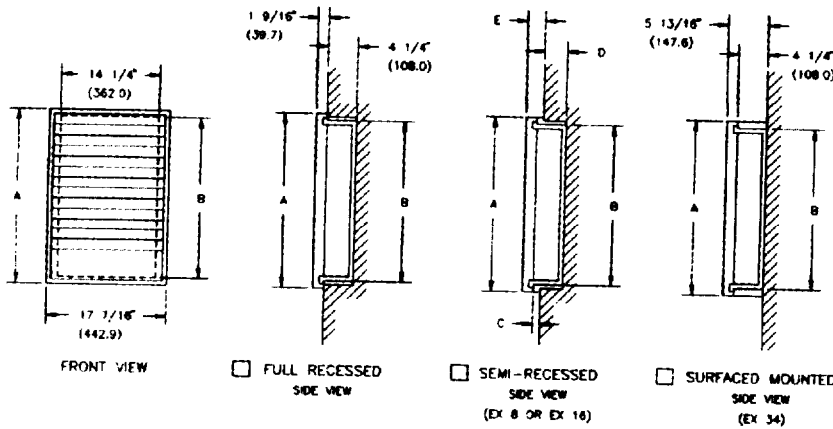
- 50 EX 34 Extension sleeve for full surface mounting.
- 50 EX 16 Extension sleeve for extending front additional 2" (50.8 mm) from finished wall. Heater recesses 2 1/4" (57.2 mm).
- 50 EX 8 Extension sleeve for extending front additional 1" (25.4 mm) from finished wall. Heater recesses 3 1/4" (82.6 mm).
- 50 Box Must be used on all heater installations.



**TRANE**

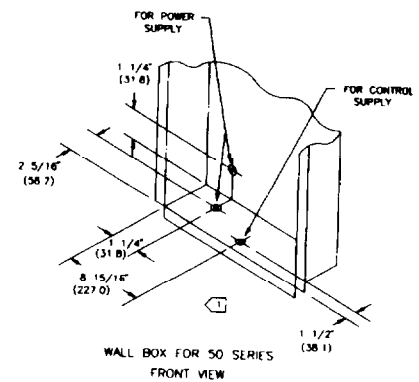
# Dimensional Data

Model UHWA  
Series 20 and 50

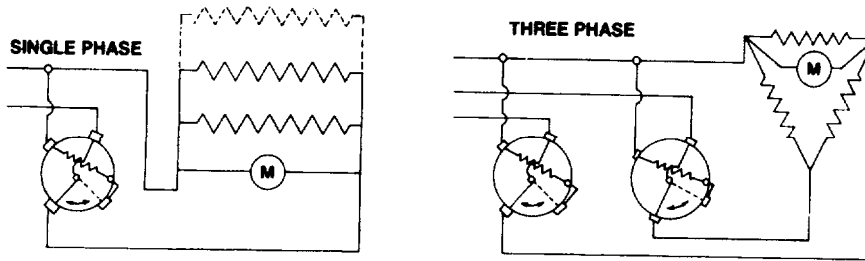


20/50 DIMENSIONS		EXTENDERS									
UNIT	A	B	C	D	E	C	D	E			
20 SERIES	21 15/32\" (545.3)	19 3/8\" (492.1)	1\" (25.4)	3 1/4\" (82.6)	2 9/16\" (65.1)	2\" (50.8)	2 1/4\" (57.2)	5 9/16\" (90.5)			
50 SERIES	25 1/32\" (635.8)	23 1/16\" (585.8)	1\" (25.4)	3 1/4\" (82.6)	2 9/16\" (65.1)	2\" (50.8)	2 1/4\" (57.2)	5 9/16\" (90.5)			

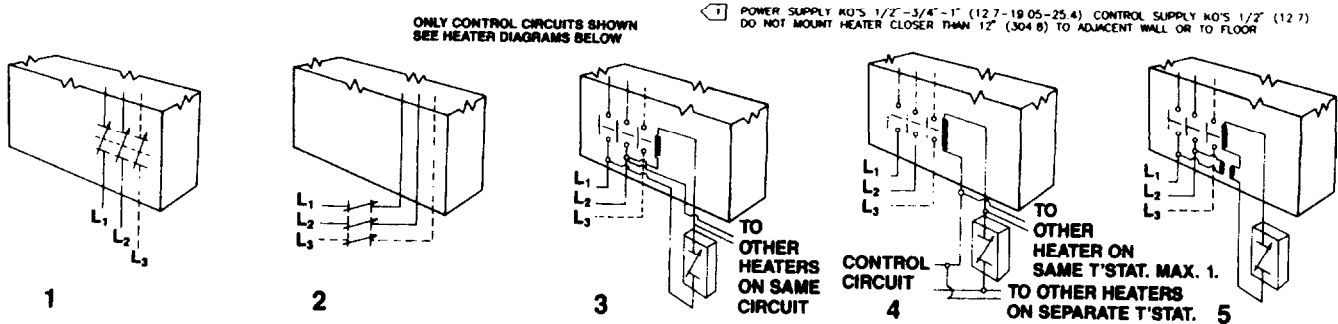
- 1 FOR SEMI RECESSED AND SURFACE MOUNTING, USE THE FOLLOWING EXTENSION SLEEVES.  
 EX 34 EXTENSION SLEEVE FOR FULL SURFACE MOUNTING.  
 EX 16 EXTENSION SLEEVE FOR EXTENDING FRONT ADDITIONAL 2\" (50.8) FROM FINISHED WALL. HEATER RECESSES 2 1/4\" (57.15).  
 EX 8 EXTENSION SLEEVE FOR EXTENDING FRONT RECESSES 3 1/4\" (82.55).
- 2 ONLY THERMOSTAT AND/OR CONTACTOR MAY BE BUILT-IN THE SERIES 20 HEATERS.
- 3 IF CIRCUIT BREAKER AND/OR TRANSFORMER ARE REQUIRED SERIES 50 ONLY MUST BE ORDERED.



## Typical Heater Element, Motor, "Zero Voltage Reset" Thermal Cutout



## Control System Wiring Diagrams



Dimensions in ( ) are shown in millimeters.



# Mechanical Specifications

Contractor shall supply and install heavy-duty, wall-mounted forced-air electric unit heaters of the wattage, voltage and phase as indicated on the plans. The heater is designed to provide an even distribution of heated air to the space by drawing return air in the periphery of the heater across the element, which shall then be discharged from the center section of the heater by means of an electric motor and axial flow fan blade.

Heaters are recessed to extend no more than 1 1/2" (38.1 mm) from the finished wall, surface mounted to extend no more than 5 3/4" (146.1 mm) from the finished wall or semi-recessed to extend no more than 2 1/2" (63.5 mm) from the finished wall.

## Enclosure

Heater front can withstand, with less than 1/16" (1.6 mm) permanent distortion, 10.8 ft. lbs (324 poundals) impact and 400 lbs. (181.4 kg) static force applied to an 8 sq. in. (5160 sq mm) area at center grille location.

The combination return and supply grille assembly are constructed of 1/16" (1.6 mm) x 3/8" (9.5 mm) rounded edge horizontal steel. Louvers are spaced for maximum opening of 1/4" (6.4 mm). Louvers are welded at every intersection to three evenly spaced 1/16" (1.6 mm) diameter vertical members and completely framed in a heavy-gauge natural anodized aluminum extrusion. Front assembly are be attached to the chassis by hidden tamper-resistant (Allen-head) machine screws. All other parts are 16-gauge (1.5 mm thickness) steel zinc coated both sides painted in a high gloss bronze colored baked enamel finish.

## Motor

Motors are permanently lubricated unit bearing, totally enclosed, shaded pole type with impedance protection. Motors will operate at no more than 1400 rpm (23.3 rps) and are the same voltage as the heater. A protective shield shall surround the motor to separate return air from heated air.

## Performance

Heaters have a rating of 245 cfm (115.6 l/s) at 660 fpm (3352.8 mm/s) with a maximum temperature rise of 73 F (40.6 C).

## Elements

Element assemblies consist of two or three corrosion-resistant steel sheathed type elements mechanically bonded to common corrosion-resistant steel fins. Each sheathed element consist of helically coiled nickel chromium alloy-resistant wire completely embedded in and surrounded by magnesium oxide, enclosed and wedged into corrosion-resistant steel sheaths. Elements have 2" (50.8 mm) cold conductor pins extending into the sheath and have a density of no more than 60 watts per inch (25.4 mm).

## Thermal Overload

Heaters are equipped with a "zero voltage reset" thermal overload which disconnects elements and motor in the event normal operating temperatures are exceeded. For safety, if opened due to abnormal temperatures, thermal overload will remain open until manually reset by turning heater off for five minutes. Automatic reset thermal overloads which allow the element to continue to cycle under abnormal conditions will not be accepted.

## Warranty

Heaters are warranted for 5 years.

## Approval

Heaters are Underwriters' Laboratories listed. Heaters are conform to Underwriters' Laboratories, Inc. Standard 1025, Paragraphs 31.20, 31.21, 31.22 and 31.23. Heaters not conforming to these paragraphs will not be acceptable.

## Optional Control Systems

Heaters are operated from wall-mounted, line voltage, heavy-duty (tamper-resistant) thermostats.

Heaters with built-in, pre-wired contactors are operated from wall-mounted, line voltage, pilot duty (tamper-resistant) thermostats.

Heaters with built-in, pre-wired contactors (and control transformers) will be operated from wall-mounted, pilot duty (24 V) or (120 V) wall-mounted tamper-resistant thermostats.

Heaters are controlled by integrally mounted thermostats. Thermostats are heavy-duty, hydraulic type with a range of 40 F (4.4 C) to 80 F (26.7 C) and with remote sensing bulb placed in the return air. Thermostats shall be electrically rated at least 125 percent of heater rating. Thermostats also act as a disconnect by breaking all ungrounded conductors in the OFF position. (Thermostat control knob is covered by a 16-gauge (1.5 mm thickness) tamper-resistant access plate to prevent adjustment by unauthorized personnel.)

## Contactors

Where required, heaters are equipped with heavy-duty, definite purpose contactors with flame path separators and dust covers. Contactors will cycle all ungrounded conductors. Contactors have holding coils (of the same voltage as the heater), or 120 volts or 24 volts.

Contactors are be rated at least 125 percent of heater rating and are UL approved for 250,000 cycles.

## Control Transformers

Heater are equipped with a Class 2 control transformer, sealed rating of 20 VA, to supply control circuits of 24 volts or 120 volts. (120 volt secondaries not available in single phase heaters over 3 kW.)

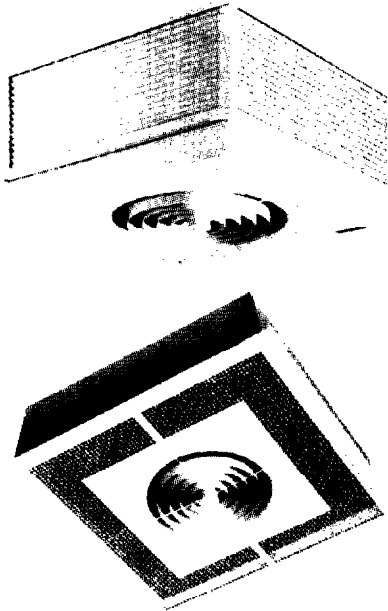
## Circuit Breakers

Heaters equipped with built-in circuit breakers in order to allow the heaters to be supplied from feeder taps. A separate switch providing a positive off for control circuits are included where required. Circuit breakers and control switches are arranged so that all line side conductors will be separately enclosed when heater front is removed for servicing so that no current-carrying parts are accessible without the use of additional tools.



## Features and Benefits

Model UHCA  
Series 70 and 80



**Series 80**  
Recess mounted for 2' (609.6 mm) x  
2' (609.6 mm) "T" bar or plaster  
ceilings

**Mounting Bracket** — features swing up installation on surface mounted 70 Series. Bracket center notched to accept screws of ceiling outlet box (installed by others). Recessed heater 80 Series has junction box attached to heater can.

**Motor** — heavy-duty unit bearing, permanently lubricated, totally enclosed, impedance protected.

**Blade** — highly efficient, space-saving blade over motor design, individually balanced.

**Thermal Cut-Out** — exclusive "zero voltage reset" type for highest degree of effectiveness in event normal operating temperatures are exceeded. Heater must be manually shut off for five minutes to reset. (See page 8.)

**Element** — totally enclosed and corrosion resistant. Maximum finning for lower operating temperatures and long life. Will not become dust clogged. (No filter required.)

**Discharge Venturi** — bull's-eye design permitting heated air to leave in uniform pattern.

**Plaster Trim** — optional plaster trim for recessed mounted heaters (series 80) only. Provides finished ceiling appearance.

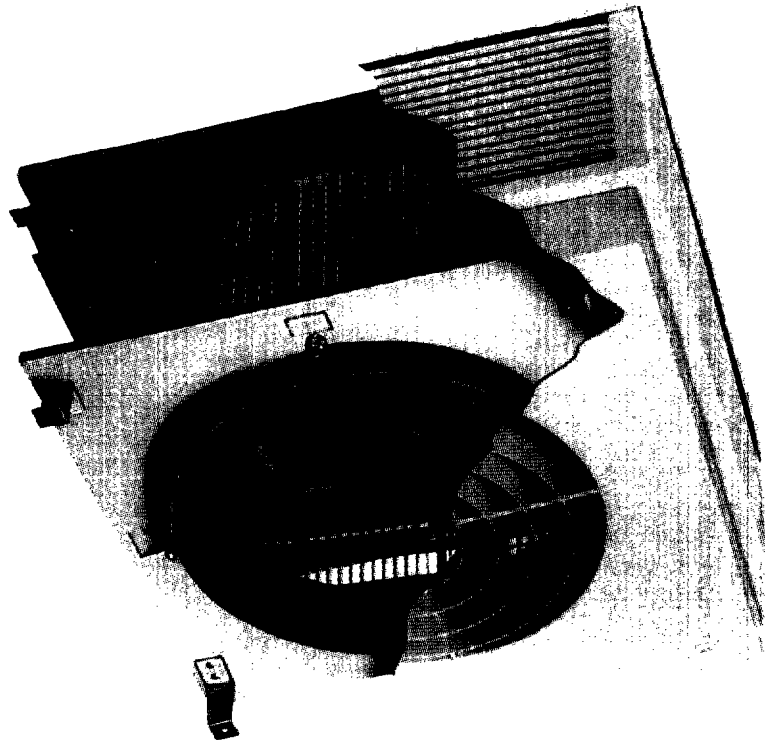
### Commercial and Industrial Ceiling-Mounted Fan Forced Heaters

#### Series 70 and 80 Features

- Crisp, unique styling to blend into any architectural design — unit designed for long life and warranted for five years.
- Higher velocity ceiling-mounted heater gets air down to warm those hard to heat areas where public accessibility is not desired or where wall area is restricted.
- Single or multiple installations at a fraction of the cost of cabinet unit heaters.
- Five-year warranty.
- 2,000 to 5,000 watts.
- 208, 204 V single and three-phase.
- 277 V single-phase.
- UL listed and conform to Underwriters' Standard 1025.

#### Commercial and Institutional Applications

- Use in vestibules, entrance ways, lobbies, restrooms and small office and guard building applications.
- A unique design offers surface and recessed applications with higher wattage capacity and wider range of voltage and phase capabilities than other heaters of this type.
- Control: Line voltage and low voltage control capabilities using accessory thermostat (see page 8).
- Unit mounted controls for Series 80 only with fan purge.





# General Data

## Model UHCA Series 70 and 80

**Table 9-1 — Series 70 Electric Ceiling Surface Heaters**

Watts	Model No. UHCA	Order No. 233	Element + Motor Voltage	Element Phase	Mounting Application	Amp Rating	BTU	*Degree F Air Rise	*Degree C Air Rise
2000	021A7A	-300	208	1	Surface	9.6	6,826	15	13.9
	021B7A	-302	240	1	Surface	8.3			
	021C7A	-304	277	1	Surface	7.2			
3000	031A7A	-306	208	1	Surface	14.4	10,239	32	17.8
	031B7A	-308	240	1	Surface	12.5			
	031C7A	-310	277	1	Surface	10.8			
4000	041A7A	-312	208	1	Surface	19.2	13,652	40	22.2
	041B7A	-314	240	1	Surface	16.7			
	041C7A	-316	277	1	Surface	14.4			
	043A7A	-318	208	3	Surface	11.1			
	043B7A	-320	240	3	Surface	9.6			
5000	051A7A	-322	208	1	Surface	24.1	17,065	44	24.4
	051B7A	-324	240	1	Surface	20.8			
	051C7A	-326	277	1	Surface	18.1			
	053A7A	-328	208	3	Surface	13.9			
	053B7A	-330	240	3	Surface	12.1			

Surface Mounted Ceiling Heaters — Series 70 designed to be mounted to standard 4 inch (101.6 mm) ceiling box furnished and installed by others. Approximate weight 32 lbs (14.5 kg) packed and shipped as complete unit.

**Table 9-2 — Series 80 Electric Ceiling Recessed Heaters**

Watts	Model No. UHCA	Order No. 233	Element + Motor Voltage	Element Phase	Mounting Application	Amp Rating	BTU	*Degree F Air Rise	*Degree C Air Rise
2000	021A8A	-331	208	1	Recessed	9.6	6,826	15	13.9
	021B8A	-333	240	1	Recessed	8.3			
	021C8A	-335	277	1	Recessed	7.2			
3000	031A8A	-337	208	1	Recessed	14.4	10,239	32	17.8
	031B8A	-339	240	1	Recessed	12.5			
	031C8A	-341	277	1	Recessed	10.8			
4000	041A8A	-343	208	1	Recessed	19.2	13,652	40	22.2
	041B8A	-345	240	1	Recessed	16.7			
	041C8A	-347	277	1	Recessed	14.4			
	043A8A	-349	208	3	Recessed	11.1			
	043B8A	-351	240	3	Recessed	9.6			
5000	051A8A	-353	208	1	Recessed	24.1	17,065	44	24.4
	051B8A	-355	240	1	Recessed	20.8			
	051C8A	-357	277	1	Recessed	18.1			
	053A8A	-359	208	3	Recessed	13.9			
	053B8A	-361	240	3	Recessed	12.1			

Recessed Mounted Ceiling Heaters — Series 80 packed as a complete unit. Contains junction box, heater box and grille. For finished ceiling application, use plaster trim (PT3480) which is an optional accessory. Approximate weight 35 lbs (15.9 kg) for use with 2' (609.6 mm) x 2' (609.6 mm) T-bar or hard surface.

\* Use PT3480 plaster trim for Series 80 when recessed in a hard finished ceiling. Option Accessory.

Performance Data —

\*Degree F (c) air rise measured at 710 fpm (3606.8 mm/s) and 425 cfm (201 l/s) in both 70 and 80 Series.

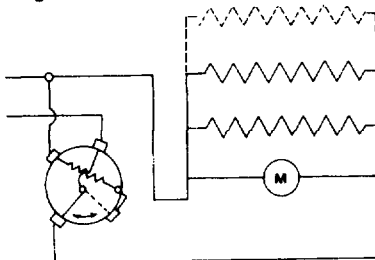
Throw designed for 8 foot (2438.4 mm) to 12 foot (3657.6 mm) ceilings.

DB RE 10-12 WATT = 63.9

### Optional Control Systems

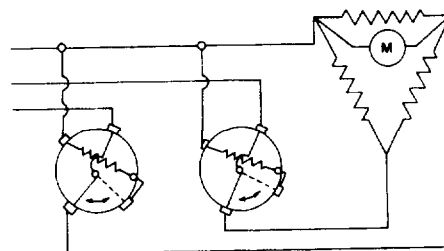
- Heaters operated from wall mounted, line voltage, heavy-duty thermostats.
- **Direct Line Voltage.** More than one heater may be controlled from one thermostat providing total amperage of heaters does not exceed thermostat rating.
- **Single-Phase Heaters.** Use any good quality single pole thermostat of sufficient ampacity. Use double pole thermostat if positive off is desired. Knob operated and tamper resistant type available.
- **Three-Phase Heaters.** Use TW1512. Makes and breaks two poles simultaneously.
- **Control Panels.** For control of one or more single or three-phase ceiling heaters from one 24V or 120V thermostat. Panels are in NEMA 1 enclosures and have one or more 30 amp, three-pole, 600 VAC contactor(s), operating voltage to control voltage transformer and transformer fusing. (User must provide separate circuit for each contactor.)
- Three-phase heaters shall be used with a control panel when controlled by a low voltage (24V or 120V) thermostat.
- **Low Voltage Thermostat (Wall Mounted).** Heaters operated from wall mounted, low voltage thermostats.
- **Thermal Relay With Built-In Line Voltage/24 Volt Transformer.** Relay with built-in line volt/24 V transformer are provided for use with wall mounted low voltage thermostat. For remote mounting only.

Single Phase



Typical heater element, motor, zero voltage reset thermal cut-out

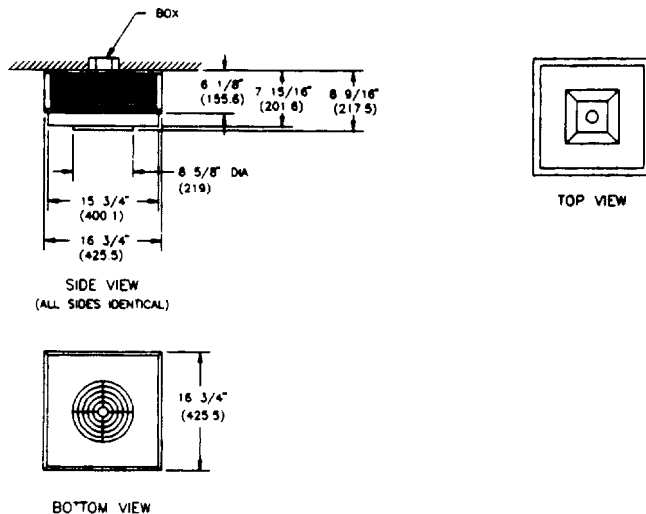
Three Phase



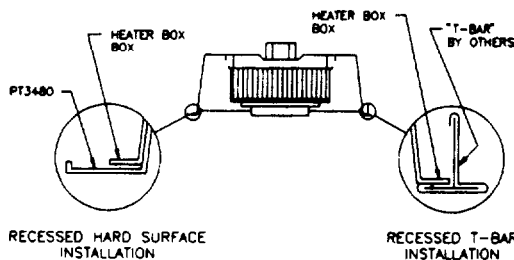
### Optional

- Unit Mounted Controls for Series 80 Recessed Ceiling Heater only shall be factory installed and wired on the Heater.
- T2 = Tamper Proof Built-in Thermostat Double Pole.
- S = Disconnect Switch.
- R1 = Transformer with 24 volt Secondary and Relay for low voltage control.
- R = Relay — Coil operates on heater supply voltage.
- R2 = Relay — Provided with 120 volt control coil.
- Fan purge (off delay to dissipate residual heat on shut off) supplied as a standard control on heaters with factory installed options.

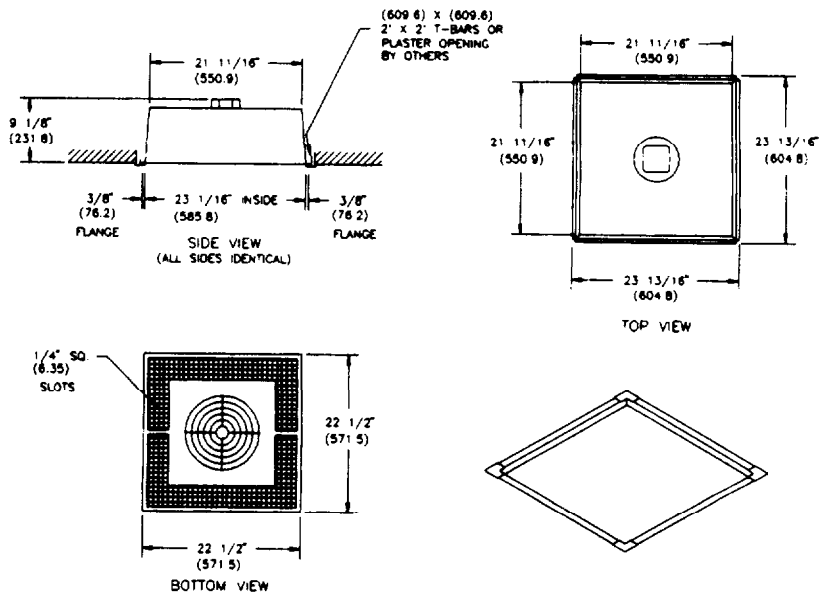
## Series 70 — Surface Mounted



## Series 70 — Surfaced Details



## Series 80 — Recessed Mounted



Dimensions in ( ) are shown in millimeters.



# Mechanical Specifications

UNICA

Contractor shall supply and install heavy duty ceiling-mounted forced-air electric heater(s) of the wattage, voltage and phase as indicated on the plans. The heater is designed to provide an even distribution of heated air to the space to be heated by drawing return air in the periphery of the heater, across and through the element and be discharged from the center section of the heater by means of an electric motor and axial flow fan blade.

Heaters that are recessed type and mounted flush with the finished ceiling or surfaced mounted to extend no more than  $8\frac{9}{16}$ " (217.5 mm) from the finished ceiling.

## Enclosure — Recessed

The return grille assembly is constructed of a one piece heavy gauge steel with  $\frac{1}{4}$ " (6.4 mm) sq. slots for return air and concentric rings for uniform air discharge. Grille assembly is attached to the chassis by tamper-resistant (Allen head) machine screws. All parts of enclosure are heavy gauge steel, zinc coated both sides and finished in neutral, off-white colored, baked enamel.

## Surface Mounted

Enclosure are constructed of  $\frac{1}{16}$ " (1.6 mm) x  $\frac{3}{8}$ " (9.5 mm) rounded edge horizontal steel louvers which are spaced for maximum opening of  $\frac{5}{16}$ " (7.9 mm). Louvers are welded at every intersection to evenly spaced  $\frac{1}{8}$ " (3.2 mm) diameter vertical members. Discharge grille to have concentric rings for uniform air discharge. Grille assembly are attached to chassis by tamper-resistant (Allen head) machine screws. All parts of enclosure are heavy gauge steel, zinc coated both sides and finished in neutral, off-white colored, baked enamel.

## Motor

Motors are permanently lubricated, unit bearing, totally enclosed shaded pole type with impedance protection. Motors operate at no more than 1,300 rpm (21.7 RPS) and are the same voltage as the heater.

## Performance

Heaters have a rating of 425 cfm (200.6 l/s) at 710 fpm (3606.8 mm/s) with a maximum temperature rise of 44 F (24.4 C) and 63.9 DB RE 10-12 watt.

## Elements

Element assemblies consist of two or three corrosion-resistant, steel-sheathed type elements mechanically bonded to common corrosion-resistant steel fins. Each sheathed element consist of helically coiled nickel chromium alloy resistant wire completely embedded in and surrounded by magnesium oxide, enclosed and wedged into corrosion resistant steel sheaths. Elements have 2" (50.8 mm) cold conductor pins extending into sheath and have a density of no more than 60 watts per inch (25.4 mm).

## Thermal Overload

Heaters are be equipped with a "zero voltage reset" thermal overload which disconnects elements and motor in the event normal operating temperatures are exceeded. For safety, if opened due to abnormal temperatures, thermal overload will remain open until manually reset by turning heater off for five minutes. Automatic reset thermal overloads which allow the element to continue to cycle under abnormal conditions will not be accepted.

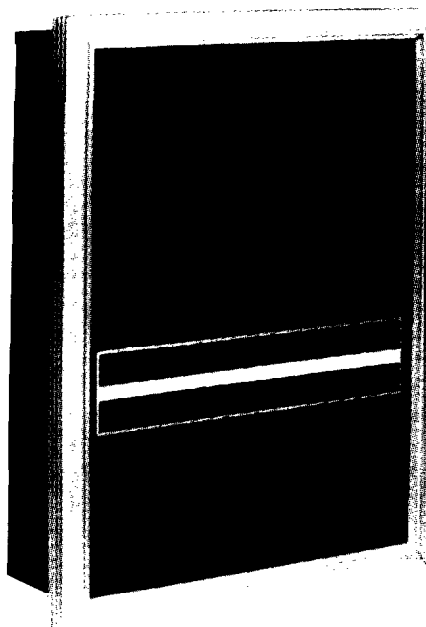
## Approval

Heaters are Underwriters' Laboratories listed. Heaters conform to Underwriters' Standard 1025.



## Features and Benefits

## Model UHAA Series 3320



### Architectural Quality

- Built-in tamper resistant thermostat
- Built-in tamper resistant disconnect switch
- Richly styled, rugged grille
- Whisper-quiet sound level
- Fan delay
- Decorator designed for functional beauty and versatility.
- Five-year element, limited warranty
- UL listed

### Optional Accessories

3320EX33	Surface Mounting Adapter
----------	--------------------------

### Factory-Installed Accessories

Suffix R	Day/Night Relay
----------	-----------------

**Rugged Grille** — Grille made of 18 gauge (1.2 mm thickness) steel painted with a dark brown baked enamel finish.

**Richly Styled Grille** — Grille is highlighted by a snap-on, 14-gauge (1.9 mm thickness) aluminum frame, secured to the heater with an inconspicuous fastener.

**Element** — Steel sheath with plate heat exchanger.

**Fan Delay Switch** — To allow the fan to continue to run for a short period after the thermostat is satisfied, to expel warm air from inside the heater. Also delays fan on start up to insure delivery of heated air. This switch also prolongs element life.

**"Unique" Vane Axial Fan Wheel** — Draws in large volumes of air then quietly and gently discharges 175 cfm (82.6 l/s) of heated air downward into the room.







# Mechanical Specifications

Furnish and install heavy-duty forced air wall heaters, Series 3320 where specified. Heaters are architectural styled, constructed of a 18-gauge (1.2 mm thickness) steel housing with a 14-gauge (1.9 mm thickness) extruded aluminum frame. The rugged steel grille and heater box are painted with a rust resistant dark brown baked enamel color finish. Rough-in dimensions of 19 <sup>3</sup>/<sub>16</sub>" (487.4 mm) high x 14 <sup>3</sup>/<sub>16</sub>" (360.4 mm) wide x 4" (101.6 mm) deep. Power wiring is connected through two <sup>1</sup>/<sub>2</sub>" (12.7 mm) knockouts in the top of the heater and one <sup>1</sup>/<sub>2</sub>" (12.7 mm) knockout on the bottom of the heater. Units are available in ratings from 1500 to 4800 watts at 240, 208 and 277 volts and 1500 watts at 120 volts. The heaters have a low-speed 600 rpm (10 rps), four-pole motor which drives a vane axial blower to deliver a quiet 175 cfm (82.6 l/s) of down flow air.

The heating element are of the sealed tubular type with large, parallel steel fins for quick heat transfer.

Unit's have as standard, thermal overload cut-off for added safety, fan delay switch, manual tamper resistant disconnect switch and a tamper resistant thermostat which are calibrated to provide a range of 55 F (12.8 C) to 85 F (29.4 C). All items factory installed and wired.

Optional accessories include a surface mounting adapter and day-night relays. All heaters are listed by Underwriter's Laboratories, Inc. The heating element are supplied with a manufacturer's five-year limited warranty.

**Worldwide Applied Systems Group**  
The Trane Company  
3600 Pammel Creek Road  
La Crosse, WI 54601-7599  
[www.trane.com](http://www.trane.com)  
An American Standard Company

Since The Trane Company has a policy of continuous product improvement, it reserves the right to change design and specification without notice.

Library	Product Literature
Product Section	Terminal Devices
Product	Unit Heaters
Model	000
Literature Type	Data Sales Catalog
Sequence	6
Date	April 1998
File No.	PL-TD-UH-000-DS-6-498
Supersedes	UH-DS-6-1195
Ordering No.	UH-DS-6



## **SUBMITTAL DATA**

EQUIPMENT: Markel Electric Ceiling Heaters

SPEC SECTION:

TAGS: EH-1 (Qty 2)

PROJECT: LRAFB Repair (Storm R+M) C130 COE  
Training Support

LOCATION: Jacksonville, Arkansas

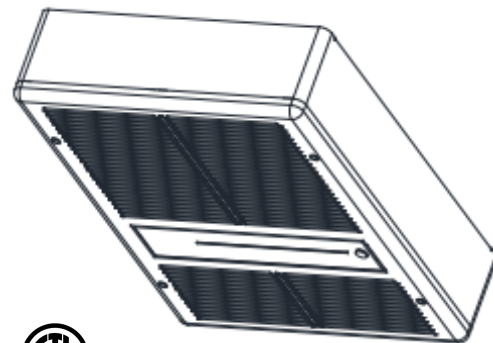
ENGINEER: Lockeby & Associates, Inc.

CONTRACTOR: **COMFORT SYSTEMS USA**  
A R K A N S A S

DATE: 7/1/2024

SUBMITTED BY: Forrest Moseley  
forrest@airetechcorp.com

SALES ORDER NO.		QUOTE	L6PTS
CUSTOMER		DATE:	07/01/2024
PROJECT	New Job		
SALES REP			
ENGINEER			
CONTRACTOR			
SUBMITTED BY	Airetech		
APPROVED BY			
APPROVED BY			

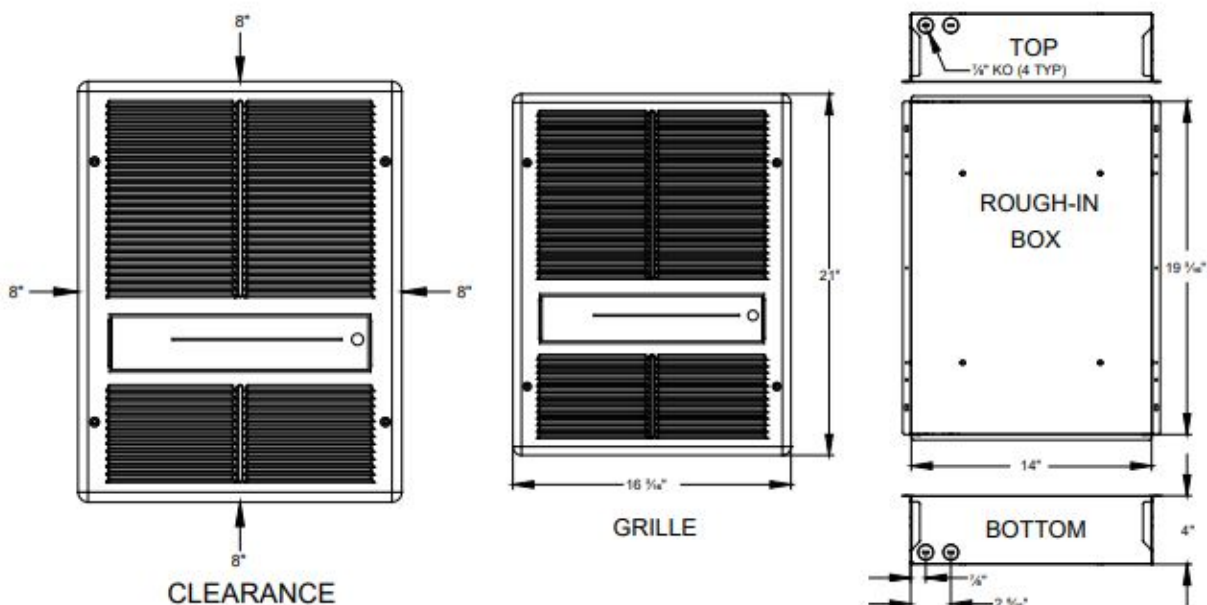


Unit shown with  
surface mount frame

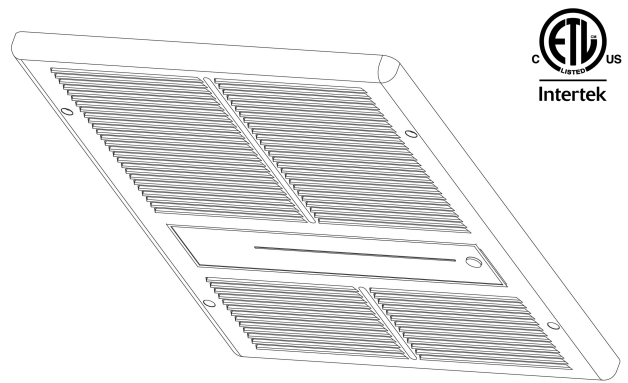
## SUBMITTAL DATA SHEET

QTY	MODEL	TAG	WATTAGE	VOLTS	PHASE	CFM	AMPS	DISCONNECT	THERMOSTAT
2	HF3386D-RP		4.0 / 3.0	240/208	1	175	16.8/14.4	INCLUDED	None

NOTES/SPECIAL  
INSTRUCTIONS:



- Fan purge circuit (has 2 wire control circuit for use with remote wall thermostat)
- Disconnect switch
- White powder coated 18 gauge steel grill
- Automatic reset thermal limit
- Manual reset thermal limit (units with in-built thermostats)
- Steel block fin element
- Vane axial fan blade:
  - 1.5kW - 4.0kW units: 700 RPM motor; 175 CFM
  - 4.8kW units: 900 RPM motor; 200 CFM
- Rough in dimensions: 14½" Wide, 19½" High, 4" Deep
- Grille Dimensions: 16 ⅜" Wide, 21" High
- Optional factory installed tamper resistant thermostat
- Optional surfacemounting adapter on 2x2 T-Bar mounting kit available
- Made in U.S.A



Unit shown recessed mounted

## Product Specifications

The heaters are to be constructed of a heavy gauge steel housing. The rough in dimensions are 19 ½" wide x 4" deep. The finish shall be baked-on powder coat in Ceiling White color. The units shall be available in ratings from 1500 through 4800 Watts with an optional factory installed single pole thermostat.

The heaters have a low speed 600-RPM motor, which drives a vane axial blower to deliver a quite 175 CFM's of down flow air. The heating element shall be of the block finned type with large, parallel steel fins for quick heat transfer. Unit shall have as standard, a manual reset capillary type limit control, for added safety. Unit weight 22 pounds.

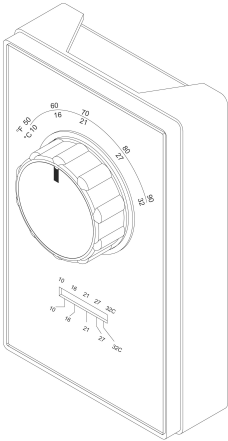
## Standard Models

MFG MODEL NUMBER	KW	BTUs	VOLTS	PH	AMPS	TEMP RISE
E3383D-RP	1.5	5120	120	1	12.5	27 °F
F3386D-RP	4.0	13600	208		19.2	72 °F
F3387D-RP	4.8	16382	208		23.1	76 °F
HF3384D-RP	2.0 / 1.5	6826/5120	240/208		8.3/7.2	36 °F
HF3385D-RP	3.0 / 2.3	10200/7679	240/208		12.5/10.8	54 °F
HF3386D-RP	4.0 / 3.0	13600 / 10200	240 / 208		16.8/14.4	72 °F
H3387D-RP	4.8	16382	240		20	76 °F
G3383D-RP	1.5	5120	277		5.4	27 °F
G3384D-RP	2.0	6826	277		7.2	36 °F
G3385D-RP	3.0	10200	277		10.8	54 °F
G3386D-RP	4.0	13600	277		14.4	72 °F
G3387D-RP	4.8	16382	277		17.3	76 °F

## Accessories

MFG MODEL NUMBER	DESCRIPTION	WT. (LBS)
BOX3310	Additional Back Can	10
3380EX33	4" Surface Mounting Adapter	5
TB3380	2X2 T-Bar Mounting Kit	7
Thermostat - Add suffix T to model	Factory Installed single pole. Range: 40 °F - 110 °F	

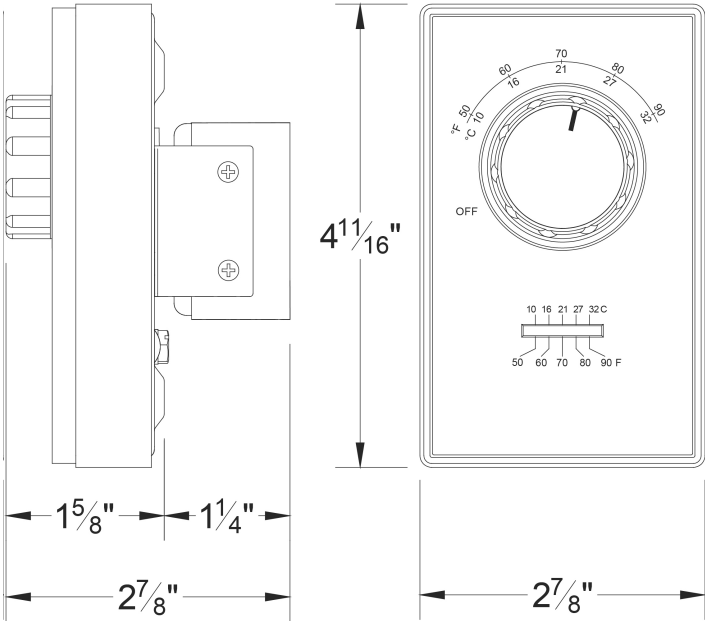
SALES ORDER NO.		QUOTE	L6PTS
CUSTOMER		DATE:	07/01/2024
PROJECT	New Job		
SALES REP			
ENGINEER			
CONTRACTOR			
SUBMITTED BY	Airetech		
APPROVED BY			
APPROVED BY			



### SUBMITTAL DATA SHEET

QTY	MODEL	TAG	RANGE	CONNECTIONS	POS. OFF	ANTICIPATOR
2	ET9DTS		50-90°F	Terminals	Yes	No

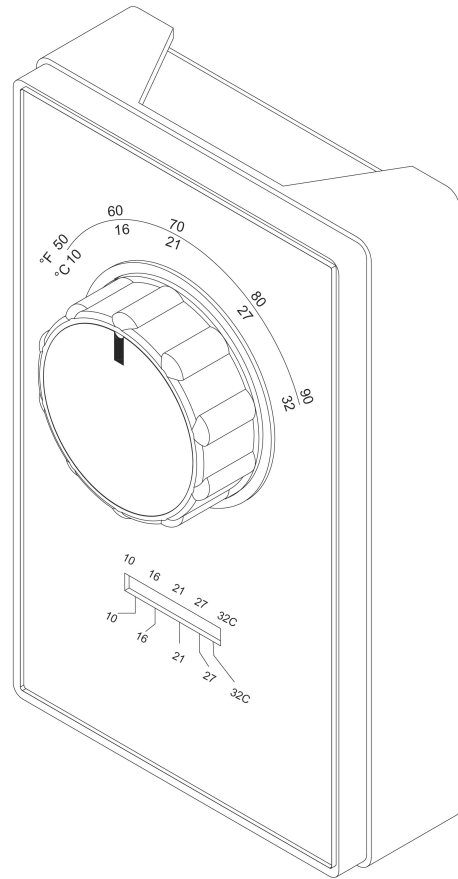
NOTES/SPECIAL INSTRUCTIONS:



- Single pole and double pole
- Heat only, cool only, & heat or cool
- DP models include positive off
- Celsius and Fahrenheit temperature scale
- Thermometer standard  
Glass, Alcohol filled
- Heating: 22A @ 120-277VAC resistive
- Cooling: 3/4HP @ 125VAC / 1.5HP @ 250/277 VAC
- Range: 50-90°F (unless otherwise noted)
- Rough in dimensions: 4.75"H x 2.9"W x 1.5"D  
Depth is from wall to top of knob.
- Imported to TPI Specifications

## Product Description

The ET Series Two-Position Room Thermostat are wall mounted line voltage thermostats suitable for direct connection with any resistance heating elements and unit heaters. This thermostat has a snap action switch operated by a bimetal actuator and is available in single pole, double pole with positive off, two stage heat. Cooling only and heat or cool models. Thermometer comes as standard on all models. Standard temperature range is 50-90°F (35-75°F available on certain models).



## Models

MFG MODEL NUMBER	MFG CATALOG NUMBER	DESCRIPTION	RANGE	CONNECTIONS	POS. OFF	ANTICIPATOR
AET9DWTS	05238302	DPST Heat Only	50-90°F	Wire Leads	Yes	Yes
AET9SWTS	05238402	SPST Heat Only	50-90°F	Wire Leads	No	Yes
ET9DTS	05238502	DPST Heat Only	50-90°F	Terminals	Yes	No
ET9D4TS	05238602	DPST Heat Only	35-75°F	Terminals	Yes	No
ET9DWTS	05238702	DPST Heat Only	50-90°F	Wire Leads	Yes	No
ET9MTS	05238502	2 Stage Heat Only	50-90°F	Terminals	No	No
ET9STS	05238902	SPST Heat Only	50-90°F	Terminals	No	No
ET9S4TS	05239002	SPST Heat Only	35-75°F	Terminals	No	No
ET9SRTS	05239102	SPST Cool Only	50-90°F	Terminals	No	No
ET9SWTS	05239202	SPST Heat Only	50-90°F	Wire Leads	No	No
ETD9MTS*	05239302	2 Stage Heat, 1 Stage Cool	50-90°F	Terminals	No	No
ETD9STS	05239402	SPDT Heat or Cool	50-90°F	Terminals	No	No

\* The 2 stage / 1 stage cool models may also be used as 1 stage heat / 1 stage cool deadband thermostat.