

Quality People. Building Solutions.

Comfort Systems USA (Arkansas), Inc.
P.O. Box 16620
Little Rock, AR 72231
Phone 501-834-3320
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Date: 3/9/2023

Return Request: 3/19/2023

Project: Ritz Theater – Phase 3

Supplier: Powers of Arkansas

Submittal: Electric Unit Heater

Submittal Number: 23 00 00-01

Drawing # and Installation: Mechanical Drawings

ARCHITECT

SCM Architects
1400 Kirk Road, Suite 220
Little Rock, AR 72223
501-224-3055

ENGINEER

Pettit & Pettit
201 E. Markham St, #400
Little Rock, AR 72201
501-374-3731

GENERAL CONTRACTOR

Clark Contractors
15825 Cantrell Rd.
Little Rock, AR 72223
501-868-3133

MECHANICAL SUBCONTRACTOR

Comfort Systems USA (Arkansas), Inc.
9924 Landers Rd.
N. Little Rock, AR 72117
501-834-3320

Notes:

CSUSA PROJECT NO.

23-1004

jon@comfortar.com



IOM

PRODUCT	Electric Unit Heater UH-1
MANUFACTURER	Raywall
JOB NAME	Ritz Theater Phase 3 - Malvern, AR
LOCATION	Malvern, AR
ENGINEER	Terry Jacks
CONTRACTOR	Comfort Systems
DATE	8/15/2023
SUBMITTED BY	Brady Smith

5440 Northshore Drive - North Little Rock, Arkansas 72118 - Tel: 501.374.5420 Fax: 501.370.9298

3420/AFC SERIES

INSTALLATION INSTRUCTIONS

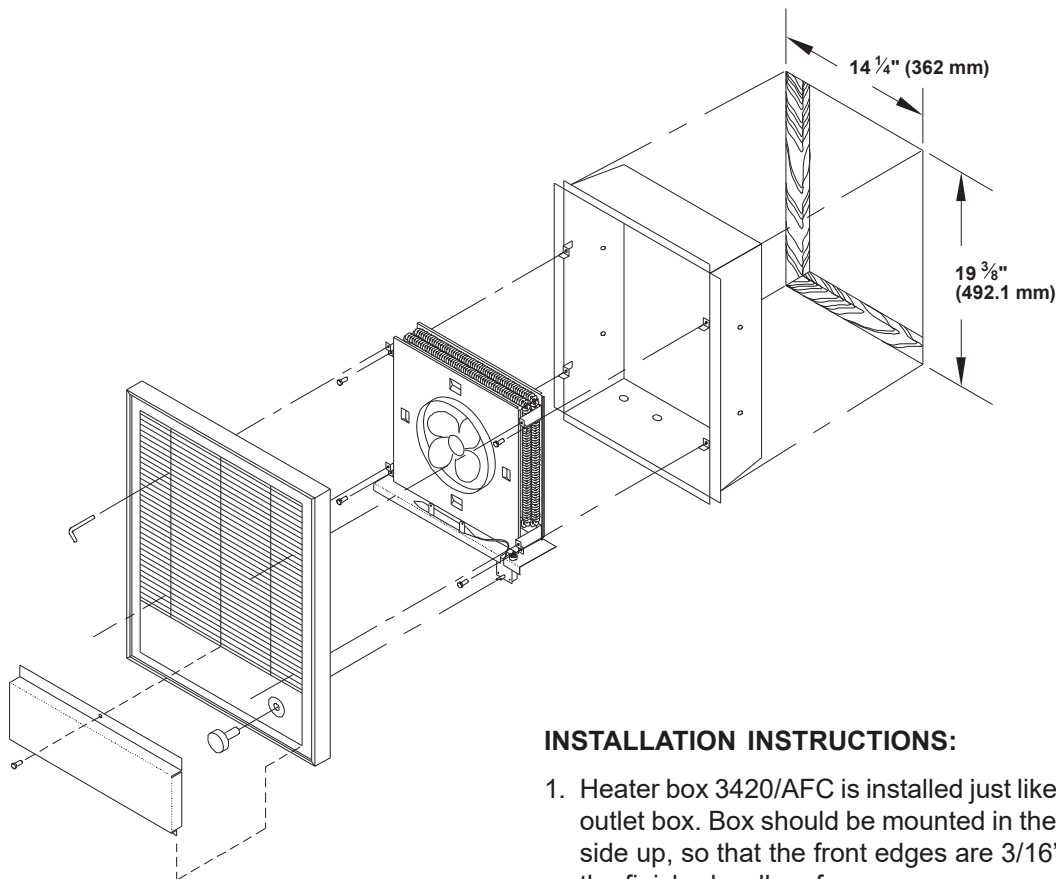
Recessed Mounting 3420/AFC Series

ATTENTION: Read carefully before attempting to install, operate or service the heater.



TPI Corporation
P.O. Box 4973
Johnson City, TN
37602-4973

America's Comfort Conditioning Company



GENERAL SAFETY INFORMATION / CAUTION:

- Mount in vertical position only.
- Do not install any closer than 12" to any vertical surface or 12" to floor.
- Do not mount beneath towel racks or behind doors.
- Heater must have no obstructions in front of it.
- Make certain power supply is same as nameplate voltage on heater.
- All wiring must conform to the National Electric Code and existing local code requirements.

INSTALLATION INSTRUCTIONS:

1. Heater box 3420/AFC is installed just like ordinary outlet box. Box should be mounted in the wall - top side up, so that the front edges are 3/16" away from the finished wall surface.
2. The knockouts on bottom and back of box can be used for conduit, metallic or nonmetallic armored cable. Terminate feed lines at knockout.
3. Mount heater mechanism to interior of box by inserting straight into box engaging (4) lower tabs on interior mounting brackets with (4) tabs on wall box. Secure with (4) screws supplied.
4. Mount heater front to heater mechanism mounting brackets (4) top tabs with (4) allen head screws trapped behind louvers to engage (4) allen head screws.

Thermal Cutout operation shown on reverse page.

Form 9282
REV. 2/06

IMPORTANT: OWNER SHOULD RETAIN THESE INSTRUCTIONS FOR FUTURE REFERENCE

3420/AFC SERIES

INSTALLATION INSTRUCTIONS

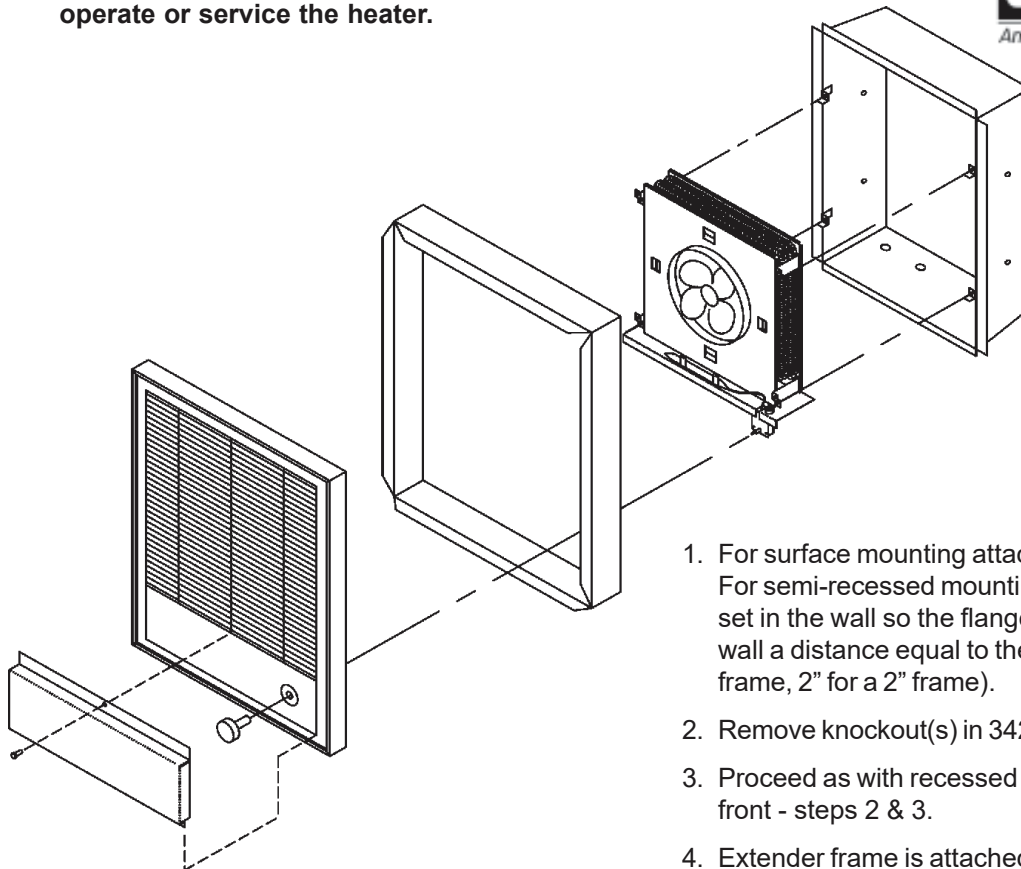
Surface Mounting
Semi-Recessed Mounting
3420/AFC Series

ATTENTION: Read carefully
before attempting to install,
operate or service the heater.



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1. For surface mounting attach 3420/AFC box to wall. For semi-recessed mounting 3420/AFC box should be set in the wall so the flange is out from the finished wall a distance equal to the frame depth (1" for a 1" frame, 2" for a 2" frame).
2. Remove knockout(s) in 3420/AFC as required.
3. Proceed as with recessed installation described on front - steps 2 & 3.
4. Extender frame is attached to heater front (slip fit) and this assembly is then attached to the heater following step 4 on front. Frame is captured between heater front and finished wall.

GENERAL SAFETY INFORMATION / CAUTION:

- Mount in vertical position only.
- Do not install any closer than 12" to any vertical surface or 12" to floor.
- Do not mount beneath towel racks or behind doors.
- Heater must have no obstructions in front of it.
- Make certain power supply is same as nameplate voltage on heater.
- All wiring must conform to the National Electric Code and existing local code requirements.

INSTALLATION INSTRUCTIONS:

- For Surface Mounting use extender 3420/AFC EX34
- For Semi-Recessed Mounting use extender 3420/AFC EX16 for 2", or 3420/AFC EX8 for 1"
- Box 3420/AFC must be used in conjunction with accessory extender.

THERMAL CUTOUT OPERATION (ZERO-VOLT) LIMIT CONTROL

To reset thermal cutout disconnect all power for 5 minutes than energize unit. If fault continues disconnect power and check for cause.

(CAPILLARY) LIMIT CONTROL

To reset thermal cutout disconnect all power, when heater has cooled locate the two 1/4" dia. holes in the control panel portion of the front grille. Using a small screwdriver or pencil press the reset button (with minimal amount of force) through the 1/4" dia. opening, then restore power to the unit. If fault continues disconnect power and check for cause.

Form 9282

IMPORTANT: OWNER SHOULD RETAIN THESE INSTRUCTIONS FOR FUTURE REFERENCE



REVIEW OF MECHANICAL SUBMITTALS

Project: ASU 3 Rivers Ritz Theater Renovation
Location: Malvern, Arkansas
Date of Receipt: Friday, March 10, 2023
Date of Review: Tuesday, March 28, 2023
Reviewed by: Adam Kelly
Email: akelly@pettitinc.com

P&P Job No. 22-024

Signed: 

Checking is for conformance with the design concept of the Project and compliance with the information given in the Contract Documents. The Contractor is responsible for dimensions to be confirmed and correlated at the job site; for information that pertains solely to the fabrication processes or to techniques of construction; and for coordination of the work of all trades.

Item	Approval Status		Comments
Section 23 23 00 - 02 – Firestopping	Approved as Corrected	○	<ul style="list-style-type: none"> - Contractor to verify all sizes, quantities, and coordinate the use of firestopping materials in all fire rated separations. Coordinate fire barriers with architectural drawings. - Coordinate the use of appropriate fire stopping materials for the applications and ensure that the UL listed materials are installed per manufacturer’s specifications.
Section 23 23 00 - 03 – Gravity Roof Ventilator	Approved as Corrected	○	<ul style="list-style-type: none"> - Coordinate installation with roofing contractor. - Verify unit is provided with backdraft damper and birdscreen.
Section 23 05 29 - 01 – Hangers and Supports	Approved as Corrected	○	<ul style="list-style-type: none"> - Contractor to verify all sizes and quantities.
Section 23 05 53 - 01 – HVAC Identification	Approved as Corrected	○	<ul style="list-style-type: none"> - Contractor to coordinate all tags with most recent construction documents. If changes are made, record deviation on “as built” documents provided to owner.
Section 23 05 93 – 01 – Testing, Adjustment, and Balancing	Approved	✓	<ul style="list-style-type: none"> - Approved as submitted.
Section 23 07 13 – 01 – HVAC Duct Insulation	Approved	✓	<ul style="list-style-type: none"> - Approved as submitted
Section 23 07 19 – 01 – HVAC Duct Insulation	Approved as Corrected	○	<ul style="list-style-type: none"> - Contractor to coordinate minimum thickness of closed cell insulation required for refrigerant piping to meet equipment manufacturer’s requirements. - Provide protection for all exterior piping insulation, see specifications.
Section 23 23 00-	Approved	○	<ul style="list-style-type: none"> - Contractor to verify all sizes and quantities.

01 – Refrigerant Piping	as Corrected		<ul style="list-style-type: none"> - Coordinate refrigerant piping installation with equipment manufacturer’s recommendations and piping diagrams. - Coordinate all natural gas piping and piping accessories with plumbing contractor.
Section 23 31 00-01 – HVAC Ducts & Casings.	Approved as Corrected	○	<ul style="list-style-type: none"> - Contractor to verify all sizes and quantities. - Contractor to coordinate routing of ductwork with all trades in space provided by architects. Ductwork to recessed in pathway to minimize visibility. - Contractor to limit flex duct runout to a total length of 3 ft.
Section 23 33 00-01 – Air Duct Accessories	Approved as Corrected	○	<ul style="list-style-type: none"> - Contractor to verify all sizes and quantities.
Section 23 34 23-01 – Power Ventilators	Approved as Corrected	○	<ul style="list-style-type: none"> - Coordinate location of fan with architect’s RCP and coordinate location of gooseneck terminations with plumbing vents and roof equipment / structure.
Section 23 37 00 – Air Duct Accessories	Approved as Corrected	○	<ul style="list-style-type: none"> - Contractor shall verify all sizes and quantities. - Final finish shall be as per architect. Provide manufacture’s color chip chart to architect for final color selection prior to ordering. - Contractor to provide continuous insulation blanket a top of all supply air and return air devices. - Contractor shall coordinate exact placement with architect’s plans. - Contractor to coordinate with architectural RCP, to verify the correct border and mounting type is provided.
Section 23 54 00-01 – High Efficiency Gas Fired Furnace	Approved as Corrected	○	<ul style="list-style-type: none"> - Refer to refrigerant piping diagrams provided by manufacturer for refrigerant piping size and additional refrigerant required. - Field coordinate clearances required for service with other trades. - Provide all seismic bracing as required. - Coordinate all electrical requirements with electrical contractor. - Field coordinate final smoke detector requirements with other trades. - Provide one set of spare filters and (drive belts; if necessary). - Coordinate placement of condensing unit on equipment pad with additional HVAC equipment and structural.
Section 23 00 00-01 – Electric Unit Heaters	Approved as Corrected	○	<ul style="list-style-type: none"> - Field coordinate clearances required for service with other trades. - Coordinate all electrical requirements with electrical contractor.



Note:

Submittal Review Comment Transmittal



Date: 3/10/2023

Project Name: Phase II Restoration of the Ritz Theater

Project No.: 19114.02

Owner: Arkansas State University Three Rivers

Contractor: Clark Contractors, LLC

Attn: Terry Jacks

Submittal: Div. 23 (various, see below)

- Accepted
- Accepted as Noted
- Revise and Resubmit
- Not Accepted

By: Ryan Biles, AIA

Items Specified:

- A. 23 00 00 Firestopping
- B. 23 00 10 Gravity Roof Ventilator
- C. 23 05 29 Hangers and Supports
- D. 23 05 53 Identification for HVAC
- E. 23 05 93 TAB
- F. 23 07 13 Duct Insulation
- G. 23 07 19 Piping Insulation
- H. 23 23 00 Refrigerant Piping
- I. 23 31 00 Ducts & Casing
- J. 23 33 00 Air Duct Accessories
- K. 23 34 23 Power Ventilators
- L. 23 37 00 Air Inlets & Outlets
- M. 23 54 00 High Efficiency Gas Fired Furnace
- N. 23 62 13 Air Cooled Condensing
- O. 23 00 00 Electric Unit Heater

Acceptance is subject to the provisions of the General Conditions of the Contract for Construction AIA Document A201.

Submittal Comments:

- **Please review for compliance with Div. 23 specifications and Plumbing Drawings and return to SCM via email**

Attachments:

23-0310 Division 23 submittals not yet reviewed by architect

By: **Ryan Biles, AIA**

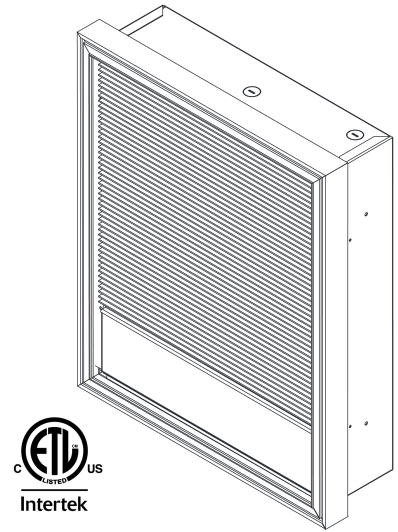
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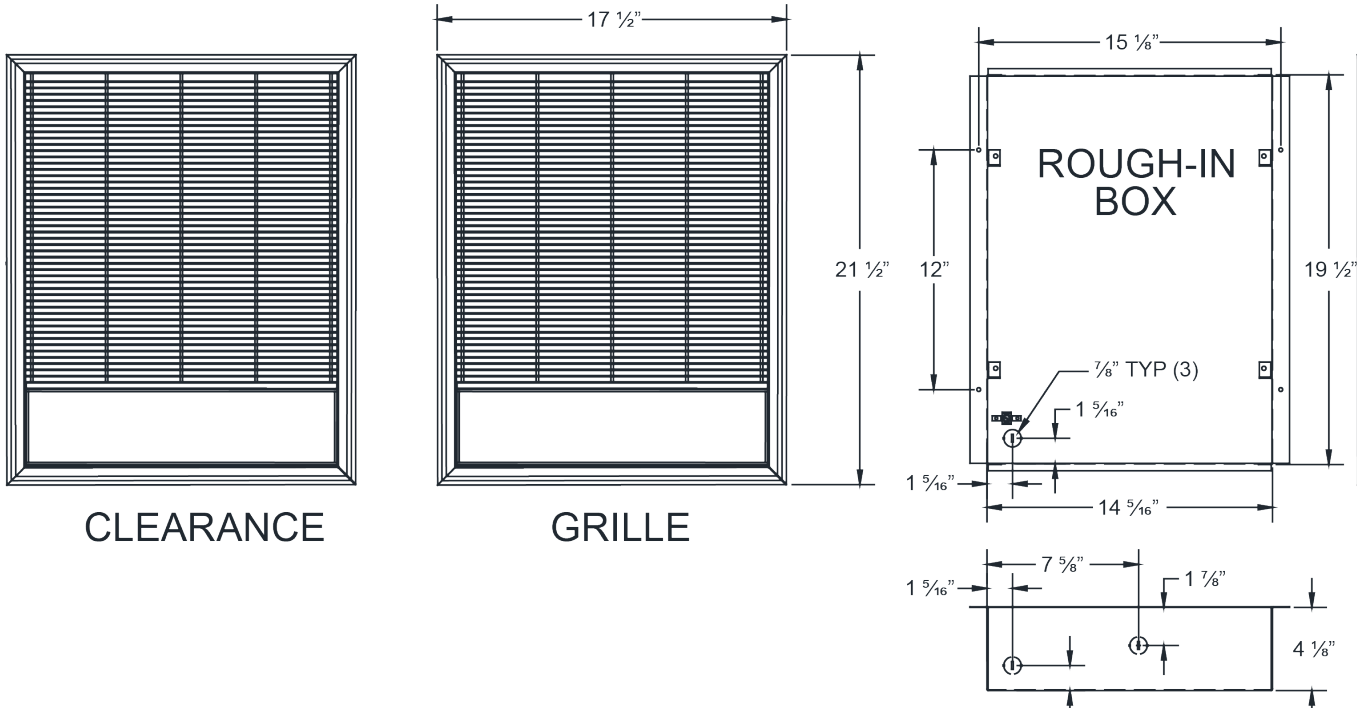
SUBMITTAL

PRODUCT	Electric Unit Heater
MANUFACTURER	Raywall
JOB NAME	Ritz Theater Phase 3 - Malvern, AR
LOCATION	Malvern, AR
ENGINEER	Terry Jacks
CONTRACTOR	Comfort Systems
DATE	3/3/2023
SUBMITTED BY	Brady Smith

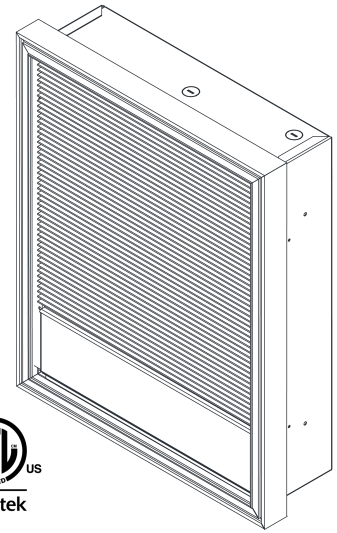
SALES ORDER NO.		QUOTE	NTJGN
CUSTOMER		DATE:	03/03/2023
PROJECT	Ritz Theater Phase 3 - Malvern, AR		
SALES REP			
ENGINEER			
CONTRACTOR			
SUBMITTED BY	Powersar		
APPROVED BY			
APPROVED BY			



SUBMITTAL DATA SHEET										
QTY	MODEL	TAG	WATTAGE	VOLTS	PHASE	AMPS	CFM	DISCONNECT	THERMOSTAT	OPTIONS
1	AFC8320T	UH-1	2	208	3	5.6	245	Yes	Yes	3420EX34
NOTES/SPECIAL INSTRUCTIONS:										



- Heavy 16 gauge steel construction
- Powder coated paint finish
- Steel block fin element
- All units equipped with manual reset thermal limit switch
- Van Axial fan blade produces 245 CFM
- Dual wattage and voltage units available foe 208/240 volts
- Surface Mounting Frames available for non-recessed and semi-recessed applications
- Units built with factory installed Disconnecting Tamper-Proof Thermostats



HEATER		WALL BOX		WATTS	BTUs	VOLTS	PH	AMPS	WT. (LBS)
MFG CATALOG NUMBER	MFG MODEL NUMBER	MFG CATALOG NUMBER	MFG MODEL NUMBER						
SERIES AFC - ROUGH-IN DIMENSIONS: 19 5/8" H X 14 7/16" W X 4 1/8" D GRILL DIMENSIONS: 21 1/2" H X 17 1/2" W									
06911302	AFC8120T	06915702	Box 3420	2000	6826	208	1	9.6	41
06911902	AFC2120T					240		8.3	
06911702	AFC7120T					277		7.2	
03846202	AFC8380			2000	6826	208	3	5.6	
03846402	AFC2320					240		4.8	
06912302	AFC8130T			3000	10239	208	1	14.4	
06913102	AFC2130T					240		12.5	
06912702	AFC7130T					277		10.8	
03238502	AFC8330			3000	10239	208	3	8.3	
03846502	AFC2330					240		7.3	
06913302	AFC8140T			4000	13652	208	1	19.2	
06913802	AFC2140T					240		16.7	
06913602	AFC7140T					277		14.4	
06914002	AFC8340T					208	3	11.1	
06914102	AFC2340T					240		9.6	
06914302	AFC8150T					240		24.03	
06915102	AFC2150T			5000	17065	240	1	20.8	
06914802	AFC7150T					277		18.1	
06915302	AFC8350T					208	3	13.9	
06915602	AFC2350T					240		12.0	

Factory Installed Accessories

Units with transformers must have a contactor. A control transformer with 120V secondary is available on all 3-phase models, 208V/240V 1-phase units up to 3KW, and up to 4KW on 277V. All heaters must be installed with a wall box

MFG MODEL NUMBER	DESCRIPTION	SERIES OPTIONS	
		AFC	AFH
Suffix - R	Contactor with Coil same as heater	YES	YES
Suffix - R1	Contactor with 24V Coil	YES	YES
Suffix - R2	Contactor with 120V Coil	YES	YES
Suffix - C	Circuit Breakers - all models	NO	YES
Suffix - A1	Control Transformers with 24V Secondary	NO	YES
Suffix - A2	Control Transformers with 120V Secondary	NO	YES

MFG CATALOG NUMBER	MFG MODEL NUMBER	DESCRIPTION	WT. (LBS)
06916002	AFCEX34	4" Surface Mounting Sleeve	5
06915902	AFCEX16	2" Semi-Recessing Sleeve	4
06915802	AFCEX8	1" Semi-Recessing Sleeve	3
06915705	Box AFC	Wall Box for AFC	4

Product Specifications

Contractor shall supply and install heavy duty wall mounted forced air electric heaters of the wattage, voltage and phase as specified. The heater shall so be designed to provide an even distribution of heated air to the space to be heated by drawing return air in the peripheral area of the heater across and through 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 shall be recessed type to extend no more than 1 ½" from the finished wall or surface mounted to extend no more than 5 ¾" from the finished wall or semi-recessed type to extend no more than 3 ½" from finished wall or semi-recessed type to extend no more than 2 ½" from finished wall.

ENCLOSURE:

Heater front shall withstand 10.8 ft. lbs. (324 poundals) impact and 400 lbs. static force applied to an 8 sq. in. area at center grille location with less than 1/16" permanent distortion. The combination return and supply grille assembly shall be constructed of 1/16" x 3/8" rounded edge horizontal steel louvers which shall be spaced for maximum opening of 1/4". Louvers shall be welded at every intersection to three evenly spaced 1/16" diameter vertical members and completely framed in a heavy gauge natural anodized Aluminum extrusion. Front assembly shall be attached to the chassis by hidden tamper-resistant (Allen-head) machine screws. All other parts shall be 16 gauge steel Zinc coated, both sides finished in a high gloss or bronze colored baked powder coat finish.

MOTOR:

Motor shall be a permanently lubricated unit bearing, totally enclosed shaded pole type with impedance protection. Motors shall operate at no more than 1400 RPM and shall be same voltage as the heater. A protective shield shall surround the motor to separate return air from heated air

PERFORMANCE:

Heaters shall have a rating of 245 CFM at 660 F.P.M. with a maximum temperature rise of 73°F

ELEMENTS:

Element assemblies shall consist of two or three corrosion resistant steel sheathed type elements mechanically bonded to common corrosion resistant steel fins. Each sheathed element shall 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 shall have 2" cold conductor pins extending into the sheath and shall have a density of no more than 60 Watts per inch.

THERMAL OVERLOAD:

Heaters shall be equipped with a "manual reset" thermal overload which disconnects elements and motor in the event normal operating temperatures are exceeded. For safety, if opened due to abnormal temperature, thermal overload shall remain open until manually reset. Automatic reset thermal overloads which allow the element to continue to cycle under abnormal conditions will not be accepted.

APPROVAL:

Heaters shall be ETL Listed.

OPTIONAL CONTROL SYSTEMS:

Heaters shall be operated from wall-mounted, line voltage, heavy-duty (tamper-proof) thermostats. Heaters with built-in, pre-wired contactors shall be operated from wall-mounted, line voltage, pilot duty (tamper-proof) thermostats. Heaters built with, pre-wired contactors (and control transformers) shall be operated from wall-mounted, pilot duty (24V) or (120V) wall-mounted tamper-proof thermostats. Heaters shall be controlled by integrally mounted thermostats. Thermostats shall be heavy-duty, hydraulic type with a temperature range of 40°F-120°F for double pole units and 40°F-120°F for three pole units and with remote sensing bulb placed in the return air. Thermostats shall be electrically rated at least 125% of heater rating. Thermostats shall be electrically rated at least 125% of heater rating. Thermostats shall also act as a disconnect by breaking all ungrounded conductors in the OFF position. (Thermostat control knob shall be covered by a 16 gauge tamper-proof access plate to prevent adjustment by unauthorized personnel.)

CONTACTORS:

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

CONTROL TRANSFORMERS:

Heater shall be 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 (AFH Series Only):

Heaters shall be 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 shall be included where required. Circuit breakers and control switches shall be 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.