McQuay International
a member of DAIKIN group

Applied Packaged Terminal Air Conditioner and Heat Pumps

Catalog 1300-2

16" × 42" Angled Top – Model PDAA/PDHA
16" × 42" Flat Top – Model PDAF/PDHF

Model PDAF/PDHF

Model PDAA/PDHA

Engineered for flexibility and performance™

Table of Contents

McQuay Applied Packaged Terminal Air Conditioners and Heat Pumps are certified in accordance with the Packaged Terminal Air-Conditioners certification program which is based on ARI Standard 310 and in accordance with the Packaged Terminal Heat Pump certification program, which is based on ARI standard 380.

The Ideal Solution for New Construction & Replacement

450,000 square foot manufacturing plant, located in Auburn, New York

Superior Zoned Heating And Cooling:

- Hotel and motel guest rooms
- Hospitals and assisted living facilities
- Apartments, college dormitories and military barracks
- Offices and other spaces in a variety of buildings

McQuay Applied PTAC/PTHP Is The Right Choice!

- The broadest selection of features and customizable options allows you to choose the ideal unit for each space in your building.
- R-410A refrigerant with no ozone depletion potential or phase-out date.
- High energy efficiency and COP ratings provide lower operating costs.
- Reliable cooling/heating and low operating sound levels maximize comfort.
- Proven institutional grade construction withstands demanding applications for long life.
- Easy to install and maintain.
- Engineered and produced in the U.S.A. by McQuay – the pioneer of Incremental® and PTAC/PTHP systems since 1955.

Ideal For New Construction or Replacement Applications

16" × 42" Angled Top PDAA/PDHA (with accessories)

16" × 42" Flat Top PDAF/PDHF (with accessories)

Replacement Guide

Manufacturer	Model	Wall Opening Dimension		Discharge		Return Air		Heat Type	
		16 1/4" x 42 1/4"		Angled	Flat	Bottom	Front	Electric	Hydronic
		AC	HP						
Amana	PTC	•		•			•	•	•
	PTH		•	•			•	•	
Carrier	52PE	•		•			•	•	
	56PC	•		•			•		
	56PQ		•	•			•	•	
	52SC	•		•			•		
	52SE	•		•			•	•	
	52SQ		•	•			•	•	
Climate Master	PTA	•		•			•	•	
	PTP		•	•			•		•
	PTH	•		•			•	•	
CNI	PC	•		•			•	•	
	PH		•	•			•	•	
Friedrich	PDE	•		•			•	•	
	PDH		•	•			•	•	
	PE	•		•			•	•	
	PH		•	•			•	•	
	TE	•		•			•	•	
	TH		•	•			•	•	
	TW	•		•			•		•
GE	AZ	•	•	•			•	•	
Ice Air	RSCT	•			•	•			•
Island Aire	ED	•			•	•		•	•
	NE				•	•		•	•
McQuay	PDE	•		•	•	•		•	•
	PDH		•	•	•	•		•	
	PSE	•		•		•		•	•
	PSH		•	•		•		•	
	MQE	•		•	•		•	•	•
	MQR		•	•		•		•	
	MQS	•	•	•	•	•		•	
	NR		•		•	•		•	
	PTAC	•		•			•	•	
	PTHP		•	•			•	•	
Singer	N	•			•	•		•	
	NE	•			•	•		•	
	NH		•		•	•			•
	NR		•		•	•		•	
Trane	PTE	•		•			•	•	•
	PTH		•	•			•	•	

= Not Applicable

Not finding what you are looking for? Consult your McQuay representative for information on other replacement PTAC/PTHP products from McQuay. To locate your representative, visit www.mcquay.com or call (800) 432-1342.

Beyond “Standard” Expectations

Customize To Suit Your Needs

Select from a wide variety of features, factory-supplied options and accessories to build the ideal unit for your application and help reduce labor and installation costs.

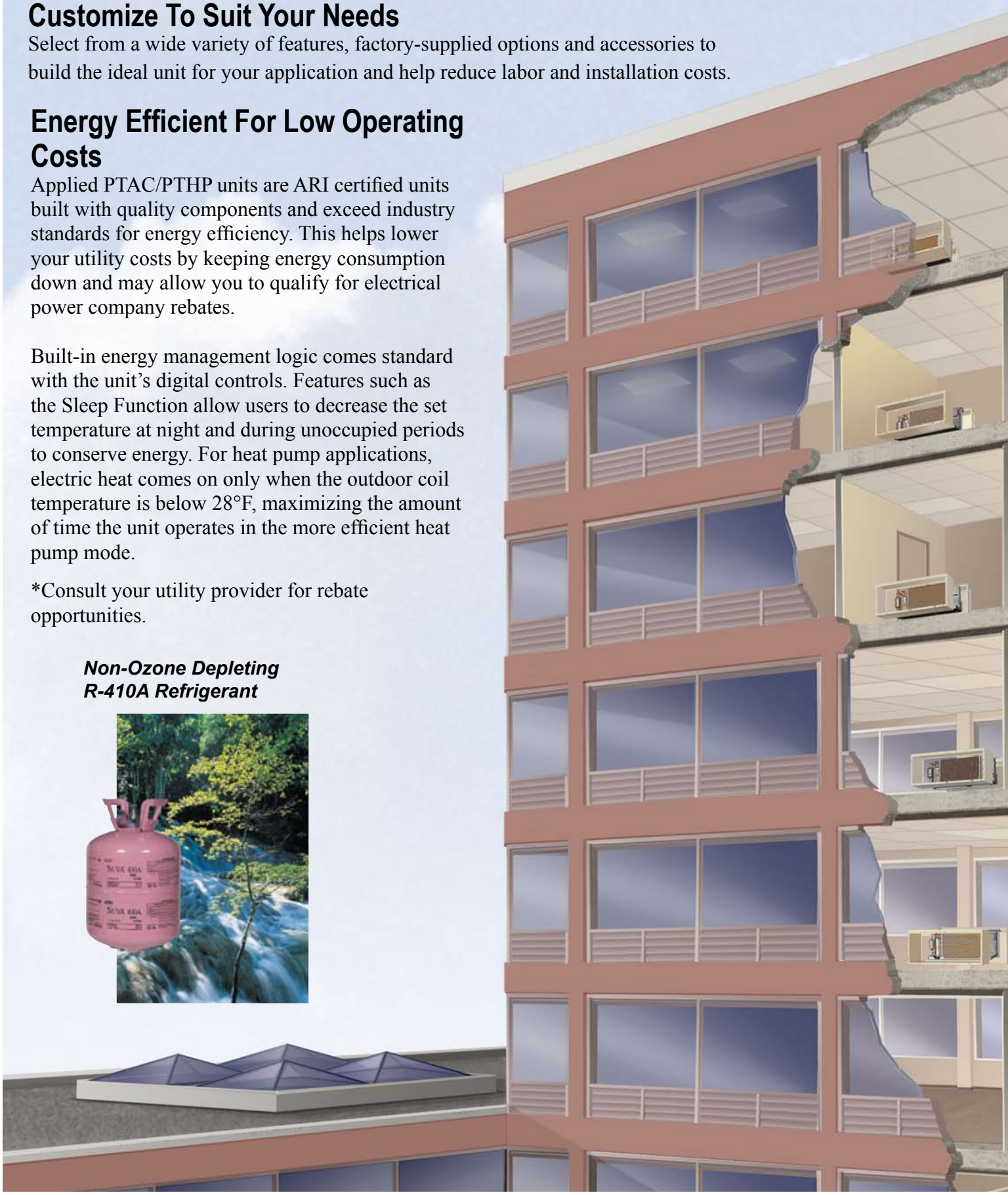
Energy Efficient For Low Operating Costs

Applied PTAC/PTHP units are ARI certified units built with quality components and exceed industry standards for energy efficiency. This helps lower your utility costs by keeping energy consumption down and may allow you to qualify for electrical power company rebates.

Built-in energy management logic comes standard with the unit’s digital controls. Features such as the Sleep Function allow users to decrease the set temperature at night and during unoccupied periods to conserve energy. For heat pump applications, electric heat comes on only when the outdoor coil temperature is below 28°F, maximizing the amount of time the unit operates in the more efficient heat pump mode.

*Consult your utility provider for rebate opportunities.

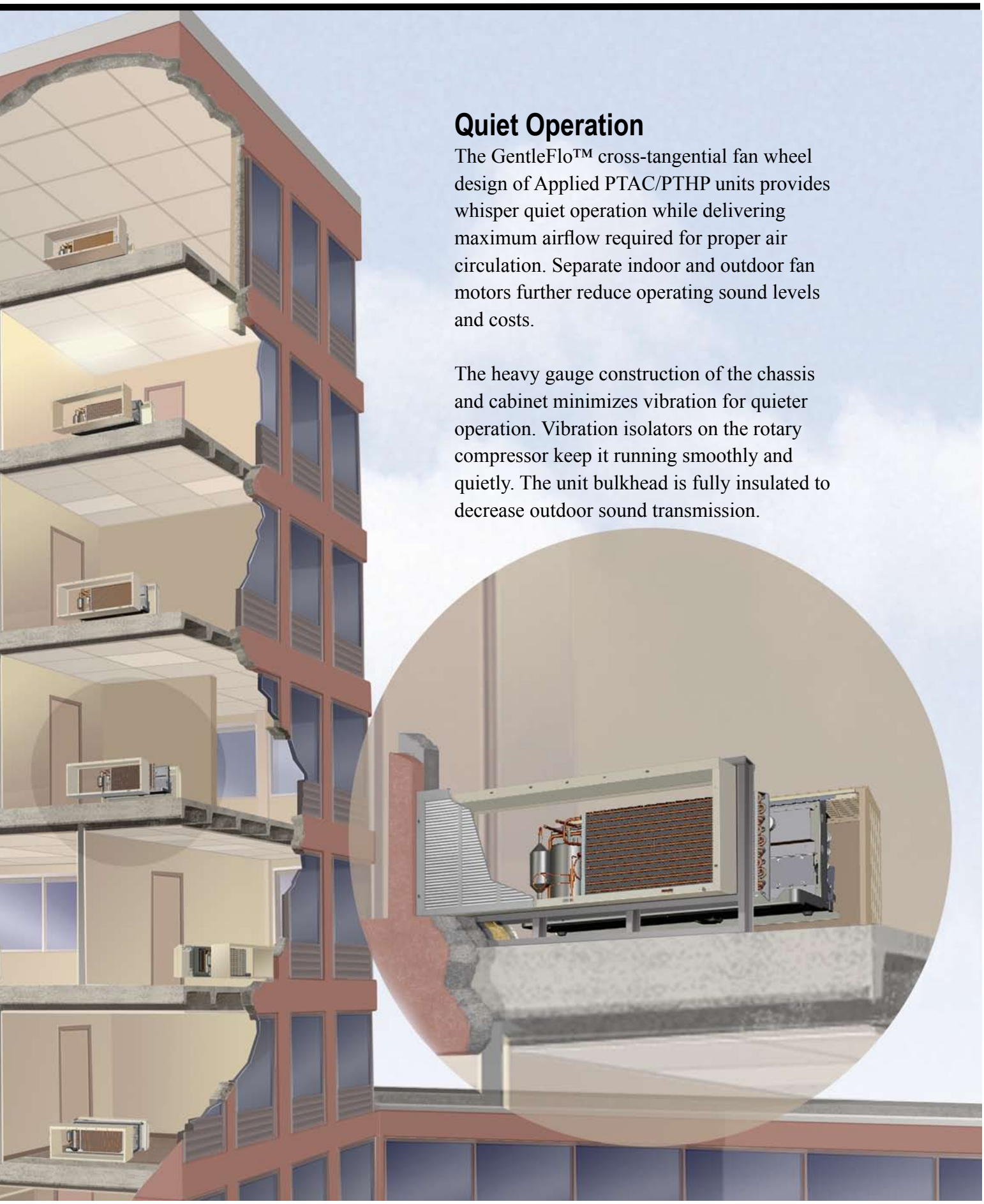
Non-Ozone Depleting R-410A Refrigerant



Quiet Operation

The GentleFlo™ cross-tangential fan wheel design of Applied PTAC/PTHP units provides whisper quiet operation while delivering maximum airflow required for proper air circulation. Separate indoor and outdoor fan motors further reduce operating sound levels and costs.

The heavy gauge construction of the chassis and cabinet minimizes vibration for quieter operation. Vibration isolators on the rotary compressor keep it running smoothly and quietly. The unit bulkhead is fully insulated to decrease outdoor sound transmission.



Room Comfort

Easy To Use Digital Controls

The unit control pad offers digital readout and is easy to use when selecting fan speed, mode of operation and temperature setting. A precise digital temperature display provides guests with an exact comfort setting, thereby eliminating uncomfortable temperature swings and costly overheating/overcooling associated with non-digital electromechanical controls.

Standard Digital Touchpad Control

Dehumidification:

The cool/dry mode automatically controls humidity by extending the cool cycle without sacrificing comfort for dehumidification. This mode comes standard with all units. The desired cooling mode (cool/dry for added dehumidification or regular cool) can be selected and locked by the owner or facility manager to meet comfort and dehumidification requirements.

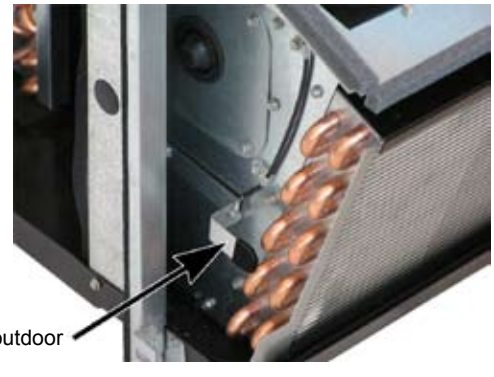
Constant Room Temperature Monitoring

Units are designed to automatically sample the room temperature and adjust operation to meet desired temperature set points.

Indoor Air Quality Options

- **Damper control** – Outdoor fresh air is brought in through a manual or automatic (optional) damper.
- **Fresh Air Damper** – Can be added to your auto damper. This will deliver 90 cfm of outdoor air into the space.
- **Cleanable filters** – Easy to remove, cleanable filters come standard with each unit.

Manual Fresh Air Damper Control - Left End



Built-In Reliability And Durable Construction

High-Grade Cabinetry

Applied PTAC/PTHP cabinets are constructed of 18-gauge steel with baked on powder coat paint for maximum durability and aesthetic appeal. Grilles are constructed of impact resistant polycarbonate.

Positive Condensate Removal

Our unique three level sloped basepan design provides positive condensate removal to prevent condensate build-up or overflow.

Room Freeze Protection

When the unit senses temperatures of 40°F or lower in an unoccupied room, the heat mode is automatically initiated to prevent freezing. The outdoor fan and compressor are stopped to help prevent coil freeze.

Beyond “Standard” Expectations

Electric Heat Override
Heat pump units can be manually switched to electric heat, providing added freeze protection if the heat pump mode is not available due to a compressor failure.

Compressor Protection
The life of the compressor is extended through built in protection logic such as:

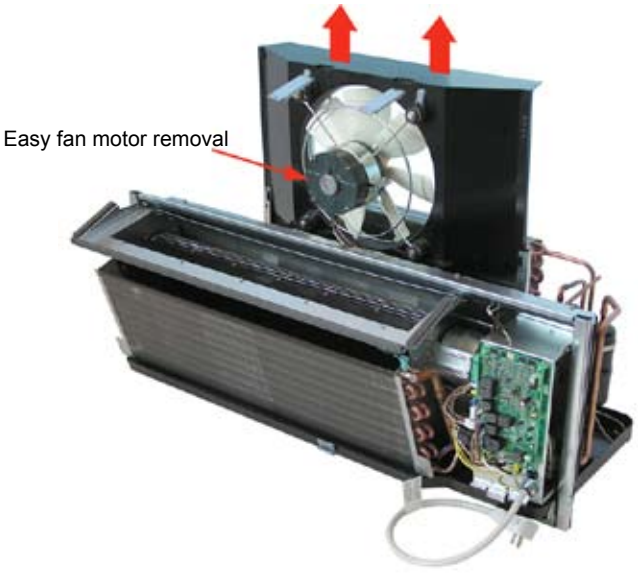
- High temperature protection if the compressor temperature exceeds 154°F
- Minimum run time
- Minimum off time
- Random restart after a power outage
- Low ambient lockout when the outdoor air temperature falls below 25°F

Memory Recall
Control settings are saved in a non-volatile memory, allowing the last settings to be recalled after a loss of power.

Easy Installation And Service Design

Quick Link Connections
Applied PTAC/PTHP units are designed for easy access with quick link connections to the control box. The simple slide in/slide out configuration makes it easy to access the electric heater, indoor and outdoor fans, motors, and compressor.

Easy Fan Removal



Easy To Read LED Diagnostics
Sensors in the unit continually monitor the indoor coil, outdoor coil, and outdoor air conditions. If abnormal conditions are detected, an error code is displayed, removing the guess work in troubleshooting a unit.

The Hydronic Experts
McQuay is a leading manufacturer of hydronic heat equipment. We specialize in providing hydronic heat with a host of configurable options.

Modes

- Cooling only mode with hydronic heat
- Cooling only mode with hydronic heat and supplemental electric heat.
- Top mounted hydronic coil (steam or hot water)
- Subbase hydronic (steam or hot water)

Controls-With Built In Hydronic Logic

- Normally open/normally closed valve control
- Heat fan lockout – prevent the fan from coming on until there is heat in the pipes.

Top-Mounted Hydronic Heat *(see Catalog 1355)*

PDAA/PDHA 16" × 42" Angled Top

Complete solution, high efficiency and very quiet – five sizes from 7,000 to 17,000 Btuh

A. Heating/Cooling Chassis

Complete air-cooled refrigeration system with a low noise indoor tangential fan wheel. Outdoor propeller fan with slinger ring provides efficient condensate removal. Separate indoor and outdoor fan motors are permanently lubricated for low maintenance and reliable operation. Concealed manual fresh air damper is standard for electric heat/cool units. Auto damper is standard for most hydronic units and optional for electric heat/cool units.

The electric heat system consists of low mass, quick response grid type heaters with high limit cutout. Hydronic heat has a 24-volt valve signal. The power cord exits from under the right side of the unit.

B. Evaporator And Condenser Coil

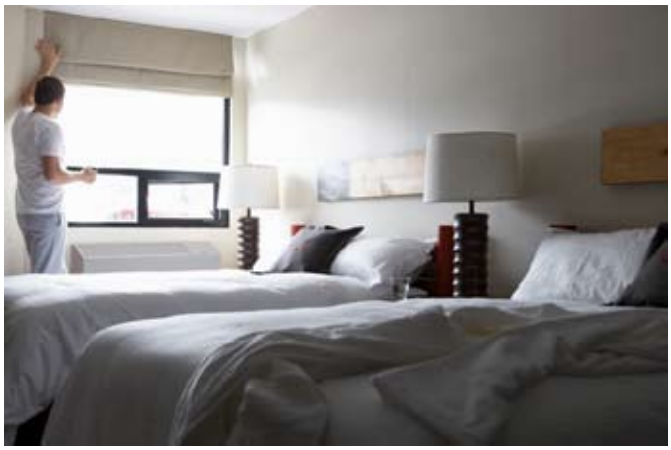
High capacity coils employ optimized heat transfer technology to provide maximum comfort to the conditioned space while minimizing the energy required to operate the unit.

F. Unit Mounted Touchpad

16" × 42" Angled Top Unit Features

C. Basic Wall Sleeve (BWS)
16" high × 42" wide × 13.75" deep and constructed from galvanized 18-gauge steel that is primed and pre-painted with an antique ivory finish. It is insulated and arrives in a removable protective plastic film.

Custom Wall Sleeve (CWS) (optional) is constructed of G-60 galvanized, phosphatized 18-gauge steel with a baked-on epoxy based powder coat paint finish to provide maximum corrosion protection. The top interior and side interior surfaces are insulated. Can be customized for extended depths, recessed louvers and wall flanges.



D. Louver (Accessory)
Flush stamped or architectural style. Constructed of anodized aluminum.

E. Room Cabinet
Angled top discharge with one piece stamped discharge grilles. Cabinet is constructed of 18-gauge steel with baked on powder coat paint. The entire room cabinet is an attractive antique ivory color. The control access door is on the right side of the cabinet.

F. Digital Control Module
The digital control module is used to control the cooling and heat mode(s) of the unit and to provide diagnostic information for troubleshooting. The standard digital control module is operated using a unit mounted touchpad or a 24-volt wall mounted thermostat.

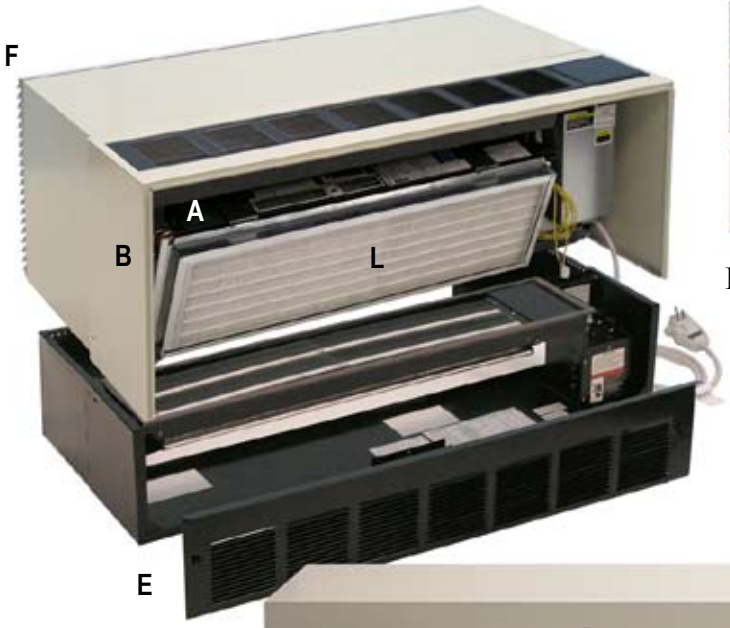
16" × 42" Flat Top Unit

Complete solution, high efficiency and very quiet – five sizes from 7,000 to 17,000 btuh

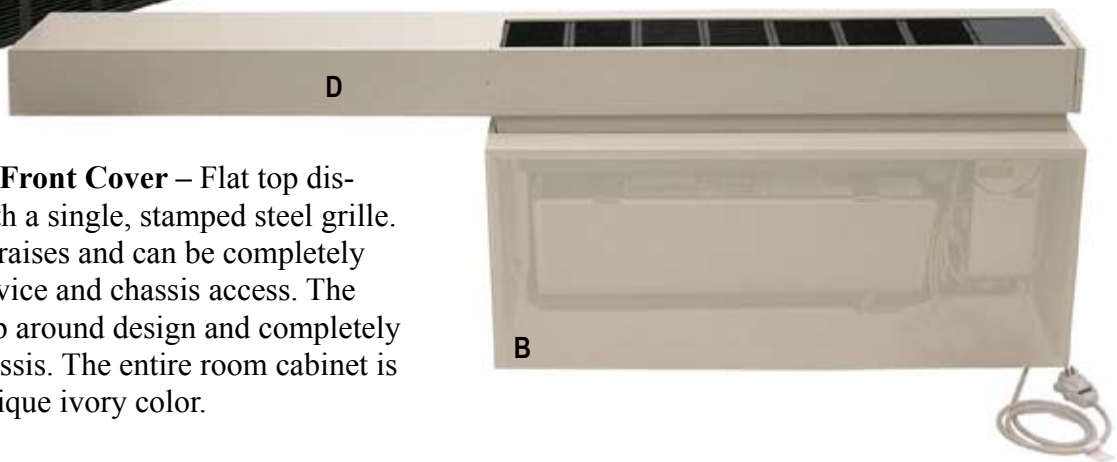
A. Heating/Cooling Chassis
Complete air cooled refrigeration system with a low noise tangential fan, outdoor propeller fan with slinger ring provides efficient condensate removal. Fan motors and concealed manual fresh air damper (auto damper for hydronic). The heating system with electric heat consists of low mass, quick response grid type electric heaters with high limit cutout. Hydronic heat has a 24-volt valve signal. Power cord exits from under the right side.

C. Digital Control Module
The Control Module is used to control the PDAF or PDHF unit that includes both an integral air conditioner and a source or two of heat. The digital control is operated with a unit mounted touchpad or 24-volt wall mounted thermostat.

C. *Unit Mounted Touchpad*



D. ExtendAire™ (Option)
The ExtendAire accessory is a cabinet extension kit designed to provide balanced heating and cooling in two rooms using a single PDAF/PDHF unit.



B. Room Cabinet/Front Cover – Flat top discharge grille with a single, stamped steel grille. The front panel raises and can be completely removed for service and chassis access. The cabinet is a wrap around design and completely encloses the chassis. The entire room cabinet is an attractive antique ivory color.

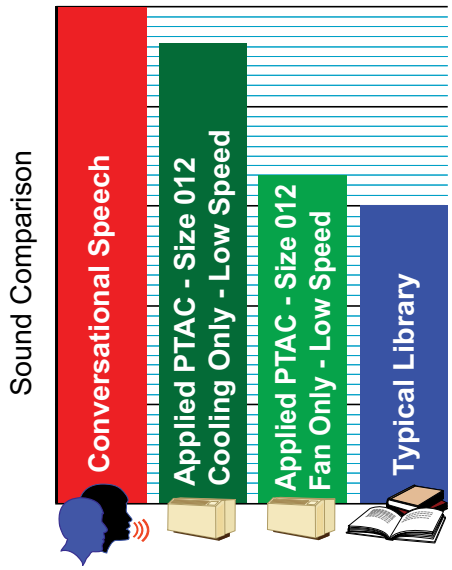
Applied 16" × 42" Chassis Common Features

E. Hydronic Subbase Heat Section (Option) –
2-row, finned/tube coil furnished for either hot water or steam and mounted in an 8" subbase. 5/8" O.D. copper pipe connections supplied. Louvered subbase front panel with quick opening latches is hinged for easy access to piping, valves and 1/2" permanent filter. Optional fused disconnect available when required. Subbase has side channels for up to 13¾" adjustment. Includes receptacle.

F. Louver (Accessory)
Flush stamped or architectural style, anodized aluminum.

G. Evaporator And Condenser Coil
High capacity coils employ the latest in heat transfer technology to provide maximum comfort to the conditioned space while minimizing the energy required to operate the unit.

Exceptionally Quiet Operation



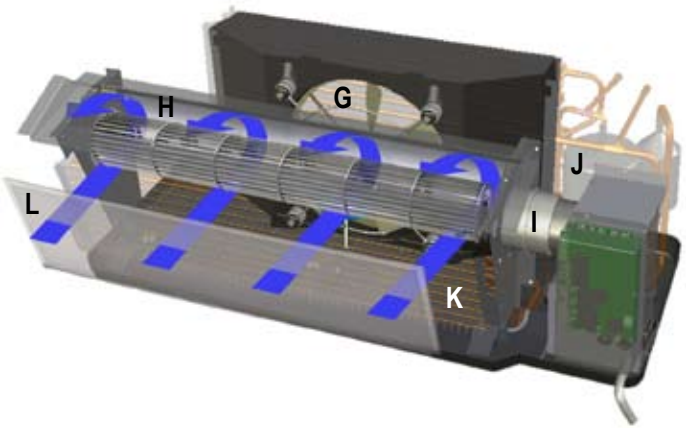
H. Tangential Indoor Fan
The indoor fan evenly circulates air across the evaporator coil and into the occupied space. This fan is constructed of metal and the motor incorporates permanently lubricated bearings to help provide uninterrupted service.

Quiet Running

I. Fan Motors
High efficiency, quiet PSC fan motors. All motors are permanently lubricated for extended life. The outdoor fan motor is totally enclosed to help prevent damage from driving rain or excess condensate accumulation in humid climates.

Indoor Fan Motor

Outdoor Fan Motor



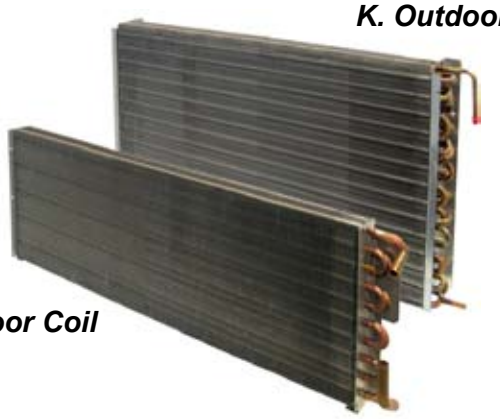
Applied 16" × 42" Chassis Common Features

J. Compressor
The reliable, high efficiency rotary compressor is hermetically sealed and designed for continuous operation. The compressor is isolated to minimize vibration and sound transmission for quiet operation.

J.

K. High Capacity Heat Transfer Surfaces
The finned/tube coils incorporate state-of-the-art technology. The unique design of these coils provides high efficiency and low air pressure drops, in addition to allowing for easy cleaning during scheduled maintenance.

K. Outdoor Coil



K. Indoor Coil

L. Filtration
Room side return air is filtered through this permanent, washable polypropylene mesh filter. It is UL listed class II, 38% average arrestance efficiency (ASHRAE test), with low resistance to airflow (0.02 w.g. at 300 cfm), and high dust holding capacity (55 grams).

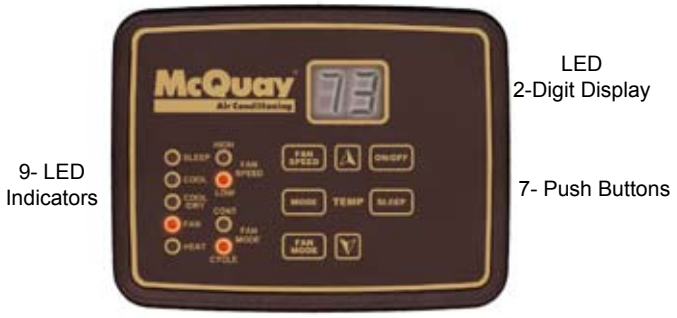
L. Permanent, Washable Polypropylene Mesh Filter
(Shown in front return configuration)

Digital Touchpad Control

The PDAC/PDHP Standard Touchpad Control is used to control both an integral air conditioner and a source of heat. The user will by default control the electronic controller via the touchpad. The user can select with a jumper for the unit to receive commands from a remote thermostat.

Standard (Non-Programmable) Dgital Touchpad

- Provides 5-selectable modes of operation: Sleep, Cool, Cool/Dry, Fan, Heat
- Temperature can be displayed in Fahrenheit (default) or Celsius



Inputs And Outputs

- Indoor coil sensor, (ICS)
- Outdoor coil sensor, (OCS)
- Indoor air sensor, (IAS)
- Outdoor air sensor, (OAS)
- Remote thermostat, T'STAT (RCBYWG)
- Power supply: (24VAC)
- Line voltage input, (L1, L2)
- Indoor fan standby voltage, (L1STB L2STB)
- Control selection: (LUI, T'STAT
- Model selection: (AC/E, HP, HP/E)
- Time delay bypass, (TEST)
- Indoor off fan cycle: (FAN, OFF CYCLE–10, 20, 30, 1 HR)

Outputs

- Compressor output, COM
- Indoor fan, BLOWER LO, HI
- Outdoor fan, OUTDOOR FAN
- Electric heater, ELE
- Reversing valve, REV VALVE

Keys And Indicators Labels

7 Push Buttons	ON/OFF, FAN SPEED, MODE FAN MODE, SLEEP Temp buttons: ▲ for Temp UP and ▼ for Temp DOWN
9 LED Indicators	SLEEP, COOL, COOL/DRY, FAN, HEAT, HIGH, LOW, CYCLE, CONT.
LED 2 Digit Displays	No Label

Display Function Legend

Tr = Room Temperature
hI = High Room Temperature
Lo = Low Room Temperature
LA = Low Ambient Lockout
rT = Remote Thermostat Control
tP = Touchpad Control
t = Time
Ts = Temperature Setpoint
Rf = Room Freeze Condition
CF = Coil Freeze Protection
F = Fahrenheit
C = Celsius
LC = Control Lockout Mode

Remote Thermostat Control

The remote thermostat can be any thermostat that can interface with an electronic thermostat via RCBWYG terminals. The Control Selection jumper must be in T'STAT position. During a call the remote thermostat will pass R back to the controller on a respective terminal. The push buttons on the touchpad become inactive in the remote thermostat mode. However, the control pad LED display will indicate the mode of operation, and the room temperature.

Note:

In terms of outputs, there are two types of thermostats: relay contacts and solid state.

If you open the thermostat and don't see relays then it must be solid state.

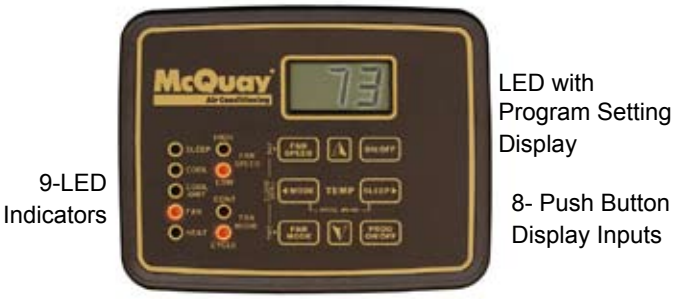
Manufacturers of solid state output thermostats include loading resistors on their installation kits. They are of 560 Ohm and 3W value. These resistors are meant to load thermostat solid state outputs in order for the output voltage to be either 0 or 24VAC, i.e. no floating voltage. These resistors are connected from W, Y, G to common (C), respectively.

You can wire any type of 24Vac thermostat straight into the REMOTE T'STAT connector of PTAC control boards, 667997101 and 667997201 (Basic and Premium models) and the control boards will recognize the signals from them.

Applied 16" × 42" Chassis Common Features

Premium (7-Day Programmable) Digital Touchpad

- Provides all the features of the Standard Controller, plus master/slave, infra-red control, auto damper, wall mounted remote thermostat, heat fan lockout



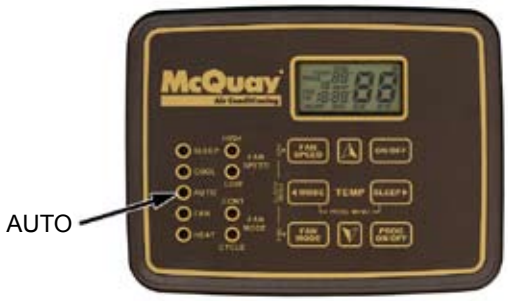
Display Inputs:

ON/OFF	Turn the unit on and off
▲	Increase the temperature set point
▼	Decrease the temperature set point
MODE	Select one from the following modes: COOL, COOL/DRY, FAN, or HEAT
FAN MODE	Change the mode of fan operation between CYCLE and CONTINUOUS
FAN SPEED	Change the speed of the fan between HIGH and LOW
SLEEP	Activate the sleep mode and set the sleep time
PROG ON/OFF	Button to activate and deactivate the program mode

Master-Slave Control (Optional)

A single master unit can be configured to control up to 32 slave units. The master unit controls on/off, fan, settings and sleep functions for the secondary units.

Digital Touchpad with Automatic Changeover from Cooling to Heating & Heating to Cooling



Available with the Programmable LUI (668003801) and Premium Board (667997301) only. The Auto-Changeover board has a new control set with a touchpad label that shows, “AUTO”. The Auto Changeover control provides:

- Auto changeover from heat to cool and vice versa
- LED's from top down that read: Sleep, Cool, Auto, Fan, and Heat

AUTO Non-Programmable Mode:

- Display shows both HEAT and COOL icons
- Temperature set point displays between the HEAT and COOL icons
- Setpoint is adjusted with Up and Down arrows
- Heating initiates when the room temperature falls one degree below the thermostat setpoint. Heating terminates when the room temperature reaches two degrees above the setpoint
- Cooling initiates when the room temperature reaches one degree above the thermostat setpoint. Cooling terminates when the room temperature falls two degrees below the setpoint

AUTO Programmable Mode:

- HEAT and COOL icons alternatively flash with their respective programmed setpoints
- The system engages cooling and heating automatically to maintain respective setpoints according to system model selection
- The 2-degree gap between setpoints represents the deadband and is necessary to prevent unecessary switching between heating and cooling

The 2 degree deadband provides the following:

- Heating activates when the room temperature is one degree below the thermostat setpoint plus the 2 degree deadband.
- Cooling activates when the room temperature is one degree above the thermostat setpoint plus the 2 degree deadband

McQuay 16" × 42" Model Product Nomenclature

Note: *For Illustration purposes only. Not all options available with all models.*
Please consult a McQuay Sales Representative for specific availability.

P DAA 2 009 E M A H A B D M A A E

Unit Type
P = PTAC

Product Identifier
DAA = Air Conditioner – Angled top
DHA = Heat Pump – Angled top
DAF = Air Conditioner – Flat top
DHF = Heat Pump – Flat top

Design Series
1 = A Design 1
2 = B Design 2
3 = C Design 3
4 = D Design 4
5 = E Design 5

Unit Size
007 = 7,000
009 = 9,000
012 = 12,000
015 = 15,000
017 = 17,000 (Cooling Only)

Voltage
A = 115-60-1
E = 208/230-60-1
J = 265/277-60-1
P = 208/230-60-1 w/stndy 115-60-1
R = 265-60-1 w/stndy 115-60-1
T = 208/208-60-1

Brand Name
M = McQuay

Refrigerant
A = R-410A

Heating Type
E = Electric Heat
H = Hydronic
A = Hydronic w/Intermediate Electric
Y = None (PDHP only)

Electric Heat
A = 2.5 Kw
B = 3.5 Kw
C = 5.0 Kw
Y = None

Hydronic Heat Type
S = Steam Top Mount (Normally Closed)
T = Steam Subbase (Normally Closed)
H = Hot Water Top Mount (Normally Open)
J = Hot Water Subbase (Normally Open)
Y = None

Damper Type
Damper Control
A = Automatic (Required for Hydronic Heating Subbase)
A = Fresh Air Boost Fan
M = Manual
Y = No Damper

Controls
Control Board Type
B = Basic Control
P = Premium Controls
(Req'd for Hydronic Heat)
User Interface Type
P = Programmable (Unit Mtd. Touchpad)
A = Programmable with Auto Changeover
(Unit Mtd. Touchpad)
N = Non-Programmable
(Unit Mtd. Touchpad)
Y = None (Wall Stat with Blank-off Plate)

Room Interface
Cabinet Type
B = Angled Top (16" × 42")
C = Flat Top (16" × 42")

Power Connection
L = Long Cord – 72" (Standard)
S - Short Cord – 30" (Optional)
30" Cord, Standard w/Hydronic
Subbase
Y = None

Upgrade Packages
S = Seacoast
Y = None

SKU
A = Stock
B = Build to Order

Warranty
A = Standard
E = Extended
X =Special

Model Quick Selection Guide

Chassis Customization Options

Description		Unit Size				
Unit Type - PDAC/PDHP		**007**	**009**	**012**	**015**	**017**
Cabinet Type	16 x 42 Top Mount Hydronic	•	•	•	•	•
	16 x 42 Angled Top	•	•	•	•	•
	16 x 42 Flat Top	•	•	•	•	•
Voltage	115-60-1	•	•	n/a	n/a	n/a
	208/230-60-1	•	•	•	•	•
	265/277-60-1	•	•	•	•	n/a
	208/230-60-1 w/ standby 115-60-1	•	•	n/a	n/a	n/a
	265/277-60-1 w/ standby 115-60-1	•	•	n/a	n/a	n/a
	208/230-60-1 w/ standby (all sizes)	•	•	•	•	•
Cooling Capacity BTUH		7,400	9,100	12,800	14,400	16,800
Heating Options						
Electric Heater (kW)	2.5	•	•	•	•	•
	3.5	•	•	•	•	•
	5.0	n/a	n/a	•	•	•
Hydronic - Hot Water or Steam		•	•	•	•	•
Hydronic with Intermediate Electric (PDAA and PDAF units)		•	•	•	•	•
Heat Pump		•	•	•	•	n/a
Heat Pump with Supplemental Electric Heat		•	•	•	•	n/a
Air Flow CFM - High/Low Speed in Heating	380/340	•	•	•	•	550/380
Outside Air Damper - Vent - CFM-High/Low Speed	50/40	•	•	•	•	70/50
Damper						
Auto Damper Control (Standard for most Hydronic Heat)		•	•	•	•	•
Manual Damper Control (Not available for most Hydronic Heat)		•	•	•	•	•
Indoor Air Quality (IAQ) Boost Fan	No Damper	•	•	•	•	•
	w/ Auto Damper	•	•	•	•	•
Unit control	Unit Mounted Non-programmable	•	•	•	•	•
	Unit Mounted Programmable	•	•	•	•	•
Seacoast Coating Package		•	•	•	•	•

n/a = not applicable

Notes:
For illustration purposes only. Not all options available with all models.
Consult a McQuay Sales Representative for details and availability.

Other Customization Options – 16¨ x 42¨ Units

- **Custom Sleeve -** Extended depths, brick stops, or support legs can be added for panel wall or curtain wall applicatons.
- **Custom Cabinet -** Extended depths, colors, kickplates
- **Factory-installed valves and hydronic coils**

Model PDAF/PDHF – Flat Top 16¨ x 42¨

- **ExtendAire -** a cabinet extension kit designed to provide balanced heating and cooling in two rooms using a single unit.

ARI Performance Data(6)

UNIT SIZE			007			009			012		015		017
Cooling	Total Btuh(1)		7,400	7,400	7,400	9,100	9,100	9,100	12,800	12,800	14,400	14,400	16,800
	Sensible Btuh(1)		6,500	6,500	6,500	7,500	7,500	7,500	9,000	9,000	9,600	9,600	11,700
	EER		10.9	10.9	10.9	10.7	10.7	10.7	9.8	9.8	9.4	9.4	9.3
	Volts		115	208/230	265	115	208/230	265	208/230	265	208/230	265	208/230
	Full Load Amps(6)		7.43	4.07	3.34	9.33	5.45	4.04	7.15	6.09	8.21	6.69	10.03
	Watts(1)		679	679	679	850	850	850	1,306	1,306	1,532	1,532	1,806
Electric Heat(3)	Volts			208/230	265		208/230	265	208/230	265	208/230	265	208/230
	2.5 kW	kW		2.2/2.7			2.2/2.7		2.2/2.7		2.2/2.7		2.2/2.7
		Amps		10.7/11.9			10.7/11.9		10.7/11.9		10.7/11.9		10.7/11.9
	3.5 kW	kW		3.1/3.8	3500		3.1/3.8	3500	3.1/3.8	3500	3.1/3.8	3500	3.1/3.8
		Amps		15.2/16.8	13.7		15.2/16.8	13.7	15.2/16.8	13.7	15.2/16.8	13.7	15.2/16.8
	5.0 kW	kW							3.9/4.8	5,000	3.9/4.8	5,000	3.9/4.8
		Amps							19.0/21.0	19.3	19.0/21.0	19.3	19.0/21.0
Hydronic Heat(4)	Valve & Fan Motor Amps		0.74	0.41	0.32	0.74	0.41	0.32	0.41	0.32	0.41	0.32	0.47
	Hot Water (Btuh) Hi/Lo		18,400/15,600			18,400/15,600			18,400/15,600		18,400/15,600		23,200/16,400
	Steam (Btuh) Hi/Lo		22,400/22,300			22,400/22,300			22,400/22,300		22,400/22,300		27,900/23,300
Heat Pump Model													
Cooling	Qt, Btuh(2)		7,400	7,400	7,400	9,200	9,200	9,200	12,700	12,700	14,200	14,200	
	Qs, Btuh(2)		6,500	6,500	6,500	7,500	7,500	7,500	9,000	9,000	9,500	9,500	
	EER		10.9	10.9	10.9	10.3	10.3	10.3	9.8	9.8	9.4	9.4	
	Volts		115	208/230	265	115	208/230	265	208/230	265	208/230	265	
	Full Load Amps		7.43	4.07	3.34	9.33	5.45	4.04	7.15	6.09	8.21	6.69	
	Watts(1)		679	679	679	893	893	893	1,296	1,296	1,511	1,511	
Reverse Cycle Heat	Btuh(2)		6,800	6,800	6,800	8,500	8,500	8,500	12,400	12,400	14,000	14,000	
	COP		3.2	3.2	3.2	3.3	3.3	3.3	3.0	3.0	2.9	2.9	
	Volts		115	208/230	265	115	208/230	265	208/230	265	208/230	265	
	Full Load Amps		7.43	4.07	3.34	9.33	5.45	4.04	7.15	6.09	8.21	6.69	
	Watts(2)		623	623	623	755	755	755	1,211	1,211	1,415	1,415	
Electric Heater	Voltage			240V	265V		240V	265V	240V	265V	240V	265V	240V
Minimum Circuit Ampacity	2.5 Kw			15.51			15.51		15.51		15.51		15.51
	3.5 Kw			21.92	17.07		21.92	17.07	21.92	17.07	21.92	17.07	21.92
	5.0 Kw								27.38	24.1	27.38	24.1	27.38
	Hydronic Heat		8.69	4.77	3.89	11.06	6.49	4.77	8.48	7.22	9.8	7.97	12.07
Time Delay Fuses or Type HACR Circuit Breaker	2.5 Kw			15			15		15		15		15
	3.5 Kw			20	15		20	15	20	15	20	15	20
	5.0 Kw								25	20	25	20	25
	Hydronic Heat		15	15	15	15	15	15	15	15	15	15	15
NEMA Receptacle Type Required	2.5 Kw			6-15R			6-15R		6-15R		6-15R		6-15R
	3.5 Kw			6-20R	7-20R		6-20R	7-20R	6-20R	7-20R	6-20R	7-20R	6-20R
	5.0 Kw								6-30R	7-30R	6-30R	7-30R	6-30R
	Hydronic Heat		5-15R	6-15R	7-20R	5-15R	6-15R	7-20R	6-15R	7-20R	6-15R	7-20R	6-15R
Airflow CFM			High		Low	High		Low	High	Low	High	Low	High	Low
	Cool		360		330	360		330	360	330	360	330	540	360
	Heat		380		340	380		340	380	340	380	340	550	380
	Vent(5)		50		40	50		40	50	40	50	40	70	50

(1) Based on ASHRAE and ARI test conditions of 95°F DB/75°F WB outside, 80°F DB/67°F WB inside.
(2) Based on ASHRAE and ARI test conditions of 47°F DB outside, 70°F DB inside.
(3) Electric Resistance Heat Watts x 3.41 = Btuh. Electric Heating Watts and Amps include Indoor Fan Motor.
(4) Water – Based on ASHRAE and ARI test conditions of 200°F EWT, 180°F LWT, 70°F EAT with a 1.8 gpm flow rate.
(5) 90 cfm with Power Vent Option.
(6) Cooling Full Load Amps includes Compressor, IDF and ODF FLA's.

= Not Applicable

Unit Weights - (lbs.)

Model	007	009	012	015	017
16" x 42" (Angled) PDAA (Chassis)	129.5	137	137.9	145.6	150.6
16" x 42" (Angled) PDAA (Packaged)	144.5	152.0	152.9	160.6	165.6
16" x 42" (Angled) PDHA (Chassis)	129.5	137.0	137.9	145.6	
16" x 42" (Angled) PDHA (Packaged)	131	138.5	139.9	147.1	
*16" x 42" (Flat) PDAF	129.5	137	137.9	145.6	150.6
*16" x 42" (Flat) PDAF (Packaged)	144.5	152	152.9	160.6	165.6
*16" x 42" (Flat) PDHF	131	138.5	139.4	147.1	
*16" x 42" (Flat) PDHF (Packaged)	146	153.5	154.4	162.1	

* Includes Chassis and Cabinet Assembly (Wall Sleeve Ships Separate)

16" x 42" Wall Sleeve

(Packaged) .....28 lbs. (13 kg)

Louvers

Flush-stamped.....6 lbs. (3 kg)

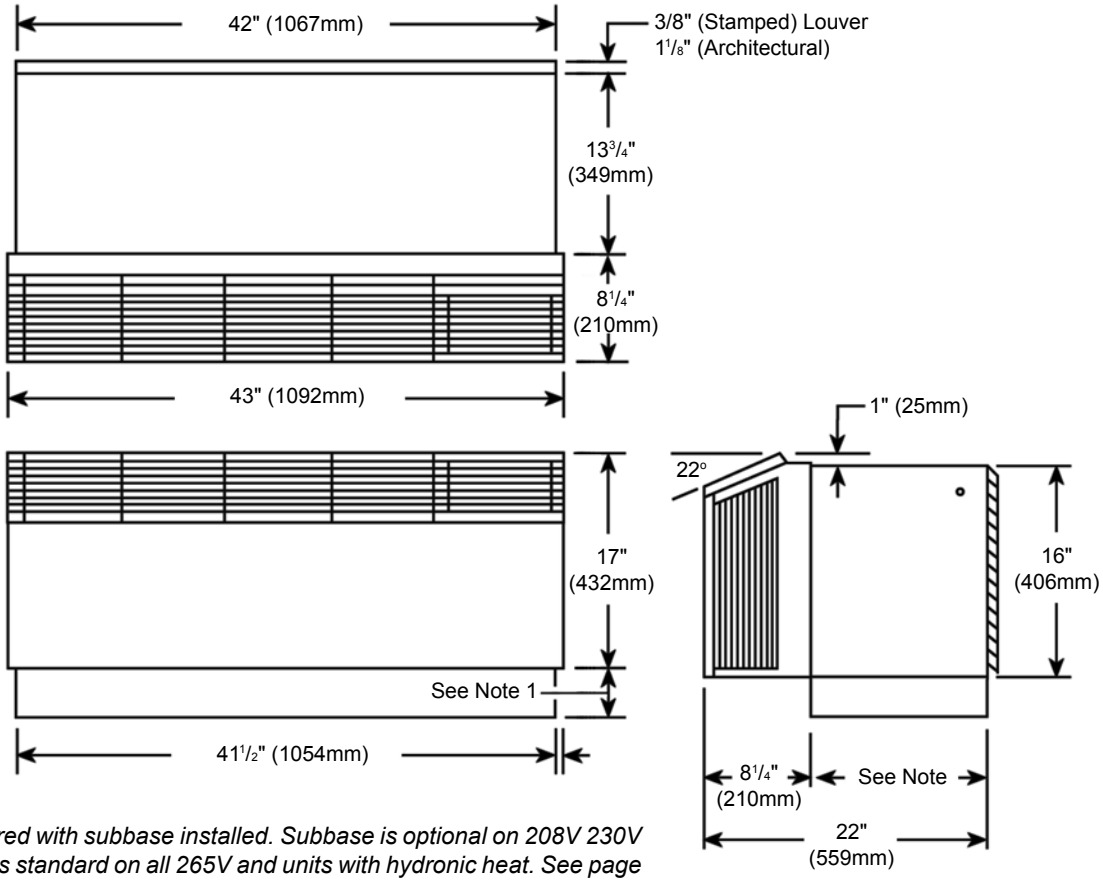
Architectural.....8 lbs. (3 kg)

Subbase

3" (76mm) High Electrical.....10 lbs. (5 kg).
4" (102mm) High Electrical.....12 lbs. (5.4 kg)
8" (203mm) High Hydronic .....20 lbs. (9 kg)

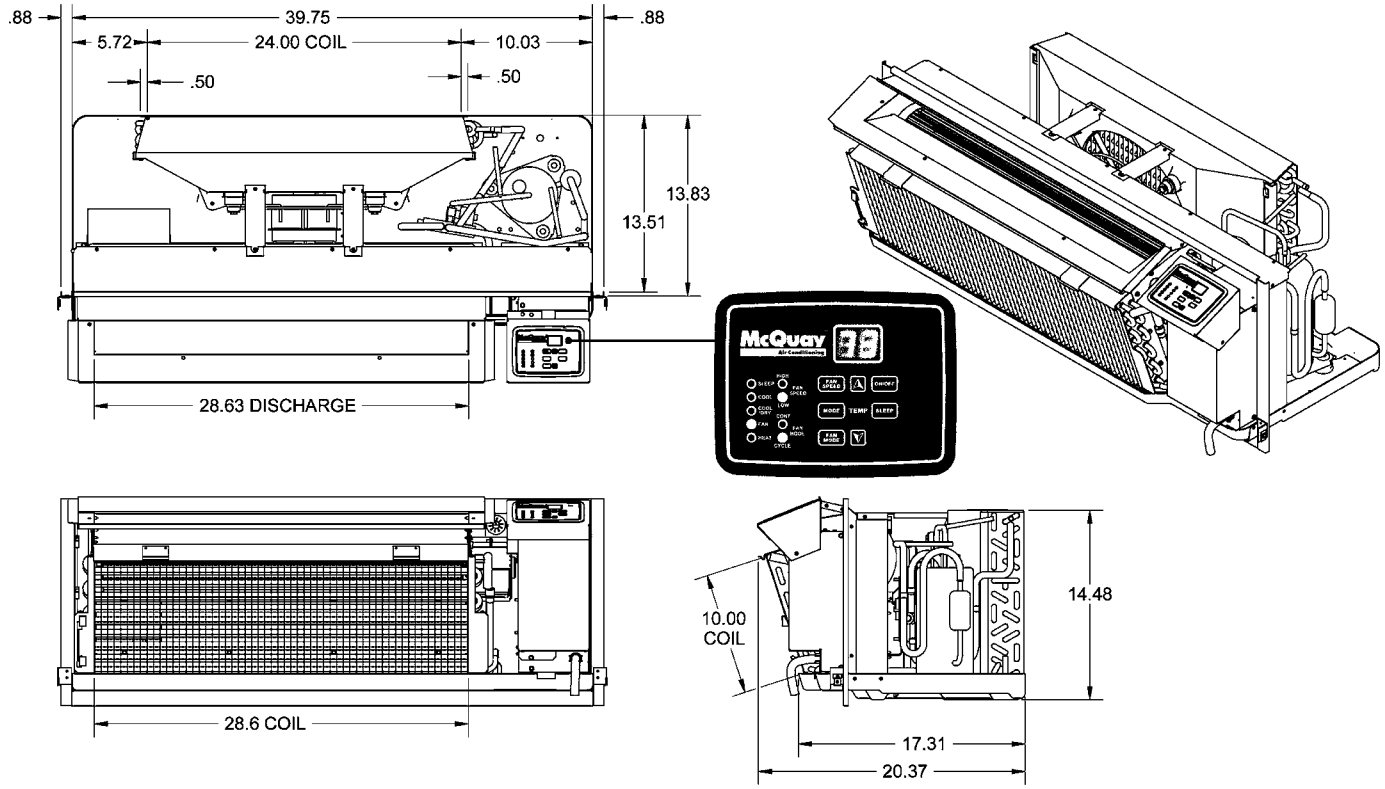
Dimensional Data – 16" × 42" Angled Top Unit

Cabinet & Wall Sleeve



Note: *Unit pictured with subbase installed. Subbase is optional on 208V 230V units. Subbase is standard on all 265V and units with hydronic heat. See page 29 for subbase dimensions. Sides are adjustable.*

Chassis



Typical Installation Types

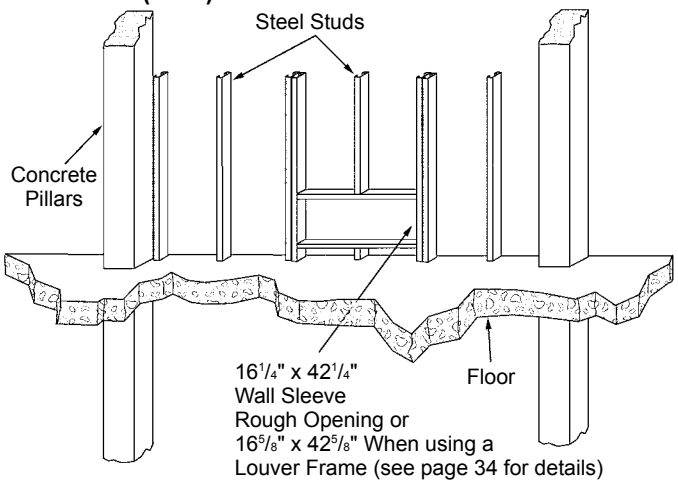
Wall Opening Requirements – 16" × 42"

When roughing in the opening for the wall sleeve, sufficient clearance from the walls and floor is required. The wall sleeve should be positioned a minimum of 5/8" from the finished side wall to accommodate the room cabinet. A minimum distance of 3" above the finished floor is required for return air.

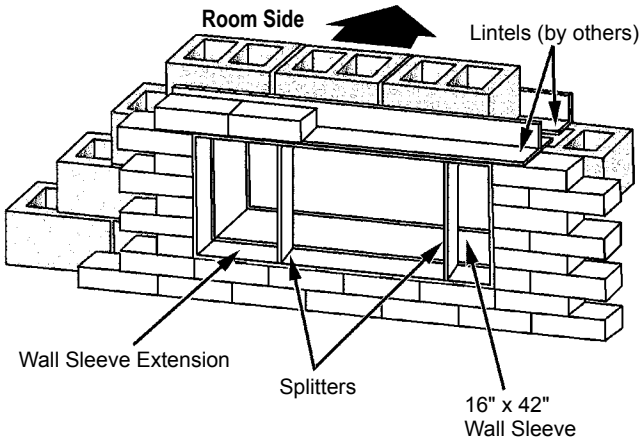
The rough opening should measure $16^{1}/_{4}$" high × $42^{1}/_{4}$" wide. When using a louver frame, the opening must measure $16^{5}/_{8}$" × $42^{5}/_{8}$". Louver frames should be used for panel wall and thin wall applications to provide positive anchoring to the wall. When an electrical subbase is used, the opening must start 3" to 4" above the finished floor (including carpeting) to match the height of the subbase selected. The subbase is available in 3" or 4" heights and has adjustable leveling legs that provide up to an additional 1" height.

Wall Construction Examples

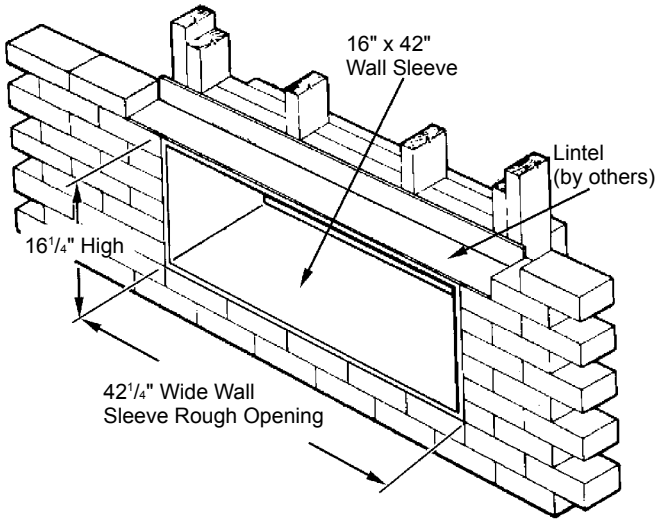
Panel Wall (Thin)



Masonry Wall (Thick)



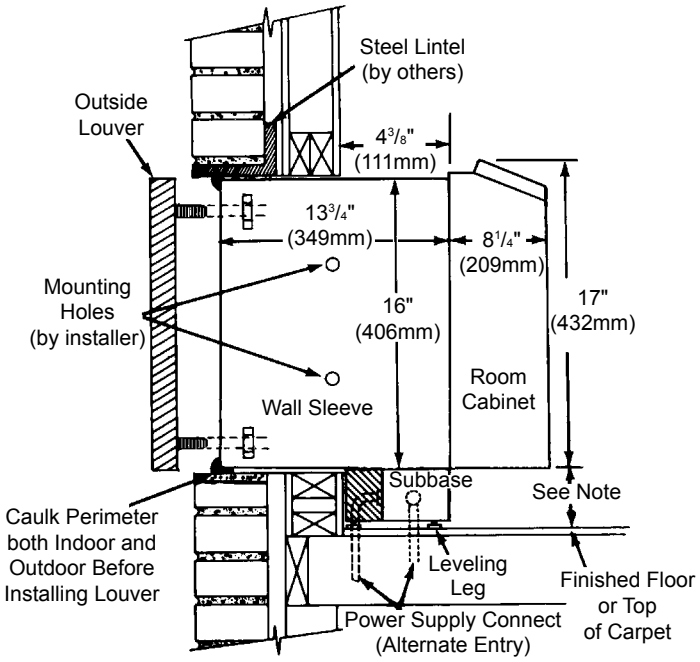
Frame And Brick



Typical Installation Types

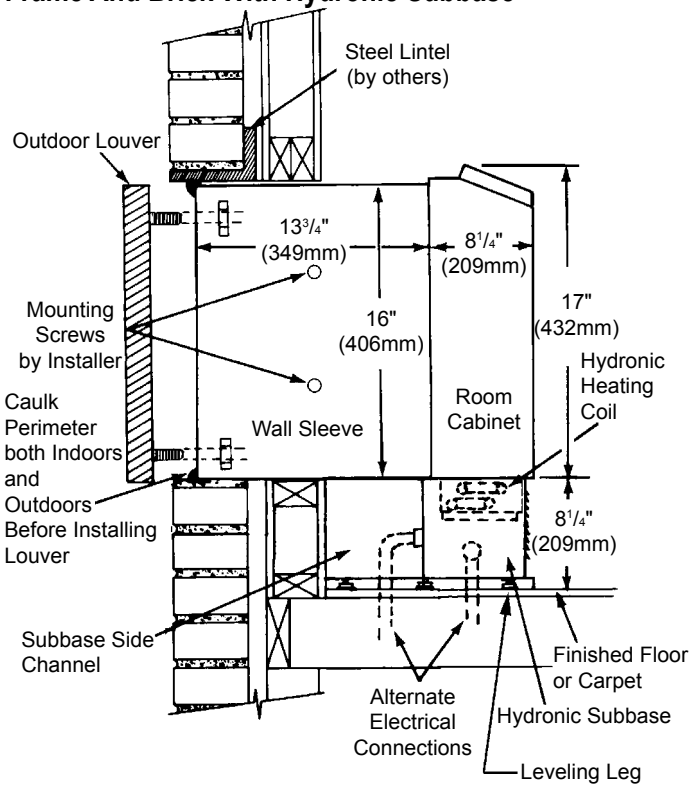
Frame And Brick Construction Examples

Frame And Brick With Electrical Subbase

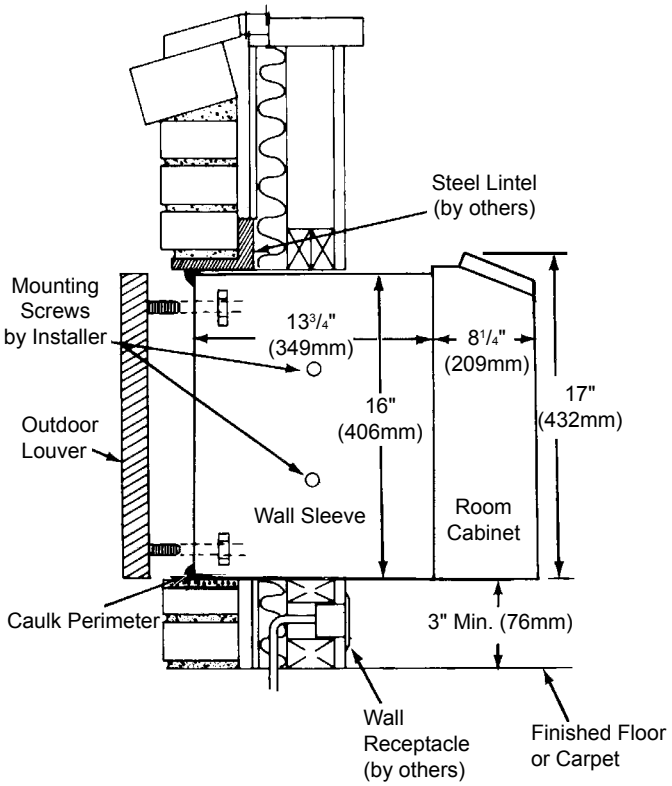


Note: *Standard subbase is available in 3" or 4" (76 mm) or (102 mm) height. Leveling legs provide adjustment of 1" (25 mm).*

Frame And Brick With Hydronic Subbase



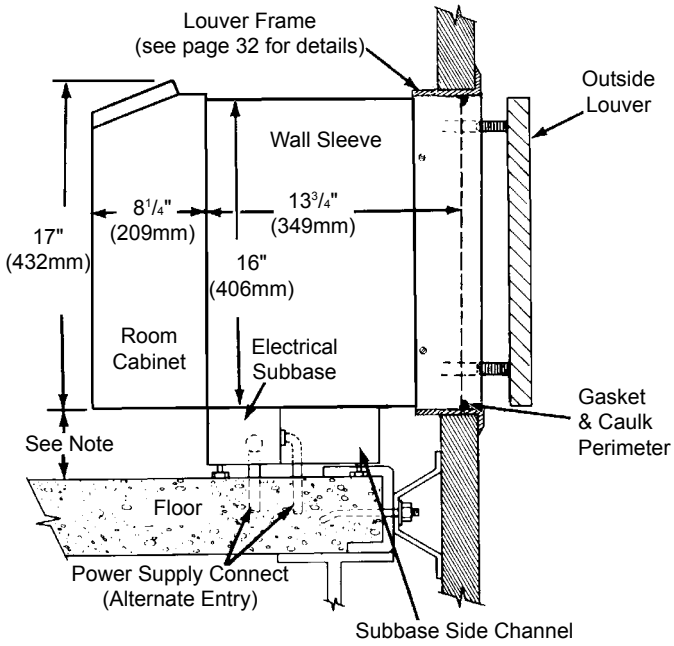
Frame And Brick With Cord Connection



Typical Installation Types

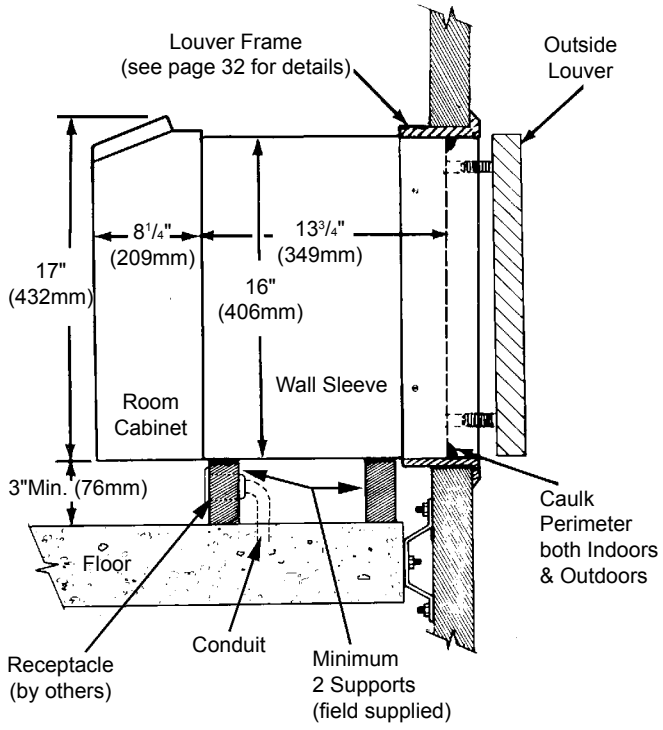
Panel Wall Construction Examples

Panel Wall With Standard Electrical Subbase



Note: *Standard subbase is available in 3" or 4" (76 mm) or (102mm) height. Leveling legs provide adjustment of 1" (25 mm).*

Panel Wall With Cord Connection



Panel Wall With Hydronic Subbase

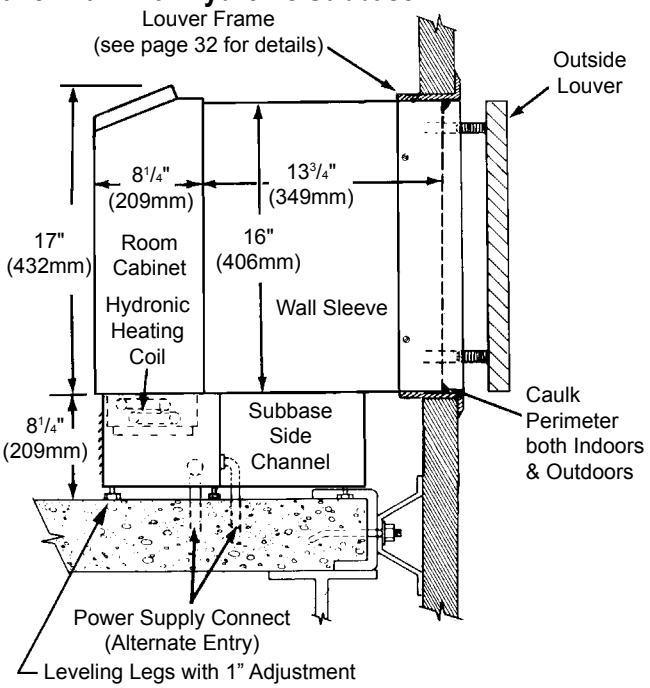


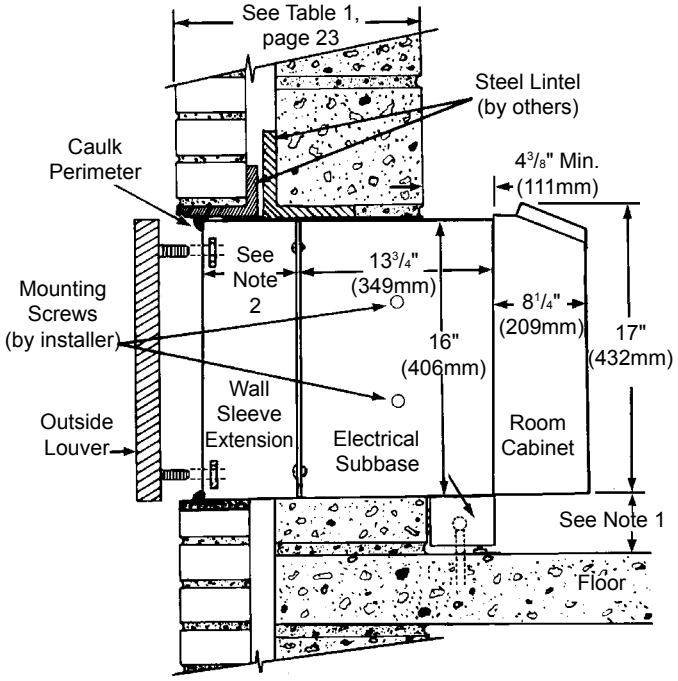
Table 1. Maximum Wall Thickness without Sleeve Extensions

Louver Type	Maximum Wall Thickness		
	No Subbase	Standard Subbase	Hydronic Subbase
Stamped 3/8"	14 1/8"	9 1/2"	13 1/8"
Architectural 1 1/8"	14 7/8"	10 3/8"	14"

Typical Installation Types

Thick Wall Construction Examples

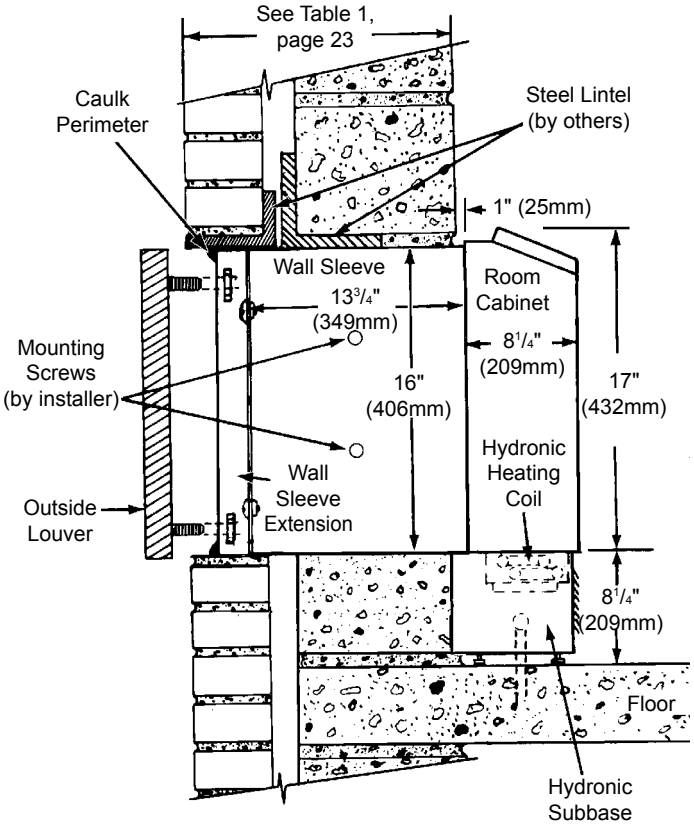
Thick Wall With Electrical Subbase



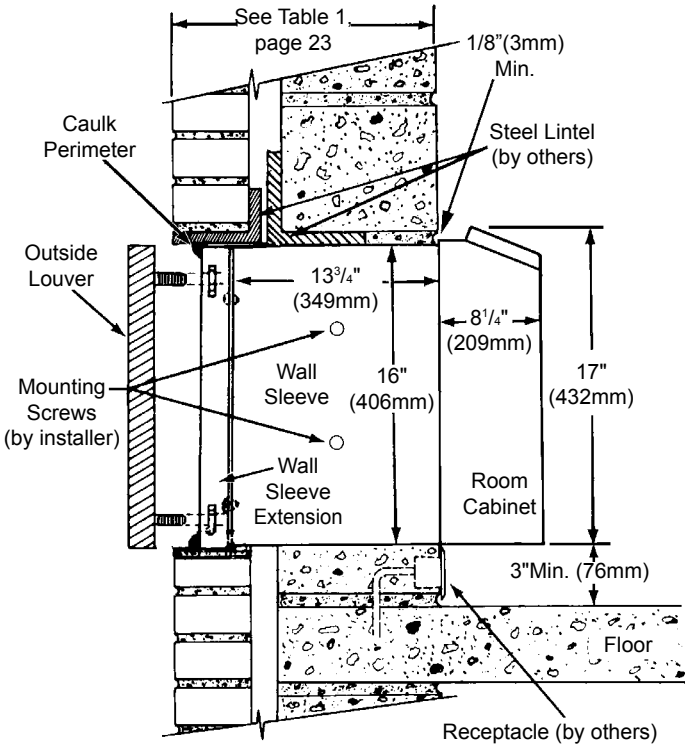
Note: *1. Standard subbase is available in 3" or 4" (76 mm) or (102 mm) height. Leveling legs provide adjustment of 1" (25 mm).*

2. Wall sleeve extension is available in various depths and supplied as required.

Thick Wall With Hydronic Subbase

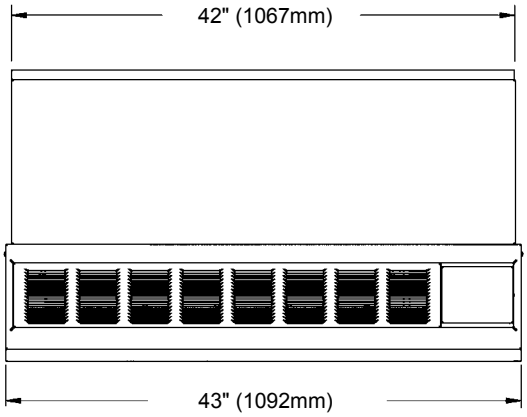


Thick Wall With Cord Connection

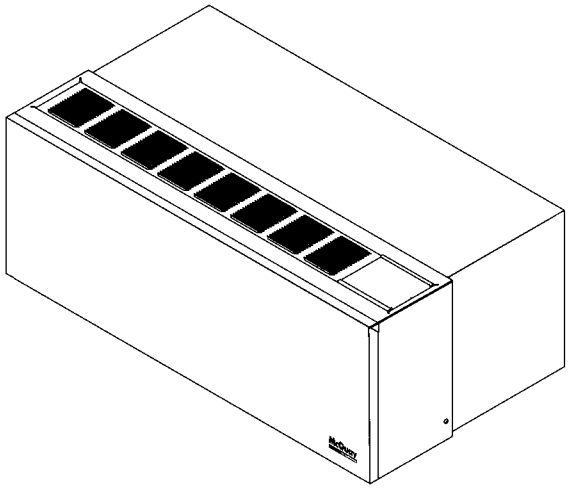


Dimensional Data – PDAF/PDHF 16" x 42" Flat Top Unit

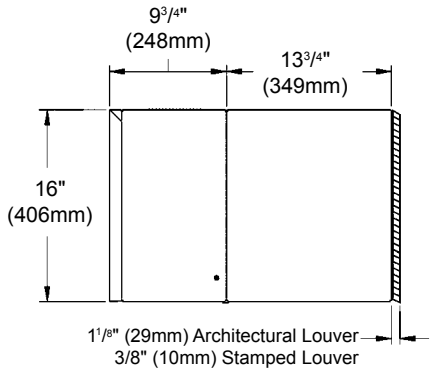
Cabinet Assembly & Wall Sleeve



Top View

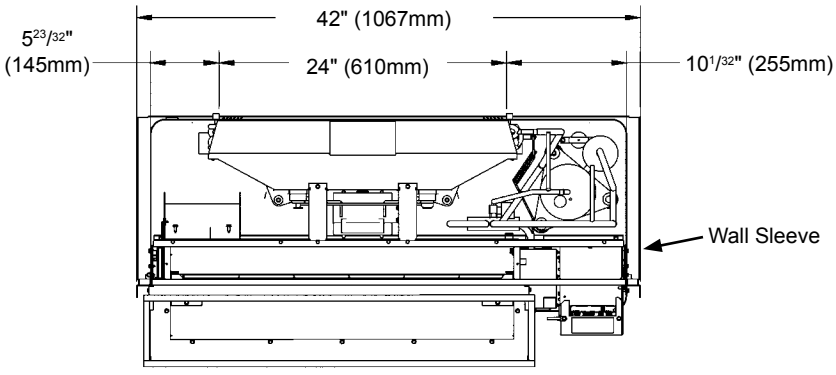


Front View

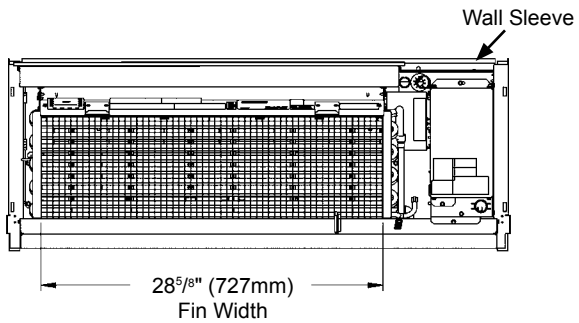


Right End View

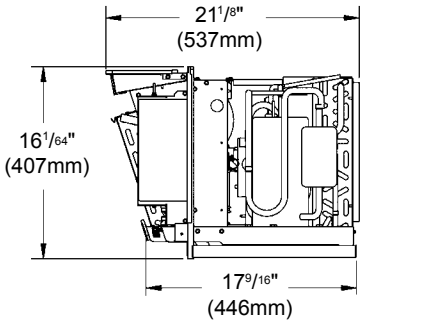
Chassis



Top View



Front View



Right End View without Wall Sleeve

Accessories Common to 16" × 42" Units

Wall Mounted Thermostats – Quick Selection Guide

Thermostat Item Number	107095701	107095801	107095901
Single Stage	•	•	•
Two Stage			•
Heat Pump	•	•	•
Manual Changeover (Cool/Off/Heat)	•	•	•
Settable Differential Range			•
Auto Changeover			•
Status LEDs			•
Backlit Display		•	•
7-Day Programmable		•	•
Temporary and Vacation Hold		•	•
Programmable Fan On/Off Delay			•
Non-Programmable	•		
Hard Wired	•	•	•
Wireless			
4 or 5 Wire Capable	•	•	•
Freeze Protection	•		
Fan Switch - On/Auto	•	•	•
Lockout Feature			•
Fahrenheit or Celsius Display	•		
Remote Sensor Option			•
Power Loss Memory Protection	•	•	•
Anti-Short Cycle Delay	•	•	•
Max/Min. Set Point Control			•
Energy Management Interface			
California Title 24 Compliant	•	•	•

Accessories Common to 16" × 42" Units

Wall Mounted, Non-Programmable Thermostat

Manual Changeover One-Stage Heat And Cool or One-Stage Heat Pump

McQuay Part No. 107095701 (1-Pk, White with Wall Plate)

Features and Benefits

- Hardwired
- Simple operation
- Large LCD display
- No batteries required
- A/C compressor protection - 5-minute time delay to protect compressor after it turns off
- Single stage heat pump
- Freeze protection feature
- Zone capatible
- 4- or 5-wire compatible (C is optional for non-heat pump systems)
- Manual Changeover

Specifications

Electrical Rating:

- 24 VAC (18 to 30 VAC)
- 1 amp maximum per terminal
- 3 amp maximum total load
- 30-minute power loss memory retention

Temperature Control Ranges:

- 45°F to 90°F, Accuracy: ± 1°F

System Configurations:

- 1 stage heat, 1 stage cool or single stage electric heat pump

Terminations:

- R, C, W, Y, O, B, G

Wall Mounted, 7-Day Programmable Thermostat

Manual Changeover One-Stage Heat And Cool or One-Stage Heat Pump

McQuay Part No. 107095801 (1-Pk, White with Wall Plate)

ENERGY STAR

Features and Benefits

- Simpleset™ logical programming for set-up and set-back temperatures and times
- Simpleset™ feature enables easy copying of one day's programming for the entire week
- Programmable fan to circulate air during any program setting.
- Vacation hold overrides programming
- Enables separate morning, day, evening, and night settings for every day of the week
- Clear, backlit display makes it easy to see time, temperature, and setpoint — even in the dark
- A/C and heat pump modes – 4-minute time delay to protect compressor after it turns off
- Lockout feature prevents unwanted tampering
- Manual Changeover

Specifications

Electrical Rating:

- 24 VAC (18 to 30 VAC)
- 1 amp maximum per terminal
- 3 amp maximum total load
- 30-minute power loss memory retention
- Easy access terminal block

Temperature Control Ranges:

- 45°F to 90°F, Accuracy: ± 1°F

System Configurations:

- 1 stage heat, 1 stage cool or single stage electric heat pump

Terminations:

- RC, RH, C, W, Y, O, B, G

Accessories Common to 16" × 42" Units

Wall Mounted, 7-Day Programmable Thermostat

Standard Auto or Manual Changeover Two Stage Heat/ Two Stage Cool

McQuay Part No. 107095901 (1-Pk, White with Wall Plate)

Features and Benefits

- Simpleset™ logical programming for set-up and set-back temperatures and times
- Simpleset™ feature enables easy copying of one day's programming for the entire week
- Programmable fan to circulate air during any program setting.
- Vacation hold overrides programming
- Enables separate morning, day, evening, and night settings for every day of the week
- Clear, backlit display makes it easy to see time, temperature, and setpoint — even in the dark
- Automatically switches between heating and cooling modes
- A/C and heat pump modes – 4-minute time delay to protect compressor after it turns off
- Lockout feature prevents unwanted tampering
- Optional remote temperature sensor available

Specifications

Electrical Rating:

- 24 VAC (18 to 30 VAC)
- 1 amp maximum per terminal
- 4 amp maximum total load
- 30-minute power loss memory retention
- Easy access terminal block

Temperature Control Ranges:

- 45°F to 90°F, Accuracy: ± 1°F

System Configurations:

- Single or two-stage heat/cool
- Single or two-stage heat pump

Terminations:

- R, C, W1/O/B, Y1, W2, Y2, G

Optional Remote Sensor - Part No. 667720401

The Fast, Easy Solution For Temperature Sensing Problems.

- For tamper prone areas
- Poor airflow areas
- Troubled applications
- Foam gasket prevents drafts through wall opening
- Mounts to standard 2" × 4" outlet box
- $2^{3}/_{4}$"W × $4^{1}/_{2}$"H

Wireless Temperature Control (T9000)

The T9000 Wireless Temperature Control is designed to provide precision temperature control without the installation labor and expense of wiring.

- Powered by AA batteries
- Mounts in any suitable location that will provide good temperature control.
- Large LCD display provides the user with current room temperature, set point temperature, time, program interval, and other system status information.

Programmable

Non-Programmable

Remote Control Node (RCN)

Used with the Wireless Temperature Control, the RCN interfaces with specific HVAC equipment, and communicates with its thermostat using unlicensed 900 MHz, radio frequency energy. Contact your local McQuay Representative for details.

Accessories Common to 16" × 42" Units

Electrical Subbase 3" or 4" High

An electric subbase is available for the PDAC/PDHP unit. The subbase height can be either 3" or 4". Leveling legs are supplied with the subbase which allow for an additional 1" adjustment. The electrical subbase requires a minimum of $4^{3}/_{8}$" from the front edge of the wall sleeve to the finished wall.

Subbase Side Dimension:

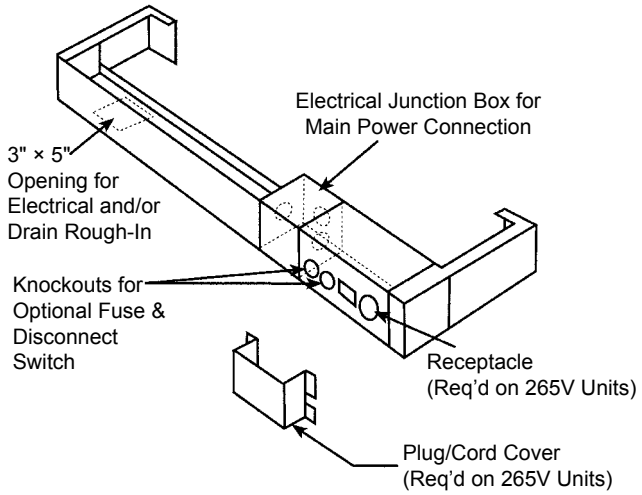
Electric: Adjustable from $4^{3}/_{4}$" to $13^{3}/_{4}$" (111mm to 349mm)

Subbase Height Dimension:

Electric: 3" to 4" (76mm to 102mm) with 0" to 1" (0mm to 25m) leveling screw

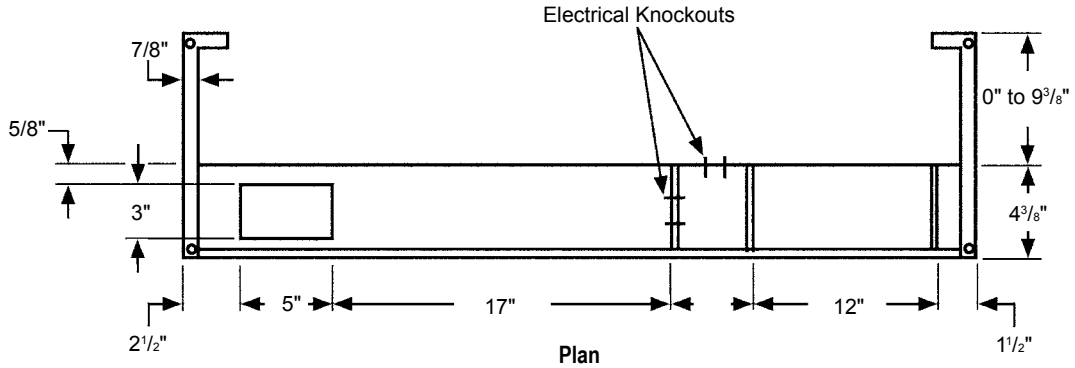
Subbase – Weight

3" (76mm) High Electrical..... 10 lbs. (5kg).
4" (102mm) High Electrical..... 12 lbs. (5.4kg)

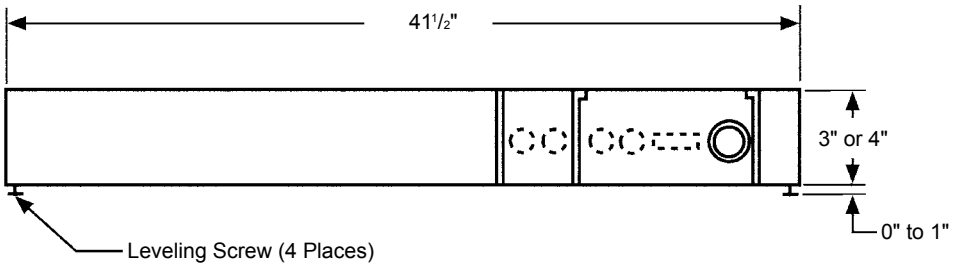


Notes:

1. *Subbase is optional on 208V and 230V units. Subbase is standard on all 265V units and units with hydronic heat. Electric subbase is flush with wall sleeve.*
2. *Subbase extends to front edge of unit when furnished with hydronic heat.*
3. *Opening needs to be $16^{5}/_{8}$" × $42^{5}/_{8}$" (422mm × 1083mm) when using a louver frame.*



Plan



Front Elevation (Three Front Panels in Place)

Accessories Common to 16" × 42" Units

Hydronic Subbase 8" High Heat Section

The PDAC hydronic model requires 1" minimum from the front edge of the wall sleeve to the finished wall. Side channels are furnished with all subbases for a maximum depth extension of 13¾". Subbases are available with or without receptacles or fuse disconnect switches

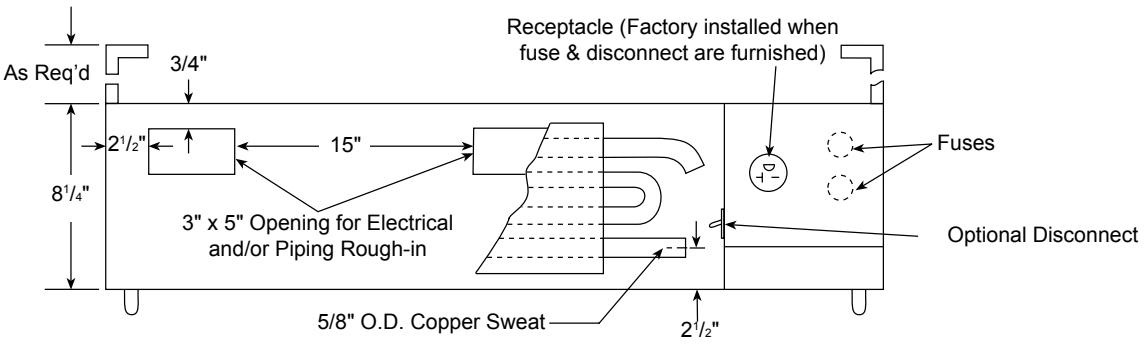
2-row, finned/tube coil furnished for either hot water or steam and mounted in an 8" subbase. 5/8" O.D. copper pipe connections supplied. Louvered subbase front panel with quick opening latches is hinged for easy access to piping, valves and 1/2" permanent filter.

Hydronic Subbase – Weight

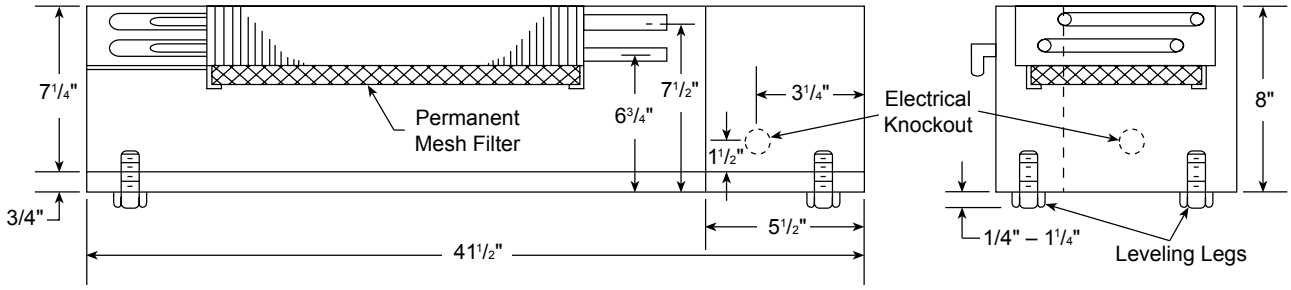
8" (203mm) High Hydronic.....20 lbs. (9 kg)

Notes:

1. *Side channels are adjustable from 0" – 9⅜" in length by inverting them. Side channels are pre drilled to allow infinite adjustment.*
2. *Subbase shown with louvered front panel removed. Front panel is hinged to allow access to valve, coil, filter & electrical junction box.*
3. *Leveling legs are adjustable from 1/4" – 1¼".*



Top View



Front View **End View**

Drain Kits

Drain kits are recommended for the heat pump units, and may be used on any unit as required. They eliminate excessive condensate accumulation which is generated during the heating cycle of the heat pump.

There are two types of drain kits employed with the Packaged Terminal equipment; internal drains and external drains.

Internal Drain

An internal drain is mounted to the bottom of the wall sleeve prior to installation of the sleeve. Position this drain on the room side of the sleeve and connect to an internal collection system.

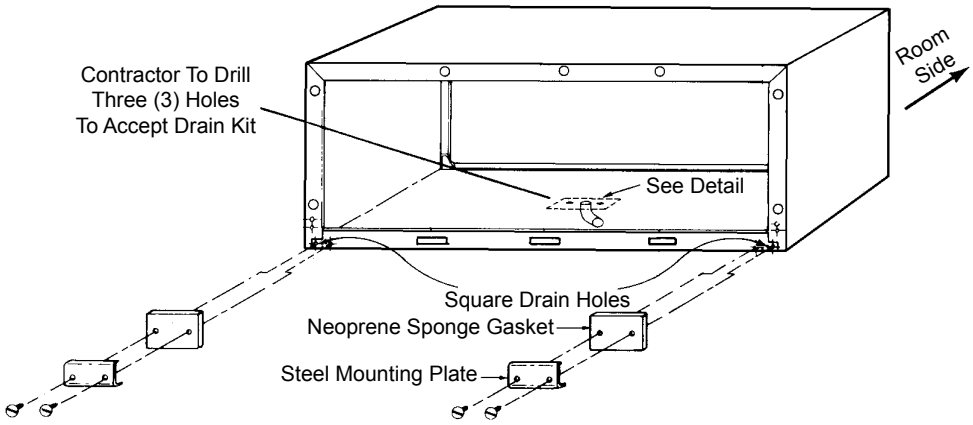
When using a subbase, a 3" × 5" opening is provided in the subbase for plumbing to the drain.

External Drain

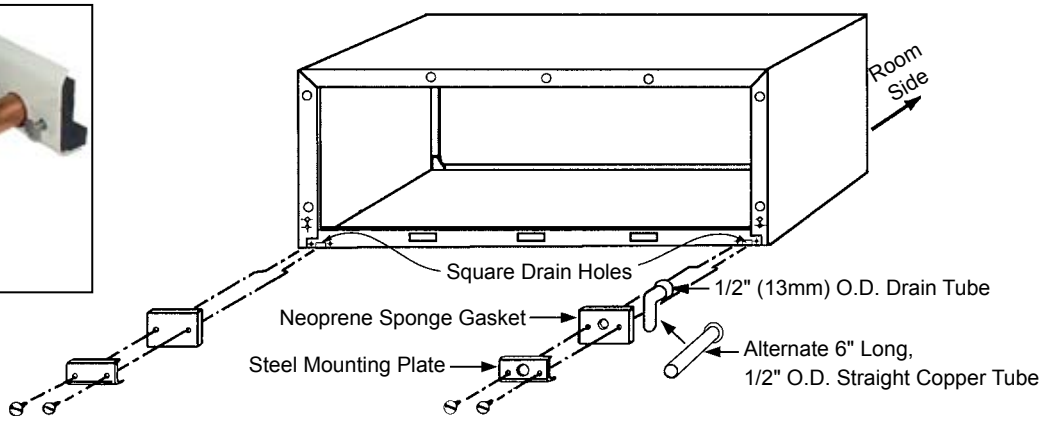
The external drain is attached to the rear of the wall sleeve, over one of the weep holes. A cap is provided to seal the remaining weep hole to force the excessive condensate to one side.

The excess condensate is then evacuated from the wall sleeve and allowed to drain to the outside of the building.

Internal Drain Kit



External Drain Kit



Note: *Use of 6" straight drain tube will require modification of architectural louver.*

Accessories Common to 16" × 42" Units

Wall Sleeve Extension

PDAC/PDHP Standard 16" × 42" Angled Top Unit

The standard wall sleeve will accommodate the maximum wall thickness described in Table 2. For thicker walls, wall sleeve extensions are available from your local distributor. Air splitters will be included in the wall sleeve extension as shown in the illustrations below.

Note:
When installing a new chassis into an existing wall sleeve with an extension, it will be necessary to relocate the two air splitters to match the dimensions shown in the illustrations (see Table 3).

16" × 42" Angled Top and Flat Top Unit

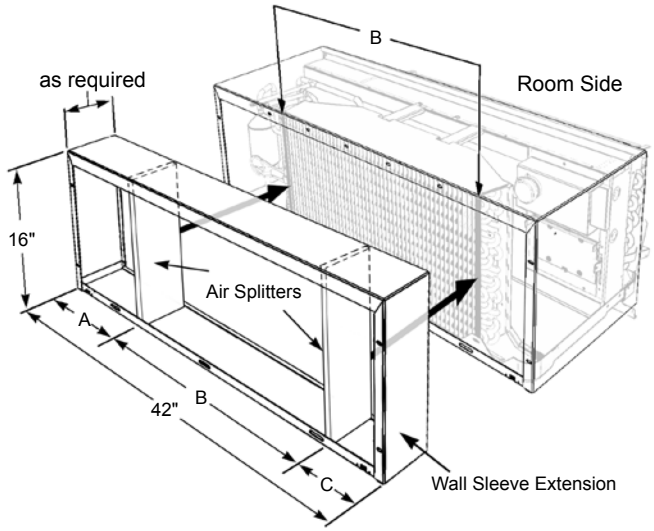


Table 2. Maximum Wall Thickness without Sleeve Extensions

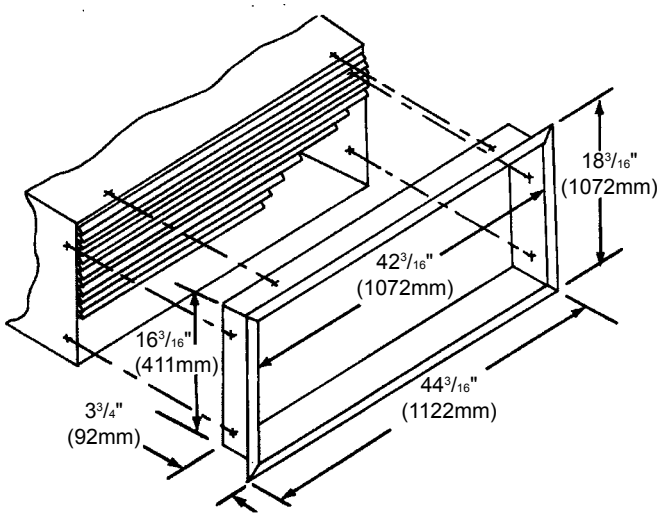
Louver Type	Maximum Wall Thickness	
	No Subbase	Standard Subbase
Stamped 3/8"	14 1/8"	9 1/2"
Architectural 1 1/8"	14 7/8"	10 3/8"

Table 3. Wall Sleeve Extension Splitter Location Dimensions

Dimension	16" x 42" Angled Top	16" x 42" Flat Top
A	11 1/8"	11 1/8"
B	24"	24"
C	6 7/8"	6 7/8"

Louver Frame

Louver frames should be used for panel wall and thin wall applications to assure positive anchoring to the wall. The cabinet/wall sleeve is installed flush with the outside of the building. The louver frame is placed around the cabinet/wall sleeve.



Note: *Wall Sleeve rough opening when using a Louver Frame must be 16 5/8" × 42 5/8"*

Louvers

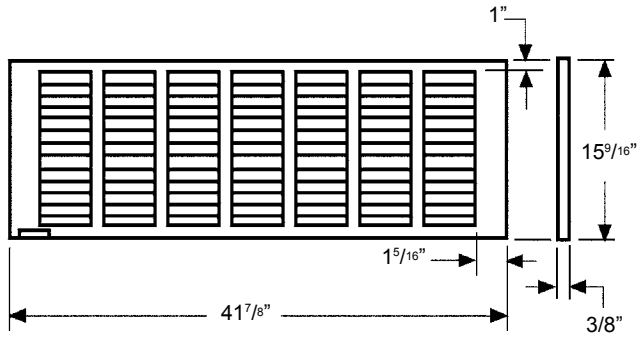
Two styles of exterior louvers are available. The standard flush stamped louver is a one-piece stamped aluminum type that is finished natural and clear anodized. Attractive, rugged architectural louvers are extruded aluminum and are finished natural and clear anodized (optional colors are also available).

Louvers by others are acceptable as long as they meet factory specifications. They must have a minimum free area of 70% or a pressure drop not exceeding .05 in. w.g. at 300 fpm face velocity, and a blade design that will not cause recirculation of condenser air.

Flush Stamped Louver

Accessories Common to 16" × 42" Units

Flush Stamped Louver Dimensions



Notes:

1. Optional stamped aluminum, or architectural extruded aluminum.

2. Knockouts are provided in stamped louver for clearance of external drain for heat pump (both sides).

3. Either louver can be installed from inside the building.

Louvers – Weight

Flush-stamped ..... 6 lbs. (3kg)
Architectural ..... 8 lbs. (3kg)

Architectural Louver

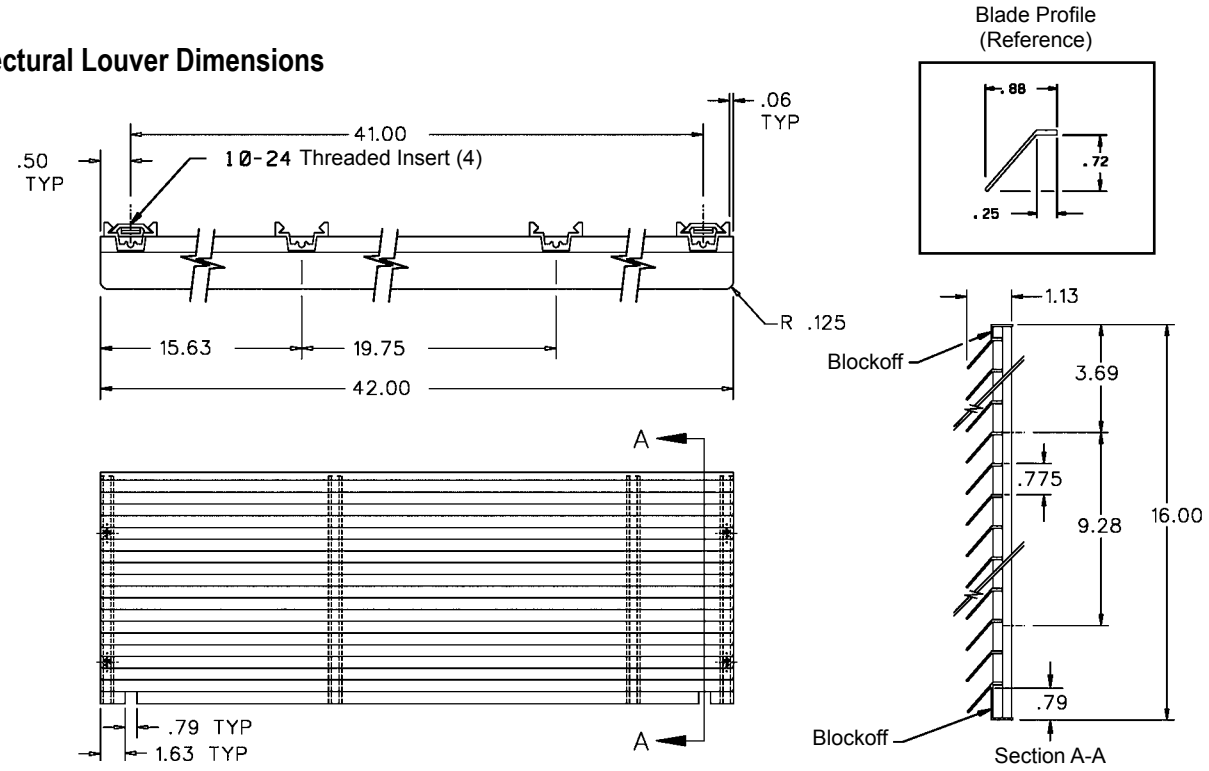
IMPORTANT

Air flow required for PTAC units must not be restricted by exterior plants or walls. Plants or shrubs must not be planted in close proximity to the outside grille of the PTAC unit. Vegetation planted too close to grilles will cause discharge air to be recirculated, thereby increasing electrical consumption. Warranty will be voided if it is determined that the compressor life is shortened from overheating due to close proximity of outside obstructions.

Note: *Discharge air restrictions include, but are not limited to:*

- Vegetation
- Concrete walls or barriers
- Overhangs that do not allow discharge air to rise
- Installation of bug screen of any kind
- Outdoor louvers by others unless approved by the factory

Architectural Louver Dimensions



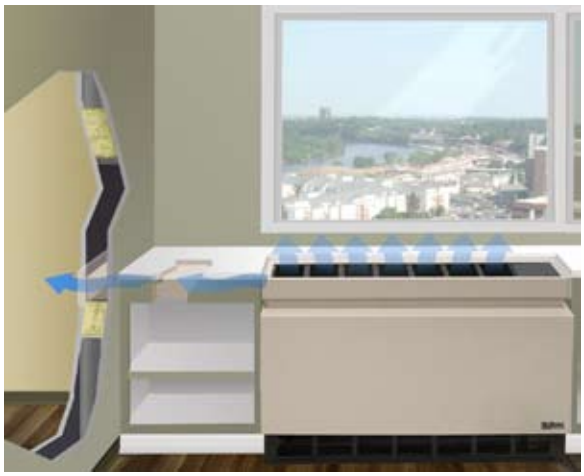
Accessory – PDAF/PDHF Flat Top 16" × 42"

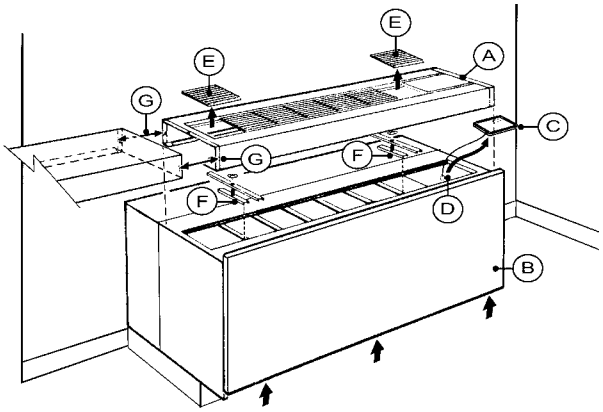
ExtendAire™ Kit

The ExtendAire plenum system is internally lined with 1/4" (6mm) fiberboard, 6 lb. (13.2 kg) density to prevent condensation on the exterior surface. Factory painted Antique Ivory, matching the finish of the basic cabinet. Each extension section is furnished in two pieces such that the rear half can be fastened to the wall and the front half then snapped in place without the use of screws or tools. Duct cross-sectional dimension is 4½" × 7½". The installer can select the number of active grilles in the primary discharge section that will provide diversion of the specified percentage of air to the adjoining room outlet.

The percent air diverted can be adjusted from 24% to 50% as outlined in the selection table.

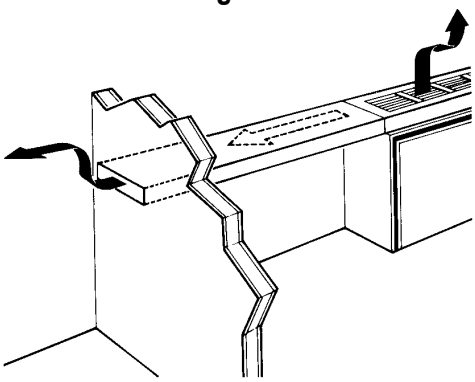
Typical ExtendAire Application



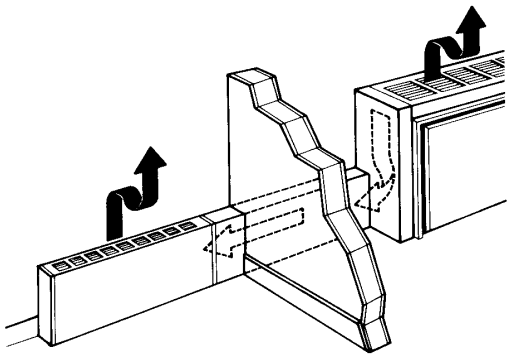


A. ExtendAire section primary discharge end cap
B. Cabinet front panel
C. Touchpad control
D. Communication cord
E. Removable discharge grilles
F. "T" bar hold-down clamps
G. Extension section connection "dimples"

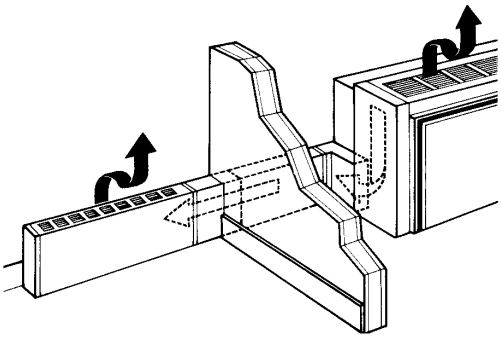
Typical ExtendAire Configurations



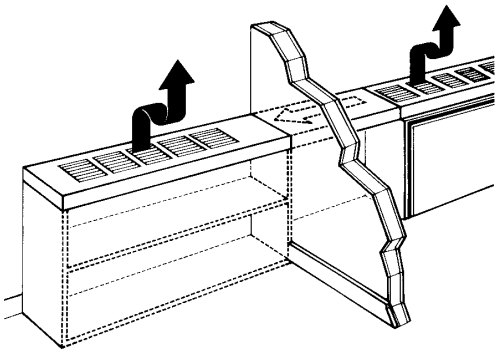
Side Wall Outlet Assembly



Baseboard Outlet Assembly – Masonry Wall Construction



Baseboard Outlet Assembly – Panel Wall Construction



Shelf Discharge Assembly

Wiring Diagrams

Premium (Programmable) Digital Control

1– Jumper Placement to Select System Module (See Jumper Detail)

A– Place jumper across AC/HYD to select Air Conditioner/Hydronic Heat.
B– Place jumper across AC/E to select Air Conditioner/Electric Heat.
C– Place jumper across AC/HYD/E to select Air Conditioner/Hydronic/Electric.
D– Place jumper across HP to select Heat Pump
E– Place jumper across HP/E to select Heat Pump/Electric.

2– Jumper Placement to Select Fan Control:

A– When in Fan Cycle Mode, fan operates for 2 minutes – Place jumper across 10, 20, 30, or 1 HR to select fan cycle off minutes which will be overridden by the room temperature.

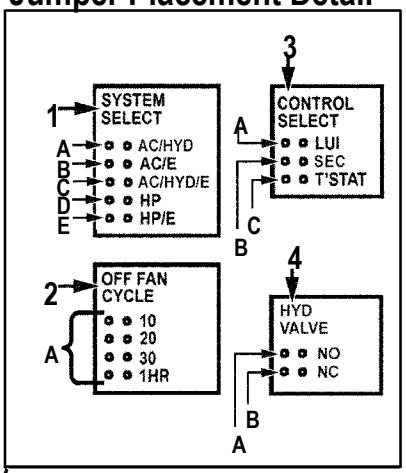
3– Jumper Placement to Select Controller Type:

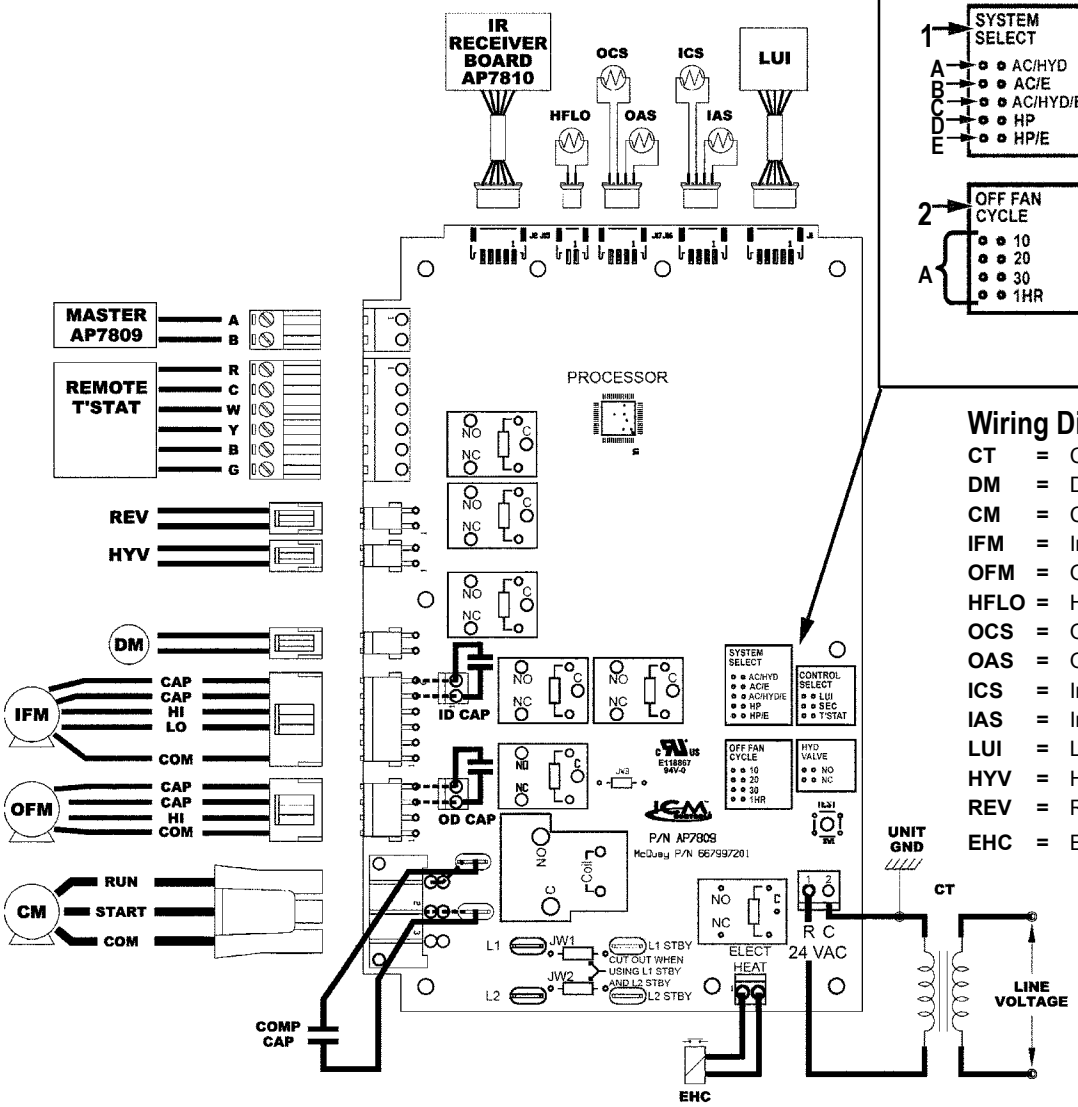
A– Place jumper across LUI to select unit mounted touchpad (Local User Interface).
B– Place jumper across SLAVE to select SLAVE Control by a master unit.
C– Place jumper across T'STAT to select remote, wall mounted programmable, or non-programmable thermostat.

4– Jumper Placement to Select Hydronic Valve:

A– Place jumper across NO to select Normally Open Hydronic Valve.
B– Place jumper across NC to select Normally Closed Hydronic Valve.

Jumper Placement Detail





Wiring Diagram Legend

CT	=	Control Transformer
DM	=	Damper Motor
CM	=	Compressor Motor
IFM	=	Indoor Fan Motor
OFM	=	Outdoor Fan Motor
HFLO	=	Heat Fan Lockout Sensor
OCS	=	Outdoor Coil Sensor
OAS	=	Outdoor Air Sensor
ICS	=	Indoor Coil Sensor
IAS	=	Indoor Air Sensor
LUI	=	Local User Interface
HYV	=	Hydronic Valve
REV	=	Reversing Valve
EHC	=	Electric Heat Contactor

Wiring Diagrams

Standard (Non-Programmable) Digital Control

1– Jumper Placement to Select System Module (See Jumper Detail)

A– Place jumper across AC/E to select Air Conditioner with Electric Heat.
B– Place jumper across HP to select Heat Pump
C– Place jumper across HP/E to select Heat Pump with Electric Back-up Heat.

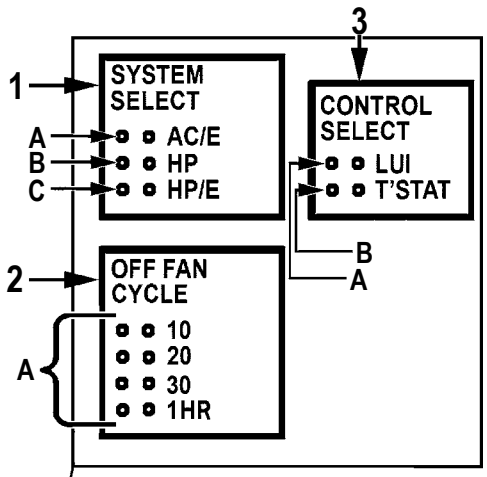
2– Jumper Placement to Select Fan Control

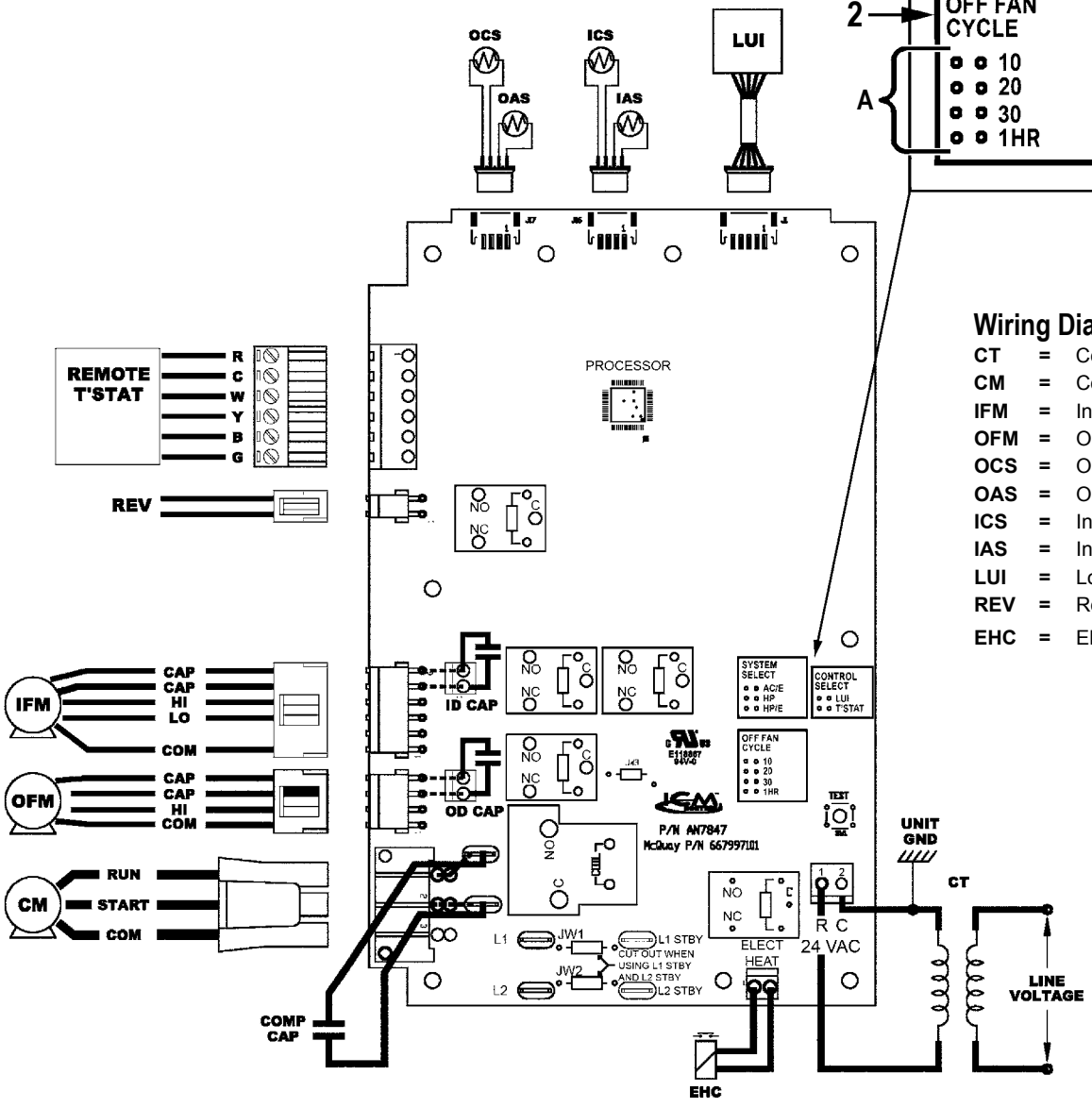
A– When in Fan Cycle Mode, fan operates for 2 minutes – Place jumper across 10, 20, 30, or 1 HR to select fan cycle off minutes which will be overridden by the room temperature.

3– Jumper Placement to Select Controller Type:

A– Place jumper across LUI to select unit mounted touchpad (Local User Interface).
B– Place jumper across T'STAT to select remote, wall mounted programmable, or non-programmable thermostat.

Jumper Placement Detail





Wiring Diagram Legend

CT	=	Control Transformer
CM	=	Compressor Motor
IFM	=	Indoor Fan Motor
OFM	=	Outdoor Fan Motor
OCS	=	Outdoor Coil Sensor
OAS	=	Outdoor Air Sensor
ICS	=	Indoor Coil Sensor
IAS	=	Indoor Air Sensor
LUI	=	Local User Interface
REV	=	Reversing Valve
EHC	=	Electric Heat Contactor

Wiring Diagrams

Digital Control Board With Standby Power

The standby power connections, L1 STBY and L2 STBY are meant to run the indoor motor at a separate voltage from the other motors, compressor and outdoor motor. When used as such, the jumpers, JH1 and JH2, must be cut. This renders L1 & L2 and L1 STBY and L2 STBY isolated from each other.

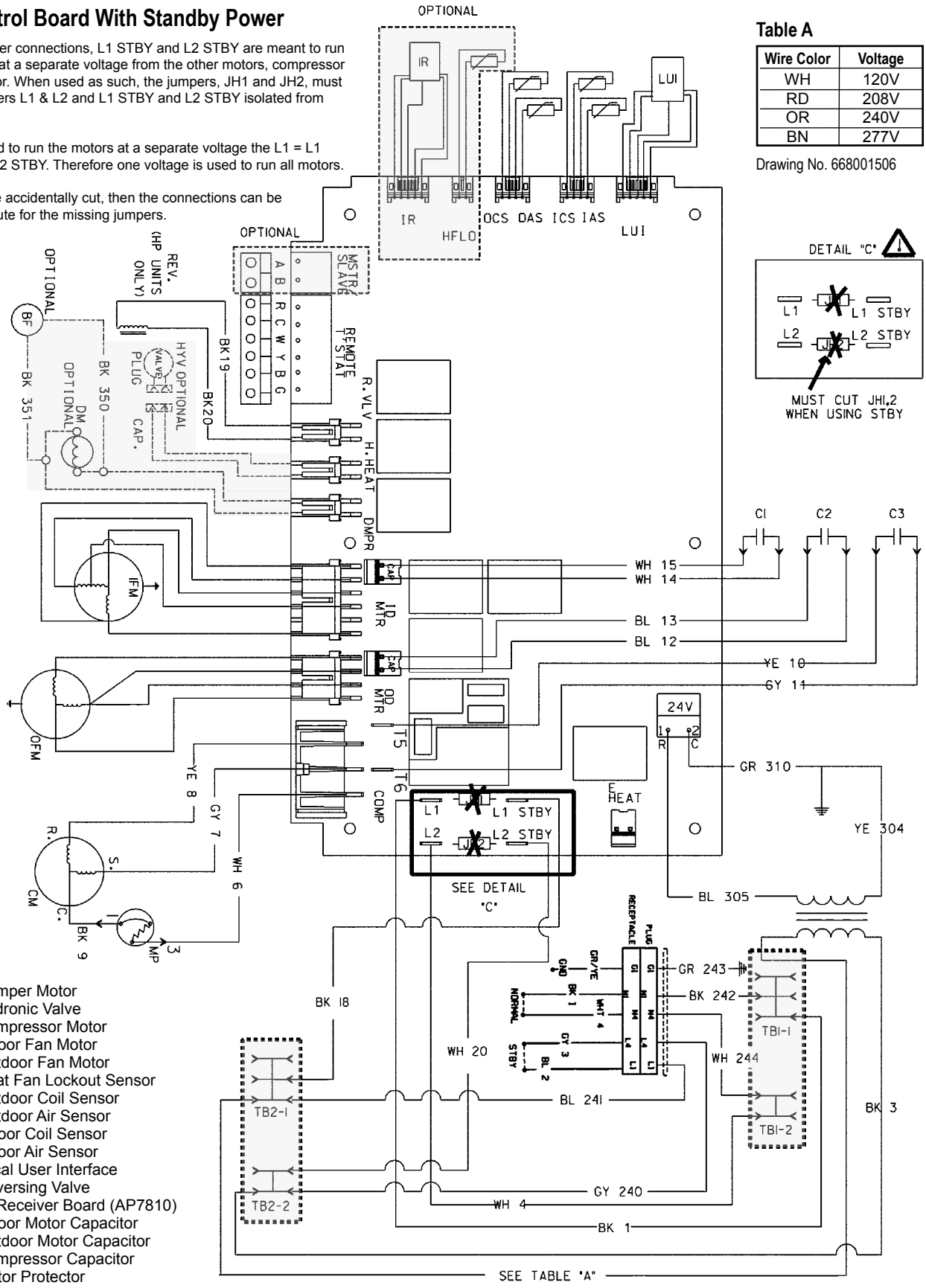
If there is no need to run the motors at a separate voltage the L1 = L1 STBY and L2 = L2 STBY. Therefore one voltage is used to run all motors.

If the jumpers are accidentally cut, then the connections can be spliced to substitute for the missing jumpers.

Table A

Wire Color	Voltage
WH	120V
RD	208V
OR	240V
BN	277V

Drawing No. 668001506



Legend

DM	=	Damper Motor
HYV	=	Hydronic Valve
CM	=	Compressor Motor
IFM	=	Indoor Fan Motor
OFM	=	Outdoor Fan Motor
HFLO	=	Heat Fan Lockout Sensor
OCS	=	Outdoor Coil Sensor
OAS	=	Outdoor Air Sensor
ICS	=	Indoor Coil Sensor
IAS	=	Indoor Air Sensor
LUI	=	Local User Interface
REV	=	Reversing Valve
IR	=	IR Receiver Board (AP7810)
C1	=	Indoor Motor Capacitor
C2	=	Outdoor Motor Capacitor
C3	=	Compressor Capacitor
MP	=	Motor Protector

Note: *The gray tinted areas in the wiring diagram; are options available only with the premium control board.*
For the latest drawing version refer to the wiring diagram located on the inside of the controls access panel of the unit.

Wiring Diagrams

Digital Control Board Without Standby Power

The standby power connections, L1 STBY and L2 STBY are meant to run the indoor motor at a separate voltage from the other motors, compressor and outdoor motor. When used as such, the jumpers, JH1 and JH2, must be cut. This renders L1 & L2 and L1 STBY and L2 STBY isolated from each other.

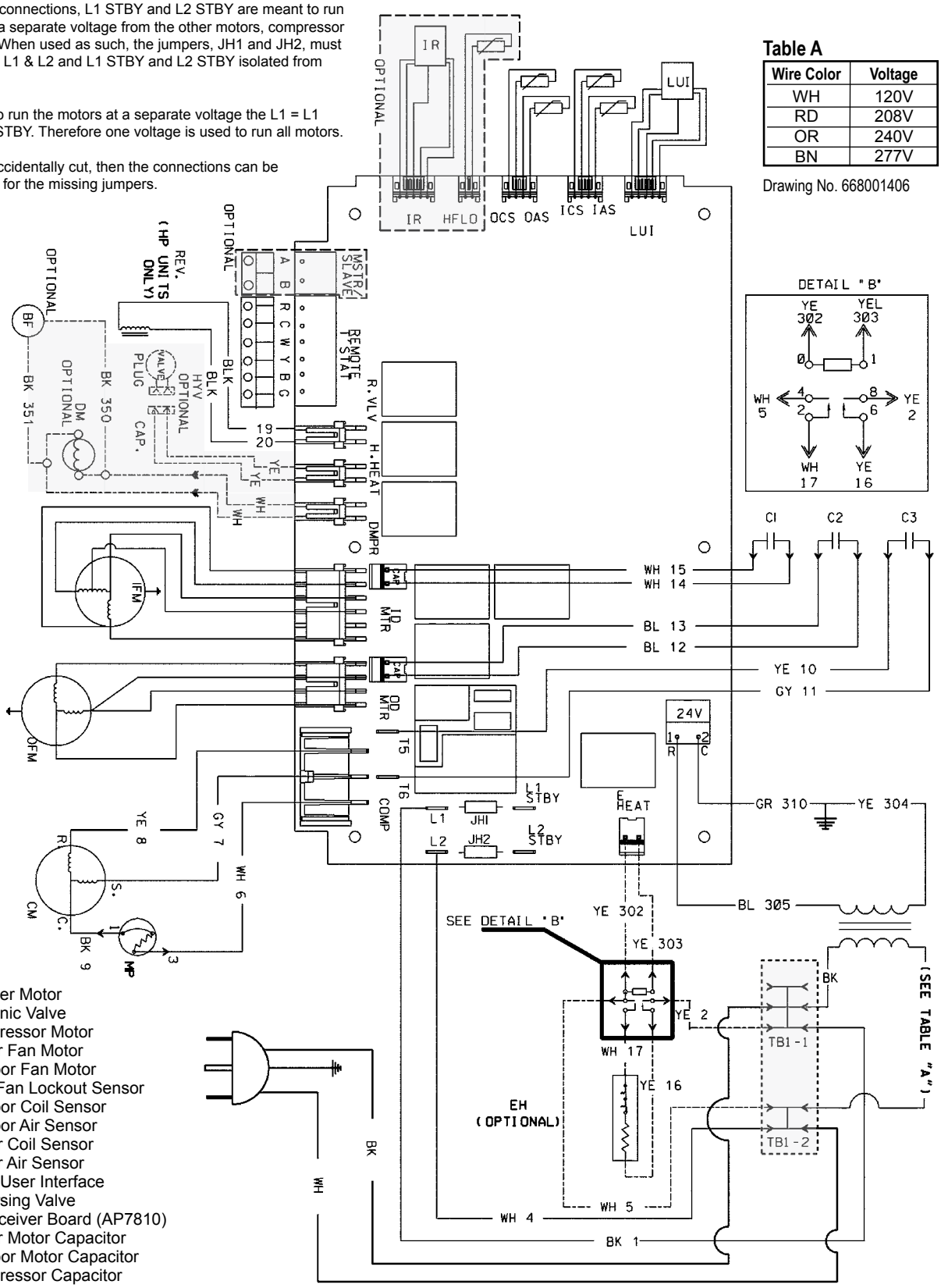
If there is no need to run the motors at a separate voltage the L1 = L1 STBY and L2 = L2 STBY. Therefore one voltage is used to run all motors.

If the jumpers are accidentally cut, then the connections can be spliced to substitute for the missing jumpers.

Table A

Wire Color	Voltage
WH	120V
RD	208V
OR	240V
BN	277V

Drawing No. 668001406



Legend

DM	=	Damper Motor
HYV	=	Hydronic Valve
CM	=	Compressor Motor
IFM	=	Indoor Fan Motor
OFM	=	Outdoor Fan Motor
HFLO	=	Heat Fan Lockout Sensor
OCS	=	Outdoor Coil Sensor
OAS	=	Outdoor Air Sensor
ICS	=	Indoor Coil Sensor
IAS	=	Indoor Air Sensor
LUI	=	Local User Interface
REV	=	Reversing Valve
IR	=	IR Receiver Board (AP7810)
C1	=	Indoor Motor Capacitor
C2	=	Outdoor Motor Capacitor
C3	=	Compressor Capacitor
MP	=	Motor Protector

Note: *The gray tinted areas in the wiring diagram; are options available only with the premium control board.*
For the latest drawing version refer to the wiring diagram located on the inside of the controls access panel of the unit.

Furnish and install where shown on plans (packaged terminal air conditioners) (packaged terminal heat pumps) of the sizes and capacities shown on the schedule. The units shall be located as shown on the drawings and shall include cabinet/wall sleeve, chassis, outdoor louver, and room cabinet. (Units furnished with hydronic heat shall also include a hydronic subbase, valve and appropriate controls).

All units shall be UL listed for safety and ETL certified for performance. Units shall be McQuay Comfort Conditioner, PDAA/PDHA, PDAF/PDHF or equal. Overall dimensions for the basic unit shall not exceed 42½" wide, 16½" high, and 22" deep. (Overall dimensions of the wall sleeve shall not exceed 16" high, 42" wide and 13¾" deep).

(Units furnished with hydronic heat shall not exceed 43" wide, 24½" high and 20" deep).
(Units furnished with an electrical subbase shall not exceed 43" wide, 24½" high and 22" deep).
All units shall operate on ____ volts, 60 Hz, single-phase power.
The minimum energy efficiency ratio (EER) in BTU per hour per watt for each unit must be in compliance with ASHRAE 90.1 replacement or new construction criteria, for all sizes using R-410A refrigerant.
(The minimum COP for heat pumps, at 47°F DB outdoor, must be 2.9 for all sizes).

Heating/Cooling chassis – Chassis shall be slide-in, plug-in type with a self-contained, hermetically sealed refrigerant circuit. All chassis sheet metal parts shall be constructed of either powder-coated A-60 or G-60 galvanized steel for maximum corrosion resistance. The chassis shall consist of the following components:

Vibration isolated compressor; rifled copper tubed evaporator and condenser coils with high efficiency raised lance aluminum plate fins mechanically expanded to the tubes for maximum heat transfer; and a capillary restrictor type refrigerant metering device. Coils shall be factory tested at 300 psig. (Heat pump models shall also include reversing valve and charge balancing device). A positive closing automatic or manual fresh air damper may be located within the chassis to provide fresh air during fan operation. An optional boost fan is available to provide additional airflow, for enhanced Indoor Air Quality (IAQ).

Indoor Air Quality Boost Fan (Option) – The IAQ Boost Fan shall operate in conjunction with the Fresh Air Damper and increase the volume of fresh air to 90 CFM. The Fresh Air Damper and Boost Fan shall operate when the following conditions are met:

- Damper setting in the touchpad set-up mode is “AU” (automatic) AND
- Indoor fan motor turns on AND
- Outdoor Air Sensor (OAS) temperature is greater than 40°F but less than 90°F AND
- Indoor Air Sensor (IAS) temperature greater than 50°F.

Airflow system shall include separate fan motors for the condenser and evaporator sections. The condenser fan motor shall be a single-speed, totally enclosed, permanently lubricated fan motor. Condenser fan shall be propeller-type with a slinger ring and shall be constructed of aluminum. The indoor fan motor shall be a two-speed, totally enclosed; permanently lubricated fan motor must be positioned on the indoor side of the bulkhead so as to be completely within the conditioned, filtered airstream. The indoor blower fan shall be a forward-curved tangential design to provide even airflow across the evaporator coil.

During the cooling cycle:

The compressor, the outdoor fan motor and the indoor fan motor shall be energized. Condensation accumulated on the evaporator coil shall be drained into the outdoor section where it is to be picked up by the condenser fan/slinger ring and evaporated against the outdoor coil. In the cool mode, the compressor will cut in if the space temperature is at least 1°F above the thermostat set point and will cut out when the space temperature is approximately 2°F below set point, subject to timing protections.

During The Heating Cycle:

Electric Resistance Heat – Control will call for electric heat when the space temperature is 1°F lower that the set point. The control will cease its call when the space temperature is 3°F or higher than set point.

Only the indoor fan motor and electric resistance heater are energized. The outdoor condenser fan motor and compressor shall not be energized. Heater shall be open wire type with quick response and high limit cutout. Heaters shall be sized to meet heating requirements as shown on the schedule. Electric resistance heaters must be placed behind the indoor evaporator coil and must not be visible through the indoor discharge grille. When the heater cuts out the indoor fan continues to run for 15 seconds at the set speed, regardless of On or Off mode. After 15 seconds the fan will stop running if unit is in Off mode, else the fan operation will depend on Fan Continuous or Fan Cycle setting.

Hydronic, Hot water or Steam, heat – Only the indoor fan motor, the (normally open) (normally closed) valve and automatic fresh air damper shall be energized. The outdoor condenser fan motor and compressor shall not be energized.

Hydronic Heat - Heat Fan Lock Out – When the control is in the heat mode and calling for heat, the indoor fan shall not turn on until the HFLO sensor is above 115°F. If at any time while the unit is in heat mode the HFLO sensor is below 95°F, the indoor fan shall turn off immediately. Control will check if the HFLO sensor temperature is above 115°F for 2 seconds before resuming indoor fan operation.

Hydronic with Intermediate Electric heat – Upon the call for heating and thereafter the HFLO sensor temperature will be monitored. A trend in HFLO sensor Temperature shall determine which form of heat is to be used. If during the 90 seconds that Hydronic is the heat source and the HFLO sensor is above 105°F and is increasing at 2°F per minute then Hydronic is the heat source. If during this 90 seconds, the temperature of the HFLO sensor is above 105°F and is not increasing at 2°F per minute then Electric is the heat source. The hydronic valve is opened for 90 seconds. After 90 seconds whether Hydronic or Electric provides the heating is determined by the following:

If HFLO sensor temperature is less that 105°F, Electric provides the heat.
If HFLO sensor temperature is greater than 115°F, Hydronic provides the heat

Reverse Cycle Heat Pump with back-up electric heat – The reversing valve, the compressor, the outdoor air condenser fan motor and the indoor fan motor shall be energized. Reverse cycle heating shall occur when the outdoor coil temperature is 28°F and above. If outdoor coil temperature drops below 28°F or the Outdoor air temperature drops to 35°F or less, Electric heat is the only source of heat. When the Outdoor coil temperature raises back to 40°F and above, then the Compressor reverse cycle or Electric heater is used.

A temperature-sensing device shall be used to monitor the outdoor coil temperature to limit frost buildup. Defrosting of the outdoor coil will be activated when outdoor coil temperature drops below 28°F of outdoor air temperature drops to 35°F or less. Defrosting is terminated when outdoor coil temperature rises back to 40°F. During defrosting, both compressor and the outdoor fan are turned off. The indoor fan will run at its set speed.

Condensation accumulated during reverse cycle heating must NOT be evaporated against the indoor coil so as to prevent contamination of the indoor air with pollutants and odors. Condensation must be disposed of using a (external) (internal) drain system as shown on plans.

Reverse Cycle Heat Pump without back-up electric heat – The reversing valve, the compressor, the outdoor condenser fan motor and the indoor fan motor shall be energized. Reverse cycle heating shall occur when the outdoor temperatures are 35°F and above. If outdoor coil temperature drops below 28°F or the Outdoor air temperature drops to 35°F or less, the compressor stops and there is no source of heat. When the Outdoor coil temperature raises back to 40°F and above, then the compressor reverse cycle is the heat source.

A temperature-sensing device shall be used to monitor the outdoor coil temperature to limit frost buildup. Defrosting of the outdoor coil will be activated when outdoor coil temperature drops below 28°F of outdoor air temperature drops to 35°F or less. Defrosting is terminated when outdoor coil temperature rises back to 40°F. During defrosting, both compressor and the outdoor fan are turned off.

The indoor fan will stop if indoor coil temperature falls below 78°F. It will restart at its set speed when indoor coil temperature rises back to 80°F.

Condensation accumulated during reverse cycle heating must NOT be evaporated against the indoor coil so as to prevent contamination of the indoor air with pollutants and odors. Condensation must be disposed of using a (external) (internal) drain system as shown on plans.

Control module – The Control module is used to control a PDAA/PDHA or PDAF/PDHF unit that includes both an integral air conditioner and a source of heat. The Digital Control is operated with a Touchpad or 24 volt, Wall Mounted Thermostat.

Inputs And Outputs

The control module offers the following inputs:

1. Indoor Coil Sensor (ICS)
2. Indoor Air Sensor (IAS)
3. Outdoor Air Sensor (OAS)
4. Inputs from Remote Thermostat (R, B, G, Y, W)
5. Heat Fan Lock Out Sensor (HFLO)
6. Power Supply, 24VAC

The control module offers the following outputs:

1. Compressor Output (COM)
2. Outdoor Fan (FAN)
3. Indoor Fan Fan cycle or Fan Continuous and Blower Hi or Blower Lo shall be incorporated to allow either continuous or automatic fan cycle operation at the selected fan speed. When choosing automatic fan cycle operation, the fan shall be energized only when the compressor or electric resistance heaters are energized.
4. Damper Control (DAMPER)
5. Hydronic Valve (HYV)

On heat pump models, a Low Ambient temperature limit Sensor (OAS) shall be incorporated to energize the electric resistance heaters at 35°F outdoor air temperature.

Room cabinet (PDAA/PDHA) – Shall be angled top, wraparound design with an 18-gauge front panel that is phosphatized and coated with baked on urethane powder paint, corrosion resistant finish to match the wall sleeve. Side panels shall be constructed of polycarbonate material with decorative vertical grooves and flame class rated at 94V per UL standard 494.

Room cabinet (PDAF/PDHAF) – Shall be flat top, wraparound design with an 18-gauge front panel that is phosphatized and coated with baked on urethane powder paint, corrosion resistant finish to match the wall sleeve. Side panels shall be constructed of polycarbonate material with decorative vertical grooves and flame class rated at 94V per UL standard 494.

Discharge grille (PDAA/PDHA) – Shall be an integral part of the cabinet and shall be a raised style. Discharge grille shall be made of the same polycarbonate material as the room cabinet side panels. Grille shall be sectional, two-position reversible, tamper proof, and carry a flame test rating of 94V0 in accordance with UL standard 494.

Discharge grille (PDAF/PDHF) – Shall be an integral part of the front panel and shall be one piece, stamped and painted Oxford Brown.

Control access door – Shall be mounted on the right-hand side.

Filtration (Standard) – Room side return air shall be completely filtered through a permanent, washable polypropylene mesh filter. Foam type filters are not acceptable. Filter must be a UL listed class II, 38% average arrestance efficiency (ASHRAE test) air filter with low resistance to airflow (0.02 w.g. at 300 CFM) and high dust holding capacity of 55 grams.

Wall Sleeve (Standard) (BWS) –
The BWS wall sleeve is constructed from galvanized, primed and pre-painted Antique Ivory 18 gauge steel is insulated and arrives in a removable plastic protective film.

Wall Sleeve (Optional) (CWS) – The CWS wall sleeve shall be entirely constructed of G-60 galvanized, phosphatized, 18-gauge steel. It shall be finished with a baked on, epoxy based powder coat paint, which is to provide maximum corrosion protection. Additionally, the top interior and side interior surfaces shall be insulated. Wall sleeves with ordinary enamel finish or those made from polymeric material are not acceptable. Wall sleeves shall have factory provisions for use of appropriate fastening devices to secure sleeve to the wall through the sides.

Outside air louvers – Shall be (stamped) (architectural) anodized aluminum as shown on plans. Louver shall be (finished natural) (painted) as shown on the schedule. (Stamped louvers shall be heavy gauge anodized aluminum of no less than 16-gauge). (Architectural louvers shall have rounded corners or be supplied with end caps). Special field fabricated louvers must be approved by the PTAC manufacturer as to free area and air circulation requirements.

Subbase (electrical) – An (3")(4") electrical subbase shall be furnished as shown on plans. Each electrical subbase shall be UL listed and conform to the National Electrical Code. Subbase must have adjustable side channels with predrilled adjusting holes and score lines. Subbase shall have four (4) adjustable leveling legs each with 1" adjustment.

Subbase (hydronic) – An 8" high, hydronic heating subbase shall be furnished as shown on plans. Subbase shall contain a 2-row, 5/8" diameter copper tubed, aluminum plate finned coil for use with hot water or steam; (normally open) (normally closed), low voltage electric valve for (hot water) (steam) heating; and provisions for mounting a receptacle. (Subbase must be supplied with factory installed fuse and disconnect sized for PTAC unit ampacity rating.) The subbase must have adjustable side channels capable of extending to any wall thickness. The subbase shall have six (6) adjustable leveling legs each with 1" adjustment.

Warranty

All McQuay equipment is sold pursuant to its standard terms and conditions of sale, including Limited Product Warranty. Consult your local McQuay Representative for warranty details. Refer to Form 933-43285Y. To find your local McQuay Representative, go to www.mcquay.com.

This document contains the most current product information as of this printing. For the most up-to-date product information, please go to **www.mcquay.com.**

Products Manufactured in an ISO Certified Facility.

McQuay International
a member of DAIKIN group