



FRESHAIRE®

Packaged Terminal Air Conditioners

Make-up air done right. The only PTAC that provides make-up air that complies with ASHRAE 62.1 requirements.

PROVIDES MAKE-UP AIR

The first PTAC unit designed to solve in-room make-up air needs that helps compliance with ASHRAE 62.1 requirements saving cost and complexity in new construction and replacement applications.

INVERTER COMPRESSOR TECHNOLOGY

Delivers best-in-class cooling and heating efficiencies for lower energy bills.

LOW SOUND LEVELS

Soft-start technology eliminates the harsh start up associated with single-speed compressors, bringing your guest a more restful stay.

DECREASES HUMIDITY

By running at a lower output for longer time, the FreshAire PTAC will continue to ring moisture out of the air providing greater comfort.

FRESHAIRE® IAQ READY

A full complement of Indoor Air Quality Products has been certified through installation and testing to ensure exceptional air quality is achieved when FreshAire IAQ accessories are added.

FreshAire®

Patented technology uses the inverter compressor and main cooling system to optimize temperature and humidity level of incoming air.

The FreshAire PTAC brings in up to 52 CFM of conditioned, MERV 8 filtered outside air into the space.



Protected by US Patents 10,408,504 and 10,436,457. Additional patents pending.

THE EXPERTS IN ROOM AIR CONDITIONING

PRODUCT FEATURES

ONLY TWO MODELS	With only two models in both 230/208V and two in 265V ranging from 6000btu–17000btu, the FreshAire PTAC meets your needs without the complicated buying decisions.
BETTER DEHUMIDIFICATION	With longer run times, the indoor coil stays colder longer resulting in better overall dehumidification outside of standard conditions.
SOFT START OPERATION	With the benefit of an inverter compressor there is no longer a sudden and noisy start up of compressors. Compressor starts up slowly gradually ramping up to the required speed to control the conditioned space.
REMOTE THERMOSTAT OPERATION	Some applications require the use of a wall-mounted thermostat. All-new FreshAire PTACs may be switched from unit control to remote thermostat control easily without the need to order a special model or accessory kit.
INTERNAL DIAGNOSTIC PROGRAM	The FreshAire PTAC features a self-diagnostic program that can alert maintenance to component failures or operating problems. The internal diagnostic program saves properties valuable time when diagnosing running problems.
SERVICE ERROR CODE STORAGE	All FreshAire PTAC units have self-diagnostic features that will store trouble codes in the case of an event. Storing the codes allows the property to see the trouble codes at a future time after the condition may have corrected.
ELECTRONIC TEMPERATURE LIMITING	By limiting the operating range, the property can save energy by eliminating “max cool” or “max heat” situations common with older, uncontrolled systems. The new electronic control allows owners to set operating ranges for both heating and cooling independently of one another.
ROOM FREEZE PROTECTION	When the PTAC senses that the indoor room temperature has fallen to 40°F, the unit will cycle on the fan (high) and the electric strip heat to raise the room temperature to 46°F, and then cycle off again. This feature works regardless of the mode selected and can be turned off. The control will also store the Room Freeze cycle in the service code memory for retrieval at a later date. This feature ensures that unoccupied rooms do not reach freezing levels where damage can occur to plumbing and fixtures.
CONDENSATE REMOVAL SYSTEM	Condenser fan utilizes slinger ring technology to pick up condensate from the base pan and disperse it on to the condenser coil where it evaporates. This helps to cool the coil and increase the energy efficiency of the unit.
SUPERIOR OPERATION AND CONTROL	Paired with Friedrich VRPXEMRT2 wired controller, or VRPXEMWRT2 wireless controller, designed for use with the FreshAire PTAC, maximizes full inverter compressor control, enhances humidity and dehumidification control, and optimizes comfort.
FRESHHAIRE® IAQ READY	A full complement of Indoor Air Quality Products has been certified through installation and testing to ensure exceptional air quality is achieved when optional FreshAire IAQ accessories are added.

PRODUCT FEATURES

DIGITAL DEFROST THERMOSTAT	The PV-Series uses a digital thermostat to accurately monitor the outdoor coil conditions to allow the heat pump to run whenever conditions are correct. Running the PTAC in heat pump mode saves energy and reduces operating costs. The digital thermostat allows maximization of heat pump run time.
INSTANT HEAT HEAT PUMP MODE	Heat pump models will automatically run the electric heater to quickly bring the room up to temperature when initially energized, then return to heat pump mode. This ensures that the room is brought up to temperature quickly without the usual delay associated with heat pump units.
EVEN HEAT CONTROL	With the Inverter control, the FreshAire PTAC will adjust capacity to better satisfy the space and the demand requirement.
SEPARATE HEAT/COOL FAN CYCLE CONTROL	The owner may choose between fan cycling or fan continuous mode based on property preference. (Note: Even heat monitoring and quiet start/stop fan delay only operate in fan cycle mode) Fan continuous mode is used to keep constant airflow circulation in the room during all times the unit is 'ON'. Fan cycle will conserve energy by only operating the fan while the compressor or electric heater is operating. The ability to set the fan cycling condition independently between heating and cooling mode will increase user comfort by allowing the choice of only constantly circulating air in the summer or winter time (unlike other PTAC brands that only allow one selection).
EMERGENCY HEAT OVERRIDE	In the event of a compressor failure in heat pump mode, the compressor may be locked out to provide heat through the resistance heater. This feature ensures that even in the unlikely event of a compressor failure, the room temperature can be maintained until the compressor can be serviced.
CENTRAL DESK CONTROL READY	All Friedrich PTACs have low voltage terminals ready to connect a central desk control energy management system. Controlling the unit from a remote location like the front desk can reduce energy usage and requires no additional accessories on the PTAC unit.
INDOOR COIL FROST SENSOR	The frost sensor protects the compressor from damage in the event that airflow is reduced or low outdoor temperatures cause the indoor coil to freeze. When the indoor coil reaches 30°F, the compressor is disabled and the fan continues to operate based on demand. Once the coil temperature returns to 45°F, the compressor returns to operation.
ULTRAQUIET AIR SYSTEM	The PV-Series units feature an indoor fan system design that reduces sound levels without lowering airflow or preventing proper air circulation.
INVERTER HIGH EFFICIENCY	The FreshAire PTAC has been engineered using the latest Inverter technology to provide the highest EERs in the part load hours of cooling/heating.
DUAL MOTOR	The dual-motor design means that the indoor motor can run at slower speeds which reduces sound levels indoors.
INVERTER ROTARY COMPRESSOR	High-efficiency, inverter rotary compressors are used on the FreshAire PTAC to maximize durability and efficiency.
TOP-MOUNTED AIR FILTERS	All Friedrich PTAC return air filters feature an element that has proven to prevent mold and bacterial growth in laboratory testing. All filters are washable, reusable and easily accessed from the top of the unit without the removal of the front cover.
MERV 8 FILTERED CONDITIONED FRESH AIR	The FreshAire PTAC meets ASHRAE 62.1 for conditioned air intake, providing up to 52 CFM of conditioned air into the space. Air is filtered through a Merv 8 replaceable filter to prevent debris from entering the air stream.
R-410A REFRIGERANT	Friedrich PTAC units use environmentally-friendly refrigerant.
2-SPEED FRESHAIRES INTAKE FAN	Maximizes operational control of the make-up air system ensuring a more comfortable indoors
RS-485 COMMUNICATION PLUG	Enables a better balanced communication signal which allows the FreshAire PTAC to communicate fully with the VRPXEMRT2 12V wired controller, or VRPXEMWRT2 wireless controller, allowing full variable control of the inverter compressor and brings access to our feature rich energy management suite of options including room occupancy.

CHASSIS SPECIFICATIONS

PVH Series Cooling with Heat Pumps

Model		PVH09K	PVH12K	PVH09R	PVH12R
PERFORMANCE DATA:					
Cooling Capacity	Btu	9600/9400	12000/11800	9600	12000
Cooling Capacity Min./Max.	Btu	6462 – 12099	7929 – 17142	6462 – 12099	7929 – 17142
Cooling Watts		815/800	1050/1035	800	1040
Energy Efficiency Ratio	EER	11.8/11.8	11.4/11.4	12.0	11.5
Reverse Heating Capacity	Btu	8200/8500	11600/11800	8500	11800
Reverse Heating Capacity Min./Max.	Btu	5606 – 11475	6995 – 16187	5606 – 11475	6995 – 16187
Heating Watts		710/685	970/950	710	970
COP		3.51/3.51	3.57/3.58	3.51	3.57
Moisture Removal	Pts./Hr.	1.4	1.9	1.2	2.4
Sensible Heat Ratio		80%	78%	82.7%	73.7%
ELECTRICAL DATA:					
Voltage [1 PHASE, 60 Hz]		230/208	230/208	265	265
Volt Range		253 – 187	253 – 187	292 – 239	292 – 239
Current	Amps	4.4/4.5	4.5/5.0	3.8	4.7
Reverse Heat	Amps	4.0/4.1	4.6/4.9	3.6	4.3
Power Factor		0.80	0.96	0.82	0.90
Compressor LRA		N/A	N/A	N/A	N/A
Compressor RLA		3.2	4.1	4.2	6.2
Outdoor Fan Motor	HP	0.06	0.09	0.06	0.09
AIRFLOW DATA:					
Indoor CFM, HIGH		400	470	400	470
Indoor CFM, LOW		250	360	290	360
MUA CFM		UP TO 52	UP TO 52	UP TO 52	UP TO 52
PHYSICAL DATA:					
Sleeve Dimensions H x W x D		16" x 42" x 13 ³ / ₄ " [all models]			
Dimensions with front H x W x D		16" x 42" x 21 ¹ / ₂ " [all models]			
Cut Out Dimensions H x W		16 ¹ / ₄ " x 42 ¹ / ₄ " [all models]			
Net Weight	Lbs.	114	120	115	120
Shipping Weight	Lbs.	136	142	137	142
R-410A Charge	Oz.	30.34	32.80	32.10	32.80

Power Cord/Heater Ratings

230/208V ELECTRIC HEATER RATING (CONFIGURATION BASED ON POWER CORD)				
POWER CORD #	VOLTAGE	BRANCH CKT AMPS	MCA	WATTS
PXPCFA23015	230/208	15	13.9	2500
PXPCFA23020	230/208	20	19.9	3600
PXPCFA23030*	230/208	30	27.5	5000
PXPCFA26515	265V	15	12.0	2500
PXPCFA26515 ¹	265V	15	7.3	1500
PXPCFA26520	265V	20	16.8	3500
PXPCFA26530*	265V	25	23.8	5000

*Cannot be used on PVH09K3FA

¹ Data for Model PVH09R

PXPCFA23020 comes standard on PTAC

Warning: Coastal Region Installations.

Friedrich Air Conditioning recommends that owners take necessary precautions to protect the interior space, furnishings, and hardware from corrosion when installing make-up air products in coastal applications. Our FreshAire PTAC delivers up to 52 CFM of direct outside make-up air into the space. If installed within 2 miles of a body of salt water, due to the high salt content of coastal air and the high latent load of the make-up air, premature corrosion will occur naturally on non-protected items. Friedrich Air Conditioning is not responsible for premature corrosion resulting from the use of make-up air products.

Due to continuing research in new energy-saving technology, specifications are subject to change without notice. Warranty limited to installations in the United States, Puerto Rico, Mexico and Canada only. See warranty documentation for full details.

COOLING & HEATING PERFORMANCE

PVH - EXTENDED COOLING PERFORMANCE

		OUTDOOR DRY BULB TEMP. (DEGREES F AT 40% R.H.)																	
		75°			85°			95°			105°			110°			115°		
		INDOOR WET BULB TEMP. (DEGREES F AT 80° F D.B.)																	
		72	67	62	72	67	62	72	67	62	72	67	62	72	67	62	72	67	62
PVH09K	Btuh	11290	10858	10051	10752	10138	9350	10330	9600	8496	9677	8592	7574	9144	8002	7061	8611	7942	6547
	Watts	665	676	683	725	732	741	815	815	815	881	880	883	921	921	924	962	961	966
	Amps	3.6	3.7	3.7	3.9	3.9	4	4.4	4.40	4.4	4.7	4.7	4.8	5	5	5	5.1	5.2	5.2
	SHR	0.55	0.74	1	0.56	0.77	1.02	0.56	0.80	1.03	0.58	0.84	1.03	0.59	0.87	1.03	0.6	0.9	1.02
PVH12K	Btuh	14112	13572	12564	13440	12672	11688	12912	12000	10620	12096	10740	9468	11430	10002	8826	10764	9928	8184
	Watts	857	870	880	933	943	954	1050	1050	1050	1135	1134	1137	1187	1186	1190	1239	1238	1244
	Amps	3.7	3.7	3.8	4	4	4.1	4.5	4.50	4.5	4.8	4.8	4.9	5.1	5.1	5.1	5.3	5.3	5.3
	SHR	0.53	0.73	0.98	0.55	0.75	1	0.55	0.78	1	0.56	0.82	1.01	0.57	0.85	1	0.59	0.88	1
PVH09R	Btuh	11290	10858	10051	10752	10138	9350	10330	9600	8496	9677	8592	7574	9144	8002	7061	8611	7942	6547
	Watts	653	663	670	711	718	727	800	800	800	865	864	866	904	904	907	944	944	948
	Amps	3.1	3.2	3.2	3.4	3.4	3.4	3.8	3.80	3.8	4.1	4.1	4.1	4.3	4.3	4.3	4.4	4.5	4.5
	SHR	0.57	0.77	1.04	0.58	0.8	1.06	0.58	0.83	1.07	0.6	0.88	1.07	0.61	0.91	1.07	0.63	0.93	1.06
PVH12R	Btuh	14112	13572	12564	13440	12672	11688	12912	12000	10620	12096	10740	9468	11430	10002	8826	10764	9928	8184
	Watts	849	862	872	925	934	945	1040	1040	1040	1124	1123	1126	1175	1175	1179	1227	1227	1232
	Amps	3.9	3.9	4	4.2	4.2	4.2	4.7	4.7	4.7	5.1	5.1	5.1	5.3	5.3	5.3	5.5	5.5	5.5
	SHR	0.51	0.69	0.93	0.52	0.71	0.95	0.52	0.74	0.95	0.53	0.78	0.96	0.55	0.81	0.95	0.56	0.83	0.95

RATING POINT
ARI 310/380

Receptacles and Fuse Types

Voltage	230V			265V			
	15	20	30	15	15	20	25
Amps	15	20	30	15	15	20	25
Heater Size	2.5 kW	3.5 kW	5.0 kW	1.5 kW	2.5 kW	3.5 kW	5.0 kW
Receptacles							
NEMA# Receptacle	6-15R	6-20R	6-30R	7-15R	7-15R	7-20R	7-30R
NEMA# Plug	6-15P	6-20P	6-30P	7-15P	7-15P	7-20P	7-30P

FreshAire PTAC may be covered under one or more of the following patents: 10,408,504 and 10,436,457. Additional patents pending.



ELECTRIC HEAT DATA

EXTENDED HEATING PERFORMANCE

		OUTDOOR DRY BULB TEMP. (DEGREES F)				
		37	42	47	52	57
PVH09K	BTUH	6833	7211	8200	8981	9918
	WATTS	670	681	710	722	762
	AMPS	3.9	4	4	4.1	4.3
PVH12K	BTUH	8747	9322	11800	12597	13467
	WATTS	871	884	970	977	990
	AMPS	4.5	4.5	4.6	4.6	4.7
PVH09R	BTUH	6138	6777	8500	8959	9719
	WATTS	621	645	710	731	755
	AMPS	3.2	3.3	3.6	3.8	3.9
PVH12R	BTUH	9342	9626	11800	12909	14142
	WATTS	893	905	970	1028	1074
	AMPS	3.9	4.0	4.3	4.5	4.7
				RATING POINT ARI 310/380		

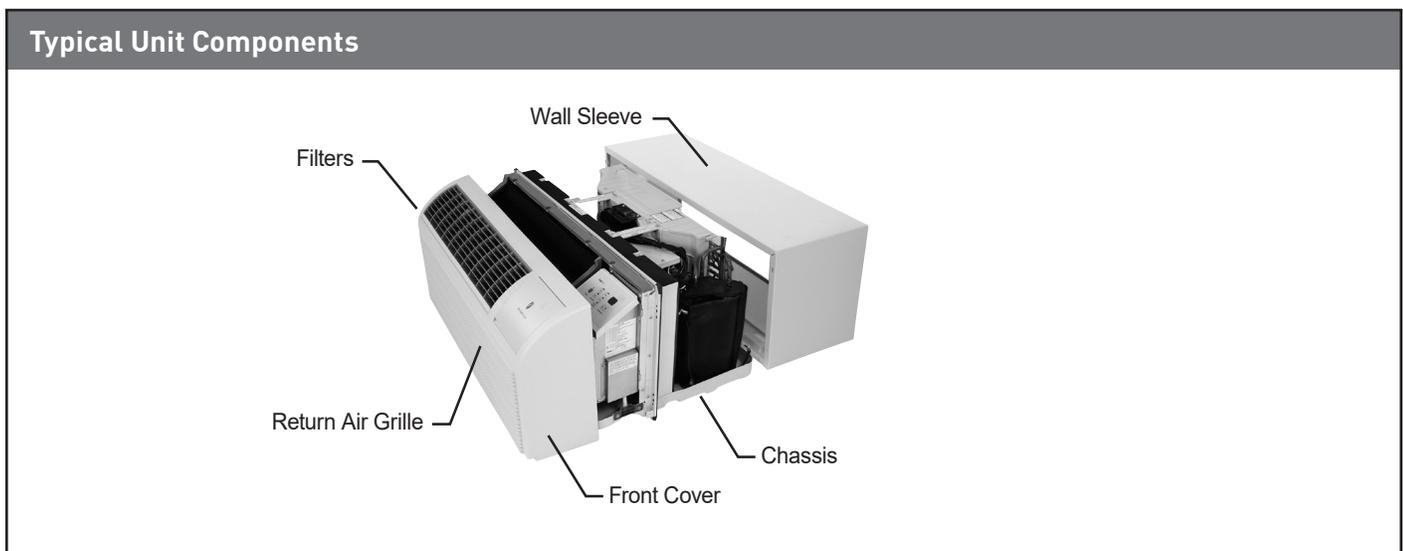
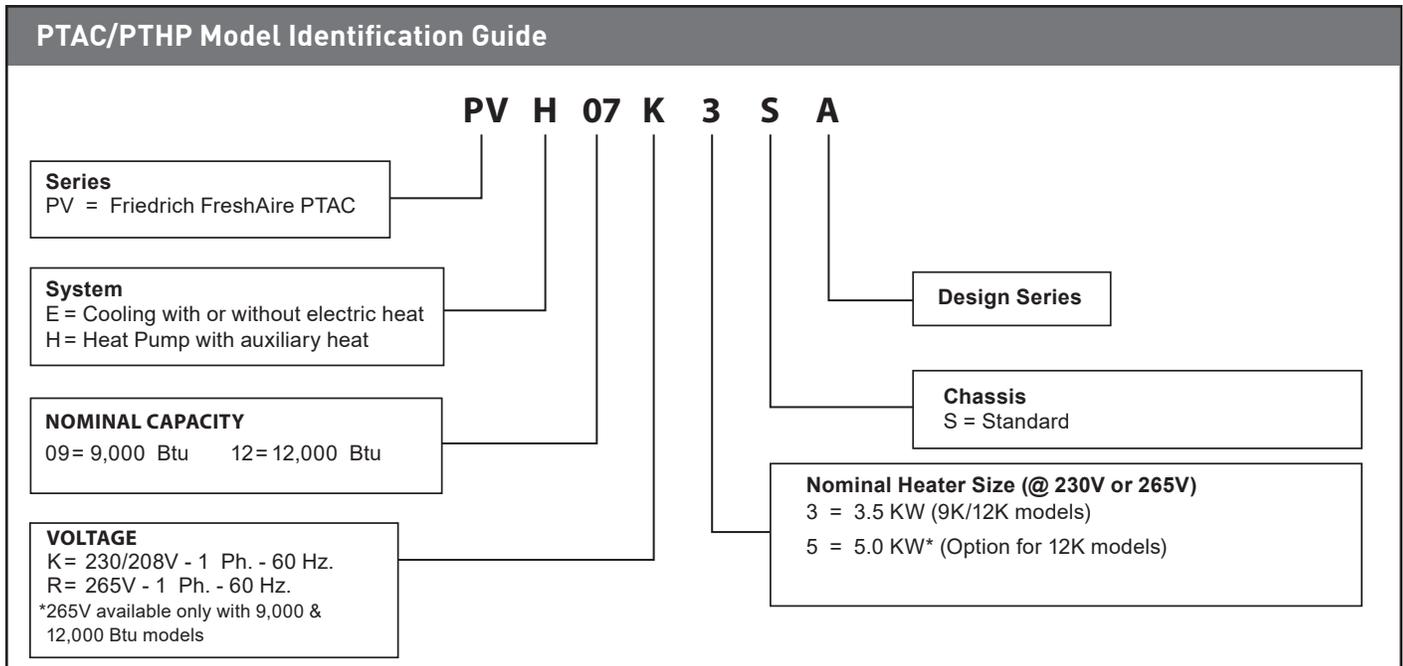
ELECTRIC HEAT DATA

Model	PVH09K	PVH09K	PVH12K	PVH12K	PVH12K
Power Cord	PXPCFA23015	PXPCFA23020	PXPCFA23015	PXPCFA23020	PXPCFA23030
Heater Watts	2500/2405	3500/2863	1500/1227	3500/2863	5000/4090
Voltage	230/208	230/208	230/208	230/208	230/208
Heating BTU	8500	11900	5100	11900	17000
Heating Current (amps)	10.9/12.1	15.3/16.9	6.6/7.3	15.3/16.9	21.8/24.1
Minimum Circuit Ampacity	13.9	19.3	8.46	19.3	27.5
Maximum Over Current Protection (MOP/MOCP)/Branch Circuit Fuse (amps)	15	20	15	20	30

ELECTRIC HEAT DATA

Model	PVH09R	PVH09R	PVH12R	PVH12R	PVH12R
Power Cord	PXPCFA26515	PXPCFA26520	PXPCFA26515	PXPCFA26520	PXPCFA26530
Heater Watts	2500/2045	3500/2863	1500/1227	3500/2863	5000/4090
Voltage	265	265	265	265	265
Heating BTU	8500	11900	5100	11900	17000
Heating Current (amps)	9.5	13.3	5.7	13.3	18.9
Minimum Circuit Ampacity	12	16.8	7.3	16.8	23.8
Maximum Over Current Protection (MOP/MOCP)/Branch Circuit Fuse (amps)	15	20	15	20	30

MODEL IDENTIFICATION / COMPONENTS



PURCHASER	P.O. #	DATE
PROJECT	LOCATION	
ENGINEER	ARCHITECT	
SUBMITTED BY	FOR APPROVAL	FOR REFERENCE

ITEM	PLAN DESIGNATION	QUANTITY	COOLING Btu	VOLTAGE	FRIEDRICH MODEL

Accessories

PDXWSA	Wall Sleeve	Qty	
PDXWSEXT18	Deep Wall Sleeve- For walls up to 17 1/2" deep	Qty	
PDXWSEXT24	Deep Wall Sleeve- For walls up to 23 1/2" deep	Qty	
PDXWSEXT	Custom Deep Wall Sleeve, For walls from 13 1/4" to 25 1/2" deep	Qty	
PXGA	Standard Outdoor Louver	Qty	
PXAA	Architectural Louver, clear	Qty	
PXBG	Architectural Louver, beige	Qty	
PXSC	Architectural Louver, color matched	Qty	
PDXRTB	Remote Thermostat Escutcheon Kit	Qty	
PXDR10	Condensate Drain Kit (pkg/10)	Qty	
PXSBA	Sub Base	Qty	
PXCJA	Conduit Kit w/ Junction Box	Qty	
PDXDAA	Lateral Duct Adapter	Qty	
PDXDEA	Lateral Duct Extension	Qty	
PXFTA	Replacement Filters (Set of 10)	Qty	
UVT1	FreshAire® UV: Single Bulb Germicidal UV Kit	Qty	
APWM1	FreshAire® Purification iWave Series M	Qty	

PXSB23020	Electrical Subbase - 230V 15A and 20A	Qty	
PXSB23030	Electrical Subbase - 230V 30A	Qty	
PXSB26520	Electrical Subbase - 265V 20A	Qty	
PXSB26530	Electrical Subbase - 265V 30A	Qty	
RT7	Wired Digital Thermostat	Qty	
RT7P	Wired Programmable Digital Thermostat	Qty	
EMRT2	Wired Thermostat with Occupancy Sensor	Qty	
EMWRT2	Wireless Thermostat with Occupancy Sensor	Qty	
VRPXEMRT2	Wired 12v Intelligent Controller for FreshAire PTAC	Qty	
VRPXEMWRT2	Wireless 12v Intelligent Controller for FreshAire PTAC	Qty	
WRT2	Wireless Digital Thermostat	Qty	
EMOCT	Online Connection Kit	Qty	
EMRAF	Remote Access Fee	Qty	
EMRHCF	Energy Management Remote Humidity Control Fee	Qty	
PXPCFA23015	LCDI 230V 15A Cord - 2.5 kW	Qty	
PXPCFA23020	LCDI 230V 205A Cord - 3.5 kW	Qty	
PXPCFA23030**	LCDI 230V 30A Cord - 5.0 kW	Qty	
PXPCFA26515	Non-LCDI 265V 15A Cord - 2.5 kW	Qty	
PXPCFA26520	Non-LCDI 265V 20A Cord - 3.5 kW	Qty	
PXPCFA26530**	Non-LCDI 265V 30A Cord - 5.0 kW	Qty	

*NOTE: The FreshAire PTAC when paired with VRPXEMRT2 wired wall controller, or VRPXEMWRT2 wireless wall controller operates as a fully variable speed unit. When used with other compatible thermostats, the unit will operate at multiple speeds in either cooling or heating mode.

** Cannot be used with PVH09K3FA

Features

Constant room comfort monitoring

"Instant Heat" heat pump mode quickly heats a room to the desired temperature for increased comfort

Even heat monitoring checks room temperature and automatically adds heat boost if necessary

Room freeze protection- heat initiated if temperature falls to 40°F in an unoccupied room, raising temperature to 46°F

Dual motors for quiet operation

Durable, powder coat paint finish

Indoor coil frost sensor protects the compressor to lengthen the life of the unit.

Separate heat and cool range limits

Central desk control ready allowing hotel owners to control units from a central location

2-speed FreshAire fan

RS-385 Communication port

Condensate removal systems uses slinger ring technology

Electronic defrost control ensures more run time in the efficient heat pump mode

Washable, air filter

Service error code memory storage

Emergency heat override

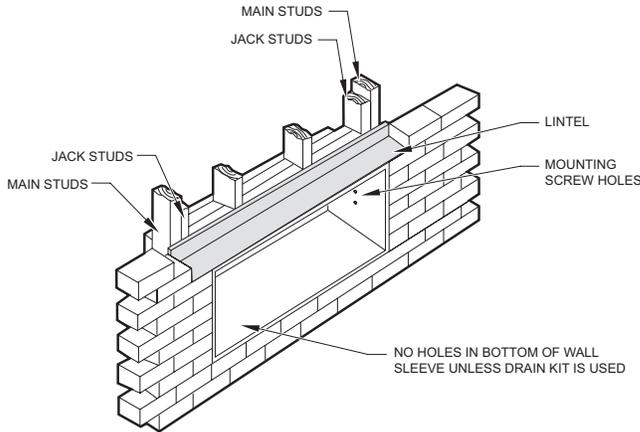
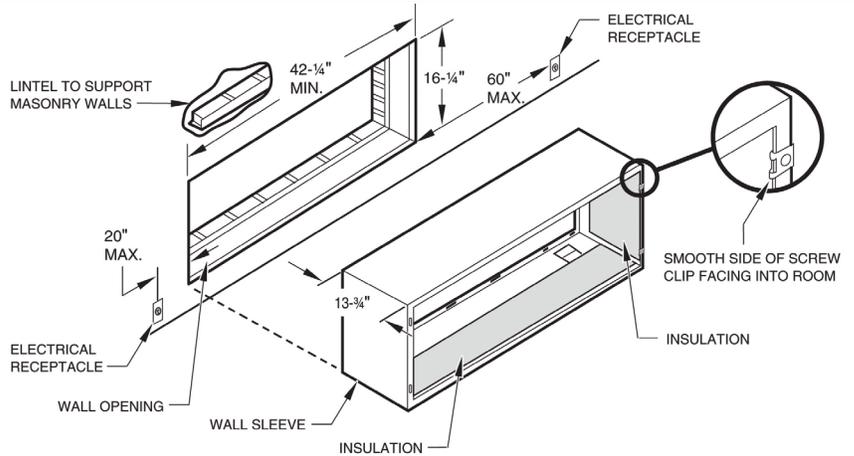
INSTALLATION

Typical Wall Sleeve Installation (PDXWSA)

PDXWSA Wall Sleeve Dimensions:
 16" H x 42" W x 13³/₄" D

Front Cover Dimensions:
 16" H x 42" W x 7³/₄" D

Cut-Out Dimensions:
 16¹/₄" x 42¹/₄"



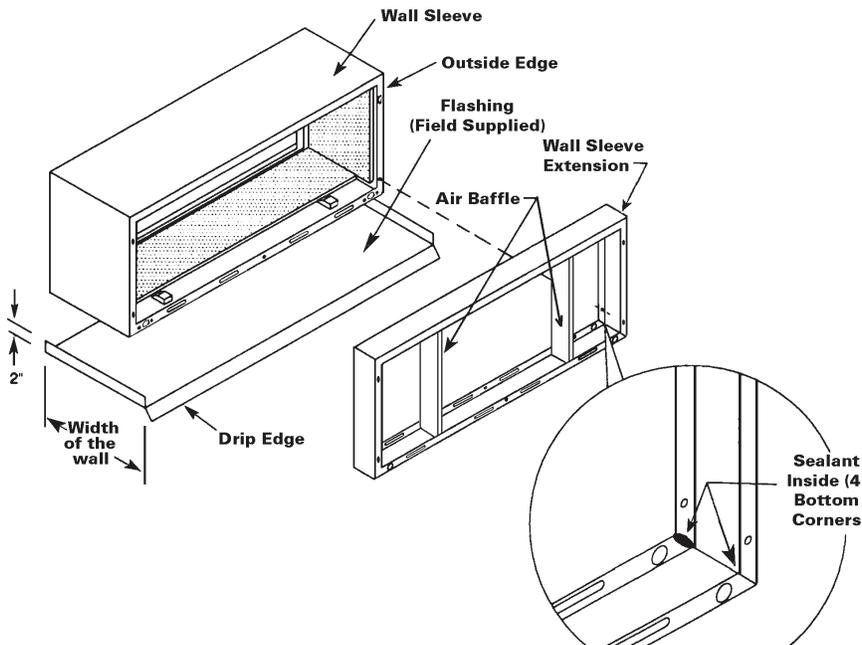
Note the use of a lintel under the first course of bricks above the wall sleeve. Do not use the wall sleeve as a lintel. The mounting screw holes shown are to be made by the installer.

Note: All 230/208V units are manufactured with a 60" power cord and all 265V units with an 18" power cord. The receptacle locations above must be followed to ensure proper connections.

NOTE: Construct wall opening to comply with all applicable building codes.

FRP010

Deep Wall Sleeve Installation



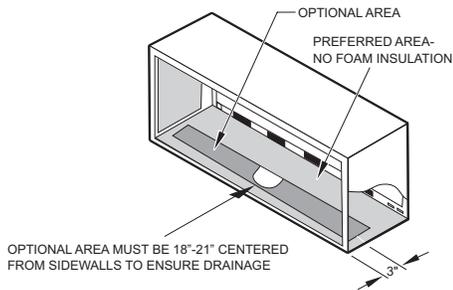
Seal condensate drip pan to wall sleeve with sealant on all (4) bottom corners.

IMPORTANT NOTE:

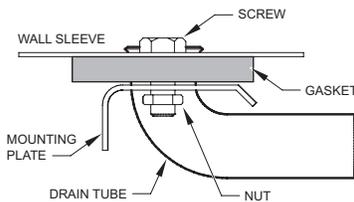
The silicone bead **MUST** extend up the side of the two flanges to prevent condensate from leaking.

ACCESSORY INSTALLATION

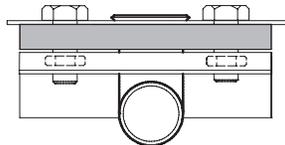
Internal Drain Kit Location and Installation (PXDR10)



NOTE: IF THE DRAIN MUST BE LOCATED IN THE OPTIONAL AREA, THE FOAM INSULATION MUST BE CUT AWAY AND REMOVED TO ALLOW ACCESS TO THE DRAIN.



SIDE VIEW



FRONT VIEW



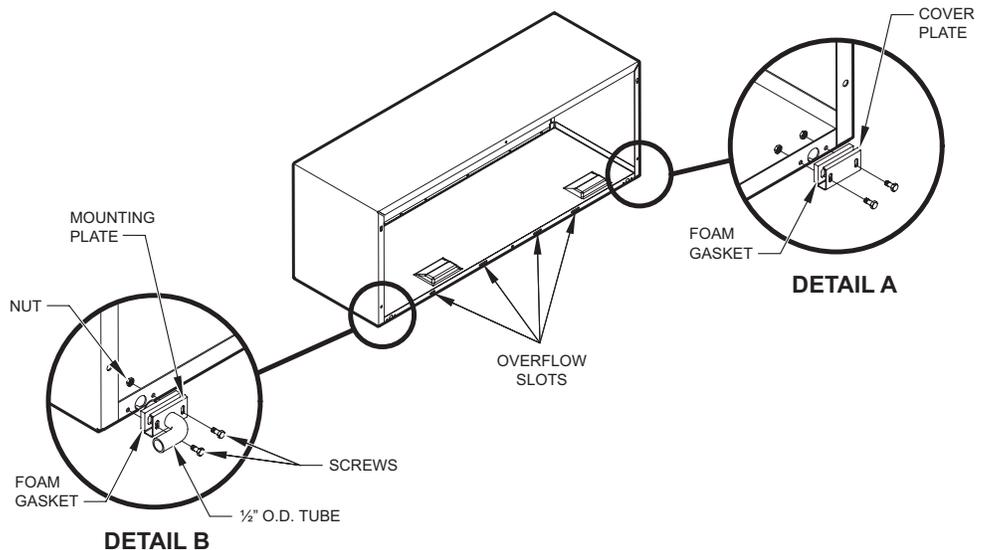
FRP011

External Drain

When using an external drain system, the condensate is removed through either of two drain holes on the back of the wall sleeve. Select the drain hole which best meets your drainage situation and install the drain kit. Seal off the other drain hole with a cover plate.

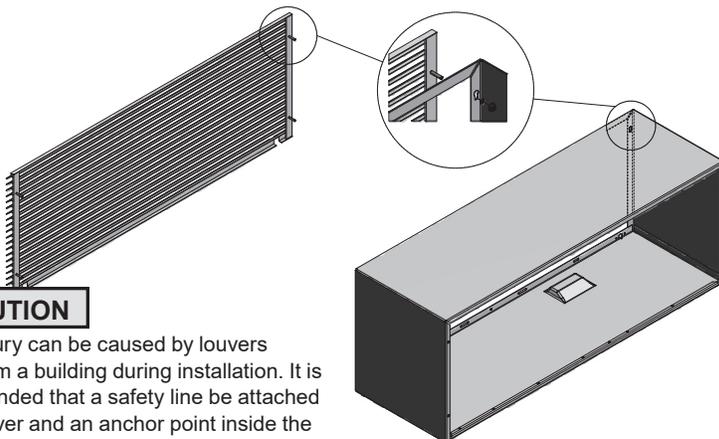
Place the drain tube through the gasket and the mounting plate with the flange toward the wall sleeve.

Attach the drain tube assembly to one of the two drain holes at the rear of the wall sleeve. The large flange on the mounting plate is positioned at the bottom of the sleeve facing toward the sleeve. When the drain tube is positioned at the desired angle, tighten the screws.



FRP012

Architectural Louver Installation (PXAA)



CAUTION

Bodily injury can be caused by louvers falling from a building during installation. It is recommended that a safety line be attached to the louver and an anchor point inside the building during installation.

INSTALLATION

1. Screw a threaded metal stud into each of the holes at the four corners of the louver.
2. From inside the building, grasp the louver at the vertical supports and maneuver the louver through the wall sleeve. Pull towards you until the threaded studs are inserted into the four holes of the wall sleeve.
3. While holding the louver with one hand, start washers and nuts on each of the four studs. Tighten the nuts securely.

FreshAire® Purifier: iWave M Series (APWM1)

iWave-M PTAC Installation Instructions: The iWave-M is a highly versatile ion generating device that is designed to be typically installed at the cooling coil; but the device can be installed in supply air as well. The iWave-M is an ideal, no replacement part device for air purification in all Friedrich PTAC's.



PTAC Installation (PZ/PD/PV)

1. Turn off power to the unit
2. Remove PTAC decorative front cover
3. Affix iWave ionizer bar to the solid surface (front surface) of coil. The ionizer bar should be centered on the coil. (see image above) Simply use the hook and loop backing on the power pack and ionization bar and stick it across the width of the coil so the iWave-M treats the coil as well as the breathing zone.
4. Mount power bank and wiring. Positioned on the side closest to control box assembly. Typically affixed with hook & loop to the control box assembly cover (see image above)
5. Run wires into the control box compartment to hook up to 110VAC to 240VAC power source to where iWave- M will power on with the indoor fan. For 110/120VAC and 208/240VAC input, connect black wire (hot) and white wire (neutral or other AC phase) to applicable electrical terminal block.
6. Trim wires to preferred length and connect to appropriate terminals. Harness/secure wires within the equipment as necessary.
7. Reassemble the unit, reattach front cover, and turn power on.
8. Apply installation notification sticker to the outside of the control panel cover

IMPORTANT!

Turn off main power source before starting PTAC installation.

Cleaning: If required, use a wet wipe or damp cloth to clean the ionizer bar. A soft bristle brush can also be used to clean debris from the ion emitter. Do Not expose the iWave-M to corrosive cleaners.

PTAC Power Cord Selection (PDE/PDH/PVH)

POWER CORDS

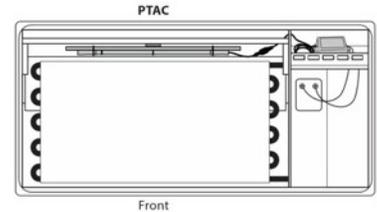
Universal power cords enable properties to select the appropriate heater size. Reference the adjacent table for power cord options.

ZONEAIRE® PREMIER	FRESHAIRES®		Length
PXPCZ23015A	PXPCFA23015	LCDI 230V 15A Cord - 2.5 kW	67 in.
PXPCZ23020A	PXPCFA23020	LCDI 230V 20A Cord - 3.5 kW	67 in.
PXPCZ23030A	PXPCFA23030*	LCDI 230V 30A Cord - 5.0 kW	67 in.
PXPCZ26515A	PXPCFA26515	Non-LCDI 265V 15A Cord - 2.5 kW	27 1/2 in.
PXPCZ26520A	PXPCFA26520	Non-LCDI 265V 20A Cord - 3.5 kW	27 1/2 in.
PXPCZ26530	PXPCFA26530*	Non-LCDI 265V 30A Cord - 5.0 kW	27 1/2 in.

FreshAire® UV Single Bulb Germicidal UV Light Kit (UVT1)

Step 1: PTAC Installation

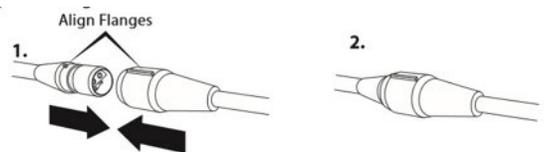
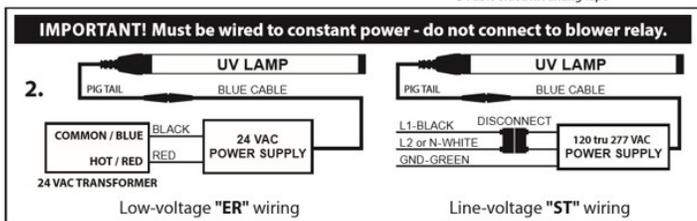
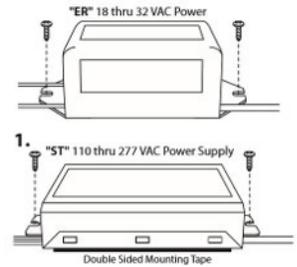
1. Remove decorative front cover, remove (6) screws holding wire mesh fan guard in place
2. Remove (6) screws on each side of the metal plate above the cooling coil.
3. Install lamp with magnetic shield on the backside of metal plate. Lamp should shine down between coil and blower. Lamp will be in front of coil on PZ & PD models. Lamp cord to be fed through existing fan wire chase.
4. Remove control panel screws to access incoming power source. PV & PD models; install power supply under control panel using double sided tape. PZ models: install power supply inside the control box
5. Using the spade and/or piggyback connectors, connect directly to a constant power source terminals. Use a split loom to protect wires.
6. Connect power supply to lamp cord. Connect lamp cord to lamp. Use Zip-tie and Zip-tie base to bundle and secure excess wire and lamp cord. (see wiring diagram)
7. Apply warning/replacement sticker to the inside of the control panel cover.



Step 2: Power Supply Installation

IMPORTANT! Turn off main power source before starting PTAC installation.

1. Find a suitable location for the power supply. Friedrich recommends the front panel of the control box area (see step 1 diagram). Install using the self-tapping screws or double sided tape (recommended)
2. Use the wiring diagram below to connect to power. The high voltage (120-277 VAC) power supply is marked "ST" (See ST diagram below)
3. o connect to power. The low voltage power supply (18 thru 32 VAC) is marked "ER". The high voltage (120-277 VAC) power supply is marked "ST"



Step 3: UV Lamp Connection

1. When all the other components are properly installed, connect the UV lamp cable to the power supply cable.
2. Make sure the flanges are aligned and then push the connection firmly together. A tight connection ensures a proper water-resistant seal.

Future Lamp Replacement

REMINDER! The germicidal UV lamp in UVT1 must be replaced every 2 years

NOTE: UV lamps will continue to emit visible light but lose germicidal effectiveness over time

1. Remove lamp from lamp clips one side at a time.
2. Replace with a new lamp and snap lamp into clips on each side
3. UV lamps contain small amounts of mercury. Dispose of lamps in accordance with local environmental regulations

HVAC Engineering Specifications

Digital Packaged Terminal Air Conditioners & Heat Pumps

Cooling: 7200 – 14500 Btu

Heating: 6400 – 13600 Btu (Heat Pump)
6824 – 17060 Btu (Electric Heat)

Friedrich FreshAir Models: PVH09K3FA, PVH12K3FA, PVH09R3FA, PVH12R3FA

All units shall be factory assembled, piped, wired and fully charged with R-410A. All units shall be certified in accordance with ARI Standard 310 for air conditioners and ARI standard 380 for heat pumps. Units shall be UL listed and carry a UL label. All units shall be factory run-tested to check operation and be Friedrich or equivalent.

The basic unit shall not exceed 16" high x 42" wide. Overall depth of the unit from the rear of the Friedrich wall sleeve to the front of the decorative front cover shall not exceed 21 1/4". The unit shall be designed so that room intrusion may be as little as 7/2". Installations in walls deeper than 13 1/4" may be accomplished with the use of a deep wall sleeve (PDXWSEXT). Unit shall draw in ambient air through both sides of an outdoor architectural louver or grille measuring 42" wide x 16" high and shall exhaust air out middle portion of the louver. The architectural louver and wall sleeve shall be designed so that the louver may be installed from the inside of the building.

REFRIGERATION SYSTEM – The refrigeration system shall be hermetically sealed and consist of a rotary compressor that is externally mounted on vibration isolators no smaller than 1 3/8" dia. x 1 1/2" high; condenser and evaporator coils constructed of copper tubes and aluminum plate fins; and capillaries as expansion devices. Unit shall have a fan slinger ring to increase efficiency and condensate disposal and have a drain pan capable of retaining 1 1/2 gallons of condensate. A tertiary condensate removal system shall also be incorporated for back up and shall overflow through the wall sleeve and to the outside of the building as a safeguard against damage to the interior room.

INDOOR AIR HANDLING SECTION – The indoor air handling section shall consist of a tangential blower wheel direct driven by a totally enclosed motor. The air handling system shall be designed to minimize airflow noise and provide smooth and consistent airflow. The indoor fan must have three fan speeds that may be selected by the user.

The indoor discharge grille shall be designed to maximize airflow throughout the room. The grille shall be reversible to allow a change in the airflow directions. The grille openings shall be sized to prevent personal injury or damage to the unit.

The front cover shall incorporate dual air filters conveniently mounted in the front of the unit. The filters must be accessible without the removal of the front cover. The filters shall be washable and reusable by cleaning with water or by vacuuming.

The chassis will have the capability to meet ASHRAE 62.1 by bringing in up to 52 CFM of Merv 8 filtered conditioned fresh air. (Higher CFM possible in negatively pressurized rooms) There must be a provision to allow damper to close.

OUTDOOR AIR HANDLING SECTION – The outdoor air section shall consist of a single injection molded fan shroud that incorporates the outdoor motor mount into a single piece for ease of service and assembly. The outdoor motor shall be totally enclosed, ball-bearing, permanently lubricated and directly drive the outdoor fan/slinger ring.

CONTROLS – Covered controls shall be accessible in a compartment at least 7 1/2" wide with the controls no deeper than 1 1/4" in the opening to facilitate easy operation of the unit.

The unit controls shall feature a soft blue LED readout that can display either room temperature or setpoint temperature. The unit shall receive input from the digital control panel through push buttons

labeled: 'Fan', 'Cool', 'Heat', 'Low Fan', 'High Fan', 'Constant Fan', '▲', '▼' and 'Power'. When 'Off', the unit may be put directly into cooling or heating mode by pressing the 'Cool' or 'Heat' button.

The unit must have the following energy saving and convenience features built-in:

- Quiet start/stop fan delay
- Fan cycle control for cooling and heating independently
- Room freeze protection
- Random compressor restart
- Electronic temperature limiting

The PTAC must also offer the ability to be controlled by a remote wall-mounted thermostat without additional accessories. Low voltage inputs will include: C (common), R (24V power), Y (cooling), GL (fan low), GH (fan high), W (heat) and B- (Reversing Valve is Energized in Heating).

PTAC models shall use a single stage cool/single stage heat thermostat. PTHP models shall use a single stage cool/two-stage heat thermostat. An accessory thermostat must be available from the manufacturer, RT7/RT7P or equivalent. The RT7/RT7P thermostat will provide temperature setpoint, mode selection from cool, heat and fan modes. The thermostat must also allow the selection of fan speed between high and low speed. To maximize full features and benefits pair with VRPXEMRT2 wired wall controller, or VRPXEMWRT2 wireless wall controller.

Other controls accessible without removal of the chassis shall include fan cycle switch, fresh air vent control and emergency heat override switch (heat pump only).

ELECTRICAL CONNECTION – All PTAC/PTHP units shall come from the factory with a power cord installed. All 230/208V power cords shall feature a leakage current detection device on the plug head.

GENERAL CONSTRUCTION – The wall sleeve shall be constructed of 18-gauge Galvanized zinc-coated steel. It shall be prepared by a process where it is zinc phosphate pretreated and sealed with a chromate rinse, then powder coated with a polyester finish and oven cured for durability. The sleeve shall be shipped with a protective weatherboard and a structural center support, and be insulated for sound absorption and thermal efficiency. The grille or louver shall be shipped separately and made from stamped or extruded anodized aluminum. All louvers shall be in the horizontal plane.

The front panel shall attach firmly to the chassis by two hidden spring clips. As an option the cover may be attached by two screws to prevent tampering. The front panel will feature a contoured discharge with no sharp corners.

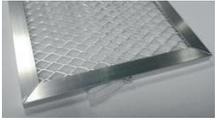
CORROSION PROTECTION – The unit shall have corrosion-resistant fans, fan shroud and drain pan for corrosion protection and to prevent rust on the side of the building below the outdoor louver. The unit shall feature corrosion resistant materials and finishes to help prevent deterioration.

WARRANTY – The warranty is two years on all parts and labor and five years on the sealed system, parts and labor, including compressor, indoor and outdoor coils and refrigerant tubing.

ACCESSORIES

New Construction Accessories		
<p>PDXWSA</p> <p>PDXWSEXT18</p> <p>PDXWSEXT24</p> <p>PDXWSEXT</p>	<p>WALL SLEEVE Galvanized zinc coated steel is prepared in an 11-step process, then powder coated with a polyester finish and cured in an oven for exceptional durability. The wall sleeve is insulated for sound absorption and thermal efficiency, 16" H x 42" W x 13³/₄" D.</p> <p>DEEP WALL SLEEVE For walls up to 17¹/₂" deep.</p> <p>DEEP WALL SLEEVE For walls up to 23¹/₂" deep.</p> <p>CUSTOM DEEP WALL SLEEVE One piece extended wall sleeve for walls from 13¹/₄" to 25¹/₂" deep are available by special order.</p>	<p>PDXWSA</p>   <p>Deep wall sleeve PDXWSEXT18 shown with weather panel</p>
<p>PXGA</p> <p>PXAA</p> <p>PXBG</p> <p>PXSC</p>	<p>GRILLE Standard, stamped aluminium, anodized to resist chalking and oxidation.</p> <p>ARCHITECTURAL GRILLES Consist of heavy-gauge 6063-T5 aluminum alloy: 42" W x 16" H x 1¹/₈" D</p> <p>PXAA – Clear, extruded aluminum PXBG – Beige acrylic enamel PXSC – Also available in custom colors.</p>	<p>PXGA</p>  <p>PXAA</p> 
<p>PXDR10</p>	<p>CONDENSATE DRAIN KIT Attaches to the bottom of the wall sleeve for internal draining of condensate or to the rear wall sleeve flange for external draining. Recommended on all units to remove excess condensate. Packaged in quantities of ten.</p>	
<p>PXCJA</p>	<p>CONDUIT KIT WITH JUNCTION BOX Hard wire conduit kit with junction box for 208/230V and 265V units (subbase not required). Kit includes a means of quick disconnect for easy removal of the chassis. *Required for 265V installations.</p>	
<p>PDXDAA</p>	<p>LATERAL DUCT ADAPTER Attaches to the Friedrich PTAC/PTHP unit to direct up to 35% of the total airflow to a second room. The unit-mounted duct plenum features a front-mounted aluminum grille that has two positions to provide the most optimal air direction. The air may be directed to either the left or the right of the unit through the supplied 3¹/₂" H x 7" W x 47" L plenum. Plenum may be cut to length by the installer. Kit includes duct plenum, front grille, 47" duct extension, duct discharge grille, duct end cap and all necessary mounting hardware.</p>	
<p>PDXDEA</p>	<p>LATERAL DUCT EXTENSION Additional 3¹/₂" H x 7" W x 47" L plenum for use with the LATERAL DUCT ADAPTER. A maximum of 3 duct extensions total may be used. Note: Ducted airflow is reduced as duct length is increased.</p>	

ACCESSORIES

New Construction Accessories																							
PXFTA	<p>REPLACEMENT FILTER PACK These are original equipment return air filters. They are reusable and can be cleaned by vacuuming, washing, or blowing out, and are sold in convenient ten-packs. (Two filters per chassis).</p>																						
PXFAFT10	<p>REPLACEMENT FILTER PACK Merv 8 filters. 10 pack. Each PTAC requires 1 filter.</p>																						
PXSBA	<p>DECORATIVE SUBBASE Provides unit support for walls less than six inches thick. Includes leveling legs, side filler panels and mounting brackets for electrical accessories. Accepts circuit breaker, power disconnect switch, or conduit kit.</p>																						
PXSB	<p>ELECTRICAL SUBBASE Provides unit support for walls less than six inches thick. Includes leveling legs, side filler panels, mounting brackets, a plug-in receptacle and field-wiring access. The subbase also includes electrical knockouts for a power disconnect switch or circuit breaker.</p> <table border="1" data-bbox="386 848 834 974"> <tr> <td>PXSB23020</td> <td>Electrical Subbase - 230V 15 & 20A</td> </tr> <tr> <td>PXSB23030</td> <td>Electrical Subbase - 230V 30A</td> </tr> <tr> <td>PXSB26515</td> <td>Electrical Subbase - 265V 15A</td> </tr> <tr> <td>PXSB26520</td> <td>Electrical Subbase - 265V 20A</td> </tr> <tr> <td>PXSB26530</td> <td>Electrical Subbase - 265V 30A</td> </tr> </table>	PXSB23020	Electrical Subbase - 230V 15 & 20A	PXSB23030	Electrical Subbase - 230V 30A	PXSB26515	Electrical Subbase - 265V 15A	PXSB26520	Electrical Subbase - 265V 20A	PXSB26530	Electrical Subbase - 265V 30A												
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PXPCFA	<p>POWER CORDS Universal power cords enable properties to select the appropriate heater size. Reference the adjacent table for power cord options</p> <p>*Cannot be used on PVH09K3FA.</p>	<table border="1" data-bbox="938 1003 1487 1199"> <thead> <tr> <th></th> <th></th> <th>Length</th> </tr> </thead> <tbody> <tr> <td>PXPCFA23015</td> <td>LCDI 230V 15A Cord - 2.5 kW</td> <td>67 in.</td> </tr> <tr> <td>PXPCFA23020</td> <td>LCDI 230V 20A Cord - 3.5 kW</td> <td>67 in.</td> </tr> <tr> <td>PXPCFA23030*</td> <td>LCDI 230V 30A Cord - 5.0 kW</td> <td>67 in.</td> </tr> <tr> <td>PXPCFA26515</td> <td>Non-LCDI 265V 15A Cord - 2.5 kW</td> <td>27 1/2 in.</td> </tr> <tr> <td>PXPCFA26520</td> <td>Non-LCDI 265V 20A Cord - 3.5 kW</td> <td>27 1/2 in.</td> </tr> <tr> <td>PXPCFA26530*</td> <td>Non-LCDI 265V 30A Cord - 5.0 kW</td> <td>27 1/2 in.</td> </tr> </tbody> </table>			Length	PXPCFA23015	LCDI 230V 15A Cord - 2.5 kW	67 in.	PXPCFA23020	LCDI 230V 20A Cord - 3.5 kW	67 in.	PXPCFA23030*	LCDI 230V 30A Cord - 5.0 kW	67 in.	PXPCFA26515	Non-LCDI 265V 15A Cord - 2.5 kW	27 1/2 in.	PXPCFA26520	Non-LCDI 265V 20A Cord - 3.5 kW	27 1/2 in.	PXPCFA26530*	Non-LCDI 265V 30A Cord - 5.0 kW	27 1/2 in.
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RT7 RT7P	<p>DIGITAL REMOTE THERMOSTATS (24V)</p> <p>RT7 Wired single stage cool, single stage heat for PDE models or single stage cool, dual stage heat for PDH model thermostat features high/low fan speed switch. Thermostat is hard wired and can be battery powered or unit powered. Features backlit display and multiple configuration modes. For use on Friedrich PTACs and Vert-I-Paks.</p> <p>RT7P Wired, programmable single stage cool, single stage heat for PDE models or single stage cool, dual stage heat for PDH model thermostat features high/low fan speed switch. Thermostat is hard wired and can be battery powered or unit powered. Features backlit display and multiple configuration modes. For use on Friedrich PTACs and Vert-I-Paks.</p>	 																					

ACCESSORIES

New Construction Accessories		
<p>WRT2</p>	<p>WIRELESS DIGITAL REMOTE THERMOSTAT Single stage cool, single stage heat for PDE models or single stage cool, dual stage heat for PDH model thermostat features high/low fan speed switch. Thermostat is wireless and is battery powered. Features backlit display and multiple configuration modes. For use on Friedrich PTACs and Vert-I-Paks.</p>	
<p>PDXRTB</p>	<p>REMOTE THERMOSTAT ESCUTCHEON KIT This kit contains ten escutcheons that can be placed over the factory control buttons when a remote wall mounted thermostat is used. The escutcheon directs the guest to the wall thermostat for operation and retains the LED window to display error codes and diagnostic information.</p>	
<p>EMRT2 EMWRT2</p>	<p>ENERGY MANAGEMENT THERMOSTATS</p> <p>EMRT2 Wired thermostat with occupancy sensor.</p> <p>EMWRT2 Wireless thermostat with occupancy sensor.</p> <p>EMOCT EMRAF EMRHCF Online connection kit. Remote access fee. Remote humidity control fee.</p>	
<p>VRPXEMRT2 (Preferred FreshAire Thermostat)</p> <p>VRPXEMWRT2</p>	<p>Wired wall controller and occupancy sensor-12v. Full inverter control. Designed to maximize features and benefits of FreshAire system.</p> <p>Wireless wall controller and occupancy sensor-12v. Full inverter control. Designed to maximize features and benefits of FreshAire system.</p>	

*NOTE: The FreshAire PTAC must be paired with wall controller **VRPXEMRT2**, or **VRPXEMWRT2** to operate as a fully variable speed unit. When used with other compatible thermostats, the unit will operate at multiple speeds in either cooling or heating mode.

Friedrich PTAC with *FreshAire*® IAQ

HEALTHY AIR DELIVERED

The COVID-19 global pandemic is transforming the way the lodging industry meets the comfort and safety needs for guests. As your room air experts, Friedrich remains committed to improving guest comfort and safety with our newest innovation, FreshAire® IAQ solutions - a suite of indoor air quality accessories for use with Friedrich Air Conditioners, all with one dedicated purpose - healthy indoor air.

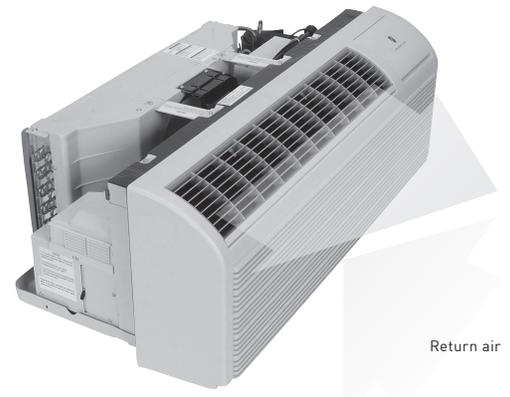
FreshAire® IAQ solutions incorporate ASHRAE-recommended protocol* to address indoor air quality and airborne transmissions. This suite of products expands upon our current award-winning, patented FreshAire make-up system (available in FreshAire PTAC) to now include industry-leading air quality technologies such as UV germicidal light, and bi-polar ionization. Together, they represent a major leap forward in integrated HVAC air purification and rebuilding confidence for indoor environments. Read below for FreshAire IAQ options available on our PTAC line-up.

*Based on ASHRAE Guidance for Building Operations During the COVID-19 Pandemic

FRESH Aire® MAKE UP AIR (MUA) & FILTRATION

Award-winning FreshAire MUA system helps achieve ASHRAE 62.1-2013 requirements, and brings up to 52 CFM of conditioned, MERV 8 filtered, outside air into the space. Patented FreshAire technology uses the Precision Inverter compressor and main cooling system to optimize temperature and humidity level of incoming air while MERV 8 filtration traps particles and pollutants.

Available on FreshAire PTAC



FRESH Aire® PURIFIER BY IWAVE® APWM1

FreshAire Purifier by iWaves features needlepoint bi-polar ionization to address any mold, bacteria, virus, allergens, and VOC's that may be in your air stream to ensure delivery of healthy, clean, purified air.

Optional accessory available on FreshAire, ZoneAire Premier and ZoneAire Select PTAC lines



FRESH Aire® UV UVT1

Germicidal UV light kits by Fresh-Aire UV have been tested and certified for use on Friedrich PTACs. The UV kit can be installed on the fan coil and is designed to disinfect surfaces and the air as it circulates through the ventilation system. UV light can kill airborne bacteria, viruses, mold, reduce maintenance costs and extend the life of an HVAC system

Optional accessory available on FreshAire, ZoneAire Premier and ZoneAire Select PTAC lines





Friedrich Air Conditioning Co.

10001 Reunion Place, San Antonio, TX 78216
800.541.6645
www.friedrich.com

FRESHAIRE® SERIES PACKAGED TERMINAL AIR CONDITIONERS LIMITED WARRANTY

SAVE THIS CERTIFICATE. It gives you specific rights. You may also have other rights which may vary from state to state and province to province

In the event that your unit needs servicing, contact your nearest authorized service center. If you do not know the nearest service center, ask the company that installed your unit or contact us - see address and telephone number above. To obtain service and/or warranty parts replacement, you must notify an authorized FRIEDRICH Air Conditioning Co. service center, distributor, dealer, or contractor of any defect within the applicable warranty period.

When requesting service: please have the model and serial number from your unit readily available.

Unless specified otherwise herein, the following applies:

FRIEDRICH PACKAGED TERMINAL AIR CONDITIONERS AND HEAT PUMPS

LIMITED WARRANTY - TWO YEARS (Twenty-four (24) months from the date of installation). Any part found to be defective in the material or workmanship will be repaired or replaced free of charge by our authorized service center during the normal working hours; and

LIMITED WARRANTY - THIRD THROUGH FIFTH YEAR (Sixty (60) months from the date of installation). **ON THE SEALED REFRIGERATION SYSTEM.** Any part of the sealed refrigeration system that is defective in material or workmanship will be repaired or replaced free of charge (excluding freight charges) by our authorized service center during normal working hours. The sealed refrigeration system consists of the compressor, metering device, evaporator, condenser, reversing valve, check valve, and the interconnecting tubing.

These warranties apply only while the unit remains at the original site and only to units installed inside the continental United States, Alaska, Hawaii, Puerto Rico, Mexico and Canada. The warranty applies only if the unit is installed and operated in accordance with the printed instructions and in compliance with applicable local installation and building codes and good trade practices. For international warranty information, contact the Friedrich Air Conditioning Company - International Division.

Any defective part to be replaced must be made available to FRIEDRICH in exchange for the replacement part. Reasonable proof must be presented to establish the date of install, otherwise the beginning date of this certificate will be considered to be our shipment date plus sixty days. Replacement parts can be new or remanufactured. Replacement parts and labor are only warranted for any unused portion of the unit's warranty.

We will not be responsible for and the user will pay for:

1. Service calls to:

- A) Instruct on the unit operation. B) Replace house fuses or correct house wiring. C) Clean or replace filters. D) Remove the unit from its installed location when not accessible for service required. E) Correct improper installations.

2. Parts or labor provided by anyone other than an authorized service center.

3. Damage caused by:

- A) Accident, abuse, negligence, misuse, riot, fire, flood, or acts of God. B) Operating the unit where there is a corrosive atmosphere containing Chlorine, Fluorine, or any damaging chemicals (other than in a normal residential environment). C) Unauthorized alteration or repair of the unit, which in turn affects its stability or performance. D) Failing to provide proper maintenance and service. E) Using an incorrect power source. F) Faulty installation or application of the unit. G) Operation of the unit during construction.

We shall not be liable for any incidental, consequential, or special damages or expenses in connection with any use or failure of this unit. We have not made and do not make any representation or warranty of fitness for a particular use or purpose and there is no implied condition of fitness for a particular use or purpose. We make no expressed warranties except as stated in this certificate. No one is authorized to change this certificate or to create for us any other obligation or liability in connection with this unit. Any implied warranties shall last for one year after the original purchase date. Some states and provinces do not allow limitations on how long an implied warranty or condition lasts, so the above limitations or other rights and remedies provided by law.

Performance of Friedrich's Warranty obligation is limited to one of the following methods:

1. Repair of the unit
2. A refund to the customer for the prorated value of the unit based upon the remaining warranty period of the unit.
3. Providing a replacement unit of equal value

The method of fulfillment of the warranty obligation is at the sole discretion of Friedrich Air Conditioning.

In case of any questions regarding the provisions of this warranty, the English version will govern.

