

## 11EER W12AB Series WALL-MOUNT™

The Bard Wall-Mount Air Conditioner is an energy efficient self contained system, which is designed to offer maximum indoor comfort at a minimal cost without using valuable indoor floor space or outside ground space. This unit is the ideal product for versatile applications such as: new construction, modular offices, school modernization, telecommunication structures, electronics buildings, portable structures, correctional facilities and many more. Factory or field installed accessories are available to meet specific job requirements for your unique application.

- Complies with efficiency requirements of ASHRAE/IESNA 90.1-2019
- Certified to ASNI/ARI Standard 390-2003 for SPVU (Single Package Vertical Units)
- Intertek ETL Listed to Standard for Safety Heating and Cooling Equipment ANSI/UL 1995/CSA 22.2 No. 236-05 Fourth Edition
- Commercial Product - Not intended for residential application
- Bard is an ISO 9001:2015 Certified Manufacturer
- The AHRI Certified® mark indicates Bard Manufacturing Company participation in the AHRI Certification program. For verification of individual certified products, go to [www.ahridirectory.org](http://www.ahridirectory.org).



[BARDHVAC.COM](http://BARDHVAC.COM)

FORM NO. 53586-0522

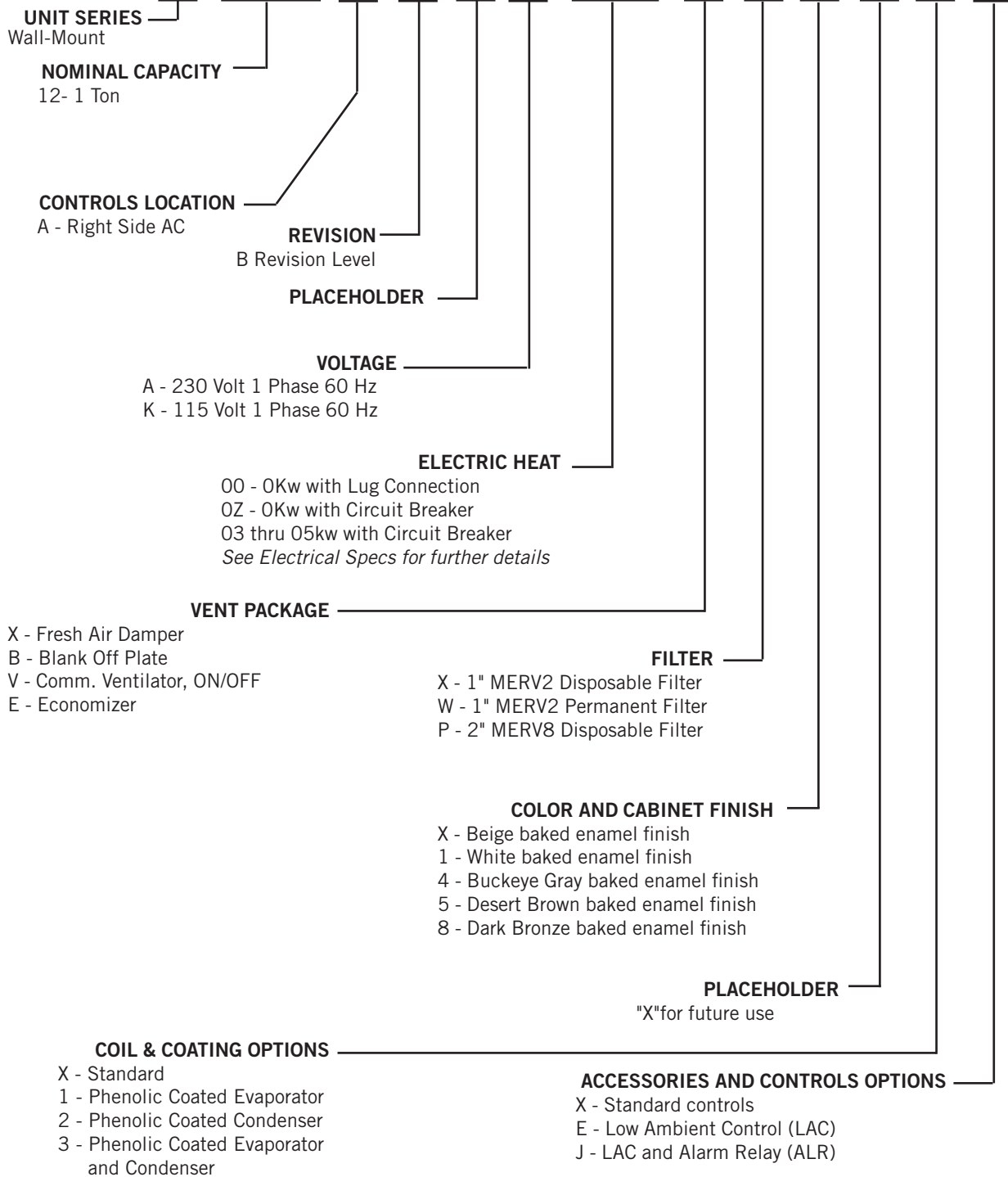


**Bard**  
SINCE 1914

Climate Control Solutions

///// WALL-MOUNT NOMENCLATURE

**W 1 2 A B - A 0 Z X P X X X X**



## ENGINEERED FEATURES

**NEW! EXCLUSIVE \*Non-Fiberglass Foil Faced Insulation:** Environmentally friendly high “R” value non-fiberglass insulation that is made with recycled denim and cotton materials used with a FSK foil face that is both durable and cleanable.

**Durable Cabinet Construction:** Multiple cabinet construction options are available for different outdoor conditions. Optional cabinet coatings may be ordered for extreme outdoor environments.

**Easy Filter Access:** A separate filter door is provided for ease of filter access during routine unit maintenance. 1” and 2” filters are available with a rating of up to MERV13.

**Field or Factory Installed Vents:** Multiple ventilation options are available as easily installed kits with electrical plugs, or Factory installed options that can be removed for service.

**Electric Strip Heat:** Reliable, comfortable heater packages feature an automatic limit and thermal cut-off safety control. Heater packages are factory or field installed.

**Reliable, Easy-to-Use Controls:** Easily accessible through right control panel locations. A lockable hinged access cover to circuit protection is provided. Phase rotation monitor is standard on all 3 phase models. Adjustable compressor on/off delay timer (CCM) with diagnostic lights is standard on all models.

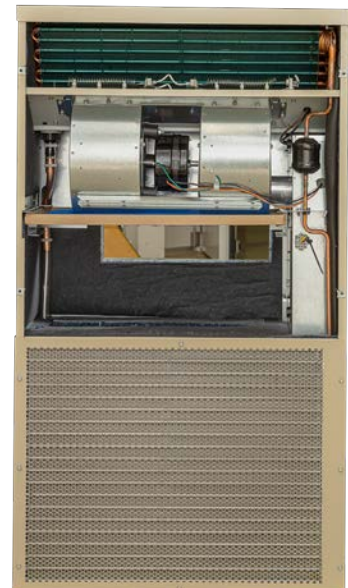
**Green Fin Hydrophilic Evaporator Coil:** Green fin stock enhances coil wettability to help prevent mold growth, aid with condensate drainage, and provide a limited amount of protection to corrosive particulates in the airstream.

**\*Balanced Climate™ Technology (patent pending):** High latent capacity humidity & sound reduction removes up to 35% more humidity than any other on the market with the use of a 2 stage thermostat or controlling device. Bard Balanced Climate™ innovation comes standard on all models.

**ECM Indoor Motor Technology:** 3 speed dual shaft motor provides quiet airflow operation when used with a twin blower assembly. Motor overload protection standard on all models.

**Enclosed Condenser Motor:** An enclosed casing condenser motor with ball bearings is used for reliable operation and extended motor life. Enclosed condenser motors are standard on all units.

**High Efficiency Cooling:** Rotary compressors for quiet, efficient cooling. Designed with R-410A (HFC) non-ozone depleting refrigerant in compliance with the Montreal protocol and 2010 EPA requirements. A liquid line filter-drier to protect the system from moisture is standard on all units.



## UNIT MODES OF OPERATION

**Cooling Operation:** The Bard WA Series WALL MOUNT products offer single stage cooling operation using R410A refrigerant. Copper tube/Aluminum green fin coils are used to provide high efficiency and easy serviceability. Scroll compressor technology delivers years of quiet, reliable operation.



**Heating Operation:** The Bard WA Series WALL MOUNT products offer single heating operation using resistance heaters. Circuit breaker disconnect protection is standard in all units equipped with electric heat.



**Ventilation Operation:** The Bard WA Series WALL MOUNT products offer optional ventilation operation that brings outdoor air into the structure. Vent options can be factory or field installed, and can be used to bring in outdoor air for occupants, save energy by using outdoor air for free cooling, or positively pressurize a structure. Exhaust air options allow room air to be vented outdoors when fresh air is being brought into the structure. Energy recovery options are also available for occupied structures which condition the air being brought in to save energy when ventilation is necessary regardless of outdoor temperature.



**Balanced Climate™ Operation:** The Bard WA Series WALL MOUNT products offer an enhanced latent capacity stage that can be controlled by a two stage cooling thermostat. During the first cooling stage (Balanced Climate Mode), the unit will increase the amount of moisture removed during compressor operation. The second stage (standard mode) of cooling increases the sensible cooling capacity to increase the amount of heat removed from the structure during compressor operation. Available in high supply static applications. In order for Balanced Climate to be used, a jumper must be removed between Y1 and Y2. Unit is shipped with jumper in place and Balanced Climate disabled.



## ADVANCED FEATURE DESCRIPTIONS

**ECM Indoor Blower Motor:** Energy efficient indoor brush-less DC blower motors use EC constant torque technology with 3 selectable pre-programmed speeds. By selecting the needed speed, the WALL MOUNT product can reduce or increase airflow. A high speed tap can be selected to offer the maximum CFM possible with the blower assembly.



**Outdoor Fan Motor:** Outdoor fan motors use ball bearing construction and are fully enclosed for increased life expectancy.

**Non Fiberglass Cabinet Insulation:** The WALL MOUNT products use advanced non-fiberglass insulation that is made with recycled denim materials. High "R" value, enhanced sound absorption, and reduced delamination are some of the features of this revolutionary product.



## ////// CAPACITY AND EFFICIENCY RATINGS

MODELS	W12AB-A	W12AB-K
Cooling Capacity BTUH ①	13,000	13,000
EER	11.0	11.0

① Capacity is certified in accordance with ANSI/ARI Standard 390-2003.

② EER = Energy Efficiency Ratio and is certified in accordance with ANSI/ARI Standard 390-2003.  
All ratings based on fresh air intake being 100% closed (no outside air introduction).

## ////// SPECIFICATIONS 1 TON

MODELS	W12AB-A	W12AB-K
<b>Electrical Rating – 60 Hz</b>	230/208 - 1	115 - 1
Operating Voltage Range	197-253	104-126
<b>Compressor--Circuit A</b>		
Voltage	230/208	115
Rated Load Amps	4.8/5.3	8.8
Branch Circuit Selection Current	5.5	10.5
Lock Rotor Amps	26/26	57
Compressor Type	Rotary	Rotary
<b>Fan Motor &amp; Condenser</b>		
Fan Motor--HP--RPM	1/12-1075	1/2-1075
Fan Motor--Amps	.6	1.1
Fan--DIA/CFM	18" - 950	18" - 950
<b>Blower Motor &amp; Evap.</b>		
Blower Motor--HP--SPD	1/8-1650	1/8-1650
Blower Motor--Amps	1.1	2.1
Motor Type	ECM	ECM
CFM Cooling & E.S.P. w/Filter (Rated-Wet Coil)	.1 - 425	.1 - 425
Filter Sizes (inches) STD.	12x24x1	12x24x1
<b>Basic Unit Weight-LBS.</b>		
Barometric Fresh Air Damper (X)	4.0	4.0
Blank-Off Plate (B)	1.0	1.0
Commercial Room Ventilator (V)	31.0	31.0
Economizer (E)	37.0	37.0

## COOLING APPLICATION DATA - OUTDOOR TEMPERATURE ①②

MODEL	RETURN AIR (DB/WB)	COOLING CAPACITY	75°F	80°F	85°F	90°F	95°F	100°F	105°F	110°F	115°F	120°F	125°F	131°F
W12AB	75/62	Total Cooling	14700	13900	13000	12200	11400	10700	10000	9300	8800	8200	7700	7100
		Sensible Cooling	11700	11200	10600	10100	9800	9400	9100	8800	8600	8200	7700	7100
	80/67	Total Cooling	15700	15100	14400	13700	13000	12400	11800	11100	10500	9900	9300	8600
		Sensible Cooling	11300	10900	10500	10100	9800	9500	9300	9100	8900	8800	8700	8600
	85/72	Total Cooling	18700	17700	16600	15500	14500	13600	12800	11900	11100	10300	9600	8800
		Sensible Cooling	11600	11100	10600	10100	9700	9200	8900	8600	8200	8000	7700	7500

- ① Low ambient control allows for compressor operation down to 0°F.
- ② Outdoor temperatures shown are measured at the condenser section air inlet.
- ③ Return air temperature °F.

CAPACITY MULTIPLIER FACTORS			
% of Rated Airflow	-10	Rated	+10
Total BTUH	0.975	1.0	1.02
Sensible BTUH	0.950	1.0	1.05

## UNIT CHARGE RATES

UNIT	STD. UNIT - LBS.	DEHUM. UNITS - LBS.
W12AB - 11 EER A/C	3.25	N/A

## BALANCED CLIMATE APPLICATION DATA (OPTIONAL, REQUIRES THERMOSTAT WITH 2 COOLING STAGES)

MODEL	RETURN AIR (DB/WB)	COOLING CAPACITY	75°F	80°F	85°F	90°F	95°F	100°F	105°F	110°F	115°F	120°F	125°F	131°F <sup>③</sup>
W12AB	75/62	Total Cooling	13800	12900	12000	11300	10500	9800	9300	8700	8200	7700	7300	6800
		Sensible Cooling	9600	9400	9100	8800	8600	8300	8000	7700	7400	7100	6800	6500
		Latent Cooling	4200	3500	2900	2500	1900	1500	1300	1000	800	600	500	300
		% Latent Increase	29%	23%	17%	16%	16%	13%	31%	50%	75%	100%	100%	100%
	80/67	Lbs. H2O per Hr.	3.962	3.302	2.736	2.358	1.792	1.415	1.226	0.943	0.755	0.566	0.472	0.283
		Total Cooling	14700	14000	13300	12700	12000	11400	10900	10300	9800	9300	8900	8300
		Sensible Cooling	9300	9200	9000	8800	8600	8400	8200	7900	7700	7400	7100	6800
		Latent Cooling	5400	4800	4300	3900	3400	3000	2700	2400	2100	1900	1800	1500
	85/72	% Latent Increase	19%	13%	9%	8%	6%	3%	7%	17%	24%	42%	67%	100%
		Lbs. H2O per Hr.	5.094	4.528	4.057	3.679	3.208	2.83	2.547	2.264	1.981	1.792	1.698	1.4151
		Total Cooling	17600	16400	15300	14400	13400	12500	11800	11000	10300	9700	9200	8500
		Sensible Cooling	9600	9400	9100	8800	8500	8200	7900	7400	7100	6700	6300	5900
85/72	Latent Cooling	8000	7000	6200	5600	4900	4300	3900	3600	3200	3000	2900	2600	
	% Latent Increase	11%	6%	3%	4%	2%	-2%	0%	8%	9%	23%	34%	50%	
85/72	Lbs. H2O per Hr.	7.547	6.604	5.849	5.283	4.623	4.623	3.679	3.396	3.019	2.83	2.736	2.4528	

- ① Low ambient operation disables Balanced Climate Operation.
- ② Outdoor temperatures shown are measured at the condenser section air inlet.
- ③ Return air temperature °F.
- ④ % Latent increase is a comparison to non-Balanced Climate unit operation.
- ⑤ Units with mechanical dehumidification rated to 125°F outdoor temperatures.

CAPACITY MULTIPLIER FACTORS			
% of Rated Airflow	-10	Rated	+10
Total BTUH	0.975	1.0	1.02
Sensible BTUH	0.950	1.0	1.05

## //////// INDOOR AIRFLOW CFM @ STATIC PRESSURES - EC BLOWER CONSTANT TORQUE MOTOR WITH ADJUSTMENT SPEEDS

ESP	INDOOR BLOWER PERFORMANCE - 60 HZ - CFM				
	In H2O	Blower and Vent Only	Balanced Climate and Part Load Cooling	Default LO Full Load Cooling and Heating	Optional HI Full Load Cooling and Heating
0"		465/460	330/325	465/460	545/525
.1"		450/435	315/305	450/435	495/470
.15"		435/420	305/290	435/420	465/445
.2"		415/400	285/270	415/400	440/415
.3"		375/355	Not Used	375/355	380/360
.4"		315/305	Not Used	315/305	320/305
.5"		245/245	Not Used	245/245	255/245

Five factory programmed speed taps (torque settings) are available for the indoor blower motor, and are selected through different unit modes of operation. These modes are energized by 24VAC signals from the low voltage terminal block located inside the control panel by a thermostat or other controlling device.

1. Blower and Ventilation Only Speed is the CFM amount for continuous fan and ventilation without a call for cooling.
2. Balanced Climate Speed is the indoor CFM amount for user selectable Balanced Climate operation and optional Mechanical Dehumidification. To use Balanced Climate, remove the jumper between Y1 and Y2 on the low voltage terminal strip. A 2 stage cooling thermostat is then used to control blower airflow stages. Be sure to follow all guidelines provided in the installation manual, and a controls kit that includes a low ambient control (LAC) must be used for Balanced Climate Operation. Balanced Climate can be used for duct free and ducted applications below 0.20"WC ESP total static. Balanced Climate provides increased moisture removal during the cooling cycle, but is not a replacement for optional mechanical dehumidification. Optional mechanical dehumidification provides moisture removal without significantly cooling the space being conditioned. Mechanical dehumidification is highly recommended for applications requiring indoor humidity control for schools, public areas, agricultural, pharmaceutical, and areas with high outdoor humidity and varying indoor heat load.
3. Default LO Cooling and Heating Speed is the indoor CFM amount for cooling operation using the default blower speed tap selection. This speed is labeled as LO on the speed selection terminal strip inside the unit control panel. All units ship with cooling and heating operation at LO cooling and heating speed, and provides the optimal airflow amount for normal use.
4. Optional HI Cooling and Heating Speed is selected manually during unit setup and provides the highest allowable indoor CFM amount. Recommended for high duct static applications. This speed is labeled as HI on the speed selection terminal strip inside the unit control panel.

## //////// SOUND DATA - DBA @ 5 FT. AND 10 FT.\*

DUCT FREE	INDOOR COOLING OPERATION @ 5 FT.	INDOOR COOLING OPERATION @ 10 FT.	OUTDOOR @ 10 FT.
Unit	Standard Grilles	Standard Grilles	Standard Features
W12AB	NA	NA	65.2

## //////// ELECTRICAL SPECIFICATIONS — W\*\*AB SERIES

MODEL	Rated Volts & Phase	No. Field Power Circuits	Single Circuit				Multiple Circuit																	
			③ Minimum Circuit Ampacity	① Maximum External Fuse	② Field Power Wire Size	② Ground Wire	③ Minimum Circuit Ampacity			① Maximum External Fuse or Ckt. Breaker			② Field Power Wire Size			② Ground Wire Size								
							Ckt. A	Ckt. B	Ckt. C	Ckt. A	Ckt. B	Ckt. C	Ckt. A	Ckt. B	Ckt. C	Ckt. A	Ckt. B	Ckt. C						
W12AB-A00, A0Z A03 A05		1	9	15	14	14																		
W12AB-K00 K02	115-1	1	17	30	10	10																		
		1	28	30	10	10																		

///// **ELECTRIC HEAT TABLE - REFER TO ELECTRICAL SPECIFICATIONS FOR AVAILABILITY BY UNIT MODEL**

NOMINAL KW	AT 240V			AT 208V			AT 115V	
	KW	1-PH AMPS	BTUH	KW	1-PH AMPS	BTUH	KW	BTUH
3.0	3.0	15.0	12,285	3.00	13.0	9,230		
5.0	5.0	20.8	17,065	3.75	18.0	12,799		
2.0							18.3	7,510

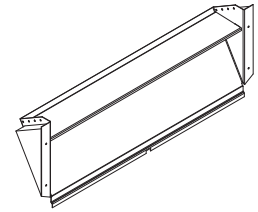
///// **WALL MOUNT™ VENTILATION OPTION SELECTION CHART**

VENT CODE	FIELD INSTALL KIT	UNIT	OPERATION	DESCRIPTION
<b>X</b>	<b>BFAD-1</b>	W12A	Barometric	Air damper provides slight positive room pressure during blower operation, No room air exhaust.
<b>B</b>	<b>BOP-1A</b>	W12A	No Ventilation	Insulated plates used to seal vent intake and exhaust openings.
<b>V</b>	<b>CRVS-1B</b>	W12A	24V On/Off	Vent Provides motorized spring return on/off operation to bring in outdoor air and exhaust room air. No intake hood required. Replaces the motorized fresh air damper.
<b>E</b>	<b>JIFM-1B</b>	W12A	JADE Controller	Partial flow Economizer that uses the JADE controller and included sensors to operate free cooling. Enthalpy or Dry Bulb operation user selectable. No intake hood required.



**“X” Vent Code Option – Standard Fresh Air Damper No Exhaust (BFAD-1)**

The barometric fresh air damper without exhaust is a standard feature on all models. It is installed on the inside of the service door and allows outside ventilation air, up to 25% of the total airflow rating of the unit, to be introduced through the air inlet openings and to be mixed with the conditioned air. The damper opens during blower operation and closes when the blower is off. Adjustable blade stops allow different amounts of outside air to be introduced into the building and can be easily locked closed if required. The room exhaust air path is sealed with an insulated block-off plate.



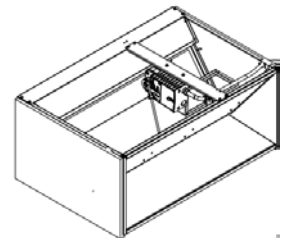
Barometric Fresh Air Damper

**“B” Vent Code Option – Blank Off Plate (BOP-1A)**

Blank off plates are installed on the inside of the service door and over the exhaust opening in the condenser partition. The plate covers the air inlet, which restricts any outside air from entering the unit. The blank off plate option may be utilized in applications where outside air intake is not required by state or local codes.

**“V” Vent Code Option – Commercial Room Ventilator with fixed blade position (CRVS-1A)**

The built-in commercial room ventilator with fixed blade position is internally mounted behind the service door and allows outside ventilation air, up to 50% of the total airflow rating of the unit. It includes a built-in exhaust air damper for room pressurization relief. Blade stops are easily adjustable to set intake airflow. The commercial room ventilator with fixed blade position is a simple and innovative approach to improving the indoor air quality by providing fresh air intake and exhaust capability. The CRV can be activated by indoor blower operation or independently controlled by a thermostat or controller using a 24VAC occupancy or schedule signal. Blade operation is controlled by a on/off spring return motor that closes rapidly when de-energized. Blade seals provide minimal blade leakage.



Commercial Room Ventilator-Fixed

**“E” Vent Code Option – Economizers with JADE® Controller (JIFM)**

The JADE controlled economizer is internally mounted behind the service door and allows outside ventilation air. The JIFM allows up to 50% of the total airflow of the unit. Includes a built-in exhaust air damper for room pressurization relief. The economizer is designed to provide “free cooling” when outside air conditions are cool and dry enough to satisfy cooling requirements without running the compressor. This provides lower operating costs, extended equipment life, and cooling operation down to -40°F outdoor temperatures. The “E” economizer does not require an intake hood.



Economizer

**JADE® Controller Information**

JADE Economizer controls provide Demand Ventilation Control, operational checkout, an easy to read LCD screen, configurable freeze protection, and LCD displayed economizer component failure alarms. Minimum vent position, occupancy ventilation, and 0-10V CO2 input is available for use with select CO2 room sensors. Economizer operation can be controlled by outdoor dry bulb or outdoor enthalpy measurement. When used with a Bard economizer assembly, the JADE controller is able to meet most state and local codes for economizer use.

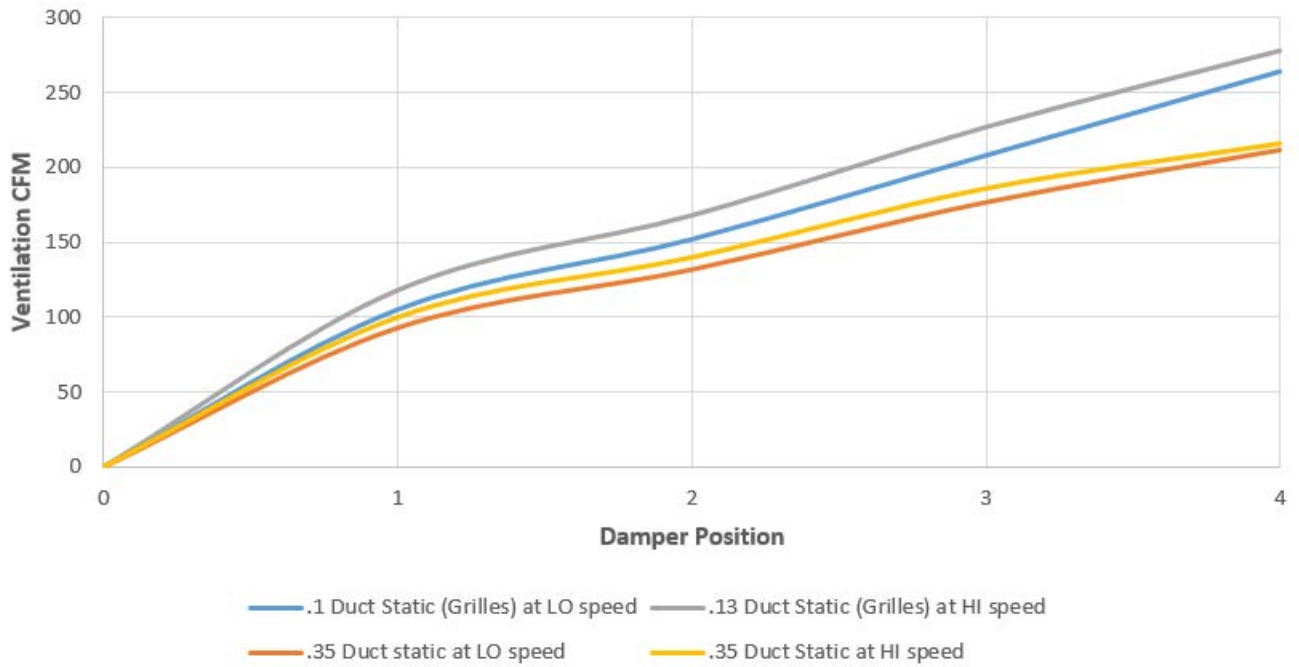


**JADE Controller Specifications:**

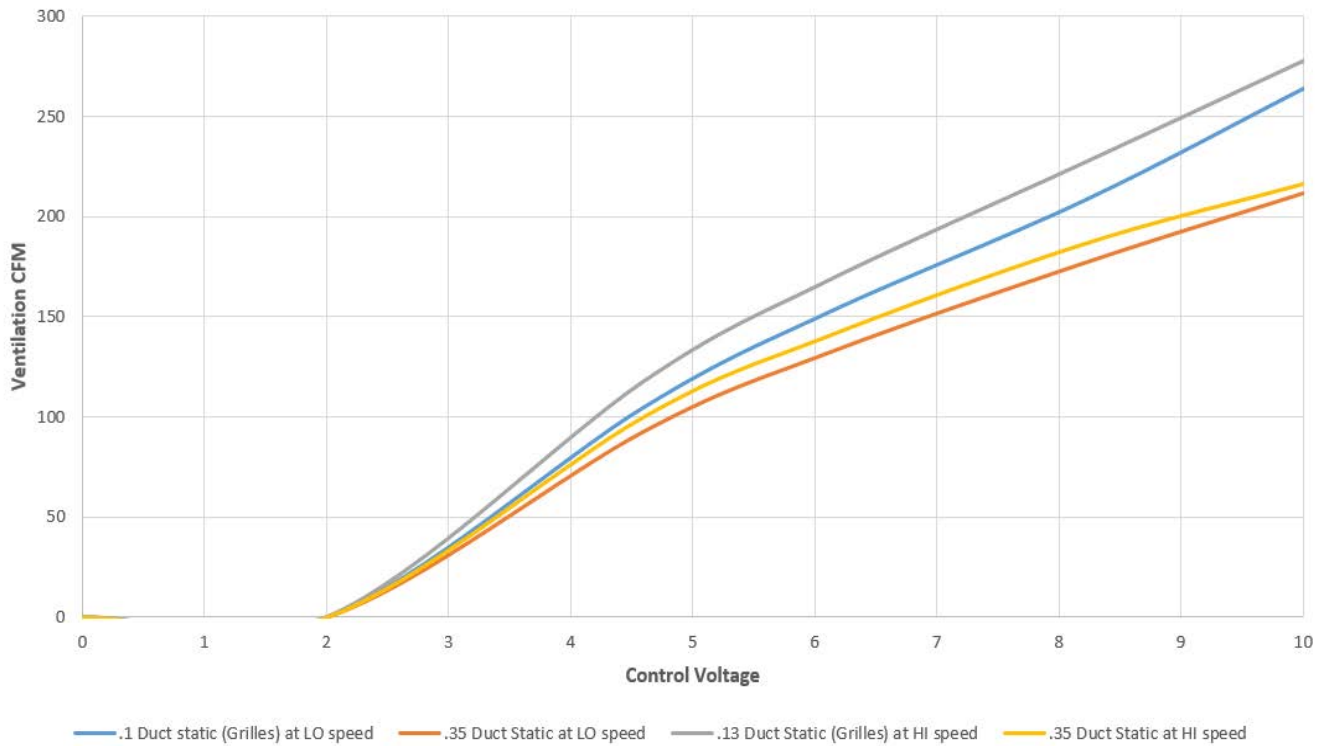
- Operating Humidity Range (% RH) 5 to 95% RH, non-condensing
- Contact Ratings 30 VAC-- 1.5 A Run, 3.5 A Inrush
- Voltage 20 to 30 VAC RMS
- Operating Temperature Range (F) -40 F to +150 F
- Operating Temperature Range (C) -40 C to +65 C
- Approvals, Federal Communications Commission Compliant
- Approvals, CE Compliant
- Complies with California Title 24
- Mixed air and Outdoor Enthalpy Sensor using Sylk Bus.
- Output 2-10 VDC to actuator, Sylk Bus.

“V” (CRVS-1B) and “J” (JIFM-1A) Vent Code Options

CRVS-1B Ventilation Delivery



JIFM-1B Ventilation Delivery



## /////// CABINET AND COIL OPTIONS

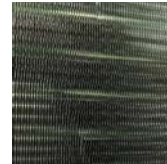
### Cabinet Finish Options

Unit models are available in Beige, White, Buckeye Gray, Desert Brown, and Dark Bronze. Painted cabinet construction is comprised of 20 gauge Zinc coated steel. Parts are cleaned, rinsed, sealed, and dried before a polyurethane primer is applied. The cabinet coating is completed with a baked on textured enamel. The resulting finish is designed to withstand 1000 hours of salt spray tests per ASTM B117-03.

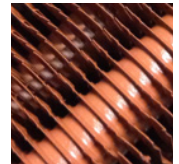


### Green Fin Hydrophilic Evaporator Coils Standard On All Units

Bard WALL MOUNT products include a green protective coating applied to the aluminum fin stock used for the evaporator coil. The evaporator coil coating is hydrophilic (attracts water) and allows for proper condensate drainage along with mild corrosion protection. Resistance to corrosive agents include ammonia, sodium hydroxide, sodium chloride, acidic solutions and solvents.



Hydrophilic  
Green Coil  
(standard)



AeroMarine  
(optional)

### Evaporator and Condenser Coil Technicoat Coating Options

All models utilize a copper/aluminum evaporator and condenser coil. An additional corrosion resistant Technicoat 10-2™ coating may be ordered for the condenser coil (option 1), evaporator coil (option 2) or both evaporator and condenser coils (option 3). Technicoat is a proprietary epoxy-modified phenolic dip coating. Total Immersion ensures complete coverage with no significant loss of thermal efficiency. The 4-step coating system consist of (1) a multi-step cleaning process, (2) chemical etch primer, (3) epoxy-modified phenolic, and (4) phenolic sealer. The result is a corrosion resistant coil that outperforms is less expensive, and is also nearly 3 times lighter than a copper finned coil. ASTM B117 salt spray tests conducted show over 4500 hours with “no fin corrosion or degradation.”

## OPTIONAL DIP COATED EVAPORATOR AND CONDENSER COIL

Bard now offers TECHNICOAT AA, a robust dipped coating option for the evaporator and condenser coil. TECHNICOAT AA has passed all HVAC accelerated tests like salt spray, flexibility and SWAAT 3,000+ hours. It has been tested in the field in the most severe industrial exposure conditions, such as a coastal refinery in Saudi Arabia, mining facilities in central Africa, and various Pacific islands. TECHNICOAT AA did not show any deterioration after multiple years of function with coils directly exposed to such harsh environmental conditions. The TECHNICOAT AA coating system is based on modified acrylic waterborne binders with high elongation properties. Aluminum pigmentation has been added to establish exceptional heat transfer, chemical resistance, and UV blocking properties. Corrosion resistance reaches >10,000+ hours in ASTM B-117 and >3.120 hours in SWAAT testing. Coating is gray in color.

### TEMPERATURE RESISTANCE:

- Maximum up to 248°F (120°C), 480°F (250°C) peak exposure
- Minimum -40°F (-40°C)

### CHEMICAL RESISTANCE:

- Alkalines including Ammoniac solution, Potassium Hydroxide, Calcium Hydroxide, and Magnesium Hydroxide.
- Alcohols including Isopropanol, Butanol, Amyl Alcohol, Benzyl Alcohol, Diacetone Alcohol, Glycerine, Propanol, and Pentanol
- Aliphatic Hydrocarbons including White Spirit, Shellsol, Bitumen, Isopar G, and Paraffin.
- Amines including Triethanolamine, Aniline Sulphate, Hexamethylenetetraamine, Phenylamine, Triethylamine, and Methylamine.
- Inorganic Compounds including Hydrogen Carbonate, Hydrogen Sulfide, Nitrous Acid, Sulphuric Acid, and Selenic Acid.
- Aromatic Hydrocarbons including Xylene, Toluene, Asphalt, Anthracene, Benzapherene, Gumlac, Benzine, and Naphtha.
- Fuels and Oils including Diesel, Fuel Oil, Petrol, Super Petrol, Lubricating Oils, Kerosene, Spheric Oils, LPG, and Mineral Oil.
- Ethers including Enthrific Oils, Vegetable Oils, Butane, Acetylene, and Methane.
- Halogenated Hydrocarbons including Amyl Acetate, Propyl Acetate, Ethyl Oxalate, Butyl Acetate, and Butyl Propionate.
- Softeners including Palatinol C, Chloraparaffine 5XX, Dioctylphosphate, Desavin, Mesamol, and Dibutylphosphate.
- Organic Compounds including Benzoic Acid, Lactic Acid, Phenols, Fatty Acids, Malic Acid, and Picric Acid.
- Salts and water solutions including Sodium, Potassium, Calcium, Aluminum, Ammonium, Barium, Copper, Lead, and Lithium.
- Many other agents including Phosphor, Zinc, Glucose Syrup, Sulfur, Urea, Menthol, Antimony, Hydrogen, Rubber, and Shellac.

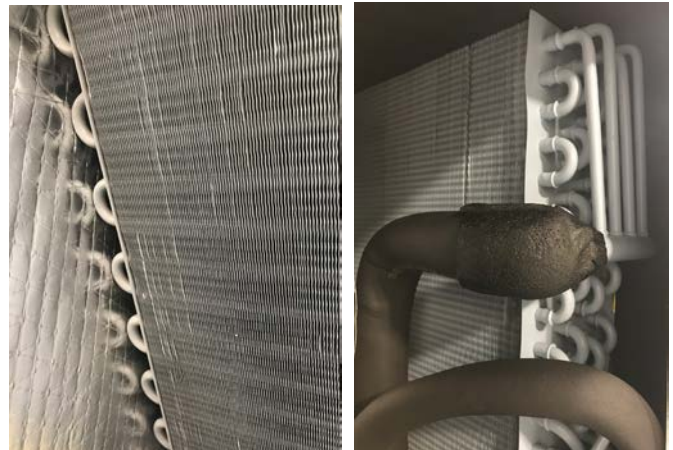
Contact your local Bard distributor or representative for a list of all chemicals and chemical resistance information.

### SPECIAL PROPERTIES:

- Anti-Odor
- Hydrophilic / Hydrophobic
- Anti-Corrosive

### EXPOSURE CONDITIONS INCLUDE:

Food Processing & Storage, Airports, Office Buildings, Hotels, Schools, Warehouses, Water Treatment, Breweries, Paper Mills, Refineries, Power Plants, Meat Processing Industries, Automotive Industries and other locations near shorelines and salt water.



## WALL MOUNT™ FACTORY INSTALLED CONTROLS OPTIONS

Factory installed controls are provided by Bard to enhance a WALL MOUNT product before it is shipped. All WALL MOUNT products are shipped with a auto-reset high pressure switch and an auto-reset low pressure switch to help protect refrigeration components. A compressor control module with adjustable voltage protection, delay on make and break, and high/low pressure diagnostics is also standard

CONTROL CODE	DESCRIPTION OF FACTORY INSTALLED COMPONENTS
X	Hi Pressure Switch, Low Pressure Switch, Compressor Control Module.
E	Hi Pressure Switch, Low Pressure Switch, Compressor Control Module, <b>Low Ambient Control</b>
J	Hi Pressure Switch, Low Pressure Switch, Compressor Control Module, <b>Low Ambient Control, Alarm Relay</b>

## WALL MOUNT™ FIELD INSTALLED KITS

Field installed kits provide accessories that can be installed in the field. Required components, wires, enclosures, screws, and instructions that are needed are provided within the kit.

CONTROL CODE	KIT PART NO.	UNITS USING KIT	DESCRIPTION OF FIELD INSTALLED KIT
E	CMA-39	W12AB	Low Ambient Control allows compressor cooling between 0°F and 50°F outdoor temp. - modulating

## ////// 24VAC LOW VOLTAGE TERMINAL DESIGNATIONS

Bard WALL MOUNT products provide 24VAC power to controllers and thermostats. They also are able to receive 24VAC signals from a controlling device. The V controls option provides additional sensors for use with a field supplied DDC controls systems. The information below provides terminal designations and how they are used in the WALL MOUNT unit. More information on low voltage connections and operational sequences is provided in the unit installation manual.

Terminal	Unit	Description
<b>R</b>	All Units	24VAC low voltage output (HOT Terminal)
<b>RT</b>	All Units	RT terminal has jumper to R terminal. When jumper is removed, R and RT can be used with normally closed contacts for fire/smoke detector for unit shutdown.
<b>C</b>	All Units	Ground Terminal
<b>G</b>	All Units	Indoor fan input
<b>Y1</b>	All Units	1st Stage cooling input. Economizer stage when used. Balanced Climate stage when used.
<b>Y2</b>	All Units	2nd Stage cooling input. Compressor cooling stage when Econ or Balanced Climate is used.
<b>B/W1</b>	All Units	1st Stage electric heat
<b>A</b>	Vent option units only	Ventilation option input. Calls for occupied vent air intake for CRV, ERV, ECON
<b>L</b>	All Units	24VAC Alarm active output
<b>1</b>	J Control Opt.	Alarm relay Normally Closed Contract
<b>2</b>	J Control Opt.	Alarm relay Normally Open Contact
<b>3</b>	J Control Opt.	Alarm Relay Common Contact

## //////// OPTIONAL CONTROLS AND KIT COMPONENT DEFINITIONS

**Hi Pressure Control (HPC)** - The high pressure control provides a means of protecting the refrigeration circuit when high system pressures occur. It is a auto-reset device that is connected to the Compressor Control Module. When activated, the compressor is disabled until pressures reach an acceptable level. If activated twice in the same cooling call, compressor operation is locked out until the cooling call is interrupted.

**Low Pressure Control (LPC)** - The low pressure control provides a means of protecting the refrigeration circuit when extremely low system pressures occur. It is a auto-reset device that is connected to the Compressor Control Module. When activated, the compressor is disabled until pressures reach an acceptable level.

**Compressor Control Module (CCM)** - The compressor control module locks out compressor operation to protect the refrigeration system based on signals from the hi and low pressure switches. It provides diagnostics to indicate when a refrigerant pressure event occurs, and also sends a signal to the alarm relay. Low incoming unit power protection suspends compressor operation when incoming voltage is too low. Suspending compressor operation avoids reverse scroll operation. The low voltage feature is adjustable or can be disabled. An adjustable delay on break timer is provided. Delay on make is 2 mins. plus 10% of delay on break setting.

**Alarm Relay (ALR)** - The alarm relay provides a set of NO and NC pilot duty contacts that operate when the compressor control module locks out compressor operation because of a high or low system refrigerant pressure event.

**Low Ambient Control (LAC)** - The low ambient control pressure sensor is attached to the suction line of the system, and monitors low side system pressure. Operation of the LAC occurs as outdoor temperatures drop below the 65°F to 50°F range. On/Off and modulating controls are used. On/Off LAC operation cycles the condenser fan operation based on outdoor temperature. Modulating LAC operation is factory adjusted and slows the condenser fan speed RPM based on outdoor temperature.

# ////// CABINET AND CLEARANCE DIMENSIONS - W12A UNITS

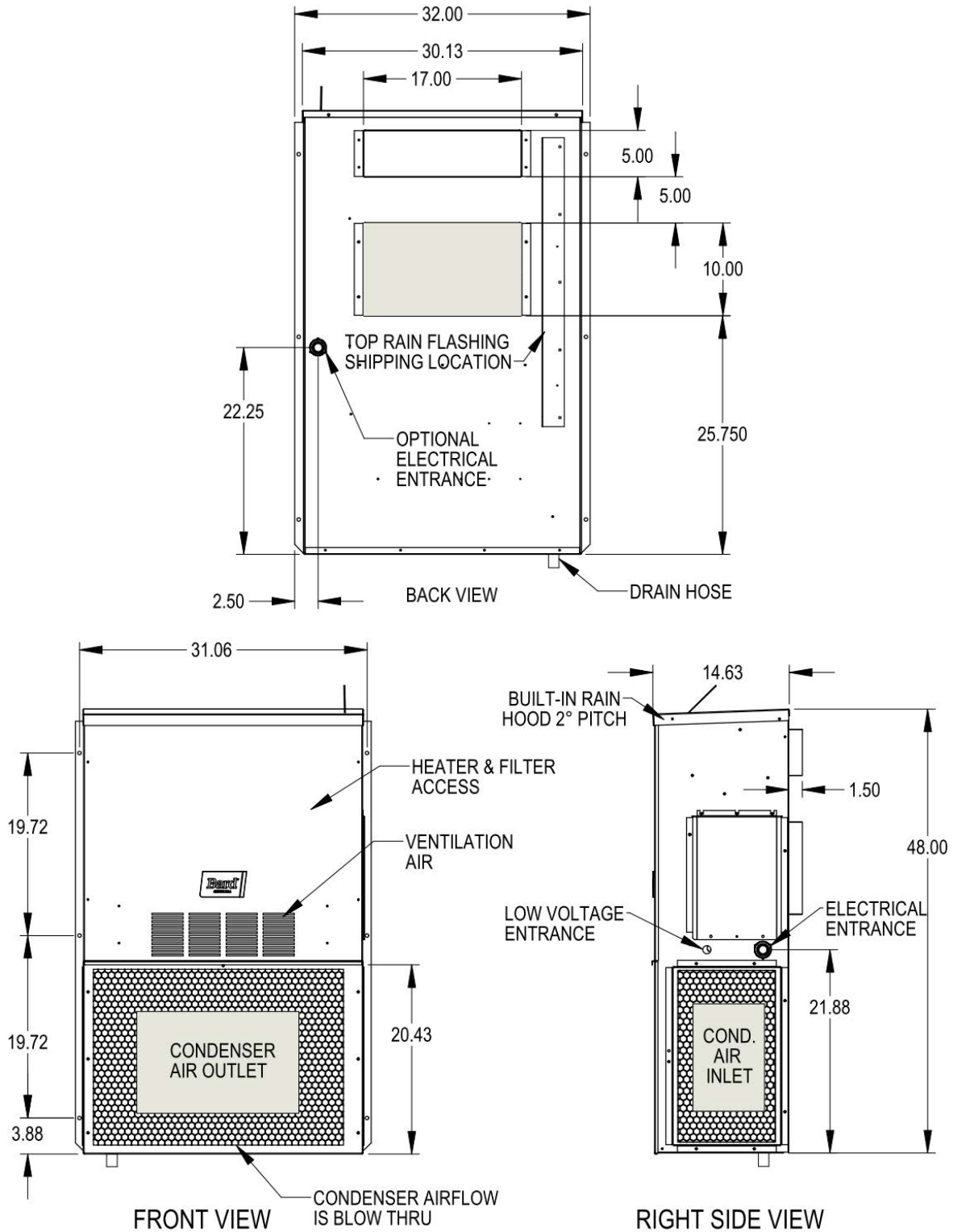
## CLEARANCES REQUIRED FOR SERVICE ACCESS AND ADEQUATE CONDENSER INLET AIRFLOW

MODELS	LEFT SIDE	RIGHT SIDE
W12AB	15"	20"

## MINIMUM CLEARANCES REQUIRED TO COMBUSTIBLE MATERIALS

MODELS ①	SUPPLY AIR DUCT FIRST THREE FEET	CABINET
W12AB	0"	0"

① Refer to the Installation Manual for more detailed information.



MIS-3599

## ////// NON-DUCTED SUPPLY AND RETURN GRILLES

Supply and return louver grilles are of a brushed aluminum finish. 2" flange versions are recommended for standard installations to allow grille attachment when large wall openings are present.

GRILLE NO.	UNITS USING GRILLE	DESCRIPTION OF LOUVER GRILLE
<b>SG-1W</b>	W12AB	5" x 17" with 2" Flange 4 way deflection supply grille. <b>Use for standard installations</b>
<b>RG-1W</b>	W12AB	10" x 17" with 2" Flange return grille. <b>Use for standard installations.</b>
<b>RFG-1W</b>	W12AB	<b>10" x 17" with 2" Flange return filter grille.</b> <b>Use for standard installations.</b>



## CONTROLLER, THERMOSTAT, HUMIDISTAT AND CO2 VENTILATION CONTROL OPTIONS

Bard provides a wide variety of controllers for equipment cooling, thermostats, for equipment and comfort cooling, humidistats for dehumidification units, and CO2 sensors for ventilation control. Lockable thermostat covers are available for applications where security or supervisory control is desired.

CONTROLLER	OPERATION	DESCRIPTION
MC4002	1 to 2 Unit Lead/Lag Controller	Standard unit Lead/Lag Controller with remote alarming capability. Optional alarm board and SNMP or web page communication board. On board temperature sensor that can be remote mounted. Can use up to (2) remote temperature sensors.
MC5300	1 to 3 Unit Lead/Lag Controller	Advanced multi-unit Lead/Lag Controller with remote alarming capability. All models have Modbus communication and web pages. Optional alarm board with NO/NC contacts. On board temperature and humidity sensor that can be remote mounted. Can use up to (2) remote temperature sensors.
MC5600	1 to 6 Unit Lead Lag Controller	Advanced multi-unit Lead/Lag Controller with remote alarming capability. All models have Modbus communication and web pages. Optional alarm board with NO/NC contacts. On board temperature and humidity sensor that can be remote mounted. Can use up to (2) remote temperature sensors.

THERMOSTAT	OPERATION	DESCRIPTION
8403-060	3 Heat/3 Cool	Programmable or Nonprogrammable, ventilation output, dehumidification operation
8403-089	1 Heat/1 Cool	Temp. Settings per Day 4, 2, 1, 0 Programs per Week 7, 5-2, 5-1-1 or Nonprogrammable
8403-090	2 Heat/2 Cool	Temp. Settings per Day 4, 2, 1, 0 Programs per Week 7, 5-2, 5-1-1 or Nonprogrammable
8403-091	1 Heat/1 Cool	Easy to use, Nonprogrammable. FEMA use
8403-092	2 Heat/2 Cool	Programmable or Nonprogrammable, ventilation output, Wi-Fi
8403-095	2 Heat/1 Cool	Temp. Settings per Day 4, 2, 1, 0 Programs per Week 7, 5-2, 5-1-1 or Nonprogrammable

HUMIDISTAT	OPERATION	DESCRIPTION
8403-038	Humidity %RH	Easy to use w/SPDT switching. Ratings: Pilot duty 50VA @24V, 120VA @ 120/240V
8403-047	Humidity %RH	Electronic with display, EEPROM memory, lockable keypad, humidity sensor calibration

CO2 CONTROL	OPERATION	DESCRIPTION
S8403-096	CO2 PPM	CO2 ventilation control with digital display. On/Off or modulating ventilation operation

THERMOSTAT COVER*	SIZE	DESCRIPTION
8405-003	(Inside) 5-1/16" H x 6-1/16" W (Outside) 6-1/2" H x 7-1/2" W x 2-15/16" D	Clear acrylic with ventilation. Fits all thermostats except 8403-060
8405-005	(Inside) 5-7/8" H x 8-3/8" W (Outside) 7-1/4" H x 9-3/4" W x 3-3/8" D	Clear acrylic with ventilation. Fits all thermostats.
8405-006	(Inside) 5-1/16" H x 6-1/16" W (Outside) 6-3/8" H x 7-3/8" W x 2-7/8" D	Clear acrylic with ventilation. Fits all thermostats except 8403-060
8405-007	(Inside) 5-7/8" H x 8-3/8" W (Outside) 7-1/8" H x 9-5/8" W x 3-1/4" D	Beige painted steel cover with ventilation. Fits all thermostats.

\* Thermostat covers include ventilation, but may effect temperature control reaction time. If security control lockout is needed, the 8403-060 thermostat provides input control lockout features.



Bard Manufacturing Company, Inc.  
1914 Randolph Dr., Bryan, OH 43506  
419-636-1194

[www.bardhvac.com](http://www.bardhvac.com)

Due to our continuous product improvement policy,  
all specifications subject to change without notice.