



THE MULTI-TEC™ WALL-MOUNT™ AIR CONDITIONERS – 10 EER (50 HZ) WITH LOGIC BOARD



Models W24AAP to W72ABP Right Side Control Panel
Models W24LAP to W72LBP Left Side Control Panel
22,400 Btuh (6.56 KW) – 64,700 Btuh (18.96 KW)

**FOR EXPORT
ONLY**

The MULTI-TEC™ Wall-Mount™ Air Conditioner utilizes PLC (Programmable Logic Control) technology to allow multiple units to operate connected to a single LC6000 controller. When installed with an optional 100% free cooling economizer, the unit will supply full-rated airflow in free cooling mode with the ability to exhaust unconditioned indoor air without the need for additional relief openings in the structure.

MULTI-TEC™ WALL-MOUNT™ Features — All Models

PLC Logic Board:

Unit control panels are equipped with PLC Logic Boards that allow multiple unit operation with a single controller. Unit connection to the LC controller is accomplished via 2 wire with drain (ground).

Dirty Filter Switch:

Field adjustable with alarm signal.

Advanced Unit Diagnostics:

When connected to the TEC-EYE™ diagnostic tool, the unit PLC logic board is able to display stored alarms and easy-to-read diagnostic information. The TEC-EYE™ also displays unit model and serial number.

Remote Monitoring:

Bard-Link™ web interface with use of LC Controller.

Free Cooling Unit:

Full flow free cooling unit economizer with positive shutoff sealing as optional equipment. Proper operation is verified through alarm notifications.

NOTE: All of the above Features are unique to the MULTI-TEC™.



**MULTI-TEC™
WALL-MOUNT™ Unit**

Standard Features — All Models

Copper Tube / Aluminum Fin Coils:

Grooved copper tubing and enhanced aluminum fins provide maximum heat transfer and high energy efficiency. Optional phenolic-coated coils are also available.

Twin Blowers:

Move air quietly with standard dual blower configuration on slide tracks for service.

R-410A Refrigerant:

Designed with R-410A (HFC) non-ozone depleting refrigerant in compliance with the Montreal protocol and 2010 EPA requirements.

Galvanized 20 Gauge Zinc Coated Steel Cabinet:

Cleaned, rinsed, sealed and dried before the polyurethane primer is applied. The cabinet is handsomely finished with a baked on textured enamel, which allows it to withstand 1000 hours of salt spray tests per ASTM B117-03. Condenser section and entire cabinet coatings are also available.

Foil Faced Insulation:

Standard on all units.

A/C Unit Controls:

All unit controls rated at -40C/-40F.

Full Length Mounting Brackets:

Built into cabinet for improved appearance and easy installation.
NOTE: Bottom mounting bracket included to assist in installation.

Liquid Line Filter Drier:

Standard on all units. Protects system against moisture.

Compressor Control Module:

Standard on all units. Built-in off-delay timer adjustable from 30 seconds to 5 minutes. 2-minute on-delay if power interrupt. 120-second bypass for low pressure control, and both soft and manual lockouts for high and low pressure controls. Alarm output for alarm relay.

Electrical Components:

Are easily accessible for routine inspection and maintenance through side service panel opening. Features a lockable, hinged access cover to the circuit breaker.

24V Transformer:

100VA with circuit breaker

Electric Heat Strips:

Features an automatic limit and thermal cut-off safety control. Heater packages are factory installed.

One-Inch, MERV 2 Air Filters:

Are standard equipment. All models include tight-sealing U-channel filter bracket to minimize air bypass around the filter.

Condenser Fan and Motor

Shroud Assembly:

Slides out for easy access.

Built-In Circuit Breakers:

HACR-type circuit breakers are standard for AC power supply.

Slope Top:

Standard feature for water run-off.

Top Rain Flashing:

Standard feature on all models.

High & Low Pressure Switches are Auto-Reset:

Standard on all units. Built-in lock-out circuit resets from the Bard-Link™ Controller. Provides commercial quality protection to the compressor.

Low Ambient Control:

Fan cycling LAC standard on all models. Screw-on fitting design for ease of service.

Evaporator Freeze Protection:

Standard on all units.

Phase Rotation Monitor (3-Phase Units Only):

Protects against reverse rotation if AC power supply is not properly connected.



LC6000 Controller



Bard is an
ISO 9001:2008
Certified Manufacturer

- Certified to ANSI/ARI Standard 390-2003 for SPVU (Single Package Vertical Units).
- Complies with efficiency requirements of ASHRAE/IESNA 90.1-2013.
- 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.

Capacity and Efficiency Ratings

MODELS	W24AAP W24LAP	W30AAP W30LAP	W36AAP W36LAP	W42AAP W42LAP	W48AAP W48LAP	W60AAP W60LAP	W72ABP W72LBP
Cooling Capacity BTUH ①	22,400	27,300	33,300	37,800	43,700	50,100	64,700
Cooling Capacity KW	6.56	8.00	9.75	11.07	12.80	14.68	18.96
EER	10.00	10.00	10.00	10.00	10.00	10.00	10.00

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 22,400 Btuh (6.56 KW) — 33,300 Btuh (9.75 KW)

MODELS	W24AAPD	W24AAPF W24LAPF	W30AAPD	W30AAPF W30LAPF	W36AAPD	W36AAPE	W36AAPF W36LAPF
Electrical Rating – 50 Hz	240/220 - 1	415/380 - 3 ①	240/220 - 1	415/380 - 3 ①	240/220 - 1	220/200 - 3	415/380 - 3 ①
Operating Voltage Range	198-254	342-456	198-254	342-456	198-254	180-242	342-456
Compressor--Circuit A							
Voltage	240/220	415/380	240/220	415/380	240/220	220/200	415/380
Rated Load Amps	7.9/9.1	3.7/4.3	8.1/9.2	3.1/3.6	12/13.5	9.9/11.1	4.5/5.1
Branch Circuit Selection Current	10.9	5.1	12.2	4.7	16.0	13.2	6.0
Lock Rotor Amps	60/60	28/28	67/67	38/38	87/87	95/95	46/46
Compressor Type	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Fan Motor & Condenser							
Fan Motor--HP--RPM	1/5 - 1090	1/5 - 1090	1/5 - 1075	1/5 - 1075	1/5 - 1075	1/5 - 1075	1/5 - 1075
Fan Motor--Amps	1.2	1.2	1.5	1.5	1.5	1.5	1.5
Fan--DIA m ³ /s	458/0.68	458/0.68	508/0.91	508/0.91	508/0.83	508/0.83	508/0.83
Blower Motor & Evap.							
Blower Motor--HP-RPM-SPD	1/6-1100-1	1/6-1100-1	1/3-1100-2	1/3-1100-2	1/3-1100-2	1/3-1100-2	1/3-1100-2
Blower Motor--Amps	1.0	0.8	2.1	2.1	2.1	2.1	2.1
m ³ /s Cooling & E.S.P. (pa) w/Filter (Rated-Wet Coil)	0.32/75	0.32/75	0.39/112	0.39/112	0.43/75	0.43/75	0.43/75
Filter Sizes (mm) STD.	405x635x25	405x635x25	405x765x25	405x765x25	405x765x25	405x765x25	405x765x25
Basic Unit Weight-LBS. (Kg)	330 (150)	330 (150)	345 (157)	345 (157)	372 (169)	372 (169)	372 (169)
Barometric Fresh Air Damper	3.5 (1.588)	3.5 (1.588)	4.0 (1.814)	4.0 (1.814)	4.0 (1.814)	4.0 (1.814)	4.0 (1.814)
Blank-Off Plate	1.0 (0.454)	1.0 (0.454)	1.0 (0.454)	1.0 (0.454)	1.0 (0.454)	1.0 (0.454)	1.0 (0.454)
Economizer	69.0 (31.30)	69.0 (31.30)	75.0 (34.02)	75.0 (34.02)	75.0 (34.02)	75.0 (34.02)	75.0 (34.02)
Shipping Weight --LBS. (Kg)	410 (186)	410 (186)	360 (163)	360 (163)	385 (175)	385 (175)	385 (175)

Specifications 37,800 Btuh (11.07 KW) — 64,700 Btuh (18.95 KW)

MODELS	W42AAPE	W42AAPF W42LAPF	W48AAPE	W48AAPF W48LAPF	W60AAPE	W60AAPF W60LAPF	W72ABPF W72LBPF
Electrical Rating – 50 Hz	220/200 - 3	415/380 - 3 ①	220/200 - 3	415/380 - 3 ①	220/200 - 3	415/380 - 3 ①	415/380 - 3 ①
Operating Voltage Range	180-242	342-456	180-242	342-456	180-242	342-456	342-440
Compressor--Circuit A							
Voltage	220/200	415/380	220/200	415/380	220/200	415/380	415/380
Rated Load Amps	10.2/11.4	4.6/5.1	17.3/19.6	5.1/5.7	14.9/15.8	7.1/7.6	8.0/8.8
Branch Circuit Selection Current	13.6	6.1	14.5	6.3	15.8	7.6	10.6
Lock Rotor Amps	80.7/80.7	43/43	94/94	52/52	111/111	54/54	74/74
Compressor Type	Scroll	Scroll	Scroll	Scroll	Recip.	Recip.	Scroll
Fan Motor & Condenser							
Fan Motor--HP--RPM	1/3 - 825	1/3 - 825	1/3 - 825	1/3 - 825	1/3 - 825	1/3 - 825	1/3 - 950
Fan Motor--Amps	2.6	2.6	2.6	2.6	2.5	2.5	4.0
Fan--DIA m ³ /s	610/1.10	610/1.10	610/1.13	610/1.13	610/1.17	610/1.17	610/1.51
Blower Motor & Evap.							
Blower Motor--HP-RPM-SPD	1/3-985-2	1/3-985-2	1/3-985-2	1/3-985-2	1/2-1070-2	1/2-1070-2	3/4-1035-2
Blower Motor--Amps	2.3	2.3	2.3	2.3	3.5	3.5	6.3
m ³ /s Cooling & E.S.P. (pa) w/Filter (Rated-Wet Coil)	0.51/100	0.51/100	0.60/87	0.60/87	0.68/75	0.68/75	0.76/62
Filter Sizes (mm) STD.	508x765x25	508x765x25	508x765x25	508x765x25	508x765x25	508x765x25	508x765x25
Basic Unit Weight-LBS. (Kg)	460 (209)	460 (209)	470 (213)	470 (213)	537 (244)	537 (244)	537 (244)
Barometric Fresh Air Damper	4.5 (2.041)	4.5 (2.041)	4.5 (2.041)	4.5 (2.041)	4.5 (2.041)	4.5 (2.041)	4.5 (2.041)
Blank-Off Plate	1.0 (0.454)	1.0 (0.454)	1.0 (0.454)	1.0 (0.454)	1.0 (0.454)	1.0 (0.454)	1.0 (0.454)
Economizer	91.5 (41.50)	91.5 (41.50)	91.5 (41.50)	91.5 (41.50)	91.5 (41.50)	91.5 (41.50)	91.5 (41.50)
Shipping Weight --LBS. (Kg)	475 (215)	475 (215)	485 (220)	485 (220)	550 (250)	550 (250)	550 (250)

① 415/380-3 electrical ratings are 3-phase wye (star) systems requiring three (3) phase legs plus neutral and ground.

NOTE: The indoor & outdoor motors and 24V transformer primary are connected at 240V derived from one (1) phase leg to neutral.

This is internally connected and no field wiring required.

Cooling Application Data - Outdoor Temperature ①② Btuh (KW)

Model	Return Air (DB/WB) ③	Cooling Capacity	75°F (23.9°C)	85°F (29.4°C)	95°F (35.0°C)	105°F (40.6°C)	115°F (46.1°C)	125°F (51.7°C)
W24AAP W24LAP	75/62°F (23.9/16.7°C)	Total Cooling Sensible Cooling	25400 (7.44) 19900 (5.83)	22200 (6.50) 17900 (5.24)	21900 (6.42) 16500 (4.83)	17700 (5.18) 15500 (4.54)	16200 (4.74) 15000 (4.39)	15200 (4.45) 14500 (4.25)
	80/67°F (26.7/19.4°C)	Total Cooling Sensible Cooling	27100 (7.94) 19300 (5.65)	24600 (7.20) 17700 (5.18)	22400 (6.56) 16600 (4.86)	20800 (6.09) 15900 (4.66)	19400 (5.68) 15500 (4.54)	18400 (5.39) 15500 (4.54)
	85/72°F (29.4/22.2°C)	Total Cooling Sensible Cooling	32300 (9.46) 19800 (5.80)	28300 (8.29) 17800 (5.21)	25000 (7.32) 16200 (4.74)	22400 (6.56) 15000 (4.39)	20400 (5.97) 14200 (4.16)	19000 (5.56) 13800 (4.04)
W30AAP W30LAP	75/62°F (23.9/16.7°C)	Total Cooling Sensible Cooling	29600 (8.67) 22300 (6.53)	26500 (7.76) 21000 (6.15)	23800 (6.97) 19700 (5.77)	21600 (6.33) 18800 (5.51)	19600 (5.74) 17900 (5.24)	17900 (5.24) 17200 (5.04)
	80/67°F (26.7/19.4°C)	Total Cooling Sensible Cooling	31600 (9.25) 21500 (6.30)	29400 (8.61) 20700 (6.06)	27300 (8.00) 19900 (5.83)	25400 (7.44) 19300 (5.65)	23500 (6.88) 18600 (5.45)	21800 (6.38) 18200 (5.33)
	85/72°F (29.4/22.2°C)	Total Cooling Sensible Cooling	37700 (11.04) 22100 (6.47)	33800 (9.90) 20800 (6.09)	30400 (8.90) 19500 (5.71)	27400 (8.02) 18300 (5.36)	24700 (7.23) 17200 (5.04)	22400 (6.56) 16100 (4.72)
W36AAP W36LAP	75/62°F (23.9/16.7°C)	Total Cooling Sensible Cooling	36000 (10.54) 26500 (7.76)	32100 (9.40) 24800 (7.26)	28900 (8.46) 23300 (6.82)	26400 (7.73) 22300 (6.53)	24400 (7.15) 21400 (6.27)	23000 (6.74) 20900 (6.12)
	80/67°F (26.7/19.4°C)	Total Cooling Sensible Cooling	38400 (11.25) 25700 (7.53)	35600 (10.43) 24500 (7.18)	33300 (9.73) 23500 (6.88)	31200 (9.14) 22800 (6.68)	29400 (8.61) 22300 (6.53)	28000 (8.20) 22000 (6.44)
	85/72°F (29.4/22.2°C)	Total Cooling Sensible Cooling	45700 (13.38) 26300 (7.70)	40900 (11.98) 24600 (7.20)	36900 (10.81) 23100 (6.77)	33600 (9.84) 21800 (6.38)	30900 (9.05) 20500 (6.00)	28800 (8.43) 19400 (5.68)
W42AAP W42LAP	75/62°F (23.9/16.7°C)	Total Cooling Sensible Cooling	39700 (11.63) 30900 (9.05)	36200 (10.6) 29400 (8.61)	33000 (9.66) 28200 (8.26)	30000 (8.79) 26900 (7.88)	27200 (7.97) 25600 (7.50)	24500 (7.18) 24300 (7.12)
	80/67°F (26.7/19.4°C)	Total Cooling Sensible Cooling	42400 (12.42) 30000 (8.79)	40200 (11.77) 29200 (8.55)	37800 (11.07) 28400 (8.32)	35400 (10.37) 27500 (8.05)	32600 (9.55) 26600 (7.79)	29800 (8.73) 25600 (7.50)
	85/72°F (29.4/22.2°C)	Total Cooling Sensible Cooling	50500 (14.79) 30700 (8.99)	46200 (13.53) 29400 (8.61)	42000 (12.3) 27900 (8.17)	38200 (11.19) 26300 (7.7)	34300 (10.05) 24500 (7.18)	30700 (8.99) 22700 (6.65)
W48AAP W48LAP	75/62°F (23.9/16.7°C)	Total Cooling Sensible Cooling	46000 (13.47) 35300 (10.34)	41900 (12.27) 33600 (9.84)	38100 (11.16) 32100 (9.40)	34600 (10.13) 30400 (8.90)	31400 (9.20) 29000 (8.49)	28300 (8.29) 27400 (8.02)
	80/67°F (26.7/19.4°C)	Total Cooling Sensible Cooling	49100 (14.38) 34200 (10.02)	46600 (13.65) 33300 (9.75)	43700 (12.8) 32400 (9.49)	40800 (11.95) 31300 (9.17)	37700 (11.04) 30200 (8.84)	34400 (10.07) 28900 (8.46)
	85/72°F (29.4/22.2°C)	Total Cooling Sensible Cooling	58500 (17.13) 35000 (10.25)	53500 (15.67) 33400 (9.78)	48600 (14.23) 31700 (9.28)	44000 (12.89) 29800 (8.73)	39600 (11.6) 27800 (8.14)	35400 (10.37) 25600 (7.5)
W60AAP W60LAP	75/62°F (23.9/16.7°C)	Total Cooling Sensible Cooling	59900 (17.54) 45600 (13.36)	53100 (15.55) 42500 (12.45)	46800 (13.71) 39400 (11.54)	41300 (12.10) 36600 (10.72)	36100 (10.57) 34000 (9.96)	31200 (9.14) 32200 (9.43)
	80/67°F (26.7/19.4°C)	Total Cooling Sensible Cooling	63900 (18.71) 44300 (12.97)	58900 (17.25) 42000 (12.30)	50100 (14.68) 39700 (11.63)	48600 (14.23) 37500 (10.98)	43400 (12.71) 35400 (10.37)	38000 (11.13) 33300 (9.75)
	85/72°F (29.4/22.2°C)	Total Cooling Sensible Cooling	76100 (22.29) 45400 (13.3)	67700 (19.83) 42200 (12.36)	59700 (17.48) 39000 (11.42)	52500 (15.38) 35800 (10.48)	45500 (13.33) 32500 (9.52)	39100 (11.45) 29400 (8.61)
W72ABP W72LBP	75/62°F (23.9/16.7°C)	Total Cooling Sensible Cooling	67200 (19.68) 50600 (14.82)	61700 (18.07) 47700 (13.97)	56300 (16.49) 45100 (13.21)	51100 (14.97) 42500 (12.45)	45900 (13.44) 40300 (11.8)	40800 (11.95) 38300 (11.22)
	80/67°F (26.7/19.4°C)	Total Cooling Sensible Cooling	71800 (21.03) 49100 (14.38)	68600 (20.09) 47300 (13.85)	64700 (18.95) 45500 (13.33)	60300 (17.66) 43600 (12.77)	55300 (16.20) 41900 (12.27)	49700 (14.56) 40300 (11.80)
	85/72°F (29.4/22.2°C)	Total Cooling Sensible Cooling	85500 (25.04) 50300 (14.73)	78800 (23.08) 47500 (13.91)	71800 (21.03) 44600 (13.06)	65000 (19.04) 41600 (12.18)	58100 (17.02) 38600 (11.3)	51200 (15.) 35600 (10.43)

- ① Below 65°F (18.3C), unit requires a factory or field installed low ambient control.
- ② Outdoor temperatures given are for air entering condenser section inlets. Follow clearances given to ensure proper condenser airflow.
- 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 - R410A

UNIT	Std. Unit - Lbs.	Dehum. Units - Lbs.
W24AAP/LAP - 10 EER Right & Left A/C	4.25	N/A
W30AAP/LAP - 10 EER Right & Left A/C	3.875	N/A
W36AAP/LAP - 10 EER Right & Left A/C	4.3125	N/A
W42AAP/LAP - 10 EER Right & Left A/C	4.8125	N/A
W48AAP/LAP - 10 EER Right & Left A/C	6.375	N/A
W60AAP/LAP - 10 EER Right & Left A/C	7.3125	N/A
W72ABP/LBP - 10 EER Right & Left A/C	8.8125	N/A

Electrical Specifications

MODEL	Rated Volts & Phase	Operating Voltage Range	No. Field Power Circuits	② Minimum Circuit Amps	① Maximum External Fuse or Circuit Breaker
W24AAPDOZ D05 D08	240/220-1	198-254	1	16	20
			1	28	30
			1	44	45
W24AAP/LAPFOZ F05	415/380-3 ③	342-456	1	9	15
			1	11	15
W30AAPDOZ D05 D10	240/220-1	198-254	1	19	30
			1	29	30
			1	55	60
W30AAPFOZ F07 F12	415/380-3 ③	342-456	1	10	15
			1	17	20
			1	26	30
W36AAPDOZ D05 D10	240/220-1	198-254	1	24	35
			1	29	35
			1	55	60
W36AAPEOZ E06 E12	220/200-3	180-242	1	21	30
			1	21	30
			1	39	40
W36AAP/LAPFOZ F07 F12	415/380-3 ③	342-456	1	12	15
			1	17	20
			1	26	30
W42AAPEOZ E09 E15	220/200-3	180-242	1	22	30
			1	31	35
			1	49	50
W42AAP/LAPFOZ F07 F14	415/380-3 ③	342-456	1	13	15
			1	17	20
			1	30	30
W48AAPEOZ E09 E15	220/200-3	180-242	1	24	35
			1	31	35
			1	49	50
W48AAPEOZ E09 E15	220/200-3	180-242	1	24	35
			1	31	35
			1	49	50
W48AAP/LAPFOZ F07 F14	415/380-3 ③	342-456	1	13	15
			1	17	20
			1	30	30
W60AAPEOZ E09 E15	220/200-3	180-242	1	28	40
			1	35	40
			1	53	60
W60AAP/LAPFOZ F07 F14	415/380-3 ③	342-456	1	16	20
			1	18	20
			1	32	35
W72ABP/LBPF0Z F07 F14	415/380-3 ③	342-440	1	24	30
			1	24	30
			1	35	35

① Maximum size of the time delay fuse or "D" rated circuit breaker for protection of field wiring conductors.

② These "Minimum Circuit Amp" values are to be used for sizing the field power conductors.

③ 415/380-3 Electrical Ratings are 3-phase wye (star) systems requiring three (3) phase legs plus neutral and ground. **NOTE:** The indoor and outdoor motors and 24V transformer primary are connected at 240V derived from one (1) phase leg to neutral. This is internally connected and no field wiring required.

NOTE: All wiring must conform to NIC/EIC latest edition.

IMPORTANT: While this electrical data is presented as a guide, it is important to electrically connect properly sized fuses & conductor wires in accordance with the National Electrical Code & all local codes.

Electric Heat Table - Refer to Electrical Specifications for Availability by Unit Model

Model	W24AAPD		W24AAPF W24LAPF		W30AAPD W36AAPD		W36AAPE		W30AAPF W36AAPF W36LAPF		W42AAPE W48AAPE W60AAPE		W42AAPF, W42LAPF W48AAPF, W48LAPF W60AAPF, W60LAPF W72ABPF, W72LBPF		
	① KW	240V-1 WATTS	220V-1 WATTS	415V-3 WATTS	380V-3 WATTS	240V-1 WATTS	220V-1 WATTS	220V-3 WATTS	200V-3 WATTS	415V-3 WATTS	380V-3 WATTS	220V-3 WATTS	200V-3 WATTS	415V-3 WATTS	380V-3 WATTS
5.0	5000	4201			5000	4201									
8.0	8000	6722													
10.0					10000	8403									
6.0							5042	4167							
7.0									6728	5641				6728	5641
9.0											7562	6250			
12.0							10083	8333	11213	9401					
14.0															
15.0											12604	10417			

① Nominal Heater KW based on unit model number.

Form No. S3547-318

Supersedes S3547-617

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Indoor Blower Performance - CFM (m³/s) at 220 Volts

Speed	W24				W30				W36				W42				W48				W60				W72			
	Single ①		High ①		Low		High ①		Low		High ①		Low		High ①		Low		High ①		Low		High		Medium ①		Low	
	Dry Coil	Wet Coil	Dry Coil	Wet Coil	Dry Coil	Wet Coil	Dry Coil	Wet Coil	Dry Coil	Wet Coil	Dry Coil	Wet Coil	Dry Coil	Wet Coil	Dry Coil	Wet Coil	Dry Coil	Wet Coil	Dry Coil	Wet Coil	Dry Coil	Wet Coil	Dry Coil	Wet Coil	Dry Coil	Wet Coil	Dry Coil	Wet Coil
ESP (Inch H2O) (Pa)																												
0.0 (0)	840 (0.4)	810 (0.38)	1200 (0.57)	1145 (0.54)	780 (0.37)	770 (0.36)	1160 (0.55)	1085 (0.51)	800 (0.38)	795 (0.38)	1645 (0.78)	1610 (0.76)	1495 (0.71)	1415 (0.67)	1660 (0.78)	1610 (0.76)	1455 (0.69)	1410 (0.67)	1745 (0.82)	1670 (0.79)	1280 (0.60)	1210 (0.57)	1870 (0.88)	1790 (0.84)	1720 (0.81)	1670 (0.79)	1655 (0.78)	1600 (0.76)
0.1 (25)	795 (0.38)	770 (0.36)	1150 (0.54)	1095 (0.52)	770 (0.36)	765 (0.36)	1110 (0.52)	1045 (0.49)	780 (0.37)	770 (0.36)	1580 (0.75)	1560 (0.74)	1410 (0.67)	1360 (0.64)	1585 (0.75)	1550 (0.73)	1390 (0.66)	1340 (0.63)	1695 (0.80)	1625 (0.77)	1230 (0.58)	1160 (0.55)	1815 (0.86)	1740 (0.82)	1670 (0.79)	1630 (0.77)	1620 (0.76)	1550 (0.73)
0.2 (50)	750 (0.35)	720 (0.34)	1085 (0.51)	1030 (0.49)	765 (0.36)	755 (0.36)	1050 (0.50)	985 (0.46)	750 (0.35)	740 (0.35)	1510 (0.71)	1460 (0.69)	1340 (0.63)	1300 (0.61)	1510 (0.71)	1470 (0.69)	1330 (0.63)	1280 (0.60)	1635 (0.77)	1565 (0.74)	1160 (0.55)	1090 (0.51)	1755 (0.83)	1690 (0.80)	1625 (0.77)	1590 (0.75)	1565 (0.74)	1515 (0.72)
0.3 (75)	695 (0.33)	665 (0.31)	1015 (0.48)	955 (0.45)	745 (0.35)	730 (0.34)	980 (0.46)	915 (0.43)	715 (0.34)	705 (0.33)	1440 (0.68)	1380 (0.65)	1270 (0.60)	1205 (0.57)	1430 (0.67)	1330 (0.63)	1245 (0.59)	1185 (0.56)	1575 (0.74)	1495 (0.71)	1080 (0.51)	1015 (0.48)	1700 (0.80)	1635 (0.77)	1590 (0.75)	1550 (0.73)	1525 (0.72)	1480 (0.70)
0.4 (100)	625 (0.29)	600 (0.28)	935 (0.44)	875 (0.41)	705 (0.33)	690 (0.33)	895 (0.42)	840 (0.40)	665 (0.31)	650 (0.31)	1340 (0.63)	1300 (0.61)	1185 (0.56)	1120 (0.53)	1305 (0.62)	1245 (0.59)	1140 (0.54)	1095 (0.52)	1495 (0.71)	1410 (0.67)	1015 (0.48)	955 (0.45)	1650 (0.78)	1595 (0.75)	1545 (0.73)	1505 (0.71)	1475 (0.70)	1430 (0.67)
0.5 (125)	530 (0.25)	505 (0.24)	845 (0.4)	790 (0.37)	650 (0.31)	625 (0.29)	805 (0.38)	745 (0.35)	585 (0.28)	565 (0.27)	1255 (0.59)	1145 (0.54)	915 (0.43)	830 (0.39)	1180 (0.56)	990 (0.47)	890 (0.42)	855 (0.40)	1415 (0.67)	1330 (0.63)	920 (0.43)	890 (0.42)	1600 (0.76)	1540 (0.73)	1500 (0.71)	1465 (0.69)	1430 (0.67)	1340 (0.63)

Above data is with 1" (25mm) standard disposable filter and 1" (25mm) washable filter.
 For optional 2" (51mm) pleated filter - reduce ESP by .15" (37.33Pa).
 See installation instructions for maximum ESP information on various KW application.

Speeds marked "**bold**" above are **Factory Connected**.

**Clearances - Inches (mm)
Required for Service Access and
Adequate Condenser Inlet Airflow**

MODELS	LEFT SIDE	RIGHT SIDE
W24AAP, W30AAP, W36AAP	15" (380)	20" (510)
W42AAP, W48AAP, W60AAP, W72ABP	20" (510)	20" (510)

**Minimum Clearances - Inches (mm)
Required to Combustible Materials**

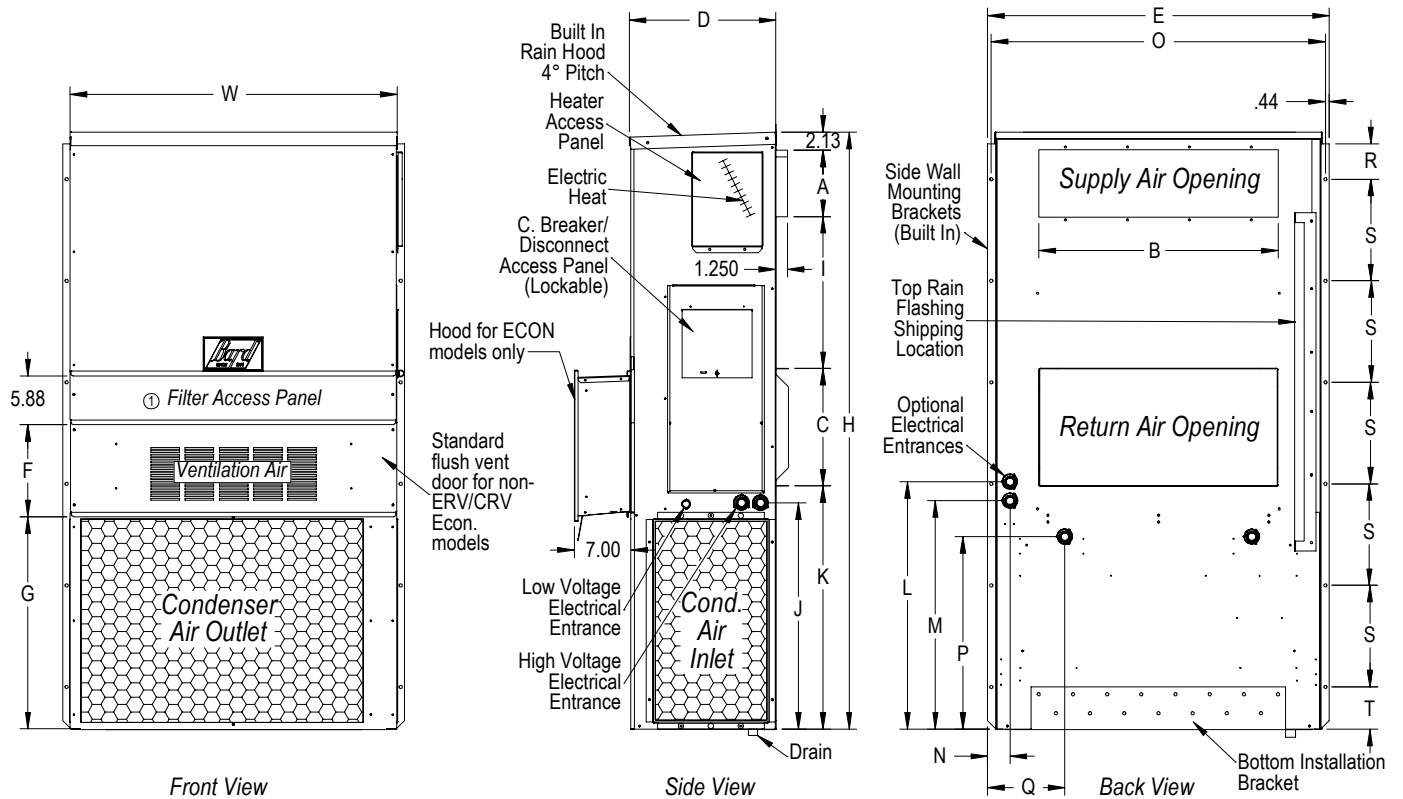
MODELS ①	SUPPLY AIR DUCT FIRST THREE FEET (1m)	CABINET
W24AAP	0"	0"
W30AAP, W36AAP	1/4" (6.35)	0"
W42AAP, W48AAP, W60AAP, W72ABP	1/4" (6.35)	0"

① Refer to the Installation Manual for more detailed information.

Dimensions of Basic Unit for Architectural & Installation Requirements - Inches (mm)

MODEL	WIDTH (W)	DEPTH (D)	HEIGHT (H)	SUPPLY		RETURN																
				A	B	C	B	E	F	G	I	J	K	L	M	N	O	P	Q	R	S	T
W24AAP	33.300 (845)	17.125 (435)	74.563 (1894)	7.88 (200)	19.88 (505)	11.88 (302)	19.88 (505)	35.00 (889)	10.88 (276)	29.75 (756)	20.56 (522)	30.75 (781)	32.06 (814)	33.25 (845)	31.00 (787)	2.63 (67)	34.13 (867)	26.06 (662)	10.55 (268)	4.19 (106)	12.00 (305)	9.00 (229)
W30AAP W36AAP	38.200 (970)	17.125 (435)	74.563 (1894)	7.88 (200)	27.88 (708)	13.88 (353)	27.88 (708)	40.00 (1016)	10.88 (276)	29.75 (756)	17.93 (455)	30.75 (781)	32.75 (832)	33.25 (845)	31.00 (787)	2.75 (10)	39.13 (994)	26.75 (679)	9.14 (232)	4.19 (106)	12.00 (305)	9.00 (229)
W42AAP W48AAP	42.075 (1069)	22.432 (570)	84.875 (2156)	9.88 (251)	29.88 (759)	15.88 (403)	29.88 (759)	43.88 (1115)	13.56 (344)	31.66 (804)	30.00 (762)	32.68 (830)	26.94 (684)	34.69 (881)	32.43 (824)	3.37 (86)	43.00 (1092)	23.88 (607)	10.00 (254)	1.44 (37)	16.00 (406)	1.88 (48)
W60AAP W72ABP	42.075 (1069)	22.432 (570)	93.000 (2362)	9.88 (251)	29.88 (759)	15.88 (403)	29.88 (759)	43.88 (1115)	13.56 (344)	37.00 (940)	30.00 (762)	40.81 (1037)	35.06 (891)	42.81 (1087)	40.56 (1030)	3.37 (86)	43.00 (1092)	31.00 (787)	10.00 (254)	1.44 (37)	16.00 (406)	10.00 (254)

W24AAP - W72ABP Models



MIS-3889

① Not used when WECO Economizers installed. Filter access is through the WECO hood.

**Clearances - Inches (mm)
Required for Service Access and
Adequate Condenser Inlet Airflow**

MODELS	LEFT SIDE	RIGHT SIDE
W24LAP, W30LAP, W36LAP	20" (380)	15" (510)
W42LAP, W48LAP, W60LAP, W72LBP	20" (510)	20" (510)

**Minimum Clearances - Inches (mm)
Required to Combustible Materials**

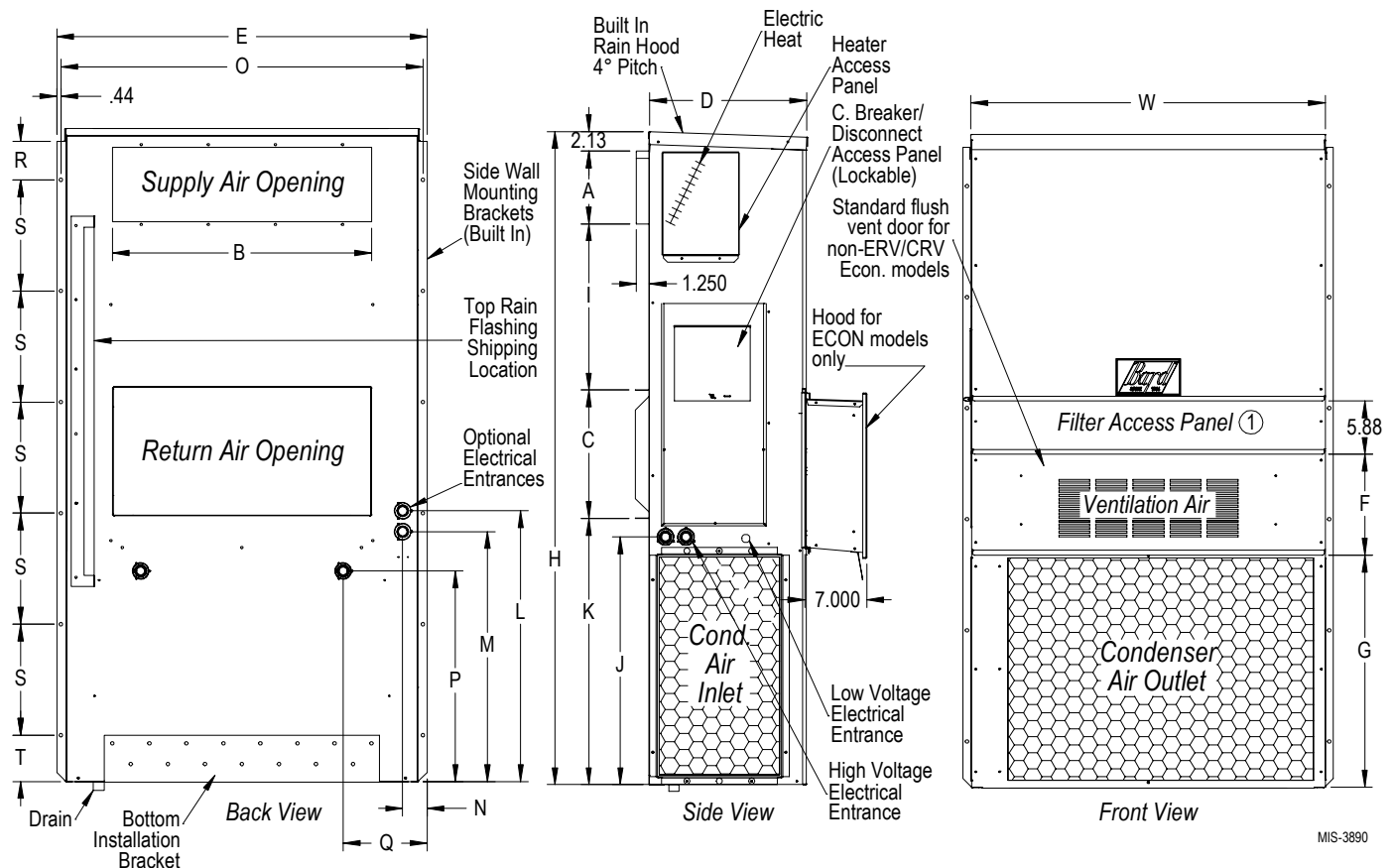
MODELS ①	SUPPLY AIR DUCT FIRST THREE FEET (1m)	CABINET
W24LAP	0"	0"
W30LAP, W36LAP	1/4" (6.35)	0"
W42LAP, W48LAP, W60LAP, W72LBP	1/4" (6.35)	0"

① Refer to the Installation Manual for more detailed information.

Dimensions of Basic Unit for Architectural & Installation Requirements - Inches (mm)

MODEL	WIDTH (W)	DEPTH (D)	HEIGHT (H)	SUPPLY		RETURN																
				A	B	C	B	E	F	G	I	J	K	L	M	N	O	P	Q	R	S	T
W24LAP	33.300 (845)	17.125 (435)	74.563 (1894)	7.88 (200)	19.88 (505)	11.88 (302)	19.88 (505)	35.00 (889)	10.88 (276)	29.75 (756)	20.56 (522)	30.75 (781)	32.06 (814)	33.25 (845)	31.00 (787)	2.63 (67)	34.13 (867)	26.06 (662)	10.55 (268)	4.19 (106)	12.00 (305)	9.00 (229)
W30LAP W36LAP	38.200 (970)	17.125 (435)	74.563 (1894)	7.88 (200)	27.88 (708)	13.88 (353)	27.88 (708)	40.00 (1016)	10.88 (276)	29.75 (756)	17.93 (455)	30.75 (781)	32.75 (832)	33.25 (845)	31.00 (787)	2.75 (10)	39.13 (994)	26.75 (679)	9.14 (232)	4.19 (106)	12.00 (305)	9.00 (229)
W42LAP W48LAP	42.075 (1069)	22.432 (570)	84.875 (2156)	9.88 (251)	29.88 (759)	15.88 (403)	29.88 (759)	43.88 (1115)	13.56 (344)	31.66 (804)	30.00 (762)	32.68 (830)	26.94 (684)	34.69 (881)	32.43 (824)	3.37 (86)	43.00 (1092)	23.88 (607)	10.00 (254)	1.44 (37)	16.00 (406)	1.88 (48)
W60LAP W72LBP	42.075 (1069)	22.432 (570)	93.000 (2362)	9.88 (251)	29.88 (759)	15.88 (403)	29.88 (759)	43.88 (1115)	13.56 (344)	37.00 (940)	30.00 (762)	40.81 (1037)	35.06 (891)	42.81 (1087)	40.56 (1030)	3.37 (86)	43.00 (1092)	31.00 (787)	10.00 (254)	1.44 (37)	16.00 (406)	10.00 (254)

W24LAP - W72LBP Models



MIS-3890

① Not used when WECCO Economizers installed. Filter access is through the WECCO hood.

MULTI-TEC™ Control Sequence of Operation & Logic

The MULTI-TEC™ unit PLC logic board uses a technologically advanced series of sequences to control unit operation. These sequences can be defined in the following processes:

- Alarm Logic
- Indoor Blower Control
- Temperature Control
- Free Cooling Operation
- Compressor Logic

The processes listed are described in detail below.

Alarm Logic

High Mixed Air Alarm

If the mixed air temperature sensor is above cooling temperature setpoint for longer than 10 seconds, the wall unit will generate a high mixed air alarm.

Low Mixed Air Alarm

If the mixed air temperature sensor is below 50°F for longer than 10 seconds, the wall unit will generate a low mixed air alarm.

Refrigerant Low Pressure

When the low pressure switch indicates a low pressure condition and there is an active call for cooling, the controller will generate an alarm after a delay. The delay used by the low pressure alarm is determined by the outdoor air temperature. If the outdoor air temperature is below 55°F, the delay is 180 seconds. If the outdoor temperature is above 55°F, the delay is 120 seconds. Additionally, if the outdoor temperature sensor is not used, the delay is set to 180 seconds. The controller will try to run the refrigeration system three (3) times before the alarm will lock the compressor out.

Economizer Damper:

When the controller commands the economizer damper actuator to a position other than 0% and the damper switch indicates the damper is not open after a delay of 20 seconds, the controller will generate a damper failed to open alarm. When the controller commands the economizer damper actuator to the 0% position and the damper switch indicates the damper is not closed after a delay of 300 seconds, the controller will generate a damper failed to close alarm.

Freeze Stat Alarm:

When the coil temperature is below 30°F for longer than 120 seconds, the controller will generate a freeze stat alarm. This will then change the blower to high speed and turn off the compressor for 300 seconds or reset once the temperature has reached 25°F above the freeze stat temperature set point.

Fan Status Alarm

If the fan is commanded on and the fan status switch has not indicated the fan is running within 45 seconds, the system will generate and alarm.

Indoor Blower Control

The fan will be enabled if the system is set for continuous blower, economizer enabled, cooling stage 1, cooling stage 2, heating stage 1, heating stage 2, freeze stat on, or a run test is started.

Temperature Control

Zone Selection

Based on the zone setting (average or highest), the unit will decide which zone control temperature to use. The control temperature is an average of the zone temperature sensors and the return air temperature sensors in each zone.

Cooling Sequence (Economizer Available) — Field-Adjustable

If the zone control temperature is higher than 79°F and outdoor conditions are acceptable for economizing, the unit will enable the economizer. If the zone control temperature is higher than 80°F, the unit will enable mechanical cooling stage 1. If the zone control temperature is higher than 81°F, the unit will enable mechanical cooling stage 2.

Cooling Sequence (Economizer Not Available) — Field-Adjustable

If the zone control temperature is higher than the cooling setpoint, the unit will enable stage 1 mechanical cooling. If the zone control temperature is higher than 80°F, the unit will enable stage 2 mechanical cooling.

Heating Sequence: — Field-Adjustable

If the zone control temperature is below 58°F, the unit will enable electric heat stage 1. If the zone control temperature is below 57°F, the unit will enable electric heat stage 2. If the zone control temperature is below 56°F, the unit will enable electric heat stage 3.

Free Cooling Operation

Economizer Enable

The economizer will be enabled for cooling operation if the following conditions are true:

None

Economizer will not be enabled.

Dry Bulb Only — Field-Adjustable

1. Outdoor air temperature is below 70°F.
2. Indoor zone relative humidity is below 70% (with LC only).

Temperature & Humidity — Field-Adjustable

1. Outdoor air temperature is below 70°F.
2. Outdoor relative humidity is below 60% (without LC indoor zone humidity sensor) or 80% (with LC indoor humidity sensor).
3. Indoor zone relative humidity is below 70% (with LC indoor RH sensor only).

Enthalpy (Temperature, Humidity & Dewpoint) — Field-Adjustable

1. Outdoor air temperature is below 70°F.
2. Outdoor relative humidity is below 60% (without LC indoor zone humidity sensor) or 80% (with LC indoor humidity sensor).
3. The outdoor air dewpoint is less than 60°F.
4. Indoor zone relative humidity is below 70% (with LC indoor RH sensor only).

Compressor Logic

Enable

The compressor will be enabled when stage 1 is enabled and outdoor air conditions are not acceptable for economizing. If the conditions are acceptable, the compressor will run when stage 2 is enabled.

Delays & Run Time — Field-Adjustable

The compressor will have a minimum run time of 60 seconds and a minimum off time of 120 seconds.

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Standard & Optional Accessory Functionality

- **LC6000 Controller:** The LC6000 is Bard's premier control device for electronics shelters, equipment buildings, pump houses and modular buildings. A logic board inside the LC controller communicates with logic boards in the MULTI-TEC units to decide when to cool the area, and what mode of cooling to use if economizers are installed. Cooling modes include unit rotation and intuitive load balancing. Energy efficiency and consistent area temperature control are maximized for reliable equipment cooling. Humidity monitoring inside the shelter helps reduce the chance of condensation forming on equipment and electronics and can be controlled with optional equipment. An "N+1" (1 extra backup unit) operation or a localized load-based strategy can be used for better temperature control when using multiple units. The controller is able to be installed in any area inside the structure with the use of remote temperature sensors, and can operate with 3 separate zones or areas including office spaces and battery rooms.
- **th-Tune Controller (8620-264):** The th-Tune controller can be used to operate one unit independent of the LC controller. The th-Tune acts as a simple thermostat and connects to one unit using standard 18 Ga. twisted pair wiring. The TEC-EYE service tool (provided in the kit) is used to program and setup the MULTI-TEC unit. The th-Tune controller does not connect to the LC controller and does not have remote alarming capability.
- **EMI Ferrite Filter (8301-055):** An EMI filter is used to suppress interference that may be present on the connecting (2) wire twisted pair between the MULTI-TEC units and LC controller. When connecting all units together in series through a "daisy chain" connection, a total of (2) EMI filters are needed. One filter is placed at the 2 wire connection to the LC controller. The other filter is placed at the 2 wire connection point where the unit at the end of the chain is connected. If two separate daisy chain connections are made, a total of (2) EMI filters are needed, one EMI filter is needed at the 2 wire connection point of each end unit.
- **TEC-EYE Service Tool (8301-059):** The TEC-EYE service tool is used for system setup and troubleshooting. An easy to read backlit display and 6-button control is provided. Used as a display and interface, the tool is able to interact with the microprocessor on the logic board located in the LC controller and in the MULTI-TEC unit. A 5 foot communication cable with RJ11 connectors is provided with the TEC-EYE. (Included with every LC6000 & 8620-264 th-Tune control package.)
- **VDC Smoke Detector (8301-060):** The smoke detector has a thermal sensor set to 135°F and has dual color LED indicator lights to display status. Required equipment includes a 3.5" or 4" octagonal, single gang, or a 4" square back box with a plaster ring to be directly mounted to a ceiling. Wiring used must be 14-22AWG and there are 4 connection points. Smoke detector can be wired into the LC6000 or directly into a MULTI-TEC™ unit.
- **VDC Hydrogen Detector (8301-061):** The hydrogen gas detector is designed for battery rooms and shelters. It is able to detect hydrogen gas as low as 1% volume and operate a wall mount economizer equipped unit to ventilate the structure. At a 2% volume, a warning alarm will be activated and an alarm signal is sent to the LC controller. A test button allows for alarm testing. Use 18 Ga. SJT 3 conductor PVC jacketed cable for power connection to LC controller (field supplied). Detector can be installed directly to a wall, ceiling or conduit box.

MULTI-TEC™ Unit Controllers

MODEL	Controller Logic	Voltage	Shipping Weight	English	Spanish	French	Fahrenheit Celsius	No. of Units Controlled	Unit Models	Zones	Smoke Detector	Unit Connection	Remote Communication & Diagnostics
LC6000	PLC	120V/230V-240V 50/60 Hz AC	23 lbs.	Yes	No	Yes	Yes/Yes	14	WA with PLC	3	Yes	Daisy Chain	Daisy Chain
th-Tune Controller #8620-264	PLC	24V	1 lb.	Yes	No	Yes	Yes/Yes	1	WA with PLC	1	No	Single Unit	Single Unit

The LC6000 and th-Tune Controller #8620-264 are shipped with a TEC-EYE™ diagnostic tool.

The th-Tune Controller #8620-264 does not include alarm functionality or remote communication. System setup requires the use of the TEC-EYE™ diagnostic tool.

LC6000 Standard and Optional Accessories

Part Number	Description	Included with LC6000
8301-055	EMI Ferrite Filter (1 needed for each unit connection to Controller)	2
8301-059	TEC-EYE™ (Service Tool), 5 ft. communication cable	1
8403-079	Remote Temperature & Humidity Sensor w/35' wire (2 additional sensors may be used)	1
8301-058	Remote Temperature Sensor (1 additional sensor may be used)	Optional

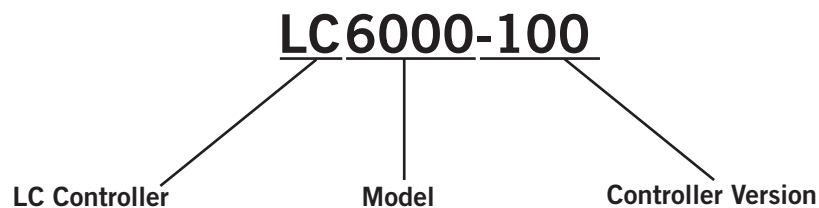
**EMI Ferrite Filter
Part #8301-055**



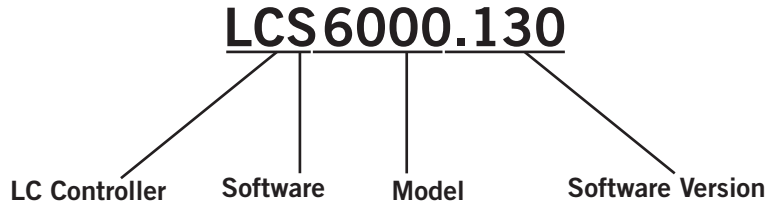
**TEC-EYE™
Part #8301-059**



Controller Version Nomenclature



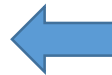
Software Version Nomenclature



The Bard MULTI-TEC™ Wall Mount unit contains an advanced PLC logic board with on-board software similar to a computer. When buying additional MULTI-TEC™ Wall Mount units for an existing project, it is important for all units and the LC controller to contain the same software version. The easiest method of ensuring all the units and the LC controller have the same software is to use a laptop computer to download the latest software for the new MULTI-TEC™ unit or LC controller from the internet and using a MicroUSB cable reprogram all existing equipment. Additional MicroUSB cables can be found at most stores carrying phones and electronics equipment.

Using the MicroUSB Cable to Update Software

#1.) Download new program from the Bard Software Download page.



Software Download

The following downloads are BDDP Management Information Base files to use with the following BDDP building controllers and components:

Software Version	Product M3P	Product Description
DC6000	DC6000-BC	LeadLag Controller
MC6000	MC6000-BC	LeadLag Controller
MT6000	MT6000-BC	LeadLag Controller (Version)

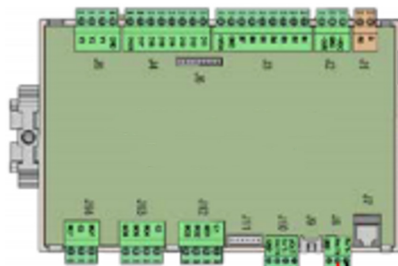
PLC Based Controller Software Downloads		
Software Version	Product M3P	Product Description
LCS1000-L30	LCS1000-300	LC Controller (PLC) (ATX)
LCS1000-L30	LCS1000-300	LC Controller (PLC) (ATX)
LCS2000-L30	LCS2000-300	LC Controller (PLC) (DIGITAL 300)
LCS2000-L30	LCS2000-300	LC Controller (PLC) (DIGITAL 300)

PLC Trunk Software Downloads		
Software Version	Product M3P	Product Description
DA21000-L30	D* A2P * D* L3P	DIGAL-7500 Trunk PLC
LCS2000-L30	MT* A2P * MT* L3P	MULTI-TEC™ Trunk PLC

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 Help User Selection User Manual Compiler File
 Software Job Building Information Modeling Software Download

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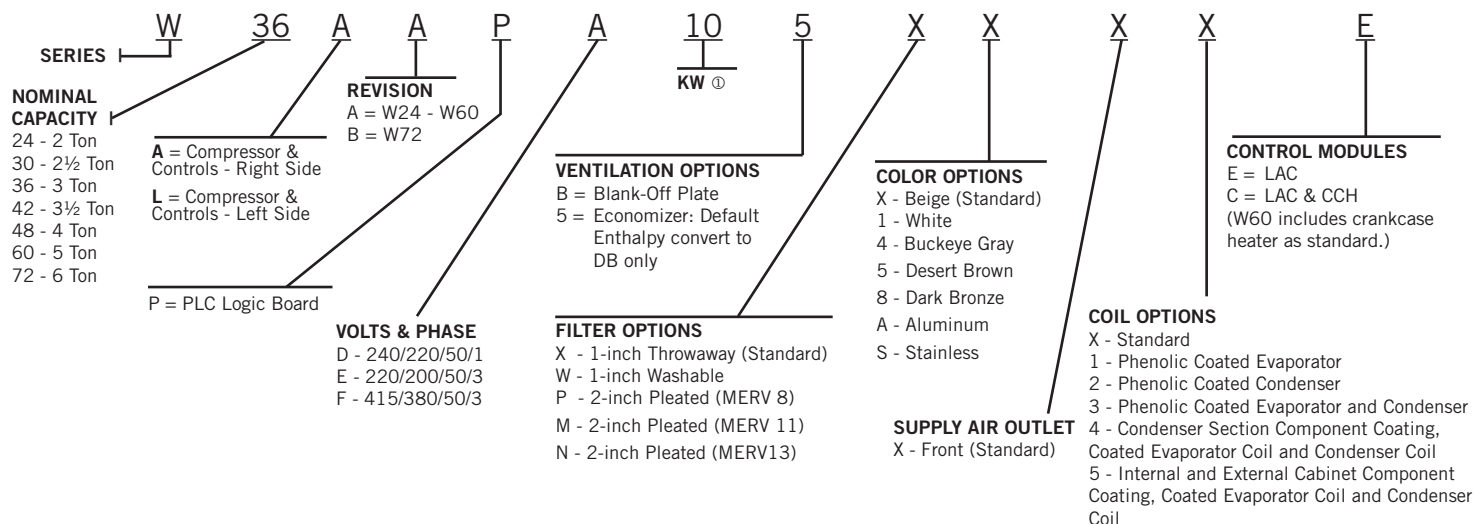
#2.) Replace old program in existing equipment using Micro USB cable.



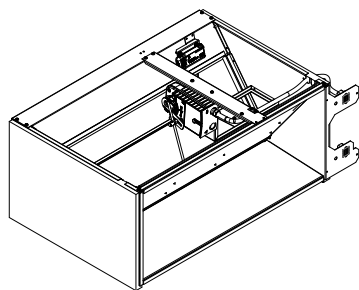
Software Website

Current versions of software and/or software information for all controllers and unit equipment may be found at: www.bardhvac.com/software-download

Air Conditioning Wall-Mount Model Nomenclature



Ventilation System Packages



Economizer

ECONOMIZER

The optional built-in economizer system is internally mounted behind the service door and allows outdoor air to be introduced through the air inlet openings. The amount of outdoor air varies in response to the system controls and settings defined by the end user. It includes a built-in exhaust air damper. 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 in turn provides lower operating costs, while extending the life of the compressor.

Standard Features:

- Full rated outdoor intake
- Fully modulating
- Hi-Torque Actuator
- 7" intake hood with filter
- Simple single blade design
- Positive shut-off with non-stick gaskets
- Electronic Enthalpy sensors
- PLC control module with precision settings and diagnostics

OPTIONAL

MULTI-TEC™ Standard Controls

High Pressure Switch: Required Safety Device that also provides protection to the compressor system when system refrigerant pressure is above an acceptable level. Auto Reset, 650 psig. Output to compressor control module.

Low Pressure Switch: Provides protection to the compressor when refrigerant pressure falls below an acceptable level. Auto Reset, cut out at 40 psig. Output to compressor control module.

Low Ambient Control: Modulating control that removes power from the condenser fan to allow for unit compressor cooling operation at outdoor ambient temperatures below 65°F. Factory set for system performance. Screw-on connection for easy servicing. Output to condenser fan motor.

Compressor Control Module: Compressor protection device that has a 30-second to 5-minute timer. This module features a delay-on-make for initial startup for a minimum of 2 minutes plus 10% of the timer setting. There is no delay during routine operation. Allows one automatic retry after high pressure switch activation, then goes into hard lockout mode. Output to PLC logic board.

Start Assist (Single Phase Models Only): PTCR motor starting device increases compressor motor torque 2-3 times.

Supply Air Sensor: 10K Thermistor measures supply air temperature, output to PLC logic board.

Return Air Sensor: 10K Thermistor measures return air temperature, output to PLC logic board.

Evaporator Coil Sensor: 10K Thermistor prevents coil freezing due to low return air temperature. Output to PLC logic board.

Outdoor Temperature & Enthalpy Sensor: 10K Temperature sensor and 4-20mA humidity transmitter, output to PLC logic board (PLC defaults to temperature only).

Phase Monitor (3-Phase Models Only): Prevents 3-phase compressor operation to protect the compressor if the device senses incorrect phasing. LED indicator light.

Filter Switch: Adjustable switch to indicate the unit air filter needs to be replaced. Output to PLC logic board.

MULTI-TEC™ Optional Controls

Compressor Crankcase Heater: 2-wire heater that prevents refrigerant migration and mixing with crankcase oil when the unit is off, prevents condensation of refrigerant in the crankcase of the compressor, and keeps refrigerant at a temperature higher than the coldest part of the system. [Recommended for Canada and cold climate compressor operation.](#)



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

Before purchasing this appliance, read important energy cost and efficiency information available from your retailer.

Form No.
S3547
March 2018

Supersedes: 617