



ECU59 & ECU60

Environmental Control Units

The Ideal Replacement for 2 & 3 Ton Air Conditioners

General Description

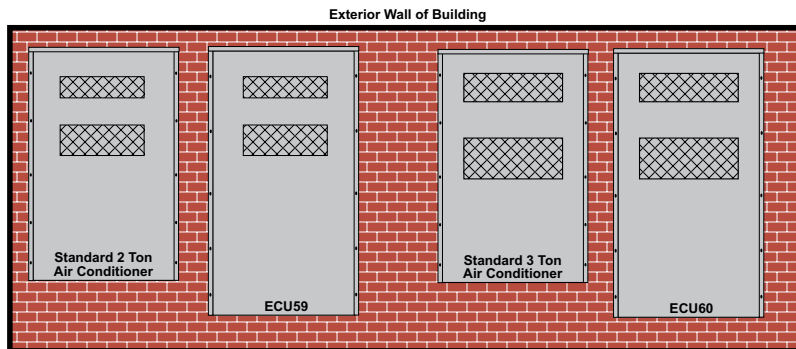
The ECU59 & ECU60 are field replacements of Marvair's and other brands of 2 & 3 ton air conditioners while delivering up to twice the cooling capacity. The ECU59 has supply and return openings that match the the openings of two ton wall mounted air conditioners. The ECU60 has supply and return openings that match the openings of three to air conditioners. This allows the units to be quickly and easily installed. No cutting or sawing of the shelter is required.

The Marvair® ECU59 and ECU60 environmental control units are used primarily to cool electronic and communications shelters requiring cooling even when outside temperatures drop below 60°F (15°C). The ECU60 has the necessary controls and components for operation during these temperatures. In addition, factory and field installed accessories can be used to meet specific requirements.

The 1Ø, no heat model is ETL listed to UL Std. 1995, 2nd Ed., and CAN/CSA - C22.2 No. 236-95 2nd. Ed.



ECU60



Standard Features

Designed for Operation in Low Ambient Conditions

- Low ambient control cycles condenser fan to maintain proper refrigerant pressures.
- Timed low pressure by-pass for start-up of compressor when outdoor temperatures are below 55°F (13°C).

High Efficiency

- Lanced fins and rifled tubing on condenser & evaporator coils.
- High efficiency compressor for reliable and quiet operation.

Built-in Reliability

- High pressure switch with lockout relay and automatic reset low pressure switch protects refrigerant circuit.
- Adjustable compressor time delay.

Remote Alarm Capability

- Dry contacts can be used for remote alarm or notification upon lockout.

Ease of Installation

- Sloped top sheds water while side sealing flanges minimize the chance of water leaks.
- Built-in mounting flanges facilitate installation and minimizes chance of water leaks.

- Factory installed disconnect on all 208/230v units.

Rugged Construction

- Copper tube, aluminum fin evaporator and condenser coils.
- Baked on neutral beige finish over galvanneal steel for maximum cabinet life. (Other finishes are available.)

Design Features

- All service is from the side of the ECU60, including compressor access.
- Field or factory installed electric heat is available to meet any requirement or simple field changes.

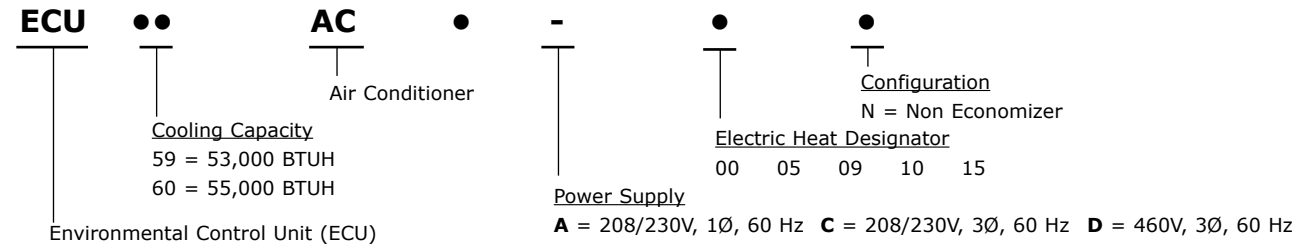
Quiet Operation

- High density insulation.
- Low RPM, quiet condenser fan.

Service

- Nationwide network of service centers.
- 24 hours/day toll free service number.
- Technical and application support is available via phone or e-mail.
- All components easily accessible for field service.

Model Identification



Options

The ECU59 and ECU60 are designed and built to stringent requirements of the communications/electronic shelter. Applications occur that have special requirements. Numerous options are available for the ECU59 and ECU60 that meet these special needs.

Extreme Duty Package

The Extreme Duty Package allows the ECU60 to operate in extremely cold and hot ambient conditions. The Extreme Duty Kit is always factory installed. Non-economizer units will operate from 0°F to 130°F (-18° to 54°C).

The Extreme Duty Package includes a suction line accumulator, thermal expansion valve (TXV), crankcase heater, hard start kit, an auto reset high pressure switch and an outdoor thermostat and fan cycle switch. The fan cycle control is standard on all ECU60s and operates based upon the liquid line pressure. The outside thermostat opens whenever the outside temperature is below 50°F (10°C) and closes when the outside temp. is 50°F (10°C) or higher. Whenever the temperature is below 50°F (10°C), the fan cycle switch is in the circuit; when temperatures are 50°F (10°C) or higher, the fan cycle switch is not in the circuit. The outdoor thermostat is used with a TXV to prevent excessive cycling or "hunting" of the TXV.

Dehumidification

Humidity controller overrides thermostat and allows electric heat to operate simultaneously with cooling. See Dehumidification Application Bulletin for details.

Coastal Environment Package

Extends life of unit when units are to be installed near an ocean or sea. Includes coated condenser coil, sealed ball bearing fan motor, corrosion resistant fasteners, sealed control panel and protective coating on copper tubing in the condenser compartment.

Stainless Steel Cabinet

All exterior sheet metal constructed of stainless steel.

Hot Gas By-pass

Used in specialty applications; i.e., Magnetic Resonance Imaging (MRI) buildings, to prevent magnetic voltage disturbance caused by compressor cycling. Hot gas by-pass option packages are available to allow operation to 20°F (-7°C). Please refer to Hot Gas By-pass Application Bulletin for details.

Color

The standard cabinet color is Marvail's driftwood beige.

Protective Coil Coatings

Either the condenser coil or evaporator coil or both can be coated with a protective coating. Used in corrosive or marine environments such as power plants, paper mills, and applications susceptible to salt-spray. Note: Cooling capacity of units with coated coil(s) may be reduced by up to 5%.

Grilles

Supply grilles.

20" x 8" (508 mm x 203 mm) for ECU59 P/N 80674
28" x 8" (711 mm x 203 mm) for ECU60 P/N 80675

Return air filter grille (**Required**)

20" x 12" (508 mm x 305 mm) for ECU59 P/N 80671
28" x 14" (711 mm x 356 mm) for ECU60 P/N 80672

Controllers and Thermostats

CommStat3™ Microprocessor Controller

P/N S/04581

Solid state controller designed to operate a fully or partially redundant air conditioning system. Insures equal wear on both air conditioners while allowing the lag unit to assist upon demand. Lead/ lag changeover is factory set at 7 days, but is field programmable in 1/2 day increments from 1/2 to 7 days. The CommStat 3™ Controller has LED's to indicate status & function, digital display of temperature, a comfort override button for energy savings, five alarm relays, a built in temperature sensor and is fully programmable. See CommStat 3 Controller Product Data Sheet for details on operation & installation.

LL357D3 Lead/Lag Controller P/N S/06671

Two stage heat and cool thermostat with solid state module for redundant operation with adjustable (2°-12°F (1.1° - 6.7°C)) interstage differential. (See the LL357D3 Product Data Sheet for details.)

Thermostat P/N 50123

Digital thermostat. 1stage heat, 1 stage cool. 7 day programmable. Fan switch: Auto & On. Auto-change over. Keypad lockout. Non-volatile program memory.

Thermostat P/N 50107

Digital thermostat. 2 stage heat, 2 stage cool. 7 day programmable. Fan switch: Auto & On. Auto-change over. Status LED's. Backlit display. Programmable fan. Non-volatile program memory.

Thermostat Guard P/N 50092

Thermostat guard for use with 50123 & 50107 thermostats.

Performance

MODEL	70°F 21°C	75°F 24°C	80°F 26.5°C	85°F 29.5°C	90°F 32°C	95°F 35°C	100°F 38°C	105°F 40.5°C	110°F 43.5°C	115°F 46°C	120°F 49°C
ECU59AC	61,200	59,160	57,120	55,080	53,040	51,000	48,960	46,920	44,880	43,860	41,820
ECU60AC	63,600	61,480	59,360	57,240	55,120	53,000	50,880	48,760	46,640	45,580	43,460

Sensible/Total Ratio at 95°F (35°C) Outside Air DB

MODEL	ECU59	ECU60
TOTAL CAPACITY (BTUH)	51,000	53,000
SENSIBLE HEAT RATIO	0.72	0.75
SENSIBLE CAPACITY (BTUH)	36,720	39,700

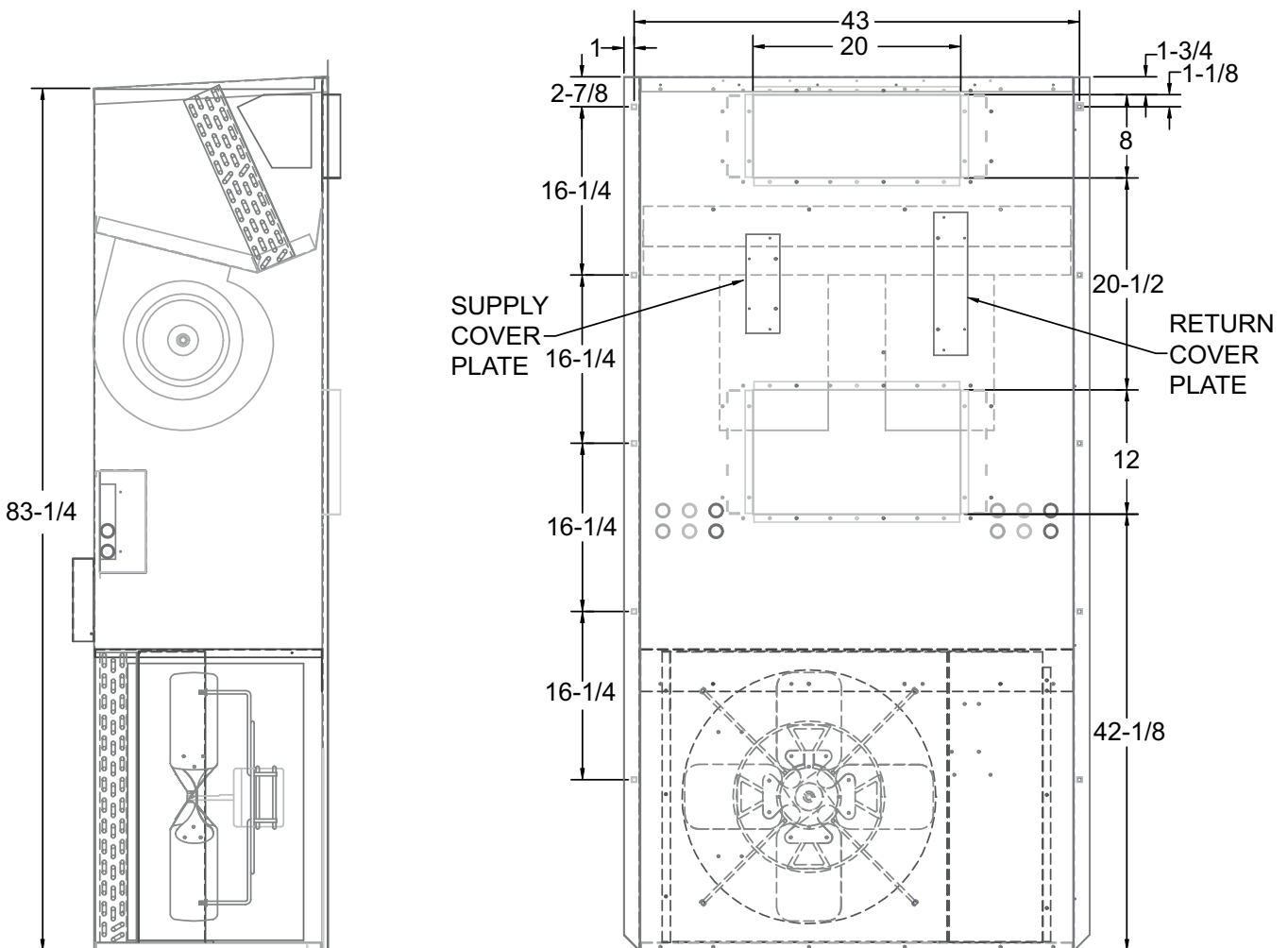
Air Flow (CFM) @ ESP (Wet Coil)

MODEL	0.20	0.25	0.30	0.40	0.50
ECU59AC	1740	1670	1600	1540	1480
ECU60AC	1840	1770	1700	1640	1560

Ship Weight

MODEL	LBS.	KG
ECU59AC	535	245
ECU60AC	535	245

Dimensional Data - ECU59



NOTES

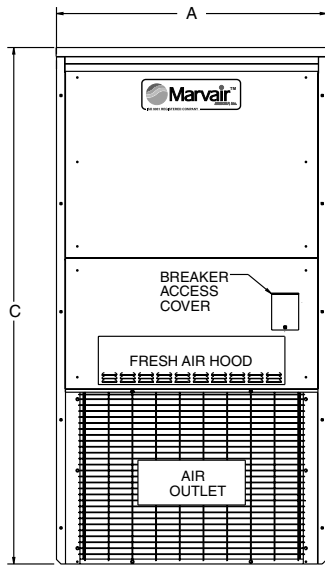
UNIT IS SHIPPED FROM FACTORY WITH SUPPLY AND RETURN OPENINGS CENTERED LEFT TO RIGHT ON BACK PANEL. RETURN AND SUPPLY OPENINGS MAY BE SHIFTED 2.6" LEFT OR RIGHT TO ALLOW FOR A BETTER FIT. A SLOTTED HOLE PATTERN IS PROVIDED TO ASSIST WITH CUT OUT OF OPENINGS AND COVER PLATES ARE ALSO PROVIDED TO COVER EXCESSIVE HOLES LEFT IN BACK PANEL AFTER MAKING CUT OUTS.



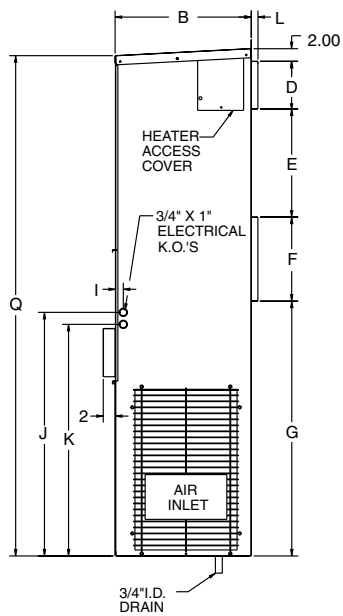
Dimensional Data - ECU60

MODEL	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
60 (inches)	45	22-5/8	86	8	18	14	42-1/2	28	1-5/16	40-9/16	38-9/16	1-1/8	43-1/8	42-3/16	40-1/2	2-1/4	83-5/16
60 (mm)	1143	575	2184	203	457	356	1080	711	33	1030	980	29	1095	1072	1029	57	2116

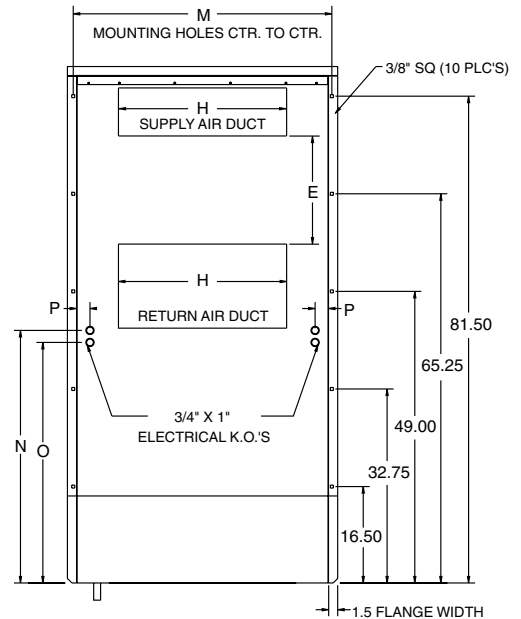
NOTE: Dimensional tolerance $\pm 1/16"$ (2 mm)



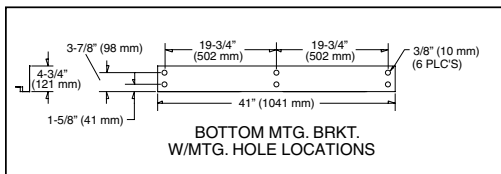
FRONT VIEW



R.H. SIDE VIEW



BACK VIEW



Complete installation instructions are in the ComPac® I & II A/C Manual. Detailed dimensional data is available upon request. A complete warranty statement can be found in each product's Installation/Operation Manual, on our website at www.marvair.com or by contacting Marvair® at 229-273-3636. As part of the Marvair continuous improvement program, specifications are subject to change without notice.



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