

RM Modulating Condensing Units

Capable of Cooling Up to 5 Zones



RM30 condensing unit shown

The new RM model remote modulating condensing units are the next generation of direct-expansion, cooling only air conditioning units designed to run multiple cooling units (evaporators) with up to five independent zones. Models are available in capacities of 24, 30 & 42,000 BTU/Hr. Total cooling unit capacity should be within 15% of the condensing unit capacity.

The new RM model has a number of improvements. Higher efficiency compressors deliver full capacity even under heavy loads. The newly designed, one-piece electrical box with 3' (1m) cable can be remote mounted simply by removing one screw. Additional service ports have been added for ease of charging and servicing. The one-piece chassis/pan has two new drain locations. New style hold-down brackets secure all four corners and allow for easier installation and removal.

The RM assembly consists of a scroll compressor, cupronickel condenser, and service/base valves, all mounted on a newly designed condensate drain pan. Custom designed components that protect the compressor when operating at full and partial loads include: high and low pressure switches, large capacity receiver and accumulator, hot gas bypass valve, and a thermal expansion de-superheat valve. The bypass valve senses low suction pressure when cooling units are shut off, and allows refrigerant to bypass back into the compressor. The de-superheat valve evaporates refrigerant into the compressor when superheat is too high.

An electrical control and relay box is mounted on the chassis, but can be remote mounted on a 3' (1m) harness for easy access. It includes control triggers, time delay, power relay, and start and run capacitors with a solid state relay for single-phase units, or a contactor for three-phase compressors.

It is designed to be installed in the engine room or other mechanical space, and is not adversely affected by moisture, vibration, or ambient temperatures up to 140°F (60°C). No ventilation is required.

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Key Benefits

- Redesigned RM type unit is lighter in weight.
- Up to five independent cooling units on one condenser.
- Model RM is compatible with all cabin controls.
- Service ports on refrigerant lines and base valves.
- Rubber isolation mounts on compressors.
- Condensate pan with front and rear drains.
- Corner mounting brackets designed for easy install.
- Electrical box includes power relay and time delay, and may be remotely mounted up to 3' (1m) from unit.
- High efficiency scroll compressors.
- High and low pressure switches.
- Hot gas bypass and de-superheat valves.
- Seawater coil manifolds are optional.
- Heavy-duty vibration isolators are available.
- Cool only.

Copper tubing is used to carry refrigerant between the condensing unit and the cooling units, which are located in the living spaces. Refrigerant manifolds (models DD and SD) are available to aid in installation.

Each cooling unit has a separate control, either SMX series or 3-knob. These controls operate independently to maintain room temperature. The RM condensing unit runs when any room control calls for cooling, and shuts off when all zone setpoints are satisfied.

Units are available for a variety of power systems. Please refer to the technical specifications on back of this sheet. Note that the 380-

460V units will require a single-phase control circuit power feed (115V or 230V). Three-phase units are not ignition protected and must not be installed in an area where flammable vapors may be present.

A seawater cooling system, with pump, scoop type through-hull, seacock, strainer, and overboard discharge, is also required.

RM condensing units are pre-charged at the factory with R-22 refrigerant and a special dye to aid in leak detection; "green gas" R-417A is available, too. Installation and final charging of the system must be performed by a certified technician using EPA approved equipment.

Technical Specifications for RM Modulating Condensing Units

Model	Capacity (BTU/hr)	Power Voltz/Hz/Ph	FLA	LRA	Weight (lb/kg)	Refrig.		Pump (gpm/lpm)
						Dis.	Sct.	
RM24C	24,000	230/60/1	8.0	67	90/40.1	3/8"	1/2"	8.0/30
RM24CK		220/50/1	7.9	74				
RM24D(C)		230/60/3	5.5	55				
RM24E(C)		460/60/3	2.9	27				
RM24ECK		380/50/3	3.2	32				
RM30C	30,000	230/60/1	11.6	84	110/49.9	3/8"	3/4"	10.0/30
RM30CK		220/50/1	9.4	82				
RM30D(C)		230/60/3	6.5	63				
RM30E(C)		460/60/3	3.3	31				
RM30ECK		380/50/3	3.7	40				
RM42C	42,000	230/60/1	12.4	109	120/54.4	3/8"	3/4"	14.0/53
RM42CK		220/50/1	13.5	114				
RM42D(C)		230/60/3	8.6	88				
RM42E(C)		460/60/3	4.3	44				
RM42ECK		380/50/3	5.0	50				

Notes:

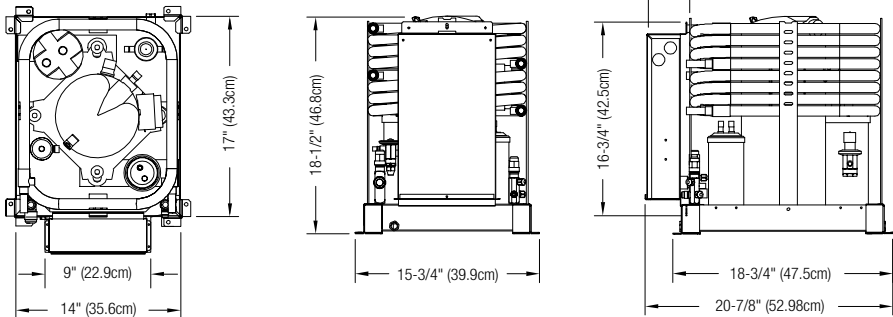
- All models have the same dimensions; see illustration below.
- All models have 5/8" cooling water connections directly to the condenser coil(s). Seawater manifolds are optional.
- Refer to the Compressor Electrical Power Specs chart below for nominal ratings and exceptional ranges.
- Compressor starting current will vary with voltage and is approximately 3-4 times the full-load amps (FLA).

Interpreting Model Numbers

R	M	42	C	K
Condensing Unit	Modulating System	Capacity X 1,000 BTU/hr	Control Voltage (3 phase units only) Blank: 115V, 1 phase C: 230V, 1 phase	Operating Frequency Blank: 60Hz K: 50Hz only

Compressor Electrical Power Specs	
Nominal Rating	Acceptable Range
230/60/1	208-240/60/1 & 200/50/1
220/50/1	220-240/50/1
230/60/3	208-230/60/3 & 190-220/50/3
220/50/3	200-220/50/3
460/60/3	440-480V/60/3 & 380-420/50/3
380/50/3	380-420/50/3

NOTE: Drain fittings extend 1/4" (0.6cm) from front and back of pan.



Some 60Hz equipment can be operated in a 50Hz environment. However, performance will be decreased by approximately 17%. Fully rated 50Hz capacity may be obtained by specifying Cruisair "CK" equipment.

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