

Type R Condensing Units

With High Efficiency Compressors

Photo courtesy of Cruisers' Yachts



RX24 condensing unit shown



Available in capacities from 20,000 to 48,000 BTU/hr, Type R remote condensing units represent the next generation of seawater-cooled, reverse-cycle heat pumps for cooling and heating in marine applications.

Models up to 36,000 BTU/hr use reciprocating compressors, while the 48K units use scroll compressors.

These condensing units can be installed with up to two Cruisair cooling units, where the total cooling unit capacity is equal to the condensing unit capacity. Some applications may allow three cooling units on one condenser; contact the Cruisair Applications department for assistance in design, prior to installation. In the cooling mode, full performance is available in seawater up to 90°F (32°C). In reverse-cycle heating, the unit will provide heat in seawater as low as 40°F (4.4°C).

The high-efficiency compressors deliver full capacity at lower amperages. The newly designed, one-piece electrical box with 3' (1m) cable can be remote mounted simply by removing one screw (RN models have a secondary box). Additional service ports allow ease of charging and servicing. The one-piece chassis/pan has two drain locations, and hold-down brackets secure all four corners, allowing easier installation and removal. The Type R condenser is designed as a drop-in for the older F type, with few modifications.

R type units are designed for installation in the vessel's engine room or other mechanical space. The unit is not affected by moisture, normal vibration, or ambient temperatures up to 140°F (60°C). No ventilation is required.

Three different series of Type R units are available, depending on what type of control is desired. Standard R units utilize the SA3 3-knob rotary switch assembly, RX units are controlled by the SMX II microprocessor, and RN models use SMX Net microprocessors. The SMX units include the respective SMX II or SMX Net power/logic boards. In addition, an SMXir or the new SMXht keypad/display, a CXP connecting cable, and a TSEP temperature sensor must be purchased separately. If networking RN units, CNP network cables are also needed.

Type R condensing 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

Key Benefits

- Higher efficiency compressors at lower amperages.
- Redesigned R type unit is lighter in weight.
- 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.
- High and low pressure switches.
- Three different control options:
 - R series uses a 3-knob rotary switch assembly.
 - RX series includes an SMX II power/logic board and uses the new SMXht, SMXir or SMX II keypad/displays.
 - RN series includes an SMX Net power/logic module.
- Electrical box can be remotely mounted to deck or bulkhead up to 3' (1m) from unit.
- Available with "green-gas" R-417A refrigerant.
- Seawater coil manifolds are optional.
- Heavy-duty vibration isolators are available.

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.

Every Type R unit is fully tested and pre-charged at the factory with R22 refrigerant; "green gas" R-417A is also available. Installation and final charging of the system must be performed by a certified technician.

Technical Specifications for Type R Condensing Units

Model	Capacity (BTU/hr)	Power Voltz/Hz/Ph	FLA Cool	FLA Heat	LRA	Weight (lb/kg)	Refrig.		Pump (gpm/lpm)
							Dis.	Sct.	
R, RN, RX20C R, RN, RX20CK R, RN, RX20ECK	20,000	230/60/1 220/50/1 380/50/3	6.0 5.3 2.7	7.2 6.6 3.2	48 55 24	95/43.1	3/8"	1/2"	6.7/25
R, RN, RX24C R, RN, RX24CK R, RN, RX24D(C) R, RN, RX24ECK	24,000	230/60/1 220/50/1 230/60/3 380/50/3	7.0 6.9 5.4 2.8	8.5 8.5 6.4 3.3	60 55 48 30	100/45.4	3/8"	1/2"	8.0/30
R, RN, RX30C R, RN, RX30CK R, RN, RX30D(C) R, RN, RX30E(C) R, RN, RX30ECK	30,000	230/60/1 220/50/1 230/60/3 460/60/3 380/50/3	7.7 8.7 5.8 2.8 3.5	9.6 10.6 6.6 3.3 4.2	61 69 58 30 38	110/49.9	3/8"	3/4"	10.0/38
R, RN, RX36C R, RN, RX36CK R, RN, RX36D(C) R, RN, RX36E(C) R, RN, RX36ECK	36,000	230/60/1 220/50/1 230/60/3 460/60/3 380/50/3	9.8 9.8 7.2 3.5 4.0	12.3 12.5 8.5 4.0 4.8	82 76 78 36 42	115/52.2	3/8"	3/4"	12.0/45
R, RN, RX48RC R, RN, RX48RCK R, RN, RX48D(C) R, RN, RX48E(C) R, RN, RX48ECK	48,000	230/60/1 220/50/1 230/60/3 460/60/3 380/50/3	12.4 13.5 8.6 4.3 5.0	17.2 17.6 11.1 5.6 6.5	109 114 88 44 50	120/54.4	3/8"	3/4"	16.0/61

Notes:

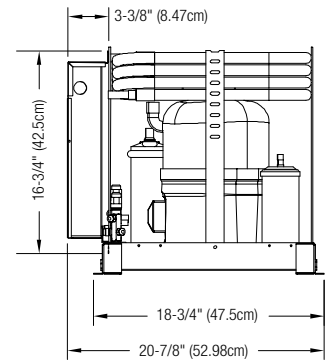
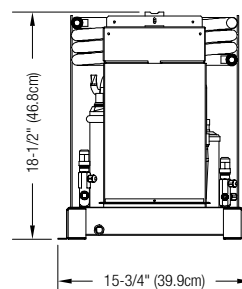
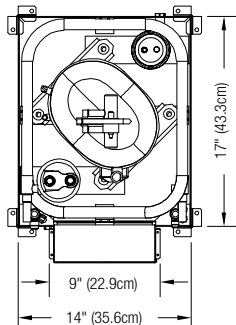
- All models have the same dimensions; see illustration below.
- All models have 5/8" cooling water connections directly to the condenser coil(s). Seawater manifolds are optional.
- Refer to the Compressor Electrical Power Specs chart below for nominal ratings and exceptional ranges.
- Compressor starting current will vary with voltage and is approximately 3-4 times the full-load amps (FLA).
- Models 20-36K use reciprocating compressors; 48K units have scroll compressors.

Interpreting Model Numbers

RX	30	D	C	K
Type of Control R: Rotary Knob RN: SMX Net RX: SMX II	Capacity X 1,000 BTU/hr	Compressor Voltage C: 230V, 1 phase D: 230V, 3 phase E: 460V, 3 phase	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.

DOMETIC CORPORATION, ENVIRONMENTAL DIVISION

2000 N. Andrews Ave. Ext. | Pompano Beach, FL 33069 USA | 954-973-2477 | Fax 954-979-4414
P.O. Box 15299 | Richmond, VA 23227 USA | 804-746-1313 | Fax 804-746-7248
www.DometicEnviro.com | sales@DometicEnviro.com

United States & Canada Service Only:

8:00 AM to 5:00 PM Eastern Time | Marine Air AC Products: 954-973-2477
Cruisair AC Products: 804-746-1313

24/7 AC SERVICE HOTLINE: 5:00PM to 8:00 AM: 888-440-4494

International Sales & Service:

Europe & the Middle East: Call +44(0)870-330-6101
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