

INSTALLATION, OPERATION AND MAINTENANCE MANUAL

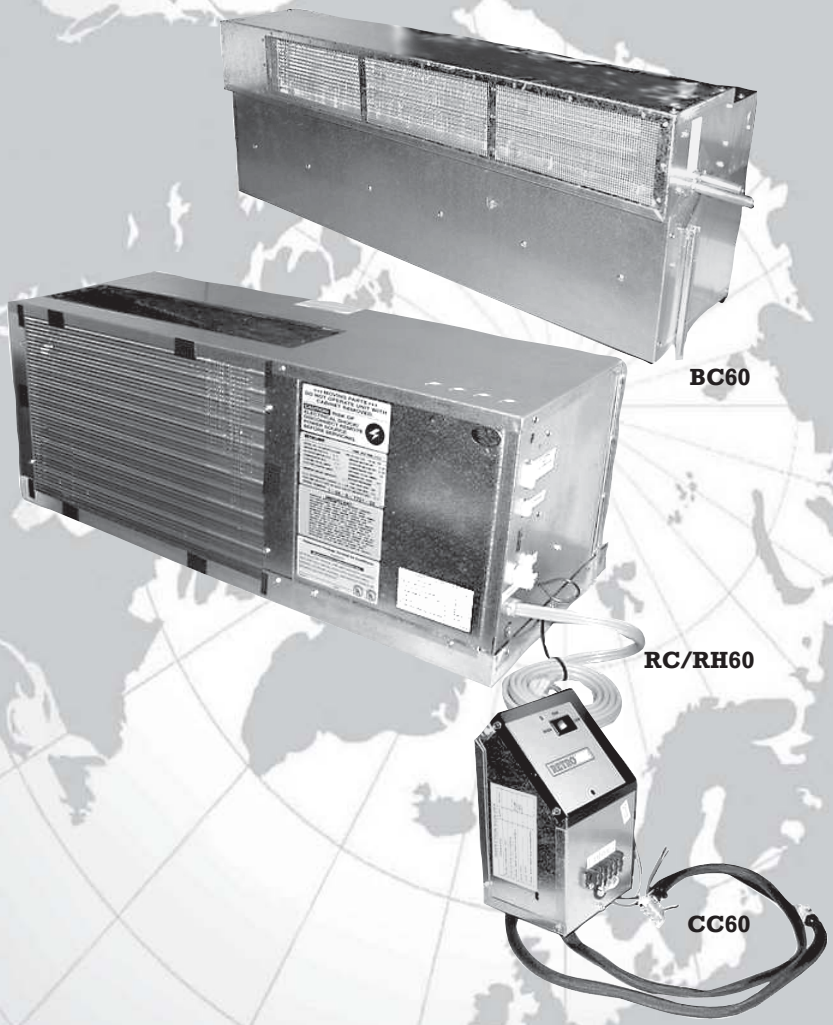
RC/RH 60 PACKAGED TERMINAL AIR CONDITIONER/HEAT PUMP

Replacement for Remington, Singer, or McQuay K/EK

COOLING ONLY/HEAT PUMP
Nominal Capacities: 9,000 -
12,000 - 15,000 - 18,000 Btuh

RETROAIRE

The Right Fit for Comfort



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An ISO 9001-2000 Certified Company



P/N# 240000671, Rev. 1.6 [2/05]

RC/RH 60 PACKAGED TERMINAL AIR CONDITIONER/HEAT PUMP

INSTALLATION, OPERATION & MAINTENANCE GUIDE

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Shipping Damage MUST be Reported to the Carrier IMMEDIATELY!!!
Examine the exterior. Remove cover and examine compressor and piping for signs of damage.

This manual is intended as an aid to qualified service personnel for proper installation, operation, and maintenance of the RetroAire RC/RH60 Downflow Ducted PTAC. Read these instructions thoroughly and carefully before attempting installation or operation. Failure to follow these instructions may result in improper installation, operation, service or maintenance, possibly resulting in fire, electrical shock, property damage, personal injury, or death.

TO THE INSTALLER

- (1) Retain this manual and warranty for future reference.
- (2) Before leaving the premises, review this manual to be sure the unit has been installed correctly and run the unit for one complete cycle to make sure it functions properly.

To obtain technical service or warranty assistance during or after the installation of this unit, contact your distributor.

When calling for assistance, please have the following information ready:

- Model Number _____
- Serial Number _____
- Date of installation _____

Recognize this symbol as an indication of important safety information

SAFETY INSTRUCTIONS

- ▲ Read all instructions before using the RetroAire RC/RH60 PTAC. Install or locate this unit only in accordance with these instructions. Use this unit only for its intended use as described in this manual.
- ▲ Check the rating plate on the RetroAire RC/RH60 PTAC before installation to make certain the voltage shown is the same as the electric supply to the unit.
- ▲ The RetroAire RC/RH60 PTAC must be connected only to a properly grounded electrical supply. Do not fail to properly ground this unit.
- ▲ Turn off the electrical supply before servicing the RetroAire RC/RH60 PTAC.
- ▲ Do not use the RetroAire RC60 PTAC if it has damaged wiring, is not working properly, or has been damaged or dropped.

[Save These Instructions]

▲ DANGER ▲

The RetroAire PTAC must:

- ▲ **Be connected to a properly grounded electrical supply with the proper voltage as stated on the rating plate.**
- ▲ **Have proper over current protection (i.e. time-delay fuse/HACR-Breaker) as listed on the Rating Plate.**

Failure to follow these instructions can result in a fire, explosion, or electrical shock causing property damage, personal injury, or death.

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INSTALLER RESPONSIBILITIES

This manual has been prepared to acquaint you with the installation, operation and maintenance of this RetroAire RC/RH60 Downflow Ducted PTAC and to provide important safety information in these areas.

We urge you to read all of the instructions thoroughly before attempting the installation or operation of this unit. This manual should be kept for future reference.

The manufacturer of this unit will not be liable for any damages caused by failure to comply with the installation and operating instructions outlined in this manual.

A rating plate identifying this RetroAire RC/RH60 Downflow Ducted PTAC can be found on the unit. When referring to your unit, always have the information listed on the rating plate readily available.

DANGER

Do not use the RetroAire RC/RH60 Downflow Ducted PTAC. With any electrical supply voltage other than the one listed on the rating plate.

Check the rating plate on the unit for the correct voltage rating. Failure to use the correct voltage may result in death, serious bodily injury or property damage. If you have any questions or doubts, consult the factory before installing this unit.

WARNING

Completely read all instructions prior to assembling, operating, or repairing this product. Inspect all parts for damage prior to installation and start-up. The RetroAire RC/RH60 Downflow Ducted PTAC must be installed ONLY by qualified installation personnel.

MODIFICATION AND TAMPERING

DANGER

Tampering with the RetroAire RC/RH60 Downflow Ducted PTAC is dangerous and may result in serious injury or death. Tampering voids all warranties.

DO NOT ATTEMPT TO MODIFY OR CHANGE THIS UNIT IN ANY WAY.

IMPORTANT SAFETY FEATURE

Power Cord With Integral Safety Protection

All PTACs rated 250V or less that are cord connected to the power supply are equipped with a power cord with integral safety protection as standard. Providing personal shock protection as well as arcing and fire prevention, the device is designed to sense any damage in the line cord and disconnect power before a fire can occur. Tested in accordance with Underwriters Laboratories, the cord set also offers a unique "passive" operation, meaning the unit does not require resetting if main power is interrupted.

WARNING - A DAMAGED POWER SUPPLY CORD MUST BE REPLACED WITH A NEW CORD FROM THE MANUFACTURER, AND NOT REPAIRED.

Each power cord should be checked before every use. Follow the instructions in the order listed on the device.

WARNING - DO NOT USE THE PRODUCT IF THE UNIT FAILS THE TEST.

PRODUCT DESCRIPTION

The RetroAire RC/RH60 replacement chassis is a conditioner designed to allow owners of Remington, Singer, or McQuay K/EK units to upgrade the performance of their room conditioning and achieve current efficiency standards.

This unit is available as a cooling only model (RC60) or, for those who wish to upgrade to a heat pump, the RH60 chassis will fit the existing wall sleeve. The heat pump version will reduce energy costs during periods of outdoor temperature ranging down to as low as 40°F.

With E.E.R. as high as 9, replacement of worn out and inefficient units becomes a very attractive option.

The RetroAire RC/RH60 cooling chassis with the evaporator blower section can be mated with existing electric or hydronic heat sections, or replacement heat sections may be ordered as options. The control box is standard with the chassis.

Whisper quiet operation improves the room ambiance and the 20 gauge, galvanized steel construction of the chassis ensures long service life.

All RetroAire products are backed by Enviromaster International LLC and are tested and rated in accordance with ARI standards 310, 380, and UL 484. A full service parts inventory is always available.

FACTORY INSTALLED CONTROLS AND COMPONENTS

- Unit Mounted Operating Controls
- Thermostat
- Fan Speed Control
- Heat/Cool Switch (when applicable)
- Baffle Kit
- Weather Strip Insulation
- Foam Strip for Supply Air Duct
- Normally/Open Normally/Closed Motor Valve-Switch, Hydronic Heat Only (standard)

FEATURES AND ACCESSORIES (Optional)

- Motorized Fresh Air Damper
- 2 or 3-Way Water Valve
- Sea Coast Coated Coils and Drain Pans
- Electric Heat (3, 4 or 5kw)
- 115V or 265/277V
- Hydronic Heat (1 or 2 row coil)

IMPORTANT: Make sure the motor valve is rated for the correct voltage. Most RetroAire units with unit mount controls will power a normally closed valve that is the same voltage as the unit (ex: a unit rated 208/230V will power a 208/230V normally closed valve). Be sure to check the wiring diagram (located on the unit) and voltage application for the specific unit. Other valve configurations and voltage options are available. Consult Technical Service if the unit voltage does not match your valve application.

PREPARATION FOR INSTALLATION

1. Remove old unit from wall sleeve for proper disposal.
 2. Inspect wall sleeve for rust or damage, clean and repair as necessary.
 3. Remove and repair old weather seals and note locations for new seals.
 4. Make sure wall sleeve is pitched to the outside by ½" and drain holes are open.
- A.** Inspect existing wiring for any deficiencies such as cut or frayed wires.
- B.** All electrical wiring must be run according to NEC and local codes. Check the unit rating plate for circuit ampacity and breaker or fuse size. Use only HACR type breakers & select the proper wire for the ampacity rating.
- C.** If plug and receptacle are used, check for proper fit.

RC/RH 60 INSTALLATION INSTRUCTIONS

RC/RH60 BAFFLE KIT INSTALLATION

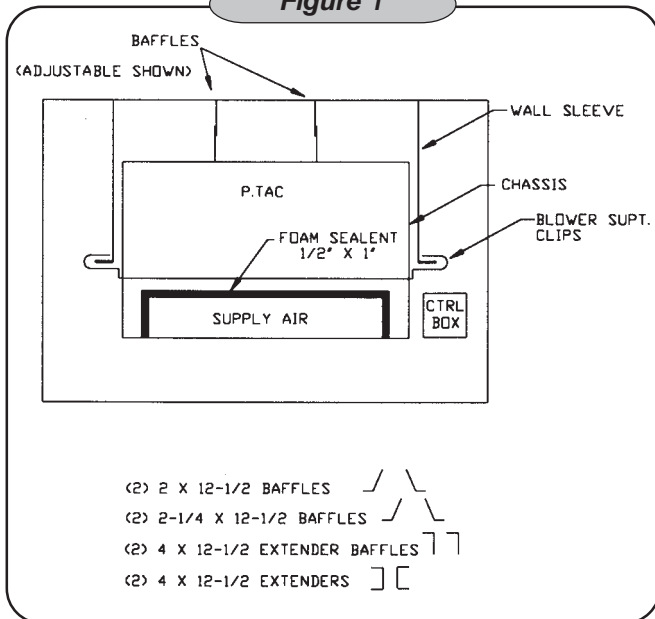
NOTE: It is very important to choose the correct baffles for the specific job to achieve proper air circulation.

OPTION 1- (2) $1\frac{7}{8}$ " x $12\frac{5}{8}$ " tight cabinet fit baffles are installed on condenser coil by removing 2 screws on front of condenser. Point both baffles toward center of condenser then fasten screws.

OPTION 2- (2) $2\frac{3}{8}$ " x $12\frac{5}{8}$ " baffles used for units that are slightly smaller than the cabinet (depth wise).

OPTION 3- (2) 4" x $12\frac{1}{2}$ " baffles with extensions are used to accommodate deeper wall sleeves. Determine required depth from cond. front to louver and adjust extension for proper fit. (Figure 1)

Figure 1



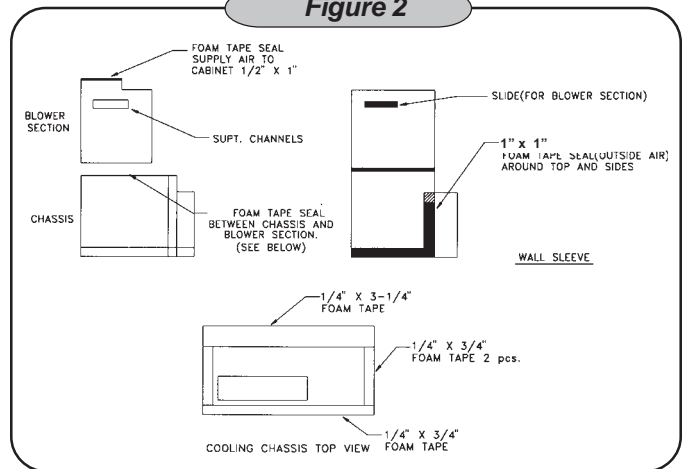
FOAM SEAL INSTALLATION

FOAM STRIPS (SMALL)- $\frac{1}{2}$ " strips must be placed around the supply air duct to ensure that all of the conditioned air is delivered into the room to be conditioned. Failure to do so could recirculate the supply air causing the unit to short cycle. (Figure 2)

FOAM STRIPS (LARGE)- 1" x 1" strips to be positioned in between wall sleeve and cooling chassis. This prevents outside air from entering around the chassis from the sides and top of the cabinet.

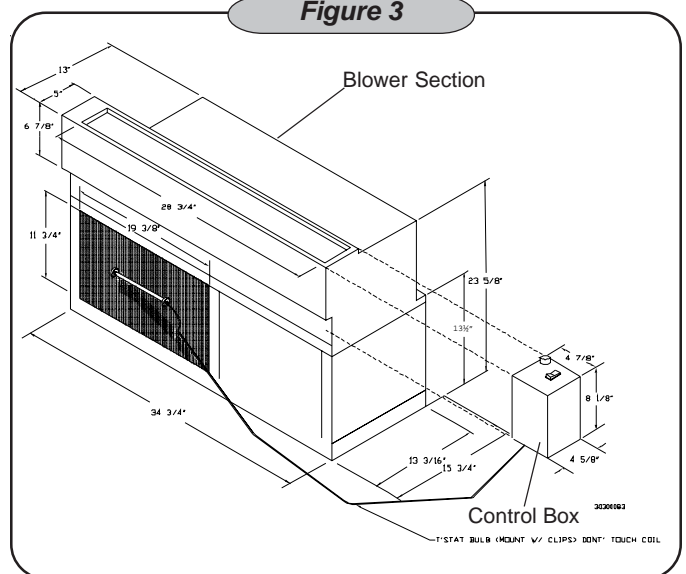
1. Install 1" x 1" large foam strip between wall sleeve and cooling chassis around the condenser top and sides to prevent outside air from entering around the chassis into the room.

Figure 2



2. Place $\frac{1}{2}$ " x 1" foam around blower section supply opening. This prevents conditioned air from recirculating. Failure to do so will result in short cycling of the unit.
3. Slide blower section in place (Figure 3). The accessories kit contains (2) blower support clips to lock blower section into position. Hook them over flange on wall sleeve and drill screw clips to L + R sides of blower section.

Figure 3



4. Mount control panel in space provided on cabinet. Take deco panel (held on by two screws) off control box. Place the control box deco panel over opening in cabinet and tighten screws through deco panel, cabinet, and into control box.
5. Connect mox connectors from chassis, blower and control box. Each mox connector is individually labeled to prevent mismatching. Make sure the label on the plugs matches the label on the mating sockets exactly.

6. Install the cooling chassis. Make sure you use the correct condenser baffles to ensure proper air circulation. Also, look at the slide rails (note that they are set in horizontally on the cooling chassis and wall sleeve sides). Slide cooling chassis into place after placing correct set of baffles on front of condenser.

NOTE: Make sure molex plugs are connected correctly to ensure proper operation of the unit.

FINAL INSPECTION AND START-UP

- A.** Hard wire line voltage to control box. (All wiring must be in accordance with NEC and local codes.)
- B.** Install thermostat bulb clips and grommets into coil and position thermostat bulb into clips. Then place air filter back on coil. (See diagram on page 7).
- NOTE:** When installing the control section on the RC/RH60, you must install the thermal bulb to the evaporator coil. To do this, take the bulb clips out of the baffle kit bag and install on the middle of the evaporator coil by pressing the round part of the clips through the coil fins. Once this is done you can proceed with the rest of the installation. See *Dimensions and Specifications* (page 4) for proper installation on the T'stat bulb.
- C.** Turn power on and check for proper operation of cooling, fresh air, and heating (if supplied).

OPERATION AND MAINTENANCE

RetroAire units can be equipped with unit mounted or remote controlled thermostats. Turning the unit mounted thermostat knob to the far left (red) will produce the warmest room temperature while turning it all the way to the right (blue) will produce the coolest. These settings can be adjusted for personal comfort.



NOTE: It is illegal to discharge refrigerant into the atmosphere. Use proper reclaiming methods and equipment when installing or servicing this unit.

- Regular cleaning of the air filter is required. To access the filter (located on the evaporator coil), remove the cabinet front and lift the filter out. It may then be cleaned with a vacuum cleaner or garden hose. Allowing dust to collect on the filter will cause the unit to lose efficiency and eventually malfunction. Check filter at least once each month.
- Vacuum dust from the return air grille surface when cleaning the filter.
- Clean the exterior of the cabinet as desired. Use a mild household cleaner.
- This unit is equipped with a permanently lubricated motor. Oiling is not necessary.

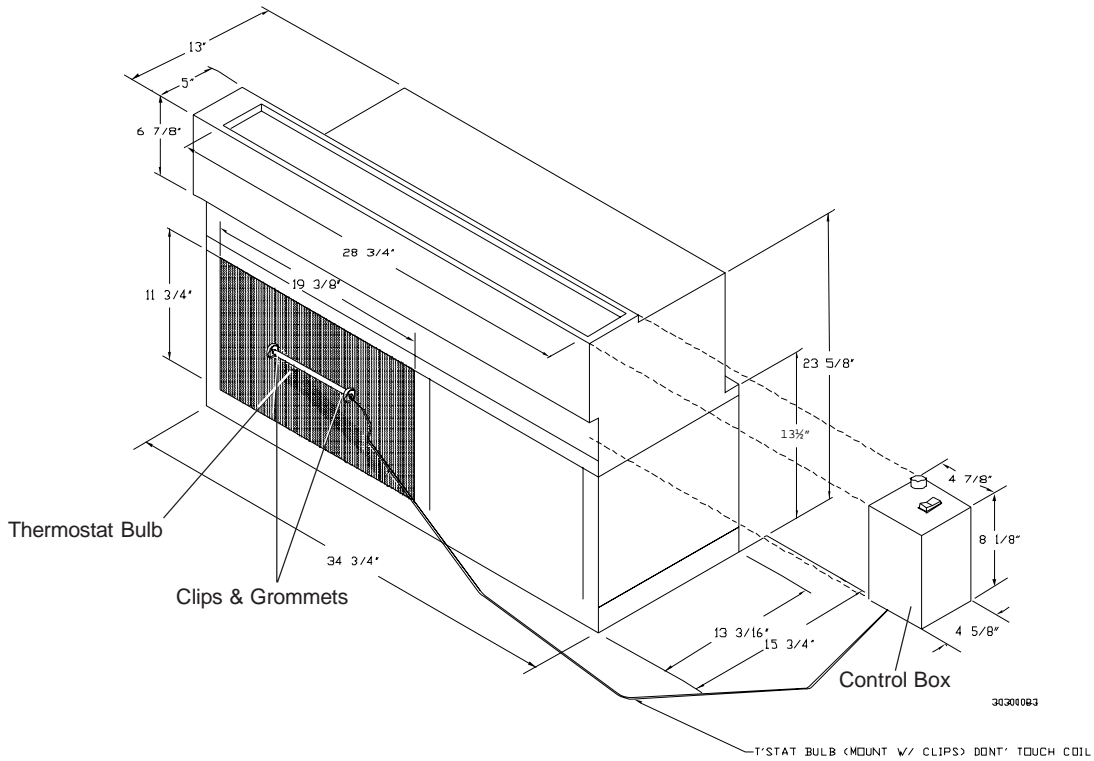
TROUBLESHOOTING

If compressor will not start, check to see if the thermostat is satisfied. If thermostat is not satisfied, check wiring and relays for proper connections and damage.

NOTE: CR/relay = cooling relay
HR/relay = heating relay

RC/RH 60 DIMENSIONS AND SPECIFICATIONS

NOTE: Due to ongoing development programs, design and specifications may change without notice.



RC/RH 60 Performance Data						
Unit Size	Cooling Btuh	EERs	Heat Pump Btuh	COP	Evaporator CFM Hi/Lo	Fresh Air CFM
09	9200	9	8900	3.2	385/335	40/35
12	11100	8.8	10800	3.1	385/335	40/35
15	13700	8.5	13200	3	440/385	55/45
18	16300	8.2	N/A	N/A	440/385	55/45

RC/RH 60 Electrical Specifications											
Model#	Voltage/Hz/Phase	Evap Motor		Cond Motor		Compressor		Total Amps	MCA	Max. Fuse	Min. Voltage
		FLA	HP	FLA	HP	RLA	LRA				
09	208/230/60/1	0.6	0.08	0.71	0.09	3.8	20	5.1	6.1	15	197
	265/60/1	0.67	0.08	0.71	0.09	3.3	18.6	4.7	5.5	15	240
12	208/230/60/1	0.6	0.08	0.71	0.09	4.8	26.3	6.1	7.3	15	197
	265/60/1	0.67	0.08	0.71	0.09	4.2	28	5.6	6.6	15	240
15	208/230/60/1	0.6	0.08	0.71	0.09	6.4	38	7.7	9.3	15	197
	265/60/1	0.67	0.08	0.71	0.09	5.4	32	6.8	8.1	15	240
18 (RC Only)	208/230/60/1	0.6	0.08	0.71	0.09	7.6	45	8.9	10.8	15	197
	265/60/1	0.67	0.08	0.71	0.09	6.3	32	7.7	9.3	15	240

RC/RH 60 Optional Electric Heat							
Heater#	Voltage	Watts	Btuh	Amps	Total Heat Amps	MCA	Max. Fuse
3	208	2454	8400	11.8	12.4	15.3	20
	230	3000	10300	13	13.6	16.9	20
	265	3983	13600	15	15.7	19.5	20
4	208	3271	11200	15.7	16.3	20.3	25
	230	4000	13700	17.4	18	22.3	25
	265	5310	18200	20	20.7	25.7	30
5	208	4089	14000	19.7	20.3	25.2	30
	230	5000	17100	21.7	22.3	27.8	30



ALL PRODUCT LIMITED WARRANTY

Enviromaster International Corporation LLC (EMI) warrants to the purchaser/owner, that the EMI products will be free from defects in material and workmanship under the normal use and maintenance for a period of twelve months for all components, and (60) months on unit compressors from date of the original installation or 15 months for all components and 63 months on unit compressors from the date of original sale whichever comes first.

WHAT WE WILL COVER

EMI will replace any defective part returned to EMI's approved service organization with a new or rebuilt part at no charge. The replacement part assumes that unused portion of this warranty.

WHAT WE DON'T COVER

THIS WARRANTY DOES NOT INCLUDE LABOR or other costs incurred for repairing, removing, installing, shipping, servicing, or handling of either defective or replacement parts.

EMI IS NOT RESPONSIBLE FOR

- Normal maintenance
- Damage or repairs required as a consequence of faulty installation or application by others.
- Failure to start due to voltage conditions, blown fuses, open circuit breakers, or other damages due to the inadequacy or interruption of electrical service.
- Damage or repairs needed as a consequence of any misapplication, abuse, improper servicing, unauthorized alteration, or improper operation.
- Damage as a result of floods, winds, fires, lightning, accidents, corrosive atmosphere, or other conditions beyond the control of EMI.
- Parts not supplied or designated by EMI.
- Products installed outside the United States or Canada.
- Any damages to person or property of whatever kind, direct or indirect, special or consequential, whether resulting from use or loss of use of the product.

LIMITATION OF WARRANTIES

This Warranty is exclusive and in lieu of any implied warranties of merchantability and fitness for a particular purpose and all other warranties express or implied. The remedies provided for in this warranty are exclusive and shall constitute the only liabilities on the part of EMI including any statements made by any individual which shall be of no effect.

FOR SERVICE OR REPAIR:

- 1) Contact the installer _____
- 2) Call the nearest distributor _____
- 3) Call or write _____

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