

Service Manual

EMD series

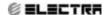
| Indoor Units | Outdoor Units |
|--------------|---------------|
| EMD 27 | OU6-27 |
| EMD 35 | OU8-33 |
| EMD 40 | OU10-38 |
| EMD 45 | OU10-44 |
| EMD 50 | OU10-50 |
| EMD 60 | OU12-60 |





| REFRIGERANT | |
|-------------|--------------|
| R22 | HEAT PUMP |
| R407C | COOLING ONLY |
| | |
| | |

JULY 2005



LIST OF EFFECTIVE PAGES

Note: Changes in the pages are indicated by a "Revision#" in the footer of each effected page (when none indicates no changes in the relevant page). All pages in the following list represent effected/ non effected pages divided by chapters.

Dates of issue for original and changed pages are:

Total number of pages in this publication is 109 consisting of the following:

| Page | Revision | Page | Revision | Page | Revision |
|------|----------|------|----------|------|----------|
| No. | No. # | No. | No. # | No. | No. # |

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• Zero in this column indicates an original page.

^{*}Due to constant improvements please note that the data on this service manual can be modified with out notice.

^{**}Photos are not contractual.



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1. FEATURES

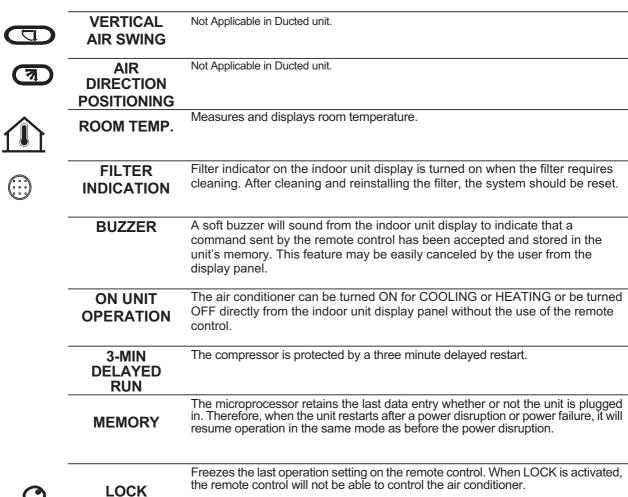
□ MODES OF OPERATION , FUNCTIONS AND FEATURES

The air conditioner is based on a microcomputer control system with remote wall mounted LCD display and control unit, programmed for the following modes and functions:

| | COOL | Cools, dehumidifies and filters the room air. Maintains desired site temperature. |
|-------------|----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ** | HEAT | Heats and filters the air. Maintains desired site temperature. |
| \triangle | AUTO | Automatically switches from COOLING to HEATING or from HEATING to COOLING, maintaining the desired temperature according to the room conditions. |
| | DRY | Dehumidifies and moderately cools the room. In DRY Mode the air conditioner operates at an increased dehumidifying power. This function is recommended to be used when temperature is rather cool but the humidity is high. |
| \$ | FAN | Recalculates and filters the room air. Maintains constant air movement in the room. |
| * | AUTO FAN | The air conditioner automatically selects the FAN speed in accordance to the room temperature. At the start, the unit operates at high fan speed. As the room air gets closer to the desired temperature, the fan switches on a lower speed for quieter operation. |
| | HOT KEEP | In HEATING and in AUTO FAN, the fan will be turned off when the compressor is not in operation and will not be restarted, unless the indoor coil reaches adequate temperature. This HOT KEEP feature prevents uncomfortable cold air drafts. AUTO FAN Is therefore, recommended to be used when the air conditioner is in HEATING mode. |
| | I FEEL | Switches the temperature sensing point to the place where the remote control is located (in normal operation the temperature sensor is located behind the intake grille of the air conditioner). This function is designed to provide a personalized environment by transmitting the temperature control information from where the remote control is placed. The communication between the remote control and the central control unit is done by infrared signal. When using this function, the remote control should always be aimed without obstructions at the air conditioner. |
| | TIMER | Real time control and display, automatically turns the air conditioner ON or OFF according to the time of day setting, ensuring comfort conditions before returning home, without wasting electricity. It turns off the air conditioner automatically when sleeping. |
| | SLEEP | Designed to automatically reset the temperature setting. In COOLING mode the temperature rises one degree centigrade after each consecutive hour, up to three hours, from the start of the mode. In HEATING mode, the reverse occurs, the air conditioner lowers its temperature one degree every hour. When in SLEEP Mode, the operation will automatically turn off after seven hours. This function saves energy when the air conditioner is operating during off hours. |

FEATURES









2. PRODUCT DATA SHEET

2.1 R22/R407C

| Mode | el (Indoor & Outo | loor) | | | EMD 27 & OU6-27 RC R22 | | | | |
|------------------------|-------------------------------|--------------------|----------------------------------------|---------|------------------------------|----------------------|-----------|-------|--|
| Insta | llation method | | | Ducted | | | | | |
| Char | acteristics | | Units | Cooling | l | | Heating | | |
| Cana | alt. | | | Btu/Hr | 26600 27300 | | | 27300 | |
| Capa | acity | | | Kw | 7.8 8.0 | | | 8.0 | |
| Powe | er input | | | Kw | 2.8 | | | | |
| COP | | | | W/W | 2.79 | | | 3.28 | |
| | er supply | | | V/Hz/Ph | | 230V/50 | Hz/1PH | | |
| | d current | | | Α | 11.6 | | , | 10.0 | |
| | ing current | | | A | 11.0 | 6 | 7 | 10.0 | |
| | it breaker rating | | | A | | 2 | | | |
| 0.100 | Fan type & qua | ntity | | , , | | Centrifu | _ | | |
| } | Fan speeds | Titity | H/ M/ L | RPM | 900 | | | 700 | |
| - | Air flow * | | H/ M/ L | M³/Hr | 1800 | 800 700 1560 1300 | | | |
| } | External static | oroccuro | Min-Max | Pa | 1000 | 25 - | | 1300 | |
| - | Sound power le | | H/ M/ L | dBa | 68.2 | 65 | | 61.3 | |
| ~ | Sound pressure | | H/ M/ L | dВа | 54.3 | 51 | | 48.5 | |
| Ö | Moisture remov | | | Lt/Hr | 34.3 | 51 1. | | 40.3 | |
| Q | | | | | | | | | |
| NDOOR | Condensate dra | ain tube i.D | \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ | mm | 705 | 1 | | 505 | |
| 🗲 | Dimensions | | W/H/D | mm | 785 | 40 | | 595 | |
| | Weight | | \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\ | Kg | 205 | 32 | | 0.4.0 | |
| | Package dimensions W/ H / D | | | mm | | | | 610 | |
| | Package weigh | | | Kg | | 34 8 | | | |
| | Units per pallet | | | Units | | | | | |
| | Stacking height | | | Units | 4 | | | | |
| | Refrigerant con | | | | | Capilla | | | |
| | Compressor typ | | | | Scroll | | | | |
| | Fan type & qua | ntity | | | Axial & 1 | | | | |
| | Fan speeds | | H/L | RPM | 920 | | | | |
| | Air flow | | H/L | M³/Hr | 2350 | | | | |
| | Sound power le | evel | H/L | dBa | 69 | | | | |
| | Sound pressure | e level *** | H/L | dBa | 62 | | | | |
| ا م ا | Dimensions | | W/H/D | mm | 900 | 58 | 30 | 340 | |
| ΙŌΙ | Weight | | | Kg | | 6 | 4 | | |
| OUTDOOR | Package dimensions W/ H / D | | | mm | 985 | 64 | 10 | 410 | |
| ¦ | Package weigh | t | | Kg | | 6 | | | |
| ΙĎΙ | Units per pallet | | | Units | 9 | | | | |
| | Stacking height | | | Units | | 3 | | | |
| | Refrigerant type | | | | | R22 | | | |
| | Charge / Distance | | | Kg/ M | 2.1/ 7.5 | | | | |
| | Additional charge per 1 meter | | | Grams | 25 | | | | |
| | | Liquid line | | Inch | | 3/ | | | |
| | Connections | Suction line | | Inch | 5/8 | | | | |
| | between | Max. tubing length | | Meter | 25 | | | | |
| | units | | t difference | Meter | 10 | | | | |
| Operation control type | | | | | | | | | |
| | | | | Kw | LCD Remote control No | | | | |
| Heating elements | | | | r\vv | No Crankcase heater (60W) | | | | |
| Othe | 15 | | | | <u>Crai</u> | ikcase f | เษลเษา (6 | UVV) | |

^{*} Airflow in ducted units; according to nominal external static pressure.

^{**} Sound power in ducted units is measured at air outlet side.

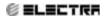
^{***} Sound pressure level is measured at 1-meter distance from the unit.



| Mode | el (Indoor & Outo | door) | | | EMD 2 | 27 & OU6-27 ST | R22 | |
|----------------------------|-----------------------------|-------------------------------|--------------|---------|--------------------|-----------------|------|--|
| Installation method | | | | | | Ducted | | |
| Characteristics | | | | Units | Cooling | | | |
| | | | | Btu/Hr | 26600 | | | |
| Capa | Capacity | | | | 7.8 | | | |
| Powe | er input | | | Kw | 2.8 | | | |
| COP | | | | W/W | 2.79 | | | |
| Powe | er supply | | | V/Hz/Ph | 2 | 230V/50Hz/1PH | | |
| Rate | d current | | | Α | 11.6 | | | |
| Start | ing current | | | Α | | 67 | | |
| Circu | uit breaker rating | | | Α | 20 | | | |
| | Fan type & qua | ntity | | | | Centrifugal & 1 | | |
| | Fan speeds H/ M/ L | | | | 900 | 800 | 700 | |
| | Air flow * | | H/ M/ L | M³/Hr | 1800 | 1560 | 1300 | |
| | External static | | Min-Max | Pa | | 25 - 70 | | |
| | Sound power le | | H/ M/ L | dBa | 68.2 | 65.5 | 61.3 | |
| ∥∺∣ | Sound pressure | | H/ M/ L | dBa | 54.3 | 51.5 | 48.5 | |
| $\parallel lpha \parallel$ | Moisture remov | ⁄al | | Lt/Hr | | 1.7 | | |
| NDOOR | Condensate dra | ain tube I.D | | mm | | 19 | | |
| ∥롣∣ | Dimensions | | W/H/D | mm | 785 | 400 | 595 | |
| | Weight | | | Kg | | 32 | | |
| | Package dimensions W/ H / D | | | mm | 825 | | | |
| | Package weight | | | Kg | 34 | | | |
| | Units per pallet | | | Units | 8 | | | |
| | Stacking height | | | Units | 4 | | | |
| | Refrigerant con | | | | Capillary tube | | | |
| | Compressor typ | | | | Scroll | | | |
| | Fan type & qua | ntity | | | Axial & 1 | | | |
| | Fan speeds | | H/L | RPM | 920 | | | |
| | Air flow | | H/L | M³/Hr | 2350 | | | |
| !! | Sound power le | | H/L | dBa | 69 | | | |
|]] | Sound pressure | e level *** | H/L | dBa | 62 | | | |
| | Dimensions | | W/ H / D | mm | 900 | 580 | 340 | |
| ∥ഉ∣ | Weight | | | Kg | | 64 | | |
| OUTDOOR | Package dimen | | W/ H / D | mm | 985 | 640 | 410 | |
| ∥ై∣ | Package weigh | | | Kg | | 67 | | |
| ∥႘∣ | Units per pallet | | | Units | | 9 | | |
| ∥˘∣ | Stacking height | | | Units | | 3 | | |
| | Refrigerant type | | | 16.15. | | R22 | | |
| | Charge / Distar | | | Kg/ M | 2.1/ 7.5 | | | |
| | Additional char | Additional charge per 1 meter | | Grams | | 25 | | |
| | Connections | Liquid line | | Inch | 3/8 | | | |
| | between | Suction line | | Inch | 5/8 | | | |
| | units | Max. tubing length | | Meter | 25 | | | |
| | | Max. heigh | t difference | Meter | 10 | | | |
| Operation control type | | | | Kw | LCD Remote control | | | |
| | Heating elements | | | | No | | | |
| Othe | rs | | | | Cran | kcase heater (6 | UVV) | |

 ^{*} Airflow in ducted units; according to nominal external static pressure.
 ** Sound power in ducted units is measured at air outlet side.

^{***} Sound pressure level is measured at 1-meter distance from the unit.



| Mode | el (Indoor & Outo | loor) | | EMD 35 & OU8-33 RC R22 | | | | |
|------------------------|-------------------------------|-----------------------------|--------------|------------------------|-----------------|----------|-----------|---------|
| Installation method | | | | | Ducted | | | |
| Characteristics | | | | Units | Cooling Heating | | | Heating |
| Capacity | | | | Btu/Hr | 32500 34800 | | | 34800 |
| Capa | icity | | | Kw | 9.5 10.1 | | | 10.1 |
| Powe | er input | | | Kw | 3.3 | | | 2.9 |
| COP | | | | W/W | 2.87 | | | 3.53 |
| Powe | er supply | | | V/Hz/Ph | | 230V/50 | Hz/1PH | |
| Rate | d current | | | Α | 14.4 | | | 12.3 |
| Starti | ing current | | | Α | | 7 | 6 | |
| Circu | it breaker rating | | | Α | | 2 | :0 | |
| | Fan type & qua | ntity | | | | Centrifu | ıgal & 1 | |
| İ | Fan speeds | • | H/ M/ L | RPM | 890 | | 00 | 680 |
| i [| Air flow * | | H/ M/ L | M³/Hr | 1770 | 15 | 70 | 1300 |
| 1 | External static | | Min-Max | Pa | | 37 - | - 80 | |
| i [| Sound power le | | H/ M/ L | dBa | 68.2 | 65 | 5.5 | 61.3 |
| [꽃 [| Sound pressure | e level *** | H/ M/ L | dBa | 54.3 | 51 | 1.5 | 48.5 |
| $1 \otimes 1$ | Moisture remov | al | | Lt/Hr | | 2 | .7 | |
| NDOOR | Condensate dra | ain tube I.D | | mm | | 1 | 9 | |
| IZĺ | Dimensions | | W/H/D | mm | 785 | 40 | 00 | 595 |
| | Weight | | | Kg | | 3 | 6 | |
| | Package dimensions W/ H / D | | | mm | 825 | 425 610 | | |
| | Package weight | | | Kg | 38 | | | |
| 1 [| Units per pallet | | | Units | 8 | | | |
| | Stacking height | | | Units | 4 | | | |
| | Refrigerant con | trol | | | | Capilla | ry tube | |
| i [| Compressor typ | е | | | Scroll | | | |
| | Fan type & qua | ntity | | | Axial & 1 | | | |
| İ | Fan speeds | • | H/L | RPM | 850 | | | |
| [| Air flow | | H/L | M³/Hr | 3110 | | | |
| | Sound power le | | H/L | dBa | 69 | | | |
| | Sound pressure | e level *** | H/L | dBa | 62 | | | |
| ╽┰│ | Dimensions | | W/H/D | mm | 900 | 86 | 30 | 340 |
| OUTDOOR | Weight | Weight | | Kg | | | 8 | |
| 121 | | Package dimensions W/ H / D | | mm | 985 | | 00 | 410 |
| ▮岸∣ | Package weigh | | | Kg | 82 | | | |
| I≳∣ | Units per pallet | | | Units | 6 | | | |
| | Stacking height | | | Units | 2 | | | |
| | Refrigerant type | | | | R22 | | | |
| <u> </u> | Charge / Distance | | | Kg/ M | 2.33 / 7.5 | | | |
| | Additional charge per 1 meter | | Grams | 25 | | | | |
| | Connections | Liquid line | | Inch | 3/8 | | | |
| | between | Suction line | | Inch | 5/8 | | | |
| | units | Max. tubing length | | Meter | 30 | | | |
| | | | t difference | Meter | 10 | | | |
| Operation control type | | | | LCD Remote control | | | rol | |
| Heating elements | | | | Kw | No | | | |
| Othe | rs | | | | Crai | nkcase h | neater (6 | 60W) |

 ^{*} Airflow in ducted units; according to nominal external static pressure.
 ** Sound power in ducted units is measured at air outlet side.
 *** Sound pressure level is measured at 1-meter distance from the unit.



| Installation method | Mode | el (Indoor & Outo | door) | | | EMD | 35 & OU8-33 | ST R22 | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|------------------------|--------------|--------------|---------|--------------------|-----------------|--------|--|--|
| Capacity | | | , | | | | Ducted | | | |
| Capacity | | | | | Units | Cooling | 1 | | | |
| Power input | | | | | Btu/Hr | | | | | |
| COP | Capa | acity | | | | | | | | |
| COP | Powe | er input | | | Kw | 3.3 | | | | |
| Rated current Starting current A | | | | | W/W | 2.87 | | | | |
| Rated current Starting current A | Powe | er supply | | | V/Hz/Ph | | | | | |
| Fan type & quantity | | | | | | | | | | |
| Fan type & quantity | ! | | | | Α | | 76 | | | |
| Fan type & quantity | | | | | | | | | | |
| Fan speeds | il I | | ntitv | | | | Centrifugal & | 1 | | |
| Air flow * | ii i | | | H/ M/ L | RPM | 890 | | | | |
| External static pressure | ll i | | | | M³/Hr | | | 1300 | | |
| Sound power level *** | ii i | | oressure | Min-Max | | | 37 - 80 | • | | |
| Sound pressure level *** | ii t | | | | | 68.2 | | 61.3 | | |
| Noisture removal | Ř | | | H/ M/ L | dBa | 54.3 | 51.5 | 48.5 | | |
| Weight | | | | | Lt/Hr | | 2.7 | • | | |
| Weight | | Condensate dra | ain tube I.D | | mm | | 19 | | | |
| Package dimensions | ∥☲┆ | Dimensions | | W/H/D | mm | 785 | 400 | 595 | | |
| Package dimensions | II [—] | Weight | | | Kg | | 36 | • | | |
| Package weight | ll i | Package dimen | sions | W/H/D | | 825 | | | | |
| Stacking height | | | | | Kg | 38 | | | | |
| Stacking height | li i | Units per pallet | | | | 8 | | | | |
| Compressor type | ii i | | | | Units | 4 | | | | |
| Compressor type | | Refrigerant con | itrol | | | | | | | |
| Fan type & quantity | ii i | | | | | Scroll | | | | |
| Fan speeds | ll [| | | | | | | | | |
| Sound power level | ii i | Fan speeds | | H/L | RPM | | | | | |
| Sound pressure level *** | [| Air flow | | H/L | M³/Hr | 3110 | | | | |
| Dimensions | ii [| Sound power le | evel | H/L | dBa | 69 | | | | |
| Weight | ii [| Sound pressure | e level *** | H/L | dBa | 62 | | | | |
| Refrigerant type | ~ [| Dimensions | | W/H/D | mm | 900 | 860 | 340 | | |
| Refrigerant type | ō [| | | | Kg | | | | | |
| Refrigerant type | Q [| | | | mm | 985 | | 410 | | |
| Refrigerant type | ∥岸∣ | | | | | | | | | |
| Refrigerant type | ∥∑∣ | | | | | | | | | |
| Charge / Distance Kg/ M 2.33 / 7.5 Additional charge per 1 meter Grams 25 Connections between units Liquid line Inch 3/8 Suction line Inch 5/8 Max. tubing length Meter 30 Max. height difference Meter 10 Operation control type LCD Remote control | | | | | Units | | | | | |
| Additional charge per 1 meter Grams 25 Connections between units Liquid line Inch 3/8 Suction line Inch 5/8 Max. tubing length Meter 30 Max. height difference Meter 10 Operation control type LCD Remote control | | Refrigerant type | е | | | | R22 | | | |
| Connections between units Liquid line Suction line Inch Suction line Inch Max. tubing length Meter Max. height difference Inch Meter Meter 10 Operation control type LCD Remote control | | | | | Kg/ M | 2.33 / 7.5 | | | | |
| Connections between units Suction line Max. tubing length Max. tubing length Meter Max. height difference Meter 10 Operation control type LCD Remote control | <u>-</u> | | | | Grams | | | | | |
| between units Max. tubing length Meter 30 | | Connections | | | Inch | 3/8 | | | | |
| units Max. tubing length Meter 30 | | | Suction line | | | 5/8 | | | | |
| Max. height difference Meter 10 Operation control type LCD Remote control | | | | | | 30 | | | | |
| | | uiilo | Max. heigh | t difference | Meter | | | | | |
| | Oper | Operation control type | | | | LCD Remote control | | | | |
| | | | | Kw | No | | | | | |
| Others Crankcase heater (60W) | | | | | | Crai | nkcase heater (| (60W) | | |

 ^{*} Airflow in ducted units; according to nominal external static pressure.
 ** Sound power in ducted units is measured at air outlet side.
 *** Sound pressure level is measured at 1-meter distance from the unit.



| Mod | el (Indoor & Outo | door) | | | EMD 3 | 5T & OL | J8-33T F | RC R22 |
|------------------------|-----------------------------|-------------------------------|--------------|----------------|--------------------|-----------|----------|--------------|
| Insta | Illation method | • | | | Ducted | | | |
| Cha | racteristics | | Units | Cooling | ı | | Heating | |
| Capacity | | | | Btu/Hr | | | | 34100 |
| II Capa | acity | | | Kw | 9.4 10.0 | | | 10.0 |
| Pow | er input | | | Kw | 3.2 2.8 | | | 2.8 |
| COF | | | | W/W | 2.91 | | | 3.58 |
| Pow | er supply | | | V/Hz/Ph | 400V/50Hz/3N | | | |
| | d current | | | Α | 3x9.1 | | | 3x8.1 |
| Start | ing current | | | Α | | 3 | 6 | |
| | uit breaker rating | | | Α | 3x16 | | | |
| | Fan type & qua | ntity | | | | Centrifu | ıgal & 1 | |
| İ | Fan speeds | | H/ M/ L | RPM | 890 | 80 | | 680 |
| ii | Air flow * | | H/ M/ L | M³/Hr | 1770 | 15 | 70 | 1300 |
| ii | External static | oressure | Min-Max | Pa | | 37 - | | |
| ll | Sound power le | | H/ M/ L | dBa | 68.2 | 65 | 5.5 | 61.3 |
| ďζ | Sound pressure | | H/ M/ L | dBa | 54.3 | 51 | .5 | 48.5 |
| | Moisture remov | | | Lt/Hr | | 2. | .6 | • |
| NDOOR | Condensate dra | ain tube I.D | | mm | | 1 | | |
| ΙĪΖ | Dimensions | | W/H/D | mm | 785 | 40 | 00 | 595 |
| ii [—] | Weight | | | Kg | | 3 | 6 | |
| ii | Package dimensions W/ H / D | | | mm | 825 | | | |
| | Package weight | | | Kg | 38 | | | |
| | Units per pallet | | | | | 8 | | |
| ii | Stacking height | | | Units Units | 4 | | | |
| | Refrigerant con | | | | | Capilla | rv tube | |
| ii | Compressor type | | | | Scroll | | | |
| | Fan type & qua | | | | Axial & 1 | | | |
| ii | Fan speeds | | H/L | RPM | 850 | | | |
| ii | Air flow | | H/L | M³/Hr | 3110 | | | |
| ii | Sound power le | evel | H/L | dBa | 69 | | | |
| ii | Sound pressure | | H/L | dBa | 62 | | | |
| II ~ | Dimensions | | W/H/D | mm | 900 | 86 | 50 | 340 |
| OUTDOOR | Weight | | | Kg | | 7 | 8 | |
| l Ŏ | Package dimen | sions | W/H/D | mm | 985 | 90 | 00 | 410 |
| ∥₽ | Package weigh | | | Kg | 82 | | | • |
| '⊃ | Units per pallet | | | Units | | 6 | 3 | |
| | Stacking height | | | Units | | 2 | 2 | |
| il . | Refrigerant type | | | | | R | | |
| il . | | Charge / Distance | | | | 2.33 | | |
| I | | Additional charge per 1 meter | | | 25 | | | |
| I | | Liquid line | | Grams Inch | | 3/8 | | |
| | Connections | Suction line | Э | Inch | 5/8 | | | |
| | between | Max. tubing length | | Meter | 30 | | | |
| I | units | | t difference | Meter | 10 | | | |
| Operation control type | | | | | LCD Remote control | | | |
| | Heating elements | | | | No | | | |
| Othe | | | | Kw | Crankcase | heater (6 | 60W), 3F | PH Protector |
| | | | | | | - /- | ,, ,, | |

^{*} Airflow in ducted units; according to nominal external static pressure.

^{**} Sound power in ducted units is measured at air outlet side.

^{***} Sound pressure level is measured at 1-meter distance from the unit.



| Mode | el (Indoor & Outo | door) | | | EMD 3 | 5T & OU8-331 | r ST R22 | |
|------------------------------------|-------------------------------|--------------|--------------|---------|------------------------------------------|----------------|---------------|--|
| | llation method | , | | | | Ducted | | |
| | acteristics | | | Units | Cooling | | | |
| | | | | Btu/Hr | 31800 | | | |
| Capa | Capacity | | | Kw | 9.4 | | | |
| Powe | er input | | | Kw | 3.2 | | | |
| COP | | | | W/W | 2.91 | | | |
| Powe | er supply | | | V/Hz/Ph | 400V/50Hz/3N | | | |
| | d current | | | Α | 3x9.1 | | | |
| Start | ing current | | | Α | | 36 | | |
| Circu | it breaker rating | | | Α | | 3x16 | | |
| | Fan type & qua | ntity | | | | Centrifugal & | 1 | |
| i i | Fan speeds | , | H/ M/ L | RPM | 890 | 800 | 680 | |
| l i i | Air flow * | | H/ M/ L | M³/Hr | 1770 | 1570 | 1300 | |
| | External static | pressure | Min-Max | Pa | | 37 - 80 | • | |
| i i | Sound power le | evel ** | H/ M/ L | dBa | 68.2 | 65.5 | 61.3 | |
| ᄣ | Sound pressure | e level *** | H/ M/ L | dBa | 54.3 | 51.5 | 48.5 | |
| \parallel $lpha$ | Moisture remov | /al | | Lt/Hr | | 2.6 | | |
| NDOOR | Condensate dra | ain tube I.D | | mm | | 19 | | |
| ∥ 몯 [| Dimensions | | W/H/D | mm | 785 | 400 | 595 | |
| | Weight | | | Kg | | 36 | · | |
| | Package dimer | nsions | W/H/D | mm | 825 | | | |
| | Package weight | | | Kg | 38 | | | |
| | Units per pallet | | | Units | 8 | | | |
| | Stacking height | | | Units | 4 | | | |
| | Refrigerant con | itrol | | | | Capillary tube | е | |
| | Compressor type | ре | | | | Scroll | | |
| | Fan type & qua | ntity | | | Axial & 1 | | | |
| | Fan speeds | | H/L | RPM | 850 | | | |
| | Air flow | | H/L | M³/Hr | 3110 | | | |
| | Sound power le | evel | H/L | dBa | 69 | | | |
| | Sound pressure | e level *** | H/L | dBa | 62 | | | |
| <u>~</u> | Dimensions | | W/H/D | mm | 900 | 860 | 340 | |
| OUTDOOR | Weight | | | Kg | | 78 | | |
| | Package dimer | | W/ H / D | mm | 985 | 900 | 410 | |
| ∥Ë∣ | Package weigh | | | Kg | 82 | | | |
| ∥≳∣ | Units per pallet | | | Units | 6 | | | |
| \parallel $^{\circ}$ \parallel | Stacking height | | | Units | | 2 | | |
| | Refrigerant type | | | 16 (11 | | R22 | | |
| | Charge / Distar | | | Kg/ M | 2.33 / 7.5 | | | |
| | Additional charge per 1 meter | | | Grams | | 25 | | |
| | Connections | Liquid line | | Inch | | 3/8 | | |
| | between | Suction line | | Inch | 5/8 | | | |
| | units | Max. tubing | | Meter | 30 | | | |
| | | | t difference | Meter | 10 | | | |
| | Operation control type | | | Kw | LCD Remote control | | | |
| | Heating elements | | | | No Crankcase heater (60W), 3PH Protector | | | |
| Othe | rs | | | | Crankcase h | neater (60W), | 3PH Protector | |

 ^{*} Airflow in ducted units; according to nominal external static pressure.
 ** Sound power in ducted units is measured at air outlet side.

^{***} Sound pressure level is measured at 1-meter distance from the unit.



| Mode | el (Indoor & Outo | door) | | | EMD 4 | 10 & OU | 10-38 R | C R22 |
|-------------------------------------|---------------------------------------------------------------------------------------------------|-------------|---------|---------|--------------------|----------|----------|---------|
| | | , | | | | Duc | ted | |
| Installation method Characteristics | | | | Units | Cooling | a | | Heating |
| C | :t | | | Btu/Hr | 37700 | | | |
| Capa | acity | | | Kw | 11.0 11.6 | | | 11.6 |
| Pow | er input | | | Kw | 3.9 3.5 | | | 3.5 |
| COP | | | | W/W | 2.82 3.32 | | | 3.32 |
| Pow | er supply | | | V/Hz/Ph | 230V/50Hz/1PH | | | |
| | d current | | | Α | 17.9 15.9 | | | |
| Start | ing current | | | Α | 114.0 | | | |
| Circu | uit breaker rating | | | Α | | 2 | 5 | |
| | Fan type & qua | ntity | | | Centrifugal & 1 | | | |
| ii i | Fan speeds | | H/ M/ L | RPM | 1130 | 10: | | 830 |
| ii i | Air flow * H/ M/ L | | | M³/Hr | 1740 | 15 | | 1250 |
| External static pressure Min-Max | | | | Pa | | 37- | 80 | |
| ii i | Sound power le | | H/ M/ L | dBa | 70.8 | 67 | 67.1 | |
| K | Sound pressure | | H/ M/ L | dBa | 54.1 | 50 | .6 | 49.2 |
| \parallel $lpha$ | Moisture remov | | | Lt/Hr | | 3.6 | | |
| ∥≅ | Sound pressure level *** H/ M/ L Moisture removal Condensate drain tube I.D Dimensions W/ H / D | | | | | 19 | | |
| ∥롣 | □ Dimensions | | | mm | 785 | 40 | 00 | 595 |
| | Weight | | | Kg | | 3 | 6 | |
| ll l | Package dimer | sions | W/H/D | mm | 825 | 42 | 25 | 610 |
| ll l | Package weight Units per pallet Stacking height | | Kg | | 3 | 8 | | |
| ll l | | | Units | | 8 | 3 | | |
| | | | Units | | 4 | 1 | | |
| | Refrigerant control | | | | Capilla | ry tube | | |
| ll l | Compressor type | | | | | Sci | roll | |
| | Fan type & qua | ntity | | | | Axia | l & 2 | |
| | Fan speeds | | H/L | RPM | 1125 | | | |
| | Air flow | | H/L | M³/Hr | 4150 | | | |
| | Sound power le | evel | H/L | dBa | 65 | | | |
| | Sound pressure | e level *** | H/L | dBa | 58 | | | |
| ∥╓ | Dimensions | | W/H/D | mm | 900 | 97 | 70 | 350 |
| ∥ō | Weight | | | Kg | | | 5.5 | |
| OUTDOOR | Package dimer | | W/H/D | mm | 985 | 10: | | 435 |
| ∥≝ | Package weigh | | | Kg | | 9 | | |
| ∥≳∣ | Units per pallet | | | Units | | - 6 | | |
| | Stacking height | | | Units | | 2 | | |
| | Refrigerant type | | | | | R2 | | |
| | Charge / Distance | | Kg/ M | | 2.65 | | | |
| | Additional charge per 1 meter | | Grams | | 3 | | | |
| | Connections Liquid line | | Inch | 3/8 | | | | |
| | between Suction line | | | Inch | | 3/4 | | |
| | units Max. tubing length | | | Meter | 50 | | | |
| <u> </u> | Max. height difference | | | Meter | 25 | | | |
| | Operation control type | | | | LCD Remote control | | | rol |
| | ing elements | | | Kw | | No | | |
| Othe | ers | | | | Cra | nkcase h | eater (6 | 60W) |

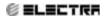
 ^{*} Airflow in ducted units; according to nominal external static pressure.
 ** Sound power in ducted units is measured at air outlet side.
 *** Sound pressure level is measured at 1-meter distance from the unit.



| Mode | el (Indoor & Outo | loor) | | | EMD 4 | 10 & OU | 10-38 ST | R22 |
|-------------------|---------------------------------------------------------------------------------------------------|--------------|---------|---------|--------------------|----------|------------|------|
| Insta | Installation method | | | | | Duc | cted | |
| Char | Characteristics | | | | Cooling | ı | | |
| 0 | | | | Btu/Hr | 37700 | | | |
| Capa | acity | | | Kw | 11.0 | | | |
| Powe | er input | | | Kw | 3.9 | | | |
| COP | | | | W/W | 2.82 | | | |
| Powe | er supply | | | V/Hz/Ph | 230V/50Hz/1PH | | | |
| | d current | | | Α | 17.9 | | | |
| | ing current | | | Α | 114.0 | | | |
| | it breaker rating | | | Α | | | :5 | |
| | Fan type & qua | ntitv | | | | Centrifu | ıgal & 1 | |
| ii i | Fan speeds | , | H/ M/ L | RPM | 1130 | | 20 | 830 |
| | Air flow * | | H/ M/ L | M³/Hr | 1740 | | 30 | 1250 |
| | External static | oressure | Min-Max | Pa | | | - 80 | |
| ii i | Sound power le | | H/ M/ L | dBa | 70.8 | | 7.1 | 62.8 |
| 🛱 | Sound pressure | | H/ M/ L | dBa | 54.1 | | | 49.2 |
| | Sound pressure level *** H/ M/ L Moisture removal Condensate drain tube I.D Dimensions W/ H / D | | | Lt/Hr | | 3.6 | | |
| | Condensate dra | ain tube I.D | | mm | | 1 | 9 | |
| ∥ᡓ↾ | Dimensions | | W/H/D | mm | 785 | 40 | 00 | 595 |
| ii [—] i | Weight | | | Kg | | 3 | 6 | |
| ii i | Package dimen | sions | W/H/D | mm | 825 | 42 | 25 | 610 |
| ii i | Package weight Units per pallet Stacking height | | Kg | | 3 | 8 | | |
| ll i | | | Units | | 3 | 8 | | |
| | | | Units | | 4 | 4 | | |
| | Refrigerant control | | | | Capilla | ry tube | | |
| ii i | Compressor type | | | | | | roll | |
| ll i | Fan type & qua | | | | | Axia | 1 & 2 | |
| ll i | Fan speeds | | H/L | RPM | 1125 | | | |
| | Air flow | | H/L | M³/Hr | 4150 | | | |
| | Sound power le | | H/L | dBa | 65 | | | |
| | Sound pressure | e level *** | H/L | dBa | 58 | | | |
| ~ [| Dimensions | | W/H/D | mm | 900 | 9 | 70 | 350 |
| OUTDOOR | Weight | | | Kg | | 88 | 3.5 | |
| 밀오 | Package dimen | | W/H/D | mm | 985 | | 20 | 435 |
| ∥岸∣ | Package weigh | | | Kg | 93 | | | |
| ∥≳∣ | Units per pallet | | | Units | | | 6 | |
| | Stacking height | | | Units | | | 2 | |
| | Refrigerant type | | | | R22 | | | |
| | Charge / Distance Additional charge per 1 meter Connections Liquid line | | Kg/ M | | | / 7.5 | | |
| | | | Grams | 30 | | | | |
| | | | Inch | 3/8 | | | | |
| | botwoon Suction line | | Inch | 3/4 | | | | |
| | units Max. tubing length | | | Meter | 50 | | | |
| | Max. height difference | | | Meter | 25 | | | |
| | Operation control type | | | | LCD Remote control | | | ol |
| | Heating elements | | | Kw | No | | | |
| Othe | rs | | | | Crai | nkcase ł | neater (60 | OW) |

 ^{*} Airflow in ducted units; according to nominal external static pressure.
 ** Sound power in ducted units is measured at air outlet side.

^{***} Sound pressure level is measured at 1-meter distance from the unit.



| Chara Capac | ation method | | | | EMD 40T & OU10-38T RC R22 | | | |
|----------------------------------|-------------------------------------------------------------------------|-------------|---------|---------|---------------------------|----------|----------|---------|
| Capac | acteristics | | | | | Duc | ted | |
| <u> </u> | | | | Units | Cooling | | | Heating |
| <u> </u> | oitv | | | Btu/Hr | 35800 | | | |
| Power | City | | | Kw | 10.5 11.3 | | | 11.3 |
| | r input | | | Kw | 3.6 | | | |
| COP | | | | W/W | 2.95 | | | 3.35 |
| Power | r supply | | | V/Hz/Ph | 400V/50Hz/3N | | | |
| Rated | l current | | | Α | 3x9.8 3x9.3 | | | |
| | ng current | | | Α | 48 | | | |
| Circuit | t breaker rating | | | Α | | 3x′ | 16 | |
| | Fan type & qua | ntity | | | | Centrifu | gal & 1 | |
| | Fan speeds | | H/ M/ L | RPM | 1130 | 102 | 20 | 830 |
| | Air flow * H/ M/ L | | | M³/Hr | 1740 | 153 | 30 | 1250 |
| External static pressure Min-Max | | | | Pa | | 37- | 80 | |
| Sound power level ** H/ M/ L | | | | dBa | 70.8 | 67 | .1 | 62.8 |
| 뜻 🗅 | Sound pressure | e level *** | H/ M/ L | dBa | 54.1 | 50 | .6 | 49.2 |
| Moisture removal | | | | Lt/Hr | 3.5 | | | |
| Condensate drain tube I.D | | | | mm | | 19 | | |
| ∥Ζ□ | | | | | 785 | 40 | | 595 |
| | Weight | | | Kg | | 36 | 6 | |
| | Package dimen | sions | W/H/D | mm | 825 | 42 | 25 | 610 |
| | Package weigh | t | | Kg | | 38 | 3 | |
| | Units per pallet Stacking height | | Units | | 8 | 3 | | |
| ; | | | Units | | 4 | | | |
| | Refrigerant control | | | | Capillar | ry tube | | |
| | Compressor type | | | | | Scr | oll | |
| | Fan type & qua | ntity | | | | Axial | & 2 | |
| | Fan speeds | | H/L | RPM | 1125 | | | |
| | Air flow | | H/L | M³/Hr | 4150 | | | |
| | Sound power le | | H/L | dBa | 65 | | | |
| | Sound pressure | e level *** | H/L | dBa | 58 | | | |
| ∥╓╚ | Dimensions | | W/H/D | mm | 900 | 97 | | 350 |
| | Weight | | | Kg | | 88 | | |
| ll 있 Li | Package dimen | | W/H/D | mm | 985 | 102 | | 435 |
| ∥岸∐ | Package weigh | | | Kg | | 93 | 3 | |
| ∥≳└ | Units per pallet | | | Units | 6 | | | |
| | Stacking height | | | Units | | 2 | | |
| | Refrigerant type | | | | | R2 | | |
| | Charge / Distance Additional charge per 1 meter Connections Liquid line | | Kg/ M | | 2.6 / | | | |
| _ / | | | Grams | | 30 | | | |
| ∐ ∣, | | | Inch | 3/8 | | | | |
| | botwoon Suction line | | Inch | 3/4 | | | | |
| | Max. tubing length | | | Meter | 50 | | | |
| | Max. height difference | | | Meter | 25 | | | |
| Opera | Operation control type | | | | LCD Remote control | | | ol |
| Heatin | Heating elements | | | Kw | No | | | |
| Others | | | | | Crar | nkcase h | eater (6 | 0W) |

^{*} Airflow in ducted units; according to nominal external static pressure.

^{**} Sound power in ducted units is measured at air outlet side.

^{***} Sound pressure level is measured at 1-meter distance from the unit.



| Mode | el (Indoor & Outd | loor) | | | FMD 40 | OT & OU10-38T | ST R22 | |
|-------------------------------------|----------------------------------------------------------------------------------------------------|-------------|---------|----------|-----------------|------------------|----------|--|
| | Illation method | | | | | Ducted | <u> </u> | |
| Installation method Characteristics | | | | Units | Cooling | | | |
| | | | | Btu/Hr | 35800 | , | | |
| Capa | acity | | | Kw | 10.5 | | | |
| Pow | er input | | | Kw | 3.6 | | | |
| COP | | | | W/W | 2.95 | | | |
| | er supply | | | V/Hz/Ph | 2.00 | 400V/50Hz/3N | | |
| | d current | | | Α | 3x9 8 | 3x9.8 | | |
| | ing current | | | A | <u> олого</u> | 48 | | |
| | uit breaker rating | | | A | 3x16 | | | |
| - | Fan type & qua | ntity | | | Centrifugal & 1 | | | |
| ii i | Fan speeds | increy | H/ M/ L | RPM | 1130 | 1020 | 830 | |
| l | Air flow * | | H/ M/ L | M³/Hr | 1740 | 1530 | 1250 | |
| | External static pressure Min-Max | | | | 17.10 | 37- 80 | 1200 | |
| il | Sound power level ** H/ M/ L | | | | 70.8 | 67.1 | 62.8 | |
| <u> </u> | | | | | 54.1 | 50.6 | 49.2 | |
| l o | Moisture removal | | | | 3.5 | | | |
| \parallel $lpha$ | Sound pressure level *** H/ M/ L Moisture removal Condensate drain tube I.D Dimensions W/ H / D | | | | | 19 | | |
| ∥岧 | Dimensions | | W/H/D | mm mm | 785 | 400 | 595 | |
| - | Weight | | | Kg | | 36 | 000 | |
| ii | Package dimen | sions | W/H/D | mm | 825 | 425 | 610 | |
| ii i | Package weight | | | Kg | | 38 | 0.0 | |
| i | Units per pallet | | Units | | 8 | | | |
| ii i | Stacking height Refrigerant control | | | Units | | 4 | | |
| | | | | | | Capillary tube | | |
| ii i | Compressor typ | | | | | Scroll | | |
| ii i | Fan type & qua | | | | | Axial & 2 | | |
| | Fan speeds | | H/L | RPM | 1125 | | | |
| ii i | Air flow | | H/L | M³/Hr | 4150 | | | |
| ii i | Sound power le | vel | H/L | dBa | 65 | | | |
| ii i | Sound pressure | e level *** | H/L | dBa | 58 | | | |
| \parallel $_{\sim}$ | Dimensions | | W/H/D | mm | 900 | 970 | 350 | |
| | Weight | | | Kg | | 88.5 | | |
| OUTDOOR | Package dimen | sions | W/H/D | mm | 985 | 1020 | 435 | |
| ∥≌ | Package weigh | t | | Kg | | 93 | | |
| ∥ ⊃ | Units per pallet | | | Units | | 6 | | |
| | Stacking height | | | Units | | 2 | | |
| | Refrigerant type |) | | | | R22 | | |
| | Charge / Distance | | | Kg/ M | | 2.6 / 7.5 | | |
| | Additional charge per 1 meter | | | Grams | | 30 | | |
| | Connections Liquid line | | | Inch | 3/8 | | | |
| | Connections Suction line | | | Inch | | 3/4 | | |
| | units Max. tubing length | | | Meter | | 50 | | |
| | Max. height difference | | | Meter | 25 | | | |
| Oper | ration control type | e | | | L(| CD Remote conti | rol | |
| Heat | ing elements | <u> </u> | | Kw | No | | | |
| Othe | rs | | | | Crar | nkcase heater (6 | 0W) | |

 ^{*} Airflow in ducted units; according to nominal external static pressure.
 ** Sound power in ducted units is measured at air outlet side.

^{***} Sound pressure level is measured at 1-meter distance from the unit.



| Mode | el (Indoor & Outo | door) | | | EMD 45 | T & OU1 | 10-44T I | RC R22 |
|------------------------------|---------------------------------------------------------------------------------------------------|-------------|---------|---------|------------------------------|----------|----------|---------|
| | Illation method | , | | | | Duc | | |
| Characteristics | | | | Units | Cooling | 1 | | Heating |
| C | :4· . | | | Btu/Hr | 43400 | | | 45000 |
| Capa | acity | | | Kw | 12.7 13.0 | | | 13.0 |
| Pow | er input | | | Kw | 4.8 4.0 | | | 4.0 |
| COP | | | | W/W | 2.64 3.24 | | | 3.24 |
| Pow | er supply | | | V/Hz/Ph | | 400V/50 | 0Hz/3N | |
| Rate | d current | | | Α | 3x13.1 3x11.1 | | | 3x11.1 |
| Start | ing current | | | Α | 61.8 | | | |
| Circu | uit breaker rating | | | Α | | 3x | 16 | |
| | Fan type & qua | ntity | | | Centrifugal & 1 | | | |
| | Fan speeds | | H/ M/ L | RPM | 1000 | 90 | 00 | 800 |
| | Air flow * H/ M/ L | | | M³/Hr | 2180 | 196 | 60 | 1740 |
| | External static pressure Min-Max | | | | | 50 - | 100 | |
| Sound power level ** H/ M/ L | | | | dBa | 73.2 | 70 | .1 | 66.1 |
| ᄣ | Sound pressure | e level *** | H/ M/ L | dBa | 56.3 | 54 | 54.0 5 | |
| \parallel $lpha$ | Moisture removal | | | | | 3.8 | | |
| ∥舀∣ | Sound pressure level *** H/ M/ L Moisture removal Condensate drain tube I.D Dimensions W/ H / D | | | | | 19 | 9 | |
| ∥롣 | | | | mm | 1040 | 40 | 00 | 595 |
| | Weight | | | Kg | | 42 | 2 | |
| | Package dimen | sions | W/H/D | mm | 1100 | 43 | 35 | 620 |
| | Package weight Units per pallet Stacking height | | Kg | | 4: | 5 | | |
| | | | Units | | 8 | | | |
| | | | Units | | 2 | <u>)</u> | | |
| | Refrigerant control | | | | Capilla | ry tube | | |
| | Compressor type | | | | | Scr | roll | |
| | Fan type & qua | ntity | | | | Axial | 8 2 | |
| | Fan speeds | | H/L | RPM | 1125 | | | |
| | Air flow | | H/L | M³/Hr | 4150 | | | |
| | Sound power le | | H/L | dBa | 65 | | | |
| | Sound pressure | e level *** | H/L | dBa | 58 | | | |
| ∥╓ | Dimensions | | W/H/D | mm | 900 | 97 | | 350 |
| ∥ō | Weight | | | Kg | | 88 | .5 | |
| | Package dimen | | W/H/D | mm | 985 | 102 | | 435 |
| ∥岸 | Package weigh | | | Kg | | 93 | | |
| OUTDOOR | Units per pallet | | | Units | | 6 | | |
| \parallel | Stacking height | | | Units | | 2 | | |
| | Refrigerant type | | | | | R2 | | |
| | Charge / Distance Additional charge per 1 meter Connections Liquid line | | Kg/ M | | 2.75 | | | |
| | | | Grams | | 30 | | | |
| | | | Inch | 3/8 | | | | |
| | between Suction line | | Inch | | 3/ | | | |
| | Max. tubing length | | Meter | 50 | | | | |
| <u> </u> | Max. height difference | | | Meter | 25 | | | |
| | Operation control type | | | Kw | LCD Remote control | | | rol |
| | Heating elements | | | | No Crankcase heater (60W) | | | |
| Othe | ers | | | | Cra | nkcase h | eater (6 | 0W) |

 ^{*} Airflow in ducted units; according to nominal external static pressure.
 ** Sound power in ducted units is measured at air outlet side.
 ** Sound pressure level is measured at 1-meter distance from the unit.



| Mod | el (Indoor & Outo | door) | | | EMD 45 | T & OU10-44 | T ST R22 |
|---------------------|----------------------------------------------------------------------------------------------------|-------------|----------|---------|--------------------|---------------|----------|
| | Illation method | , | | | | Ducted | |
| Characteristics | | | | Units | Cooling | | |
| Can | a city | | | Btu/Hr | 43400 | | |
| Capa | acity | | | Kw | 12.7 | | |
| Pow | er input | | | Kw | 4.8 | | |
| COP | , | | | W/W | 2.64 | | |
| Pow | er supply | | | V/Hz/Ph | | 400V/50Hz/3 | N |
| | d current | | | Α | 3x13.1 | | |
| | ing current | | | Α | | 61.8 | |
| Circu | uit breaker rating | | | Α | 3x16 | | |
| | Fan type & qua | intity | | | Centrifugal & 1 | | |
| ii | Fan speeds | | H/ M/ L | RPM | 1000 | 900 | 800 |
| ii | Air flow * | | H/ M/ L | M³/Hr | 2180 | 1960 | 1740 |
| ii | External static pressure Min-Max | | | | | 50 - 100 | - |
| li | Sound power level ** H/ M/ L | | | | 73.2 | 70.1 | 66.1 |
| | | | | dBa | 56.3 | 54.0 | 51.7 |
| Moisture removal | | | | Lt/Hr | | 3.8 | |
| \parallel $pprox$ | Sound pressure level *** H/ M/ L Moisture removal Condensate drain tube I.D Dimensions W/ H / D | | | | | 19 | |
| ∥₹ | Dimensions W/ H / D | | | mm | 1040 | 400 | 595 |
| ii — | Weight | | | Kg | | 42 | |
| ii | Package dimer | nsions | W/H/D | mm | 1100 | 435 | 620 |
| ii | Package weigh | | | Kg | | 45 | 1 |
| ii | Units per pallet Stacking height | | Units | | 8 | | |
| li | | | Units | | 2 | | |
| | Refrigerant control | | | | Capillary tub | e | |
| ii | Compressor type | | | | | Scroll | - |
| li | Fan type & qua | | | | | Axial & 2 | |
| li | Fan speeds | | H/L | RPM | 1125 | | |
| li | Air flow | | H/L | M³/Hr | 4150 | | |
| ii | Sound power le | evel | H/L | dBa | 65 | | |
| ii | Sound pressure | e level *** | H/L | dBa | 58 | | |
| ∥ ~ | Dimensions | | W/H/D | mm | 900 | 970 | 350 |
| ШÖ | Weight | | | Kg | | 88.5 | ' |
| Ŏ | Package dimer | nsions | W/H/D | mm | 985 | 1020 | 435 |
| ∥≘ | Package weigh | | | Kg | | 93 | |
| OUTDOOR | Units per pallet | | | Units | | 6 | |
| | Stacking height | | | Units | | 2 | |
| l | Refrigerant type | | | | | R22 | |
| ll . | Charge / Distance | | Kg/ M | | 2.75 / 7.5 | | |
| ll . | Additional charge per 1 meter | | Grams | | 30 | | |
| | Connections Liquid line | | Inch | | 3/8 | | |
| | Connections Suction line | | Inch | 3/4 | | | |
| | May tubing length | | g length | Meter | | 50 | |
| | units Max. tubing length Max. height difference | | | Meter | 25 | | |
| Ope | Operation control type | | | | LCD Remote control | | |
| | ing elements | | | Kw | No | | |
| Othe | | | | | Crar | nkcase heater | (60W) |

^{*} Airflow in ducted units; according to nominal external static pressure.
** Sound power in ducted units is measured at air outlet side.

^{***} Sound pressure level is measured at 1-meter distance from the unit.



| Mode | el (Indoor & Outo | door) | | | EMD 50 | T & OU | 10-50T | RC R22 |
|-------------|------------------------------------------------------------------------------------------------------------------|-------------|---------|---------|--------------------|----------|----------|---------|
| Insta | llation method | | | | | Duc | | |
| Char | racteristics | | | Units | Cooling | j l | | Heating |
| Сара | acity | | | Btu/Hr | 47500 51000 | | | 51000 |
| 1 | | | | Kw | | | 14.9 | |
| Powe | er input | | | Kw | 5.1 4.5 | | | 4.5 |
| COP | ı | | | W/W | 2.74 3.30 | | | 3.30 |
| Powe | er supply | | | V/Hz/Ph | 400V/50Hz/3N | | | |
| Rate | d current | | | Α | 3x14.7 3x13.2 | | | 3x13.2 |
| Start | ing current | | | Α | 65.5 | | | |
| Circu | iit breaker rating | | | Α | | 3x′ | 16 | |
| | Fan type & qua | ntity | | | | Centrifu | gal & 1 | |
| | Fan speeds H/ M/ L | | | RPM | 1030 | 93 | 30 | 820 |
| | Air flow * | | H/ M/ L | M³/Hr | 2400 | 210 | 60 | 1910 |
| i i | External static | oressure | Min-Max | Pa | | 50 - | 100 | |
| i i | Sound power le | | H/ M/ L | dBa | 73.2 | 70 | .1 | 66.1 |
| l 또 i | Sound pressure | e level *** | H/ M/ L | dBa | 56.3 | 54 | .0 | 51.7 |
| 121 | Sound pressure level *** H/ M/ L Moisture removal Condensate drain tube I.D Dimensions W/ H / D | | | | | 4.8 | | |
| ∥≝∣ | Condensate drain tube I.D | | | | | 19 | 9 | |
| ∥롣│ | Dimensions | | W/H/D | mm | 1040 | 40 | 00 | 595 |
| | Weight | | | Kg | | 4: | 3 | |
| | Package dimen | sions | W/H/D | mm | 1100 | 43 | 5 | 620 |
| İ | Package weight Units per pallet Stacking height | | | Kg | | 4(| 6 | |
| i i | | | Units | | 8 | 3 | | |
| i i | | | Units | | 2 |) | | |
| | Refrigerant control | | | | Capillaı | ry tube | | |
| | Compressor type | | | | | Scr | | |
| | Fan type & qua | | | | | Axial | & 2 | |
| İ | Fan speeds | | H/L | RPM | 1220 | | | |
| i i | Air flow | | H/L | M³/Hr | 4345 | | | |
| | Sound power le | | H/L | dBa | 69 | | | 63 |
| [| Sound pressure | e level *** | H/L | dBa | 62 | | | 56 |
| l ~ [| Dimensions | | W/H/D | mm | 900 | 97 | 0 | 350 |
| | Weight | | | Kg | | 90 | .5 | |
| ၂ ဝ ၂ | Package dimen | sions | W/H/D | mm | 985 | 102 | 20 | 435 |
| OUTDOOR | Package weigh | | | Kg | 95 | | | |
| ∥≒∣ | Units per pallet | | | Units | | 6 | | |
| | Stacking height | į | | Units | | 2 | | |
| | Refrigerant type | | | | | R2 | 22 | |
| | Charge / Distance Additional charge per 1 meter Connections between Charge / Distance Liquid line Suction line | | Kg/ M | | 4.2 / | 7.5 | | |
| | | | Grams | | 30 | 0 | | |
| | | | Inch | 3/8 | | | | |
| | | | Inch | 3/4 | | | | |
| | between Max. tubing length | | | Meter | 50 | | | |
| | Max. height difference | | | Meter | 25 | | | |
| Oper | Operation control type | | | | LCD Remote control | | | rol |
| | Heating elements | | | Kw | No | | | |
| Othe | | | | | Crar | nkcase h | eater (6 | 0W) |

 ^{*} Airflow in ducted units; according to nominal external static pressure.
 ** Sound power in ducted units is measured at air outlet side.

^{***} Sound pressure level is measured at 1-meter distance from the unit.



| Model (Indoor & Outdoor) Installation method Ducted | .1 .7 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| Characteristics Units Cooling Capacity Btu/Hr 47500 Kw 13.9 13.9 Power input Kw 5.1 COP W/W 2.74 Power supply V/Hz/Ph 400V/50Hz/3N Rated current A 3x14.7 Starting current A 65.5 Circuit breaker rating A 3x16 Fan type & quantity Centrifugal & 1 Fan speeds H/ M/ L RPM 1030 930 82 Air flow * H/ M/ L M³/Hr 2400 2160 19° External static pressure Min-Max Pa 50 - 100 Sound power level *** H/ M/ L dBa 73.2 70.1 66 Sound pressure level *** H/ M/ L dBa 56.3 54.0 51 Moisture removal Lt/Hr 4.8 Condensate drain tube I.D mm 19 Dimensions W/ H / D mm 1040 400 | .1 .7 |
| Descript | .1 .7 |
| Name | .1 .7 |
| Power input | .1 .7 |
| COP | .1 .7 |
| Power supply | .1 .7 |
| Rated current A 3x14.7 | .1 .7 |
| Starting current | .1 .7 |
| Circuit breaker rating | .1 .7 |
| Fan type & quantity Fan speeds Air flow * External static pressure Sound power level ** Moisture removal Condensate drain tube I.D Dimensions Weight Pan speeds H/ M/ L RPM 1030 930 82 100 197 100 100 100 100 100 100 100 100 100 10 | .1 .7 |
| Fan speeds | .1 .7 |
| Air flow * H/ M/ L M³/Hr 2400 2160 197 External static pressure Min-Max Pa 50 - 100 Sound power level ** H/ M/ L dBa 73.2 70.1 66 Sound pressure level *** H/ M/ L dBa 56.3 54.0 51 Moisture removal Lt/Hr 4.8 Condensate drain tube I.D mm 1040 400 59 Weight Kg 43 Package dimensions W/ H / D mm 1100 435 62 | .1 .7 |
| External static pressure Min-Max Pa 50 - 100 | .1 |
| Sound power level ** | .7 |
| Sound pressure level *** | .7 |
| Moisture removal | |
| Weight Kg 43 Package dimensions W/ H / D mm 1100 435 62 | |
| Weight Kg 43 Package dimensions W/ H / D mm 1100 435 62 | |
| Weight Kg 43 Package dimensions W/ H / D mm 1100 435 62 | 5 |
| Package dimensions W/ H / D mm 1100 435 62 | |
| | 0 |
| | |
| Units per pallet Units 8 | |
| Stacking height Units 2 | |
| Refrigerant control Capillary tube | |
| Compressor type Scroll | |
| Fan type & quantity Axial & 2 | |
| Fan speeds H / L RPM 1220 955 | |
| Air flow H / L M³/Hr 4345 3400 | |
| Sound power level H / L dBa 69 63 | |
| Sound pressure level *** H / L dBa 62 56 | |
| Directorione | 0 |
| O Weight Kg 90.5 | - |
| Package dimensions W/ H / D mm 985 1020 43 | 5 |
| No | |
| Units per pallet Units 6 | |
| O Stacking height Units 2 | |
| Refrigerant type R22 | |
| Charge / Distance Kg/ M 4.2 / 7.5 | |
| Additional charge per 1 meter Grams 30 | |
| Liquid line lnch 3/8 | |
| Connections Suction line Inch 3/4 | |
| May tubing length Meter 50 | |
| units Wax. tubing length Meter 35 Max. height difference Meter 25 | |
| Operation control type LCD Remote control | |
| Heating elements Kw No | |
| Others Crankcase heater (60W) | |

 ^{*} Airflow in ducted units; according to nominal external static pressure.
 ** Sound power in ducted units is measured at air outlet side.

^{***} Sound pressure level is measured at 1-meter distance from the unit.



| Model (Indoor & Outdoor) | | | | | EMD 50T | | | C R407C |
|---------------------------------|---------------------------------------------------------------------------------------------------|-------------|----------|---------|--------------------|-----------|----------|--------------|
| | llation method | | | | | Duc | | |
| Char | acteristics | | | Units | Cooling | | | Heating |
| Capa | acity | | | Btu/Hr | | | | 51500 |
| | | | | Kw | 13.4 15.1 | | | |
| | er input | | | Kw | | | | 5.6 |
| COP | | | | W/W | 2.5 | | | 2.7 |
| | er supply | | | V/Hz/Ph | 400V/50Hz/3N | | | |
| | d current | | | Α | 3x15.0 | | | 3x15.3 |
| | ing current | | | Α | | 5 | | |
| Circu | Circuit breaker rating | | | Α | | 3x | | |
| | Fan type & qua | ntity | | | | Centrifu | | |
| | Fan speeds H/ M/ L | | | RPM | 1030 | 93 | | 820 |
| | Air flow * H/ M/ L | | | M³/Hr | 2400 | 21 | | 1910 |
| | External static p | | Min-Max | Pa | | 50 - | 100 | |
| | Sound power le | | H/ M/ L | dBa | 73.2 | 70 | | 66.1 |
| 뜻 [| Sound pressure | | H/ M/ L | dBa | 56.3 | | 0 | 51.7 |
| $\parallel eta \parallel$ | Moisture remov | | | Lt/Hr | 4.9 | | | |
| ∥Ճ∣ | Sound pressure level *** H/ M/ L Moisture removal Condensate drain tube I.D Dimensions W/ H / D | | | mm | | 19 | | |
| ∥롣│ | Dimensions | | W/H/D | mm | 1040 | 40 | 00 | 595 |
| | Weight | | | Kg | | 4 | 3 | |
| | Package dimen | | W/ H / D | mm | 1100 | 43 | | 620 |
| [| Package weigh | t | | Kg | | 4 | | |
| II [| Units per pallet Stacking height | | Units | | | 3 | | |
| | | | Units | | 2 | 2 | | |
| | Refrigerant control | | | | Capilla | ry tube | | |
| ll i | Compressor typ | ре | | | | Sc | roll | |
| | Fan type & qua | ntity | | | | Axia | I & 2 | |
| | Fan speeds | | H/L | RPM | | | | 955 |
| | Air flow | | H/L | M³/Hr | 4345 | | | |
| [| Sound power le | | H/L | dBa | | | | 63 |
| | Sound pressure | e level *** | H/L | dBa | 62 | | | 56 |
| \parallel $_{\rm C}$ | Dimensions | | W/H/D | mm | 900 | 97 | 70 | 350 |
| OUTDOOR | Weight | | | Kg | | 90 | | |
| 밀오니 | Package dimen | sions | W/ H / D | mm | 985 | 10 | 20 | 435 |
| ∥岸∣ | Package weigh | | | Kg | 95 | | | |
| $\parallel \supseteq \parallel$ | Units per pallet | | | Units | | (| 3 | |
| | Stacking height | | | Units | | 2 | | |
| | Refrigerant type | | | | R40 |)7C | | |
| | Charge / Distance Additional charge per 1 meter Connections Liquid line | | Kg/ M | | 4.15 | / 7.5 | | |
| | | | Grams | 30 | | | | |
| | | | Inch | 3/8 | | | | |
| | between Suction line | | Inch | 3/4 | | | | |
| | between Max. tubing length | | | Meter | 50 | | | |
| | Max. height difference | | | Meter | 25 | | | |
| Oper | Operation control type | | | | LCD Remote control | | | rol |
| | Heating elements | | | Kw | No | | | |
| Othe | | | | | Crankcase I | neater (6 | 60W), 3F | PH Protector |

^{*} Airflow in ducted units; according to nominal external static pressure.

^{**} Sound power in ducted units is measured at air outlet side.

^{***} Sound pressure level is measured at 1-meter distance from the unit.



| | el (Indoor & Outo | door) | | | EMD 60 | T & OU12-60T | RC R22 | |
|-------------------------------------|----------------------------------------------------------------------------------------------------|-------------|---------|---------|--------------------|-----------------|---------|--|
| Installation method Characteristics | | | | | | Ducted | | |
| Chai | racteristics | | | Units | Cooling | l | Heating | |
| Capa | acity | | | Btu/Hr | 55000 | 56900 | | |
| <u> </u> | | | | Kw | 16.1 | 16.5 | | |
| | er input | | | Kw | 5.9 5.2 | | | |
| COP | | | | W/W | 2.74 | | 3.16 | |
| | er supply | | | V/Hz/Ph | 400V/50Hz/3N | | | |
| | d current | | | Α | 3x16.3 3x14.8 | | | |
| | ing current | | | Α | 74 | | | |
| Circu | uit breaker rating | | | Α | | 3x20 | | |
|]] | Fan type & qua | intity | | | | Centrifugal & 1 | | |
| | Fan speeds H/ M/ L | | | RPM | 1000 | 840 | 700 | |
|]] | Air flow * H/ M/ L | | | M³/Hr | 2950 | 2480 | 2065 | |
| | External static | | Min-Max | Pa | | 50 - 110 | | |
| | Sound power le | | H/ M/ L | dBa | 71.8 | 68.9 | 62.3 | |
| ∥∺ | Sound pressure | | H/ M/ L | dBa | 60.2 | 55.7 | 51.5 | |
| \parallel $pprox$ | Moisture remov | | | Lt/Hr | | 4.8 | | |
| ∥Ճ | Sound pressure level *** H/ M/ L Moisture removal Condensate drain tube I.D Dimensions W/ H / D | | | | | 19 | | |
| ∥롣 | Dimensions | | W/H/D | mm | 1140 | 400 | 680 | |
| | Weight | | | Kg | | 46 | | |
| | Package dimer | nsions | W/H/D | mm | 1195 | 440 | 730 | |
| ll | Package weight Units per pallet | | Kg | | 50 | | | |
| | | | Units | | 8 | | | |
| | Stacking height | | Units | | 4 | | | |
| | Refrigerant control | | | | Capillary tube | | | |
| | Compressor type | | | | | Scroll | | |
| li | Fan type & qua | intity | | | | Axial & 2 | | |
| li | Fan speeds | | H/L | RPM | 825 | | | |
| li | Air flow | | H/L | M³/Hr | 4850 | | 3300 | |
| ll | Sound power le | evel | H/L | dBa | 70 | 62.0 | | |
| li | Sound pressure | e level *** | H/L | dBa | 60.4 | | 53.7 | |
| ∥ ~ ∣ | Dimensions | | W/H/D | mm | 900 | 1255 | 350 | |
| ll ö | Weight | | | Kg | | 110 | | |
| Q | Package dimer | nsions | W/H/D | mm | 985 | 1395 | 435 | |
| OUTDOOR | Package weigh | | | Kg | | 120 | | |
| ∥∵⊃ | Units per pallet | | | Units | | 1 | | |
| | Stacking height | | | Units | | 1 | | |
| li | Refrigerant type | | | | | R22 | | |
| ii | Charge / Distance | | Kg/ M | | 5000 / 7.5 | | | |
| ii | Additional charge per 1 meter | | Grams | | 40 | | | |
| ii | Connections Liquid line | | Inch | | 1/2 | | | |
| ll . | | | Inch | 7/8 | | | | |
| | May tubing length | | Meter | | 50 | | | |
| ii . | units Max. height difference | | Meter | 25 | | | | |
| One | Operation control type | | | | LCD Remote control | | | |
| I—'— | Heating elements | | | Kw | No | | | |
| Othe | | | | 1 (1) | Crar | nkcase heater (| 60W) | |
| | | | | | <u> </u> | sace meater (| | |

 ^{*} Airflow in ducted units; according to nominal external static pressure.
 ** Sound power in ducted units is measured at air outlet side.

^{***} Sound pressure level is measured at 1-meter distance from the unit.



| Installation method | Mode | el (Indoor & Outd | loor) | | | EMD 601 | & OU1 | 2-60T R | C R407C |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|--------------------------------------------------------------------------------------|-------------|---------|---------|---------------|----------|----------|---------|
| Btu/Hr | Insta | llation method | | | | | | | |
| Capacity | Char | acteristics | | | | | | | |
| Power input | Cana | ocity | | | Btu/Hr | | | | |
| COP | Capa | icity | | | Kw | | | 18.0 | |
| Power supply | Powe | er input | | | Kw | | | | 6.3 |
| Rated current A 3x16.4 3x16.8 | COP | | | | W/W | 2.52 | | | |
| Starting current | Powe | er supply | | | V/Hz/Ph | | 400V/5 | 0Hz/3N | |
| Fan type & quantity | Rate | d current | | | | 3x16.4 3x16.8 | | | |
| Fan type & quantity | | | | | Α | 74 | | | |
| Fan speeds | Circu | it breaker rating | | | Α | | 3x | 20 | |
| Fan speeds | | Fan type & qua | ntity | | | | Centrifu | ıgal & 1 | |
| External static pressure Min-Max Pa S0 - 110 | İ | Fan speeds | • | H/ M/ L | RPM | 1000 | 84 | 10 | 700 |
| Sound power level *** H/ M/ L dBa 71.8 68.9 62.3 | İ | Air flow * | | H/ M/ L | M³/Hr | 2950 | 24 | 80 | 2065 |
| Sound power level ** H/ M/ L dBa 71.8 68.9 62.3 | İ | External static p | oressure | Min-Max | Pa | | | | |
| Moisture removal | İ | | | H/ M/ L | dBa | 71.8 | | | 62.3 |
| Moisture removal | ľΚ | Sound pressure | e level *** | H/ M/ L | dBa | 60.2 | 55 | 5.7 | 51.5 |
| Weight | 121 | | | | Lt/Hr | | | | |
| Weight | Condensate drain tube I.D | | | | mm | | 1 | 9 | |
| Package dimensions | ΙZΙ | Dimensions | | mm | 1140 | 40 | 00 | 680 | |
| Package dimensions | | Weight | | | Kg | | 4 | 6 | |
| Package weight | i 1 | | sions | W/H/D | | 1195 | 44 | 10 | 730 |
| Units per pallet Units Stacking height Units 4 | i i | Package weight Units per pallet | | Kg | | 5 | 0 | | |
| Stacking height | i | | | | | 3 | 3 | | |
| Refrigerant control | i | | | Units | | | 1 | | |
| Compressor type | | | | | | Capilla | rv tube | | |
| Fan type & quantity | | | | | | | | | |
| Fan speeds | i | | | | | | | | |
| Air flow | i i | | | H/L | RPM | | | | 560 |
| Sound power level | i i | | | | M³/Hr | | | | |
| Sound pressure level *** | i i | Sound power le | evel | | | | | | |
| Dimensions | i i | | | | dBa | 60.4 | | | |
| Weight | l ~ [| | | W/H/D | mm | 900 | 12 | 55 | 350 |
| Refrigerant type | ΙÖΙ | Weight | | | Kg | | 11 | 10 | , |
| Refrigerant type | Q | Package dimen | sions | W/H/D | | 985 | 13 | 95 | 435 |
| Refrigerant type | | | | | Kg | | 12 | 20 | |
| Refrigerant type | ΙÞΙ | | | | | | | | |
| Refrigerant type R407C Charge / Distance Kg/ M 4550 / 7.5 Additional charge per 1 meter Grams 40 Connections between units Liquid line Inch 1/2 Suction line Inch 7/8 Max. tubing length Meter 50 Max. height difference Meter 25 Operation control type LCD Remote control Heating elements Kw No | | | | | Units | | 1 | | |
| Charge / Distance Kg/ M 4550 / 7.5 Additional charge per 1 meter Grams 40 Connections between units Liquid line 1/2 Suction line Inch 7/8 Max. tubing length Meter 50 Max. height difference Meter 25 Operation control type LCD Remote control Heating elements Kw No | | | | | | | R40 |)7C | |
| Additional charge per 1 meter Grams 40 Connections between units Liquid line Inch 1/2 Suction line Inch 7/8 Max. tubing length Meter 50 Max. height difference Meter 25 Operation control type LCD Remote control Heating elements Kw No | | Charge / Distance Additional charge per 1 meter Connections Liquid line Suction line | | Kg/ M | | 4550 | / 7.5 | | |
| Connections between units Liquid line Inch 7/8 Max. tubing length units Meter 50 Max. height difference Meter 25 Operation control type LCD Remote control Heating elements Kw No | | | | _ | | 4 | 0 | | |
| Connections between units Suction line Max. tubing length Max. height difference Meter Operation control type Heating elements Suction line Inch Meter 50 Meter 25 LCD Remote control No | i i | | | | | | | | |
| Max. tubing length Meter 50 Max. height difference Meter 25 Operation control type LCD Remote control Heating elements Kw No | | | | | | | | | |
| Max. height difference Meter 25 Operation control type LCD Remote control Heating elements Kw No | | May tubing length | | | | | | | |
| Operation control type LCD Remote control Heating elements Kw No | | | | | | | | | |
| Heating elements Kw No | Oper | | | | | | | | rol |
| | | | | Kw | | | | | |
| | | | | | | Crai | | - | (W) |

Airflow in ducted units; according to nominal external static pressure. Sound power in ducted units is measured at air outlet side.

^{***} Sound pressure level is measured at 1-meter distance from the unit.



3. RATING CONDITIONS

NOTES:

1. Rating conditions ISO/CD 13253R

Cooling: indoor: 27°C (80°F) DB 19°C (66°F) WB

Outdoor: 35°C (95°F) DB

Heating: indoor: 20°C (68°F) DB

Outdoor: 7°C (45°F) DB 6°C (43°F) WB

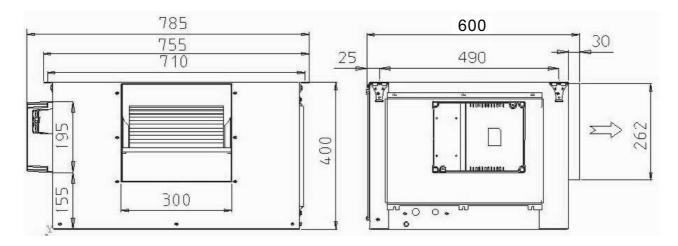
Refrigerant tubing length (one way) 7.5m (24.6 ft)

2. Guaranteed operating range:

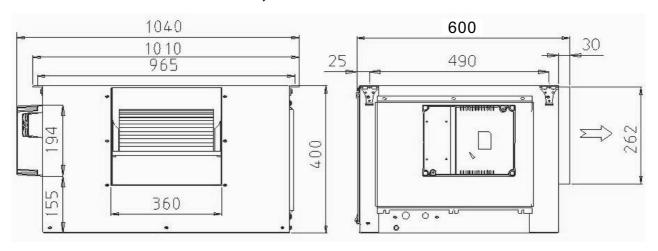
| | | Indoor | Outdoor |
|---------|-------------|------------------|-------------------------------|
| Cooling | Upper limit | 32°C DB, 23°C WB | 46°C DB |
| Cooling | Lower limit | 21°C DB, 15°C WB | 21°C DB |
| | Upper limit | 27°C DB | 24°C DB, 18°C WB |
| Heating | Lower limit | 20°C DB | -5°C DB, -6°C WB (For R22) |
| | Lower min | 20 C DB | -9°C DB, -10°C WB (For R407C) |
| Voltage | 1 PH | 198 | – 242 V |
| vollage | 3 PH | 360 | – 440 V |

4. OUTLINE DIMENSIONS

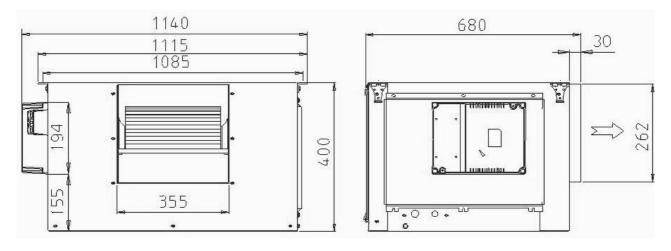
4.1 Indoor Unit: EMD 27, 35, 40



4.2 Indoor Unit: EMD 45, 50

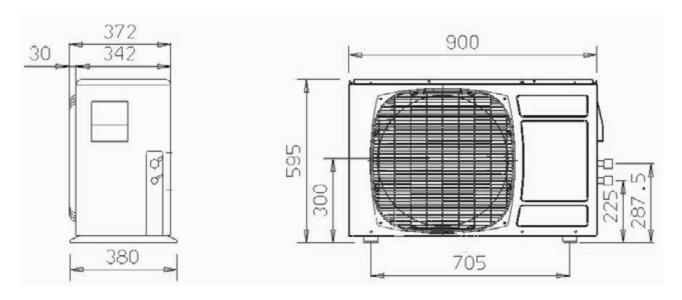


4.3 Indoor Unit: EMD 60

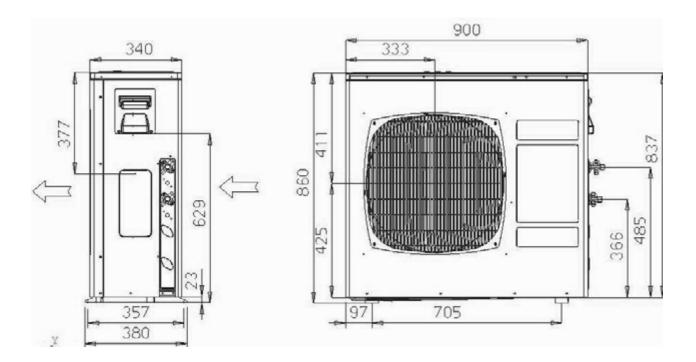




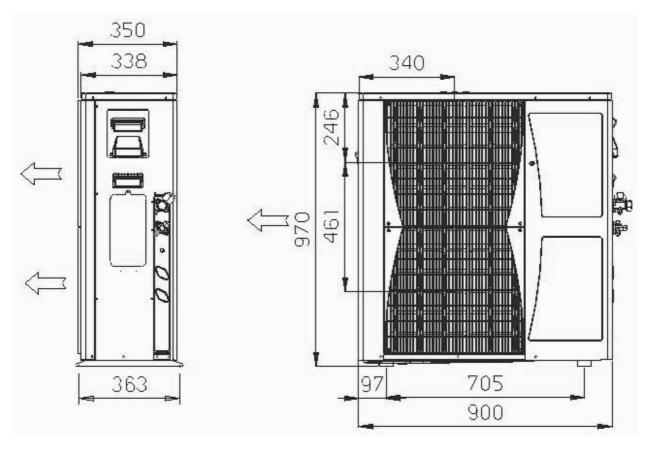
4.4 Outdoor Unit: OU6-27



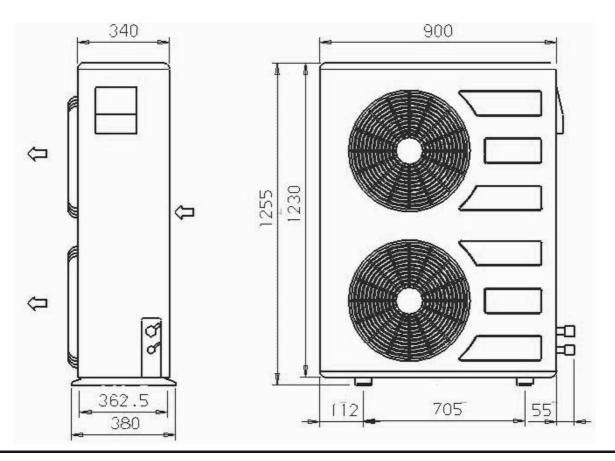
4.5 Outdoor Unit: OU8-33



4.6 Outdoor Unit: OU10-38/45/50



4.7 Outdoor Unit: OU12-60

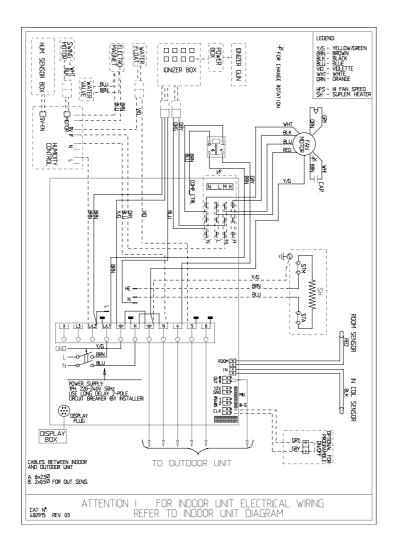


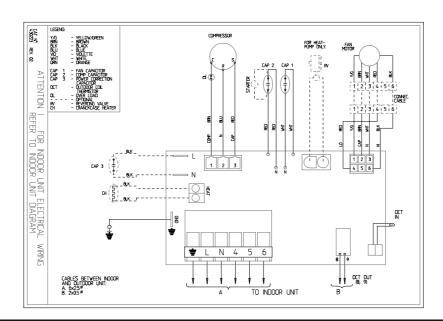


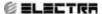
5. WIRING DIAGRAMS

5.1 EMD 27 1PH INDOOR POWER SUPPLY

INDOOR

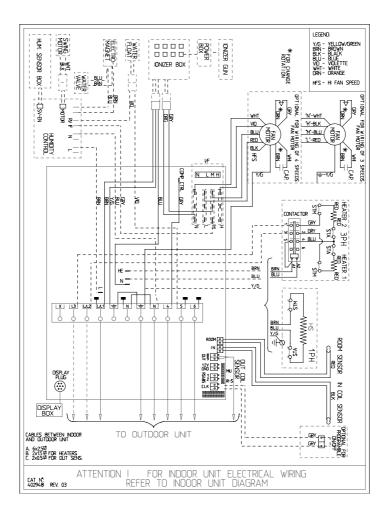


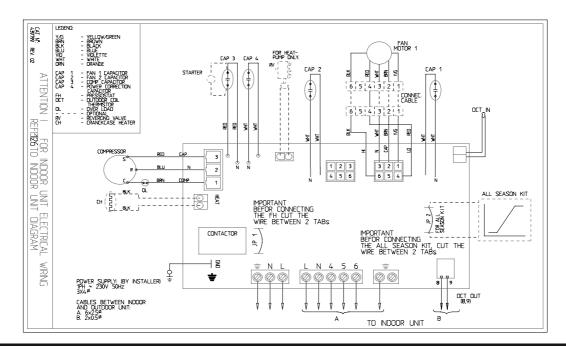




5.2 EMD 35 1PH OUTDOOR POWER SUPPLY

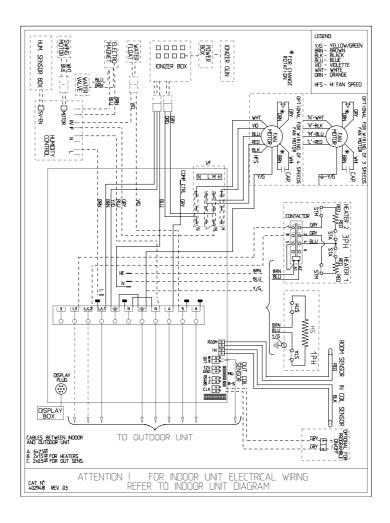
INDOOR

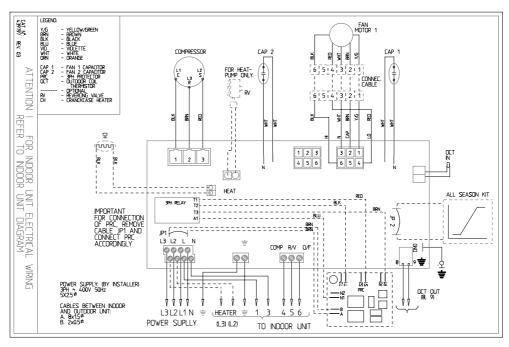




5,3 EMD 35 3PH OUTDOOR POWER SUPPLY

INDOOR

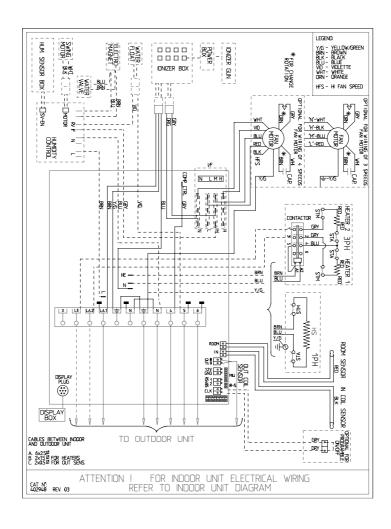


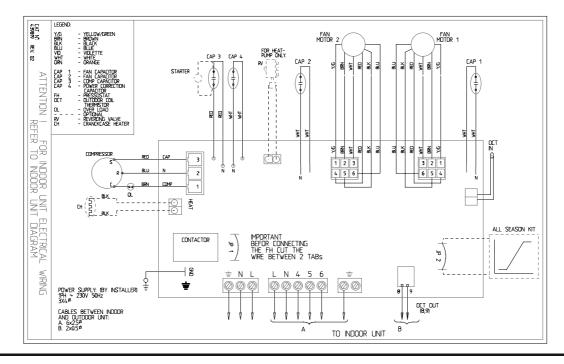




5.4 EMD 40 1PH OUTDOOR POWER SUPPLY

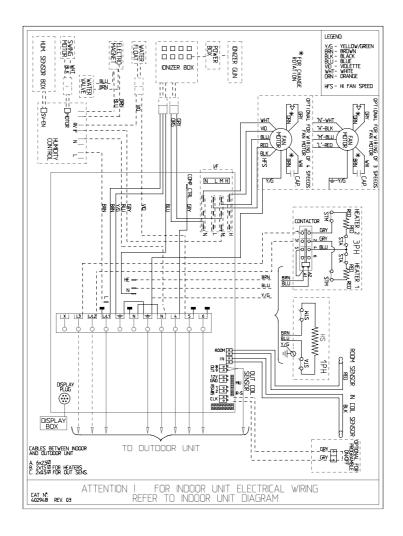
INDOOR

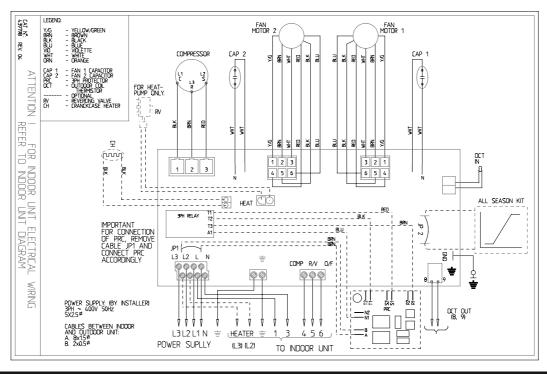


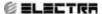


5.5 EMD 40, 45 3PH OUTDOOR POWER SUPPLY

INDOOR

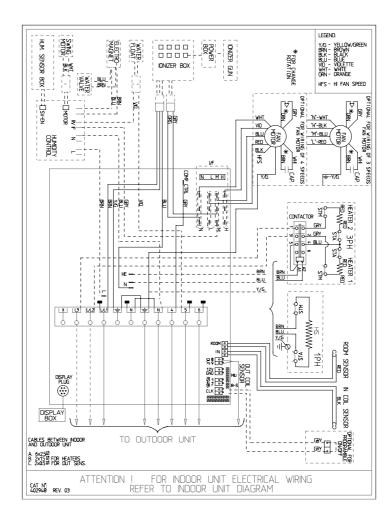


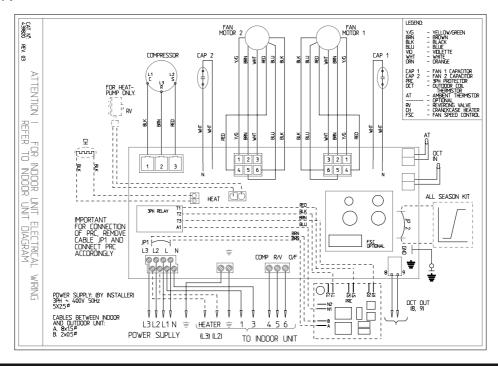




5,6 EMD 50 3PH OUTDOOR POWER SUPPLY

INDOOR

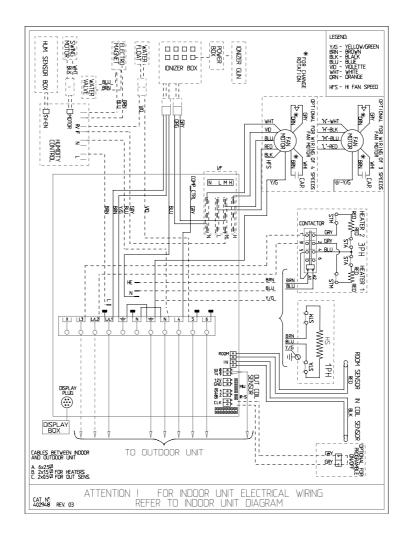


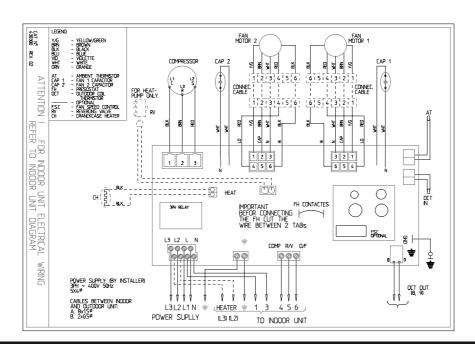




5,7 EMD 60 3PH OUTDOOR POWER SUPPLY

INDOOR

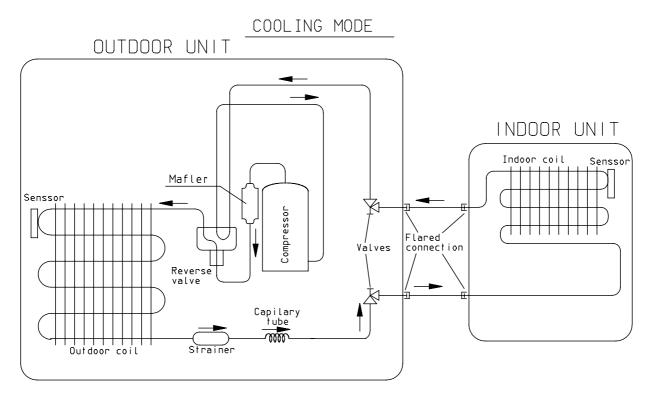




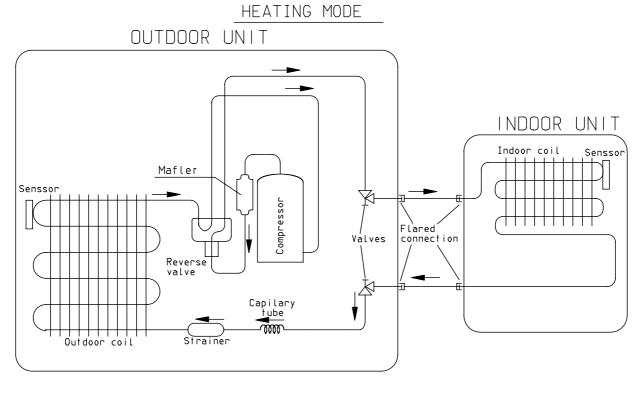
6. REFRIGERATION DIAGRAMS

6.1 Model: EMD 27 RC

Heat Pump

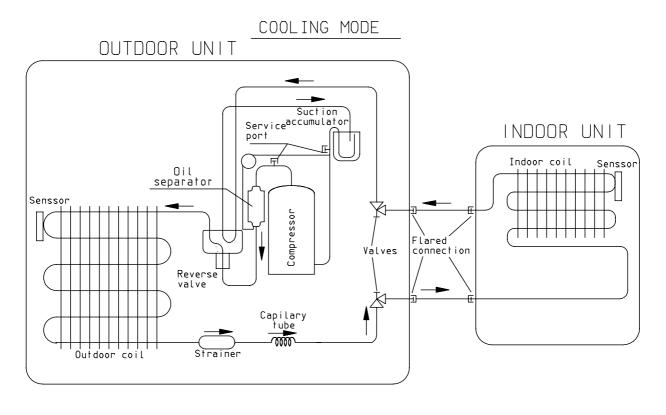


._____





6.2 Model: EMD 35 RC Heat Pump



HEATING MODE

OUTDOOR UNIT

Service accumulator port

Separator

Separator

Sensor

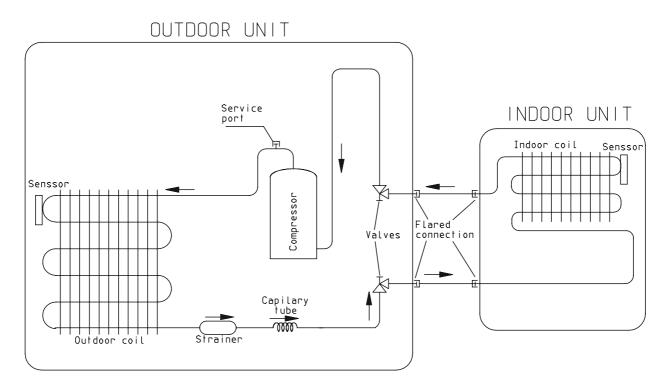
Capilary

Lube

Outdoor coil

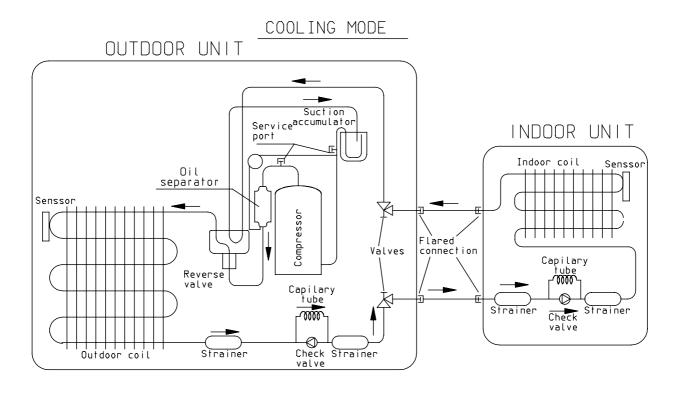
Strainer

6.3 Models: EMD 27, 35 ST Cooling Only





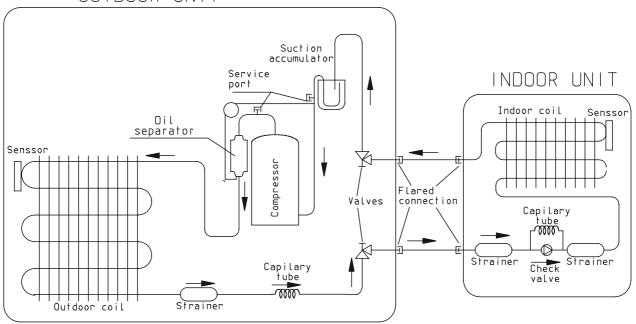
6.4 Models: EMD 40, 45, 50, 60 RC Heat Pump



HEATING MODE OUTDOOR UNIT Suction Service accumulator port INDOOR UNIT Indoor coil Senssor Oil separator Senssor Flared Valves connection Capilary tube Reverse valve \overline{m} Capilary tube Strainer Strainer Check valve -ww Outdoor coil Check

6.5 Model: EMD 40, 45, 50 ST Cooling Only

OUTDOOR UNIT



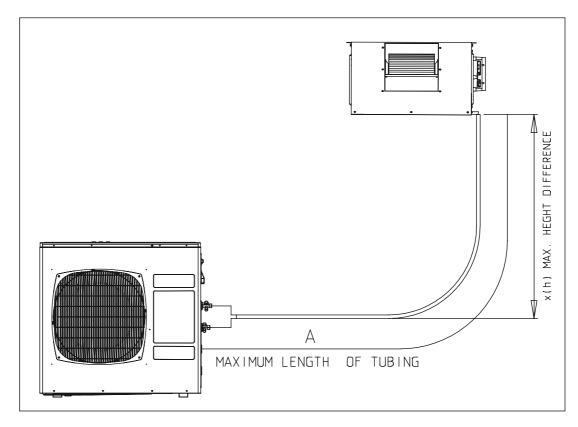


6.6 Additional Refrigerant Charge (R 22, R407C gr.)

| MODEL | REFRIGERANT TUBING LENGTH (ONE WAY) | | | | |
|--------|-------------------------------------|-----|-----|-----|------|
| MODEL | 10m | 15m | 25m | 30m | 50m |
| EMD 27 | 60 | 185 | 435 | - | - |
| EMD 35 | 60 | 185 | 435 | 560 | - |
| EMD 40 | 75 | 225 | 525 | 675 | 1275 |
| EMD 45 | 75 | 225 | 525 | 675 | 1275 |
| EMD 50 | 75 | 225 | 525 | 675 | 1275 |
| EMD 60 | 100 | 300 | 700 | 900 | 1700 |

MAXIMUM REFRIGARANT TUBING LENGTH AND HEIGHT DIFFERENCE

| MODEL | LENGTH (m) | HEIGTH |
|---------|------------|----------------|
| IVIODEL | (A) | DIFFERENCE (m) |
| EMD 27 | 25 | 10 |
| EMD 35 | 30 | 10 |
| EMD 40 | 50 | 25 |
| EMD 45 | 50 | 25 |
| EMD 50 | 50 | 25 |
| EMD 60 | 50 | 25 |



^{*} THE INDOOR UNIT CAN BE ABOVE OR BELOW THE OUTDOOR UNIT.



7. CONTROL SYSTEM

Instructions for

Electronic Control Service Package

INTRODUCTON

The electronic control package is designated for service and is common for the following group of air-conditioners.

1. **ST/RC** group - Cooling only / Cooling and Heating by heat pump.

2. **SH** group - Cooling and Heating by heat pump and supplementary heater.

3. **RH** group - Cooling and Heating by heaters only.

Before installation, be sure that you select and set for the right group.

PACKAGE CONTENT

The following should be included in the electronic control service package:

- Controller designated for service
- Model plug

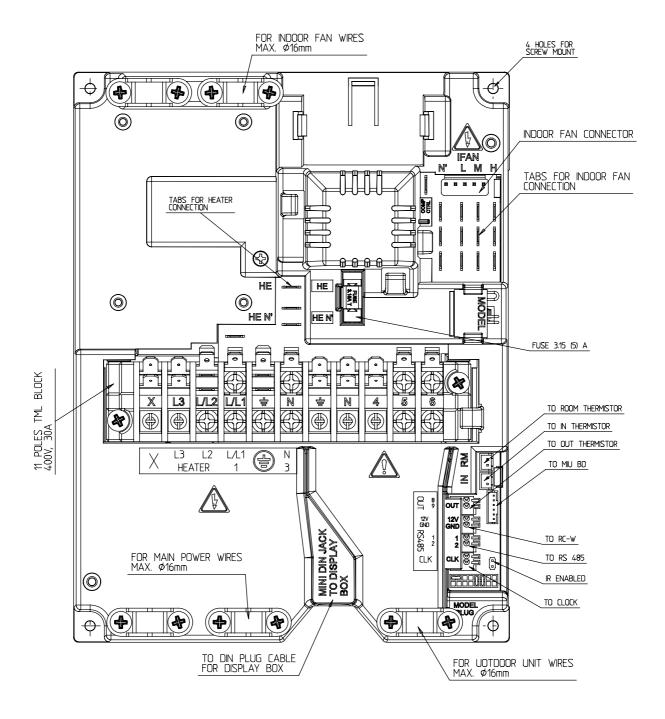
MODEL PLUG SETTINGS

Before installation, make sure to set the model plug to conform with the suitable group.

| GROUP | J6 Setting | J2 Setting |
|---------|-------------------|------------|
| ST / RC | open | open |
| SH | closed | open |
| RH | closed | closed |



POWER CONTROLLER



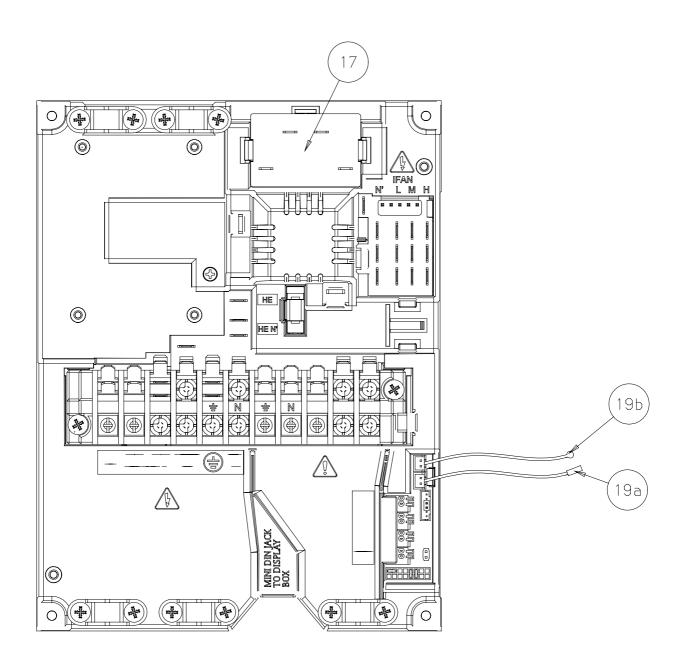


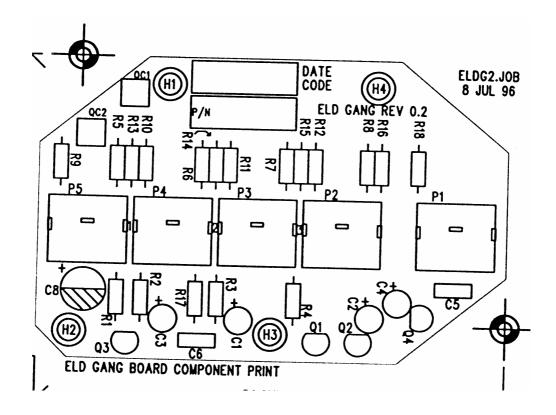
FIG.4 ELECTRICAL ASSEMBLY – EMD

FOR COMPONENTS DESCRIPTION AND CATALOG NUMBERS REFER TO SPARE PARTS LIST FOR THE RELEVANT PRODUCT NO.

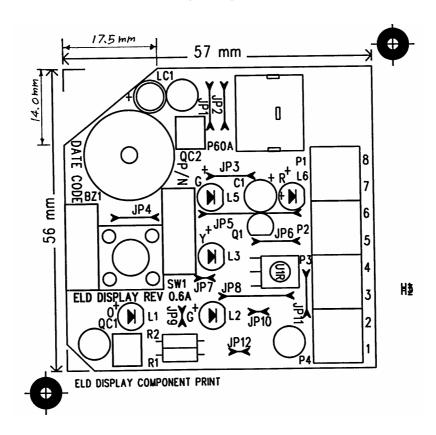
| .ELECTRA consumer products LTD | REV. 01 03/2004 | SERIES: EMD | PG. 12- 14 | l |
|--------------------------------|-----------------|-------------|------------|---|
|--------------------------------|-----------------|-------------|------------|---|



GANG BOARD



DISPLAY BOARD





CONFIGURATION OF THE APPLIANCE

REMOTE CONTROL DIP SWITCH SETTING

| SETTING SWITCH STATUS | | | | DEFINITION | | |
|-----------------------|-----------|-----------|----------|-----------------------------|---------------------------------------------------|--|
| SW. NO. 1 | SW. NO. 2 | SW. NO. 3 | SW. NO.4 | RC3 | RC4 | |
| OFF | OFF | _ | _ | RC-ALL MODES OF OPERATION | | |
| ON | OFF | _ | _ | STD-COOL, FAN, DRY, ACTIVE | | |
| OFF | ON | _ | _ | HEAT-COOL, FAN, DRY, ACTIVE | | |
| ON | ON | _ | _ | AUTO FAN (AF) | | |
| _ | _ | OFF | _ | TEMP. DISPLAY IN °C DEGREES | VERTICAL SWING ONLY | |
| _ | _ | ON | _ | TEMP. DISPLAY IN °F DEGREES | HORIZONTAL & VERTICAL SWING FUNCTIONS TOGETHER | |
| _ | - | _ | OFF | TIMER & CLOCK 12 H AM, PM | DISABLE LCD & KEY ILLUMINATION | |
| _ | _ | _ | ON | TIMER & CLOCK 24 H | ENABLE LCD & KEY ILLUMINATION | |

RESET OPERATION - Press at the same time the 4 buttons :"CLEAR ", "SET" , "HR +", "HR -" for 5 seconds

LEGEND:

SW1, SW2 - SELECTION OF RC/ST

SW3 - SELECTION OF TEMP. DISPLAY °C or °F IN RC3 OR SWING FUNCTION IN RC4.

SW4 - SELECTION OF TIME DISPLAY 12H AM/PM or 24H IN RC3 0R ILLUMINATION FUNCTION IN RC4.

OFF = 0 ON =1

NOTE: After setting the dip switches perform reset operation..





1 Legend

1.1 Abbreviations

AC - Alternate Current A/C - Air-Conditioner ANY - ON or OFF status

CLOCK - ON/OFF Operation Input, (dry contact)

COMP - Compressor

CPU - Central Processing Unit

CTV -Compensation Temperature Value

HE - Heating Element HPC - High Pressure Control

H/W - Hardware

ICP - Indoor Condensation Pump

ICT - Indoor Coil Temperature (RT2) sensor

IF, IFAN - Indoor Fan IR - Infra Red

LEVEL1 - Normal Water Level LEVEL2/3 - Medium/High Water Level

LEVEL4 - Overflow Level

Max - Maximum

Min - Minimum

min - Minute (time)

NA - Not Applicable

OCP - Outdoor Condensation Pump

OCT - Outdoor Coil Temperature (RT3) sensor

OF, OFAN - Outdoor Fan OPER - Operate Para. - Paragraph

RAT - Return Air Temperature (RT1) sensor

RC - Reverse Cycle (Heat Pump)

R/C - Remote Control

RCT - Remote Control Temperature

RH - Resistance Heater

RT - Room Temperature (i.e. RCT in IFEEL mode, RAT otherwise)

RV - Reversing Valve
SB, STBY - Stand-By
sec - Second (time)
Sect - Section

SH - Supplementary Heater SPT - Set Point Temperature

ST - Standard (a Model with Cooling Only)

S/W - Software
TEMP - Temperature
W/O - Without

 ΔT - The difference between SPT and RT.

in Heat Mode: $\Delta T = SPT - RT$ in Cool/Dry/Fan Mode: $\Delta T = RT - SPT$



2 General functions for all models

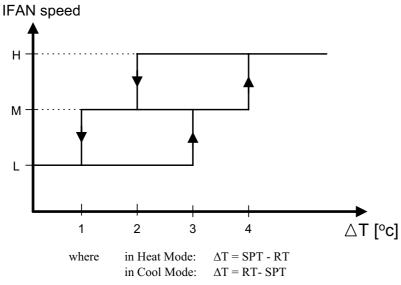
2.1 COMP operation

- 2.1.1 For each Mode including POWER OFF & SB, a Min time delay of 3 min before COMP restarting, excluding DEICING Mode (see 7.2.1).
- 2.1.2 The Min operation time of COMP under different operating conditions is

| Operation Mode | Min operation time of COMP |
|------------------------------------------------------|----------------------------|
| Heat, Cool, H.P protection or Auto Modes | 3 min. |
| Fan, Dry, Overflow, Protection modes, or mode change | ignored |

2.2 IFAN operation

- 2.2.1 Min time interval between IFAN speed change in AUTOFAN Mode, is 30 sec.
- 2.2.2 Min time interval between IFAN speed change in H/M/L Mode is 1 sec.
- 2.2.3 IFAN speed in Heat/Cool Autofan Mode is determined according to the following chart:



2.3 OFAN operation

2.3.1 Min time interval between OFAN ON/OFF state change is 30 sec.

2.4 HE operation

- 2.4.1 Minimum Heaters ON or OFF time is 30 sec.
- 2.4.2 Heaters can never be in operation while IFAN is OFF.
- 2.4.3 In RH group, HE-1 and HE-2 will be activated only when <u>COMP is not</u> operating, except in Dry Mode.

2.5 Protections

- 2.5.1 High pressure protection is applicable to all operating modes.
- 2.5.2 Deicing control is valid in Heat and Auto Heat Mode only.
- 2.5.3 Defrosting control is valid in Dry, Cool, and Auto Cool Modes.



2.6 Thermistors operation

- 2.6.1 Return air Temp. is detected by RAT in normal Mode, or by RCT (R/C sensor) in I-FEEL Mode.
- 2.6.2 Indoor Coil Temp. is detected by ICT.
- 2.6.3 Outdoor Coil Temp. is detected by OCT.

2.6.4 <u>Definition of thermistor faults:</u>

a. Thermistor is disconnected -

The thermistor reading is below -30°c.

b. Thermistor is shorted -

The thermistor reading is over 75°c.

- c. Thermistor Temp reading doesn't change -
 - (i) This test is performed <u>only once</u> after a unit is switched from OFF/STBY to operation. At the <u>first occurrence</u> of 10 min continuous COMP operation, the current ICT are compared with those when the COMP was switched from OFF to ON 10 min before. If the ΔT is less than 3°c, the thermistor is regarded as defective.
 - (ii) The ICT no-change error can be disabled together by connecting a 4.7 k ohm resistor (5%) to the ICT connector. These resistors are equivalent to a thermistor 48+/-1°c.

2.6.5 Cases for disabling ICT thermistor disconnected detection

- The detection of thermistor faults (a) and (b) above is disabled when Deicer Protection is started. The
 detection will be enabled again only after (1) the deicing is completed, and (2) COMP has been restarted and
 operated for 30 sec.
- ii. When all the following conditions are fulfilled:
 - a. 4.7K Ohm resistor is connected on the OCT
 - b. IFAN is OFF
 - c. Compressor is ON
 - d. ICT < -30 (disconnected)

2.7 RV Fault

This test is applied only in compressor units where 4.7k Ohm is not connected to the OCT.

This test is performed <u>every time</u> the unit is switched from OFF/STBY to OPER in Heat mode or changes operation mode from COOL/DRY to HEAT or (this applies also in AUTO COOL/HEAT mode).

If ICT is lower than 35°C at the time of mode change, then at the <u>first occurrence</u> of 15 min continuous COMP operation, ICT is compared with ICT reading when the COMP was switched from OFF to ON 15 min before. RV fault is defined when ICT decreases in more than 5 °C.

In this case, the COMP will stop and the SB led will blink. This fault is reset after going to SB or mode change.

2.8 General features

- 2.8.1 Allowed (control target) rage for RAT is SPT +/-1°C.
- 2.8.2 Whenever the unit is changed from Cool/Dry/STBY mode to Heat mode or vice versa, the procedures below are followed:

Stop COMP for 3 min \rightarrow Change RV state \rightarrow Start COMP if necessary.



3 Cooling Mode

3.1 Cooling Mode - General

3.1.1 Mode Definition

MODE: COOL, AUTO (AT COOLING)

TEMP: SELECTED DESIRED TEMPERATURE.

FAN: HIGH, MED, LOW, AUTO.

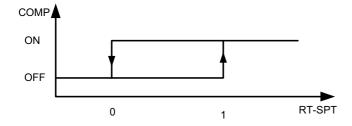
TIMER: ANY

I FEEL:ON OR OFF

- 3.1.2 Room Temperature, RT, is detected by
 - RAT in normal operation, or
 - RCT (R/C sensor) in I-FEEL mode.
- 3.1.3 Indoor Coil Temp is detected by ICT.
- 3.1.4 Outdoor Coil Temp is detected by OCT.

3.2 Control Functions

3.2.1 COMP Operation



3.2.2 OFAN Operation

• In normal operation OFAN operates together with the COMP.

3.2.3 IFAN Operation

- IFAN will operate in ANY speed regardless the ICT or COMP state.
- IFAN speed will be determined according to user selection or AUTO-FAN logic (sect. 2.2)

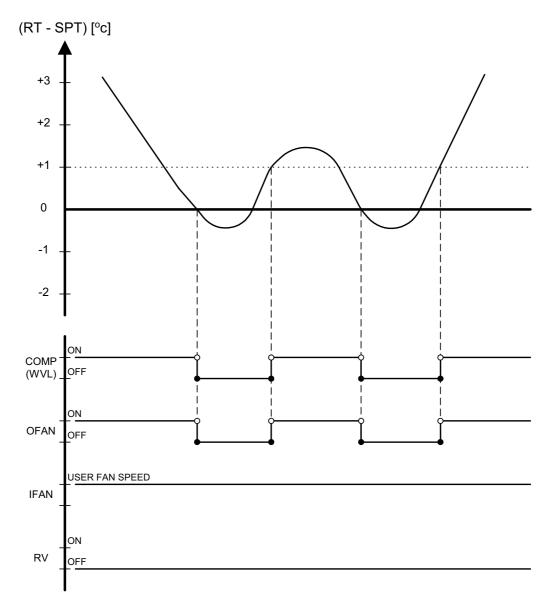
3.2.4 RV and HEATERS outputs

• RV and HEATERS are in OFF state in cool mode.

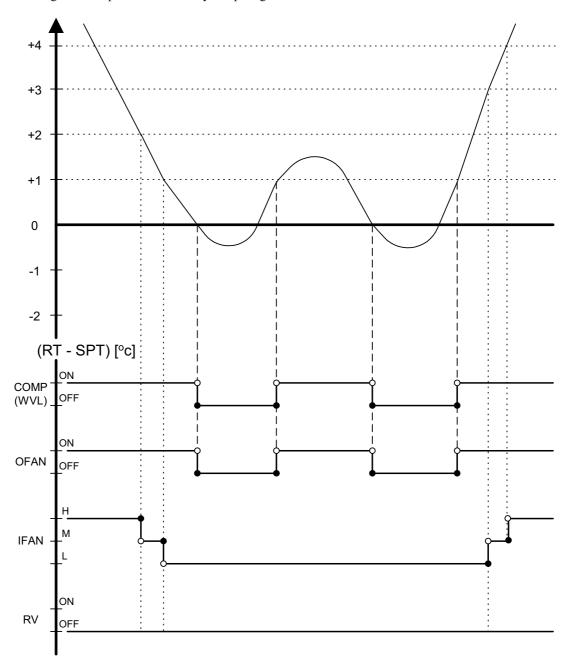


3.3 Sequence Diagrams

3.3.1 Maintaining room temp at desired level by comparing RT and SPT with user defined IFAN speed.



3.3.2 Maintaining room temp at desired level by comparing RT and SPT with AUTO-IFAN.



Note: Refer to Sect 2.22.2 for IFAN operations in Auto-fan mode.



4 Heating Mode

4.1. Heating Mode - General

4.1.1. Compensation Procedure

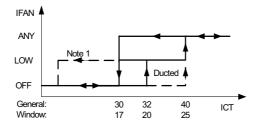
When I feel is OFF during heat mode: RT= RAT - CTV. When I feel is ON during heat mode: RT= RCT.

| Model | CTV |
|--------------------------|-------|
| WNG, WMN, RWK. | +3 °C |
| MBX, PX, PRX, P2000, PXD | +0 °C |
| WMF, WAX | +2 °C |
| EMD/ELD | +4 °C |
| ECC-K | +4 °C |

No compensation will be activated in Forced operation modes (Cf. Sect 11).

4.1.2. IFAN operation rules for RC and SH groups

(a) As a general rule for **RC and SH groups**, IFAN will be switched ON according to the following graph:



Note 1: When COMP is ON (except WAX Model), IFAN will change from Low to OFF either when:

- (1) ICT<28 and IFAN is on for 5 min or longer.
 - Or,
- (2) ICT<20

Note 2: When ICT is faulty:

When the compressor switches from off to on (excluding deicing), IFAN will be on in ANY speed. When the compressor switches from on to off, the IFAN will change to low speed for 30 seconds and then it will be off.

(b) In **SH or RC group**, IFAN will operate for min 30 sec according to 0-(a) after HE's turned off, where in a case it has to be OFF, it will be forced to low speed.

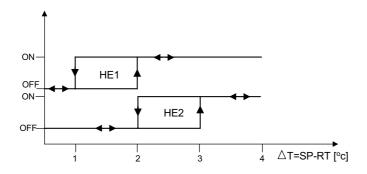
4.1.1 IFAN operation rules for **RH group**

(a) In **RH group**, IFAN starts when HE starts. When HE switches to OFF, IFAN switches to LOW for 30 sec and then stops.

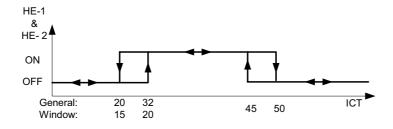


4.1.2 Heaters operation rules for RC and SH groups

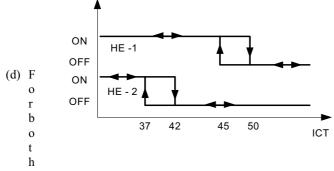
(a) For both RC and SH groups, Heaters versus ΔT is as the following:



- (b) Operation rules for Heaters in RC group:
 - (i) Heaters can be enabled only if IFAN is ON.
 - (ii) Heaters will operate according to ΔT and the following graph:



- (c) Rules for Heaters operation in SH group:
 - (i) When heaters are to be ON and IFAN is to be OFF according to 4.1.2 (a), IFAN will be forced to low speed.
 - (ii) Heaters will operate according to ΔT and the following graph:

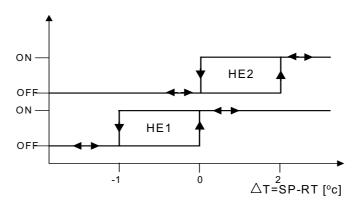


RC and SH groups, excluding deicing, HE1 and HE2 can be on only when the compressor is on.



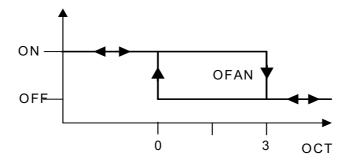
4.1.5 Heaters operation rules for **RH groups**

(a) In **RH group**, HE operation is according to the difference between RAT and SPT.



4.1.6 OFAN Operation for **RC and SH groups**

- (i) As a general rule for **RC and SH groups**, excluding protection modes, OFAN starts with the compressor.
- (ii) When OFAN is then ON it will operate according to the following conditions:
 - a) OFAN operates together with the compressor.
 - b) When $(RT \ge SPT 2)$ and $ICT \ge 50$ and the 4.7k Ohm resistor is not connected to the OCT, OFAN will operate according to the following curve:





4.2. Heating, RC or SH Group

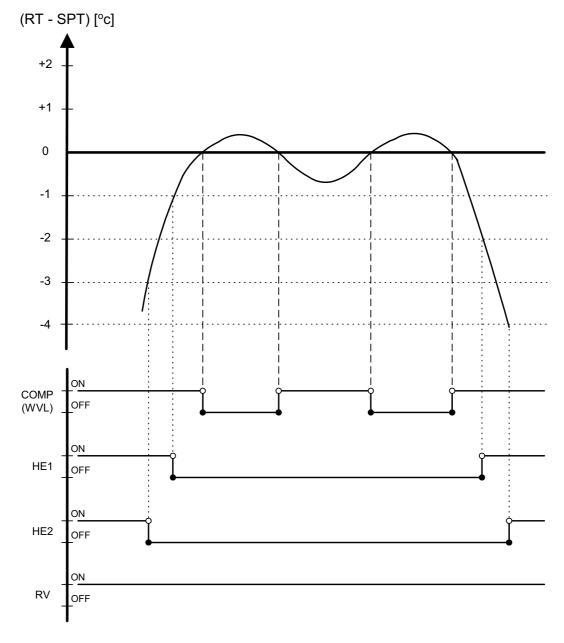
Mode: Heat, Auto (at heating)
Temp: Selected desired temperature

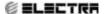
Fan: HIGH, MED, LOW

Timer: Any I Feel: On or Off

Sequence Diagram

Maintains room temp. at desired level by comparing RAT or RCT to SPT.





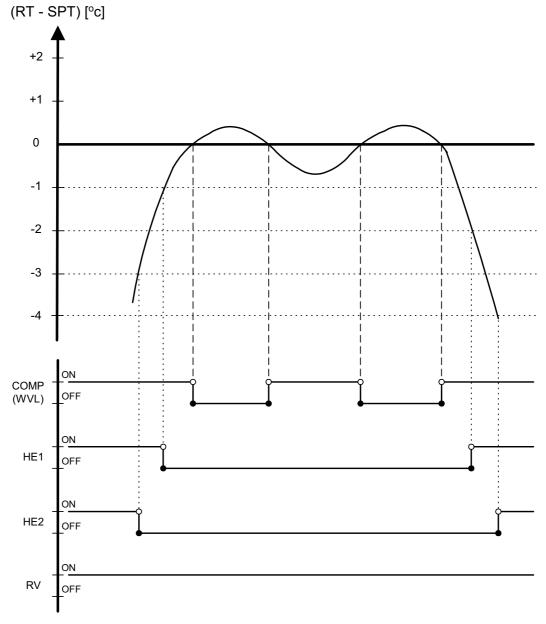
4.3. Heating, RC or SH Group with Autofan

Mode: Heat, Auto (at heating)
Temp: Selected desired temperature

Fan: Auto Timer: Any I Feel: On or Off

Sequence Diagram

Maintains room temp at desired level by controlling COMP, IFAN and OFAN.





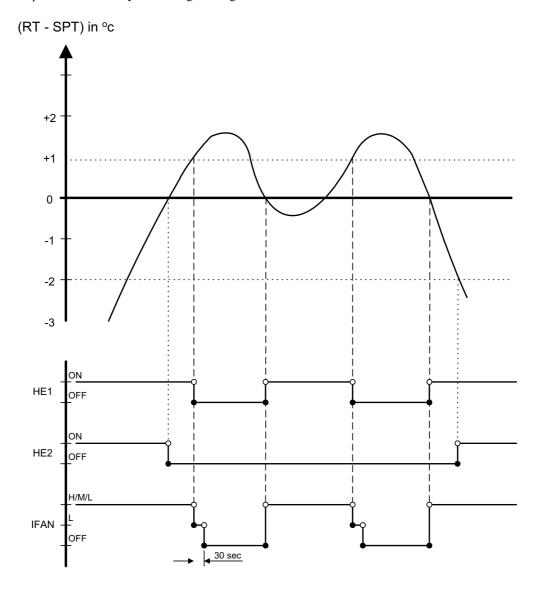
4.4. Heating, RH Group

Mode: Heat, Auto (at Heating)
Temp: Selected desired temperature
Fan: HIGH, MED, LOW

Timer: Any
I Feel: On or Off

Sequence Diagram

Maintains room temp at desired level by controlling Heating Elements : HE1 or HE2.





4.5. Heating, RH Group, with Autofan

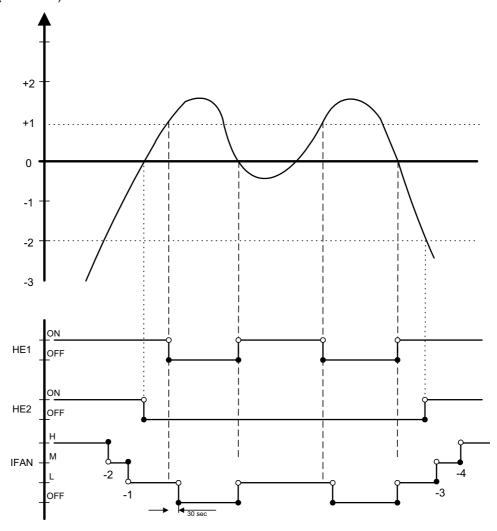
Mode: Heat, Auto (at Heating)
Temp: Selected desired temperature

Fan: Auto Timer: Any I Feel: On or Off

Sequence Diagram

Maintains room temp at desired level by controlling the 2-Stage Electric Heaters.

(RT - SPT) in °c





5 Automatic Cooling or Heating

5.1 Automatic Cooling or Heating - General

The Auto Mode is for model with compressor and the WVL-RH only. The WVL-ST, RC and SH units do not work in Auto Mode.

5.1.1 Mode Definition

Mode: Auto

Temp: Selected desired temperature

Fan: Any Timer: Any

I Feel: On or Off

- 5.1.2 Switching-temperature between Cooling and Heating is SPT \pm 3°c.
- 5.1.3 When the Auto Mode is started with SPT +/-0°c, the unit will not select Auto Heat or Auto Cool mode immediately. Instead, the unit will be in a temporary Fan Mode with IFAN operating at low speed. The proper Auto Heat mode or Auto Cool will be started whenever the RT reaches SPT-1°c or SPT+1°c respectively.
- 5.1.4 For RC & SH units, Mode change between Auto Heat & Auto Cool Modes is possible only after the COMP has been OFF during the last T minutes.

| Mode Change | time, T |
|------------------------|---------|
| Auto Cool to Auto Heat | 3 min |
| Auto Heat to Auto Cool | 4 min |

5.1.5 For RH and WVL-RH units, Mode change between Auto Heat & Auto Cool Modes is possible after the COMP/HEs have been OFF during the last T minutes.

| Mode Change | time, T | |
|------------------------|--------------------|--|
| Auto Cool to Auto Heat | COMP off for 3 min | |
| Auto Heat to Auto Cool | HEs off for 3 min | |

5.1.6 When unit is changed form Cool/Dry mode to Auto Mode, the unit will continue to operate at (Auto) Cool Mode until the conditions for switching from Auto Cool to Auto Heat are satisfied.

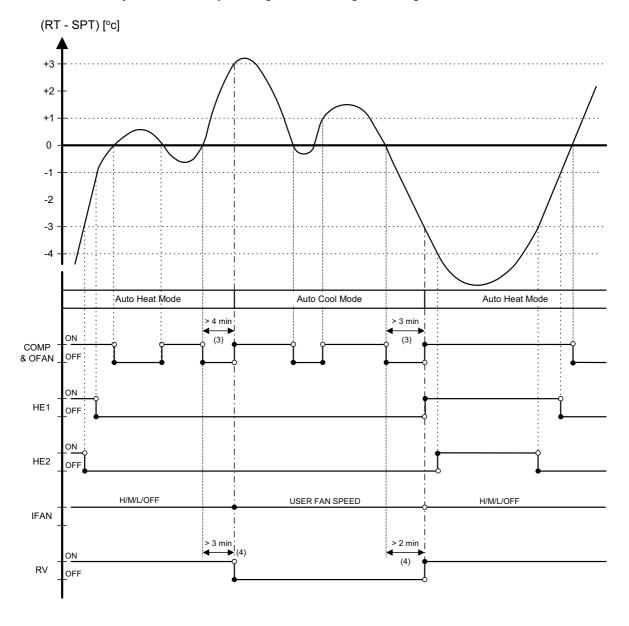
Similarly, when unit is changed from Heat Mode to Auto Mode, the unit will continue to operate at (Auto) Heat Mode until the conditions for switching from Auto Heat to Auto Cool are satisfied.



5.2 Sequence Diagrams

5.2.1 Auto Cooling or Heating, RC or SH Groups

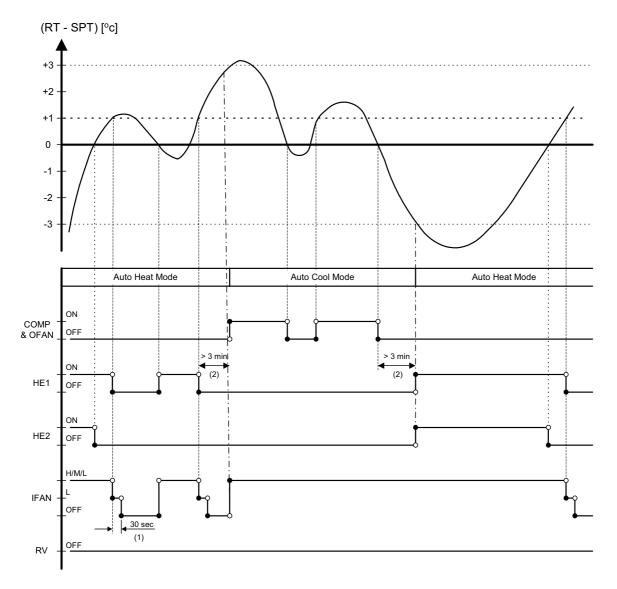
Maintains room temp at desired level by selecting between cooling and heating modes.





5.2.2 Auto Cooling or Heating RH Group

Maintains room temp at desired level by selecting between Cooling or Heating Modes.





6 Dry Mode

6.1 Dry, ST or RC group or P2000 model with any group settings

Mode: Dry

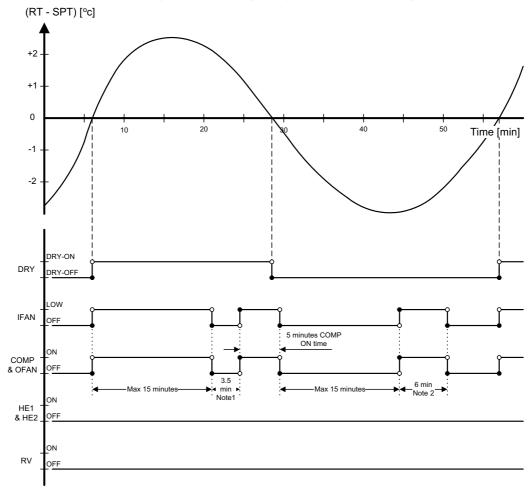
Temp: Selected desired temp

Fan: Low (automatically selected by software)

Timer: Any I FEEL: Any

Control function

Reduce room humidity with minimum temp. fluctuations by operating in Cool Mode with low speed IFAN.



Notes:

- 1. When Dry is ON, the COMP is forced OFF for 3.5 min (longer than the 3 min Min COMP-Off time) after every 15 min of continuous COMP operation.
- 2. When Dry is OFF, the COMP is forced ON for 6 min (longer than the 3 min Min COMP-On time) after every 15 min of continuous COMP OFF time.
- 3. When Dry is changed from ON to OFF or vice versa, the limits mentioned in (1) & (2) are ignored. The COMP operation is only controlled by the 3 min Min OFF time and 1 min Min ON time.
- 4. In Dry Mode, IFAN is LOW when COMP is ON, and is OFF when COMP is OFF.
- 5. Pumps are operating as indicated in Sect. 7.3, 7.4, and 7.5.
- 6. HEs are always OFF in Dry Mode.



6.2. Dry, SH or RH group excluding P2000 model

Mode: Dry

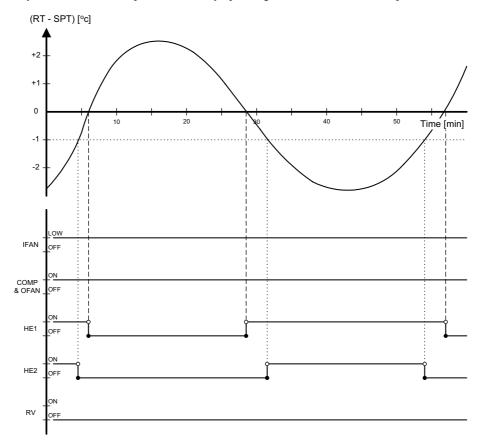
Temp: Selected desired temp.

Fan: Low (automatically selected by software)

Timer: Any I FEEL: Any

Control function

Reduce room humidity with minimum Temp. fluctuations by operating in Cool Mode with low speed IFAN and HE.





7 Protection

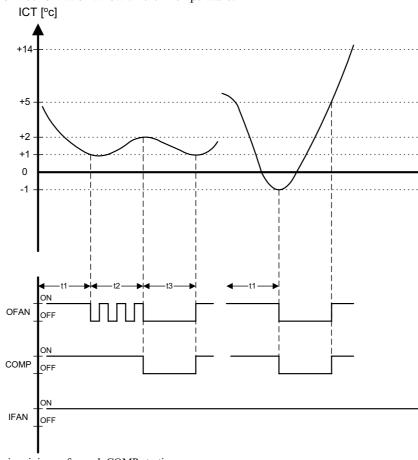
7.1. Cooling Mode Protections

7.1.1. Indoor Coil DefrostMode: Cooling, Dry, AutoTemp: Selected desired temp.

Fan: Any Timer: Any I Feel: On or Off

Control Function

Protect the indoor coil from ice formation at low ambient temperature.



- t1 = 5 min minimum for each COMP starting
- t2 = OFAN cycling (alternate between ON and OFF every 30 sec) for 20 min maximum
- t3 = COMP and OFAN stop for 10 min minimum

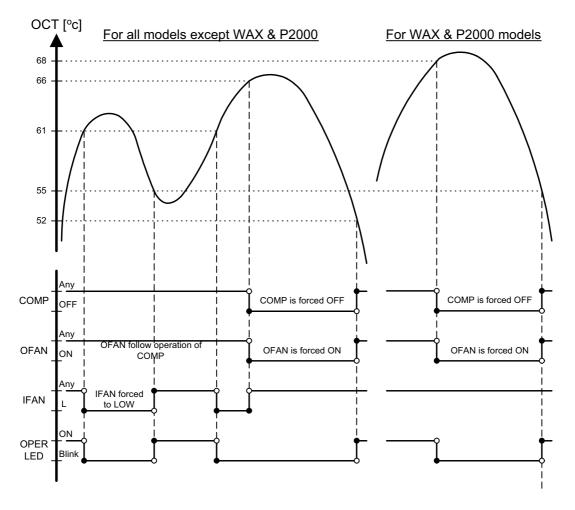


7.1.2. High Pressure ProtectionMode: (Auto) Cooling or DryTemp: Selected desired temp.

Fan: Any
Timer: Any
I Feel: On or Off

Control Function

To protect the COMP from the high pressure built-up in the outdoor coil during normal cooling operation, by switching OFF the IFAN and COMP.



Note:

The ICT is also monitored during Cool and Dry mode, in case the RV control circuit is faulty. Whenever ICT reaches 70°c, which indicates a high pressure in the indoor coil, the COMP will be forced off automatically. The COMP can be turned on again only after the ICT is under 70°c again and after the 3 min COMP ON delay time. The OPER LED will not blink in this case.



7.2. Heating Mode Protections

7.2.1. Outdoor coil Deicing (excluding RH Group)

Mode: Heating, Auto (at heating) Temp: Selected desired Temp

Fan: Any Timer: Any I FEEL:Any

Control function

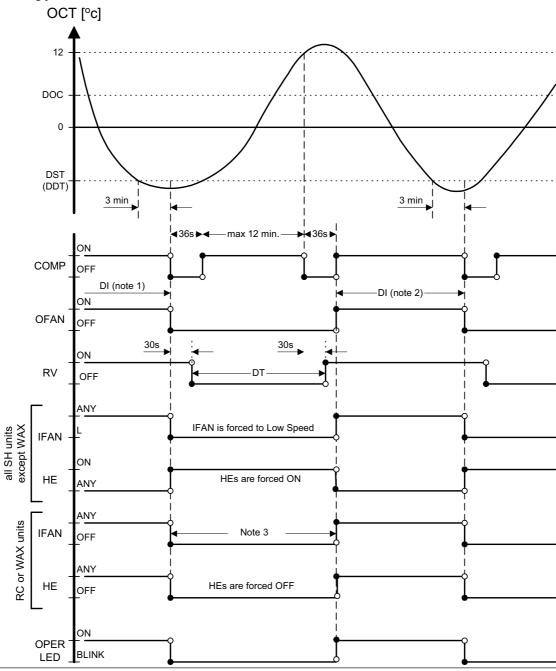
To protect the Outdoor coil from ice formation by controlling COMP & RV operation.

7.2.1.1. Deicer Activation Algorithm

- 1. static deicer threshold is -5°C
- 2. dynamic deicer threshold is change of 3°C in 3 minute in the OCT temperature
- 3. In first COMP activation (after SB or OFF), if OCT < 0°c, min time to first deicer id 10 min else 40 min.
- 4. In a case of reading 3 successive OCT values below -10°C and previously 3 successive OCT values of 43°C (4.7 K), the unit will activate deicing procedure.



7.2.1.2. <u>Deicing procedure</u>



Notes:

- 1. In the following Deicing cycles, the time interval between two Deicing cycles activation is between 30 to 80 min
- 2. For RC group, IFAN is forced off
- 3. For SH group, HEs are forced ON and IFAN is forced to operate in Low speed, regardless of the ICT and difference between RAT & SPT.
- 4. When jumper J7 is set, the DST value is -2°C.



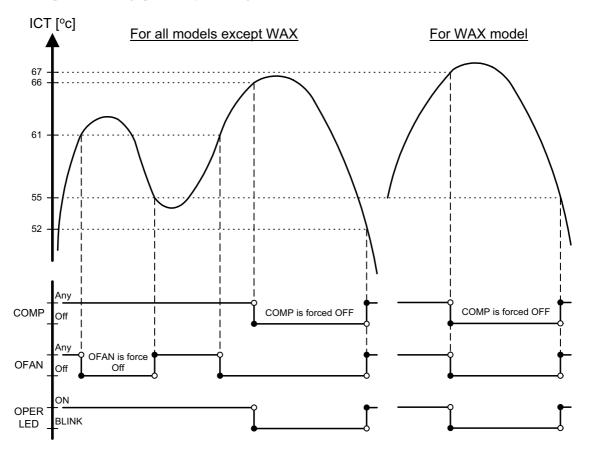
7.2.2. High pressure protection (excluding RH Group)

Mode: (Auto) Heating

Fan: Any Timer: Any I Feel: On or Off

Control Function

Protect the Compressor from high pressure by switching OFF the OFAN and COMP.





SELF TEST for General Controller

STEP 1: TURNING ON THE POWER.

Turn ON the power, make sure that the unit is in operation.

STEP 2: ENABLE SELF TEST MODE

- 1. Use the Remote control to send the first settings to display / indoor unit Heat mode, High IFAN, set temperature 16 °C , no I FEEL Sleep or any Timer settings needed.
- 2. Cover the IR transmitter components in the head of the remote control so that it will not transmit the signals to the indoor unit display.
- 3. Use the Remote control to send the second settings to display / indoor unit Cool mode, Low IFAN, no I FEEL Sleep or any Timer settings.
- 4. Uncover the remote control IR transmitter and change the temperature settings.

If the display/indoor unit receive the settings properly the following steps will start:

STEP 3: MODEL SETTING CONFIRMATION

1. The STAND-BY and COOL LEDS will indicate the operation mode as following:

| OPERATION MODE | STAND-BY LED | COOL LED |
|-------------------|--------------|----------|
| ·ST | ON | OFF |
| RC | OFF | OFF |
| SH | OFF | ON |
| RH | ON | ON |

2. Testing the Model configuration. selected by the COMP, STAND-BY, TIMER LEDS and FILTER will indicate the model configuration as follows:

| MODEL | COMP | OPERATE LED | TIMER LED | FILTER LED |
|-----------|------|-------------|-----------|------------|
| WNG | ON | OFF | OFF | OFF |
| MBX | ON | OFF | OFF | ON |
| WNX | ON | OFF | ON | OFF |
| PRX | ON | ON | OFF | OFF |
| WMN1 | ON | ON | OFF | ON |
| EMD/LS | ON | ON | ON | OFF |
| ECC-K | ON | ON | ON | ON |
| WMN 4 | OFF | OFF | ON | OFF |
| PXD | OFF | OFF | ON | ON |
| WMN 2/WHX | OFF | ON | OFF | ON |
| WMN 3 | OFF | ON | ON | ON |

In this term the step motor will turn to HOME POSITION.



STEP 3: AUTO LED WALK TEST.

- 1) All the LEDS will turn OFF.
- 2) All the LEDS will turn ON for 1 second one by one in the following sequence : STAND-BY ⇒ OPERATE ⇒ TIMER ⇒ FILTER ⇒ COOL ⇒ HEAT.
- 3) In PRX all the LEDS will turn ON for 1 second one by one in the following sequence: 18 °c ⇒ 20 °c ⇒ 22 °c ⇒ 24 °c ⇒ 26 °c ⇒ 28 °c ⇒ 30 °c ⇒ High IFAN ⇒ Auto IFAN ⇒ Med IFAN ⇒ Low IFAN ⇒ STAND-BY⇒ TIMER ⇒ FILTER ⇒ COOL⇒ HEAT.

STEP 4: AUTO REALY WALK TEST:

All relays will turn ON one by one in the following sequence :

COMPRESSOR ⇒ OUTDOOR FAN⇒R. V. ⇒ HEATER 1 ⇒ HEATER 2 ⇒ INDOOR WATER

PUMP ⇒ SWING or OUTDOOR WATER PUMP ⇒ INDOOR FAN: ⇒ LOW ⇒ MID ⇒ HIGH.

When the relay walk test is completed, the next test will start automatically.

STEP 5: FREQUENCY TESTING:

If the frequency measuring process fails the COOL LED will turn ON.

In order to move to the next step press ON/OFF button on the remote control.

STEP 6: INPUT TEST.

This stage is testing the analog real time indicators (thermistors, LEVEL and clock) according the table below.

| LED indicator | Condition for LED to be ON | |
|---------------|---------------------------------|--|
| STBY LED | Room thermistor ≠ 25 °c | |
| OPER LED | Indoor coil thermistor ≠ 25 °c | |
| TIMER LED | Outdoor coil thermistor ≠ 25 °c | |
| FILTER LED | Clock | |
| COOL LED | LEVEL 2&3 | |
| HEAT LED | LEVEL 4 | |

STEP 7: TIMING RESET TEST (WATCH DOG).

The test purpose is to find out the CPU rise time after power failure is between 1 to 3 sec, test results are indicated on the LEDS: STAND-BY,OPER, TIMER AND FILTER are turning ON one by one.

The results of the test are coded as follow:

pass condition

1 sec - STAND-BY and OPER are turn ON

2 sec - STAND-BY, OPER and TIMER are turn ON

Fail condition

0 sec - STAND-BY is turn ON

3 sec - STAND-BY, OPER, TIMER and FILTER are turn ON

When the timing reset test is completed, the next test will start automatically.



STEP 8: MEMORY TEST (EEPROM)

The test purpose is to check if the memory is functioning correctly. The test result is reported by using the STAND-BY and FILTER LEDS:

| LED indicator | Condition for LED to be ON | | |
|---------------|----------------------------|--|--|
| STAND-BY LED | Test passed | | |
| FILTER LED | Test failed | | |

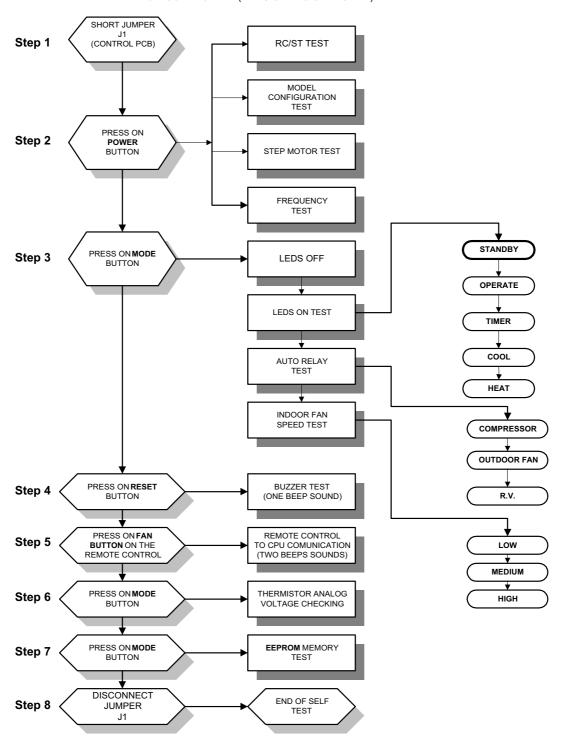
AT THIS POINT THE SELF-TEST IS COMPLETED.

In order to terminate self-test mode the User can change the unit setting from "Cool Mode, Low FAN" to "Cool Mode, Med FAN" or to wait without using the Remote control for 60 sec.



SELF TEST DIAGRAM

FOR CONTROLLER (VERSION 4V5 OR HIGHER)





System diagnostics

Pressing Mode button for 5-10 seconds in SB or any other operation mode will activate diagnostic mode by the acknowledgment of 3 short beeps and lighting of COOL and HEAT LEDs.

In diagnostic mode, system problems will be indicated by blinking of Heat & Cool LEDs.

The coding method will be as follow:

Heat led will blink 5 times in 5 seconds, and then will be shut off for the next 5 seconds. Cool led will blink during the same 5 seconds according to the following table:

| No | Problem | 1 | 2 | 3 | 4 | 5 |
|----|---------------------------------------|---|---|---|---|---|
| 1 | RT1 is disconnected | 0 | • | • | • | • |
| 2 | RT1 is shorted | 0 | • | • | • | 0 |
| 3 | RV Fault | 0 | • | • | 0 | • |
| 4 | RT2 is disconnected | • | 0 | • | • | • |
| 5 | RT2 is shorted | • | 0 | • | • | 0 |
| 6 | (Reserved) | • | 0 | • | 0 | • |
| 7 | RT2 temp reading doesn't change | • | 0 | • | 0 | 0 |
| 8 | RT3 is disconnected | • | • | 0 | • | • |
| 9 | RT3 is shorted | • | • | 0 | • | 0 |
| 10 | (Reserved) | • | • | 0 | 0 | • |
| 11 | RT3 temp reading doesn't change | • | • | 0 | 0 | 0 |
| 12 | RT2 & RT3 temp reading doesn't change | • | 0 | 0 | 0 | 0 |

Notes:

- 1. If faults occur in more than one thermistor (except case number 12 on the table above), only one fault will be indicated according to the following order: RT3, RT2, RT1.
- 2. A/C will jump out to normal mode if sending a command by the R/C in the system diagnostics mode. If this command from the R/C contain a Group ID, this ID will become the new Group ID of the ELCON unit.