



## SUBMITTAL DATA

TVR Smart – Outdoor Unit - Heat Pump

26HP – 220V/3Ph/50-60Hz DC Motor

Model: 4TVH0249R8000AA

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Job Name: \_\_\_\_\_

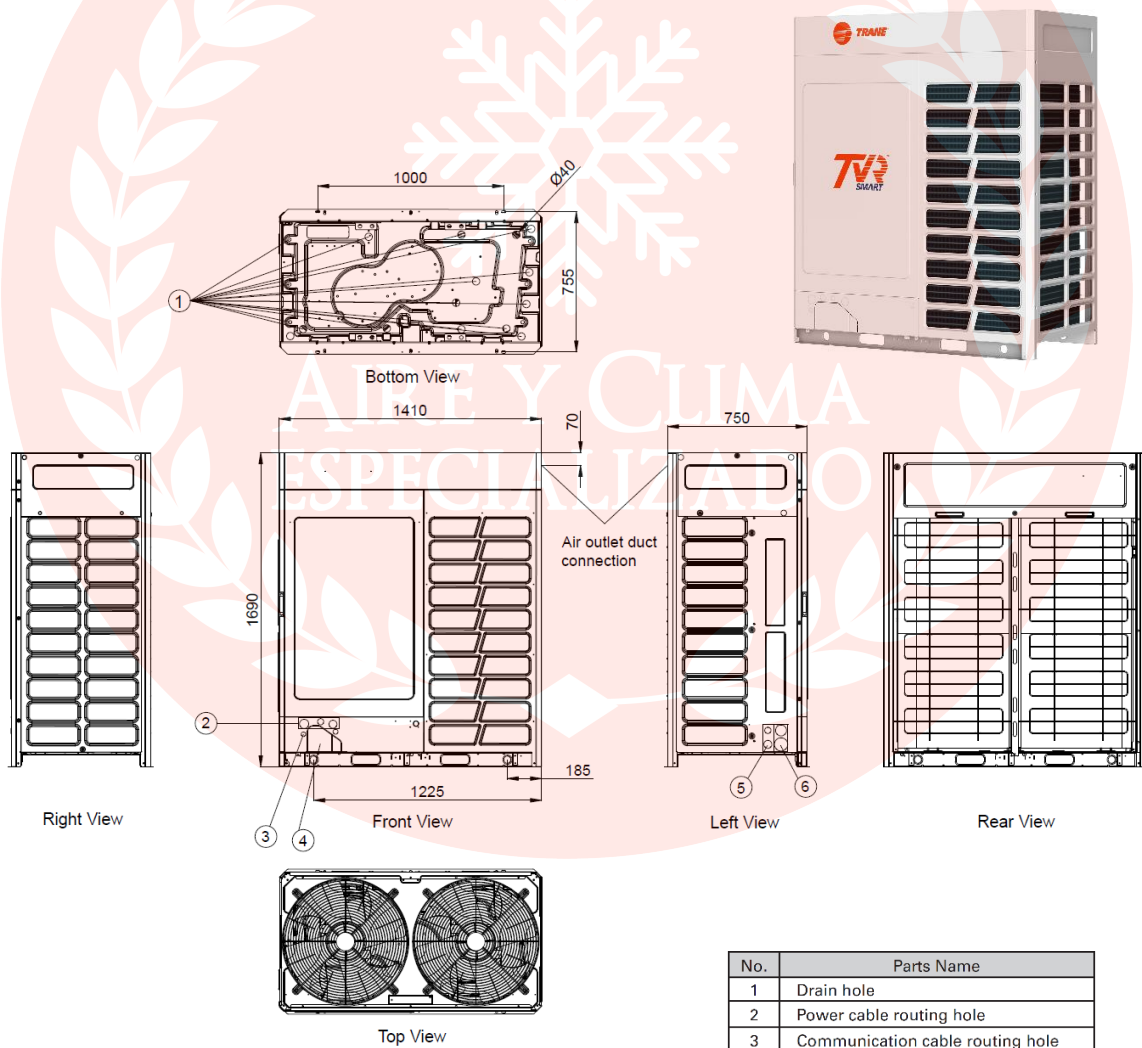
Date: \_\_\_\_\_

Reference: \_\_\_\_\_

Location: \_\_\_\_\_

### Commercial Air Conditioner > TVR Smart > Outdoor Unit

- Overall Dimensions



| No. | Parts Name                                       |
|-----|--------------------------------------------------|
| 1   | Drain hole                                       |
| 2   | Power cable routing hole                         |
| 3   | Communication cable routing hole                 |
| 4   | Pipe routing hole                                |
| 5   | Power cable and communication cable routing hole |
| 6   | Pipe routing hole                                |



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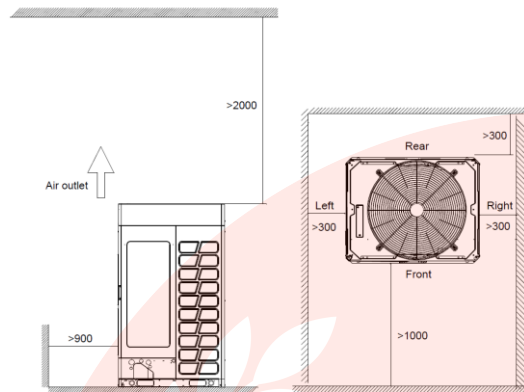
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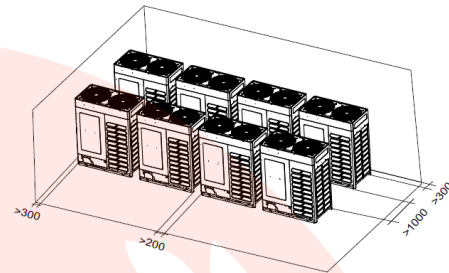
### • Installation Space Requirements

#### Single Unit Installation



#### Multiple Units Installation

Units can be installed in the same or opposite direction.



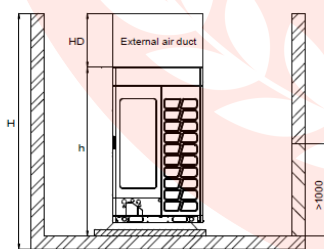
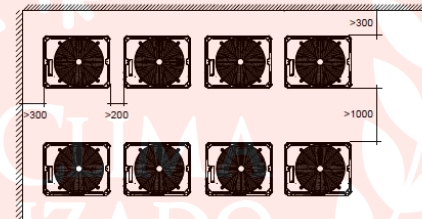
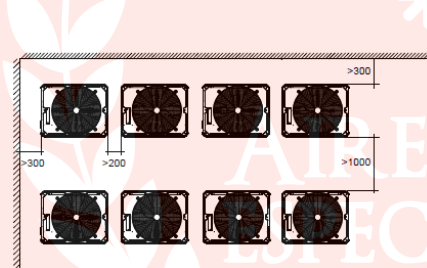
#### Multiple Units Installation with Wall Higher than Outdoor Heat Exchanger

Place with air inlet hole

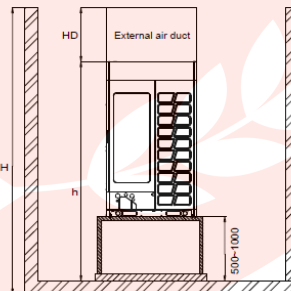
- Fan speed  $V_s$  at air inlet is 1.5m/s or below.
- Air outlet height  $HD=H-h$  and below 1m.

Place without air inlet hole

- Set a 500~1000mm support.
- Air outlet height  $HD=H-h$  and below 1m.



unit: mm



unit: mm

When installing the outdoor unit, consider the effects of seasonal wind direction. Avoid placing the unit where wind blows directly into the return air inlet, as this can affect functions like defrosting.

The air outlet duct installation must follow these principles:

- Remove the fan grille from the unit before installing the air outlet duct. Failure to do so will affect unit output, reduce performance, and may cause malfunctions.
- Adding louvers affects unit airflow and reduces performance, so they are not recommended. If louvers must be used, keep the louver angle below 15 degrees and spacing above 80 millimeters.
- The air outlet duct is limited to one bend only, as additional bends will cause poor unit operation.
- Install flexible connections between the unit and ductwork to prevent vibration and noise.
- Each unit must have its own independent air outlet duct. Never connect multiple units' ducts in parallel, as this may cause unit failure.



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### • Specifications

| Product Data                            |                                | Unit              | 4TVH0249R8000AA                                                                                              |
|-----------------------------------------|--------------------------------|-------------------|--------------------------------------------------------------------------------------------------------------|
| HP                                      |                                | HP                | 26                                                                                                           |
| Connectable Indoor Units Ratio ※1       |                                | %                 | 50≤x≤130                                                                                                     |
| Cooling                                 | Rated Capacity                 | kW                | 73,5                                                                                                         |
|                                         | Rated Power Input              | kW                | 19,29                                                                                                        |
|                                         | Maximum Power Input            | kW                | 27,80                                                                                                        |
|                                         | EER *1                         | W/W               | 3,81                                                                                                         |
| Heating                                 | Rated Capacity                 | kW                | 82,5                                                                                                         |
|                                         | Rated Power Input              | kW                | 21,43                                                                                                        |
|                                         | Maximum Power Input            | kW                | 26,97                                                                                                        |
|                                         | COP *1                         | W/W               | 3,85                                                                                                         |
| Electrical Characteristics              | Power Supply                   | Ph/V/Hz           | 3/220/50/60                                                                                                  |
|                                         | Communication Cable ※3         | mm <sup>2</sup>   | 3*25                                                                                                         |
|                                         | Power Cable                    | mm <sup>2</sup>   | 1*16                                                                                                         |
|                                         | Earth Wire                     | mm <sup>2</sup>   | ≥2*0.75                                                                                                      |
|                                         | Min. Circuit Amps (MCA)        | A                 | 100                                                                                                          |
|                                         | Max. Fuse Amps (MFA)           | A                 | 67,88                                                                                                        |
| Maximum Outdoor Air Flow                |                                | m <sup>3</sup> /h | 19000                                                                                                        |
| Maximum External Static Pressure        |                                | Pa                | 110                                                                                                          |
| Maximum Outdoor Sound Power Level       |                                | dB                | 77                                                                                                           |
| Maximum Outdoor Sound Pressure Level *3 |                                | dB(A)             | 63                                                                                                           |
| Design Pressure                         |                                | MPa               | 4,15                                                                                                         |
| Safety Devices                          |                                | -                 | High pressure switch; Fan driver PCB overload protection; Overcurrent fuse; Inverter PCB overload protection |
| Defrost Method                          |                                | -                 | Reverse defrosting                                                                                           |
| Defrost Control                         |                                | -                 | Sensor for outdoor Heat Exchanger temperature + Current detect                                               |
| Casing                                  | Color                          | -                 | Light grey                                                                                                   |
|                                         | Material                       | -                 | Galvanized steel plate                                                                                       |
| Compressor                              | Brand                          | -                 | MITSUBISHI ELECTRIC                                                                                          |
|                                         | Model                          | -                 | ANB66FZPMT*2                                                                                                 |
|                                         | Type                           | -                 | DC INV. SCROLL                                                                                               |
|                                         | Compressor Quantity            | -                 | 2                                                                                                            |
|                                         | Capacity (Test Under 60RPS)    | W                 | 21000*2                                                                                                      |
|                                         | Power Input (Test Under 60RPS) | W                 | 6450*2                                                                                                       |
|                                         | Rated Load Amps. (RLA)         | A                 | 28.30*2                                                                                                      |
|                                         | Crankcase Heater               | W                 | 66*2                                                                                                         |
|                                         | Compressor Oil Brand           | -                 | IDEMITSUKOSAN                                                                                                |
|                                         | Compressor Oil Type            | -                 | FVC68D                                                                                                       |
|                                         | Compressor Oil Charge          | ml                | (2300+2700)*2                                                                                                |
|                                         | Starting Method                | -                 | Soft start                                                                                                   |
| Fan Motor                               | Brand                          | -                 | SHANGQI                                                                                                      |
|                                         | Model                          | -                 | ZWF-920C*2                                                                                                   |
|                                         | IP Class                       | -                 | IP55                                                                                                         |
|                                         | Type                           | -                 | DC                                                                                                           |
|                                         | Quantity                       | -                 | 2                                                                                                            |
|                                         | Insulation Class               | -                 | B                                                                                                            |
|                                         | Safe Class                     | -                 | I                                                                                                            |
|                                         | Full Load Amps (FLA)           | A                 | 2.10*2                                                                                                       |
|                                         | Rated Power Input              | W                 | 2100                                                                                                         |
|                                         | Rated Motor Output             | W                 | 1840                                                                                                         |
| Fan                                     | Max. Speed                     | rpm               | 1100                                                                                                         |
|                                         | Brand                          | -                 | Shun Wei                                                                                                     |
|                                         | Material                       | -                 | ABS+20%GF                                                                                                    |
|                                         | Type                           | -                 | Axial                                                                                                        |
|                                         | Diameter                       | mm                | Ø642                                                                                                         |
| Fan                                     | Height                         | mm                | 198                                                                                                          |
|                                         | Quantity                       | -                 | 2                                                                                                            |



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| Product Data                               |                                                                 | Unit     | 4TVH0249R8000AA                                                   |
|--------------------------------------------|-----------------------------------------------------------------|----------|-------------------------------------------------------------------|
| Heat Exchanger                             | Number of Rows                                                  | -        | 3                                                                 |
|                                            | Tube Pitch                                                      | mm       | 21                                                                |
|                                            | Row Pitch                                                       | mm       | 18,186                                                            |
|                                            | Fin Spacing                                                     | mm       | 1,6                                                               |
|                                            | Fin Material                                                    | -        | Hydrophilic aluminum                                              |
|                                            | Fin Coating Type                                                | Optional | Clear lacquer                                                     |
|                                            | Salt Spray Test Duration                                        | hour     | 168                                                               |
|                                            | Tube OD. Diameter                                               | mm       | Ø7                                                                |
|                                            | Tube Type                                                       |          | Inner grooved                                                     |
|                                            | Heat Exchanger Dimension (W*D*H)                                | mm       | (2843*18.186*1260+<br>2757*18.186*1260+<br>2669*18.186*1260)      |
|                                            | Number of Circuits                                              | -        | 29                                                                |
| Electronic Expansion Valve (LEVA1)         | Brand                                                           | -        | SAN HUA                                                           |
|                                            | Diameter                                                        | Standard | φ4.0                                                              |
|                                            | Model                                                           | -        | DPF-TS2040-002-RK8                                                |
| Electronic Expansion Valve (LEVA2)         | Brand                                                           | -        | SAN HUA                                                           |
|                                            | Diameter                                                        | mm       | φ4.0                                                              |
|                                            | Model                                                           | -        | DPF-TS2040-002-RK8                                                |
| Electronic Expansion Valve (LEVB)          | Brand                                                           | -        | SAN HUA                                                           |
|                                            | Diameter                                                        | mm       | φ2.5                                                              |
|                                            | Model                                                           | -        | DPF-TS1025-042-RK                                                 |
| Four Way Valve                             | Brand                                                           | -        | SAN HUA                                                           |
|                                            | Model                                                           | -        | SHF-H35672-009-RK                                                 |
|                                            | Quantity                                                        | -        | 1                                                                 |
| Cabinet Coating                            | Coating Type                                                    | -        | Zinc aluminum magnesium                                           |
|                                            | Salt Spray Test Duration                                        | hour     | 72                                                                |
|                                            | Sheet Metal Material                                            | -        | Galvanized steel plate                                            |
|                                            | Sheet Metal Thickness                                           | mm       | 1                                                                 |
| Electrical Control Box IP Class            |                                                                 | Standard | IPX4                                                              |
| Dimension                                  | Net Dimensions (W*D*H)                                          | mm       | 1410*750*1690                                                     |
|                                            | Packing Dimensions (W*D*H)                                      | mm       | 1475*850*1858                                                     |
| Weight                                     | Net Weight                                                      | kg       | 382                                                               |
|                                            | Gross Weight                                                    | kg       | 411                                                               |
| Refrigerant                                | Type                                                            | -        | R410A                                                             |
|                                            | Default Refrigerant Charge                                      | kg       | 16,00                                                             |
|                                            | Refrigerant Control                                             | -        | Electronic expansion valve                                        |
| Refrigerant Piping                         | Liquid Pipe OD. Diameter*4                                      | mm       | Ø15.88                                                            |
|                                            | Gas Pipe OD. Diameter*4                                         | mm       | Ø28.58                                                            |
|                                            | Total Single Way Pipe Length                                    | m        | 1000                                                              |
|                                            | Max. Single Way Pipe Length (Equivalent/Actual)                 | m        | 260/220                                                           |
|                                            | Max. Height Difference Between Indoor and Outdoor Units         | m        | 90(Outdoor higher than indoor)<br>110(Indoor higher than outdoor) |
|                                            | Standard Height Difference Between Indoor and Outdoor Units     | m        | 50(Outdoor higher than indoor)<br>40(Indoor higher than outdoor)  |
|                                            | Max. Height Difference Between Indoor Units                     | m        | 30                                                                |
|                                            | Standard Height Difference Between Indoor Units                 | m        | 18                                                                |
|                                            | Pipe Connection Method                                          | -        | Gas pipe: Brazing<br>Liquid pipe: Flared joint                    |
|                                            | Max. Communication Cable Length Between Indoor and Outdoor Unit | m        | 1000                                                              |
| Connectable Indoor Units Ratio *5          |                                                                 | %        | 50~130<br>(200 with limitation)                                   |
| Maximum Number of Connectable Indoor Units |                                                                 | Piece    | 49(64)                                                            |
| Working Temperature                        | Cooling (Min.~Max.)                                             | °C DB    | -10~55                                                            |
|                                            | Heating (Min.~Max.)                                             | °C DB    | -25~27                                                            |



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### Notes:

1. Nominal condition:

Indoor temperature (cooling): 27°C DB/19°C WB, indoor temperature (heating): 20°CDB/14.5°CWB.

Outdoor temperature(cooling): 35°CDB/24°CWB, outdoor temperature(heating): 7°CDB/6°CWB

2. When applying the "Power off PMV control" function: Use a 2-core x 1.5mm<sup>2</sup> shielded wire. The communication cable resistance should be < 1.33Ω/100m.

When not applying the "Power off PMV control" function: Use a ≥2-core x 0.75mm<sup>2</sup> shielded wire.

For the "Power off PMV control" function, one refrigerant system can control up to 10 indoor units, with a maximum communication line length of 200 meters. For longer distances, repeaters are needed. Each repeater can extend the connection by 200 meters or add 10 indoor units. One refrigerant system can accommodate up to 2 repeaters, supporting a maximum communication line length of 600 meters or communication with 30 indoor units.

3. The data is measured with 7.5m equivalent pipe and 0 m height difference.

The noise level will be measured in the third octave band limited values in the semi-anechoic chamber, using a Real Time Analyser calibrated sound intensity meter. It is a sound pressure noise level.

4. When piping sizes differ, use the reducer provided in the accessory kit for the specified pipe diameter. Refer to the Installation and Operation Manual for dimensions.

Gas pipe connection method: From the outdoor unit to the indoor unit side: Brazed → Brazed

Liquid pipe connection method: From the outdoor unit to the indoor unit side: Flared → Brazed

5. When the system combination ratio exceeds 100%, it is advisable to operate only a portion of the indoor units simultaneously to keep the ratio within 100%. Alternatively, you can run the indoor units that exceed the 100% capacity at a low fan speed to minimize the impact on system performance.



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