



## SUBMITTAL DATA

Mini TVR Smart – Outdoor Unit - Heat Pump  
5HP – 220~240V/1Ph/50-60Hz DC Motor  
Model: 4TVHS048RF000AA

TRANE  
TECHNOLOGIES™

Job Name:

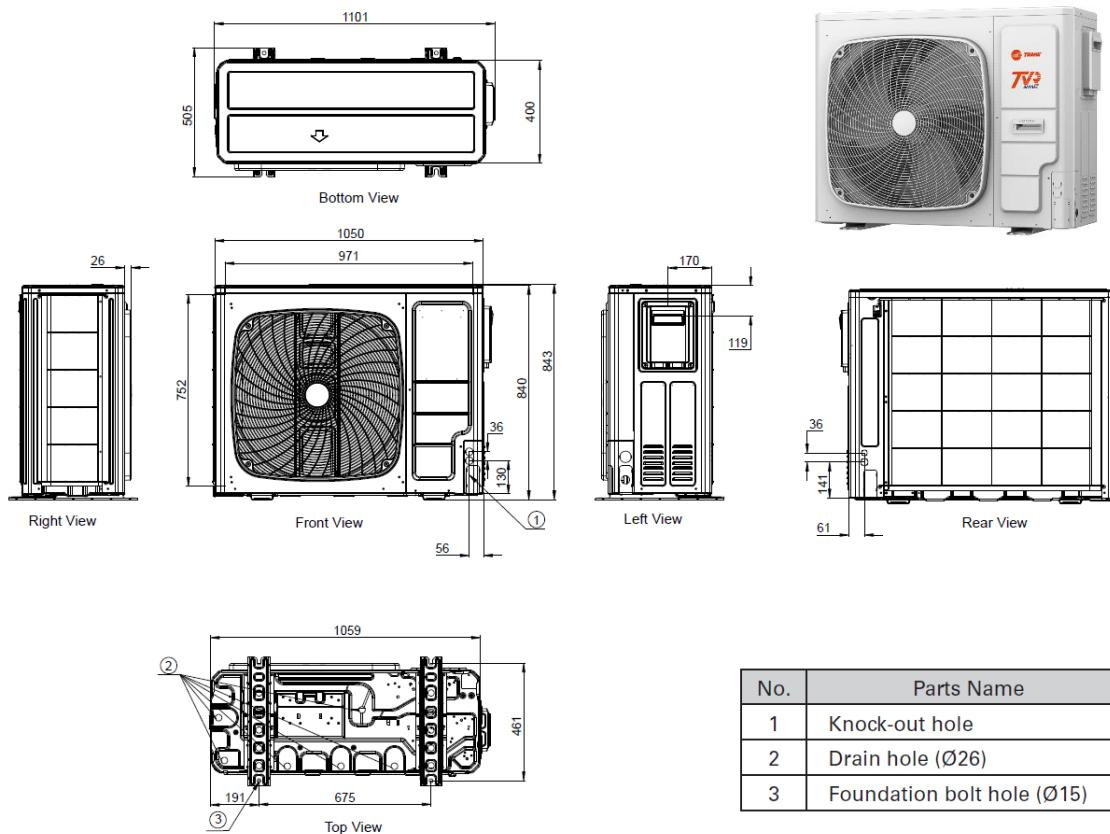
Date:

Reference:

Location:

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

- Overall Dimensions



| No. | Parts Name                 |
|-----|----------------------------|
| 1   | Knock-out hole             |
| 2   | Drain hole (Ø26)           |
| 3   | Foundation bolt hole (Ø15) |



## SUBMITTAL DATA

Mini TVR Smart – Outdoor Unit - Heat Pump

5HP – 220~240V/1Ph/50-60Hz DC Motor

Model: 4TVHS048RF000AA

**TRANE**  
TECHNOLOGIES™

### • Installation Space Requirements

#### Single Unit Installation

| Obstacles at rear only      | Obstacles at front only     | Obstacles at rear and sides  |
|-----------------------------|-----------------------------|------------------------------|
|                             |                             |                              |
| Obstacles at rear and above | Obstacles at front and rear | Obstacles at front and above |
|                             |                             |                              |

unit: mm

#### Multiple Units Installation

| Obstacles at rear and sides |
|-----------------------------|
|                             |
| Obstacles at front and rear |
|                             |

unit: mm



## SUBMITTAL DATA

Mini TVR Smart – Outdoor Unit - Heat Pump

5HP – 220~240V/1Ph/50-60Hz DC Motor

Model: 4TVHS048RF000AA

**TRANE**  
TECHNOLOGIES™

### • Specifications

| Model                                   |                            | Unit            | 4TVHS048RF000AA                      |
|-----------------------------------------|----------------------------|-----------------|--------------------------------------|
| Capacity                                |                            | HP              | 5                                    |
| Connectable Indoor Units Ratio ※1       |                            | %               | 50s≤130                              |
| Max. Number of Connectable Indoor Units |                            | Piece           | 8                                    |
| Rated Cooling ※2                        | Capacity                   | kW              | 14.0                                 |
|                                         |                            | kBtu/h          | 47.8                                 |
|                                         | Power Input                | kW              | 3.51                                 |
|                                         | Current                    | A               | 17.25                                |
|                                         | EER                        | -               | 3.99                                 |
| Rated Heating ※2                        | Capacity                   | kW              | 16.0                                 |
|                                         |                            | kBtu/h          | 54.6                                 |
|                                         | Power Input                | kW              | 3.63                                 |
|                                         | Current                    | A               | 17.86                                |
|                                         | COP                        | -               | 4.41                                 |
| Max. Power Input                        | Cooling                    | kW              | 6.55                                 |
|                                         | Heating                    | kW              | 5.67                                 |
| Electrical Characteristics              | Power Supply               | Ph/V/Hz         | 1/220~240/50/60                      |
|                                         | Communication Cable ※3     | mm <sup>2</sup> | ≥2*0.75mm <sup>2</sup> shielded wire |
|                                         | Power Cable                | mm <sup>2</sup> | 2*6                                  |
|                                         | Earth Wire                 | mm <sup>2</sup> | 1*6                                  |
|                                         | Min. Circuit Amps (MCA)    | A               | 22.74                                |
|                                         | Max. Fuse Amps (MFA)       | A               | 32                                   |
| Casing                                  | Color                      | -               | Light Grey                           |
|                                         | Material                   | -               | Galvanized steel plate               |
| Heat exchanger                          | Number of Rows             | -               | 2                                    |
|                                         | Tube Pitch                 | mm              | 21                                   |
|                                         | Row Pitch                  | mm              | 18.186                               |
|                                         | Fin Spacing                | mm              | 1.4                                  |
|                                         | 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                        |
|                                         | Dimension (W*D*H)          | mm              | 1122*36.4*798                        |
|                                         | Number of Circuits(In/Out) | -               | 6/12                                 |
| Compressor                              | Brand                      | -               | MITSUBISHI ELECTRIC                  |
|                                         | Model                      | -               | MNB40FMLMC-L                         |
|                                         | Type                       | -               | Twin Rotary                          |
|                                         | Quantity                   | -               | 1                                    |
|                                         | Power Input                | W               | 4030                                 |
|                                         | Rated Load Amps. (RLA)     | A               | 16.80                                |
|                                         | Crankcase Heater Quantity  | -               | 1                                    |
|                                         | Crankcase Heater Power     | W               | 28                                   |
|                                         | Compressor Oil Brand       | -               | IDEMITSU                             |
|                                         | Compressor Oil Model       | -               | FV50S                                |
|                                         | Compressor Oil Charge      | ml              | 1250                                 |
|                                         | Starting Method            | -               | Soft start                           |
| Fan                                     | Brand                      | -               | Lang di                              |
|                                         | Material                   | -               | ABS+20%GF                            |
|                                         | Type                       | -               | Axial Fan                            |
|                                         | Quantity                   | -               | 1                                    |
|                                         | Diameter                   | mm              | Ø640                                 |
|                                         | Height                     | mm              | 210                                  |



## SUBMITTAL DATA

Mini TVR Smart – Outdoor Unit - Heat Pump

5HP – 220~240V/1Ph/50-60Hz DC Motor

Model: 4TVHS048RF000AA

**TRANE**  
TECHNOLOGIES™

| Model                                                           |                                                         | Unit     | 4TVHS048RF000AA                                                                                                       |
|-----------------------------------------------------------------|---------------------------------------------------------|----------|-----------------------------------------------------------------------------------------------------------------------|
| Fan Motor                                                       | Brand                                                   | -        | BROAD-OCEAN                                                                                                           |
|                                                                 | Model                                                   | -        | ZW512D200001                                                                                                          |
|                                                                 | Type                                                    | -        | DC                                                                                                                    |
|                                                                 | Quantity                                                | -        | 1                                                                                                                     |
|                                                                 | Voltage                                                 | V        | 310                                                                                                                   |
|                                                                 | Rated Current                                           | A        | 1.91                                                                                                                  |
|                                                                 | Full Load Amps(FLA)                                     | A        | 1.74                                                                                                                  |
|                                                                 | Power Input                                             | W        | 415                                                                                                                   |
|                                                                 | Power Output                                            | W        | 300                                                                                                                   |
|                                                                 | IP Class                                                | -        | IP44                                                                                                                  |
|                                                                 | Insulation Class                                        | -        | B                                                                                                                     |
|                                                                 | Safe Class                                              | -        | I                                                                                                                     |
|                                                                 | Max. Fan Speed                                          | rpm      | 850                                                                                                                   |
| Max. Airflow Rate                                               |                                                         | m³/h     | 5500                                                                                                                  |
|                                                                 |                                                         | CFM      | 3235                                                                                                                  |
| Max. External Static Pressure                                   |                                                         | Pa       | 35                                                                                                                    |
| Max. Sound Power Level                                          |                                                         | dB       | 74                                                                                                                    |
| Max. Sound Pressure Level ※4                                    |                                                         | dB(A)    | 56                                                                                                                    |
| Cabinet Coating                                                 | Coating Type                                            | -        | Powder Coating                                                                                                        |
|                                                                 | Salt Spray Test Duration                                | hour     | 72                                                                                                                    |
|                                                                 | Sheet Metal Material                                    | -        | Galvanized steel plate                                                                                                |
|                                                                 | Sheet Metal Thickness                                   | mm       | 1                                                                                                                     |
| Four Way Valve                                                  | Brand                                                   | -        | SANHUA/DUNAN                                                                                                          |
|                                                                 | Model                                                   | -        | SHF-20D-46G30/DSF(S)-20-2230C                                                                                         |
|                                                                 | Quantity                                                | -        | 1                                                                                                                     |
| Electronic Expansion Valve (LEVA1)                              | Brand                                                   | -        | SANHUA                                                                                                                |
|                                                                 | Diameter                                                | mm       | φ3.0                                                                                                                  |
|                                                                 | Model                                                   | -        | DPF(TS1)3.0C-56                                                                                                       |
| Electronic Expansion Valve (LEVB)                               | Brand                                                   | -        | FUJIKOKI                                                                                                              |
|                                                                 | Diameter                                                | mm       | φ1.5                                                                                                                  |
|                                                                 | Model                                                   | -        | D15FKS-2R                                                                                                             |
| Dimension                                                       | Net Dimensions (W*D*H)                                  | mm       | 1050*400*840                                                                                                          |
|                                                                 | Package Dimensions (W*D*H)                              | mm       | 1160*520*1015                                                                                                         |
| Weight                                                          | Net Weight                                              | kg       | 87                                                                                                                    |
|                                                                 | Gross Weight                                            | kg       | 101                                                                                                                   |
| Defrost Method                                                  |                                                         | -        | Reverse defrosting                                                                                                    |
| Refrigerant                                                     | Type                                                    | -        | R410A                                                                                                                 |
|                                                                 | Default Refrigerant Charge                              | kg       | 3.10                                                                                                                  |
|                                                                 | Refrigerant Control                                     | -        | Electric expansion valve                                                                                              |
| Refrigerant Pipe                                                | Liquid Pipe OD. Diameter (Connection Method)            | mm       | Ø9.52 (Flared)                                                                                                        |
|                                                                 | Gas Pipe OD. Diameter (Connection Method)               | mm       | Ø19.05 (Flared)                                                                                                       |
|                                                                 | Total Single Way Pipe Length                            | m        | 300                                                                                                                   |
|                                                                 | Max. Single Way Pipe Length (Actual)                    | m        | 100                                                                                                                   |
|                                                                 | Max. Height Difference between Indoor and Outdoor Units | m        | 30(Outdoor higher than indoor)<br>20(Indoor higher than outdoor)                                                      |
|                                                                 | Max. Height Difference between Indoor Units             | m        | 15                                                                                                                    |
| Max. Communication Cable Length between Indoor and Outdoor Unit |                                                         | m        | 300                                                                                                                   |
| Electrical Control Box IP Class                                 |                                                         | Standard | IPX4                                                                                                                  |
| Design Pressure                                                 |                                                         | MPa      | 4.15                                                                                                                  |
| Safety Devices                                                  |                                                         | -        | High pressure switch,<br>Fan driver PCB overload protection,<br>Overcurrent fuse,<br>Inverter PCB overload protection |
| Standard Accessories                                            |                                                         | -        | 1.Drainage elbow, 2EA                                                                                                 |
| Working Temperature                                             | Cooling(Min.~Max.)                                      | °C DB    | -10~55                                                                                                                |
|                                                                 | Heating(Min.~Max.)                                      | °C DB    | -25~27                                                                                                                |



## SUBMITTAL DATA

Mini TVR Smart – Outdoor Unit - Heat Pump  
5HP – 220~240V/1Ph/50-60Hz DC Motor  
Model: 4TVHS048RF000AA



### Notes:

※1 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.

※2 Rated 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

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

※3 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.

※4 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.



Trane optimizes the performance of homes and buildings around the world.  
The leader in creating and sustaining safe, comfortable and energy efficient environments.  
Broad portfolio of advanced controls and HVAC systems, comprehensive building services, and parts.

For more information, visit [www.trane.com](http://www.trane.com).