

## Set Free – FSN Technical Description – Outdoor units

### General Data

Model		RAS-5FSN	RAS-8FSNE	RAS-10FSNE
<b>Power Supply</b>		380-415V / 50Hz		
<b>Nominal Cooling Capacity</b>	kW	14.0	22.4	28.0
<b>Nominal Heating Capacity</b>	kW	16.0	25.0	31.5
<b>Cabinet Colour</b>		Natural Gray		
<b>Sound Pressure Levels</b> (Night Shift)	dB(A)	52(47)	56(51)	58(53)
<b>Outer Dimensions</b>				
Height	mm	1,645	1,745	1,745
Width	mm	630	950	950
Depth	mm	750	750	750
<b>Net Weight</b>	kg	160	260	270
<b>Refrigerant</b>		R410A		
Flow Control		Micro-Computer Control Expansion Valve		
<b>Compressor</b>		Hermetic (Scroll)		
Model		E405AHD	E405AHD E505DH	E405AHD E605DH
Quantity		1	1+1	1+1
Motor Output (Pole)	kW	3.0(4)	1.8(4)+3.7(2)	2.3(4)+4.4(2)
<b>Heat Exchanger</b>		Multi-Pass Cross-Finned Tube		
<b>Condenser Fan</b>		Propeller Fan		
Quantity		1	1	1
Air Flow Rate	m <sup>3</sup> /min	87	138	172
Motor Output (Pole)	W	160(8)	380(8)	380(8)
<b>Refrigerant Piping</b>		Flare Nut Connection		
Liquid Line	mm(in.)	Ø9.53(3/8)	Ø9.53(3/8)	Ø9.53(3/8)
Gas Line	mm(in.)	Ø15.88(5/8)	Ø19.05(3/4)	Ø22.2(7/8)
<b>Refrigerant Charge</b>	kg	5.4	8.5	9.5
<b>Wiring Holes</b>				
Power Supply	mm	Ø56	Ø56	Ø56
Control Circuit	mm	Ø26.5	Ø26.5	Ø26.5
<b>Connecting Wire between</b>				
<b>Indoor and Outdoor Unit</b>		2	2	2
<b>Approximate Packing</b>				
<b>Measurement</b>	m <sup>3</sup>	0.87	1.44	1.44

### NOTES:

1. The cooling and heating capacities show the capacities when the outdoor unit is operated with the 100% rating of indoor units, and are based on the standard JIS B8616-1984.

#### Cooling Operation Conditions

Indoor Air Inlet Temperature: 27°C DB (80°F DB)  
19.0°C WB (66.2°F WB)  
Outdoor Air Inlet Temperature: 35°C DB (95°F DB)

#### Heating Operation Conditions

Indoor Air Inlet Temperature: 20°C DB (68°F DB)  
Outdoor Air Inlet Temperature: 7°C DB (45°F DB)  
6°C WB (43°F WB)  
Piping Length: 7.5 Meters  
Piping Lift: 0 Meter

2. The sound pressure level is based on following conditions. In case of cooling operation mode, the sound pressure level increases by approximately 1~2dB.  
1 Meter from the unit service cover surface, and 1.5 Meters from floor level. Voltage of the power source is 380V. In case of the power source of 415V, the sound pressure level increases by about 1 dB. The above data was measured in an anechoic chamber so that reflected sound should be taken into consideration in the field.



RAS-5FSN



RAS-8/10FSNE

## Set Free – FSN Technical Description – Outdoor units

### General Data



RAS-16FSN



RAS-20FSN

Model		RAS-16FSN	RAS-20FSN
<b>Power Supply</b>		380-415V / 50Hz	
<b>Nominal Cooling Capacity</b>	W	45.0	56.0
<b>Nominal Heating Capacity</b>	W	50.0	63.0
<b>Cabinet Colour</b>		Natural Gray	
<b>Sound Pressure Levels (Night Shift)</b>	dB(A)	62(57)	62(57)
<b>Outer Dimensions</b>			
Height	mm	1,745	1,745
Width	mm	1,210	1,910
Depth	mm	750	750
<b>Net Weight</b>	kg	370	535
<b>Refrigerant</b>		R410A	
Flow Control		Micro-Computer Control Expansion Valve	
<b>Compressor</b>		Hermetic (Scroll)	
Model		E405AHD E605DHx2	E405AHD E605DHx3
Quantity		1+1x2	1+1x3
Motor Output (Pole)	kW	3.0(4)+4.4(2)x2	1.8(4)+4.4(2)x3
<b>Heat Exchanger</b>		Multi-Pass Cross-Finned Tube	
<b>Condenser Fan</b>		Propeller Fan	
Quantity		1	2
Air Flow Rate	m <sup>3</sup> /min	210	172+172
Motor Output (Pole)	W	380(8)	380(8)+275(6)
<b>Refrigerant Piping</b>		Flare Nut Connection	
Liquid Line	mm(in.)	Ø12.70(1/2)	Ø15.88(5/8)
Gas Line	mm(in.)	Ø28.6(1 1/8)	Ø28.6(1 1/8)
<b>Refrigerant Charge</b>	kg	13.0	19.0
<b>Wiring Holes</b>			
Power Supply	mm	Ø56	Ø56
Control Circuit	mm	Ø26.5	Ø26.5
<b>Connecting Wire between</b>			
<b>Indoor and Outdoor Unit</b>		2	2
<b>Approximate Packing</b>			
<b>Measurement</b>	m <sup>3</sup>	1.81	2.82

### NOTES:

- The cooling and heating capacities show the capacities when the outdoor unit is operated with the 100% rating of indoor units, and are based on the standard JIS B8616-1984.

#### Cooling Operation Conditions

Indoor Air Inlet Temperature: 27°C DB (80°F DB)  
19.0°C WB (66.2°F WB)  
Outdoor Air Inlet Temperature: 35°C DB (95°F DB)

#### Heating Operation Conditions

Indoor Air Inlet Temperature: 20°C DB (68°F DB)  
Outdoor Air Inlet Temperature: 7°C DB (45°F DB)  
6°C WB (43°F WB)  
Piping Length: 7.5 Meters  
Piping Lift: 0 Meter

- The sound pressure level is based on following conditions. In case of cooling operation mode. In case of heating operation mode, the sound pressure level increases by approximately 1~2dB.

1 Meter from the unit service cover surface, and 1.5 Meters from floor level. Voltage of the power source is 380V. In case of the power source of 415V, the sound pressure level increases by about 1 dB. The above data was measured in an anechoic chamber so that reflected sound should be taken into consideration in the field.

## Set Free – FSN Technical Description – Outdoor units

### General Data

Model		RAS-24FSNE	RAS-30FSNE
<b>Power Supply</b>		380-415V / 50Hz	
<b>Nominal Cooling Capacity</b>	W	69.0	85.0
<b>Nominal Heating Capacity</b>	W	77.5	95.0
<b>Cabinet Colour</b>		Natural Gray	
<b>Night Shift</b>	dB(A)	62(57)	63(58)
<b>Outer Dimensions</b>			
Height	mm	1,745	1,745
Width	mm	2,430	2,430
Depth	mm	750	750
<b>Net Weight</b>	kg	675	720
<b>Refrigerant</b>		R410A	
Flow Control		Micro-Computer Control Expansion Valve	
<b>Compressor</b>		Hermetic (Scroll)	
Model		E405AHD E605DHx4	E405AHD E655DHx5
Quantity		1+1x4	1+1x5
Motor Output (Pole)	kW	1.4(4)+4.4(2)x4	1.4(4)+4.4(2)x5
<b>Heat Exchanger</b>		Multi-Pass Cross-Finned Tube	
<b>Condenser Fan</b>		Propeller Fan	
Quantity		2	2
Air Flow Rate	m <sup>3</sup> /min	210+172	210+172
Motor Output (Pole)	W	380(8)+275(6)	380(8)+275(6)
<b>Refrigerant Piping</b>			
Liquid Line	mm(in.)	Ø15.85(5/8)	Ø19.05(3/4)
Gas Line	mm(in.)	Ø28.6(1 1/8)	31.75(1 1/4)
<b>Refrigerant Charge</b>	kg	23.0	26.0
<b>Wiring Holes</b>			
Power Supply	mm	Ø70	Ø70
Control Circuit	mm	Ø26.5	
<b>Connecting Wire between</b>			
<b>Indoor and Outdoor Unit</b>		2	2
<b>Approximate Packing Measurement</b>	m <sup>3</sup>	3.57	3.57



RAS-24/30FSNE

### NOTES:

- The cooling and heating capacities show the capacities when the outdoor unit is operated with the 100% rating of indoor units, and are based on the standard JIS B8616-1984.

#### Cooling Operation Conditions

Indoor Air Inlet Temperature: 27°C DB (80°F DB)  
19.0°C WB (66.2°F WB)  
Outdoor Air Inlet Temperature: 35°C DB (95°F DB)

#### Heating Operation Conditions

Indoor Air Inlet Temperature: 20°C DB (68°F DB)  
Outdoor Air Inlet Temperature: 7°C DB (45°F DB)  
6°C WB (43°F WB)  
Piping Length: 7.5 Meters  
Piping Lift: 0 Meter

- The sound pressure level is based on following conditions. In case of cooling operation mode, the sound pressure level increases by approximately 1~2dB.  
1 Meter from the unit service cover surface, and 1.5 Meters from floor level. Voltage of the power source is 380V. In case of the power source of 415V, the sound pressure level increases by about 1 dB. The above data was measured in an anechoic chamber so that reflected sound should be taken into consideration in the field.