



# Tranquility® Vertical Stack (TSM) Series

*Models TSM09 - 36 - 60Hz - HFC -410A*

The Tranquility® Vertical Stack (TSM) Series offers an innovative, labor-saving solution for spaces where individual, quiet control of the heating and cooling system is important. Using EarthPure® (HFC-410A) refrigerant, the Tranquility® Vertical Stack (TSM) Series not only protects the environment, it does so while delivering unprecedented comfort, efficiency, and reliability.

## Advantages of the Vertical TSM Series:

- Environmentally-friendly EarthPure® (HFC-410A) zero ozone depletion refrigerant
- High efficiency rotary and scroll compressors
- Exceeds ASHRAE 90.1 efficiencies
- Removable chassis allows staged installation and ease of maintenance
- Galvanized steel cabinet
- Unique double isolation compressor mounting for quiet operation
- TXV metering device
- Unit or remote-mounted controls available
- Choice of high efficiency ECM or PSC motor
- Cabinet can slide over riser ball valve easily. This allows riser stack to be completed first
- Microprocessor controls standard (optional DXM2 and/or DDC controls)
- LonWorks, BACnet, Modbus and Johnson N2 compatibility options for DDC controls
- Unit Performance Sentinel performance monitoring system
- Multiple discharge air configurations with the option to have knock outs configured at the factory with dust covers
- Stainless steel braided hose kits for connection from piping risers to chassis
- Wide variety of options including disconnect switch and extended range
- Eight standard safeties
- Optional modulating water valve in lieu of auto flow regulator and normal water valve
- Optional internal 200 PSI load matching pump (single pipe)
- Riser options for sweat or crimped connections

## Unit Size

Model		W	D	H **
09 - 18	in.	19.0	19.0	88.0
	cm	48.3	48.3	223.5
24 - 36	in.	24.0	24.0	88.0
	cm	61.0	61.0	223.5

\* Not Including Riser

\*\* Optional 80" Cabinet

# Physical Data

Model	09	12	15	18	24	30	36
Compressor (1 Each)	Rotary				Scroll		
Factory Charge HFC-410A (oz) [kg]	34 [.07]	34 [.97]	43 [1.22]	53 [1.51]	71 [2.01]	66 [1.87]	84 [2.83]
PSC & Blower Wheel							
Motor (HP) [W]	1/30 [25]	1/8 [93]	1/6 [124]	1/3 [248]			1/2 [373]
Blower Wheel Size (dia x w) - (in) [mm]	6.75 x 7.25 [174 x 184]	6.75 x 7.25 [174 x 184]	9.50 x 7.12 [241 x 181]	9.50 x 7.12 [241 x 181]	9.50 x 7.12 [241 x 181]	9.50 x 8.06 [241 x 205]	9.50 x 8.06 [241 x 205]
ECM Motor & Blower							
Motor (hp) [W]	1/8 [93]	1/8 [93]	1/3 [248]	1/3 [248]	1/3 [248]		1/2 [373]
Blower Wheel Size (dia x w) - (in) [mm]	6.75 x 7.25 [174 x 184]	6.75 x 7.25 [174 x 184]	9.50 x 7.12 [241 x 181]	9.50 x 7.12 [241 x 181]	9.50 x 8.06 [241 x 205]		
Chassis Air Coil							
Air Coil Dimensions (h x w) - (in) [mm]	28 x 14 [711 x 356]	28 x 14 [711 x 356]	28 x 14 [711 x 356]	28 x 14 - [711 x 356]	30 x 18 [762 x 457]	30 x 18 [762 x 457]	30 x 18 [762 x 457]
Standard Filter - 1" [25.4 mm], (w x h) - (in) [mm]	16 x 30 [406 x 762]	16 x 30 [406 x 762]	16 x 30 [406 x 762]	16 x 30 [406 x 762]	20 x 32 [508 x 813]	20 x 32 [508 x 813]	20 x 32 [508 x 813]
Coax Volume (Gallons)	0.215	0.26	0.367	0.367	0.602	0.602	0.602
Hose Size (in)	1/2	1/2	3/4	3/4	1		
Weight							
Chassis - (lbs) [kg]	103 [47]	105 [48]	123 [56]	125 [57]	186 [84]	190 [86]	192 [87]
Cabinet - (lbs) [kg]	189 [86]	189 [86]	189 [86]	189 [86]	243 [110]	243 [110]	243 [110]

## Tested To ASHRAE/AHRI/ISO 13256-1 English (I-P) Units

Model with ECM Motor	Water Loop Heat Pump				Ground Water Heat Pump				Ground Loop Heat Pump			
	Cooling 86°F		Heating 68°F		Cooling 59°F		Heating 50°F		Cooling 77°F		Heating 32°F	
	Capacity Btuh	EER Btuh/W	Capacity Btuh	COP	Capacity Btuh	EER Btuh/W	Capacity Btuh	COP	Capacity Btuh	EER Btuh/W	Capacity Btuh	COP
TSM09	9,800	15.0	12,900	5.4	11,700	24.5	10,300	4.5	10,500	17.8	7,400	3.4
TSM12	11,600	14.7	16,000	5.2	13,600	23.8	12,900	4.4	12,300	17.2	9,600	3.4
TSM15	14,600	15.9	17,500	5.3	16,800	25.6	14,500	4.5	15,500	18.8	11,000	3.6
TSM18	18,000	15.2	22,200	5.1	20,000	23.5	17,700	4.4	18,500	17.3	13,200	3.3
TSM24	25,000	15.7	32,500	5.1	29,500	25.3	26,000	4.5	26,500	18.5	18,200	3.5
TSM30	28,000	15.1	34,500	5.0	31,500	22.9	28,500	4.4	29,000	17.6	22,200	3.6
TSM36	37,500	14.6	44,000	5.0	42,500	22.6	36,000	4.3	38,500	16.5	28,000	3.5

Model with PSC Motor	Water Loop Heat Pump				Ground Water Heat Pump				Ground Loop Heat Pump			
	Cooling 86°F		Heating 68°F		Cooling 59°F		Heating 50°F		Cooling 77°F		Heating 32°F	
	Capacity Btuh	EER Btuh/W	Capacity Btuh	COP	Capacity Btuh	EER Btuh/W	Capacity Btuh	COP	Capacity Btuh	EER Btuh/W	Capacity Btuh	COP
TSM09	9,700	13.9	12,700	5.2	11,500	22.1	10,400	4.3	10,300	16.2	7,600	3.2
TSM12	11,400	13.8	16,000	5.1	13,500	21.8	13,000	4.3	12,200	16.0	9,700	3.3
TSM15	14,300	13.3	18,000	4.8	16,500	20.5	14,500	4.1	15,200	15.6	11,500	3.3
TSM18	17,300	13.2	22,500	4.8	20,000	20.0	18,000	4.0	18,400	15.1	13,500	3.2
TSM24	25,000	14.4	32,500	4.9	29,000	22.5	26,500	4.3	26,500	16.8	18,400	3.4
TSM30	27,500	13.4	34,500	4.7	31,000	19.5	28,500	4.1	28,500	15.2	22,000	3.3
TSM36	37,500	14.1	44,500	4.9	42,500	21.5	36,500	4.3	38,500	16.2	28,500	3.4

Cooling capacities based upon 80.6°F DB, 66.2°F WB entering air temperature

Heating capacities based upon 68°F DB, 59°F WB entering air temperature

All units AHRI/ISO/ASHRAE 13256-1 rated on high speed motor TAP

All ratings based upon operation at lower voltage of dual voltage rated models



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