

WT & WW Models

Water-to-Water Heat Pump

2 to 35 ton

The FHP single and two-stage water-to-water models offer a clean solution with enhanced features to meet the design requirements for many types of HVAC and industrial applications that require cost effective heated or chilled water systems.

ENHANCED	WT/WW	PART LOAD	
		UP TO	
	MODELS	22.1	4.7
		EER	COP
		GLHP	WSHP



Made in the U.S.A.



Commercial Sales Brochure
fhp-mfg.com



BOSCH
Invented for life

Enhanced **WT & WW Models**

The **WT Model** is available in 2-6 tons, includes a wider range of voltages and optional double-wall load side heat exchanger. Also providing almost limitless options for hydronic systems due to its two-stage compressor and high operating temperatures for best-in-class performance.

The **WW Model** is available from 10-35 tons. Including either a single-stage scroll compressor (WW120, 150, 180 and 210) or dual scroll compressors, two-stage refrigerant circuits for water-cooled modular reverse cycle chiller applications designed to meet all your needs and requirements.

Quiet Comfort

- ▶ **Floating Compressor Base** (WT only) - Reduces vibration and noise transmission from the compressor to the structure
- ▶ **Compressor Blanket** (option) - Ensure that heating and cooling needs will be met quietly as well as efficiently

Service Friendly

- ▶ **Schrader Charging Valves** - Facilitates **service** diagnosis by allowing the connection of refrigerant hoses quickly and securely
- ▶ **Comfort Alert Module** (WT only) - This feature can significantly improve system diagnostics by monitoring and analyzing data from the compressor and thermostat demands. This then alerts the technician through flashing LED indicators should issues arise

Robust and Durable Construction

- ▶ **G90 Galvanized Steel Cabinet** - Provides strength and corrosion protection against the elements
- ▶ **Cupro-nickel Coaxial Heat Exchanger** (option) - Protects against corrosion when water conditions are of low quality

Safety

- ▶ **Flow Proving Switch** (option) - Prevents the continued operation of the compressor should the water supply fail
- ▶ **Unit Protection Module*** - Monitors the unit operation and safety controls that protect the unit
- ▶ **Dual Refrigerant Freeze Sensors*** - Freeze protection on the source and load side of the system

Quality Design & Efficiency

- ▶ **Extended Range** (option) - Accommodates a wider range in temperature swings commonly found in geothermal projects
- ▶ **Heat Recovery Package** (option) - HRP or desuperheater takes advantage of waste heat of the compressor and uses it to heat domestic water
- ▶ **Energy Management Switch** (option) - This switch allows you to connect to an energy management system that can turn the unit off and on

Options Designed for any Application

Controls

There are two main choices when designating controllability for the water-to-water models. There is either a factory installed unit mounted controller (UMC) or a field supplied remote mounted controller (RMC). In deciding which to choose for the project, one factor to consider is if the project entails a building automation system with DDC. If this is the case, the remote mounted controller is mandatory. For further explanation, contact the local sales representative to receive a better understanding of the console controllability choices.

DDC Controls*

The optional factory mounted DDC Controller is preprogrammed and installed on the unit with the Unit Protection Module (UPM) to be job site ready. The unit will

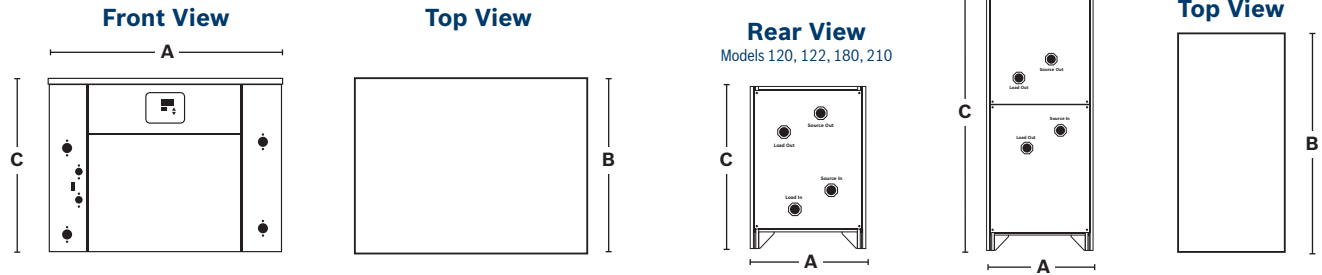
operate in a 100% stand-alone control mode or connect to a Building Automation System (BAS) using open protocols BACnet™, Modbus, N2 or LonWorks® (with an optional Lon card). Stand-alone DDC modules must use remote intelligent sensors and are to be programmed by the FHP BACview® controller only. Zone temperatures, leaving air temperatures and water temperatures can be monitored from the central control computer and unit fault indication displayed.

DDC Room and Zone Sensors

To complement the controller, Bosch Thermotechnology Corp. offers a line of intelligent FHP space sensors, which provide precision measurement and communication capabilities in an attractive low profile enclosure.

*With remote mounted controller

Technical Specifications



WT Model Unit Dimensions

Model	Horizontal Unit Dimensions (in inches)		
	A (width)	B (depth)	C (height)
WT025	32.50	24.00	24.00
WT035	32.50	24.00	24.00
WT049	32.50	24.00	24.00
WT061	32.50	24.00	24.00
WT071	32.50	24.00	24.00

NOTE: All dimensions in inches unless otherwise noted. All dimensions within +0.125". Specifications subject to change without notice.

WW Model Unit Dimensions

Model	Horizontal Unit Dimensions (in inches)		
	A (width)	B (depth)	C (height)
WW120	28.00	46.00	37.50
WW122	28.00	46.00	37.50
WW180	28.00	46.00	37.50
WW210	28.00	46.00	37.50
WW240	28.00	46.00	70.00
WW360	28.00	46.00	70.00
WW420	28.00	46.00	70.00

ASHRAE/AHRI/ISO 13256-2. English (I-P) Units															
Model	Load	Source Water Flow Rate (GPM)	Load Water Flow Rate (GPM)	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 BTU/h	EER BTU/W-h	Capacity BTU/h	COP	Capacity BTU/h	EER BTU/W-h	Capacity BTU/h	COP	Capacity BTU/h	EER BTU/W-h	Capacity BTU/h	COP
WT025	Part	6	5	15500	14.7	22000	4.6	18500	25.7	17000	3.7	18000	22.1	15500	3.1
	Full	6	5	21000	13.4	31000	4.4	24500	21.2	25000	3.6	22500	15.9	19500	2.8
WT035	Part	9	7	22500	14.5	31000	4.7	25500	24.5	25000	3.6	24000	20.6	22000	3.1
	Full	9	7	29000	12.6	43000	4.3	34000	20.2	34000	3.5	30000	14.5	27000	2.8
WT049	Part	10	8	29000	13.8	42000	4.5	33500	23.5	34500	3.8	32500	20.1	30500	3.2
	Full	10	8	39000	12.8	58000	4.1	45000	19.7	47000	3.6	41000	14.9	37500	2.9
WT061	Part	13	10	37000	14.2	55000	4.7	42500	23.3	41500	3.6	41000	19.8	36500	3.0
	Full	13	10	49000	12.9	74500	4.2	56000	19.9	59000	3.4	51000	14.8	44500	2.8
WT071	Part	15	12	43500	13.5	65500	4.4	50500	21.8	52000	3.5	48500	18.7	45000	3.1
	Full	15	12	57500	12.4	86500	4.1	64000	18.8	70000	3.4	60000	14.8	53000	2.9
WW120	Full	30	30	110100	13.5	160000	4.4	125000	19.2	129000	3.7	116000	15.5	106500	3.0
WW122	Part	30	25	54950	12.3	78600	4.2	63500	19.0	63600	3.4	61100	16.7	56300	3.2
	Full	30	25	114150	13.8	160800	4.6	130200	21.3	129800	3.8	119800	16.1	102700	3.0
Performance in Accordance with ARI/ISO 13256-2															
WW180	Full	34	27	127000	13.8	180500	4.5	143000	20.7	148500	3.8	132500	15.9	121000	3.2
WW210	Full	40	32	164200	13.2	239500	4.4	185500	19.1	194000	3.7	171500	15.1	156000	3.0
WW240	Full	56	44	222000	13.5	320000	4.4	249500	19.2	258500	3.7	232500	15.5	206500	3.0
WW360	Full	68	54	254000	13.8	361500	4.5	286500	20.7	297000	3.8	265000	15.9	242000	3.2
WW420	Full	80	64	328300	13.2	479000	4.4	370500	19.1	387500	3.7	343000	15.1	312000	3.0

NOTES: The performance data results alter depending on application design; use Bosch Selection Tools software for specific performance data per the application, selection and specifications. <http://bst.fhp-mfg.com/eRep/> *For units with a part load rating temperature of 68° F. This applies only to ground loop condition. The other two conditions have the same water temp for full and part load conditions. **For units with a part load rating temperature of 41° F. This applies only to ground loop condition. The other two conditions have the same water temp for full and part load conditions.

Typical Applications of WT/WW Units

There are many load side applications for which the water-to-water heat pump/ liquid chiller is ideally suited. Some typical uses are as follows: Hydronic baseboard heating, hydronic in-slab floor heating, forced air fan coil heating or cooling, ice and snow melting, heating potable water, (when allowed by code) heating swimming pool and spa, process fluid heating or cooling (NOTE: Not recommended in low temperature applications or ice production).

Additional Features

- ▶ 75VA transformer
- ▶ TXV
- ▶ Remote reset at thermostat
- ▶ Fault LED indication
- ▶ Four-way reversing valve
- ▶ Filter drier

Additional Options

- ▶ 100VA transformer
- ▶ Phase monitor (Available on all sizes with voltage -3, -4, -5)
- ▶ Wire to 208V (Available on all sizes with voltage -1, -3)
- ▶ Pump/valve relay

Electrical Data

WT Model

Model	Voltage Code	Voltage/ Ph/Hz	Voltage Min/Max	Compressor			Total Unit		Compressor Services				
				Quantity	RLA	LRA	Min Circuit Amps	Max Fuse/ HACR	Cold Winding Resistance (Ω)				Run Capacitor (µF/V)
									Single Phase S-C	Single Phase R-C	Three Phase: T1-T2/T2-T3	Three Phase: T1-T3	
WT025	1	208-230/1/60	197/253	1	11.7	58.3	14.6	25	1.64	1.30	-	-	35/370
	2	265-277/1/60	239/291	1	9.1	54.0	11.4	20	2.17	1.48	-	-	40/370
	3	208-230/3/60	197/253	1	6.5	55.4	8.1	15	-	-	2.153	1.763	-
WT035	1	208-230/1/60	197/253	1	15.3	83.0	19.1	30	1.52	0.88	-	-	40/370
	2	265-277/1/60	239/291	1	13.0	72.0	16.3	25	1.15	1.22	-	-	60/370
	3	208-230/3/60	197/253	1	11.6	73.0	11.6	25	-	-	1.53	1.21	-
WT049	4	460/3/60	414/506	1	5.7	38.0	7.1	15	-	-	5.87	4.86	-
	1	208-230/1/60	197/253	1	21.2	104.0	26.5	45	1.86	0.52	-	-	30/370
	3	208-230/3/60	197/253	1	14.0	83.1	17.5	30	-	-	1.03	1.03	-
WT061	4	460/3/60	414/506	1	6.4	41.0	8.0	15	-	-	4.17	4.17	-
	1	208-230/1/60	197/253	1	27.1	152.9	33.9	60	1.63	0.39	-	-	40/440
	3	208-230/3/60	197/253	1	16.5	110.0	20.6	35	-	-	0.68	0.68	-
WT071	4	460/3/60	414/506	1	7.2	52.0	9.0	15	-	-	3.20	3.20	-
	1	208-230/1/60	197/253	1	29.7	179.2	37.1	60	1.85	0.34	-	-	40/440
	3	208-230/3/60	197/253	1	17.6	136.0	22.0	35	-	-	0.60	0.60	-
	4	460/3/60	414/506	1	8.5	66.1	10.6	15	-	-	2.52	2.52	-

NOTES: Resistance value tolerance +/- 7%. All resistance values must be measured with compressor at room temperature.

WW Model

Model	Voltage Code	Voltage/ Ph/Hz	Voltage Min/Max	Compressor			Total Unit		Compressor Services			
				Quantity	RLA	LRA	Min Circuit Amps	Max Fuse/ HACR	Cold Winding Resistance (Ω)			Run Capacitor (µF/V)
									Single Phase S-C	Single Phase R-C	Three Phase: Line-Line	
WW120	3	208-230/3/60	197/253	1	33.3	239.0	41.6	70	-	-	0.31	-
	4	460/3/60	414/506	1	17.9	125.0	22.4	40	-	-	1.24	-
	5	575/3/60	518/632	1	12.8	80.0	16.0	25	-	-	2.55	-
WW122	1	208-230/1/60	197/253	2	28.3	178.0	63.7	90	0.365	0.970	-	80/370
	3	208-230/3/60	197/253	2	19.2	136.0	43.2	60	-	-	0.60	-
	4	460/3/60	414/506	2	8.7	66.1	19.6	25	-	-	2.52	-
WW180	5	575/3/60	518/632	2	6.9	55.3	15.5	20	-	-	3.74	-
	3	208-230/3/60	197/253	1	48.1	245.0	60.1	100	-	-	0.28	-
	4	460/3/60	414/506	1	18.6	125.0	23.3	40	-	-	1.24	-
WW210	5	575/3/60	518/632	1	14.7	100.0	18.4	30	-	-	1.88	-
	3	208-230/3/60	197/253	1	55.8	340.0	69.8	125	-	-	0.21	-
	4	460/3/60	414/506	1	26.9	173.0	33.6	60	-	-	0.83	-
WW240	5	575/3/60	518/632	1	23.7	132.0	29.6	50	-	-	1.27	-
	3	208-230/3/60	197/253	2	33.3	239.0	74.9	100	-	-	0.31	-
	4	460/3/60	414/506	2	17.9	125.0	40.3	50	-	-	1.24	-
WW360	5	575/3/60	518/632	2	12.8	80.0	28.8	40	-	-	2.55	-
	3	208-230/3/60	197/253	2	48.1	245.0	108.2	150	-	-	0.28	-
	4	460/3/60	414/506	2	18.6	125.0	41.9	60	-	-	1.24	-
WW420	5	575/3/60	518/632	2	14.7	100.0	33.1	45	-	-	1.88	-
	3	208-230/3/60	197/253	2	55.8	340.0	125.6	175	-	-	0.21	-
	4	460/3/60	414/506	2	26.9	173.0	60.5	80	-	-	0.83	-
	5	575/3/60	518/632	2	23.7	132.0	53.3	70	-	-	1.27	-

NOTES: Resistance value tolerance +/- 7%. All resistance values must be measured with compressor at room temperature.

Bosch Thermotechnology Corp.

555 NW 65th Court
 Fort Lauderdale, FL 33309
 Phone: 866-642-3198
 Fax: 954-776-5529
fhp-mfg.com



Printed on Elemental Chlorine Free, FSC-certified, minimum 10% PCW paper with vegetable-based inks.

Scan the QR code to the right to access product information.

Copyright © 2014 Bosch Thermotechnology Corp.
 All rights reserved. Subject to change without notice.

76P993058 08-14

