JH Series Installation

Space Heating / Fresh Air Make-Up

Includes:

JH-15

JH-30

From the Manufacturers of
Hi-Velocity Systems™
www.hi-velocity.com

Installation

JH fan coils by Energy Saving Products Ltd. can be installed in the Hi-Boy, Horizontal, or Counterflow positions. The JH fan coil can also be positioned on its side for between the joist locations. Return air (Intake Air) access can be from the rear of the unit (Standard), or optionally from the side access panel that is opposite from the motor access. The JH fan coil comes complete with filter and filter frame.

When used for fresh air make-up in radiant only systems, the JH Fancoil can be used either with or without return air to temper the outside air. The fresh air intake must be insulated and vapour barriered, with a balancing damper installed. A humidifier can also be installed on the JH fan coil. When used for humidification, the humidifier can be mounted on the back access panel.

When used for heating, the JH fan coil can be used with a line volt thermostat to operate the fan. This would be used when there is a constant flow of hot water to the JH fan coil. An optional 24 volt relay or circuit board may be installed to operate the unit from a 24 volt thermostat, and to control boiler operation.

Hydronic connections are 3/8" I.D. copper sweat connections, and should be piped to allow access to the filter and motor access panel for maintenance and service.

Optional Equipment

Variable Speed Controller - This allows the airflow to be adjusted to meet exact system requirements. This is especially important when using the JH fan coil for fresh air make-up, as over ventilating a structure will cause excessive fuel usage, and possibly create positive pressure problems within the structure.

Low Temperature Cut-Out - When the discharge air temperature drops below 50°F, this control will shut down power to the blower and to the fresh air damper motor (if installed). This control is located in the supply air duct work, within eighteen inches of the fan coil. The disc will automatically reset when the ambient temperature around the disc reaches 60°F.

Constant Temperature Controller - This control will provide a constant discharge air temperature by modulating the water flow through the coil. The controller body is installed in the hydronic supply line, and the remote sensor will mount in the discharge air duct within eighteen inches of the fan coil. The control head may then be adjusted to provide the desired leaving air temperature.

The JH fan coil can be suspended in any position, using most industry standard hanging support systems. Redi-Rod, All Thread, C-Channel or Unistrut are some of the building code acceptable hanging systems. Use these in conjunction with spring or rubber isolators to ensure a sturdy hanging support system. These isolators will absorb most of the vibrations generated by the fan coil system, eliminating any sound transfer.

Low temperature Cut-In - This control is located in the air stream and wired parallel with the rest of the boiler controls running back to control the firing of the boiler.

Winter Pump Control - The sensor for this control will be located outside the structure or inside the fresh air duct to allow constant water circulation to the fan coil when the outdoor temperature drops to the setpoint temperature. See page 7 for cut-in temperature settings.

Fan Center Relay - This Relay/Transformer combination allows the fan coil to operate with a 24 volt thermostat providing on/off operation of the fan and/or 24 volt controls. (eg: 24 volt zone valve or damper motor.)

Fresh Air Damper Box - This consists of an insulated return air box, with a normally closed, line volt damper. A Low Temperature Cut-Out must be used in conjunction with this damper box to cut power to the damper motor when there is a low discharge air temperature from the fan coil. A filter frame and a six inch round intake collar are standard on this damper box.

R/A and S/A Collars - When using round duct work with the JH fan coil, square to round transitions may be ordered from the factory. Transitions are available to either six inch or eight inch round.

Directional Discharge Vanes - When using the fan coil for area heating in an exposed application such as an overhead style heater, these vanes may be installed to direct the airflow as needed.

Balanced Ventilation Exhaust Unit - When using the JH fan coil for fresh air make-up, a central exhaust ventilator can be interlocked with the fan coil to provide a balanced ventilation system. These JH-xx EX units come with six inch discharge and eight inch intake transitions.

Domestic Water Package (DHW) - When used with open potable water systems, the water must be circulated once per day to prevent stagnation during the summer months. Our DHW package includes a Printed Circuit Board with timer chip, transformer, and bronze body circulator pump.

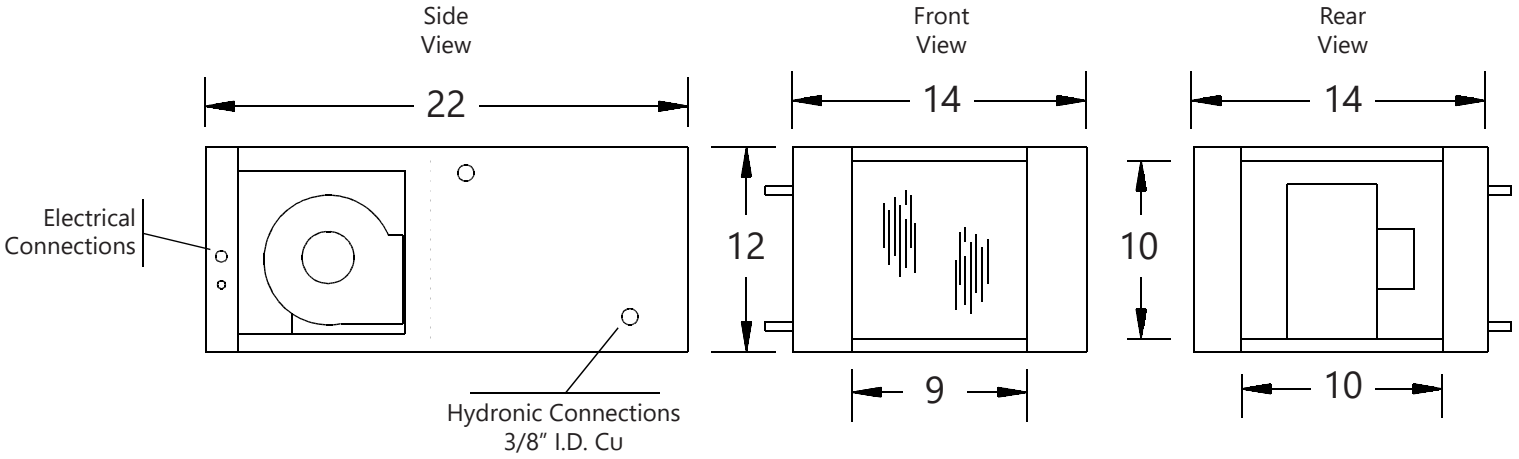
JH Series Northern Pak (JH-xx NP)

The JH Series of fan coils can be ordered as a fresh air make-up package by adding the suffix "NP" to the model number. The Northern Pak consists of:

- Fan Coil
- Filter and Filter Frame
- Isolation Hanging Straps
- Low Temperature Cut-Out
- Variable Speed Controller
- 1/2" Constant Temperature Controller

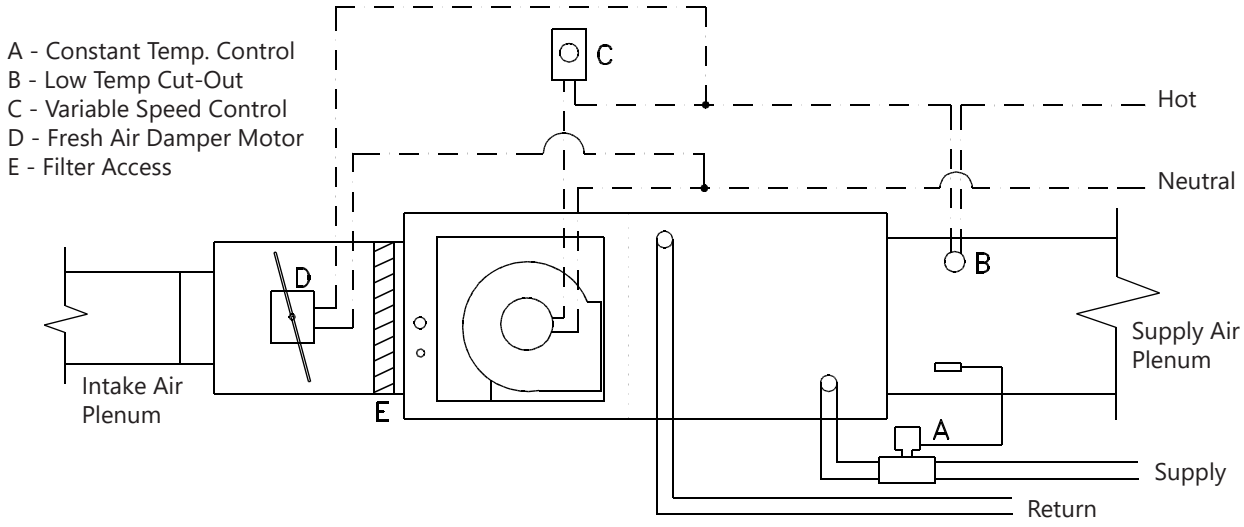
NOTE: The Northern Pak can be ordered with the Fresh Air Damper Box by using the Suffix "NPF". Eg. JH-xx-NPF

JH Heating Unit Dimensions

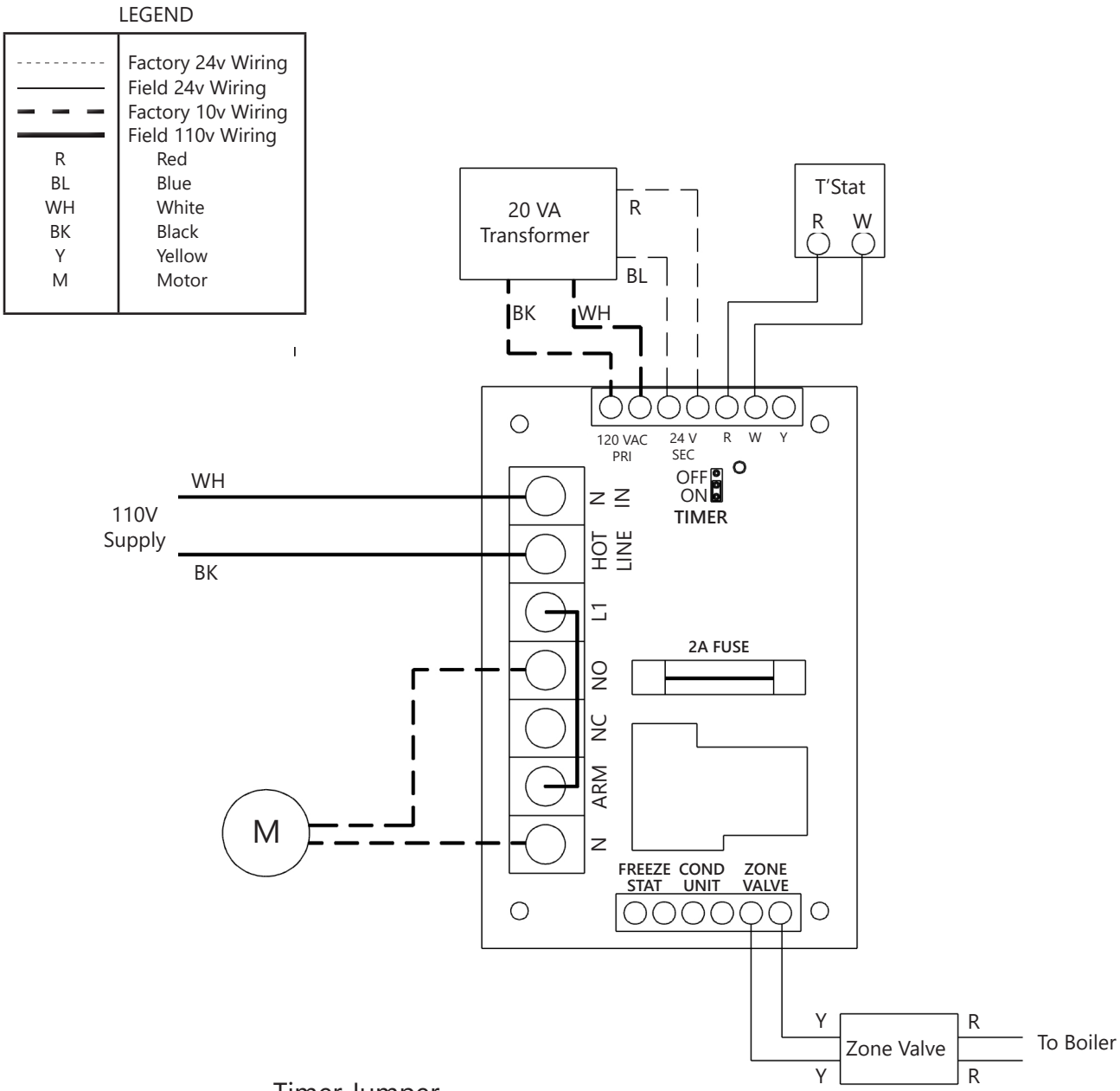


- All Dimensions in Inches
- All Dimensions +/- 1/8"
- Cabinet finish is Polyester Powder Coat (Sky White)
- All Specifications subject to change without notice

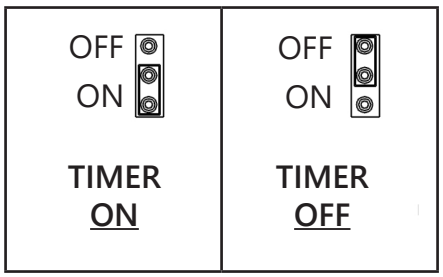
JH-15/30 NPF Typical Connections



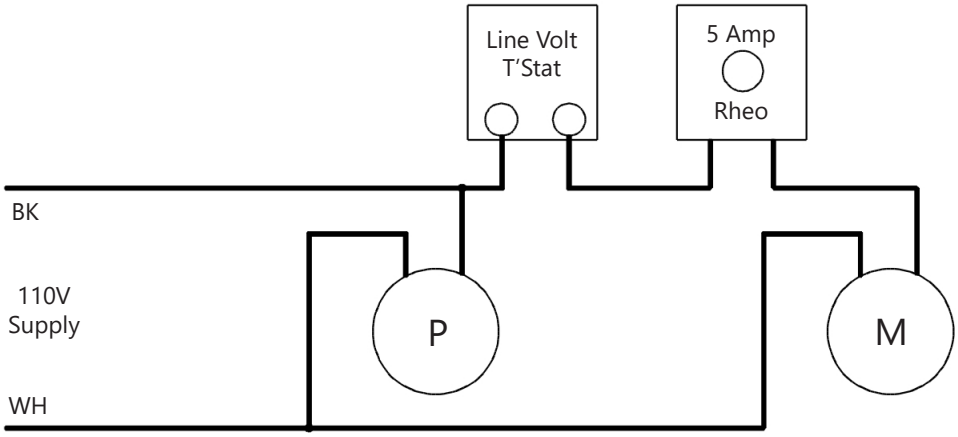
JH Fan Coil with On/Off Operation from Printed Circuit Board



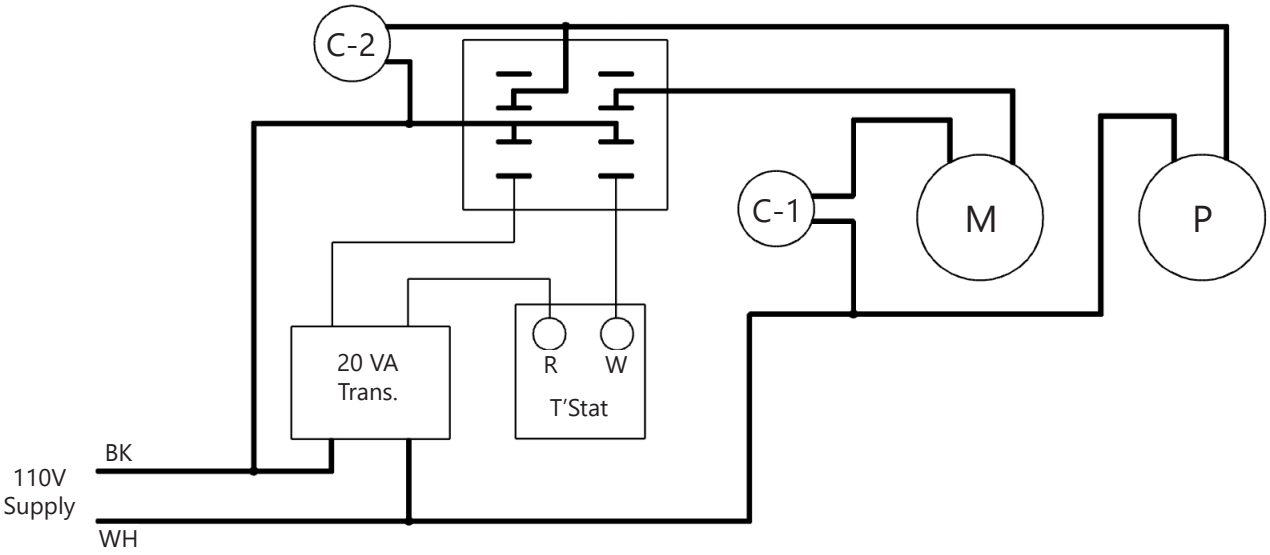
Timer Jumper Setting Detail



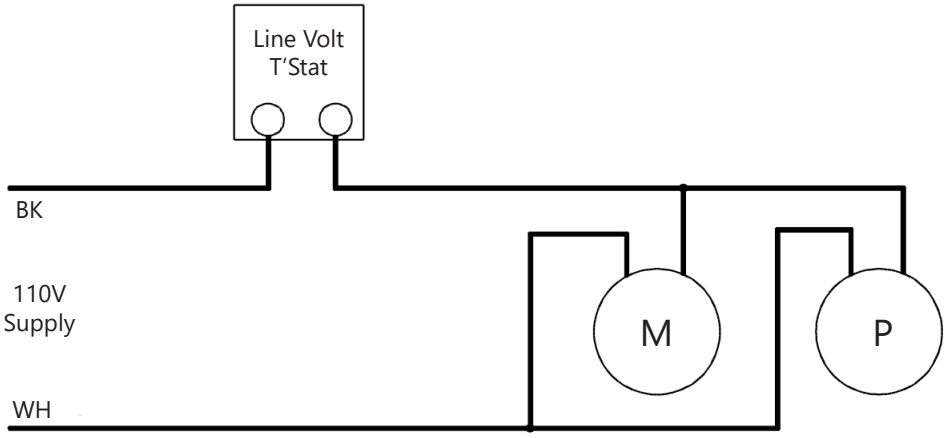
Line Volt Wiring with Constant Pump Circulation and Variable Speed Option



24 Volt Operation with Freeze Stat Protection and Outdoor Pump Cut-In Controls (Optional)



JH Wiring with Line Volt T'Stat (Space Heating)



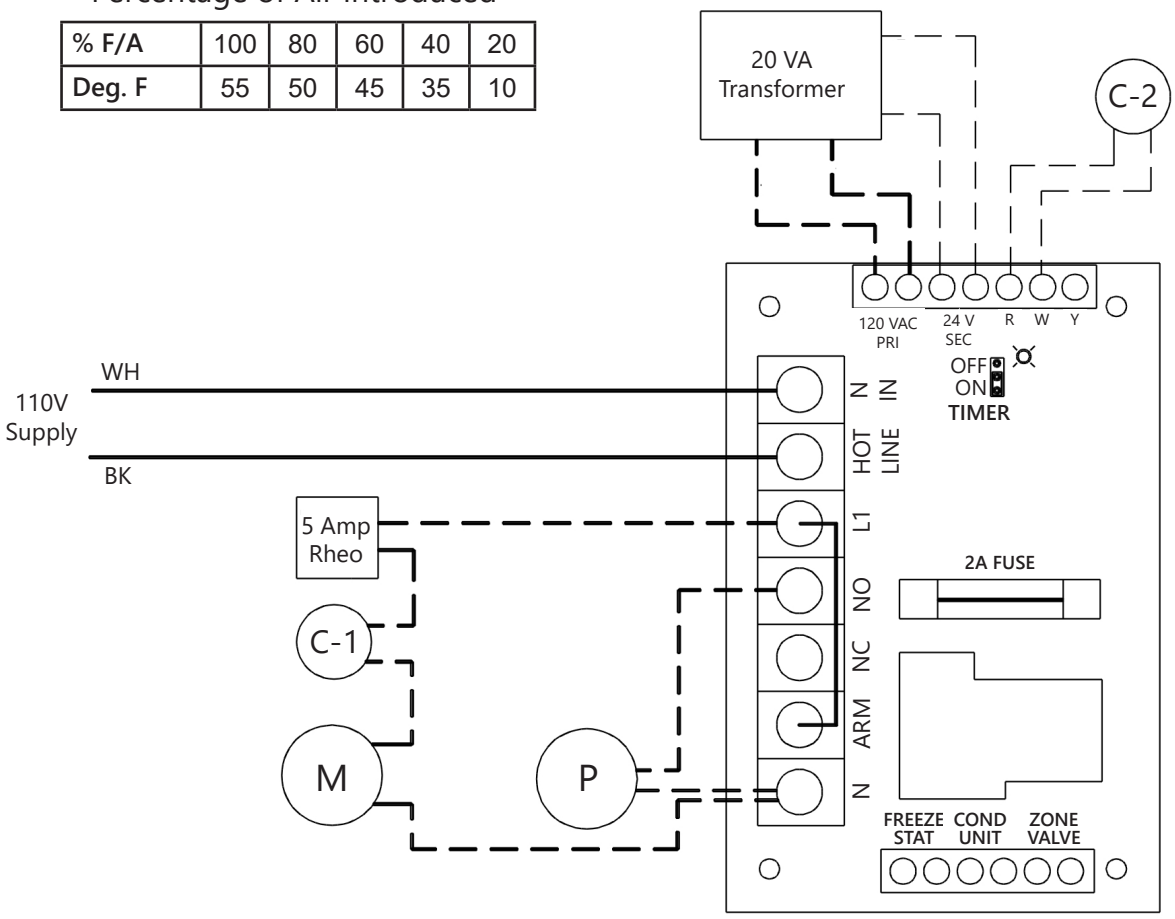
LEGEND

----------	Factory 24v Wiring
————	Field 24v Wiring
- - - -	Factory 10v Wiring
————	Field 110v Wiring
R	Red
BL	Blue
WH	White
BK	Black
Y	Yellow
M	Motor
P	Pump
C-1	Freeze Stat
C-2	Outdoor Pump Cut-In

JH Packaged Make-Up Air Wiring with Circuit Board

C-2 Cut-In Settings Based on Percentage of Air Introduced

% F/A	100	80	60	40	20
Deg. F	55	50	45	40	10



Timer Jumper Setting Detail

OFF ON **Timer** **ON**	OFF ON **TIMER** **OFF**

Note: Timer set to the "on" position will activate the circulator pump for five minutes per day to prevent stagnation during the warmer season.

LEGEND

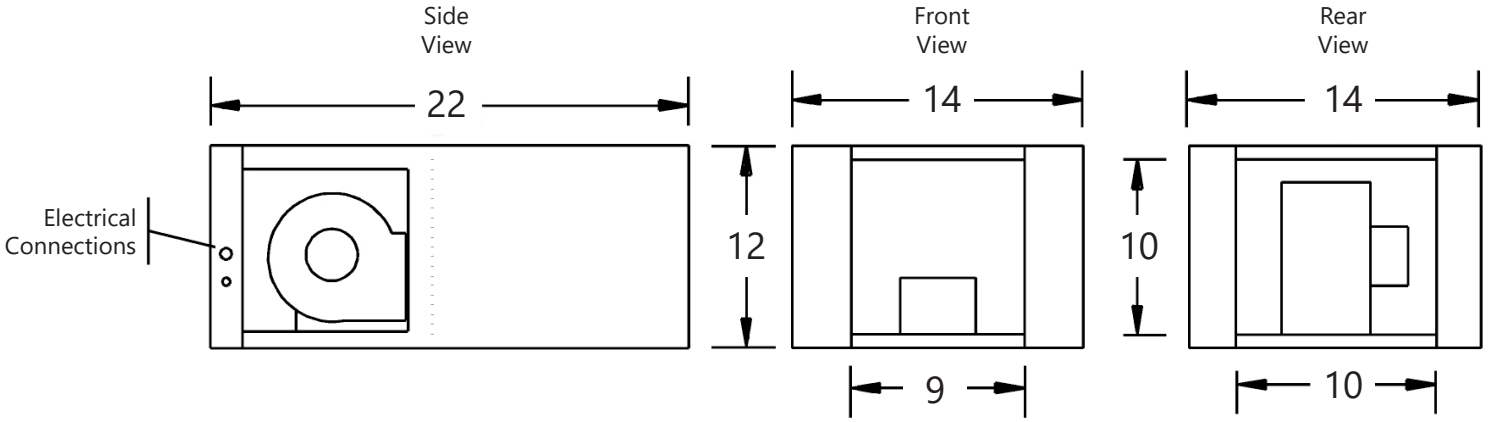
----------	Factory 24v Wiring
————	Field 24v Wiring
- - - -	Factory 10v Wiring
————	Field 110v Wiring
R	Red
BL	Blue
WH	White
BK	Black
Y	Yellow
M	Motor
P	Pump
C-1	Freeze Stat
C-2	Outdoor Pump Cut-In

JH EX Series Exhaust Air Units

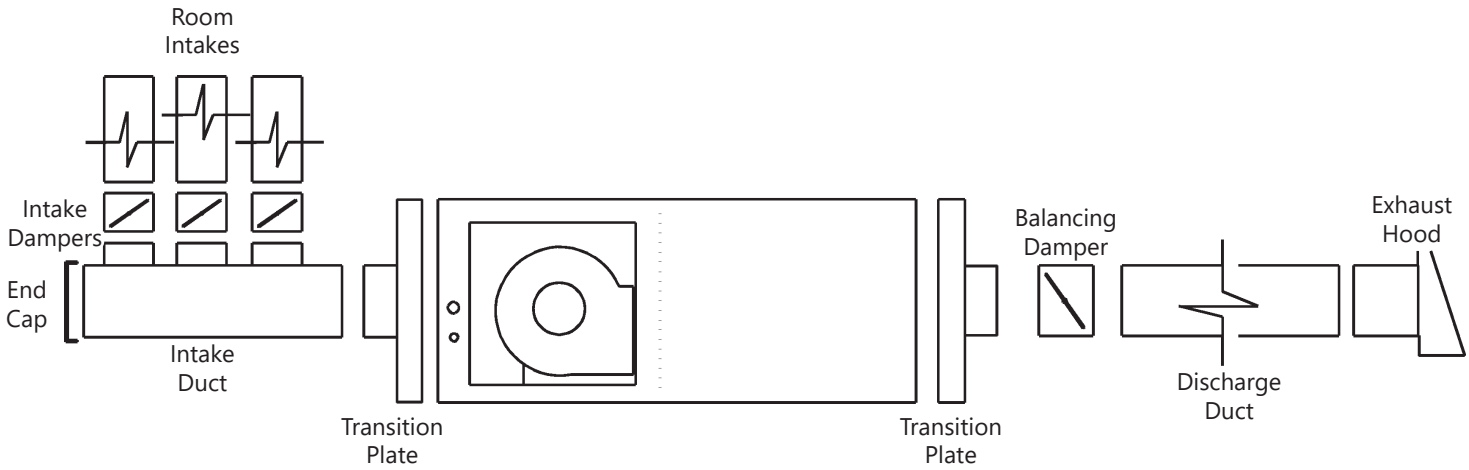
JH-xx EX units can be used as stand alone central exhaust ventilators, or in conjunction with a fan coil for fresh air make-up to provide a balanced ventilation system. Typical installations will have an intake from each bathroom and an intake from the kitchen running to the unit with a six inch exhaust to outside. Manual dampers are recommended to be installed on each duct run to assist in system balancing.

A variable speed fan control will be used to set the minimum constant ventilation rate for the structure requirements. Override switches such as de-humidistats or bathroom light switches can be wired parallel to the variable speed control to increase the ventilation rate when needed. When interlocked to a fan coil with multiple speeds, an isolation relay may be needed to prevent voltage from being sent to two sets of motor windings at the same time.

Exhaust Air Unit Dimensions

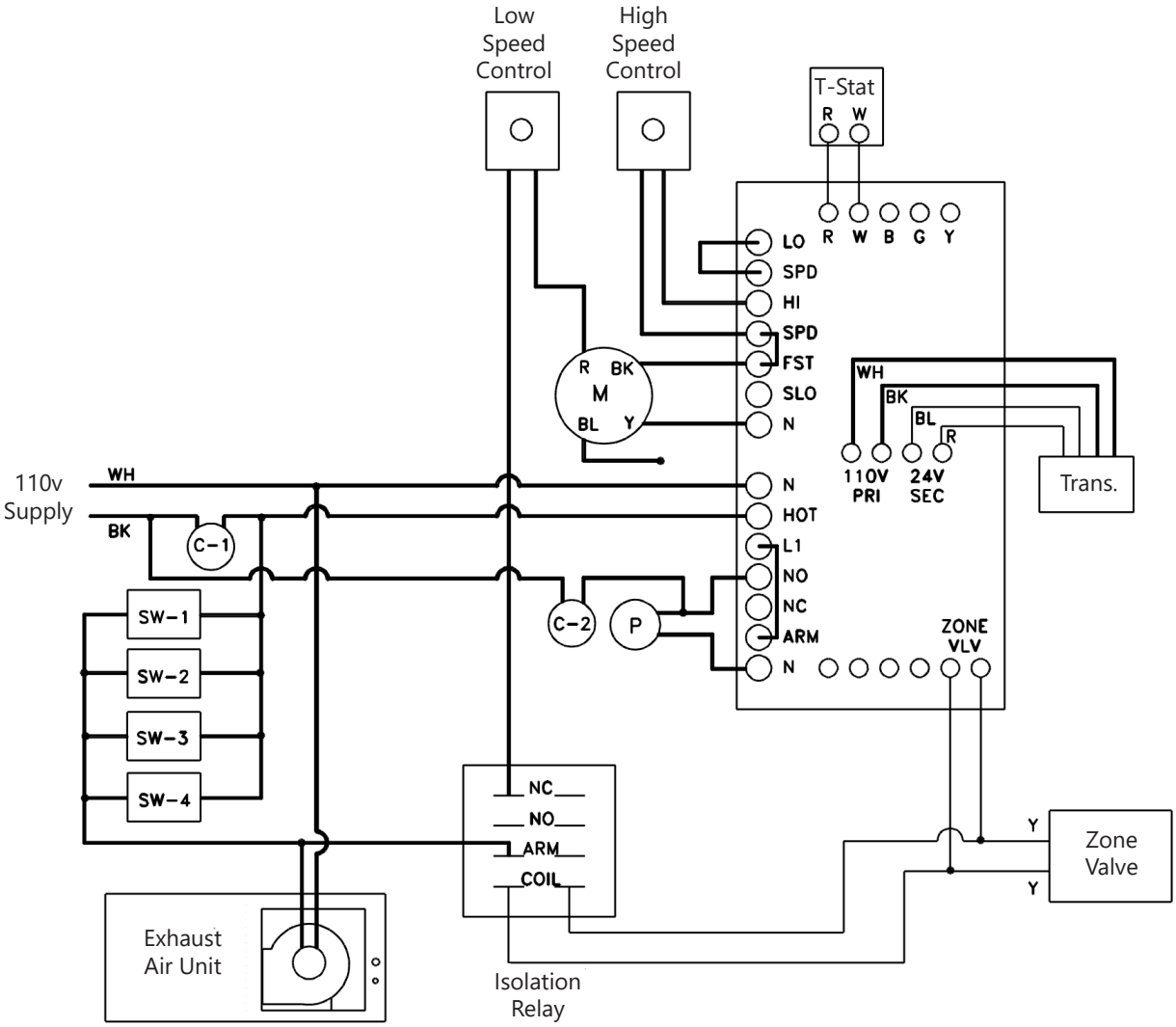


JH Exhaust Air Unit Typical Connections

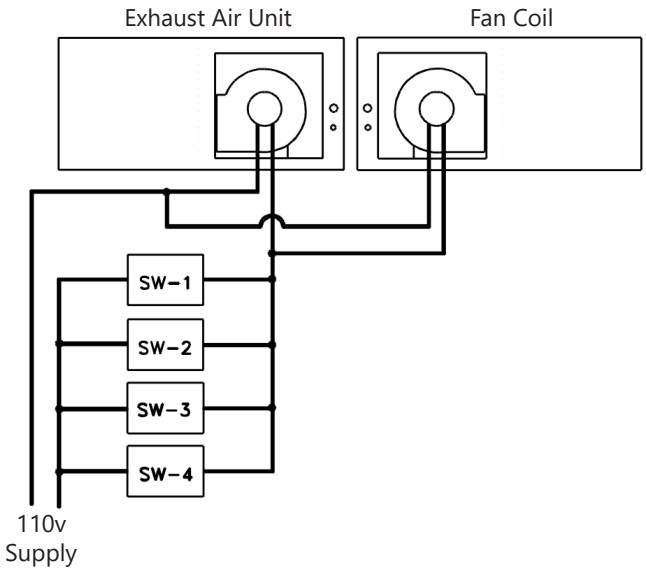


- All Dimensions in Inches
- All Dimensions +/- 1/8"
- Cabinet finish is Polyester Powder Coat (Sky White)
- All Specifications subject to change without notice

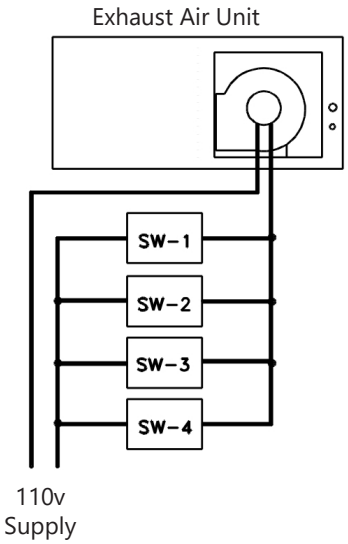
JH Exhaust Air Unit with Interlock to Printed Circuit Board for Multi-Speed Fan Coil



JH Exhaust Air Unit Wiring with Interlock to Make-Up Air Fan Coil



JH Exhaust Air Unit Wiring with Optional Switches



Hi-Velocity Systems
www.hi-velocity.com

Matching Coils
Hot Water Coils
JH-15/30

JH Series Specifications

Fresh Air Make-Up and Space Heating

Model	JH-15			
JH-15 Hot Water Heating	**EAT 60°F** (16°C)	**EAT 30°F** (-1°C)	**EAT 0°F** (-18°C)	**EAT -30°F** (-34°C)
Max. BTUH @ 200°F E.W.T. (kW @ 93°C)	14,500 (4.2 kW)	17,500 (5.1 kW)	20,600 (6.0 kW)	23,000 (6.7 kW)
Max. BTUH @ 190°F E.W.T. (kW @ 88°C)	13,500 (3.9 kW)	16,500 (4.8 kW)	19,600 (5.7 kW)	22,000 (6.4 kW)
Max. BTUH @ 180°F E.W.T. (kW @ 82°C)	12,400 (3.6 kW)	15,400 (4.5 kW)	18,500 (5.4 kW)	20,900 (6.1 kW)
Max. BTUH @ 170°F E.W.T. (kW @ 77°C)	11,300 (3.3 kW)	14,400 (4.2kW)	17,500 (5.1 kW)	19,900 (5.8 kW)
Max. BTUH @ 160°F E.W.T. (kW @ 71°C)	10,300 (3.0 kW)	13,300 (3.9 kW)	16,400 (4.8 kW)	18,900 (5.5 kW)
Max. BTUH @ 150°F E.W.T. (kW @ 66°C)	9,200 (2.7 kW)	12,300 (3.6 kW)	15,400 (4.5 kW)	17,900 (5.2 kW)
Max. BTUH @ 140°F E.W.T. (kW @ 60°C)	8,200 (2.4 kW)	11,300 (3.3 kW)	14,300 (4.2 kW)	16,900 (4.9 kW)
Max. BTUH @ 130°F E.W.T. (kW @ 54°C)	7,200 (2.1 kW)	10,200 (3.0 kW)	13,300 (3.9 kW)	15,800 (4.6 kW)
GPM Flow Ratings (L/s Flow Ratings)	3 (0.19 L/s)	3 (0.19 L/s)	3 (0.19 L/s)	3 (0.19 L/s)

Model	JH-30			
JH-30 Hot Water Heating	**EAT 60°F** (16°C)	**EAT 30°F** (-1°C)	**EAT 0°F** (-18°C)	**EAT -30°F** (-34°C)
Max. BTUH @ 200°F E.W.T. (kW @ 93°C)	31,400 (9.2 kW)	38,200 (11.2 kW)	44,900 (13.2 kW)	51,600 (15.1 kW)
Max. BTUH @ 190°F E.W.T. (kW @ 88°C)	29,200 (8.6 kW)	35,900 (10.5 kW)	42,600 (12.5 kW)	49,300 (14.4 kW)
Max. BTUH @ 180°F E.W.T. (kW @ 82°C)	26,900 (7.9 kW)	33,600 (9.8 kW)	40,300 (11.8 kW)	47,000 (13.7 kW)
Max. BTUH @ 170°F E.W.T. (kW @ 77°C)	24,600 (7.2 kW)	31,300 (9.2 kW)	38,000 (11.1 kW)	44,700 (13.1 kW)
Max. BTUH @ 160°F E.W.T. (kW @ 71°C)	22,300 (6.5 kW)	29,000 (8.5 kW)	35,700 (10.5 kW)	42,400 (12.4 kW)
Max. BTUH @ 150°F E.W.T. (kW @ 66°C)	21,100 (6.1 kW)	26,800 (7.9 kW)	33,400 (9.8 kW)	40,100 (11.7 kW)
Max. BTUH @ 140°F E.W.T. (kW @ 60°C)	17,800 (5.2 kW)	24,500 (7.2 kW)	31,200 (9.1 kW)	37,900 (11.1 kW)
Max. BTUH @ 130°F E.W.T. (kW @ 54°C)	15,600 (4.6 kW)	22,200 (6.5 kW)	28,900 (8.5 kW)	35,500 (10.4 kW)
GPM Flow Ratings (L/s Flow Ratings)	3 (0.19 L/s)	3 (0.19 L/s)	3 (0.19 L/s)	3 (0.19 L/s)

Fan Coil Specifications		**JH-15**	**JH-30**
Max Rated CFM @ 0.12" E.S.P. (L/s @ 30 Pa)		200 (94 L/s)	380 (179 L/s)
Voltage		115/1/50/60 F.L.A. 4 amp	115/1/50/60 F.L.A. 4 amp
Nominal Operating Amperage		1.5	2.4
Horse Power		1/25	1/12
Motor RPM		1550	1550
Slo-Blo Fuse (AMPS)		2	2
Hydronic Connections	Supply	3/8" (9.5mm)	3/8" (9.5mm)
	Return	3/8" (9.5mm)	3/8" (9.5mm)
Supply Air Size		9" x 10" (228mm x 254mm)	9" x 10" (228mm x 254mm)
Return Air Size Needed		10" x 10" (254mm x 254mm)	10" x 10" (254mm x 254mm)
Shipping Weight (no coil)		25 lbs (11.3 Kg)	30 lbs (13.6 Kg)
Fan Coil Size	Length Width Height	22" (559mm) 14" (356mm) 12" (304mm)	22" (559mm) 14" (356mm) 12" (304mm)

NOTE: All BTUH ratings based on 3 USGPM

EAT- Entering Air Temperature
BTUH - British Thermal Units per Hour
E.W.T. - Entering Water Temperature
GPM - US Gallons per Minute
L/s - Litres per Second

CFM - Cubic Feet per Minute
F.L.A. - Full-Load Amperage
RPM - Revolutions per Minute
E.S.P. - External Static Pressure