

TECHNICAL INSTRUCTIONS

# Humipack H User Guide

**HUMIDIFICATION SYSTEM**

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# Humipack H

## Specification Sheet



Air-Water Nozzle Box

### Features

- Warehouse Humidifier Control Unit
- Maintains constant relative humidity of +/- 2 % desired settings
- Can support up to 100 nozzles, up to 500,000 ft<sup>3</sup> (15000 m<sup>3</sup>)
- Recommended for applications up to 97 % RH
- Factory assembled for easy mounting and installation
- Color coded plumbing
- Powder coated cabinet
- Maximum performance, low maintenance

Model	HUMIPACK H
Maximum volume up to	500,000 ft <sup>3</sup> (15000 m <sup>3</sup> )
Nozzles box supported up to	100
<b>Location Requirements</b>	
Electrical Source	100/120/230 V AC, 50-60 Hz
Water Supply	1/2" FPT Adapter with Shutoff Valve
Inlet Pressure	30 psi (2 bar) minimum
Drain	Floor Drain or 1" Drain Pipe
<b>Specifications</b>	
Size:	
Height	18.5 inches (47 cm)
Width	14 inches (36 cm)
Depth	4.5 inches (11 cm)
Weight	43 lb (19.5 kg)
Pressure Gauges	Air, Product
Operating Voltage	24 V DC
Unit Power Consumption	120 V, 2 A / 240 W 230 V, 1 A / 230 W
Solenoid Valve:	
Mist	Plastic 1/4" FPT V DC
Purge	Plastic 1/4" FPT V DC
Air	Plastic 1/2" FPT V DC
Air compressor	Not included
<b>Tubing</b>	
	Color coded
Materials	Polyethylene
<b>Nozzle box</b>	
Materials	Plastic
Dimensions	2.25 x 3.5 x 1.5 inches (6 x 9 x 4 cm)
Air Pressure	30-40 psi
Air Required	0.8 ft <sup>3</sup> /m
Liquid Capacity	0.5 gallons/hour (2 liters/hour)
Droplet Size	10 microns
<b>Humidity Control</b>	
Sensor	Hydrotransmitter 0-99.9 % RH
Humidity controller	Digital
Cable from system to sensor	130 feet (40 meters)

# Humipack H

## Installation Guide

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### SYSTEM PLACEMENT

Mount the Humipack Control Box in a convenient, accessible location. This could be on a wall or lay on top of the warehouse room. Also make sure there is convenient access to power and water.

**NOTE: The control unit should be installed outside the humidified area if RH in this area is 80 % and higher.**

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Picture 1

### NOZZLES INSTALLATION

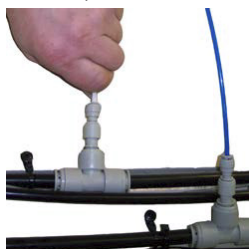
Place the nozzles, evenly on the wall of the warehouse room about 8-10 feet (3 meters) apart to give the best possible coverage and even distribution of humidity in the warehouse. Install each nozzle using supplied self-tapping screws, on the warehouse wall as high as possible, about 1-2 feet (1/2 meter) below the ceiling, to get the best possible distribution of humidity.

**NOTE:** The tubing for the warehouse system can be run inside the warehouse on the wall, if the warehouse temperature will not fall below freezing. This will eliminate the drilling of holes for the conduit and supply lines. OTHERWISE: Drill a 1/2" hole through the warehouse wall or ceiling near each nozzle. Insert a piece of 1/2" tube through the hole leaving a small amount hanging over each side of the 1/2" hole. This 1/2" tube will serve as a conduit for the two 1/4" or 5/32" tubes (white and blue) from the nozzle connecting to the water and air feed lines to be installed. Disconnect the 1/4" x 5/32" reducers (#17075) on each of the white and blue 5/32" lines coming from the nozzle feed tubes (if using Box Nozzles only). This can be done by holding down the collet ring on the end of the fitting, and pulling the tube out at the same time. Feed the two 1/4" or 5/32" lines (blue and white) through the 1/2" conduit tubing.

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### AIR AND WATER FEED LINES

Run a 1/2" black tube from the Humipack Air Out port (white collet) the entire length of the nozzle run. At the same time run 3/8" water tube from the Humipack Water Out port (blue collet) the length of the nozzle run. Strap down the tube as you go about every 4 feet (1 meter) using the self-tapping screws and tie straps supplied.



Picture 2

With the 1/2" x 3/8" and 3/8" Quick Connect (QC) tee's provided (#17074) and (#17010), cut the 1/2" and 3/8" black air

and water tubes near each nozzle and install a tee taking care to make a straight cut of the tube (to prevent leaks) and push the tubing all the way into the tee fitting past the inner O-ring inside the tee to seat the tubing (also to prevent leaking).

Insert a 3/8" x 1/4" reducer (#17049) into the 3/8" side of the air and water line tee. Insert the White 1/4" air line into the 1/4" air tee reducer. Insert the 1/4" blue water line into the 1/4" water tee reducer on the water line tee.

**NOTE: Only on nozzles Without Box Housing: Install 1/4" QC**

x MPT (#17004) fittings into each nozzles liquid and air ports. Insert the 1/4" blue water line into the Liquid side (labeled) of the Humidification nozzle. Install the 1/4" white air line into the Air side (labeled) of the Humidification nozzle.

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### HUMIDITY SENSOR PLACEMENT

Mount the Humidity Sensor in the room, away from the nozzles, doors and fans to maintain consistent sensor readings. The length of the wires between the system and the Humidity Sensor is 130 feet (40 meters).

**The sensor also needs to be protected against any moisture besides the humidity that is being produced for the room. If the sensor is sprayed directly it will give false readings and will not allow proper function of the unit.**

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### WATER INLET

Connect a 1/4" Green Inlet water line from Reverse Osmosis water if available. If there is no RO water, Miatech can provide an RO purification system for an additional charge. RO water is required for proper operation and maintenance of the humidification system.

Use the green 1/4" tube provided to connect the inlet water supply to the "Inlet Water" port on the Humipack Unit.

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### AIR INLET (COMING FROM AIR COMPRESSOR)

Connect the red 1/2" air supply line from the air compressor system to the "Air In" port on the Humipack Control Box. If no air compressor is available, Miatech can supply an air compressor system for an additional charge.

**NOTE:** For Miatech's air compressor installation, please refer to Compressor Pack Installation Guide.

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### CHECKING THE INSTALLATION

Make all final electrical connections from the Air Compressor(s) and the Humipack Control Box to the wall outlets. Turn ON the water to the Humipack System and make sure all connections are free from leaks. Turn ON the Humipack System and make your humidity level adjustments according to the Humidity Controller Settings instructions provided.

# Humipack H

## Installation Guide

### OPERATION AND ADJUSTMENTS

The system will turn ON and when the humidity level is achieved it will automatically shut off.

There can be some variance to the quality of humidity delivered by the system depending on water and air supply pressure. The correct mist will not puddle on the floor but should be heavy enough to increase the humidity levels in the warehouse/cold room steadily.

Adjustments can be made to the Water Metering Valve (Regulator) inside the Humipack System. Gently pull the top of the regulator and turn the knob left or right to increase or decrease the air water mix. By increasing or decreasing the water pressure, the Mist Atomization will vary in quality. The ideal Mist will be achieved with experimentation.

### HUMIDITY CONTROLLER OPERATION

The Humidity Controller comes programmed from the factory, however if adjustments need to be made please follow instructions below. To set the parameters use the four buttons on the Humidity Controller.

The button description:

“Set” – entering and saving humidity level settings;

“Rst” – power and cancel button;

“▲” – increase button;

“▼” – decrease button;



### OPERATING INSTRUCTIONS

1. Power on/off:

a) To turn “On” the system - press Power (RST) button.

b) To turn “Off” the system - hold Power (RST) button for three seconds and hold on, then it will be off.

2. Setting desired Relative humidity (RH) level:

a) Press the SET button once to enter the humidity control setting (you will see current desired RH level);

b) Press ▲ or ▼ button to adjust RH level;

c) After you set desired RH level press the SET button once to save settings and exit setting mode.

**\* Factory setting for relative humidity level to be maintained in the room is 90%.**

### Factory settings

Symbol	Details	Factory settings	Units
HC	Humidification/ Dehumidification	H	
D	Hysteresis (humidistat differential)	2	%
LS	The minimum set limit	1	%
HS	The maximum set limit	99	%
CA	Humidity calibration	10	%
PT	Delay time	0	Minutes

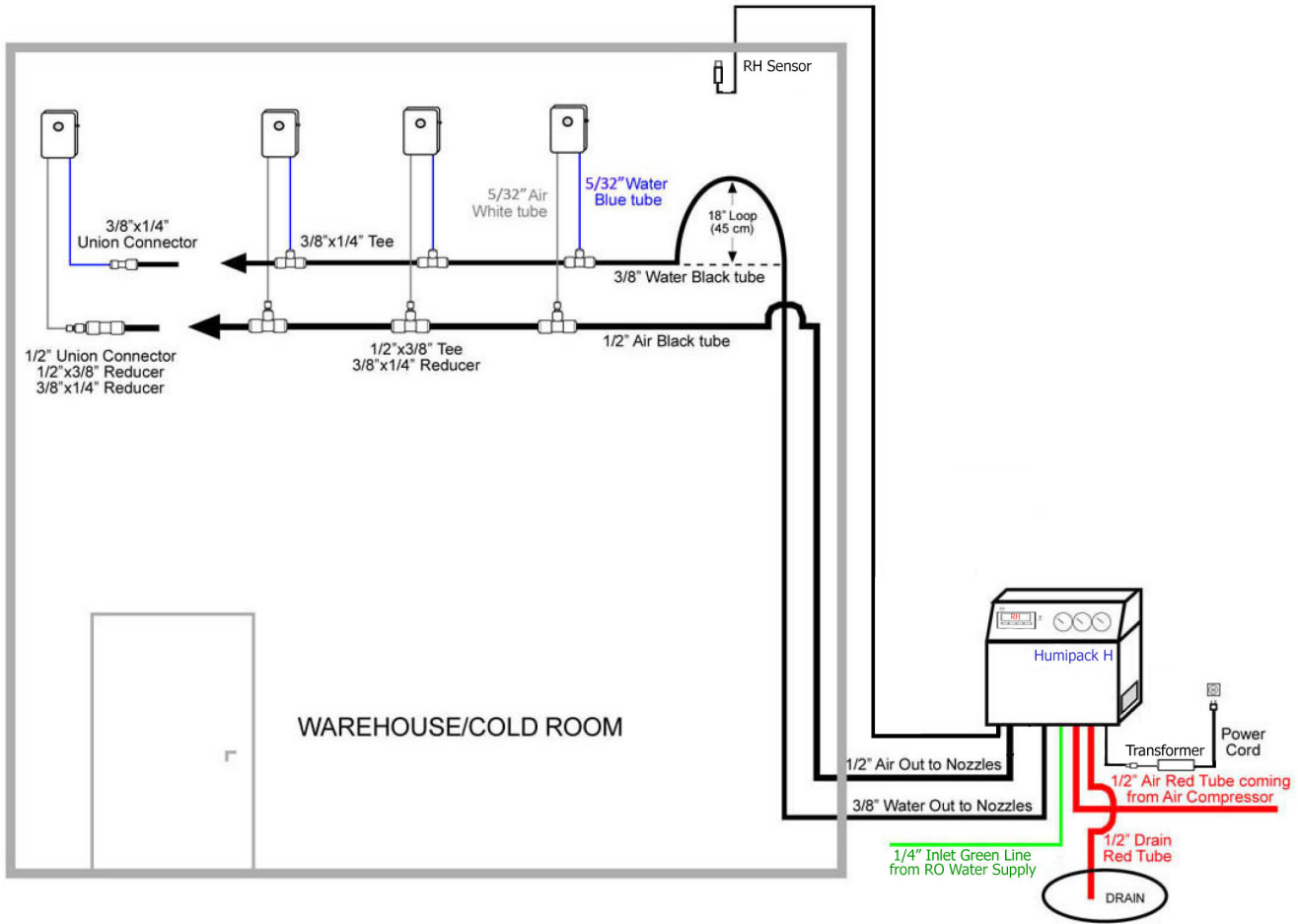
### Humidity Controller LED Description

“WORK” LED – system is operating.

“SET” LED – on when in settings menu.

# Humipack H

## Layout Diagram



# Humipack H

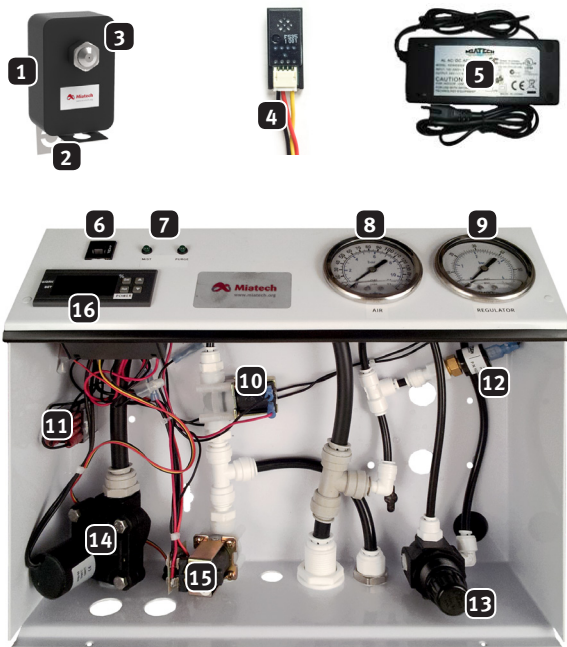
## Maintenance Guide

### Maintenance Requirements

1. Maintenance free.
2. Unit should be inspected for leaks.
3. Perform visual inspections of the nozzles periodically for any clogs.

### Troubleshooting

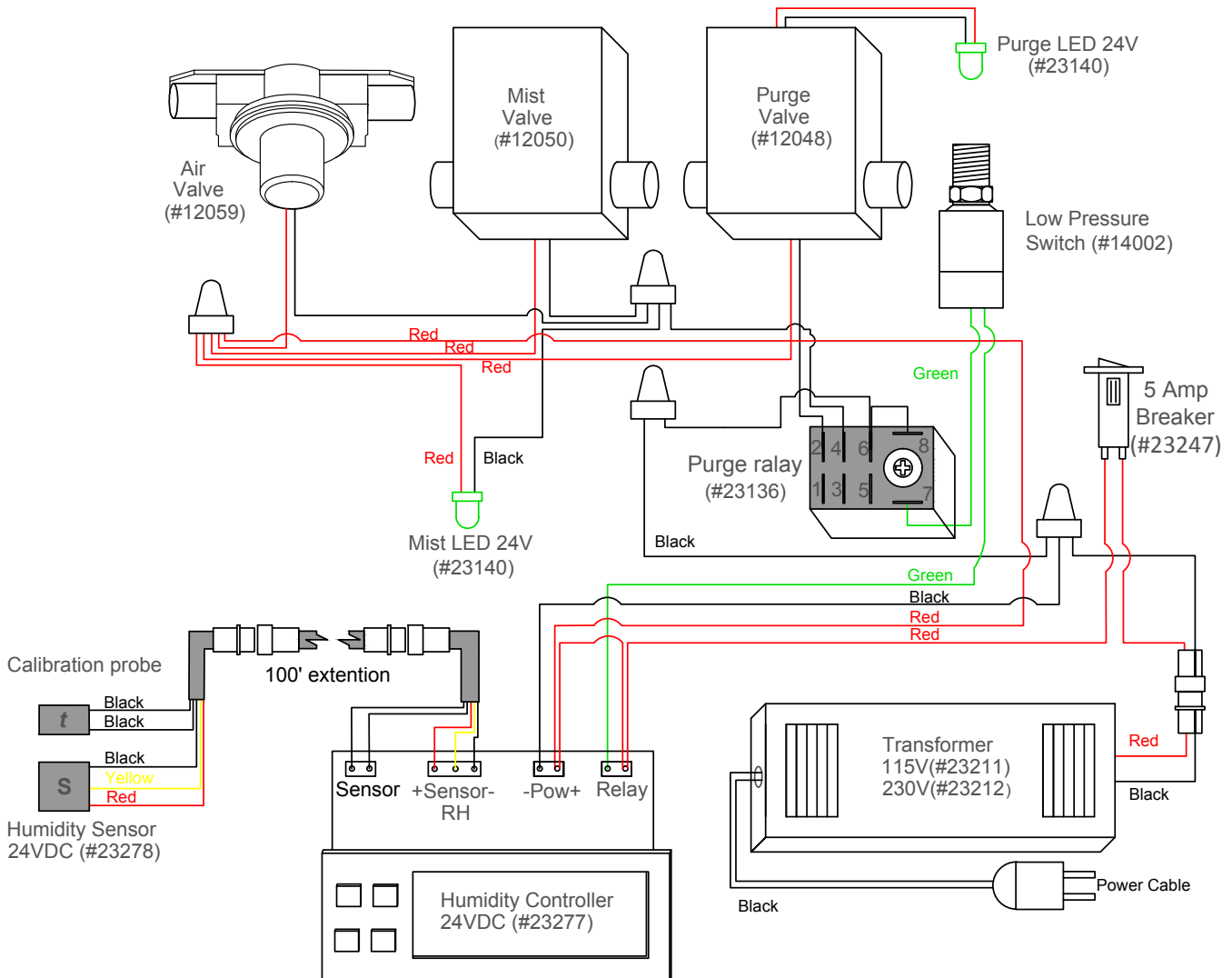
Problem	Solution
Humidity Controller reading is not correct.	First make sure the sensor is positioned where the mist or other factors do not affect it.  If sensor is correctly placed, then either sensor or humidity controller will need replacing.
Straight squirt of water from the nozzles.	Solenoid air valve is not opening due to a bad valve or a bad internal module.  Check for proper air pressure.
Unit working continuously but never reaches the desirable humidity.	Check if all Nozzles are spraying water.  Check the water inlet pressure (min. 30 psi).  Check if the mist is going in the center of the room and is not hitting walls or equipment.
Unit never turns off, even when the desired humidity level is reached.	Humidity controller may be set wrong or either sensor or humidity controller requires replacement.
No mist but has air.	Mist solenoid valve is not opening due to bad valve or a bad internal module.  Check for kinks on your water line.  Check for proper water pressure.
Drips of water from the Nozzles after each cycle.	Make sure that the drain valve opens after each cycle. No kinked or clogged tubing.
The red air inlet tube is very hot to touch and the air valve as well.	That is normal and is from the heat of the compressor.
Unit is not turning On.	Check the Humidity Controller and Sensor connection.  Check for proper electrical connection.  Check the 5 amp breaker.
Humidity controller display is showing “- - -”	Sensor is disconnected (output is closed). Check sensor connection.
Humidity controller display is showing “H H H”	Humidity is higher than 99%. Sensor might be saturated.



- |   |                                      |
|---|--------------------------------------|
| 1. Black Plastic Box (#19010)                         | 9. Regulator Pressure Gauge (#15005) |
| 2. Stainless Steel Nozzle Bracket (#16035)            | 10. Mist Valve (#12050)              |
| 3. Air-water Nozzle (#20026)                          | 11. Relay 24 V DC (#23136)           |
| 4. Humidity Sensor (#23278)                           | 12. Low Pressure Switch (#14002)     |
| 5. Transformer 24 V DC 115 V (#23211), 230 V (#23212) | 13. Water Regulator (#23041)         |
| 6. 5 A Circuit Breaker (#23247)                       | 14. Air Solenoid Valve (#12059)      |
| 7. LED Green (#23140)                                 | 15. Purge Valve (#12048)             |
| 8. Air Pressure Gauge (#15005)                        | 16. Humidity controller (#23277)     |

# Humipack H

## Wiring Diagram



# Humipack H

## Pull Sheet Pack

PART NO.	PART NAME	AMOUNT	Insp.
18004	66 Black Tube	40'	
18006	88 Black Tube	40'	
18024	44 Green Tube	40'	
18036	66 Red Tube	40'	
18038	88 Red Tube (Special Heat Resistant)	30'	
24001	#8 x 3/4 Self-tapping Screw (Phillips)	125	
24034	#14 x 2 1/2" Screw	3	
24035	#14 Plastic Anchor	3	
24078	Cable Tie 6" (Black)	125	
23211	115V Transformer 24V DC	Refer to the order	
23212	230V Transformer 24V DC		

DATE \_\_\_\_\_

PULLER \_\_\_\_\_

CHECKER \_\_\_\_\_



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If outside North America call to the USA at 1-503-659-5680