Water to Air Troubleshooting Tips

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Troubleshooting

Problem/Issue	*Possible Cause*	*Actions and Corrections*
Entire unit will not run.	Power supply is off	Apply power and close disconnect.
	Circuit breaker	reset circuit breaker.
	Voltage supply low	If voltage is below minimum voltage specified on unit data plate, contact local power company.
	Thermostat	Set the fan to *On*. The fan should run. Set thermostat to *Cool* and lowest temperature setting, the unit should run in the cooling mode. Set unit to *Heat* and the highest temperature setting, the unit should run in the heating mode. If neither the blower nor compressor run in all three cases, the thermostat could be wired incorrectly or faulty. To ensure correct wiring or faulty thermostat verify 24 volts is available on the low voltage terminal strip between "R" and "C", "Y" and "C", and, if in cooling mode, "O" and "C". If the blower does not operate, verify 24 volts between terminals "G" and "C". Replace the thermostat if defective.

Problem/Issue	***Possible Cause***	***Actions and Corrections***
Blower operates but compressor does not.	Wiring	Check for loose or broken wires at compressor, capacitor, or contactor.
	Safety controls	Check Smart Relay screen for faults.
	Capacitor	Check capacitor and replace if defective.
	Compressor overload open	If the compressor has cooled down and the overload will not reset, replace compressor.
	Compressor motor grounded	Internal winding grounded to the compressor shell. Replace compressor. If compressor burnout has occurred, install suction filter dryer.
	Compressor windings open	After compressor has cooled, check continuity of the compressor windings. If the windings are open, replace the compressor.
PLC reads High Pressure Check Unit Or HARD LOCKOUT HI PRESSURE	Discharge pressure too high	In *Cooling* mode, check: • Lack of or inadequate water flow • Entering water temperature too warm • Scaled or plugged condenser In *Heating* mode check: • Lack of or inadequate air flow • Blower is inoperative, clogged filter or restrictions in ductwork
	Refrigerant charge	The unit is overcharged with refrigerant. Reclaim refrigerant, evacuate and recharge with factory recommended charge.
	High pressure	Check for defective high pressure switch.

Problem/Issue	***Possible Cause***	***Actions and Corrections***
PLC reads: Low Pressure Check Unit, or HARD LOCKOUT LOW PSI.	Suction pressure too low	In *Cooling* mode, check: • Lack of or inadequate air flow • Entering water temperature too cold • Blower is inoperative, clogged filter or restrictions in ductwork In *Heating* mode check: • Lack of or inadequate water flow • Entering water temperature too cold • Scaled or plugged condenser Check refrigerant charge. Always charge to nameplate.
	Refrigerant charge	The unit is low on refrigerant. Check for refrigerant leaks. Repair, evacuate and recharge with factory recommended charge.
	Low pressure switch	Check for defective low pressure switch.
	TXV Bulb may be defective/severed, TXV valve stuck shut, or moisture in the refrigerant system	TXV bulb and TXV control diaphragm can be replaced after removing the charge, replacing the control device and bulb, and properly recharging the unit to nameplate value.
Unit Short Cycles	Unit oversized	Recalculate heating and or cooling loads.
	Thermostat	Thermostat may be installed near an area with too much air movement. Relocate or adjust grills
	Wiring and controls	Loose connections in the wiring or a defective compressor contactor.
Insufficient cooling	Unit undersized	Recalculate heating and or cooling loads. If excessive, adding insulation and shading may possibly fix the problem.
	Reversing valve	Defective reversing valve creates a bypass of refrigerant from discharge to suction side of compressor. Replace reversing valve.

Problem/Issue	***Possible Cause***	***Actions and Corrections***
Insufficient heating	Loss of conditioned air by leaks	Check for leaks in duct work or look for entering ambient air through doors or windows.
	Airflow	Lack of adequate air flow or improper distribution of air. Replace dirty filter.
	Refrigerant charge	Low refrigerant charge causing poor operation.
	Compressor	Check for defective compressor. If discharge is too low and suction pressure is too high, compressor is not pumping properly. Replace compressor.
	Reversing valve	Defective reversing valve creates a bypass of refrigerant from discharge to suction side of compressor. Replace reversing valve.
	Operating pressures	Compare unit operating pressures to a pressure / temperature chart for the refrigerant used.
	TXV	Check TXV for restriction or defect. Replace if necessary.
	Moisture, noncondensables	The refrigerant system may be contaminated with moisture or noncondensables. Reclaim refrigerant, evacuate and recharge with factory recommended charge. **NOTE**: A liquid line dryer may be required.
	Loss of conditioned air by leaks	Check for leaks in duct work or entering ambient air through doors or windows.
PLC Reads: HARD LOCKOUT FLOW SWITCH	Inadequate or no water flow	Check for water flow. Check flow switch by temporarily bypassing it. Make sure all air is purged from lines. Make sure flow center is purged and functional. Check for proper flow direction.
PLC Reads: HARD LOCKOUT PAN LEVEL	Pan level switch	Check condensate drain for blockage. Make sure condensate drain is properly installed. Check Pan level switch by temporarily bypassing it. Make sure unit is on a level surface.
PLC Reads: HARD LOCKOUT CURRENT SENS	Current sensor	Refer to blower operates but compressor does not. Check current sensor by temporarily bypassing it.