

Full Range Systems

Mokon Troubleshooting Guide | Model 311



Process/Water Loop

Problem	Possible Cause	Corrective Measure
Process pump will not start	Chiller not running	Start chiller
	System unplugged/power off	Plug system in/turn power on
	Improper power source wiring	Check wiring (electrical schematics) and correct
	Blown fuse at power supply	Identify open fuse and replace. Check for ground/shorted condition.
	Blown control circuit fuse	Replace and check for ground/shorted condition
	Low voltage	Measure incoming voltage. If too low, correct.
	Overload on pump/motor starter	Press reset button on Overload to reset.
	Inadequate flow of process fluid	Inspect process and process lines for blockage. If blocked, correct.
	Flow switch	Inspect/clean or replace as needed
Process pump shuts down during operation	Chiller shut down	Check Refrigeration/Chiller Loop section for possible causes and corrective measures
	Overload on pump/motor starter	Press reset button on Overload to reset.
	Blown fuse at power supply	Replace and check for ground/shorted condition
	Blown control circuit fuse	Replace and check for ground/shorted condition
Pump seal leak	Entrapped air in process loop	Replace seal – order EDPM seal if running below 20°F
	System run dry	
	Temperature run below 20°F with standard seal	
	Debris in fluid loop	Add filtration
Tank overflows or will not fill on systems with autofill option (water makeup valve)	Float switch for auto fill is stuck	Inspect. If stuck, clean/replace.
	Solenoid diaphragm will not seat	Inspect, clean/replace

For more information, refer to complete operation and installation instructions in manual or consult Mokon factory.



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Problem	Possible Cause	Corrective Measure
Discharge pressure will not build up	Incorrect pump rotation	Reverse phase to incoming power
	Entrapped air	Press purge button. Run system with temperature setting at its lowest setting.
	Faulty Pressure gauges	Inspect/replace as required
System does not reach and/or hold temperature	Cooling solenoid valve or pressure regulator	Clean or replace valve(s)
	Heater burn out	Inspect/replace as required
	Heater contactor	Inspect/replace as required
	Lime deposits	Clean system (recommend using a Mokon D-Scaler system). Visit our website.
	Temperature controller needs tuning	Tune as required. Refer to controller section in manual.
	Kilowatt capacity inadequate	Consult with a Mokon application engineer to determine correct sizing
	Loose electrical connections	Tighten connection or replace broken wires
	Faulty Thermocouple or RTD	Inspect/replace as required
Variance in temperature readings	Plugged flow paths, inadequate circulation through process and connecting lines	Inspect. If plugged, dislodge.
	Lime deposits	Clean system (recommend using a Mokon D-Scaler system). Visit our website.
	Kilowatt capacity inadequate	Consult with a Mokon application engineer to determine proper sizing.
	Faulty thermometers	Inspect/replace as required
	Temperature controller needs tuning	Tune as required. Refer to controller section in manual for proper procedure.
Leaking water around the motor shaft	Leaking Pump seal	Replace pump seal
Slow response after changing temperature setting	Heater burn out	Inspect/replace as required
	Heater contactor	Inspect/replace as required
	Lime deposits	Clean system (recommend using a Mokon D-Scaler system). Visit our website.
	Kilowatt capacity inadequate	Consult with a Mokon application engineer to determine proper sizing
	Sticking Cooling solenoid valve	Clean or replace valve as required
	Faulty thermocouple or RTD	Inspect/replace as required

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Problem	Possible Cause	Corrective Measure
Fluctuating temperature readings from controller	Lime deposits	Clean system (recommend using a Mokon D-Scaler system). Visit our website.
	Faulty thermocouple or RTD	Inspect/replace as required
	Temperature controller needs tuning	Tune as required. Refer to controller section in manual for proper procedure.
Noisy pump	System at end of long feeder line	Install another source line
	Entrapped air	Press purge button
	Cooling solenoid valve or pressure regulator	Clean or replace valve(s)
	Incorrect pump rotation	Check and correct pump rotation

Refrigeration/Chiller Loop

(only a qualified refrigeration technician should attempt repairs in the refrigeration loop)

Problem	Possible Cause	Corrective Measure
Compressor will not start or shuts down with supply pump running	Scroll compressor rotating in the wrong direction	Switch any two incoming power connections to correct phase issue
	Low or high refrigerant pressure	Consult a qualified refrigeration technician
	Compressor shut down due to thermal protection	Let cool, restart and verify amp draw. Consult a qualified refrigeration technician.
	Inadequate flow of process fluid	Inspect process and lines for blockage. Clear blockage if necessary. Make sure all process valves are open.
	Freezestat/Fluid is exceeding the low temperature limit	Flow restrictions in process loop, partially plugged evaporator, running below 25% of the chillers rated capacity.
	Blown control circuit fuse	Replace and check for ground/shorted condition
	Low water flow through the condenser	Verify condenser supply water flow rate is as stated in manual
	Water regulating valve	Inspect, clean/replace

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Problem	Possible Cause	Corrective Measure
System shuts down on high refrigerant pressure (water-cooled systems)	Condenser supply water lines too small	Replace lines with insulated hose or pipe of equal diameter as the port (refer to table in manual)
	Insufficient water pressure drop across condenser due to plugged or fouled condenser tubes	Inspect, clean/replace
	Condenser supply water temperature too high (above 85°F/29°C)	Find colder source of water
	Dirty condenser coils	Inspect/clean
	Inadequate water flow	Requirement is 3 GPM/Ton at 85°F or 1.5 GPM/Ton at 60°F
System shuts down on high refrigerant pressure (air-cooled systems)	Fan not rotating	Blown control fuse
	Fan rotation	Verify fan is rotating (counter clockwise)
	High ambient air temperature	Review chiller location. See manual for installation guidelines.
	Refrigeration loop overcharged	Consult a qualified refrigeration technician
	Inadequate air flow	Requirement is 1000 CFM/Ton. Keep inlet of condenser clear.
System shuts down on low refrigerant pressure	Low refrigerant charge	Consult a qualified refrigeration technician
	Low head pressure	
	Restriction to refrigerant flow in refrigerant loop	
	Ambient air temperature too cold (air-cooled)	Find warmer source of air
	Condenser cooling water temperature too low (water-cooled)	Find warmer source of water
	Air in process loop	Purge – refer to start up procedures in manual
	Water/glycol solution foaming	Add a defoaming agent
System shuts down on freezestat	Attempting to operate below setting (45°F/7°C)	Standard operating range is 50-65°F
	Defective freezestat	Inspect/replace as required
	Low water flow	Increase water flow/remove restrictions
	Low water flow causing icing in condenser (water-cooled)	Consult a qualified refrigeration technician

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Refrigeration/Chiller Loop

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Problem	Possible Cause	Corrective Measure
Chiller does not keep up with load	Hot gas bypass valve stuck open	Consult a qualified refrigeration technician
	Condenser tubes limed over/blocked (water-cooled)	
	Poor condensing	
	Over condensing	
	Chiller not started correctly (before heat generating process)	Chiller should be the first piece of machinery started in the process
	Scroll compressor rotating in the wrong direction	Switch any two incoming power connections to correct phase issue
	Chiller undersized for load	Consult Mokon application engineer for assistance with determining proper size chiller
System does not come down to set point temperature	Lack of refrigerant	Consult a qualified refrigeration technician
	Dryer clogged	
	Too large process load	
	Evaporator freezing	
	Restrictive process or process connections	Remove restrictions
	Faulty Thermocouple or RTD	Inspect/replace component

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