Affinity®

Trouble Shooting Guide

PAA, 3-phase

(D4977)

Lydall®

Trouble Shooting Guide

Problem	Possible Cause	Possible Remedy
Unit does not start	No power to unit, breaker tripped	Verify supply power is on, close breaker after correcting fault
	Low voltage	Check electrical service to unit
	Refrigeration high pressure cut-out tripped	Will automatically reset after correcting fault
	Loose wire	Check wiring after disconnecting power
	Defective contactor or coil	Repair or replace contactor or coil
	Loss of refrigerant	Repair leak, recharge with type and amount of refrigerant specified on serial tag
	Compressor damaged	Replace compressor - Call Affinity
Unit does not cool	Compressor internal thermostat tripped	Allow time for compressor to cool and automatically reset
	Compressor damaged	Replace compressor - Call Affinity
	Room temperature exceeds 85EF, causing cooling capacity to be derated	Improve ventilation/air-conditioning to maintain room temperature < 85EF
	Evaporator damaged	Call Affinity
	Microprocessor failure	Replace microprocessor
	Cooling load exceeds capacity of unit	Reduce cooling load
	Microprocessor programmed incorrectly	Call Affinity
	Loss of refrigerant	Locate and repair leak, recharge with type and amount of refrigerant specified on serial tag
	Refrigeration solenoid coil failure	Replace solenoid coil

Problem	Possible Cause	Possible Remedy
Unit does not cool	Solid State Relay failure	Replace Solid State Relay
	Solenoid valve stuck in closed position	Repair or replace solenoid valve
	Defective refrigeration low pressure cut-out	Repair or replace low pressure cut-out
	Dirty condenser fins	Gently clean condenser fins
	Malfunctioning thermal expansion valve	Replace thermal expansion valve
	Pump damaged, loss of flow	Replace pump
	Hot gas bypass valve setting too high	Call Affinity
	Hot gas bypass valve stuck open	Repair or replace valve
Pump leaks	Faulty pump casing	Replace pump assembly
	Shaft seal damaged	Replace shaft seal
	Pump housing O-Ring damaged	Remove pump and rebuild
	Improper fluid	Call Affinity
Excessive noise on Start-Up	Low voltage	Check electrical service to unit
	Wrong voltage taps used on transformer	Connect to proper taps
	Contactor or coil failure	Replace contactor or coil
Level light remains on	Low coolant level	Check for leaks, then fill reservoir
	Reservoir level switch float stuck	Clean reservoir and level switch
	Time delay relay malfunction (when used)	Replace time delay relay
	Level switch failure	Replace level switch

Problem	Possible Cause	Possible Remedy
Level light does not work	Time delay relay (where used)	Wait for time delay relay to time out
	Lamp burned out	Replace lamp
	Level switch failure	Replace level switch
Pump motor overheats	Improper voltage supplied to unit	Correct voltage
Noisy compressor	Flooding of refrigerant into crankcase	Warm crankcase if unit has been off for a long period or has been left in a cool ambient for more than a few hours
	Worn compressor	Replace compressor - Call Affinity
	Refrigeration high pressure cut-out set too high	Adjust setting
	Refrigeration low pressure cut-out set too low	Adjust setting
Fault light remains on	Low coolant flow	See Problem; Low coolant flow
	No coolant flow	See Problem' No coolant flow
	Flow switch sticking	Disassemble flow switch, clean and reinstall or replace
	Dirty condenser	Clean condenser
	Air flow to condenser blocked	Provide free space to allow air flow
	Room temperature exceeds 85EF, causing cooling capacity to be derated	Improve ventilation/air-conditioning to maintain room temperature < 85EF
Low coolant flow	Pump suction strainer clogged	Remove strainer, clean and reinstall or replace strainer
	Pump rotating backwards	Reverse one electrical phase

Problem	Possible Cause	Possible Remedy
Low coolant flow (continued)	Flow control valve not fully open	Open flow control valve
	Low coolant level in reservoir	Fill reservoir to proper level
	Pressure relief valve set too low (unless not adjustable)	Adjust pressure relief valve to specifications
	Restriction in coolant lines external to chiller	Eliminate restriction in coolant lines external to chiller
	Frozen evaporator	Call Affinity
	Flow switch clogged	Disassemble flow switch, clean and reinstall or replace
No coolant flow	Pump not primed	Prime pump
	Pump suction strainer clogged	Remove and clean strainer, then reinstall or replace
	No coolant in reservoir	Check for leaks, then fill reservoir
	Pump overload tripped	Wait 5 minutes for overload to reset
	Pump motor shaft bound to seal	Replace pump or renew seal
	Pump housing torqued improperly	Remove pump, torque to specification, test, and reinstall
	Damaged pump	Replace pump
	Frozen evaporator	Call Affinity
	Clogged line or closed valve in external piping	Check external piping for dirt or closed valve
	Leak(s) in external piping	Check for leaks and repair if needed
Too much recirculating pressure to process	Flow control valve set too high	Throttle flow control valve
	Pressure relief valve set too high (unless not adjustable)	Adjust pressure relief valve

Problem	Possible Cause	Possible Remedy
Unit shuts down during operation	Refrigeration high pressure cut-out set too low	Adjust and reset refrigeration high pressure cut-out
	Refrigeration low pressure cut-out set too high	Adjust and reset refrigeration low pressure cut-out
	Excess refrigerant charge	Remove excess refrigerant and charge with refrigerant to specifications on serial tag
	Dirty condenser	Gently clean condenser
	Pump thermal overload set too low	Adjust and reset pump thermal overload relay to specifications, or replace if faulty
	Pump overload tripped	Determine cause of trip, if pump is damaged, repair or replace
	Low voltage	Check electrical service to unit
Compressor turns on and off automatically	Discharge pressure too high	Check condenser for restrictions
	Condenser fan(s) not on	Check motor(s) and wiring
	Refrigeration high pressure cut-out set to automatic	Check settings
Compressor does not run	Compressor internal thermostat tripped	Allow time for compressor to cool and automatically reset
	Motor burned out	Replace - Call Affinity
Temperature display reads incorrectly	Loose wire	Disconnect power to unit, then check wiring
	Broken RTD	Replace RTD
	Microprocessor failure	Replace microprocessor

Problem	Possible Cause	Possible Remedy
Microprocessor does not work	5 second delay has not timed out	Wait at least 5 seconds after turning on
	Microprocessor programmed incorrectly	Reprogram microprocessor - Call Affinity
	Microprocessor failure	Replace microprocessor