CLIMA COOL®

A **NIBE** GROUP MEMBER

CoolLogic TOUCH CONTROLLER

TROUBLESHOOTING GUIDE

For All Air-Cooled, Water-Source, & Remote Air-Cooled Modules

Model: CoolLogic Touch

CoolLogic TOUCH™

Model:
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Touch

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Communication and Power

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NO COMMUNICATION BETWEEN THE COOLLOGIC TOUCH CONTROLLER AND MODULES

- Verify that all ethernet connections are secure and connectors properly terminated between the modules and CoolLogic Touch panel.

- Ensure the Ethernet switch is powered on in the CoolLogic panel.

- Ensure the bank and modules are unlocked using the factory-provided unlock code.

- Ensure bank controller is broadcasting the correct Device ID.

NO COOLLOGIC/MODULE CONTROLLER OPERATION OR LED INDICATORS PRESENT

- Check power to controller. If 24V is present, check internal fuse to ensure it is intact. If needed, replace the fuses.

Figure 1: Fuses

2.5A Fuse for
Controller Power

4A Fuse for I/O Bus
Edge Connector
to Downstream
Expanders
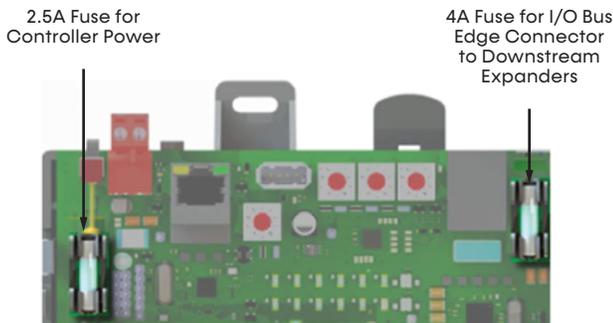
Symptoms of a Blown Fuse

- **Power fuse:** the LED is not lit.

- **I/O bus edge connector fuse:** the LED is not lit on downstream expanders connected to the edge connector.

NOTE: If the LS-1628u's power fuse blows but not the I/O bus edge connector fuse, the LS-1628u will be off but not the downstream expanders.

If you suspect a fuse is blown, remove the fuse as described and use a multimeter to verify. If the fuse is blown, attempt to determine why it blew before replacing it. Check the power wiring polarity of the LS-1628u and any other devices that share the power supply. Use the same polarity for all of them.

The fuses are fast-acting, 5mm x 20mm glass fuses that you can purchase from one of the following vendors.

Table 1: Fuse Vendors and Part Numbers

Manufacturer	Mfr. Part # for 2.5A Fuse	Mfr. Part # for 4A fuse
Littelfuse	021702.5HXP	0217004.HXP
Bussmann	not specified	S500-4-R
Belfuse	5SF-2.5-R	5SF 4-R
Optifuse	FSD-2.5A	FSD-4A

Replace a Fuse

1. Turn off the LS-1628u's power switch.

2. Remove the red power connector.

3. Remove the blue output connectors, if present.

Insert a flathead
screwdriver about 1/8
inch (.32 cm) to pry up
on the cover
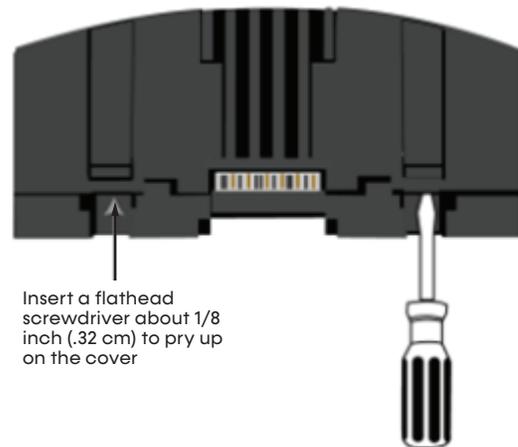
4. On both ends of the LS-1628u, insert a small flathead screwdriver as shown, and then gently pry up on the cover until it is released from the base.

5. Remove the cover from the base.

6. Remove the blown fuse.

7. Snap the new fuse into the fuse holder.

8. Replace the LS-1628u cover.

| Model:
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Touch | **LED Identification** |

LS-1628u COMMUNICATION LEDs

Figure 2: Communication LEDs

When blinking:
Rx indicates the port is receiving data
Tx indicates the port is transmitting

Programmable indicator
Yellow indicates a valid Ethernet connection
Blinking green indicates activity
See table
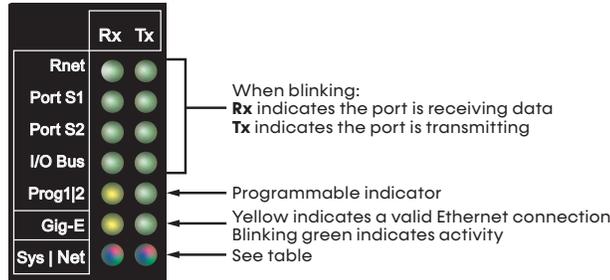
Use the following tables for troubleshooting the communication LEDs:

Table 2: Net (Network Status) Tricolor LED

Color	Pattern	Condition	Message in Module Status	Possible Solutions
Red	On	Ethernet connection problem	No Ethernet Link	Connect Ethernet cable
				Check other network components
Red	1 blink	One of the following BACnet/IP (Ethernet) DLL reporting issues: Unable to create tasks Unable to open socket for BACnet port	BACnet/IP error	Cycle power
Red	2 blink	Current default IP address does not match the current rotary switch setting	Default IP address mismatch	Use the controller setup **Ports** tab to set the IP address
				Cycle power to accept new IP address
				Change rotary switches to match current default IP address
Blue	On	Port communication firmware did not properly load	ARCNET/MSTP firmware error	Change rotary switch to select valid protocol
		Port communication firmware is not running		Cycle power
		Invalid protocol selected		
Blue	1 blink	Invalid address selected for protocol	Invalid address selection for ARCNET/MSTP	Change rotary switch to select valid protocol
Blue	2 blink	Controller has the same MAC address as another connected device	Duplicate address on MSTP	Change rotary switch to unique address
Blue	3 blink	Controller is the only device on the network	No other devices detected on ARCNET/MSTP	Check that network cable is properly connected
				Check that baud rate is correct
Blue	4 blink	Excessive errors detected over 3 second period	Excessive communication errors on ARCNET/MSTP	Check that network cable is properly connected
				Check that baud rate is correct
Blue	5 blink	ARCNET traffic overload possibly due to circular route or excessive COVs (change of values)	Event System Error - FPGA RX FIFO full	Check the network configuration for a circular route
				Increase the time between COVs to reduce excessive COV traffic
Green	On	All enabled networks are functioning properly	No errors	No action required
Magenta		Operating system changes are downloading **WARNING**: This process could take several minutes. Do NOT power off the controller during the download.	N/A	No action required

LED Identification and Loss of Configuration

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Table 3: Sys (System Status) Tricolor LED

Color	Pattern	Condition	Message in Module Status	Possible Solutions
Red	2 blink	Restarting after an abnormal exit	Auto restart delay due to system error on startup	After the 5-minute delay expires, if the condition occurs again, then cycle power
Red	4 blink	Firmware image is corrupt	Firmware error	Download driver again
Red	Fast blink	Firmware error caused the firmware to exit and restart	Fatal error detected	No action required
Green	1 blink	No errors	Operational	No action required
Green	2 blink	Driver download is in progress	Download in progress	No action required
Green	3 blink	BACnet Device ID is not set	Download required	Download the controller
Green	Fast blink	Installation of recently downloaded driver is in progress	N/A	No action required
Blue	On	Controller is starting up	N/A	No action required
Blue	Slow blink	Linux (operating system) is starting up	N/A	No action required
Blue	Fast blink	Linux is running but it could not start the firmware application	No errors	No action required
Magenta		Operating system changes are downloading **WARNING**: This process could take several minutes. Do NOT power off the controller during the download.	N/A	No action required

LOSS OF CONFIGURATION DATA OR LOSS OF PROGRAMMING

- If you suspect there is a loss of programming or controller memory, perform a MODSTAT on the controller through the touchscreen.

    - If the MODSTAT shows a driver with a lower revision than **drv_fwex_107-06-2079.driverx**, contact ClimaCool support to get instructions on updating the controller driver.

- Check the last time the controller was archived in the **SYSTEM SETUP > CONTROLLER CONFIGURATION** menu. If the settings were not archived when they were changed, the controller loses them after a loss of power and reverts to factory settings.

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Compressors

COMPRESSOR FAIL STATUS WITH NO ACTIVE ALARM

- Check the **SYSTEM SETUP > MODULE CONFIGURATION** menu to ensure the compressor is not disabled in software.

PID NOT COUNTING UP

- Check that the setpoint and supply temp are displaying the correct differential to increase the PID count accordingly.

- Is the LOCAL-OFF-REMOTE switch in the **LOCAL** or **REMOTE** position? If in the **REMOTE** position, check LVTB2 terminals 37 and 38 to ensure a jumper or closed relay contact is present.

- If the 3-way switch is in the **LOCAL** position, check IN-17 at the bank controller to confirm circuit closure. If you suspect the input or switch to be bad, remove the input wiring from the controller and, with the switch set to LOCAL, you should measure close to 0.1 ohms. If you measure open loop, then the switch is not making contact.

- If the 3-way switch is in the **REMOTE** position, check IN-16 at the bank controller to confirm circuit closure. If you suspect the input, switch, or relay to be bad, remove the input wiring from the controller and with the switch set to **REMOTE** and relay closed you should measure close to 0.1 ohms. If you measure open loop, then the switch or relay is not making contact.

- Is the blue light lit on the front of the CoolLogic controller? Check for 24VAC at the blue light.

- Check **SYSTEM SETUP > CHILLER CONTROL SOURCE** for proper configuration.

- KEYPAD - Set to **ON** to enable the chiller (3-way switch in **LOCAL** position).

- DIGITAL INPUT and 3-way switch in the **REMOTE** position - requires circuit closure through LVTB2, terminals 37 and 38.

- BAS and 3-way switch in the **REMOTE** position - requires enabling chiller from the building automation system through software; also requires circuit closure through LVTB2, terminals 37 and 38.

- Confirm there are no active bank-level alarms - Phase, Flow, or bank temperature (these are auto reset). Red fault light will be lit.

PID COUNTS UP PARTIALLY AND STOPS

- Some modules in the bank are not available to operate

  - These modules may be in an unload state - See the module status menu for the module in question by selecting the module from the Home screen. A Retry Status point displays a green light if either compressor or the entire module is currently in an unload state.

  - These modules may be in alarm.

  - These modules show compressor STATUS as **ON** but are not running. (Current switch is detecting current-Look for crankcase heater active and current switch sensing this CCH current) If system thinks the compressor is on, it is considered 'not available'.

  - Compressors in bank are disabled- See **SYSTEM SETUP > MODULE CONFIGURATION** menu to confirm no compressors are disabled.

PID COUNTING UP BUT COMPRESSORS NOT STARTING

- Are compressor toggle switches in the **OFF** position? Turn switches **ON**.

- If the motorized valve end switch electrical circuits do not close when the valves are commanded to open, check that the motorized valve end switches are mechanically opening and confirm that the rotary dials point to the right side between 12 and 6 o'clock when open. If so, check the corresponding input at the LS1628u controller for the valve in question. (See Motorized valve troubleshooting Section below) **NOTE: MV status can also be checked in the STATUS menu.**

  - Also, verify that the controller output configuration switches match the wiring diagram for the motorized valves. A UO can be either set for **Binary (Dry Contact)** or **Analog** and if analog is set the lower switch should be set for **0-10Vdc**.

Compressors

- Are compressor manual reset high pressure switches tripped? Reset push button on switch and reset NO RUN alarm on the touchscreen.

- Is the compressor motor protector safety circuit open?

- Is the PID counting up and resetting back to 0? Look for intermittent loss of flow, phase alarms, or header high/low temperature alarms. Also, look for loose electrical connections in the local or remote enable circuit and 3-way switch (based on the current switch position).

- Are compressors in alarm? Review the ALARM menu for ACTIVE alarms.

- Are compressor UNLOADS active? Review UNLOAD status menu.

- Check Compressor Fuses or Circuit breakers to be sure all three legs of power are present.

COMPRESSORS IN CERTAIN MODULES NOT STARTING

- See **SYSTEM SETUP > MODULE CONFIGURATION** menu to confirm that module is not disabled.

- Confirm those respective compressors are not in alarm.

- Confirm those respective compressors do not show a status of **ON** in the module's status screen.

- Confirm those respective compressors are not disabled in the MODULE CONFIGURATION menu.

- Compressors that shut off for no apparent reason when the set point is not yet reached may be entering an UNLOAD state. See module status menu to confirm. Three UNLOADS of the same fault type within 2 hours generates an alarm. This is the three-strike rule. If no UNLOADS are present, this could be a routine mode change into HEAT RECOVERY mode.

COMPRESSORS STARTING BUT VERY NOISY

- Confirm all three legs of power are present. A compressor running in a single-phase condition is very noisy and sounds like it has mechanical damage.

- Check the oil sight glass at the compressor and ensure you can see the oil level present in the sight glass.

- Confirm the compressor is running in the right direction. Any two leads can be reversed to change the rotation.

- Confirm the saturated condensing temperature is above 85°F (29.4°C). A low compression ratio causes the scroll set to sit incorrectly, creating a noisy condition. Low entering condenser water temperature causes this condition.

- Confirm the compressor is not running in a flooded state. The minimum suction superheat is 10°F (-12.2°C); the discharge gas superheat should be 45°F (7.2°C) or above.

- Confirm that the compressor is operating within its operational envelope. See compressor manufacturer application guide for the operational envelope of respective compressor model.

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Water Flow and Refrigerant

LOSS OF FLOW ALARMS

- Dirty or plugged 40-mesh strainers.

- Minimum differential water pressure for a given water loop is not being met. Improper control of pump and/or system bypass valves.

- Response time of pump control or system bypass control is too slow when additional modules are indexed open.

- There is no system-side bypass valve control in place, and load-side valves are all, or mostly, 2-way valves at the minimum position or closed.

- System side bypass is not properly controlled.

- The pumping system cannot adequately deliver the required GPM.

  Also, check formatting. Ensure that there is room for the text to continue on the first row

LOW OR HIGH LEAVING WATER TEMPERATURE ALARMS

- Dirty or plugged 40-mesh strainers.

- Low water flow.

- Low water loop volume.

- Low (cooling mode) or High (heating mode) entering water temperature.

- The load-side bypass is too close to the chiller/heater, reducing loop volume.

- Source loop not absorbing/rejecting heat adequately.

- Pump or system bypass control response time is too slow when additional modules are indexed and open.

- There is no system-side bypass valve control in place, and load-side valves are all, or mostly, 2-way valves at the minimum position or closed.

- Entering evaporator water temperature too high, causing overcapacity on condenser loop.

LOW OR HIGH REFRIGERANT PRESSURE ALARMS

- Dirty or plugged 40-mesh strainers.

- Low water flow.

- Low (cooling mode) or High (heating mode) entering water temperature.

- High entering Chilled Source Loop temperature (Source loop is chilled water in SHC-HP Heat mode and SHC-HR Heat Only modes).

  Excess heat in chilled/Source water loop increases the heating capacity of the module and requires additional flow through the heating loop to prevent alarms.

- The load-side bypass is too close to the chiller/heater, reducing loop volume.

- Pump or system-bypass control response time is too slow when additional modules are indexed and open.

- There is no system-side bypass valve control in place, and load-side valves are all, or mostly, 2-way valves at the minimum position or closed.

- Fouled heat exchanger - Check HX approach temperature (5 to 6°F [-15 to -14.4°C] with both compressors on, at nominal flow rates)

- Low refrigerant pressure - Undercharge - Check Sub-cooling (5 to 15°F [-15 to -9.4°C]). TXV closed or not opening adequately- Check suction superheat Target 10 to 14°F (-12.2 to -10°C) to keep suction pressure elevated.

- High refrigerant pressure over charge - Check Sub-cooling (5 to 15°F [-15 to -9.4°C]). If above 15°F (-9.4°C), check suction superheat (10 to 14°F [-12.2 to -10°C). Check discharge superheat - minimum 50°F (10°C) with a max discharge line temperature of 220°F (29.4°C)

  104.4. TXV may not be opening.

- Dirty Condenser coil (UA only)

- Fans not running or running backwards (UA only)

Water Flow and Refrigerant

SENSOR OUT OF RANGE (OOR) ALARMS (WATER AND REFRIGERANT TRANSDUCERS)

Read the alarm:

- MxCx- p1=pressure-discharge), (p2=pressure-suction), (t1=temperature-discharge), t2=temperature- suction)

- Sensor itself or wiring to the sensor is open or shorted. Controller is reading an input voltage of < 0.5VDC or > 4.5VDC.

- **Transducers:** Check for 5VDC supplied to the sensor at + (red) and GND (black), next check for proper signal range of 0.5 to 4.5VDC at output of the sensor (output wire will be green or white) and GND (black), then confirm this return signal is between 0.5VDC and 4.5VDC (corresponding to the pressure present to the transducer) at the input of the control board.

  - Differential Water flow sensor (DPT) OOR= <-5.43 PSID or > +48.95 PSID

  - Refrigerant discharge pressure OOR= <-55 PSIG or >+650 PSIG

  - Refrigerant suction pressure OOR= <-20 PSIG or >+250 PSIG

- **Thermistors (10K):** Check resistance value of temperature sensor and confirm reading accurately reflects the appropriate temperature range in which it is measuring. OOR is <597 OHMs and >489,981 OHMs (or <-55°F [-48.3°C] to >+250°F [121.1°C]).

Display

COOLLOGIC TOUCH TOUCHSCREEN DISPLAY

- Screen not powering up

  - Check for 24VDC at the power plug at the back of the touchscreen. If voltage is present, check polarity and that the terminations are correct.

- **WAITING FOR CONNECTION...** displayed.

  - Verify ethernet connection between touchscreen and LS-1628u bank controller.

- **NO SCREEN FILE, DOWNLOAD MEMORY** displayed

  - Power cycle the touchscreen. If the error still displays, contact ClimaCool support.

- **(???????????)** Displayed under a point value in touchscreen.

  - The point displaying the question marks is not mapped to the internal program point. Point may not be used for the installed program. If this point use is required, consult factory.

Alarms and Motorized Water Valves

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NO RUN ALARM

- **MxCx_no_run_5** means module X compressor X did not run when commanded. The additional characters AFTER the _5 have no meaning and are to be ignored.

- **_5** in the alarm name means it is a Module-level alarm; whereas, **_1** in the alarm name means it is a Bank level alarm. Any characters after a _5 or _1 have no meaning and are to be ignored.

- The NO RUN alarm means there was a command for that compressor to run at B01 or B02 respectively, and a running status was not sensed by the status circuit. Refer to the wiring diagram included in the module panel for further details on status circuit wiring.

The causes for a NO RUN alarm in order of likelihood are as follows:

Compressor Does not Start

- **Manual reset high pressure switch is tripped:** even if the alarm is reset in the touchscreen, the MANUAL reset high pressure switch still requires resetting to put the circuit back into operation. If not reset, the NO RUN alarm persists.

- **Compressor ON/OFF switch in the OFF position:** This breaks the control circuit and does not allow 24VAC control voltage to reach the contactor coil.

- **Blown compressor fuses:** This prevents line voltage from reaching the compressor, not allowing it to start and run.

- **Compressor motor protector open:** This is the CPM module located under the compressor motor cover. This is automatically reset and trips when the motor and/or discharge temperature gets too high.

Compressor Starts and Runs but Status is not Sensed

- If the compressor starts and runs, but a NO RUN alarm is triggered 600 seconds later, it shuts off due to not sensing status. This results from the status circuit not electronically closing when the compressor is energized.

ClimaCool uses either an auxiliary contact mounted to the side of the compressor contactor, or more recently, a current switch that senses amperage (>0.5 amps) through one leg of the compressor contactor to close its internal contact. Both methods serve the same function and reside in the same location in the status circuit.

MOTORIZED VALVE OPERATION AND ALARM TROUBLESHOOTING

The causes for motorized valve modulation are below:

- **Head pressure control:** Anytime the refrigerant discharge pressure falls below the set point of 280 PSIG (adjustable), the condenser motorized valves modulate. This occurs when the entering condenser water temperature is low.

- **Load Limiting:** Anytime the refrigerant suction pressure rises above 135 PSIG (adjustable), the evaporator motorized valves modulate.

Motorized valve alarm troubleshooting: Motorized valve end switches used for a specific active mode did not electrically close. It is essential to note which motorized valves are wired to which inputs on the wiring diagram.

- If the appropriate input does not produce the correct state for the active mode, either the end switches require adjustment, or there is a loose connection or wiring issue.

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Alarms and Motorized Water Valves

- If any of the readings are not accurate, determine which actuator end switch is not closing and confirm the adjustment of the mechanical end switch.

With the valve mechanically closed (fully clockwise), the rotary end switch dial should point to the 11:00 o'clock position. S1 to S3 will be electrically open. As the actuator rotates counterclockwise to open, the end switch rotary dial rotates clockwise. Once the rotary dial arrow passes 12:00 o'clock position clockwise, the end switch contact electrically closes S1 to S3. This contact closure is required to prove VALVE OPEN status. See Figure 3.

Figure 3: MWV Operation
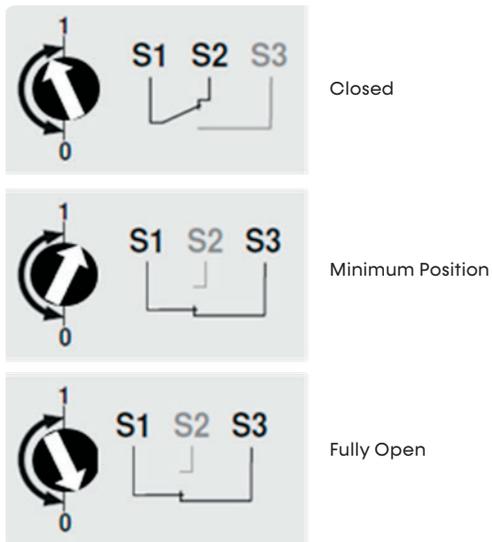
If a proportional motorized valve is not opening beyond minimum position when the discharge pressure rises above the LOW HEAD PRESSURE SETPOINT, the compressor ON status may not be sensed. Check the **COMPRESSOR STATUS** on the Home screen menu.

This could also be caused by a loose electrical connection of the signal wire to the actuator. The above can also be true for an evaporator motorized valve using the LOAD LIMITING routine where the system uses the HIGH SUCTION PRESSURE SETPOINT pressure to modulate the evaporator motorized valve when the refrigerant suction pressure is HIGHER than this set point.

As an alternative to the voltage feedback troubleshooting methods described, this feedback circuit is also displayed on the CoolLogic Touch under **STATUS** in the UA/UW I/O MENU.

ALARM DESCRIPTIONS

ClimaCool alarms are divided into two main categories, Bank Level Alarms and Module Level Alarms.

The alarms are displayed on the touchscreen in plain English text or as the Alarm BACnet point name of that alarm. Once the 100 most recent alarms buffer is full and the 101st (and so on) alarms are displayed, the Alarm BACnet point name may be displayed. The respective alarm list for that product line can be used to determine the ALARM NAME, and TRIP CONDITION from the Alarm BACnet point name. See the respective alarm codes list for that product type to find the BACnet point name for each plain English text alarm name.

When the Alarm BACnet point name is displayed, all master-level alarms end in a _1, and all module-level alarms end in a _5. Sometimes, additional characters follow the _1 or _5, but these extra characters are to be ignored as they have no meaning in the alarm nomenclature.

The root cause of the encountered alarms should be intuitive to most seasoned technicians. Alarms that are less easily understood are detailed in this document. For any additional questions, contact the ClimaCool factory.

Alarms

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Table 4: CoolLogic Touch Alarms

Alarm Name	Input Type	Self Reset	# Trips to Alarm	OFF	RUN	Trip Condition
No Modules Available	calc	Yes	1	Yes	Yes	Number of modules available = 0
No Flow	psi	No	1	No	Yes	"Run Commanded" AND flow differential pressure < trip point for any active loop
Loop1 Outlet Out of Range	temp	Yes	1	Yes	Yes	temp > 250F OR temp < -55F
OAT Out of Range	temp	Yes	1	Yes	Yes	temp > 250F OR temp < -55F
Loop1 Inlet Out of Range	temp	Yes	1	Yes	Yes	temp > 250F OR temp < -55F
Loop2 Flow Out of Range	psi	Yes	1	No	Yes	"Run" ACTIVE AND (psi > max trigger OR psi < min trigger) AND "Water-source unit" selected
Loop1 Flow Out of Range	psi	Yes	1	No	Yes	"Run" ACTIVE AND (psi > max trigger OR psi < min trigger)
Low Ambient Load Limit	temp	Yes	1	No	Yes	"Run" ACTIVE AND "Heat Mode" ACTIVE AND "Air-source unit" ACTIVE AND (OAT < 45F) AND ("Hot water SP" > "Limited Heating SP")
Loop2 Outlet Out of Range	temp	Yes	1	Yes	Yes	temp > 250F OR temp < -55F
Loop2 Inlet Out of Range	temp	Yes	1	Yes	Yes	temp > 250F OR temp < -55F
Cool Logic Lockout	calc	No	1	Yes	Yes	lockout code != factory unlock
SWRT_LO	temp	Yes	1	No	Yes	Loop 2 Leaving Temp Too Low > 10 seconds
SWST_HI	temp	Yes	1	No	Yes	Loop 2 Entering Temp Too High > 10 seconds
SWST_LO	temp	Yes	1	No	Yes	Loop 2 Entering Temp Too Low > 10 seconds
SWRT_HI	temp	Yes	1	No	Yes	Loop 2 Leaving Temp Too High > 10 seconds
CHRT_LO	temp	Yes	1	No	Yes	Loop 1 Entering Temp Too Low > 10 seconds
CHST_HI	temp	Yes	1	No	Yes	Loop 1 Leaving Temp Too High > 10 seconds
CHST_LO	temp	Yes	1	No	Yes	Loop 1 Leaving Temp Too Low > 10 seconds
CHRT_HI	temp	Yes	1	No	Yes	Loop 1 Entering Temp Too High > 10 seconds
RDS Shutdown	dry contact	Yes	1	Yes	Yes	"RDS Enable" AND "RDS Alarm/Shutdown" ACTIVE

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Alarms

Table 5: Module Alarms

Alarm Name	Input Type	Self Reset	# Trips to Alarm	Lockout COMP	Lockout Module	OFF	RUN	Trip Condition
M"X" Compressor "X" EEV Comm Loss	calc	No	3	Yes	No	No	Yes	EEV Status Lost > 5 minutes
M"X" Compressor "X" NO-Run	calc	No	3	Yes	No	No	Yes	Compressor Commanded AND no "Run" Status feedback > 3 minutes
M"X" Compressor "X" High Discharge Temp	temp	No	3	Yes	No	No	Yes	Compressor Commanded AND (Discharge Temp > Trip point) > 15 seconds
M"X" Compressor "X" Low Suction Pressure	psi	No	3	Yes	No	No	Yes	Compressor Commanded AND (Suction psi < Trip point) > Suction psi delay
M"X" Compressor "X" High Pressure	psi	No	3	Yes	No	No	Yes	Compressor Commanded AND (Discharge psi > Trip point)
M"X" Compressor "X" Low Disc Pressure	psi	No	3	Yes	No	No	Yes	Compressor Commanded AND (Discharge Temp < Trip point) > 15 minutes
M"X" Compressor "X" High Suction Press	psi	No	3	Yes	No	No	Yes	Compressor Commanded AND (Suction psi > Trip point) AND Loop1 valve at minimum position > 15 minutes
M"X" Loop"X" Leaving Temp Out of Range	temp	Yes	1	Yes	No	Yes	Yes	temp > 250F OR temp < -55F
M"X" Loop"X" Entering Temp Out of Range	temp	Yes	1	Yes	No	Yes	Yes	temp > 250F OR temp < -55F
M"X" OAT Out of Range	temp	Yes	1	Yes	No	Yes	Yes	temp > 250F OR temp < -55F
M"X" Phase Loss	dry contact	No	3	Yes	Yes	No	Yes	Chiller Run OR C"X" in Manual mode AND phase status FALSE > 25 seconds
M"X"C"X" Discharge Pressure OOR	psi	Yes	1	Yes	No	Yes	Yes	psi > 650 OR psi < 0
M"X"C"X" Discharge Temperature OOR	temp	Yes	1	Yes	No	Yes	Yes	temp > 280F OR temp < -55F
M"X"C"X" Suction Pressure OOR	psi	Yes	1	Yes	No	Yes	Yes	psi > 250 OR psi < 0
M"X"C"X" Suction Temperature OOR	temp	Yes	1	Yes	No	Yes	Yes	temp > 250F OR temp < -55F
M"X"C"X" Air Coil Line Temperature OOR	temp	Yes	1	Yes	No	Yes	Yes	temp > 250F OR temp < -55F
M"X"C"X" Liquid Line Temperature OOR	temp	Yes	1	Yes	No	Yes	Yes	temp > 250F OR temp < -55F
M"X"C"X" Liquid Line Pressure OOR	psi	Yes	1	Yes	No	Yes	Yes	psi > 650 OR psi < 0
M"X" Loop"X" Low Water Temp	temp	No	3	Yes	Yes	No	Yes	Compressor Commanded AND (Leaving temp < Trip point) OR (Entering temp < Trip point) > 5 minutes
M"X" Loop"X" High Water Temp	temp	No	3	Yes	Yes	No	Yes	Compressor Commanded AND (Leaving temp > Trip point) OR (Entering temp > Trip point) > 5 minutes
M"X" XP1 COMM FAIL	calc	Yes	1	Yes	Yes	Yes	Yes	RDS Shutdown ACTIVE
M"X" Module Flow	psi	No	3	Yes	Yes	No	Yes	"Run" AND (C"X" requested OR C"X" Manual Command) AND (Loop1 Valve Open AND Loop2 Valve Open AND No flow) > 5 seconds
M"X" Loop"X" Motorized Valve	0-10V	No	3	Yes	Yes	No	Yes	(Valve Command > min voltage) AND (Valve Feedback Status < min voltage) > 140 seconds
M"X" High OAT Shutdown	temp	Yes	1	Yes	Yes	Yes	Yes	Heat mode ACTIVE AND "Air-source" unit type selected AND (OAT > trigger point) > 2 minutes
M"X" Low OAT Shutdown	temp	Yes	1	Yes	Yes	Yes	Yes	Heat mode ACTIVE AND "Air-source" unit type selected AND (OAT < trigger point) > 2 minutes
M"X" Communications	calc	Yes	1	Yes	Yes	Yes	Yes	CoolLogic Heartbeat STALE > 2.5 minutes
M"X" Module Lockout	calc	No	1	Yes	Yes	Yes	Yes	lockout code != factory unlock

Notes | Model:
CoolLogic
Touch

Model:
CoolLogic
Touch

Revision History

Date	Item	Action
08/28/24	First Published	

CLIMA COOL®

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