

RE: ASLLC.2 Lead/Lag Alarm Configuration Detail for Software Rev 13B46

NOTE: All alarms are Form C Contact type

Overview: The AIRSYS ASLLC.2 provides for 3 input alarms and 4 output alarms. All alarms are OPTIONAL; however, they are all active. This means for the input alarms the **default** “non-alarm” state must be supplied otherwise the system will believe there is an alarm condition and respond according to the descriptions below. This document covers alarm detail for software revision **13B46** and higher. Contact the HVAC Support line if you need information on earlier software revisions: HVACSupport@Tempestelecom.com

Three Alarm Inputs:

- Smoke/Fire:** When the system sees a Smoke/Fire alarm all fans will shut down and the dampers will close. This is to prevent the AC system from feeding a potential fire and literally “fanning the flames”
- Gen Run:** When the system is being told that there is a generator running (alarm condition) then the outside air dampers will close and only one HVAC system will be allowed to engage in Mechanical Cooling. The dampers close to prevent the free cooling function from pulling diesel fumes into the shelter. A second HVAC system is prevented from engaging in mechanical cooling to ensure the generator is not overstressed by having to endure the turn-on spike of a second HVAC system while already running the site load and one HVAC system
- Prime Power Outage:** This signal is ONLY relevant when a DC fail-Over box (ASPCB.2) is part of the config. This signal comes from the DC fail-over system and wires directly into the ASLLC.2 controller. When this signal is received the system will go into a low power Supply Fan only mode. In which case if cool enough outside will continue to cool the site with outside air. If warmer outside the system will enter into an emergency ventilation mode at > 85 F inside temp as soon as Toutside < Tinside.

Four Alarm Outputs:

- Temp Alarm:** Factory set to trigger 18°F above Set point (77 + 18 = 95°F). OR 27°F below set point. Set point can be changed via the PLD user interface
- HVAC 1 Alarm:** Indicates WPU1 Mechanical Cooling will not come on without an on-site service visit. Power cycling the ASLLC.2 controller box assembly (off then on via the 240 VAC breaker in the controller) clears the lockout condition.
- HVAC 2 Alarm:** Indicates WPU2 Mechanical Cooling will not come on without an on-site service visit. Power cycling the ASLLC.2 controller box assembly (OFF then ON via the 240VAC breaker in the controller) clears the lockout condition.
- Second Compressor Run Alarm:** Triggers whenever both the Lead & Lag units are engaged in Mechanical cooling

How can I find software Revision?

Software revision is easily accessible through the PLD user interface

Accessing the C Menu

From the main menu use the **Up** or **Down** buttons until the PLD displays 5 E t , press the **Sel** button to enter the C menu. Then press the **Down** button to display the parameters in the order listed in the table below.

Parameters on Maintenance Menu (C)

Ref	Display	R/W	Description	Unit	Range	Default
....	
C-15	UE 1	R	Software version 1			13
C-16	UE 2	R	Software version 2			47

Software Revision is 13 B 47

Alarm Code Mapping

Code	Description	Output Delay	Alarm Contact Reporting				PLD display
			High/low temp. Alarm	HVAC 1 Major Alarm	HVAC 2 Major Alarm	2 nd Comp. Run	
A02	Low pressure1	60/10s		X			X
A03	High pressure1	2s		X			X
A04	Low pressure2	60/10s			X		X
A05	Smoke/Fire	None					X
A06	High pressure2	2s			X		X
A07	High temperature	300s	X				X
A08	Low temperature	300s	X				X
*A09	Prime power outage	40s		X	X		X
*A10	Supply fan overload1	0s		X			X
*A11	Supply fan overload2	0s			X		X
A15	Dirty air filter1	10s					X
A16	Dirty air filter2	10s					X
A17	pLAN alarm	30s			X		X
A18	Clock card alarm	60s					X
A19	Humidity alarm	60s					X
A20	Indoor temperature sensor defective	60s					X
A21	Backup indoor temp. sensor defective	60s					X
A20 & A21	Indoor and backup indoor temp. sensors defective	60s		X	X		X
A22	Outdoor temp. sensor defective	60s					X
A23	2nd compressor run	5s				X	X
A24	Damper Failure 1	60m					X
A25	Damper Failure 2	60m					X
A26	HVAC 1 supply air temp. sensor defective	60s					X
A27	HVAC 2 supply air temp. sensor defective	60s					X
A28	Generator run	5s					X
*A29	HVAC1 air flow defective or DC part powered off	30s		X			X
*A30	HVAC2 air flow defective or DC part powered off	30s			X		X
*A31	HVAC1 AC part powered off alarm	30s		X			X
*A32	HVAC2 AC part powered off alarm	30s			X		X

*Note:

- All alarm codes listed in the table above will result in an audible tone and a red alarm light presented on the PLD user interface.
- A09, A10&A11 will not display if the HVAC is equipped with DC EC supply fan and ASLLC.2.48 is chosen.
- A29, A30, A31& A32 will not display if the HVAC is equipped with AC EC supply fan and ASLLC.2 is chosen.
- HVAC major alarm will not be cleared until manually reset or the components can work normally at the next working time.
- Low pressure alarm or High pressure alarm are triggered 3 times in one hour, the HVAC will LOCKOUT which means just supply fan work, no compressor. There are two ways to remove the alarm:
 - Power cycling the controller.
 - Accessing the parameters in the table: L04-U 2 L (Manual reset as low pressure) or U 2 E (Manual reset as high pressure)
- Lock-Out of either HVAC system is indicated via a slow flash of the PLD LEDs as follows:
 - HVAC#1 Lock-out: Slow flash of Up Button LED (green)
 - HVAC#2 Lock-out: Slow Flash of Down button LED (Yellow).

Alarm configurations for software REV13B46 and higher

	Alarm Name	Alarm Type (Input/Output)	Severity	Default (NC or NO)	Adjustability (S--> software via PLD) (HW= Hard Wired)	Connections To ASLLC.2	Reports on code:	Comments
Form C Contact Alarm INPUTS	Fire/Smoke alarm	Input	Critical	NC	S --> parameter $S F t$	41 and 5	A05 Only	Remove factory jumper prior to connecting alarm input
	Generator Run	Input	None	NO	S --> parameter $d t t$	42 and 5	A28 Only	Connected to Gen-Run signal
	Prime Power Outage	Input	Major	NO	NA	60 and 5	A09 Only	Only when using DC Fail-Over Box: ASPCB.2
Form C Contact Alarm OUTPUTS	Temperature alarm	Output	Critical	NC	S --> parameter $H t t$	43 and 44	A07, A08	Can connect in series for NC or in parallel (NO) with analog High Temp thermostats in many sites.
	HVAC1 Alarm	Output	Major	NO	HW	45 and 46	A02, A03, A09, A10, (A20&A21), A29, A31	Means Mechanical cooling is disabled until problem is addressed on site
				NC		46 and 47		
	HVAC2 Alarm	Output	Major	NO	HW	48 and 49	A04, A06, A09, A11, (A20&A21), A30, A32	Means Mechanical cooling is disabled until problem is addressed on site
NC				50 and 49				
Two compressor run	Output	Minor	NC	S --> parameter $z t t$	51 and 52	A23 Only	Indicates compressors running in both Lead & Lag WPU's simultaneously	

Alarm Section of terminal block located at the bottom of the ASLLC.2 Lead/Lag controller.

NOTE: With only one HVAC alarm available on the punch down block typical alarming joins HVAC#1 alarm and HVAC#2 alarm into a single connection.

When HVAC#1 & 2 are NC (default)

- ✓ Jumper wire between 46 & 49.
- ✓ Connect punch down to 47 & 50

When HVAC#1 & 2 are NO

- ✓ Jumper wire between 46 & 49.
- ✓ Jumper wire between 45 & 48.
- ✓ Connect punch down to 48 & 49

