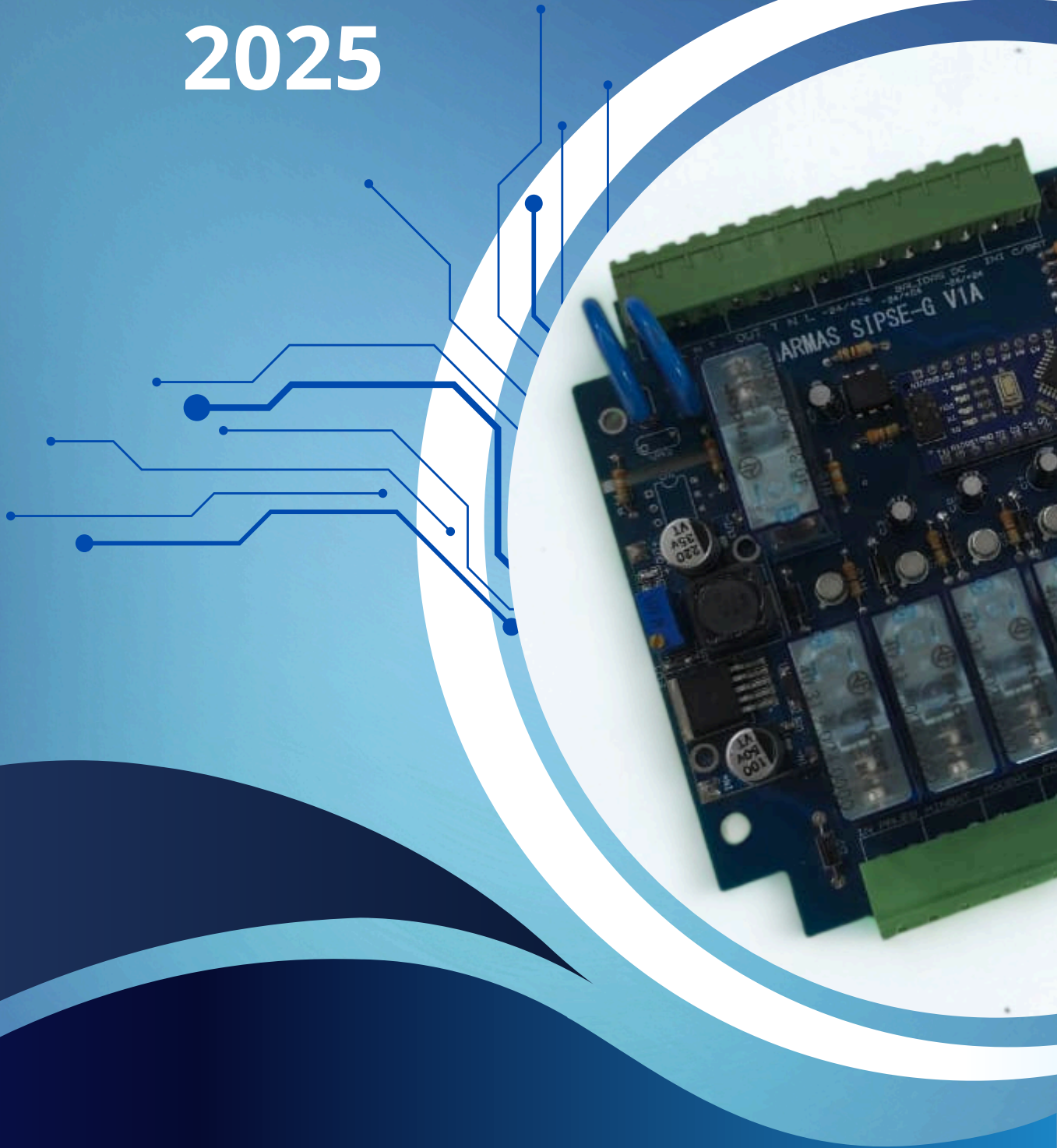


ALARM

SIPSEMX-G V2A

2025



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SIPSEMX ALARMS TECHNICAL SPECIFICATION

Charger control board. This board can provide output signals as dry contacts (potential-free) or 24 Vdc wet contacts, adding the required functionality depending on the application. It incorporates a microcontroller and offers eight digital inputs, which are used to integrate and communicate the charger status to the electronic controller.

Internally, it includes a firmware-programmed battery test procedure.

The alarms it provides are:

- Minimum battery
- Absence of VCA
- Battery mode
- Incomplete test
- Charger failure

- Coil Voltage: 24 VCD
- Contact Current Rating: 10A
- Contact Voltage Rating: 250 VAC

Voltage supply	24	VCD
Output RELAY	5	24VCD Contact
Digital Input	6	
Temperature range	-30 to +80 °C	

Table 1 Specifications

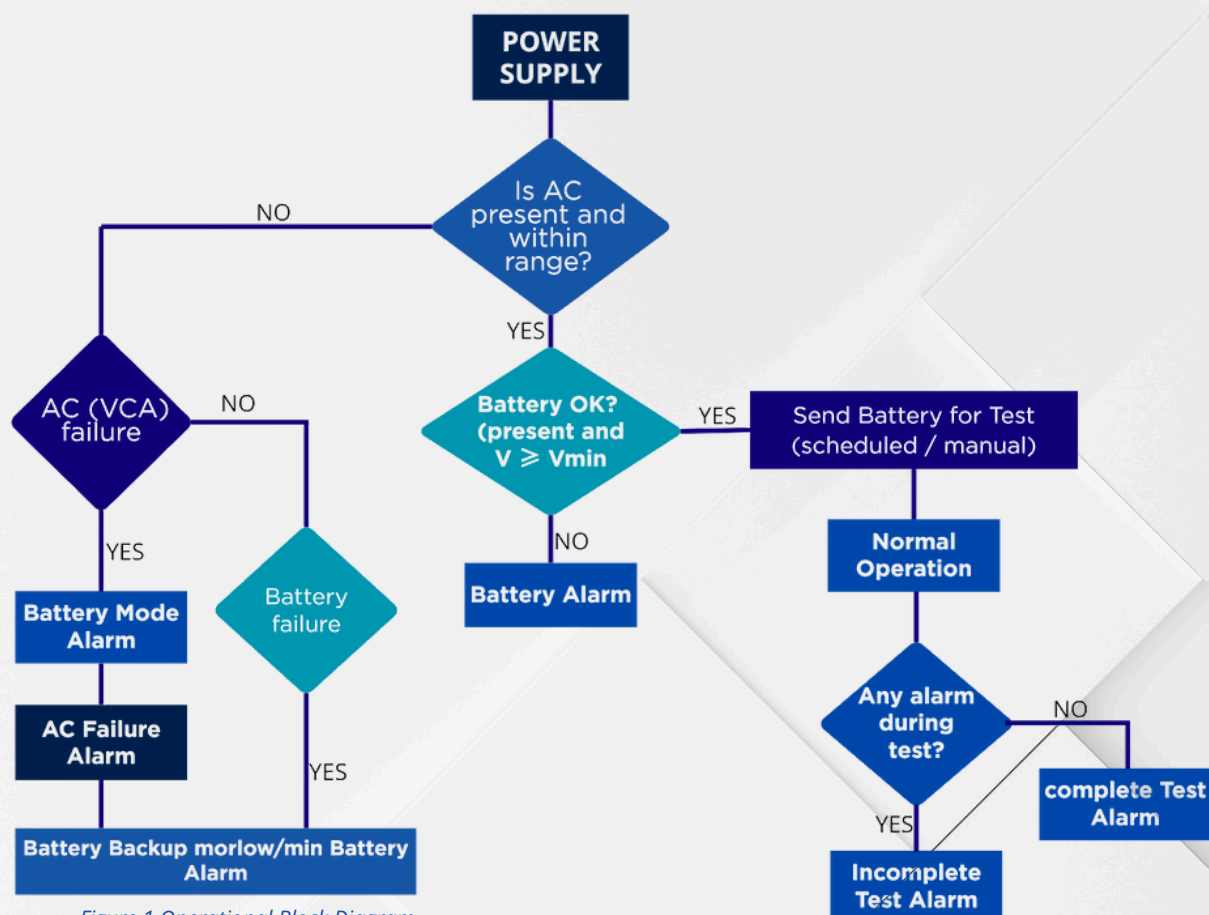


Figure 1 Operational Block Diagram



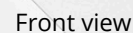
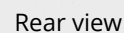
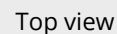


Figure 2: PCB Representation

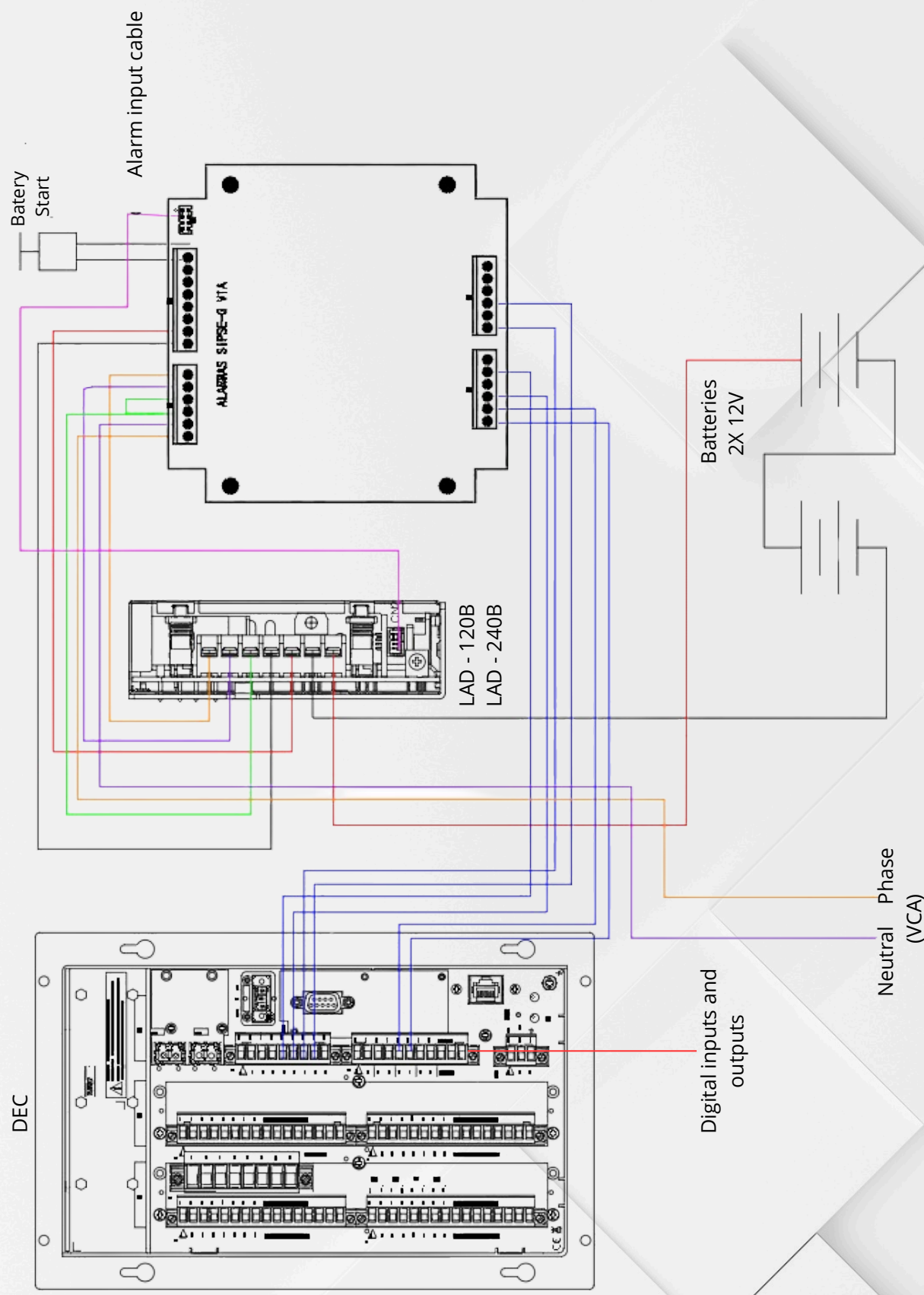
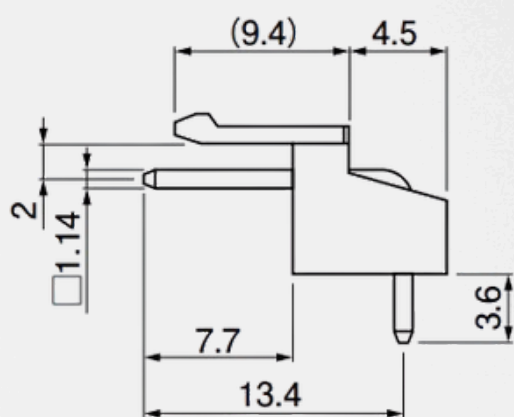


Figure 3: Connection Example

Connector features

- Current rating: 10 A AC/DC (AWG #16)
- Voltage rating: 250 V AC/DC
- Temperature range: -24°C to +85°C (including temperature rise in applying electrical current)
- Contact resistance: initial value/ 10 MΩ max
After environmental tests/ 20 MΩ max
- Insulation resistance: 1,000 MΩ min
- Applicable wire: AWG #22 to #16



Averages expressed
in mm

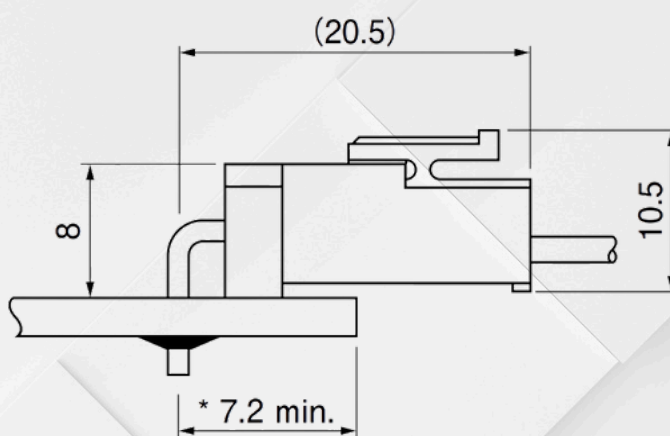
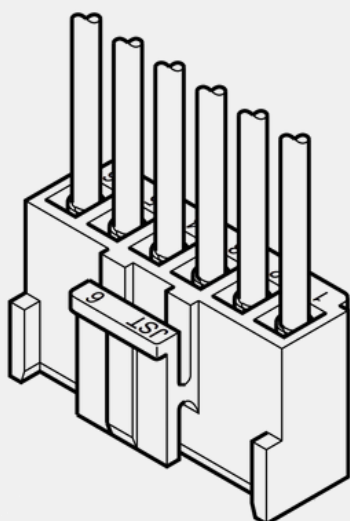
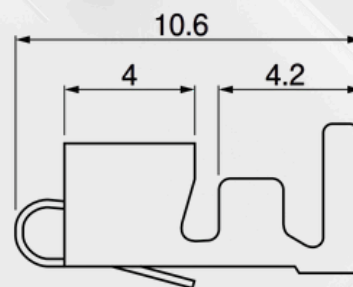
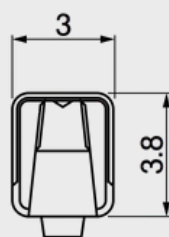


Figure 4: Connection dimensions



CONNECTOR	PIN	DESIGNATION	EXPLANATION
IN LNT	1	LINE	Input voltage (Phase)
IN LNT	2	NEUTRAL	Input voltage (Neutral)
IN LNT	3	GROUND	Protective ground connection. The charger must also be connected to ground through the mounting screws.
OUT TNL	1	GROUND	AC POWER OUTPUT (GROUND)
OUT TNL	2	NEUTRAL	AC POWER OUTPUT (NEUTRAL)
OUT TNL	3	LINE	AC POWER OUTPUT (LINE)
-24/24	1	NEGATIVE 24VDC	BATTERY DC INPUT (NEGATIVE)
-24/24	2	POSITIVE 24VDC	BATTERY DC INPUT (POSITIVE)
DC OUTPUTS	1	NEGATIVE 24VDC	BATTERY DC OUTPUT (NEGATIVE)
DC OUTPUTS	2	POSITIVE 24VDC	BATTERY DC OUTPUT (POSITIVE)
DC OUTPUTS	3	NEGATIVE 24VDC	BATTERY DC OUTPUT (NEGATIVE)
DC OUTPUTS	4	POSITIVE 24VDC	BATTERY DC OUTPUT (POSITIVE)
INI C/BAT	1	DRY CONTACT	START WITH BATTERIES
INI C/BAT	2	DRY CONTACT	START WITH BATTERIES
IN TEST	1	DRY CONTACT	START BATTERY TEST
IN TEST	2	DRY CONTACT	START BATTERY TEST
MINBAT	1	NA	Output indicating battery voltage is below 23.1V. Normally open dry contact.
MINBAT	2	COMMON	Output indicating battery voltage is below 23.1V. Normally open dry contact.
MODBAT	1	NA	Output indicating both loads and charger are being supplied from the battery. Normally open dry contact.
MODBAT	2	COMMON	Output indicating both loads and charger are being supplied from the battery. Normally open dry contact.
FA.VCA	1	NA	DRY CONTACT ALARM AC FAILURE
FA.VCA	2	COMMON	DRY CONTACT ALARM AC FAILURE
PRUEBINC	1	NA	Input to start a battery test. This input is wet, it must be activated with a free potential contact.
PRUEBINC	2	COMMON	DRY CONTACT ALARM INCOMPLETE TEST
F.CDOR	1	NA	DRY CONTACT ALARM CHARGER FAILURE
F.CDOR	2	COMMON	DRY CONTACT ALARM CHARGER FAILURE

-  AC INPUT
-  DC INPUT
-  DC OUTPUT
-  DIGITAL INPUT
-  DIGITAL OUTPUT

Table 2 CONTACT INFORMATION





SIPSEMX-G V2A Alarm Interface Module

The SIPSEMX-G V2A Alarm Interface Module serves as a communication interface between Mean Well LAD-120B / LAD-240B power supplies and the recloser control unit. Its primary role is to monitor, aggregate, and report power-system status and alarms to the controller, while also ensuring the implementation of the functions required by the intended application.

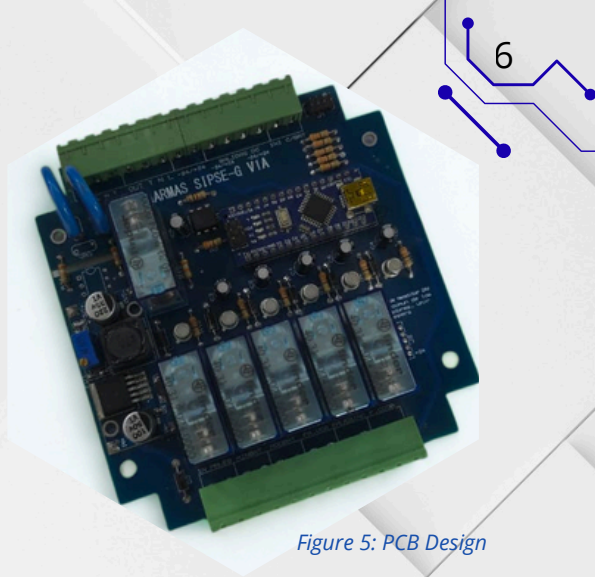


Figure 5: PCB Design



System Protection Features

The charger and auxiliary power supply provide the following protections to ensure system integrity and uninterrupted service:



Overvoltage Protection (OVP)

The equipment includes input overvoltage protection that operates in coordination with the site circuit breaker to react to mains surges. When the input exceeds 320 Vac (rms), the MOV clamps the overvoltage and shunts surge energy. If the condition persists or the event energy exceeds the safe limit, the resulting current causes the breaker/fuse to trip, isolating the equipment from the grid.



Main & Auxiliary Supply Undervoltage Monitoring and Automatic Transfer (UVP/ATS)

The LAD-120B / LAD-240B continuously monitor the main and auxiliary supply voltages. When the main supply falls below the configured thresholds (e.g., 61 Vdc or 43.5 Vac (rms)), the loads are automatically transferred to the backup battery, ensuring uninterrupted operation. Status and alarms are conveyed through the charger's dedicated outputs to the SIPSEMX-G V2A, where the microcontroller interprets and filters them; the relays then actuate to communicate the corresponding signals to the recloser control unit.



24 Vdc Output Overload/Short-Circuit Protection (24V-OCP/SCP)

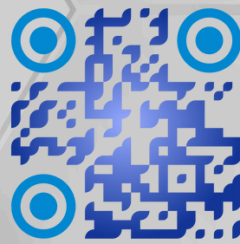
The 24 Vdc output of the primary LAD-120B / LAD-240B supply includes integrated overload and short-circuit protection. Although this condition is not actively reported, the protection engages to prevent damage, and the output automatically recovers once the abnormal condition clears (e.g., hiccup mode or current limiting, depending on model).



Battery Reverse-Polarity Protection (RPP)

The system—comprised of the LAD-120B / LAD-240B main supply and the SIPSEMX-G V2A—includes automatic protections to prevent damage if the battery is connected with reversed polarity. Reverse current is blocked at the battery input (e.g., using an ideal-diode MOSFET or a series diode + fuse). Depending on configuration, a battery fault alarm is asserted; the SIPSEMX-G V2A processes it and drives the assigned relay, providing a contact (dry or 24 Vdc) to a digital input of the recloser controller. Normal operation resumes once polarity is corrected.





SIPSEM

 EMAIL

contacto@sipsemx.com

 WEB

www.sipsemx.com

 TEL

55 5877 2657

55 2405 6652