

ARTESYN LMD-PDU

Power Distribution Unit One PDU for Three LCM12K Shelves



Advanced Energy's Artesyn[™] Power Distribution Unit (PDU) serves as the central hub for distributing power to the LCM12K shelves housed within rack system. One PDU is connected to three LCM12K shelves, ensuring efficient power management and distribution. The PDU receives input power from the main power source and distributes it to the shelves. This centralized power distribution reduces energy losses and enhances overall system efficiency. The PDU includes safety features to protect against overcurrent and electrical faults, ensuring reliable operation. The PDU ensures that the high-power remote driver system operates efficiently and reliably, making it suitable for large-scale industrial and horticultural applications.

AT A GLANCE

Total Power

Up to 36 kW

Input Voltage

Same as LCM12K: 180 to 264 VAC Three Phase 342 to 528 VAC Three Phase 540 to 660 VAC Three Phase (WYE with Neutral)



SPECIAL FEATURES

- 5 years manufacture's warranty
- Modular 3-channel switch capable of powering three LCM12K shelves
- Standard 19" rack
- Designed for use with LCM12K shelves
- Over-current protection
- Individual shelf output control
- Refer to LCM12K shelf and PSU for the electrical specifications and safety approvals

ARCHITECTURE

Power Distribution Unit Architecture

Each PDU should be enclosed and provide power to three LCM12K shelves.



Power Distribution Architecture





ARCHITECTURE

Input Configuration





ELECTRICAL SPECIFICATIONS

Input		
Input Range	342 to 528 VAC (3-PH 4W), 380/480 VAC Nominal	
Frequency	47 to 63 Hz, nominal 50/60 Hz	
Input Current	25 A max per phase per shelf at 342 VAC	
Transient Input AC Current	AC inrush current limiting and soft start-up capability will be handled by PSU. Inrush current should not exceed the PDU output circuit breaker trip point. Inrush limiting component should be at the input stage of PSU to limit inrush current below threshold. The AC inrush current under max power transient and over-current protection conditions should not trip the upstream AC input breakers.	
Isolation Voltage	Refer to LCM12K power shelf specification	
Protection		
Overcurrent Protection	The PDU output is equipped with 25 A Circuit Breaker designated to every LCM12K shelf installed. Excessive current/overcurrent drawn by individual shelf will trip its corresponding circuit breaker without affecting other shelf in good operation.	

Ground Design

Chassis GND should be grounded to input AC input whips of three phase and single phase through solid low resistance path. Grounding design should comply in accordance with UL62368-1.

Signal and Control

The individual PDU have three PS_ON/PS_OFF switches that turn on and turn off the individual shelf output. The table shows the location of the switches on corresponding PDU and the outputs it controls.

Location	Switches	Outputs
PDU	S1	Output 1,2&3
	S2	Output 4,5&6
	S3	Output 7,8&9

Refer to LCM12K shelf and PSU for other electrical specifications, eg. EMI, EMC, shock, vibration, etc.



MECHANICAL DRAWING

PDU Front



PDU Back



PDU Front and Back Interface





MECHANICAL DRAWING

Installation Sample

In the installation sample image, a simple application shows how a single PDU is installed in a standard 19" rack cabinet and connected to three LCM12K shelves.



ENVIRONMENTAL SPECIFICATIONS

Operating Conditions		
Operating Temperature	0°C to 50°C, 30°C typ.	
Storage Temperature	-40°C to 85°C	
Operating Humidity	20% to 90% non condensing	
Storage Humidity	10% to 95% non condensing	
Operating Altitude	Up to 9,842 feet above sea level (3,000 meters)	
Storage Altitude	Up to 30,000 feet above sea level (9,144 meters)	
Cooling	Provided by PSU (Internal with variable speed control)	



PDU WIRE ASSEMBLY PART NUMBER





Advanced Energy (AE) has devoted more than four decades to perfecting power for its global customers. AE designs and manufactures highly engineered, precision power conversion, measurement and control solutions for mission-critical applications and processes.

Our products enable customer innovation in complex applications for a wide range of industries including semiconductor equipment, industrial, manufacturing, telecommunications, data center computing, and medical. With deep applications know-how and responsive service and support across the globe, we build collaborative partnerships to meet rapid technological developments, propel growth for our customers, and innovate the future of power.

PRECISION | POWER | PERFORMANCE | TRUST

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