



High Power DC High Voltage for LED Driver Applications – CSP-3000

Technical Service Center / Wu Weiqiang

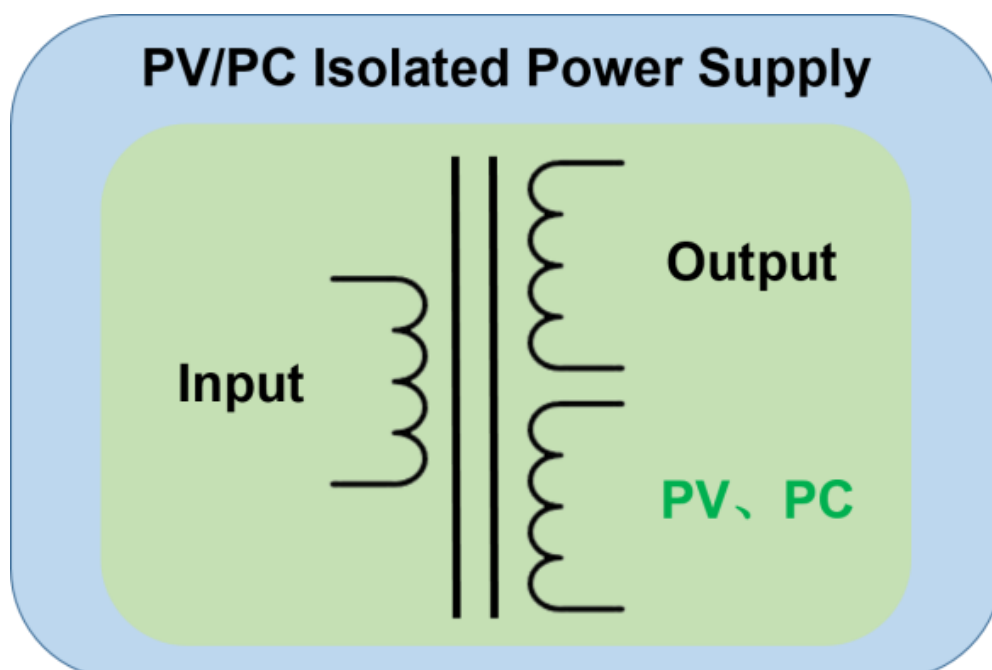
RMA@meanwell.com.cn

The MEAN WELL CSP-3000 series is a 3kW enclosed type DC high-voltage output power supply, available in three voltage ranges—120/250/400 VDC. It supports both constant voltage and constant current output modes and features extensive voltage and current adjustment capabilities (PV/PC). The series also allows for parallel operation (LINK) and is widely used in high-voltage DC power supply systems, new energy industries, EV charging, semiconductor equipment, laser systems, and more.

To meet the diverse requirements of signal controllers in the market and to enhance the operational safety between controllers and output devices, the CSP-3000 series has been upgraded with an isolated circuit design for its PV/PC adjustment function, effective from July 2024.

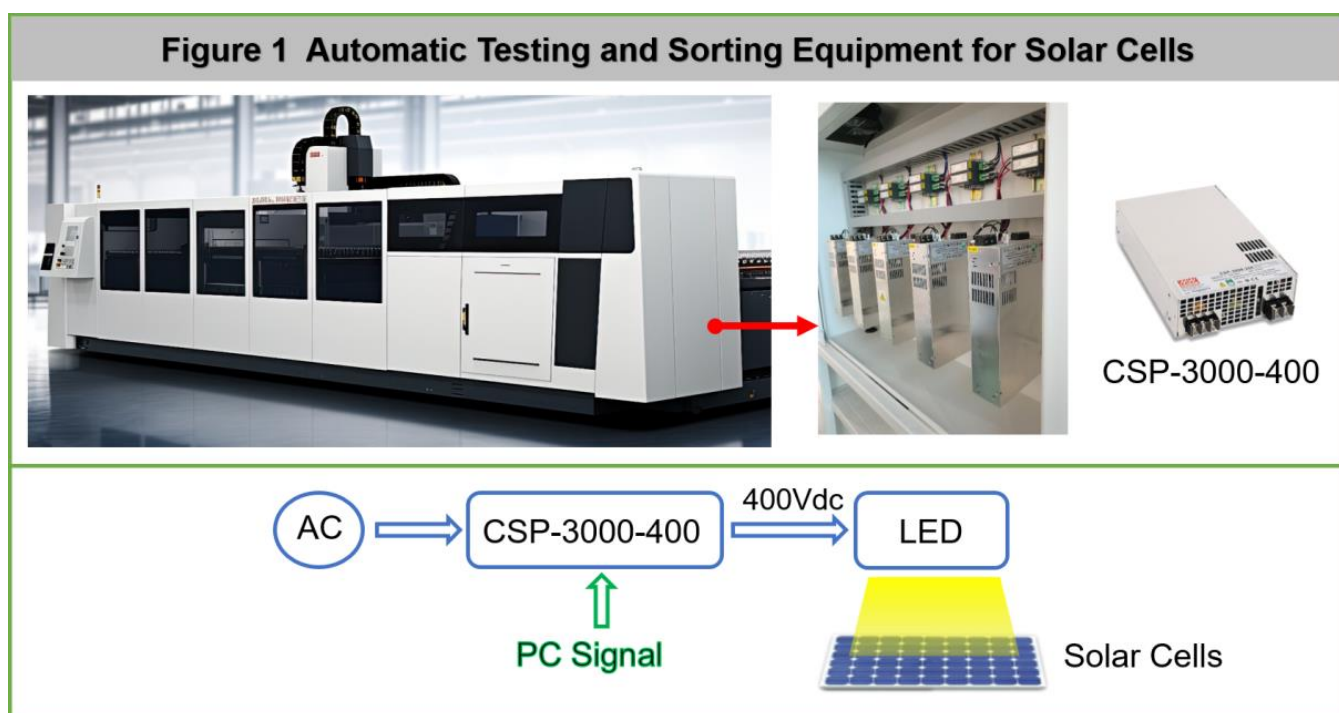
Key details of the upgrade include:

1. Isolation Design: The PV/PC circuit is isolated from both input and output terminals
2. Parallel Operation: When in constant current output mode, PC adjustment is supported during parallel applications



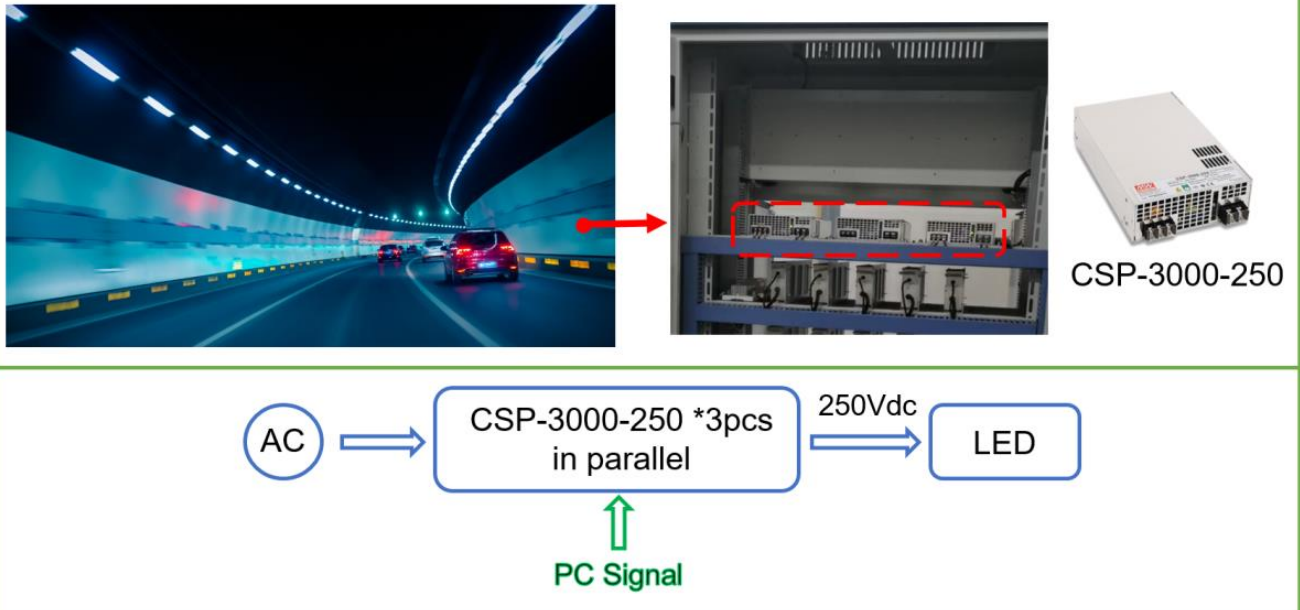
This article shares two application cases:

- A. As illustrated in Figure 1, this system is an automated testing and sorting equipment for solar cells. It incorporates five independent LED light source arrays to simulate the spectrum and intensity of sunlight. The system is equipped with data acquisition and computation capabilities, as well as electronic loads, to evaluate the performance of photovoltaic devices, such as solar cells, including metrics like conversion efficiency and V-I characteristics. Each LED light source operates at 400Vdc/2000W and is driven by five CSP-3000-400 constant current drivers, with light intensity precisely controlled via PC voltage signals.



- B. Figure 2 illustrates the application of a DC high-voltage centralized power supply for tunnel lighting. Due to the high illumination requirements at the tunnel entrance, a 7.5kW high-voltage lamp (VF: 210~250Vdc) is employed. This lamp is driven by three CSP-3000-230 units connected in parallel for constant current, with a synchronized dimming function controlled by a set of PC voltage signals.

Figure 2 DC High Voltage Centralized Power Supply Lighting - Tunnel Lamp



For related product and application requirements, please directly contact MEAN WELL Distributor or MEAN WELL technical team. Stay tune to the online courses on related products and solutions in the MEAN WELL Online Exhibition.

For more and completed Power Solutions
Please visit "MEAN WELL Virtual Expo" ▶

