

Programmable DC Power Supplies Add Water Cooling Option

[Magna-Power Electronics](#) has expanded its popular Water Cooling (+WC) option to the SLx series, offering 1U water-cooled programmable dc power supplies for the first time. The SLx series represents Magna-Power's latest xGen all-digital power supply platform, featuring industry-leading power density and versatility, according to the vendor.

With over 60,000 different model variants, the series spans voltages from 5 Vdc to 3,000 Vdc and power levels from 1.5 kW to 10 kW, all housed in a compact 1U chassis. This expansion follows the successful global launch of the SLx series, bringing liquid-cooled performance to the company's most-versatile power engine designed for research, industrial automation, and process control.

The Water Cooling (+WC) option replaces standard air cooling in the SLx series with a sealed, ventless enclosure and dedicated water inlet/outlet ports. Designed for customer-supplied chilled water at 25°C or less, +WC uses an advanced internal thermal architecture combining precision chill plates and an integrated heat exchanger. The chill plates provide a direct conduction path for heat-sensitive power components, while the heat exchanger removes heat from the enclosure's internal air volume.

The system's high-frequency transformer is also tied directly into the chilled-water loop, providing active cooling of critical magnetic components to support long-term reliability. To prevent condensation and ensure safe operation, an integrated solenoid automatically regulates internal water flow. By eliminating externally venting fans, the water-cooled architecture significantly reduces audible noise. The +WC option can be added to any SLx series configuration by specifying option code +WC.

The water-cooling option is used in applications where customers need to control the heat load of the power supply and avoid dumping hot exhaust air into the environment, especially in large multichannel systems for semiconductor manufacturing and laser systems. In addition to thermal management, the sealed, ventless enclosure design can improve suitability for cleanroom-adjacent and contamination-controlled environments by eliminating air intakes and exhaust paths through the power supply.

To support the demands of modern industrial applications, the SLx series offers what's described as unprecedented versatility in automation. Beyond the standard dual USB and RS485 interfaces, the series supports a wide array of fully integrated communication options, including EtherCAT, PROFINET, EtherNet/IP, CANopen, and conventional LXI TCP/IP Ethernet. With provided device description files, these protocols allow for seamless integration into PLC-based control systems and distributed automation networks.

Magna-Power brings nearly two decades of expertise in liquid-cooled power electronics to the SLx series, a pedigree established through its high-power TS series and the megawatt-scale ML series. By maintaining fully integrated manufacturing of heatsinks and magnetics, the company creates highly optimized, organic water-cooled solutions.

In 2025, the company further expanded its infrastructure by adding a 1-MW chilled loop in its factory, equipping all test stations with the capability to fully validate water-cooled power supplies. All Magna-Power products are designed and manufactured in the USA at the company's vertically integrated factory in Flemington, New Jersey.

The Water Cooling (+WC) option for the SLx series is available now directly from Magna-Power. For more information, see the Water Cooling [page](#) or contact the [company](#).