Editorial Contact:
Beth Smith, Leverage Marketing Group
Phone: (215) 453-8700
E-mail: beth@leverage-marketing.com
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Reliable Liquid Cooling in Demanding AI Data Centers, ESS and EV Charging Stations Using Amphenol Industrial Operations' Expanded Connector Series
Diverse series supports evolving needs of hyperscale and next gen energy storage

Technical Highlights

- Engineered for reliable, networked liquid cooling infrastructure
- High flow, low pressure loss for AI data centers, ESS, EV charging stations
- Dual safety interlocking mechanism for improved spill protection
- Durable, corrosion-resistant construction
- Easier maintenance, safer operations

Endicott, NY April 2026 – Amphenol Industrial Operations, a global leader in interconnect systems, has expanded its quick disconnect liquid cooling connector series with several new technologies to meet the intense thermal and operation needs of large-scale AI data centers, high-performance computing environments, energy storage systems (ESS), and electric vehicle (EV) charging systems.

Ty Yesensky, Sr. Product Manager - Americas of Amphenol Industrial Operations, noted, "Data is throttling through high-compute AI data centers and other demanding energy environments around the clock. These systems require integrated liquid cooling methods that can handle high levels of heat constantly being generated. Our expanded series ensures reliable connection, minimal pressure loss and consistent integrity for virtually any high-performance, liquid-cooled environment."

OCP REV2.0 Compliant (UQD/UQDB 2.0)

The flagship of the liquid cooling series, the UQD and UQDB connectors have been enhanced to fully comply with the Open Compute Project (OCP) Rev 2.0 specifications. The UQD Series offers quick connect technology, while the UQDB features blind mating for easy installation. Improvements to each include fully defined geometry to OCP Rev 2.0 as well as enhanced flow performance. The latest OCP REV 2.0 specification has also developed a hybrid configuration enabling the UQD plug to mate with a UQDB socket.

Sourceline high flow, low resistance (SHQD sourceline)

With flow performance up to 800 L/min, the semi-hand mate (SHQD) self-sealing connector features a dual interlocking safety mechanism as well as large-diameter valve designs of 1", 1.5" or 2". This

sourceline connector facilitates full-flow, low-resistance liquid cooling between a coolant distribution unit (CDU) and a manifold (distribution pipe) to ensure reliable operation and minimize pressure drop in high flow sourceline applications.

Compact, reliable connections (MQD/OMQD)

The Multi Quick Disconnect (MQD) incorporates a push-pull locking mechanism in a compact design to provide high-performance and reliability for compact computer tray environments. Fundamental to enabling the next generation of liquid-cooled systems, the MQD comes in sizes 02, 03, and 04, all of which have a straight version, and an elbow 90° right angle version for flexible installation and ease-of-use.

The customizable Optical Module Quick Disconnect (OMQD), designed specifically for optical module applications, can handle cooling systems managing 1.6T and 3.2T data rates. Available in ultra-small 1mm, 2mm, or 3mm fluid diameters, the OMQD can be hand mated, including a locking mechanism, or blind mated with an optional floating feature. Contact Amphenol Industrial Operations for available options and delivery.

Robust multi-channel manifold

Reliably distributing coolant across a multi-channel network, Amphenol Industrial Operation’s new manifold provides the infrastructure for optimal cooling across the entire system. Made of durable material, such as stainless steel, copper, aluminum, or durable plastics, the manifold promotes corrosion resistance, while facilitating thermal management to reduce overheating risks and energy use. Customized manifolds are available within short lead times for quick installation in a range of applications, from high performance data systems to electric vehicles and industrial machinery.

Foundation for next-gen performance

By incorporating a dual safety interlock via a bidirectional ball valve and dry-break, the expanded connector series provides enhanced leak protection during maintenance and servicing as well as helps prevent valve opening when unmated. Aerospace-grade sealing improves safety and reliability, while low flow resistance increases connector performance.

The new connectors come in a variety of termination options, such as threaded, hose barb and sanitary flange, with customization upon request, and the outer shells employ corrosion-resistant stainless steel. As standard, EPDM rubber seals provide chemical and thermal resistance against a

range of glycol-based coolants, with additional seal options available depending on a system's coolant or fluid.

Amphenol Industrial Operation's QR code traceability during manufacturing reinforces user confidence in the company's quality commitment.

For more information, please visit https://amphenol-industrial.com/products/liquid-cooling-systems/ or e-mail Ty Yesensky at tyesensky@amphenol-aio.com.

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EDITOR'S NOTE: Headquartered in Endicott, N.Y., with global manufacturing, sales and marketing locations, Amphenol Industrial Operations specializes in delivering a comprehensive range of high-reliability power and signal connectors along with comprehensive interconnection systems specifically designed for industrial applications.

Our solutions cater to diverse industrial sectors, including, but not limited to, alternative energy, heavy equipment, energy storage, factory automation, eMobility, rail mass transit, datacom/telecom, and power distribution.

Our product portfolio encompasses power interconnects utilizing our trademark RADSOK® contact technology and ruggedized, military-derivative cylindrical connectors, like threaded (SAE AS50151), PT (MIL-DTL-26482) and GT reverse bayonet styles as well as assemblies and harnesses using these and other industry standard interconnects.

With a dedicated team of over 900 skilled professionals, backed by industrial certifications such as ISO9001 and IATF 16949, Amphenol Industrial Operations consistently meets the highest standards of quality and performance.

Amphenol Industrial Operations proudly operates as a business unit of the Amphenol Corporation, one of the world's largest designers, manufacturers and marketers of electrical, electronic and fiber optic connectors and interconnect systems, antennas, sensors and sensor-based products and coaxial, high-speed, fiber optic and specialty cable. For more information, visit www.amphenol.com.