

Nominee: Emerson Network Power

Nomination title: Liebert® EconoPhase™

- What are your product's/solution's key distinguishing features and/or USP?

The Liebert® EconoPhase is the industry's most advanced refrigerant economiser, delivering freecooling without water usage costs. Customers purchasing the Liebert PDX range of direct expansion cooling units now also have the option to add-on the Liebert EconoPhase, our pumped refrigerant economiser, rigorously tested in the US market for 4 years. This provides new levels of cooling efficiency for small-to-medium data centres and businesses, resulting in substantial cost savings.

A Liebert PDX system with Liebert EconoPhase is composed of:

- Liebert® PDX—High efficiency, direct expansion floor-mounted indoor unit
- Liebert® MC Condenser—Air-cooled microchannel condenser, premium version
- Liebert® EconoPhase™ — pumped refrigerant economiser module

The Liebert EconoPhase is an add-on module to be used with a specific version of an air-cooled Liebert PDX system.

Figure 1. A Liebert® PDX System with EconoPhase™

This technology allows the system to transition to the economical operation when the external temperature is lower than the internal temperature of the facility, prompting the unit to shift from compressor mode to economiser mode. This results in a substantial reduction in power consumption as the Liebert EconoPhase module uses approximately 10 percent of the power used by the compressor. When the external environment is no longer compatible with the Liebert EconoPhase operation, the system simply reverts back to a typical air-cooled expansion system, turning off the economiser module.

- What tangible impact has your product/solution had on the market and your customers?

The Liebert EconoPhase module combined with the Liebert PDX units provides a 40 to 50 percent reduction in energy consumption when compared with the current most efficient direct expansion

model. The system is also capable of achieving partial Power Usage Effectiveness (pPUE) levels as low as 1.05, equating to an annual energy cost reduction of more than €200,000 when compared to a pPUE of 1.3 for a 1 MW data centre.

- What are the major differentiators between your product/solution and those of your primary competitors?

One of Liebert EconoPhase key differentiator can be found in its state-of-the-art integrated iCOM™ Control which ensures that the freecooling unit is able to automatically switch between both operating modes seamlessly and effectively. The intelligent control allows the system to adjust airflow patterns and quickly adapt to changing IT loads. This increases efficiency by optimising component operation for lowest total system power, whilst also maximising freecooling hours through automatic economiser transition control.

The control guarantees the following:

- ☐ Seamless, automatic changeover between Direct Expansion (DX) and economizer mode.
- ☐ Constantly monitors load, room and outdoor conditions to adjust system operation to most efficient operating mode.
- ☐ Mechanical systems networked together to optimize component performance and increase system reliability.
- ☐ Automatic failure diagnostics and pump unit serviceable without loss of cooling.

Another key differentiator can be found in our Thermal Management Customer Experience Center where our Thermal Management units can be tested, including direct expansion ones. The scope of the Validation Areas is to provide customers, consultants and data center specialists with the most complete testing area to experience the capabilities of our evaporative technology at peak conditions. All our measuring tools are periodically tested to adhere to the current international quality procedure ISO9001. This guarantees that all our measurements are in line with the metrological laboratories' standards (Accredia/EA/ILAC) and that our equipment precision level is also compliant with the European EN14511 standard. Every customer visit is accompanied by a complete final report which includes each and every tested parameter as well as the relevant outputs for the specific Thermal Management unit validated. With our constant focus on our customers' needs, we guide them through a first-hand experience with full transparency and flexibility enabling them to achieve the highest standards of technical excellence.

Emerson Network Power also takes meticulous effort to identify the actual customer needs and, most importantly, the future needs and technology trends. This has allowed it to ensure appropriate product development and guarantee that it truly satisfies its customers' needs. It does not stop at offering a competitive product but also provides its customers with thorough support on the best tailor-made unit selection. Emerson Network Power also provides commissioning and service facilities with predictive maintenance through remote monitoring. It supports the entire critical infrastructure and enhances the network availability with the largest global service organization.

Emerson Network Power processes are regulated by the current international standard ISO9001, which includes the following phases: design, production, service, and product review. The company's product life cycle phase follows 2 processes, an internal procedure, known as the New Product Development Process, and an external one, known as ECAM. The former one is divided into 8 phases and 8 gates, where in order to move from 1 gate to another, the approval of the 1st step is necessary. The latter process, on the other hand, involves a 3rd-party entity that annually examines a project and provides it with the indications to improve the product under examination.

- Please supply any supportive quotes and/or case study materials to demonstrate the value of this product/solution to your customers/partners.

Considering a 500 kW Data Center located in Frankfurt, with a 4 + 1 configuration (all sharing the same load, thus 100 kW per unit) with 23 °C in front of the servers and adopting the cold aisle containment, the annual energy consumption would be of 765,000 kWh/year for an highly efficient system (including modulating compressor, EEV, supply control and EC fans) while with the addition of the EconoPhase module, the value would drastically lower to 399,000 kWh/year, thus resulting in a 50 % energy savings. Considering an energy cost of 0.14€/kWh this saving would translate into 51,240€ of savings.

To conclude:

- The Liebert EconoPhase delivers substantial reductions and savings in terms of energy consumption, thus provides new levels of cooling efficiency for small-to-medium data centres and businesses.
- Emerson Network Power's Thermal Management division has an extensive industry-leading product portfolio, covering any customer needs in terms of efficiency and energy savings. It covers the entire application, with products that match and exceed customer expectation.
- Emerson Network Power's global network ensures that industry expertise, technology, and resources are made globally available to address our customers' growing business challenges. With over 3,500 service professionals, Emerson Network Power offers customer support 24/7 anywhere in the world.

Why nominee should win

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