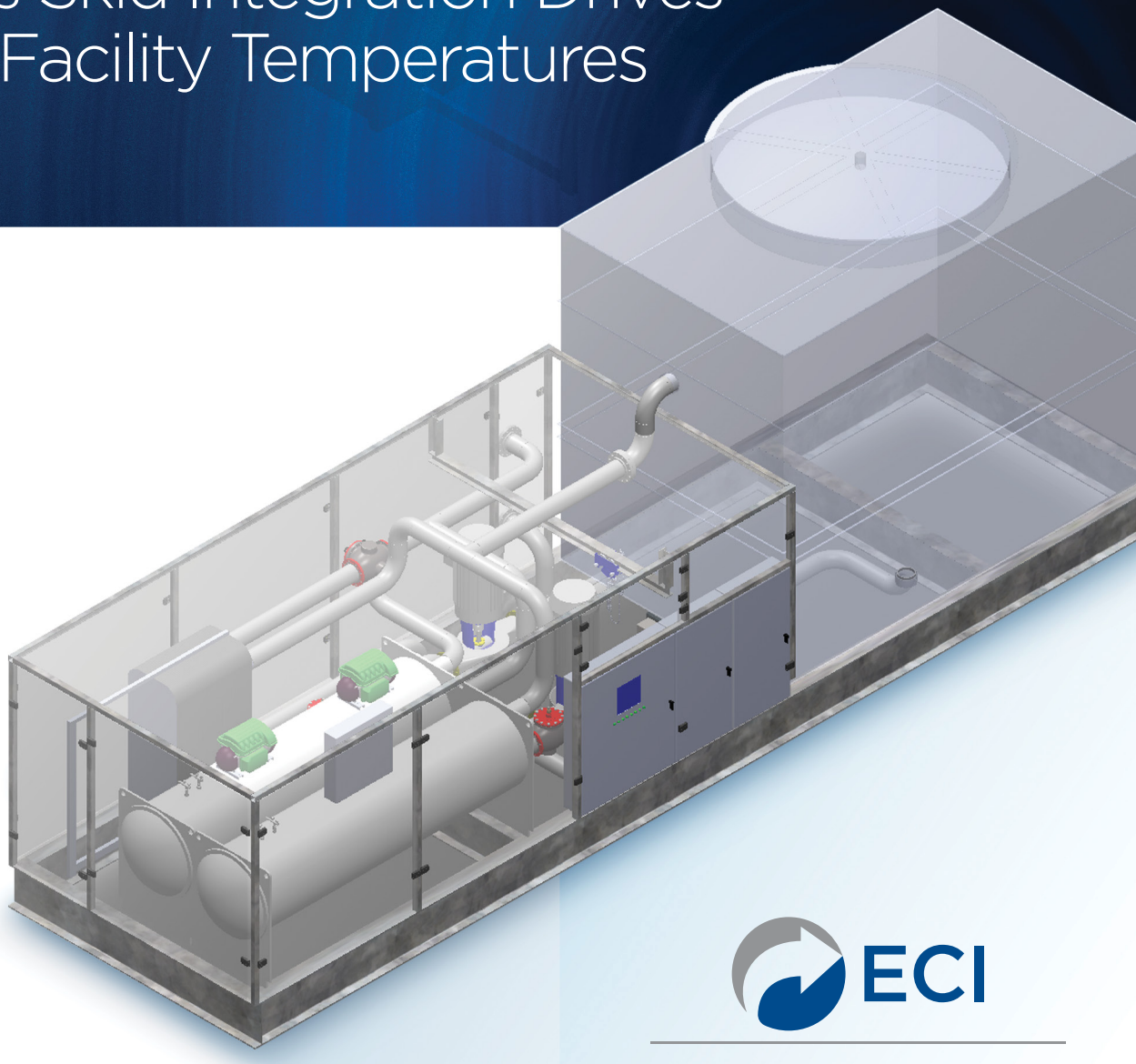
CHILLER SKID SOLUTIONS

Seamless Skid Integration Drives Optimal Facility Temperatures



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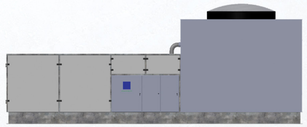
Quality skid fabrication and the right expertise minimizes installation and commissioning time and supports a cohesive skid and building management system interface.

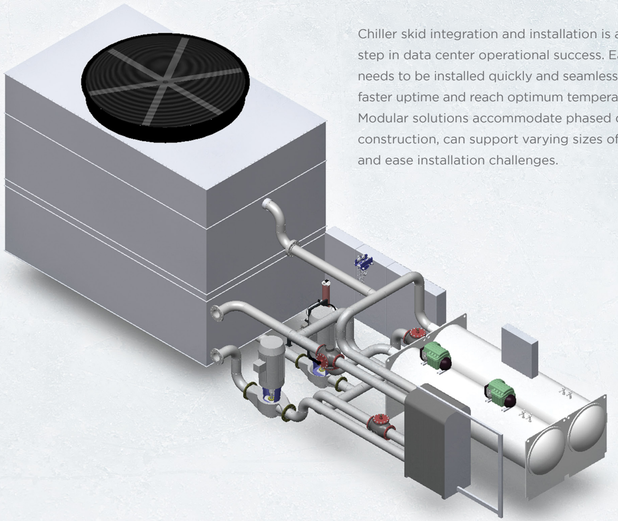
The right expertise matters.



As the data center market continues to expand, speed, agility and custom solutions that target specific infrastructure needs take on even greater importance.

Identifying efficient, streamlined solutions developed to support your operations is paramount to keep pace with industry demands. Modular chiller skid solutions designed to integrate with the building management system and minimize installation and commissioning time lead to faster start up and the ability to maintain optimal facility temperatures.

Chiller skid integration and installation is a pivotal step in data center operational success. Each skid needs to be installed quickly and seamlessly to enable faster uptime and reach optimum temperatures faster. Modular solutions accommodate phased data center construction, can support varying sizes of operations and ease installation challenges.



There are several critical imperatives to successful chiller skid development and operation. Quality testing, coordinated skid to building management system interface and the right combination of expertise are essential.

Quality Testing

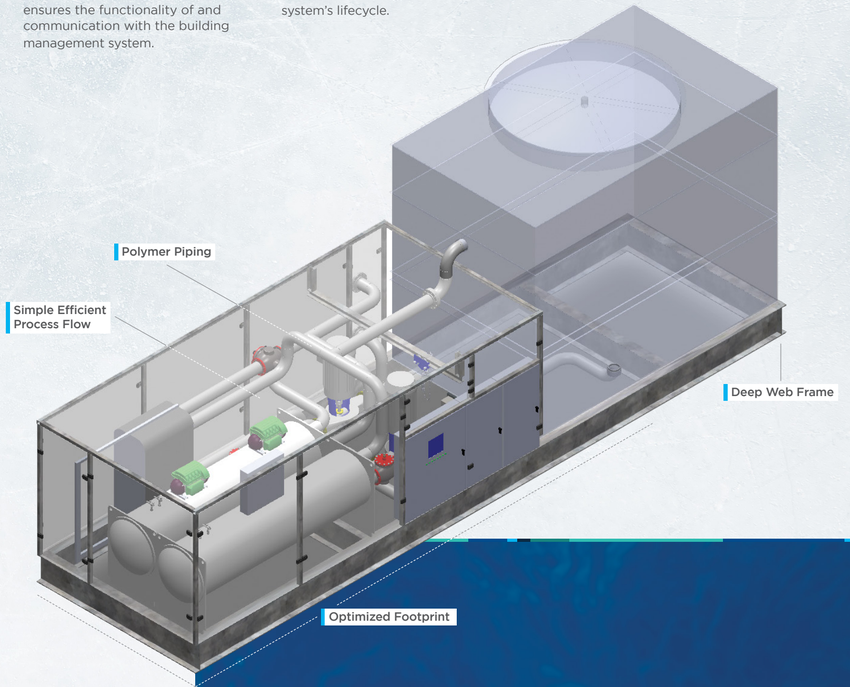
Skid quality and accuracy are critical to installation and commissioning. This seems simple but it is often a source of challenges and delays. Eliminating this challenge starts long before a skid is delivered. ECI's Skid Technologies conducts factory acceptance testing as a standard practice, resulting in high quality skids that meet all specification requirements and function properly when delivered. Rigorous testing ensures all components, wiring, welding, piping, instrumentation, heat exchangers and chillers perform as expected. In addition to skid performance, our rigorous testing ensures the functionality of and communication with the building management system.

Strategic System Interface

Communication is key, even for building systems and equipment. When building management systems and skids are designed to work together, they can function together to support operational imperatives including temperature requirements and power and water utilization. Seamless operations, installation and coordination are possible when the skid can directly integrate with the building management system and is prepped for operation upon delivery. This integrated approach delivers improved results during installation and commissioning, and for the system's lifecycle.

Cross-Functional Expertise

The right expertise matters. Combining data center building management system, skid manufacturing and process control expertise produces a higher level of accuracy and application knowledge. With one partner aligned on these critical areas, you'll experience project management continuity, deep subject matter capabilities and a partnership that reduces risk and delivers peace of mind. ECI's Skid Technologies group and PHS division collaborate to develop skids designed to specifically support data center operations.



Custom Solutions

Chiller skid solutions need to be developed to support your requirements. ECI has the expertise and capabilities to develop a design to meet your needs or build your existing design. From component and material selection to pressure ratings, noise control and footprint requirements, each chiller skid is built to meet your specifications. This approach enables us to accommodate current infrastructure and future build outs, and evolve design standards to address your evolving business needs

- Process flows that support continuous cooling satisfy temperature requirements
- Self-contained units ease transportation and lifting challenges
- Enclosures with removeable access panels for troubleshooting and maintenance
- Insulation and acoustic materials control temperature and noise
- Reliability services maintain and support rotating equipment
- Skid capacity options address the needs of various operations
- In-house manufacturing improves quality
- Design optimization – smaller, more energy efficient solutions

Chiller Skid Design Elements

Chiller and skid expertise together deliver effective solutions that mitigate common challenges, and address operational performance requirements. While ECI builds all chiller skids to customer specifications, the following design elements create opportunities for efficiency gains.

Simple Efficient Process Flow
- Reject first – Advancement upon free-cooling; reject heat to ambient before chilling
- Outdoor rated electronics (NEMA 4 minimum) remove need for conditioned enclosure and fluid coolers
- Parallel flow cooling tower water for optimum heat rejection balance between heat exchanger and chiller

Deep Web Frame
- Rigid base for evaporative tower mount (reduced vibration and height)
- No redundant base/mounting frame – can mount direct to concrete pads
- Appropriate pump head without raising evaporative tower

Shipping and Module Optimization
- 48' length, 12' width – Wide load, non-permit load, no pilot car
- Reduced module count: 1) base, chiller, pumps, heat exchanger 2) Evaporator (1 or 2 pieces) (Potentially minor modules: piping and/or catwalk)

Polymer Piping
- Corrosion and water quality improvement
- Lower cost material and fabrication
- Better thermal insulating properties – resistant to freezing in cold environments

Proven Success in Mission Critical and High Consequence Solutions

- Modular Solutions
- Design Capabilities
- System Integration
- Project Management Continuity
- Reduced Risk
- Shorter Commissioning Time
- Factory Acceptance Testing
- On-site Manufacturing
- Seamless Installation

FOR MORE INFORMATION

724.746.3700
www.ECI.us

After Hours Emergency Support:
800.569.6030

ECI, an Emerson Impact Partner, is the leading provider of industrial automation, valves and process control technology in western Pennsylvania, West Virginia, western Maryland and Ohio.

ECI also provides design, configuration, lifecycle support and training services for customers in the oil and gas, chemical, power, food and beverage, mining and metals, life sciences, pulp and paper, refining, petrochemical, OEM and nuclear industries. An ISO 9001:2015 registered company, ECI has operated on the principles of quality, reliability and safety for more than 60 years, offering unmatched product and service solutions designed to meet specific customer needs.

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