Respect
Integrity
Cooperation
Positivity
Vision

Accessen | Shanghai Accessen Co., Ltd.

Add：1458 Xiechun Rd, Jiading District, Shanghai China
Post Code：201804
Tel：+86 21 6959 5555
Fax：+86 21 6959 0007
E-mail：info@accessen.cn
Website：www.accessen.cn

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202411 DAIS Rv1 EN

Accessen

Prefabricated Low-Carbon Data Center, Creating A Green Digital World.

Extraordinary Masterpiece

Accessen

How does Accessen solve the problems that arise in data centers?

The data center cooling system is the most core equipment besides IT equipment, which determines the safe and economical operation of the data center.

Accessen data center cooling solutions are helping more data center users achieve shorter construction cycles, lower system operating energy consumption, more convenient operation and maintenance services, and higher automation and intelligent operation, helping data centers operate energy-efficiently.

High-quality and cost-controlled construction

- Prefabricated modular
- Avoid wasted space
- Reduce construction space costs
- Shorten construction period
- Green and low-carbon construction
- The project quality is stable and reliable

Efficient matching reduces energy consumption

- High efficiency plate heat exchanger
- Liquid cooling/water cooling hydraulic module
- Liquid cooling distribution unit
- Indoor prefabricated integrated cooling station
- Outdoor prefabricated integrated cooling station
- Micro-module container integrated cold station

High quality and reliability

- BIM design, secondary optimization
- Energy-saving optimization design
- Simulation model calculation
- Pipe collision analysis
- Factory prefabricated module production
- Product Iteration Upgrade

Convenient for operation, maintenance and management

- Smart operation, autonomous maintenance
- Dynamic Management
- Energy management autonomous regulation
- Multi-working condition simulation for optimal operation
- Simulation hydraulic calculation

Fast and efficient five-star service

- Five-star service support
- 2 hours fast response
- 24-hour problem solving solution
- Cold station system and maintenance services
- Localized on-site service

Accessen

Low-carbon Sustainable,
Achieving a **Green Digital World**.

Extraordinary
Masterpiece

Extraordinary Masterpiece

Accessen "Green Digital World" Data Center Solving Solutions

Accessen

In the AI era, innovative technology embraces efficient liquid cooling

From liquid-cooling CDU to liquid-cooling primary-side hydraulic modules, Accessen creates an unimaginable cooling experience for you!

Three core advantages
Leading a new era in data center cooling

High efficiency and energy saving, cost reduction and efficiency improvement

Precise temperature control avoids performance degradation and failure caused by server overheating, extends equipment life, and reduces operation and maintenance costs.

Quiet operation, comfortable environment

The liquid cooling system operates with noise as low as 40dB, creating a quiet and comfortable working environment.

Eliminate the noise pollution and let your team focus on the most important thing.

Provides excellent scalability for future growth

Embrace the future with a modular design that easily scales capacity with plug-and-play functionality to meet growing data center needs.

Minimizes renovation costs and reduces overall lifecycle investment costs.

Accessen liquid-cooled primary side hydraulic module has more highlights waiting for you to discover

- The construction period of the cold station is greatly shortened, and the system can be quickly put into place and use
- BIM design, precise design and prefabrication to ensure efficient layout and seamless installation
- Smart O&M realizes intelligent monitoring capabilities, enables real-time system monitoring, fault detection and predictive maintenance, minimizes downtime and optimizes operational efficiency
- Satisfy the data center which has stringent requirements on cooling performance and reliability

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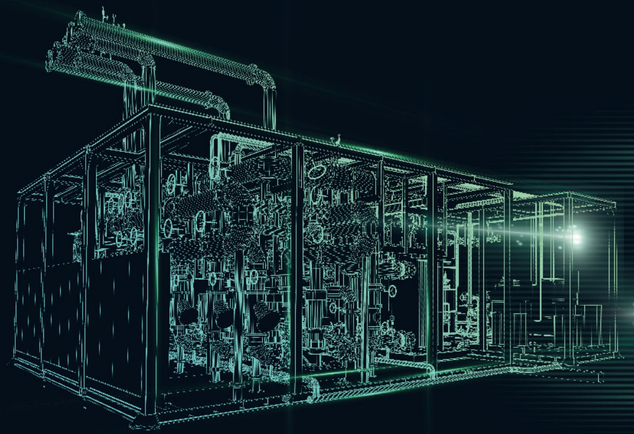
Liquid-cooling primary side hydraulic module Distribution System



Combining the rich production experience and technology of Accessen, we can customize the liquid-cooling primary-side hydraulic module distribution system for customers, integrating plate heat exchanger, cooling pumps, liquid cooling pumps, water treatment, pipeline valves, and electrical control systems. Highly integrated products provide more efficient and convenient heat exchange solutions for liquid-cooling data centers.

Extraordinary Masterpiece

Pursuit of ultimate craftsmanship
Achieve extraordinary masterpieces

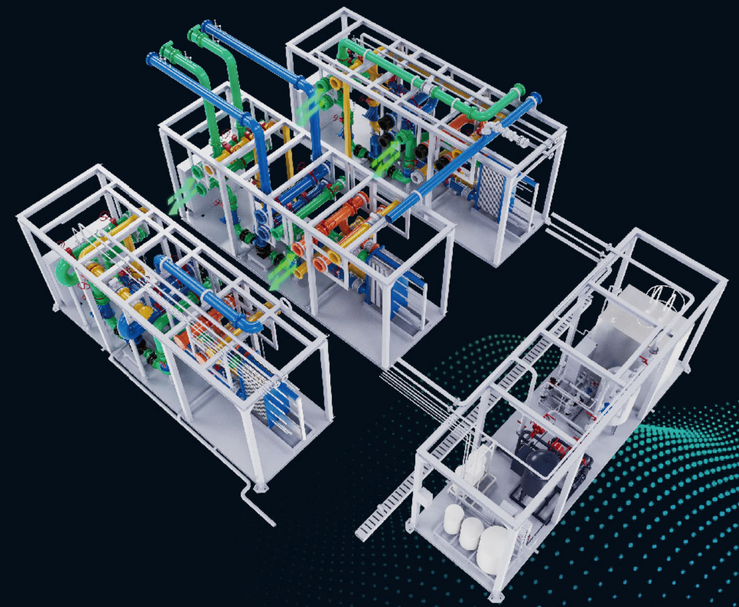
- Prefabricated integration, reasonable layout
- Short construction period of cold station
- Modular plug-and-play
- Low carbon and high energy efficiency
- BIM Design
- Smart operation and maintenance, more convenient

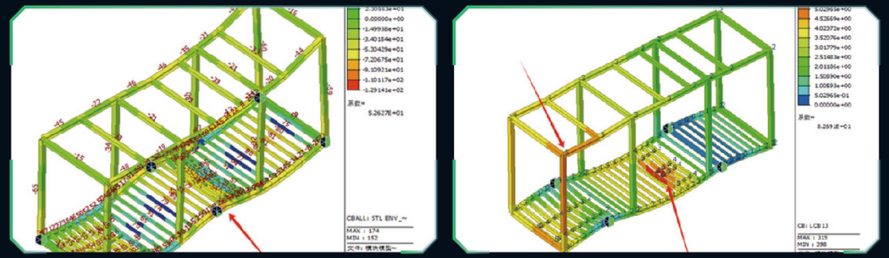
- Data Center Field
- New energy field
- Biomedicine
- Commercial buildings

Accessen adopt BIM technology in the construction of integrated cold stations and pipeline networks, which reflects the key issues in the design and construction of cold stations directly. It also can meet the needs of different data centers flexibly and provide all operating data and geometric graphics quickly and accurately.

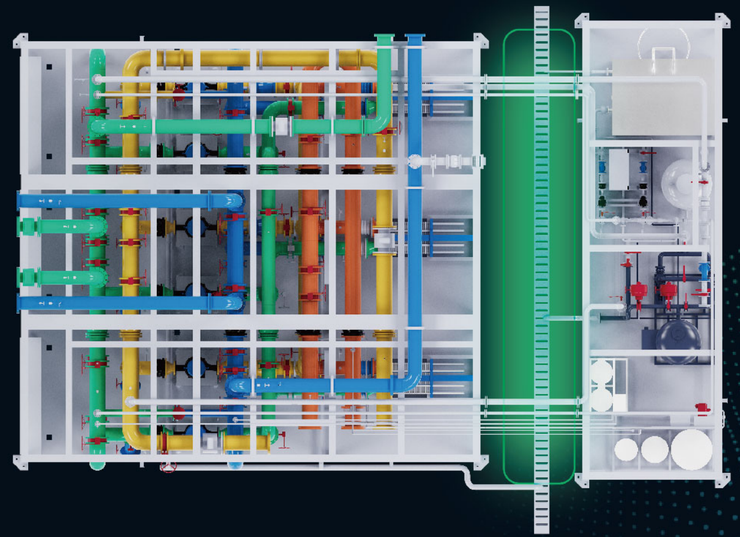
Accessen

A single module consists of three plate heat exchange units and one water treatment unit. Each unit is transported to the site for assembly separately, positioned by precise fixtures and connected by prefabricated pipelines. Only threaded or flange connections are required on site, minimizing on-site welding work.





The steel structure frame is used as the main structure of the module, and reasonable hanging points are set according to the internal structure and the center of gravity of the unit thus to avoid the center of gravity shift of the equipment during the lifting process. The steel structure not only meets the requirements for hanging pipes inside the module, but also meets the strength requirements for placing some main pipes in the later stage.



Fully consider the needs of the system's later operation, maintenance, and overhaul, reserve on-site inspection channels, and reserve space for equipment operation and maintenance.

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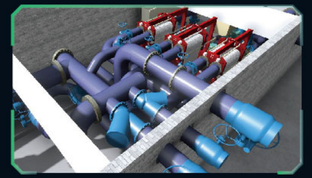
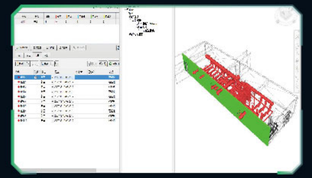
Building better system designs with BIM

Full process design

- Energy-saving design
- BIM Construction
- Simulation Design
- Secondary optimization design





Develop from nothing, Create extraordinary

Step01	Modular architecture construction
Step02	Cold source module prefabrication
Step03	Heat exchange module prefabrication
Step04	Cooling water module prefabrication
Step05	Chilled water module prefabrication
Step06	Electrical system module prefabrication
Step07	Performance verification and evaluation

Prefabricated integrated,
high quality product delivery.

AIS optimizes the traditional system and configures it into basic modules such as host module, heat exchange module, hydraulic module, control system, etc. according to functions and equipment.The structure is optimized and designed in the factory, and the products are prefabricated and assembled into various integrated systems to achieve rapid installation and system debugging.

Accessen

Precise prefabrication and fast delivery

In the process of continuous innovation, Accessen insists on user demand-oriented, customer satisfaction as the core target, strengthening system construction, and constantly introducing advanced automated production equipment and information management systems, including electrophoretic coating production lines, automated cutting, welding robots, 40,000-ton presses, automatic welding special equipment, heat exchangers, heat exchanger unit full performance test platforms, ERP systems, CRM and other equipment systems. Through the integration of informatization and industrialization, the full life cycle service of products and customers is improved, ensuring the normal operation of Accessen heat exchange equipment used worldwide.

Automatic cutting

Automatic welding

Electrophoretic coating production line

Electrophoretic coating process

Assembly line

Testing Center

Accessen

A wide range of product families

AHRI Certified Products

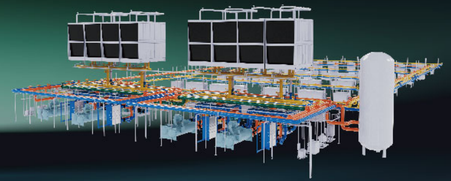
High efficiency plate heat exchanger AQ/AA

Compact structure, small space
Reasonable layout and easy maintenance

Liquid cooling/water cooling hydraulic module PHEU

Achieve overall data center operation
PUE≤1.15

Liquid Cooling Distribution Unit ACDU



Customization
More suitable cooling solution

Indoor prefabricated integrated cooling station AIS

High-precision prefabrication
Flexible modules

Outdoor prefabricated integrated cooling station AIS

Achieve rapid completion of data center
Flexible expansion

Micro-module container integrated cold station AIS

Accessen

High efficiency plate heat exchanger AQ/AA

AQ/AA series gasket type plate heat exchangers are widely used in HVAC refrigeration applications. This series of products has passed the American Air Conditioning, Heating and Refrigeration Association AHRI Liquid Heat Exchanger (LLHE) certification, and the thermal performance of the product has been inspected and recognized by the third-party professional organization. AHRI certification is the only third-party organization in the world that certifies the performance of plate heat exchangers. The heat exchanger developed by Accessen according to refrigeration application conditions can meet the requirements of higher efficient heat exchange better, cover different working conditions and processing capacity, and have suitable heat exchange solutions for applications with different water qualities and different temperatures.

- Safe and reliable
- Third-party performance certification
- Easy maintenance
- High heat transfer coefficient
- Glue-free gasket
- Long service life

Liquid cooling/water cooling hydraulic module PHEU

Hydraulic modules for liquid cooling/water cooling systems are the core of the distribution system. A single set can consist of multiple heat exchange units and water treatment auxiliary units. The design of inspection and maintenance channels is optized to facilitate later operation and maintenance. Each unit can be transported to the site separately through modular design and precise modeling, assembled and put into place quickly. Integrated product design and installation greatly shortens the project construction period. Factory automation and large-scale production ensure the quality and stability performance. The debugging process is simple and fast.

- Prefabrication
- Efficient heat exchange
- Easy maintenance
- Safe and reliable
- Fast delivery
- Easy debugging

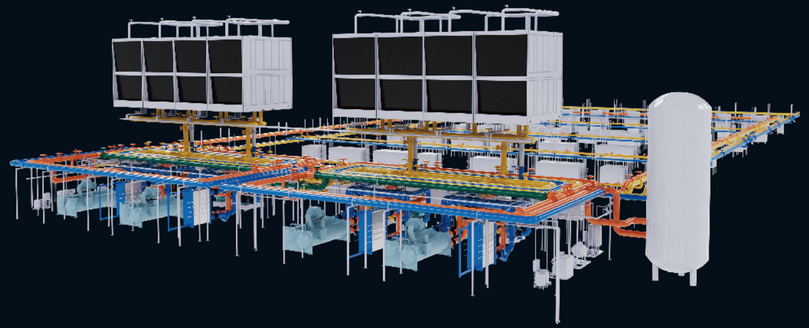
Accessen

Liquid Cooling Distribution Unit ACDU

The liquid cooling system consists of cooling source, liquid cooling distribution unit (CDU), prefabricated pipe network, a distribution unit, a power distribution and control system. Provides large temperature difference and non-compression natural cooling for IT equipment. It can be flexibly expanded and has the characteristics of efficient heat dissipation, ultra-low energy consumption, stability and reliability, quick deployment, and low environmental dependence.

The CDU developed and produced by Accessen adopts a liquid-liquid heat exchange mode and is suitable for cooling scenarios such as cold plate liquid cooling servers, immersion liquid cooling pools/cabinets etc. It can achieve an overall data center operation PUE ≤ 1.15.

- High intelligence
- PUE≤1.15
- Safe and reliable
- Fast delivery
- High compatibility
- High flexibility



Indoor prefabricated integrated cooling station AIS

Suitable for indoor refrigeration station construction. Factory prefabrication and testing will reduce the interfaces between different equipment and professions, avoid on-site cross-construction, and shorten the construction period. Through precise modeling and simulation, a functional module can be divided into several modules that are easy to transport. The system is integrated through multiple modules which is convenient for disassembly, lifting and transportation. Equipment delivery is faster. At the same time, on-site welding operations are greatly reduced which is safe and environmentally friendly and reduces construction pollution.

indoor prefabrication, we can also provide prefabrication and installation engineering services for related pipelines according to customer needs.

- Coating or electrophoresis
- BIM Design
- Prefabrication
- Intelligent Control
- Module Integration
- Flexible configuration

Outdoor prefabricated integrated cooling station AIS

It is suitable for the construction of outdoor refrigeration stations with a higher degree of integration. And the integrated delivery will shortens the construction period. Through precise modeling and simulation, a functional module can be divided into several modules that are easy to transport. The system is integrated through multiple modules which is convenient for disassembly, lifting and transportation. Equipment delivery is faster. At the same time, on-site welding operations are greatly reduced which is safe and environmentally friendly and reduces construction pollution. Compared with indoor prefabrication, it achieves lower construction and workload, faster delivery and higher degree of integration.

- Outdoor installation
- Safe and reliable
- Easy maintenance
- Compact structure
- Intelligent Control
- Long service life

Accessen

Micro-module container integrated cold station AIS

The micro-module container integrated refrigeration station is different from the outdoor box-type integrated refrigeration station in terms of the combination of multiple functional modules. The micro-module has all the functions of a small but complete system, integrating a complete system into one box.
It is suitable for expansion and renovation of outdoor and roof systems. It has a higher degree of integration and integrated delivery greatly shortens the construction period. Through precise modeling and simulation that a functional module is divided into several skids that are easy to transport and place. The system is integrated through multiple modules which is easy to disassemble, hoist and transport.
The goal of rapid delivery is achieved. At the same time, on-site welding operations are greatly reduced which is safe and environmentally friendly and reduces construction pollution.

- BIM Design
- Compact structure
- Prefabrication
- Intelligent Control
- Module Integration
- Flexible configuration

Accessen

Intelligent control on demand
Smart Operation and Maintenance

Automatic control system

Smart energy-saving operation and maintenance, proactive maintenance

Fault warning, worry-free

Cloud Data Platform

Real-time data

Remote Management

Statistical analysis charts

Parameter Report

Timely alert

Prologis Southeast Data Center Phase I, Phase II, and Phase III

Project Background

The project is located in Changshu High-tech Zone, Jiangsu Province with a total construction area of 150,000 m2 which can provide facilities and value-added services for 300,000 servers. In order to achieve high-quality and fast delivery of the data center, the project adopted prefabricated integrated cold station heat exchange solution of Accessen. The Phase I and Phase II data centers are composed of two indoor prefabricated integrated cold stations, and the refrigeration unit uses core components such as "chiller + plate heat exchanger + cold storage tank". During the same period, a number of prefabricated technical equipment such as prefabricated 110kV substations and outdoor container diesel generator sets were used. It also won the first prize of the "2021 Data Center Science and Technology Achievement Award".

Phase I of the project was completed and accepted in August 2021 with a construction period of less than 5 months. The operation and energy-saving effects were good. The water system saved energy by about 20% and the average PUE could reach 1.25. The third phase adopts an outdoor container module combination integrated cold station heat exchange solution to achieve rapid, efficient and low-carbon construction of the data center.

Water thermal storage

Free cold source

PUE1.25

A Data Center Hydraulic Module Project

Project Background

It covers a total area of about 6,000 acres and is positioned as a domestic million-level server resource center, covering the East China region and the surrounding areas of Central China. It has a planned capacity of 3 million servers and a 10-millisecond dedicated line to the six provinces and one municipality in East China and more than 20 popular cities in Central China (Hunan, Hubei, and Jiangxi).

The data center uses AI technology to accurately control the temperature and collects all data from the data center, IT infrastructure, and cloud services for training. It pioneered cloud service-aware energy efficiency tuning technology, effectively reducing PUE and achieving an annual PUE as low as 1.1 for liquid-cooled data centers, which is lower than the industry level and saves 1 billion kilowatt-hours of electricity per year for every 1 million servers.

Hydraulic Module

Liquid Cooling

PUE 1.1

Chengdixiangjiang Smart Data Center

Project Background

The project is located in the Shanghai Lingang Heavy Equipment Industrial Zone, with a construction area of approximately 25,000m2, and is positioned as an Internet data center service. The cooling system is divided into two cooling modules, each of which bears an IT load of 12MW. The heating value of power equipment such as transformers and batteries is 2.4MW. It adopts an indoor prefabricated cooling station and completes the prefabrication construction and delivery of the entire system.

In the project, the module design was optimized for the second time and split into chiller module, plate exchange module, water pump module and connecting pipe switching module. After positioning each module, the installation can be completed by docking its interfaces, greatly reducing on-site working hours. The pipe prefabrication and construction of the entire water system are pre-filmed and surface painted in the factory. After installation, it only takes two days of flushing to meet the pre-coating standards, saving the time of owner and water consumption, Meanwhile,Wastewater discharge is more environmentally friendly. Construction period after boundary optimization: 60 days.

8000RT

Prefabrication of the entire system

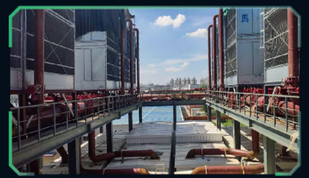
Terminal prefabrication

Langfang Yunfeng Data Center—Zhongpeng Cloud

Project Background

The project is located in Longhe High-tech Zone, Langfang. The construction area of Phase I and Phase II is 27,000 m2, with more than 6,700 cabinets designed. Phase I (Area A) uses 4 sets of 2,200 refrigeration tons integrated cold stations. The second phase (Zone B) uses 4 sets 1,600 tons integrated cold stations and a three-story steel structure platform to be used to build an outdoor dual-cold-source high-efficiency integrated cold station.

The cold station integrates mechanical refrigeration and natural cooling perfectly. The core refrigeration component equipment of the project is prefabricated and integrated into two boxes. The core refrigeration component equipment of the project is prefabricated and integrated in two boxes. After qualified pre-commissioning, it is transported to the site for three-dimensional assembly and connection, ensuring efficient and reliable operation of both mechanical refrigeration and natural cooling. It meets the requirements of fast and efficient delivery very well.



6700+ cabinet

11400 RT

Outdoor prefabrication

Accessen

Cloud Computing Research and Development and Data Interaction Center Project

Project Background

The project has a construction area of about 25,000m2 and adopts an outdoor container type prefabricated cold station solution. The building type is a Class C factory building design, with one floor above ground and a partial two-story structure. The water pump heat exchanger and chiller module of the cold station are on the first floor, and the cooling tower is arranged on the second floor, which saves 40% of the construction space compared with the original indoor design.

The integrated cold station is pre-installed and debugged in the factory, and then transported to the site for assembly after disassembly. The container was hoisted and spliced into place within 36 hours. The cooling tower only needs to be hoisted into place and piped simply. The internal pipelines, bridges, cables and other connections can be completed within half a month after being put in place. At the same time, the conditions for water and electricity are met.

Save **40%** of building space

Outdoor prefabrication

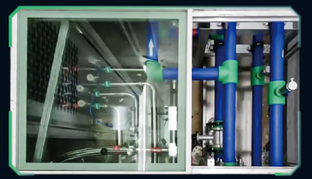
4050RT

A liquid cooling CDU and system integration project

Project Background

This project is a pilot liquid cooling project, and the pilot site is the operator access room of the delivered computer room. Utilize existing power supply equipment, air-cooled row air conditioners, cabinets and other equipment. The main equipment and materials added include liquid-cooled CDU, outdoor cooling tower or dry cooler, primary and secondary pipelines, cabinet Manifold, quick connector (QD), etc.

In view of the difficulty of construction and high material cost of stainless steel pipelines which used in domestic projects commonly, we worked with customers to develop a PPR pipeline system for connection, and used a load cabinet at the end to conduct CDU heat exchange efficiency test and pipeline reliability test. The project has been running trouble-free for 2 years.



Fast delivery

CDU

Liquid Cooling

Tianhe-2 supercomputer

Project Background

The Guangzhou Supercomputing Center is located in Guangzhou University Town. Tianhe-2 is a supercomputer system developed by the National University of Defense Technology. At the "2013 Global Supercomputing Technology Conference" held in Leipzig, Germany, Tianhe-2 became the world's fastest supercomputer in terms of floating-point computing speed, ranking first with its excellent performance of a peak computing speed of 549 quadrillion times per second and a sustained computing speed of 339 quadrillion double-precision floating-point operations per second.

Accessen provided 19,000RT heat exchange equipment for Tianhe-2 project. Among them, there are 12 sets AN series plate heat exchangers with a single load 5,000KW / temperature difference of 1℃ and 2 sets ABJ/GU series heat exchange units with a single load of 2,400KW. It provides reliable guarantee for the normal operation of Tianhe-2.

Free
cold source

5.49quadrillion times
Calculation speed/second

19000 RT

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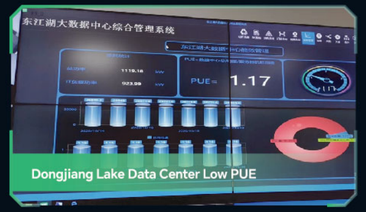
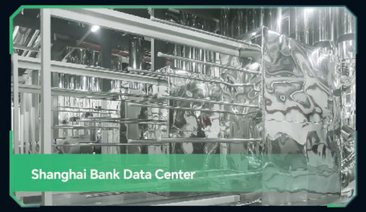


Dongjiang Lake Data Center Low PUE


Tencent Tianjin Data Center


Daqing Huawei Cloud Data Center

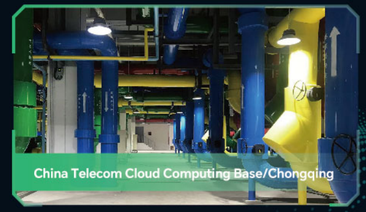

Shanghai Bank Data Center


Beijing City Cloud Data Center


Smart IoT Data Center


China Telecom Cloud Computing Base/Qingdao


China Telecom Central Big Data Center/Nanchang


China Telecom Cloud Computing Base/Chongqing

Extraordinary
Masterpiece

Tencent 腾讯 | 阿里巴巴 Alibaba.com | Baidu 百度 | HUAWEI | ByteDance 字节跳动

中国移动 China Mobile | 中国电信 CHINA TELECOM | China unicom 中国联通 | ZTE 中兴

中国农业银行 AGRICULTURAL BANK OF CHINA | 中国银行 BANK OF CHINA | ICBC 中国工商银行 | 中国建设银行 China Construction Bank | 上海银行 Bank of Shanghai

中国邮政储蓄银行 POSTAL SAVINGS BANK OF CHINA | e·Hualu 易华录 | 亚太中立 | 中国通信服务 CHINA COMSERVICE | 国家电网 STATE GRID

金山云 | 中鹏云 ZPY | HYPERAI CLOUD 中科弘云 | 宝之云 BAOCLOUD | YUEKE

国家超级计算广州中心 NATIONAL SUPERCOMPUTER CENTER IN GUANGZHOU | 数据港 | 鹏博士集团 DR.PENG GROUP | 城地香江 | 世纪互联 VNET

*The trademark ownership belongs to the original holder.

Accessen

Fast and efficient localization service

Customer service is our primary task and customer satisfaction is our goal. Accessen is committed to forming a sustainable development partnership with customers. We have established sales and service organizations in major cities all around China, providing on-site service to strategic users within 24 hours, and providing users with customized "one-to-one" services.

Our service has no end...

2
2 hours quick response

4
4 hour door-to-door service

24
Provide solutions within 24 hours

365
info@accessen.cn

Service Hotline
4006-191-191

Online Support
ts@accessen.cn


服务认证证书

上海艾克森股份有限公司

5-star service certification

Service public account

5+ National Industry Standards

30+ International professional certification

50+ Technical R&D Team

100+ Patents and Copyrights

400+ China Sales and Service Network

At the 10th Data Center Standards Summit of CDCC, the "White Paper on Efficient Prefabricated Integration Technology of Data Center Refrigeration Systems" was released on November 9, 2022, edited by China Data Intelligence Information Technology Research Institute, Prosperity Data Technology (Shanghai) Co., Ltd. and Beijing Yanhua Construction Design Co., Ltd., and co-edited by more than a dozen companies including Shanghai Accessen.


数据中心制冷系统高效预制集成
技术白皮书

Data center cooling systems efficient prefabricated integration technologies white paper

Project and service support

- Project Research
- Engineering Design
- System Integration Skid Mount
- Installation and Debugging
- Training support
- Operation and maintenance
- Upgrade
- EPC&BOT
- Green Certificate Application

In the context of globalization and sustainable development, Shanghai Accessen Co., Ltd. is fully aware of the importance of corporate social responsibility. We are committed to achieving environmental sustainability, social harmony and transparency in corporate governance through technological innovation and responsible operations. Committed to continue promoting ESG practices and working with all stakeholders to create a sustainable future.

Carbon Footprint Certification