

Vertiv in the Oil and Gas Industry

Unmatched Protection and Reliability for Your Critical Equipment

The demand for 4.0 technologies driven by an increase in the volume of data, the power of computer systems, and connectivity by the oil and gas industry has sparked a growing interest in digital investments and sustainability.

Vertiv understands the complexity and challenges of heavy industry operations, which is why we specialize in providing effective and reliable solutions that are designed to withstand the most extreme conditions of industrial environments (corrosion, humidity, saline environments, high temperatures, dust, geographic altitude and snow, among others) through a full range of mission-critical applications. With proven industrial capabilities and backed by global service support, Vertiv solutions are on a mission to protect your most valuable assets, ensuring continuity in your operation and helping you meet your goals.

Trending in the Industry of Oil and Gas

Sustainability:

Sustainable development must meet the needs of global society in a costeffective and safe manner, minimizing environmental impact and utilizing sources of alternative energy.

Digitalization:

Digital technologies are redefining all industries, including oil and gas. Technological advances, reduced costs of digital deployments and the proliferation of smart devices offer a competitive opportunity for the industry.

Additive Manufacturing:

Refers to the construction of 3D objects by adding ultra-thin layers of various materials such as plastic, metal, cement, or other composites. This technology is of interest to the oil and gas industry as it helps reduce the time and resources to produce complex prototypes, allowing innovative shapes to be built with intricate geometries.

Natural Gas Growth:

Globally, the demand for natural gas has increased significantly and the market will experience further growth as projects continue to increase this capacity.

Preparation and strengthening of infrastructure for **5G technology**.

The digital transformation allows one to benefit from advanced technologies such as Al (Artificial Intelligence), IoT (Internet of Things), Big Data, and field devices (sensors, motors, VDFs), among others. In order to open new opportunities in the industry by optimizing and automating processes, as well as incorporating predictive maintenance of critical assets to reduce system downtime and minimize the risk to workers in the facilities.

Vertiv helps you protect critical processes in the oil and gas industry, prevent, predict, and reduce maintenance costs and ensure continuity of your operation. As industry experts we collaborate with our clients to visualize and build futureproof infrastructures. We leverage our portfolio of hardware, software, data analytics, and services to ensure that our customers' vital applications run smoothly, perform optimally, and can be scaled up according to business needs.



Vertiv Protects Critical Processes in the Oil and Gas Industry



1. Upstream: Exploration, Drilling, Extraction

Power protection

2. Midstream: Transport

 DC power, solar energy and hybrid solutions

3. Downstream: Refineries

- Power protection
- Thermal management

4. Plant Control and Monitoring Center

- Power protection
- Thermal management
- Prefab IT network closet

5. Storage and Delivery Terminals (TARs)

- Power protection
- Thermal management

6. Distribution: Service Stations

- Power protection
- Prefab IT network closet

7. Electric Vehicle Charging:

- DC power, solar energy and hybrid solutions
- Power protection
- Prefab IT network closet

8. Data Center

- Power protection
- Thermal management
- Smart Solutions
- Power distribution
- Monitoring
- Racks

9. Administrative Buildings:

- Power protection
- Thermal management
- Prefab IT network closet
- Monitoring

10. Services

- Installation
- Start-up
- Maintenance
- Optimization
- Digital Services



Electrical Switchgear, Power Distribution, Energy Management

Our power distribution systems are custom-built using a modular design. We offer single source LV & MV switchgear solutions, in ratings available from 800A – 6300A.



Vertiv[™] Powerboard LV Power Distribution

You want a solution that grants you flexibility for reconfiguring, ease of installation, and overall, more efficiency. The Vertiv[™] Powerbar patented range of busbar trunking ads overhead power distribution to your data center, allowing increased accessibility to power loads for maintenance. Circuits can be added and removed easily as they are located just above their respective racks. This allows you to make changes in a cost-efficient and timely manner.

<u>Vertiv™ Liebert® Apt</u>



<u>Vertiv™ Powerbar iMPB</u>

Uninterruptible Power Supplies

The critical systems that sustain your business operations can't go down. Vertiv supports you in improving your uptime with a full range of innovative Vertiv[™] Liebert[®] uninterruptible power supplies (AC UPS) and future-proof, integrated UPS systems, that will cover the backup power needs of your IT infrastructure, from small computer rooms at the network edge to enterprise and hyperscale data centers.

From 0.35 kVA to 3.4 MW





Vertiv[™] Liebert[®] EXM2

<u>Vertiv™ Liebert® EXS Family</u>



Vertiv™ Liebert® GXT5 Family

The Vertiv[™] Liebert[®] Hipulse[™] D UPS systems are designed to meet a wide array of mission-critical continuity needs in critical environments. It is embedded with the latest technologies available in the market today to provide your business maximum power protection even in the harshest conditions.



<u>Vertiv™ Liebert® Hipulse™ D</u>

Global Services

A service model embracing the entire product lifecycle going from project start up to continuous maintenance and Performance optimization.



Services ensure your vital applications are available and healthy through our project management, maintenance, and performance optimization capabilities so you can operate more efficiently, reducing risks and difficulties.



Global Geographic Coverage and Capabilities

The largest and best-trained engineering staff.



Technology, access to research and development, and field knowledge.





Expert Ally Reliability: we are your most dependable business partner.

Battery Energy Storage Systems

Vertiv[™] DynaFlex BESS, Integrated Modular Design

The Vertiv[™] DynaFlex BESS uses UL9540A lithium-ion batteries to provide utility-scale energy storage for mission-critical businesses that can be used as an always-on power supply. This energy storage system can be used to smooth out power usage and seamlessly transition to an always-on battery-enabled power supply whenever needed. By doing so, organizations can reduce OpEx costs, such as peak demand charges, on an ongoing basis. They can also participate in energy arbitrage and other services, enhancing profitability.



DC Power Systems and Outdoor Enclosures

Your industrial environments are business-critical, so don't let power grid failure keep you from achieving your operational goals. With superior reliability and a minimal footprint, the Vertiv[™] NetSure[™] Technology Platform -- including DC power, solar energy and hybrid solutions -- offers hassle-free protection that keeps your data flowing.



<u>Vertiv™ NetSure™ 5100 Hybrid DC Power System</u>



<u>Vertiv[™] Netsure[™] eSure[™] Rectifiers</u> and <u>Solar Converters</u>





Vertiv[™] NetSure[™] M44 Outdoor Enclosure with Intelligent Climate Control

Vertiv[™] NetSure[™] D601 Outdoor Enclosure



Integrated Solutions

Tailored solutions for your application, pre-engineering, pre-configuring, pre-testing, and pre-validating against your specific needs and expectations. Our prefabricated modular (PFM) data centers offer a variety of solutions for core data centers & critical facilities, whether you're looking for a new build, expansion of pre-existing facilities and retrofits, or augmentation of facilities. They are flexible, allowing for faster deployment and lower risk, scalable, allowing for rapid response to unforeseen demand, and efficient, allowing for lower total cost.

Vertiv[™] Modular Data Center Solutions

Vertiv[™] Integrated Rack Solutions



Vertiv[™] SmartCabinet[™] Solutions



Vertiv[™] SmartCabinet[™] 2

Vertiv[™] SmartMod[™]

Thermal Management

Managing the heat transferred from the data center to the external environment, while assuring the right temperature and airflow for each server. The Thermal Management range of Vertiv® Liebert® solutions answers all different customer needs and applications, adopting state-of-the-art technologies to achieve the highest efficiency while minimizing energy costs.



Vertiv[™] Liebert[®] PDX 15-165kW



Vertiv[™] Liebert[®] PCW 25-400kW



Vertiv[™] Liebert[®] CRV



Vertiv[™] Liebert[®] HPW

Vertiv[™] Liebert[®] HPS







Vertiv[™] Liebert[®] SE



Vertiv[™] Liebert[™] AFC Inverter Screw with low-GWP 650-2000kW



Vertiv[™] Liebert[®] HPC Freecooling chiller 60-1000kW

Power Distribution

PDU for IT Rack





IT Management

- Serial Console
- Consolidated Management Appliance
- High-Performance KVM
- Desktop Secure KVM and KM
- Management Software



<u>Vertiv™ Liebert® RXA</u>

Software

- Data Center Monitoring
- Energy Management
- Power Management
- Capacity Management
- Remote Management
- Change Management





Services for Critical Facilities and Advanced Solutions

We offer management, operation, and maintenance services for data centers and critical infrastructure solutions. We have highly trained people, processes, and appropriate innovative technologies, considering the best practices in the industry to operate your facility efficiently and profitably. Learn more about this solution here.

Vertiv[™] Life[™] Diagnostic and Preventive Monitoring Services

Remote service delivery is enabled by Vertiv Life Services, which provides remote diagnostics and preventive monitoring service for critical infrastructure equipment. Vertiv Life Services delivers increased uptime and operational efficiency by enabling your team's continuous monitoring, expert data analysis, and field engineering expertise.

Maintenance Programs

Our comprehensive and preventative maintenance program helps you maximize the reliability and performance of your IT/OT network and gives you complete peace of mind. Vertiv's trained and certified service engineers will implement this service by using proper tools and original parts to ensure greater system reliability.

Upgrades, Replacements and Retrofits

Replacing life-limited components like UPS systems and batteries before they age provides a much more reliable approach to achieving extended life for your critical systems. Waiting to replace components can lead to unplanned downtime.

Professional Assessments and Tests

Professional assessment and testing will help you identify gaps in your energy infrastructure, ensure IT /OT system availability, and plan for additional capacity. Vertiv's professional assessments and tests are designed to encourage informed decisions that improve your data center performance.









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