



# ACTIVE POWER CLEANSOURCE<sup>®</sup> UPS

PRODUCT PORTFOLIO

[activepower.com](http://activepower.com)



135,000sqft manufacturing facility in Austin, Texas.

# CLEANSOURCE® UPS systems

## Who we are

When you choose an Active Power solution, you can breathe easier in every way possible. You'll get peace-of-mind that your critical operations are protected, you'll see improved bottom-line expense performance and you will be part of the growing global movement to reduce industrial environmental impact.

Active Power is an established provider of efficient, reliable and green critical power solutions that ensure business continuity in the event of power disturbances.

Active Power's expert system engineers and worldwide service and support teams ensure that enterprises around the globe have the power to perform.

Active Power protects operations in more than 50 countries with premier flywheel-based UPS systems and turnkey power solutions. Our systems are built with pride in Austin, Texas, at a state-of-the-art, ISO 9001:2008 registered manufacturing center.

The company was founded in 1996 and became public in 2001 (NASDAQ). In November 2016 the business was acquired by the German Piller Power Systems group. Today, US customers are served via Austin TX and internationally via the Piller global network of subsidiaries and service centers. The Piller Power Systems group is a division of the UK engineering and industrial group, Langley Holdings plc.

## Why Active Power?

Our solutions are:

### Active Power CLEANSOURCE®

- 5,000+ flywheels shipped worldwide
- 200+ infrastructure modules deployed worldwide
- 50+ country deployments
- 200+ million hours of field runtime
- 1,000MW+ of critical power deployed



intelligently  
efficient

- The most energy and space efficient quality power solution on the market
- Twice the energy density and up to 98% energy-efficient, delivering real impact in reduced power consumption costs to your bottom line
- Lower total cost of ownership than other solutions – short term investment payback and typical 40% total cost savings over the system life



inherently  
reliable

- Precision engineered to be 12 times less likely to fail than traditional UPS with batteries
- 20-year product life with no degradation
- Field-proven excellence in design and engineering with 5000+ flywheels shipped and 200 million+ run hours
- Flexibility to operate in harsh environments from 0-40° C ambient temperature



economically  
green

- Green solution delivered at an economic advantage
- Good for your business (reduced power costs) and good for the environment (reduced CO<sub>2</sub> emissions)
- No hazardous materials to manage or maintain
- Meets or exceeds green design requirements

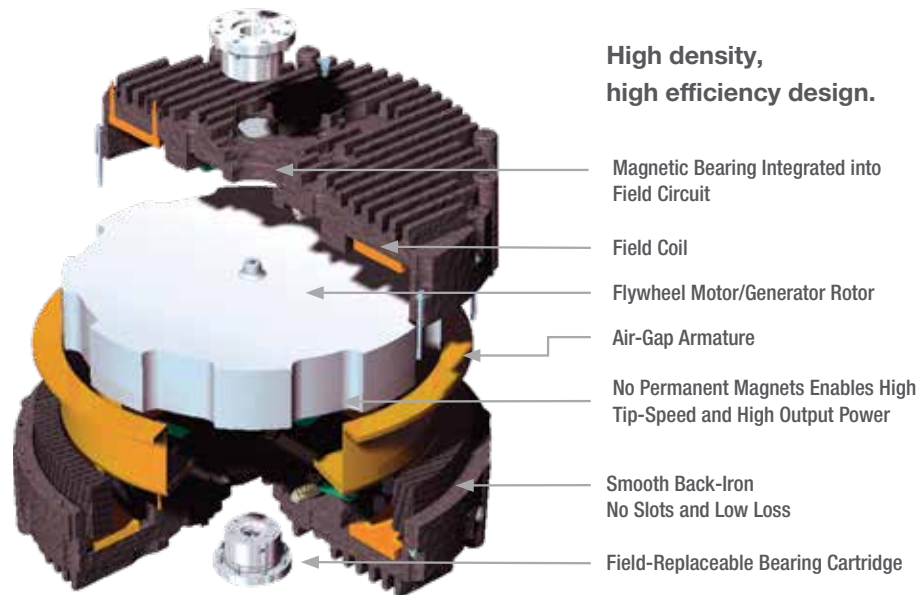
# Innovative technology

Active Power's **CLEANSOURCE®** flywheel-based UPS solutions provide unique advantages that solve the most important power problems for data centers and health care, as well as industrial and manufacturing operations. Choose the modular and expandable (up to 2.4MW) **CLEANSOURCE® PLUS** UPS, or the **CLEANSOURCE® HD** UPS for high power density with a large system building block. Both systems offer Active Power's industry-leading TCO, reliability and sustainability.



## Flywheel Technology

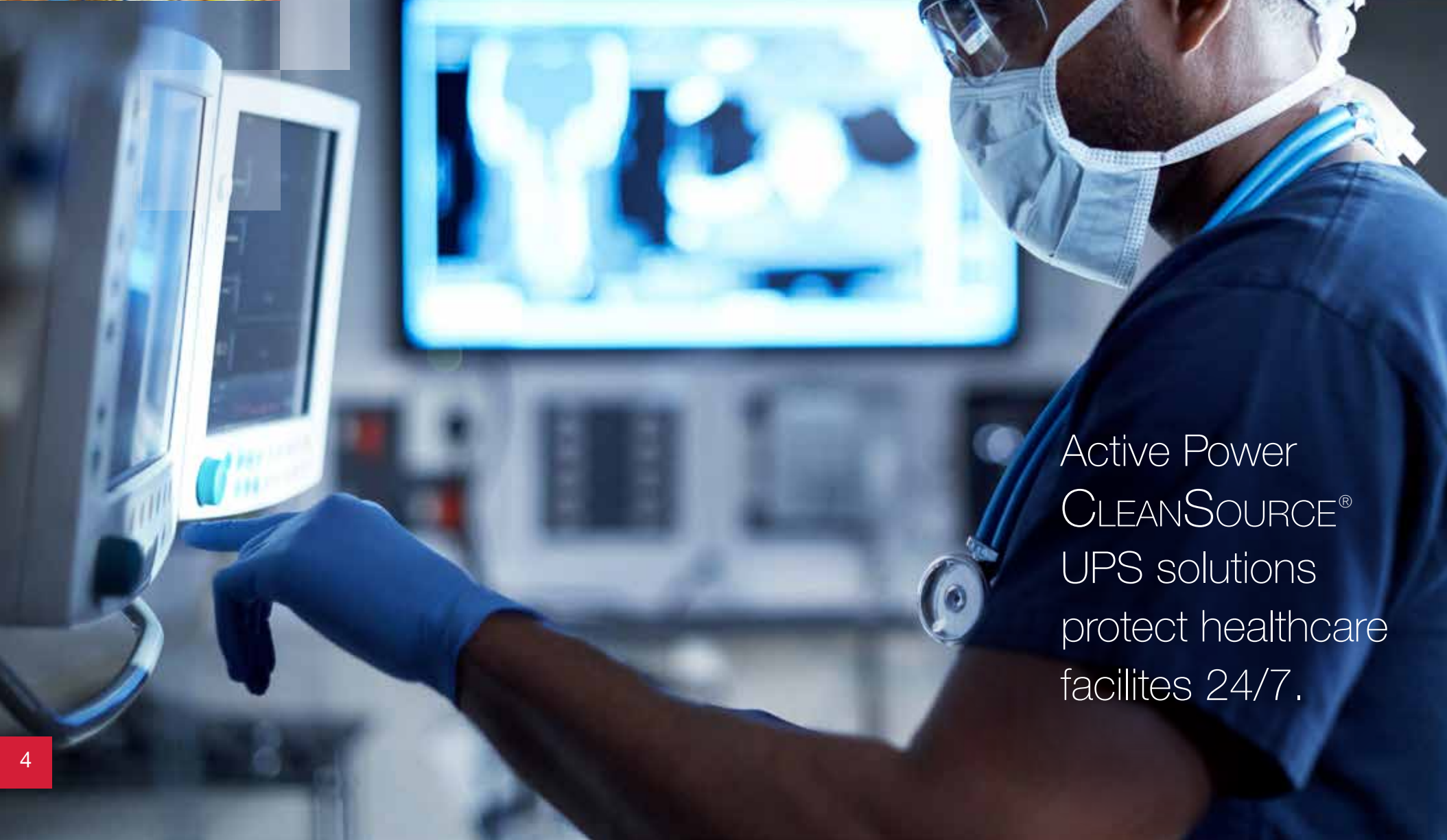
What makes **CLEANSOURCE®** systems so special? The answer is Active Power's patented integrated flywheel UPS technology. Flywheel systems store kinetic energy – energy produced by motion – by constantly spinning a compact rotor in a low-friction environment. When the utility supply fluctuates or is lost, inertia in the flywheel is used to generate electrical energy and keep the load powered without interruption.



**High density,  
high efficiency design.**

**CLEANSOURCE® UPS** have a proven track record for solving the most important power problems facing facilities in a multitude of industries:

- **Industrial & Manufacturing**  
Flywheel UPS system provides significant benefits in harsh environments.
- **Data Centers**  
Our systems have been optimized for deployment in the most common data center designs.
- **Transportation**  
**CLEANSOURCE® UPS** help provide continuous power which is critical in keeping transportation infrastructure running smoothly.
- **Healthcare**  
Our systems are an ideal fit for the specific demands of healthcare applications where electrical interruption is not an option.
- **Broadcasting**  
**CLEANSOURCE® UPS** system is proven to protect transmitters and master control rooms from costly downtime and to guard transmitters from possible damage due to utility events.



Active Power  
CLEANSOURCE<sup>®</sup>  
UPS solutions  
protect healthcare  
facilities 24/7.

# The Active Power CLEANSOURCE® range

The Active Power CLEANSOURCE® range, based on innovative flywheel technology, provides a unique combination of reliability, total cost of ownership and power density.

## CLEANSOURCE® Key Benefits:

- Extended ride-through
- Up to 98% efficient
- Half the space of legacy battery based UPS
- Redundant fans and control power units
- Lower cooling requirements
- Lower maintenance and service
- Cost-effective installation
- Color LCD touch-screen display
- Remote monitoring
- Built-in power factor correction
- Generator compatibility
- Dual input and integrated maintenance bypass option
- Seismic provisions – consult factory
- 20-year design life
- GenStart option

## CLEANSOURCE® PLUS SMS

The Active Power CLEANSOURCE® PLUS SMS UPS is the perfect combination of low total cost of ownership, superior reliability and sustainability for any mission critical application.

Designed with highly predictable, battery-free energy storage, the **Single Module System** offers excellent total cost of ownership in its class.

## Parallel Online Architecture

The CLEANSOURCE® PLUS SMS is based on our Parallel Online Architecture which provides highly effective active and passive isolation between input and output, while delivering Class 1 voltage regulation and dynamically cancelling effects of non-linear load harmonics. This continuously provides online power protection to your organization, protecting critical operations against all nine IEEE (Institute of Electrical and Electronics Engineers) power disturbances in a power dense, reliable, and energy efficient package.





### CLEANSOURCE® PLUS MMS

Our **M**ulti **M**odular **S**ystem offers a wide range of modular and redundant backup power systems from 300kW to 2400kW.

The built-in flywheel energy storage takes up less than half the footprint of battery based systems, delivers efficiency up to 98% and lowers total cost of ownership by up to 40% over the life of the product compared to conventional UPS systems. This field proven

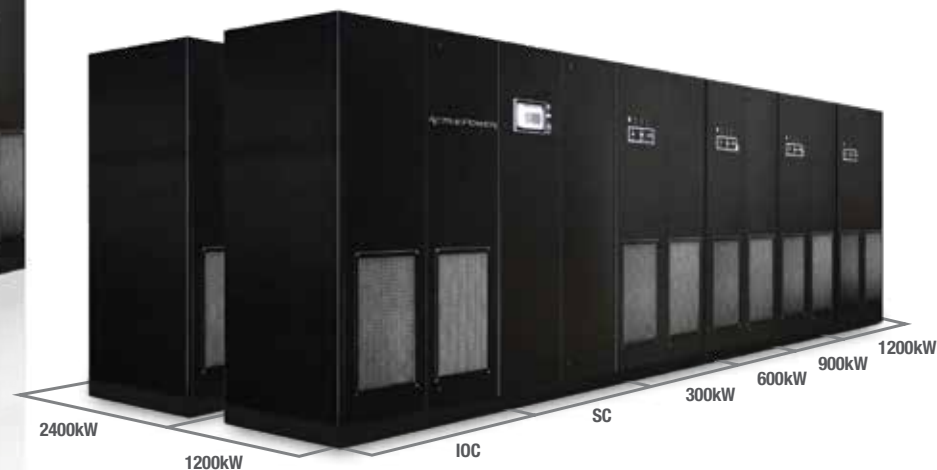
technology is based on a highly fault tolerant IGBT architecture designed to protect all critical loads, such as data centers, industrial processes and healthcare applications.

Stored energy will provide ride-through up to two minutes depending upon configuration, making the CLEANOURCE® PLUS MMS a clear alternative to modular static UPS systems reliant on battery storage. The CLEANOURCE® PLUS MMS UPS system has more than enough energy storage for diesel starting and synchronization, even when paralleling generating sets. Elimination of batteries saves space and

weight, reduces site testing and maintenance and removes the need for routine replacement after a few years of service life.

### Modular and Scalable Architecture

CLEANSOURCE® PLUS MMS UPS are modular and capable of multiple redundancy levels (N+1, N+2, ...). Customers can readily expand them in line with their own growth needs by adding further modules over time. Each system consists of an input/output cabinet (IOC), a system cabinet (SC) and the option to connect up to four modules with built-in wireways. In total, eight modules can operate in a single system, providing up to 2400kW of high efficiency, battery-free UPS power.



### CLEANSOURCE® HD

Active Power CLEANSOURCE® HD UPS delivers 40% TCO savings, is 12 times less likely to fail and reduces your impact on the environment by 90% compared to conventional static UPS systems. Based on a field-proven design, our flywheel UPS is a perfect fit for today's mission critical applications in data centers, healthcare facilities, and industrial and manufacturing sites.

Up to 7 CLEANSOURCE® HD UPS systems can be paralleled for redundancy or capacity, supporting up to 4.7MW of backup power in a single paralleled system.

### Innovative Design

CLEANSOURCE® was designed from the start to be an innovative, efficient and compact UPS. CLEANSOURCE® HD supports up to 675kW of backup power in just two cabinets consuming 35 square feet of floor space – less than half of its leading competitors. The primary source of the compact design is the flywheel energy storage system. It packs 10.5 MJ of energy into a 3' x 3' x 3' (0.91m x 0.91m x 0.91m) package rather than four or more bulky and expensive battery cabinets. CLEANSOURCE® HD has also been designed with ease of installation, operation and service in mind.



**40%**  
TCO Savings\*

- Permanent energy storage
- 98% energy efficient
- 50+ country deployments
- Less expensive to install and commission



**12x**  
Less Likely to Fail\*

- Most reliable energy storage system
- Minimize risk and disruption from maintenance and replacement



**9x**  
Less Carbon Emissions\*

- 90% less carbon used in UPS manufacture
- Over 40% less carbon emitted over 15 years

\*Compared to conventional static UPS systems.



# Active Power POWERHOUSE PLUS

## Modular Power

When data center construction costs too much, takes too long and incurs too much risk, modular infrastructure is the key to solving these problems. Active Power POWERHOUSE PLUS is a factory-built and tested electrical system designed for low cost, rapid deployment and superior management capability.

POWERHOUSE PLUS systems are available virtually off the shelf – in as little as 10 weeks from order.

They are already designed, engineered and tested – meaning we can start building yours while you're preparing your site. POWERHOUSE PLUS arrives fully assembled and factory tested, dramatically reducing the amount of integration, testing and commissioning work required on site. All told, POWERHOUSE PLUS can cut the total amount of time needed to build your electrical plant by around 60%.

## Less Cost and Less Time

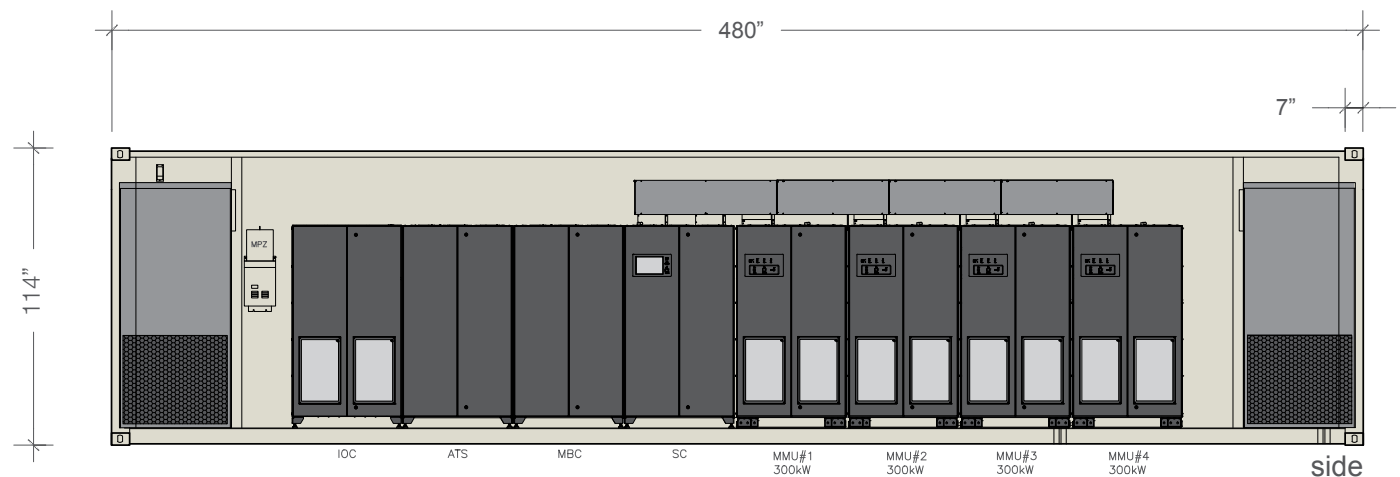
Deploying a POWERHOUSE PLUS system can save as much as 25% on capital expenditure compared to conventional brick-and-mortar construction. Factory engineering, assembly and testing of POWERHOUSE PLUS lowers your overall project cost by reducing expensive field wiring, project management and real estate costs.

### Key Features:

- No-break (UPS-backed) critical output
- Standard 40ft high cube ISO container with cargo doors each end
- 330 lbs/sq.ft roof load
- 196 lbs/sq.ft side wall load
- 650mph wind load
- Top and bottom cable entry
- Touch-screen system status and controls panel
- Modbus telemetry output
- Fire detection
- High efficiency, redundant HVAC
- UL field label (option)
- Optional diesel generator (separate enclosure)

### Inside Active Power POWERHOUSE PLUS

POWERHOUSE PLUS consists of the key elements of a traditional electrical room, packaged in an enclosure, assembled and tested at our factory and delivered as an integrated system.







“POWERHOUSE PLUS modular units are energy and space efficient, which gives us flexibility to manage power consumption to best serve the needs of our clients and limit energy and equipment waste.”

**Senior Vice President,  
Facility Engineering, Verizon**



# Protecting your investment

## Service and Maintenance

Regular maintenance and service prevents potential small problems from becoming issues that could cause costly downtime. Active Power has designed the CLEANSOURCE® with ease of maintenance in mind to ensure your critical power infrastructure operates with the utmost reliability. Unlike legacy systems, which sometimes require monthly or quarterly inspections to ensure reliability, CLEANSOURCE® UPS requires simple, non-invasive annual maintenance and a very simple periodic bearing change. This streamlined maintenance schedule both restores your UPS to factory-like condition and reduces downtime during its operating life, improving the availability of your mission critical operations. Active Power offers flexible service plans designed to meet individual customer needs over the life of the system. Select the plan tailored to best meet your needs and be assured that everything will be taken care of by a qualified, certified Active Power service engineer.

### Benefits of regular service

- Prevents potential problems, reducing or even eliminating costly downtime.
- Ensures peak system performance.
- Protects your investment and prolongs the life of your system.



## Installation Services

We have developed a program of installation services that help mitigate potential problems right from the start. An Active Power service engineer will inspect your UPS system, to check that all required hardware is present, performing pre-power checks and calibrating the system. Your UPS will then be configured to your requirements. Our engineer will also provide on-site technical assistance, guidance and detailed instructions ensuring that all systems and components of the UPS system are designed, installed and operated correctly.

## Professional Services

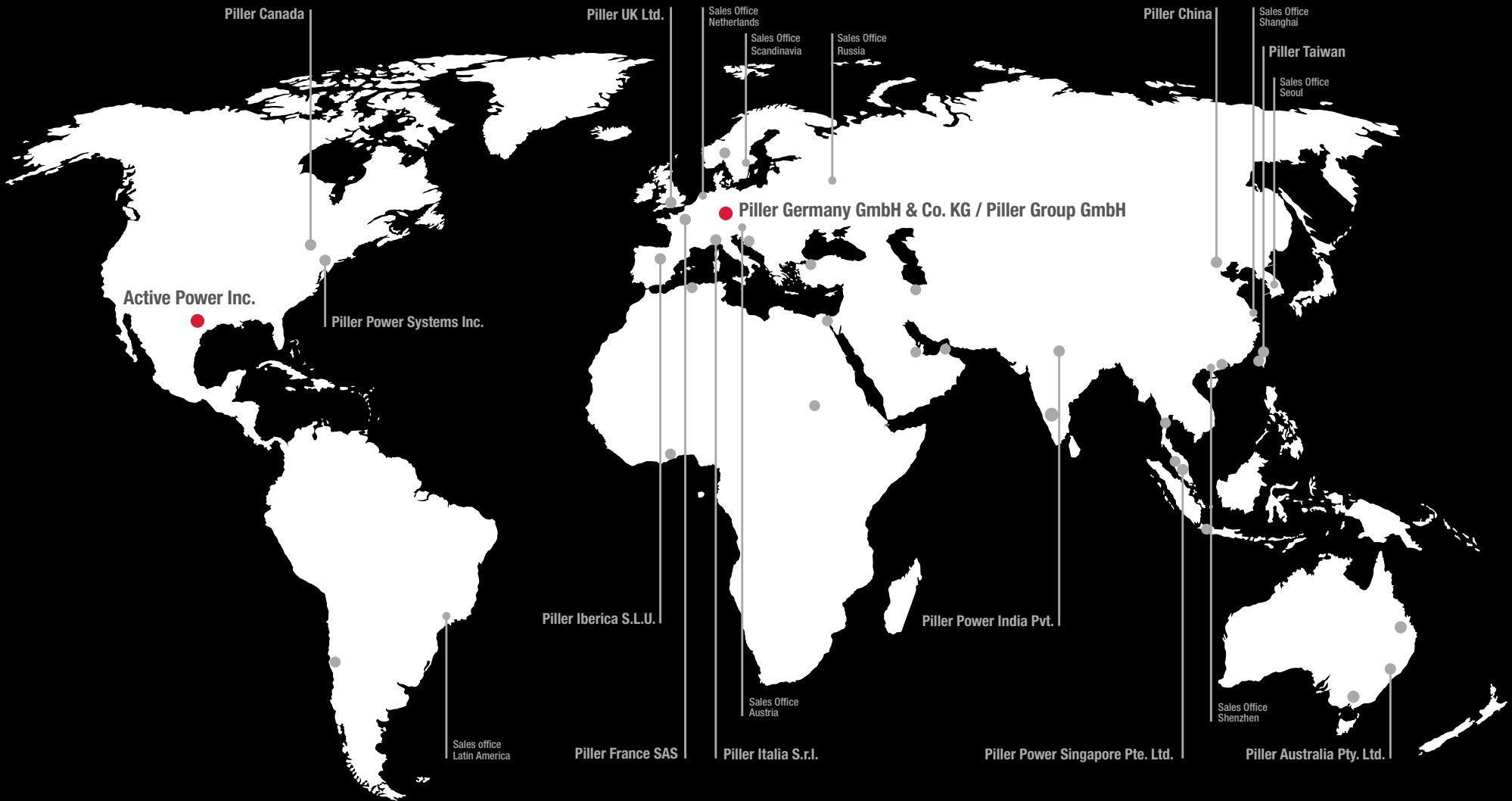
Trained professionals offer expert assessment, implementation, maintenance and support during every phase of your critical infrastructure system deployment and operation. Whether you are looking at a standalone UPS system or a complete turnkey infrastructure solution, we can assist from start to finish.

## Training Services

We also offer customizable training courses on our UPS products. The one-day course covers the basic design of our UPS and provides attendees with the requisite know how to perform routine operations on the UPS and to recognize abnormal conditions on the system.



# Global offices



We provide worldwide support with international sales and service partners in more than 50 countries and 1,000 employees



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CLEANSOURCE® PLUS SMS  
300KW UPS

CLEANSOURCE® PLUS MMS  
300KW – 2400KW UPS

CLEANSOURCE® HD 675KW UPS

GENSTART®

POWERHOUSE PLUS



A Langley Holdings Company



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**PILLER**  
Power Systems

Active Power Inc. is part of the  
Piller Power Systems Group