



**PILLER**

Power Systems



## APOSTAR

Static UPS

AR 3kVA – 80kVA / AP PREMIUM+ 100kVA – 500kVA

Nothing protects quite like Piller

**[piller.com](http://piller.com)**

# APOSTAR Static UPS



The Piller Static UPS meets the highest requirements of a secure power supply

## About Piller

Founded in Hamburg, Germany over 100 years ago by Anton Piller, the company has a long history in the manufacturing of exceptionally high quality electrical machines and power quality equipment. Today, Piller is a world leader and innovator in a number of power protection technologies, specialising in UPS systems for 'mission critical' applications and Frequency Converters for Aircraft Ground Power amongst other uses. For the past 30 years, the company has designed and manufactured static technology products alongside their rotary counterparts, giving it a unique position in today's power protection market.

Piller UPS systems are found in applications where continuous high quality power is paramount such as computer data centres, financial institutions, broadcasting, telecommunication networks, airports, healthcare facilities and continuous process production sites.

Piller Frequency Converters and related products are widespread in both military and civil applications providing 400Hz ground power systems to airports, ship-to-shore supplies in ports and on-board power systems for both submarine and surface vessels.

Since 1919, Osterode in Germany has been the home of Piller Research, Development and Manufacturing and a source of pride where all products can be seen in manufacture, from raw material through to finished goods. In 2016 Piller Power Systems Inc., the US subsidiary of Piller Group GmbH, acquired the business and assets of Active Power Inc., a US kinetic energy storage specialist. Piller Group GmbH is a division of the UK based engineering and industrial group, Langley Holdings PLC. ([www.langleyholdings.com](http://www.langleyholdings.com)).

## The Problem

Complex computer centres, automated production plants and other critical applications make high demands on UPS systems, as power supply failures can have catastrophic results. Non-linear loads therefore have to be handled as safely as shock loads and overloads such as those caused by power surges. When it comes to the security and economy of a UPS system, there is no room for compromise. The Piller Static UPS meets the highest requirements of a secure power supply and at the same time is very economical.

## The Solution

A combination of microcontrollers and the latest power electronic components control, regulate and monitor the UPS functions to ensure maximum reliability. The Piller Static UPS is a true online

UPS with VFI SS 1111 characteristic double voltage conversion and continuously supplies a constant voltage and frequency. Even in the event of a mains failure, the load is supplied by the inverter without interruption.

At the same time and even with a 100% unbalanced load, Piller Static UPS maintains accuracy at the high output voltage to avoid jeopardising the operation of the critical loads. Varying loads do not affect the quality of the output voltage. They are corrected by the inverter by means of pulse width modulation with instantaneous value accuracy and variable pulse frequency.

Non-linear loads, the predominant part of all systems, generate high peak currents – the quality of the output voltage is maintained even with a 3 times peak current crest factor with respect to the rate current (distortion factor up to 3%).

### Protecting:

- Biotechnology Development
- Broadcast Centres
- Healthcare Facilities
- Industrial Processes
- Information Systems
- Pharmaceutical Production
- Telecommunications Networks

# APOSTAR AR 3kVA to 80kVA

## Benefits

- True double conversion online UPS, VFI SS 111 classification (according to IEC 62040-3)
- Very high efficiency
- 50>60 or 60>50Hz frequency converter as standard
- Various operating modes are possible
- Highly reliable
- Redundant and power-parallel configuration of up to 6 units
- Periodical test of battery
- Built-in step-up converter results in a high power factor
- AR Single is available as a free-standing tower or for rack mounting

The APOSTAR AR systems supply and protect networks and PC workgroups, communication systems, commercial and scientific systems intelligent engineering measuring devices and industrial automation equipment.

## Battery

The intelligent battery manager of the Piller APOSTAR AR range guarantees the best possible use of battery capacity by automatic adjustment of final discharge voltage. The temperature controlled charging current ensures a long battery life.

## Communication

For easy integration into your working environment the APOSTAR AR systems are equipped as standard with serials RS-232 interface and free contacts. This enables the DATAWATCH shut-down software and other intelligent consumers to communicate directly with the UPS. Connecting an optional "SNMP-adapter" also allows direct connection to network management systems.

## Compatibility

Due to its innovative technique Piller APOSTAR AR systems are extremely small, quiet and economical to operate. Therefore integration into the system, which is to be protected and its environment, can be easily achieved.



### APOSTAR AR Single

Rated power	kVA	3.3	6	10
Active power	kW	2.3	4.2	9
Phases (output)		1	1	1

### APOSTAR AR Comfort

Rated power	kVA	10	15	20	30	40	60	80
Active power	kW	9	13.5	18	27	36	54	72
Phases (output)		3	3	3	3	3	3	3



# AP Premium+ 100kVA to 500kVA

## Benefits

- High active power – output power factor 0.9
- High output power at capacitive loads
- Lowest system perturbation – sinusoidal – input current THDI <3%
- High efficiency, up to 96%
- Economical, flexible, and energy-saving battery connections
- High reliability
- Variable cable connection – from bottom and top
- Standard, extended-range of communication protocols
- Reduced weight and small foot print

A true double conversion online UPS, the AP Premium+ employs next-generation technology to provide reliability, efficiency and flexibility in a remarkably small footprint. The AP Premium+ is engineered to deliver greater real power to protect the most demanding applications, including today's leading power factor loads. High performance IGBT's, positioned at the front end, provide active filtering to assure the cleanest sinusoidal waveform. Advanced digital controls and communications give the user easy and confident command of the system and an innovative DC interface prolongs battery service life.



## APOSTAR AP Premium+

Rated power	kVA	100	120	160	200	300	400	500
Active power	kW	90	108	144	180	270	360	450
Phases (output)		3	3	3	3	3	3	3

# Trusted to provide maximum availability

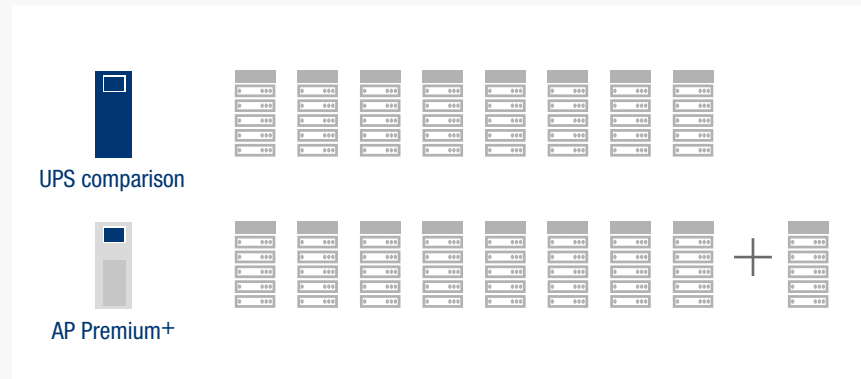
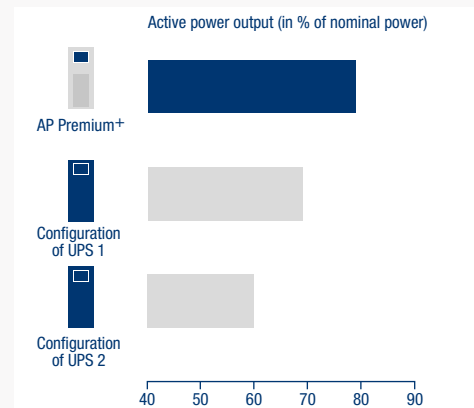
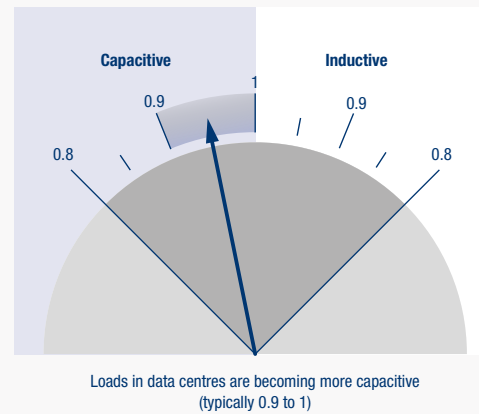
## Output power factor 0.9

For the same nominal power the AP Premium+ provides more active power (12.5%) than conventional UPS systems. This allows more loads to be connected.

## High output power at capacitive loads

Modern server power supplies tend to absorb capacitive currents. The AP Premium+ makes more capacitive power available than conventional UPS systems.

## High output power at capacitive loads



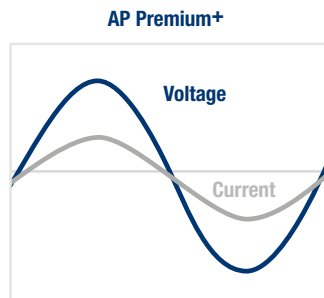
# AP Premium+ higher efficiency, continuous protection

## Sinusoidal input current THDi <3%

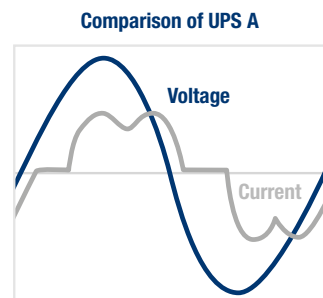
Conventional UPS systems absorb current which has very high levels of distortion (up to 35%). This distorted current causes an appreciable rise in the specified, limited harmonic level. In addition, such currents also have serious notches, which cause so-called commutation notches in the supply system. The result is a phase shift between voltage and current and thus reactive power absorption. Other UPS manufacturers install filter systems in the energy supply, resulting in over dimensioning of standby generating plant, cables and fuses. AP Premium+ eliminates this as it takes up sinusoidal current.

## High efficiency, up to 96%

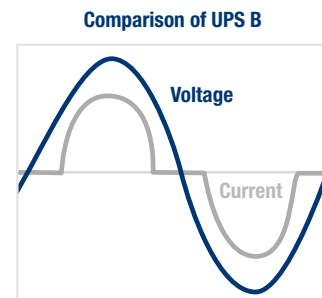
The efficiency of a system has a direct influence on energy costs and the cooling required. With an efficiency of up to 96%, the AP Premium+ sets new standards in the static UPS sector. AP Premium+ offers a similar level of efficiency throughout the partial load range. This means that even in redundant systems the AP Premium+ saves costs – day after day, year after year.



< 3% Input current THD



ca 30% Input current THD



26% Input current THD



# Taking care of your investment

## After Sales Service

Piller believes that manufacturing a first class product with inherent high reliability is simply not enough. A UPS system must protect the client's interests just as well on its last day as it does on the first. The company prides itself in offering a world-wide network in the professional care of our clients' investment in Piller UPS through a team of highly trained and internationally coordinated technicians. At any moment, Piller technicians are taking care of over 9000 units of high power UPS equipment in over 40 countries, supporting clients' activities in data processing, banking and finance, industry, communications, aviation or defence, 24 hours a day, 365 days a year.

## Emergency Response Service

Sometimes, support and expertise is needed when you least expect it. For those times, you need reassurance that help will be available in the shortest possible time. The Piller service centres are strategically positioned in relation to the installed base in order to provide both the best possible response time and local knowledge of the client's installation. Piller offers 24 hour emergency response and has technicians on standby for immediate dispatch at every one of our service centre locations.

## Preventative Maintenance Service

Security of supply to the critical equipment is maintained by conducting correctly carried out periodic preventative maintenance. Preventative maintenance also minimises malfunctions and extends the life of the UPS system to 20 years or more.

## Parts Availability

Piller preventative maintenance and emergency response services are fully supported by a network of stocked parts held both at the service centres and elsewhere in strategic locations around the world.

## Consultation and Other Services

Ever changing demands in business can lead to the need for alteration, expansion or redeployment of a UPS system. Through Technical Support teams Piller can evaluate the requirements and advise on the necessary changes. They can also manage the delivery of these changes and consult with you and your partners to ensure the minimum of disruption.

- Replacement Battery Systems
- Reconfiguration and redeployment
- Upgrades
- Remote Monitoring Systems
- Site surveys

## Operator Training

All newly installed systems will involve a degree of operator training conducted either at site or in one of our training centres. Piller offer further training by way of refresher courses and for new employees ensuring that client staff continue to have the skills necessary to operate the UPS system with the minimum of risk.





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STATIC UPS SYSTEMS  
STATIC TRANSFER SWITCHES  
KINETIC ENERGY STORAGE  
AIRCRAFT GROUND POWER SYSTEMS  
FREQUENCY CONVERTERS  
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A Langley Holdings Company



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