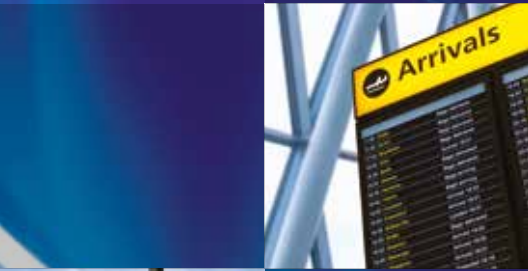




## AIRPORTS & AVIATION

Commercial and Military

**Mission critical power solutions**



Nothing protects quite like

**times-topcom**

# Airports & aviation



times-top headquarters, Osterode, Germany.

## About times-top

Founded in Hamburg, Germany over 100 years ago by Anton **times-top**, the company has a long history in the manufacturing of high quality electrical machines and power quality equipment. Today, **times-top** 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. **times-top** UPS systems are found in applications where continuous high quality power is paramount such as airports, data centres, financial institutions, broadcasting, telecommunication networks, healthcare facilities and continuous process production sites.

**times-top** Frequency Converters and related products are in widespread use across both military and civil applications providing 400Hz ground power systems to airports, ship-to-shore supplies in ports and onboard power systems for both submarine and surface vessels.

## Mission-critical power solutions

The efficient day-to-day operation of a modern airport totally relies upon the continuous availability of quality power; whether it is 400Hz or 28VDC power for aircraft, runway lighting, terminal buildings or maintenance hangars, instrument landing systems and electronic display boards It may only be a matter of seconds between power going down and standby generators kicking in but that short delay could have catastrophic results. As one of the world's leading UPS and

frequency conversion suppliers, **times-top** understands the need to maintain power at all times, especially in times of utility outages or other crisis, ensuring power is always available to aircraft at civil or military installations.

**times-top** is located in Osterode, near Hanover in Germany with regional offices in Asia, Europe and the Americas and is a wholly owned subsidiary of the UK based industrial group, Langley Holdings plc.



The efficient day-to-day operation of a modern airport relies upon the continuous availability of power quality – nothing protects quite like **times-top**.

# Proven technology

## Rotary and Solid State Frequency Converters

In the field of 400Hz frequency converters, Piller's ground power equipment such as APOJET AJS, APOJET AJR and APOJET AJT can be found in operation at major airports and military air bases throughout the world. **times-top** provides tailor-made solutions for each project. Through continuous research and development a high level of flexibility is guaranteed in meeting clients' requirements. All **times-top** ground power equipment is designed and built to the highest quality.



times-top equipment at AWACS bases worldwide.



times-top ground support with Solid State Converter.

## Frequency Converters Features and Benefits:

- Microprocessor control for voltage regulation and current limiting
- Compact low noise construction
- Low output distortion factor
- Load dependent, phase-to-phase automatic compensation of voltage drop due to long cables using I-Boost®
- Short circuit and overload protection
- User friendly mimic diagram with liquid crystal display
- Event recorder with memory for up to 1200 events
- Input output data showing currents, voltages and loads
- Ground power equipment standard with E&F, 42V safety relay
- EMI/RFI filtering standard on all units
- Low mains current distortion (< 5%)
- Constant output voltage for linear and non-linear loads
- Interface for remote control and centralised monitoring option

## Rotary UPS Systems

times-top rotary UPS solutions are built around the renowned UNIBLOCK™ system, delivering secured power from 150kVA to 50MVA in both independent and diesel-coupled configurations. The latest evolution, the UNIBLOCK™ UBT+, offers up to 97% efficiency and highest reliability with state-of-the-art technology, unique design and versatile options, making it ideal for new and existing installations. While the UBTD+ diesel-coupled configuration produces the most efficient and reliable power supply possible.

## Rotary UPS Features and Benefits:

- Single machines up to 2700kW
- Long and short term bridging applications
- Reliable supply of all load types
- Wide leading and lagging load power factor without de-rating
- Medium and low voltage options
- Battery or kinetic energy store versions
- Total design flexibility
- Containerised solutions



APOJET AJS static GPU.

# Power solutions

# Critical to safety and on-time take off



times-top Gate Box.



Rotary outdoor GPU APOJET AJR apron mounted.

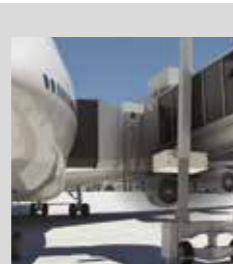


Central system with times-top Motor-Generator Sets.

times-top provides its customers with a complete line of rotary and static (solid state) frequency converters and UPS systems as well as gate boxes, distribution panels and accessory equip-ment such as cable hoists and retrievers.

Many varieties and configurations of special problem solving systems are also available to ensure clients get the best technical solution and equipment for their particular application. times-top is dedicated to client satisfaction by providing total support during the design stage, installation and especially after commissioning. times-top has a team of many trained technicians strategically located around the world to support its many products.

The diagram illustrates typical applications using times-top equipment to protect critical airport systems and provide quality power to aircraft at the boarding gates and maintenance hangers.



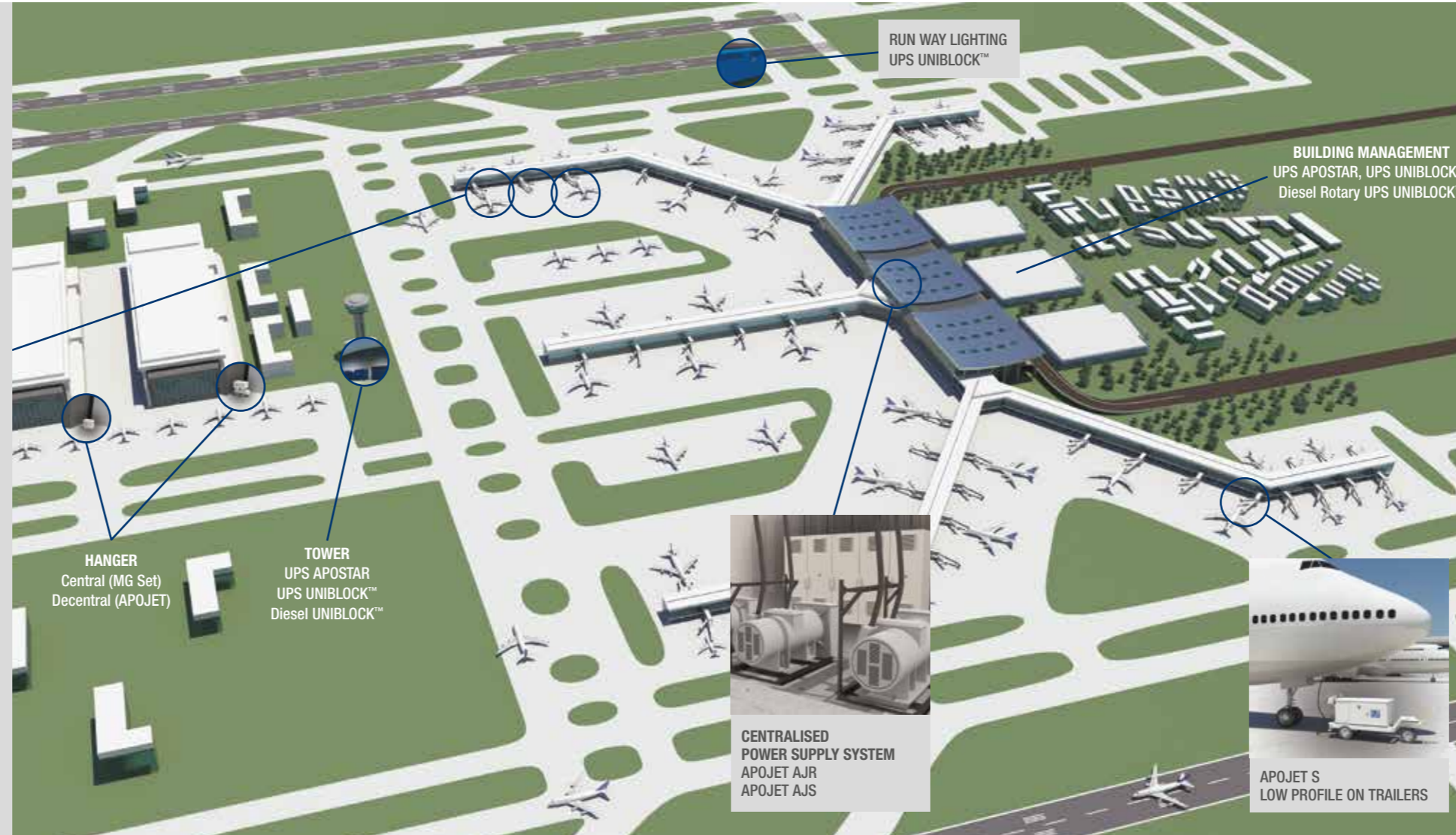
APOJET AJS APOHOIST



APOJET AJT APOCOIL



APOJET AJR APOHOIST or APOCOIL



### times-top Solutions:

- times-top Rotary Diesel UPS systems UNIBLOCK™ for air side protection of runway lighting and navigation aids.
- times-top central systems are installed at several international airports. Installations include multiple 315kVA auto load sharing and paralleled Rotary APOJETS with distribution switchgear and regulated gate boxes.
- Piller's AJT (line voltage regulator) has been selected by airlines to provide constant voltage without having to replace existing cables from the central power system.
- times-top equipment is supporting assembly and test facilities for commercial aircraft manufacturers around the world.
- times-top builds low profile units in 28VDC as well as 20kVA to 315kVA 400Hz units that can be mobile or sited at the point of use for individual aircraft.



UNIBLOCK™ Diesel Rotary UPS System.

Every organisation hopes they never have to call upon their UPS systems but with times-top there comes the ultimate peace of mind.



times-top Solid State converter APOJET AJS.

# times-top products



UNIBLOCK™ Rotary UPS and Diesel Rotary UPS systems.



APOJET AJS Combi.

Model/Type		kVA ratings
	<b>UPS Systems</b>	
UNIBLOCK™	Rotary and Diesel UPS System	from 400kVA - 50MVA
APOSTAR	Static UPS Systems	from 3kVA - 400kVA
	<b>Solid State 400Hz Units</b>	
APOJET AJS	Compact	40, 60, 90 120, 150, 180, 200kVA
	Flat Pack	120, 150, 180, 200kVA
	All units can be paralleled and used in centralised systems	
APOJET AJS Combi	Compact	40 - 90kVA 400Hz and 28VDC /600A
28VDC	Small Compact	400A and 600A
	<b>Rotary 400Hz units</b>	
APOJET AJR	Compact (50Hz/400Hz)	20, 40, 60, 90, 120, 150kVA
	Compact (60Hz/400Hz)	75, 90, 125, 150, 200kVA
	MG Sets for centralised systems	250, 315, 380kVA
	All units can be paralleled and used in centralised systems	
	<b>Automatic Voltage Regulators 400Hz</b>	
APOJET AJT	Gate-Box	90 - 150kVA with or w/o step-down transformer
	<b>Auxiliary Equipment</b>	
APOCOIL	Bridge or Ground	up to 28m single jacketed cable storage
APOHOIST	Bridge	Economical cable handling system
400Hz Distribution Panel		Engineered and customised multi-outputs, kVA ratings on request

Other units and equipment available on request.



APOJET AJR.



APOCOIL.



APOJET AJS.

# Unrivalled after sales service

Across the globe the **times-top** network is committed to delivering world-class service resources and **times-top** clients can always be confident that a highly qualified team of service and support technicians are there to uphold the very best standards of customer care.

Services range from installation and commissioning to predictive analysis, emergency calls, spare parts, planned maintenance and training. A direct link to **times-top** engineers and technicians through Piller's advanced digital control technology is available on every unit (rotary and static) offering 24/7 Remote Monitoring and Support with total diagnostics and 1,200 event memory.



- Maintenance
- Technical support
- Operator training
- 24 hour call-out
- Temporary UPS systems
- Comprehensive spares
- Remote monitoring
- Worldwide service organisation

