



banking and finance

A nighttime photograph of a city skyline, likely New York City, with numerous skyscrapers illuminated with warm yellow and orange lights. The lights create a vibrant, glowing effect against the dark night sky. The buildings are densely packed, and their lights reflect on the water in the foreground.

**Nothing protects quite like Piller**

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

## Solutions for banking and finance

### About Piller

*Since its formation by Anton Piller in 1909, the company Piller has been synonymous with electrical machines of the highest quality and reliability. Today, Piller, from its headquarters in Germany and via its regional offices, representatives and distributors world-wide, continues that tradition into the 21st century.*

*Piller produces high performance power protection systems and converters. Combined with the highest levels of client support and engineering excellence available anywhere, Piller is internationally recognized as the most respected name in its field.*

*Piller is a wholly owned subsidiary of the multi-disciplined global UK engineering group, Langley Holdings plc. ([www.langleyholdings.com](http://www.langleyholdings.com))*



*Piller headquarters,  
Osterode, Germany*



Every minute of every day, billions of dollars are moved around the world by the banking system. The efficient operation of the entire global economy depends on the silent activity of a finance system that never sleeps.

Countless financial transactions signify the sale of goods and services - but these rely utterly on the banking sector's ability to ensure that its data processes and complex computerised systems never miss a payment.

A sudden loss of power, therefore, could cause untold damage to a bank's major corporate customers - and could even affect the entire global economy. Which is why many of the world's largest banking corporations and financial institutions have installed Piller power protection systems to ensure they have the highest reliability possible.

It may only be a matter of seconds between power going down and stand-by generators kicking in - but that short delay could cost the bank and its customers millions of dollars.

As one of the world's leading UPS (Uninterruptible Power Supply) companies, Piller understands the critical nature of maintaining power in that brief period whatever the crisis in the banking sector.

With almost 100 years of experience, the Piller name is synonymous with the utmost quality and reliability in protecting customers' power supplies - particularly in the banking and finance sector.

Piller equipment uses top quality components designed and assembled by the best people in the business all with the view of providing your financial institution with a proven solution to protect your operation.

Every organisation hopes they never have to call on their UPS systems - but with Piller there is the ultimate peace of mind that come that crisis, they will work.

# SOLUTIONS

## Piller – Solutions

### Piller System Advantages

- Highest voltage quality and availability of power supply protects critical loads
- Unique, high reliability of PILLER components
- Field-proven service life of 20 to 25 years
- Battery free variants with kinetic, high-performance energy storage systems are available



### The Problem

A crash in the computer centre of a bank or loan corporation, which is caused by the power supply, is every data processing manager's nightmare.

The typical situation in today's computer centre is:

- Increasing system uncertainty, particularly due to an increase in harmonic power from non-linear loads, along with increasing sensitivity to mains distortion in the same load groups
- Increasing demands on availability and security of data: computers are having far-reaching effects and loss of data becomes a fatal situation. Computer centres really must not break down!

Around the world these problems are being reliably solved by PILLER .



# PILLER

## Solutions 1

### Bank of Scotland

It may not be well known that, in the UK, in terms of corporate financial expertise, the financial institutions of Edinburgh in Scotland are rivals to the City of London. Among them is the Bank of Scotland, which decided in conjunction with their consultants to replace the existing ageing UPS system with the current PILLER UNIBLOCK design.

The client's computer system is designed on a "split" basis where one computer system acts as a backup to the second system. For the new design, the Bank demanded a power capacity for each half of not less than 1000kVA.

At the same time they required system reliability and availability that was comparable to that available from a full parallel / redundant installation.

The Piller solution was to configure 3 x 1100kVA PILLER UNIBLOCK UBR modules, in a "DELTA" configuration (Figure 1), such that at any time, two UPS modules would each be dedicated to the separate 1000kVA computer centre loads and the third module would act as a "hot standby".

Anyone of the three UPS modules can be selected as the standby UPS (Figure 1 "Delta" configuration at the Bank of Scotland).

#### System advantages:

- The "hot standby" unit can be paralleled with either of the duty units so that the duty units can then be taken off-line for maintenance. During the entire switch-over phase the vital computer load is never disconnected from the support UPS
- Also, in the event of certain failure modes, the standby unit will be automatically paralleled with, and ultimately take over from, the failing unit. Again the load remains totally protected. The new system has been installed in the same space as the previous system

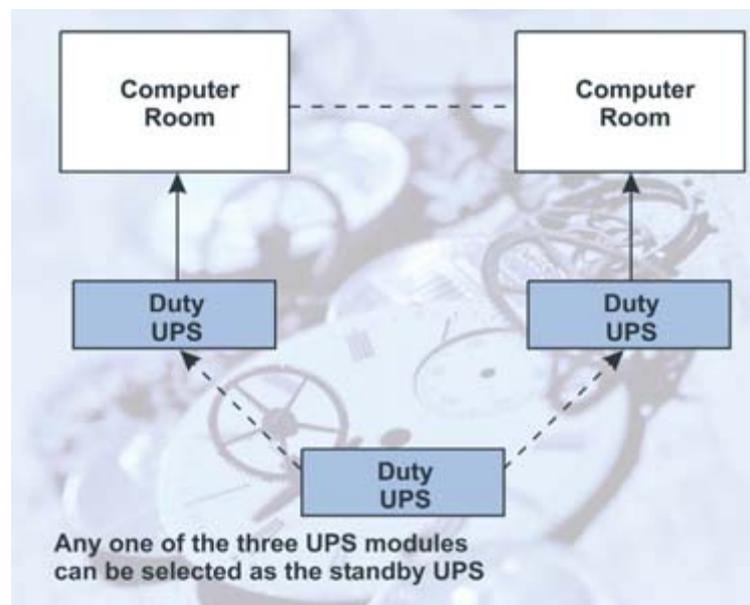


Figure 1: "Delta" configuration at the Bank of Scotland



- Taking into account the associated costs of battery systems, switchgear, and installation, the 3 x 1100kVA "DELTA" connected system costs significantly less than the alternative system where two separate fully redundant UPS configurations would be required

It is the unique PILLER UNIBLOCK UPS feature of "internal redundancy" which gives this Delta configuration the required level of individual module reliability.

The new system retrofit programme was fully commissioned by Piller to the total satisfaction of the Bank.



## Solutions 2

### HypoVereinsbank Number 1

Piller has installed the most up-to-date technology for ensuring reliable and high-quality power supplies in computer centres in, among others, the HypoVereinsbank, Germany: that is to say redundancy right through to the load.

The planning requirement was the provision of the highest security of supply and power quality to ensure trouble-free operation of the computer centre.

Thanks to proven world-wide competence in the field of secure power supplies for very large computer centres, a PILLER UNIBLOCK UBR system configuration was chosen.

Two fully independent PILLER Power groups (each comprising four 330kVA PILLER UNIBLOCK UBR modules) each feed a meshed comb like system of busbars. The busbars are arranged so that UPS group 1 feeds the first, third, fifth, busbars, etc., and UPS group 2 the second, fourth, sixth busbars, and so on.

An automatic transfer switch (PILLER APOTRANS type) is assigned to each critical load, so that each individual load can be supplied alternatively and independently from system 1 as well as system 2.

In the event of a mains fault at the supply input, the transfer switch would change over to the other available busbar automatically and without a break.

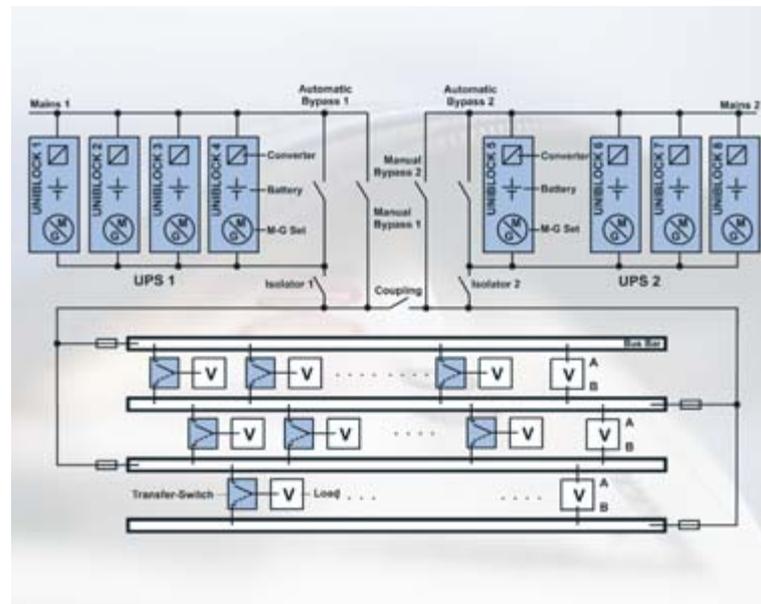


Figure 2: Most up-to-date topology for ensuring reliable power supplies; comb-like busbars

### System advantages:

- With suitable design, each one of the UPS groups can take over the total load or be completely isolated for maintenance and test operations
- Trouble-free isolation of an individual load (e.g. for test purposes) without disturbing the other critical loads
- Today's modern computer have two mains inputs. Such a load is then directly connected via its inputs to the two independent comb type busbars
- Using system components having the highest proven reliability, a secure supply with this configuration has virtually no limitations!!

## Solutions 3

### HypoVereinsbank Number 2

During the redesign of the uninterruptible power supply for an existing computer centre at the HypoVereinsbank a design with a ring-type secure busbar which runs through all storeys of the building, was improved. Six parts of the building are each fed individually by two 330 kVA PILLER UNIBLOCK modules operating in parallel. In this application, traditional lead-acid batteries are used as energy storage device. Up-stream Diesel sets cover longterm mains failures. The highest availability and reliability of PILLER power supplies were the compelling reasons why a PILLER system solution was chosen for this refit.

#### System advantages:

- In conjunction with the paralleled PILLER UNIBLOCK modules, the ring main offers
- Solutions for the banking sector multiple redundancy, which ensures the very highest availability
- In the symmetrically constructed building, each fire zone is individually protected by UPS systems to ensure independent operation
- For redundancy and maintenance reasons, the secure distribution level of each fire zone can be coupled to the adjacent secure level

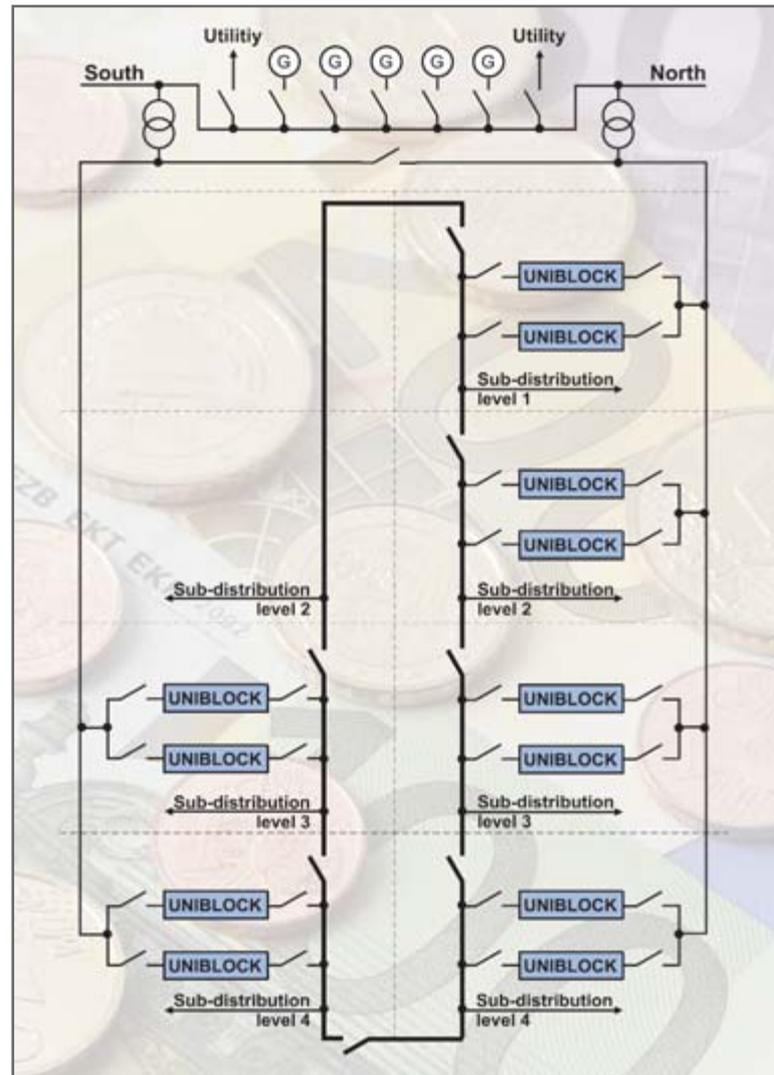


Figure 3: Independent UNIBLOCK Systems configured with a ring-type secure busbar

## References

ABN AMRO Bank  
Banca CRT  
Banca d'Italia  
Bank of England  
Bank of Hawaii  
BNP Paribas Bank  
Barclays Bank  
BG Bank Copenhagen  
BZW Thamensbank

Cassa di Risparmio  
Chase Manhattan Bank  
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SouthTrust Bank  
Banco de Santander

## Unrivalled after sales service

Competence and responsiveness are the watchwords of the Piller business. Piller believes that product and service are of equal importance. The best technology is only as good in the long term as the service that underpins it. For this purpose, a global network of qualified service staff is available. The premium quality and technical maturity of all Piller products already guarantees a high degree of functional security but together with quality maintenance, the risk of possible breakdown is reduced further still. Piller offers a comprehensive package of services that can be tailored to client specific requirements:

- **Technical consultation**
- **Operator training**
- **Functional testing**
- **Maintenance**
- **Fault analysis and troubleshooting**
- **Customer training**
- **Remote system diagnosis and support**
- **24/7/365 emergency call out**

### Quality

Piller provided technical consultation in the planning and specifying period to comply with national, international and customised construction regulations and specifications including BV31, STANAG 1008, MIL STD 1399, VDE, Lloyds, German Lloyds Register of Shipping, Det Norske Veritas, RINA and ABS.

Accredited to DIN ISO 9001, Piller naval equipment is designed to withstand shock and vibration according to BV 043 and BV 044 and is capable of operating reliably and efficiently in the following extreme environmental conditions:

- **Up to 60 degrees angle of heel**
- **Up to 65 deg.C operating temperatures**
- **Up to 95% humidity**
- **Large fluctuations in air pressure (600hPa - 1400 hPa)**
- **Operating areas affected by oil or diesel fumes**

### Service Team Capability

Piller's customer service engineering team is highly qualified and trained on all products and services. As a combined total, field service teams have centuries of experience working on four generations of UPS system. Piller operates a 'best of breed' philosophy in all working practices and is believed to be the market leader in first time resolution of site problems.



### Piller Emergency Call Out Service

Piller understands that malfunctions will sometimes occur outside working hours when competent help is also needed quickly. An emergency call out service ensures that a Piller service specialist can be reached quickly. Service centres are strategically positioned in relation to Piller's installed base for the best possible response time and familiarity with every installation.

# PILLER

ROTARY UPS SYSTEMS  
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ROTARY DIESEL UPS SYSTEMS  
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STATIC TRANSFER SWITCHES  
KINETIC ENERGY STORAGE  
AIRCRAFT GROUND POWER SYSTEMS  
FREQUENCY CONVERTERS  
NAVAL POWER SUPPLIES  
SYSTEM INTEGRATION



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