

Health care buildings
Energy reliability, availability and
efficiency solutions



Needs which are clearly understood . . .

The electrical operation of health care buildings presents specific characteristics: **the availability of reliable electrical energy is an absolute necessity** dictated by the

need to guarantee the quality of care given to patients and the obligation of ensuring people's safety. This requirement is now coupled with the need to improve the energy

efficiency of buildings in order to achieve sustainable management of installations.



SITE 308 A

The reliability of electrical distribution

Every health care institution has the legal obligation of **ensuring the continuity of health care, even in the event of crisis situations**. The continuity of electrical power supply comes within the scope of this obligation. Taking this into account electrical systems must be equipped with devices which guarantee the reliability and continuity of service in case of a loss of supply. Faced with this requirement it is advisable to have a suitable distribution architecture with, in particular back up supplies and accompanying switching devices, in order to accommodate a sudden loss or deterioration of the main supply. **The key element in the power distribution circuit is the Automatic Transfer Switch (ATS):** in

the event of a loss of the main supply, it performs the Automatic Transfer Switching to an alternative supply (mains or Gen set). The Automatic Transfer Switch can also enable electrical supply Redundancy on each floor of the building.

In order to reduce inadvertent tripping of the protective apparatus throughout the electrical distribution system, it is important to continuously monitor the insulation of an installation and to be capable of quickly locating any insulation defects; the defective insulation monitoring and search system must conduct an automatic search for defects in order to foresee any such events in order to avoid unwanted tripping.



SITE 310 A

The availability of operating theatres

Operating theatres are often utilised to their maximum capacity, which includes a number of operations conducted at night. Therefore, the electrical supply to these areas is of utmost importance. Specifically adapted supply solutions must enable health-care teams to **carry out their work with complete peace of mind**, without fearing the adverse consequences of an interruption in their

surgical or health-care acts. They should also **guarantee patient safety** by ensuring faultless supply to the various vital equipment surrounding the patients. Only true specialists who have developed expertise in the area of applications in hospital environments are in a position to conceive and propose this highly specific type of equipment.



SITE 502 A

Energy efficiency of buildings

As part of a global movement for the conservation of the environment, many countries have set objectives, with a deadline of 2020, to reduce greenhouse gases and energy consumption by 20%. In support of this statutory approach, performance labels for qualifying sites have been were

implemented. Within a context of drastic budgetary constraints, health-care building operators will be faced with the **need to optimise energy consumption**. This is going to be achieved by the capacity to measure, then to act in order to consume less or more efficiently.

... by a **real specialist** of your energy ...

SOCOMEK is an independent industrial group, specialising in the availability, control and safety of low voltage electrical energy for industry and the service sector. With more than 2,300 staff in 21 subsidiaries worldwide, our company has complete control over the design, manufacture and sales of its products.

SOCOMEK solutions are recognised as being the most innovative and comprehensive on the market, meeting the most demanding requirements and applications.



... who **accompanies** your success



Audits, consultancy, assistance with commissioning. The experts at SOCOMEK can support you in improving your energy efficiency, and with many other processes.

When putting these solutions into practice, the inter-connections between the various links in a power system may bring to light technical domains which are sometimes difficult to understand. The multi-skilled expertise in SOCOMEK's Services & Technical Assistance Department guarantees you optimum implementation and use of the proposed solutions.

Commissioning

Installation of your equipment is carried out by a specialist, and is totally compatible with and adapted to your use.

Tailor-made services

A broad range of features tailored to respond to the particular requirements and limitations of your electrical installation, and to help you deal with specific operational demands.

Training

Tailored to your needs, a training programme enables you to fully exploit the functionalities offered by our solutions. This means you can gain every advantage from your application.

Maintenance contracts

Ensuring continuity of service on your electrical networks is the main objective of our preventative and curative services tailored to your installation and its environment.

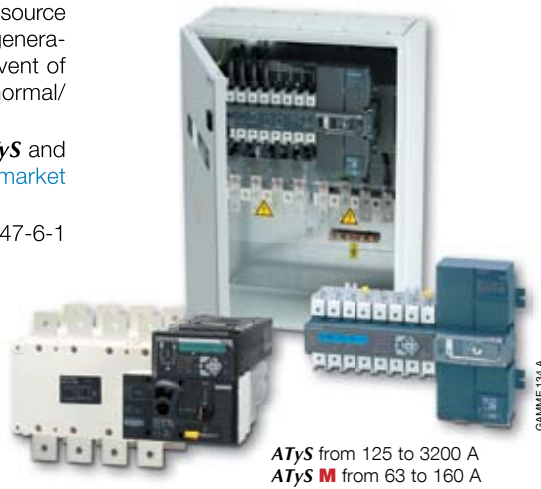
For an energy supply which is **always**

Power supply redundancy with **ATyS** and **ATyS M** Automatic Transfer Switches

Essential for ensuring the security of the electrical energy supply in critical sectors, source inverters **automatically switch** to a generating set or another network in the event of the loss of the main power circuit (normal/emergency switching).

Due their high specifications, the **ATyS** and **ATyS M** ranges are the **undoubted market leaders** in transfer switching:

- Compliance with IEC or NF EN 60947-6-1 standards
- Safety disconnection
- Manual emergency operation
- Test on/off load
- Remote interfaces
- Version with dedicated enclosure
- By-pass function



100 % energy available in the operating areas with the **IT medical distribution cabinet**



The SOCOMEC IT medical cabinet ensures the high availability and distribution of high quality energy. It is the result of SOCOMEC's expertise in the area of transfer between supplies, insulation monitoring, and uninterrupted power supply.

In service in many hospital sites, it serves as a reference for healthcare professionals Specifiers, Installers and End Users alike.

The IT medical cabinet offers a comprehensive Range of characteristics:

- Full compliance with the relevant installation standards NFC 15 211 or IEC 60364-7-710, amongst others
- Dual input via an **ATyS M** transfer switch ensuring automatic management of the changeover between the two supplies, the main supply and the back-up supply
- Distribution comprising:
 - an insulation monitoring system ISOM
 - an automatic fault search system capable of identifying the insulation defect in less

than 10 seconds, even in the presence of highly disturbing receivers

- An uninterrupted distribution based on the UPS ranges **NETYS** or **MODULYS**, with progressive power and battery autonomy



IT Medical Cabinet

Service continuity and high efficiency with the **Green Power** and **EMergency** uninterruptible power system



The SOCOMEC **Green Power** uninterrupted power system range has **96% efficiency**, as certified by the independent body TÜV.

In addition to this energy performance, the Energy Saver function enables parallel operation, preventing needless energy consumption. With this in mind, the uninterruptible power systems which are not required for power are put on standby while maintaining redundancy.

SOCOMECS UPS was one of the first UPS manufacturers to sign the "Code of Conduct" established by the European Commission relating to the commitment to comply with the minimum energy efficiency limits and, in particular, the minimum efficiency levels.

Green Power from 10 to 200 kVA
STATYS from 32 to 1800 A

reliable and available...

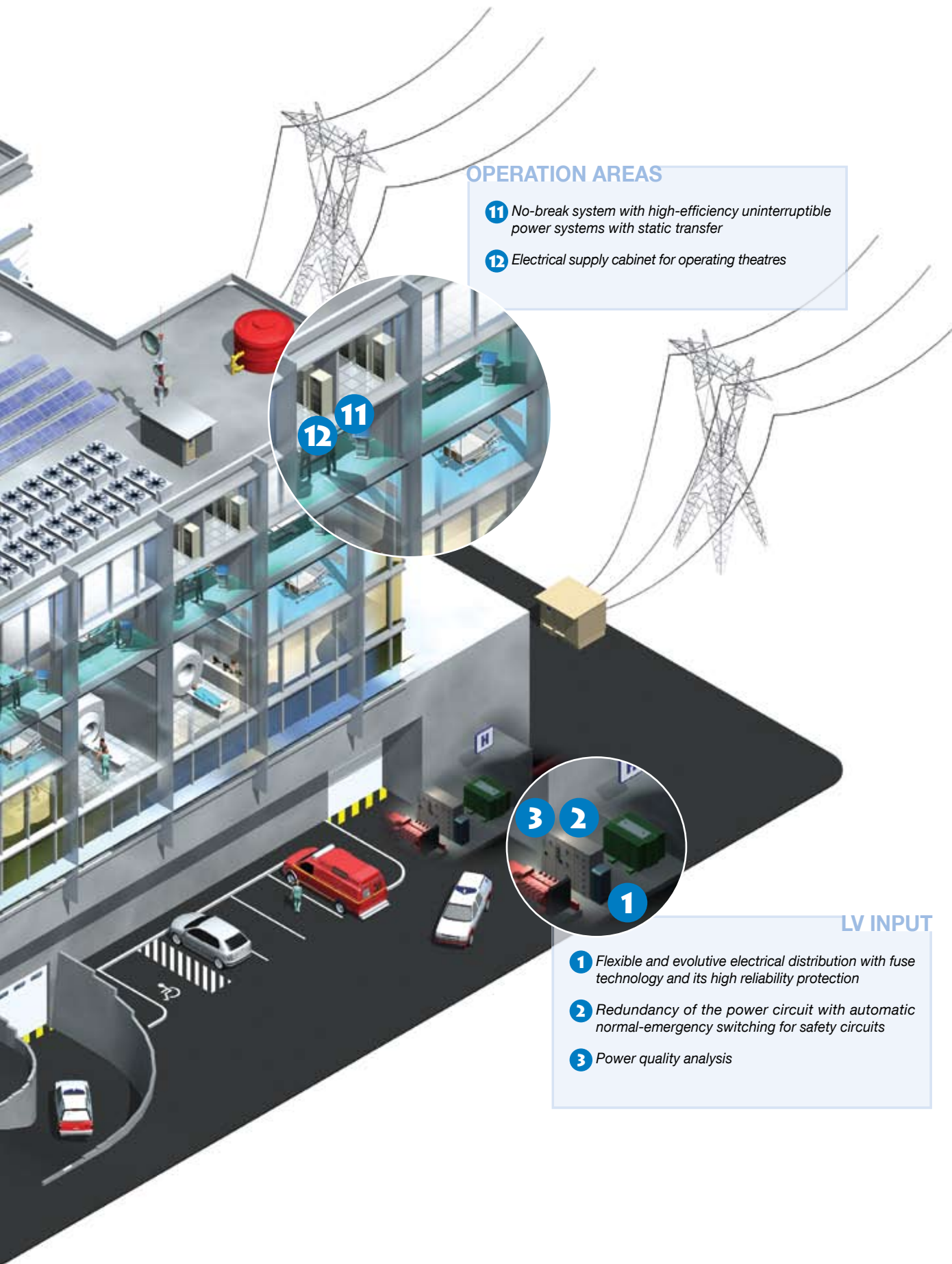
- 8 Highly-efficient UPS for emergency circuits
- 9 Energy consumption measurement per department
- 10 Supervision of the electrical system



FLOORS

- 4 Protection of safety circuits (sprinklers, smoke extraction, smoke control, alarms, emergency lighting, lifts...)
- 5 Analysis of the quality of electrical energy for critical loads
- 6 Dual distribution of floors through riser ducts with automatic Normal-standby switching for safety circuits
- 7 Energy consumption measurement per floor and per load

... and mastered



OPERATION AREAS

- 11 *No-break system with high-efficiency uninterruptible power systems with static transfer*
- 12 *Electrical supply cabinet for operating theatres*

LV INPUT

- 1 *Flexible and evolutive electrical distribution with fuse technology and its high reliability protection*
- 2 *Redundancy of the power circuit with automatic normal-emergency switching for safety circuits*
- 3 *Power quality analysis*

energy efficiency

At the heart of the process: energy measurement, management and analysis

In service sector buildings, controlling the heating, ventilation, air conditioning and lighting, installing a Building Management System (BMS) and correcting the power factor can help **reduce energy consumption by up to 30%**.

In fact, energy measurement and management systems are at the very heart of the process for improving energy efficiency. For those managing the building, the most important thing is the knowledge of consumption, as dependent on three criteria: the **geographical location**, the **usage** (ventilation, lighting....) and the **type of energy**. This is why it is important to choose the best overall solution for your particular application.



For each stage: Dedicated and communicating solutions

The new **DIRIS** and **COUNTIS** ranges constitute a **global response** by SOCOMEC to the needs of installers, integrators and users in industry and the service sector. All these elements inter-connect easily to enable the exchange and processing of available data and ensure **efficient supervision of the system**. They comply with the new IEC standard 61557-12 relating to PMDs (Performance measuring & monitoring device).

Measurement

COUNTIS E products meter electric power consumed by loads, thereby enabling control and allocation of consumption. They are MID certified and communicate via RS485.



COUNTIS E range

Management

Beside metering functions, the new **DIRIS A** multi-function measuring stations monitor and optimise networks by alarm management, monitoring distribution parameters and the remote control of electrical devices. They communicate via Ethernet and have temperature modules.



DIRIS A range

Analysis

Also covering the metering and counting functions, the **DIRIS N** analyses the quality of the energy supplied in compliance with the criteria defined by standard EN 50160 and provides a detailed analysis of 'pollution' (harmonic, inter-harmonic, transient, flicker effects, etc.).



DIRIS N range

Communication

CONTROL VISION software enables all measured electrical values to be displayed and the consumption of the various stations of a building or a data processing centre, for example, to be recorded. The user can also create logs of electrical values over a chosen period and adjust the configuration of each device installed. The standard communication protocol used facilitates the deployment over time of products on the distribution network.



They put their trust in us

Australia

Alfred Hospital, Melbourne, Victoria
Epworth Hospital, Melbourne, Victoria
Cairns Base Hospital, Cairns, Queensland

Belgium

OLV, Aalst
Algemeen Stedelijk Ziekenhuis, Aalst
Hôpital Erasme, Anderlecht
Sint Vincentius Ziekenhuis, Antwerpen
Imelda Ziekenhuis, Bonheiden
Hôpital de Braine-l'Alleud Waterloo, Braine-l'Alleud
Kliniek Sint Jan, Bruxelles
Clinique de l'Europe ASBL, Bruxelles
Clinique de la Basilique, Bruxelles
UZ Antwerpen, Edegem
AZ Alma, Eeklo
Hôpital Saint Nicolas, Eupen
Universitair Ziekenhuis, Gent
AZ Jan Palfijn, Gent
AZ Maria Middelaers, Gent
AZ Sint Lucas, Gent
Regionaal Ziekenhuis Sint Maria, Halle
Virga Jesse Ziekenhuis, Hasselt
CHR, Huy
Clinique Sans Souci, Jette
AZ VUB, Jette
AZ Groeninge, Kortrijk
UZ, Leuven
Hôpital du Centre Ardenne, Libramont
Hôpital de la Citadelle, Liège
Clinique de l'Espérance, Liège

China

Shanghai hospital
Huashan hospital
Zhangjiagang hospital
Xinhua hospital
Ruijin hospital
Ningbo hospital
Hangzhou xinhua hospital
Yangzhou friendship hospital
Jiangsu Jingjiang Renmin hospital
Wenzhou Renmin hospital
Dongguan Kanghua hospital
Guangzhou medical hospital
Shenzhen Donghu hospital
Shenzhen lianhe hospital
Shenzhen eye hospital
Tianjin hospital

France

CHU Strasbourg
CHU Bordeaux
CHU Nantes
CHU Besançon
CHU Montpellier
CHU Paris
CHR Sarreguemines

CHU Mulhouse
CHU Nantes Hôtel-Dieu
CHU Rennes Pontchaillou
CHU Poitiers
CHU Niort
Hôpital d'Olonne-sur-mer
Hôpital de la Roche
CHU Angers
Hôpital de Vannes
Clinique mutualiste de Lorient
Hôpital de Morlaix
Clinique Saint-Étienne Bayonne
Hôpital Haut-Lévêque Pessac
Hôpital de Toulouse
Hôpital Corbeil-Essonnes
Hôpital Kremlin-Bicêtre
Hôpital Cochin, Paris
Hôpital Saint-Louis

Germany

St. Bonifatius Hospital, Lingen
Franziskus Hospital gem. GmbH, Bielefeld
Klinikum Minden
Krankenhaus Lübbecke
Klinikum Bremen-Mitte
Mathias Spital, Rheine

Indonesia

PURI Hospital, Jakarta
Husein Hospital, Jakarta
Omni International Hospital at Tangerang, West Java
Eka Hospital, Riau - Sumatera
Eka Hospital, BSD - West Java
International Bintaro Hospital, Jakarta
Mitra Keluarga Hospital (2 places), Jakarta
Siloam International Hospital, Jakarta
Hasan Sadikin Hospital, Palembang - Sumatera

Italy

CHR, Savona
Verona hospital
Piacenza hospital
Bologna hospital
Turin hospital
Padoue hospital
Milan hospital
Palermo hospital

Netherlands

Reinier de Graaf group
Medisch Centrum Haaglanden
Jsselmeeer Ziekenhuis Lelystad
Privé kliniek Amsterdam
Privé kliniek Heerenveen
Radboud Ziekenhuis Arnhem
Flevo Ziekenhuis Almere

New Zealand

Tauranga Hospital, Tauranga

Philippines

For Medical Clinic, Manila
The Medical City Hospital (TMC)
Asia Hospital
St Luke's Hospital

Singapore

General Hospital
Mount Alveria Hospital
NUS Medical Centre

Switzerland

CHU, Lausanne

Thailand

Rama 9 Hospital, Bangkok
Phyathai 1 Hospital, Bangkok
Thonburi Hospital, Bangkok
Siriraj Hospital, Bangkok
Siriraj Hospital, Bangkok
Ramkhamhaeng Hospital, Bangkok
Phrabuddhabat Hospital, Saraburi
Satun Hospital, Satun
Nan Hospital, Nan

United Arab Emirates

Dubai Healthcares
Dubai Hospital

United Kingdom

St Michael Hospital, London
Norfolk & Norwich University Hospital
Ysbyty Ystrad Fawr Hospital, Caerphilly S. Wales
St James Hospital, Leeds
St Helens & Knowsley Hospital, Liverpool
Gt Ormond St Childrens Hospital, London
National Blood Transfusion Centre, Bristol
St Michaels Hospital, Hayle
Forth Valley Hospital, Falkirk Scotland
Addenbrookes Hospital, Cambridge
Peterborough City Hospital, Peterborough
UBH Childrens Hospital, Bath
Hammersmith Hospital, London
Bangor Hospital, Bangor N. Wales
Burnley General Hospital, Burnley
Freeman Hospital, Newcastle
Royal Hallamshire Hospital, Sheffield
Royal Free Hospital, London
Kings College Hospital, London
Guy's Hospital, London

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