CASE STUDY: **ICT SOLUTIONS AND SERVICES PROVIDER**

Socomec Powers Energy Efficient, High Performance Data Centers for Indian ICT Giant

The customer:

Sify Technologies is one of the largest Integrated Communications Technologies (ICT) solutions and services providers in India, serving over 8500 B2B customers. The company's end-to-end solutions and comprehensive range of products are delivered to customers in 1400 cities and towns over a robust telecom data network infrastructure.

Client:

India's leading ICT solutions and services provider

Solution:

DELPHYS GREEN POWER 2.0 series designed to provide high availability and fault tolerance to protect critical servers and IT equipments.

DIRIS A60 & COUNTIS E53 Meters supplied for energy efficiency enhancement, facilitated by its exemplary performance on strategic event analysis.

ATyS M Automatic Transfer Switching Equipment to guarantee the availability and performance of LV electrical installation.

Benefits:

- High operating efficiency
- Reduced TCO
- Superior network integration
- Easy usability

socomec
Innovative Power Solutions

The need:

A robust power supply system to protect IT infrastructure and support expansion

With its telecom network spread across 48 datacenters, including six tier-3 centers across Chennai, Mumbai, Bengaluru and Delhi, the client had a pressing need to protect its critical servers and IT equipment. Furthermore, they were looking to accommodate the growing demands from their tier-3 datacenters for integrated ICT solutions and services. A dependable power supply system was a critical requirement to drive both security as well as the expansion initiatives. The client therefore wanted a robust power supply system with a failure resilient design that could enable high levels of:

- Resistance to power vagaries
- Operating efficiency to minimize energy costs
- Power density with minimum footprint
- Short circuit current delivering capacity
- Integration with existing systems
- Compatibility with BMS system based on MODBUS protocols

Why Socomec:

Leading provider of high-availability power solutions

The client chose Socomec to ramp up and transform its power supply infrastructure based on our deep domain expertise in managing power for critical applications. Socomec is an industry recognised expert in leveraging cutting-edge technologies to ensure the highest availability of electrical power supply to critical facilities and commercial applications. Our innovative range of products comprising UPS, changeover and transfer switches, and electrical storage and monitoring systems provide high-quality distortion-free power, maintain efficient power back-up,and prevent failures and downtime. The result is superior operational efficiency, reduced equipment and productivity losses, and improved stabilization of the power grid.

Socomec solution:

High performance UPS solution to enhance data center availability and efficiency

Socomec's experienced engineers identified **DELPHYS GREEN POWER 2.0 series 400KVA UPS system** as the perfect fit for the client's requirements. The highlights of the solution include:

- **Modular N+1 configuration UPS** that can be paralleled up to eight units to enhance capacity up to 4 MW.
- **Static bypass** facility on each UPS for high current fault tolerance of 12.5kA peak.
- **Clean rectifier** with near unity power factor and less than 2% input current harmonics to enhance life of electrical infrastructure.
- Expert **battery management feature** to avoid stress on battery and enhance battery life.
- **Proven design highly resilient to failures** with very high mean time between failures (MTBF).
- **Type tested and compliant with international standards** for immunity to noise and electromagnetic interferences.
- Options for **local and remote monitoring,** including compatibility with Building Management Systems (BMS), using MODBUS protocols.

Socomec has supplied 52 X 400 kVA Delphys Green Power 2.0 UPS to meet the customer needs, apart from the existing installations of 21 x 500 kVA Delphys MX elite, 4 x 160 kVA; 1 x 120 kVA; 2 x 80 kVA Delphys MP elite & 2 x 20 kVA Masterys Green Power UPS. We are proud to have close to 33 MVA of UPS supplied to Sify technologies.

The architecture:

Powering high availability and compliance

Technical highlights of the robust architecture (see Figure 1) deployed by Socomec include:

- Compliant with tier-3 requirements with 2N redundancy for supply, power conditioning, distribution, and auxiliaries.
- Two distribution transformers step down 11KV supply to LV for providing input supply to two sets of UPS connected in 2N configuration for redundancy and concurrent maintainability. Each set of UPS is also N+1 redundant.
- Long term outage of HV supply is supported by multiple generators of 2MVA which supply power to the preferential loads. The overall architecture complies with TIA-942 datacenter certification and is capable of sustaining 72 hours of power outage.

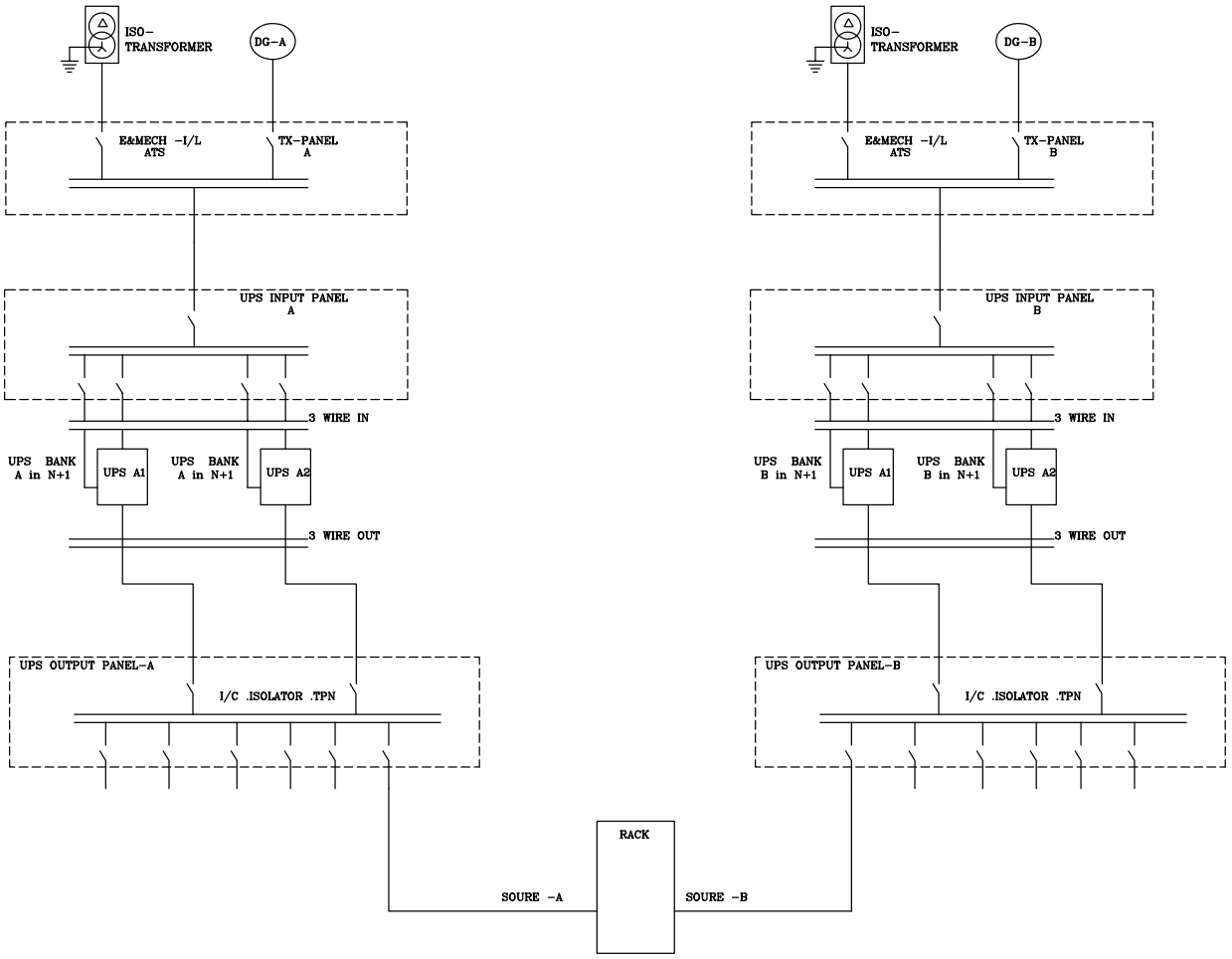


Figure 1: Architecture of Socomec's solution

Business benefits:

Improved network performance and capacity

Socomec's deep domain expertise and industry knowledge have been instrumental in driving our engagement with Sify Technologies over the past 10 years. We also supply UPS for Sify's award-winning datacenter co-location services. Installation of DELPHYS GREEN POWER 2.0 series UPS at tier-3 datacenter locations across Chennai, Bengaluru, Mumbai, and Delhi enabled the following benefits for the client:

- Improved power availability, thanks to the fault tolerant design of each 400kVA UPS capable of directly sustaining short circuit current equal to 3 times of peak rating. Enabled total short circuit capability of 'N' times in N+1 redundant configuration of each set of UPS.
- Enhanced competitive edge through high operating efficiency of greater than 95% - even at 30% load, significantly lowering TCO during the life cycle of UPS. Further, the solution's compact design with high power density, typically 1.12 sq.m. for each 400kVA UPS, ensures minimal footprint and maximum space savings for the client to support future expansion.
- Superior network integration by way of high input power factor of greater than 0.99 and very low input harmonics distortion<2.5%. Sinusoidal input current drawn from Mains using 3-level insulated-gate bipolar transistor (IGBT) rectifier.
- Revamped usability through an interactive and user friendly graphic touch screen for displaying extensive parameters, status, and events. Enabled user-friendly menu-driven selection and setting of various parameters for Mains and load compatibility.

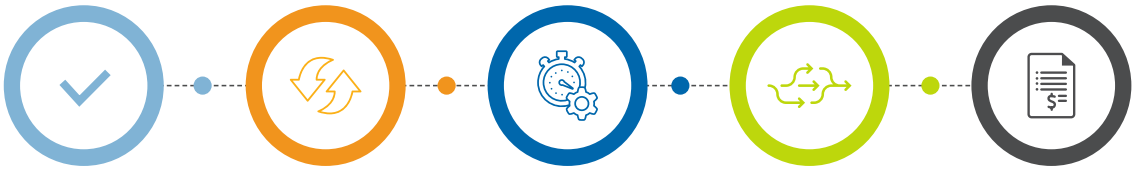
IMPORTANCE OF POWER MONITORING IN DATACENTER IS CRUCIAL FOR BELOW PARAMETERS

- Power availability
- Energy efficiency
- System upgradability (flexibility)
- System sustainabilty
- User adapted billing modules

For new or existing data centers installations

Sustainability
Minimize environmental impact and guarantee compliance with responsibility guidelines

Flexibility
Futureproof critical power architecture



Availability
Guaranteeing business continuity and the ultimate protection for your critical asserts

Efficiency
Minimize energy consumption and reduce operating costs

Tailored Billing
Allow possibility to invoice customer data centers

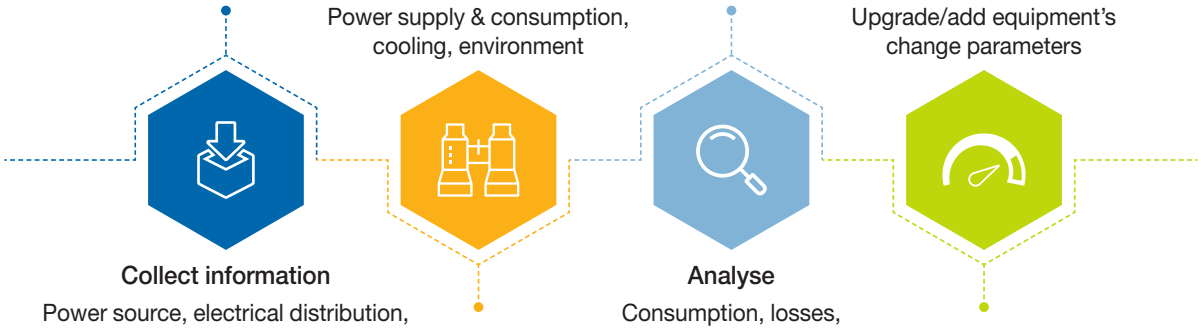
Socomec supplied their PQ meter Diris A60 encompassing all relevant and critical feature matrix for SIFY datacenter energy efficiency enhancement, facilitated by its exemplary performance on strategic event analysis

A snapshot of important steps involved

- Collect information on all key aspects of the Power sources and for the Electrical distribution
- Monitor various installation parameters
- Analyse the parameters with reference to Availability and to enhance Energy efficiency
- Help indicate designated steps to Improve Energy efficiency

Monitor the installation
Power supply & consumption, cooling, environment

Improve performances
Upgrade/add equipment's change parameters



Collect information
Power source, electrical distribution, IT server power consumption

Analyse
Consumption, losses, availability, power capacity

What all Diris A60 is capable of doing?

- Data logging
- Recording curves for power quality events, to facilitate remote analysis and correction
- Compliance to IEC 61557-12, the venerable PMD standard, to measure and monitor electrical parameters in distribution networks, including for seamless performance in adverse environmental conditions
- Confirmity to EN 50160 defining key electrical events related to Network quality analysis

Socomec also supplied COUNTIS E53 panel mounted active and reactive energy meters for direct display of multi measurement and Metering values. Complying with IEC 61557-12 - the venerable PMD standard, these meters are provided with an RS485 MODBUS communication output to enable remote reporting of energy consumption. Additional feature includes, protection against phase/ neutral inversion, also an integrated test function that is utilised to detect wiring errors for auto correction, thereby simplifying the installation and commissioning. These attributes help toward cost optimisation and also ensures that the device operates correctly.

ATyS M Automatic Transfer Switching Equipment: to guarantee the availability and performance of LV electrical installation

The customer need was for Three phase Modular Automatic Transfer Switching equipment inside DB enclosure, suitable for DIN rail mounting. Socomec has a DTC application oriented product, named ATyS M, that is a quick-acting source transfer switch offering ultimate reliability and ensuring power availability for critical IT infra assets and for ensuring safety of operating personnel. ATyS M complies with IEC 60947-3 & IEC 60947-6-1, incorporating optimised user friendly design with integrated controller with voltage and frequency monitoring of both sources for their three phase networks. To ensure that the correct configuration is maintained a sealable cover is fitted in order to avoid any unintentional modifications to the programming.

Partnering with Socomec has helped fast-track our expansion initiatives to support the growing customer demand for integrated ICT solutions and services. The uptick in our operating efficiency, thanks to superior network integration and performance has helped us significantly compress TCO for data center operations. Socomec team leveraged its industry knowledge and expertise to customize their high-availability power solutions for our unique business needs.

Mr. Roopesh Kumar
Associate Vice President,
Data Center Services - Projects,
Sify Technologies Limited

Socomec: our innovations supporting your energy performance

1 independent manufacturer

3,200 employees worldwide

10 % of sales revenue dedicated to R&D

400 experts dedicated to service provision

Your power management expert

POWER SWITCHING

POWER MONITORING

POWER CONVERSION

EXPERT SERVICES

The specialist for critical applications

- Control, command of LV facilities
- Safety of persons and assets
- Measurement of electrical parameters
- Energy management
- Energy quality
- Energy availability
- Energy storage
- Prevention and repairs
- Measurement and analysis
- Optimisation
- Consultancy, commissioning and training

A worldwide presence

8 production sites
- France (x3)
- Italy
- Tunisia
- India
- China (x2)

27 subsidiaries
- Australia • Belgium • China • France
- Germany • India • Italy • Netherlands
- Poland • Romania • Singapore
- Slovenia • Spain • Switzerland • Thailand
- Tunisia • Turkey • UK • USA

80 countries where our brand is distributed

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