WATT'S NEW?

SATEC'S EMPOWERING NEWSLETTER

NUMBER 3
JANUARY
2010

Everyone has their set of January thoughts. Some of us decide that this will be the year that we'll move, other vow to visit the gym regularly, and then there are those who promise to call Grandma at least once a week. No matter how good the past year has been, we always want the next year to be even better.

The trouble with this wonderful process of refining and striving is that we sometimes overlook our strengths and significant achievements. As we print up the final draft of 2010 goals, let's take a look at what 2009 is telling us:

Well, for starters, we are survivors. With the worst of the recession behind us, we can proudly say "we did it!" Now that is a lot, but there's even more… SATEC has expanded significantly in Europe, created strategic alliances with distributors worldwide and increased sales over the year. Alongside the sales, we've launched new releases of hardware and software. We've expanded our offering and aligned it with market requirements. We've added customers and gained a deeper understanding of their needs.

So when you take one last look at those killer goals before delving into the hard work that makes SATEC such a success story, remember you have a lot to be proud of!

Galia & Gvira

NOTABLE PROJECTS

The Edge Building

Queensland's new digital culture center for experi-mentation in design, art, technology and enterprise. The Edge building, part of the State Library of Queensland, Australia, is a place for experimentation and creativity, giving contemporary tools to young people to allow them to explore critical ideas, green initiatives, new design practices and media making. VRT Systems supplied SATEC BFM136 Branch Feeder Monitors to the recently completed building, to examine energy usage and to provide input to the creative output of the facility. The local and international specialists (catalysts) at the center will weave networks and stimulate the creative practice and productivity that takes place within and beyond the building. The Catalysts will use the BFM136 communications output to provide new ways of displaying energy usage to the public and to create greater awareness of the global impact of greenhouse gas emissions.

More info: yuvalc@satec-global.com

Delek IPP

Delek Group

An 84 MW power plant owned by Delek, a leading gas company. eXpertpower™ provides monthly bills based on half hour readings.

- Charges take predicted generation and consumption into account
- Extensive use of virtual meters

More info: mikiz@satec-global.com

DON'T MISS...

SATEC
Powerful Solutions

NETHERLAND'S LARGEST FOOD RETAILER USES SATEC'S EXPERTPOWER FOR ENERGY MANAGEMENT

Rob Burghard, GROEI 50, Netherlands

Albert Heijn is one of the leading food retailers in the Netherlands and also one of the country's most recognizable brands. Founded in 1887, its mission is "to make the ordinary affordable and the extraordinary attainable" for customers. Albert Heijn has more than 800 stores and employs over 70,000 people, making it one of the largest employers in the Netherlands. The company operates four main formats: the neighborhood grocery store, the larger Albert Heijn XL supermarket, "AH to Go" convenience stores, and the AH internet grocer.

GROEI 50, SATEC's distributor in the Netherlands, has started an energy monitoring and analysis pilot project with two franchise supermarkets from the Albert Heijn chain. SATEC's BFM136 multimeters have been installed for the monitoring of all the main groups in the supermarkets themselves as well as the satellite shops in the two shopping centers.

The owner of the two Albert Heijn franchise supermarkets Mr. Frits van der Heide says: "It was a very good decision to enlarge our project scope from one single meter to twelve meters per supermarket. Now we have a much better view on our energy consumption." The installation of the BFM136 meters and the connection with SATEC's eXpertpower™ is the first phase of this project. Later this month GROEI 50 will install its new GATEWAY to enable Mr. van der Heide to improve the energy awareness of his employees. With the combination of SATEC's BFM136 and the GROEI 50 GATEWAY it is possible to correlate energy consumption data to weather data, number of clients and any other factors that impact the energy consumption, but that cannot or should not be influenced. The result is the visualization of the amount of consumption that can be influenced by human factors... Which seems in most cases the lowest hanging fruit that can be picked when it comes to energy saving.

More info: yuvalc@satec-global.com

NEW @ SATEC SALES

AGUSTIN "GUS" HERRERA

Sales Application Engineer

DeVry University, graduated October 2009 with a Bachelor's degree in Electrical Engineering Technician.

YAEL BALLEUR

Business Development Coordinator

Fluent in 5 languages, Yael is responsible for customer relations in Europe, Oceania and South Africa.

VITALI POLSKY

Technical support engineer

Billing Dept.

Vitali is an electrical engineering technician with an extensive background in electrical billing.

WHERE TO?

March 11 2010

ElectroTECH 2010

Rotorua, New Zealand

Novotel Lakeside Hotel

Stands 28 and 29

ElectroTECH 2010 is the inaugural electrical industry trade expo organised by the Waikato/Bay of Plenty branch of ECANZ, the Electrical Contractors Association of New Zealand

March 16-18 2010

NFM&T 2010

Baltimore, MD, USA

Baltimore Convention Center

Booth 480

National Facilities Management & Technology Conference and Exposition

April 19-22 2010

IEEE 2010

New Orleans, LA, USA

New Orleans Convention Center,

Booth 1757

IEEE PES Transmission and Distribution Conference and Exposition

March 24-25 2010

GLOBALCON 2010

Philadelphia, PA, USA

Pennsylvania Convention Center

Booth 423

AEE Exhibit

April 18, 2010

SATEC Sales Meeting & Dinner 2010

New Orleans, LA, USA

The Maison Dupuy Hotel

April 19-23 2010

HANNOVER MESSE

Hannover, Germany

Hall 16, booth B33

The leading showcase for industrial technology. The spotlight will be on industrial automation, energy, technology, industrial subcontracting and cutting-edge technologies.

March 23-25 2010

DistribuTECH 2010

Tampa, FL, USA

Tampa Convention Center

Booth 738

Distributech® Conference & Exhibition

BACK FROM....

October 14-17 2009

ELECTRO INDONESIA

Jakarta, Indonesia

www.electroindonesia.com

November 12-13 2009

SAEEC 2009—SOUTHERN AFRICA ENERGY EFFICIENCY CONVENTION

Johanessburg, Gauteng

The www.saeec2009.org.za

December 1-4 2009

ELECTRICAL NETWORKS OF RUSSIA

Moscow, Russia

expoelectroseti.ru

MEASURE TRANSIENTS FOR DAMAGE CONTROL

With SATEC's **ALL IN ONE** Revenue Meter, Power Quality Analyzer & Fast Transient Recorder

Prof. Mendel Krichevsky, Senior Application Scientist

Transient overvoltages occur as a result of lightning, faults in power networks or reactive loads switching, causing severe damages to equipment.

According to the EN50160 standard definition, transient overvoltage is a short duration oscillatory or non-oscillatory overvoltage usually highly damped and with a duration of a few milliseconds or less.

Due to the short duration of these events, they can only be detected by special, fast measurement and recording.

The Problem

Global damages due to transient overvoltages are estimated at billions of dollars annually. These disturbances cause serious damage to equipment, such as transformers, capacitors and computers, and result in financial losses for factories and business activities, as well as to customers.

Damage to Customers & Equipment

1. **Transformer explosions & fire**
2. Nuisance tripping of circuit breakers
3. Unexplained fuse operation
4. Loss of computer or controller memory
5. Tripping of variable speed drives
6. Motor overload operation
7. Computer system data alterations
8. Errors of microprocessor controlled equipment
9. Damage to electronic components
10. Failure and damage to power factor correction capacitors

State of the Art

Revolutionary Device for a Smart Solution

The EM720T High-voltage fast transient recorder detects impulsive and low frequency oscillatory transient overvoltages with peaks up to 2kV and durations of up to 20 microseconds.

Causes of Transient Overvoltages

- Lightning
- Capacitor switching
- Line switching
- System faults
- Switching of large inductive loads (motors)
- DC – loads switching

Measuring Problems

The duration of transient overvoltages is very short, from microseconds to 10msec, and the amplitude of the peaks is high. Standard Revenue and Power Meters are unable to measure and record these transients.

With the new EM720T eXpertmeterTM, SATEC is now able to offer a solution to the deadly problems caused by transient overvoltages.

The EM720T Revenue Energy Meter is class 0.2S accuracy and has special high impedance inputs for measuring high voltages between phases and neutral relative to ground.

The EM720T records four voltage waveforms simultaneously (3 phase and neutral relative to ground), in fast speed. It can also measure transient pulses with amplitude of up to 2kV and isolation withstands of voltage and current inputs relative to ground up to 6kV.

The Battery Backup Power Supply (BPS) with built-in rechargeable

NiMn battery provides 2.5 hours of backup, enabling to record transients at the time of the fault.

Transient Overvoltages Recorded by EM720T

Transient overvoltages are detected as impulse according to next parameters—impulse amplitude, duration and rise time. In the EM720, minimal impulse amplitude is set by the consumer. The impulse amplitude is referenced to the nominal voltage amplitude (1.414 Un), and should be set at 30% or more. The impulse duration may be from 20 microsecond up to 10 ms.

Figure 1 shows a waveform generated by OMICRON and recorded by EM720. The waveform has an impulse of 1 ms and an amplitude of 100%. In this experiment, voltage neutral input was connected to ground input of the EM720.

Figure 2 shows a waveform generated by a special device. The waveform has an impulse of 88 microsecond and an amplitude of 410%.

The waveform in figure 3 was recorded by EM720. The instrument was installed in a 400V network. The Impulse has a duration of 22 microseconds and an amplitude of 378.9V (phase to ground).

Figure 4 shows amplitude in phase 1—720.4V (phase to ground). Amplitude in neutral—369.6 (phase to ground). In the case illustrated here, damages were caused to electronic equipment.

Figure 5 lists transient overvoltage events recorded in PQ Log.

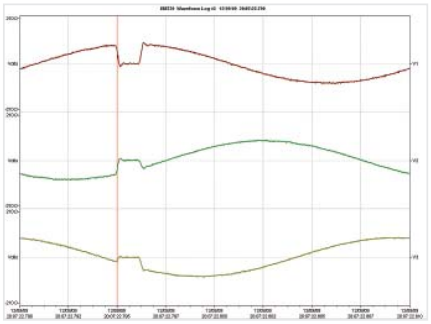


Figure 1. OMICRON Signal Generator waveforms

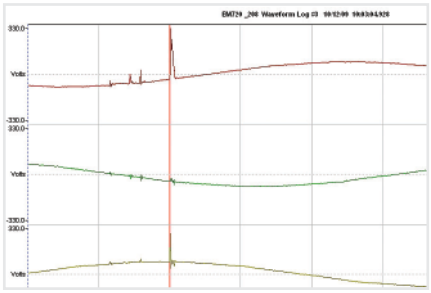


Figure 2. SATEC Signal Generator waveforms

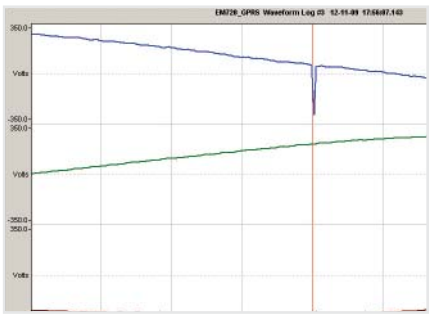


Figure 3. Transient overvoltage in a 400V network

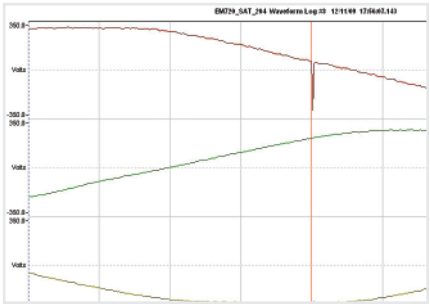


Figure 4. Transient overvoltage with equipment damage

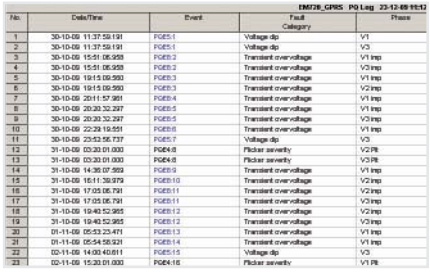


Figure 5. Power Quality Event Log

EM720 Standards Compliance

EMC	IEC standards	IEC 61000-2
Safety	IEC 61010	
Insulation	Impulse, protective class II – IEC 62052-11	6KV/500Ω @ 1.2/50 µs
	Dielectric withstand, protective class II – IEC 62053ww-22	4 KV r.m.s. @ 1mn
Measurements & Accuracy	IEC 62052-11	
	IEC 62053-22 – Active Energy measurement	Class 0.2S
	IEC 62053-23 – Reactive Energy measurement	Class 0.5S
Power Quality	PQ methods – IEC 61000-4-30	Class A
	Harmonics & Interharmonics measurements – IEC 61000-4-7	Class I
	Flicker measurements – IEC 61000-4-15	Class I
	Report – EN50160	
	Report – GOST 13109-97	

WATT'S NEW IN EXPERTPOWER?

Some interesting goodies from the latest eXpertpower™ release:

Import Devices

Great for sub-metering and other large applications where you have a lot of devices to define.

Instead of laboring through a web page for each of the new devices, eXpertpower™ provides an Excel template in which you can enter all your new devices using all the Excel options for cutting, pasting and sorting.

eXpertpower™ then provides an interface that reads this data directly into its database. Of course, the Import utility includes a validation process that ensures that no erroneous data enters the system. Highly recommended for BFM136-based applications or any other application with over 20 devices monitored.

Water bills

One-stop shop for full utility sub-metering.

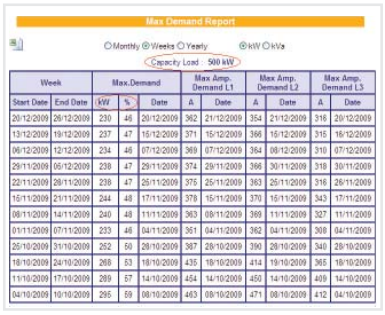
Besides the various billing schemes that eXpertpower™ offers for electricity, you can now create water bills.

Water meters are read via the Digital Input on the PM130 series. eXpertpower™ then translates the readings into water consumption units, associates the data with appropriate meters and prints up a full fledged water bill for each tenant.

EXPERTIP

Monitor Maximum demands versus load capacity.
When defining device in maintenance site note capacity.
Max demand report will then show what percentage of the capacity is being used.

Max Demand Capacity Definition



Max Demand Capacity

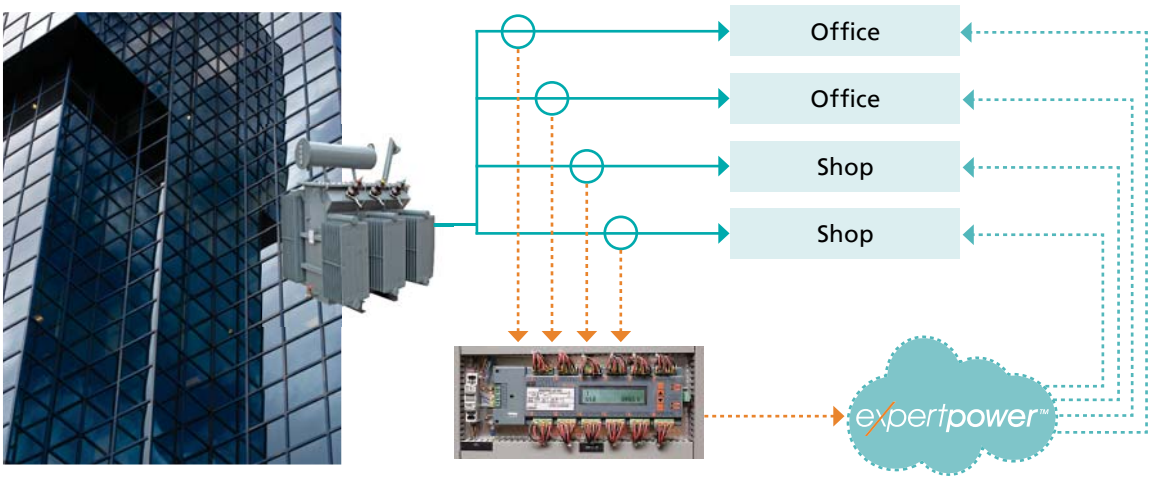
MAKING MONEY OUT OF ENERGY

Yuval Cannon, VP Business Development

When thinking of energy management, most of us assume we are dealing with cost saving & energy efficiency. Because of that, most energy management systems are designed and aimed solely for these purposes.

At SATEC, we offer much more. Amongst other possible applications, our solutions are intended to make energy a source of recurring revenue.

There are numerous possibilities and one good example of making energy a source of profit can be by monitoring an existing building complex occupied by stores and offices.



Case Study: Energy Profits For a Building Complex

The complex owners decided to buy the electricity from the utility at middle range voltage (22KV) and sub-meter it to their tenants. The customer-installed transformer steps down the voltage to a range of 220V. The energy from the step down transformer is resold to the tenants at utility prices for a profit. In this particular case the margin between purchasing middle and domestic voltage ranges is a 15% discount.

This complex is fully covered by SATEC's BFM136, a unique 36 channel 0.5% accuracy device. The BFM136 measures the energy consumption of each sub-tenant while translating the data into actual costs by implementing the domestic utility tariffs according to the TOU.
The devices transmit the data via the internet to SATEC's eXpertpower™ web server, which issues monthly bills to the tenants.
By implementing such a simple solution, the owners are capturing the utility profit between wholesale and retail pricing differences, thus creating their own profit center.

A relatively small investment allowed the building owners to return the investment in less than a year and make energy a stable monthly profit source.

By adopting your own utility pricing models such as max demand, different tariffs for different hours or connecting new customers to the grid fee's, **you can implement the same concept in order to create such a profit source for your business.**
Please consult us or your local distributor for further information.

Got anything to say?

Comment, project, interesting quote?

Mail us!

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