

# WATT'S NEW?

SATEC'S EMPOWERING NEWSLETTER

NUMBER 1  
SEPTEMBER  
2009

## NOTABLE PROJECTS



At the SATEC Global sales conference that took place in July, someone mentioned that SATEC was reborn.

We can't think of a better way to describe the latest conceptual and organizational changes!

During the past few months we've all experienced a new type of synergy. It creates the type of electricity that even the EM720 and the up-and-coming socket meter can't measure...

To reinforce this momentum, SATEC management instituted "Watt's New?", an empowering newsletter that will keep us all up to speed, allow us to learn from each other and implement leading solutions all over the world. "Watt's New?" will walk the reborn SATEC to its success.

Congratulations!

*Galia & Guira*

**Got anything to say? Comment, project, interesting quote? Mail us!**

### Disney

Disney Studios in Burbank, California. About 30 buildings will be monitored with 80 PM174 meters.

Disney studios, in an effort to be more green than ever, was limited in its ability to improve energy consumption by the lack of real time and historical information about their power system. In order to gain insight and control over the power and energy usage of the Disney studios campus, they have decided to install PM174 meters, connected to our eXpertManager system.

For more info: [rjensen@oksatec.com](mailto:rjensen@oksatec.com)

### Soroka Hospital

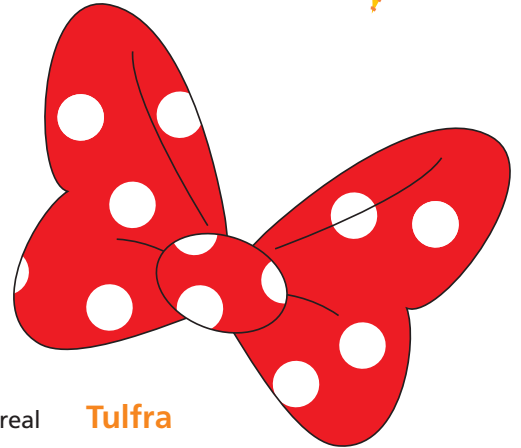


A government-owned hospital.

Approximately 60 meters connected to eXpertpower.

- Monitor Power Quality
- Measure Energy in each department
- Follow energy consumption trends

For more info: [dannys@satec-global.com](mailto:dannys@satec-global.com)



### Tulfra

[tulfra.com](http://tulfra.com)

A large property manager located in Northern NJ installed our eXpertPower Web base service. Utilizing the SATEC meters we determine efficiencies and distribute the actual cost appropriately. The tenants who are being billed for actual energy usage now have an incentive to conserve.

For more info: [mariov@oksatec.com](mailto:mariov@oksatec.com)

### Cotroceni Mall, Bucharest



A next generation mall that raised high standards for shopping and entertainment destinations.

Approximately 300 shops and a huge entertainment area, monitored by eXpertPower. Additionally, SATEC will provide monthly billing services.

More Info: [mosheb@satec-global.com](mailto:mosheb@satec-global.com)

“

Electricity is actually made up of extremely tiny particles called electrons, that you cannot see with the naked eye unless you have been drinking.”

Dave Barry



NEW  
CONCEPT

# REAL-TIME PUMPS EFFICIENCY MONITORING

Mendel Krichevsky, Senior Application Scientist. [mendelk@satec-global.com](mailto:mendelk@satec-global.com)

The pump's monitor microprocessor is based on control + energy saving in pumping systems (with PM172EH/174/175).

## The Benefits:

- Improved plant reliability
- Save money AND help save the world from global warming

## The Disadvantages of the Existing Situation

1. **Efficiency data are not accurate** since there are a lot of pressure, flow and voltage oscillations, and the data collected from sensors and Power Meters are not synchronized.
2. In case there are problems in communication, the data from the field are lost.
3. It is impossible to receive the device alarms or activate / deactivate protection in real time.

A new utilization of SATEC devices for pumps efficiency monitoring, event logging and event triggering

## State of the Art

- Pumps use nearly 20% of the world's electrical energy.
- Responsible for about 7% of the world's greenhouse gas emissions.
- Previous studies have shown that 20% or more of the energy consumed by the pump systems could be saved through equipment or control changes.
- Pumps are often critical components of a process. Hence plant reliability is optimal when they are maintained on the basis of regular or continuous condition monitoring.

- Reduced consumed energy and maintenance costs

## The Current Situation

Currently PM130 is being used in the above mentioned Monitoring System for the energy and power supply measurement -  $P_E$  of the pumps' motors.

A national water supplier has more than 4000 motors monitored by PM130 devices. The electrical energy data is being transferred from the PM130 devices via their relay pulses to the controller, and then to the computer. All other data from the sensors, such as pressure, flow rate and motors RPM, reach the computer as well.

These data give us the ability to calculate the energy and power supply of the pump -  $P_{\text{pump}}=f$  (pressure and flow).

The pumps efficiency is calculated according to the following formula:

$$\text{Efficiency\%} = P_{\text{pump}} / P_E * 100\%$$

According to the pump's efficiency we know what the state of the pump is, as well as the state of the pipeline and the whole pumping system.

## The Applications

- Industry Sectors include:
  - Water pumping and wastewater treatment
  - Petrochemical
  - Pulp and paper
  - Irrigation
  - Hydroelectric
  - Power generation
- Features:
  - Permanent control and protection
  - Plant reliability and process improvement
  - Energy usage
  - Operations and maintenance



## A New Solution

A new solution consists of the usage in one power meter only, possessing both protection and alarms functions as well as data logging.

Efficiency data is with high accuracy as a result of:

- A single SATEC power meter is able to simultaneously measure electrical data (voltages, currents and power  $P_E$ ) and mechanical data (pressure, flow and motor speed).
- All the data is recorded in the same data log of the power meter.
- All data is recorded in non-volatile memory of the power meter itself.
- In addition to the data logging ability,

the power meter can provide event logging and triggers. These data can produce alarms and additional protection.

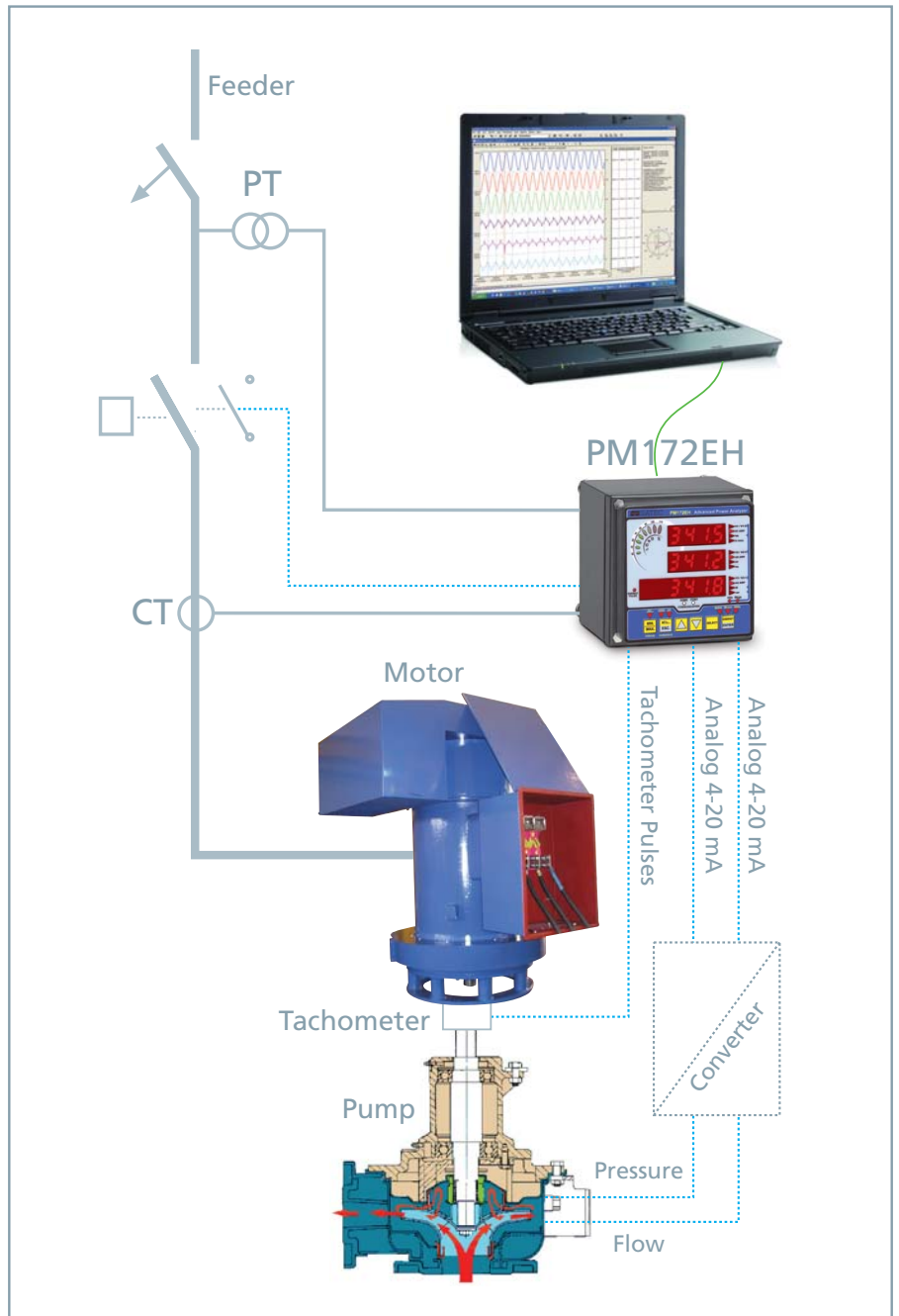
### PM172EH/175 Matches the Solution

1. The devices have two analog inputs that can receive external data from the analog sensors—rate of flow and pressure.
2. The devices have two digital inputs that measure pulses for motors speed values.

In future, we can develop a program for the power meter which will enable the implementation of real time pump efficiency calculation.

### Advantages of SATEC's New Solution

1. Using one real time device for receiving and storing the data will greatly enhance the accuracy and reliability of the measurement.
2. The device will allow access to data logged inside the device, regardless of the status of the communication system.
3. The device will allow to receive alarms and protection in real time from SATEC devices.



4. Using the following type communication modules including Ethernet and Cellular Modem of PM17x series.
5. PM17X's measurement accuracy is extremely high. The accuracy of electric energy measurement is class 0.2S.

## TECHNICAL >> SNTP\*

The Single Network Time Protocol (SNTP) is a protocol for synchronizing the clocks of computer systems over packet-switched, variable-latency data networks. NTP uses UDP on port 123 as its transport layer. It is designed particularly to resist the effects of variable latency by using a jitter buffer.

NTP also refers to a reference software implementation that is distributed by the NTP Public Services Project. Clock synchronization is a problem from computer science and engineering which deals with the idea that internal clocks of several computers may differ. Even when initially set accurately, real

clocks will differ after some amount of time due to clock drift, caused by clocks counting time at slightly different rates. There are several problems that occur as a repercussion of rate differences and several solutions, some being more appropriate than others in certain contexts.

www.www.www

A WORD FROM THE CHAIRMAN...

June 30th 2009 was a monumental day for SATEC global: Our new and restructured web site went on air! Since then, we've had over 7,000 visits – and the numbers are on a continuous rise.

Visit at [www.satec-global.com](http://www.satec-global.com) to find:

- **Product pages** that are brimming with content
- Downloadable **technical literature** and **brochures**
- A revised, easy to use **Order String**, for you, distributors and customers
- **Application descriptions** that tie our products together to provide full fledged **powerful solutions**

We keep updating the site, so even if you've been there, pop in for another visit.

We're sure you'll find something new and useful!



SATEC is kicking strong, even in spite of the economic tsunami! We are rapidly growing our product offering and expanding to new territories around the world.

With the completion of SATEC's state of the art eXpertmeter™ EM720, we are conquering the European market. The BFM136 is yet another example of SATEC's ingenuity, revolutionizing the commercial market. The worldwide initiative for energy efficiency and a smart grid has reinforced the need for eXpertpower™—going green is just a click away. So much more to come....

This wouldn't be possible without the dedication of our outstanding team. I would like to take this opportunity to personally thank each and every one of you and extend a warm welcome to the new additions to the SATEC family.

With wishes of continuous success and good health,

H. Daniel Branover



## EXPERTIP

The PM130 with its four digital inputs can provide an excellent low price solution for reading pulses from complimentary devices such as water meters, gas meters and other controls.

Questions? Contact Hagai Kahana, [hagaika@satec-global.com](mailto:hagaika@satec-global.com)

## EINSTEIN: R&D NEWS

### PM174

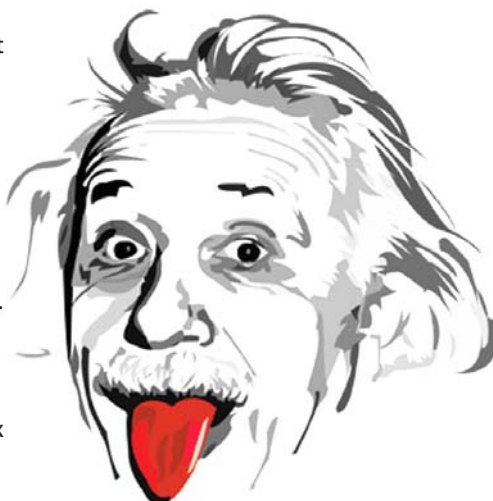
PM174 supporting Voltage and Current Line Post sensors, including Voltage and Current Transformer corrections.

### ezPAC

ezPAC 128 I/O supported by IEC 61850 substation automation protocol over IP.

### PM17X AND BFM136

Coming soon! GPRS modem for PM17x series and BFM136.



### ezPAC AND EM720

SNTP\* - Time synchronization over IP supported by ezPAC and EM720.

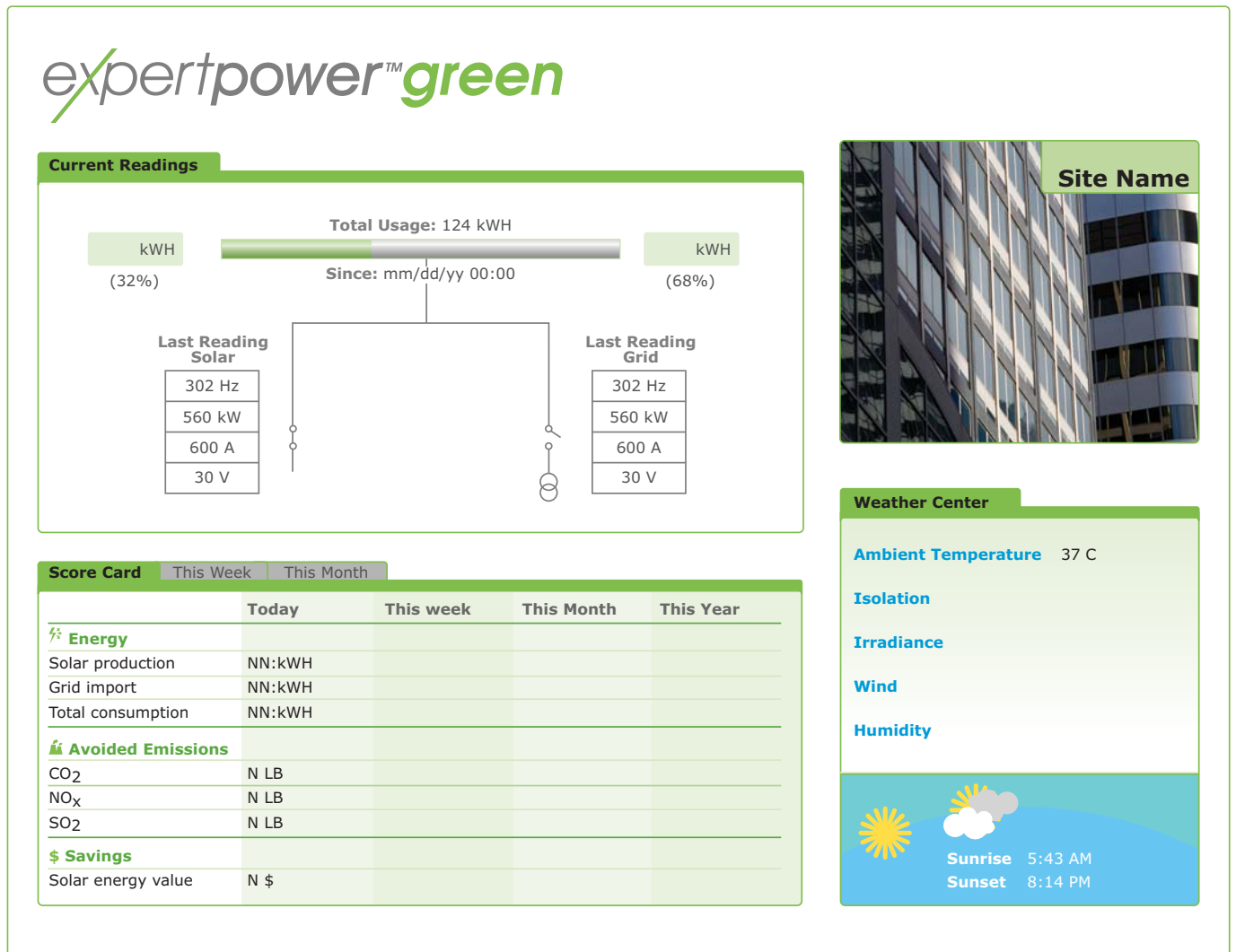
\* See **TECHNIONARY** on pg. 3

### PM130 PLUS

Enhanced TOU for PM130E/EH PLUS with up to 8 tariffs.

For more info: Dany Shacked  
[danysh@satec-global.com](mailto:danysh@satec-global.com)

eXpertpower™ green provides a cohesive dashboard that takes energy management two giant steps ahead by displaying avoided emissions and \$\$\$ savings related to solar and wind electricity generation.



SATEC will provide an eXpertpower package geared for solar applications. This package will be based mostly on existing building blocks that already exist in eXpertpower, packaged in a tailored dashboard that represents the relevant data for a solar application.

The dashboard includes the following areas:

- Logo area that represents, SATEC, the dealer and the specific customer.
- Scorecard—daily, weekly, monthly and yearly totals of generated energy, imported and exported energy in KWH, avoided emissions and \$\$.
- Current readings—a graphical representation of the measured points and last values that were read.

- Picture of monitored facility.
- Weather Center—An area representing weather information that typically influences generation capacity.

For more info:  
gviram@satec-global.com  
mariov@oksatec.com



SATEC has teamed up with Piedmont Bushings and Insulators (PBI) in a strategic partnership to provide a unique solution for Smart Grid initiatives on 25kV Distribution systems in the US.

communication direct to a SCADA System, make installation simple.

By enhancing the input design of the standard PM174 Power Quality / Energy Meter to accept the low level signals provided from the Piedmont Line Post Sensors, SATEC has provided the utility Industry with a new powerful system to monitor, coordinate and operate distribution systems in a real-time mode to provide power quality information from remote locations that were previously unobtainable. The Utility

information is usually limited to just what the voltage regulators can provide from their single source of regulation, which has been deemed insufficient. The need is to increase monitoring to additional points further “downstream” of the regulator to many critical points along the grid.



SATEC has provided the utility Industry with a new powerful system to monitor, coordinate and operate distribution systems

The PBI Line Post Sensors replace standard line insulators and incorporate a built-in CT and PT function. These sensors can easily be installed without having to de-energize or cut and terminate the main 25kV line wire. They produce a very small voltage signal instead of the normal 120 Volt and 5 Amp outputs of standard CTs and PTs. Special inputs have been designed into the SATEC Model PM174 Power Quality / Energy Meter to fully interface with the low level sensor outputs for line voltage and current. Full measurements and data can be obtained from the PM174, including waveforms and harmonics. A custom SATEC enclosure for the PM174, input connections and a GPRS modem for real-time data

can now process this information to analyze power flow and determine MW-reduction capabilities. They can use this data to execute commands to operate and control equipment such as voltage regulators, capacitor controls, loading switches and system outage reporting. Today, this

SATEC’s approach can control demand reduction during peak load times to deliver the power needed by the system during high demand periods. This can help minimize losses on the distribution system and optimize efficiency as well as the quality of the power.



## EXHIBITIONS & CONFERENCES

### WHERE TO?

September 10-12 2009

#### INDIA ELECTRICITY

New Delhi, India

[www.indiaelectricity.in](http://www.indiaelectricity.in)

October 14-17 2009

#### ELECTRO INDONESIA

Jakarta, Indonesia

Indonesia's soaring power demand requires massive investment in power generation, renewable energy and downstream electrical equipment.

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

October 27-30 2009

#### IEEE T&D ASIA—SIEF 2009

Seoul, Korea

IEEE PES sponsored exhibition on electric power and electric IT covering Power Generation, Transmission & Distribution.

November 1-2 2009

#### ELECTRICITY 2009

Tel-Aviv, Israel

Electric & electronic engineers annual convention.

### BACK FROM...



May 26-28 2009

#### POWERGRID EUROPE

Cologne, Germany

POWERGRID Europe presents electricity transmission and distribution and conventional and renewable power.  
[generationpgrid09.events.pennnet.com](http://generationpgrid09.events.pennnet.com)

## NEW @ SATEC SALES

#### HANA GAZOLI

Asia Pacific Business Dev.  
Coordinator



MA in Public Health & Community Medicine. Worked in Business Dev. & Marketing in Rafa Pharmaceutical Labs.

#### MENACHEM BERCHOLZ

Sales & Tech Support

Menachem has extensive experience in marketing energy management and PQ solutions, with Elspec among others, and 10 years' experience in technical support.

#### TAMAR PICHKHADZE

Europe Business Dev.  
Coordinator



BA in Business Admin. & Int. Relations. Former experience includes: online marketing manager; assistant to Google's co-founder Sergey Brin.

#### YUVAL CANNON

Business Development Manager

MBA with major in marketing with honors. 15 years of experience as marketing and international business development manager with a variety of technological hi-tech companies.

#### FARZAANA ALI

Sales Assistant

Graduated West Essex County College. She previously was employed by CAN DO Fitness for six years as a sales associate.



#### SERGEY KONDRATIEV

Sales Engineer

Specialist with extensive engineering and IT experience. Master's Degree in Electrical Engineering. Over 20 years of experience.

## NEW DISTRIBUTORS

#### GROEI50

Holland



Field of expertise: Energy management and efficiency.

Segments: SME & industrial.

Contact: Mr. Rob Burghard

#### POWER QUALITY ENGINEERING Sdn Bhd

Malaysia

Field of expertise: power quality and energy management consultancy.

Contact: Mr. Andrew Teh





**Got anything to say?**

**Comment, project, interesting quote?**

**Mail us!**

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