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Stuart Thorogood

**Executive General Manager
Schneider Electric Australia**

Welcome to the first 2008 edition of our Inform Magazine. The dynamic nature of today's business environment has already provided us with a few key global and locally impacting challenges for 2008. Take for example the effects of the US sub-prime mortgage market fall-out on our own economy, the boom in both China and India, and of course, the ever-mounting pressure on our natural resources.

A 'greener future' is now forefront in the minds of business leaders and individuals alike. The new Australian Governments' first official act of ratifying the Kyoto Protocol is evidence of this. As a consequence, Australia is now formally committed to a reduction of 60% in our own emissions by the year 2050.

This challenge calls for absolute solidarity amongst all Australians and our emission targets insist we utilise our energy sources more effectively and efficiently, both in business and at home.

Within Schneider Electric, we have embraced this responsibility fully and are moving towards a sustainable future with a dual focus. Internally, we are employing solutions that drive our business to adhere to stringent environmental and social commitments.

This means monitoring production sites, creating innovative manufacturing processes, reducing energy consumption and applying international directives and regulations within our facilities.

Externally, we are rolling out action plans to provide our customers with innovations that will assist throughout the entire process of energy management. By utilising our expertise in energy efficiency, we are providing tailor-made solutions to suit the uniqueness of each application, regardless of how big or small. As a customer pursuing the same sustainable future as our own, please keep in mind that our doors are always open to assist you.

In closing, I would like to congratulate the Wild Oats XI team on their fantastic performance in the 2007 Sydney to Hobart yacht race! In the last edition of Inform we took a 'behind the scenes' look at the Schneider Electric automation systems on board the vessel. Shortly after the magazine was distributed, Wild Oats XI went on to become the winner for the third year in succession. This is just another example of where Schneider Electric is contributing to outstanding performance.

Farming a non-traditional resource

Just 200km North of Adelaide the area of Hallett is home to some of the most rugged, windswept and rain drenched land in South Australia. It is also soon to become Australia's largest wind farm, pumping enough renewable energy into the grid to support the electricity needs of 60,000 Australian households per year.

"It's the first time we have constructed a wind farm in this country."

Suzlon Energy Australia Pty Ltd was awarded the contract by AGL Energy to build the 14km stretch of 45 turbines on the Brown Hill ridge, scheduled for completion in 2008. When commissioned, Suzlon's turbines will have a total capacity of 94.5 MW. That's 3.75 MW more than the country's largest operational wind farm at Wattle Point on the state's Yorke Peninsula. Chris Judd, the Chief Operations Officer at Suzlon says: "This is a turnkey project for us, we are responsible for the full design and construction of the wind farm, and for delivering to the client an operational facility. "It's the first project of its kind for Suzlon in Australia—it's the first time we have constructed a wind farm in this country."

To help them meet the challenge, Suzlon has contracted Schneider Electric to provide and design the customised kiosk substations at the base of each turbine. Joe Riitano, National Business Development Manager at Schneider Electric, explains the configuration: "The wind turbines at Hallett Wind Farm generate 690V, which flows into the switchgear in the kiosk. The power is then fed into a 2.5MVA transformer, which boosts the voltage from 690V to 33kV. The 33kV end of the transformer is protected by Schneider Electric circuit breakers. So, under the one enclosure we have 690V switchgear, a 2.5 MVA transformer, and 33kV switchgear."

"Because of lengthy distances between the points of generation and consumption, the power is distributed at 33kV to compensate for energy losses and reduce cabling expenditure," says Mr Riitano. "The higher voltages allow the use of significantly smaller conductors for distribution. When taking the price of copper and aluminium into consideration, it is logical to step-up the voltage and reap the benefits of reduced cabling costs."



High availability

Compared to its competitors, Judd says Schneider Electric's solution allows for greater maintenance flexibility and higher availability for a wind farm. "The 33kV MESA switchgear is specifically designed for wind farm applications," says Serel Ogten, Electrical Engineering Manager at Suzlon Energy. "The additional switches provide more functionality than has traditionally been available in wind farm applications. Before now, wind farms were not able to isolate turbines within a string; so an underground cable failure anywhere along the string would shut down all turbines until repairs were complete. With the Schneider Electric switchgear, if we have, a string of 12 turbines and we have a cable failure at turbine 3, we can continue to operate nine turbines."

The Schneider Electric 33kV switchgear supplied for AGL's Hallett Wind Farm use circuit breaker (CB) protection for the transformer. Ferroresonance, or unstable high voltage, typically causes equipment to fail, so CB protection is a way of minimising down time. "CB protection was the preferred solution, as it helps to mitigate ferroresonance, which can occur with oil-immersed fused transformer protection. It ensures that all three phases trip during a fault and helps to mitigate switching delays between phases," says Mr Ogten.

"Ultimately, Schneider Electric has been chosen because of their good name in the industry as a proven supplier of quality product; they are manufacturing locally, so we can check on the progress and they have been responsive, flexible and adaptable in providing a good solution—all at the right price," Mr. Judd says.



“The additional switches provide more functionality than has traditionally been available in wind farm applications.”

Windproof enclosures

The size and location of the Hallett Wind Farm imposed some unique constraints for Schneider Electric to work within. The design of the enclosure has been carefully considered to make sure it can withstand high winds.

“On a normal kiosk substation, there are two doors at either end, at a wind farm, if you open one of these doors it acts like a sail. So in designing the enclosure, we have reduced the size of the doors, and increased the number of doors—six instead of two. We also used a thicker gauge of material to create a stronger, sturdier enclosure” says Riitano.

Citect, Schneider Electric's specialist industrial automation software company, has been working closely with the parent company to design, implement, and commission the wind farm's SCADA system.

Citect SCADA product offers a host of connectivity options, which are essential for the demands of the project. Not only will the SCADA system need to communicate to standard field devices via DNP3, Modbus, OPC and IEC60870-5-103 protocols, it will also need to connect to proprietary wind turbine control systems, meteorological stations and the National Electricity Market Management Company system.

The SCADA system also spells good news for AGL operations staff. While the wind farm will be controlled on site at Hallett, the SCADA system will allow AGL staff to remotely monitor the wind farm from the comfort of their less-exposed operations centre at Mount Beauty in Victoria.

Automated high-speed safety system protects huge coal loader site



Multiskilled Resources, Gordon Brown and Schneider Electric's Steffan Malek.

One of Australia's most advanced and widely dispersed automated safety systems has been installed by Multiskilled Resources Australia at the \$60 million Antiene Coal loader in New South Wales' Hunter Valley.

To achieve intergrated global and local control the high-speed integrated safety network – extending across a site spanning 6.5km – incorporates Schneider Electric's versatile Preventa multi-function programmable compact safety PLC technology. The versatile safety system can respond immediately and precisely to site emergencies with a total site-wide shutdown of machinery, or provide an equally swift response to local issues arising on remote sections of the long-haul conveyors. Multiskilled Principal Engineer Mr. Doug Lithgow says Schneider Electric's solution allows for greater flexibility, "the primary safety solution using Schneider Electric technology is highly advanced and highly practical in that it meets multiple design challenges with one integrated package."

Schneider Electric's Product Application Engineer, for Safety and Detection, Mr Steffan Malek says there are many benefits in using the SafeEthernet protocol, "including being able to communicate safe and standard data over one communication medium. This allows the user to reduce overall costs for cabling and commissioning." Mr Lithgow said the Schneider Electric Ethernet solution was both cost effective and extremely robust, being rated to external temperatures of 85°C.

"The versatile safety system can respond immediately and precisely to site emergencies."

"Schneider Electric's preference for an open system means you can engineer an ideal solution for particular clients, fitting the technology to them, rather than vice-versa. Another advantage is testing of equipment can be carried out on your office internet, and that's exactly what we do, rather than having to buy a whole heap of expensive hardware." In addition to the technological features of the Schneider Electric system, Mr Lithgow said it was reassuring to have Schneider Electric's support if needed. "We could e-mail any problems and get answers directly. Where there were software questions arising with the technology – and we knew the equipment could do the job, we just needed to know how – we were confident we could get the answers we needed." The flexibility of the Schneider Electric solution allows for localised response to safety issues, a major win for the Antiene Coal loader.



View of the conveyor from behind the Power Station.



Part of the 5.5km conveyor connected the unloader to the Bayswater Power Station.

Energy efficiency out of this world at NASA

Schneider Electric is saving the technology expert NASA a considerable amount of time and money by bringing products, technical support and expertise to measure and control energy.

NASA and its Kennedy Space Centre (KSC) needed an advanced energy monitoring system to cover more than 200 facilities and integrate a basewide SCADA system. Using Square D and PowerLogic products, technical support from Schneider Electric and open Ethernet-based protocol proved critical in bringing two complex systems online.

First, the installation of hundreds of networkable devices boosted overall system functionality. To further simplify monitoring and billing, Schneider Electric energy information technology helps the KSC accurately size new backup generators, monitor and control water, HVAC, and pneumatics throughout the base.

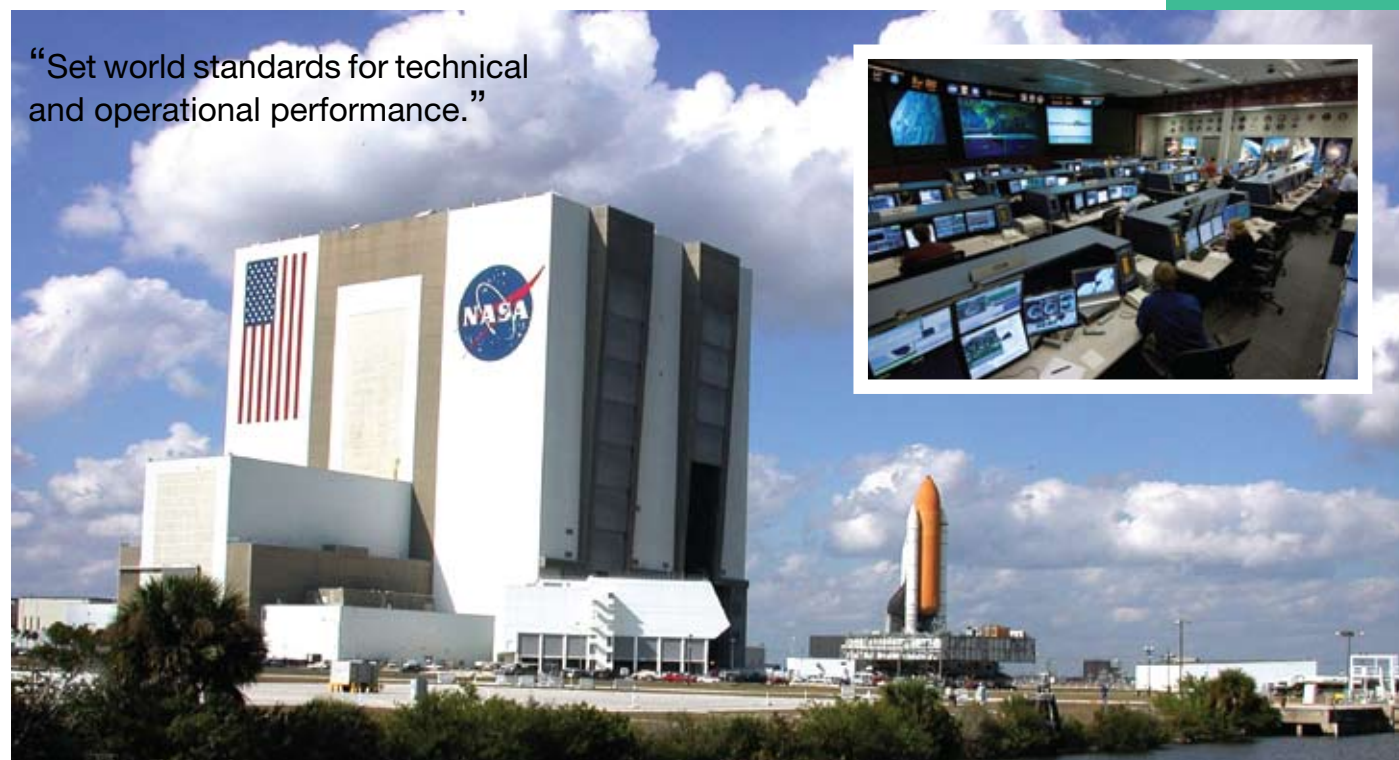
Schneider Electric delivered the information needed to program third-party software and configure any one of hundreds of alarms, which cover 60,000 data points and accommodate scan rates as low as 100ms.

Setting world standards for technical and operational performance the KSC now uses collected data to reclaim tenant costs, focus energy management efforts, identify adverse trends to reduce costs, and justify funding to support conservation measures.

NASA's conservation efforts include a Square D Powerlink lighting control system to shut off non-essential lights at the branch circuit level. With annual usage of 250,000 MWh, the agency saved approximately \$6 million in utility bills, compared to previous expenditure without energy management. Already at the forefront of space technology, NASA is now using Schneider Electric's expertise to set world standards for technical and operational performance.

The engineers at the KSC don't have immediate access to the secure launch site, but this power monitoring system now enables remote fault diagnosis, which saves considerable time and expense, and improves reliability.

“Set world standards for technical and operational performance.”



Cross entities team provides a total solution

Members of Clipsal, T.A.C., Schneider Electric and Moduline have been awarded the \$1 billion new Royal Children's Hospital project contract in Melbourne. Congratulations must be extended to this group who will provide a total electrical distribution and automation solution for the facility.

The project was identified over a year ago by Schneider Electric as a great opportunity to provide a comprehensive solution to a mammoth project.

Teams from each entity worked together to provide a total resolution for the project that will include: building automation and security, MV/LV Electrical Distribution, metering, lighting systems and power management. The team will also offer complete integration between all of the products provided.

Mark Fisher from T.A.C, was the sales leader for the cross entities team and said "It was critical to make sure the integrator was committed to Schneider Electric's solutions, this was probably the key, and Elecraft committed to the Schneider Electric solution."

The letter of intent was received on October 2nd 2007, with final close targeted by the 28th February 2008. Work to build the new Royal Children's Hospital has commenced and will open in 2011.



Artists impression of 'the street', main foyer



Artists impression of new main entry



Artists impression of view from Flemington Road



"Teams from each entity worked together to provide a total solution for the project."

Rockhampton stays alight with Schneider Electric

Queensland Magnesia's (QMAG) Rockhampton plant has been experiencing poor electricity supply conditions in the form of frequent voltage fluctuations.

Even a two second voltage dip would cause their air blowers, which are critical in the operation of the plant's gas-fired shaft kilns, to trip. With one of the blowers down, the whole plant would then shut down.

An eight-hour restart procedure could follow, resulting in a considerable loss of production. QMAG's Electrical Engineer Don Wilschefski explains "this problem would happen whenever we had a power dip. It has been happening ever since the plant was built, up to twice a month, having the potential to lose a day or two's production each time."

In 2006, QMAG decided to replace existing variable speed drives on the shaft kiln air supply lines. QMAG approached Schneider Electric and decided to install Schneider Electric's Altivar 61 variable speed drive (ATV 61), which are designed especially for pump and fan applications. Choosing from the wide range available—from 0.75 to 800kW—QMAG had a 160kW and a 250kW ATV 61 drive installed on each line; one drive for each stage.

Don says since the installation there haven't been any problems, "we installed them, and set all the parameters correctly. They are operating quite well now, we've had a number of supply dips without causing any trips on the kilns."

One of the other advantages of the ATV 61 drives was their compact size. "With retrofitting in any organisation, you're normally trying to fit things into spaces that don't exist, it wasn't quite the case here. When the old drives were removed, and new ones installed, it created some extra space for us" says Mr. Wilschefski.

The major deciding point for QMAG was the ride through ability of the product. The voltage dip ride-through feature of the ATV 61 range allows the user's machinery to continue operating without tripping during supply dips and 'brown-outs' on one, two or all three phases.

Following the initial success the company has purchased several small drives, ranging from 15 to 55kW, to replace old units throughout the plant.

"The major deciding point for QMAG was the ride through ability of the product."





Process and Control Engineers, nominate and be recognised

Have you recently completed a successful project that you think the wider community should know about? Then PACE Zenith awards are the forum for you!

Schneider Electric is a proud sponsor of the Automotive and Manufacturing category of the PACE magazine Zenith awards. The awards, publicly recognise and reward companies that show leadership in engineering and technological excellence and innovation. Previous winners include household names like Holden, Ford, BlueScope Steel, Rio Tinto, Unilever and Shell.

Miguel Gonzalez, editor of PACE magazine says, "The PACE magazine Zenith Awards are an exciting opportunity for any company to celebrate its achievements and increase not only its visibility and profile, but also boost the morale of the staff by sharing their most successful and innovative projects with a large audience." Entering a project means potential clients will know about you and your success. PACE devotes editorial support to the Zenith Awards, starting in December and leading up to the Finalists issue in May, as well as the Winners issue in July. Make sure you submit your entry form; there is nothing to lose, but a whole lot to win!"

We want to hear about your project! Nominations can be submitted under the following categories:

- Automotive and Manufacturing
- Chemicals and Petrochemicals
- Food and Beverage
- Oil, Gas and Hydrocarbons
- Metal Products Manufacturing
- Mining, Aggregates and Cement
- Transport, Power and Infrastructure
- Water and Wastewater

Want to nominate your project, or just after some more information? Contact Sarah Byrne on (02) 9851-2721 or e-mail sarah.byrne.au.schneider-electric.com



Stuart Thorogood, Schneider Electric Australia's Executive General Manager, congratulates Clyde Campbell of Machine Automation and Robotics, 2007 Zenith Winner of the Automotive and Manufacturing category.

Schneider Electric expands its training offer

Steve Trainer, Schneider Electric's Training Manager, sat down with the Editor of *Inform* to discuss Schneider Electric's 2008 training offer and why training is important to all businesses.

Why is Schneider Electric expanding its customer training offer?

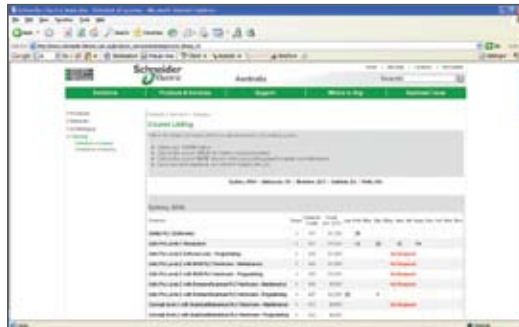
ST: Training is vital in today's market. It helps businesses maintain their competitive edge and ensures increased productivity, reduced downtime, increased safety and even an increased bottom line.

Feedback from our customers has confirmed this, which is why Schneider Electric is expanding our list of training courses offered in 2008.

What's new in the 2008 training program?

ST: For many years now, we have provided a comprehensive range of courses covering Programmable Logic Controllers (PLCs) and associated software. Our 2008 training offer will include courses on industrial control and electrical distribution topics.

These courses cover products, application solutions and maintenance. Different programs have been devised to meet the needs of electricians, technicians, engineers, contractors, operators and maintenance technicians. Each course is regularly updated to stay current with the latest technology, with an emphasis on hands-on exercises where appropriate.



Who will be conducting the training?

ST: A highly qualified team of instructors with many years of experience will be conducting the training. As one of the world's leading electrical manufacturers, Schneider Electric gives you the reassurance of expert, up to date instruction to make maximum use of your time.

“Schneider Electric gives you the reassurance of expert, up to date instruction to make maximum use of your time.”

Where will the courses take place?

ST: These courses are available either at Schneider Electric Offices on regularly scheduled dates, or can be provided to the customer on site.

How do Schneider Electric customers find out more?

ST: Information on course topics, content, scheduled dates and pricing are available on our website at www.schneider-electric.com.au/products_services/training or our customers can send an e-mail to training.courses@au.schneider-electric.com or call us on 1300 727 811.



Clever KEB switchboards curtail power wastage

Innovative power monitoring technology is being employed by K E Brown Electrical Switchboards (KEB) to radically expand energy efficiency and systems security for industries with dynamic load capacities, including data processing, "green" buildings and process and control systems.

The KEB group is using Schneider Electric Power Logic family H704 series branch circuit monitors to measure the individual current draw of each breaker in a distribution board rather than the collective draw created by boards that may include many dozens of such breakers.

The benefit of this monitoring technology is operation managers can see exactly how much power individual circuits are drawing, enabling them to achieve load-based cost allocation, overload protection, load management and load balancing. PowerLogic SMS Software helps minimise energy costs, reduce peak demand charges, reduce power factor penalties and ultimately downtime.

The H704 branch circuit monitor updates power usage data about once a second, helping to safeguard security of data and industrial processing operations. Determining the level of current drawn in individual circuits, alerts operators as to when they should close down an operation to prevent damage. Such fine control also greatly facilitates trouble-shooting in commercial, retail and industrial data control and intelligent building processes.

KEB Operations Manager Mr Peter Silsby says, "One immediate benefit is the technology enables users to accurately bill clients according to exact usage of power in their sub-circuit, which is a radical improvement." Individual sub-circuits can represent individual clients in data processing applications, for example, or individual building or factory functions in an intelligent building. This helps Operations Managers target problems and prevent energy waste.

The new KEB technology has already been adopted by leading telecommunications, computer and retail organisations in Australia.

"It is wonderful technology because it is so precise and easy to use."

"It is wonderful technology because it is so precise and easy to use. You could even sit at home and monitor outputs, such as AC Amps per circuit, on the internet. You can drill down into the system for so much power usage information. Now operation managers can access a wealth of information about exactly what is going on in each individual circuit on that board, which provides both billing accuracy and overload protection. The protection gives great peace of mind to both the system operator and the system user, because integrity of supply is critical in data processing, building and industrial situations," says Mr Silsby.



NECA National Excellence Award Winners announced

Schneider Electric, a Platinum associate member of NECA, is proud to congratulate all of the 2007 National NECA Excellence Awards Winners.

Once again there was a very high standard of entries, and winning projects demonstrating creative solutions that met the needs of some very difficult technical project requirements.

The winning projects were diverse electrical and communications installations across the country including work in the Sydney Opera House, a motoring dealership and high fashion jewellery store, just to name a few.

Schneider Electric's Executive General Manager, Stuart Thorogood attended the awards ceremony, which were held at the Crown Casino in Melbourne late last year.

"There is a worldwide shortage of electrical skills and Australia is no exception to this. Schneider Electric is a leader in electrical distribution and automation and we believe it is our responsibility to help develop our industry. The NECA Excellence Awards raise the profile of our industry and help attract top people to the trade," says Mr Thorogood.



Congratulations to:

- Deadshort Electrical Pty Ltd, SA, for Madurta House
- Power and Drive Solutions, SA, for its work on the GSR Power Van Upgrade
- Downer EDI Engineering Electrical, Victoria, for the Eastern Green Energy Project
- Southern Cross Electrical Engineering, WA, for the Ravensthorpe Nickel Project
- Southern Cross Electrical Engineering, WA, for the Dampier Port Upgrade
- Corke Instrument Engineering (Aust), Victoria, for its work on the Otway Gas Project
- FDC Technologies Pty Ltd, NSW, for Medtronic Australasia
- Fredon Industries Pty Ltd, NSW, for Sydney Data Centre
- Barnwell Cambridge, NSW, for Paspaley Pearls Project
- Leane Electrical, South Australia, for the Stillwell Ford Dealership Project
- Commercial Energy Services, NSW, for the Sydney Opera House Main Switchboard Refurbishment Project.

For details about each project go to www.neca.asn.au



Thalassa plastic industrial boxes: evolving on demand



Thalassa plastic industrial boxes, by Schneider Electric, offer you an adaptable and versatile solution, ideal for the building, industrial and residential markets.

- Available in sizes from 65x65x45mm to 325x275x160mm with opaque or transparent covers in different depths
- Performance is guaranteed from -25°C to 80°C
- IP66 protected, impact resistance of IK07 for ABS versions and IK08 for polycarbonate type
- Excellent flame resistance with double insulation class II protection against electric shock.

Thalassa plastic industrial boxes have a full accessory range for equipping, sealing, mounting, ventilating and cable entries. It conforms to standard IEC 536, certified by TUV laboratory, approved by SEMKO, NEMKO, DEMKO DNV, and UL.

Phaseo Power Supplies and Transformers

Schneider Electric's new Phaseo power supplies and control transformers are designed to suit a wide variety of both simple and advanced control and automation applications. Power Supplies – five different ranges - single, two or three phase power supply options with output powers from 0.3 to 40 Amps.

Transformers - two different ranges - single phase power supply with double and single winding options and output powers of 25 to 2500VA.



The Pump Management and Monitoring Solution

The RM3 5BA relays from Schneider Electric are ideally suited to the monitoring and control of single or 3-phase pumps.

Using discrete inputs, these easy to install, clip mount devices monitor:

- The sequence of phases L1, L2 and L3
- The absence of one or more phase
- Under-current, to protect the pump against running empty
- Over-current, for protection against motor overload.

With adjustment of settings achieved through integrated potentiometers and status indication via LEDs, the RM3 5BA ensures a simple yet effective pump management solution.



“a simple yet effective pump management solution.”

Power Logic Power View

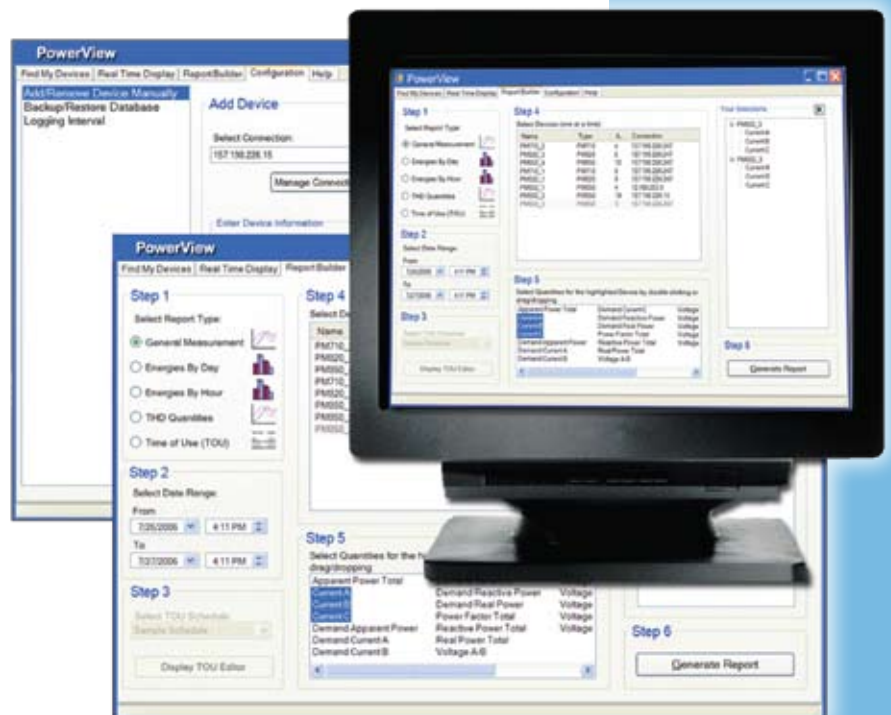
PowerLogic® PowerView™ software is an easy-to-use, entry-range power monitoring solution ideally suited for small system applications. Companies continually look for innovative solutions to cut power-related costs and optimize equipment use.

Key features:

- Automatic device detection for easy setup, supporting up to 32 devices simultaneously
- PC-based data logging for devices without onboard logging memory
- Pre-configured real-time and historical data displays
- Modbus TCP/IP and RS-485 supported serial communications
- Reports leverage Microsoft Excel™
- Microsoft MSDE database.

The software allows you to track real-time power conditions and perform remote monitoring of electrical equipment or installations at key distribution points across your electrical network.

“cut power-related costs and optimize equipment use.”



For more information about any of these products call 1300 369 235 or go to www.schneider-electric.com.au and click on 'A-Z product index.'

Global concern over emissions effect on environment

“Schneider Electric's growing commitment to energy efficiency and its determination to secure clean and reliable energy.”

Schneider Electric is implementing our commitment to energy efficiency by acting as a signatory contributor at the United Nations International Conference to combat the dangers of climate change and deploying our own environmental initiatives.

The United Nations International Conference on the environment, held in Bali during December of 2007 was attended by over 190 countries and had the single goal: to take immediate measures to reduce greenhouse gas emissions and tackle global warming. As newly elected Prime Minister Kevin Rudd delivered on his promise to ratify the Kyoto protocol, Schneider Electric's participation at the Conference, as a signatory contributor, sent a strong message of Schneider Electric's growing commitment to energy efficiency and its determination to secure clean and reliable energy.

Schneider Electric is involved in a number of schemes that are concentrated on reducing greenhouse gases, without jeopardising the quality of product or services provided for their consumers. Executive Vice President of Strategy, Customers & Technology, Eric Pilaud says Schneider Electric is committed to delivering products of environmental conformity to their customers, “Schneider Electric is rolling out an action plan to improve energy use and reduce consumption.

Our commitment to our customers is to significantly better their energy efficiency, whether in their buildings, factories, infrastructures or homes. Moreover, we supply them with products and solutions that exceed current rules of environmental compliance.” Already Schneider Electric products, solutions and services mean it is possible to generate savings of between 10 and 30%, guaranteeing reliable energy supply without detrimental effects on comfort, performance and reliability.

In May of last year Schneider Electric agreed to participate in the national energy saving scheme and made a commitment to the Energy Management Company Association and the China Building Electricity Efficiency Committee. With the aim of helping 40 cities and metropolitan areas throughout the world manage the energy consumption of their buildings more efficiently and hence reduce their greenhouse gas emissions, Schneider Electric and its Building Automation Business Unit joined the Clinton Climate Initiative Foundation.

For more information about Schneider Electric's initiatives, please go to www.schneider-electric.com.au and click on 'about us'.

