

Vintec Knowledge Newsletter



Vintec Africa
providing Africa with
Alternate Energy

Courtesy of The National Renewable Energy Laboratory (NREL)

Vintec Africa Offer "Rural" Energy & Water Solution

"Rural Solutions"

Green Energy / Medical grade Water / Mobile Buildings

CEO Pierre Tarin announced the formation of a new department to address some of the "Rural" living conditions; this will cover "Power", Lighting, Hot Water, Drinking Water, Sanitation, Clinics and Schools. These solutions are meant to fast track a better and healthier environment for those less fortunate, for more information see our website - www.vintecafrika.com.

Solar Geysers –

Local Manufacturing

A locally manufactured "Vintec" Solar Geysers is "happening" our factory will be fully operation by the first quarter 2013; in the interim we are able to offer a small quantity of solar geysers until such time. Our new range of "Solar Collectors" were certified early this year, this is an improvement upon the existing model and will go into production in the New Year, says Tarin.

Vintec Africa now has a range of both direct and indirect solar geysers on offer at great pricing. These geysers are SABS approved and qualify for the Eskom rebate; training on installation of the solar geyser is available.

MotorCon

Our range of MotorCon (Motor Controllers) has received wide acclaim in regards to the achieved saving made at various installations around the world especially Germany. The MotorCon insures that motors are run more efficiently and the built-in processor allows for easy installation (Please see MotorCon report-pg3).

The automatic load recognition detects various motor-parameters at a high sample rate. Based on these motor-parameters the adaptive software control calculates the current load of the motor and the optimum voltage for that load. The control unit then feeds the motor only this optimum voltage using the phase angle control approach.

Smart Grid

Eskom has started to deploy a hybrid smart grid model which will enable smart demand-side management, automatic correction and the connection of variable, renewable-energy generation capacity. With the increasing demand for electricity and limited supply a "Smart Grid" will allow for a more efficient load management and demand response.

Recommended Read

March issue of "South African **Builder**" – Number 1047.

News

- "Rural Solutions"
- Solar Geysers
- Motor Controller
- "Smart Grid"
- Eskom – steps to negate "Load Shedding"
- MotorCon Report



Heat Pumps

"Save up to 50% by replacing your T12/T8 Fluorescent Lighting with the New T5."



"Huge Profit to be made from Vintec Solar Geysers"



Eskom taking steps to negate "Load Shedding"

Eskom "Buy back Power"

Eskom's electricity buy-back program is gaining momentum with more companies joining, ferrochrome producer Hernic said it would participate in assisting the national power supplier in managing its maintenance program before the start of winter. The company announced that it would shut off one furnace from April 1 to May 31, reducing its total production capacity to 67% (reported by Engineering News) this is in line with others also shutting down furnaces.

This action is a quick fix solution but comes at a great cost to the companies involved and also the economy; hopefully it does not lead to job loss.

State-owned power utility Eskom is still busy casting a wide power buy-back net as part of efforts to close a possible supply/demand shortfall of 6 TWh this year and 9 TWh in 2012/13, without having to resort to rotational load shedding— 9 TWh is equivalent to the electricity consumed by a large city such as Cape Town in a year.

CEO **Brian Dames** indicated that the utility was even going so far as to approach large shopping malls and hospitals with generation capacity to offer them short-term incentives to use their capacity should the system become overextended during the next two years.

Inconcluded with mega malls in Gauteng, KwaZulu-Natal and the Western Cape in the not too distant future and that the incentive would probably be higher than the R2 800/MWh it costs Eskom to run its open-cycle gas turbines, in the Western Cape. However, these contracts would only be triggered in instances of dire system stress.

Eskom is also in talks with the Johannesburg and Tshwane municipalities in a bid to secure an additional 200 MW of coal-fired capacity in the near term, as well as with those municipalities that have installed gas turbines, which could add 100 MW of peaking capacity.

Eskom is hoping to lock in buy-backs worth 2 000 MW for the coming two years as part of a larger 'virtual power station' concept unfolding at the power-stressed utility. Further components involve residential demand-management solutions, energy efficiency programmes, demand-side management programmes, as well as a mandatory energy conservation scheme (ECS).

This program is to target South Africa's 500 largest electricity users and act, Eskom says, as a further "safety net".

The objective is to achieve a 10% reduction against agreed 2007 baselines from industrial customers consuming more than 25 GWh a year. Currently, the scheme is voluntary.

Reported by: **Creamer Media**



LED Solar Powered
"Street Light"



South Africa
Contingent inspect
"Street Light Solution"
working in Israel



IR People Sensor



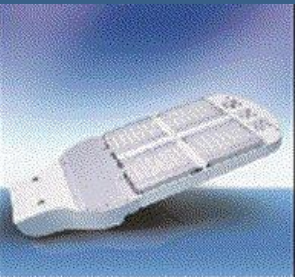
Community Light-
"Self Contained" Solar
powered LED Light



OptiLux Controller
Save min 20%
Built in diagnostic & remote control



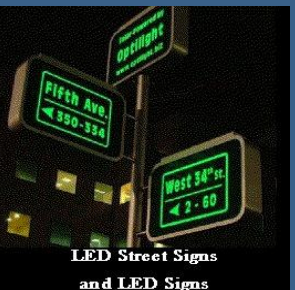
Electronic Ballast
Save min 20% Built-in diagnostic & remote control



LED Street Light



LED Tunnel Light



LED Street Signs and LED Signs

Success story from Korea

MotorCon Energy Saving Installation Report

(All information is based upon measured values recorded on site 07/03/2012)

Our ref: 0603-2012 Posco

7th March 2012

Client: POSCO POHANG

Country: Korea

Company: Steel Mill

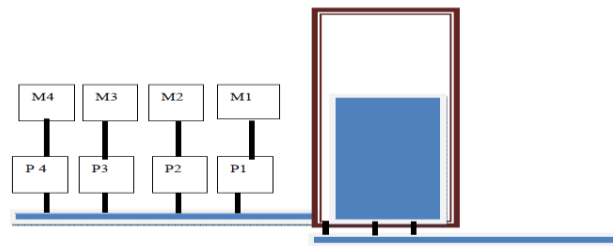
Application: Motor Pump

Installation Date: 07th March 2012

This report has been prepared following the installation of two MotorCon in POSCO steel mill, Pohang, Korea. The installation demonstrates substantial savings in electrical energy costs that are achievable within Hydraulic tank. MotorCon unique technology performed reduction of about 29.73% in energy consumption of the four Pumps systems feeding the hydraulic tank.

Installation Results Summary

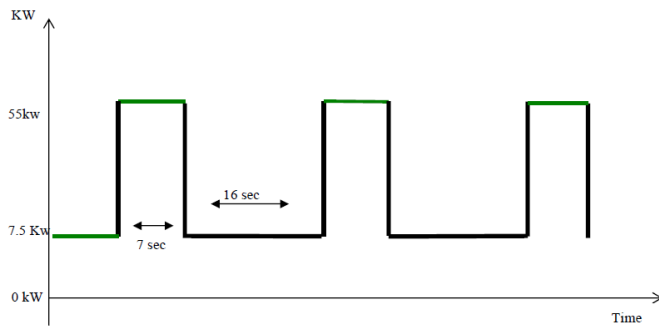
Measured Energy Savings	29.73%
Total Customer Annual Savings	\$ 1,007
Savings over 5 Years	\$ 5,035



All the following motors consume 50kw when loaded and 7.5 kw when unloaded

Motor No.	KW	Status
M1	55KW	Operated all the time
M2	55KW	Stand-by
M3	55KW	Stand-by
M4	55KW	Spare

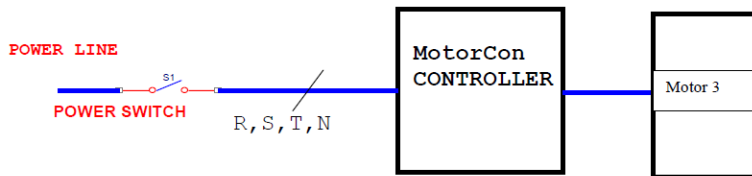
Motor No.1 during operation



All the motors during unload operation Consume 7.50 KW



The Main Power Switch **must be** placed before the controller.



Installation Procedure

The MotorCon controller installed connected to the main supply feeding Motor No 3 with running load of 7.5 Kw. The MotorCon reduced the consumption motor from 7.5KW down to 5.27 Kw.

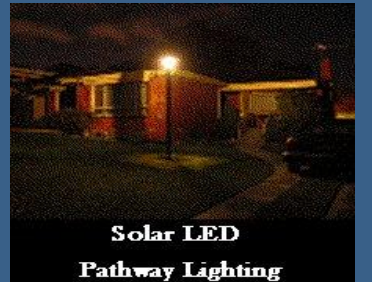
The monitoring equipment Fluke 345 was fitted to the system on the 7th march 2012 consisted of:

The data collected covers 10hr operational periods and verifies that the motor scheme was on for the whole of this period.

MSS in the solar city - Holland



Multi Solar Systems



Solar LED
Pathway Lighting



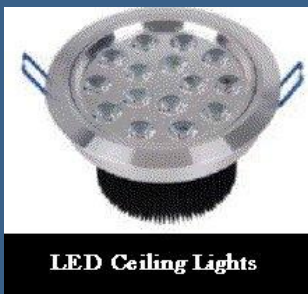
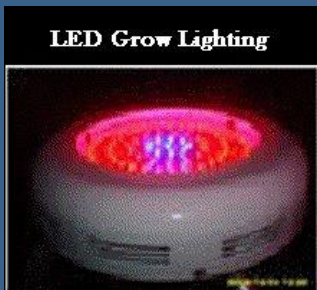
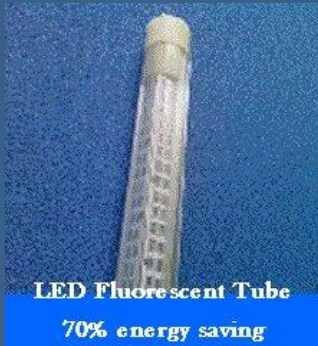
Solar Power Station



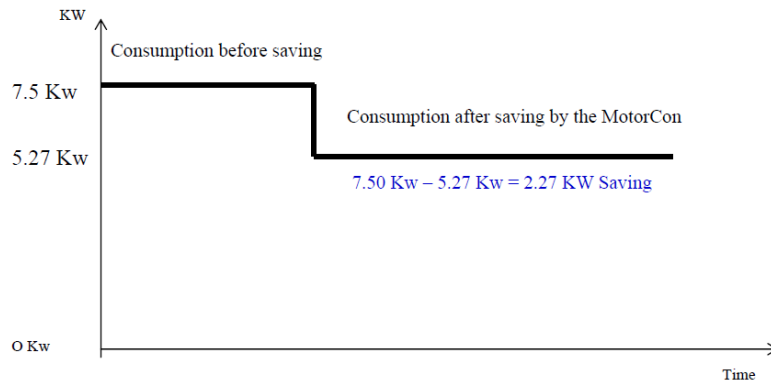
Solar Power Station
(CSS)



LED Special Lighting



MotorCon connected to Motor no.3 (unload)
Before saving and after saving



Site Information

Electricity cost	\$ 0.07 (very low tariff)
Total working hours per day	24 hours
Total working days per year	269 Days
Current Running Costs Based On Measured Values	\$ 3,389 (7.50kw*24h*269d*0.07\$)
Average electricity saving	2.23 KW
Saving percentage	29.73 % (2.23*100/ 7.5)
Annual Maintenance Savings	Unknown (about 10% of maintenance hours)
Total Annual Savings	\$ 1,007 (2.23*24*269*0.07)

Savings Over 5 Years \$ 5,035

Results

Summary

The result of the installation validates the projection that the operating costs of motor no 3 can be reduced by 29.73%.

The 29.73% reduction in operating cost can also be analysed as currently the organisation is paying 29.73% for power and some percentage for maintenance and low power factor more than necessary to run the complete Hydraulic Tank.

For the ease of comparison in demonstrating the savings achieved between the energy normally consumed by Motor no 3 and the reduction when MotorCon technology is used, the data logged e Motor no.1 is in survey process results will be in few days.

Motor Controller

The innovation of the **MotorCon** lies in its automatic load recognition and adaptive software control. They enable it to use the phase angle control approach to adaptively control the voltage being fed to the motor during continuous motor operation.