CG APPLICATIONS

CARLO GAVAZZI

Application Note :	**March 19th 2009**
Market involved :	**Photovoltaic, Renewable Energy**
Product :	**ISMG**
Customer :	**---**
Subject :	**Maximize the energy collected from the sun - page 1/2**

CUSTOMER ISSUE :

Carlo Gavazzi Automation headquarter decided to have a pilot PV solar plant on the roof of its building, with the aim to test the products designed for the renewable energy and to benefit from energy saving too.

The request was also the possibility to monitor weather condition, using the sensors' range available, and to correlate the results with the amount of energy collected.

The distance between the roof and the inverter station is about 80mt., so that a control panel ith DC switches wiill be deployed close to the PV modules.

OUR SOLUTION:

We decided to place on the roof a first batch of 42 PV modules divided in 4 separate strings, each one able to handle up to 2000W peak of Power, with a maximum open voltage of 400 Vdc.(see attached page).
Two inverters ISMG 145 (double strings) are then selected to handle the power into the grid. Four basic sensors: solar irradiation, wind speed, temperature of the PV and air temperature, are detected and sent via RS485 to the technical dept, in order to monitor the PV condition in real time.
The provision for the string control is also prepared at roof panel level.
A custom software was developed - ISMGSoft - allow to correlate the sensors with the inverters data (AC power, DC power) and display the collected energy by hours, days and months.
The expected maximum power peak is about 9.2 KW.

ACHIEVED BENEFITS:

This plant allows Carlo Gavazzi to test the ISMG in different configurations, with the different DC input level and under all weather condition.

This is a very important test to check the inverter DC conversion efficiency and the sensibility to the different condition, in order to maximize the energy collected from the sun.