



magellan solar export control solutions

Magellan Power Solar Gate



magellanpower



Compatible with Three Phase SMA Tripower, ABB Trio, Solis, Samil Power, Magellan Energy Storage Systems, Fronius, Delta and more...

Automatically recognises connected inverters and their ratings.

Detects excess solar power available.

Status indicators for power, inverter communications, power control and alarm.

Ethernet supporting PV Output Portal & Remote Monitoring.

Electrically isolated RS485 connection to PV inverters.

Electrically isolated USB connection to PC.

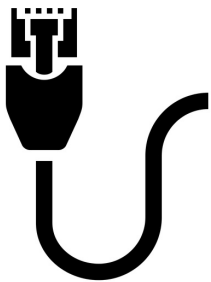
IEC 60255



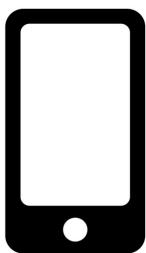
What is the Solar Gate?

Australian designed and manufactured, the Magellan Solar Gate combines state of the art hardware and software to control/prevent export of solar power to the grid.

In a typical application, the Solar Gate determines the power requirement of the local load and adjusts the solar power (through controlling the PV inverter) so that only a pre-set amount or zero amount of power is injected into the grid, ensuring that most or all of the generated power is available for the local load.



- Ethernet capability.
- 10/100 MBits/second.
- Remote monitoring and control via Solar Gate Control Software or Modbus/TCP.
- 5 minute logging to monitoring portal - www.pvoutput.org.
- PV Output Portal capability.



- Logs solar power, site power and mains voltage every 5 minutes.
- Free apps available for iPhone, Android and Windows Mobile.

How it works...

The Solar Gate controls the export of solar power to the grid. The Solar Gate also operates as a protection relay, which means no additional protection relay is required to prevent reverse power.

Solar Gate Configuration:

Fig 1 shows the block diagram of the Solar Gate in a PV system. The Solar Gate communicates with the PV inverters via the RS485 communication bus, and automatically determines the size of the PV plant. It then continuously monitors the power flowing from the grid and the PV output, and adds them to calculate the instantaneous load power. The load power is then scaled according to the permitted amount of export power, required safety margin, and PV plant size. This value is then sent to the PV inverters via RS485 bus to limit their maximum power output so as to not exceed the load. As a protection relay the Solar Gate also performs utility-compliant protection functions, by directly controlling a contactor which can isolate the PV plant output if reverse power flow is detected at the grid. This gives a redundant protection against reverse power flow in the event of any communication problems between the Solar Gate and PV plant.

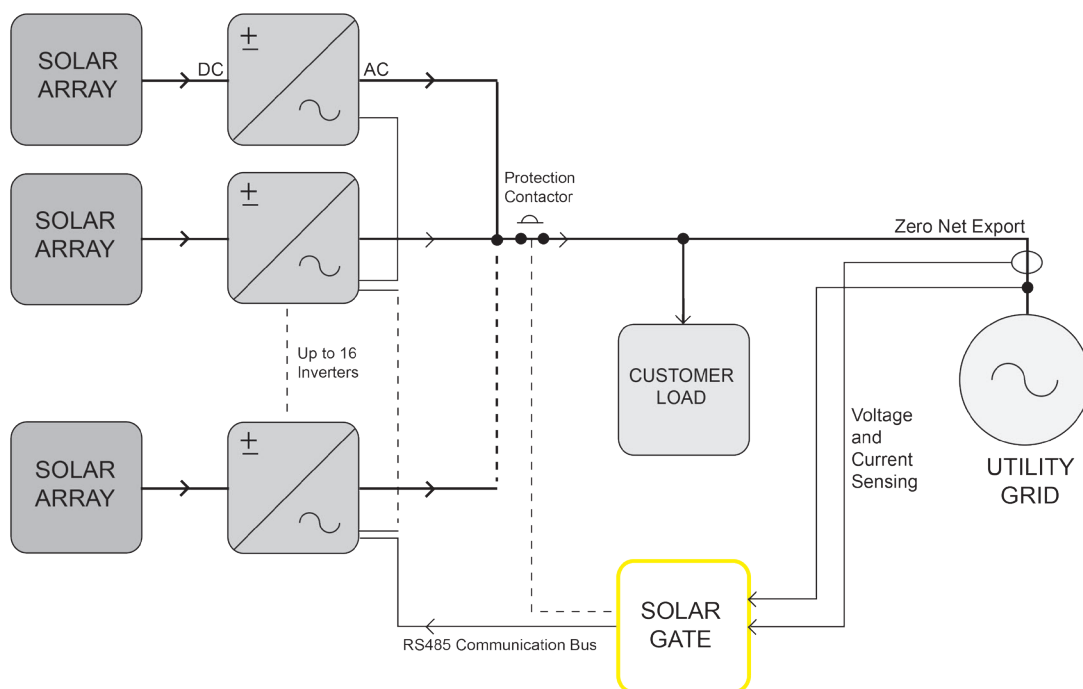
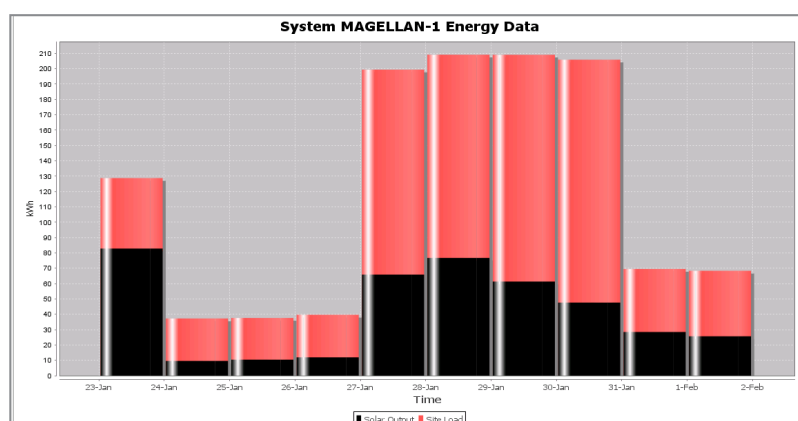


Figure 1 - Up to 16 Inverters

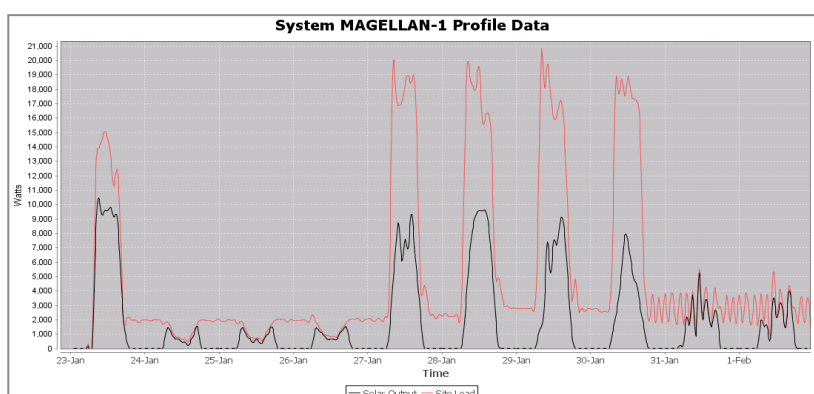
Data Logging

The Solar Gate captures and records PV power and the site power on an hourly basis and keeps them in a non-volatile memory for 250 days. It can also record events such as voltage sags and swells. The data is downloadable via USB or Ethernet. This data logging makes the Solar Gate an excellent site power surveying tool.

System Energy Data

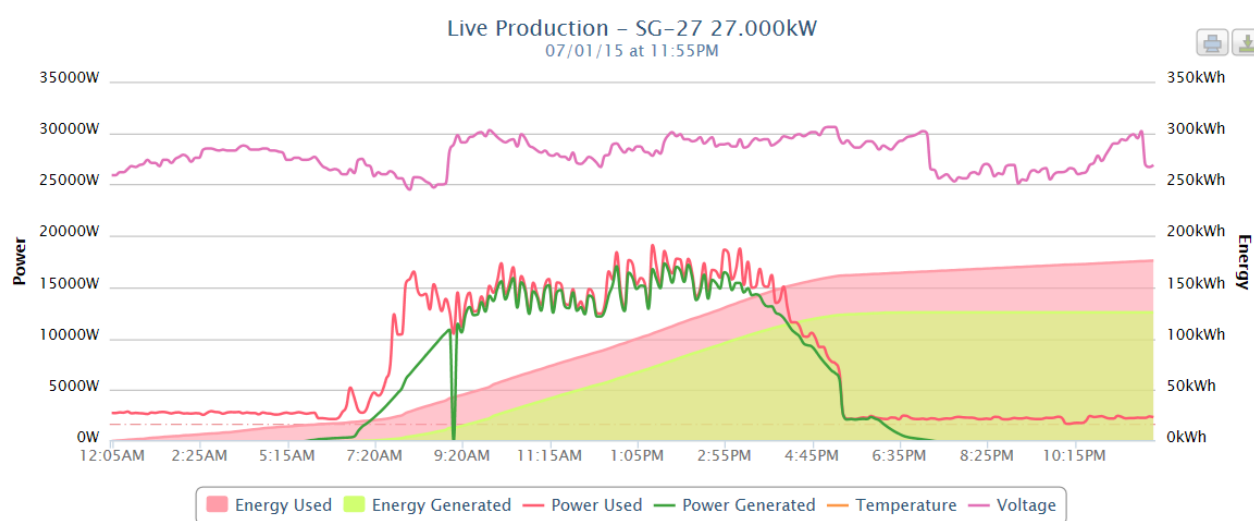


System Profile Data

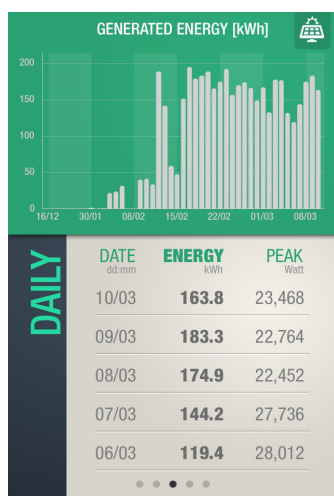


PV Output Website Monitoring

Below is an example from the PVOutput website. It shows the load (red line) being followed by the generated solar power (green line). The solar gate ensures that the load is not exceeded by the solar power, resulting in undesirable export to the grid.



PV Output Mobile Monitoring



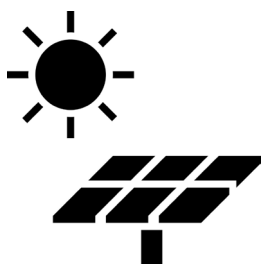
The mobile monitoring app allows you to track the generation and consumption of your load and generated energy.

The app is free and downloadable for both Android, Windows Mobile and iPhone devices.



TECHNICAL SPECIFICATIONS

Function:	Prevents export of solar power to grid, ensuring solar power is used within premises. Measures real load power, and commands PV inverters to export this amount of power.
Environmental conditions:	-20°C to 60°C.
Dimensions:	246mm, 237mm, 76mm (LxWxH).
Weight:	< 3 kg.
Mounting Location:	Switchboard (IP43).
Installations Options:	Wall mount.
Power Interface Phases:	3.
Nominal Voltage:	230V/400V; 50/60Hz.
Current Range:	10A using onboard CT's or using external CT's.
Measurement Accuracy:	≤1%.
Power Consumption:	Max 3W.
Power Supply:	Phase A; 200-270V; 50/60Hz.
Inverter Interface Physical:	Isolated RS485.
Maximum Inverters:	12 - 16.
Compatibility:	Ginlong Solis (RS485) SMA Tripower (RS485/ Suns spec) Fronius Symo (Suns spec) Magellan Energy Storage Systems (Suns spec) ABB Aurora (RS485) Delta RPI (RS485) Kaco Powador TR3/TL3 (RS485) Samil Power Solar River/ Solar Lake (RS485/ Ethernet).
Status Indications:	Power, Inverter Communications, Power Control, Alarm.



**Enables
Solar Use**



**Saves
on Bills**



**Reduces
Emissions**



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