

Many solar farm solutions is connected to an external grid . Mostly these are rather large systems but sometimes there is a demand to connect even single solar panel systems to a grid tie solution. This is common in tropical areas where grid is weak and power consumption is not very large (less 500W). In larger systems we have 1 phase systems and 3 phase systems from 1.5KW and up to 100KW or more.

This document focus on smaller systems of less 1000W operating grid tie on smaller installations or in a network with many hours with own panels and a zero balance design. In many remote areas small grid tie systems with zero balanced houses is a good alternative. All inverters can handle the best thin film panels as well as standard crystalline panels when they are an alternative.

Model	MG250TF	MG500 TF	MG10003PH	Inv-15001PH (not micro inverter)
Max power	250W	500W	1 KW 3 phase	1500W grid tie stand alone
Output Volt	230 Volt	230 Volt	3x230/380 Volt	230 Volt
MPP efficient.	95%	95.5%	95%	
Current out	1.02A	2.27A	3 x 1,3A	11.5A
Frequency	All units have 50 Hz		and optional 60Hz and 110 VAC output	
Input current	3,4A	10A	4x14.5A	
MPP Input	72-120 Volt	28-40Volt	16-55Volt DC	75-350 Volt DC
Max volt	150 Volt	50 Volt	60 Volt	420 Volt
Power factor	0.99	0.99	0.99	0.95
Night time	100mW	120mW		2W
Distortion	5%	3.5%	3%	2%
Max panels	15	8	4 separate inputs	1 input and many panels
Insulation	Yes	Yes	Fully galvanic	Fully galvanic
Max in string	With e-interface		12 pcs	No string design
Temperature	-40 +60	-40+65C	-40C +85C	-40 + 50C
Encapsulation	IP65	IP67	IP65	IP21
Weight	2.4 Kg	3.2Kg	3.8Kg	8.3 Kg
Dimensions	230x138x35	237x165x25	259x242x36	608x340x222mm

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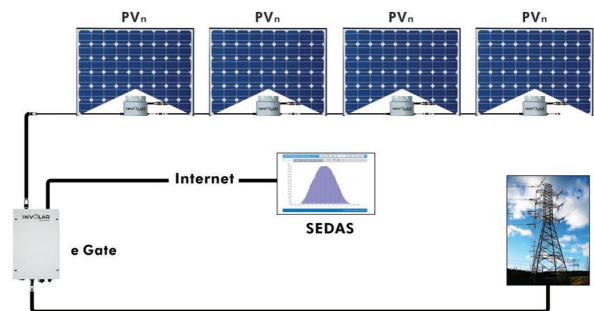
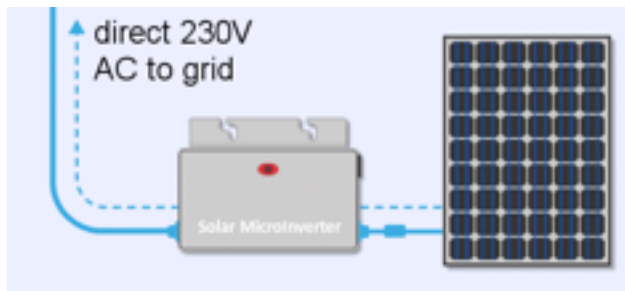
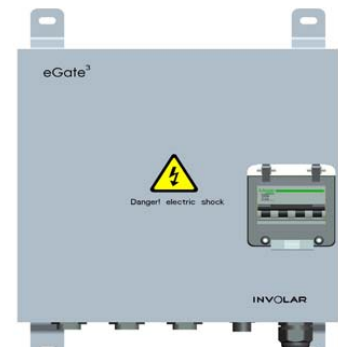
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On Grid Inverters by Sunnytek 250 W-1.5KW

Model	MG250TF	MG500 TF	MG10003PH	Inv-15001PH (not micro inverter)
Interface	PLCC	PLCC	Zig Bee	RS 485/Internet
Warranty	15 years	15 years	10 years	7 years
Compliance	CE certified, EN 62109-1; EN 62109-2; EN61000-6-1; EN61000-6-2; EN61000-6-3; EN61000-6-4 , EN50438 (default) or VDE4105 (you can set the necessary parameters by ECU unit.)			

Internet and interface unit for MG250TF and MG500TF inverters adds internet and statistics functions. This is not needed to operate as inverters work stand alone which is not very common and reduce costs a lot as no network between inverters is needed.

Down below we show 2 ways to connect this system in a simplest way. This is the budget solution that works and simplicity is often reliability by few components.



This 3 phase system is better when there are more panels and we want to equalise all 3 phases.

Here we preferable need 3-4 panels or more.

