

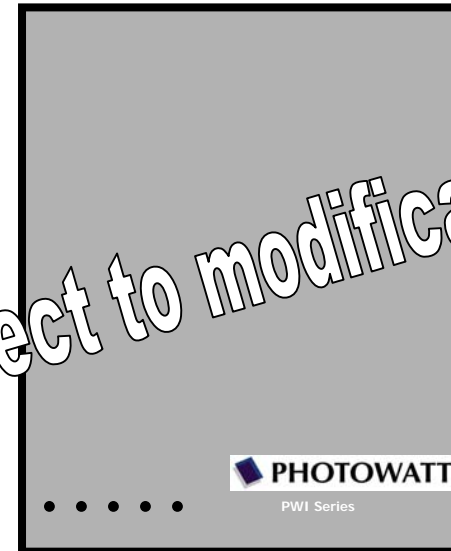


PHOTOWATT PWI Series 20, 40, 60 PHOTOVOLTAIC GRID CONNECTED INVERTERS

NEW HIGH EFFICIENCY INVERTERS

- Product warranty : 5 years (optional : extension up to 10 years)
- Input voltage : Hv and Mv
- masters/slaves or individual MPP trackers
- Wireless display
- datalogger
- software

Draft version subject to modifications



Out door inverter

The PWI series is Photowatt photovoltaic high efficiency inverters range. This complete range up to 4.6KVA perfectly suits all kind of applications, from the small installation to several megawatts PV plant. Easy to install, Photowatt's inverters benefit from two possible kinds of connexions : screw terminals and MC connectors (till MC3).

These inverters are optimised to maximize the yield of your installation thanks to

- 2 inputs voltage ranges, High Voltage (Hv) - dedicated to 5 inch cells modules – and Medium Voltage(Mv) - dedicated to 6 inch cells module - limiting volt drops and optimizing efficiencies
- 2 operating principles : master/slaves or individual MPP trackers depending on the system configuration

This enables to set up a full communication network around your installation thanks to :

- the wireless display that indicates the production datas, status and errors
- external datas logger
- a software with friendly to use interface



In door inverter



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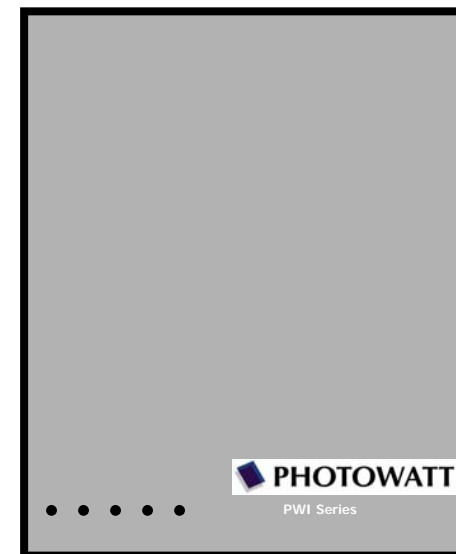
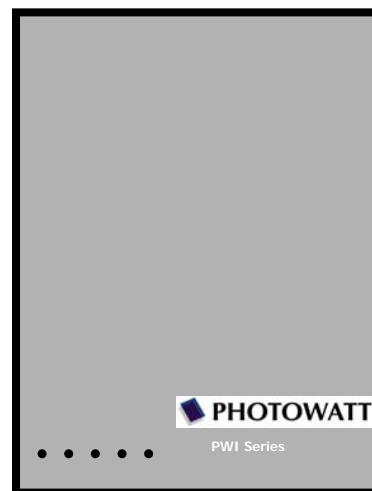
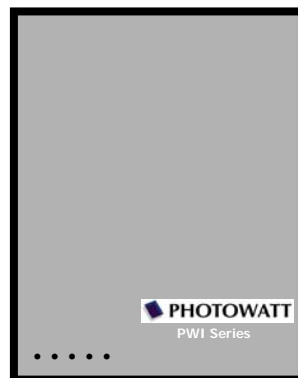
Solutions for natural power

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November 2005 - The characteristics of this document are representative of the products and have no contractual value. Subject to products improvements, Photowatt reserves the right to modify the characteristics without prior notification.

PWI-X-XX-**I** : Indoor inverters

PWI-X-XX-**O** : Outdoor inverters



PWI Series Outdoor Inverter specifications						
Parameter	PWI-5-20-O	PWI-6-20-O	PWI-5-40-O	PWI-6-40-O	PWI-5-60-O	PWI-6-60-O
Input						
Nominal input power @ 25°C	1800 W	1800 W	3600 W	3600 W	5400 W	5400 W
Nominal input power @ 40°C	1650 W	1650 W	3300 W	3300 W	4950 W	4950 W
Maximum input power (temperature dependent)	1950 W	1950 W	3900 W	3900 W	5850 W	5850 W
Start up power	20 W	20 W	20 W	20 W	20 W	20 W
Standby power loss (at night)	<0.2 W	<0.2 W	<0.2 W	<0.2 W	<0.2 W	<0.2 W
Input voltage range	200 - 500 V DC	100 - 350 V DC	200 - 500 V DC	100 - 350 V DC	200 - 500 V DC	100 - 350 V DC
Maximum input voltage	600 V	450 V	600 V	450 V	600 V	450 V
Maximum input current @ 40°C	7A	10A	14A	20A	21A	30A
Independent MPP trackers	1	1	2	2	3	3
Output						
Nominal output power @ 25°C	1650 W	1650 W	3300 W	3300 W	4600 W	4600 W
Nominal output power @ 40° C ambient	1500 W	1500 W	3000 W	3000 W	4500 W	4500 W
Max output power (temperature dependent)	1800 W	1800 W	3600 W	3600 W	5400 W	5400 W
Nominal output current	6.5 A	6.5 A	13 A	13 A	19 A	19 A
Maximum output current	8 A	8 A	15.5 A	15.5 A	23 A	23 A
Maximum efficiency	93.7	93.7	94.2	94.2	94.3	94.3
European efficiency, master/slave	91.6	91.6	93.3	93.3	93,4	93.4
Inverter weight	14 kg	14 kg	18 kg	18 Kg	22 kg	22 kg
Dimensions	481 x 395 x 195,5	481 x 395 x 195,5	610 x 395 x 195,5	610 x 395 x 195,5	739 x 395 x 195,5	739 x 395 x 195,5

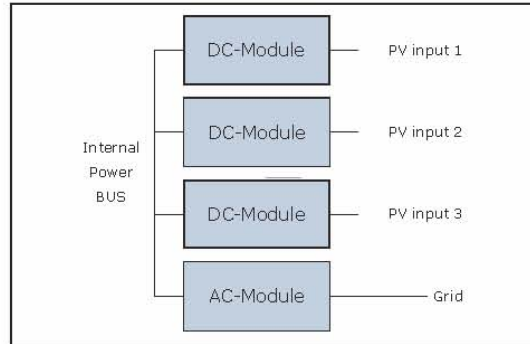
PWI-X-XX-I : Indoor inverters

PWI-X-XX-O : Outdoor inverters

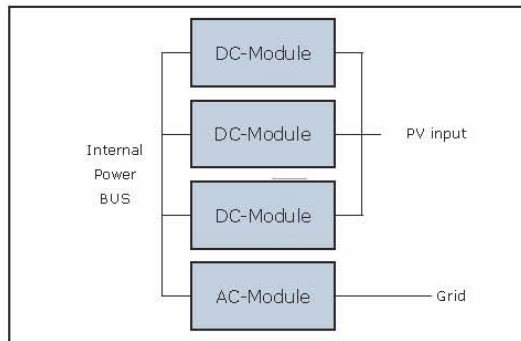


PWI Series Indoor Inverter specifications						
Parameter	PWI-5-20-I	PWI-6-20-I	PWI-5-40-I	PWI-6-40-I	PWI-5-60-I	PWI-6-60-I
Input						
Nominal input power @ 25°C	1800 W	1800 W	3600 W	3600 W	5400 W	5400 W
Nominal input power @ 40°C	1650 W	1650 W	3300 W	3300 W	4950 W	4950 W
Maximum input power (temperature dependent)	1950 W	1950 W	3900 W	3900 W	5850 W	5850 W
Start up power	20 W	20 W	20 W	20 W	20 W	20 W
Standby power loss (at night)	<0.2 W	<0.2 W	<0.2 W	<0.2 W	<0.2 W	<0.2 W
Input voltage range	200 - 500 V DC	100 - 350 V DC	200 - 500 V DC	100 - 350 V DC	200 - 500 V DC	100 - 350 V DC
Maximum input voltage with Individual Configuration	600 V	450 V	600 V	450 V	600 V	450 V
Maximum input voltage with Parallel Configuration	520 V	395 V	520 V	395 V	520 V	395 V
Maximum input current @ 40°C	7A	10A	14A	20A	21A	30A
Independent MPP trackers	1	1	2	2	3	3
Output						
Nominal output power @ 25°C	1650 W	1650 W	3300 W	3300 W	4600 W	4600 W
Nominal output power @ 40° C ambient	1500 W	1500 W	3000 W	3000 W	4500 W	4500 W
Max output power (temperature dependent)	1800 W	1800 W	3600 W	3600 W	5400 W	5400 W
Nominal output current	6.5 A	6.5 A	13 A	13 A	19 A	19 A
Maximum output current	8.A	8 A	15.5 A	15.5 A	23 A	23 A
Maximum efficiency	93.7	93.7	94.2	94.2	94.3	94.3
European efficiency, master/slave	91.6	91.6	93.4	93.4	93.4	93.4
Inverter weight	14 kg	14 kg	19.2 kg	19.2 Kg	23 kg	23 kg
Dimensions	369 x 386 x 188	369 x 386 x 188	498 x 386 x 188	498 x 386 x 188	631 X 386 X 188	631 X 386 X 188

Operating connexion

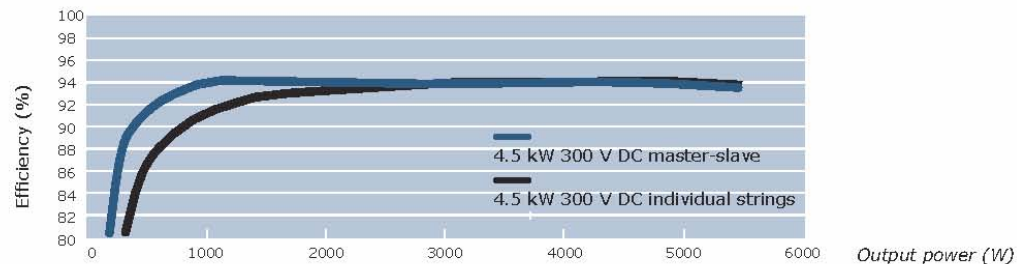


Independent string operation



Parallel string (master/slave) operation

Inverter efficiency



Inverter efficiency at individual string configuration and parallel string configuration (master/slave)

GENERAL SPECIFICATION		
Parameter	Condition	Specification
Output voltage		195-265 V AC
Frequency		49-51 Hz
Maximum operating temperature		60°C ambient
Minimum operating temperature		- 25°C ambient note*
Nominal operating temperature	@ nominal power	40°C ambient
Relative humidity		0-95% non condensing
Enclosure rating		IP21
Power factor	P > 20%	0,97
Total harmonic distortion	PNOM	< 5%
Safety class	Complete inverter	Class I
Galvanic isolation class	Between input and output	Class II
DC surge protection		Integrated, tested up to 4000 V surge
Protection against islanding		U/F window
Islanding detection ENS	Optional	ENS acc. VDE 0126
Reverse polarity protection		Integrated

*The integrated disply operates down to -15°C

QUALITY CERTIFICATIONS		
Parameter	Standard	Specification
EU guidelines (CE conformity)	Guidelines : 72/73 EEC LVD 89/336 EEC EMC 93/68/EEC CE	
Enclosure rating (outdoor inverter)	EN 60 529	IP54
Enclosure rating (indoor inverter)	EN 60 529	IP21
Harmonic current emission on mains	EN 61 000-3-2 / A14	Class A
EMC immunity	EN 50 082-2	
	EN 61000-6-1	
	EN/IEC 61000-4-2	
	EN/IEC 61000-4-3	
	EN/IEC 61000-4-4	
	EN/IEC 61000-4-5	
	EN/IEC 61000-4-6	
	ENV 50204	
	EN/IEC 61000-4-11	
EMC emission	EN 50 081-1	Generic standards
	EN 61000-6-3	Generic standards
	EN 61000-6-4	Generic standards
	EN 55011	Group 1, Class B
	EN 55022	Group 1, Class B
	EN 55014-2	Group 1, Class B
Safety standard	EN 50 178	
Insulation	EN 60664-1	
PV Specific		