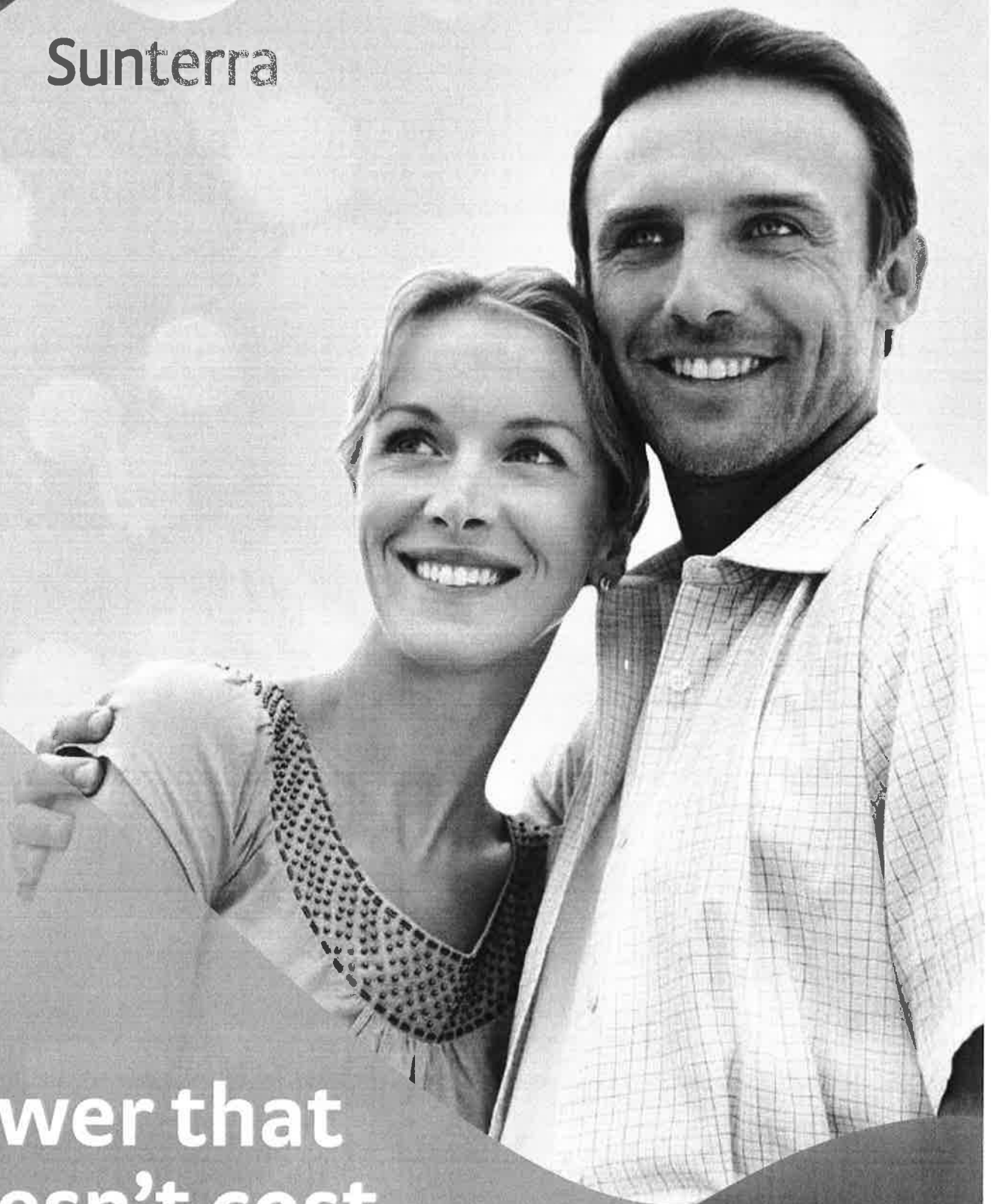


Sunterra



**Power that
doesn't cost
the earth.**

1300 501 810
www.sunterra.com.au

About Us

Sunterra was established in December 2010, Perth, Western Australia.

Since then, we have expanded our operations into New South Wales, Victoria and South Australia.

Our core business activity is design and installing grid-connected solar systems for homes and businesses..

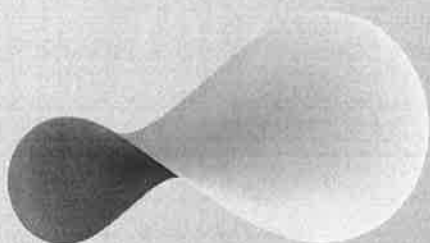
The success of our core business is enabling us to re-invest for further growth and to expand our product range and capabilities.

Sunterra is a also member of the Clean Energy Council (CEC).

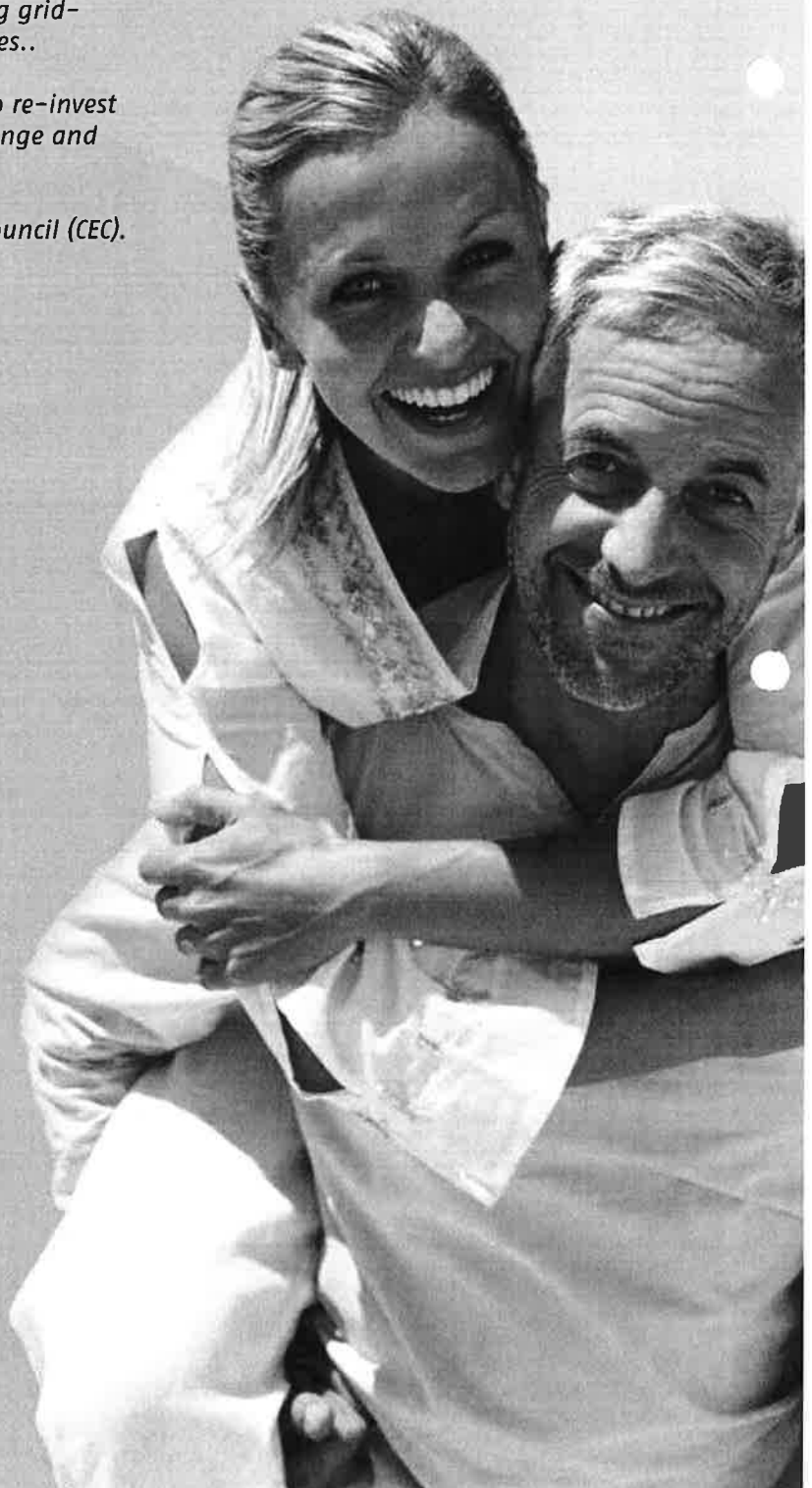
“We believe in a sustainable future.”

Sunterra Exclusive Advantages

- ✓ Clean Energy Council Member
- ✓ Free quotes and call outs
- ✓ High quality CEC approved products
- ✓ 30 years combined industry experience
- ✓ 5 year installation warranty
- ✓ 25 year panel performance guarantee
- ✓ Exclusive solar match system matches your system to you
- ✓ Helpful and friendly staff
- ✓ Exclusive competitions and referral bonuses



Sunterra



Why Go Solar?

Solar Smart

A solar electricity system on your roof will help you cut your electricity bills, insulate you from rising electricity prices and at the same time make a big difference to the environment.



"More and more Australians are choosing to switch to Solar Electricity to help save on their household energy costs."

The Environmental Benefits

- Save tonnes of carbon dioxide from entering Australia's atmosphere
- Help Australia meet international environmental agreements
- Reduced the need for new coal powered power stations
- Lower Australia's greenhouse gas emissions



"Every 1kW installed is equivalent to planting over 200 trees!"



"A 3kW system can remove 120T of CO² over its lifetime, the equivalent of 600,000km of car travel!"

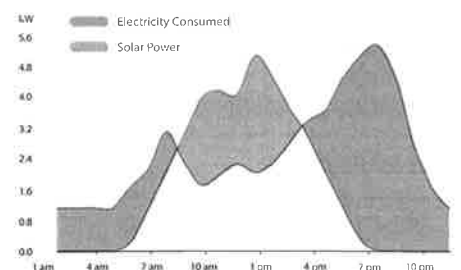
The Financial Benefits

- Save up to \$4,000 off the solar system with the Governments Solar Credit Scheme
- Get paid for the electricity you produce
- Recover your system cost in as little as 2 years
- Add value to your home investment property
- Insulate yourself from rising energy costs

65%*
electrical usage covered
\$3.83*
daily bill savings
\$1,400*
yearly bill savings

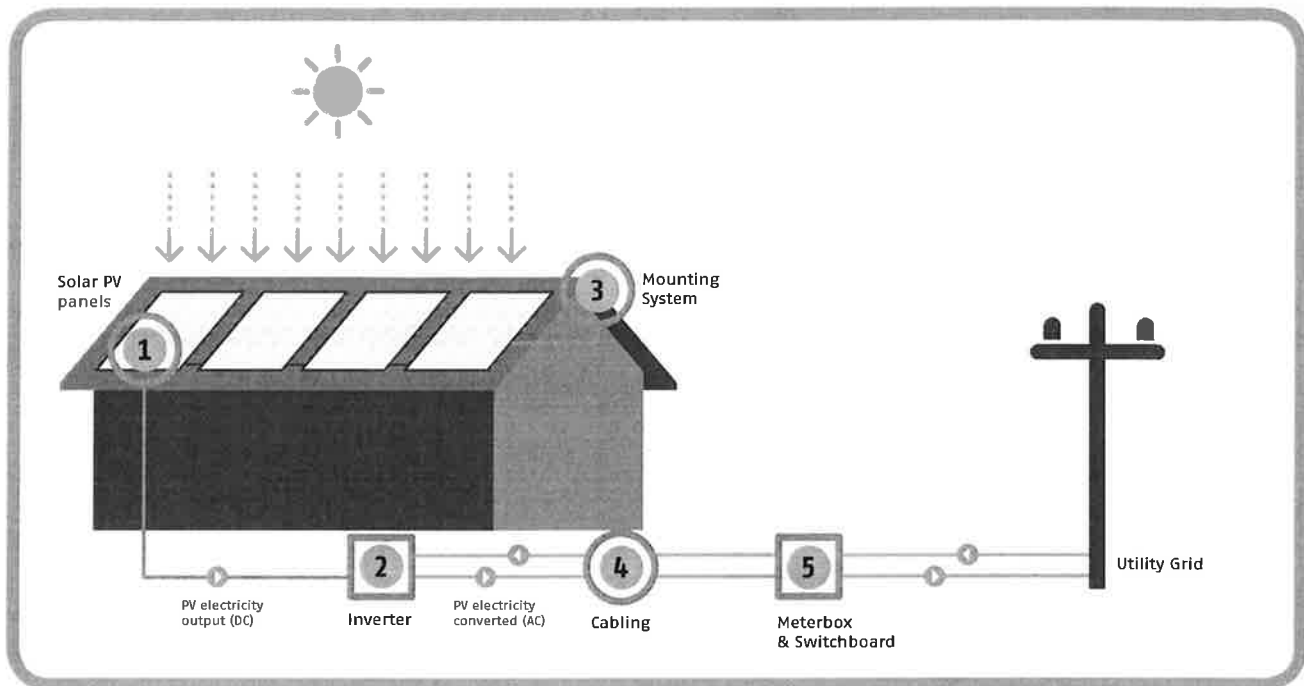
*Based on medium home usage (21 units per day) with a Maxi-saver 5kW system. Full details available on page 5.

Home Electricity Consumption



The chart shows typical household energy consumption with excess solar electricity produced by the solar system sold during the day (orange), electricity usage offset (white) and electricity purchased by the household (blue). Maximising energy efficiency increases your savings.

How Solar Works



A residential solar system converts sunlight directly into electricity and is made up of 5 main components.

1. **Solar PV Panels**
2. **Solar Electricity Inverter**
3. **Mounting System**
4. **Cabling**
5. **Meterbox and Switchboard**

Solar PV Panels

Numbering anywhere from 6 to 54 panels (or more) and connected in series solar panels convert the sun's rays into DC electricity.

Solar Electricity Inverter

The inverter converts the DC electrical current produced by the solar panels into AC electrical current suitable for supply to your home and the electricity grid. Inverters can be transformer based or transformer less with transformerless inverters being smaller, lighter and more efficient than transformer based inverters.

Mounting System

The mounting system secures your solar PV panels to the roof. We use Grace Solar mounting brackets that provide an attractive finish and are designed to last a lifetime.

Cabling

Using the right cables and minimising cabling distance ensures maximum efficiency of your system. Our experienced installers use only premium quality cable and know how to design a system in such a way as to maximize its efficiency.

Your Meterbox and Switchboard

Your meterbox and switchboard connect your solar power system to the electricity grid and enable you to participate in the energy buyback and feed in tariff schemes.

Your Home and Solar

Power That Doesn't Cost You The Earth

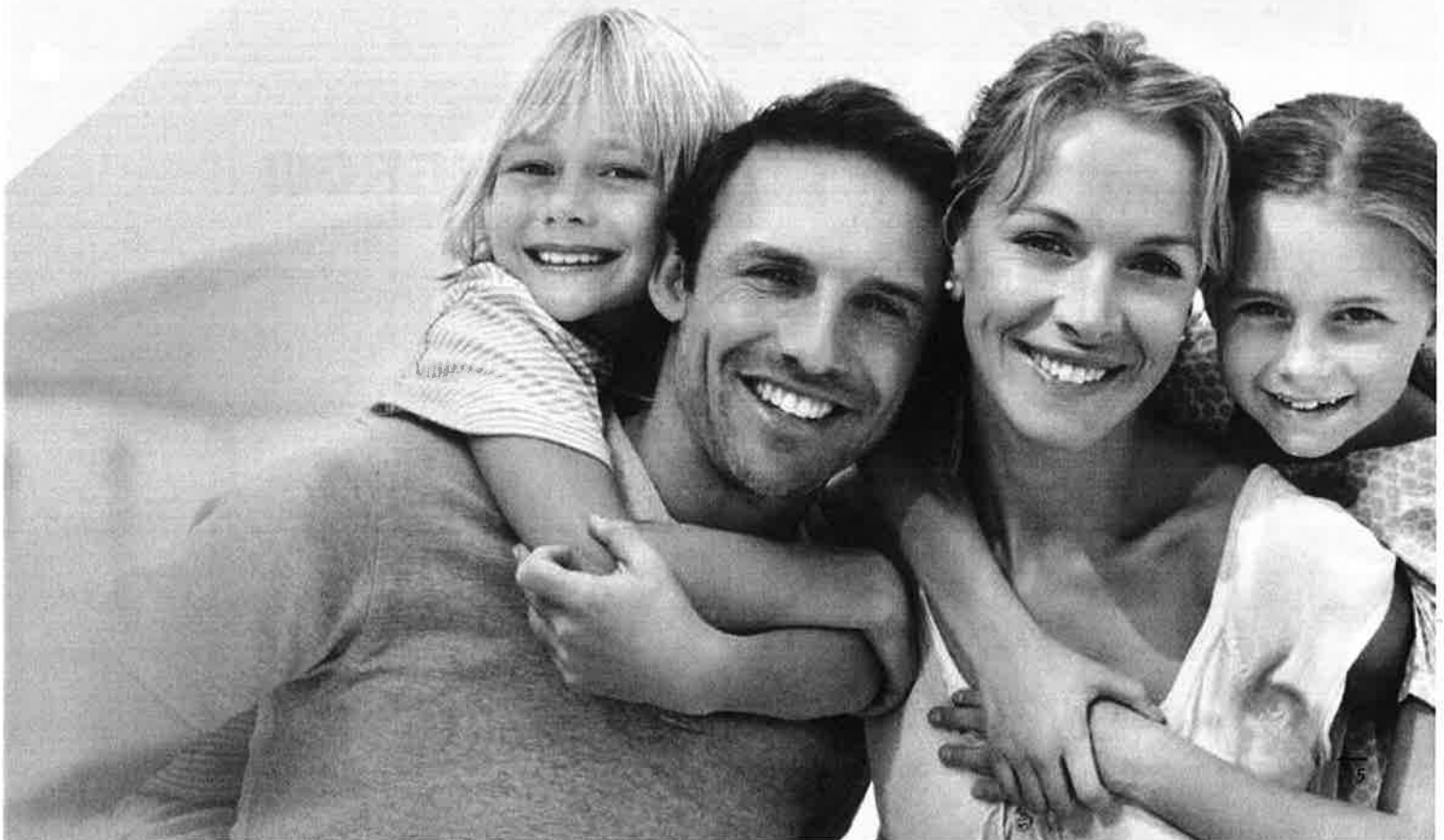
Most homes in Australia are suited for solar panel installations but there are factors that affect the performance of solar power systems that need to be taken into account which can vary from home to home. The main factors that affect performance are:

- Your homes location
- Orientation of panels
- Your roof angle
- Available roof area
- Solar panel performance
- Number of panels
- Efficiency of the Solar Inverter
- Atmospheric weather conditions

Your Installation

Once you decide to go solar with Sunterra we undertake 4 simple steps to ensure you get the right solar system installed and operating correctly.

1. *We consult with you to choose the right solar system for your needs*
2. *We apply for electricity utility approval to connect your solar system*
3. *We arrive on time to complete your installation and finish all work on the day*
4. *We help you fill out all the required documentation*



Our Products

Better Products, Better Price

Solar Panels

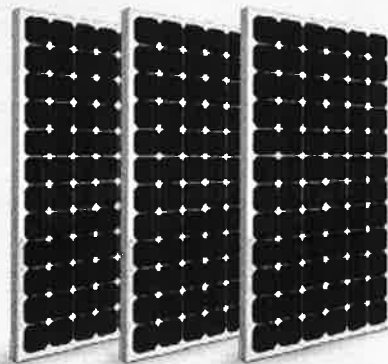
We use only the highest quality solar panels at Sunterra. Risen Solar Panels are World's 2nd Best, Global Tier 1 Brand high efficiency panels. All of our stock is delivered direct from personally inspected manufacturing plants overseas and meets with our complete seal of approval. With our national buying power and a 25 year performance warranty you know you are getting a great deal.

Solar Inverters

All of our inverters are of the latest transformerless type. Smaller, lighter and quieter than older transformer based models our inverters also operate at much higher efficiencies, up to 96.5% With a choice of quality inverters covering all situations and a 5 year inverter warranty you have piece of mind when configuring your system.

Our Installers

At Sunterra we understand that our job doesn't end when we sell a system. We offer a two year comprehensive warranty on installations and commit to keeping you informed throughout the after sales process. Fully insured and warranted our installers have completed over 10,000 installations and know to treat your home with the care they would show their own.



Did You Know about Risen Solar Panels?

- Global Tier 1 Brand solar panels – by Bloomberg
- Risen scores best among all CN PV manufacturers in regards to financial health and bankability according to Atman-Z score – by Sinovoltaics
- The Second Best quality panels in the world – by Photon;
- 12 years product warranty, most of other panels are only 10 years;
- Chubb insurance backed.

Our Packages

① Eco-saver 3kW

\$ _____

3kW Solar PV System

3 kW JFY inverter
12× 250W RISEN panels
Covers approx. 50% of average household energy consumption*



② Maxi-saver 5kW

\$ _____

5kW Solar PV System

5 kW JFY inverter
20× 250W RISEN panels
Covers approx. 65% of average household energy consumption*

65%
APPROX HOUSEHOLD
ENERGY USAGE COVERED*



x20
SOLAR PANELS

③ Ultimate 10kW

(FOR HOUSEHOLD OR BUSINESS)

\$ _____

10kW Solar PV System

10 kW JFY inverter
40 × 250W RISEN panels
Covers approx. 95% of average household energy consumption*

95%
APPROX HOUSEHOLD
ENERGY USAGE COVERED*



x40
SOLAR PANELS

Solar Power Checklist

Here is a handy checklist to help you choose the best solar business to install your solar system.

- Is your solar power installer CEC certified and suitably qualified?
 - We are.
- Do they have years of solar power industry experience?
 - Established in 2010, with 30 years of combined experience we think so!
- Are they using CEC certified solar power products?
 - We do, you can check out the CEC website cleanenergycouncil.org.au to make sure.
- Does the salesperson have a good technical knowledge?
 - Our consultants go through an extensive training program – be sure to give us a call if they fail to please.
- Do they offer a long system warranty?
 - 25 Years performance warranty for panels and 10 years product warranty for JFY Inverter.
- Will you benefit from exclusive competitions and referral bonuses when you become their customer?
 - Our customers do.
- Do they have the required design skills and knowledge to maximise the performance of your solar power system?
 - With a committed, knowledgeable team we take the time and effort to ensure your system performs at its best.
- Will they install within a reasonable time period?
 - Delays in installations help no-one, when you sign with us we commit to have your system installed within a reasonable period or you get a refund!
- Are they able to help you process the paperwork required to participate in the relevant government schemes?
 - We do and we help with the utility paperwork as well.
- Are they using the latest transformerless inverters and high efficiency panels?
 - We stock only the latest, high efficiency inverters – smaller, quieter and more reliable than older models.
- Are their solar power products suitable for the harsh Australian conditions?
 - All of our products are built tough for Aussie conditions.

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100% Recycled
100% Post Consumer Waste

SYP240S~SYP260P

POLYCRYSTALLINE MODULE 60x6"

Characteristics & Performance

- Use of only certified materials at highest quality standards.
- The process of cell and module production is fully automated with 100% quality control and product traceability.
- Heavy load mechanical resistance: TÜV certified (5400Pa tested against snow and 2400Pa test against wind)
- Excellent performances even during low solar radiation
- Guaranteed positive tolerance 0 to +3% of power for each module

Certifications for Incentives

■ Quality, Environment, Health & Safety

ISO9001:2008, ISO14001:2004, OHSAS18001:2007
Full Member PV Cycle Association AISBL

■ Product Certifications

Quality and Robustness: IEC61215:2005

Safety: IEC61730 -1/-2, MCS, CEC, UL

Resistance to salt corrosion (salt fog): IEC61701:2000

Resistance to ammonia fumes: Ammonia Resistance Test

25 Year Linear Power Guarantee

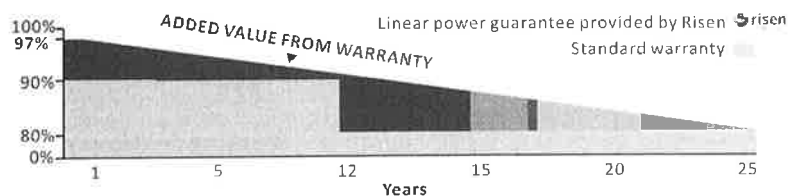
■ Commercial

12 years on material and manufacturing defects

■ Performance

Power not less than 90% of power peak during the first 12 years

Power not less than 80% of power peak during the subsequent 13 years.



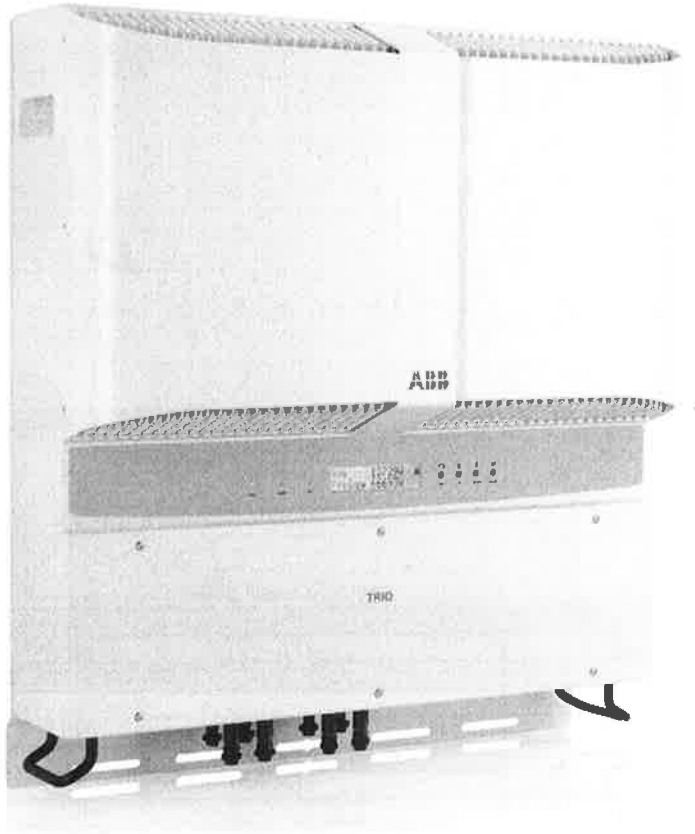
Qualified: IEC61215
Qualified: IEC61730



47VC



ABB string inverters PVI-10.0/12.0-I-OUTD 10 to 12 kW



Designed for commercial usage, this three-phase inverter is highly unique in its ability to control the performance of the PV panels, especially during periods of variable weather conditions.

The high speed, precise Multiple Power Point Tracker (MPPT) algorithm enables real-time power tracking and improved energy harvesting.

This device has two independent MPPTs and efficiency ratings of up to 97.3%.

Flat efficiency curves ensure high efficiency at all output levels delivering consistent and stable performance across the entire input voltage and output power range.

The input voltage range makes the inverter suitable for installations with reduced string size

Dual input section with independent MPPT tracking, allows for optimal energy harvesting from two sub-arrays oriented in different directions.

Each inverter is set on specific grid codes which can be selected in the field.

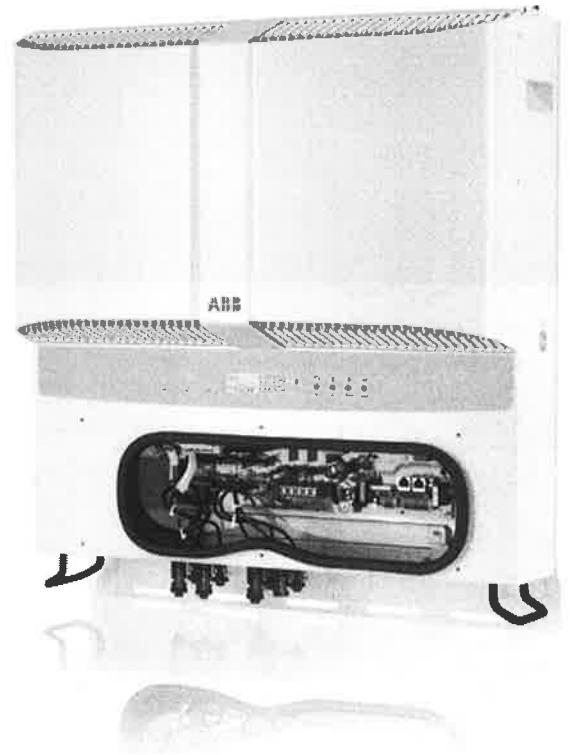
The outdoor enclosure provides unrestricted usage under any environmental condition.

Highlights

- True three-phase bridge topology for DC/AC output converter
- The HF isolation allows positive or negative ground configuration
- The unit is free of electrolytic capacitors, leading to a longer product lifetime
- Night wake up button to access energy harvesting data and error log

Additional highlights

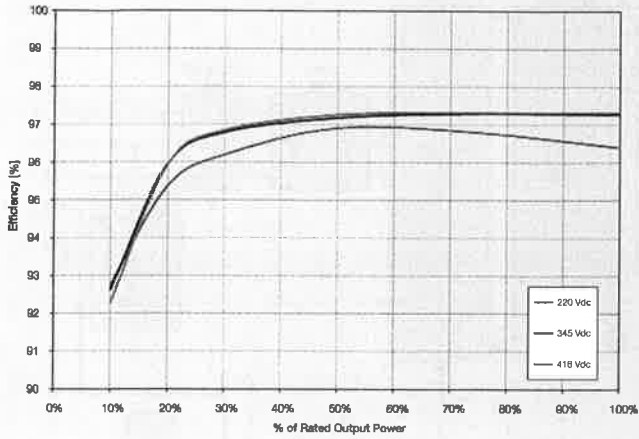
- Integrated DC disconnect switch in compliance with international Standards (-S version)
- Natural convection cooling for maximum reliability
- Outdoor enclosure for unrestricted use under any environmental conditions (IP65)
- RS-485 communication interface (for connection to laptop or data logger)



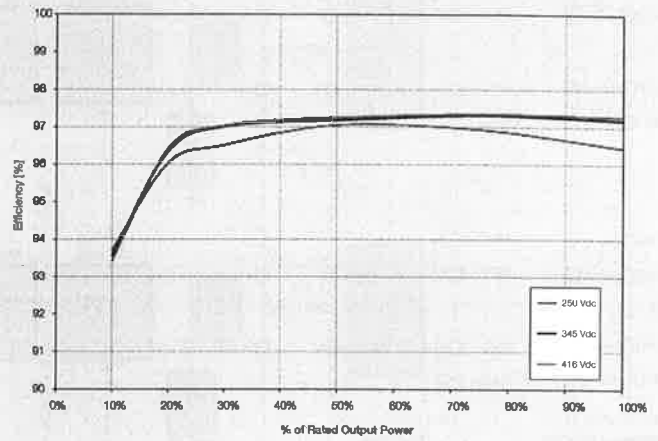
Technical data and types

Type code	PVI-10.0-I-OUTD-400	PVI-12.0-I-OUTD-400
Input side		
Absolute maximum DC input voltage ($V_{max,abs}$)	520 V	
Start-up DC input voltage (V_{start})	200 V (adj. 120...350 V)	
Operating DC input voltage range ($V_{dmin}...V_{dmax}$)	0,7 x $V_{start}...520$ V	
Rated DC input voltage (V_{dcr})	345 V	
Rated DC input power (P_{dcr})	10500 W	12300 W
Number of independent MPPT	2 ⁽⁵⁾	
Maximum DC input power for each MPPT ($P_{MPPT,max}$)	6800 W	
DC input voltage range with parallel configuration of MPPT at P_{dcr}	220...470 V	250...470 V
DC power limitation with parallel configuration of MPPT	Linear derating from max to null [470V ≤ V_{MPPT} ≤ 520V]	
DC power limitation for each MPPT with independent configuration of MPPT at P_{dcr} , max unbalance example	6800 W [285V ≤ V_{MPPT} ≤ 470V] the other channel: P_{dcr} -6800W [155V ≤ V_{MPPT} ≤ 470V]	6800 W [275V ≤ V_{MPPT} ≤ 470V] the other channel: P_{dcr} -6800W [220V ≤ V_{MPPT} ≤ 470V]
Maximum DC input current ($I_{dcr,max}$) / for each MPPT ($I_{MPPT,max}$)	48.0 A / 24.0 A	50.0 A / 25.0 A
Maximum input short circuit current for each MPPT	29,0 A	
Number of DC inputs pairs for each MPPT	2	
DC connection type	Tool Free PV connector WM / MC4	
Input protection		
Reverse polarity protection	Yes, from limited current source	
Input over voltage protection for each MPPT - varistor	2	
Photovoltaic array isolation control	According to local standard	
DC switch rating for each MPPT (version with DC switch)	32 A / 600 V	
Output side		
AC grid connection type	Three phase 3W or 4W+PE	
Rated AC power ($P_{acr}@cos\phi=1$)	10000 W	12000 W
Maximum AC output power ($P_{ac,max}@cos\phi=1$)	11000 W ⁽³⁾	12500 W ⁽⁴⁾
Maximum apparent power (S_{max})	11100 VA	13300 VA
Rated AC grid voltage (V_{acr})	400 V	
AC voltage range	320...480 V ⁽¹⁾	
Maximum AC output current ($I_{ac,max}$)	16.0 A	18.0 A
Contributory fault current	25.0 A	
Rated output frequency (f_r)	50 Hz / 60 Hz	
Output frequency range ($f_{min}...f_{max}$)	47...53 Hz / 57...63 Hz ⁽²⁾	
Nominal power factor and adjustable range	> 0.995, adj. ± 0.9 with $P_{acr}=10.0$ kW	> 0.995, adj. ± 0.9 with $P_{acr}=12.0$ kW
Total current harmonic distortion	< 2%	
AC connection type	Screw terminal block, cable gland M40	
Output protection		
Anti-islanding protection	According to local standard	
Maximum AC overcurrent protection	20.0 A	
Output overvoltage protection - varistor	3 plus gas arrester	

Efficiency curves of PVI-10.0-I-OUTD



Efficiency curves of PVI-12.0-I-OUTD



Support and service

ABB supports its customers with dedicated, global service organization in more than 60 countries and strong regional and national technical partner networks providing complete range of life cycle services.

For more information please contact your local ABB representative or visit:

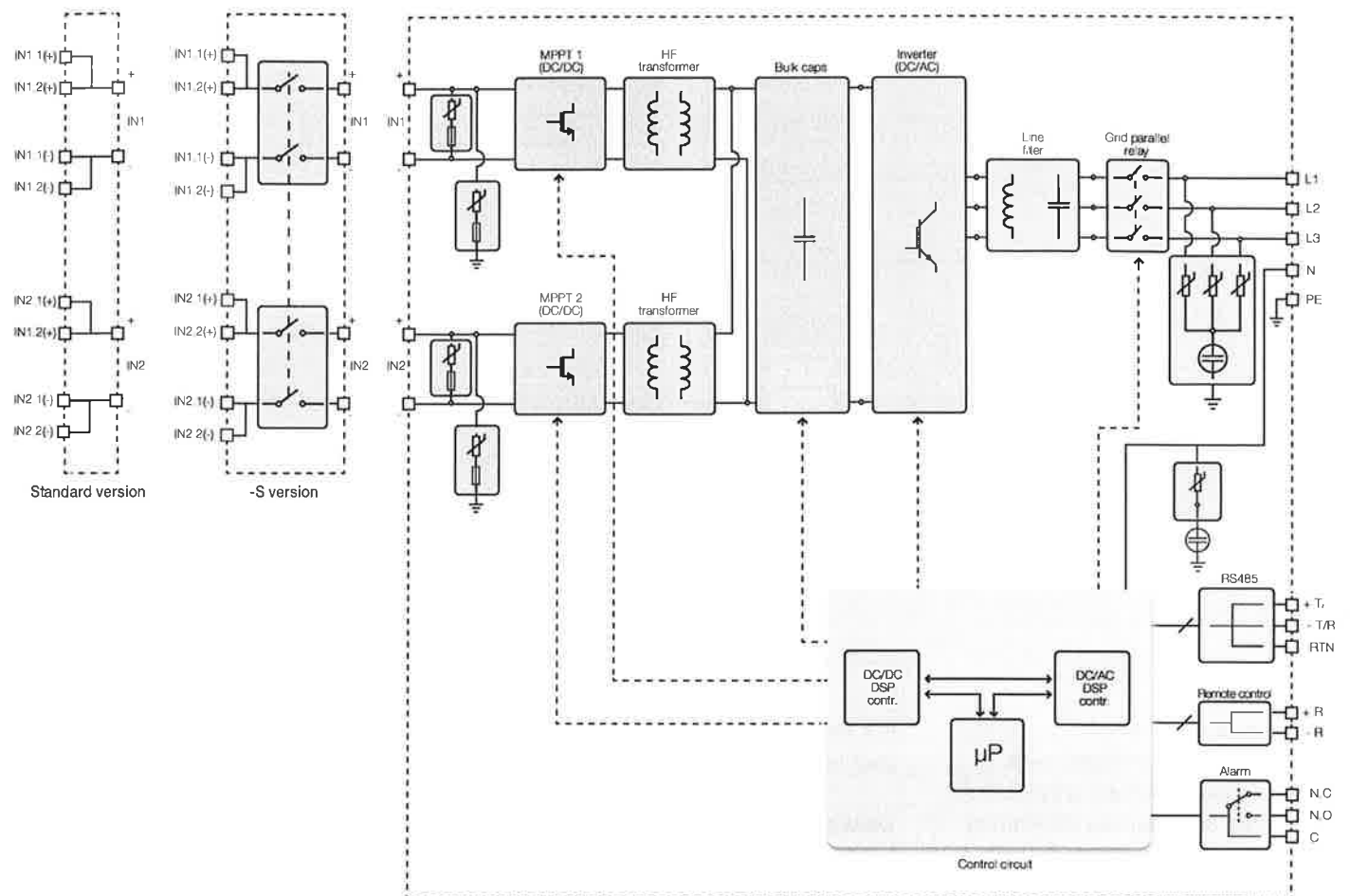
www.abb.com/solarinverters

www.abb.com

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Specifications subject to change without notice.



Block diagram of PVI-10.0/12.0-I-OUTD



Technical data and types

Type code	PVI-10.0-I-OUTD-400	PVI-12.0-I-OUTD-400
Operating performance		
Maximum efficiency (η_{max})	97.3%	
Weighted efficiency (EURO/CEC)	97.0% / -	
Feed in power threshold	30 W	
Stand-by consumption	< 8 W	
Communication		
Wired local monitoring	PVI-USB-RS232_485 (opt.)	
Remote monitoring	VSN300 Wifi Logger Card ⁽⁶⁾ (opt.), PVI-AEC-EVO (opt.), VSN700 Data Logger (opt.)	
Wireless local monitoring	VSN300 Wifi Logger Card ⁽⁶⁾ (opt.)	
User interface	16 characters x 2 lines LCD display	
Environmental		
Ambient temperature range	-25...+60°C / -13...140°F with derating above 50°C/122°F	-25...+60°C / -13...140°F with derating above 45°C/113°F
Relative humidity	0...100% condensing	
Noise emission	< 50 dB(A) @ 1 m	
Maximum operating altitude without derating	2000 m / 6560 ft	
Physical		
Environmental protection rating	IP 65	
Cooling	Natural	
Dimension (H x W x D)	716mm x 645mm x 222mm / 28.2" x 25.4" x 8.7"	
Weight	< 45.8 kg / 99.0 lb	
Mounting system	Wall bracket	
Safety		
Isolation level	HF transformer	
Marking	CE (50 Hz only)	
Safety and EMC standard	EN 50178, EN62109-1, EN62109-2, AS/NZS3100, AS/NZS 60950, EN61000-3-2, EN61000-3-3, EN61000-6-2, EN61000-6-3	EN 50178, EN62109-1, EN62109-2, AS/NZS3100, AS/NZS 60950, EN61000-6-2, EN61000-6-3, EN61000-3-11, EN61000-3-12
Grid standard (check your sales channel for availability)	CEI 0-21, CEI 0-16, VDE 0126-1-1, VDE-AR-N 4105, G83/2, G59/3, C10/11, EN 50438 (not for all national appendices), RD1699, RD 1565, AS 4777, ABNT NBR 16149, CLC/FprTS 50549	CEI 0-21, CEI 0-16, VDE 0126-1-1, VDE-AR-N 4105, G59/3, C10/11, EN 50438 (not for all national appendices), RD1699, RD 1565, AS 4777, ABNT NBR 16149, CLC/FprTS 50549
Available products variants		
Standard	PVI-10.0-I-OUTD-400	PVI-12.0-I-OUTD-400
With DC switch	PVI-10.0-I-OUTD-S-400	PVI-12.0-I-OUTD-S-400

1. The AC voltage range may vary depending on specific country grid standard
2. The Frequency range may vary depending on specific country grid standard
3. Limited to 10000 W for Belgium and Germany

4. Limited to 12000 W for Germany
5. Independent MPPT just with negative ground
6. Check availability before to order

Remark. Features not specifically listed in the present data sheet are not included in the product