



# SUNNY BOY 240-US



### Optimized reliability

- Multigate technology allows for reduced component count
- Private band powerline for highly reliable communications
- Overvoltage protection enhances durability

### Simple installation

- Ideal for complex roofs
- Pre-assembled AC plugs and cables
- Multiple DC connector options and daisy chain configuration
- No grounding washers or DC GEC needed

### Unrivald monitoring

- The Sunny Multigate is a reliable, distortion-free solution
- Module-level, customized reporting through Sunny Portal
- Remote monitoring via the Internet or iPhone and Android apps

### SMA-backed security

- 30-year history and strong financials create stability and ensure full warranty support
- Assembled in the USA for unmatched quality
- #1 ranked service offering

## SUNNY BOY 240-US

Dream big. Start small.

SMA's Sunny Boy micro inverter system enhances design flexibility for installers in the U.S. and across the globe. It features simple installation, an innovative communications platform and is especially applicable for residential systems and rooftops with complex, shaded situations. Superior reliability is achieved with the groundbreaking introduction of the Sunny Multigate-US, which allows for fewer components exposed to heat stress under the module and greatly improves communication reliability versus other micro inverter systems. An improved cabling concept further elevates the Sunny Boy 240-US from the competition by eliminating the need for a trunk cable.





# EASY, FLEXIBLE, RELIABLE

## THE NEW MICRO INVERTER SYSTEM FROM SMA

SMA's new micro inverter system is the perfect solution for many residential installations. Advanced PV plant design experience is not required to install the Sunny Boy 240-US micro inverter and Sunny Multigate. Other advantages include increased energy production due to module-specific MPP tracking and the ability to add on to a system incrementally.

### The secure choice

There are many options when it comes to micro inverters, so why choose SMA? Because the Sunny Boy 240-US is the only micro inverter backed by 30 years of experience from a company whose singular focus is PV. German engineering coupled with American manufacturing in Denver, CO result in unsurpassed quality, while some other micro inverters are produced in countries with inferior quality standards. SMA also has the #1 ranked service offering, which provides unparalleled support for installers and trouble-free system operation for homeowners.

### Safe, easy installation

Complex PV system design knowledge is not required to install the new Sunny Boy 240-US micro inverter. Micro inverters utilize AC electricity and only low-voltage DC electricity, making this technology a great learning tool for electricians expanding their

skill set into photovoltaics. In addition, the integrated ground within the SMA Sunny Boy 240-US micro inverter eliminates the need to bring extra grounding conductors or grounding devices in contact with the enclosure during installation. This innovative feature saves time and money, and also complies with UL1741 requirements for inverter electrical grounding. For those who want a more refined approach, SMA's free Sunny Design software makes system design simple and allows installers to outline complex systems in minutes.

### High reliability due to simplified design

The simplified design of the Sunny Boy 240-US enhances long-term reliability which reduces service calls and inverter replacements, both of which have challenged currently available micro inverters. High efficiency and a unique thermal design concept keep the system running smoothly even under the harsh conditions found on

a rooftop. And, while superior engineering results in enhanced durability, so too does a highly proficient manufacturing process, both factors SMA has relied on to develop its reputation for quality.

### The Sunny Multigate-US

The SMA Sunny Multigate-US is the intelligent link between the micro inverter and the power distribution grid. It is an integral component to the Sunny Boy micro inverter system, providing a clear, distortion-free communication solution for micro inverter installations while optimizing system reliability. It provides an electrical interface to the main service panel, networking support for panel-level monitoring and diagnostics, country settings and overvoltage protection. The Sunny Multigate supports DIN rail or wall mounting, and is designed for maximum AC ratings of 12 A / 2.88 kW.

### Module-level monitoring via Sunny Portal

The production of a Sunny Boy 240-US micro inverter system can be analyzed via the world's largest PV monitoring database. From anywhere in the world with an Internet connection, owners will have real-time data at their fingertips, enabling pinpoint control and fast error detection. Advances in module-level monitoring configuration allow installers and homeowners unrivaled levels of customized data while providing a granular look at systems performance and swift correction should there be an issue with an individual panel.



## Maximum flexibility and simplicity

The Sunny Boy 240-US offers a new dimension in flexibility. While other micro inverters require use of their proprietary cabling system, the Sunny Boy 240-US features a variety of DC plug-in options including MC4 and Tyco. Additionally, AC wiring is a snap thanks to pre-assembled plugs and connection cables. This turnkey approach to micro inverter installation is designed to support installers with maximum flexibility, simplicity and superior SMA technology.

## Perfect for complex roofs

The Sunny Boy 240-US is the inverter of choice for complex roofing situations including shaded roofs and roofs with multiple orientations. The inverter also minimizes losses due to shaded or soiled modules. By utilizing the Sunny Boy 240-US micro inverter system, installers can more easily and effectively use all available roof space for electricity production. Places that receive partial shading or were not large enough for multiple modules can now be seamlessly incorporated into the overall system.

## Common applications with real advantages



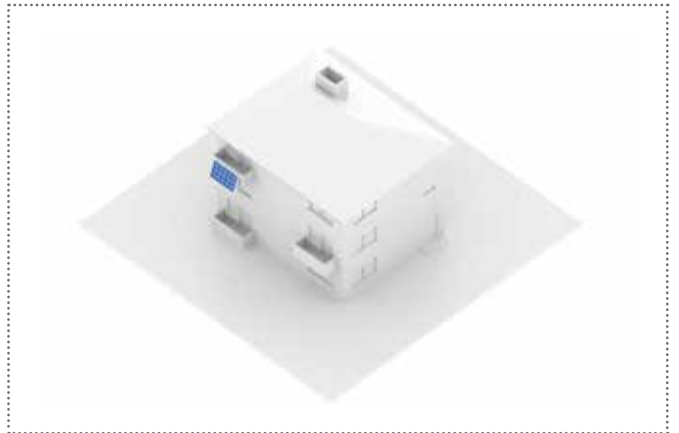
*Partial shading: One MPP tracker per module ensures optimal energy production, even with dynamic shading.*



*Multiple orientations, no problem: Installers can now use roof space on multiple sides of a home to generate power.*



*Optimal use of roof surface: Complex roof configurations can be used to maximize system output without impacting the rest of the system.*



*Small systems: Whether on the balcony or in the garden, even the smallest PV system can utilize the Sunny Boy 240-US while retaining the ability to add on later.*

Technical data	Sunny Boy 240-US	Sunny Multigate-US
<b>PV Module Compatibility</b>		
PV module peak power @ STC	300 W	N/A
PV module MPP voltage range @ STC	26 V... 32 V	N/A
PV module max. short circuit current @ STC	12 A	N/A
<b>Input (DC)</b>		
Max. number of micro inverters	N/A	12 x SB 240-US-10
Max. input voltage	45 V	N/A
MPP voltage range / rated input voltage	23 V - 39 V / 29.5 V	N/A
Max. input current	8.5 A	N/A
<b>Output (AC)</b>		
Rated power (@ 240 V, 60 Hz)	240 W	N/A
Max. apparent AC power	240 VA	2880 VA / 2880 W
Nominal AC voltage / range	2 x 120 V / 211 V - 264 V	2 x 120 V / 211 V - 264 V
AC power frequency / range	60 Hz / 59.3 Hz ... 60.5 Hz	60 Hz / 59.3 Hz ... 60.5 Hz
Rated power frequency / rated grid voltage	60 Hz / 240 V	60 Hz / 240 V
Max. output current	1 A	12 A
Power factor at rated power	1	1
Feed-in phases / connection phases	2 / 2x120 V split phase	- / 2x120 V split phase
<b>Efficiency</b>		
Max. efficiency / CEC efficiency	95.9% / 96%	99.9%
<b>Protective devices</b>		
Ground fault monitoring / grid monitoring	● / ●	-
DC reverse polarity protection / AC short-circuit current capability / galvanically isolated	● / ● / ●	-
Grid monitoring / AC short-circuit current capability	N/A	● / ●
Max. permissible fuse protection	N/A	15 A Circuit Breaker
<b>General data</b>		
Dimensions (W / H / D)	188.4 / 218.4 / 43.7 mm (7.4 / 8.6 / 1.7 inch)	162 / 90 / 63 mm (6.4 / 3.5 / 2.5 inch)
Weight	1.3 kg / 2.9 lb	0.7 kg / 1.5 lb
Ambient temperature range	-40 °C ... +65 °C / -40 °F ... +149 °F	N/A
Operating temperature range	-40 °C ... +90 °C / -40 °F ... +194 °F	N/A
Topology	HF Transformer	N/A
Cooling concept	Convection	Convection
Degree of protection (according to IEC 60529)	NEMA 4X	TYPE 1
Max. permissible value for relative humidity (non-condensing)	100%	N/A
<b>Communication</b>		
Sunny Portal		SMA Webconnect via Ethernet
<b>Features</b>		
DC connection	Connector	N / A
AC connection	Connector	Screw terminal
Interface: Webconnect	N/A	●
Grounding washers/DC GEC	Not required/Not required	N/A
Warranty: 10 / 15 / 20 years	● / ○ / ○	● / ○ / ○
Certificates and approvals (more available on request)	UL1741, UL1998, IEEE 1547, FCC Part 15 Class A & B, IEC 62109-1/-2 (CAN/CSA C22.2 107.1-1)	
● Standard feature ○ Optional feature - Not available		
Updated: September 2014		
Type designation	SB 240-US-10	MULTIGATE-US-10

