

Efficiently into the sun

The SolarMax product range



20

More than
20 years Swiss Quality
and Experience

 **SolarMax**[®]
SWISS QUALITY

Inverter

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Reliable solutions for every requirement

From a detached house right up to a megawatt power station: Overview of the string and central inverters in the SolarMax family

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A whole range of products makes individually coordinated monitoring of the photovoltaic system possible

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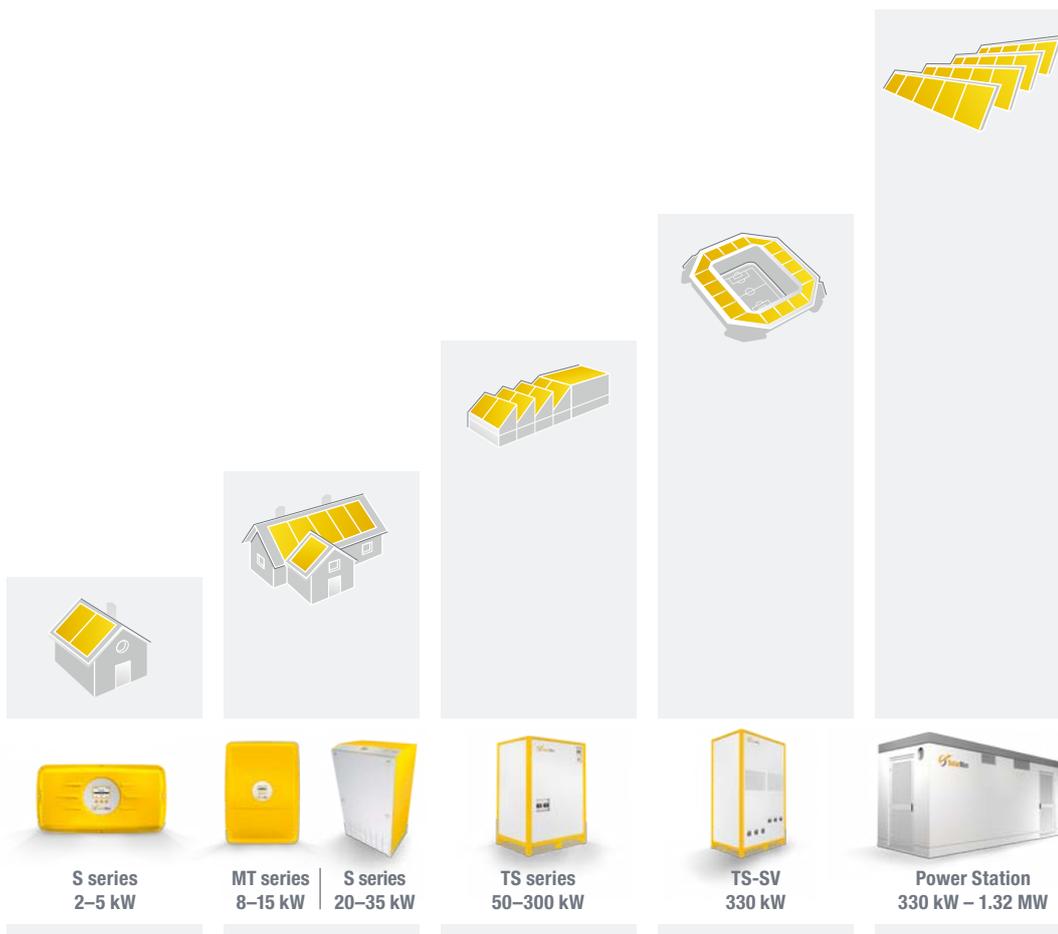
MaxConnect plus and further useful articles

Generator terminal boxes, antennas, wall power supply, potential equalization set

Reliable solutions for every requirement

Inverters are the real heart of every photovoltaic system, whatever their size – as it is only thanks to these devices that network compliant and thus usable alternating current is created. With the SolarMax brand, Sputnik Engineering offers a range of string and central inverters for every requirement: from detached houses or blocks of flats to agricultural and industrial buildings right up to megawatt solar energy power plants.

All products developed, produced and distributed by Sputnik are characterised by excellent efficiency, high reliability and extraordinary durability: The newest standard of Swiss quality.





1 | Lausanne, Switzerland © Solstis



2 | Grifón, Spain



3 | Bourges, France



4 | Mindelstetten-Hiendorf, Germany, © Solea AG



SolarMax S series

String inverter

SolarMax	2000S	3000S	4200S	6000S
MPP voltage range	100 V...550 V			
Max. DC voltage	600 V			
AC Rated output power at $\cos(\varphi) = 1$	1'980 W	2'750 W	4'180 W	5'060 W
Maximum apparent output power	1'980 VA	2'750 VA	4'180 VA	5'060 VA
Grid connection	One-phase (1 / N / PE)			
Circuit type	Two-stage, transformerless (no galvanic isolation)			
Max. efficiency	97 %	97 %	97 %	97 %
European efficiency	95.4 %	95.5 %	95.8 %	96.2 %
Weight	13 kg	13 kg	15 kg	15 kg
Dimensions in mm (W x H x D)	545 x 290 x 185			

SolarMax MT series

String inverter

SolarMax	8MT2	10MT2	13MT2	15MT2	13MT3	15MT3
MPP voltage range	250 V...750 V					
Max. DC voltage	900 V					
AC Rated output power at $\cos(\varphi) = 1$	8'000 W	10'000 W	13'000 W	15'000 W	13'000 W	15'000 W
Maximum apparent output power	8'000 VA	10'000 VA	13'000 VA	15'000 VA	13'000 VA	15'000 VA
Grid connection	Three-phase (3 / N / PE)					
Circuit type	Two-stage, transformerless (no galvanic separation)					
Max. efficiency	98 %					
European efficiency	97.5 %					
Weight	39 kg	39 kg	39 kg	39 kg	42 kg	42 kg
Dimensions in mm (W x H x D)	550 x 750 x 200					



SolarMax S series

Central inverter

SolarMax	20S	35S
MPP voltage range	400...800 V	
Max. DC voltage	900 V	
AC Nominal capacity	20 kW	35 kW
AC Maximum capacity	22 kW	38.5 kW
Grid connection	Three-phase (with neutral conductor)	
Circuit type	Two-stage, transformerless (no galvanic separation)	
Max. efficiency	96.6 %	96.8 %
European efficiency	96.0 %	96.1 %
Weight	98 kg	125 kg
Dimensions in mm (W x H x D)	655 x 1090 x 455	



SolarMax TS series

Central inverter

SolarMax	50TS	80TS	100TS	300TS
MPP voltage range	430 V...800 V			
Max. DC voltage	900 V			
AC Nominal capacity	50 kW	80 kW	100 kW	300 kW
AC Maximum capacity	55 kVA	88 kVA	110 kVA	330 kVA
Grid connection	Three-phase (without neutral conductor)			
Circuit type	LF transformer (galvanic separation)			
Max. efficiency	96.3 %	96.3 %	96.3 %	96.3 %
European efficiency	95.5 %	95.5 %	95.5 %	95.7 %
Weight	670 kg	800 kg	840 kg	2600 kg
Dimensions in mm (W x H x D)	1000 x 1410 x 760			2x (1200x1970x800)



SolarMax TS-SV

Central inverter

SolarMax	330TS-SV
MPP voltage range	450 V...800 V
Max. DC voltage	900 V
AC Nominal capacity	330 kW
AC Maximum capacity	340 kVA
Grid connection	Three-phase (without neutral conductor)
Circuit type	No galvanic separation: direct connection to MV transformer
Max. efficiency	98 %
European efficiency	97.2 %
Weight	990 kg
Dimensions in mm (W x H x D)	1200 x 1970 x 800



SolarMax Power Station

660 kW / 990 kW / 1.32 MW

SolarMax	330TS-SV
MPP voltage range	450 V...800 V
Max. DC voltage	900 V
AC Nominal capacity	330 kW
AC Maximum capacity	340 kVA
Grid connection	Three-phase (without neutral conductor)
Circuit type	No galvanic separation: direct connection to MV transformer
Max. efficiency	98 %
European efficiency	97.2 %
Weight	990 kg
Dimensions in mm (W x H x D)	1200 x 1970 x 800

■ Services around the product

SolarMax expertly accompanies you before, during and after your purchase and thus offers excellent investment protection. We are at hand with help and advice for all questions concerning our products during the whole lifespan of the product regardless of its location. Of course, you can rely on Swiss quality in our services, from consultation right up to the guarantee.





Training

Sputnik offers training on all issues connected to SolarMax devices and accessories for installers, retailers and other interested parties, if required. Installation courses, for example, or training on the topic of data communication.

Training takes place in the training centre at our headquarters, in one of our subsidiary companies or directly at your site. The flexible structure of the training modules also enables individual training which is tailored to your needs.

After Sales

Once your inverter is operational, we provide peace of mind thanks to our competent service. Our guarantees can be selected in a modular manner. We provide support for our guarantees with an efficient and easy to use call centre. If a repair is needed, string inverters are exchanged and we take care of central inverters by sending our own experienced service engineers to your site if required. Extensive information, support pages and downloads for the whole product portfolio are available from our website (www.solarmax.com).

Technical Sales Support

Sales support assists you from the planning phase onwards. Our extensive technical experience is available to advise you in finding solutions, develop technically viable variations and train you in the selected solution. A secure interaction between inverters and modules minimises your project' risks. We are available to answer all your questions during the planning and implementation phases.

Marketing Services

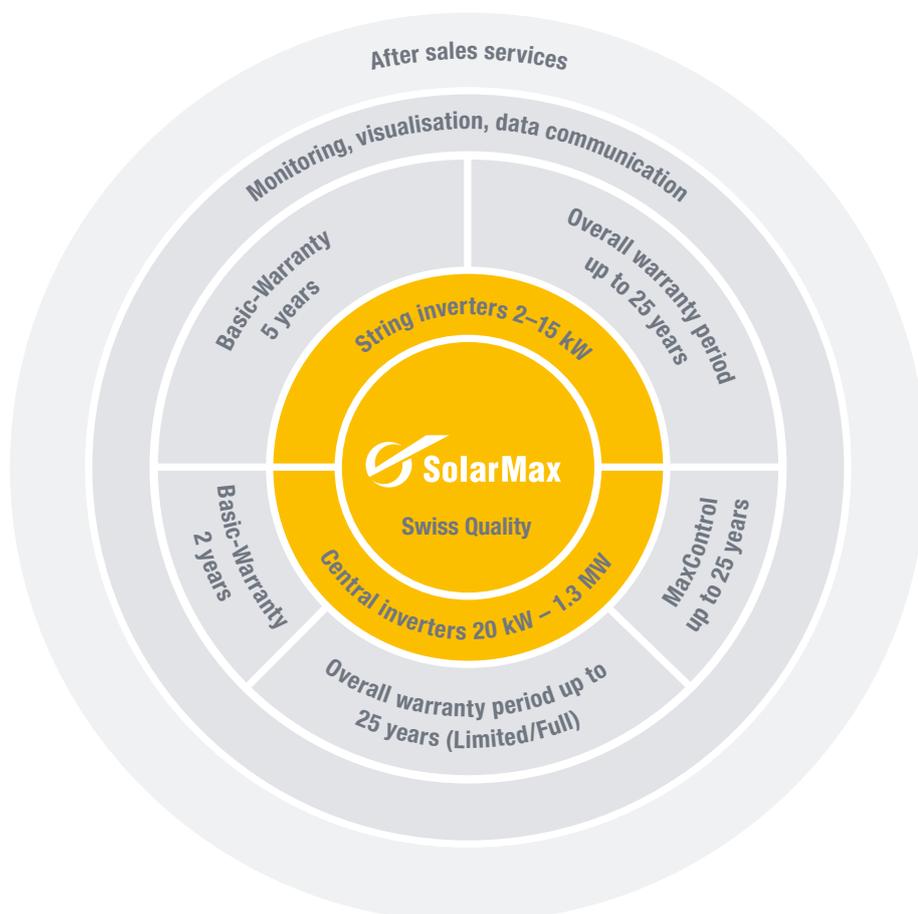
As well as basic information and news, our website also contains all types of documentation. Furthermore, we can offer you a range of marketing materials to support your activities at trade fairs and exhibitions: Presentation material, posters, displays, inverter dummies and much more.

■ This will make you sleep peacefully

Each SolarMax inverter is put to the acid test after it is completed. This, amongst others, comprises a multiple hours test at full load. This way, we are able to guarantee that each device meets the requirements of the proverbial Swiss Quality.

You decide whether you want to secure your investments with extended warranty services. Depending on the product, these can be extended to an overall warranty period of 25 years. Using the options “Limited” and “Full”, you can determine the degree of services. With MaxControl you provide for carefreeness for central inverters for up to 25 years.

You decide which option is the right one for you.



Warranty overview

	String inverters	
	Basic	Full
Duration for S and MT series	5 years	Overall warranty period of 10, 15, 20, or 25 years (including standard warranty Basic)
Conclusion	–	can be concluded within the 5 years standard warranty Basic
Extent of the warranty	Replacement service ⁽¹⁾	

	Central inverters			
	Basic	Limited	Full	MaxControl full-service package
Duration for S serie	2 years (when registering, cost-free extension by 3 years)	Overall warranty period of 10 or 12 years (including standard warranty Basic)		97 % technical availability up to an overall duration of 20 years
Duration for TS and TS-SV series	2 years (when registering, cost-free extension by 3 years)	Overall warranty period of 10, 15, 20 or 25 years (including standard warranty Basic)		97 % technical availability up to an overall duration of 25 years
Conclusion	–	within 3 months upon installation		before installation
Extent of the warranty	Material, travel, and labour expenses	Material expenses	Material, travel, and labour expenses	System monitoring, material, travel, and labour expenses
Loss-of-revenue compensation per day	–	–	–	0.80 €/kW (winter) or 1.80 €/kW (summer) AC rated output ***

⁽¹⁾ Replacement service:

- cost-free technical support
- cost-free replacement with equivalent device in the case of device-related malfunctions or defects
- delivery of a replacement device (normally within a period of 2 working days)
- compensation of a replacement lump-sum during the warranty period

*** when falling below the annual availability

MaxControl – no worries at all

MaxControl is a service package for the SolarMax central inverters of your solar system. It is based on the MaxComm system monitoring and mainly comprises the following services provided by Sputnik Engineering:

- monitoring of the inverters
- on site service
- loss-of-revenue compensation in the case of an availability of less than 97 % per year
- monthly delivery of the revenue data per email



■ What you can count on

Switzerland is not only well-known for its mountains, chocolate and watches. It also stands for unwavering quality awareness. This applies to everything and at SolarMax we fully embrace this philosophy. Swiss Quality is at the heart of all our activities and informs the way we think and behave in our daily work. We are proud of the way traditional Swiss values are reflected in our operations.



Training

Switzerland possesses an excellent training system. On the one hand, the traditional apprentice system has been constantly adjusted to changing conditions. This has provided a continuation for the tradition of established, technical ability, especially in combination with modern technologies. On the other hand, Switzerland, as a country with few natural resources, places a lot of value on superb universities; and with success.

Innovation

Although Switzerland has a real sense of tradition in many things, a strong spirit of innovation rules in the world of work. This may also be due to the fact that quadrilingual Switzerland has always been a melting pot of cultures; a place where different ideas come together and stimulate each other: Tradition and high-tech flow together effortlessly here.

Pride

The Swiss are proud of their own work, regardless of whether they are builders or university professors. Work ethic and enthusiasm are correspondingly high. If, as in the case of Sputnik, there is an added fascination with technology, this results in world-class products.

Reliability

Punctuality is one of the most important values in Switzerland. You can depend on the word – or the guarantee – of the Swiss. Reliability is correspondingly important as a criterion in the selection of partners in business – and in the production of high-tech devices.

Monitoring

Swiss workmanship takes quality to another level – a level aspiring to perfection. This reputation is closely guarded and monitored. That chocolate which is not absolutely perfect could leave a Swiss factory would be unthinkable. Or a watch. Or an inverter.

Swiss Quality

SolarMax is proud to write “Swiss Quality” on its products. For our international clientele, this means guidance and the promise of high dependability in every respect. And for ourselves, this is a duty which we take on every day.

■ Dimensioning with MaxDesign

Thanks to this free, interactive design tool, you can design the optimal combination of module and inverter in a short period of time. Enter the framework conditions and the simple, self-explanatory software suggests the best construction variations.



Features

- Manual and automatic design possible
- Calculation of the loss of power (DC string and main line, AC line)
- Yield calculation for all European countries possible
- Own user information with company logo
- Internet update
- Location and module databank individually extendable
- Central module databank (for company networks) adjustable
- Multiple usability (company networks) using PROXI server
- The configuration of the planned system can be saved as a project and can also be clearly represented as a PDF which can be printed out

System requirements

Software	
Supported operating systems	<ul style="list-style-type: none">■ Windows XP■ Windows Vista■ Windows 7

Hardware	
Minimum	400 MHz CPU, 96 MB working memory
Recommended	<ul style="list-style-type: none">■ 1.0 GHz CPU or higher, 512 MB or larger working memory■ up to 500 MB available hard disc space■ Graphics device and monitor with 1280 x 1024 pixels, 16bit colour depth

Support	
Contact	md@solarmax.com

■ MaxComm for individual system monitoring

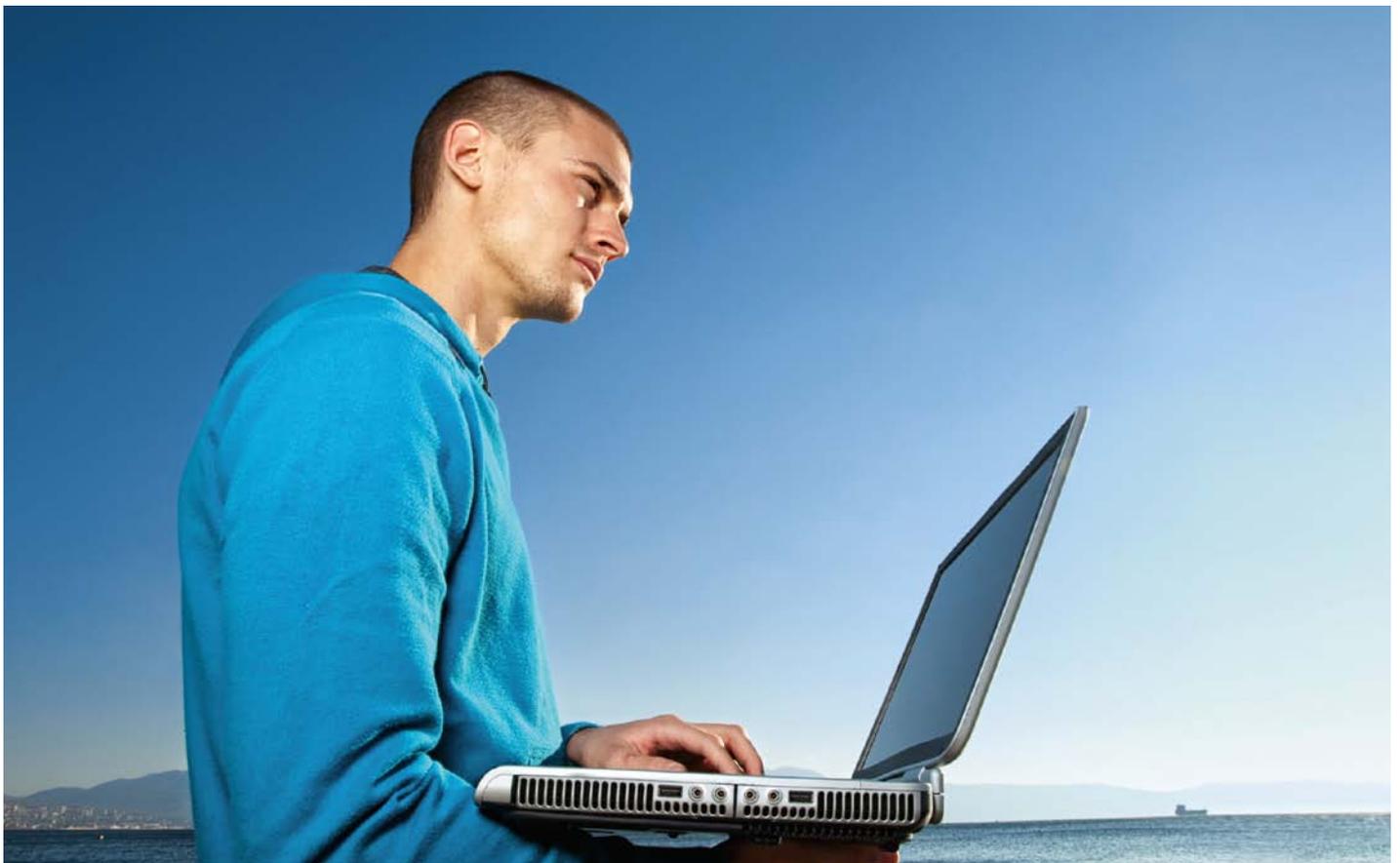
Within the SolarMax portfolio there is a whole family of products that enable you to constantly monitor your system. All inverters are equipped with the corresponding interfaces. Monitoring can be individually arranged depending on your system.

The platform

The MaxComm communication platform is modularly constructed. The evaluation of data from a detached house can be just as easily conducted as the monitoring of a major plant, whether on site or from afar. All modules and options were specially developed and produced by Sputnik for the range of SolarMax inverters.

MaxWeb signifies the area of internet-based communication and thus remote monitoring. Measurement values, yield data and occurrences will be automatically transferred to the MaxWeb Portal server. Its high-performing user interface enables a multitude of significant evaluations.

MaxTalk is the user-friendly PC software for on site communication, especially for small installations.



MaxWeb

The MaxWeb xp data logger forms the core of the web-based monitoring system; it enables multimedia communication with the photovoltaic plant and sends information via the internet to

wherever you wish to receive it. MaxRemote enables remote-controlled performance reduction by the operator.



MaxMonitoring

The cost-free app visualises the performance data of the photovoltaic system and of individual inverters on site.

MaxTalk

User-friendly PC software for on site communication and for local system monitoring.

■ Monitoring regardless of the location with MaxWeb

In the MaxWeb series, we offer you a whole range of products and opportunities which make accessing a photovoltaic plant, regardless of your location, possible. The MaxWeb xp data logger forms the hub of these opportunities.



Where the threads join together: MaxWeb xp

The web-enabled data logger records current measurement values, yield data and occurrences and transfers these to the MaxWeb Portal server. Its integrated alarm monitoring provides for permanent surveillance of the connected devices. In the case of a disruption, an alarm message is sent via email or text message.

Via the web server, you are always connected to your plant. Using the web browser, you can perform settings on the connected SolarMax products without additional software and regardless of the operating system.

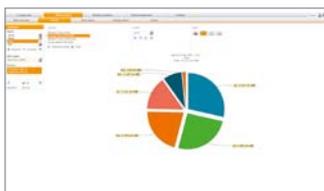
Furthermore, MaxWeb xp possesses an interface for the MaxRemote option for access to the reduction of performance for the purpose of network management.



The total overview: MaxWeb Portal

Today, internet-supported communication solutions come as standard in PV system monitoring. With the MaxWeb Portal, SolarMax offers an independent solution for the monitoring and presentation of photovoltaic systems on the internet. All values from your PV system – or several systems – can be depicted graphically and in table-format in different ways.

Using the login and your username plus password, you can access everything over the internet. User permission can be assigned with different permission levels. Despite the multitude of functions, the MaxWeb Portal is easy to operate and is very clear and still free of charge.



Local monitoring

For on-site communication, MaxMonitoring is an easy to use App for indicating the facility data – and MaxTalk is a software covering all needs.

MaxMonitoring

Using the cost-free MaxMonitoring App, you can view the performance data of a photovoltaic system at any time in your home.

Once the SolarMax inverters have been connected to a WiFi router, it is possible to access the system data within the domestic network using a mobile end device. The performance data is displayed in a clear manner and divided into different areas. It is possible to obtain the most important information and know at any time how much environmentally friendly solar power the facility generates and feeds into the public grid at one glance. MaxMonitoring is available for iPad, iPod touch, iPhone, Android smartphones, Windows, Linux and Mac OS.



MaxTalk

MaxTalk is a user-friendly PC software for on site communication. The tool supplies the most important data and depicts the structure of the system in an overview. Furthermore, the measurement values, configurations and settings can be displayed for each device. Downloading software from our website, www.solarmax.com, is free of charge; a Setup Wizard leads you through installation and configuration.

Moreover, the professional MaxTalk pro tool allows registered installers to configure the inverter.



■ Accessories



MaxDisplay

The interface to large LCD and LED displays imports your data from MaxWeb xp and allows you to see the most important system values and depict them for the public.



MaxMeteo

The solar radiation sensor records the current irradiation, the radiation energy and the temperature of the solar cells. MaxMeteo can also be combined with MaxTalk.



MaxCount

Records the status of a maximum of two meters of an energy supply company and determines the daily, yearly and total yield. Can also be used to calculate private consumption. Can be combined with MaxTalk.

More than an accessory: MaxConnect plus

Devices in the MaxConnect plus series are generator terminal boxes for SolarMax central inverters. They are used to combine the individual strings of a solar generator. Thanks to its integrated individual string monitoring system, the devices are in the position to detect defects and shadowing effects early.

The devices are designed to be used at high voltages and offer the highest security even when the strings are being serviced. High-quality components guarantee a long lifespan and ultimate availability.

MaxConnect plus

Aluminium generator terminal box with terminal connections

MaxConnect plus	12 plus	16 plus
Terminal box	for 12 strings	for 16 strings
Monitoring	String current monitoring, fuse failure detection, surge arrester	
Weight	14 kg	17 kg
Dimensions in mm (W x H x D)	600 x 520 x 150	720 x 520 x 170
Protection class	II according to EN 61140	



MaxConnect plus p

Synthetic generator terminal box with MC4 connections

MaxConnect plus p	12 plus p	16 plus p
Connector type	12 MC4 socket pairs	16 MC4 socket pairs
Monitoring	String current monitoring, fuse failure detection, surge arrester	
Weight	33 kg	
Dimensions in mm (W x H x D)	590 x 855 x 360	
Protection class	II according to EN 60529	



Further useful articles

Wall power supply

Auxiliary voltage for MaxComm network:
230 VAC to 15 VDC; 1.7 A



Antenna SF 916

Stationary antenna for MaxWeb xp with 5 m cable for wall installation, improves reception in comparison to standard antennas.



MaxComm Bus Repeater

For the segmentation of larger networks and overcoming large distances



Potential equalization set

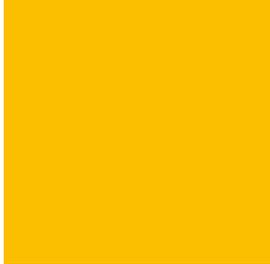
For TS-SV central inverters and TS series; enables the connection of the PV generator to earth potential



Disclaimer of liability

Sputnik Engineering's General Terms and Conditions apply.

If permitted by law, more extensive and/or alternative warranty remedies or guarantees from Sputnik are excluded. Commercial operators cannot make claims for loss of yield.



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