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Introduction

Dear Ladies and Gentlemen,

Renewable energy sources are completely changing the supply system and already today play a great role in improving the environment. They help to reduce the emissions of pollutants and environmental risks.

Solar power is paving the way to a cleaner future. We at Solar-Log™ are also making our contribution with our sophisticated technology and years of experience. Always true to our motto: more performance, more efficiency and more success for every photovoltaic plant.

Solar-Log™ is the unchallenged market leader in the area of photovoltaic monitoring and management and we plan to remain the leader. Our solutions set standards for the industry. We continue to offer our innovative technology at the best price. To strengthen our market leadership, we constantly invest in new innovations - and this has proved successful. The new Solar-Logs place more emphasis on managing energy flows, allowing generated energy to be utilized even more effectively.

With the commitment to deliver the best, our “Made in Germany” quality is paying dividends with recognition within the industry in the form of the OTTI Innovation Prize 2012 and the nomination for the Solar Industry Award 2012 and Intersolar Award 2012. However, despite our success, our search for new ideas and innovations is never-ending and results in the continuous development of even more efficient solutions.

Yours,
Jörg Karwath

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*In many countries, the designation „Speedwire“ is a registered trademark of SMA Solar Technology AG.

Welcome to the market leader in PV Monitoring and Management

Quality



We provide our customers world-wide with state-of-the-art solar energy system solutions.

We are the world leader when it comes to monitoring with over 205,000 plants and 860,000 inverters. In total, we monitor over 8 gigawatts and this number is increasing every day. Our recipe for success involves staying ahead of the market with new ideas and innovations.

Monitoring

Precise advanced technology for plant monitoring: As an innovator in the solar industry, Solar-Log™ provides the most efficient data loggers worldwide. A photovoltaic plant can only reach maximum yields when it is producing power uninterrupted and free of disturbances. The Solar-Log™ recognizes disturbances right away and reports them immediately - which especially important at large plants. This eliminates long-term losses in yields due to undetected defects.

Managing and Analyzing

The Solar-Log™ is an intelligent monitoring system for photovoltaic plants that not only displays and presents self-produced power consumption but also efficiently manages it. The device analyses the cost effectiveness of your plant based on the yield figures and identifies optimization possibilities. The break-even point, i.e. the point in time where the investment enters the profit zone, can be calculated with the help of plant yields and of nominal values based on the yield forecast.

All-In-One Solutions

Unrivalled simplicity: With our all-in-one solutions, we are always a step ahead of the competition, saving you the time and effort of mastering several systems. The Solar-Log™ offers you all-in-one systems for all major inverters on the market. We have developed trend-setting products for self-produced power to ensure the most optimal use of this power.

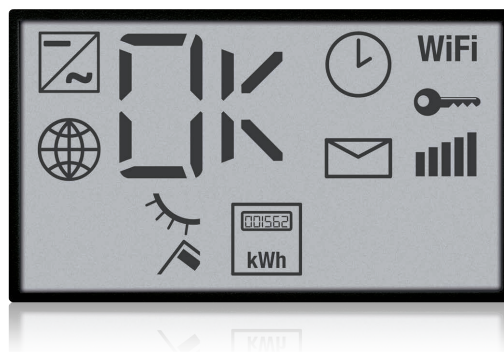
Unmatched Security for Banks

Banks and investors often require financial guarantees on their PV investments. With Solar-Log™ plant monitoring, we offer a system to reliably monitor the rate of return from the PV plant and to serve as a safeguard for PV investments.



Advantages and benefits for installers, portal operators and service providers

- 1 All information at a glance**
Centrally monitor all PV plants from a single platform with the Solar-Log™ WEB "Commercial Edition".
- 2 Saving a considerable amount of time and money**
Thanks to remote access via Solar-Log™ WEB "Commercial Edition" and real-time diagnostic tools, it is no longer absolutely necessary to check PV plants on site.
- 3 Easily become more efficient**
No PC or internet expertise are required to take advantage of the quick and simple installation with "Easy Installation".
- 4 The LCD displays show the operating status**
An LCD-Status-Display is included with all devices and provides comprehensive information on the installation and operating status.
- 5 Greatly reduce the installation time and effort required for network set-up**
For wireless communication, all Solar-Log™ models are available with optional WiFi, Bluetooth and GPRS.
- 6 Compatible with all major inverters on the market**
The single monitoring system for all inverters allows plant operators to select the best inverter for their needs.



Solar-Log™ LCD-Status-Display

Advantages and benefits for plant operators

1 Unmatched security for banks

Banks and investors require guarantees on their PV investments. Solar-Log™ monitoring helps to ensure a solid rate of return from the PV plant.

2 Higher efficiency

Error messages are immediately transmitted online or to mobile devices to guarantee yield certainty.

3 Effective and quick monitoring

The device can be intuitively and conveniently operated via the color touch display direct from the device or remotely via the online connection.

4 No PC expertise required

No software needs to be installed to connect the Solar-Log™ to the network.

5 Flawless and precise monitoring at an attractive price

As the market leader, we produce larger quantities at the highest qualities and guarantee the best value for money.

6 Optimize consumption of self-produced power and save money

Optimal control and consumption of self-produced power with Solar-Log™. This optimization helps rising electricity prices become less frightening.

7 Reliability, a reassuring feeling for decades to come

The "Full-Service" contract offers plant operators comprehensive professional monitoring and maintenance.

The core benefits of the Solar-Log™

The three

Control, in and of itself, is a good thing. However, we have taken PV monitoring two steps further by adding self-consumption optimization and feed-in and powermanagement features to our Solar-Log™ devices to provide you the best all-in-one solution for your PV plants. Never before has it been so easy to manage photovoltaic plants. The Solar-Logs used in combination with the Solar-Log™ WEB central control element offer the simplest and most user-friendly plant monitoring and management options available.

Greater certainty thanks to optimal plant monitoring:

The Solar-Log™ as well as the online Solar-Log™ WEB portal recognize disturbances right away and reports them immediately. The immediate resolution of problems secures maximum yields on a lasting basis.

Greater independence from rising electricity prices:

The Solar-Log™ system provides a concise presentation of power yields and consumption. Appliances can be remotely controlled to ensure that there is an ideal amount of power consumption to correspond to the current amount of solar power being generated.

More flexibility for feed-in and powermanagement:

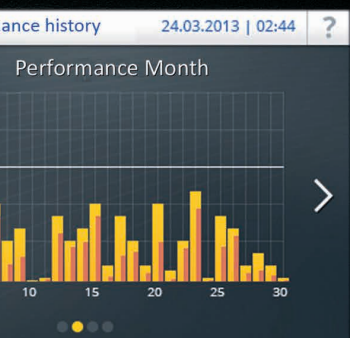
Our hardware and software can implement the multitude of differing requirements from grid operators. In addition to controlling active power, our Solar-Log™ models have many options to regulate reactive power as well.



Monitoring

Self-consumption
Optimization

Feed-In Management



 Solar-Log™
www.solar-log.com

01

Solar-Log™ Hardware

Highlights of the new Solar-Log™ devices

The Solar-Log™ is setting new international standards when it comes to monitoring and managing photovoltaic plants. Perfect and precise monitoring provides the basis for flawless operation, and intelligent controlling systems ensure that you get the most out of your power. This helps you to maximize your consumption of self-produced power in no time at all. For example, get the most with networked “smart plugs” connected to existing electrical outlets or with the Solar-Log 1200 and 2000 via relays. All Solar-Logs are equipped with state-of-the-art technology to provide continuously optimized functions. Thanks to the modern design, plant owners need not hide their Solar-Log™ from anybody. The black matt finish in combination with dark gray is suitable for any surrounding. The Solar-Log 1200 and 2000 come with a TFT Color Touch Screen Display to operate directly from the device and to display yield graphics and plant data in a descriptive and easy to understand way. All Solar-Log™ devices come with a new LCD-Status-Display that provides comprehensive information on the installation and operating status.

Maximum plant size 15 kWp

Optional Powermanagement

Dynamic LCD-Status-Display

Monitor, optimize and manage
the consumption of
self-produced power



Solar-Log 300

For small domestic installations

Connections

Inverters

The Solar-Log 300 is compatible with inverters from all major manufacturers. It can be connected to several of SDS supported inverters from a single manufacturer with a maximum total power of 15 kWp per interface.

Interfaces

The Solar-Log™ has an RS485/RS422.

Sensors RS485

The sensors measure irradiation, temperature and wind speed. To avoid any potential capability issues, please check if sensors can be combined with your particular inverter brand.

Meter S_0 in or RS485

The meter can record your consumption data, serve as an inverter and measure the power from incompatible inverters.

RS485 or S_0 out

Connect a large external display to gain an additional overview of the data.

Ripple Control Receiver

The signal to reduce active power is generally sent via a Ripple Control Receiver. This can be connected directly to the Solar-Log 300 PM+ to control the power of the PV plant.

Solar-Log 300 USB Connection and Data Export

A USB stick can be connected to manually install new firmwares with additional inverter support or new functions, or to transfer quick and secure backups and other data.

Display Options

Solar-Log™ WEB

The Solar-Log™ WEB “Commercial Edition” online portal expands the monitoring function of the Solar-Log™ and offers comprehensive reporting options in the form of graphs and tables via the internet.

Solar-Log™ APP

You can access your data and graphical reports at any time from anywhere in the world with the Solar-Log™ APP.

Solar-Log™ Dashboard

The Dashboard is a feature of the WEB “Commercial Edition” that displays all important information for a plant such as yields, CO₂ savings and plant performance.



Solar-Log™ Dashboard – displaying PV plant performance at a glance.

Solarfox® large and external display

A large external display used in combination with the Solar-Log™ can visually present the live data from a PV plant. You can also add personalized advertisements. Large external displays can be connected via the RS485 or S₀ interface.

Accessing the Solar-Log™

The Solar-Log™ is operated from a PC with any standard web browser. Remote access is possible with the WEB "Commercial Edition".

Functions

Solar-Log™ Easy Installation

The installation and initial setup is automatic. The inverter detection and the Internet log-on starts immediately. The installation status is shown on the LCD Display. Any subsequent manual configurations of the Solar-Log™ can be performed conveniently from a PC via the WEB interface. Easy Installation is compatible with the Solar-Log™ WEB "Commercial Edition" and "Classic 2nd Edition."

Self-consumption

The Solar-Log™ is available in two models, with and without an integrated power meter. The Solar-Log™ requires an external digital power meter to measure and display self-consumption as a graph. The power meter is already integrated into the new Solar-Log 300 Meter and Solar-Log 1200 Meter models and provides the same functions as an external meter as an external meter, only with slightly less precision.

Cable cover

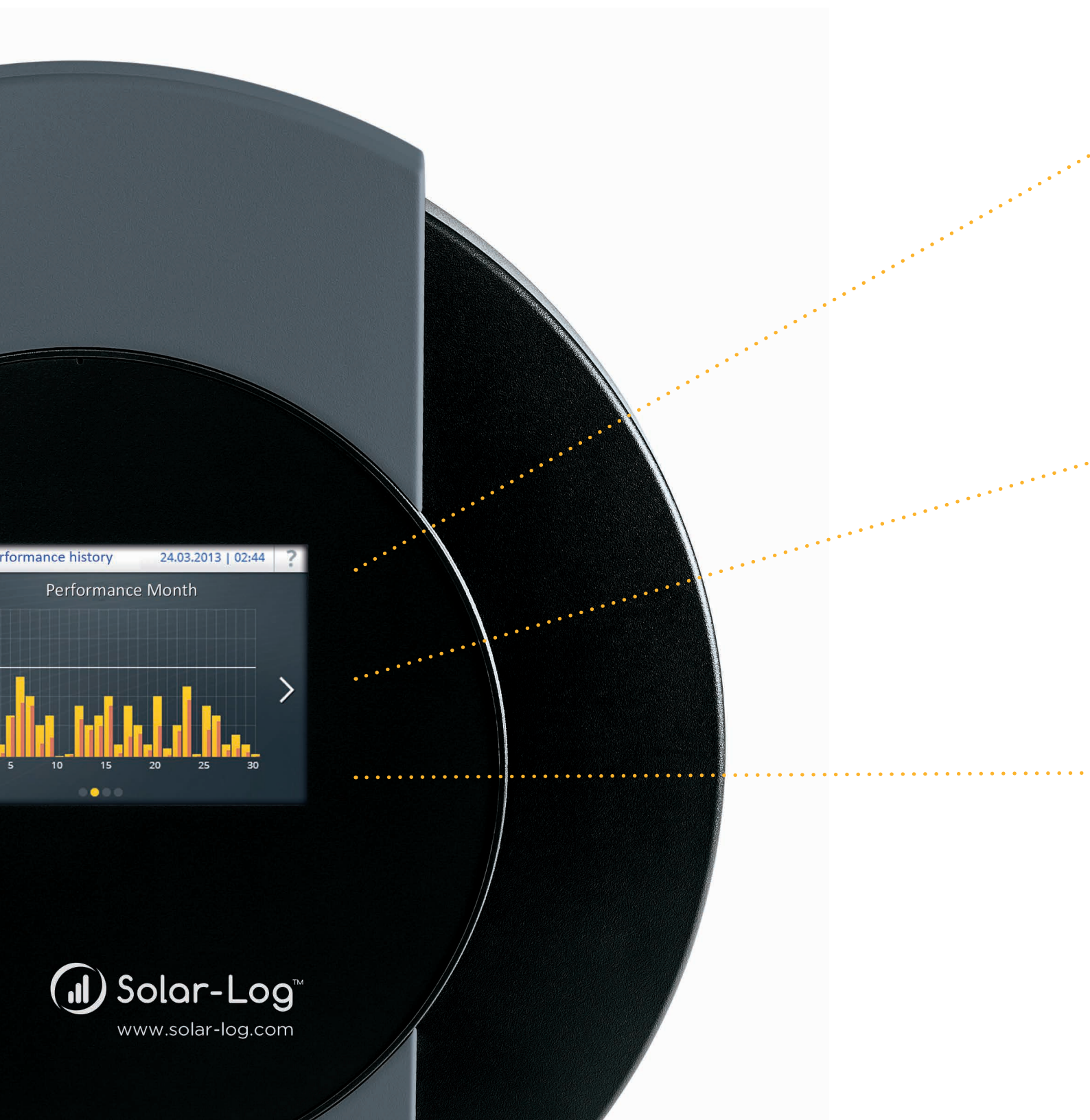
With its attractive design the cable cover for the Solar-Log™ offers the best possible mechanical protection for interfaces and cables.

Data security

The data volume from the Solar-Log™ can be recorded for up to 20 years. The micro SD card is used to protect against any loss of data in the event of a power failure.

Options	BT	WiFi	BT WiFi	PM+	PM+ WiFi	GPRS	PM+ GPRS	Meter
	●	●	●	●	●	●	●	●

TFT-Touch-Display Views in the Solar-Log 1200 and Solar-Log 2000



You can operate Solar-Log 1200 and Solar-Log 2000 directly from the device. The graphical reports of a PV plant's yield and consumption data are visualized on the Color TFT-Touch-Display. An extra feature of using the Solar-Log™ with the WEB is that it displays a three-day yield forecast based on the weather forecast.

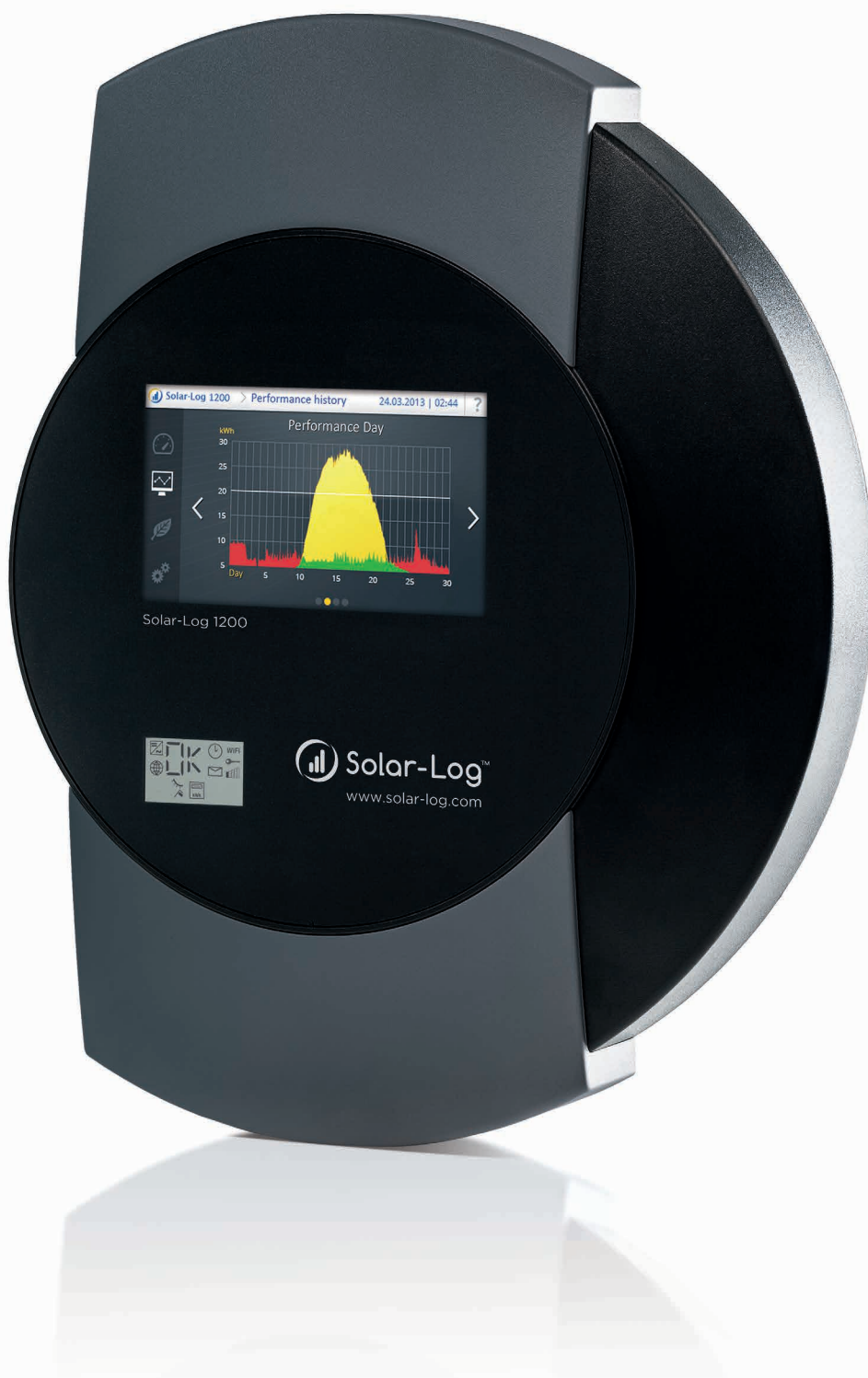


Maximum plant size 100 kWp

Optional Powermanagement

New: Color TFT-Touch-Display and
LCD-Status-Display for displaying
graphics and operation

Possible to monitor, optimize
and manage the consumption
of self-produced power



Solar-Log 1200

For small domestic installations and medium-sized plants

Connections

Inverters

The Solar-Log 1200 is compatible with inverters from all major manufacturers. It can be connected to several of SDS supported inverters from one manufacturer with a maximum total power of 100 kWp per interface.

Interfaces

The Solar-Log™ has an RS485/RS422 and an RS485 interface.

Sensors RS485

The sensors measure irradiation, temperature and wind speed. To avoid any potential capability issues, please check if sensors can be combined with your particular inverter brand.

Meter S_0 in or RS485

The meter can record your consumption data, serve as an inverter and measure the power from incompatible inverters.

RS485 or S_0 out

Connect a large external display to gain an additional overview of the data.

Ripple Control Receiver

The signal to reduce active power is generally sent via a Ripple Control Receiver. Up to two Ripple Control Receivers can be connected to the 1200 PM+, one for power reduction and one for reactive power control.

Solar-Log 1200 USB Connection and Data Export

A USB stick can be connected to manually install new firmwares with additional inverter support or new functions, or to transfer quick and secure backups and other data.

Display Options

TFT-Touch-Display

You can operate Solar-Log™ directly from the device and display graphical yield reports on the high-quality Color TFT-Touch-Display.

Solar-Log™ WEB

The Solar-Log™ WEB "Commercial Edition" online portal expands the monitoring function of the Solar-Log™ and offers comprehensive reporting options in the form of graphs and tables via the internet.

Solar-Log™ APP

You can access your data and graphical reports at any time from anywhere in the world with the Solar-Log™ APP.

Solar-Log™ Dashboard

The Dashboard is an extra feature of using the Solar-Log™ with the WEB "Commercial Edition" to display all important information for a plant such as yields, CO₂ savings and plant performance.

Accessing the Solar-Log™

The Solar-Log™ is operated from a PC with any standard web browser and via the TFT-Touch-Display. Remote access is possible with the WEB "Commercial Edition".

Solarfox® large and external display

A large external display used in combination with the Solar-Log™ can visually present the live data from a PV plant. You can also add personalized advertisements. Large external displays can be connected via the RS485 or S₀ interface.

Functions

Solar-Log™ Easy Installation

The installation and initial setup is automatic. The inverter detection and the Internet log-on starts immediately. The installation status is shown on the LCD-Display. Any subsequent manual configurations of the Solar-Log™ can be performed conveniently from a PC via the WEB interface. Easy Installation is compatible with the Solar-Log™ WEB "Commercial Edition" and "Classic 2nd Edition."

Self-consumption

The Solar-Log™ is available in two models, with and without an integrated power meter. The Solar-Log™ requires an external digital power meter to measure and display self-consumption as a graph. The power meter is already integrated into the new Solar-Log 300 Meter and Solar-Log 1200 Meter models and provides the same functions as an external meter as an external meter, only with slightly less precision.



The generated output and the consumption of the PV plant are displayed in the “Balance” section.

Cable cover

With its attractive design, the cable cover for the Solar-Log™ offers the best possible mechanical protection for interfaces and cables.

Data security

The data volume from the Solar-Log™ can be recorded for up to 20 years. The micro SD card is used to protect against any loss of data in the event of a power failure.

Options

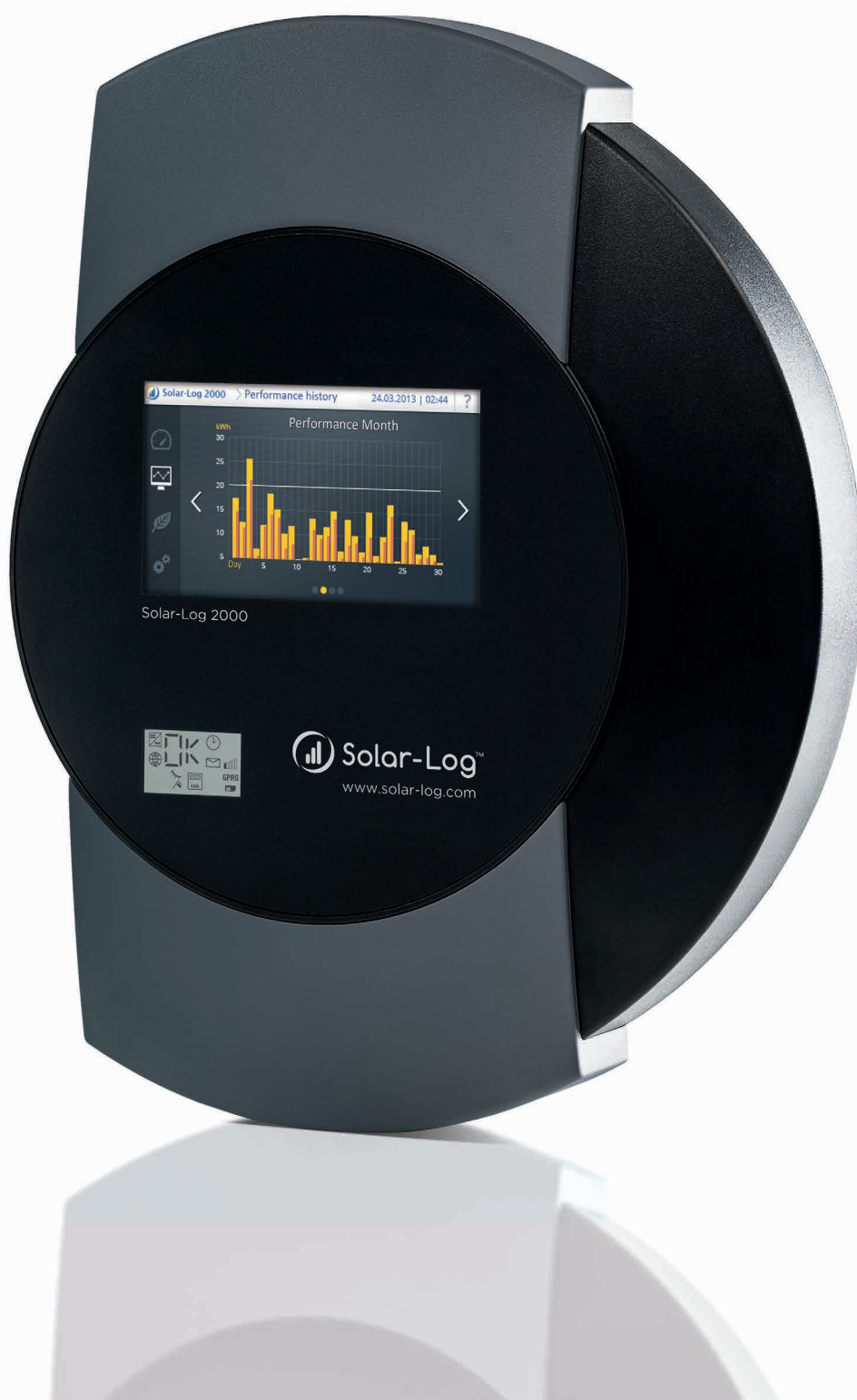
BT	WiFi	BT WiFi	PM+	PM+ WiFi	GPRS	PM+ GPRS	Meter
●	●	●	●	●	●	●	●

Optional Powermanagement
and cos phi control

Maximum plant size 2000 kWp

New: Color TFT-Touch-Display and
LCD-Status-Display for displaying
graphics and operation

Monitor central inverters and SCBs



Solar-Log 2000

For solar power stations and large-scale PV plants

Connections

Inverters

The Solar-Log 2000 is compatible with inverters from all major manufacturers. It can be connected to several of SDS supported inverters from one manufacturer with a maximum total power of 2000 kWp per Solar-Log 2000.

Interfaces

The interfaces can be used to connect inverters (up to two different manufacturers) and accessories such as Utility Meter, Pyranometer and SCBs. The Solar-Log 2000 Standard and PM+ have two RS485/RS422 interfaces and one RS485 interface. The Solar-Log 2000 GPRS and PM+/GPRS have one RS485/RS422 and one RS485 interface.

Sensors RS485

The sensors measure irradiation, temperature and wind speed. To avoid any potential capability issues, please check if sensors can be combined with your particular inverter brand.

Meter S_0 in or RS485

The meter can record your consumption data, serve as an inverter and measure the power from incompatible inverters.

RS485 or S_0 out

Connect a large external display to gain an additional overview of the data.

Ripple Control Receiver

The signal to reduce active power is generally sent via a Ripple Control Receiver or remote control technology. Up to 2 Ripple Control Receivers can be connected to the 2000 PM+, one for power reduction and one for reactive power control.

Solar-Log 2000 USB Connection and Data Export

A USB stick can be connected to manually install new firmwares with additional inverter support or new functions, or to transfer quick and secure backups and other data.

Display Options

TFT-Touch-Display

You can operate Solar-Log™ directly on the device and display yield reports as graphs on the high-quality Color TFT-Touch-Display.

Solar-Log™ WEB

The Solar-Log™ WEB "Commercial Edition" online portal expands the monitoring function of the Solar-Log™ and offers comprehensive reporting options in the form of graphs and tables via the internet.

Solar-Log™ APP

You can access your data and graphical reports at any time from anywhere in the world with the Solar-Log™ APP.

Solar-Log™ Dashboard

The Dashboard is a feature of the WEB "Commercial Edition" that displays all important information for a plant such as yields, CO₂ savings and plant performance.

Accessing the Solar-Log™

The Solar-Log™ is operated from a PC with any standard web browser and via the TFT-Touch-Display. Remote access to the WEB "Commercial Edition" is possible.

Solarfox® large and external display

A large external display used in combination with the Solar-Log™ can visually present the live data from a PV plant. You can also add personalized advertisements. Large external displays can be connected via the RS485 or S₀ interface.

Options

Solar-Log 2000 PM+ & Solar-Log™ Utility Meter

Combining the Solar-Log 2000 and Utility Meter simplifies implementation of the diverse requirements for powermanagement in Germany. The voltage-dependent reactive power control, Q(U) function, is accomplished by measuring the medium voltage with the Utility Meter. The combination of the Solar-Log 2000 and Utility Meter is also needed to send a confirmation of the current amount of feed-in power to the grid operator.

Solar-Log 2000 & PM-Package

For plants larger than 100 kWp, remote control of the reactive power supply and power limitations are required along with a confirmation of the current amount of feed-in power.

In practice, each grid operator stipulates their own signalization variant in the technical connection requirements (TAB). To fulfill the requirements from a particular grid operator, Solare Datensysteme offers a grid company specific “PM-Package.” This package includes hardware that is adjusted to a company’s remote control technology and profile file.

Solar-Log™ String Connection Box (SCB) or String Monitoring Box (SMB)

When used with the Solar-Log™ WEB “Commercial Edition” and either the SCB or SMB, the Solar-Log 2000 monitors every single string, ensuring the most complete and secure monitoring for large-scale PV plants with exact error identification and localization.

Options	BT	WiFi	BT WiFi	PM+	PM+ WiFi	GPRS	PM+ GPRS	Meter
	-	-	-	●	-	●	●	-

Functions

Self-consumption

The Solar-Log 2000 offers the option to measure the amount of self-produced power consumed and to present it graphically via the Solar-Log™ WEB “Commercial Edition”. A digital power meter serves as a consumption meter.

Cable cover

With its attractive design the cable cover for the Solar-Log™ offers the best possible mechanical protection for interfaces and cables.

Solar-Log 2000 Data Security

The data volume from the Solar-Log™ can be recorded for up to 20 years. The micro SD card is used to protect against any loss of data in the event of a power failure.

Solar-Log 2000 Alarm Function

This provides your plant with anti-theft protection and an external alarm against burglars and vandals.

Product comparison		Solar-Log 300	Solar-Log 1200	Solar-Log 2000
Basis Functions	PM+ ²⁾	●	●	●
	PM+ / WiFi ²⁾	●	●	-
	PM+ / GPRS ²⁾	●	●	● ⁴⁾
	Bluetooth (BT) ²⁾	●	●	-
	WiFi (wireless LAN) ²⁾	●	●	-
	Bluetooth (BT) / WiFi ²⁾	●	●	-
	GPRS ²⁾	●	●	●
	Solar-Log™ Meter (CT)	●	●	-
	Central inverter SCB and SMB	-	-	●
	Communication interface	1 x RS485 / RS422 (1 inverter manufacturer per bus)	1 x RS485 1 x RS485 / RS422 (1 inverter manufacturer per bus)	1 x RS485, 2x RS485 / RS422, 1 x CAN (1 inverter manufacturer per bus)
Plant Monitoring	Max. plant size	15 kWp	100 kWp	2000 kWp
	Max. cable length	max. 1000 m ¹⁾	max. 1000 m ¹⁾	max. 1000 m ¹⁾
	String monitoring (depending on type of inverter / on tracking level)	●	●	●
	Inverter failure, status of fault and power monitoring	●	●	●
	Sensor system connection (irradiation / temp. / wind)	● ³⁾	● ³⁾	● ³⁾
	E-mail and text message (SMS) alert	●	●	●
	Alarm (local)	-	-	●
	Yield forecast	●	●	●
	Self-produced energy consumption: Digital electricity meter	●	●	●
	Self-produced energy consumption: Managing external appliances	●	●	●
Visualization	Integrated web servers	●	●	●
	Graphic visualization – PC local and internet	●	●	●
	LCD-Status-Display	●	●	●
	Display on the unit	-	4.3" TFT color display	4.3" TFT color display
	Controls on the unit	-	via touch display	via touch display
	Large external display RS485 / S ₀ pulse	●	●	●

Product comparison	Solar-Log 300	Solar-Log 1200	Solar-Log 2000	
Ethernet network	●	●	●	Interfaces
USB flash drive	●	●	●	
Potential-free contact (relay)	-	●	●	
Alarm contact (anti-theft)	-	-	●	
Power supply voltage/device voltage/current consumption	115 V – 230 V / 12 V / 3 W			General Data
Ambient temperature	-10 °C to +50 °C			
Housing/dimensions (w x d x h) in cm/ Mounting/Protection level	Plastic / 22.5 x 4 x 28.5 / Wall-mounted / IP 20 (indoor use only)			
Connection to Solar-Log™ WEB “Commercial Edition”	●	●	●	
Multi-lingual (DE, EN, ES, FR, IT, NL, DK)	●	●	●	
Memory, Micro-SD, 2 GB, endless data logging	●	●	●	
Warranty	5 years			

1) Depending on the inverter used, and the cable length (details can also vary from one type of device to another).

2) Other important information about Bluetooth and compatibility, Powermanagement, self-consumption and SCB and SMB inverters can be found on our website www.solar-log.com.

3) Using every inverter on the same bus is not always possible, please see the inverter database www.solar-log.com.

4) Solar-Log 2000 PM+ / GPRS Communication interface 1 x RS485, 1 x RS485 / RS422 (1 inv. manufacturer per bus)

Accessories	Solar-Log 300	Solar-Log 1200	Solar-Log 2000
Accessories	Ready-to-install cable kits for most supported inverters		
	Digital electricity meter		
	PowerLine Package		
	RS485 Wireless Package		
	Sensors		
	Overvoltage protection		
Accessories for SMA inverters	Special PiggyBack RS485 (except TL-20 series)		
	Data Modul SMA RS485		

Top Features

Solar-Log 300

Solar-Log 1200

Solar-Log 2000

LCD-Status-Display	Status display for installation and operations		
	Installation is possible without PC and installation expertise.		
Easy Installation	The inverter detection and Internet registration is enabled by default and is started automatically.	Inquiry for additional information, then automatic inverter detection and internet registration.	-
Network recognition	Automatic search for the DHCP server and assignment of a valid IP address in the local network.		
Local network accessibility	Registration is done with its name. The IP address of the Solar-Log™ no longer needs to be known, unless there are several Solar-Logs on the network. The Solar-Log™ can be accessed directly from a web browser with this address: http://solar-log .		
Solar-Log™ Meter	Monitoring, feed-in management and power meter.		-
	Monitoring, optimization and managing of self-consumption with a fixed regulation of active power including the calculation of self-consumption.		
Additional functions	Evaluation of Sensor Box Commercial data		
	-	-	Monitoring of central inverters
Support for the Solar-Log™ SCB/SMB	-	-	Individual string monitoring
Solar-Log™ PM+ functionality	Remote controlled active power reduction and reactive power adjustments		Monitoring large plants with support of the Solar-Log 2000 or Solar-Log 2000 PM+ with active power reduction and reactive power control along with response signals.
Web connection / Data transfer	The HTTP-based incremental transfer to the Solar-Log™ WEB “Commercial Edition” and Solar-Log™ WEB “Classic 2nd Edition” reduces the amount of data to transfer and transfer times.*		

* It is possible to make a data transfer to a third-party portal once per day via FTP - an additional license is required for more frequent transfers.

Article Number	Solar-Log 300	Solar-Log 1200	Solar-Log 2000
Standard	255574	255591	255592
BT	255577	255585	-
WiFi	255576	255584	-
BT / WiFi	255578	255586	-
PM+	255579	255587	255594
PM+ / WiFi	255580	255588	-
GPRS	255575	255583	255593
PM+ / GPRS	255581	255589	255595
Solar-Log™ Meter (CT)	255582	255590	-

Interface	Solar-Log 300	Solar-Log 1200	Solar-Log 2000	
RS485/RS422 – interface usage	RS485 / RS422 – combined interface usage	RS485 – interface, RS485 / RS422 – combined interface usage	RS485 A – interface, RS485 / RS422 B – / RS485 / RS422 C* – combined interface usage	
	Inverter connection			Inverter Interfaces
	Connection of a Sensor basic to record environmental data (irradiance and module sensor)	Connection of a Sensor Box Commercial to record environmental data (irradiance, module and ambient temperature, wind sensor)		
RS485 – interface usage	Connection of meter for self-consumption according to IEC 60870			
	Connection of the display panels produced by Schneider Displaytechnik, Rico or HvG			
	Smart Home Relay Box connection for the management of consumption data			
	-	-	Connecting the Utility Meter and I/O Box for PM remote control technology	
RS422 – interface usage	RS422 Fronius / Sunville connectible without additional interface converters			
CAN-Bus	-	-	For the connection of e.g. Voltwerk inverters	
	S ₀ pulse input – for optional recording and calculation of self-produced power consumption			Additional Function Interfaces
2x S ₀ in / 1x S ₀ out	Second input to connect an additional power meter			
	S ₀ pulse output to connect large external displays, pulse factor can be set to any value			
Relay	-	For external switch control, e.g. heat pumps		
Alarm	-	-	Connection for anti-theft protection via contact loop for external alarms via potential-free contact	
	To access data			
USB connection	Import firmware updates at plants			
	PM+ (Powermanagement)			
PM+ interface (optional)	For connection of a Ripple Control Receiver to regulate the plant			
	Fulfills the EEG 2012 requirements (Germany)			
Solar-Log™ Meter (optional)	Current measurements via transformers (extra accessory) up to 2 x 3 phases or 6 single phases			
Network	Connection to the internet (Ethernet, fixed IP address or DHCP)			Net-work
GPRS (optional)	Antenna connection and SIM card slot for Solar-Log™ with integrated GPRS			

* not with GPRS models



02

Solar-Log™ WEB

The best way to present

Keeping everything in sight and under control: The Solar-Log™ WEB features concise presentation options that can be accessed from anywhere in the world via the internet. With this internet service, the plant yields, error messages and configuration data from the Solar-Log™ are transferred to our servers.

Solar-Log™ WEB comes in two versions, both of which are tailored to your needs. With the “Commercial Edition,” the plant owner can purchase a service contract from the installer. The owner does not have to worry about anything since the status messages are sent directly to the installer. This enables installers and service providers to react immediately by taking care of the problem remotely or by making a service call. The Solar-Log™ WEB “Commercial Edition” is also a central control element that allows installers to adjust settings and activate functions remotely. The plant owner has around-the-clock access to the yield and plant information. The “Classic 2nd Edition” offers basic plant monitoring functions. Private plant owners monitor their own plant and independently evaluate faults. There is the option to display, analyze and compare yields over a period of weeks, months or years.

Solar-Log™ WEB “Commercial Edition”

The “Full Service” option from the installer, portal operator and service provider: Installation, Monitoring, Maintenance.

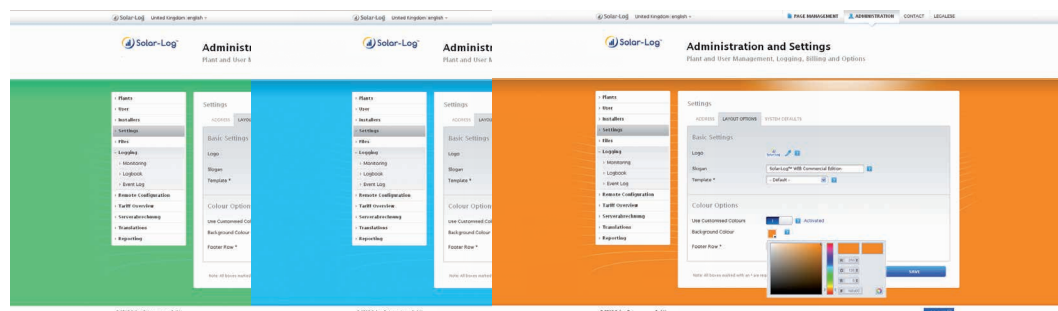
The Solar-Log™ WEB “Commercial Edition” has been developed for installers, portal operators and service providers. You can offer the plant owner a service contract to manage the PV plant remotely and to offer comprehensive professional monitoring. For the plant owner, this is the simplest and safest way since all of the installation and monitoring will be professionally and properly handled.

Professional Remote Maintenance

Without having to leave the office, the installer can react to error messages immediately by taking care of the problem remotely with access to configuration settings. If needed, service calls can also be arranged immediately. The plant owner also always has access to the yield and plant information.

Custom Designed Monitoring Platform

The possibility to customize the design of your own platform is a huge service benefit for installers. A range of function modules are available that can be integrated as required at the touch of a button without expert knowledge. Pages individually designed with HTML can also be integrated. Precise color selection and HTML coding make it possible to customize the appearance to match the customer’s corporate design.



Template with different sample colors

Solar-Log™ WEB “Commercial Edition” Advantages and Benefits

1 Professional Maintenance

The “Full-Service” maintenance concept offers plant operators ideal plant maintenance.

2 Effortless Installation

Use the Solar-Log™ Easy Installation to quickly and easily integrate plants into the Solar-Log™ WEB “Commercial Edition.”

3 Efficient Monitoring

Review the status of all monitored plants at a glance, ensuring quick and efficient monitoring.

4 Fast Service Restoration

Detect, analyze and remedy errors quickly with the diagnostic tools, saving time and money.

5 Simple Administration

Manage and log all activities, events and appointments in the plant logbook.

6 Detailed Reports

Keep plant operators informed with reliable and easy-to-read reports. Reports can also be generated automatically with minimal effort.

7 Concise Presentation

In connection with the WEB “Commercial Edition”, the Solar-Log™ APP, Solar-Log™ Dashboard and Solarfox® can access plant data and offer various options to present the data.

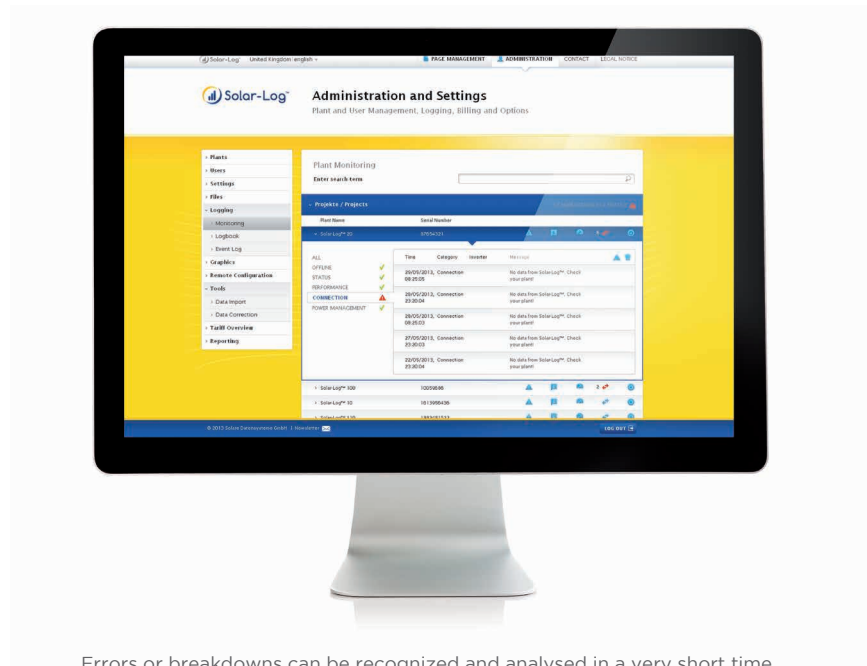
8 Protection against data loss

Plant yields, error messages and configuration data are stored, secured and backed up on our server.

Power tools for installers, portal operators and service providers: Solar-Log™ WEB “Commercial Edition”

Simple integration of the PV plant and remote configuration

The set-up wizard guides you through the first steps to integrate the plants into Solar-Log™ WEB “Commercial Edition.” Once integrated, the Solar-Log™ settings can be conveniently accessed remotely via the internet, greatly reducing the installation time and effort required on site.



Errors or breakdowns can be recognized and analysed in a very short time.

Always in the know with regular reports

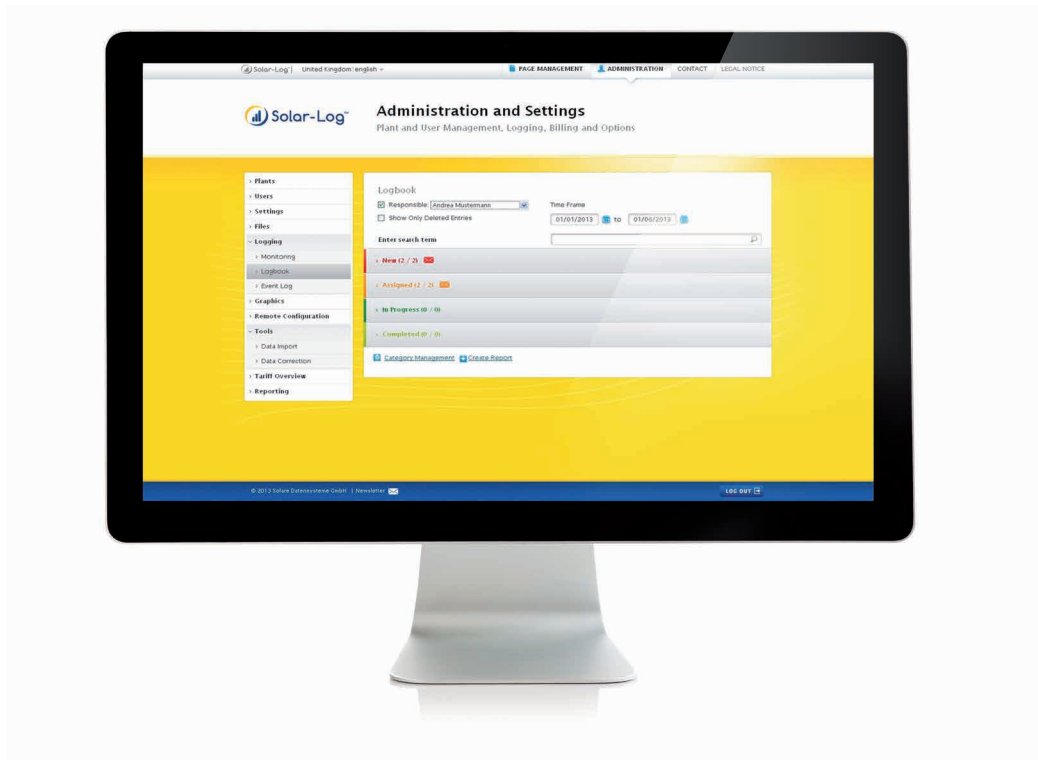
A well-arranged yield report for every plant that is monitored by Solar-Log™ WEB “Commercial Edition” is available in a PDF or CSV format. If desired, the reports can be automatically generated on a weekly, monthly or yearly basis and sent to as many e-mail addresses as you want. The ideal option for installers and their customers to be reliably informed on a regular basis.

Documents are available when you need them

Documents for specific plants such as string plans, contracts or specifications can be uploaded to the portal and are accessible at all times by authorized users.

Benefits for the plant operator

When quality of service plays a big role, the WEB “Commercial Edition” is the perfect solution with the convenience it offers to plant owners. No in-depth technical knowledge is required, there is no need to invest time in monitoring and managing the plant. However, when there is a malfunction, you are informed immediately and offered possible solutions.



The plant logbook includes the option of an integrated ticket system from which entries may be sorted according to their status. Service calls and task can be concisely managed and logged.



Upgrading to Solar-Log™ WEB “Commercial Edition”: Separate Portals, Central Administration

Service providers, project companies or investors have the option to administer several WEB “Commercial Edition” Portals at the same time with the comfort of a single operator interface. Every portal operator has full access to their individual portal and has limitless possibilities to design and to use it. This offers central and convenient monitoring with a single log-in.



No basic fees, no long-term commitments

There are no annual basic fees to use the software, just a fee per plant. Every plant can be initially monitored for 30 days without obligation before plant specific charges arise. Hence, all Solar-Log™ fees can be correlated to the respective customers. On site or online trainings are available to get the most out of all of the possibilities that the Solar-Log™ WEB “Commercial Edition” has to offer.

The perfect overview for installers, service providers and plant operators

A wide range of reporting and presentation options

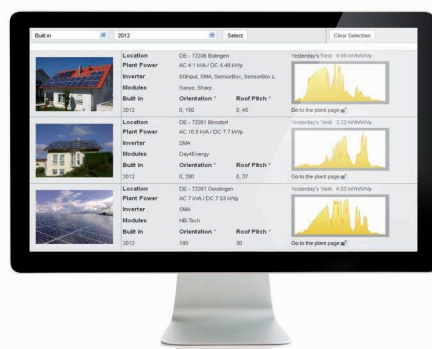
The Solar-Log™ WEB “Commercial Edition” can process and analyze plant data in a graphic or numerical format in the form of daily, monthly and annual data reports. In addition, the yield line, input voltage, individual strings and inverters can be displayed. With the help of the Sensor Box Commercial, it is also possible to display environmental data and other benchmarks that aid plant monitoring.



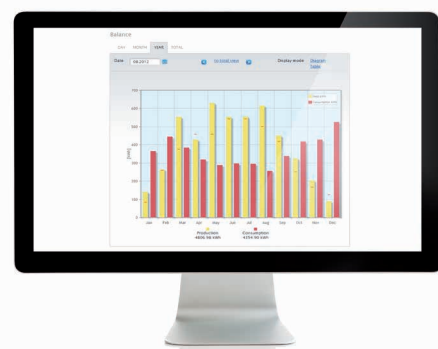
Monthly overview: Display of the power production and consumption.



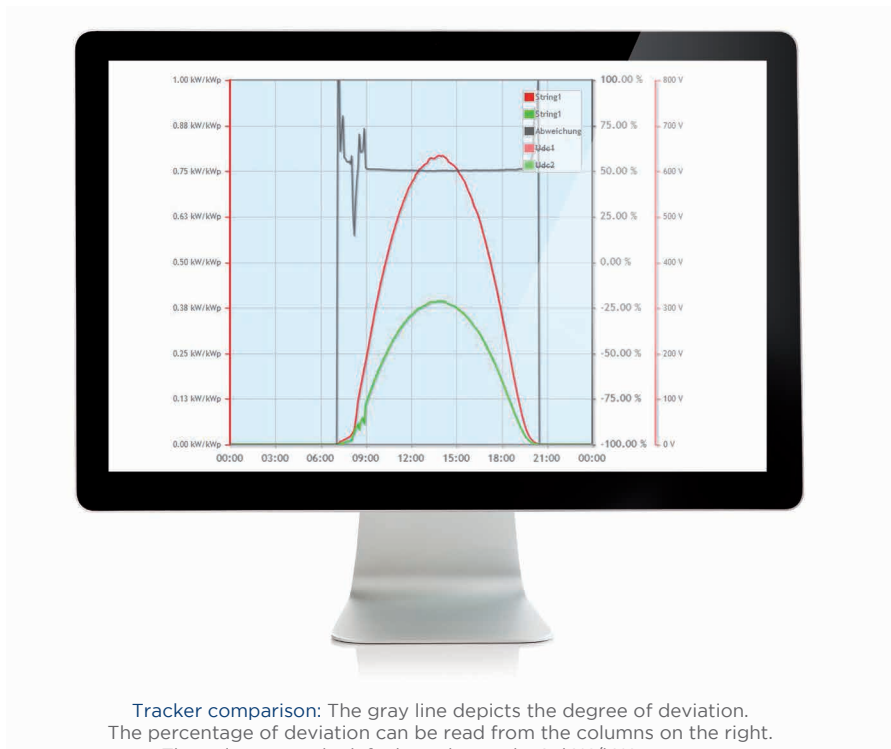
Data Overview: The overview option impressively displays the overall performance, the total yield or the amount of CO₂ emissions that have been avoided.



Plant overview: The informative plant overview with search options.



Year overview: Display of the power production and consumption.



Comprehensive Solar-Log™ failure monitoring and power balancing

String monitoring

To ensure that the solar power plant runs efficiently without downtime, the power ratings of individual inverters are compared against one another. Here, the Solar-Log™ examines the data in terms of kWh / kWp (specific power) of the inverters. This means that different sized inverters can still be compared against one another. On multi-string tracking inverters, the Solar-Log™ can detect deviations right down to string level. The Solar-Log™ transmits details of these deviations either by e-mail or by text message (SMS).

Inverter status

The Solar-Log™ continuously records the status and fault codes of the inverters, i.e. you always have peace of mind that all connected inverters are working properly. Fault codes from each manufacturer are saved in the Solar-Log™ as well as on the internet. In the event of a malfunction they are transmitted by e-mail or text message (SMS).

Message transmission

The Solar-Log™ transmits yield and fault messages either by e-mail or by text message (SMS). The LCD-Status-Display provides information about the operating status of the data logger. With the Solar-Log 1200 and 2000, variant values are also displayed on the screen.

Solar-Log™ WEB “Classic 2nd Edition”

Online Monitoring for Plant Owners

The Solar-Log™ WEB “Classic 2nd Edition” has been developed for technically adept private plant owners. It offers all of the basic functions for monitoring and analyzing status messages. The yields and reports are presented as graphs. The “Classic 2nd Edition” can be used free of charge, in any country or region, with plants up to 30 kWp. There is an option to use for plants with more than 30 kWp for small fee.



Daily overview with presentation of yield and consumption balance.

All information at a glance

Present your photovoltaic plant's performance data in a unique way with customized style. The Dashboard delivers a concise presentation of yields, CO₂ savings and performance. As an alternative, we also offer large external Solarfox® displays and the newly developed Solar-Log™ APP for mobile access.

Solar-Log™ Dashboard

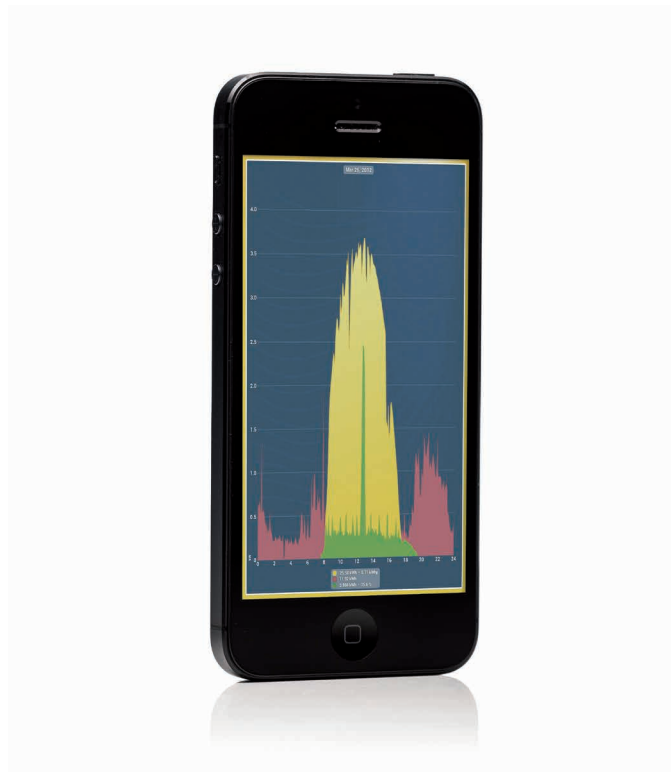
The Dashboard provides customers a dynamic display of all of the important plant information, such as yield, CO₂ savings and performance. The display can be set up by selecting up to any four of the following elements: Current Production, Yield History, Earnings, Weather, Plant Information and Environmental Contribution. For the visual presentation of a plant, any TV can be connected to the Dashboard with a simple Android HDMI stick. The Dashboard is only available with the Solar-Log™ WEB "Commercial Edition."



Solar-Log™ Dashboard – displaying PV plant performance at a glance.

Solar-Log™ APP

The Solar-Log™ APP allows you to always have your data with you. Current and past data is represented in the form of daily, monthly, annual and total overviews. Additionally, the CO₂ savings from the plant, power consumption and self-consumption are displayed. Intuitive finger gestures (swipes) enable you to quickly navigate between different time periods. The APP saves all of the data in an internal cache so that once loaded it can also display yields - even when no Internet connection is available.



Several different PV plants can be monitored by the Solar-Log™ and visualized with this APP.



Supported plants include any that are accessible via the Solar-Log™ WEB “Commercial Edition” and “Classic 2nd Edition” Internet websites.

The Solar-Log™ APP is available for both iOS (e.g. iPhone, iPad, ...) and Android devices (e.g. Samsung Galaxy S3, Samsung Galaxy Tab 2, ...). The APP is available from the iTunes Store for iOS devices and from Google Play for Android devices free of charge.

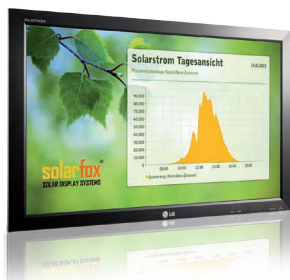
Solarfox® Large External Displays

Descriptive diagrams and graphics present a plant's performance in a user-friendly and easy to follow way. Present your contribution to the environment to visitors and customers by displaying diagrams of the plant's performance, CO₂ savings or self-produced power consumption. Individual customized graphics, texts and logos can be added to the presentation at any time.

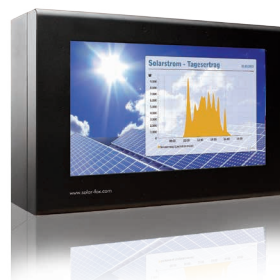


The German Federal Office of Economics and Export Control BAFA offers a 2,400 Euro funding program for displays in Germany.

(For more information: www.solar-fox.de/foerderung - in Germany)



Solarfox® SF-200 (LCD / Indoor)
24" (61 cm) to 47" (119cm)



Solarfox® SF-400 (IP65/Outdoor)
32" (81 cm) to 55" (140cm)



Solarfox® SF-300 (LED / Indoor)
24" (61 cm) to 55" (140cm)

For information and orders:

Solarfox® Solar Display Systems

SOLEDOS GmbH

Tel.: +49 60 58 - 91 638-0

E-mail: info@solar-fox.de

www.solar-fox.de

Product comparison

Classic 2nd Edition

Commercial Edition

	Plant monitored by	Plant owner	Installer / Portal Operator / Service Provider
	Annual fees	with costs, up to 30 kWp* free	with costs
	Plant registration	online: solar-log.com/classic2	online: Portal operator
Basis Functions	Yields per kWp (specific yields)	●	●
	Event log (error/status messages from the inverters)	●	●
	Data sheet with the essential information and plant image	●	●
	Performance comparison of the individual inverters and strings	●	●
	Data and fault messages via e-mail	●	●
	Compatible with Solar-Log™ APP for iOS and Android	●	●
	Compatible with Solarfox® large external display	●	●
	Standard transfer intervals: 30 min, 1 h, 2 h, 4 h, 8 h, daily	only standard	standard plus every 10 or 15 min
	Number of e-mail addresses for performance / fault messages	1	4
	Simple configuration - with Easy Installation	●	●
Monitoring & Management	Centralized and concise monitoring of several plants at a glance	-	●
	Remote configuration of the Solar-Log™	-	●
	Plant log book with ticket system and task assignment	-	●
	Central plant data administration (location, owner, inverter, information and module data)	-	●
	User administration and individual access rights	-	●
Portal Design	Page layout with precise color selection and customized logo	-	●
	Custom page design due to flexible Content Management System (CMS)	-	●
	Application as platform for promotional activities and customer relationship	-	●
	Configuration wizard to design the web pages	-	●
	Easily customized contact form	-	●
	Additional language options	Only the server language	●

Product comparison

Classic 2nd Edition

Commercial Edition

Dashboard with performance, yield, environmental contribution, weather forecast, plant information and plant earnings	-	●	Displaying Module
Display all current data (total yield, total output, CO ₂ emission)	-	●	
Integration of current data (total yield, total power output, CO ₂ emissions and much more) into one's own texts	-	●	
Display all plant locations on a map	-	●	
Overview of the reference plant with search options	-	●	
Graphical arrangement of up to 10 Solar-Logs	-	●	
Performance Ratio graphic (only when sensors are attached)	-	●	
String Connection Box graphic	-	●	
User-defined automatic yield report (CSV, PDF) via e-mail or FTP	-	●	
Powermanagement report with a calculation of yield losses (only when sensors are attached)	-	●	
Report on self-produced power consumption and balance	-	●	
Sensor value report	-	●	
Performance ratio evaluation	-	●	
Annual overview compared to several years	-	●	
Report on documented faults and service calls	-	●	
Yield report at the inverter level	-	●	
Simple integration or migration of plants from Classic 1st/2nd Edition	-	●	
Compatible with SMA Sunny WebBox (limited functionality)	-	●	
On request, customized Corporate Identity template	-	with costs	
On request, domain name of your choice (de/eu/com)	-	with costs	

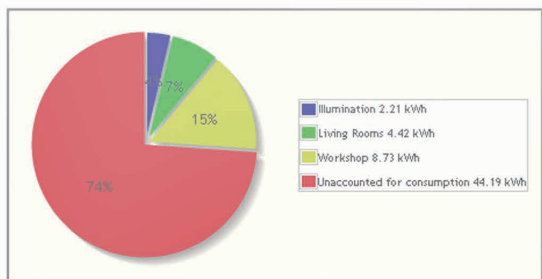
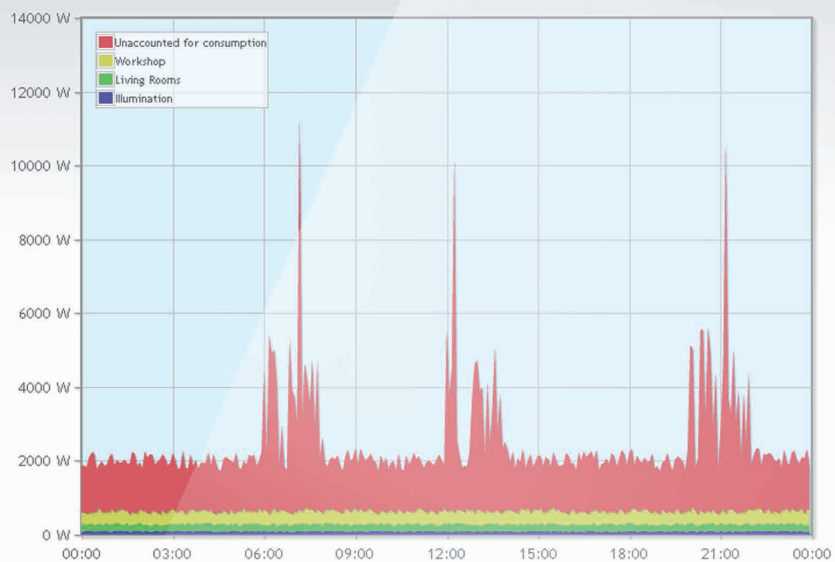
*) country-dependent

Changes & additions subject to change without notice.

Consumption

DAY MONTH YEAR TOTAL

Date 01.10.2013  < To the monthly graph [October](#) >



03

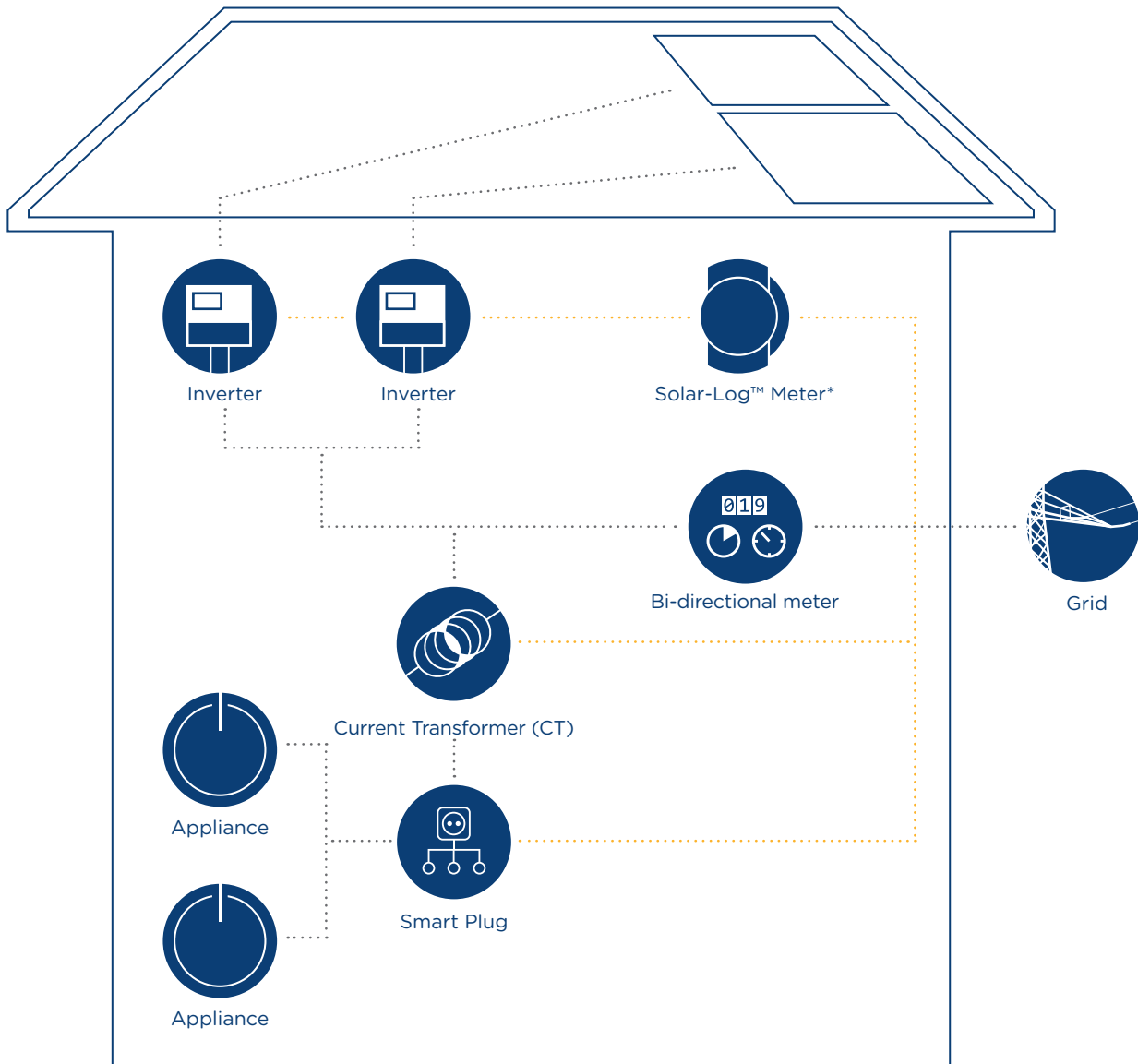
Energy Management

Efficient Power Management

Getting the most out of your power. Regardless of the amount of sunshine, smart controlling optimizes the use of self-produced power at all plants. Plant owners in Germany for example can easily implement requirements from the German Renewable Energy Act (EEG 2012) and have new options: Plants below 30 kWp, for example, can be throttled at 70 %. With Smart Timing, the power from the photovoltaic plant can be consumed directly, saving money and allowing customers to take rising electricity prices in stride. The Solar-Log™ monitors the power production and current consumption and indicates when enough energy for self-consumption is available. For investors with large solar plants, the Solar-Log™ delivers the hardware and software to implement efficient and reliable powermanagement. With very little effort, grid operators can be granted access to all of the control functions.

Smart Timing

Optimizing the consumption of self-produced power



*Please refer to your local regulations to see if using measuring transducers to record the total consumption for regulated grid feed is allowed.

More solar energy for one's own household or company

The Solar-Log™ maximizes the amount of self-produced power consumed. All devices offer the option to precisely control appliances via the Solar-Log™. Additional options to control appliances include networked "smart plugs", devices that fits on top of existing electrical outlets and the integrated relays on the Solar-Log 1200 and 2000.

The flexible linking system makes it possible to create different scenarios for when a particular appliance should be turned on or off. Heat pumps, electrical appliances, motors and pumps are ideal devices to help maximize the amount of self-produced power consumed. For example, you can create a "heat pump" profile with Solar-Log™ that has various running times configured to ensure a certain amount of heat even during periods with little sun. To carry out this optimization, all you need to do is measure your consumption. The Solar-Log 300 and 1200 Meter come with integrated power meters for two 3 phases (or each phase individually). The Solar-Log™ measures every phase individually and delivers the corresponding value. Additionally, two electricity S_0 meters or supported RS485 meters can be used to measure consumption.



This graphic clearly displays the PV plant has reached its break-even point.

Presentation options

In the display, the current power values are displayed and the amount of surplus power is calculated. This allows the operator to determine the ideal time for switching on external appliances. Depending on the amount of surplus, a "Smiley" emoticon indicates whether or not it makes sense to manually turn on appliances at a given time. If the power meter is configured as a "consumption meter", an additional "power balance" dialog is available on the touch screen.

Feed-In Management

Powermanagement makes it possible to temporarily reduce the amount of fed-in power which is required in Germany since the German Renewable Energy Act of 2009 (EEG). The Solar-Log™ software and hardware products cover the entire range of requirements for Powermanagement and provides a solution for every plant size.

Solar-Log™ functions for feed-in management		Solar-Log 300/1200/2000	Solar-Log 300 PM+/1200 PM+	Solar-Log 2000 PM+
Active Power	Reduction to X percent with or without the calculation self-consumption	●	●	●*
	Remote controlled reduction with or without the calculation self-consumption	-	●	●*
	Fixed value cos phi shift factor	●	●	●
Reactive Power	Fixed reactive power in Var	●	●	●
	Variable cos phi shift factor over characteristic curve P/Pn	●	●	●
	Remote controlled fixed value cos phi shift factor	-	●	●
	Remote controlled switch between fixed and characteristic curve P/Pn	-	●	●
	Remote controlled switch between fixed and characteristic curve Q(U)	-	-	●
	Variable reactive power via characteristic curve Q(U) (only with Utility Meter voltage measurement)	-	-	●
	Controlled factor at the feeding point (only with Utility Meter voltage measurement)	-	-	●
	Connection for two Ripple Control Receivers	-	●	●
Interfaces	PM Packages			
	Flexible interface for remote control technology Inputs: max. 4 analog and 9 digital Outputs: max. 3 analog and 10 digital	-	-	●
	Modbus TCP interface for a direct connection to remote control technology	-	-	●
	Solar-Log™ Master-Slave network	-	-	●

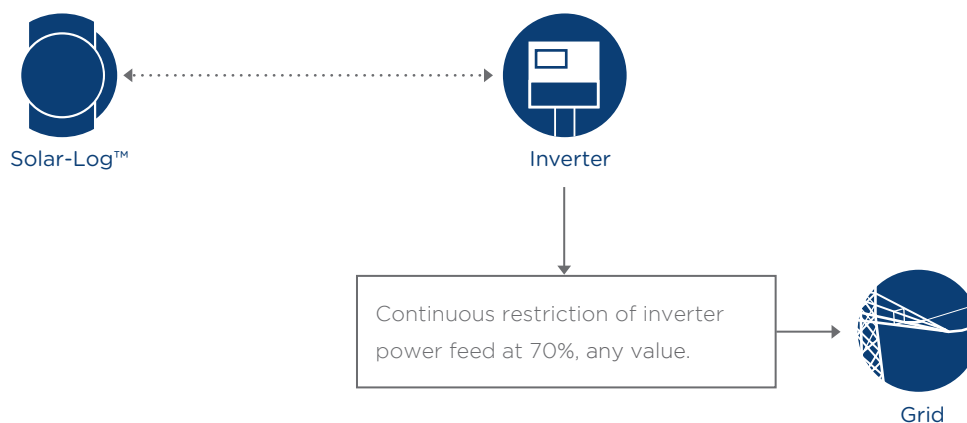
* allocation of self-consumption is not possible when using PM packages or Modbus TCP interface at the same time.

Powermanagement up to 30 kWp

Operators with a PV plant up to 30 kWp (German law at present) have a choice when it comes to power reduction. They can choose a remotely adjustable power reduction or a fixed reduction of 70 %. This fixed regulation is applied to 70 % of the power output from the installed module at the feeding point. The firmware of the Solar-Log 300, 1200 and 2000 offers two versions to implement the fixed 70 % power reduction.

1. 70 % fixed regulation

With the fixed reduction, the inverter's power feed is limited to 70 % of the module's output. The Solar-Log™ adjusts the inverter to 70 % to limit the maximum yield accordingly. Yield losses from about 3 to 5 % are to be expected with this function.

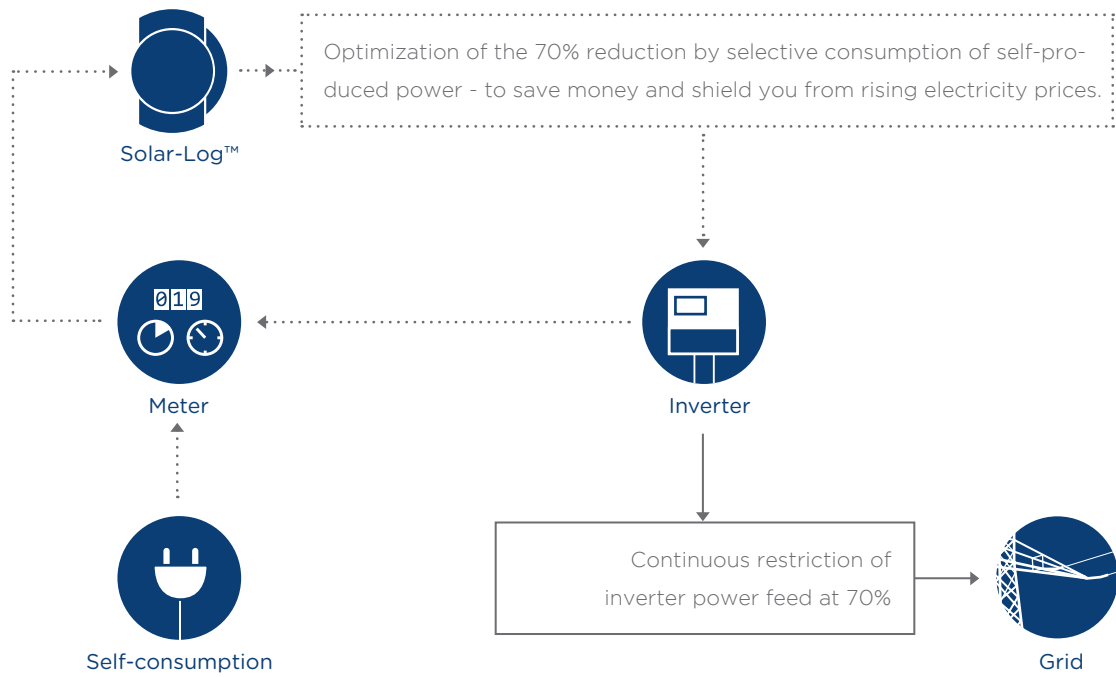


2. Remote controlled with the calculation of self-consumption

This function offers an innovative solution to minimize losses that result from the 70 % reduction. To carry out this function, the Solar-Log™ only needs a power meter. The Solar-Log™ calculates the amount of private consumption and the current amount of power being produced by the inverters. If the difference between the current production and consumption exceeds 70 % of the module's power output, the inverters are regulated accordingly.

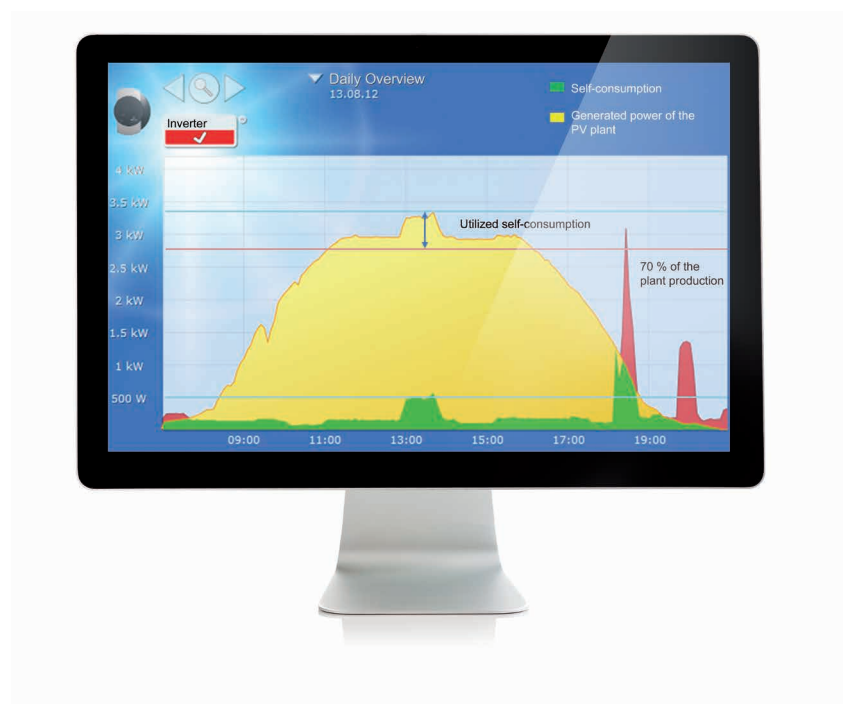


An additional external meter is needed to implement this function.



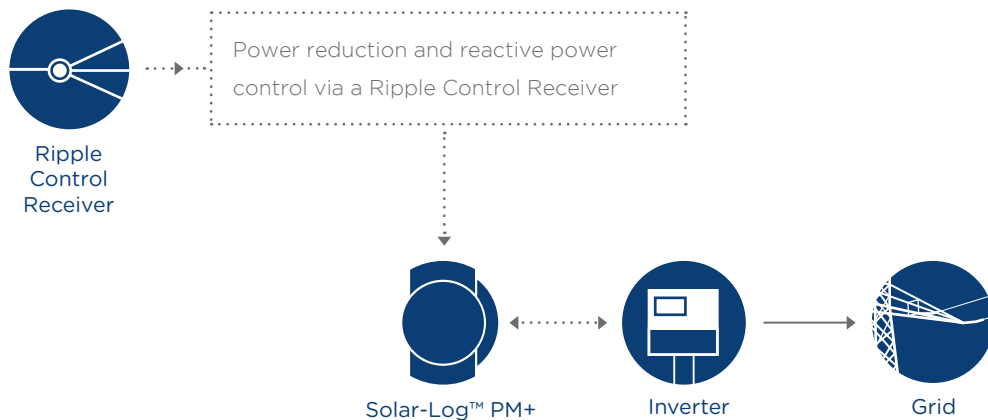
Example:

A plant with 10 kWp has to be limited to a maximum output of 7 kWp with the 70 % reduction. If an appliance, such as a stove, that uses 600 watts of power is turned on, the inverter could also convert 7.6 kWp into AC power. Only 7 kWp is delivered to the feeding point.



3. Simple Feed-in Management for plants up to 100 kWp in Germany

The requirement of "simplified" feed-in management from the German Renewable Energy Act (EEG) has to be implemented for plants up to 100 kWp. The signal to reduce active power is generally sent via a Ripple Control Receiver. The Solar-Log™ PM+ product line comes with an additional interface for potential-free contacts. Up to two Ripple Control Receivers can be connected to this interface, one for power reduction and one for reactive power control. Reactive power can be conveniently controlled from the Solar-Log™ and does not have to be entered for every individual inverter.



Simple feed-in management can also implement the "remote controlled with the calculation of self consumption" function. To carry out this function, the Solar-Log™ only needs a power meter.

Options	Solar-Log 300	Solar-Log 1200	Solar-Log 2000
70 % fixed reduction	●	●	●
70 % with self-consumption	+ Meter	+ Meter	+ Meter
Simple feed-in management	PM+	PM+	PM+
Simple feed-in management with self-consumption	PM+ / Meter	PM+ / Meter	PM+ / Meter
Feed-in management for large plants	-	-	PM+, Utility Meter, I/O

String Control

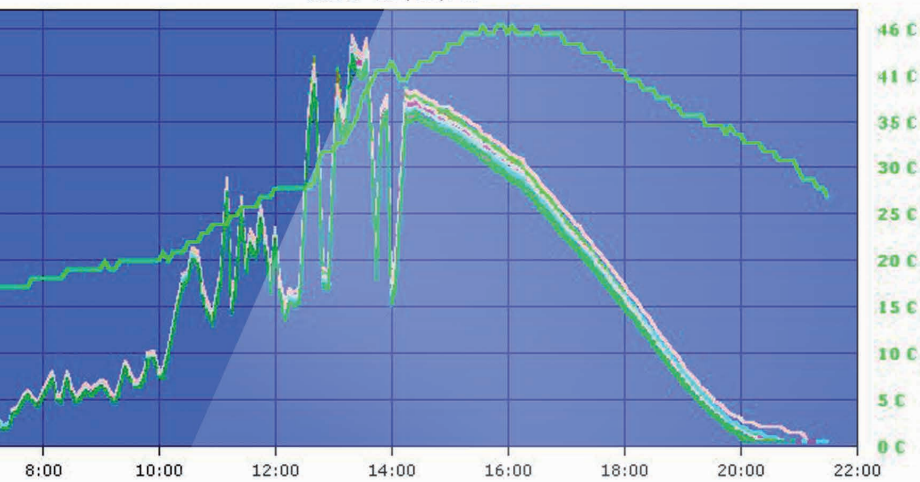
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Line	Area	Digital

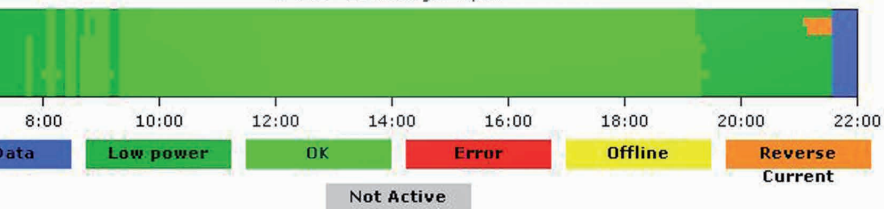
Udc	Idc	Idc-S	Pdc

SCB°C

SCB 1 - Udc/Idc/Pdc



1 SCB - 10 Analogue inputs



1 SCB - 1 Digital inputs



04

Managing and Monitoring Large Plants

Solar-Log™ is setting new standards for large plants

Since the grid cannot save energy but only allocate between generated and consumed power, a surplus of power may be produced under certain weather conditions. This could lead to a temporary grid overload and poor grid quality.

For this reason, the medium-voltage guidelines in Germany stipulate that grid operators need to be able to remotely measure and manage the power from their large feeding plants as required. These feed-in management requirements differ according to the PV plant's nominal power.

Managing Large Plants

The power grid management for photovoltaic plants in the medium voltage network in Germany

There are additional requirements for large plants (>100kWp in Germany) in the medium voltage network. In addition to the stipulations from grid operators on controlling photovoltaic plants, the information on the actual amount of fed-in power needs to be provided. The communication with the grid operators is usually carried out with remote control technology such as telecontrol systems in this plant class. Unlike ripple control technology, bi-directional communication is possible with remote control technology.

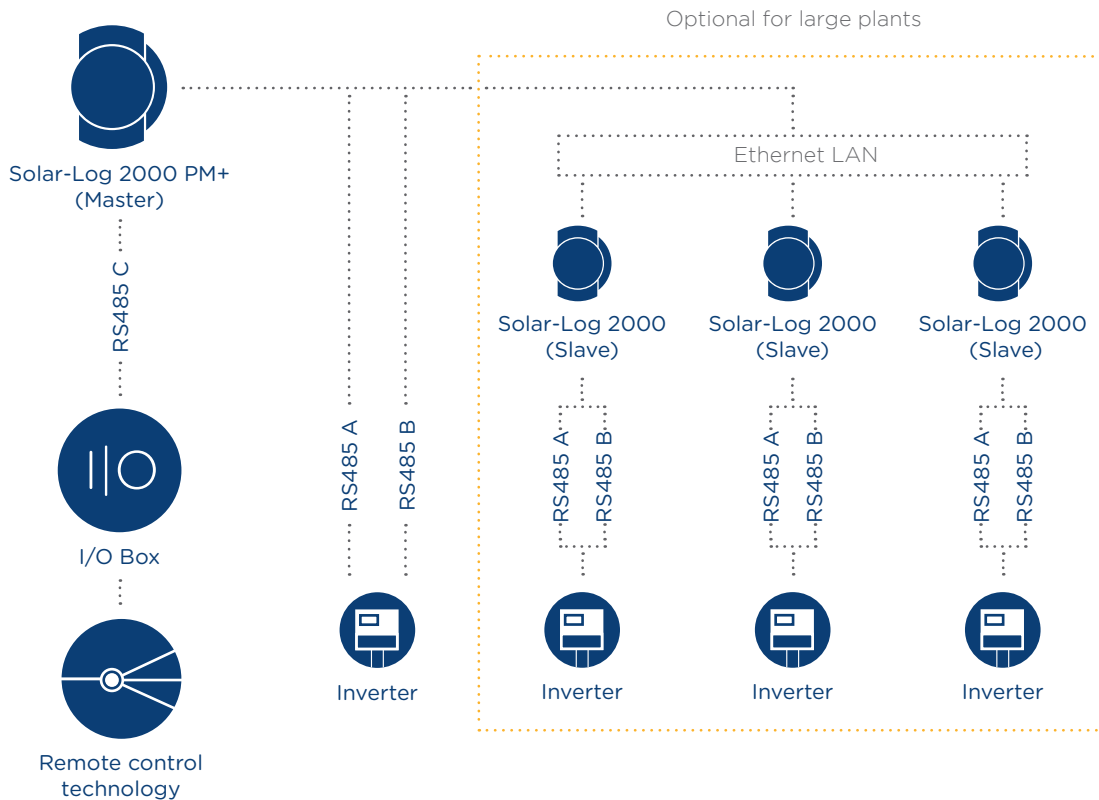
The signals are transmitted between the remote control system and Solar-Log 2000 via an I/O Box with the PM package. Depending on which value has to be transmitted to the grid operator, a measurement of transformer voltage, cos phi and/or current with the Solar-Log™ Utility Meter is required.

Controlling active power and regulating reactive power represents a serious technical challenge. Grid operators rely on various concepts here. The Solar-Log™ Utility Meter is used to control voltage-dependent reactive power via the Q(U) function and reactive power at the feeding point. The fixed value cos phi shift factor or performance-related cos phi functions can be implemented without measurements.



Feed-in management with Solar-Log™ networks

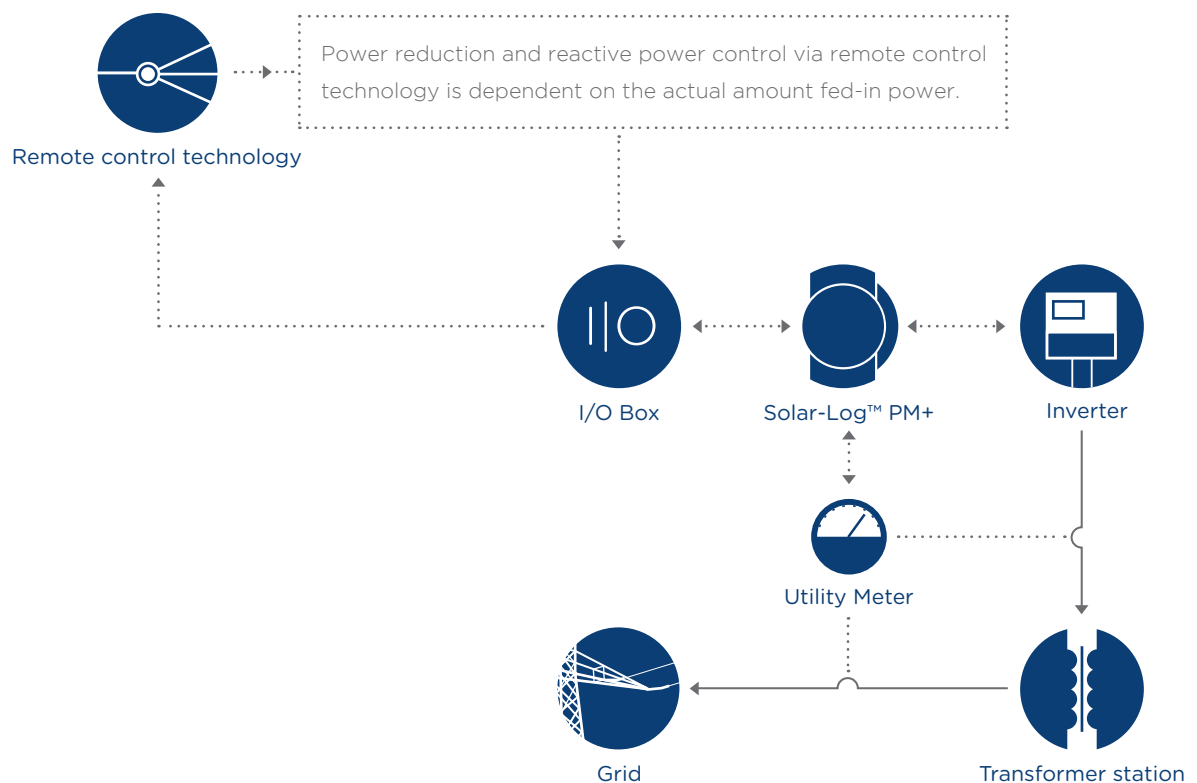
Solar-Log 2000 data loggers are linked together via Ethernet to implement feed-in management at plants in the megawatt range. This linking over the network allows the control signals from Ripple Control Receivers to be interchanged.




The grid operator's signals are received by the Solar-Log 2000 PM+ (master) and distributed to the connected inverters via the Solar-Log 2000 (slaves). The master can be connected to up to nine slaves in this setup. Linking the Solar-Logs together over the network helps to implement complex requirements (several plant parts, feeding points and inverters from several manufacturers).

Feed-in management for plants over 100 kWp in Germany

It is absolutely essential for plants with more than 100 kWp to use feed-in management. In contrast to simple feed-in management, a response signal with the actual amount of fed-in power is also required. That is why most grid operators deploy remote control technology. The Solar-Log™ I/O Box can receive and send the wide-range of signals from various grid operators. This function is only available with the Solar-Log 2000 PM+. When used with the Utility Meter, measured values such as reactive power, voltage and currents are reported back.



 A Solar-Log 2000 PM+ and grid company specific PM profile with I/O Box(es) are required for this function. Depending on the power company, a Utility Meter might also be required. For more information: www.solar-log.com/pm+

Solar-Log™ PM-Packages

Grid operators employ a wide range of signals that are required for feed-in management and that are used to send commands and the response signals. The Solar-Log™ PM-Package is a single system to implement the various requirements with minimum effort. The PM-Package consists of I/O Boxes and PM profiles. The I/O Boxes are a flexible gateway between remote control technology and the Solar-Log 2000. The input and output signals from the I/O Boxes are defined by the PM profile according to the grid operator requirement.



Technical Data

Inputs	up to 4 analog and up to 9 digital
Outputs	up to 3 analog and up to 10 digital
Rated operating voltage	10-24 VDC

Solar-Log™ Utility Meter

The Solar-Log™ Utility Meter is a universal metering device. It can be integrated in both low- and medium-voltage networks (via a transformer) and is needed for various tasks. In addition to voltage-dependent reactive power control $Q(U)$, it is also used for reactive power control at the feeding point and to record the data that is needed to send signals to the grid operator.



Technical Data

Voltage measurement	17 V-520 V L-L, 4 inputs
Current measurement	max. 5A
Interface	RS485
Rated operating voltage	135-340 VDC voltage supply
Mounting	Top hat rails, 95-240 VAC / 135-340 VDC voltage supply

Article Number

Solar-Log™ Utility Meter	255385
Measuring unit for cos phi control in conjunction with the network voltage	
The Solar-Log™ PM-Packages consist of an I/O Box with a grid operator specific PM+ profile.	on request*

*The operator specific PM+ profile needs to be ordered.

Solar-Log™ String Connection Box (SCB)



The Solar-Log™ SCB, in connection with Solar-Log 2000 and Solar-Log™ WEB "Commercial Edition", monitors each individual string and ensures secure and accurate monitoring of PV plants. Large plants can be consistently and reliably monitored with up to 60 SCBs per Solar-Log™. The SCB adheres to the highest standards of quality and consists of high-quality standard components.

Product details

A Sensor Box Commercial delivers additional reference values. The Solar-Log™ and Solar-Log™ SCB only work with the Solar-Log™ WEB "Commercial Edition". All components used comply with current DIN and VDE standards. The Solar-Log™ SCB is designed for systems with up to 900 volts, including all components from the terminals to cables. An 1100 V, 160 A circuit breaker ensures reliable all-terminal DC disconnection at full load. The Class I / II, "B / C" surge protection as well as string protection on the positive and negative terminal provides comprehensive protection of connected modules. Additionally, stability at high temperature ensures continuous operations. The aluminum housing is able to withstand severe weathering without any difficulty. Clearly defined connections with contact protection inside the box assure high levels of reliability. The box is powered by the DC voltage from the modules, eliminating the need for external power cables.

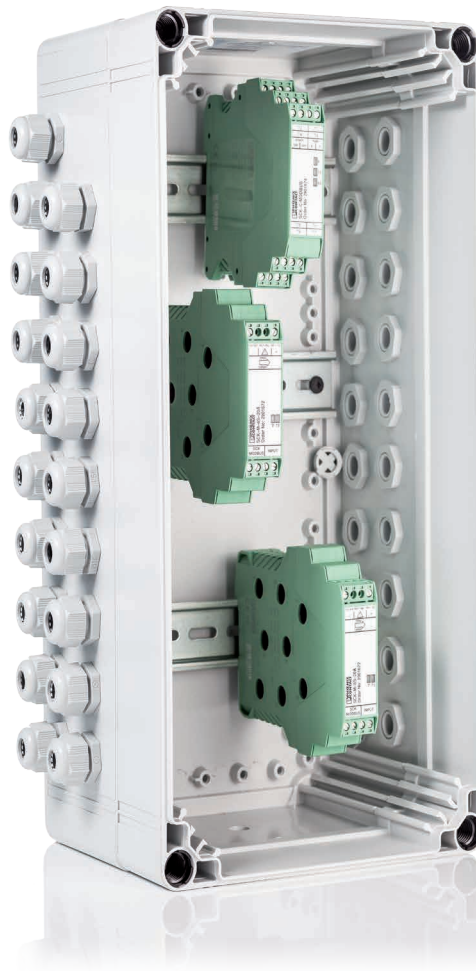
Product comparison	Solar-Log™ SCB 12 DC/DC ¹⁾	Solar-Log™ SCB 16 DC/DC ¹⁾	
Number of inputs	12 x Plus / 12 x Minus	16 x Plus / 16 x Minus	DC-Input
Cable cross-section, flexible	1 – 6 mm²	1 – 6 mm²	
Input voltage – DC	440 – 900 V ¹⁾	440 – 900 V ¹⁾	
Cable current per string – DC	12 A	10 A	
Number of fuse holders/ fuse dimensions in mm	12 + 12 / 10 x 38	16 + 16 / 10 x 38	
Type of protection (not in- cluded in the delivery)	IEC 60269-6	IEC 60269-6	
Overvoltage protection, type	Class I / II (B / C)	Class I / II (B / C)	
Number of outputs	1 Plus / 1 Minus	1 Plus / 1 Minus	Output
Cable cross-section, flexible	35 – 240 mm²	35 – 240 mm²	
Max. output voltage	900 V ¹⁾	900 V ¹⁾	
Cumulative current	160 A	160 A	
Grounding protection	External M12 connection pin	External M12 connection pin	
Rated operating voltage, U _e (DC)	1100 V _{DC}	1100 V _{DC}	DC Circuit
Rated operating current in category DC22B, I _e	160 A _{DC}	160 A _{DC}	
Mechanical service life	25,000 engagements / 120 per hour	25,000 engagements / 120 per hour	
Reference standard	IEC 60947-3	IEC 60947-3	
Energy consumption/DC supply voltage ¹⁾	< 8 W / self-sustaining from 440 to 900 V	< 8 W / self-sustaining from 440 to 900 V	Data Monitoring
Ambient temperature	-20 °C to +65 °C	-20 °C to +65 °C	
Measuring channels (current – DC)	12	16	
Available data	String currents (12)	String currents (16)	
	Total voltage		
	SCB internal temperature		
	Overvoltage protection triggered		
	Sensor data (irradiance, wind, module tem- perature, ambient temperature)		
Configuration	Solar-Log™ Config Interface		
Type	RS485	RS485	Bus
Bus spacing	2 m to 500 m	2 m to 500 m	
Max. number of SCB on the bus	60	60	
Dimensions (h x w x d) in mm without screw connections	600 x 600 x 170		Housing
Weight	approx. 16.8 kg	approx. 17.5 kg	
Material	UV-resistant, powder-coated aluminium housing		
	UV-resistant cable apertures – screw connections M32 (DC-input) x M40 (DC-output) 1.5 RAL9004		
Protection class, protection level	Protection class II, IP 65		
Warranty	5 years	5 years	

¹⁾ Voltage supply direct via the PV generator

Article Number

Solar-Log™ SCB 12 DC/DC	255115
Solar-Log™ SCB 16 DC/DC	255123

Solar-Log™ String Monitoring Box (SMB)



String monitoring at large plants offers the best way to prevent failures. The Solar-Log™ String Monitoring Box, in combination with the Solar-Log 2000 and the Solar-Log™ WEB "Commercial Edition" provides the optimal solution when upgrading to string monitoring. The Solar-Log™ SMB is employed if the SCB which is already present only links the strings and does not monitor them.

Product details

The Solar-Log™ SMB is a two-part monitoring system that consists of:

Solar-Log™ SMB-C

Control Unit for the communication with the Solar-Log™ including measuring unit for 16 strings.

Solar-Log™ SMB-M

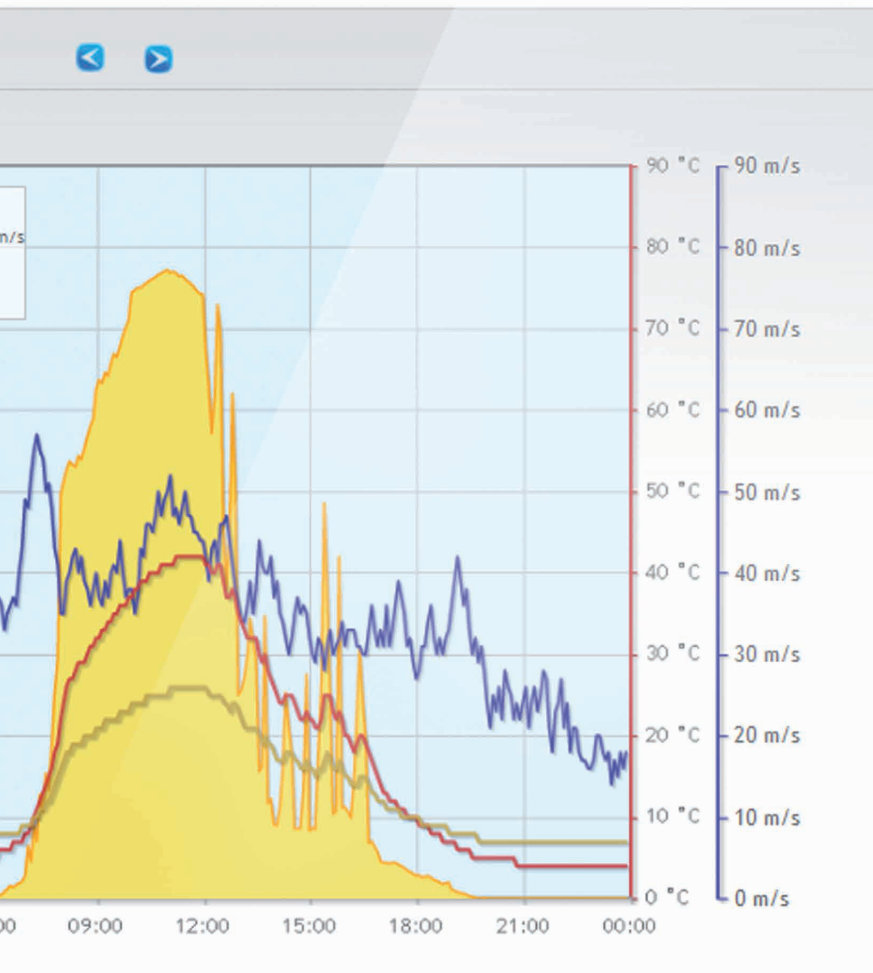
Measuring unit for 16 strings.

The Solar-Log™ SMB-M has to always connected to a Solar-Log™ SMB-C. That is why every plant has to have at least one Solar-Log™ SMB-C. That means a maximum of 16 strings can be monitored from the Solar-Log™ SMB-C; with an additional 16 strings from each attached Solar-Log™ SMB-M (maximum 3 SMB-M per SMB-C). This results in a total of 64 strings that can be monitored. Up to 31 Solar-Log™ SMB-Cs can be connected to a Solar-Log™ RS485 interface and in total 60 SMB-Cs and SMB-Ms can be connected together. Note that the Solar-Log™ SMB can only be used with the Solar-Log™ WEB “Commercial Edition” and needs a 24 V power supply.

Product Comparison	Solar-Log™ SMB-C	Solar-Log™ SMB-M
Measuring number of strings	2 x 8 Strings	
Measuring range per string	0 – 20 A, < 1% tolerance	
Diameter for the cables	10 mm	
Temperature range	-20 °C to +70 °C	
Protection Class	IP65	
Dimensions in mm	300 x 400 x 200	
Power supply	23 VDC – 30 VDC	via Solar-Log™ SMB-C
Power consumption	Max. 800 mA	via Solar-Log™ SMB-C
Warranty	1 year	1 year

Article Number

Solar-Log™ SMB-C	255427
Solar-Log™ SMB-M	255428



05

Solar-Log™ Accessories

Challenging requirements require sophisticated products

A number of accessories are available for the Solar-Log 300, 1200 and 2000 to offer extra protection, new functions and/or improved performance. All needs can be met – regardless if it overvoltage protection, connecting diverse inverters or sensors – We leave nothing to be desired. Installers, dealers and service providers can offer their customers complete solutions with high-quality products.

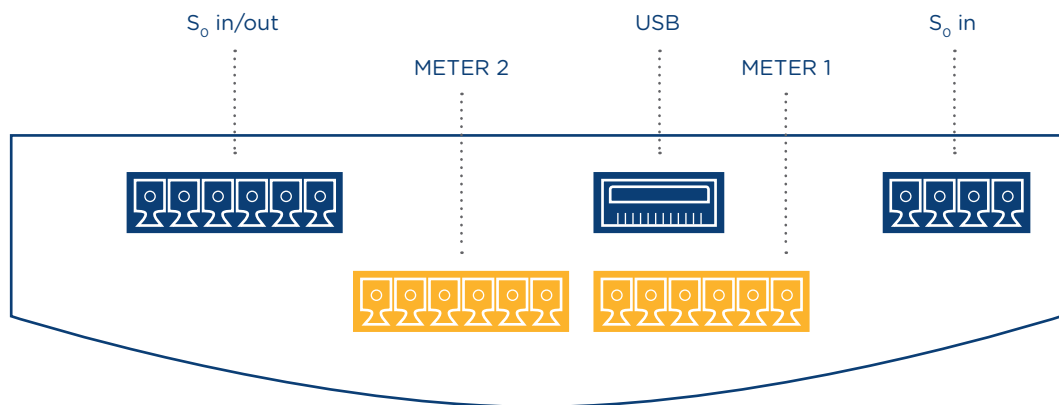
Solar-Log™ Meter

Metering power in a simple and effective way

The Solar-Log™ Meter provides detailed power consumption measurements and information on the PV production. It also has an integrated interface to connect current transformers (CTs) to monitor and present six individual phases or two 3-phase output. The phases only have to pass through the sensors. Current transformers with opening mechanism even permit an installation without opening the circuit. With this, the Solar-Log 300 and 1200 fulfill several requirements with one device. The self-consumption and production of a PV plant are easily displayed in detail with little effort required for the installation. When feed-in management, such as the fixed 70% reduction rate in Germany or an adjustable reduction rate, is employed at a plant, the total consumption needs to be recorded with a digital power meter instead of a current transformer.



Technical Data	Solar-Log CT 16	Solar-Log CT100A-c	Solar-Log CT 100A -o
	sealed transformer 80:1	sealed transformer 500:1	open transformer (folding mechanism) 500:1
Primary measurement	16A		100A
Secondary output		200mA, max. 6,7V	
Accuracy	±4% between 1A – 16A		±4% between 1A – 100A
Diameter /outer Dimension	4,32 cm	5,33 cm	5,18 x 5,43
Depth	1,91 cm	1,91 cm	1,64 cm
Opening	0,7 cm	1,86 cm	1,86 cm
Cable length		3 m (extendable to 30 meters with 0.75 mm²)	



The connection panel of the Solar-Log™:
Connections for two 3 phase transformers / CT's

Networked Smart Plugs

Optimizing the consumption of self-produced power

External appliances can be turned on and controlled by the Solar-Log 300, 1200 and 2000 via smart plugs. To optimize the consumption of self-produced power automatically, a power consumption meter is required as well as a networked smart plug. It is also possible to manually control appliances. A maximum of 10 networked smart plugs are supported.



Technical Data	Standard 1.8KW	WLAN 3.5KW
Maximum load	1600-2000 watts	1600-3500 watts
Maximum current	8 A	16 A
Control	TCP / IP	TCP / IP
Status	On / Off	On / Off
Connector	Schuko connector	Schuko connector
Dimensions (h x w x d) in mm / weight	40 x 68 x 128, 200 grams	60 x 68 x 128, 200 grams
Warranty	2 years	2 years

Solar-Log™ Smart Home Relay Box

The Solar-Log™ Smart Home Relay Box comes with 8 relay outputs. The outputs allow devices to be switched on directly or also to be adjusted in different levels according to the PV production. Only one free RS485 connection needs to be defined.



Technical Data

Outputs	8 relays (30V/1A to 230V/250mA), 4 of which are alternating relays
Rated operating voltage	10-24V
Warranty	1 year

Article Number

Solar-Log 300, 1200 Meter	See page 30
Solar-Log™ CT 16 A	255639
Solar-Log™ CT 100 A-c	255640
Solar-Log™ CT 100 A-o	255638
Networked Smart Plugs standard 1.8 KW	255429
Networked Smart Plugs WLAN 335 KW	255616
Solar-Log™ Smart Home Relay Box	255656

Digital Power Meters for Smart Timing

Power measurements

A power meter relays the measured amount of power to the Solar-Log™ for analysis. If you wish to consume the self-produced power from a PV plant, the meter serves as a consumption meter, displaying a comparison of the power produced and consumed. The meter can be configured to operate with the Solar-Log™ in three different modes:

1. Measuring power consumption for the optimal utilization of self-produced power.
2. Measuring the total amount of power that has been fed into the grid.
3. Measuring the power production from inverters that are not directly supported by Solar-Log™.



Technical Data	Inepro calibrated, 1-phase, S ₀ and RS485	Inepro calibrated, 3-phase, S ₀ and RS485	Iskra uncalibrated, 1-phase, S ₀	Iskra uncalibrated, 3-phase, S ₀
Connections	RS485 Interface / Cable length up to 500m		6-pin S ₀ in / out connector / max. cable length 10m	
Direct connection	100 A	100 A	80 A	65 A
Rated current	10 A	10 A	10 A	10 A
Voltage U _n	230 V / 400 V	3 x 230 V / 400 V	230 V -20% - +15%	3 x 230 V / 400 V -20% - +15%
Measuring range	<1 mA - 100 A	<1 mA - 100 A	4 mA - 80 A	4 mA - 65 A
Self-consumption	< 2 W	< 2 W per phase	< 8 W	< 0,85 W
Start-up current	< 1 mA	< 1 mA	4 mA	4 mA
Power frequency	50 Hz / 60 Hz	50 Hz / 60 Hz	50 Hz / 60 Hz	50 Hz / 60 Hz
Dimensions (h x w x d) in mm	130 x 76 x 65	130 x 126 x 65	100.5 x 36.5 x 65	84.3 x 53.6 x 65.1
Wire diameter	2.5-16 mm ²	2.5 - 16 mm ²	2.5-10 mm ²	2.5 - 16 mm ²
Protection level	IP51	IP51	IP20	IP20
LCD display	7-digit LCD (5.2)	7-digit LCD (5.2)	7-digit LCD	6+1 digit, 100 Wh resolution
S ₀ pulse	1600 p / kWh	400 p / kWh	1000 p / kWh	500 p / kWh
Misc.	Class 1 according to EN50470-1	-	2 counters: 1x total, 1x resetable	no LCD display
	Class 1 according to EN50470-3 MID, RS485* and S ₀		Class 1 EN 62053-21 and EN 62052-11	
Warranty	2 years	2 years	1 year	1 year

* only one meter possible per RS485 Bus.

PowerLine Package and Cable Accessories

Alternative to the network cable

The PowerLine Package is a problem-free alternative for transmitting data between the Solar-Log™ and the PC or the router without having to run extra cable when WiFi reception is poor or an ethernet connection is problematic. For PowerLine data transmission, at least two connectors are required and it can be extended indefinitely. The PowerLine connector includes a network and a USB connection.



Technical Data

Transmission speed	85 Mbit / s
dLAN connection	EURO connector
Device connection	Connector type: RJ 45 or USB (Universal Serial Bus) 1.1
Power intake	4.5 W (max.), 3 W in standby mode
Power supply	AC 100 – 240 V 50 / 60 Hz
Ambient conditions	10 – 90 % humidity (non-condensing)
Registrations	CE compliant in accordance with the technical requirements of all EU countries and for Switzerland: EN 55022/EN 50024/EN 60950
Dimensions (h x w x d) in mm / weight	85 x 53 x 30 / 92 g
Warranty	2 years

Article Number

Iskra uncalibrated 1-phase, S ₀	255346
Iskra uncalibrated 3-phase, S ₀	255347
Inepro calibrated 1-phase, S ₀ and RS485	255420
Inepro calibrated 3-phase, S ₀ and RS485	255421
Develo dLan – PowerLine Package Duo (2 units)	255431

Solar-Log 300, 1200 and 2000 GPRS

The alternative to a permanent internet connection

The Solar-Log 300, 1200 and 2000 GPRS come with an integrated GPRS modem and an antenna with a magnetic base and two meters of cable. The SIM card holder is mounted inside of the device to protect it against theft. Please note that when using master/slave configuration with the Solar-Log 2000, each Solar-Log 2000 slave (maximum of nine) inside the network requires its own SIM card or a GPRS router has to be used.



Technical Data

GSM bands	Quad-band GSM / GPRS
GSM power rating	GSM 800 / 850 Power Class 4 – 33 dBm +/- 2 dBm GSM 1800 / 1900 Power Class 1 – 30 dBm +/- dBm
Data transfers	Class 10, max. 85,6 kbps
Package contents	2 m magnetic foot antenna
Connection	SMA antenna connection

GPRS external antenna

Improved data connection with GPRS

This antenna improves signal strength in response to poor GPRS reception and is suitable for outdoor wall mounting.



Technical Data

Frequency	GSM 900: 880 – 960 MHz / GSM 1800: 1710 – 1880 MHz
Impedance	50 Ohm
Polarization	Vertical
Gain / power	0 dB / max. 10 W
Dimensions (h x w x d) in mm / weight	370 x 155 x 36 (Ø 16 mm), 420 g
Temperature range / type of protection	-40 °C to +80 °C, IP 66
Cabel length / connection	4950 + 100 mm, FME Female or SMA

Solar-Log™ WiFi

Wireless Internet Connection

The Solar-Log 300 and 1200 WiFi can easily connect to an existing WiFi infrastructure. The signal strength is displayed via the WEB interface and on the device's LCD-Status-Display. The Solar-Log™ WiFi does not need an extra cable, eliminating additional costs for installation and hardware.



Technical Data

WiFi (WLAN modes)	802.11b and 802.11g
Max. output transmission power	802.11 b: +20 dB / 802.11 g: +17 dB
Max. input level	-10 dB
Frequency	2.412 – 2.472 channel 1 – 13 / 2.484 channel 14
Encryption	WEP 128 and 64 Bit, WPA, WPA 2



Detailed WiFi information is provided via the web interface.

Article Number

Solar-Log 300, 1200 and 2000 GPRS, Solar-Log 300, 1200 and 2000 PM+ / GPRS	See page 30
Antenna extension GPRS modem, internal/external area, 5m, internal modem	255326
Antenna extension GPRS modem, internal/external area, 10m, internal modem	255327
Antenna extension GPRS modem, internal/external area, 15m, internal modem	255328
GPRS Antenna for greater wireless coverage, internal modem	255329
Solar-Log 300, 1200 WiFi, Solar-Log 300, 1200 BT / WiFi, Solar-Log 300, 1200 PM+ / WiFi	See page 30

Sensor Box Commercial

Irradiation sensor specifically designed for commercial plants

Sensors measure the precise deviations between the potential power production and the current power production and deliver key statistical values in regard to the quality of the whole plant. Once a deviation is detected, an error message is sent. The most important element in the Sensor Box Commercial is the irradiance sensor. This delivers a reference value for solar radiation and enables conclusions to be drawn about possible power generation problems. Due to the built-in internal module temperature sensor, it is easy to analyze reductions in performance and use this data to find the cause of the fault. Up to 9 Sensor Boxes Commercial can be connected. The irradiance sensor is equipped with a high-quality monocrystalline cell, that is rugged and specifically designed for long-term use in outdoor locations. It is not possible to use RS422 and RS485 inverters on the same bus.



Technical Data

Solar cell, laminated inside glass	Mono crystalline silicon (5 cm x 3.3 cm)
Dimensions (h x w x d) in cm, housing	14.5 x 8.5 x 4.0, powder-coated aluminium housing, IP65
Temperature range	-20 °C to +70 °C
Power supply	via RS485 data cable from Solar-Log™ (10 – 28 V _{DC}), no further power supply required
Measuring range radiation strength	0 to max. 1,400 W/m ²
Tolerance	Irradiance sensor: +/-5 %
Scheduled	Not scheduled
Installation	On module assembly rails. Not necessary to open up the sensor.
Connecting cables	4 pin, 3 m, UV and weather-resistant
Ambient temperature sensor	PT1000 measuring range: -40 °C to +85 °C
Wind sensor	Cup anemometer measuring range: 0-40 m/s, gusts 60 m/s
Warranty	2 years

Article Number

Sensor Box Commercial, including irradiance sensor and module temperature sensor	220060
Wind sensor for connection to the Sensor Box Commercial; including a 5 m connection cable	220061
Ambient temperature sensor for connection to the Sensor Box Commercial, including a 3 m connection cable	220062

Sensor Box Commercial accessories

Ambient temperature and wind sensors

The optional ambient temperature sensor (PT1000) delivers additional information for the power generation. One problem that could arise and contribute to decreased yields is that the combination of cold temperatures and sunshine causes a buildup of ice. Such problems are easily detected when a sensor is being used. In addition to this, wind speeds can be tracked with a wind sensor and identified much better as possible causes for breakdowns, power reductions or power losses.



Sensor basic

Irradiance sensor specifically designed for residential systems

The Sensor basic delivers the irradiance values as well as the module temperature. Compared to the Sensor Box Commercial, the measurements from the Sensor basic are only 3 % higher precise. It is not possible to connect a wind or ambient temperature sensor and to use an RS422 inverter on the same bus. A maximum of one Sensor basic can be connected to an RS485 bus.



Technical Data

Solar cell	Amorphous thin layer silicon cell (3.5 cm x 3.5 cm)
Dimensions (h x w x d) in mm, housing	64 x 99 x 36, Polycarbonate, UV-stabilised IP65
Temperature range	-25 °C to +75 °C
Power supply	Via RS485 data cable from Solar-Log™ 10-28 VDC, no further power supply required
Measuring range, radiation strength	0 to 1,400 W/m ²
Tolerance	Irradiance sensor: +/-8 %
Scheduled	Not scheduled
Installation	On module mounting rails. Not necessary to open up the sensor.
Connecting cables	4-pin, 3 m, UV and weather-resistant
Warranty	1 year

Weather station with a Pyranometer

Precise measurements of irradiance

The Weather Station provides data on air pressure*, wind direction* and speed* and humidity measurement results for the local prevailing overall irradiance. The data is collected by the integrated CMP 3 Pyranometer. Measuring the local irradiance provides information on the influence of weather conditions on the PV plant's performance. The data from the Pyranometer is used in the Solar-Log™ WEB "Commercial Edition" to calculate the performance ratio.

* only possible via CSV export



Measurement	Measuring Range	Measuring Method
Pyranometer	1,400 W/m²; spectral range (50 %): 300 – 2800nm	Kipp & Zonen CMP3
Ambient temperature	-50 °C – +60 °C	NTC
Humidity	0 – 100 %	Capacitive
Air pressure	300 – 1,200 hPa	MEMS capacitive
Wind direction	0 – 359.9 °	Ultrasound
Wind speed	0 – 60 m/s	Ultrasound

Technical Data

Power supply	24 Vdc +/- 10 %
Power consumption	20 VA at 24 V
Connection	RS485
Protection class	IP65
Dimensions in mm	Diameter: 150, Height: 332, Weight: 1.5 kg

Article Number

Sensor basic including irradiance sensor and module temperature sensor	255258
Pyranometer with weather sensors	on request

Solar-Log™ RS485 Wireless Package

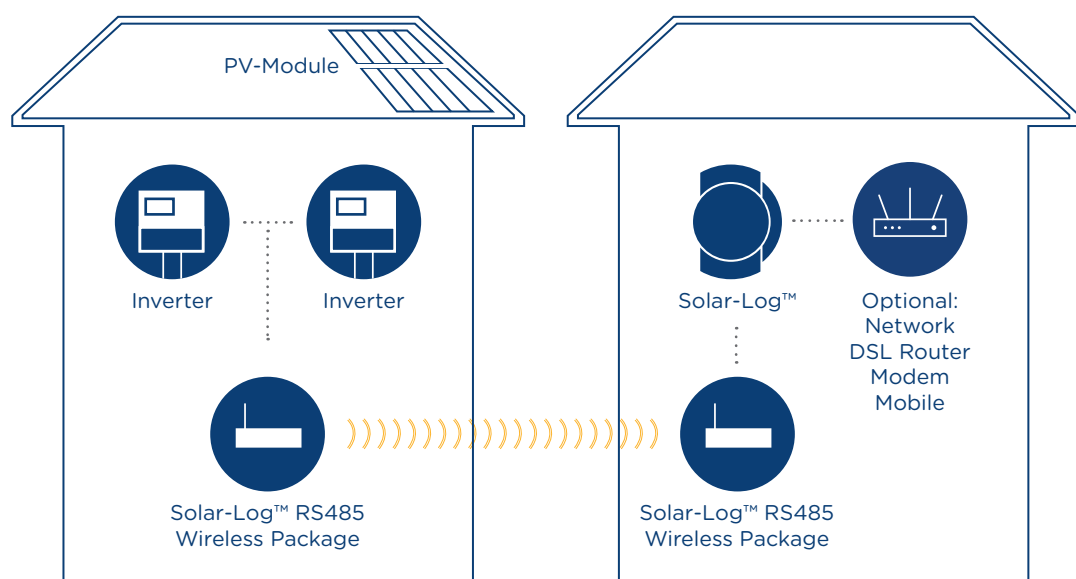
Connecting inverters wirelessly

The Solar-Log™ RS485 Wireless Package allows for monitoring even in places where cable connections are difficult. Radio modules are always deployed in pairs. When used in conjunction with the external and directional radio antenna, connections can be made at larger distances. The test function helps you to find the optimal mounting location. When placing an order, the name of the inverter manufacturer is required in order to pre-configure the Wireless Packages. Not all inverters can be used with the Wireless Package. Please check the inverter database for the inverter compatibility (<http://www.solar-log.com/en/service-support/supported-inverters.html>)



Technical Data

Range inside buildings	up to 80 m (up to three concrete walls)
Range over open field	up to 500 m, with directional radio antenna up to 800 m
Protection class, approval	IP 20, only suitable for internal use, CE standard
Power supply/performance	7 – 18 V, 1 watt
Frequency	2.4 Ghz
Temperature range	0 ° – 70 °C
Dimensions per piece (w x h x d) in mm / Weight	70 x 140 x 30 / 200 g
Antenna	Dipole antenna, 2,1 dBi amplification



Solar-Log™ Bluetooth (BT)

Bluetooth module for wireless connections

Use Bluetooth to easily connect the Solar-Log™ to SMA inverters, eliminating the need of extra wiring to connect the devices. The Solar-Log™ BT supports all SMA Bluetooth devices. A mixed inverter operation via Bluetooth and RS485 interface or SMA Speedwire* is possible. A major advantage of using the SMA network connection is that it is possible to have large distances between the Solar-Log™ and the inverters since every inverter operates as a signal repeater. A maximum of 7 SMA Bluetooth inverters can be connected to the Solar-Log 300 and 1200 BT, and the maximum distance between two inverters depends on the surroundings, e.g. 50 meters is typical for open spaces.



Speedwire*

Alternative connection for SMA inverters

All Solar-Log™ modules have the option to connect to SMA inverters via SMA's Speedwire* protocol. All you need is a standard network infrastructure. Most new SMA inverters come with an integrated Speedwire* interface by default. The only step required is to connect the inverter to the same Ethernet switch or router as the Solar-Log™. Only standard network cables are needed for the connection.

Article Number

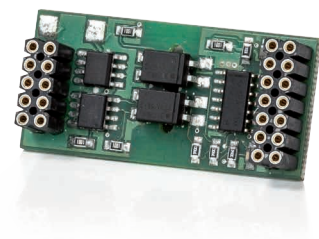
Solar-Log 300, 1200 BT	See page 30
Solar-Log 300, 1200 BT / WiFi	See page 30
Solar-Log™ X24 RS485 Wireless Package (2 units) Please specify type of inverter for pre-configuration.	220058

*In many countries, the designation „Speedwire“ is a registered trademark of SMA Solar Technology AG.

Special PiggyBack (RS485)

Communication between SMA inverter and Solar-Log™

The special PiggyBack (RS485) is an inexpensive alternative to the standard SMA PiggyBack (RS485). It can only be used with the Solar-Log™ and requires 4-pin wiring. The device is supplied with power from the Solar-Log™ unit and therefore needs to have the proper connecting cable with a sufficient wire diameter and length. It is suitable for use with all SMA inverters, unless a data module, Quick module or Speedwire* is being used. For more information, see the inverter's manual. The interface card is to be installed by qualified personnel only. Important Notice: Solare Datensysteme GmbH is not liable for damage arising from connecting the PiggyBack to the inverter.



Article Number

PiggyBack – compatible with SMA inverters	Special PiggyBack (RS485) for SMA inverter – only for Solar-Log™ systems (not compatible if a Data Module or a Quick Module is required)	220020
	Data Module SMA (RS485 SB3000/SB4000/5000TL-20 (Next Generation)	220053
Fronius and identical inverter designs	ComCard Retrofit Fronius and identical designs	220022

*In many countries, the designation „Speedwire“ is a registered trademark of SMA Solar Technology AG.

Article Numbers Cable Sets / Interfaces

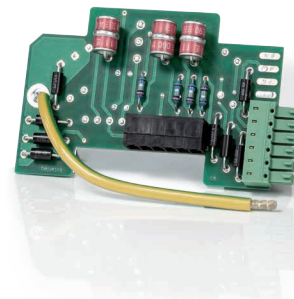
RS485 – interface; cable set 3m	BKL2 Universal / Alphasol / Powercom / Winaico	255107
	BKL3 Universal / Solutronic xx / Q3 xx00	220050
	BRJ2 Universal / Motech / Zentral Solar	255157
	BRJ3 Universal / Samilpower / Enfinity	255331
	BRJ4 Universal / Danfoss / AEG PV	220042
	BRS1 Universal / Solutronic SP 1xx / Q3 1xx00	255264
	Delta	255125
	Diehl AKO	220064
	Effekta	255034
	Hyundai HPC-250 HT-E	255154
	Hyundai HPC-050 / 100 HT-E	255156
	Kaco	220038
	Kostal / Convert	220055
	Mastervolt	220054
	Mitsubishi	220049
	Power-One	220043
	Refu	220056
	Santerno-Solar-Log™ (from Solar-Log™ to 1st inverter incl. connector) – always required	255109
	Santerno inverter (from one inverter to another)	255110
	Schüco	220051
	SMA	220037
	SolarMax	220040
	Steca	255066
	Sunways	220039
	Sustainable Energy	255155
	Vaillant	220044
	Vectron	255012
	Xantrex GT 30 E	255348
RS422 – interface; cable set 3m	BKL1 Universal / Salicru (EQX) / SE SunEzy	255106
	BKL4 Universal / Eaton / Phoenixtec / Sunville / Riello / AEG PS	220057
	BRJ1 Universal / Europa Solar / Ever-Solar	255108
	Fronius	220041
	SamilPower	255331
Canbus; 3m	Voltwerk / Conergy (from Solar-Log™ to 1st inverter incl. connector) – always required	255001
	Voltwerk / Conergy (from one inverter to another)	255002
Extension cable	RS485, 4 pin sheathed, length 8 m	255145
	RS422, 6 pin sheathed, length 8 m	255146
RS485 for home-made cables	sheathed 4 pin cable for RS485 wiring, 5 m indoor applications only	220012
	sheathed 4 pin cable for RS485 wiring, 10 m indoor applications only	220013
	sheathed 4 pin cable for RS485 wiring, 25 m indoor applications only	220014
	sheathed 4 pin cable for RS485 wiring, 100 m indoor applications only	220068
Warranty	2 years	

Overvoltage protection

Greater security thanks to optimal protection

The overvoltage protection device for the Solar-Log™ offers protection against power surges which could result from removing inverter communication cables from the logger while the inverter operates as well as from lightning strikes in the vicinity.

This device protection has been specially developed for retrofitting the RS485/422 interface of the Solar-Log™. It is easy to install in just a few quick steps. Failures due to power surges are minimized.



Technical Data

Nominal operating voltage	5 V
Maximum operating voltage	$6 V_{DC} ; 4,25 V_{AC}$
Maximum operating current	500 mA
DC resistance in operation	2.7 Ohm
Line-ground capacitance	$\leq 5 \text{ nF}$
Protection level core - core, max.	8 V
Protection level line - ground, max.	90 VDC (1kV / microS)
Impulse protection level line - ground	$\leq 450 \text{ V}$
Nominal discharge current (1 kV/QS)	10 kA
Overvoltage protection class	Class 3
Width x height x depth in mm	52 x 88 x 14

Article Number

Extended cover and overvoltage protection for Solar-Log 300	255602
Extended cover and overvoltage protection for Solar-Log 1200 and 2000 (only RS485 + RS485/422 A)	255601
Solar-Log™ Installation Housing IP 65 version 1 for outdoor use including 2 power connections, mounting plate	255422
Solar-Log™ Installation Housing IP 65 version 2 for outdoor use including 2 power connections, mounting plate incl. transparent cover	220063
Transparent cover for Installation Housing IP 65 (version 1)	255435
Hinges (2 units) for the Installation Housing	220072

Solar-Log™ Installation Housing for outdoor use

Protection against dust and moisture

The Solar-Log™ provides reliable protection to ensure safe operation under all weather conditions with protection against dust and moisture. The housing is available in two versions. The Housing can be equipped with a data logger and additional accessories such as the RS485 Mobile Wireless Package. In addition to the Solar-Log™ socket, a second socket is included.



Technical Data	Version 1	Version 2
Installation Housing	<p>The housing material is made of polycarbonate and ABS plastic.</p> <p>For quick and easy installation of the Solar-Log™, the holes on the mounting wall have been pre-drilled.</p> <p>There is space in the box for additional accessories.</p>	
Mounting	<p>4 PG connections are available for the grid power network and other connections.</p>	<p>5 PG connections are available for the grid power network and other connections.</p>
Standard color for the enclosure	Grey / RAL 7035	
Surface	The Installation Housing is non-fading.	
Protection class	IP 65 when used with the proper cable screws and when the cable conduits are properly sealed.	
Dimensions (w x h x d) in mm	400 x 300 x 130	600 x 300 x 130
Warranty	2 years	2 years

Solar-Log™ compatibility:



Solar-Log™ worldwide:

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