SOLADIN

700 WEB / 1000 WEB / 1500WEB

GRID CONNECTED SOLAR INVERTER

EN USER'S AND INSTALLATION MANUAL

Other languages: See WWW.MASTERVOLTSOLAR.COM/SOLADINWEB

10000005892/05

MASTERVOLT
THE POWER TO BE INDEPENDENT

ENGLISH

This manual serves as a guideline for the safe and effective use and installation of the Soladin:

- For the installer this manual instructs in the installation, operation and commissioning.
- For the end user, this manual instructs in operation, inverter maintenance and possible correction of minor malfunctions.
- Every person who works with the apparatus should be familiar with the contents of this manual, and must carefully follow the instructions contained herein.
- Store the manual in an accessible place.

NEDERLANDS

Deze handleiding dient als richtlijn om de Soladin op een veilige en doelmatige wijze te installeren en te gebruiken:

- Voor de installateur geeft deze handleiding aanwijzingen voor het plaatsen, bedienen en in bedrijf stellen.
- Voor de gebruiker geeft deze handleiding aanwijzingen voor bedienen, onderhouden en het zelf oplossen van eventuele kleine storingen.
- Iedereen die aan of met het apparaat werkt, installateur en gebruiker moet van de inhoud van deze handleiding op de hoogte zijn en de instructies daarin nauwgezet opvolgen.
- Bewaar de handleiding op een goed toegankelijke plaats in de nabijheid van de Soladin.

DEUTSCH

Diese Anleitung dient als Richtlinie für die sichere und effektive Installation und den Betrieb des Soladin:

- Für den Elektriker enthält diese Anleitung Anweisungen für die Installation, den Betrieb und die Inbetriebnahme.
- Für den Endbenutzer enthält diese Anleitung Anweisungen für den Betrieb, die Wartung und eine mögliche Behebung kleinerer Fehlfunktionen des Soladin.
- Jede Person, die mit dem Gerät arbeitet, muss mit dem Inhalt dieser Anleitung vollständig vertraut sein und die hierin enthaltenen Anweisungen sorgfältig befolgen.
- Die Anleitung muss für den Benutzer sofort zugänglich sein.

FRANÇAIS

Ce manuel a été conçu pour servir de directives à l'installation sécurisée et effective du Soladin:

- des instructions d'installation, de fonctionnement et de Mise en service sont fournies à l'attention des électriciens.
- des instructions de fonctionnement, d'entretien et d'éventuelles corrections de dysfonctionnements mineurs du Soladin sont fournies à l'attention des utilisateurs.
- toute personne travaillant sur ou avec l'appareil doit avoir une connaissance approfondie du contenu du présent manuel et doit suivre scrupuleusement les instructions ci-après.
- Conserver ce manuel dans un endroit facilement accessible à l'utilisateur.

ESPAÑOL

Este manual establece las pautas para la instalación efectiva y segura del Soladin:

- Al electricista este manual le sirve de guía para la instalación, el funcionamiento y la puesta en marcha.
- Al usuario final le ofrece instrucciones para el funcionamiento, el mantenimiento y la posible corrección de pequeñas anomalías del Soladin.
- Todas las personas que trabajen con el aparato deben estar plenamente familiarizadas con este manual y seguir de manera minuciosa las instrucciones contenidas en el mismo.
- Guarde este manual en un lugar de fácil acceso.

ITALIANO

Il presente manuale funge da orientamento per un'installazione ed un funzionamento sicuri ed efficaci del Soladin:

- All'elettricista, il presente manuale dà delle istruzioni per l'installazione, il funzionamento e la messa in servizio.
- All'utente finale, il presente manuale dà delle istruzioni per il funzionamento, la manutenzione ed eventualmente la soluzione di malfunzionamenti di minore entità del Soladin.
- Chiunque lavori con questo impianto deve familiarizzarsi del tutto con il contenuto del presente manuale e seguire con attenzione le istruzioni in esso contenute.
- Il manuale deve essere immediatamente accessibile all'utente.

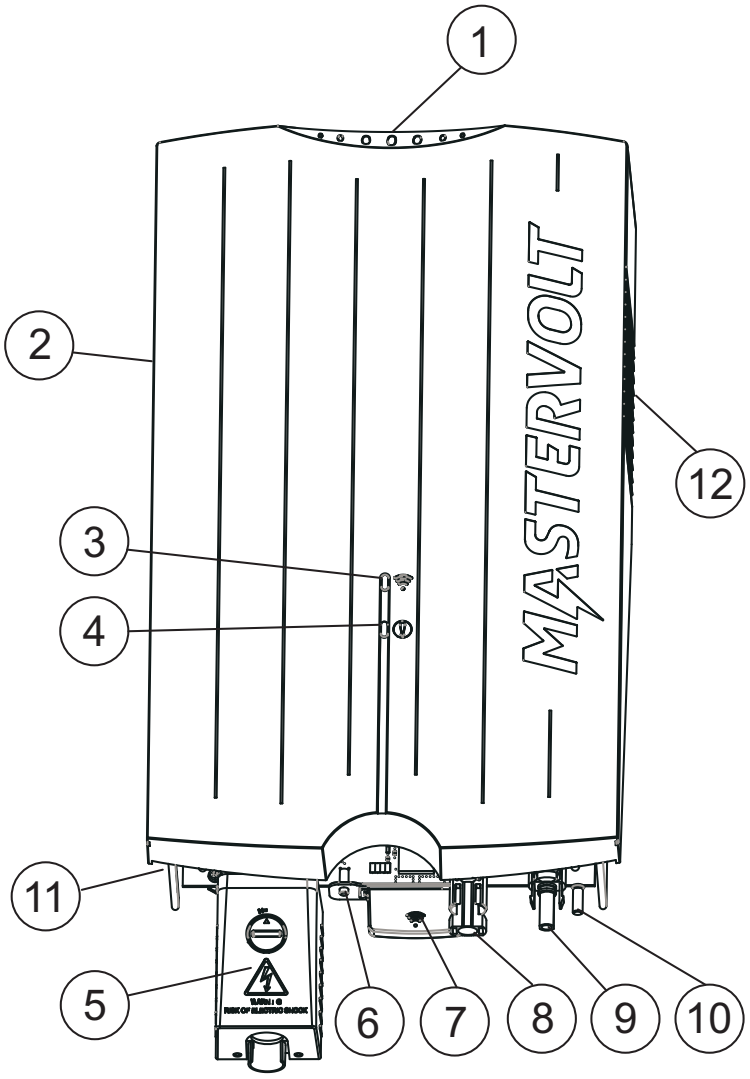

Figure 0-1: Overview

1. *Power LEDs (Section 6.4)*
2. *Cooling fan*
3. *WIFI LED (Section 6.4)*
4. *Status LED (Section 6.4)*
5. *AC connection compartment (Chapter 5)*
6. *WIFI connection button (Section 6.4)*
7. *WIFI antenna*
8. *DC plus input (Chapter 5)*
9. *DC minus input (Chapter 5)*
10. *Ground screw (Chapter 5)*
11. *Identification label*
12. *Cooling outlet*

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1 GENERAL INFORMATION

1.1 Product description

The Soladin 700 Web, 1000 Web and 1500 Web further referred to as "Soladin" or "Soladin Web" are grid connected solar inverters. This inverter type is used to convert photovoltaic power and feed this into the grid. The Soladin Web is not suitable for stand-alone use (i.e. use without utility grid).

1.2 Use of this manual

Copyright © 2014 Mastervolt. All rights reserved. Reproduction, transfer, distribution or storage of part or all of the contents in this document in any form without the prior written permission of Mastervolt is prohibited.
This manual serves as a guideline for the safe and effective use and installation of the Soladin:

- For the installer this manual gives directions for the installation, operation and commissioning.
- For the end user, this manual gives directions for the operation, maintenance and possible correction of minor malfunctions of this inverter.
- Every person who works with the apparatus should be familiar with the contents of this manual, and must carefully follow the instructions contained herein.
- Store the manual in an accessible place.

1.3 Validity of this manual

This manual is valid for the following models:

Part no	Model
130000700	Soladin 700 Web
130001000	Soladin 1000 Web
130001500	Soladin 1500 Web

All the specifications, provisions and instructions contained in this manual apply solely to the Mastervolt-delivered standard version of this inverter.

1.4 Scope of warranty

Mastervolt assures the product warranty of the Soladin Web during five years after your purchase, on the condition that all instructions and warnings given in this manual are taken into account during installation and operation. Among other things, this means that installation is carried out by a qualified person, that installation and maintenance are executed according to the stated instructions and correct working sequence, and that no changes or repairs may have been performed on the Soladin other than by Mastervolt. The warranty is limited to the costs of repair and/or replacement of the product by Mastervolt only.

For more details, refer to our general warranty terms and conditions which are available on request.
For making an appeal on warranty you can contact your supplier directly, stating your complaint, application, date of purchase and part number / serial number.

1.5 Liability

Mastervolt accepts no liability for:

- consequential damage due to use of the Soladin Web;
- possible errors in the manuals and the results thereof.

1.6 Changes to the Soladin

Changes to the Soladin Web inverter are not allowed. Changes to the Soladin Web software/ firmware, except for the settings made available to the user or installer, are not allowed.

1.7 Identification label

Figure 1-1

The identification label is positioned at the left side of the Soladin. The scan code has no use for you.

Read this manual before installation and use

This product has been declared conform the EC directives and standards.

CAUTION!
Never remove the identification label.

2 SAFETY GUIDELINES AND WARNINGS

2.1 Warnings and symbols

Safety instructions and warnings are marked in this manual by the following pictograms:

A procedure, circumstance, etc which deserves extra attention.

CAUTION!
Special information, commands and prohibitions in order to prevent damage.

WARNING
A WARNING refers to possible injury to the user or installer or significant material damage to the Soladin if the installer / user does not (carefully) follow the stated procedures.

2.2 Use for intended purpose

The Soladin Web is constructed as per the applicable safety-technical guidelines. Use the Soladin Web inverter only in installations that meet the following qualifications:

- the electrical installation must meet the applicable regulations and standards (must be carried out correctly) and must be in a good condition;
- according to the technical specifications.

WARNING
Never use the Soladin Web in situations where there is danger of gas or dust explosion or potentially flammable products!.

Use of the inverter other than as mentioned under section 2.2 is considered to be conflicting with the intended purpose. In such cases, Mastervolt will not accept liability for any damage or injury caused by the functioning or malfunctioning of the inverter

2.3 Installation, maintenance, repair

WARNING
Only allow installation, maintenance and repair of the Soladin Web to be carried out by a qualified person.

Connections and safety features must be executed according to the locally applicable regulations.
In case of decommissioning and/or demounting follow the instructions as stated in this manual. If repairs or replacements are required, only use original Mastervolt spare parts. Make sure two persons are present when working on the installation, at least until the installation has been de-energized and verified by a suitable metering instrument.

2.4 Warning of special dangers

WARNING
Two primary energy sources are present:
• solar panels (DC)
• utility grid (AC).
Switch off both sources before starting any work on the installation. Block the switching device against unintentional reconnection. Verify the de-energizing of both DC and AC connections using a suitable metering instrument.

The voltages present at the grid and solar side of the Soladin are not safe to touch

WARNING
Life danger caused by high electric voltages present at the connectors after disconnecting DC and AC. After 1 minute the connectors are voltage free

WARNING
Do not try to open the inverter. There are no user serviceable parts inside.

3 HOW IT WORKS

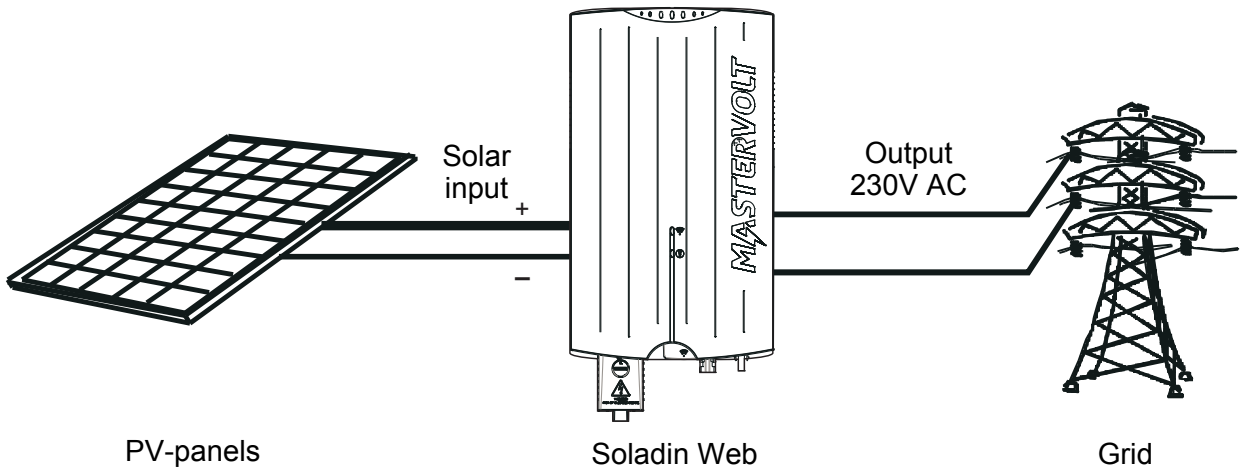


Figure 3-1: Schematic example of the Soladin in a PV plant

3.1 PV-modules

PhotoVoltaïc (PV) modules convert light into DC power. A series of PV modules is called a string. The string must be connected to the solar input of the inverter. The PV string connected to the Soladin DC input is operated at its optimum voltage to obtain an optimal yield (Maximum Power Point tracking). A plane of PV modules is called a PV array and consists of multiple strings of the same length, being connected in parallel.

3.2 Grid connected inverter

See figure 3-1.
The Soladin Web is a grid connected photovoltaic power inverter. Its main task is to convert the high voltage DC power coming from the photovoltaïc (PV) panels into AC power. The AC power is fed back into the public utility grid,

3.3 Isolated inverter

The Soladin Web is an isolated inverter. It has a High Frequency (HF) transformer inside which provides galvanic isolation between the DC (solar) and AC (grid) side. The Soladin is equipped with Isolation fault detection: it monitors PV array isolation resistance.

3.4 Grid interface

The DC PV input is converted to an AC output: 230V AC. For the PV input operating voltage range refer to the specifications.
The Soladin Web is not suitable to be operated in standalone mode (independently from the utility grid). The grid interface contains numerous safety mechanisms:

- Output relay to isolate the inverter from the grid.
- DC injection: Monitors DC current injection into the grid.
- Redundant grid voltage- and frequency monitoring
- Anti islanding protection: loss of utility detection

Selection of country settings is mandatory for use of the Soladin.

3.5 Communication

The Soladin Web configuration communicates through a Wi-Fi device, such as a notebook, smartphone or tablet. If you opt for online monitoring, the Soladin Web communicates via Wi-Fi through your internet router to the Internet as well.

4 BEFORE YOU START

4.1 Unpacking

In addition to the Soladin the delivery includes:

- A mounting bracket to mount the Soladin to a wall
- This Quick Install Guide
- AC connection module.

After unpacking, check the contents for possible damage. Do not use the product if it is damaged. If in doubt, contact your supplier.

4.2 Things you need for installation

Make sure you have all further parts to install the Soladin:

- 4 screws max 4,5 mm (with plugs) to mount the Soladin to the wall, suitable to carry its weight.
- Wifi access point router and associated password
- Wi-Fi device (smart phone, tablet or note book)
- Flat 1x3.5 mm bled screwdriver to open the AC connector
- AC cable or PVC tube to fit into the AC connector.

4.3 Installation environment

Obey the following stipulations when choosing a location to install the Soladin:

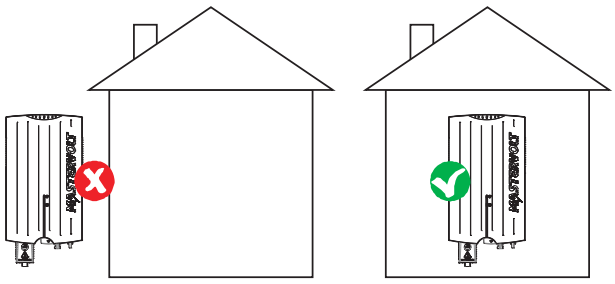


Figure 4-1

- The Soladin is allowed to be installed in indoor environments only (Figure 4-1).

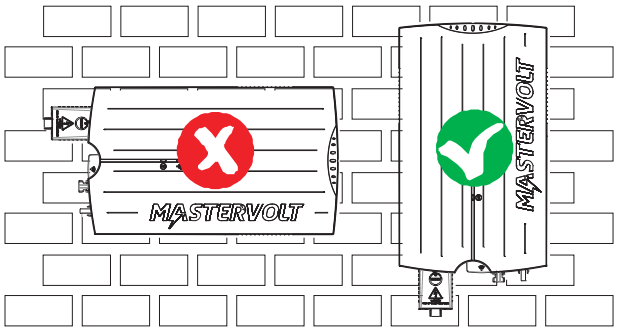


Figure 4-2

- Mount the Soladin vertically to a solid wall. A light weight wall may lead to resonance and is dissuaded (Figure 4-2).
- If the Soladin is installed in the immediate vicinity of living areas, take into account that the Soladin can produce a slight noise level when operating.
- Mount the Soladin on a maximum 2000 m altitude.

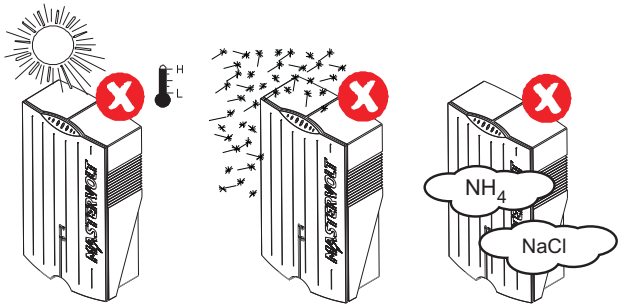


Figure 4-3

- Do not expose the Soladin to direct sunlight or other heat sources (Figure 4-3).
- Do not expose the Soladin to excessive dust (Figure 4-3).
- Do not expose the Soladin to aggressive environments, ammonia or salt (Figure 4-3).
- Ambient temperature: -20 ... 60°C; (power derating above 45°C).

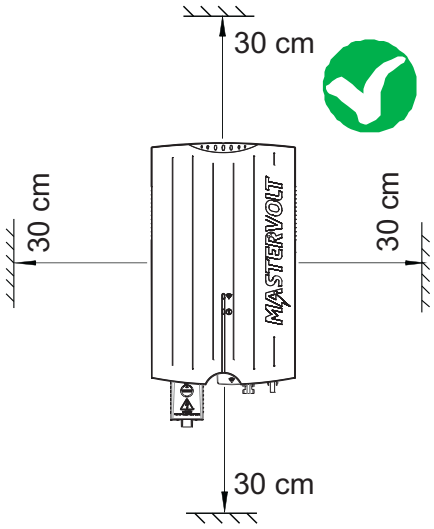


Figure 4-4

- No objects must be located within a distance of 30 cm around the Soladin (Figure 4-4)
- Allow sufficient ventilation to prevent build up of hot air.

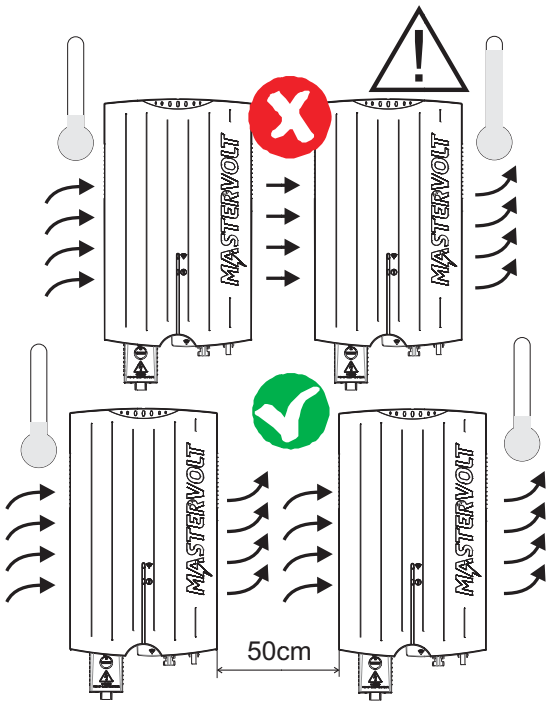


Figure 4-5

- When multiple Soladins are installed either side by side or vertically above each other, keep at least 50 cm horizontal and vertical clearance between Soladins. (Figure 4-5) If this is not possible, adequate measures must be taken to avoid one inverter heating up the other.

4.4 General safety and installation precautions

WARNING
Be sure that all wiring is disconnected from any power source during the entire installation.

CAUTION!
- Short circuiting or reversing DC polarity may lead to damage to the Soladin, the cabling and/or the terminal connections.
- Follow all steps of the installation instructions in order of succession as described.

WARNING
When the PV array is exposed to light, it supplies a DC voltage to the solar inverter!

4.5 Country suitability

European countries maintain different regulations with regard to the grid interface of solar inverters. Because of these different regulations the Soladin must be configured at first installation.

4.6 AC connection compartment

The AC connection compartment is suitable for PVC tube and AC cables up to 16mm diameter. See Figure 4-6. AC cables can be fit firmly using the strain relief. This strain relief can be turned upside down to accommodate smaller diameter cables. The AC terminal is suitable for conductor diameters up to 4 mm2.

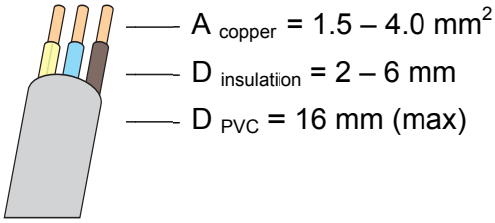


Figure 4-6: AC cable sizes

Length	Soladin model		
	700 Web	1000 Web	1500 Web
<10m	1.5 mm²	1.5 mm²	1.5 mm²
10-20m	1.5 mm²	1.5 mm²	2.5 mm²
20-30m	1.5 mm²	2.5 mm²	4 mm²

Table 4-1: Recommended AC cable sizes

4.7 Specifications of the PV installation

CAUTION!
- Never connect voltages higher than specified to the inverter, as this will cause permanent damage to the inverter.
- The inverter will automatically limit the input current and power to its specified rating. Excess power will not be converted.
- Use of Amphenol Helios H4 connectors is mandatory!

The table below shows the recommended DC cable cross sections dependent on the cable lengths.

Length	Cross section
<15m	2.5 mm²
15-25m	4 mm²
25-35m	6 mm²

Table 4-2: Recommended DC cable sizes

4.8 Lightning protection

The Soladin inverter is equipped with class III (micro) protection against surges inducted by lightning

4.9 Wi-Fi router

Please bear in mind you need a Wi-Fi compatible router to be able to use IntelliWeb.

5 INSTALLATION

5.1 Installation step-by-step

WARNING
Read chapters 2 and 4 prior to installation

1 Click the AC connection module onto the inverter and mark the position of the mounting spots using the bracket

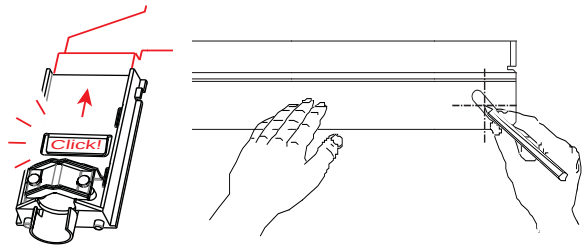


Figure 5-1

2 Fix the mounting bracket to the wall.

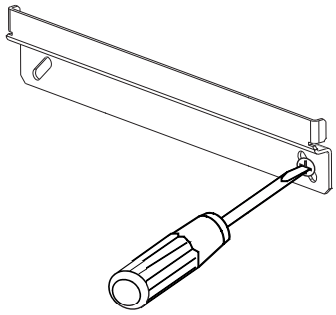


Figure 5-2

3 Place the Soladin over the mounting bracket and then move it downwards until it is supported by the mounting bracket.

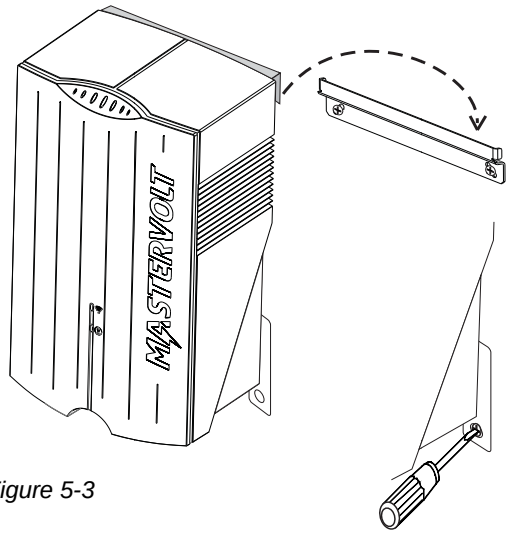


Figure 5-3

4 Strip AC wiring over 10mm. Push firmly into AC terminal. Tighten the strain relief. Make sure the cable is fixed firmly

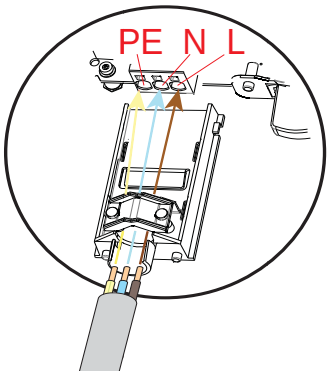


Figure 5-4: Connection of the AC cabling

5 Close the AC connection compartment by clicking the cover in place, see figure 5-5.

Figure 5-5: Close the AC connection module

6 If an additional Protective Earth or equipotential connection is required in your country, use of the ground screw is an option. Refer to Figure 0-1, item 10.

7 Switch on AC.

8 Connect the DC cables and if applicable, switch on the DC switch.
If sunlight is available, the Soladin will switch on but will start inverting only when the country has been selected.

Continue with the set-up instructions as described in chapter 6.

5.2 Installation options

This section explains optional items that may be required for local regulations or personal wishes.

5.2.1 External DC Switch

Optionally the Soladin can be equipped with an external DC switch which is used to disconnect the photovoltaic modules from the inverter, as may be required in buildings by the international standard IEC60364-7-712. It is available at Mastervolt.

5.2.2 Using an RCD

If local requirements prescribe the use of an RCD, according to IEC 60364-7: 712.413.1.1.1.2 (and national standards derived from this standard) the Soladin Web is a "PV power supply that has at least a simple separation between AC side and DC side".

5.2.3 Functional grounding

Certain PV-modules need functional grounding according to the manufacturer's instructions. When a grounding resistor ≥ 100kΩ is used, the isolation detection of the Soladin doesn't need to be switched off. A grounding resistor is included in the delivery of the Soladin DC-switch. Refer to the user's manual of the Soladin DC-switch for more information on functional grounding of the PV-modules.

5.2.4 Connection to a 230V 3_Phase grid

If the public grid is in a three phase 230V Delta configuration without neutral, the Soladin must be connected between two phases (230V).

5.2.5 Load disconnection

Install a separate circuit breaker for each Soladin to ensure that it can be disonnected safely when under load. 16A is the maximum permitted fuse protection.

5.3 De-commissioning

In case of de-commissioning, follow these instructions in succession as described:

1. Disconnect the grid voltage by switching off the corresponding AC breaker in the electrical installation;
2. Use the DC switch in the electrical installation to disconnect the DC voltage;
3. Use a special tool to press the arrow-like parts, locking the DC connectors, inwards. Disconnect the DC connectors.
4. Unlock the AC wires, one-by-one, using a small flat blade screw driver; see Figure 5-6

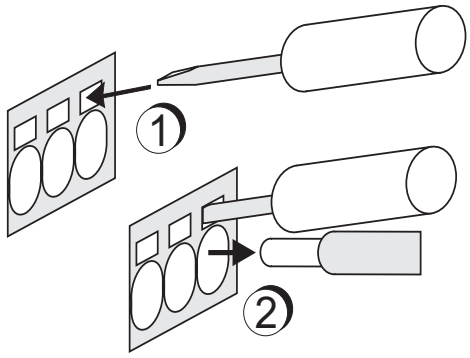


Figure 5-6

6 COMMISSIONING AND SET-UP

6.1 Country selection

If the inverter is connected for the first time, the red (STATUS) LED will flash indicating that the country has not been set yet. To set the country of installation, a WiFi connection shall be made between the Soladin and a ***WiFi device*** such as a smartphone, tablet or notebook.

6.2 Soladin configuration page

Immediately after performing the country selection, the free IntelliWeb monitoring service can be set up (recommended). Before starting with steps 1 – 5, the installer may use a ***WiFi device***, using the WiFi network name and password of the (system-) ***owner***, to check if the connection to the Internet is working properly.

As the Soladin is powered through the PV panels only, settings should be performed during day time when sufficient energy from the PV panels is available.

The Soladin generates a WiFi network automatically during the first 30 minutes after power-up. The yellow (WIFI) LED flashes indicating that the inverter broadcasts a point-to-point WiFi network.

It is possible to either change the WiFi network settings or set up an Internet connection and register the ***owner*** to IntelliWeb at a later stage, by re-starting the procedure at step 1.

Perfom the following steps for commissioning and set-up of the Soladin:

1. Check if the yellow WiFi LED (3) is blinking (● - - - ● - - - ●), indicating it is generating a point-to-point WiFi network. If this is not the case, push the WiFi button (6) shortly until the WiFi LED blinks as indicated.

2. Refer to fig. 6-1. Using a ***WiFi device***, connect to the WiFi network called [Mastervolt-Soladin-xxxx]. No password is required ("xxxx" represents the last 4 digits of the Soladin serial number)

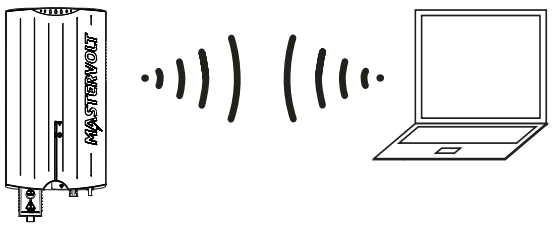


Figure 6-1: Soladin WiFi communication – Point-to-Point mode

When connected, open the web browser on the ***WiFi device*** and in the address bar, enter [10.0.0.1]. The Soladin internal web page will appear corresponding to Fig. 6-2. Select the preferred language in the lower left corner. Select the country of installation and press [Next]. (After initial commissioning, this feature is locked)

Figure 6-2: Soladin internal page – country setting

3. Refer to Figure 6-3. The inverter can be set up to communicate with the free IntelliWeb monitoring service using the WiFi network of the owner to connect to the Internet (option A or B). Alternatively, the set-up can be finished (option C)

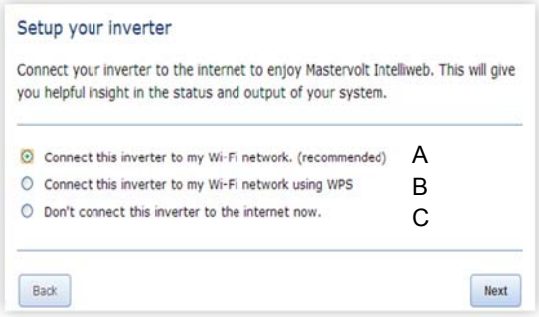


Figure 6-3: Soladin internal web page – Intelliweb connection set-up

4. Option A:
   - Select the ***owner's*** WiFi network from the list.
   - Enter the corresponding password.
   - Press [Save & Connect]. (Leave the box "Get IP Address" on "Automatic").

   Option B:
   - Make sure the ***owner's*** Internet Router supports WPS.
   - Select option B and press the WPS button on owner's WiFi router. No network name or password is needed.

   Option C: Do not connect to the Internet now.
   - Select this option when no WiFi internet access is available.
   - To complete set-up, select [Finish].

The Soladin will start converting power. The power indicator on the top of the Soladin will light up and fade out to indicate that power is being converted.

5. Refer to Fig. 6-4. Option A & B only - The Soladin will now:
   - Break the Point-to-point connection with the WiFi device;
   - Connect to the ***owner's*** Internet Router
   - Register the Soladin to the IntelliWeb server automatically
   - Redirect your WiFi device to the Intelliweb web site automatically (or click [proceed by clicking here…]);

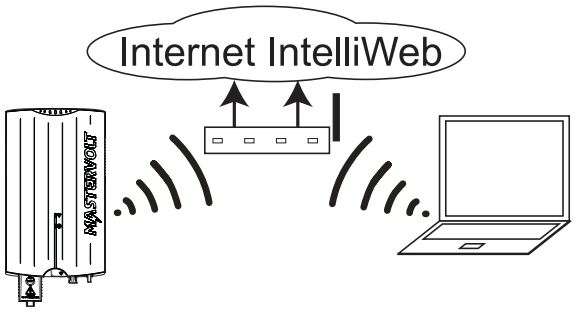


Figure 6-4:
Soladin WiFi communication – Internet Mode

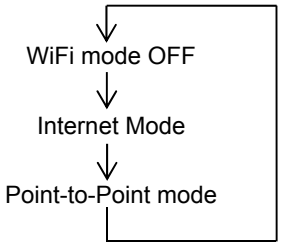
Follow the instructions on the Internet page that comes up. You may now create an IntelliWeb account by registering the ***owner*** online or add the Soladin to an existing IntelliWeb account. An activation link will be sent to the ***owner's*** e-mail address.

6.3 Visit IntelliWeb

To monitor the energy production of the PV system, the owner can visit http://intelliweb.mastervolt.com and log in to his personal account, using e-mail address and password.

6.4 WiFi mode

Refer to figure 0-1, position 6. Repeatedly (short) pressing the WiFi mode button selects either one of the following WiFi operation modes:



6.5 LED table

Refer to table 6-1 for WiFi LED indications

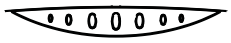
LED	Indication of the LED	Meaning	WiFi Mode
All LEDs	Off	Insufficient irradiation	
Power LED 	Slow blinking	Starting up	
	< > < > < >	Normal operation, low power	
	<> <> < > <> <> <>	Normal operation, high power	
WiFi LED	On	Connected with IntelliWeb	Internet Mode
	●●●● ●●●●	Connecting to IntelliWeb	Internet Mode
	●●● ●●●	Get IP addres from WiFi router	Internet Mode
	●● ●●	Connecting to WiFi router	Internet Mode
	● ●	Inverter configuration	Point-to-point mode
	Off	WiFi disabled	Off
StatusLED	On	Grid fault	
	●●●●●● ●● ●●●●	Hardware error	
	●●●●● ●●●●●	Solar voltage too high	
	●●●● ●●●●	Temperature too high	
	●●● ●●●	No country selected	
	●● ●●	Isolation fault	
	● ●	Solar voltage low	
	Off	Normal operation	
Status + Power LED	Fast blinking	Software update in progress – Do not switch off!	

Table 6-1: WiFi LED indications

7 ADVANCED SETTINGS

7.1 IntelliShade

IntelliShade optimizes system performance when the solar array is partially shaded. The shadow MPP tracker function is standard disabled to prevent unnecessary losses in the Maximum Power Point Tracker.
Connect your Wi-Fi device to the Soladin in point-to-point mode according to table 6-1. In the options menu IntelliShade can be enabled or disabled.

7.2 Accessing installer menu

The Soladin Web inverter is equipped with a library of grid interface settings, enabling easy adaptation to country specific grid codes. Where required, the inverter may contribute to the static grid support. All country specific settings are automatically set when the country is selected during the commissioning. However, in certain cases, adjustment to the standard settings may be necessary.

The following parameters can be adjusted when authorized as installer:

- Country selection
- Voltage- and frequency limits, Insulation detection and anti-islanding protection
- Maximum inverter power (Power limiting to 70% of array capacity according to the German EEG2012)

An "installer password" can be obtained from Mastervolt Technical Support.

Connect your Wi-Fi device to the Soladin in point-to-point mode according to table 6-1.

- Click on "Advanced settings" in the bottom left part of the screen and enter your personal "Installer" password.
- If the password is correct, the Country settings menu will be displayed.

7.2.1 Installer menu: Country setting

During first commissioning, the country is selected. This automatically stores the correct grid interface parameters in the Soladin Web. The Country Settings menu allows to change the country of installation, if necessary. Choose the correct country and press "Update". This will load the correct settings for the country and store them in the Soladin Web. Country setting "Custom" copies current settings to "Custom" and allows to change single settings, independent of the country installed.

Changing the country during on-grid operation may lead to a disconnection and reconnection to the grid

7.2.2 Installer menu: Power limiting

Power limiting of the inverter may be required by regulations, for example, limitation to 70% of array capacity according to EEG2012 in Germany. In the options menu, check the box to enable the maximum power and set the maximum AC output power of the inverter.

8 TROUBLE SHOOTING TABLE

LED	Indication of the LED	Meaning	What to do?
Status LED	On continuous	Grid fault	Check AC fuse, circuit breaker, cabling
Status LED	●●●●●● ●●●●●● blinking 6 times	Hardware error	Contact your Mastervolt supplier
Status LED	●●●●● ●●●●● blinking 5 times	Solar voltage too high	Check the PV string length
Status LED	●●●● ●●●● blinking 4 times	Temperature too high	Check the fan and free ventilation
Status LED	●●● ●●● blinking 3 times	No country selected	Select the country in the configuration page
Status LED	●● ●● blinking 2 times	PV insulation ground fault	Check the PV-installation for insulation errors
Status LED	● ● blinking 1 time	Solar voltage low	During dusk and dawn this can occur.
Wi-Fi LED	●●●● ●●●● stays blinking 4 times	The Soladin is connected to your home network, but is not able to connect to our servers.	Check your home internet connection Try unplugging and replugging your router. Check if you can reach http://intelliweb.mastervolt.com/ If you can reach other Internet sites, but not IntelliWeb, our service might be temporarily disrupted.
Wi-Fi LED	●●● ●●● stays blinking 3 times	The Soladin cannot obtain an IP address which it needs to access your local network	Check if your router is configured as a DHCP server, verify and correct your router settings if necessary. There may be a problem within the router, replug your router's power cord
Wi-Fi LED	●● ●● stays blinking 2 times	The Soladin cannot connect to the Wi-Fi network	Is the home router plugged in and switched on? Check the cables and plug them in if needed.
			Is the password correct? Use the Soladin setup to verify and, if needed, correct the password.
			Is the signal strength ok? Go to the location where your Soladin is installed and check if you can connect to your home network with a smartphone, tablet or laptop.
			May be caused by WiFi-interference; press WIFI connection button (Fig 0-1, ref.6) three times shortly to disable and enable the Internet Mode.Then the SSID will broadcast on a different WiFi-channel
Wi-Fi LED	● ● stays blinking 1 time	Setup modus	This is a normal situation. The Wi-Fi LED stays blinking during 30 minutes or shorter if the setup was finished earlier.
The Wi-Fi connection with the router is established but there is no internet connection.		Your internet server or the internet cable connection may be down.	Check your server and internet cable.
Because of a new router or otherwise you want to change the Wi-Fi settings.			Refer to section 6.1 for instructions.
You cannot find the internet router home network in the list.		The router may be installed too far from the Soladin or it is defect.	Check the position of your router and if it is working correctly.
There is no Wi-Fi connection between the Soladin and WiFi-device			Check if your WiFi-device is working correctly and check its password.

9 TECHNICAL DATA

9.1 Technical specifications

	Soladin 700 Web	Soladin 1000 Web	Soladin 1500 Web
GENERAL			
Part number:	130000700	130001000	130001500
Operating temperature:	Ambient temperature -20°C to 60°C (Full power up to 45 °C ambient)		
Enclosure:	Aluminium enclosure, plastic front		
Protection degree:	IP21 for indoor use		
Relative humidity:	<90% non condensing		
Safety class:	Class I		
Inverter technology:	HF transformer		
Cooling:	Intellicool		
Weight:	6 kg	7kg	8kg
Dimensions, hxwxd:	456 x 191 x 128 mm	478 x 241 x 128 mm	478 x 241 x 128 mm
SOLAR INPUT (DC)			
PV power range:	500-900 Wp	850 - 1350 Wp	1300 - 2000 Wp
Start up power:	<5 W	<5 W	<5 W
Operating voltage:	50 - 200 V	70 - 290 V	80 - 375 V
MPPT voltage range:	65 - 160 V	130 - 230 V	150 - 300 V
Nominal voltage:	140 V	205 V	220 V
Absolute maximum voltage:	200 V	290 V	375 V
Overvoltage category:	OVC2	OVC2	OVC2
Number of inputs:	1 MPP Tracker / 1 set of DC connectors		
Maximum input current:	8.6 A	8.6 A	11 A
Maximum short circuit current:	17 A	17 A	17 A
DC protection:	Surge arresters class III according to IEC 61643-1		
GRID OUTPUT (AC)			
Voltage:	230 Vac single phase +15% / -20%		
Overvoltage category:	OVC3	OVC3	OVC3
Nominal Power:	700 W	1050 W	1575 W
Maximum power:	735 W	1050 W	1575 W
Maximum current:	3.6 A	5.1 A	7.6 A
Maximum short circuit current:	2.35 A rms for 3 periods	2.35 A rms for 3 periods	2.35 A rms for 3 periods
Frequency:	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz
Nominal Power factor:	> 0.99	> 0.99	> 0.99
Standby Power consumption:	< 0.5 W	< 0.5 W	< 0.5 W
EU efficiency:	94.2 %	94.4 %	95.0 %
Maximum efficiency:	95.1 %	95.3 %	95.6 %
AC connector:	0.75 – 4 mm2 spring cage terminal block		
REGULATIONS AND DIRECTIVES			
CE conformity:	Yes		
Approved for use in:	UK, NL, DE, FR, ES, BE, DK, GR, AT, IE, BG, CZ		
National grid requirements:	VDE0126-1-1; VDE-AR-N4105; RD1699; G83/2; C10/11		
COMMUNICATION & MONITORING			
Indicators:	Status LED, Power LED and Wi-Fi LED		
Monitoring:	Monitoring portal (access included)		
Communication:	Wi-Fi		

9.2 Outline drawings

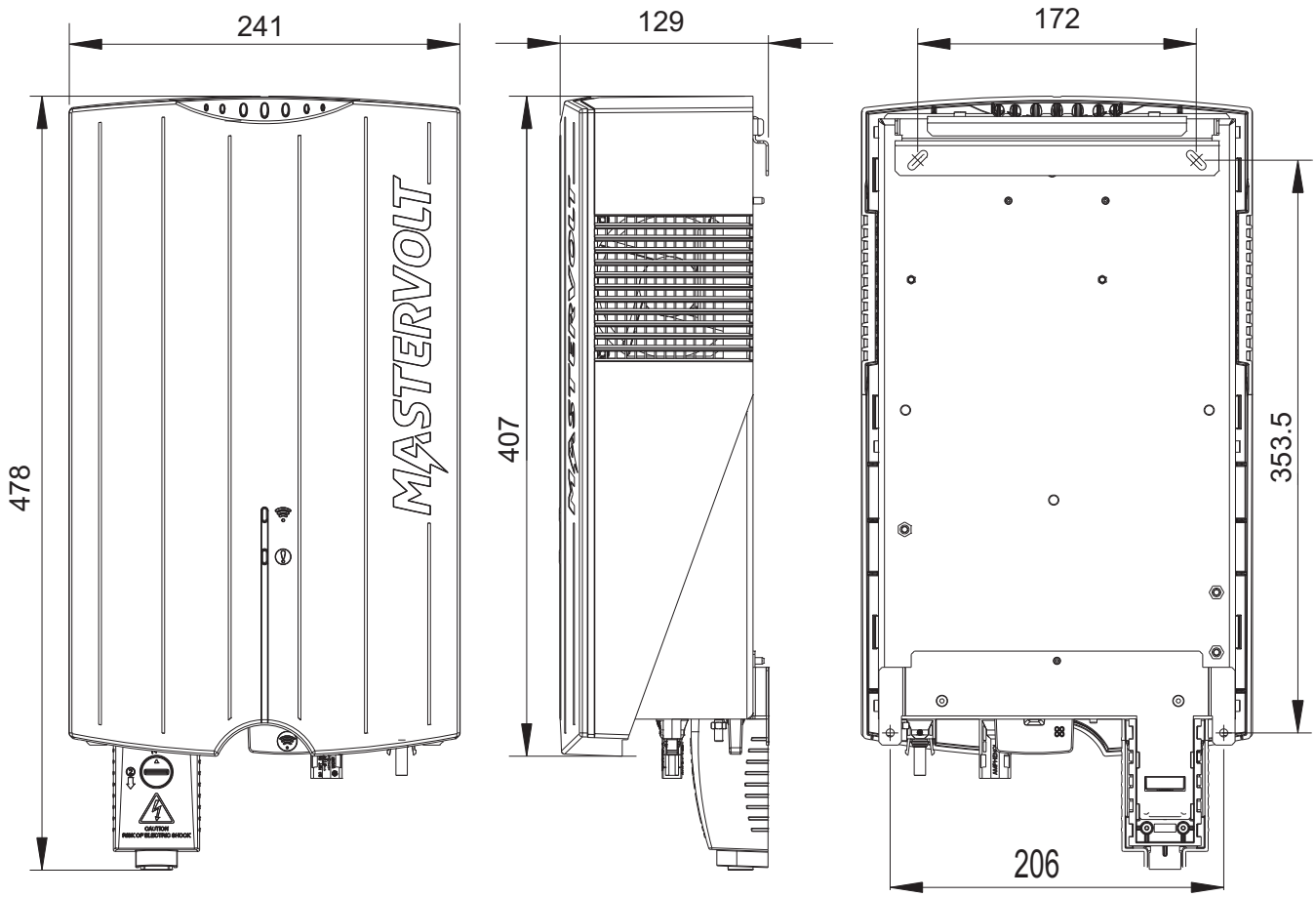


Figure 9-1: Dimensions of the Soladin 1000 Web and 1500 Web

9.3 Ordering information

Part number	Description
130000700	Soladin 700 Web
130001000	Soladin 1000 Web
130001500	Soladin 1500 Web
130500640	Soladin Web DC Switch Completely pre-assembled DC switch which ensures fast installation and optimum safety

10 CERTIFICATES

10.1 EC Declaration of Conformity

We,
Manufacturer Mastervolt International B.V.
Address Snijdersbergweg 93
1105 AN Amsterdam
The Netherlands

Declare under our sole responsibility that the product:

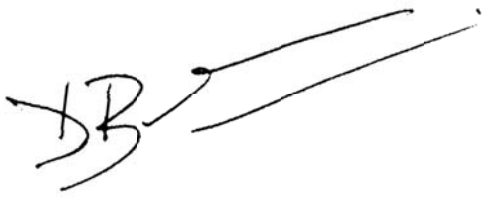
Article number	Product name
130000700	Soladin 700 Web
130001000	Soladin 1000 Web
130001500	Soladin 1500 Web

is in conformity with the provisions of the applicable directives:

2004/108/EC	EN 61000-3-2:2006 + A1:2009 + A2:2009
	EN 61000-3-3:2008
	EN 61000-6-1:2007
	EN 61000-6-3:2007 + A1:2011
2006/95/EC	EN 60950-1:2006 + A11:2009 + A1:2010 [1) 2)]
	EN 62109-1:2010
	EN 62109-2:2011
1999/5/EC	EN 301489-1 V1.8.1:2008-04 [1) 2)]
	EN 301489-17 V2.1.1:2009-05 [1) 2)]
	EN 300 328 V1.7.1:2006-10 [1) 2)]
	EN 50371:2002-03 [1) 2)]
2011/65/EU	

NOTES:
[1)] Notified body involved: 0681
[2)] Wireless module only

Amsterdam, 21-05-2013
MASTERVOLT INTERNATIONAL B.V.



Ing. D.R. Bassie
Product Manager Solar

10.2 VDE V 0126-1-1 Unbedenklichkeitsbescheinigung

Bureau Veritas
Consumer Products Services
Germany GmbH
Businesspark A96
86842 Türkheim
Deutschland
+ 49 (0) 4074041-0
cps-tuerkheim@de.bureauveritas.com

Zertifizierungsstelle der BV CPS GmbH
Akkreditiert nach EN 45011 -
ISO / IEC Guide 65

Unbedenklichkeitsbescheinigung

Antragsteller: **Mastervolt International BV**
Snijdersbergweg 93
1105 AN AMSTERDAM ZO
Niederlande

Erzeugnis: **Selbsttätige Schaltstelle zwischen einer netzparallelen Eigenerzeugungsanlage und dem öffentlichen Niederspannungsnetz**

Modell: **Soladin 1000 WEB, Soladin 1500 WEB**

Bestimmungsgemäße Verwendung:

Selbsttätige Schaltstelle mit einhasiger Netzüberwachung gemäß DIN V VDE V 0126-1-1:2006-02 und DIN V VDE V 0126-1-1/A1:2012-02 für Photovoltaikanlagen mit einer einphasigen Paralleleinspeisung über Wechselrichter in das Netz der öffentlichen Versorgung. Die selbsttätige Schaltstelle ist integraler Bestandteil der oben angeführten trafolosen Wechselrichter. Diese dient als Ersatz für eine jederzeit dem Verteilungsnetzbetreiber (VNB) zugängliche Schaltstelle mit Trennfunktion.

Prüfgrundlagen:

DIN V VDE V 0126-1-1 (VDE V 0126-1-1):2006-02
Selbsttätige Schaltstelle zwischen einer netzparallelen Eigenerzeugungsanlage und dem öffentlichen Niederspannungsnetz

DIN V VDE V 0126-1-1/A1 (VDE V 0126-1-1/A1):2012-02
Selbsttätige Schaltstelle zwischen einer netzparallelen Eigenerzeugungsanlage und dem öffentlichen Niederspannunugsnetz; Änderung 1.

Ein repräsentatives Testmuster der oben genannten Erzeugnisse entspricht den zum Zeitpunkt der Ausstellung dieser Bescheinigung geltenden sicherheitstechnischen Anforderungen der aufgeführten Prüfgrundlagen für die bestimmungsgemäße Verwendung.

Bericht Nummer: **13TH0069-VDE0126-1-1/A1**
Zertifikat Nummer: **U13-0495**
Datum: **2013-07-15** **Gültig bis:** **2016-07-15**

Zertifizierungsstelle

Dieter Zitzmann

DAkkS Deutsche Akkreditierungsstelle D-ZE-12024-01-01

10.3 Konformitätsnachweis Eigenerzeugungseinheit

Bureau Veritas
Consumer Products Services
Germany GmbH
Businesspark A96
86842 Türkheim
Deutschland
+ 49 (0) 4074041-0
cps-tuerkheim@de.bureauveritas.com

Zertifizierungsstelle der BV CPS GmbH
Akkreditiert nach EN 45011 -
ISO / IEC Guide 65

Konformitätsnachweis Eigenerzeugungseinheit

Hersteller / Antragsteller: Mastervolt International BV
Snijdersbergweg 93
1105 AN AMSTERDAM ZO
Niederlande

Typ Erzeugungseinheit:	**Netzgebundener Photovoltaikwechselrichter**	
Name der EZE:	**Soladin 1000 WEB**	**Soladin 1500 WEB**
Wirkleistung (Nennleistung bei Nennbedingungen):	**1000 VA**	**1500 VA**
Bemessungsspannung:	**230 V; N; PE**	

Firmwareversion: 1.16

Netzanschlussregel: **VDE-AR-N 4105:2011-08 – Erzeugungsanlagen am Niederspannungsnetz**
Technische Mindestanforderungen für Anschluss und Parallelbetrieb von Erzeugungsanlagen am Niederspannungsnetz

Mitgeltende Normen / Richtlinien: **DIN VDE V 0124-100 (VDE V 0124-100): 2012-07 – Netzintegration von Erzeugungsanlagen – Niederspannung**
Prüfanforderungen an Erzeugungseinheiten vorgesehen zum Anschluss und Parallelbetrieb am Niederspannungsnetz

Die oben bezeichneten Eigenerzeugungseinheiten wurden nach der Prüfrichtlinie VDE 0124-100 geprüft und zertifiziert. Die in der Netzanschlussregel geforderten elektrischen Eigenschaften werden erfüllt:

- Nachweis zulässiger Netzrückwirkungen
- Nachweis des Symmetrieverhaltens von Drehstromumrichtereinheiten
- Nachweis des Verhaltens der Erzeugungseinheit am Netz

Das Zertifikat beinhaltet folgende Angaben:

- Technische Daten der Erzeugungseinheiten, der eingesetzten Hilfseinrichtungen und der verwendeten Softwareversion
- Schematischer Aufbau der Erzeugungseinheit
- Zusammengefasste Angaben zu den Eigenschaften der Erzeugungseinheit (Wirkungsweise)

BV Projektnummer: 13TH0069

Zertifikatsnummer: U13-0489

Ausstellungsdatum: 2013-07-15 **Gültig bis:** 2016-07-14

Zertifizierungsstelle

Dieter Zitzmann

(Eine auszugsweise Darstellung des Zertifikats bedarf der schriftlichen Genehmigung der BV CPS GmbH)

DAkkS Deutsche Akkreditierungsstelle D-ZE-12024-01-01

10.4 Konformitätsnachweis NA-Schutz

Bureau Veritas
Consumer Products Services
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86842 Türkheim
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cps-tuerkheim@de.bureauveritas.com

Zertifizierungsstelle der BV CPS GmbH
Akkreditiert nach EN 45011 -
ISO / IEC Guide 65

Konformitätsnachweis NA-Schutz

Hersteller / Antragsteller: Mastervolt International BV
Snijdersbergweg 93
1105 AN AMSTERDAM ZO
Niederlande

Typ NA-Schutz:	Integrierter NA-Schutz
Zugeordnet zu Erzeugungseinheit Typ:	Soladin 1000 WEB, Soladin 1500 WEB

Firmwareversion: 1.16

Netzanschlussregel: VDE-AR-N 4105:2011-08 – Erzeugungsanlagen am Niederspannungsnetz
Technische Mindestanforderungen für Anschluss und Parallelbetrieb von Erzeugungsanlagen am Niederspannungsnetz

Mitgeltende Normen / Richtlinien: DIN VDE V 0124-100 (VDE V 0124-100): 2012-07 – Netzintegration von Erzeugungsanlagen – Niederspannung
Prüfanforderungen an Erzeugungseinheiten vorgesehen zum Anschluss und Parallelbetrieb am Niederspannungsnetz

Der oben bezeichnete NA-Schutz wurde nach der Prüfrichtlinie VDE 0124-100 geprüft und zertifiziert. Die in der Netzanschlussregel geforderten elektrischen Eigenschaften werden erfüllt:

- Einstellwerte und die Abschaltzeiten
- Funktionstüchtige Wirkungskette „NA-Schutz-Kuppelschalter"
- Technische Anforderungen der Schalteinrichtung
- Aktive Inselnetzerkennung
- Einfehlersicherheit

Das Zertifikat beinhaltet folgende Angaben:

- Technische Daten des NA-Schutz und zugehörige EZE Typen
- Einstellwerte der Schutzfunktionen
- Auslösewerte der Schutzfunktionen

BV Projektnummer: 13TH0069

Zertifikatsnummer: U13-0490

Ausstellungsdatum: 2013-07-15 **Gültig bis:** 2016-07-14

Zertifizierungsstelle

Dieter Zitzmann

(Eine auszugsweise Darstellung des Zertifikats bedarf der schriftlichen Genehmigung der BV CPS GmbH)

DAkkS Deutsche Akkreditierungsstelle D-ZE-12024-01-01