Anlagenüberwachung/System Monitoring/Monitorización de la instalación/Surveillance de l'installation/Monitoraggio dell'impianto

USB-SERVICE-INTERFACE

Installationsanleitung/Installation Guide/Instrucciones de instalación/Instructions d'installation/Instruzioni per l'installazione

USBPBS-IXX103813 | 98-0006813 | Version 1.3 DE EN ES FR IT

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1 Notes on this Guide

1.1 Validity

This guide for the USB service interface applies to Sunny Data Control version 3.81 and up.

1.2 Symbols Used

The following types of safety instructions and general information appear in this document as described below:

⚠ DANGER

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

⚠ WARNING

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

⚠ CAUTION

CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE

NOTICE indicates a situation that can result in property damage if not avoided.

Important

Information provides tips that are valuable for the optimal installation and operation of your product.

2 The USB Service Interface

2.1 Supported Devices and Software

The USB service interface supports the following SMA inverters and software:

SMA Inverters:

- Sunny Boy
- Sunny Mini Central
- Windy Boy
- SWR

SMA Software:

- Sunny Central Control version 3.81 and later

Operating Systems:

- Windows 2000
- Windows XP (32-Bit and 64-Bit)
- Windows Vista (32-Bit and 64-Bit)
- Windows 7 (32-Bit and 64-Bit)

2.2 Identifying the USB Service Interface

The type plate identifies the USB service interface. The type plate can be found on the USB service interface enclosure. The type plate is labeled "USB service interface."

3 Safety

3.1 Appropriate Usage

In conjunction with the SMA Sunny Data Control software, the USB Service Interface can carry out the following tasks:

- Parameterization of SMA inverters during start-up.
- Reading out fault statuses for maintenance purposes.

Do **not** use the USB service interface for permanent installations.

Only qualified personnel may connect the USB service interface in the inverter.

The USB service interface can generate one link to 1 inverter. If you wish to parameterize or check more than one inverter, you must parameterize or check each inverter individually.

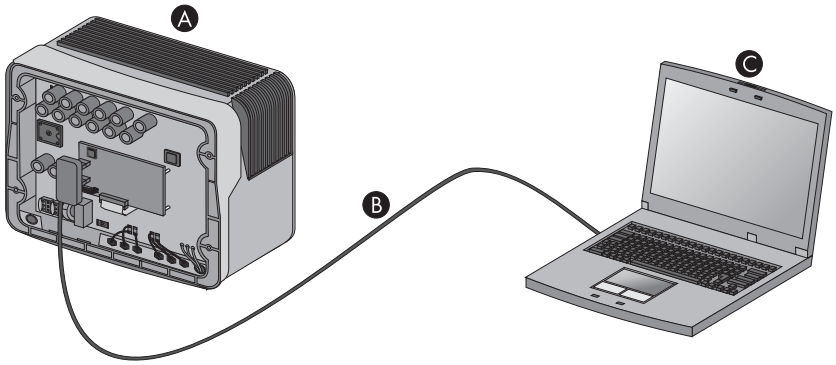


Figure 1: Appropriate Usage

Position	Description
A	Inverters
B	USB service interface
C	Laptop

3.2 Safety Precautions

Information in order to avoid injury to persons:

- Damaged cables can cause risk of lethal electric shock.
  - Before each use, perform a quick visual check for damage to the cable.
  - Do not use the USB service interface if the cable is damaged. Dispose of the damaged USB service interface immediately.
- Risk of lethal electric shock as a result of incorrect working on electrical devices.
  - Only qualified personnel may work on the inverter.
  - Only use the USB service interface for brief periods.
- Incorrectly setting the parameters in the inverter can result in a life-threatening hazard.
  - Before changing the parameter settings in the inverter, consult the responsible utility grid operator.
  - Ensure that the responsible utility grid operator has approved of the change to the parameter settings.

Notes for avoiding damage to the inverter:

- Electrostatic discharges can damage the inverter.
  - Ground yourself before touching the component by touching the PE or a non-coated part of the inverter enclosure.

4 Scope of Delivery

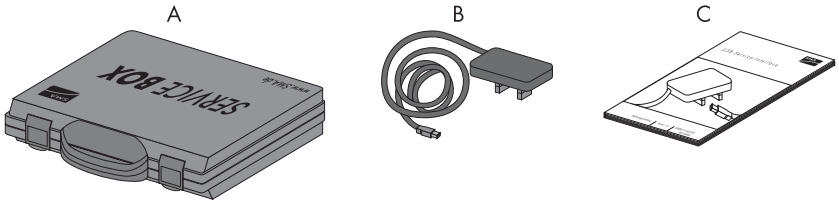


Figure 2: Packing list

Position	Description
A	Service Box
B	USB service interface
C	Installation guide

5 Initial Start-up

5.1 Checking the Windows Bit Version

In order to select the correct driver for the USB service interface from the www.SMA.de/en download area, you need to know which bit version of Windows is installed on your laptop. Most commonly available computers have 32 bit operating systems. To obtain a 64 bit system, it has to be specially selected during purchase.

Check the bit version under Windows XP/Windows 2000.

1. Right-click on **My Computer** and **Properties**.
2. In the "System Properties" window, click the **General** tab.

☑ The operating system is displayed under "System."

☑ If nothing is indicated next to the operating system, your laptop has a 32 bit operating system.

☑ If "64 bit" is indicated next to the name of the operating system, your laptop has a 64 bit operating system.

Check the bit version under Windows Vista /Windows 7.

1. Select **Start**.
2. Right-click on **Computer** and select **Properties**.

☑ In the "System" area, the Windows bit version is indicated next to "System type".

5.2 Download Driver

Required material:

☐ Laptop with zip program

☐ Internet access

☐ Supported operating system (see Section 2.1 "Supported Devices and Software", page 37)

☐ USB service interface

1. Switch on laptop.
2. Create a new folder on your laptop, for example named **USB Service Interface**.
3. Download the driver for the USB service interface from the www.SMA.de/en download area.
   - Select the USB service interface driver for the operating system.
   - In the "File download" window, select **Open**.
   - Save the zip file on your computer.
   - Using your zip program, unzip the zip file in the folder you created.

5.3 Installing the Driver

5.3.1 Install drivers in Windows XP/Windows 2000

The installation procedure is the same under Windows XP and Windows 2000. You will need to install drivers for 2 hardware components.

Procedure:

- Install driver for the USBPB
- Install driver for USB serial port

Windows Logo test

During the installation of a Window driver from SMA, you will receive a warning notice under Windows stating that the software you are about to install has not passed the Windows Logo test.

This warning notice appears when other providers' drivers are installed. It indicates that the manufacturer's driver was not tested in the Microsoft "Windows Hardware Quality Labs (WHQL)" laboratory.

SMA Solar Technology AG has checked the driver's function and approved the driver. You can ignore Microsoft's recommendation that you stop installation and continue with the installation.

Install Driver for the USBPB

1. Insert the USB plug of the USB service interface in one of the laptop's USB connectors.

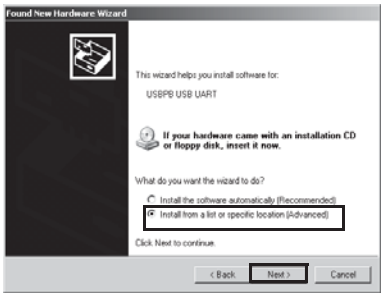
☑ The "Found New Hardware" wizard will open.

✖ If the "Found New Hardware" wizard does not open...

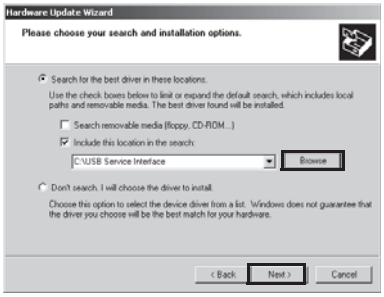
- See Section 8 "Troubleshooting", page 58

2. When the window displays the question "Can Windows connect to Windows Update to search for software?" select **No, not this time** and press the [Next>] button.

3. When the window asks "What do you want the wizard to do?", select **Install from a list or specific location (Advanced)**, and click [Next>].



4. Select [Browse] and select the folder in which the unzipped driver file is located.
5. Select [Next].



6. Select [Continue Anyway].

☑ The installation will start.

☑ The "Completing the Found New Hardware" wizard window will open.

7. Select [Finish].

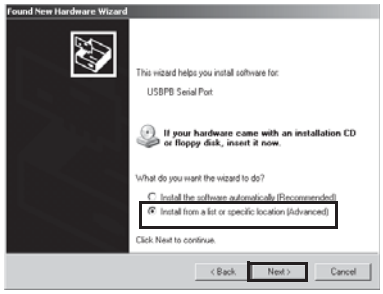
☑ The "Found New Hardware" wizard will open.

✖ If the "Found New Hardware" wizard does not open...

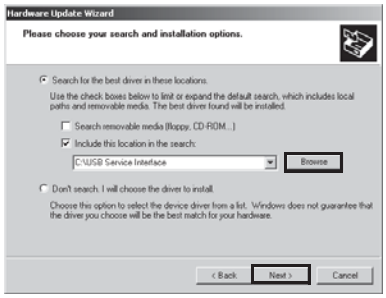
- See Section 8 "Troubleshooting", page 58

Install Driver for USB serial port

1. Select **Install from a list or specific location (Advanced)**, and click [Next>].

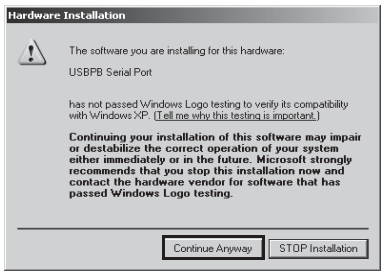


2. Select **Browse** and select the folder in which the unzipped driver files are located.
3. Select [Next>].



4. Select [Continue Anyway].

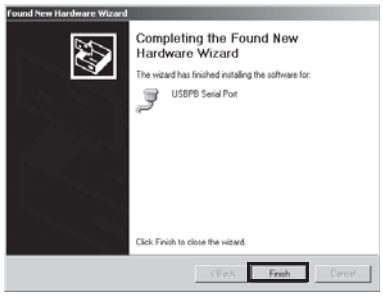
☑ The installation will start.



☑ The "Found New Hardware" wizard will open.

5. Select [Finish].

☑ Both drivers are installed.



5.3.2 Installing Drivers in Windows Vista

You will need to install drivers for 2 hardware components.

Procedure:

- Install driver for the USBPB
- Install driver for USB serial port

Windows Security

During the installation of a Window driver from SMA, you will receive a warning notice under Windows stating that the manufacturer of the driver software could not be tested.

This warning notice appears when other providers' drivers are installed. It indicates that the manufacturer's driver was not tested in the Microsoft "Windows Hardware Quality Labs (WHQL)" laboratory.

SMA Solar Technology AG has checked the driver's function and approved the driver. You can ignore Microsoft's recommendation that you stop installation and continue with the installation.

Install Driver for the USBPB

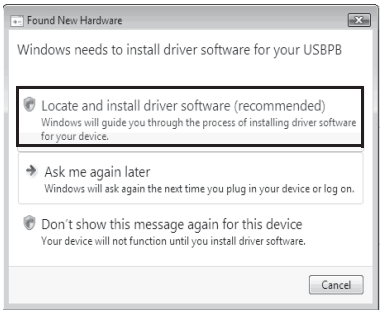
1. Insert the USB plug of the USB service interface in the laptop's USB connectors.

☑ The "Found New Hardware" wizard will open.

✖ If the "Found New Hardware" wizard does not open...

- See Section 8 "Troubleshooting", page 58

2. Select **Locate and install driver software (recommended)**.



3. **Select I don't have the disc.** Select **Show me other options.**

4. Select **Browse my computer for driver software (advanced).**

5. Select [Browse...].
6. Select the folder in which the unzipped driver files are located and press [OK].
7. Select [Next].

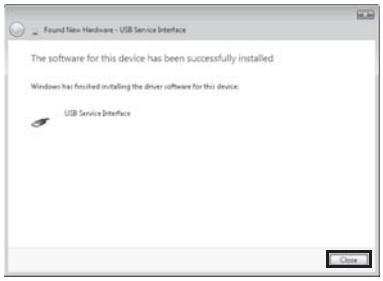
8. Select **Install this driver software anyway.**

☑ The installation will start.

☑ The "Found New Hardware - USB Service Interface" window will open.

9. Select [close].

☑ The "Found New Hardware - USB Serial Port" window will open.



Install Driver for USB serial port

1. **Select I don't have the disc.** Select **Show me other options.**

2. Select **Browse my computer for driver software (advanced)**.

3. Select [Browse...].
4. Select the folder in which the unzipped driver files are located and press [OK].
5. Select [Next].

6. Select **Install this driver software anyway**.

☑ The installation will start.

☑ The "Found New Hardware - USB Serial Port (COMx)" window will open.

7. Select [Close].

☑ Both drivers are installed.

5.3.3 Install Drivers in Windows 7

You will need to install drivers for 2 hardware components.

Procedure:

- Install driver for the USBPB
- Install driver for USB serial port

Windows Security

During the installation of a Window driver from SMA, you will receive a warning notice under Windows stating that the manufacturer of the driver software could not be tested.

This warning notice appears when other providers' drivers are installed. It indicates that the manufacturer's driver was not tested in the Microsoft "Windows Hardware Quality Labs (WHQL)" laboratory.

SMA Solar Technology AG has checked the driver's function and approved the driver. You can ignore Microsoft's recommendation that you stop installation and continue with the installation.

Install Driver for the USBPB

1. Insert the USB plug of the USB service interface in the laptop's USB connectors.
2. Select **Start**.
3. Right-click on **Computer** and select **Properties**.
4. Select **Device Manager**.
5. Select **Other devices.**

6. Right-click on **USBPB** and select **Update Driver Software...**

☑ The "Update Driver Software - USBPB" window will open.

7. Select **Browse my computer for driver software**.

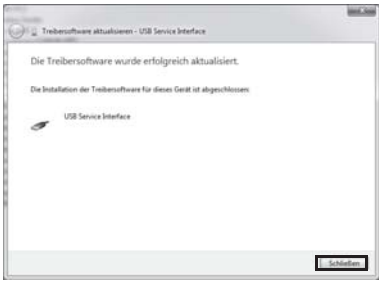
8. Select [Browse...].
9. Select the folder in which the unzipped driver files are located and press [OK].
10. Select [Next].

11. Select **Install this driver software anyway**.

☑ The installation will start.

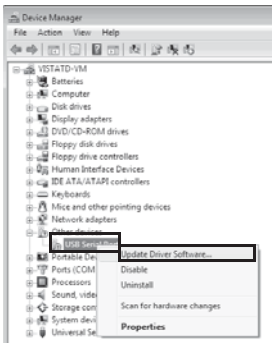
☑ The "Found Driver Software - USB Service Interface" window will open.

12. Select [Close].



Install Driver for USB serial port

1. Select **Start**.
2. Right-click on **Computer** and select **Properties**.
3. Select **Device Manager**.
4. Select **Other devices**.
5. Right-click on **USB Serial Port** and select **Update Driver Software...**.



6. Select **Browse my computer for driver software**.

7. [Select [Browse...].
8. Select the folder in which the unzipped driver files are located and press [OK].
9. Select [Next].

10. Select **Install this driver software anyway**.

☑ The installation will start.

☑ The "Found New Driver Software - USB Serial Port (COMx)" window will open.

11. Select [Close].

☑ Both drivers are installed.

5.4 Locate the COM port of the USB Service Interface

You will need the USB Service Interface COM port to configure Sunny Data Control.

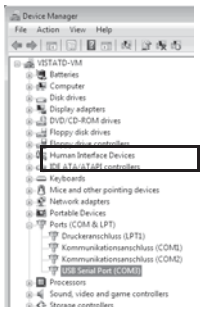
Find COM port under Windows XP/Windows 2000.

1. Select **Start > Settings > Control Panel > System > Hardware > Device Manager**.
2. Under "Ports (COM & LPT)", select **USBPB Serial Port (COMx)**.

3. Make note of the COM port: _____ .

Find COM port under Windows Vista/Windows 7.

1. Select **Start**.
2. Right-click on **Computer** and select **Properties**.
3. Select **Device Manager**.
4. Under "Ports (COM & LPT)", select **USBPB Serial Port (COMx)**.



5. Make note of the COM port: _____ .

5.5 Install Sunny Data Control

Required material:

☐ Laptop with zip program

☐ Internet access

☐ Supported operating system (see Section 2.1 "Supported Devices and Software", page 37).

1. Switch on laptop.
2. Download Sunny Data Control installation file from the download area at www.SMA.de/en and save it on your laptop.
3. Double-click installation file.

☑ Start installation program for Sunny Data Control.

4. Select [Next>].
5. Click "Yes, I accept". This activation confirms you accept the license agreement.
6. Select [Next>].
7. Select [Next>].
8. In the "Select target path" dialog, select [Browse...].
9. Select the target directory where you wish to save the Sunny Data Control.
10. Select [OK].
11. Select [Next>].
12. Activate the "Sunny Data Control" field.
13. To install the SDC-Agent, select the "SDC-Agent" field. This will allow you to display measured values from your PV plant on an HTML page in the internet (see Sunny Data Control operating instructions).
14. Select [Next>].
15. Select the program manager group from the drop down list in which you wish to save the Sunny Data Control.
16. Select [Next].
17. Select [Next].

☑ A window with the message "Sunny Data Control X.XX has been successfully installed" will open.

18. Select [Finish].

5.6 Configure Sunny Data Control

Requirement:

☐ The COM port of the USB service interface is known (see Section 5.4 "Locate the COM port of the USB Service Interface", page 51).

1. Start Sunny Data Control.
2. Create new plant, for example named **USB Service Interface** (see the "Sunny Data Control" operating instructions).
3. Select **Settings > Communication**.
4. In the "Connection via" drop down list, select COM port of the USB service interface.
5. Select [Settings].
6. In the "Media type" drop down list, select **RS232**.
7. In the "Bits per second" drop down list, select **1200**.

6 Parameterizing the Inverter

⚠ DANGER

Risk of lethal electric shock

- Only qualified personnel may work on the inverter.
- When using the USB server interface, protect the inverter from interference, for example by using a tarp.

⚠ DANGER

Incorrectly setting the parameters in the inverter can result in a life-threatening hazard.

- Before changing the parameter settings in the inverter, consult the responsible utility grid operator.

NOTICE

Electrostatic discharges can damage the inverter.

- Ground yourself before touching the component by touching the PE or a non-coated part of the inverter enclosure.

Requirements:

☐ The drivers for the USB service interface are installed on the laptop (see Section 5.3 "Installing the Driver", page 41).

☐ Sunny Data Control is installed on the laptop (see Section 5.5 "Install Sunny Data Control", page 52).

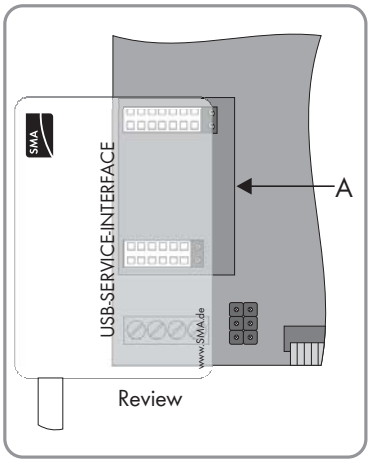
☐ Sunny Data Control is configured for communication with the USB service interface (see Section 5.6 "Configure Sunny Data Control", page 53).

1. Open inverter (see inverter installation guide).

2. **NOTICE**

   Incorrect insertion can damage the USB service interface and the interface slot of the inverter.

   - Plug in the left-hand pin connector of the USB service interface flush to the left of the strip on the interface slot (A) of the inverter (see inverter installation guide).



3. Protect the inverter from interference, for example with a tarp.
4. Commission the inverter when it is opened (see inverter installation guide).
5. Switch on laptop.
6. Insert the USB plug of the USB service interface in one of the laptop's USB connectors.
7. Start Sunny Data Control.
8. Parameterize the inverter in accordance with the utility grid operator's instructions. Observe the information regarding parameter setting in the Sunny Data Control documentation.
9. Disconnect inverter (see inverter installation guide).
10. Remove USB service interface from the slot in the inverter.
11. Close inverter (see inverter installation guide).
12. Commission the inverter (see inverter installation guide).

7 Uninstalling Drivers

7.1 Uninstalling Drivers in Windows XP/Windows 2000

If you are no longer using the USB service interface, you can uninstall the drivers.

Uninstall Driver for the USBPB

1. Select **Start > Settings > Control Panel > System > Hardware > Device Manager**.

☑ "USBPB" will be listed under "USB Controller".

✖ If "USBPB" is not listed under "USB Controller" ...

- Check whether "USBPB" is listed under "Other Devices".

2. Right-click on **USBPB** and select **Uninstall**.
3. Under "Confirm Device Removal", select [OK].

Uninstall Driver for the USB serial port

1. Select **Start > Settings > Control Panel > System > Hardware > Device Manager**.

☑ "USB Serial Port" is listed under "Ports (COM & LPT)".

2. Right-click on **Other Devices** and select **Uninstall**.
3. Under "Confirm Device Removal", select [OK].

☑ Both drivers are uninstalled.

7.2 Uninstalling Drivers in Windows Vista/Windows 7

If you are no longer using the USB service interface, you can uninstall the drivers.

Uninstall Driver for the USBPB

1. Select **Start**.
2. Right-click on **Computer** and select **Properties**.
3. Select **Device Manager**.

☑ "USBPB" will be listed under "USB Controller".

✖ If "USBPB" is not listed under "USB Controller" ...

- Check whether "USBPB" is listed under "Other Devices".

4. Right-click on **USBPB** and select **Uninstall**.

☑ Under "Confirm Device Removal", select [OK].

Uninstall Driver for the USB serial port

1. Select **Start**.
2. Right-click on **Computer** and select **Properties**.
3. Select **Device Manager**.

☑ "USB Serial Port" is listed under "Ports (COM and LPT)".

4. Right-click on **Other Devices** and select **Uninstall**.
5. Under "Confirm Device Removal", select [OK].
6. Both drivers are uninstalled.

8 Troubleshooting

Problem	Cause	Rectification
Hardware wizard does not start automatically.	Automatic start for the hardware wizard is not activated on your computer.	1. If your computer's operating system is Windows XP/Windows 2000, **select Start > Settings > System Control > System > Hardware > Device Manager**. 2. If your computer's operating system is Windows Vista: – Select **Start**. – Right-click on **Computer** and select **Properties**. – Select **Device Manager**. ☑ "USBPB" will be listed under "USB Controller". ✖ If "USBPB" is not listed under "USB Controller" ... • Check whether "USBPB" is listed under "Other Devices". 3. Right-click on **USBPB** and select **Update driver**. ☑ The hardware wizard will open.
The USB service interface is not working properly.	The USB service interface is not attached correctly.	• Ensure that the left-hand pin connectors of the USB service interface is attached to the left strips of the interface slot of the inverter. • Ensure that the USB plug of the USB service interface is correctly inserted in the laptop's USB connector.
	The laptop's USB connector is defective.	• Ensure that the laptop's USB connector is functioning, for example by inserting a USB memory stick or another USB device.

Problem	Cause	Rectification
	The USB service interface does not support your computer's operating system.	• Ensure that the USB service interface supports your laptop's operating system (see Section 2.1 "Supported Devices and Software", page 37).
	An incorrect driver is installed.	• Ensure that the driver for the laptop's operating system is installed.
	The drivers are not installed correctly.	1. Start the "Device Manager" in the operating system. 2. Ensure that when the USB service interface is attached, the entry "USBPB Serial Port (COMx)" is listed under "Ports (COM & LPT)". 3. If "USBPB Serial Port (COMx)" is not listed, repeat the driver installation (see Section 5.3 "Installing the Driver", page 41).
	The Sunny Data Control software version does not support the USB interface.	1. Call up the Sunny Data Control software version (see Sunny Data Control operating instructions). 2. Ensure that the Sunny Data Control software version is at least 3.81. 3. If necessary, install a new version of Sunny Data Control (see Section 5.5 "Install Sunny Data Control", page 52).
	Sunny Data Control is not configured for communication with the USB service interface.	• Configure Sunny Data Control for communication with the USB service interface (see Section5.6 "Configure Sunny Data Control", page 53).
	The inverter is not supplied with generator power.	• Ensure that the inverter is supplied with power.

9 Maintenance and Care

9.1 USB Service Interface Maintenance

- Before each use, perform a visual check for damage to the cable.
- Do not use the USB service interface if the cable is damaged. Dispose of the damaged USB service interface.

9.2 Cleaning the USB Surface Interface

- Clean the USB service interface with a damp cloth.
- After cleaning, allow the USB service interface to dry completely before the next use.
- Clean connector strip and USB plug with cleaners for boards or electrical devices.

10 Discarding the USB Surface Interface

- To dispose of a USB service interfaces at the installation site, observe the disposal regulations for electrical equipment waste at the installation site.
- To have SMA Solar Technology AG dispose of the USB service interface:
  - Send the USB service interface at your cost back to SMA Solar Technology AG with the note "FOR DISPOSAL".

11 Technical Data

General data

Width x height x depth	35 mm x 45 mm x 90 mm
Cable length	150 cm
Weight	150 g
typical current input*	30 mA

* via USB

Interfaces

to the inverter	SMA interface plug
to the laptop	Virtual COM port via USB

Environmental Conditions

Ambient temperature	– 10 °C ... +55 °C
Relative humidity, non condensing	5 % ... 95 %

12 Contact

If you have technical problems concerning our products, contact the SMA Serviceline. We require the following information in order to provide you with the necessary assistance:

- Type and serial number of the inverter
- Communication interface serial number
- Type and serial number or version of the communication device (e.g., Sunny Beam, Sunny Explorer).
- Detailed description of the problem

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