

iManager NetEco 1000S V100R002C20 Product Description

Issue **02**
Date **2017-03-31**

Copyright © Huawei Technologies Co., Ltd. 2017. All rights reserved.

No part of this document may be reproduced or transmitted in any form or by any means without prior written consent of Huawei Technologies Co., Ltd.

Trademarks and Permissions



and other Huawei trademarks are trademarks of Huawei Technologies Co., Ltd.

All other trademarks and trade names mentioned in this document are the property of their respective holders.

Notice

The purchased products, services and features are stipulated by the contract made between Huawei and the customer. All or part of the products, services and features described in this document may not be within the purchase scope or the usage scope. Unless otherwise specified in the contract, all statements, information, and recommendations in this document are provided "AS IS" without warranties, guarantees or representations of any kind, either express or implied.

The information in this document is subject to change without notice. Every effort has been made in the preparation of this document to ensure accuracy of the contents, but all statements, information, and recommendations in this document do not constitute a warranty of any kind, express or implied.

Huawei Technologies Co., Ltd.

Address: Huawei Industrial Base
Bantian, Longgang
Shenzhen 518129
People's Republic of China

Website: <http://www.huawei.com>

Email: support@huawei.com

Contents

Contents	ii
1 Overview.....	1
1.1 Positioning	1
1.2 Benefits	1
2 Architecture	3
2.1 Deployment Scheme	3
2.2 Software Architecture	5
2.3 Networking Scheme.....	6
3 Configuration.....	8
3.1 Software Configurations	8
3.2 Hardware Configurations.....	8
4 Product and Application Scenarios	10
4.1 PV Plant Monitoring	10
4.2 Inverter Upgrade	10
4.3 Historical Data Query	10
4.4 Remote Notification.....	11
5 Technical Specifications	12
6 Complied Standards	14
6.1 Communication Protocol	14
7 Acronyms and Abbreviations	15

1 Overview

1.1 Positioning

This document is applicable to Network Ecosystem (NetEco) 1000S V100R002C20.

NetEco 1000S is equipment-level monitoring software developed for solar inverter series products of the energy product line. NetEco 1000S V100R002C20 is mainly developed for SUN2000 and SUN8000 products (including the Smart Logger and EMI). EMI is short for environmental monitoring instrument.

NetEco 1000S can be installed on a computer running Windows operating system (OS). You can log in to NetEco 1000S using a web browser. You can log in to NetEco 1000S using any computer on an Ethernet monitoring network, monitor KPIs and alarms of grid-tied PV inverters in real time, and perform remote control and management. This helps centrally manage grid-tied PV inverters and perform remote O&M.

1.2 Benefits

NetEco 1000S mainly monitors inverters. It also provides the following functions:

- Easy and fast installation. NetEco 1000S can be installed on a PC running Windows 7 or Windows 2012.
- Device search and automatic configuration. NetEco 1000S can quickly access devices and start monitoring.
- Sub power station management. NetEco 1000S provides key device information based on sub power stations for easy O&M.
- Remote alarm notification. NetEco 1000S notifies users by emails or short messages immediately after a device reports an alarm.
- Remote configuration and control. NetEco 1000S allows users to remotely configure and control devices.
- Real-time monitoring. NetEco 1000S monitors device data, such as the output power, total power generated, and power factors, in real time.
- Historical data query. NetEco 1000S allows users to query various historical data and alarm logs of devices. The data can be exported and displayed on multiple pages.
- System logs query. NetEco 1000S allows users to query historical operation records and login records of all users.

- Remote upgrade. NetEco 1000S allows users to remotely upgrade inverter devices.
- User management. NetEco 1000S supports operations, such as adding, modifying, and deleting a user, and can assign different operation rights to users as required.
- Device operation log query. NetEco 1000S can remotely obtain operation logs of devices for technical support engineers to quickly learn running status of devices.

2 Architecture

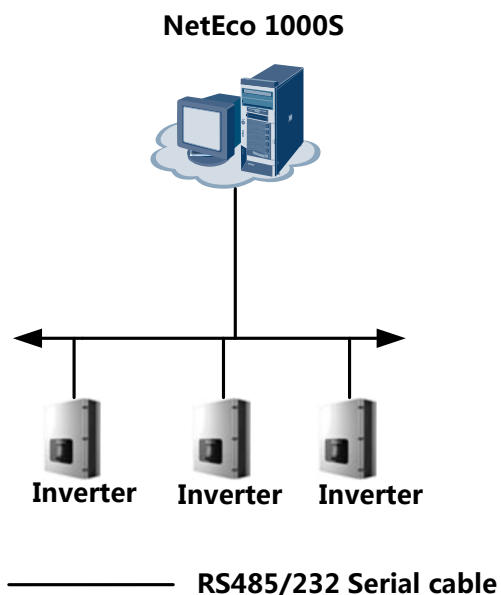
This chapter describes the hardware deployment schemes and software architecture of NetEco 1000S.

2.1 Deployment Scheme

NetEco 1000S provides two deployment schemes:

- Figure 2-1 shows the deployment scheme for connecting NetEco 1000S through serial ports.

Figure 2-1 Connection through serial ports



- Figure 2-2 and Figure 2-3 shows the deployment scheme for connecting NetEco 1000S through the IP network.

Figure 2-2 Connection through the IP network (SmartLogger)

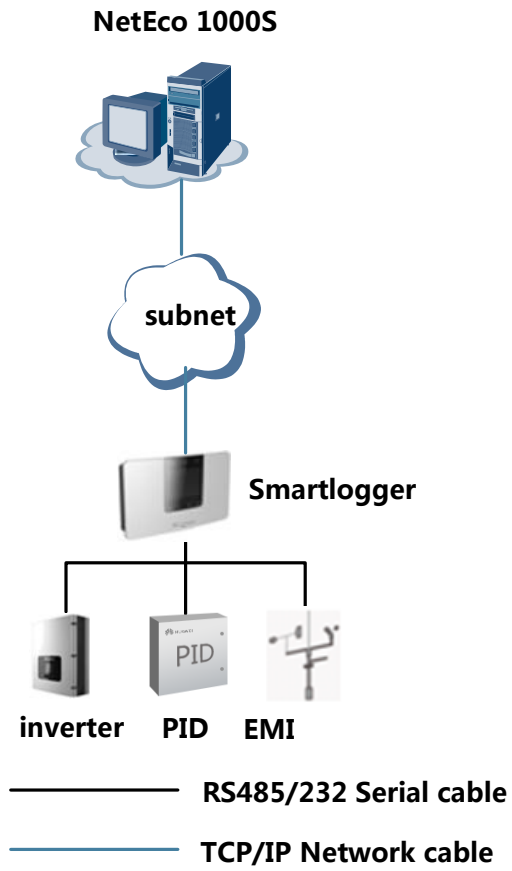
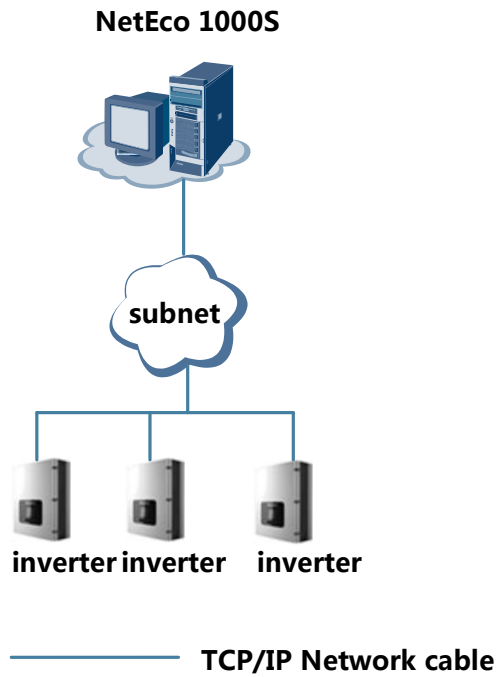


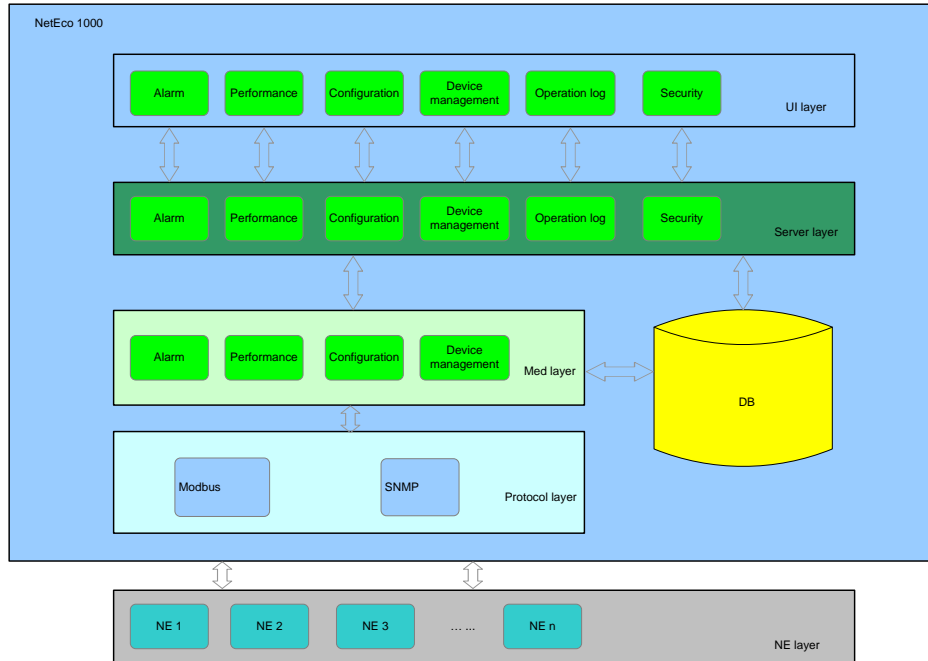
Figure 2-3 Connection through the IP network (the FE is directly connected to inverters)



2.2 Software Architecture

Figure 2-4 shows the software architecture of NetEco 1000S.

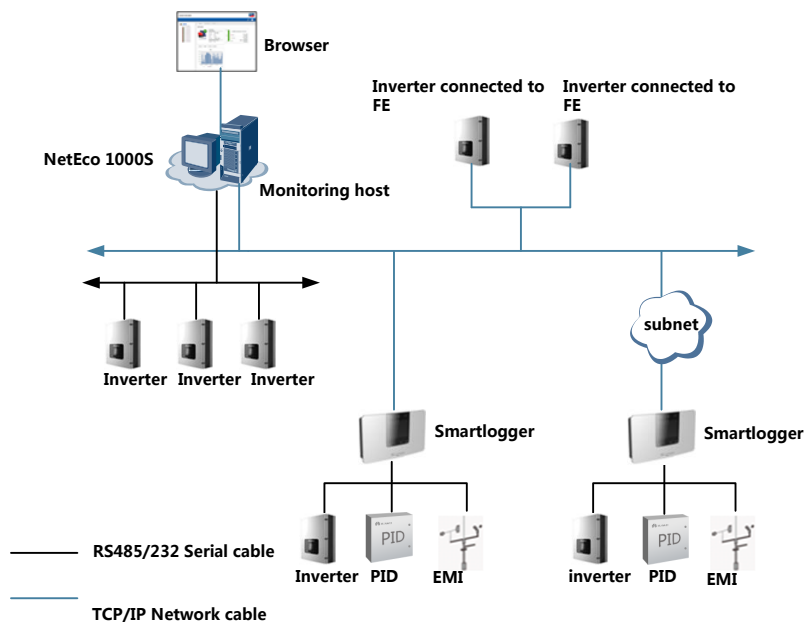
Figure 2-4 Software architecture of NetEco 1000S



2.3 Networking Scheme

Figure 2-5 shows the networking scheme of NetEco 1000S.

Figure 2-5 Networking scheme of NetEco 1000S



- NetEco 1000S adopts the B/S architecture. It is deployed on a monitoring host where Ethernet ports and serial ports are configured. You can use any computer on an Ethernet monitoring network to access the NetEco 1000S server using a web browser and monitor devices.
- The monitoring network consists of serial port buses and an Ethernet network.
- The Ethernet monitoring network is divided into a LAN and a remote subnet.
- Inverters can access the monitoring network in the following three modes:
 - Inverters can access the Ethernet monitoring network through serial ports. SUN2000 and SUN8000 are configured with standard serial ports.
 - The FE is directly connected to inverters and accesses the monitoring network through the Ethernet.
 - Inverters or EMIs are connected to the SmartLogger through serial ports. The SmartLogger is connected to an Ethernet monitoring network through Ethernet ports.

3 Configuration

This chapter describes configurations of NetEco 1000S.

3.1 Software Configurations

Table 3-1 lists software configurations of NetEco 1000S.

Table 3-1 Software configurations of NetEco 1000S

Item	Configuration
OS	<ul style="list-style-type: none">Standard edition: Windows 7Enterprise edition: Windows 2012
Web browser	<ul style="list-style-type: none">Internet Explorer 11Chrome50

3.2 Hardware Configurations

Table 3-2 lists hardware configurations of NetEco 1000S.

Table 3-2 Hardware configurations of NetEco 1000S

Item	Configuration
Memory	Minimum memory configuration: <ul style="list-style-type: none">Standard edition: 1 GB 4 GB is recommended for use.Enterprise edition: 8 GB 16 GB is recommended for use.

Item	Configuration
Hard disk	Minimum disk configuration: <ul style="list-style-type: none">• Standard edition: 1.5 GB• Enterprise edition: 2 GB Installation directory disk space: <ul style="list-style-type: none">• Standard edition: 500 GB• Enterprise edition: 4 x 600 GB

4 Product and Application Scenarios

This chapter describes the O&M characteristics of NetEco 1000S. These functions help improve O&M efficiency.

4.1 PV Plant Monitoring

NetEco 1000S allows users to:

- Browse site and device status overview.
- Query device faults and device details.
- Set device parameters.
- View devices and their running status in charts in real time.

With the preceding functions, users can easily monitor running status of site devices and quickly identify problems. NetEco 1000S also provides the alarm monitoring function for users to quickly locate problems.

4.2 Inverter Upgrade

The inverter version upgrade or patch installation is a common O&M scenario. When an inverter needs to be upgraded, you only need to remotely install the inverter of the target version or the patch package on the NetEco 1000S to complete the upgrade. This reduces O&M costs.

4.3 Historical Data Query

NetEco 1000S provides the alarm log query and performance data query functions for users to quickly learn the historical alarm information and performance data of devices.

4.4 Remote Notification

NetEco 1000S provides the remote notification function. When a device reports an alarm, NetEco 1000S notifies users by emails or short messages. This helps users learn the running status of the device in a timely manner.

5 Technical Specifications

Performance specifications of NetEco 1000S are as shown in Table 5-1.

Table 5-1 Performance Specifications

Module	Function Description	Performance Specifications	Specification Description
Installation CD-ROM	Management capacity	<ul style="list-style-type: none"> • Number of devices: 1860 <ul style="list-style-type: none"> – inverter: 1500 – Smartlogger: 300 – EMI: 30 – PID: 30 • Number of PV plants: 300 	Standard edition
		<ul style="list-style-type: none"> • Number of devices: 7200 <ul style="list-style-type: none"> – inverter: 6000 – Smartlogger: 1000 – EMI: 100 – PID: 100 • Number of PV plants: 1000 	Enterprise edition
Database	Performance data storage	The maximum number of devices whose data can be collected is as follows: <ul style="list-style-type: none"> • Standard edition: 1860 <ul style="list-style-type: none"> – inverter: 1500 – Smartlogger: 	Size of a daily dumped file for each device: 10 KB

Module	Function Description	Performance Specifications	Specification Description
		<p>300</p> <ul style="list-style-type: none"> - EMI: 30 - PID: 30 • Enterprise edition: 7200 - inverter: 6000 - Smartlogger: 1000 - EMI: 100 - PID: 100 <p>The relationships between collection period and data storage durations are as follows:</p> <ul style="list-style-type: none"> • 5-minute data of the EMIs is saved for one year. 5-minute data of other devices is saved for one month. • Data collected on a 15-minute basis is saved for two years. • Data collected by day, month, or year is saved for 20 years. 	

For details about more performance specifications of NetEco 1000S, see **Operation and Maintenance > System Maintenance > Performance Specifications.**

6 Complied Standards

NetEco 1000S is developed according to the EMS model defined in the ITU-T TMN standards. It uses the object-oriented method for information modeling. NetEco 1000S has good scalability and reusability and complies with the following international specifications and standards. ITU is short for International Telecommunication Union.

6.1 Communication Protocol

The communication between NetEco 1000S and devices on the southbound network complies with MODBUS interface specifications.

7 Acronyms and Abbreviations

F	
FE	Fast Ethernet
I	
ITU	International Telecommunication Union
N	
NetEco	Network Ecosystem