### List of related manuals

<table>
<thead>
<tr>
<th>Title</th>
<th>Code (English)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABB Remote monitoring portal User’s manual</td>
<td>3AUA0000098904</td>
</tr>
<tr>
<td>NETA-01 Ethernet adapter module User’s manual</td>
<td>3AFE64605062</td>
</tr>
</tbody>
</table>

You can find manuals and other product documents in PDF format on the Internet. See section *Document library on the Internet* on the inside of the back cover. For manuals not available in the Document library, contact your local ABB representative.
User’s manual

ABB Remote monitoring portal

Table of contents
# Table of contents

## 1. Introduction to the manual

- What this chapter contains ........................................................................... 7
- Intended audience .......................................................................................... 7
- Contents ......................................................................................................... 7
- Terms and abbreviations ............................................................................... 8

## 2. Description of the Remote monitoring portal (RMP)

- What this chapter contains ........................................................................... 9
- The RMP in brief ........................................................................................... 9
  - Configuration application ........................................................................... 10
  - Monitoring application ............................................................................. 11
- Block diagram of the system ....................................................................... 12

## 3. Setting up the Internet connection

- What this chapter contains ........................................................................... 13
- Prerequisites .................................................................................................. 13
- Adapters between the monitored equipment and Ethernet ......................... 14
  - The NETA-01 Ethernet adapter .................................................................. 14
  - Detailed NETA settings ............................................................................ 14
- Examples ....................................................................................................... 15
  - Local area network with an external SMTP server .................................... 15
  - Local area network with a local SMTP server ......................................... 16
  - 3G modem connection with an external SMTP server ......................... 17
  - Remote connection to NETA-01 (optional) ........................................... 18

## 4. Setting up the customer portal

- What this chapter contains ........................................................................... 19
  - Summary of the configuration procedure .................................................. 20
- Customer information ................................................................................... 20
- Editing the site information ......................................................................... 20
- Adding field devices ..................................................................................... 21
- Defining the monitored equipment ............................................................... 21
- Defining the user permissions for a site ....................................................... 21
- Configuring the field devices ...................................................................... 21
  - Pre-requisites ............................................................................................ 21
  - NETA configuration .................................................................................. 22
- Testing the data reception ........................................................................... 24
- Production mode .......................................................................................... 24
- Other site setup actions ............................................................................... 25
  - Setting up alerts ("Alerts" tab) ................................................................ 25
  - The site log ("Log" tab) .............................................................................. 25
- Other configuration application features ..................................................... 25
  - Documentation page .................................................................................. 25
- User management .......................................................................................... 25
  - Adding a user ............................................................................................. 25
Specifying user permissions and access levels ........................................ 25
Adding or deleting an external user ...................................................... 26
Editing a user ....................................................................................... 26
Deleting a user ..................................................................................... 26
The map page ....................................................................................... 26

5. Monitoring the plant

What this chapter contains ................................................................. 27
Starting the Monitoring application .................................................. 27
Main screen ......................................................................................... 28
Map page ........................................................................................... 29
Sites ..................................................................................................... 30
   Plant status ..................................................................................... 31
   Inverter details .............................................................................. 33
   Inverter strings (solar power plants only) ...................................... 34
   Expert view .................................................................................. 35
   Documentation ............................................................................. 36

Further information

Product and service inquiries ............................................................. 37
Product training ................................................................................ 37
Providing feedback on the manual ................................................... 37
Document library on the Internet ....................................................... 37
Introduction to the manual

What this chapter contains

This chapter contains general information on the manual including intended audience, contents, and a listing of terms and abbreviations.

Intended audience

This manual is intended for people that have any of the following roles related to the ABB Remote monitoring portal:

- Basic user
- Customer administrator.

For definitions of these roles, see Terms and abbreviations below.

Contents

The chapters of this manual and their contents are as follows:

- Description of the Remote monitoring portal (RMP) provides an overview of the ABB Remote monitoring portal.
- Setting up the Internet connection contains information on the requirements for the on-site Internet connection, and the Internet settings of the NETA module connected to the monitored equipment.
- Setting up the customer portal contains instructions for setting up the customer portal.
- Monitoring the plant deals with the Monitoring application of the RMP.
# Terms and abbreviations

<table>
<thead>
<tr>
<th>Term/Abbreviation</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic user</td>
<td>A person that has been given read access to the customer portal</td>
</tr>
<tr>
<td>Configuration application</td>
<td>Interface for administration of customer portals and users.</td>
</tr>
<tr>
<td>Customer administrator</td>
<td>The person who maintains, and grants read permissions to, the customer portal and sites</td>
</tr>
<tr>
<td>Customer portal</td>
<td>The website that contains the data collected from the equipment of the customer</td>
</tr>
<tr>
<td>DDCS</td>
<td>A communication protocol used by ABB equipment</td>
</tr>
<tr>
<td>DHCP</td>
<td>Dynamic Host Configuration Protocol</td>
</tr>
<tr>
<td>DNS</td>
<td>Domain Name Server. Translates network names into IP addresses.</td>
</tr>
<tr>
<td>External user</td>
<td>A person who has a user account provided by the portal administrator, and has been given access to a customer site (by the customer administrator). For example, an ABB service technician could be an external user on a customer portal.</td>
</tr>
<tr>
<td>HTTP</td>
<td>Hypertext Transfer Protocol</td>
</tr>
<tr>
<td>IP address</td>
<td>Numerical address of a device on a network that uses the Internet Protocol</td>
</tr>
<tr>
<td>ISP</td>
<td>Internet Service Provider</td>
</tr>
<tr>
<td>Monitoring application</td>
<td>Interface for monitoring data collected from customer plants or other installations.</td>
</tr>
<tr>
<td>NAT</td>
<td>Network Address Translation</td>
</tr>
<tr>
<td>NETA</td>
<td>Type of Ethernet adapter module to be installed on the monitored equipment and connected to the Internet through local networking</td>
</tr>
<tr>
<td>Portal administrator</td>
<td>The person (at ABB) who maintains the RMP system and customer administrator accounts and permissions</td>
</tr>
<tr>
<td>RMP</td>
<td>ABB Remote monitoring portal</td>
</tr>
<tr>
<td>SMS</td>
<td>Short Message Service</td>
</tr>
<tr>
<td>SMTP</td>
<td>Simple Mail Transfer Protocol</td>
</tr>
</tbody>
</table>
Description of the Remote monitoring portal (RMP)

What this chapter contains
This chapter provides an overview of the Remote monitoring portal (RMP).

The RMP in brief
The RMP is an Internet-based service that continuously collects data from on-line equipment (such as wind or solar power plants, or drives) over the Internet, and allows the users to access the data with a web browser. The monitored equipment is fitted with a NETA-01 module that is configured to send data to the RMP. The data is stored securely and protected by user permissions control.

The RMP enables long-time monitoring of selected parameters, comparisons between different equipment (for example, sections of a photovoltaic power plant), and CO₂ emission reduction calculations. Alerts can be set up to be sent to an email address or by SMS.

The RMP has two interfaces: the Configuration application, and the Monitoring application.
10 **Description of the Remote monitoring portal (RMP)**

- **Configuration application**

Through the Configuration application, the customer administrator defines the customer site settings, user accounts and permissions. The Configuration application is also used by ABB personnel for portal administration.

The Configuration application is available at [https://setup.mydrives.info](https://setup.mydrives.info).

For further information on the Configuration application, see chapter *Setting up the customer portal* (page 19).
Monitoring application

The Monitoring application is available to users as defined by the site administrator. It displays the data collected from the monitored equipment. The data can be exported into PDF, CSV, XLS and image formats.

The address of the Monitoring application is [https://www.mydrives.info](https://www.mydrives.info).

For further information on the Monitoring application, see chapter Monitoring the plant (page 27).
Block diagram of the system

[Diagram showing the flow of data and communication between different components of the system, including the plant, inverter, field device, internet, database, and various users with different access levels.]
Setting up the Internet connection

What this chapter contains

This chapter contains information on the requirements for the on-site Internet connection, and the Internet settings of the NETA module connected to the monitored equipment.

The information in this chapter is mainly targeted on the customer administrator or network administrator.

Prerequisites

• The browser used for NETA-01 configuration must support Java applets. For details, see NETA-01 Ethernet adapter module User’s manual (3AFE64605062 [English]).

• It is presumed that the NETA module is already installed and communicates with the monitored equipment. The IP address of the NETA, as well as a system administrator-level username and password, must be at hand.

• An Internet connection must be available on site as the service provided by ABB does not include one. The Internet connection can be implemented, for example, with an ADSL or 3G modem that has a RJ45 Ethernet port.

• The cabling and/or networking that connects the NETA module to the modem must be present.
Adapters between the monitored equipment and Ethernet

The NETA-01 Ethernet adapter

The NETA-01 is connected to the Internet using standard RJ45 Ethernet connection. It is recommended to install the NETA behind a firewall or NAT. The NETA-01 accepts both static and DHCP-assigned IP addresses. The module needs to have access to a SMTP server to send e-mail messages to the RMP server, so at least the IP address of the SMTP server must be defined.

Detailed NETA settings

**IP address**: The address of the adapter.

**Subnet mask**: The mask that tells the adapter which addresses are local and which are remote.

**Gateway address**: The address of the gateway router. A gateway is needed if the DNS or SMTP server is located outside the local network.

**DNS address**: A DNS server must be defined if the gateway or the SMTP server is accessed by name instead of IP address, in which case at least one DNS server must be defined. Another DNS server can defined as a backup if the first does not respond, but this is not mandatory.

**Host name**: Optional network name of the adapter.

**Domain name**: Optional domain name of the network.

**SMTP server**: Name or IP address of the email server (required).

---

**Note**: The SMTP server must
- allow access from the IP address specified for the adapter
- be listening to port 25
- be available without encryption. Basic SMTP authentication can be used
- allow the sender address to be the format [xxxxx]@mydrives.info. If the email address has to be set otherwise, contact your local ABB representative.

**SMTP username/password**: Authentication information for the SMTP server. Used only if the server requires authentication.

**DHCP**: If the network contains a DHCP server, it can be used to assign the IP address, subnet mask, gateway and DNS servers. In that case, only the SMTP server-related information must be entered.
Examples

- **Local area network with an external SMTP server**

This drawing shows a typical ADSL/VDSL connection. The modem can either be in bridging or NAT mode. When the modem is in bridging mode, IP addresses are assigned to the NETA adapters by the SMTP server. If the modem is in NAT mode, it assigns the IP addresses to the devices in the local network. In either case, DHCP can be used, so no fixed IP addresses are needed. If DHCP is not used with the modem in NAT mode, fixed IP addresses must be defined for the NETA adapters, and so must gateway and DNS addresses.

The name or address of the SMTP server is required; also, the requirements for the SMTP server stated under *Detailed NETA settings* (page 14) must be fulfilled.
Local area network with a local SMTP server

This example represents a typical office network. Let us assume that the local IP address 192.168.2.10 is reserved for the NETA, and 192.168.2.2 is the SMTP server. The subnet mask is 255.255.255.0, so both the IP addresses are located in the same network. The SMTP server is configured to allow the sending of mail from all local IP addresses (192.168.2.x). In this case, all that needs to be done is to provide the NETA with the information of its own IP address as well as that of the SMTP server.
3G modem connection with an external SMTP server

In this case, no broadband Internet connection is available, and a 3G modem with a SIM card from a local Internet service provider (ISP) is used. Typically, 3G modems acquire an IP address by DHCP. The SMTP server is specified by the ISP.
Remote connection to NETA-01 (optional)

It is possible, but not mandatory, to allow remote access to the NETA module through the Internet. This allows, for example, ABB service personnel to check the status of the equipment remotely. This may be useful if troubleshooting is required. The remote connection is secured with a password.

To allow remote access, the firewall must accept incoming connections through port 80 (WWW for web user interface access) and 46823 (DDCS for optical communication between the converters, inverters or drives connected to the NETA) to the IP address of the NETA. If the NETA is behind NAT, these ports should be forwarded to the NETA IP address. If there are multiple NETA modules behind NAT, for example, port 8001 of the router can be forwarded to port 80 of NETA module 1, port 8002 to port 80 of NETA module 2, etc. Port 46821 of the router could be forwarded to port 46821 of NETA module 1, port 46822 to port 46822 of NETA module 2, etc. Note that the DDCS port of the NETA is selectable, while the HTTP port is always 80. Also note that IP addresses may change if they are reassigned by a DHCP server, after which any previous port forwarding settings become invalid.

This diagram is an example of NETA adapters connected to the Internet with NAT.
Setting up the customer portal

What this chapter contains

This chapter contains instructions for setting up the customer portal in the Configuration application. These tasks are usually the responsibility of the customer administrator, i.e. the person who maintains, and grants read permissions to, the customer portal and sites. Most actions take place within the “Remote monitoring portal setup” view. An example of the start-up screen is shown below.
Notes:

- The tasks are ordered so as to form a logical setup procedure. The order does not necessarily reflect the actual arrangement of items on the subpages of the configuration application.
- It may take up to an hour for changes made via the configuration application to take effect in the monitoring application. For this reason, you might want to activate the testing mode before starting the configuration procedure (see page 24).

Summary of the configuration procedure

1. Checking and editing customer information
2. Editing site information
3. Addition of field devices
4. Definition of monitored equipment (inverters, converters, drives etc.)
5. Definition of user permissions
6. Configuration of field devices
7. Testing and activating data reception

Customer information

The basic customer information (name, address, contact person, etc.) can be viewed and edited by selecting “Edit customer information” on the left pane. Apply any changes by pressing the “Save changes” button.

Editing the site information

Site information is available by selecting “Sites” - [sitename] - “Plant” tab. This tab contains the location information of the site, the contact person of the site, and other data.

Notes:

- Notification emails will be sent to the specified contact email address when the license is nearing expiration.
- The location is given in WGS84 format, for example “60.220666,24.87461”.
- The value inserted into the “Coefficient for CO₂ calculation” field is used to calculate the CO₂ savings. The coefficient is the saved CO₂ (in tons) per kilowatt.
- The GPS coordinates given in this view are used on the map page. See section The map page (page 26).
Adding field devices

Select the “Field devices” tab. The NETA adapters located at the site (if any) are listed here.

To add a field device,
- Press the “New field device” button.
- Select the type of the device and transfer.
- Add a list of monitored equipment connected to the new field device.
- (Optional) Add information on the remote access and network settings. These fields do not affect the actual communication – they can be stored here for reference only.
- Save the changes.

Repeat the procedure for all physical field devices on this site.

Defining the monitored equipment

The monitored equipment (inverters, drives, etc.) are added under the “Inverters” tab as follows:
- Press the “New inverter” button.
- Enter a unique identification number for each inverter. (The suggested number can be changed manually but it must be unique within this site.)
- Enter the serial number, type, and nominal power for each inverter.
- In case of a solar power plant: If string monitoring is in use, tick the “View string monitoring page” box; also, click on “Select and rename strings” to name and enable/disable strings.
- Press the “Save changes” button to save, or click “Cancel” to discard the changes.

Repeat the above steps for each piece of equipment.

Defining the user permissions for a site

Select the “User permissions” tab to define the user permissions to this site. To do this, local users must have been defined. See section User management (page 25) for information on how to add local users.

Configuring the field devices

At this point, the field devices are configured to send data to the RMP.

- Pre-requisites
  - The monitored equipment (inverter, converter, drive etc.) has been installed.
  - The field device has been installed and connected to the monitored equipment.
  - The Internet connection settings have been set up for the field devices. See chapter Setting up the Internet connection (page 13).
### NETA configuration

- Print, save or write down the settings ("Field devices" tab, then click on device type) for each field device as you might not be able to access the settings page while the configuration is in progress.
- Select “Configuration files” on the left pane. Download the appropriate configuration file to your PC.
- Unzip the configuration package into a suitable folder.
- Connect the PC to the NETA-01 using one of the following methods:

![Diagram of connectivity options]

- **User (local access)**
  - Ethernet
  - Switch
  - NETA-01
- **User (remote access)**
  - Internet
  - Router/Modem/Firewall
  - Port forwarding
  - NETA-01
• Assign the PC with an IP address that can be used to access the NETA. For example, if the NETA has the address 192.168.2.10, assign the PC an unoccupied address in the area of 192.168.2.x. The netmask must also be set (in this case, to 255.255.255.0).

The connection can be tested via the Command prompt by entering:

```
ping 192.168.2.10
```

This should return a reply such as:

```
Reply from 192.168.2.10: bytes=32 time<1ms TTL=128
```

four times. (If the connection is not working, a "Request timed out." message is displayed.)

• Run the batch file "upload_emails.bat" (located in the folder into which you unzipped the configuration package earlier).
Setting up the customer portal

- Answer the questions according to the settings information you saved or noted down earlier. In the screenshot below, the answers are shown in white.

![Screenshot](image-url)

- Use your browser to connect to the NETA-01.
- The batch overwrites the DDCS settings; check that they are correct.
- Check the Ethernet settings.

Repeat the procedure for all other NETA-01 modules.

Testing the data reception

Whether data is received from the NETA devices can be tested as follows:

- Check that the monitored equipment is powered so that meaningful data can be transmitted.
- Click “Sites”, then the sitename.
- Select the “License” tab.
- Click the “Activate testing mode” button. The testing mode activates test data transfer for 24 hours. (You can alternatively activate the production mode for constant data reception. The license starts counting when production mode is activated.)
- Wait for the configuration application to upload the settings to the database application. **Note:** This may take up to an hour.
- Login to the monitoring application.
- Select the site and see if any data is coming in.

Production mode

After data reception has been tested, the site can be set to production mode. The production mode dates are set by the portal administrator. The customer administrator can check the validity of the RMP license under the “License” tab.
Other site setup actions

- **Setting up alerts (“Alerts” tab)**
  
  Alerts can be set up for each site. Click on “Sites” - [sitename] - Alerts tab. Press the “New alert” button.
  
  Specify whether alerts are sent to an email address or a telephone number. It is possible to define the times of day for both email and SMS messages.

- **The site log (“Log” tab)**
  
  A log page exists for each site. The page is accessible by selecting “Sites” - [sitename] - “Log” tab.
  
  A new log entry can be added by typing the message into the field and pressing the “Add new log entry” button.
  
  Old log entries can be deleted by clicking “Delete” beside the message.

Other configuration application features

- **Documentation page**
  
  The “Documentation” link on the left opens a page that contains links to documentation related to the RMP.

User management

You can add and edit users that are allowed to view customer sites. You can specify if the user has customer administrator privileges or not.

- **Adding a user**
  
  - Click “Edit and add users” on the left pane. Click the “New user” button.
  - Fill in the “Name” and “Email address” fields and select a preferred language from the pull-down list.
  - Tick the “View map” checkbox to allow the user to view a map of the sites. See section *The map page* (page 26).
  - Select an access level for the user to the available sites.
  - Specify whether the new user has basic user or customer administrator privileges.

  The new user will be sent a notification email automatically.

Specifying user permissions and access levels

Access to a site can be given either through “Sites” - [sitename] - “User permissions”, or by selecting “Edit and add users” and specifying an access level to the user in the sites list.

The available access levels are:

- No access: The user cannot view the site.
- Basic: The user can view the production data (such as plant status).
- Service: The user can view detailed device data (such as inverter details and string monitoring data).
- Factory: The user can view expert data such as raw email messages.
Adding or deleting an external user
Permissions to access a site can be given to external users (i.e. accounts that already exist in the RMP system). Select “Sites” - [sitename] - “User permissions” tab. Under “Add new external user”, enter the email address of the user into the “Username” field. Finally, specify an access level for the user to this site and press the “Save changes” button.

An external user’s access to the site can be cancelled by clicking “Remove” right of the user name under “External users”.

Editing a user
For an existing user, the preferred language, “View map” preference, and access levels to the different sites can be edited by selecting “Edit and add users” and clicking on the “Name” of the user.

Furthermore, the password of a user can be changed by clicking “Change password” at the bottom of the page.

Deleting a user
Select “Edit and add users”, then “Delete” to the right of the user name.

The map page
The map page shows the location of the sites. The location is defined by the coordinates given under “Sites” - [sitename] - “Plant” tab. If no coordinates are given, the application will try to determine the location from the city and country information.

The status of each site is indicated by a color code. See an example of the map view on page 29.

To allow a user to view the map, select “Edit and add users”, click on the username, and tick the “View map” box.
Monitoring the plant

What this chapter contains

This chapter deals with the Monitoring application of the RMP.

Starting the Monitoring application

With a web browser, navigate to https://www.mydrives.info.

Enter your username and password in the available fields and click the “Login” button. The main screen appears.
Main screen

The links on the left-hand pane are used to navigate within the Monitoring application. Clicking on “Main” any time displays this screen.

The text content on this page is updated by ABB to present, for example, news concerning the users of the application.
Map page

Clicking on "Map" displays a map view of the sites that you have the permissions to monitor. The color of the marker on each location indicates the status of the site; the meaning of the colors are listed below the map.

You can move the view by clicking on the map and dragging. To zoom in and out, either click on the + or – signs on the left edge of the map or move the slider in between.

The sites can be filtered by entering a text string into the field at the upper right corner of the map; only the sites whose names contain that string are shown. The filter is removed by clicking the “×” in the field.
30 Monitoring the plant

- Sites

The site details are available through the links below the “Map” link on the left-hand pane. In the pictures here, “ABB” represents the customer name.

Clicking on a customer name (or the + sign to the right of the name) shows the sites defined for that customer. Clicking on the site name shows the monitoring pages for the site.
Plant status

The “Plant status” provides a summary of the plant status and production.

Click on the tabs to select the desired graphical display. “<” and “>” display the previous or next period of the same length. To select a specific date, click on the “Day”, “Week” and “Month” links (or the calendar button) at the bottom of the screen. Clicking on “Apply to all” sets the selected date to all tabs; clicking on “Reset” returns the tabs to the present date.

If you want to view several curves at the same time, hold down the Shift key and click on the data names you want to add to the view.

To export the data to a file, click “More” and select the desired file format.
Site information
This page shows site information as specified by the customer administrator.

<table>
<thead>
<tr>
<th>Site information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site name: ABB Eerof Piijärveli</td>
</tr>
<tr>
<td>System size: 181 kWp</td>
</tr>
<tr>
<td>Installation type: Fixed, roof mounted</td>
</tr>
<tr>
<td>Inverter 2 type: PV235P-57-01800W-A</td>
</tr>
<tr>
<td>Nominal inverter power: 100 kW</td>
</tr>
<tr>
<td>Measured since: 3.7.2016</td>
</tr>
<tr>
<td>Plant time zone: Europe/Helsinki</td>
</tr>
<tr>
<td>CO2 coefficient: 0.0011 tons/kWh</td>
</tr>
</tbody>
</table>
Inverter details

This page shows various measurements concerning the currently-selected inverter.

### Inverter 2 details

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Latest value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC current</td>
<td>103</td>
<td>A</td>
</tr>
<tr>
<td>DC voltage</td>
<td>549</td>
<td>V</td>
</tr>
<tr>
<td>AC voltage</td>
<td>305</td>
<td>V</td>
</tr>
<tr>
<td>Temperature</td>
<td>50</td>
<td>°C</td>
</tr>
</tbody>
</table>

### Power

For the commands available next to each graphical display, see section *Plant status* (page 31).
Inverter strings (solar power plants only)

This page shows data on individual strings.

For the commands available next to each graphical display, see section *Plant status* (page 31).
Expert view

This page is like the Inverter details view (page 33), but with more detailed technical information on the inverter.

For the commands available next to each graphical display, see section Plant status (page 31).
**Documentation**

This page will collect together links to documentation related to the RMP.
Further information

Product and service inquiries
Address any inquiries about the product to your local ABB representative, quoting the type designation and serial number of the unit in question. A listing of ABB sales, support and service contacts can be found in the product pages at www.abb.com/solar.

Product training
For information on ABB product training, navigate to www.abb.com/solar and select Photovoltaic systems – Solar inverters – Training courses.

Providing feedback on the manual
Your comments on our manuals are welcome. Go to www.abb.com/drives and select Document Library – Manuals feedback form (LV AC drives).

Document library on the Internet
Go to www.abb.com/solar and click on the links under Downloads. You can browse the library or enter selection criteria, for example a document code, in the search field.
Contacts

www.abb.com/solar