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01.00.zz (Device firmware)

Special Documentation
Proline Promass 500 PROFINET

Web server

Endress+Hauser
People for Process Automation

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1 About this document

1.1 Document function

This manual is a Special Documentation; it does not replace the Operating Instructions pertaining to the device. It serves as a reference for using the Web server integrated in the measuring device.

1.2 Target group

The document is aimed at specialists who work with the device over the entire life cycle and perform specific configurations.

1.3 Using this document

1.3.1 Information on the document structure

This Special Documentation contains a range of information, including:
- Prerequisites for use on the computer and measuring device
- Connection of the computer via the service interface, WLAN interface or Ethernet-based fieldbus
- Configuration of the communication interface
- Establishing a connection
- Diagnostics and troubleshooting

The information and safety instructions in the Operating Instructions pertaining to the measuring device must always be observed → 4.

1.3.2 Device documentation

The Technical Documentation for the measuring device is available:
- On the CD-ROM supplied with the measuring device (depending on the device version, the CD-ROM might not be part of the delivery!)
- Via the *W@M Device Viewer*: enter the serial number from the nameplate (www.endress.com/deviceviewer)
- Via the *Endress+Hauser Operations App*: enter the serial number from the nameplate or scan the 2-D matrix code (QR code) on the nameplate.

Technical documentation can also be downloaded from the Download Area of the Endress+Hauser web site: www.endress.com → Download. However this technical documentation applies to a particular instrument family and is not assigned to a specific measuring device.

1.4 Symbols used

1.4.1 Safety symbols

Symbol	Meaning
DANGER	**DANGER!** This symbol alerts you to a dangerous situation. Failure to avoid this situation will result in serious or fatal injury.
WARNING	**WARNING!** This symbol alerts you to a dangerous situation. Failure to avoid this situation can result in serious or fatal injury.

Symbol	Meaning
⚠ CAUTION	**CAUTION!** This symbol alerts you to a dangerous situation. Failure to avoid this situation can result in minor or medium injury.
NOTICE	**NOTE!** This symbol contains information on procedures and other facts which do not result in personal injury.

1.4.2 Symbols for certain types of information

Symbol	Meaning
	**Permitted** Indicates procedures, processes or actions that are allowed.
	**Forbidden** Indicates procedures, processes or actions that are forbidden.
	**Tip** Indicates additional information.
	Reference to documentation
	Reference to page
	Reference to graphic
▶	Notice or individual step to be observed
1., 2., 3...	Series of steps
↳	Result of a step

1.4.3 Symbols in graphics

Symbol	Meaning
1, 2, 3,...	Item numbers
1., 2., 3...	Series of steps

2 Basic safety instructions

2.1 Requirements for personnel

Personnel involved in installation, commissioning, diagnostics and maintenance must meet the following requirements:
- Trained, qualified specialists must have a relevant qualification for this specific function and task
- Are authorized by the plant owner/operator
- Are familiar with federal/national regulations
- Before starting work, read and understand the instructions in the manual and supplementary documentation as well as the certificates (depending on the application)
- Follow instructions and comply with basic conditions

Operating personnel must meet the following requirements:
- Be instructed and authorized by the plant operator with regard to the requirements of the task
- Follow the instructions in this manual

2.2 Designated use

The designated use of the measuring device is described in the Operating Instructions pertaining to the device → 🖹 4.

2.3 Occupational safety

For work on and with the device:
- Wear the required personal protective equipment according to federal/national regulations.

If working on and with the device with wet hands:
- It is recommended to wear gloves on account of the higher risk of electric shock.

2.4 Operational safety

Risk of injury!
- Operate the device in proper technical condition and fail-safe condition only.
- The operator is responsible for interference-free operation of the device.

Modifications to the device

Unauthorized modifications to the device are not permitted and can lead to unforeseeable dangers.
- If, despite this, modifications are required, consult with Endress+Hauser.

2.5 Product safety

This device is designed in accordance with good engineering practice to meet state-of-the-art safety requirements, has been tested, and left the factory in a condition in which it is safe to operate.

It meets general safety standards and legal requirements. It also complies with the EC directives listed in the device-specific EC Declaration of Conformity. Endress+Hauser confirms this by affixing the CE mark to the device.

2.6 IT security

We only provide a warranty if the device is installed and used as described in the Operating Instructions. The device is equipped with security mechanisms to protect it against any inadvertent changes to the device settings.

IT security measures in line with operators' security standards and designed to provide additional protection for the device and device data transfer must be implemented by the operators themselves.

2.7 Device-specific IT security

The device offers a range of specific functions to support protective measures on the operator's side. These functions can be configured by the user and guarantee greater in-operation safety if used correctly.

2.7.1 Access via CDI-RJ45 service interface

The device can be connected to a network via the CDI-RJ45 service interface. Device-specific functions guarantee the secure operation of the device in a network.

It is advisable to take relevant security concepts into consideration, such as those issued by the Federal Office for Information Security. This includes organizational security measures such as the assignment of access authorization as well as technical measures such as network segmentation.

The device can be integrated in a ring topology. The device is integrated via the terminal connection for signal transmission (output 1) and the connection to the service interface (CDI-RJ45) .

3 Product features and availability

3.1 Product features

Thanks to the integrated Web server, the device can be operated and configured via a Web browser and via a service interface (CDI-RJ45) or via a WLAN interface. The structure of the operating menu is the same as for the local display. In addition to the measured values, status information on the device is also displayed and allows the user to monitor the status of the device. Furthermore the device data can be managed and the network parameters can be configured.

A device that has a WLAN interface (can be ordered as an option) is required for the WLAN connection: order code for "Display; operation", option **G** "4-line, illuminated; touch control + WLAN". The device acts as an Access Point and enables communication by computer or a mobile handheld terminal.

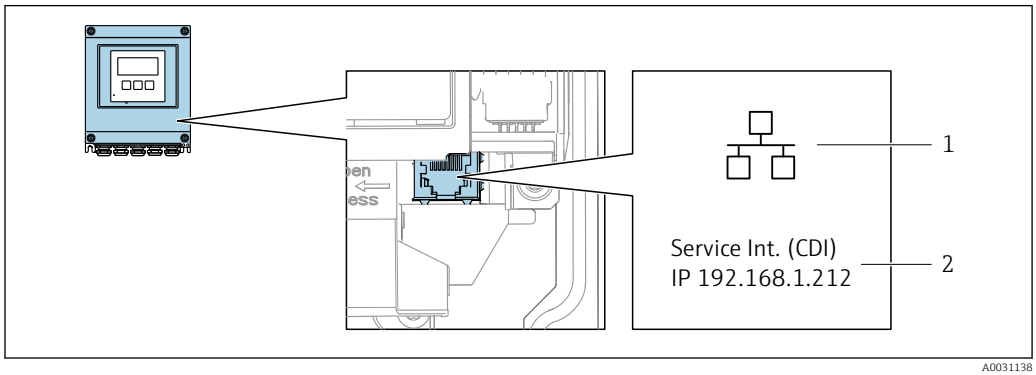
3.2 Availability

The integrated Web server is a standard feature. It does not need to be ordered for the device ex works as it is provided as standard when the device is delivered to the customer. No particular measures are required to put the feature into operation.

3.3 Identification in the measuring device

An adhesive label on the inside of the electronics compartment cover or the connection compartment describes all the available hardware components, and their functions, for the measuring device. The service interface (CDI-RJ45) has the following identification:

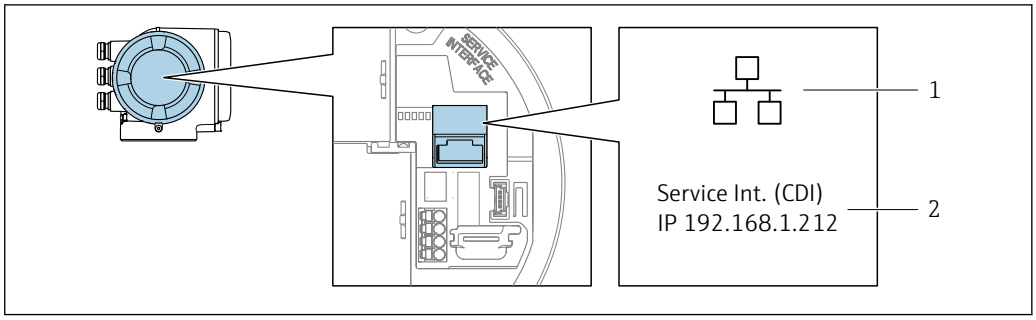
3.3.1 Proline 500 – digital



1 Example of the CDI-RJ45 service interface

1 Symbol for service interface
2 Information on the default setting for the WLAN IP address

3.3.2 Proline 500



2 Example of the CDI-RJ45 service interface

1 Symbol for service interface
2 Information on the default setting for the WLAN IP address

4 Commissioning

Establishing a connection to the integrated Web server

1. Configure the computer → 10.
2. Check the settings on the measuring device and change them if necessary → 16.
3. Connect the measuring device to the computer .
4. Establish a connection to the Web server → 19.
5. Start the Web browser and access the operating menu → 20.
   ↳ The measuring device can be operated via the Web server.

4.1 Prerequisites - computer

4.1.1 Hardware

Hardware	Interface	
	CDI-RJ45	WLAN
Interface	The computer must have an RJ45 interface.	The operating unit must have a WLAN interface.
Connection	Standard Ethernet cable with RJ45 connector.	Connection via Wireless LAN.
Screen	Recommended size: ≥12" (depends on the screen resolution)	

4.1.2 Software

Software	Interface	
	CDI-RJ45	WLAN
Recommended operating systems	▪ Microsoft Windows 7 or higher. ▪ Mobile operating systems: – iOS – Android Microsoft Windows XP is supported.	
Web browsers supported	▪ Microsoft Internet Explorer 8 or higher ▪ Microsoft Edge ▪ Mozilla Firefox ▪ Google Chrome ▪ Safari	

4.1.3 Configuring the computer

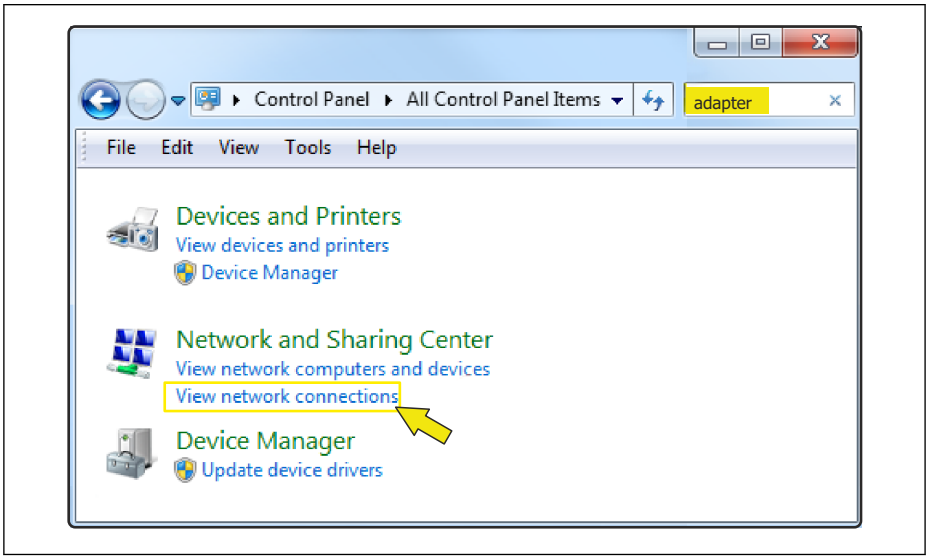
User rights	Appropriate user rights (e.g. administrator rights) for TCP/IP and proxy server settings are necessary (for adjusting the IP address, subnet mask etc.).
Proxy server settings of the Web browser	The Web browser setting *Use a Proxy Server for Your LAN* must be **deselected** .

JavaScript	JavaScript must be enabled. If JavaScript cannot be enabled: enter http://192.168.1.212/basic.html in the address line of the Web browser. A fully functional but simplified version of the operating menu structure starts in the Web browser. When installing a new firmware version: To enable correct data display, clear the temporary memory (cache) of the Web browser under **Internet options**.
Network connections	Only the active network connections to the measuring device should be used.
	Switch off all other network connections such as WLAN.

Configuring IP settings for Windows

- To configure the IP settings, appropriate user rights (e.g. administrator rights) are required for the computer.
- Before configuring the IP settings, close all the windows of the Web browser.

1. Click *Start* (Windows icon).
   ↳ The Start menu appears.
2. In the Start menu, select *Control Panel*.
   ↳ This opens a new window with the control panel elements.



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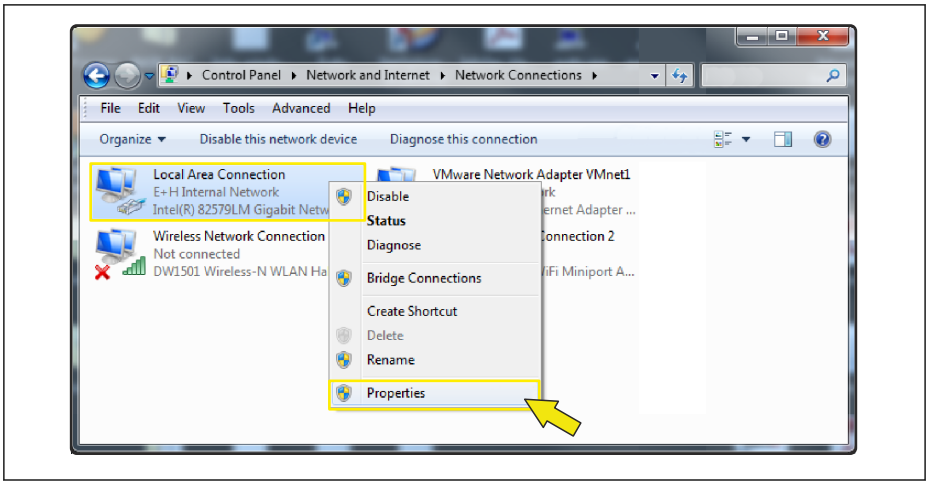
3. Enter the term "adapter" in the search field.
   ↳ The *Network and Sharing Center* is listed in the search results.
4. Select the *Network Connections* option under *Network and Sharing Center*.
   ↳ This opens a new window with the network connections.



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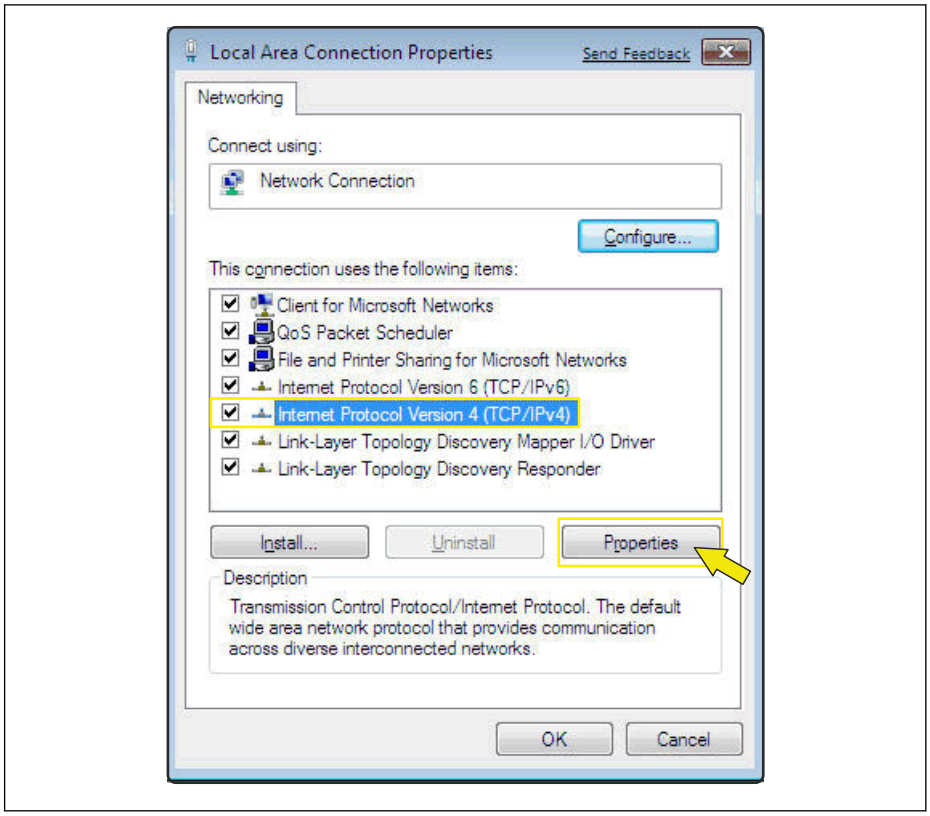
5. In this window, select the *Local Area Connection* (LAN).

6. Right-click to open the picklist and select *Properties*.
   ↳ The *Local Area Connection Properties* dialog box opens.



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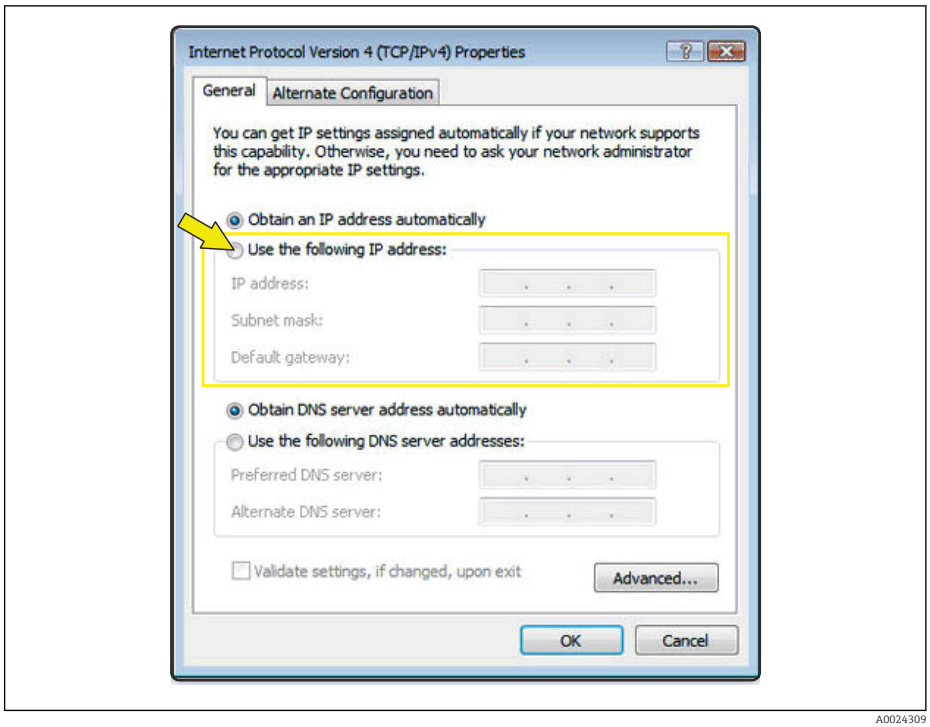
7. Select the *Internet Protocol Version 4 (TCP/IPv4)* item.
8. Click the *Properties* button.
   ↳ The *Internet Protocol Version 4 (TCP/IPv4) Properties* window opens.



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9. In the *General* tab, select the *Use the Following IP Address* option.

10. Enter the IP address, subnet mask and default gateway as indicated in the following table and then click *Ok* to confirm.

Standard settings for IP address, subnet mask and default gateway

IP address	192.168.1.XXX For XXX all numerical sequences except: 0, 212 and 255 → e.g. 192.168.1.213
Subnet mask	255.255.255.0
Default gateway	192.168.1.212 or leave cells empty

The standard settings correspond to those for private networks. In the case of Ethernet-based networks, the settings can deviate from these standard settings and must be changed if necessary.

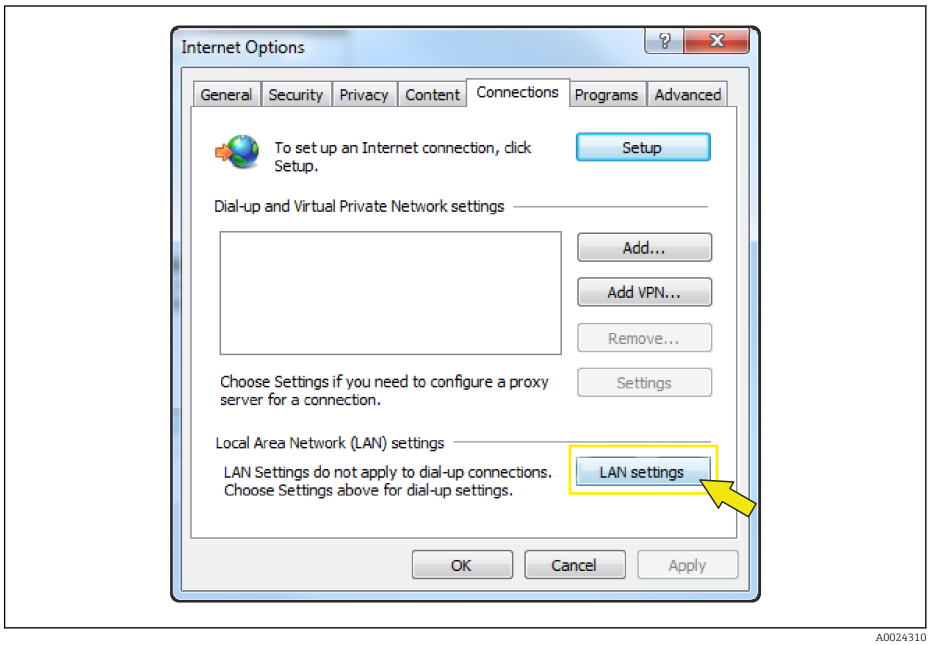
Changing the proxy server settings

To establish communication, the proxy server setting *Use a Proxy Server for Your LAN* must be deselected for the Web browser.

To change the proxy server setting, appropriate user rights (e.g. administrator rights) are required for the computer.

Changing the proxy server settings taking Internet Explorer as the sample browser

1. Open the Web browser.
2. In the *Options* menu, select the *Internet Options* item.
   ↳ This opens a new window with the Internet options.



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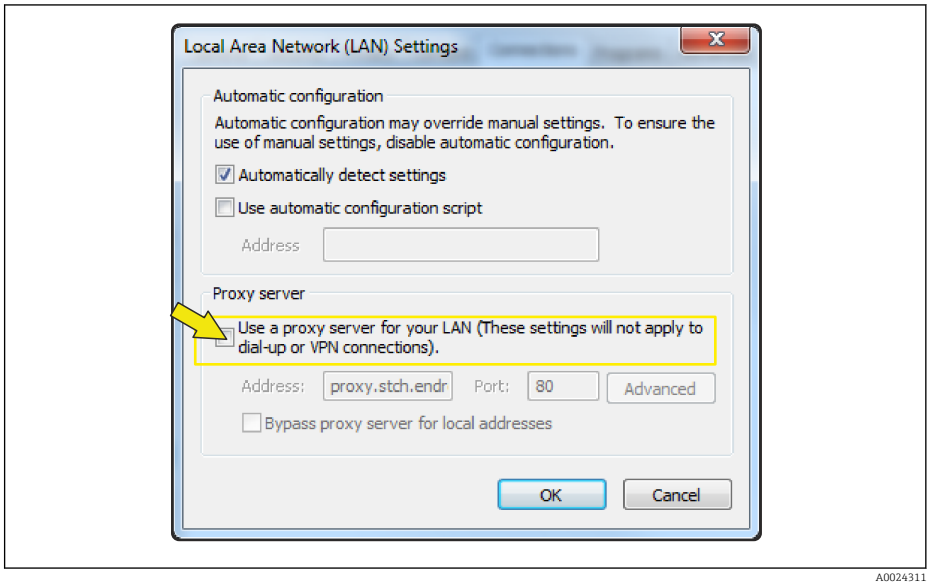
3. Select the *Connections* tab.
4. Under *Local Area Network Settings* click the *LAN Settings* button.
   ↳ This opens a new window with the *Local Area Network Settings*.



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5. Deselect the *Use a Proxy Server for Your LAN* checkbox and then click *Ok* to confirm.

4.2 Prerequisites - measuring device

4.2.1 Enabling the Web server

The Web server must be enabled in the measuring device (factory setting).

If the Web server is disabled it be enabled again via the **Web server functionality** parameter (→ 🖹 22). To do so, users can choose from the following operation options:
- Local display
- Operating tool e.g. FieldCare, DeviceCare, AMS Device Manager , SIMATIC PDM

4.2.2 Determining the IP address of the measuring device

The IP address of the measuring device is required to establish communication between the measuring device (Web server) and a computer (client). The IP address used depends on the setting of the DIP switches or on the system settings.

The IP address can be assigned to the measuring device in a variety of ways:
- Dynamic Configuration Protocol (DCP), factory setting:
  The IP address is automatically assigned to the measuring device by the automation system (DCP server).
- Hardware addressing:
  The IP address is set via DIP switches
- Software addressing:
  The IP address is entered via the **IP address** parameter (→ 🖹 22)
- DIP switch for "Default Ethernet Network Settings":
  For establishing the network connection via the service interface (CDI-RJ45). The fixed IP address 192.168.1.212 is used .

IP address assigned or specified via:	Determine IP address settings via parameters or DIP switches		
	Local display (if available)	Operating tool e.g. FieldCare, DeviceCare	DIP switches in electronics compartment
Dynamic Configuration Protocol (DCP), factory setting	✓	✓	✗
Hardware addressing of the IP address via DIP switches	✓	✓	✓
DIP switch for "Default Ethernet Network Settings", use the fixed IP address: 192.168.1.212	✗	✗	✓

Position of the DIP switches → 🖹 8

Using the local display or an operating tool

The **IP address** parameter can be used to determine the IP address via the local display or via an operating tool e.g. FieldCare, DeviceCare, AMS Device Manager, SIMATIC PDM.

4.3 Connecting the computer to the measuring device

The measuring device can be connected to the computer via:
- Service interface (CDI-RJ45)
- WLAN interface
- Ethernet-based fieldbuses

4.3.1 Via service interface (CDI-RJ45)

Preparing the measuring device

Proline 500 – digital

1. Loosen the 4 fixing screws on the housing cover.
2. Open the housing cover.
3. The location of the connection socket depends on the measuring device and the communication protocol:
   Connect the computer to the RJ45 connector via the standard Ethernet connecting cable → 🖹 8.

Proline 500

1. Depending on the housing version:
   Release the securing clamp or securing screw of the housing cover.
2. Depending on the housing version:
   Unscrew or open the housing cover.
3. The location of the connection socket depends on the measuring device and the communication protocol:
   Connect the computer to the RJ45 connector via the standard Ethernet connecting cable → 🖹 8.

Configuring the Internet protocol of the computer

NOTICE

Risk of electric shock! Components carry dangerous voltages!

- ▶ Never open the measuring device while it is connected to the supply voltage.
- ▶ The information and safety instructions in the Operating Instructions pertaining to the measuring device must always be observed → 🖹 4.

The IP address can be assigned to the measuring device in a variety of ways:

- Dynamic Configuration Protocol (DCP), factory setting:
  The IP address is automatically assigned to the measuring device by the automation system (e.g. Siemens S7).
- Hardware addressing:
  The IP address is set via DIP switches .
- Software addressing:
  The IP address is entered via the **IP address** parameter (→ 🖹 22) .
- DIP switch for "Default IP address":
  To establish the network connection via the service interface (CDI-RJ45): the fixed IP address 192.168.1.212 is used .

The measuring device works with the Dynamic Configuration Protocol (DCP), on leaving the factory, i.e. the IP address of the measuring device is automatically assigned by the automation system (e.g. Siemens S7).

To establish a network connection via the service interface (CDI-RJ45): the "Default IP address" DIP switch must be set to **ON**. The measuring device then has the fixed IP address: 192.168.1.212. This address can now be used to establish the network connection.

If the IP address of the measuring device is assigned via hardware or software addressing and the IP address is known, the network connection can also be established directly via the Ethernet network → 🖹 16.

1. Via DIP switch 2, activate the default IP address 192.168.1.212: .
2. Switch on the measuring device.
3. Connect to the computer using a cable → 🖹 8.

4. If a 2nd network card is not used, close all the applications on the notebook.
   ↳ Applications requiring Internet or a network, such as e-mail, SAP applications, Internet or Windows Explorer.
5. Close any open Internet browsers.
6. Configure the properties of the Internet protocol (TCP/IP) as defined in the table:

IP address	192.168.1.XXX; for XXX all numerical sequences except: 0, 212 and 255 → e.g. 192.168.1.213
Subnet mask	255.255.255.0
Default gateway	192.168.1.212 or leave cells empty

4.3.2 Via WLAN interface

Configuring the Internet protocol of the mobile terminal

NOTICE

If the WLAN connection is lost during the configuration, settings made may be lost.

- ▶ Make sure that the WLAN connection is not disconnected while configuring the device.

NOTICE

In principle, avoid simultaneous access to the measuring device via the service interface (CDI-RJ45) and the WLAN interface from the same mobile terminal. This could cause a network conflict.

- ▶ Only activate one service interface (CDI-RJ45 service interface or WLAN interface).
- ▶ If simultaneous communication is necessary: configure different IP address ranges, e.g. 192.168.0.1 (WLAN interface) and 192.168.1.212 (CDI-RJ45 service interface).

Preparing the mobile terminal

- ▶ Enable WLAN reception on the mobile terminal.

Establishing a connection from the mobile terminal to the measuring device

1. In the WLAN settings of the mobile terminal:
   Select the measuring device using the SSID (e.g. EH_Promass_500_A802000).
2. If necessary, select the WPA2 encryption method.
3. Enter the password: serial number of the measuring device ex-works (e.g. L100A802000).
   ↳ LED on display module flashes: it is now possible to operate the measuring device with the Web browser.

The serial number can be found on the nameplate.

To ensure the safe and swift assignment of the WLAN network to the measuring point, it is advisable to change the SSID name. It should be possible to clearly assign the new SSID name to the measuring point (e.g. tag name) because it is displayed as the WLAN network.

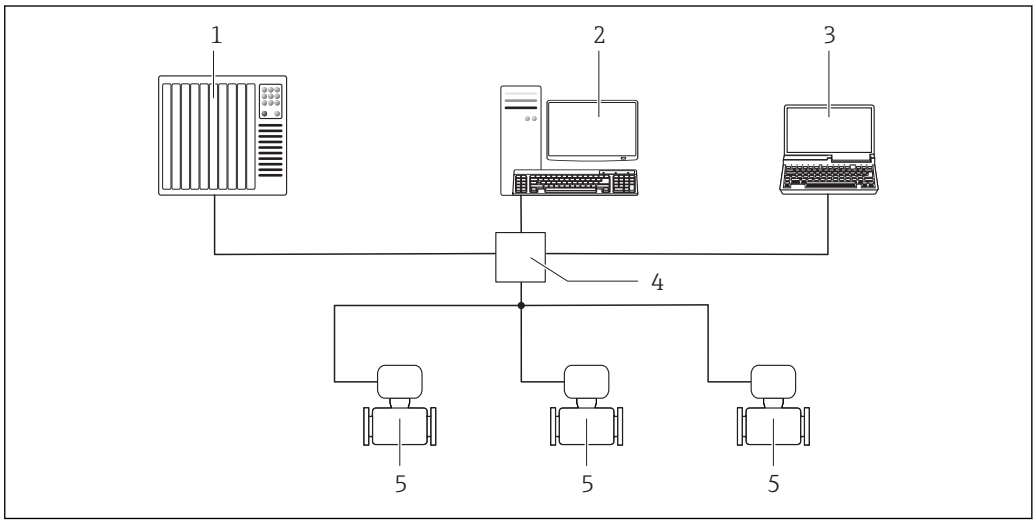
Disconnecting

- ▶ After configuring the device:
  Terminate the WLAN connection between the operating unit and measuring device.

4.3.3 Via Ethernet-based fieldbus

If the IP address of the measuring device is assigned via hardware or software addressing, the network connection can be established directly via the Ethernet network.

The device is configured at the factory to work with the Dynamic Configuration Protocol (DCP), i.e. the IP address of the measuring device is automatically assigned by the automation system (e.g. Siemens S7). To establish a network connection via the service interface (CDI-RJ45): the "Default Ethernet network settings" DIP switch must be set to **ON**. The measuring device then has the fixed IP address: 192.168.1.212. This address can now be used to establish the network connection → 16.



3 *Ethernet network*

1 *Automation system, e.g. "RSLogix" (Rockwell Automation)*
2 *Workstation for measuring device operation: with Add-on Profile Level 3 for "RSLogix 5000" (Rockwell Automation) or with Electronic Data Sheet (EDS)*
3 *Computer with Web browser (e.g. Internet Explorer) for accessing the integrated device Web server or with operating tool (e.g. FieldCare, DeviceCare) with COM DTM "CDI Communication TCP/IP"*
4 *Ethernet switch*

4.4 Establishing a connection to the Web server

4.4.1 Prerequisites

The IP settings in the measuring device and computer must match before a connection can be established successfully. In particular this concerns the IP addressing and Web browser settings.

The following conditions must be met to connect:
- The Web server of the measuring device is enabled → 16.
- The IP address of the measuring device is known → 16.
- The computer used meets the requirements for hardware and software → 10.
- The measuring device and computer are connected to one another → 16
- The measuring device is switched on.

4.4.2 Starting the Web browser

If JavaScript cannot be enabled:
enter http://192.168.1.212/basic.html in the address line of the Web browser. A fully functional but simplified version of the operating menu structure starts in the Web browser.

When installing a new firmware version: To enable correct data display, clear the temporary memory (cache) of the Web browser under **Internet options**.

Prerequisite: The IP address of the measuring device is known.

1. Start the Web browser on the computer.
2. Enter the defined device address in the address line of the Web browser.
   ↳ The login page appears.

Prerequisite: The IP address of the measuring device is not known.

1. Start the Web browser on the computer.
2. Read out the IP address via local operation (Diagnostics → Device information → IP address).
3. Or set the upper DIP switch No. 2 to **ON**.
4. Restart the device.
5. Enter the default IP address 192.168.1.212 .
   ↳ The login page appears.

If a login page does not appear, or if the page is incomplete → 29

4.5 Setting the IP address

The IP address of the measuring device is required to establish communication between the measuring device (Web server) and a computer (client).

Assign or specify the IP address via:	Description
DCP (Dynamic Configuration Protocol) [1]	The measuring device is automatically assigned the IP address by the automation system.
Hardware addressing	▪ The measuring device uses the IP address configured via the "IP address setting" DIP switches. ▪ "IP address setting" DIP switch = **ON/OFF**, depending on the address
Software addressing	The measuring device uses the IP address configured in the **IP address** parameter (→ 🖹 22)
Use of the DIP switch: Default Ethernet Network Settings [2]	▪ The measuring device uses the fixed IP address: 192.168.1.212 ▪ DIP switch: default Ethernet network settings = **ON** ▪ The device is connected via the CDI-RJ45 service interface. ▪ Following a restart, the measuring device can be connected via the CDI-RJ45 service interface or via the Ethernet network. ▪ To avoid conflict between IP addresses, the DIP switch should never be used simultaneously on two measuring devices in the same Ethernet network.

1) Factory setting
2) For a temporary connection when servicing, for example, or if the IP address is not known. The measuring device is disconnected from the network/automation system.

4.6 Overview of the Web server parameters

4.6.1 Language

Navigation
"Operation" menu → Web server language

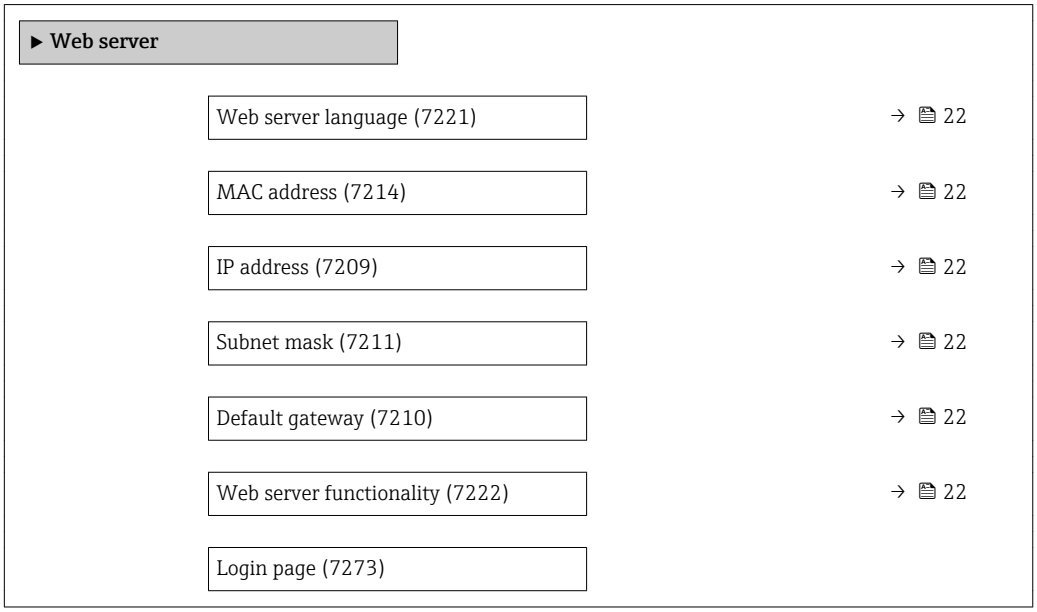
Parameter overview with brief description

Parameter	Description	Selection	Factory setting
Web server language	Set web server language.	▪ English ▪ Deutsch * ▪ Français * ▪ Español * ▪ Italiano * ▪ Nederlands * ▪ Portuguesa * ▪ Polski * ▪ русский язык (Russian) * ▪ Svenska * ▪ Türkçe * ▪ 中文 (Chinese) * ▪ 日本語 (Japanese) * ▪ 한국어 (Korean) * ▪ Bahasa Indonesia * ▪ tiếng Việt (Vietnamese) * ▪ čeština (Czech) *	English

* Visibility depends on order options or device settings

4.6.2 "Configuration" submenu

Navigation
"Expert" menu → Communication → Configuration

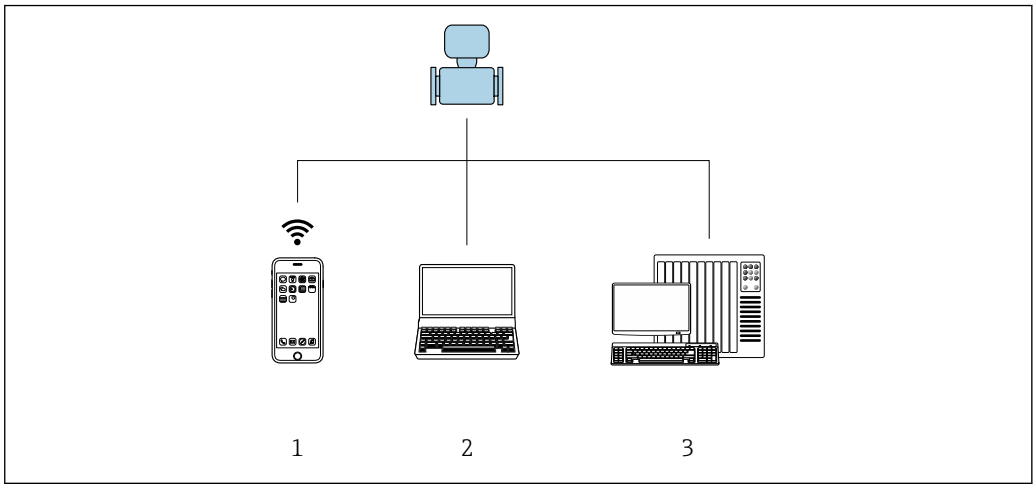


Parameter overview with brief description

Parameter	Description	Selection / User interface	Factory setting
Web server language	Set web server language.	▪ English ▪ Deutsch * ▪ Français * ▪ Español * ▪ Italiano * ▪ Nederlands * ▪ Portuguesa * ▪ Polski * ▪ русский язык (Russian) * ▪ Svenska * ▪ Türkçe * ▪ 中文 (Chinese) * ▪ 日本語 (Japanese) * ▪ 한국어 (Korean) * ▪ Bahasa Indonesia * ▪ tiếng Việt (Vietnamese) * ▪ čeština (Czech) *	English
MAC address	Displays the MAC address of the measuring device. MAC = Media Access Control	Unique 12-digit character string comprising letters and numbers, e.g.: 00:07:05:10:01:5F	Each measuring device is given an individual address.
IP address	Displays the IP address of the Web server of the measuring device.	4 octet: 0 to 255 (in the particular octet)	0.0.0.0
Subnet mask	Displays the subnet mask.	4 octet: 0 to 255 (in the particular octet)	0.0.0.0
Default gateway	Displays the default gateway.	4 octet: 0 to 255 (in the particular octet)	0.0.0.0
Web server functionality	Switch the Web server on and off.	▪ Off ▪ HTML Off ▪ On	On

* Visibility depends on order options or device settings

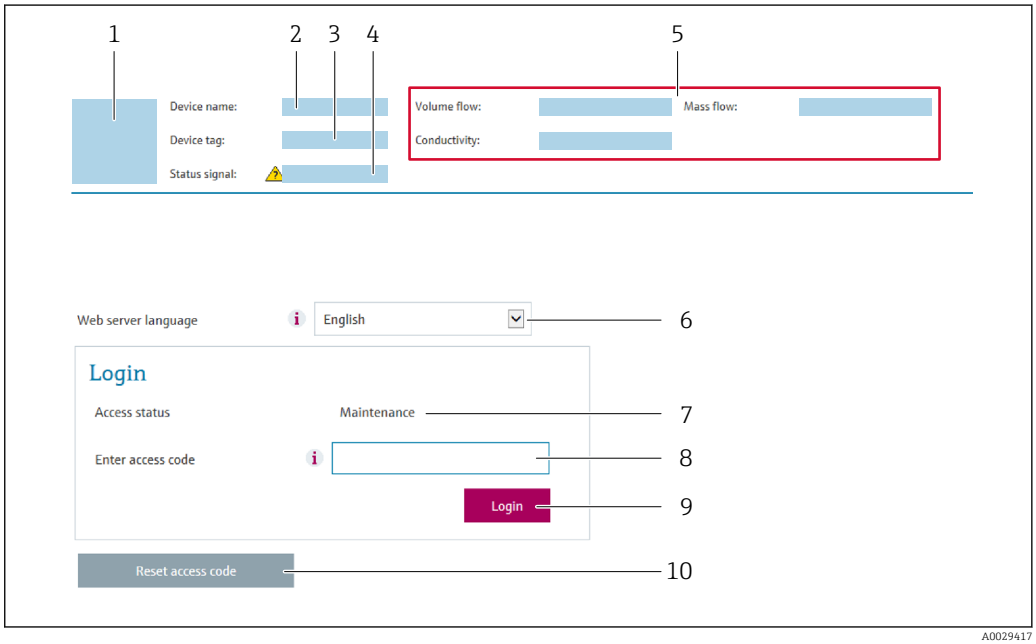
5 Operation options



4 *Example of a Proline flowmeter with an integrated Web server*

1 *Mobile end device with Web browser (e.g. Internet Explorer) and WLAN interface*
2 *Computer with Web browser (e.g. Internet Explorer), connection via cable or WLAN interface*
3 *Control station via network*

5.1 Logging on



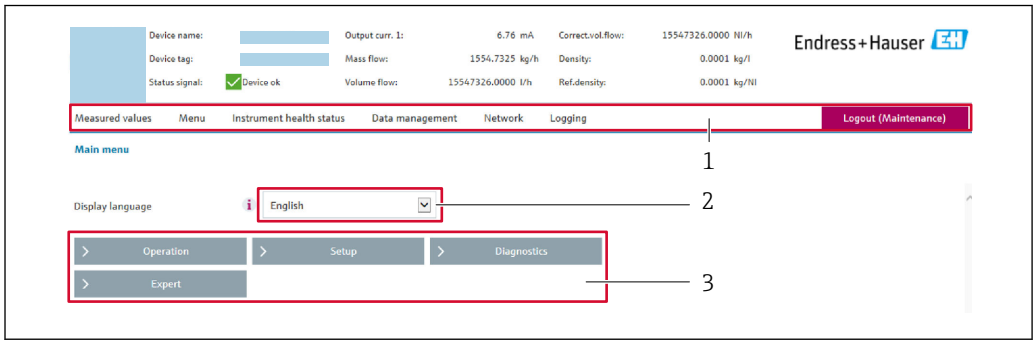
1 *Picture of device*
2 *Device name*
3 *Device tag*
4 *Status signal*
5 *Current measured values*
6 *Web server language*
7 *User role*
8 *Access code*
9 *Login*
10 *Reset access code*

1. Select the required operating language for the Web browser (6).
2. Enter the user-specific access code (8).
3. Confirm entry with **Login**(9).

Access code	0000 (factory setting); can be changed by customer

If no action is performed for 10 minutes, the Web browser automatically returns to the login page.

5.2 User interface



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1 *Function row*
2 *Local display language*
3 *Navigation area*

5.2.1 Header

The following information appears in the header:
- Device name
- Device tag
- Device status with status signal → 31
- Current measured values

5.2.2 Function row

Functions	Meaning
Measured values	Displays the measured values of the measuring device
Menu	▪ Access to the operating menu from the measuring device ▪ The structure of the operating menu is the same as for the local display For detailed information on the structure of the operating menu, see the Operating Instructions for the measuring device
Device status	Displays the diagnostic messages currently pending, listed in order of priority
Data management	Data exchange between PC and measuring device: ▪ Device configuration: – Load settings from the device (XML format, save configuration) – Save settings to the device (XML format, restore configuration) ▪ Logbook - Export Event logbook (.csv file) ▪ Documents - Export documents: – Export backup data record (.csv file, create documentation of the measuring point configuration) – Verification report (PDF file, only available with the "Heartbeat Verification" application package) ▪ File for system integration - If using fieldbuses, upload device drivers for system integration from the measuring device: PROFINET: GSD file ▪ Firmware update - Flashing a firmware version

Functions	Meaning
Network configuration	Configuration and checking of all the parameters required for establishing the connection to the measuring device: ▪ Network settings (e.g. IP address, MAC address) ▪ Device information (e.g. serial number, firmware version)
Logout	End the operation and call up the login page

5.2.3 Navigation area

If a function is selected in the function bar, the submenus of the function open in the navigation area. The user can now navigate through the menu structure.

5.2.4 Working area

Depending on the selected function and the related submenus, various actions can be performed in this area:
- Configuring parameters
- Reading measured values
- Calling up help text
- Starting an upload/download

5.3 Logging out

Before logging out, perform a data backup via the **Data management** function (upload configuration from device) if necessary.

1. Select the **Logout** entry in the function row.
   ↳ The home page with the Login box appears.
2. Close the Web browser.
3. If no longer needed:
   Reset modified properties of the Internet protocol (TCP/IP) → 17.

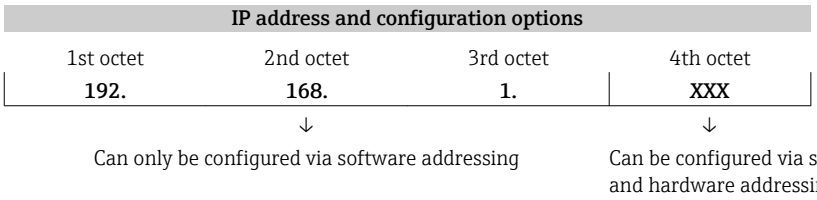
If communication with the Web server was established via the default IP address 192.168.1.212, DIP switch No. 10 must be reset (from **ON** → **OFF**). Afterwards, the IP address of the device is active again for network communication.

5.4 Addressing Ethernet-based fieldbuses

5.4.1 Setting the device address

The IP address of the measuring device can be configured for the network via DIP switches.

Addressing data



IP address range	1 to 254 (4th octet)
IP address broadcast	255

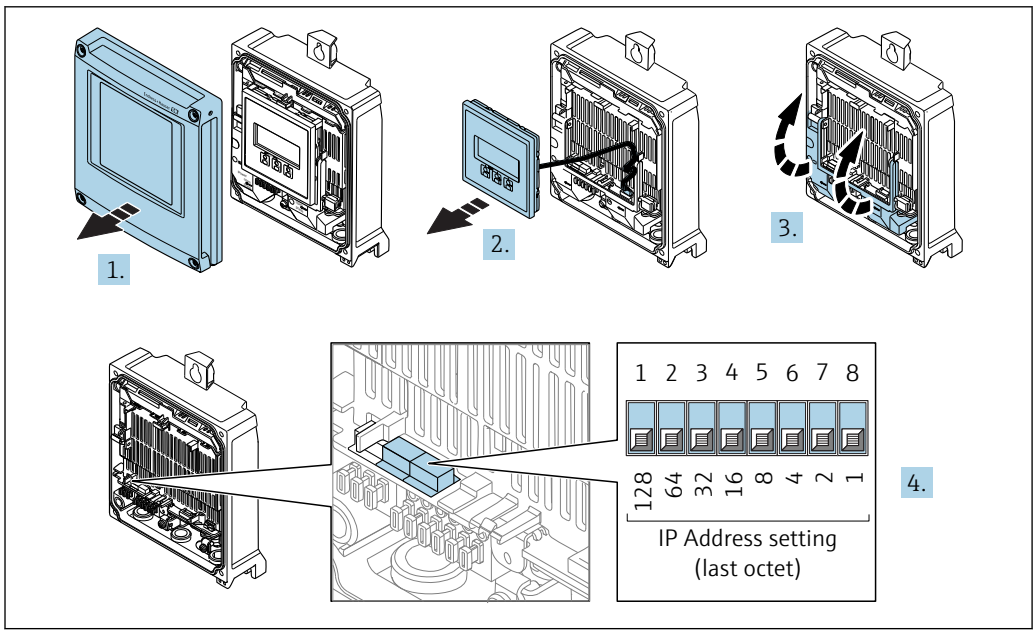
Addressing mode ex works	Software addressing; all DIP switches for hardware addressing are set to OFF.
IP address ex works	DHCP server active

Software addressing: The IP address is entered via the **IP address** parameter (→ 22).

Setting the IP address: Proline 500 - digital

Risk of electric shock when opening the transmitter housing.
- ▶ Before opening the transmitter housing:
- ▶ Disconnect the device from the power supply.

The default IP address may **not** be activated .

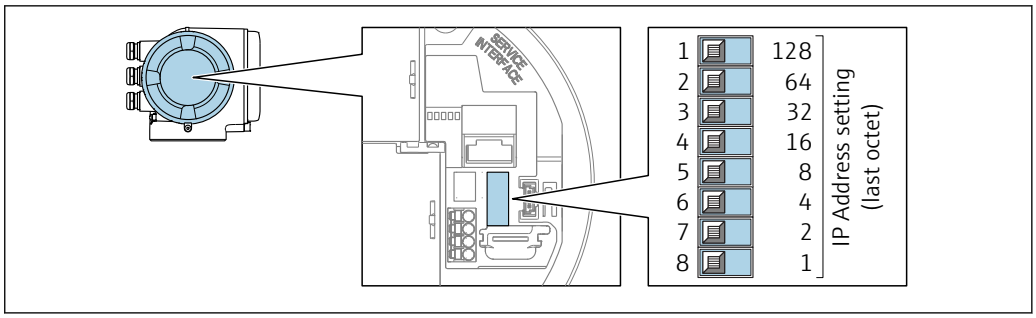


1. Loosen the 4 fixing screws on the housing cover.
2. Open the housing cover.
3. Fold open the terminal cover.
4. Set the desired IP address using the corresponding DIP switches on the I/O electronics module.
5. Reverse the removal procedure to reassemble the transmitter.
6. Reconnect the device to the power supply.
   ↳ The configured device address is used once the device is restarted.

Setting the IP address: Proline 500

Risk of electric shock when opening the transmitter housing.
- ▶ Before opening the transmitter housing:
- ▶ Disconnect the device from the power supply.

The default IP address may **not** be activated .



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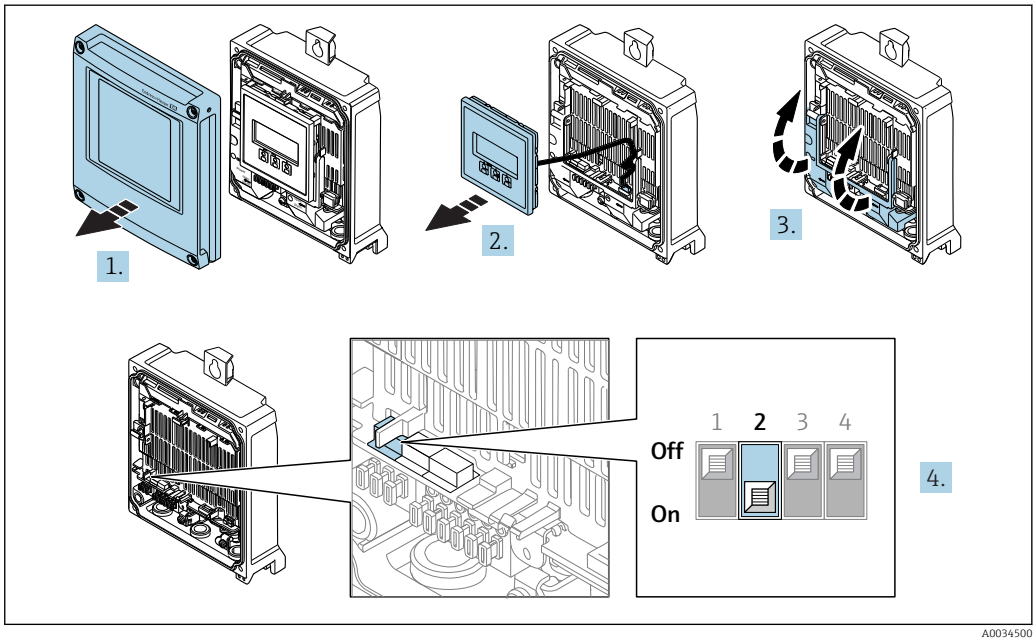
1. Depending on the housing version, loosen the securing clamp or fixing screw of the housing cover.
2. Depending on the housing version, unscrew or open the housing cover and disconnect the local display from the main electronics module where necessary.
3. Set the desired IP address using the corresponding DIP switches on the I/O electronics module.
4. Reverse the removal procedure to reassemble the transmitter.
5. Reconnect the device to the power supply.
   ↳ The configured device address is used once the device is restarted.

5.4.2 Activating the default IP address

The default IP address 192.168.1.212 can be activated by DIP switch.

Activating the default IP address by DIP switch: Proline 500 - digital

Risk of electric shock when opening the transmitter housing.
- ▶ Before opening the transmitter housing:
- ▶ Disconnect the device from the power supply.



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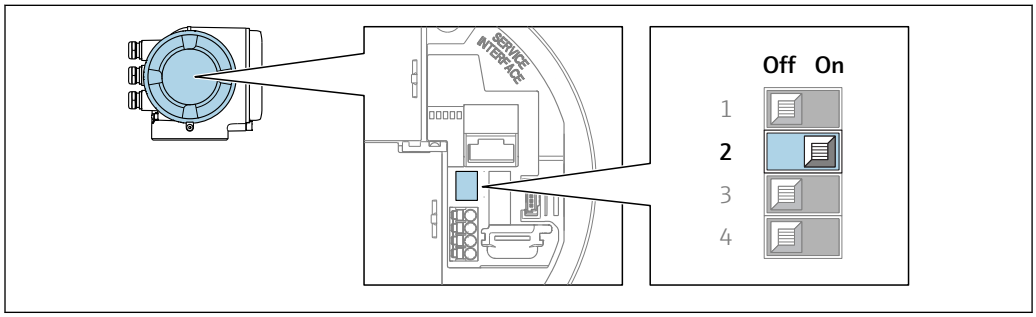
1. Loosen the 4 fixing screws on the housing cover.
2. Open the housing cover.
3. Fold open the terminal cover.
4. Set DIP switch No. 2 on the I/O electronics module from **OFF** → **ON**.

5. Reverse the removal procedure to reassemble the transmitter.
6. Reconnect the device to the power supply.
   ↳ The default IP address is used once the device is restarted.

Activating the default IP address via the DIP switch: Proline 500

Risk of electric shock when opening the transmitter housing.
- ▶ Before opening the transmitter housing:
- ▶ Disconnect the device from the power supply.



A0034499

1. Depending on the housing version, loosen the securing clamp or fixing screw of the housing cover.
2. Depending on the housing version, unscrew or open the housing cover and disconnect the local display from the main electronics module where necessary .
3. Set DIP switch No. 2 on the I/O electronics module from **OFF** → **ON**.
4. Reverse the removal procedure to reassemble the transmitter.
5. Reconnect the device to the power supply.
   ↳ The default IP address is used once the device is restarted.

6 Diagnostics and troubleshooting

For details on the diagnostic information, see the Operating Instructions for the device → 4.

6.1 General Web server troubleshooting

For access

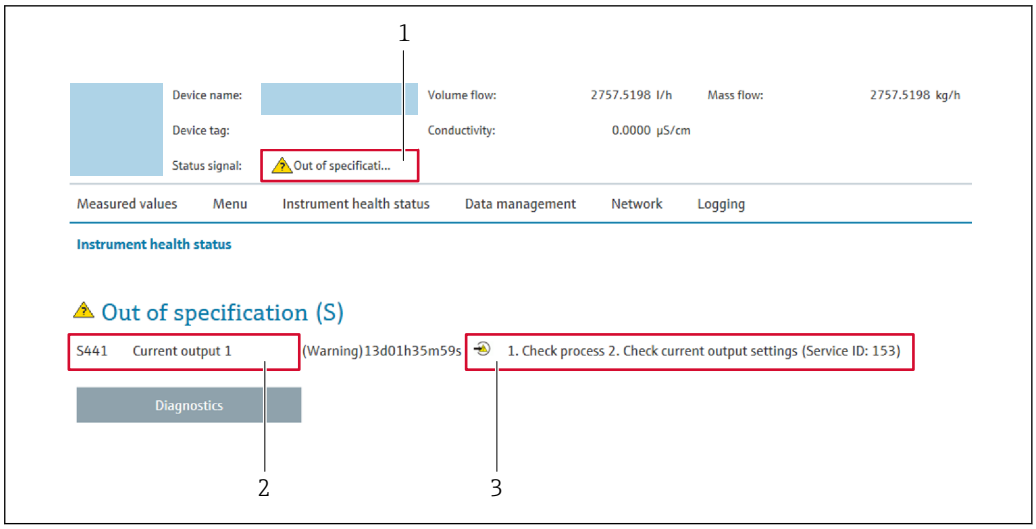
Error	Possible causes	Solution
Not connecting to Web server	Web server disabled	Using the "FieldCare" or "DeviceCare" operating tool, check whether the Web server of the measuring device is enabled, and enable it if necessary.
	Incorrect setting for the Ethernet interface of the computer	1. Check the properties of the Internet protocol (TCP/IP) → 17. 2. Check the network settings with the IT manager.
Not connecting to Web server	▪ Incorrect IP address ▪ IP address is not known	1. If addressing via hardware: open the transmitter and check the IP address configured (last octet). 2. Check the IP address of the measuring device with the network manager. 3. If the IP address is not known, set DIP switch no. 10 to ON, restart the device and enter the factory IP address 192.168.1.212.
	Web browser setting "Use a Proxy Server for Your LAN" is enabled	Disable the use of the proxy server in the Web browser settings of the computer. Using the example of MS Internet Explorer: 1. Under *Control Panel* open *Internet options*. 2. Select the *Connections* tab and then double-click *LAN settings*. 3. In the *LAN settings* disable the use of the proxy server and select *OK* to confirm.
	Apart from the active network connection to the measuring device, other network connections are also being used.	▪ Make sure that no other network connections are established by the computer (also no WLAN) and close other programs with network access to the computer. ▪ If using a docking station for notebooks, make sure that a network connection to another network is not active.
Not connecting to Web server	Incorrect WLAN access data	▪ Check WLAN network status. ▪ Log on to the device again using WLAN access data. ▪ Verify that WLAN is enabled on the measuring device and operating device .
	WLAN communication disabled	–

Error	Possible causes	Solution
Not connecting to Web server, FieldCare or DeviceCare	No WLAN network available	▪ Check if WLAN reception is present: LED on display module is lit blue ▪ Check if WLAN connection is enabled: LED on display module flashes blue ▪ Switch on instrument function.
Network connection not present or unstable	WLAN network is weak.	▪ Operating device is outside of reception range: Check network status on operating device. ▪ To improve network performance, use an external WLAN antenna.
	Parallel WLAN and Ethernet communication	▪ Check network settings. ▪ Temporarily enable only the WLAN as an interface.
Web browser frozen and operation no longer possible	Data transfer active	Wait until data transfer or current action is finished.
	Connection lost	1. Check cable connection and power supply. 2. Refresh the Web browser and restart if necessary.
Content of Web browser incomplete or difficult to read	Not using optimum version of Web server.	1. Use the correct Web browser version . 2. Clear the Web browser cache and restart the Web browser.
	Unsuitable view settings.	Change the font size/display ratio of the Web browser.
No or incomplete display of contents in the Web browser	▪ JavaScript not enabled ▪ JavaScript cannot be enabled	1. Enable JavaScript. 2. Enter http://XXX.XXX.X.XXX/basic.html as the IP address.

6.2 Diagnostic information in the Web browser

6.2.1 Diagnostic options

Any faults detected by the measuring device are displayed in the Web browser on the home page once the user has logged on.



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1 Status area with status signal
2 Diagnostic information
3 Remedy information with Service ID

In addition, diagnostic events which have occurred can be shown in the **Diagnostics** menu:
- Via parameter
- Via submenu

Status signals

The status signals provide information on the state and reliability of the device by categorizing the cause of the diagnostic information (diagnostic event).

Symbol	Meaning
	Failure A device error has occurred. The measured value is no longer valid.
	Function check The device is in service mode (e.g. during a simulation).
	Out of specification The device is operated: Outside its technical specification limits (e.g. outside the process temperature range)
	Maintenance required Maintenance is required. The measured value is still valid.

The status signals are categorized in accordance with VDI/VDE 2650 and NAMUR Recommendation NE 107.

6.2.2 Calling up remedy information

Remedy information is provided for every diagnostic event to ensure that problems can be rectified quickly. These measures are displayed in red along with the diagnostic event and the related diagnostic information.

6.3 Diagnostic information in the measuring device

6.3.1 Overview of Web server information events

Unlike a diagnostic event, an information event is displayed in the event logbook only and not in the diagnostic list.

Information event	Event text
I1000	--------(device OK)
I1110	Write protection switch changed
I1361	Web server login failed
I1627	Web server login successful
I1631	Web server access changed

6.4 Checking the network connection

The network connection between the computer and measuring device can be checked using the "ping" utility of the Internet Control Message Protocol (ICMP).

The "ping" utility sends ICMP(v6) "echo request" packets (ping, ICMP packet type 8 (0x08)) to the target address of the measuring device. According to the protocol specification, the measuring device must send back a response: ICMP "echo reply" (pong, ICMP packet type 0 (0x00)).

1. Click *Start* (Windows icon).
   ↳ The Start screen opens along with the search field.
2. In the search field, enter "cmd" (command).
   ↳ A link to "cmd.exe" is displayed in the results field.
3. Select the "cmd.exe" link.
   ↳ A new command window opens.
4. Enter ping and the IP address, e.g.: ping 192.168.1.212
   ↳ The network connection status is displayed.

Depending on the operating system used, or the version of the operating system, other tools can also be used, such as Powershell.exe, prompt etc.

If the measuring device cannot be reached the router responsible delivers the following response:
- "Network unreachable"
  or
- "Host unreachable"

1. Check the IP address settings → 16.
2. Check whether the Web server is enabled → 16.

7 Technical data

Web server	Stack: standard TCP stack with IPv4 functionality
Connection and session management	▪ Open ports: – 80 (HTTP for Web server) – 8000 (for Endress+Hauser Service communication) ▪ Only one connection possible at any one time via Hypertext Transfer Protocol (HTTP) ▪ Time out after 10 minutes
Supported functions	▪ Java Script ▪ Communication protocol: Dynamic Configuration Protocol (DCP), based on RFC 2131 ▪ Hypertext Markup Language (HTML) ▪ Cascading Style Sheets (CSS)
Functions not supported	▪ Domain Name System (DNS) ▪ Hyper Text Transfer Protocol Secure (HTTPS)

www.addresses.endress.com

Endress+Hauser

People for Process Automation