



Level



Pressure



Flow



Temperature



Liquid
Analysis



Registration



Systems
Components



Services

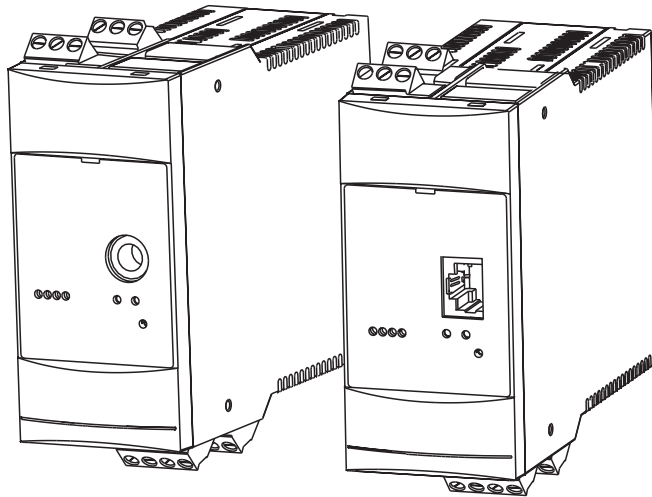


Solutions

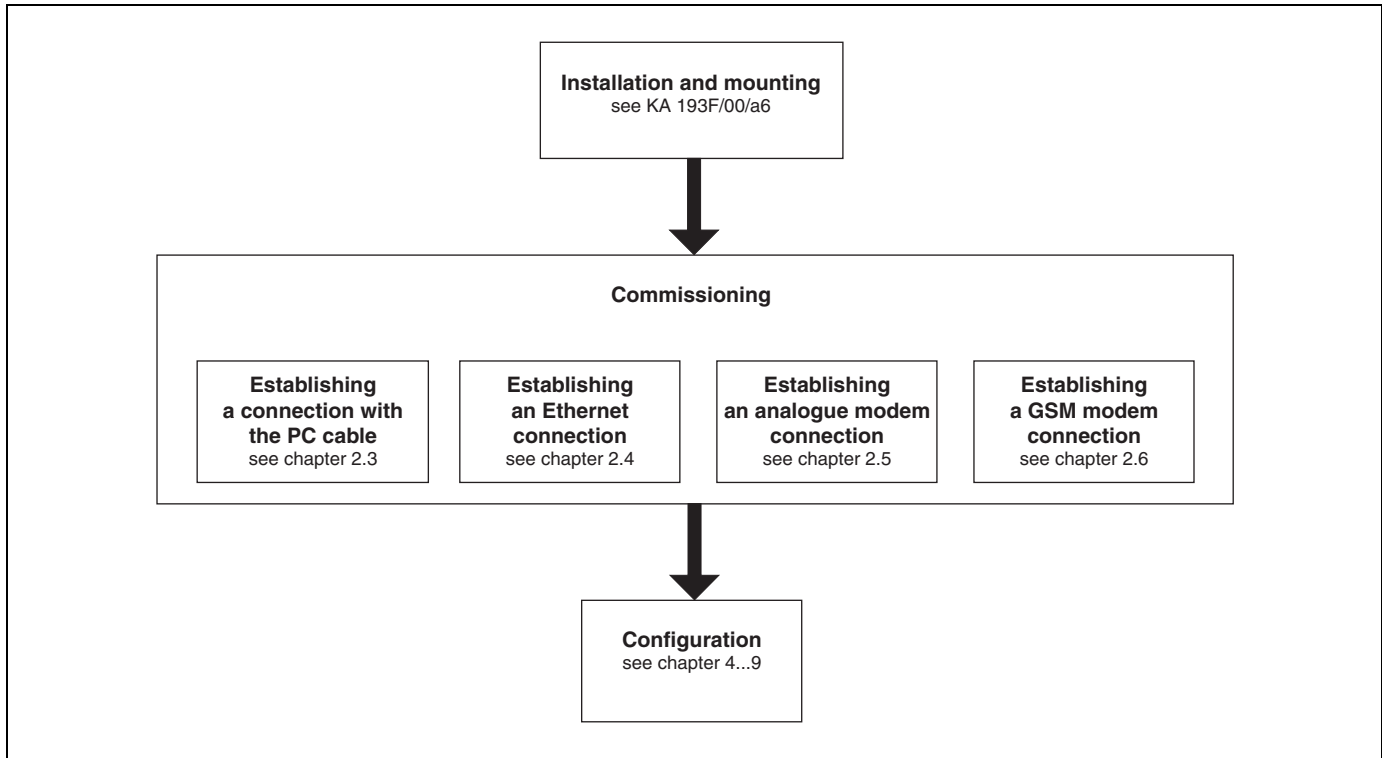
Operating Instructions

Fieldgate FXA520

Gateways/Interfaces



Brief operating instructions



L00-FXA520xx-05-00-00-en-002

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1 Introduction

1.1 Licensing agreement

The software required for read out and commissioning is freely available or is subject to the licensing conditions of its manufacturer (→ Chap. 1.4.1).

1.2 Registered trademarks

HART®

Registered trademark of the HART Communication Foundation, Austin, USA.

Microsoft®, Windows®, Windows NT® and the Microsoft logo are registered trademarks of the Microsoft Corporation.

All other brand and product names are trademarks or registered trademarks of the companies and organisations in question.

1.3 Conventions used in the manual

The following writing conventions and symbols have been used to provide the user with a better overview of the contents of this manual and to highlight important information:

Text emphasis

The following section provides you with a brief overview of the methods used to emphasise text in this manual.

Text emphasis	Function	Example
"Bold in inverted commas "	Keys, buttons, program icons, tabs, menus, commands	"Start < Programs < ToF " or "Enter "
		Select "Print " in the "File " menu.
	With the CTRL key (CONTROL key) held down, press the SHIFT key.	Keep the "CTRL key " pressed and press the "SHIFT key".
	With the CTRL key (CONTROL key) held down, click the left mouse button.	Keep the "CTRL key " pressed and left-click the mouse.
CAPS	Details on paths and file names in the text	DOKUFMR2XX.PDF or WIN.HLP
Angle brackets	Variables	<CD-ROM drive>

Signal	Meaning
Caution!	This word signals important information and points to note. These should always be followed in order to avoid any malfunctions.
Note!	This word indicates helpful tips and additional information.

1.4 System requirements

1.4.1 Software

Software for remote monitoring via web browser

Operating system	Service Pack / extensions
Windows 95	Y2K bug fixes
Windows 98	Y2K bug fixes
Windows NT 4.xx	SP 6a or higher
Windows 2000	SP 1 or higher
Windows XP	Home/Professional

Web browser	Service Pack / extensions
MS Internet Explorer	> 5.0 with current security updates
Netscape Navigator	> 4.7 with current security updates
Opera	> 6.0 with current security updates
Mozilla	≥ 1.0 with current security updates

Software for remote configuration with HART Client

Operating system	Service Pack / extensions
Windows 98	Y2K bug fixes
Windows NT 4.xx	SP 6a or higher
Windows 2000	SP 1 or higher
Windows XP	Home/Professional

Add-on	Version	Function
HART Client	≥ 1.5	This add-on is required for remote configuration, e.g. with ToF Tool, ReadWin or FieldTool, Commuwin II or OPC Server
ToF Tool	≥ 3.10	Service and operating program for level transmitters with Time-of-Flight measuring
FieldTool	≥ 1.03.06	A common software for commissioning and configuring all flowmeters of the new PROline generation.
ReadWin	≥ 1.9.2.0	PC software under MS-Windows for unit setting up, display and archiving measured values/sequences.
Commuwin II	≥ 2.08-1	Commuwin II is the general tool for device configuration for all smart Endress+Hauser field devices.
OPC Server	≥ 1.4.0.0	PC - OPC Interface

1.4.2 Printer

The configuration of the Fieldgate can be printed out on printers connected to your personal computer.

1.5 Scope of delivery

The scope of delivery comprises:

- Device
- Installation and mounting instructions
- Accessories (depending on order)
- PC cable (service connector/RS232)

2 Commissioning

2.1 Installation and mounting

A number of requirements must be fulfilled before being able to install the device. For further information please refer to the Installation and Mounting Instructions (KA193F/00/a6) supplied with the device.

2.1.1 Input

Analogue 4...20 mA inputs

2 channels: joint ground of both channels, no galvanic isolation.

Channel 1&2 - passive	
Max. input voltage per channel	35 V
Max. input current per channel	45 mA
Input impedance	approx. 100 Ω
Accuracy	$\leq 1 \%$
Voltage drop (incl. diode against reverse polarity)	≤ 3 V
Connection cable	Instrument cable, unshielded
Cable resistance	max. 25 Ω per core

RS-485 interface

Galvanic isolation	500 V RMS
Termination resistor A-B	120 Ω fully integrated

HART channel 1&2

The HART signal is capacitive coupled and decoupled via a communication resistor

Communication resistor in the 4...20 mA signal line	Integrated 270 Ω communication resistor, for optional use, max. 45 mA!
Short-circuit duration (without interior communication resistor)	Unlimited

Galvanic isolation between HART channel 1 and channel 2

Ex-isolation between field devices and internal circuits.

Output voltage U ₀ in the event of a fault (Ex)	Max. 6.5 V
Max. current for EEx ia (Ex)	5.97 mA
Max. power output (Ex)	39 mW
Maximum input voltage (Ex)	30 V
Maximum input voltage (non-Ex)	45 V

2.1.2 Output

Output signal

- A relay for alarm in the event of a fault
- Switching-off the sensor's power supply (in the event of a fault, power-save mode)
- Switching capacity of relay contacts:
 - U~ maximum 253 V
 - I~ maximum 2 A
 - P~ maximum 500 VA at $\cos \varphi 0.7$
 - U- maximum 40 V
 - I- maximum 2 A
 - P- maximum 80 W

2.1.3 Power supply

Supply voltage

Alternating current version (AC):

Voltage range: 85...253 V, 50/60 Hz.

Safe galvanic isolation between mains power supply and internal circuits.

Direct current version (DC):

Voltage range: 20...60 V_{DC} or 20...30 V_{AC}.

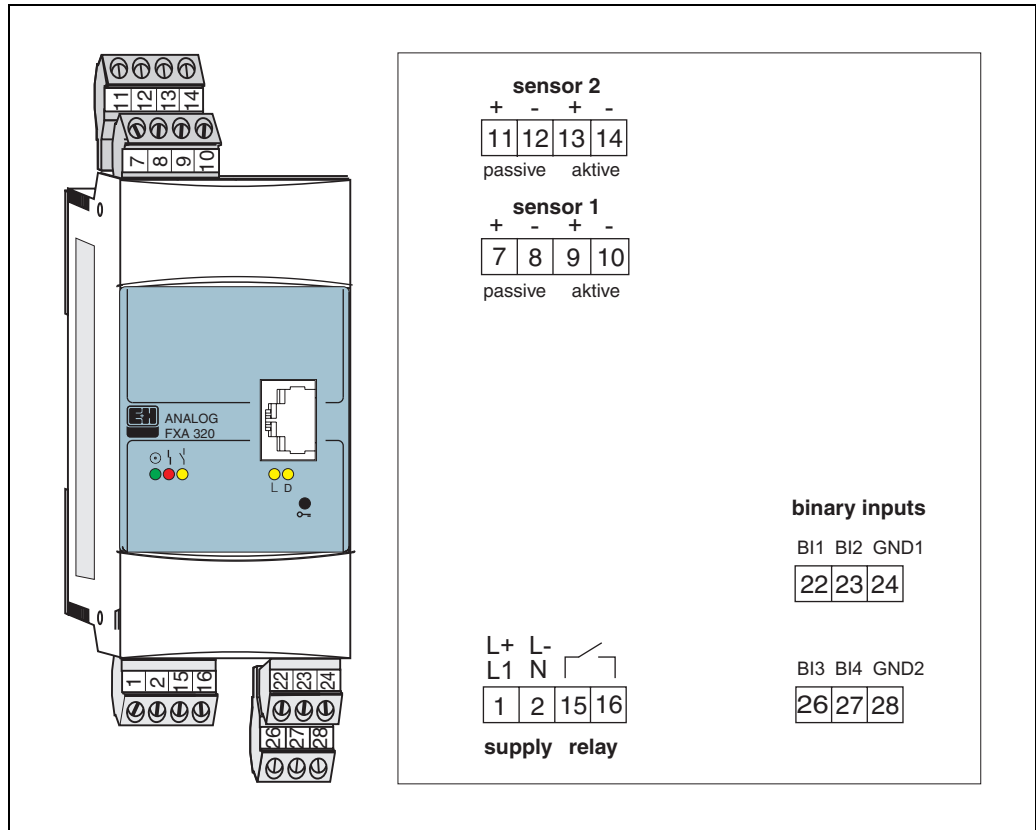
Reverse polarity protection guaranteed by bridge rectifier.

Safe galvanic isolation between mains power supply and internal circuits.

Power consumption

FXA520	AC (at 253 V _{AC})	DC (at 20 V _{DC})
Analogue	6 VA	2 W
Ethernet	4.9 VA	1.5 W
GSM	Send mode	8 VA
	Standby	4.5 VA
		1 W

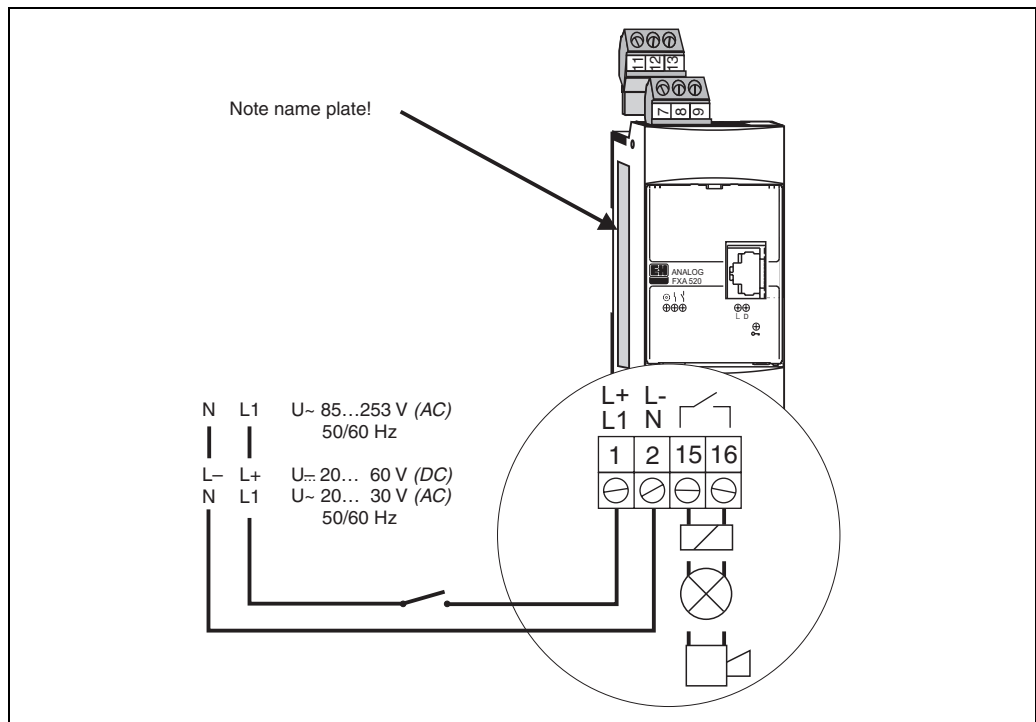
2.1.4 Terminals



L00-FXA520ex-04-00-06-en-012

Abb. 1: Terminal assignment Fieldgate FXA520

Power supply and all-or-nothing relay



L00-FXA520ex-04-00-06-en-004

Fig. 2: Terminal assignment for power supply and all-or-nothing relay

Connection of HART sensors

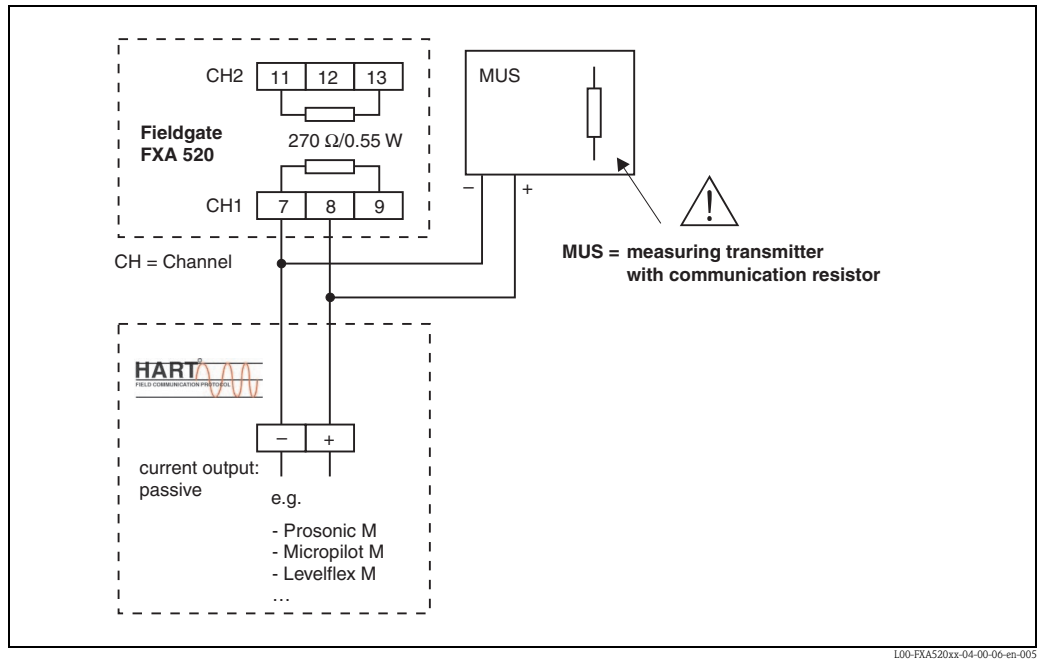


Fig. 3: Terminal assignment for connection with transmitter power supply unit **with** communication resistor

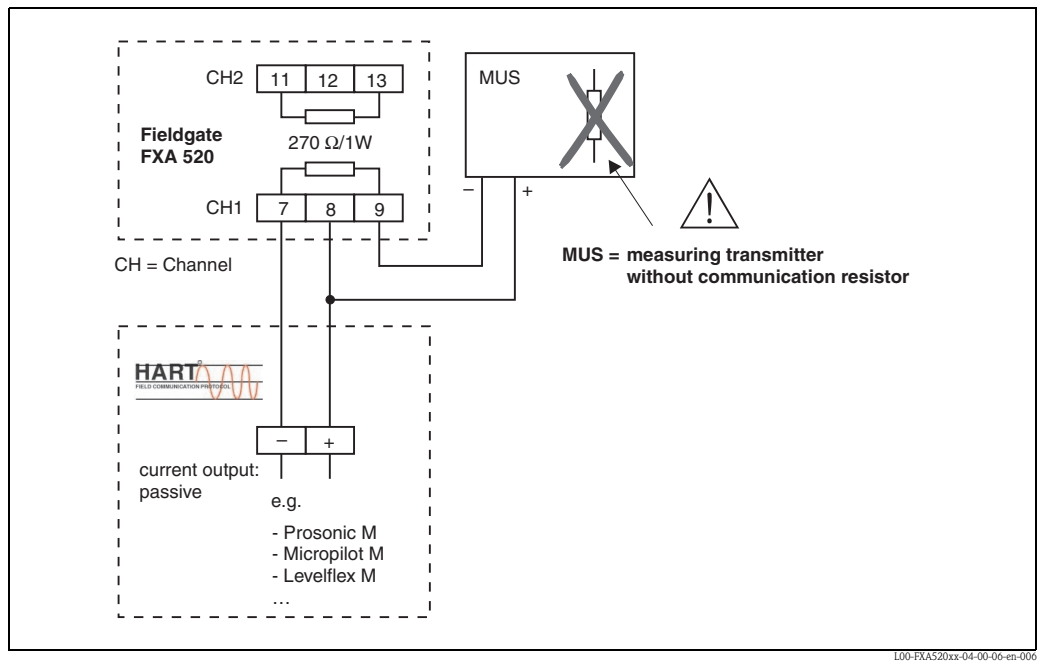
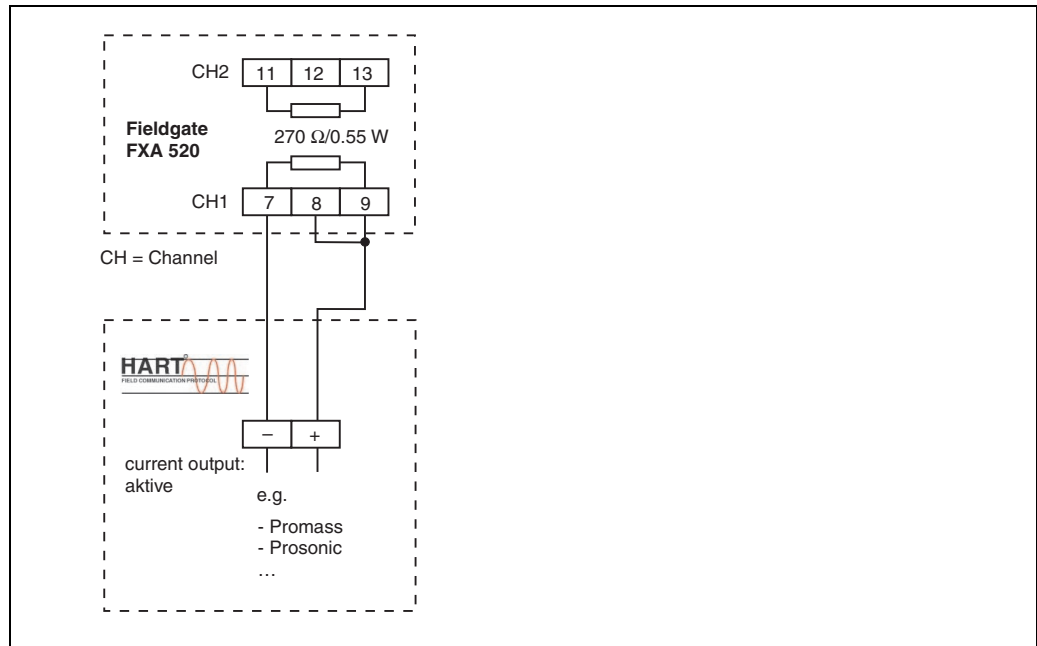


Fig. 4: Terminal assignment for connection with transmitter power supply unit **without** communication resistor



L00-FXA520cx-04-00-06-en-010

Fig. 5: Terminal assignment for connection with active current output

Connection of HART multidrop sensors

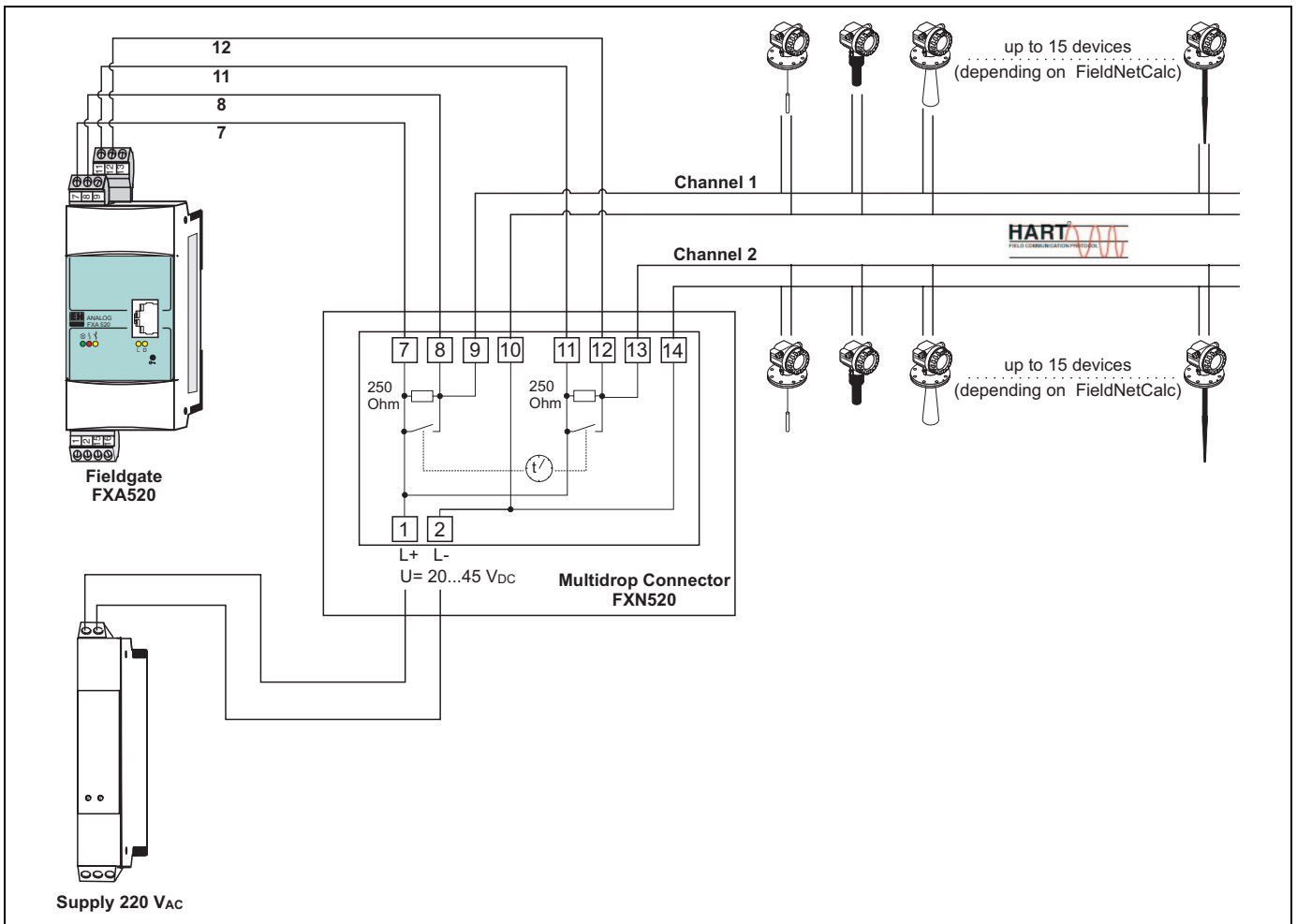


Fig. 6: Terminal assignment for connection with Multidrop Connector FXN520

Connecting the supply voltage

Warning!

Please ensure that the maximum supply voltage at terminal 1 and 2 observes the maximum voltage range of the connected devices.

Connection of 4...20 mA sensors

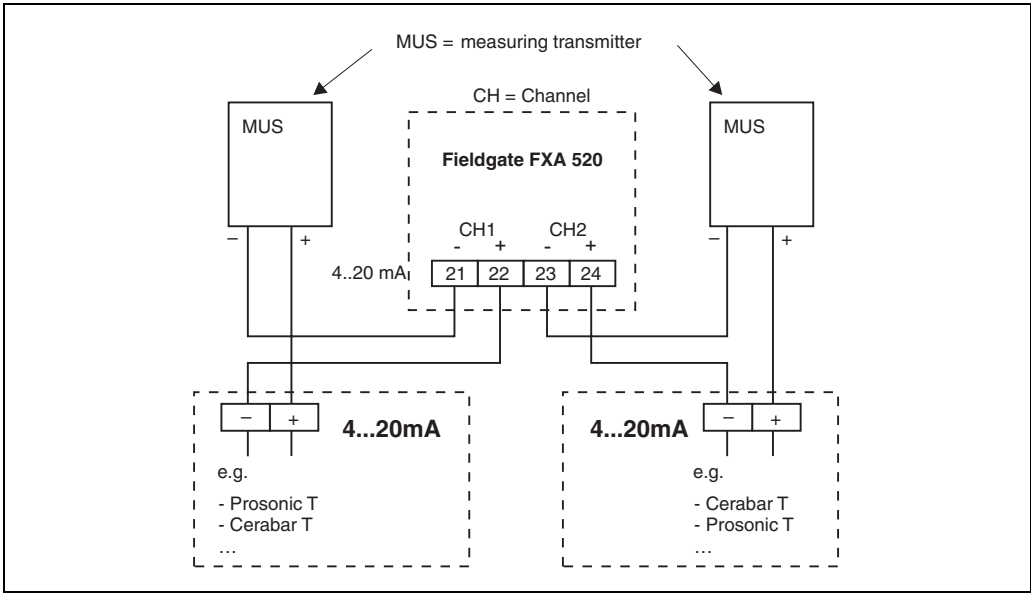


Fig. 7: Terminal assignment for connection with transmitter power supply unit

Connection of RS-485 outputs

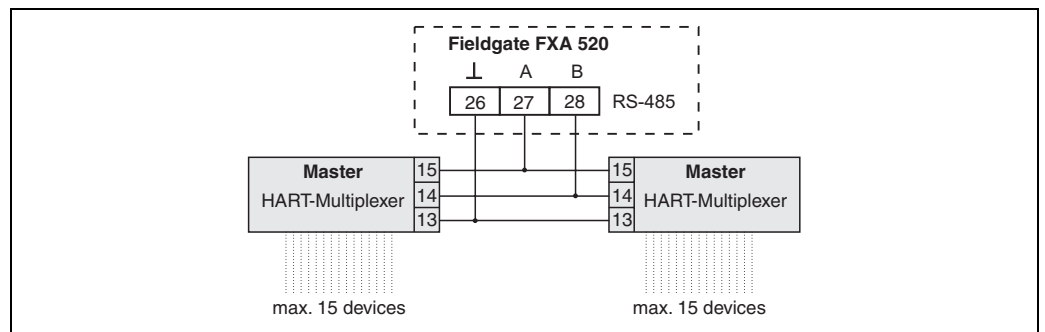


Fig. 8: Terminal assignment for connection with HART multiplexer (master/master)

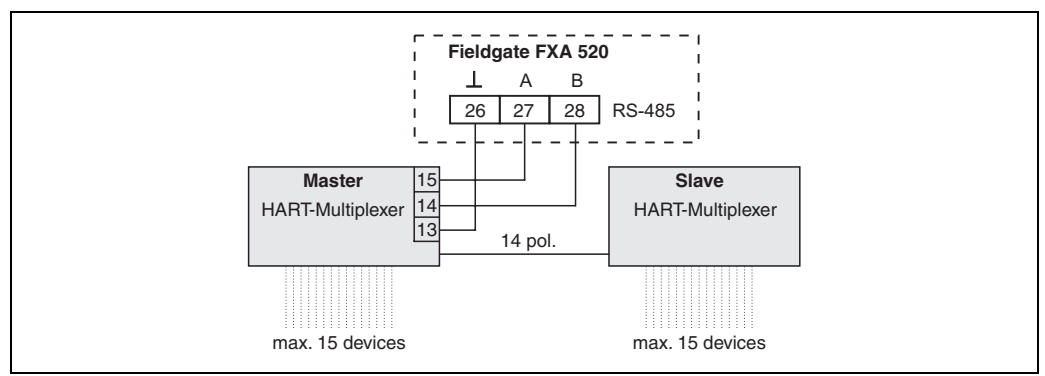


Fig. 9: Terminal assignment for connection with HART multiplexer (master/slave)

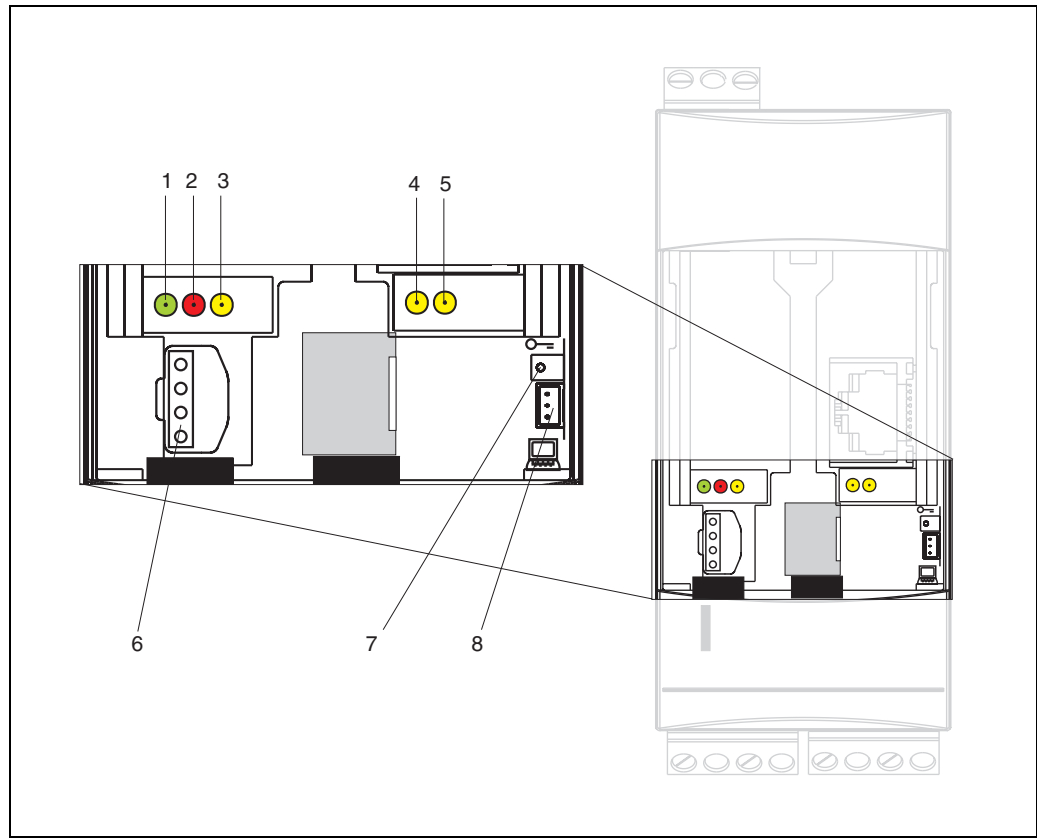
Information about and accessories for the HART-Multiplexer can be found in → Chap. 20.7

Note!

The Fieldgate is designed for the HART multiplexer master and HART slave units from Pepperl+Fuchs:

- HART multiplexer master, type KFD2-HMM-16
- HART slave unit, type KFD0-HMS-16

2.2 Display and operating elements



100-FXA520xx-07-00-06-xx-001

Fig. 10: Arrangement of display and operating elements on Fieldgate FXA 520

Display elements

Arrangement of elements see Fig. 10.

Item	Light emitting diode (LED)	Meaning
1	Green LED constant	Indicates the power supply is correct
2	Red LED constant	Indicates a fault
	Red LED flashes	Indicates a warning / on-site communication via PC / hardware is unlocked / system start
3	Yellow LED	Switching status of the built-in relay LED off = relay de-energised LED on = relay energised
4	Yellow LED	Indicates: connection active
5	Yellow LED	Indicates: communication / GSM version: field strength display if no connection

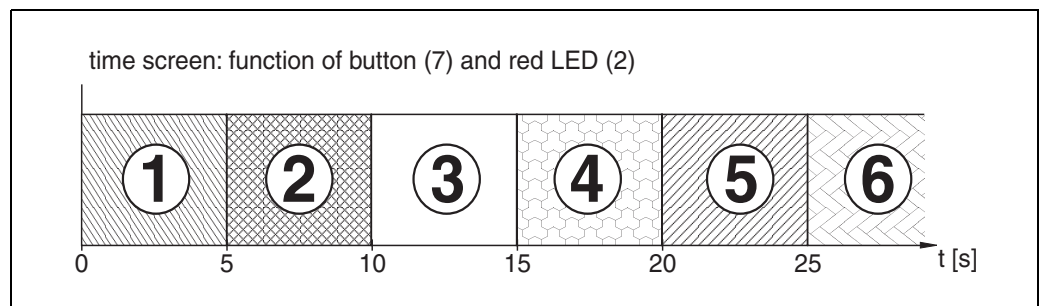
Operating elements

Arrangement of elements see Fig. 10.

Item	Element	Meaning
6	Socket	Connection socket for DAT module
7	Button	Button for hardware locking and configuration reset
8	Socket	Connection socket for PC cable / service connector

Function of button (7) and red LED (2)

If the key is pressed and held during system start-up, the following functions are available in the time screens when the button is released:



L00-FXA520xx-05-00-00-en-001

Time interval [s]		Red LED	Function - release button
1	0 ... 5	Flashes at approx. 5 Hz	The data of the internal EEPROM is first checked, the configuration data is copied from the internal EEPROM to the DAT module
2	5 ... 10	Off	No function when released
3	10 ... 15	Flashes at approx. 2.5 Hz	Configuration is reset to the factory settings
4	15 ... 20	Off	No function when released
5	20 ... 25	Flashes at approx. 1.25 Hz	Firmware and configuration is reset to the factory settings
6	25	Off	No function when released

The red LED flashes at approx. 10 Hz during initialisation once the button has been released or a restart has taken place without pressing the button. This takes approx. 10 s. It takes approx. 30 s if a firmware update was carried out on the Fieldgate.

2.2.1 Relay concept

Use as alarm relay

The relay is energised after power-up and initialisation (good status).

If using as an alarm relay, the checkbox "Power Down Devices between Scan Cycles" in the administrator mode must be **deactivated**. A "no" appears in the user mode.

Power safe function application

For self-sufficient installations, the power-save mode can be activated.

This function can be used to switch the power supply for connected devices (HART, 4...20 mA, multiplexer) on and off. For this, the checkbox "Power Down Devices between Scan Cycles" in the administrator mode must be **activated**. A "yes" appears in the user mode (→ Chap. 10.4.2).

2.3 Establishing a connection with PC cable

Note!

All Fieldgate versions can be configured with the service connector.

Caution!

Changes to the Fieldgate configuration are not adopted when a connection is made via the PC connecting cable until:

- a system restart via the configuration page in the "**Information & Configuration / Special**" function has been triggered (→ Chap. 10.5),
- the connection via the PC connecting cable has been disconnected for more than 2 minutes.

2.3.1 Installation

Connect your personal computer and the Fieldgate with the PC cable supplied. The service connector (see Fig. 10, item 8) is used to connect the Fieldgate. An unassigned COM port is used to connect the PC.

2.3.2 Setting up the personal computer

Note!

All Fieldgate communication versions can be commissioned via the service connector with a web browser (Internet Explorer, Netscape Navigator, etc.). The IP address to be contacted via the service connector is fixed permanently and cannot be changed (**IP = 192.168.253.1**).

Installing the standard modem

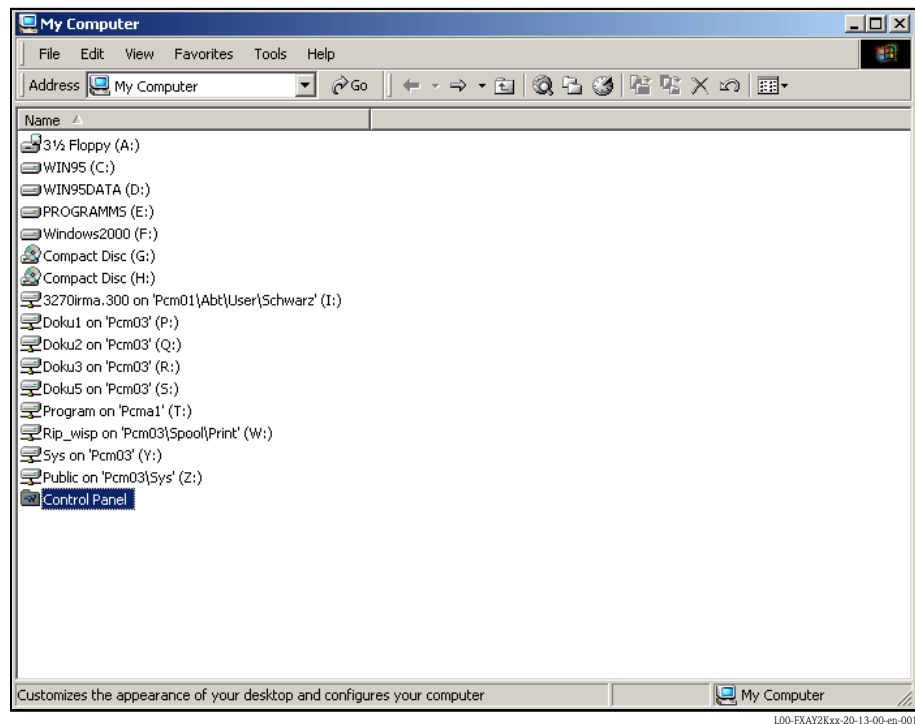
In order to be able to connect to the fieldgate via the service connector, a new standard modem has to be installed.

The following are sample instructions for Windows 2000® :

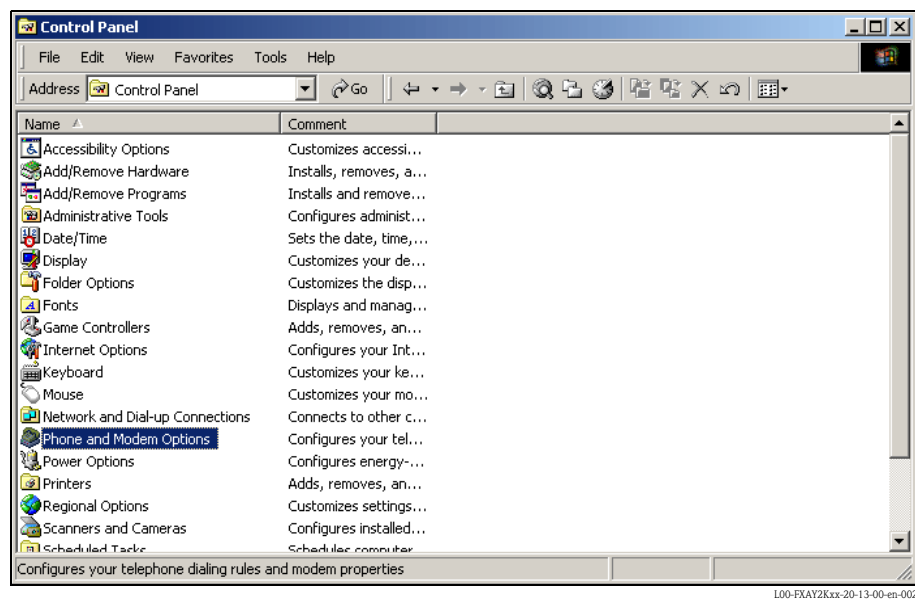
Note!

Examples of instructions for other operating systems can be found in the appendix.

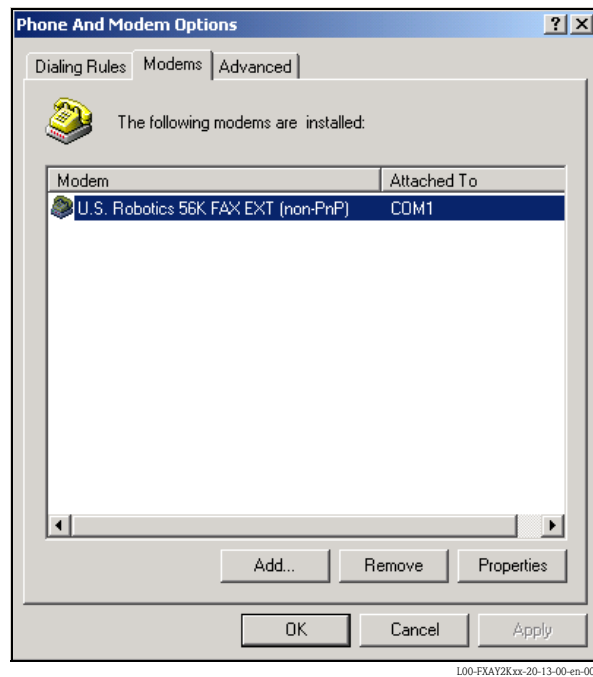
1. Using the left mouse button, double-click the "**My Computer**" icon to open the appropriate window.



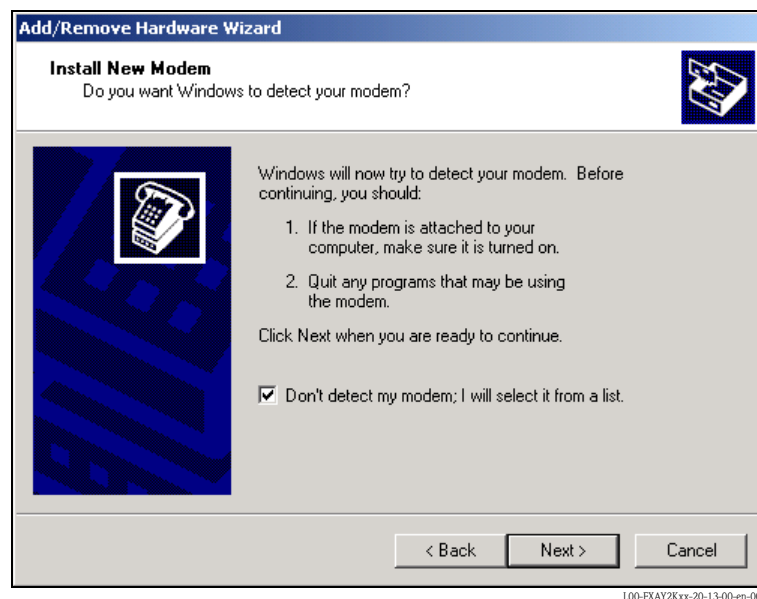
- Using the left mouse button, double-click the "**Control Panel**" icon to open the appropriate window.



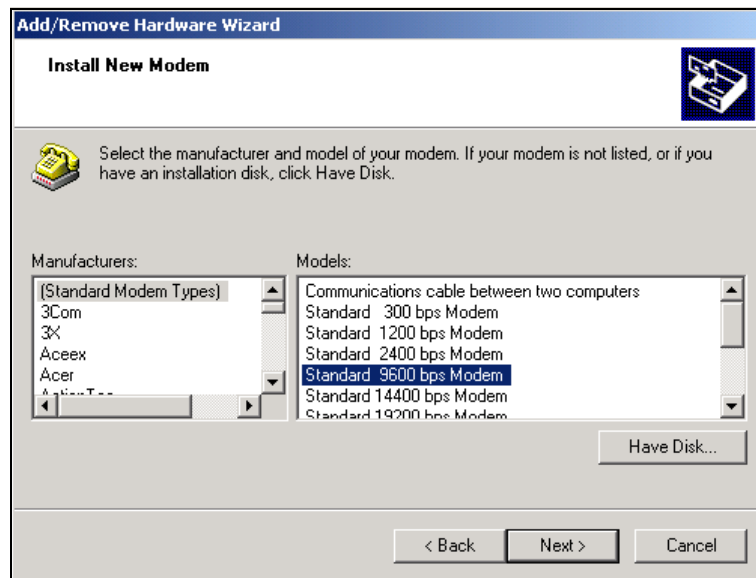
- Using the left mouse button, double-click the "**Phone and Modem Options**" icon to open the appropriate window.



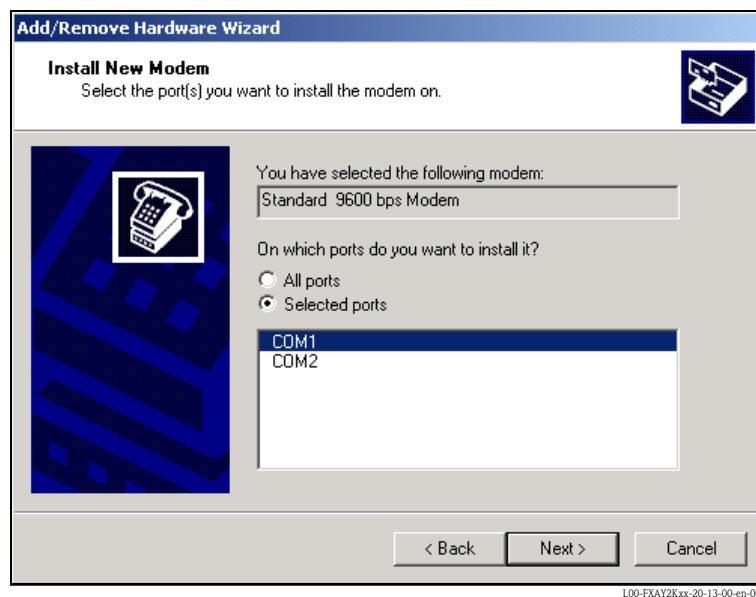
4. Here you must left-click the "**Add...**" button to add a new modem.



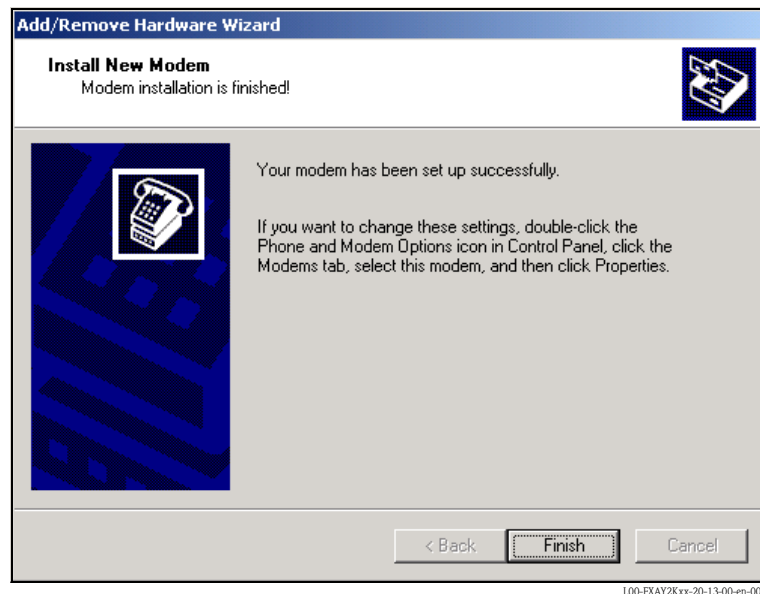
5. Activate the checkbox "**Don't detect my modem; I will select it from a list.**", click "**Next >**" to confirm.



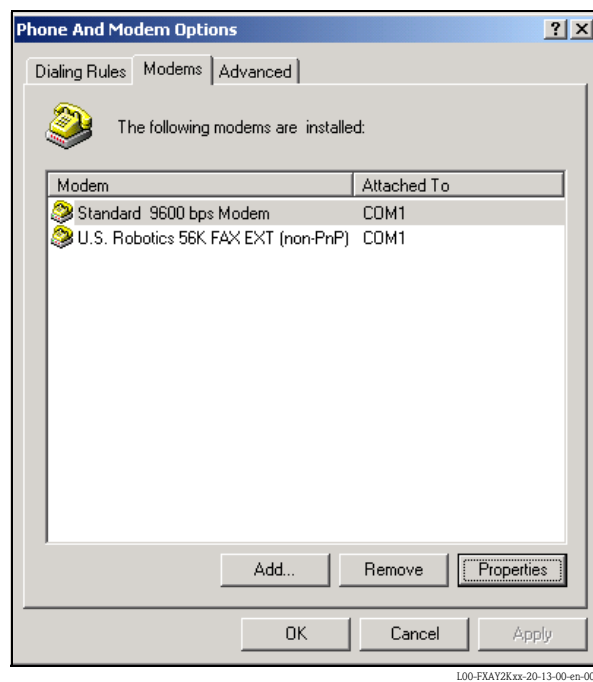
6. Select the following from the picklists "**Manufacturers: → (Standard Modem Types)**" and "**Models: → Standard 9600 bps Modem**" and click "**Next >**" to confirm.



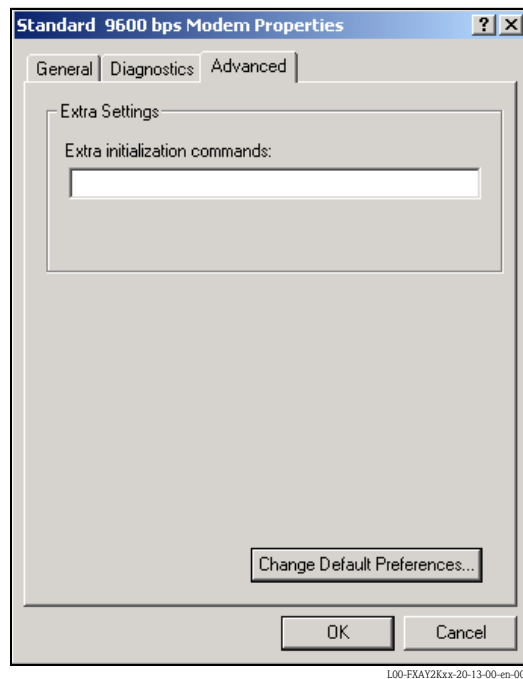
7. Select the desired COM port and click "**Next >**" to confirm.



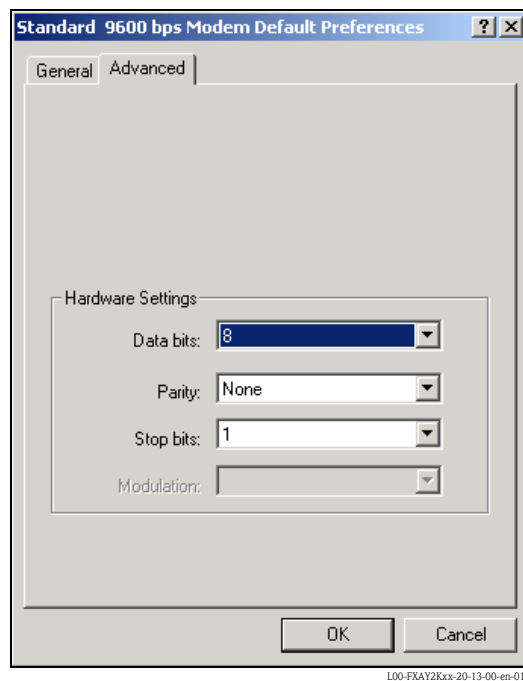
8. Click "**Finish**" to confirm the modem installation.
9. Using the left mouse button, double-click the "**Phone and Modem Options**" icon to open the appropriate window.



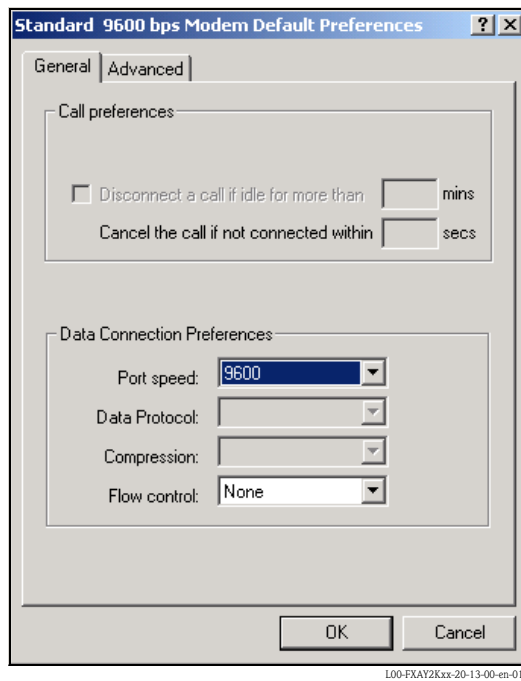
10. Select the newly installed modem "**Standard 9600 bps Modem**" and left-click the "**Properties**" button.



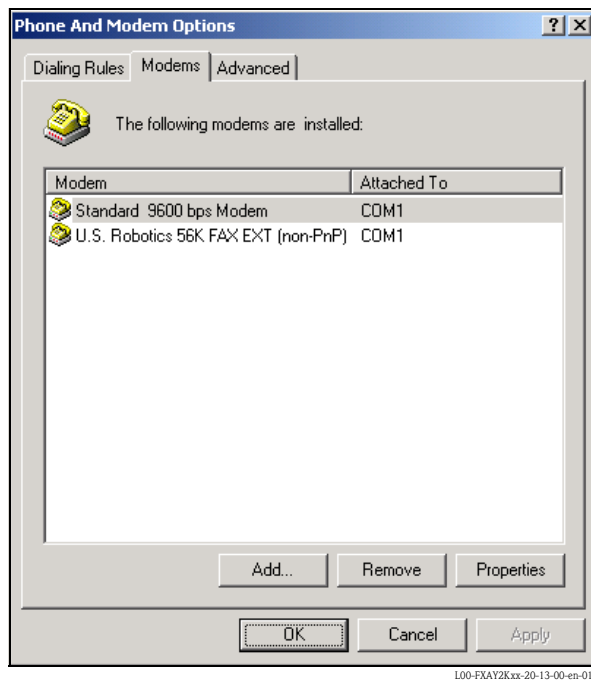
11. Select the "**Advanced**" tab. Left click the "**Change Default Preferences**" button.



12. Check the "**Hardware Settings**" on the "**Advanced**" tab.



13. Change to the **"General"** tab. Change the **"Flow control"** to **"None"**. Click **"OK"** to confirm your settings.

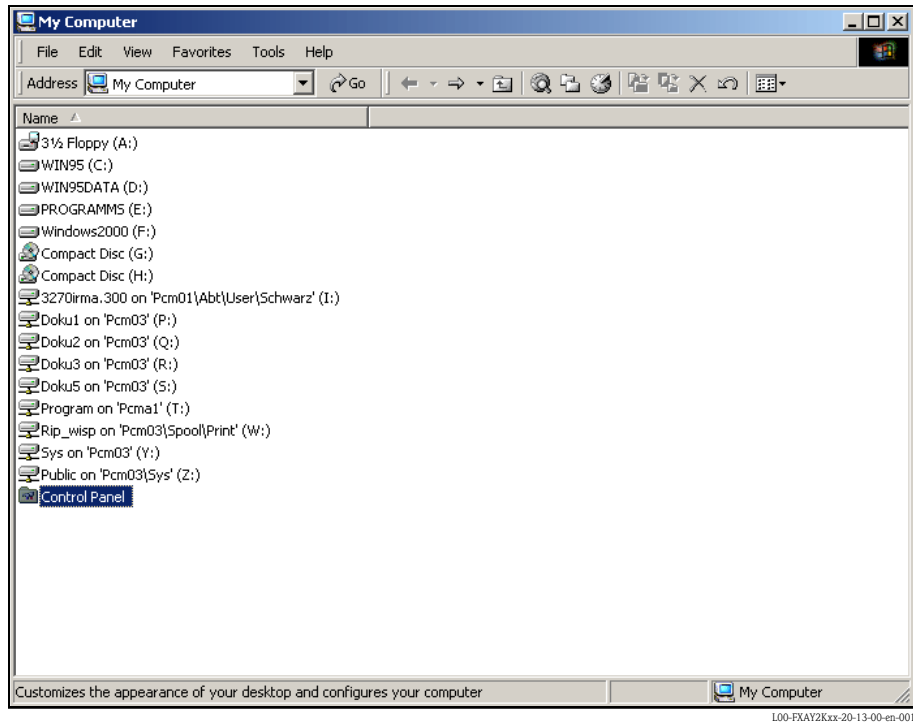


14. Click **"OK"** to confirm your settings.

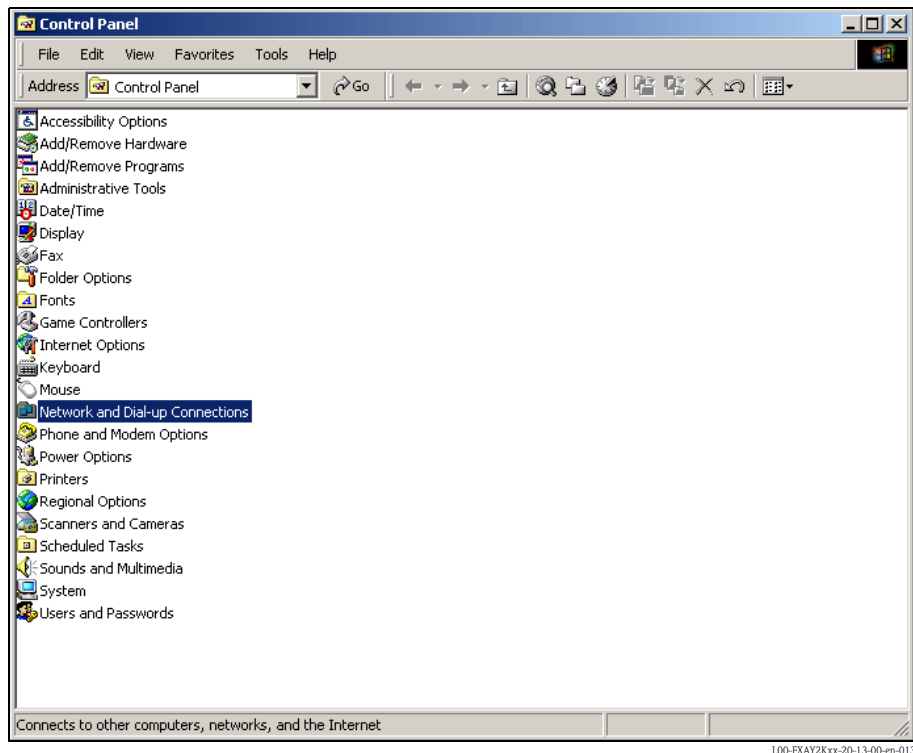
Setting up a dial-up networking connection

Now you must set up a dial-up networking connection.

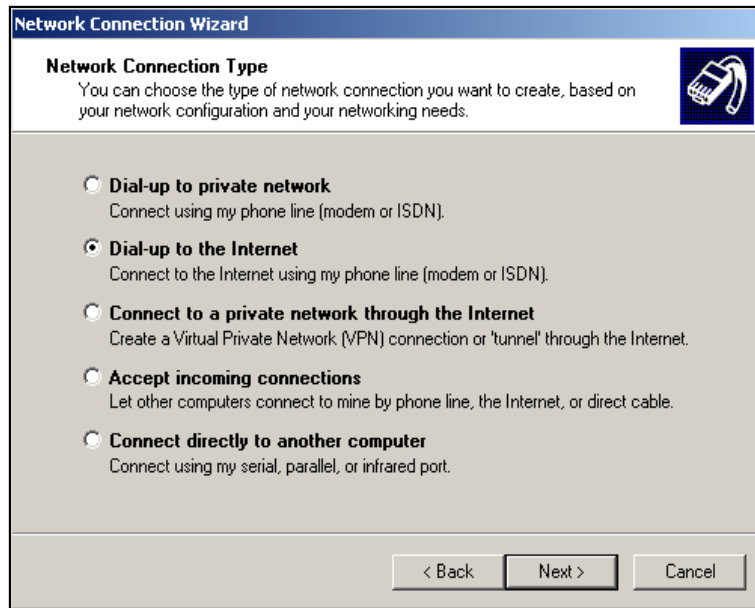
1. Using the left mouse button, double-click the **"My Computer"** icon to open the appropriate window.



2. Using the left mouse button, double-click the **"Control Panel"** icon to open the appropriate window. Double-click the **"Network and Dial-up Connections"** icon.

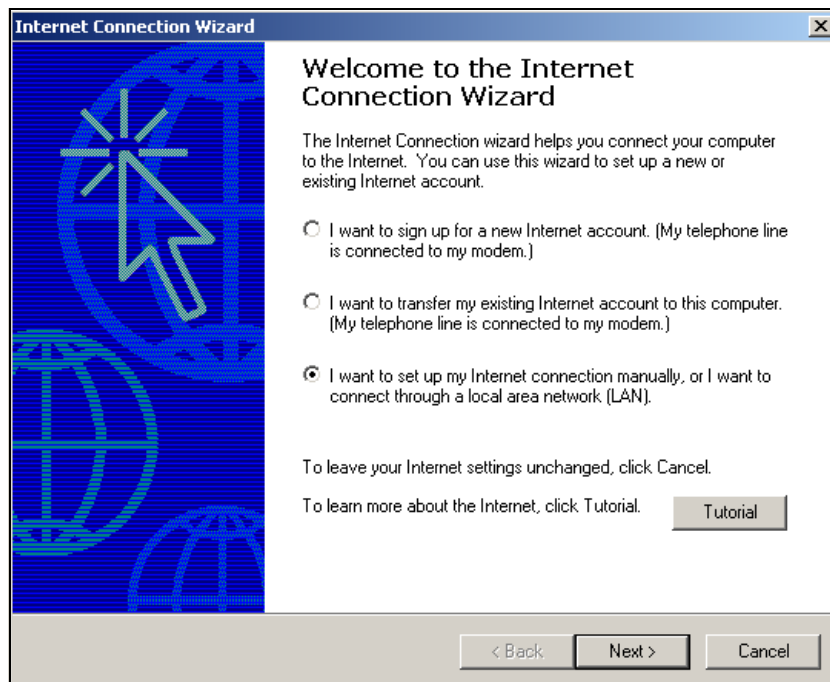


3. Double-click the **"Make New Connection"** icon. Click **"Next >"** to confirm.



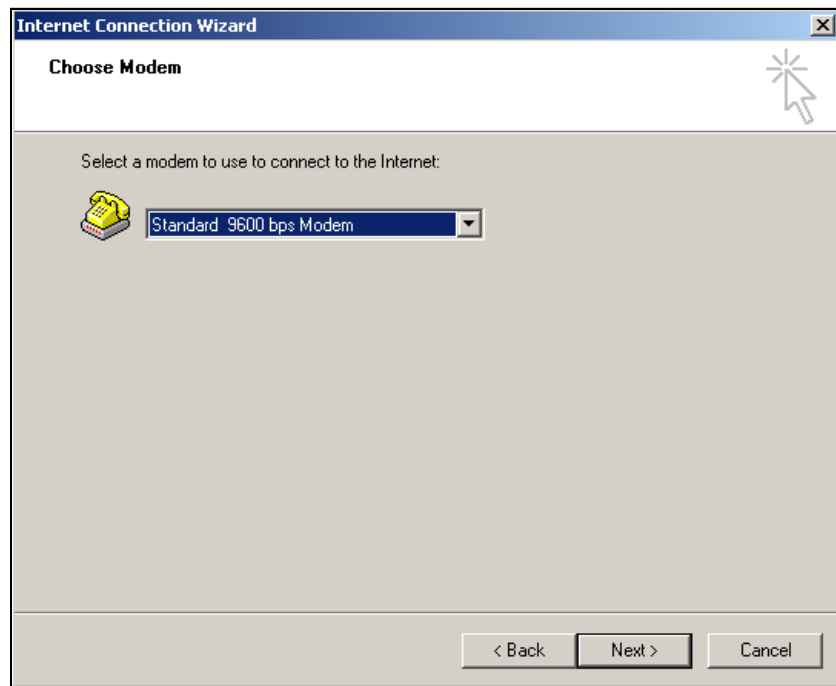
L00-FXAY2Kxx-20-13-00-en-014

4. Select the **"Dial-up to the Internet"** option and click **"Next >"** to confirm.



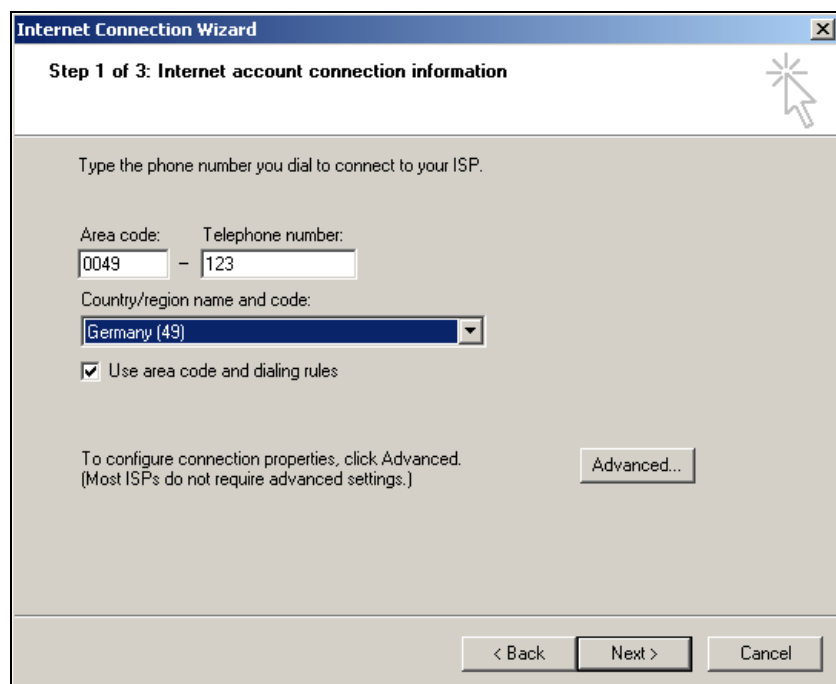
L00-FXAY2Kxx-20-13-00-en-015

5. Select the **"I want to set up my Internet connection manually, or I want to connect through a local area network (LAN)."** option and click **"Next >"** to confirm.
6. Click **"I connect through a phone line and a modem"** checkbox and **"Next >"** to confirm.



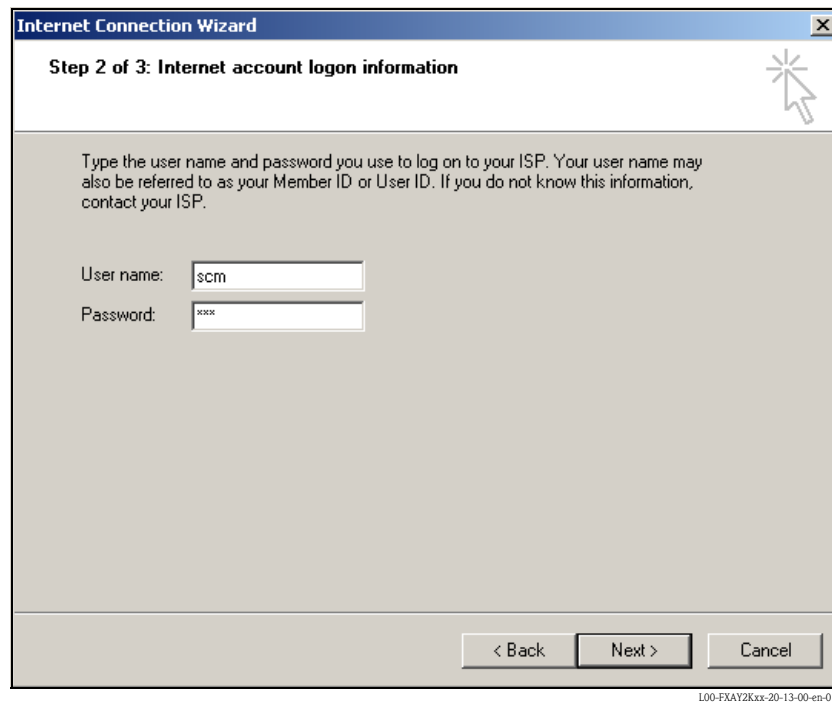
L00-FXAY2Kxx-20-13-00-en-016

7. Select the newly set up **"Standard 9600 bps Modem"** from the dropdown list and click **"Next >"** to confirm. In the following window, enter the telephone number (a hypothetical number of no significance, such as 123...) and click **"Next >"** to confirm.



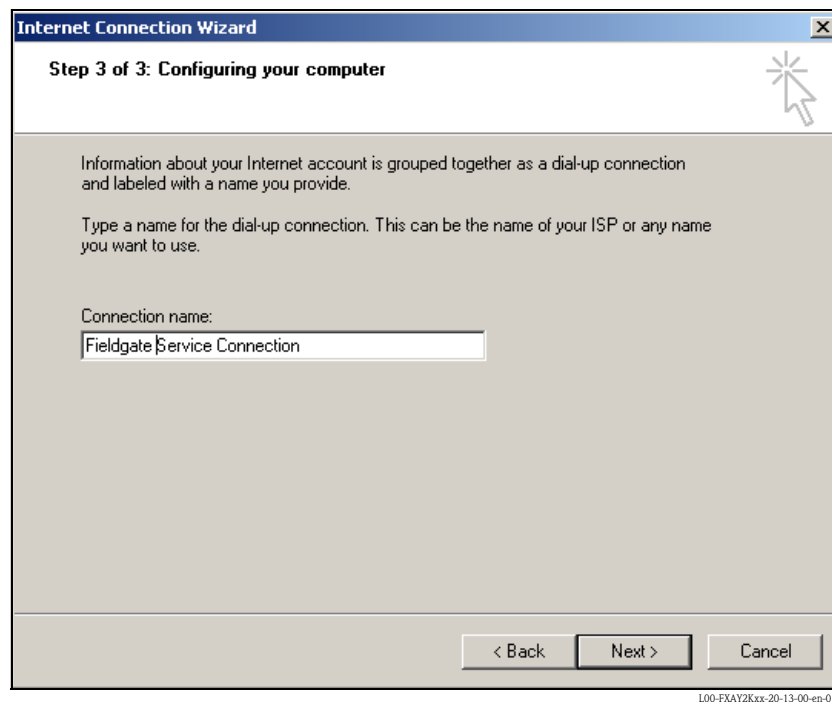
L00-FXAY2Kxx-20-13-00-en-017

8. Enter:
 - the user name **"scm"**
(This is permanently stored in the Fieldgate and cannot be altered!)
 - and the password **"scm"**
(This is permanently stored in the Fieldgate and cannot be altered!)
 Click **"Next >"** to confirm

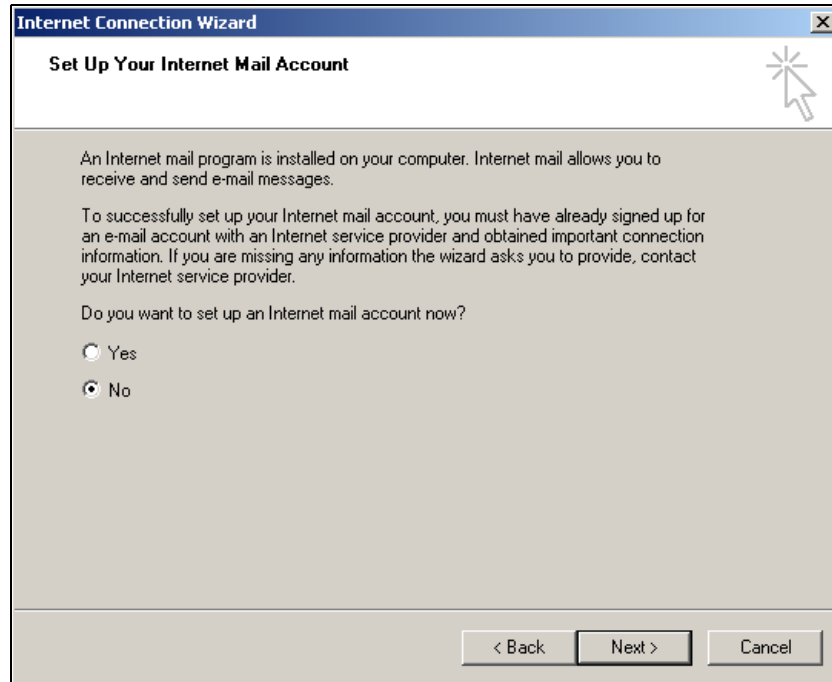


The screenshot shows a window titled "Internet Connection Wizard" with a close button in the top right corner. The title bar also contains a help icon. The main content area is titled "Step 2 of 3: Internet account logon information". Below the title, there is a paragraph of text: "Type the user name and password you use to log on to your ISP. Your user name may also be referred to as your Member ID or User ID. If you do not know this information, contact your ISP." Below this text are two input fields: "User name:" with the text "scm" and "Password:" with "xxxx". At the bottom of the window, there are three buttons: "< Back", "Next >", and "Cancel". A small ID number "100-FXAY2kxx-20-13-00-en-018" is visible in the bottom right corner of the window.

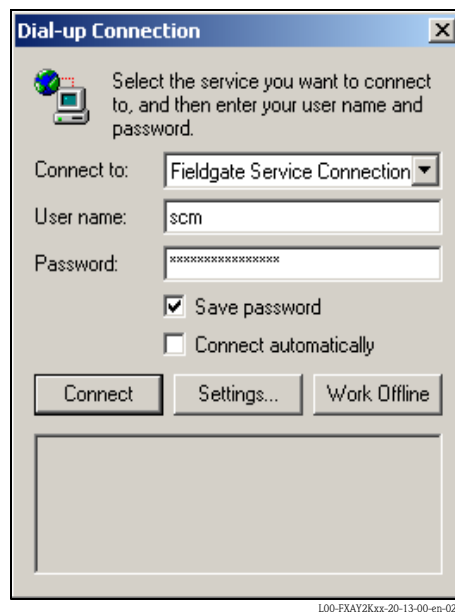
9. Enter the connection name in the "**Connection name:**" field. You can enter any name you choose (e.g. Fieldgate Service Connection in our example). Click "**Next >**" to confirm the name entered.



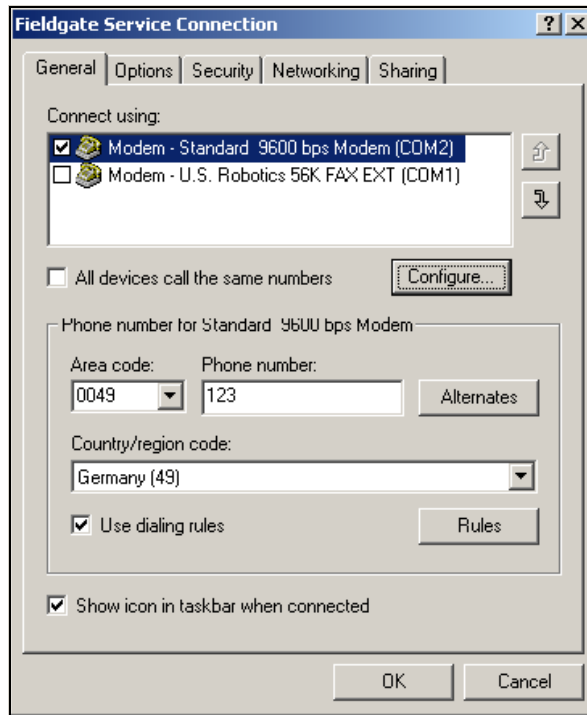
The screenshot shows a window titled "Internet Connection Wizard" with a close button in the top right corner. The title bar also contains a help icon. The main content area is titled "Step 3 of 3: Configuring your computer". Below the title, there is a paragraph of text: "Information about your Internet account is grouped together as a dial-up connection and labeled with a name you provide." Below this text is another paragraph: "Type a name for the dial-up connection. This can be the name of your ISP or any name you want to use." Below this text is a single input field labeled "Connection name:" containing the text "Fieldgate Service Connection". At the bottom of the window, there are three buttons: "< Back", "Next >", and "Cancel". A small ID number "100-FXAY2kxx-20-13-00-en-019" is visible in the bottom right corner of the window.



10. Click **"No"** and then **"Next >"** to confirm. Click **"Finish"** to confirm. The dial-up networking connection is set up.

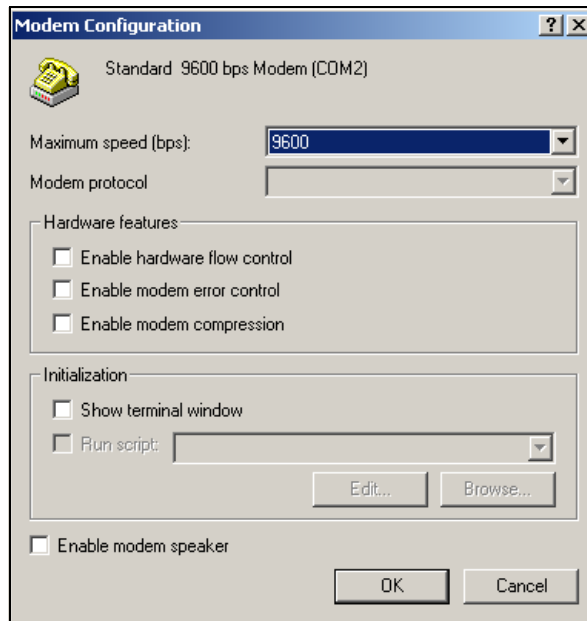


11. Left-click the **"Settings..."** button.



L00-FXAY2Kxx-20-13-00-en-022

12. Check the "**Hardware Settings**". To do so click the "**Configure...**" button.



L00-FXAY2Kxx-20-13-00-en-023

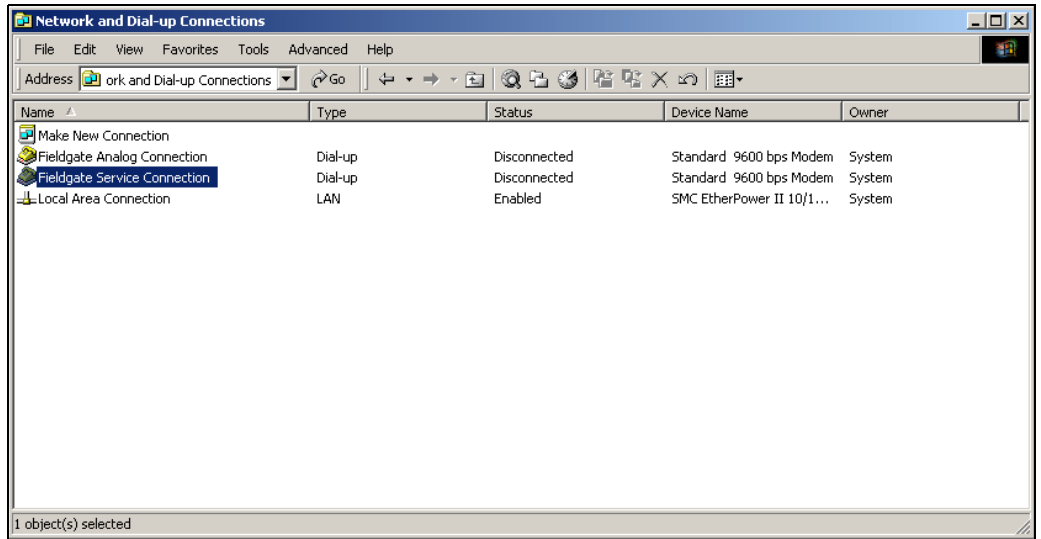
13. De-activate all "**Hardware features**" checkboxes. Click "**OK**" to confirm your settings.

The dial-up networking connection is set up.

Note!

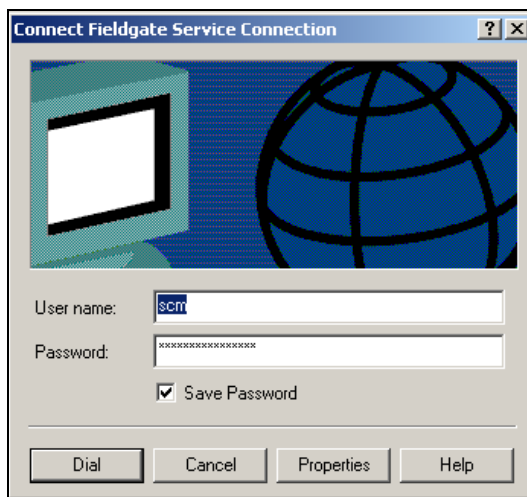
The newly established dial-up connection has been saved and can be used for the next connection. It can be found in the "**Network and Dial-up Connection**" window.

2.3.3 Making the connection



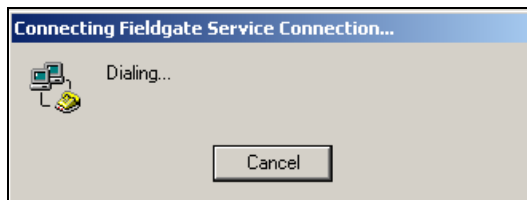
L00-FXAY2Kxx-20-13-00-en-024

1. Using the left mouse button, double-click the "Fieldgate Service Connection" icon to open the appropriate window.

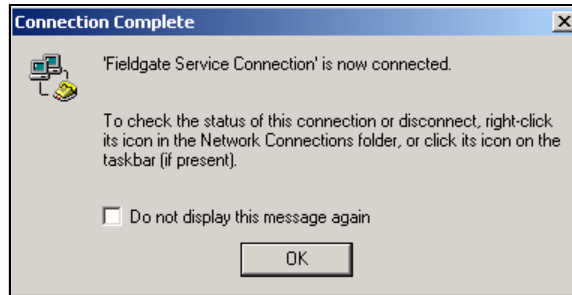


L00-FXAY2Kxx-20-13-00-en-025

2. Click "Dial" to confirm the entries.



L00-FXAY2Kxx-20-13-00-en-026

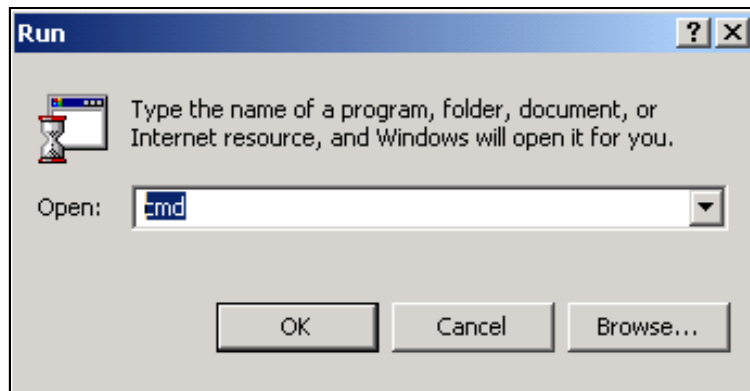


L00-FXAY2Kxx-20-13-00-en-027

3. If you see this window the connection is successfully complete.
4. Start the web browser once the connection is made. Enter the IP address "**192.168.253.1**". This IP address for the service connector is fixed permanently in the Fieldgate and cannot be changed!

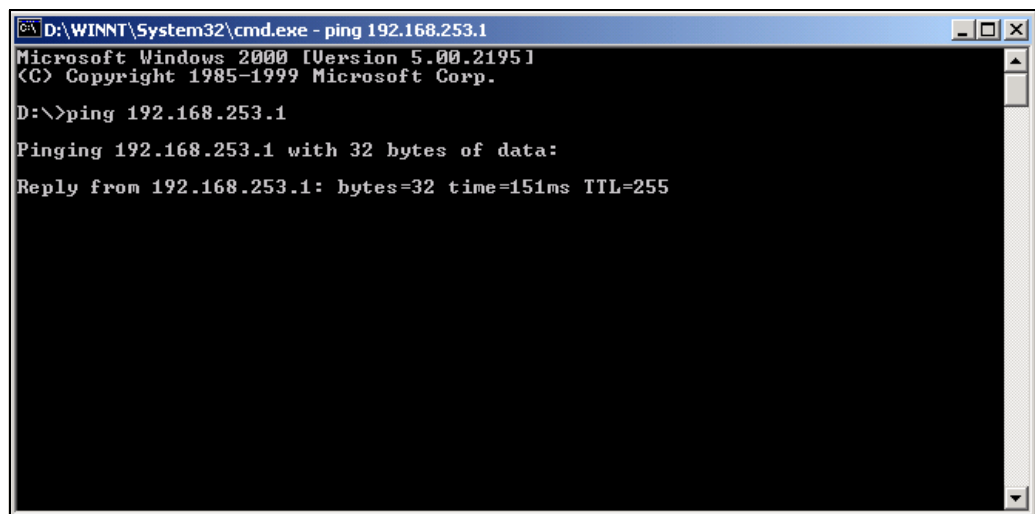
If there is no connection, check the connection to the Fieldgate as follows:

1. Open the DOS prompt "Start → Run → cmd "



L00-FXAY2Kxx-20-13-00-en-104

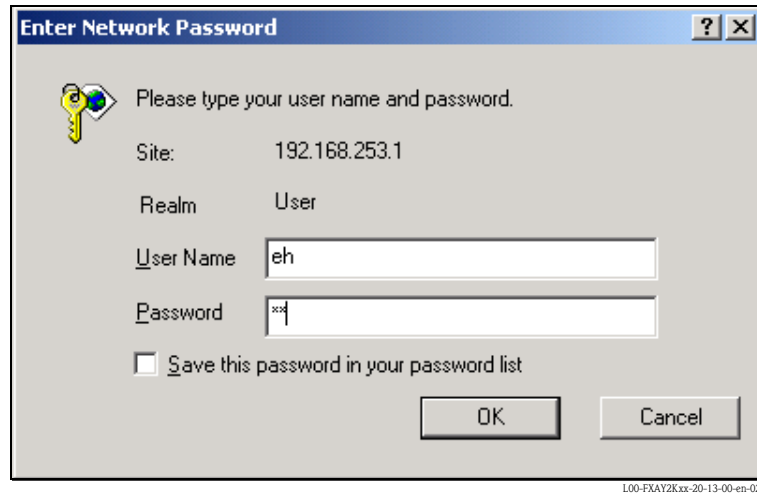
2. Enter "**ping 192.168.253.1**".
Do you get the answer 192.168.253.1 Bytes=32...
 - Yes. The connection is OK. Check your browser settings (If a proxy server is used try to bypass the IP address 192.168.253.1).
 - No. There is no connection to the Fieldgate.



L00-FXAY2Kxx-20-13-00-en-029

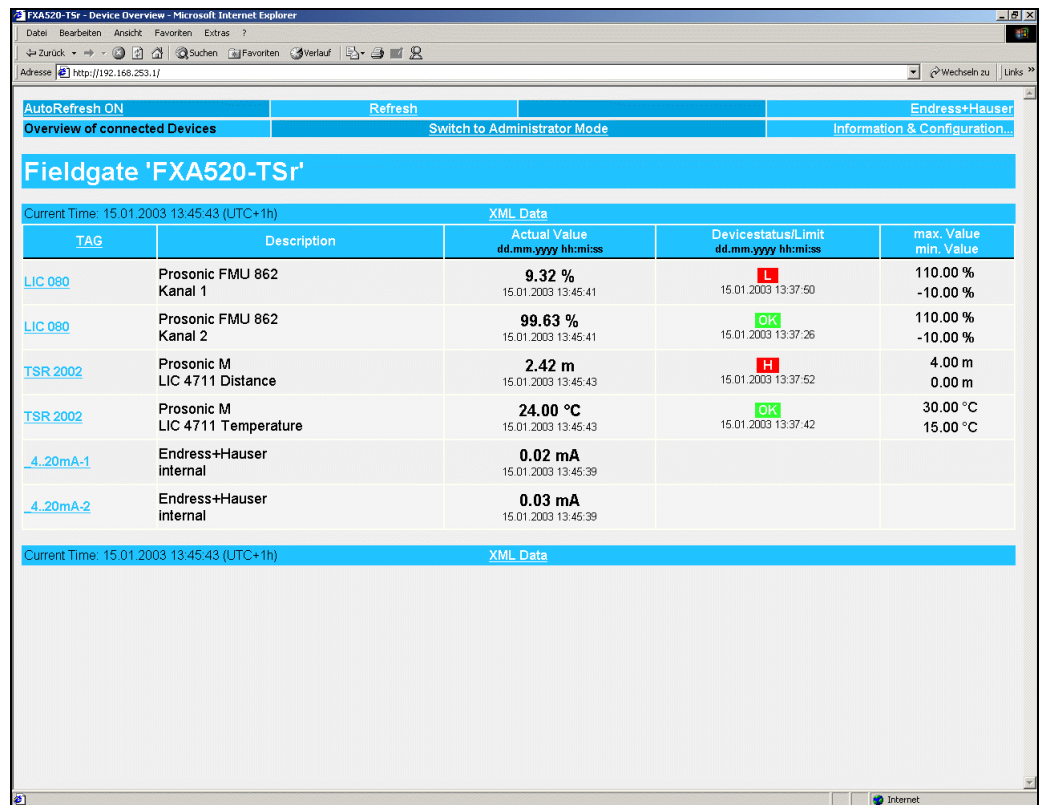
2.3.4 Working in the web browser

1. In the following window enter:
 - the user name "eh"
 - and the password "eh"
 - (in the delivery status).
 Click "OK" to confirm your entries.



L00-FXA520xx-20-13-00-en-028

The user interface is displayed in the web browser and the Fieldgate can now be commissioned.



L00-FXA520xx-20-13-00-en-301

2.4 Establishing an Ethernet connection

2.4.1 Installation

Caution!

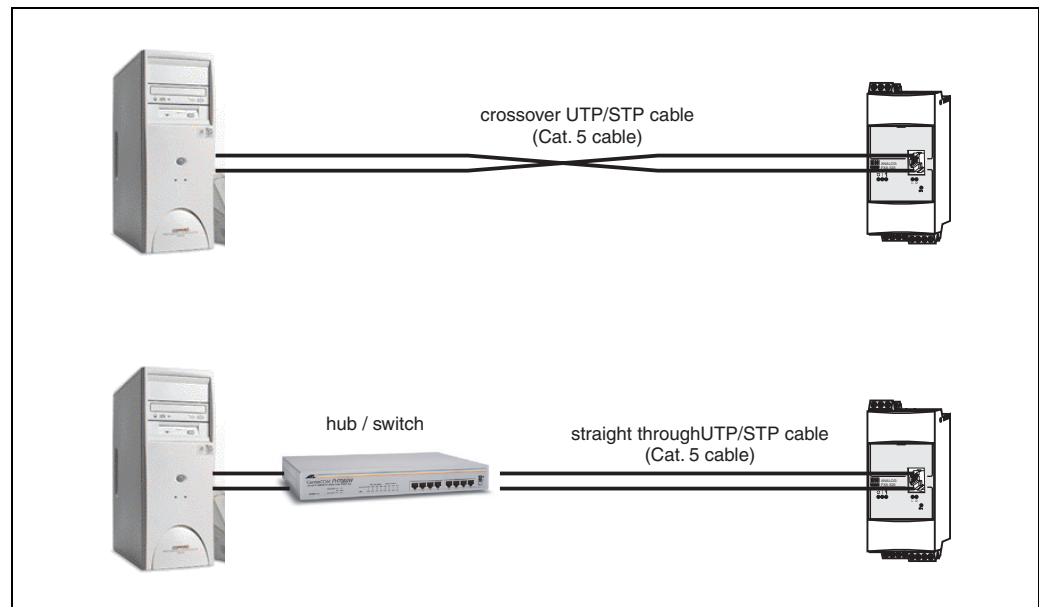
Ensure that the supply voltage matches the specifications on the nameplate. Please refer also to the online help of your operating system.

2.4.2 Setting up the personal computer

To establish an Ethernet connection, your personal computer must be equipped with a network card and the TCP/IP protocol must be supported.

2.4.3 Making the LAN connection

Use a crossover UTP/STP cable (Cat. 5 cable) to connect the Fieldgate to your PC or use a straight-through UTP/STP cable (Cat. 5 cable) and a hub/switch. For this, please use the socket on the front of the Fieldgate.



If the yellow LED "L" for Link (→ Fig. 10, item 4 on Page 16) lights up, the Fieldgate is physically connected to the Ethernet. If not, check the cable and/or use another cable type (crossover/straight-through).

For connection to the Fieldgate, you must adapt the IP address of your PC to that of the Fieldgate or add another address to the existing IP address.

When delivered, the Fieldgate has the IP address **192.168.252.1** as standard.

Thus, configure an IP address in the address range 192.168.252.2 to 192.168.254.252. For example, 192.168.252.2 network mask 255.255.255.0.

Please refer to your PC manual for information on how to change the IP address of your PC.

Caution!

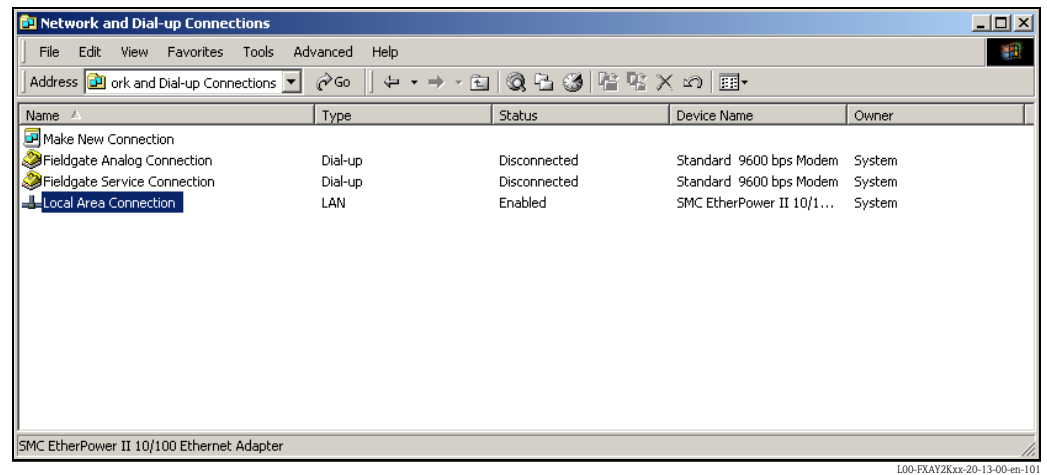
For the following instructions under Windows® 2000, you require administrator rights. Contact your system administrator.

The following are sample instructions for Windows® 2000:

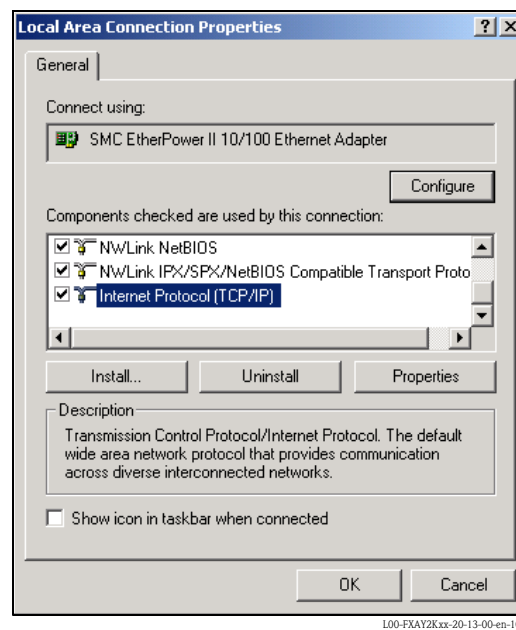
Note!

Examples of instructions for other operating systems can be found in the appendix.

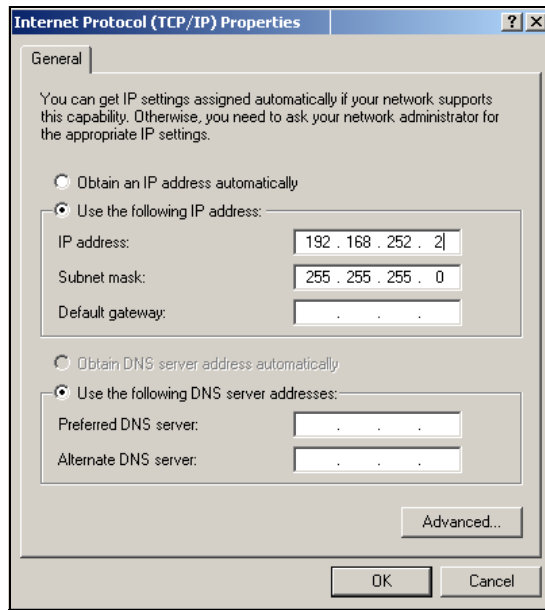
1. Right-click "**My Network Places**" → "**Properties**".
2. Right-click "**Local Area Connection**" → "**Properties**".



3. Using the left mouse button, double-click "**Internet Protocol (TCP/IP)**".



4. Now you can enter/change the values and click "**OK**" to confirm.

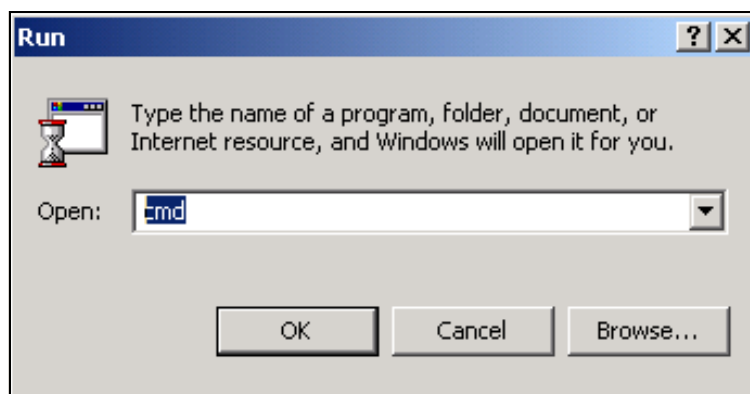


L00-FXAY2Kxx-20-13-00-en-103

5. Start the web browser, e.g. Internet Explorer.
6. Now enter "**192.168.252.1**" in the address field of your browser. The Fieldgate start page is displayed.

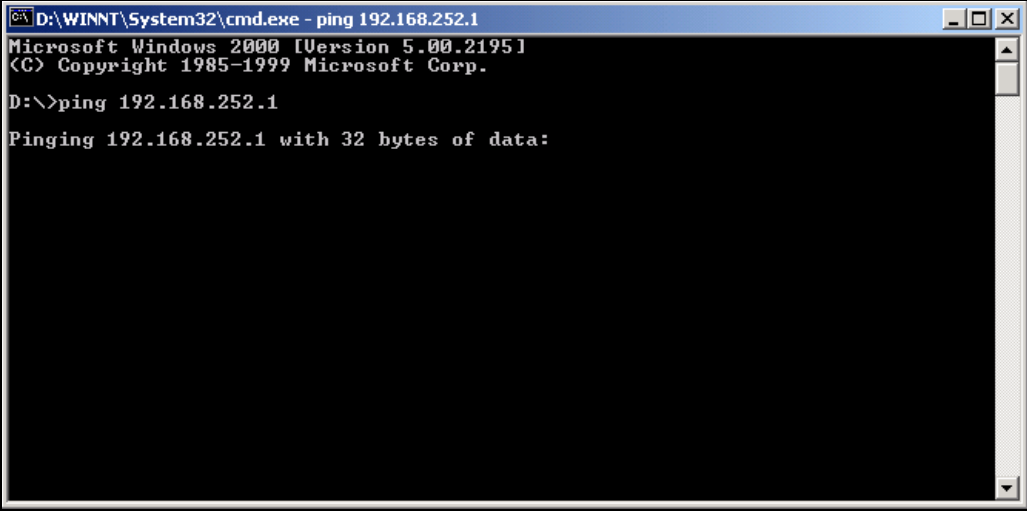
If there is no connection, check the connection to the Fieldgate as follows:

1. Is the Link LED lit on the Fieldgate?
 - Yes, proceed with point 2
 - No, check the cable
2. Is the Link LED of the PC network card lit?
 - Yes, proceed with point 3
 - No, check the cable
3. Open the DOS prompt "**Start → Run → cmd** "



L00-FXAY2Kxx-20-13-00-en-104

4. Enter "**ping 192.168.252.1**".
 - Do you get the answer 192.168.252.1 Bytes=32...
 - Yes. The connection is OK. Check your browser settings.
 - If a proxy server is used, try avoid this for the IP address (192.168.254.1).
 - No. There is no connection to the Fieldgate. Check the IP address of your PC.



```
D:\WINNT\System32\cmd.exe - ping 192.168.252.1
Microsoft Windows 2000 [Version 5.00.2195]
(C) Copyright 1985-1999 Microsoft Corp.

D:\>ping 192.168.252.1
Pinging 192.168.252.1 with 32 bytes of data:
```

100-FXAY2Kxx-20-13-00-en-105

2.4.4 Connecting

Start the web browser.

In the address field of your Internet browser, enter the IP address of the Fieldgate.

2.4.5 Disconnecting

Close your web browser.

2.5 Establishing an analogue modem connection

Note!

The telephone country default setting is set to TBR 21 (basic standard of European countries). You may have to adjust this via the service interface (PC cable). Please refer also to the online help of your operating system.

2.5.1 Installation

Note!

To be able to configure the Fieldgate, there must be a telephone connection between your personal computer and the Fieldgate.

For this, you require a commercially available analogue modem and 2 analogue telephone connections, one for your analogue modem and one for the Fieldgate. These connections can also be internal ports of a telephone system.

This configuration can also be made using the PC cable (→ Chap. 2.3).

2.5.2 Setting up the personal computer

Caution!

An analogue modem must already be installed on your personal computer. Please refer to the operating instructions for the modem and your PC for information on how to install an analogue modem.

Creating a dial-up networking connection

Set up a dial-up networking connection.

Note!

For this purpose, please also refer to the online help of your Windows® operating system on the topic "Setting up a dial-up networking connection".

Note!

The factory setting for the IP address of the analogue modem version is:

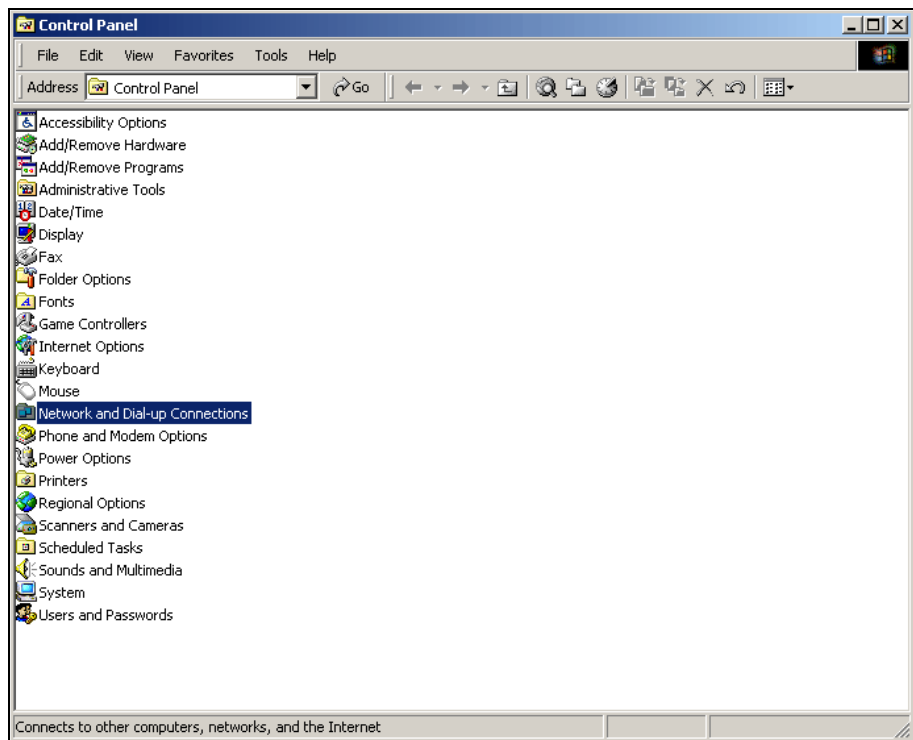
"http://192.168.254.1".

This IP address can be altered as required.

The following are sample instructions for Windows 2000® :

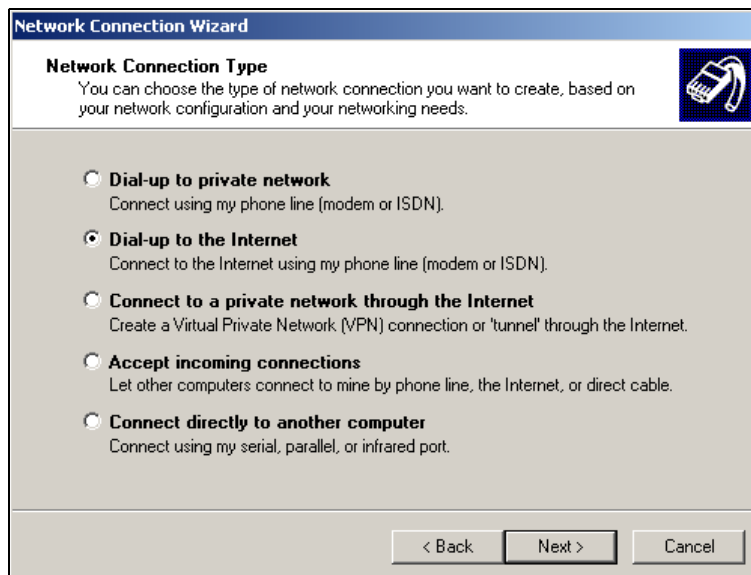
Note!

Examples of instructions for other operating systems can be found in the appendix.



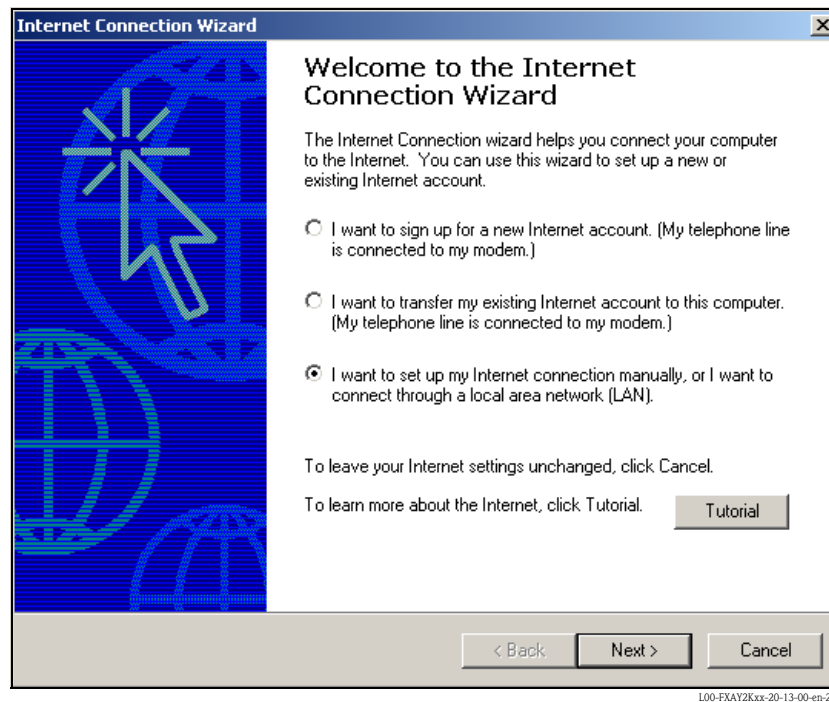
L00-FXAY2kxx-20-13-00-en-201

1. Using the left mouse button, double-click the **"Network and Dial-up Connections"** icon to open the appropriate window.

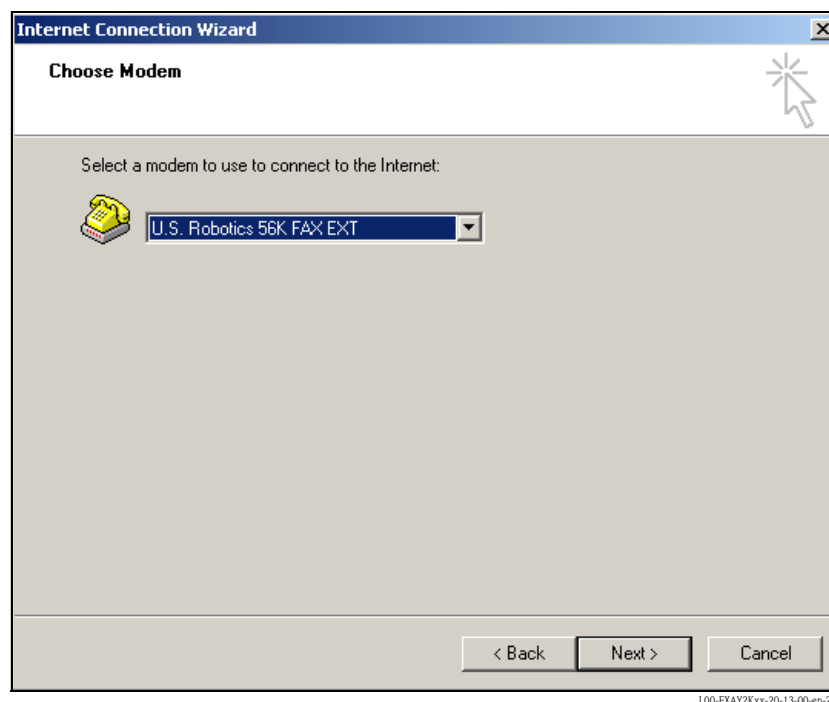


L00-FXAY2kxx-20-13-00-en-202

2. Select the **"Dial-up to the Internet"** option and click **"Next >"** to confirm.

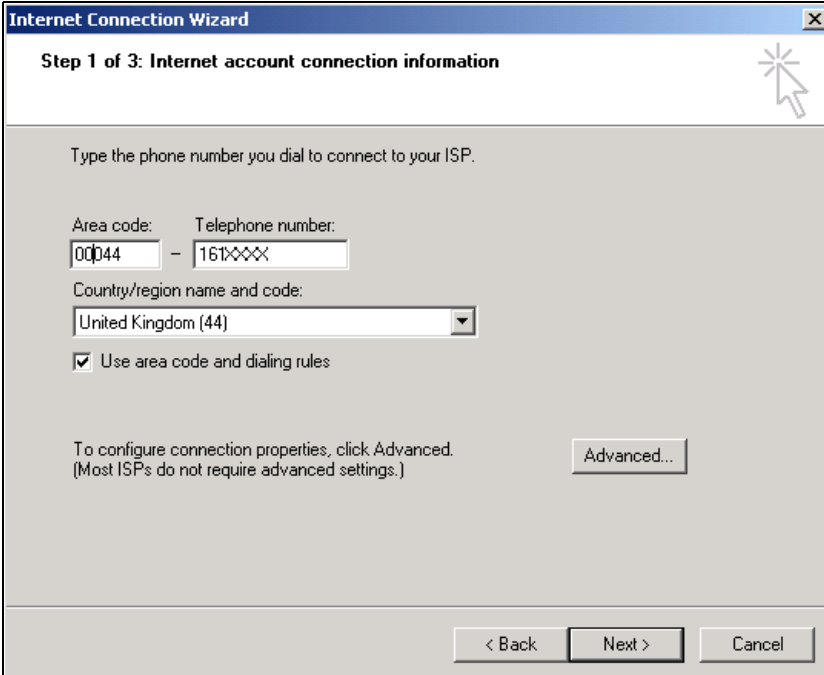


3. Select the "**I want to set up my Internet connection manually...**" checkbox and click "**Next >**" to confirm.
4. Click "**I connect trough a phone line and a modem**" checkbox and "**Next >**" to confirm.



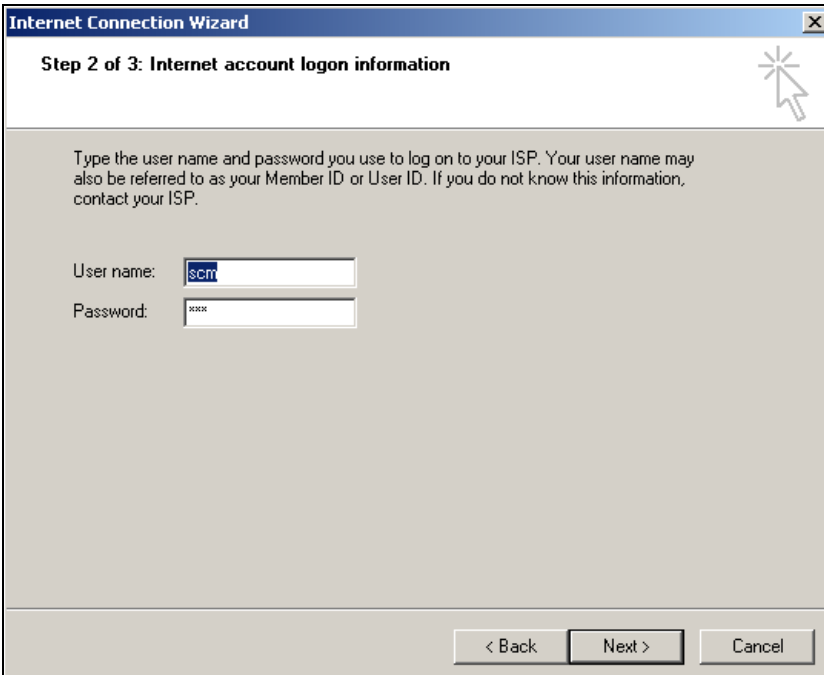
5. Select the analogue modem to be used and click "**Next >**" to confirm your choice.

- In the following field, specify the telephone number of the Fieldgate. Please also enter the exchange number if it is required. For example, this means the following for the number "00044161XXXX":
 - Position 1 (0 = exchange)
 - Positions 2...5 (0044 = country code, here for UK)
 - Positions 6...8 (161 = area code, here for Manchester)
 - Position 9... (XXXX = Fieldgate telephone number)



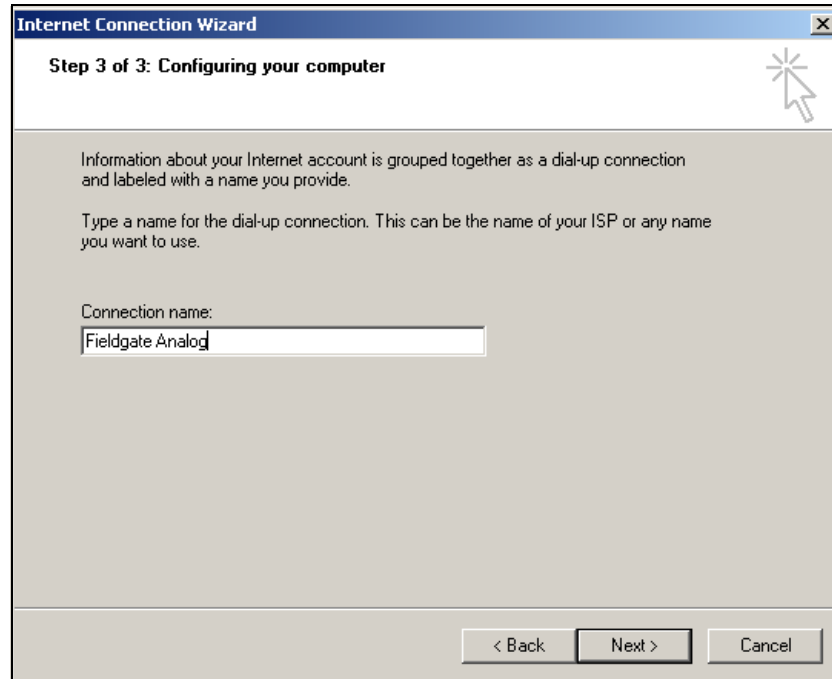
The screenshot shows the 'Internet Connection Wizard' window at 'Step 1 of 3: Internet account connection information'. The window title is 'Internet Connection Wizard'. The main heading is 'Step 1 of 3: Internet account connection information'. Below the heading, there is a text prompt: 'Type the phone number you dial to connect to your ISP.' There are two input fields: 'Area code:' with the value '00044' and 'Telephone number:' with the value '161XXXX'. Below these is a dropdown menu for 'Country/region name and code:' set to 'United Kingdom (44)'. A checkbox labeled 'Use area code and dialing rules' is checked. At the bottom, there is an 'Advanced...' button and a note: 'To configure connection properties, click Advanced. (Most ISPs do not require advanced settings.)'. At the very bottom of the window are three buttons: '< Back', 'Next >', and 'Cancel'. A mouse cursor is pointing at the 'Next >' button. The ID 'L00-FXAY2Kxx-20-13-00-en-205' is visible in the bottom right corner.

Click "Next >" to confirm your entries.



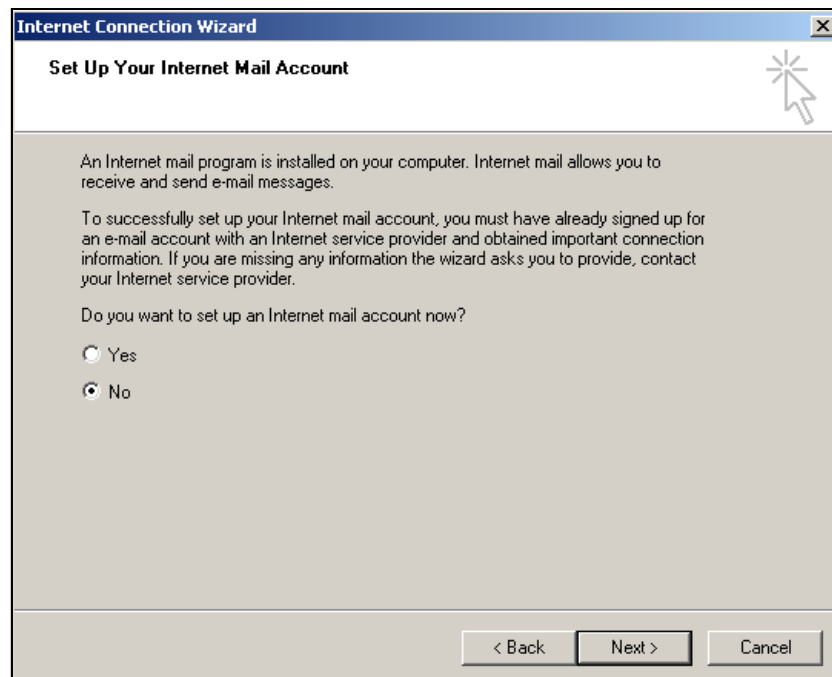
The screenshot shows the 'Internet Connection Wizard' window at 'Step 2 of 3: Internet account logon information'. The window title is 'Internet Connection Wizard'. The main heading is 'Step 2 of 3: Internet account logon information'. Below the heading, there is a text prompt: 'Type the user name and password you use to log on to your ISP. Your user name may also be referred to as your Member ID or User ID. If you do not know this information, contact your ISP.' There are two input fields: 'User name:' with the value 'scm' and 'Password:' with the value 'xxxx'. At the bottom, there are three buttons: '< Back', 'Next >', and 'Cancel'. A mouse cursor is pointing at the 'Next >' button. The ID 'L00-FXAY2Kxx-20-13-00-en-206' is visible in the bottom right corner.

7. Enter:
 - the user name "**scm**"
(This is permanently stored in the Fieldgate and cannot be altered!)
 - and the password "**scm**"
(This is permanently stored in the Fieldgate and cannot be altered!)
 Click "**Next >**" to confirm



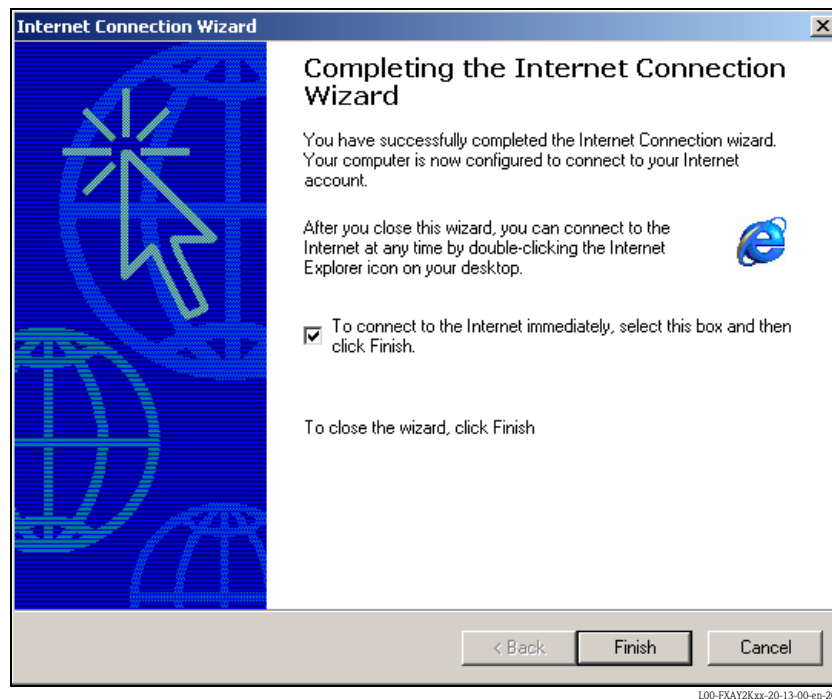
100-FXAY2kxx-20-13-00-en-207

8. Enter the connection name in the "**Connection name:**" field. You can enter any name you choose (e.g. Fieldgate Analog Connection in our example). Click "**Next >**" to confirm the name entered.



100-FXAY2kxx-20-13-00-en-208

9. Click "**No**" and then "**Next >**" to confirm.

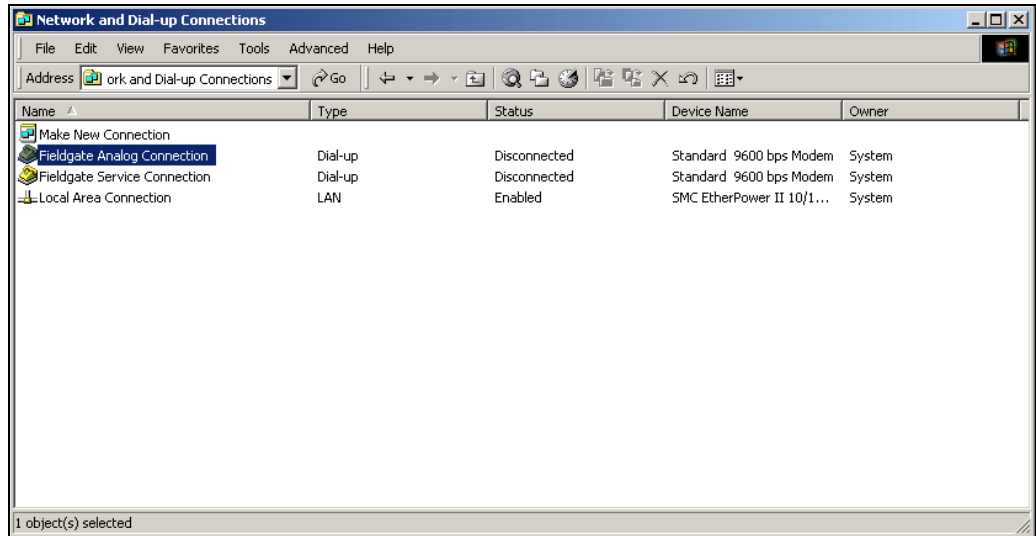


The dial-up networking connection is set up.

Note!

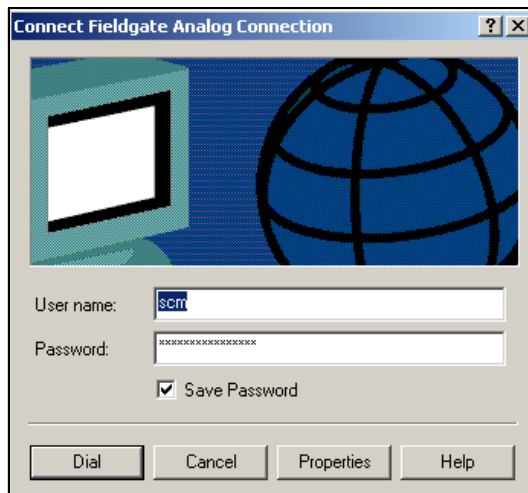
The newly established dial-up connection has been saved and can be used for the next connection. It can be found in the "**Network and Dial-up Connection**" window.

2.5.3 Making the connection



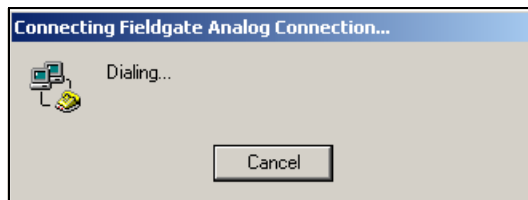
L00-FXAY2Kxx-20-13-00-en-210

1. Using the left mouse button, double-click the "**Fieldgate Analog Connection**" icon to open the appropriate window.

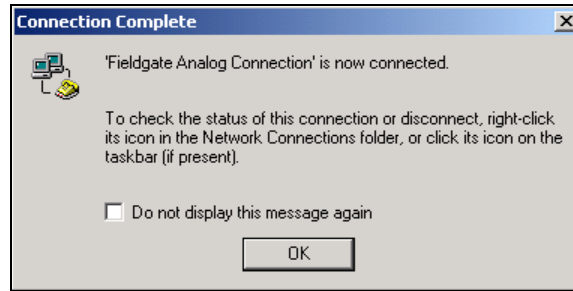


L00-FXAY2Kxx-20-13-00-en-211

2. Click "**Dial**" to confirm the entries.



L00-FXAY2Kxx-20-13-00-en-212

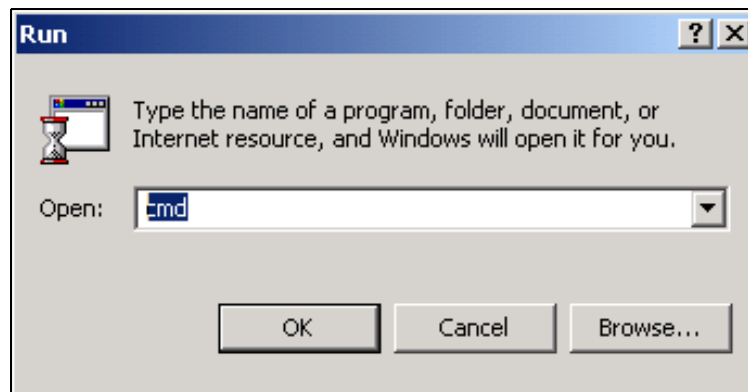


100-FXAY2Kxx-20-13-00-en-213

3. If you see this window the connection is successfully complete.
4. Start the web browser once the connection is made. Enter the IP address "**192.168.254.1**". This IP address for the analog modem is fixed permanently in the Fieldgate and cannot be changed!

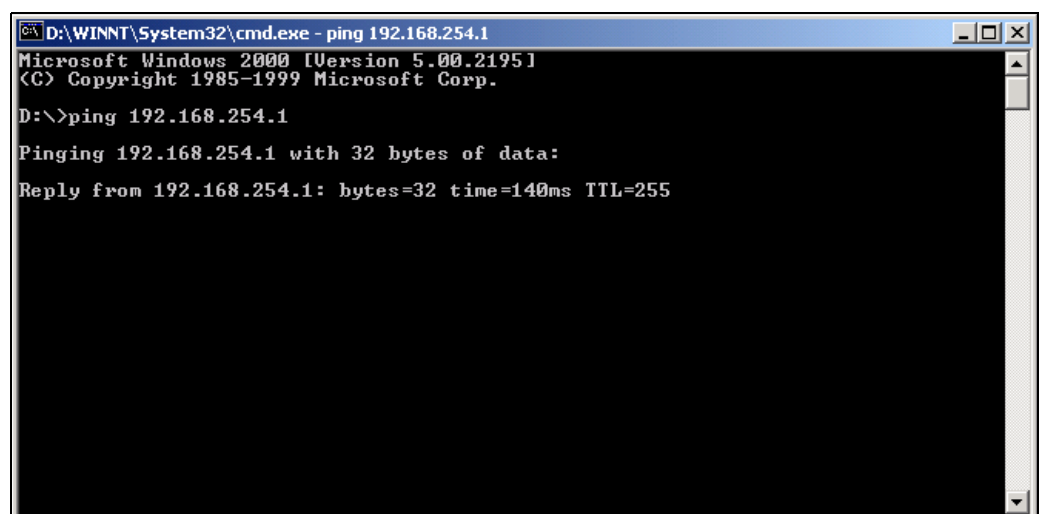
If there is no connection, check the connection to the Fieldgate as follows:

1. Open the DOS prompt "**Start → Run → cmd** "



100-FXAY2Kxx-20-13-00-en-104

2. Enter "**ping 192.168.254.1**".
Do you get the answer 192.168.254.1 Bytes=32...
 - Yes. The connection is OK. Check your browser settings (If a proxy server is used try to bypass the IP-address 192.168.254.1).
 - No. There is no connection to the Fieldgate.



100-FXAY2Kxx-20-13-00-en-215

2.5.4 Working in the web browser

1. In the following window enter:
 - the user name "eh"
 - and the password "eh" (in the delivery status).
 Click "OK" to confirm your entries.

Enter Network Password

Please type your user name and password.

Site: 192.168.254.1

Realm: User

User Name: eh

Password: **

Save this password in your password list

OK Cancel

L00-FXAY2Kxx-20-13-00-en-214

The user interface is displayed in the web browser and the Fieldgate can now be commissioned.

AutoRefresh	Refresh	Endress+Hauser		
Overview of connected Devices	Switch to Administrator Mode	Information & Configuration...		
Fieldgate 'E+H Weather Station Brombach'				
Current Time: 17.03.2004 08:16:10 (UTC+1h)		XML Data		
Tag	Description	Actual Value dd.mm.yyyy hh:mm:ss	Device status/Limit dd.mm.yyyy hh:mm:ss	max. Value min. Value
CORIOLIS	Endress+Hauser Promass 83	3497.24 kg/h 17.03.2004 08:16:07	OK 09.03.2004 14:34:10	
FLOW MID	Endress+Hauser Promag 53	0.00 l/s 17.03.2004 08:16:08	OK 09.03.2004 14:34:11	
LEVEL	Endress+Hauser FMR2xx / Micropilot M	7.61 m 17.03.2004 08:16:04	OK 09.03.2004 14:34:15	
PRESSURE	Endress+Hauser Cerabar S	997.92 mbar 17.03.2004 08:16:02	OK 09.03.2004 14:34:14	
TEMP.-OUT	Endress+Hauser TMT 182	13.93 °C 17.03.2004 08:16:01	OK 09.03.2004 14:34:13	
_4..20mA-1	Endress+Hauser internal	0.02 mA 17.03.2004 08:16:04	OK -	
_4..20mA-2	Endress+Hauser internal	0.02 mA 17.03.2004 08:16:04	OK -	
Current Time: 17.03.2004 08:16:10 (UTC+1h)		XML Data		

L00-FXAY2Kxx-20-13-00-en-302

2.6 Establishing an GSM modem connection

2.6.1 Installation

Before you can establish contact with a GSM Fieldgate, the following components are also required:

- SIM card of a GSM provider with activated data traffic must be inserted into the card holder.
- The PIN of the SIM card must be configured (→ Kap. 10.3.2 "ISP & Modem Configuration").

Note!

To be able to configure the Fieldgate, there must be a telephone connection between your personal computer and the Fieldgate.

For this, you require a commercially available analogue modem and 1 analogue telephone connection. If the connection consists of an analog adapter being connected to a digital telephone facility, data communication must be enabled for this connection.

This configuration can also be made using the PC cable (→ Chap. 2.3).

2.6.2 Setting up the personal computer

Caution!

An analogue modem must already be installed on your personal computer. Please refer to the operating instructions for the modem and your PC for information on how to install an analogue modem.

Creating a dial-up networking connection

Set up a dial-up networking connection.

Note!

For this purpose, please also refer to the online help of your Windows® operating system on the topic "Setting up a dial-up networking connection".

Note!

The factory setting for the IP address of the GSM modem version is:

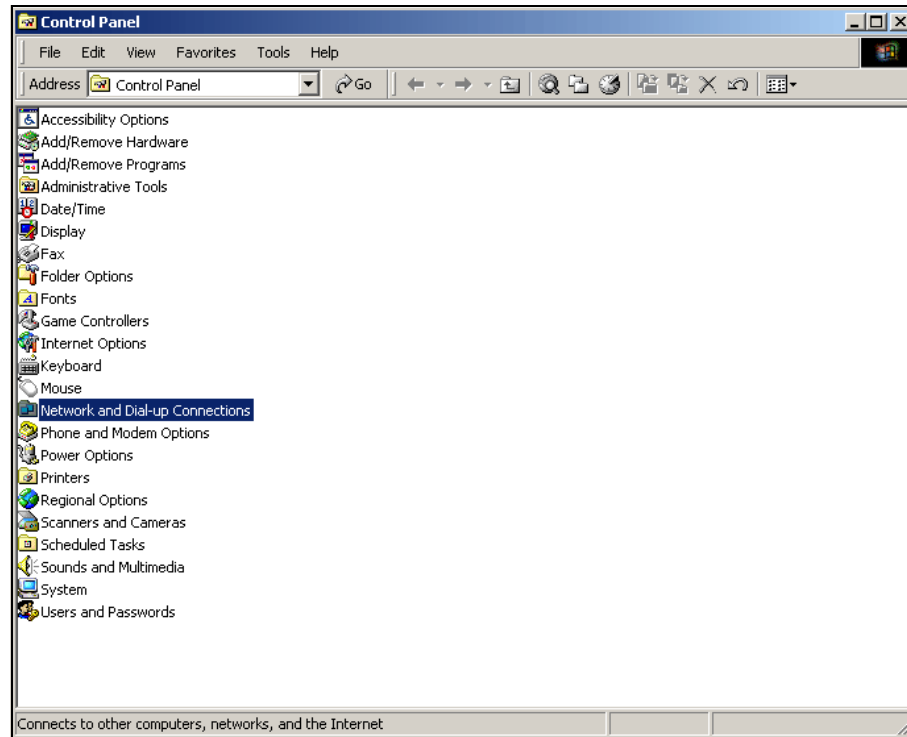
"http://192.168.254.1".

This IP address can be altered as required.

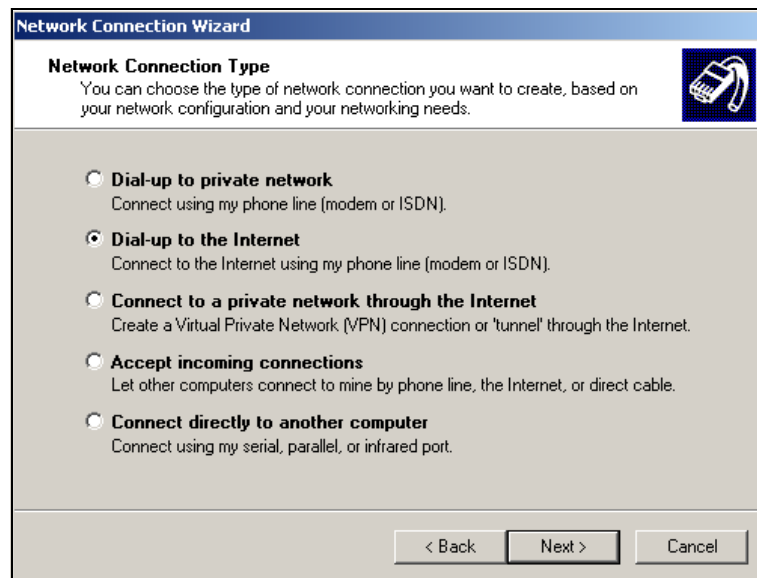
The following are sample instructions for Windows 2000® :

Note!

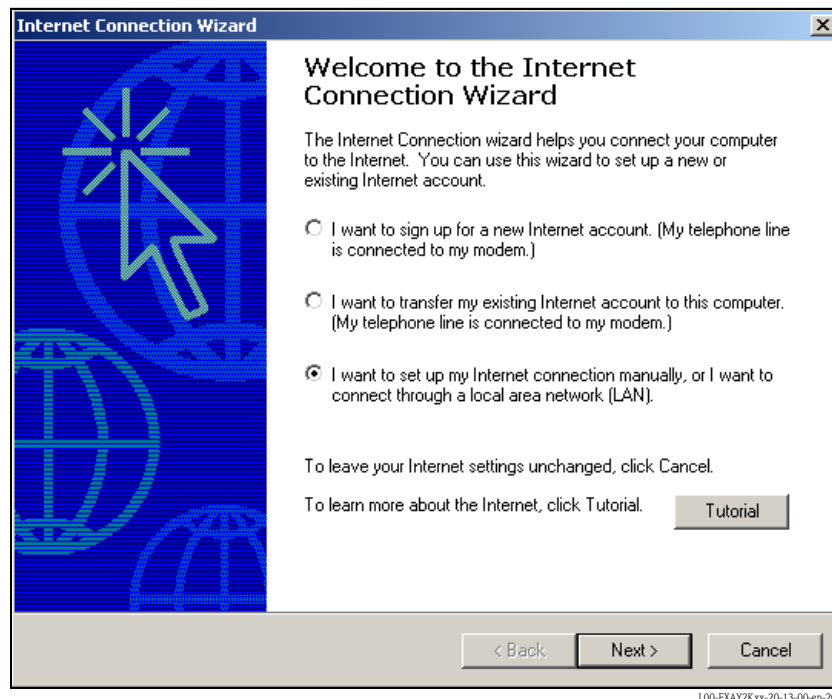
Examples of instructions for other operating systems can be found in the appendix.



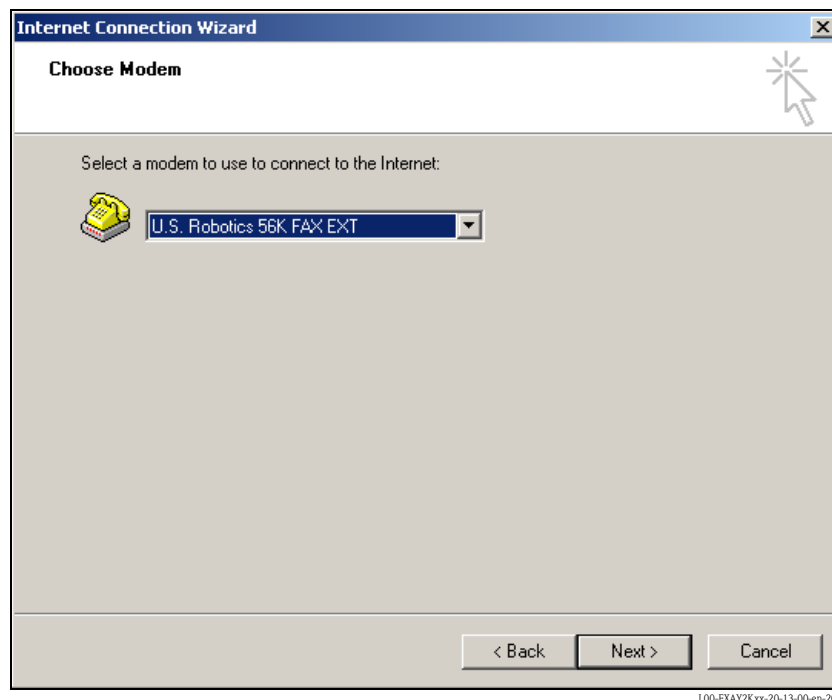
1. Using the left mouse button, double-click the "**Network and Dial-up Connections**" icon to open the appropriate window.



2. Select the "**Dial-up to the Internet**" option and click "**Next >**" to confirm.



3. Select the **"I want to set up my Internet connection manually..."** checkbox and click **"Next >"** to confirm.
4. Click **"I connect trough a phone line and a modem"** checkbox and **"Next >"** to confirm.



5. Select the analogue modem to be used and click **"Next >"** to confirm your choice.

6. Enter the call number of the SIM card used intended for data traffic in the following input field. Please also enter the exchange number if it is required.
For example, this means the following for the number "00044172XXXX":
- Position 1 (0 = exchange)
 - Positions 2...5 (0044 = country code, here for UK)
 - Positions 6...8 (172 = e.g. T-Mobile)
 - Position 9... (XXXX = Fieldgate telephone number)

Internet Connection Wizard

Step 1 of 3: Internet account connection information

Type the phone number you dial to connect to your ISP.

Area code: - Telephone number:

Country/region name and code:

Use area code and dialing rules

To configure connection properties, click Advanced.
 (Most ISPs do not require advanced settings.)

100-FXAY2Kxx-20-13-00-en-411

Click "Next >" to confirm your entries.

Internet Connection Wizard

Step 2 of 3: Internet account logon information

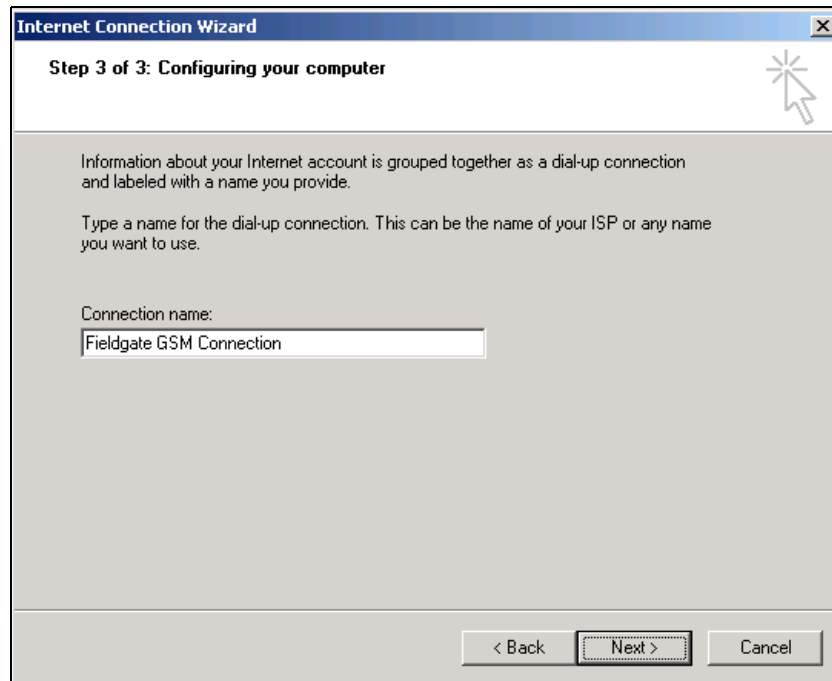
Type the user name and password you use to log on to your ISP. Your user name may also be referred to as your Member ID or User ID. If you do not know this information, contact your ISP.

User name:

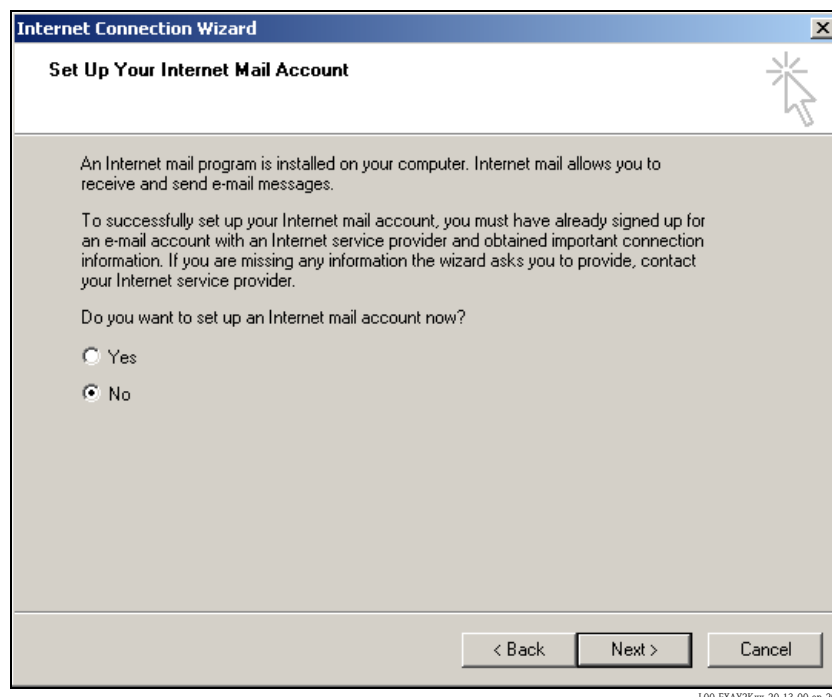
Password:

100-FXAY2Kxx-20-13-00-en-206

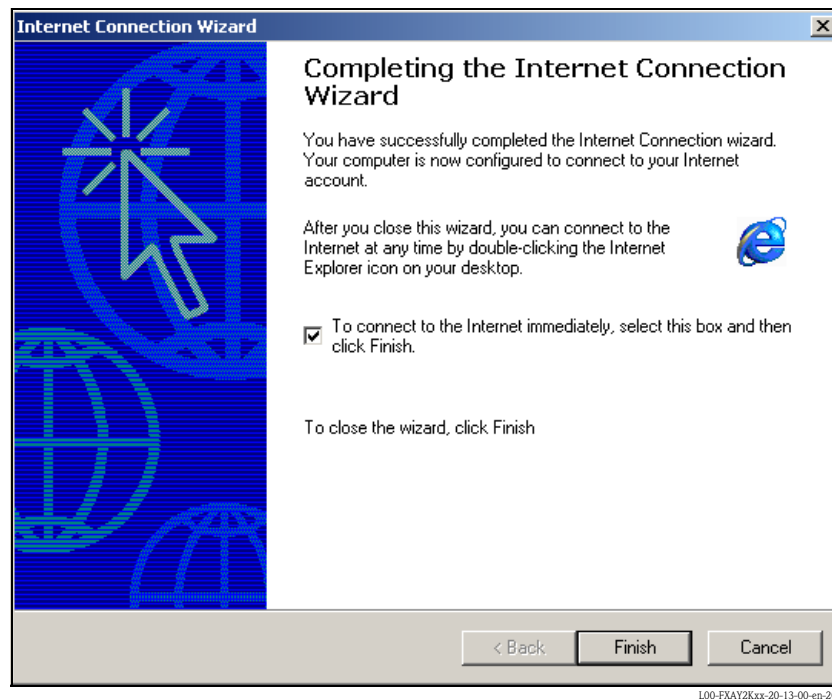
7. Enter:
 - the user name "**scm**"
(This is permanently stored in the Fieldgate and cannot be altered!)
 - and the password "**scm**"
(This is permanently stored in the Fieldgate and cannot be altered!)Click "**Next >**" to confirm



8. Enter the connection name in the "**Connection name:**" field. You can enter any name you choose (e.g. Fieldgate GSM Connection in our example). Click "**Next >**" to confirm the name entered.



9. Click "**No**" and then "**Next >**" to confirm.

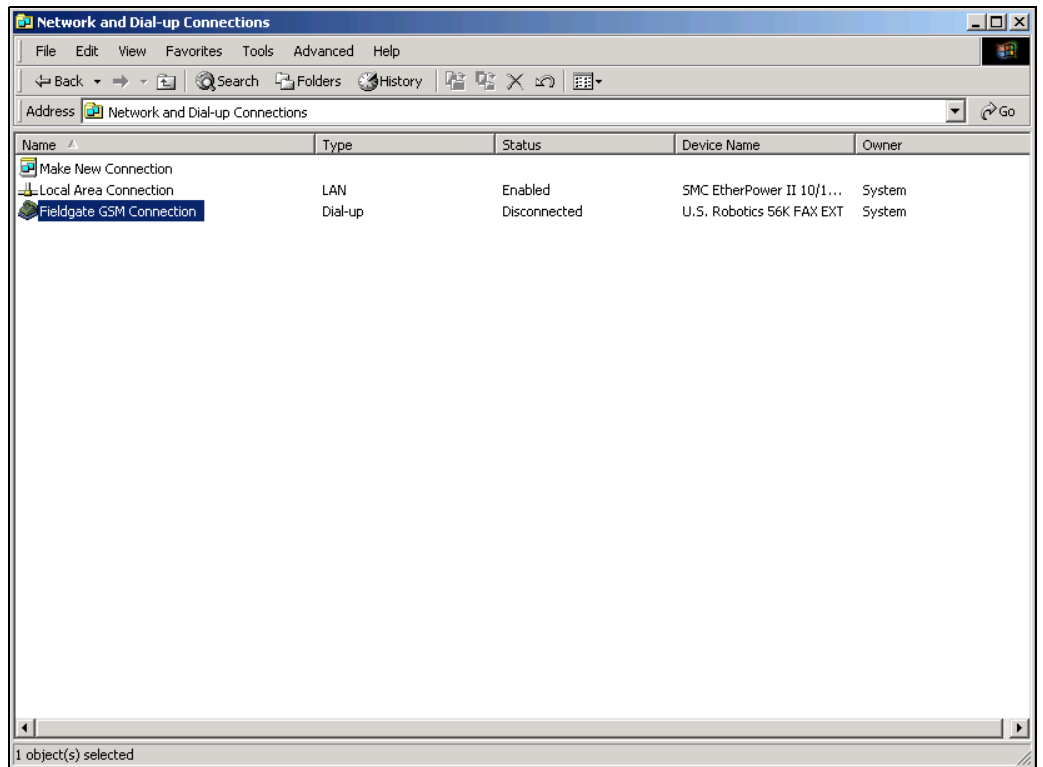


The dial-up networking connection is set up.

Note!

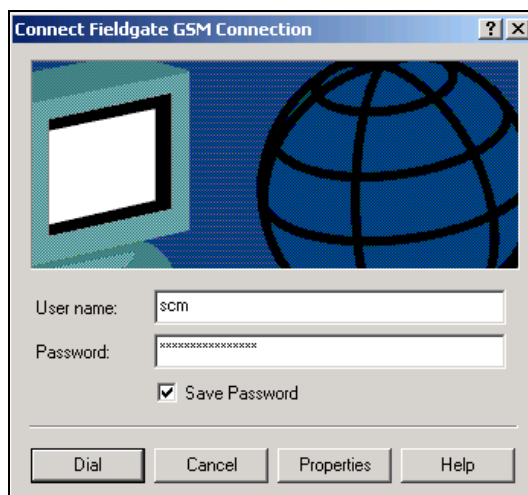
The newly established dial-up connection has been saved and can be used for the next connection. It can be found in the "**Network and Dial-up Connection**" window.

2.6.3 Making the connection



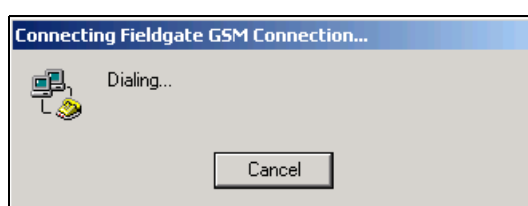
L00-FXAY2Kxx-20-13-00-en-402

1. Using the left mouse button, double-click the "**Fieldgate GSM Connection**" icon to open the appropriate window.

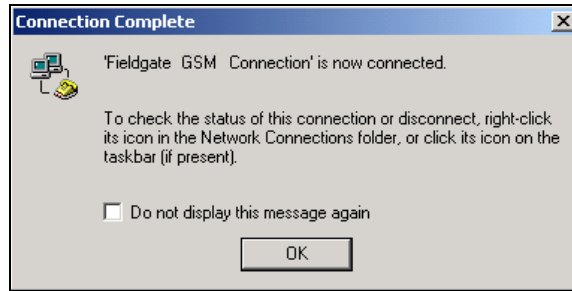


L00-FXAY2Kxx-20-13-00-en-403

2. Click "**Dial**" to confirm the entries.



L00-FXAY2Kxx-20-13-00-en-404

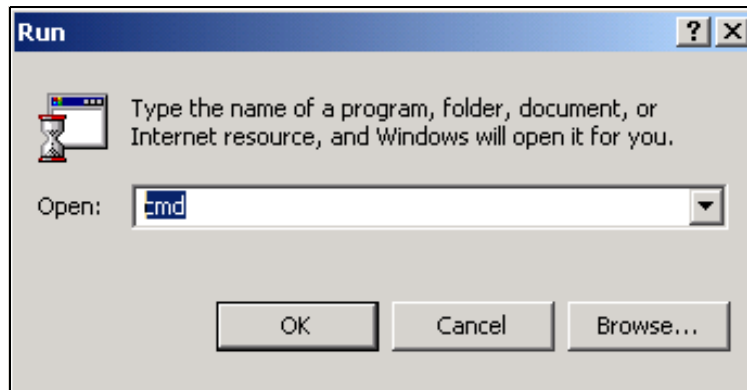


L00-FXAY2Kxx-20-13-00-en-405

3. If you see this window the connection is successfully complete.
4. Start the web browser once the connection is made. Enter the IP address "**192.168.254.1**". This IP address for the analog modem is fixed permanently in the Fieldgate and cannot be changed!

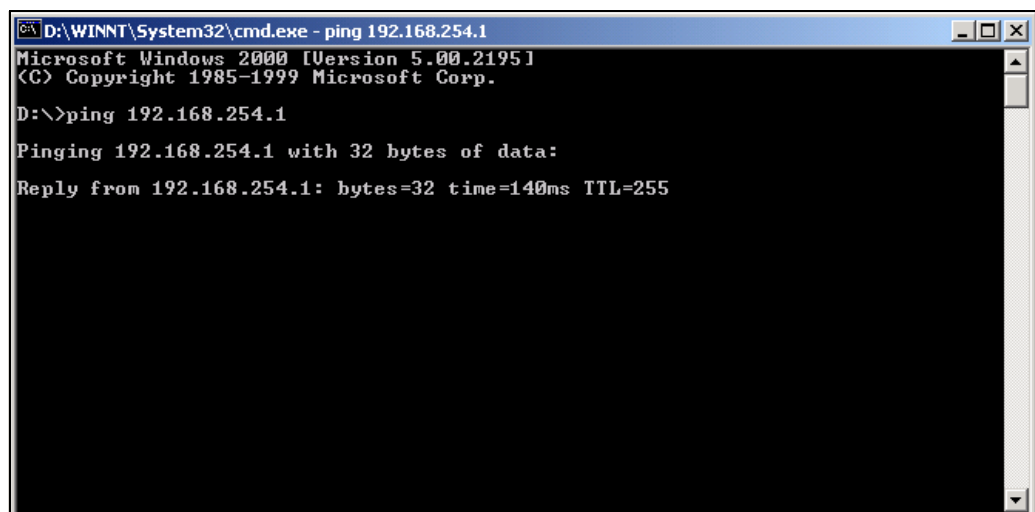
If there is no connection, check the connection to the Fieldgate as follows:

1. Open the DOS prompt "**Start → Run → cmd** "



L00-FXAY2Kxx-20-13-00-en-104

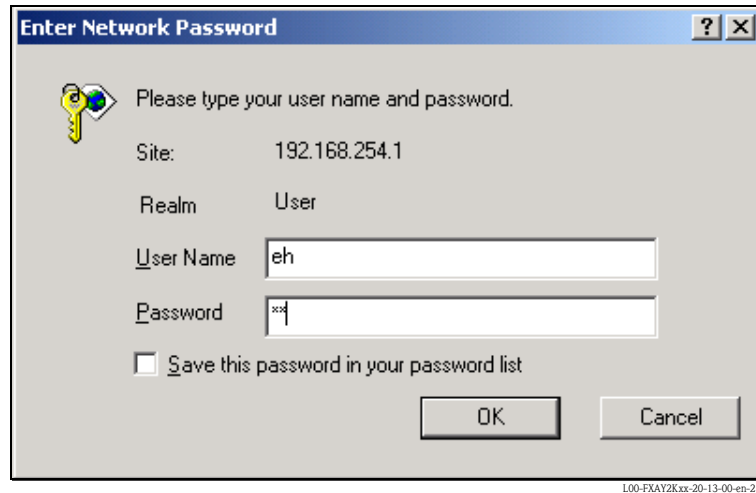
2. Enter "**ping 192.168.254.1**".
Do you get the answer 192.168.254.1 Bytes=32...
 - Yes. The connection is OK. Check your browser settings (If a proxy server is used try to bypass the IP-address 192.168.254.1).
 - No. There is no connection to the Fieldgate.



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2.6.4 Working in the web browser

1. In the following window enter:
 - the user name "eh"
 - and the password "eh"
 - (in the delivery status).
 Click "OK" to confirm your entries.



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The user interface is displayed in the web browser and the Fieldgate can now be commissioned.

AutoRefresh	Refresh	Endress+Hauser		
Overview of connected Devices	Switch to Administrator Mode	Information & Configuration...		
Fieldgate 'E+H Weather Station Brombach'				
Current Time: 17.03.2004 08:16:10 (UTC+1h)		XML Data		
Tag	Description	Actual Value dd.mm.yyyy hh:mm:ss	Device status/Limit dd.mm.yyyy hh:mm:ss	max. Value min. Value
CORIOLIS	Endress+Hauser Promass 83	3497.24 kg/h 17.03.2004 08:16:07	OK 09.03.2004 14:34:10	
FLOW MID	Endress+Hauser Promag 53	0.00 l/s 17.03.2004 08:16:08	OK 09.03.2004 14:34:11	
LEVEL	Endress+Hauser FMR2xx / Microplit M	7.61 m 17.03.2004 08:16:04	OK 09.03.2004 14:34:15	
PRESSURE	Endress+Hauser Cerabar S	997.92 mbar 17.03.2004 08:16:02	OK 09.03.2004 14:34:14	
TEMP-OUT	Endress+Hauser TMT 182	13.93 °C 17.03.2004 08:16:01	OK 09.03.2004 14:34:13	
4..20mA-1	Endress+Hauser internal	0.02 mA 17.03.2004 08:16:04	OK -	
4..20mA-2	Endress+Hauser internal	0.02 mA 17.03.2004 08:16:04	OK -	
Current Time: 17.03.2004 08:16:10 (UTC+1h)		XML Data		

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3 Configuration

3.1 User interface

Once the IP address has been entered and the connection made, you are prompted to enter a user name and the password.

Two modes are already initially set in the Fieldgate:

■ **User mode (factory setting)**

In the user mode, you can view almost all the configuration parameters and measured values but you cannot alter them.

Default setting for:

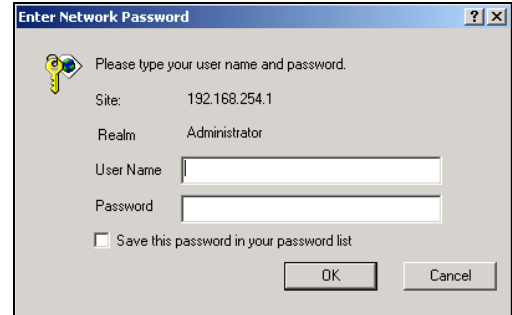
- user name is "eh"
- password is "eh"

■ **Administrator mode**

In the administrator mode, you can alter all the configuration parameters. In addition, up to 5 user names and passwords can be allocated.

Default setting for:

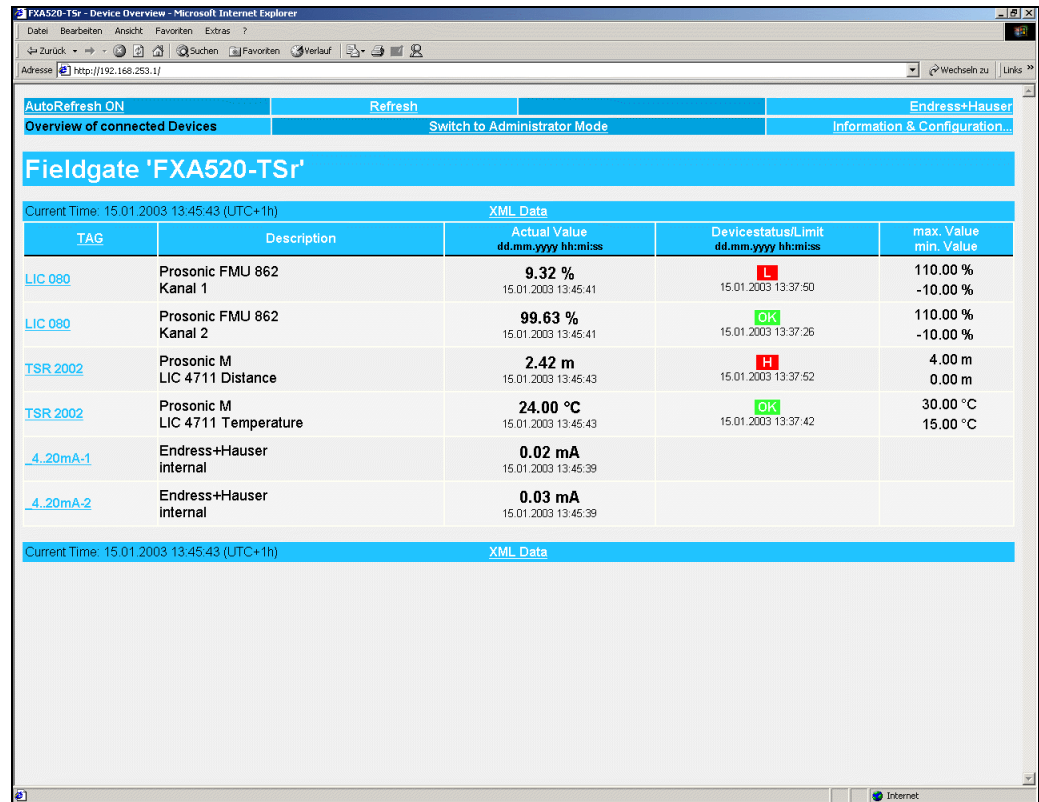
- user name is "super"
- password is "super"



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Please do not enter the inverted commas when entering the user name and password!

Once logged on, the following is displayed in the web browser (this display depends on the devices connected):



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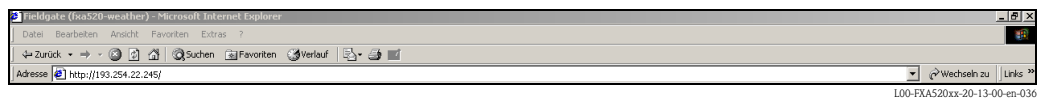
Approx. 1 second update time is required for every measured value in the overview.

The user interface consists of the following elements:

- Menu bar (belongs to the web browser installed)
- Navigation bar
- Configuration editor
- Footer
- A separate help window which is opened after calling up the help function "?".

3.2 Menu bar

Example of how the menu bar is displayed in MS Internet Explorer



The IP address of the Fieldgate is entered in the address field of the web browser.

Note!

The menu bar contains the standard functions of the installed web browser. More detailed information on the individual menus is provided in the documentation on the web browser.

3.3 Navigation bar

The navigation bar consists of the following functions and subfunctions in the form of links:

- "About Fieldgate" function (in preparation)
- "AutoRefresh" function
- "Refresh" function
- "Endress+Hauser" function
- "Overview of Connected Devices" function
- "Switch to Administrator Mode" or "Switch to User Mode" function
- "Information & Configuration" function
 - "Fieldgate Location" subfunction
 - "Change Password" or "User Setup" subfunction
 - "Network Setup" subfunction
 - "HART Setup" subfunction
 - "Special" subfunction
 - "Information" subfunction

Example of how bar is displayed in user mode:

This display can be activated by means of the "**Switch to User Mode**" function in the navigation bar.

AutoRefresh	Refresh	Endress+Hauser
Overview of connected Devices	Switch to Administrator Mode	Information & Configuration...
Fieldgate Location	Change Password	Network Setup
	HART Setup	Special
		Information

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Example of how bar is displayed in administrator mode:

This display can be activated by means of the "**Switch to Administrator Mode**" function in the navigation bar.

AutoRefresh	Refresh	Endress+Hauser
Overview of connected Devices	Switch to User Mode	Information & Configuration...
Fieldgate Location	User Setup	Network Setup
		HART Setup
		Special
		Information

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3.4 Configuration editor

The configuration editor consists of a header and display and entry fields. In addition, a description of the individual functions and parameters can be called up using the help function "?" (this function is in preparation).

Example of how editor is displayed in user mode:

This display can be activated by means of the "Switch to User Mode" function in the navigation bar.

Fieldgate Location	
Fieldgate Identification	FXA520 MBO
Fieldgate Location	Maulburg Germany
Remarks	Demo Modell

L00-FXA520xx-20-13-00-en-168

Example of how editor is displayed in administrator mode:

This display can be activated by means of the "Switch to Administrator Mode" function in the navigation bar.

Fieldgate Location	
Fieldgate Identification	FXA520 MBO
Fieldgate Location	Maulburg Germany
Remarks	Demo Modell

Send Reset

L00-FXA520xx-20-13-00-en-169

3.5 Footer

Current Time: 29.01.2003 09:06:58 (UTC+1h)

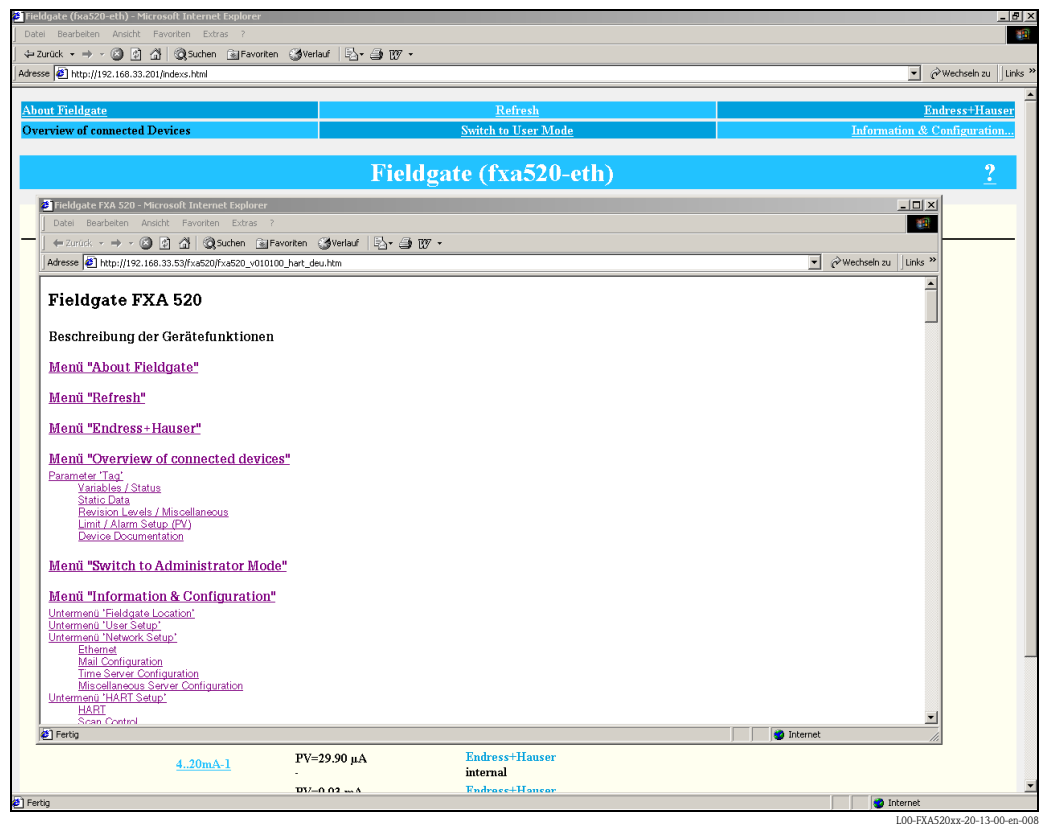
L00-FXA520xx-20-13-00-en-006

The following is displayed in the left-hand section of the status bar:

- Current Time: YYYYMMDD-hhmmss (UTC + Offset). You can select the display format → Chap. 10.3.4

The time is only available if a time server has been configured or the time has been entered manually.

4 "About Fieldgate" function (in preparation)



With this function, a separate help window is opened with a complete description of the individual functions, subfunctions and parameters.

In addition, a description of the individual functions and parameters can be called up using the help function "?".

Note!

If there is no on-line help for the Fieldgate, then the "**About Fieldgate**" function is not displayed in the navigation bar.

5 "AutoRefresh" function

With this function, the page display is updated every 120 seconds.
Click on "AutoRefresh" to activate updating.

AutoRefresh	Refresh	Endress+Hauser
Overview of connected Devices	Switch to Administrator Mode	Information & Configuration

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Click on "AutoRefresh OFF" to deactivate updating.

AutoRefresh OFF	Refresh	Endress+Hauser
Overview of connected Devices	Switch to Administrator Mode	Information & Configuration

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Note!

This function is only available in the "User mode" .

6 "Refresh" function

The "**Refresh**" function reloads the page currently displayed and has the same function as the "**Refresh**" function of your web browser (e.g. Internet Explorer with the "**F5**" key).

6.1 Cyclic refresh

You can use this function to set the time intervals in which the displayed page is reloaded and thus the display refreshed.

For example, by entering:

"`http://192.168.252.1/?refresh=15`"

the current page is refreshed every 15 s.

7 "Endress+Hauser" function

With the "Endress+Hauser" function, you go directly to the Endress+Hauser homepage. You require Internet access for this. There is no charge for displaying the page. You only have to pay the fees of your Internet service provider.



8 "Overview of Connected Devices" function

With this function, the most important data of the connected HART devices, 4...20 mA inputs, board temperature and board voltage are displayed.

TAG	Description	Actual Value dd.mm.yyyy hh:mm:ss	Device status/Limit dd.mm.yyyy hh:mm:ss	max. Value min. Value
LIC 080	Prosonic FMU 862 Kanal 1	9.32 % 15.01.2003 13:45:41	L 15.01.2003 13:37:50	110.00 % -10.00 %
LIC 080	Prosonic FMU 862 Kanal 2	99.63 % 15.01.2003 13:45:41	OK 15.01.2003 13:37:26	110.00 % -10.00 %
TSR 2002	Prosonic M LIC 4711 Distance	2.42 m 15.01.2003 13:45:43	H 15.01.2003 13:37:52	4.00 m 0.00 m
TSR 2002	Prosonic M LIC 4711 Temperature	24.00 °C 15.01.2003 13:45:43	OK 15.01.2003 13:37:42	30.00 °C 15.00 °C
4...20mA-1	Endress+Hauser internal	0.02 mA 15.01.2003 13:45:39		
4...20mA-2	Endress+Hauser internal	0.03 mA 15.01.2003 13:45:39		

Note!

A maximum of 30 measured values can be displayed in the "Overview of connected devices".

Example:

- The Micropilot has only 1 measured value - 30 devices can be connected.
- The Promass has 4 measured values - if all 4 measured values on the interface are activated, then (→ Chap. 8.1 "Show In Overview"), the number of devices is reduced to 7 (7 devices x 4 measured values = 28), in addition to this, 2 more Micropilot measuring devices, for example, can then be connected.

Tag

This column displays the tag designation set in the device.

Description)

Additional information of 2 x 20 characters can be entered in this column (only in admin mode). This is stored in the Fieldgate. By default, the manufacturer is entered into the first line and the device designation into the second line.

Actual Value

This column displays the measured value last determined with a time stamp (only if a time server is set up) (→ Chap. 10.3.4).

Limit Status

This line displays the limit value status:

- OK (green) - measured value is within the specified limits
- L < (red) first lower limit value has been undershot
- LL < (red) second lower limit value has been undershot
- H > (red) first upper limit value has been exceeded
- HH > (red) second upper limit value has been exceeded

If a device error is present (Device status -> Error), then the limit status is given as "uncertain".
 ■ Display OK = no limit values defined

max. Value / Min. Value

The property of the measuring point is entered in this column (e.g. max. tank content). This can be edited freely and has no effect on measured values and alarms.

8.1 "Tag" parameter

By left-clicking on a device designation in the "Tag" column, you get a detailed view of the device (here by selecting "Prosonic M" for Prosonic M for example).

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Note!

You can edit the limit values (Limit) in the administrator mode (→ Chap. 9).

8.1.1 Description/Range/Limit/Alarm Setup

AutoRefresh		Refresh			Endress+Hauser					
Overview of connected Devices		Switch to Administrator Mode			Information & Configuration...					
Tag details:FMU4xx / Prosonic M:TSR 2002										
Description/Range/Limit/Alarm Setup										
Show in Overview	Description	Actual Value dd.mm.yyyy hh:miss	Device Status	Limit Status dd.mm.yyyy hh:miss	max. Value min. Value	Limitsetting High High High Low Low Low	Hysteresis Reentering Limit	Mail on -Limit Alarm - Alarm Reset	Mail on Measurement Gradient (dv/dt)	Show Switch level Switch status below / over
<input type="checkbox"/> PV	Prosonic M FMU4xx Hauptmesswert	2.43 m 29.01.2003 09:51:40	ok	OK 29.01.2003 07:58:35	4.00 0.00	3.80 3.50 0.80 0.60		no no	m / minute	2.40empty/full
<input checked="" type="checkbox"/> SV	Prosonic M FMU 4xx Temperatur	23.45 °C 29.01.2003 09:51:40	ok	OK 29.01.2003 07:58:35				no no	°C / minute	bad/good

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This section provides you with an overview of the measuring signals, measured values and codes returned by the device.

The parameters are categorised as follows:

- Data from the device:

- Show in Overview
- Actual Value
- Device Status

and

- Data in the Fieldgate:

- Description
- Limit Status
- max. Value / min. Value
- Limitsetting High/HighHigh Low/Low Low
- Hysteresis Reentering Limit
- Mail on Limit Alarm / Alarm Reset
- Mail on Measurement Gradient (dv/dt)
- Show Switch level / Switch status below/over

Show in Overview

By activating the control box in administrator mode, the second (SV), third (TV) and fourth (QV) measuring value can also be displayed in the "Overview of connected Devices". In this way, several measured values from a device can be displayed in the interface.

Description

Additional information can be entered in this column (only in admin mode). This is stored in the Fieldgate.

By default, the manufacturer is entered into the first line and the device designation into the second line.

Actual Value

This column displays the measured value last determined with a time stamp (only if a time server is set up) (→ Chap. 10.3.4).

Device Status

This column displays the device status:

- OK (green)
- WARN (Warning - orange)
- ERROR (Device error - red)

Limit Status

This line displays the limit value status:

- OK (green) - measured value is within the specified limits
 - L < (red) first lower limit value has been undershot
 - LL < (red) second lower limit has been undershot
 - H > (red) first upper limit value has been exceeded
 - HH > (red) second upper limit value has been exceeded
- If a device error is present (Device status -> Error), then the limit status is given as "uncertain".
- Display OK = no limit values defined

max. Value / Min. Value

The property of the measuring point is entered in this column (e.g. max. tank content). This can be edited freely and has no effect on measured values and alarms.

Limitsetting HighHigh/High/Low/Low Low

In this section, limit values can be set which can trigger e-mails or SMS (GSM) to be sent should certain situations arise. These limit values also control the behaviour of the alarm display in the status section of this page as well as on the overview page of the connected devices. The limit values are stored in the Fieldgate

Note!

The limit values can be entered and the e-mail functions activated in administrator mode only. The limit values and functions are only displayed in user mode.

In this column either:

- the first lower L limit value and the second lower LL limit value are entered
- or
- the first upper H limit value and the second upper HH limit value are entered.

Hysteresis Reentering Limit

Here, the hysteresis value of the limit value is entered as an absolute value.

The default value is 0.1% of the measured value. Specifying hysteresis prevents multiple limit messages, e.g. in the form of e-mails, if the measured value fluctuates around a specified limit value.

Mail on Limit Alarm

When the control box is activated, an e-mail is sent when

- OK -> L
- L -> LL
- OK -> H
- H -> HH

are exceeded.

Mail on Alarm Reset

When the control box is activated, an e-mail is sent when

- L -> OK
- LL -> L
- H -> OK
- HH -> H

are exceeded.

SMS on Limit Alarm

When the checkbox is activated, an SMS is sent when

- OK -> L
- L -> LL
- OK -> H
- H -> HH

are exceeded.

SMS on Alarm Reset

When the checkbox is activated, an SMS is sent when

- L -> OK
- LL -> L
- H -> OK
- HH -> H

are exceeded.

Mail on Measurement Gradient (dv/dt)

Here, an e-mail is sent if the measured value change rate is greater than the set value (SMS is not supported).

Show Switch Status

Definition of a level and the corresponding text display. If the measured value lies below the level or is equal to it, the text before the / is displayed. If the measured value is > the level entered, the text after the / is displayed.

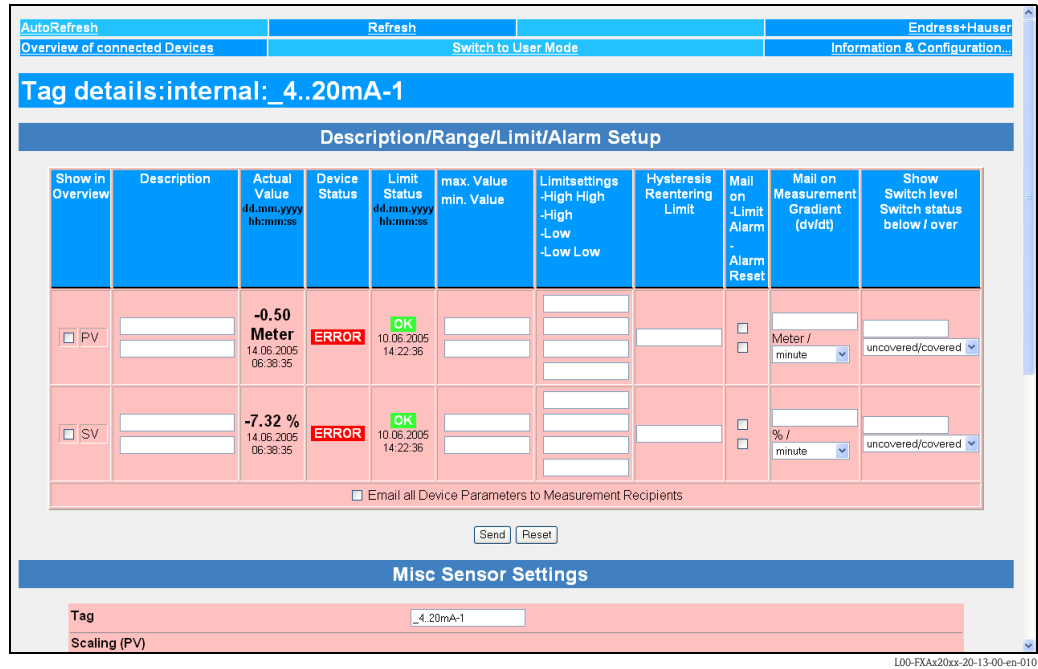
Email all Device Parameters to Measurement Recipients

Activate this checkbox if, the next time you press "Send", you want to send the static parameters described in this section of **all** the devices connected to Fieldgate, or of **all** the internal interfaces, to the measurement recipients in the form of several e-mails in XML format. A separate e-mail with the static parameters is sent for every connected device/every internal interface.

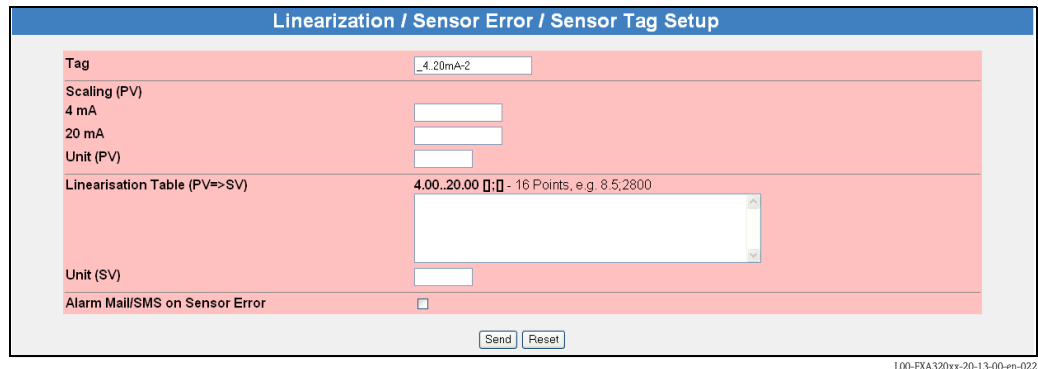
Note!

Do not carry out this step until all the device parameters of the Fieldgate have been configured completely to avoid unnecessary e-mailing.

8.1.2 Configuring the 4-20mA analog inputs



Linearization/SensorError/SensorTag Setup



In this section it is possible to enter a name for the measuring point, carry out linearization for the current value determined and specify an appropriate customer unit. The behavior in the event of a sensor error can be selected.

TAG

Enter here the desired designation of the input which should be displayed in the overview.

Linearization

For the internal 4-20mA analog inputs, Fieldgate allows scaling or linearization, optionally in two stages with a linearization table.

In level measurement, linearization specifies the ratio between the level and tank volume or product weight and allows measurement in technical units, such as meters, hectoliters, etc. The measured value is then displayed in the selected unit.

Linear measured value pattern

The measured 4-20mA current value is proportional to the customer unit over the entire measuring range.

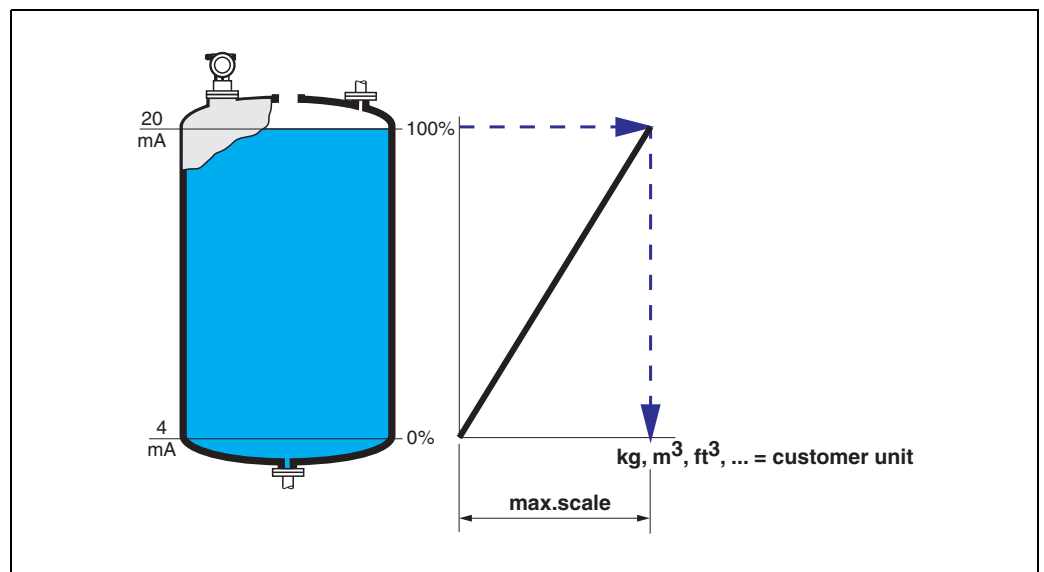
Here, the values entered specify the ratio of the measured 4-20mA current value to the Unit (PV) customer unit to be parameterized. The measured value resulting from this simple scaling is displayed as the primary variable PV.

Example of level measurement:

The tank is linear, e.g. vertical cylindrical tank.

The customer unit can be selected under Unit (PV). The volume value corresponding to full adjustment is specified under 20mA.

This value corresponds to an output of 100% (= 20mA). The volume value corresponding to empty adjustment or a start value is specified under 4mA. This value corresponds to an output of 0% (= 4mA).



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Non-linear measured value pattern

If the measured 4-20mA current value is not proportional to the customer unit within the entire measuring range, linearization can take place optionally in two stages with scaling and subsequent linearization table input.

Optionally, you can first scale the 4-20mA measured values and, in doing so, determine the ratio between the measured 4-20mA current value and the measured variable Unit (PV) of the connected transmitter ("m" for level measurement for example). The measured value resulting from this simple scaling is displayed as the primary variable PV.

With the aid of the linearization table, Fieldgate can calculate and display the correct values of the customer unit Unit (SV) using the value pairs to be entered from Unit (PV) and Unit (SV).

The following requirements have to be met:

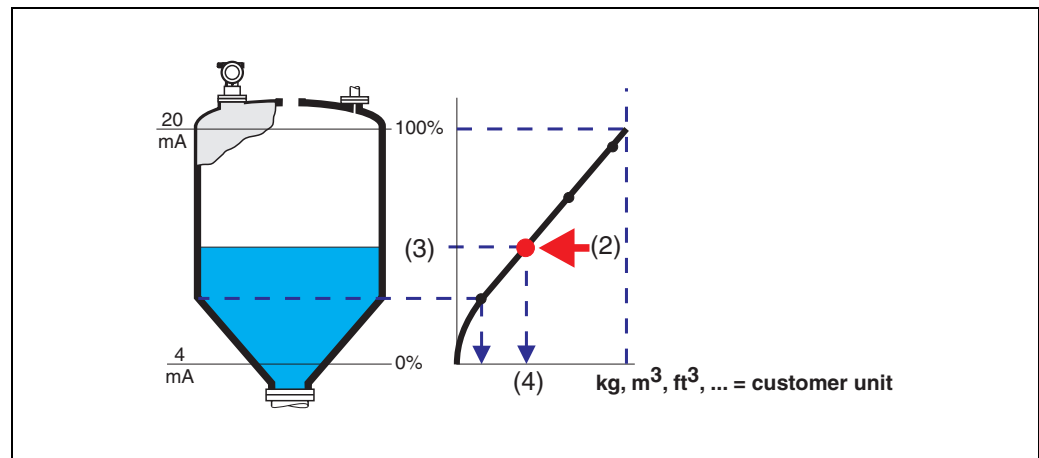
- The max. 32 (16 FXA520) value pairs for the points in the linearization curve are known.
- The measured values have to be entered in increasing order. The curve is monotone increasing.
- The measured values for the first and last point of the linearization curve should correspond to the minimum and maximum value of the measuring range.
- Linearization takes place in the customer unit Unit (SV) to be entered.

The linearized customer unit is displayed as a secondary variable (SV).

If the 4-20mA measured values are not scaled beforehand, the measured 4-20mA current values must be entered in the linearization table as the Unit(PV).

Example of level measurement

If the level is not in proportion to the volume or weight within the set measuring range, a linearization table can be entered in order to measure in technical units.



Every point (2) in the table is described by a value pair: level (3) and volume (for example) (4). The last value pair determines the output of 100% (= 20 mA).

Levels are generally indicated in the unit "m" in the linearization table which requires the 4-20 mA current values to be scaled to level values in "m" as explained in Step 1.

The linearization table can then also be computed beforehand using a device tool such as the ToF Tool, for example, and copied into the appropriate field of the Fieldgate configuration using the "copy & paste" function.

8.1.3 SensorError Setup

Alarm mail/SMS on sensor error

If the control box is switched on, an alarm e-mail is sent in the event of a sensor error. In the GSM version an SMS is sent simultaneously if the "SMS Configuration" control box is switched on in the "Enable SMS Send" function (→ Chap. 10.3.6). A sensor error is detected at the current inputs when the measured value lies outside the limits recommended by the NAMUR Recommendation NE 43. An appropriate alarm is sent by mail and/or SMS and the "Device Status" is set to "ERROR".

Behaviour of the "Limit Status" and "Device Status" for measured values outside the measuring range

Measured value	≤ 3.6 mA or ≥ 21 mA (NAMUR limit)	3.6...3.8 or 20.5...21
Limit Status	uncertain	uncertain
Device Status	ERROR	WARNING
Behaviour	If activated, an alarm is sent	No alarm is sent

Use CMD48 for Extended Device Status

Switch on the control box if you wish to use the evaluation of the Additional Device Status of HART devices.

For a more precise diagnosis of device statuses, such as status information, warnings or alarms, the Extended Device Status can be read out using the HART command 48. Additional Device Status is a 0 to 10 byte long data field which contains information about the field device in encoded form. The information it contains may be structured differently in each field device and is therefore only partially standardised by HART. For this reason it is not possible to display the encoded information directly in text form and identify it.

However, it is possible to trigger encoded status information using bit masks. In this case, the Fieldgate differentiates between status information which can be displayed as a warning and information which can be displayed as an error and reported.

Several bits, representing particular status information, can be set in the bit masks. Every 10 update times, the Fieldgate compares the current Additional Device Status on the basis of the bits set in the bit mask. If at least one of the bits matches, it reports an error or warning. The current Additional Device Status is sent (e-mail or SMS) together with the error or warning message, to the registered receiver of alarms. The precise identification of the error must then be performed by the receiver using the Additional Device Status.

Example:

The Additional Device Status of a TMT162 consists of 8 bytes, as follows:

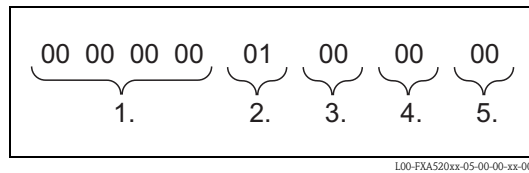
1. 4 byte device status
2. 1 byte channel 1 status
3. 1 byte channel 2 status
4. 1 byte Extended Device Status (see Common table 17)
5. 1 byte Operating mode (see Common table 14)

Therefore, the status of channel 1 is found in byte 5 of the Additional Device Status.

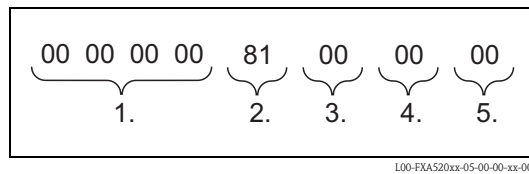
Sample contents of byte 5:

- 0x01 : warning corrosion
- 0x80 : error A/D conversion

If, for example, you now wish to detect and report a corrosion warning using the Fieldgate, the bit mask may appear as follows:



If you wish to detect a warning for corrosion and/or an A/D conversion error, the bit mask may appear as follows:



Extended Device Status

Here it is indicated whether, under consideration of the specified bit masks, the current Additional Device Status contains a warning or an error.

- If it contains a warning, "**WARN**" is displayed.
- If it contains an error, "**ERROR**" is displayed.
- Under normal conditions "**OK**" is displayed.

Error Bitmask CMD48 (hex)

Here, enter in hex form the bit mask which is to trigger an error message.

If at least one of the set bits is found to match between the bit mask and the Additional Device Status, an error message is sent by e-mail to the receiver specified under "Address Alarm Mails". In the GSM version there is the option of sending an SMS.

Warning bit mask CMD48 (hex)

Here, enter in hex form the bit mask which is to trigger a warning message.

If at least one of the set bits is found to match between the bit mask and the Additional Device Status, a warning message is sent by e-mail to the receiver specified under "Address Alarm Mails". In the GSM version there is the option of sending an SMS.

8.1.4 Static / Data

Static Data			
Tag MS1	Descriptor @@@@@@@@@@@@@@@@	Message @@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@	
Manufacturer Endress+Hauser	Device Type FMU862 / Prosonic	Device ID 13959175	Channel / Polling Address 0x00 0x00
Final Assembly Number 0	Unique Identifier 1105d50007	Date Code 0	Static Data Acquired 20040316-144147

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The static data are stored in the device and have either been specified by the manufacturer or entered during device commissioning. These values normally do not change.

Tag

The tag is the designation of the device or the measuring point. It is set in the measuring device and can only be altered in the measuring device (e.g. via ToF Tool).

Descriptor

A user-defined message which is saved in the measuring device.

Message

An additional user-defined message which is saved in the measuring device.

Manufacturer

The name of the manufacturer is displayed here.

Device Type

The manufacturer name of the transmitter is displayed here.

Device ID

The serial number of the measuring device.

Channel / Polling Address

This field contains the channel of the Fieldgate (0x00 or 0x01) to the left. The HART address is on the right and is dependent on the protocol used up to 15 at HART5 (up to 63 at HART6). If the device is connected via a multiplexer, 0x10 is displayed here.

Final Assembly Number

Manufacturer device assembly code.

Unique Identifier

A unique number consisting of three components (standardised by the HCF) is displayed here.

For example, for the number "**110a002148**", this means:

- Positions 1+2 (11 = manufacturer, here Endress+Hauser)
- Positions 3+4 (0a = device, here Prosonic)
- Positions 5...10 (002148 = serial number of the device, this is manufacturer-specific)

Date Code

The date of manufacture formatted to HART specifications is displayed here.

Static Data Acquired

Date of the last static data acquired.

8.1.5 Dynamic Data / Status

Dynamic Data / Status	
PV - Loop Current 2.40 mA Status WARN 0x00 0x54 Device Status: Loop Current Saturated, More Status Available, Configuration Changed	PV - Percent of Range 110.00 % Additional Device Status (raw) 0x00 0x30 0x30 0x00 0x00

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PV - Loop Current

Display of set 4-20mA current value

PV - Percent of Range

Display of measured value as a percentage of the set measuring range

Status

Display of simple device status according to HART specification:

- Error: **"ERROR"**
- Warning: **"WARN"**
- Normal function: **"OK"**

In addition, the Device Status consisting of 2 bytes is displayed in hex form, and the information it contains is displayed in text from below that.

Example:

- ok: 0x00 0x08
- **Device Status:** Loop Current Fixed

Additional Device Status (raw)

The current Additional Device Status is presented here in hex form.
 See also "Use CMD48 for Extended Device Status".

8.1.6 Revision Levels / Miscellaneous

Revision Levels	
Universal Command: 5	Device: 3
Hardware: 1	Software: 23

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This section provides you with an overview of the software and hardware revisions of the device selected. All these data are specified by the HCF.

Universal Command

This line displays the version of the HART protocol.

Device

This line displays the version of the device specific commands.

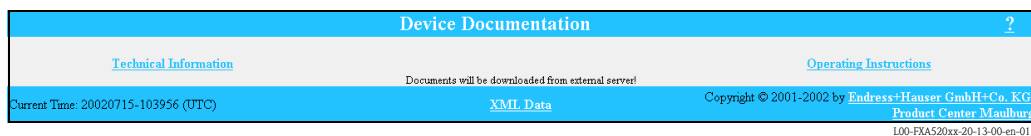
Hardware

This line displays the hardware version.

Software

This line displays the software version.

8.1.7 Device Documentation (in preparation)



This section contains links to corresponding sections of device documentation which you can call up over the Internet.

Note!

This function is only available for Endress+Hauser devices (in preparation).

Technical Information

This link opens a separate window with the Technical Information in PDF format of the device selected. Acrobat Reader must be installed for this purpose.

Note!

This only works if:

- the Fieldgate is accessed via the document server,
- a document server is specified in the "Miscellaneous Server Configuration" function under "Doc/Download Server".

Operating Instructions

This link opens a separate window with the Operating Instructions in PDF format of the device selected. Acrobat Reader must be installed for this purpose.

Note!

This only works if:

- the Fieldgate is accessed via the document server,
- a document server is specified in the "Miscellaneous Server Configuration" function under "Doc/Download Server".

XML Data

This link opens a page on which the device data are displayed in XML format. XML data are especially well-suited to automated information exchange between computers or devices processing data.

9 "Switch to Administrator Mode" or "Switch to User Mode" function

Two modes are already initially set in the Fieldgate:

- **User mode (factory setting)**

In the user mode, you can view almost all the configuration parameters and measured values but you cannot alter them.

Default setting for:

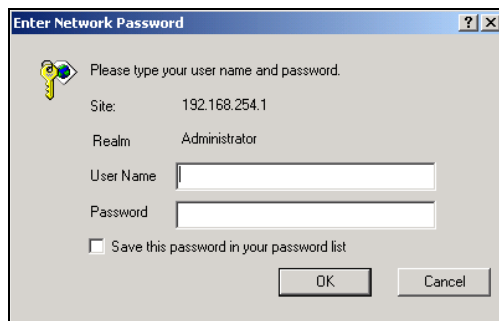
- user name is "eh"
- password is "eh"

- **Administrator mode**

In the administrator mode, you can alter all the configuration parameters. In addition, up to 5 user names and passwords can be allocated.

Default setting for:

- user name is "super"
- password is "super"



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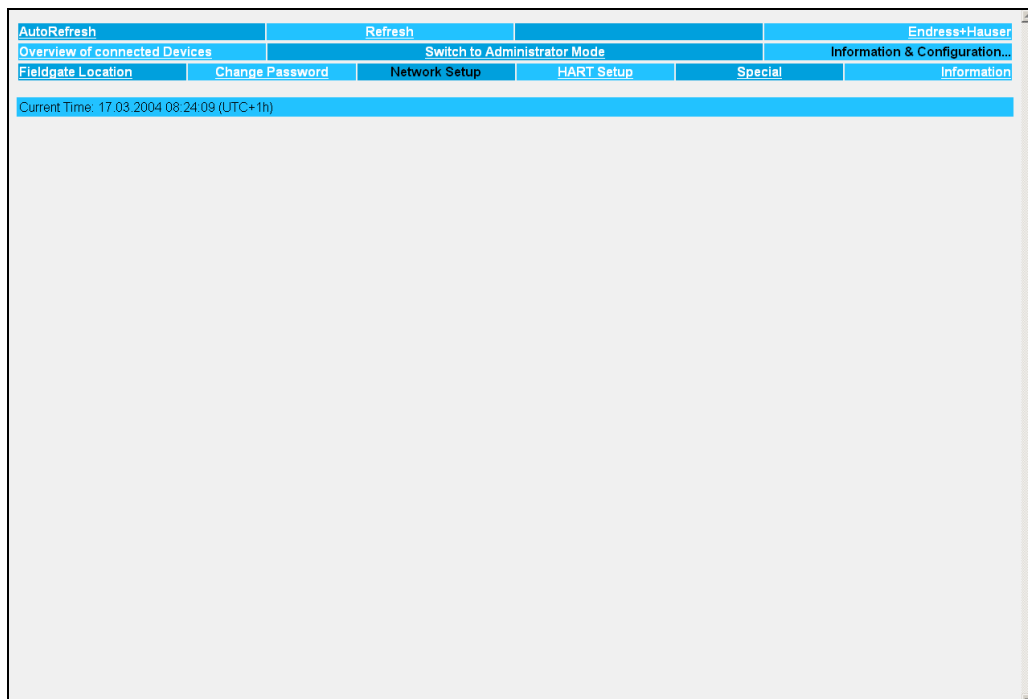
Please do not enter the inverted commas when entering the user name and password!

Caution!

All parameters can be viewed and configured in the administrator mode. To avoid errors, only use the administrator mode if you really want to change the configuration.

Example of display in user mode

This display can be activated by means of the "Switch to User Mode" function in the navigation bar.



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Example of display in administrator mode

This display can be activated by means of the "Switch to Administrator Mode" function in the navigation bar.

AutoRefresh	Refresh	Endress+Hauser			
Overview of connected Devices	Switch to User Mode	Information & Configuration...			
Fieldgate Location	User Setup	Network Setup	HART Setup	Special	Information

Network Setup

Ethernet

Host Name (*)	<input type="text"/>
IP Assignment (*)	Use DHCP
IP Address	10.54.8.105
Gateway	<input type="text"/>
Netmask	<input type="text"/>
DNS1 (*)	<input type="text"/>
DNS2 (*)	<input type="text"/>

Send Reset

(*) system restart required!

Dynamic DNS Settings

Get DynDNS URL (http://)	<input type="text"/>
Update Cycle DynDNS	NONE

Send Reset

Mail Configuration

SMTP-Gateway	194.194.130.243
SMTP Username	<input type="text"/>
SMTP Password	<input type="password"/>
Sender Address	<input type="text"/>
Address Alarm Mails	address.elarm@txa520.com
Remind pre-Boot Limit Alarms	<input type="checkbox"/>
Alarm Mail on Sensor Connect/Disconnect	<input checked="" type="checkbox"/>
Alarm Mail on Illegal Password (HART)	<input checked="" type="checkbox"/>
Address Measurement Mails	address.measurement@txa520.com
Periodic Measurement Mails	2h
Format Measurement Mails	XML
Data Logging Email on	<input type="checkbox"/>
- Periodic Measurement Mail	<input type="checkbox"/>
- Log Buffer full	<input type="checkbox"/>
- Device Event	<input checked="" type="checkbox"/>

Send Reset

Time Server Configuration

Time Server	10.54.11.162
Protocol	http
Periodic Fetch	1d
Timezone (related to UTC)	+2h
Date/Time Format	dd.mm.yyyy hh:mm:ss
manual Timestamp (dd.mm.yyyy hh:mm:ss)	<input type="text"/>

Send Reset

Miscellaneous Server Configuration

Doc/Download Server	<input type="text"/>
Proxy Server	195.118.80.252
Port Number Proxy Server	8080
Proxy Server Username	<input type="text"/>
Proxy Server Password	<input type="password"/>
Port Number Web Server	80
Port Number Pass-Through-HART	3222

Send Reset

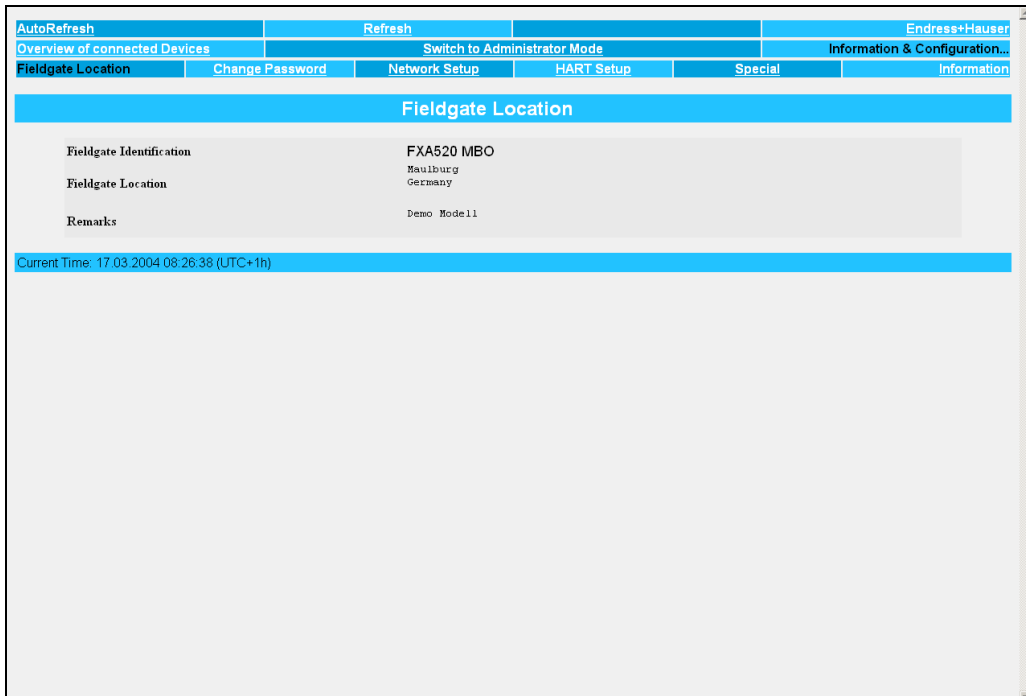
Current Time: 19.07.2004 13:06:32 (UTC+2h) [XML Data](#)

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10 "Information & Configuration" function

Note!

In the user mode, you can change your password and view the configuration settings. You only have access to all the configuration parameters in the administrator mode and can also only edit them here.



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With the "Information & Configuration" function, you can make and view the configuration settings.

10.1 "Fieldgate Location" subfunction

Fieldgate Location	
Fieldgate Identification	FXA520 MBO
Fieldgate Location	Maulburg Germany
Remarks	Demo Modell

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This section provides you with the option of entering additional information on the location and characteristics of the Fieldgate. These data have no effect on the functionality of the Fieldgate and are saved.

Fieldgate Identification

Here, enter the name of the Fieldgate (e.g. FXA520-...) which is also displayed on the overview page, in the header of your browser, in the XML file and the header of the e-mail.

Fieldgate Location

You can enter additional information on the location of the Fieldgate here. These data have no effect on the functionality and solely serve to provide additional information.

Remarks

You can enter remarks and additional information on the Fieldgate here. These data have no effect on the functionality and solely serve to provide additional information. When using text e-mails, these remarks are entered in the e-mail (e.g. "We hereby order...").

10.2 "Change Password" or "User Setup" subfunction

The amount of information you can enter in this section is dictated by your user rights.

Example of display in user mode:

This display can be activated by means of the "**Switch to User Mode**" function in the navigation bar. As the user, you can change your password here.

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Example of display in administrator mode:

This display can be activated by means of the "**Switch to Administrator Mode**" function in the navigation bar. As the administrator, you can create and manage up to 5 users here.

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Activating and deactivating the additional checkboxes in the administrator mode has the following functions:

- **Fieldgate Configuration**

By activating the checkbox, the password for the configuration (Switch to Administrator Mode) of the Fieldgate is assigned.

- If the checkbox is deactivated, the selected user has access in user mode. The factory setting for user name/password is "**eh/eh**" (→ Chap. 9 on Page 79). The user name/password can be chosen as required and can be allocated in the administrator mode.

- If the checkbox is activated, the selected user only has access in administrator mode. The factory setting for user name/password is "**super/super**" (→ Chap. 9 on Page 79). The user name/password can be chosen as required.

Caution!

Enabling the checkbox gives the selected user the right to alter the configuration of the Fieldgate and thus administrator rights.

- **Pass-Through-HART (HART device configuration)**

If the checkbox is activated, the user has access via a HART tool, such as the ToF Tool, by means of which device configuration is possible. The user name/password can be chosen as required. The factory setting is not activated.

Caution!

Enabling the checkbox gives the selected user the right to alter the configuration of the HART device and thus administrator rights.

■ **Public Access to (read-only) Web-Interface? (Web browser prompt)**

If you enable this checkbox, everyone can view all the pages of the user mode without a password.

Disable this checkbox so that a prompt to enter a password appears when the Fieldgate web pages are called up.

The user name/password can be freely defined; for this, the checkboxes for "**Pass-Through-HART**" and "**Fieldgate Configuration**" must be deactivated.

In the user mode, the password can be changed. Proceed as follows to do so:

User Name

Enter your user name here.

Old Password

Enter your old password here.

New Password

Enter your new password here.

Retype New Password

Enter your new password again here.

10.3 "Network Setup" subfunction

Example for Ethernet:

AutoRefresh	Refresh	Endress+Hauser
Overview of connected Devices	Switch to User Mode	Information & Configuration...
Fieldgate Location	User Setup	Network Setup
	HART Setup	Special
		Information

Network Setup

Ethernet

Host Name (*)

IP Assignment (*)

IP Address

Gateway

Netmask

DNS1 (*)

DNS2 (*)

(*) system restart required!

Dynamic DNS Settings

Get DynDNS URL (http://)

Update Cycle DynDNS

Mail Configuration

SMTP-Gateway

SMTP Username

SMTP Password

Sender Address

Address Alarm Mails

Remind pre-Boot Limit Alarms

Alarm Mail on Sensor Connect/Disconnect

Alarm Mail on Illegal Password (HART)

Address Measurement Mails

Periodic Measurement Mails

Format Measurement Mails

Data Logging Email on

- Periodic Measurement Mail
- Log Buffer full
- Device Event

Time Server Configuration

Time Server

Protocol

Periodic Fetch

Timezone (related to UTC)

Date/Time Format

manual Timestamp (dd.mm.yyyy hh:mm:ss)

Miscellaneous Server Configuration

Doc/Download Server

Proxy Server

Port Number Proxy Server

Proxy Server Username

Proxy Server Password

Port Number Web Server

Port Number Pass-Through-HART

Current Time: 19.07.2004 13:06:32 (UTC+2h) [XML Data](#)

Example for analogue modem:

AutoRefresh	Refresh	Switch to User Mode	Endress+Hauser
Overview of Connected Devices	User Setup	Network Setup	Information & Configuration
Fieldgate Location	Special	Information	
Network Setup			
ISP & Modem Configuration			
ISP Phone Number (*)	<input type="text"/>		
ISP Username (*)	<input type="text"/>		
ISP Password (*)	<input type="password"/>		
ISP DNS1	<input type="text"/>		
(the Fieldgate tries to fetch DNS1/2 from ISP)			
ISP DNS2	<input type="text"/>		
IP-Addr. Modem Server (Fieldgate)	<input type="text"/>		
IP-Addr. Modem Peer (remote)	<input type="text"/>		
Max. Daily Dial In Time [min]	<input type="text" value="1440"/>		
Number of Dial Retries	<input type="text" value="3"/>		
Number of Rings until Off-Hook	<input type="text" value="3"/>		
Callback ISP on Phone Rings	<input type="checkbox"/>		
Dial In Permanently	<input type="checkbox"/>		
Additional AT Commands	<input type="text"/>		
SDI-Pin	<input type="password" value="****"/>		
<input type="button" value="Send"/> <input type="button" value="Reset"/>			
(*) system restart required!			
SMS Configuration			
Enable SMS Send	<input type="checkbox"/>		
SMS Phonenumber 1	<input type="text"/>		
SMS Phonenumber 2	<input type="text"/>		
<input type="button" value="Send"/> <input type="button" value="Reset"/>			
GPRS Configuration			
GPRS-Dial In Permanently	<input checked="" type="checkbox"/>		
Access Point Name-APN	<input type="text"/>		
GPRS Username	<input type="text" value="fcd1"/>		
GPRS Password	<input type="password" value="****"/>		
GPRS QoS	<input type="text"/>		
<input type="button" value="Send"/> <input type="button" value="Reset"/>			
Dynamic DNS Settings			
Get DynDNS URL (http://)	<input type="text" value="http://members.dyndns.org/httpdator"/>		
Update Cycle DynDNS	<input type="text" value="NONE"/>		
<input type="button" value="Send"/> <input type="button" value="Reset"/>			
Mail Configuration			
SMTP-Gateway	<input type="text" value="194.194.130.243"/>		
SMTP Username	<input type="text"/>		
SMTP Password	<input type="password"/>		
Sender Address	<input type="text"/>		
Address Alarm Mails	<input type="text" value="address_alarm@kx520.com"/>		
Remind pre-Boot Limit Alarms	<input type="checkbox"/>		
Alarm Mail on Sensor Connect/Disconnect	<input checked="" type="checkbox"/>		
Alarm Mail on Illegal Password (HART)	<input checked="" type="checkbox"/>		
Address Measurement Mails	<input type="text" value="address_measurement@kx520.com"/>		
Periodic Measurement Mails	<input type="text" value="2h"/>		
Format Measurement Mails	<input type="text" value="HTML"/>		
Data Logging Email on	<input type="checkbox"/>		
- Periodic Measurement Mail	<input type="checkbox"/>		
- Log Buffer full	<input type="checkbox"/>		
- Device Event	<input checked="" type="checkbox"/>		
<input type="button" value="Send"/> <input type="button" value="Reset"/>			
Time Server Configuration			
Time Server	<input type="text" value="10.54.11.162"/>		
Protocol	<input type="text" value="http"/>		
Periodic Fetch	<input type="text" value="1d"/>		
Timezone (related to UTC)	<input type="text" value="+2h"/>		
Date/Time Format	<input type="text" value="dd.mm.yyyy.hh:mm:ss"/>		
manual Timestamp (dd.mm.yyyy hh:mm:ss)	<input type="text"/>		
<input type="button" value="Send"/> <input type="button" value="Reset"/>			
Miscellaneous Server Configuration			
Doc-Download Server	<input type="text"/>		
Proxy Server	<input type="text" value="196.118.80.253"/>		
Port Number Proxy Server	<input type="text" value="8080"/>		
Proxy Server Username	<input type="text"/>		
Proxy Server Password	<input type="password"/>		
Port Number Web Server	<input type="text" value="80"/>		
Port Number Pass-Through-HART	<input type="text" value="3222"/>		
<input type="button" value="Send"/> <input type="button" value="Reset"/>			
Current Time: 10.07.2004 13:06:52 (UTC+2h) XML Data			

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In this section, you can make all the communication settings. Depending on your rights, you can either only view the parameters (in User Mode) or edit them also (in Administrator Mode).

Caution!

Changes must be confirmed separately for each section with the button "Send".

Example for GSM modem:

AutoRefresh	Refresh	Endress+Hauser
Overview of connected Devices		Switch to User Mode
Fieldgate Location	User Setup	Information & Configuration
Network Setup		Information

Network Setup

ISP & Modem Configuration

ISP Phone Number (*)

ISP Username (*)

ISP Password (*)

ISP DNS1

(the Fieldgate tries to fetch DNS1/2 from ISP)

ISP DNS2

IP-Addr. Modem Server (Fieldgate)

IP-Addr. Modem Peer (remote)

Max. Daily Dial In Time [min]

Number of Dial Retries

Number of Rings until Off-Hook

Callback ISP on Phone Rings

Dial In Permanently

Additional AT Commands

SIM Pin

(*) system restart required!

SMS Configuration

Enable SMS Send

SMS Phonenumber 1

SMS Phonenumber 2

GPRS Configuration

GPRS-Dial In Permanently

Access Point Name APN

GPRS Username

GPRS Password

GPRS QoS

Dynamic DNS Settings

Get DynDNS URL (http://)

Update Cycle DynDNS

Mail Configuration

SMTP-Gateway

SMTP Username

SMTP Password

Sender Address

Address Alarm Mails

Remind pre-Boot Limit Alarms

Alarm Mail on Sensor Connect/Disconnect

Alarm Mail on Illegal Password (HART)

Address Measurement Mails

Periodic Measurement Mails

Format Measurement Mails

Data Logging Email on

- Periodic Measurement Mail
- Log Buffer full
- Device Event

Time Server Configuration

Time Server

Protocol

Periodic Fetch

Timezone (related to UTC)

Date/Time Format

manual Timestamp (dd.mm.yyyy hh:mm:ss)

Miscellaneous Server Configuration

Doc/Download Server

Proxy Server

Port Number Proxy Server

Proxy Server Username

Proxy Server Password

Port Number Web Server

Port Number Pass-Through-HART

Current Time: 19.07.2004 13:06:32 (UTC+2h)

XML Data

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10.3.1 Ethernet

In this section, you configure the IP address of the Fieldgate.

Caution!

Each IP address may only occur once in a network! You can get an IP address from your Internet provider or your system administrator. The settings must be confirmed with the button "**Send**".

Host name

The host name describes the unambiguous name of a device in the network.

Usage in conjunction with DHCP:

DHCP assigns as standard an IP address on the basis of the MAC address of the device. If the DHCP server being used supports IP allocation using host names, the name of the device in the network can alternatively be used for the assignment of the IP address.

Note!

WINS name resolution is not supported. Therefore, the device cannot be contacted in the network using its host name instead of its IP address. The purpose of the host name in this case is solely to provide an alternative means of allocating IP addresses through the DHCP server.

IP Assignment

Selection list:

- Manual Entry
- Use BootP-Protocol
- Use DHCP

This selection list is used to establish how the IP address is allocated, under which the device can later be contacted in the network. The factory setting is "**Manual Entry**".

– Manual Entry

If no DHCP or BootP is used, then all network settings must be entered manually. Fill out the following field (IP Address, Gateway, ...) for this purpose.

– Use BootP-Protocol

Activate the checkbox if a BootP server is being run in the network in which the Fieldgate is being deployed and the IP address should be allocated dynamically. The IP address is then set automatically and the gateway address is also taken from the local BootP server.

Please contact your system administrator if you have any questions.

If you use BootP, a mail is sent after every restart to the recipient or the recipient specified under "**Address Alarm Mails**" containing the currently allocated IP address.

– Use DHCP

Activate the checkbox if a BootP server is being run in the network in which the Fieldgate is being deployed and the IP address should be allocated dynamically. The IP address is then set automatically and also the usual network settings such as the gateway or the DNS server are usually taken from the local DHCP server.

Please contact your system administrator if you have any questions.
If you use DHCP a mail is sent after every restart to the recipient or the recipient specified under "Address Alarm Mails" containing the currently allocated IP address.

Caution!

A restart of the system is necessary if a change is made from "**Manual Entry**" to "**Use DHCP**" or "**Use BootP-Protocol**" while operating.

IP Address

Enter the IP address of the Fieldgate here (factory setting is 192.168.252.1). You can get this address from your system administrator.

Caution!

There is the possibility of losing the connection to the Fieldgate after confirming the new IP address. Simply enter the new IP address in the web browser. In addition to this, the web browser must also be informed of the new IP address (adjust proxy server settings).

Gateway

A gateway must be specified if the Fieldgate should be able to access servers or PCs outside its network, e.g. a mail server. This is the network firewall, the Internet router or an internal switch, for example.

If you have any questions, please contact your system administrator.

Netmask

The sub-network mask number to be entered is the one you received from the network administrator or internet provider. This number when taken together with the IP address states which network segment your computer belongs to. A sub-network mask is made up of four numbers from 0 to 255 which are separated from each other by points.

Caution!

If this field is left free then the standard sub-network mask number for the network class is set (e.g. "**255.255.255.0**"). The standard setting can be kept in the majority of cases.

DNS1

DNS (=Domain Name System) servers convert alphanumeric server data to IP addresses, e.g. **www.pcm.endress.com** to 62.128.16.123. This is required if you enter the name instead of the IP address for a server. You can get the address of your DNS server from your provider or from your system administrator. If you do not enter any information, you must use IP addresses when specifying servers.

DNS2

For safety purposes, a second DNS server can be entered here if DNS1 fails. This entry is not compulsory.

Caution!

IP addresses must be entered if no DNS server is configured. Names are not permitted!

10.3.2 ISP & Modem Configuration

Caution!

With the exception of the SIM PIN, the specifications of the following section are not relevant for GPRS operation of the Fieldgate GSM.

The Analog/GSM Fieldgate is capable of dialling into a central server.

This may be necessary for the following reasons:

- The Fieldgate should send an e-mail with the current measured values or alarm messages to a mail server
- The Fieldgate should compare its internal time against a central time server
- The Fieldgate should be reachable via an existing network, e.g. the Internet (dial-in to an Internet Service Provider)
- For security reasons, the Fieldgate should not take any calls but should, upon request (ring), dial into a configurable, trustworthy server/user (automatic call-back mechanism)

Caution!

If you do not want to use any of the four options described in your application, only the "**Number of Rings until Off-Hook**", "**Modem Country Selection**" (only analog version) and "**SIM PIN**" (only GSM version) points are relevant.

ISP Phone Number

Here, enter the dial-in number of the server which the Fieldgate should dial into due to one of the reasons mentioned above (e.g. the access number of your Internet Service Provider).

Caution!

When using the GSM version, special dial-in numbers of the Internet Service Provider should be used, which are provided especially for access via mobile communications. This saves on the costs for dialling into a public fixed network.

ISP Username (in the administrator mode)

Here, enter the user name, required for accessing the server, which you received from the server operator (e.g. ISP).

ISP Password (in the administrator mode)

Here, enter the password, required for accessing the server, which you received from the server operator (e.g. ISP).

ISP DNS1

Here, enter the IP address of the Domain Name Server which should be primarily used by the Fieldgate.

DNS (Domain Name System) servers convert alphanumeric server specifications into IP addresses, e.g. **www.pcm.endress.com** to 62.128.16.123. This is essential if you enter the name, and not the IP address, for a server. You can get the address of your DNS server from your provider or your system administrator. If you do not enter anything here, you must use IP addresses when specifying servers.

ISP DNS2

A second DNS server can be entered here just in case DNS1 fails. It is not compulsory to enter anything here.

Caution!

If a DNS server is not configured, you must use IP addresses when specifying servers. Names are not permitted! Exception: The server used (e.g. ISP) transmits the addresses of the DNS servers during dial-in (common nowadays).

IP-Addr. Modem Server (Fieldgate)

Enter the IP address of the Fieldgate here (factory setting is 192.168.254.1).

If Fieldgates should be addressed with a modem interface via a network router, every Fieldgate which can be contacted in this way needs a separate IP address comparable with an Ethernet device. Users in a company network can easily contact the required Fieldgate by means of a router solution, for example by entering the IP address in the browser. The router automatically sets up a modem connection to the device.

IP-Addr. Modem Peer (remote)

You can enter an IP address at this location which is allocated to the caller when dialling up the Fieldgate (the factory setting is 192.168.254.2).

Max. Daily Dial In Time [min]

Here, the limit of the daily dial-in time to the specified server (e.g. Internet Service Provider) is entered. The initial setting is 1440 minutes (1 day) and this is also the maximum value. Any value can be entered.

Caution!

Adherence to the specified maximum dial-in time is not guaranteed if, due to faulty configuration (sensor, limit, ISP, e-mail settings), the device dials in periodically at short time intervals to the specified server. The exact dial-in time cannot be calculated exactly in the case of short transmissions occurring in quick succession. Therefore, particularly in the case of GSM devices, pay attention to the correct configuration of the device, as even dial-in attempts may result in charges.

Use Tone Dialing (otherwise Pulse) (analogue version only)

Here, you can choose whether the integrated modem of the Fieldgate should use tone or pulse dialling. The checkbox is activated as standard (a "yes" appears in user mode). Uncheck the checkbox if you want to use pulse dialling.

Wait for Dialtone

Activate the checkbox if the Fieldgate should first wait for a dial tone before dialling-in (operation with public telephone network). In the standard setting, the Fieldgate does not wait for a dial tone (operation with an internal telephone system).

Number of Dial Retries

Here, specify the maximum number of times the Fieldgate should retry dialling-in if no modem connection to the server (e.g. ISP) is established.

During each dial-in, the Fieldgate tries to establish a modem connection to the specified server for approx. one minute. If the server does not take the call during this time, the Fieldgate disconnects and, where applicable, tries to dial-in again.

Number of Rings Until Off-Hook

Here, specify the minimum number of rings the Fieldgate should wait for until it takes a call and the line is engaged. The maximum number of rings, however, is limited by the country setting "Modem Country Selection" of the integrated modem. If the value entered exceeds the maximum number of rings allowed in the particular country setting, the Fieldgate automatically adjusts the specified value to the maximum value permitted.

This setting is especially important if you operate the Fieldgate at a connection parallel to a conventional telephone (analogue version only).

Caution!

An exception arises when 0 is specified. In this instance, the Fieldgate does not take any calls/ does allow the connection requested by the opposite party. This setting can be used for the automatic call-back safety mechanism, whereby the Fieldgate dials into a configurable, trustworthy server/user on request (ring) – (automatic call-back mechanism). To use this mode, the "Callback ISP on Phone Rings" setting must be activated and, in addition, the dial-in number and the access data of the server must be specified (basically the first three points of this configuration section).

Callback ISP on Phone Rings

The Fieldgate has an integrated call-back mechanism for dialling into a central server whose dial-in number was specified under "ISP Phone Number". Activate the checkbox if you want to use this function.

The Fieldgate reacts as follows if the function is activated:

- The Fieldgate starts dialling into the specified server if, having detected at least one ring signal, another signal does not follow for ten seconds.
- If another ring signal is detected within this period, it waits for ten seconds again. This procedure is continuously repeated.
- If the number of rings specified under "Number of Rings until Off-Hook" is then exceeded (exception if number = 0), the call is accepted and, where necessary, a modem connection established with the opposite party.
- If no other ring signal is detected within the ten-second period, the Fieldgate starts dialling into the specified server.

Example:

The setting for "Number of Rings until Off-Hook" is 5 and the "Callback ISP on Phone Rings" option is activated. An Internet Service Provider has been specified as the server. The user can now ring the Fieldgate with a conventional telephone. If the user hangs up after a maximum of four rings, the Fieldgate dials into the Internet Service Provider. If the "Mail Configuration" section is completely configured and the "Mail assigned IP Address" option activated, the current IP address of the Fieldgate is sent to the user with the e-mail address specified under "Address Alarm Mails". The Fieldgate can then be reached worldwide in the Internet under this IP address (several users can now also access it simultaneously).

Dial In Permanently

If this option is activated, the Fieldgate tries to dial into the specified server permanently. The Fieldgate behaves as follows here:

- If the server connection is busy, the Fieldgate will keep starting dial-in attempts until dial-in is successful.
- If a connection between the Fieldgate and server is lost, the Fieldgate immediately starts new dial-in attempts until a new connection to the server has been successfully established.

This option can be used to permanently connect a Fieldgate to a server. For example, you can ensure that a Fieldgate installed in the field is always connected to the intranet/local network of a company via a company server (router) and thus can be reached by all those sharing the network.

Additional AT Commands

This setting is for designed for service only. Please do not alter the factory setting of the field.

SIM-Pin (only GSM version)

Enter the PIN of your SIM card here, or change the PIN of your card to the default value 8080.

Modem Country Selection (only Analog version)

Differences between the telephone networks of different countries and telephone systems of different manufacturers mean that the settings of the integrated modem have to be adjusted. For this reason, select the country setting suited to your application from the drop-down list. The country settings refer to the specifications of public telephone networks.

When delivered, "United States" is set for the Fieldgate. This setting proves to be a functional basic setting in most countries.

Proceed as follows if problems arise with the current country setting:

- When using a public telephone connection:
 - Dial the specific setting for your country if available.
- For telephone systems:
 - Ask the manufacturer for the country specification followed (possibly try the country of origin of the manufacturer).
- No country setting is available for your country:
 - The specification of the telephone network used corresponds to one of the country settings available, i.e. a country setting which can be selected covers the specification of the country of use. Contact your network operator or try out different country settings.

For example, try the "Taiwan" setting for the following countries:

Algeria, Belarus, Bolivia, Bosnia-Herzegovina, Brunei, Costa Rica, Ecuador, El Salvador, Guatemala, Honduras, Jordan, Lithuania, Morocco, Nicaragua, Peru, Oman, Tunisia, Ukraine, Yemen

10.3.3 Mail Configuration

In this section, you can make all the settings for sending e-mails. If the Fieldgate is to send e-mails, a mail server which forwards the e-mails must be entered.

Caution!

If you have configured e-mail sending for "**Address Alarm Mails**", "**Address Measurement Mails**" and "**Periodic Measurement Mails**", you must check that mails are sent correctly. If configured incorrectly, the Fieldgate permanently tries to send the e-mails which can result in a very high telephone bill. If e-mailing is not working correctly, it is better to delete the "**ISP Phone Number**" (→ Chap. 10.3.2 "ISP & Modem Configuration" on Page 88).

Note!

A measured value e-mail in XML format, for example, does not contain all the static parameters of the connected devices/internal interfaces such as limit values or descriptive texts for example. Dynamic data such as measured values and status information, as well as the units and time stamp, are transmitted via e-mail.

There are further restrictions when sending history e-mails -> see Datalogging.

Higher-order data processing and visualization systems, however, often need all the other static parameters of the Fieldgate for correct processing/display. This information is just needed once. Examples of this include Fieldgate DA and Fieldgate Viewer from Endress+Hauser.

If it is not possible to call up the complete data record directly by interrogating the index.xml page, the data can be sent directly to all the recipients of the measured values by selecting "Email all Device Parameters to Measurement Recipients" in the device configuration (→ Chap. 8.1.1 "Description/Range/Limit/Alarm Setup").

Example:

A Fieldgate in GPRS mode can only send its data cyclically via e-mail to Fieldgate DA and Fieldgate Viewer. Direct access to the device, and thus index.xml interrogation, is not possible from the outside. Fieldgate Viewer, however, needs all the static parameters of the Fieldgate to display the measured values and limit values correctly. Every time one or more static parameters is changed, these data can be sent directly to Fieldgate DA/Fieldgate Viewer in the form of several e-mails using the option described above.

SMTP-Gateway

Enter the IP address or the name (DNS required) of your mail server here.
If you have any questions, please contact your system administrator.

Test the e-mail delivery. It is best to do this without specifying an SMTP Gateway at first if you have configured the Fieldgate for dialling into an Internet Service Provider. In this case, mails for the analog/GSM version from the server (ISP) specified under "ISP & Modem Configuration" are forwarded directly or by the specified DNS to the mail server of the recipient. When using Ethernet, the mails are then forwarded accordingly by the specified gateway or one of the DNS servers. In some cases, this function is also supported by the mobile communications provider in GPRS operation (GSM version).

Sometimes it can happen that certain mail recipients receive messages here while others do not. Should this occur, use a mail server and enter the SMTP Gateway in the form of an IP address or a name (DNS required).

Authentication:

If you use an SMTP Gateway with authentication, the user name and password must be specified. Here, the Fieldgate supports the authentication methods LOGIN, PLAIN and CRAM-MD5.

SMTP Username

If authentication is required for the specified SMTP Gateway, you have to enter the user name here.

Caution!

If the SMTP Gateway does not request authentication or if no SMTP Gateway is used, nothing must be entered here.

SMTP Password

If authentication is required for the specified SMTP Gateway, you have to enter the password here.

Caution!

If the SMTP Gateway does not request authentication or if no SMTP Gateway is used, nothing must be entered here.

Sender Address

Enter the sender address of the Fieldgate here, e.g. **fieldgate@company.uk**. This address appears in the sender field. Depending on the mail server used, this field can have any name or must correspond to a valid account. Ask your system administrator.

Note!

With some providers, the e-mail address of the account holder must be specified as the sender address. No mails will be accepted from other sender addresses.

Address Alarm Mails

Enter the recipient of the alarm mails here, e.g. **name@company.uk**.

The recipients entered here receive all messages defined as alarms and limit e-mails, which have been configured under "Mail on Limit Alarm" and "Mail on Alarm Reset".

The e-mail address(es) under ""only receive e-mails if the set limit values are exceeded or undershot (the format is always TEXT).

Remind pre-Boot Limit Alarms

The Fieldgate conducts checking of the current measured values with the configured limit values after every restart if you have activated limit value violation reporting for a channel, for example when the power supply is interrupted. If, after a restart, one of these limit values is undershot or exceeded, an alarm mail or alarm SMS is always sent to the recipient for the respective channel when the equipment is in the delivered condition (no ticks made), even if this alarm condition already arose before the restart and was also reported by mail/SMS. This also happens when the current measured value has not changed compared to the measured value before the restart. Thus the situation can arise where a number of alarm messages are sent regarding one limit value violation, namely before and after the restart.

It is possible to change this behaviour by ticking the box to the extent that the Fieldgate can remember previously sent limit value messages and suppresses sending any further messages. This behaviour is as follows:

- The measured value is stored in a non-volatile memory at the point in time of the violation if a limit value violation takes place while operating. Alarm messages are then sent as an e-mail or SMS depending on the configuration.
- Once the device is restarted the current measured value is compared with the last stored limit value violation. No limit value violation is assumed if the current measured value lies within the limit value range of the stored value and thus no alarm message is sent. If no limit value violation occurred before the restart of the device, an alarm is sent as usual when the current measured value undershot or exceeded a limit value.

Caution!

- No alarm message is sent in this mode if a restart of the system takes place before storing or determining the limit value violation and before the device could send an alarm message (for example due to interruption of the power supply).
- The Fieldgate is not capable of testing whether the recipient really received the alarm message.
- The user is responsible for the correct mail/SMS configuration.

Alarm Mail on Sensor Connect/Disconnect

If you activate this checkbox in the administrator mode (a **"yes"** appears in the user mode), an e-mail is sent as soon as the Fieldgate is no longer in contact with the device. The measured value last determined is sent in another e-mail. Two other e-mails are sent as soon as contact is reestablished – one to confirm the connection and the other with the current measured value.

Alarm Mail on Illegal Password (HART)

Activate this check box in administrator mode (**"yes" appears in user mode**) if you want to be informed about failed login attempts. When using Fieldgate GSM, SMS messages are also sent accordingly if the function under "SMS-Configuration" is activated.

Mail assigned IP Address

Analogue/GSM version

The Fieldgate Analog is able to dial into a central server (→ Chap. 10.3.2 "ISP & Modem Configuration").

Once the Fieldgate has dialled into the server specified, it receives an IP address from the server. If the Fieldgate dials into an Internet Service Provider, it receives a dynamic IP address of the worldwide Internet, for example, from this provider.

If you activate the checkbox, the IP address currently assigned is sent to the e-mail address specified under "Address Alarm Mails"(→ Chap. 10.3.8 "Dynamic DNS Settings" on Page 106).

GPRS Mode (GSM Version):

In GPRS mode the Fieldgate is assigned an IP address by the provider. This IP address may be altered at undefined time intervals. Here, the newly assigned IP address can be reported by e-mail.

Ethernet version:

If DHCP is used for the Ethernet version, an IP address is assigned to the Fieldgate by the DHCP server. This IP address may be altered at defined time intervals. The newly assigned IP address is always reported automatically by e-mail. It is not possible to deactivate this function.

Address Measurement Mails

Enter the recipient of the measured value mails here, e.g. **name@company.uk**.

Periodic Measurement Mails

From this drop-down field, select the time interval after which the measured value is transmitted per e-mail.

You have the following options here:

- Select the cycle between 15 minutes and up to one week
- Select fixed times for sending measured value mails.
- Select "**Use Scan Cycle**" to have the scan cycle specify the time interval for measured value mails. Here, the measured value mails are always sent every time the measured value is determined.

A new measurement is always carried out before a measured value mail is sent.

Format Measurement Mails

Set the format of the e-mails here. You can choose between three formats:

- None - with this option, you do not get any measured value mails.
- HTML - for HTML display similar to the overview page.
- XML - for an e-mail formatted as XML.
- Text - for an e-mail created in text format. The remarks entered in "Fieldgate Location" subfunction the are added to the e-mail.

Note!

Alarm mails are always sent in text format.

Data Logging Email on

Periodic Measurement Mail

If you switch on this control box in Administrator mode, every time a measured value mail is sent, all the logged history data are sent to the recipients of the measured values in the form of one or more separate mails in XML format.

Use this function if you want to cyclically send all the measured values recorded in the history over a specified period. The time interval is specified by the option selected under "**Periodic Measurement Mails**".

Log Buffer Full

If you switch on this control box in Administrator mode, every time the history memory overruns, its entire content is sent to the recipients of the measured values in the form of several mails in XML format.

Use this function if you do not want to lose any measured values saved in the history in the event of history overrun.

Device Event

If you switch on this control box in Administrator mode, every time an event occurs, e.g. limit value violation or device errors, all the logged history data are sent to the recipients of the measured values in the form of one or more separate mails in XML format.

This function makes it possible to analyze all the measured values saved before the event occurred.

Note!

History data are always sent in XML format.

10.3.4 Time Server Configuration

The screenshot shows a web form titled "Time Server Configuration". The form has the following fields and values:

- Time Server:** 192.168.33.53
- Protocol:** daytime
- Periodic Fetch:** 1h
- Timezone (related to UTC):** 1h
- Date/Time Format:** dd.mm.yyyy hh.mi.ss
- man. TimeSet (dd.mm.yyyy hh:mi:ss):** A dropdown menu is open, showing options: yyyymmdd-hhmiss, mm/dd/yyyy hh.mi.ss, and dd.mm.yyyy hh.mi:ss.

At the bottom right of the form, there are two buttons: "Send" and "Reset".

With the aid of a time server, the Fieldgate automatically synchronises its time with the time of the configured server. An Internet connection or a time server in the local network is required for this. If you have any questions, please contact your system administrator.

Time Server

Enter the name or the IP address of the time server here.

You can find public NTP servers under:

- "<http://www.eecis.udel.edu/~mills/ntp/servers.htm>"

or

- "<http://www.google.de/search?q=public+ntp+servers>"

Protocol

Set the protocol used by the time server here:

- HTTP (standard-port: 80)
- SNTP (standard-port: 123)
- TIME (standard-port: 37)
- DAYTIME (standard-port: 13)
- MAN -> Manual time setting

The time server operator can tell you the protocol the server uses. Normally SNTP and TIME servers are used.

Periodic Fetch

Time interval after which the internal clock is resynchronised with the time server.

Analogue / GSM version:

In the modem versions Periodic Fetch“ is performed in accordance with the set time interval only if the Fieldgate is, for example, connected with the internet via an ISP (e.g. for the sending of e-mails or DynDNS requests). The internal clock is then resynchronised with the specified time server. If the Fieldgate is never connected to the internet, the internal clock cannot be synchronised.

GPRS mode (GSM version):

In GPRS mode Periodic Fetch“ is performed in accordance with the set time interval because a permanent internet connection is available.

Timezone (related to UTC)

Here, an offset from the UTC time can be entered.

Date/Time Format

Here, the date and time format can be selected.

man. TimeSet (dd.mm.yyyy hh:mi:ss)

If no time server is available, the time can be set manually here. When setting, select the "manual" protocol beforehand.

Caution!

The device is not capable of automatically switching between summer and winter time. Deviations from the UTC time must be set manually.

Time stamp with manual time entry

If it is not possible for the Fieldgate to automatically access a time server, the current time must be entered manually to be able to use the data logging function.

The current time is saved by Fieldgate every 10 minutes.

After the device has been restarted, Fieldgate first tries to access the time server specified under "Time Server" in order to set the time automatically. If this is not possible, the time last saved before the device restart is used for the logged data.

If the time last saved is used after restarting the device, there is a time difference between this time and the real time. This is determined by the length of time the unit was without current. The `<vtbuf>1</vtbuf>` variable is added to the time stamp of the logged data records until the time is manually or automatically updated.

This tells the user/higher-order system that there is a difference between the Fieldgate time and the actual time.

Caution!

In this situation, no time is displayed in the footnote of a web page. Similarly, all other XML documents do not bear a time stamp.

10.3.5 Miscellaneous Server Configuration

In this section, you can make further server settings.

Doc/Download Server (in preparation)

Enter the server which contains software updates and documentation (e.g. on-line help) here. If you leave this field empty, you cannot access the on-line help.

Proxy Server

If the Fieldgate is operated in a network with a proxy server, enter the proxy server here.

Port Number Proxy Server

Enter the port number of your proxy server here. This is "8080" as standard. Ask your system administrator.

Proxy Server Username

If the proxy server in use demands authentication, enter the user name here.

Proxy Server Password

If the proxy server in use demands authentication, enter the password here.

Test Connection Server

With GPRS operation there is the possibility of checking the Fieldgate connection to the Internet by periodically contacting a server on the Internet once every hour. Enter the address of the required Internet server for the test connection here (e.g. "www.endress.com"). If the connection to the test server fails, a new connection attempt is started after approx. 10 minutes. If the second connection attempt also fails, the Fieldgate disconnects from the GPRS network and then tries again to connect to the GPRS network.

This periodic test connection should be used in the following case:

- Sometimes the Fieldgate does not disconnect from the GPRS network in the usual way and, after longer waiting periods, can no longer be contacted using the current IP address and can be contacted again only after a reset. In this case, ensure that you check the connection to the Fieldgate using the latest IP address of the Fieldgate. When using dynamic DNS services, please also ensure that the dynamic DNS service works correctly and has received the latest IP address from the Fieldgate (see "Dynamic DNS Settings" on page 106).
- The Fieldgate is verifiably connected to the GPRS network. However, it can no longer be contacted within acceptable waiting times using the current IP address.

In this case, the setting up of the test connection server ensures that the Fieldgate itself notices a disconnection from the Internet within 1/2 day at maximum and then establishes a new GPRS connection.

Port Number Web Server

Enter the port number of the web server here. This is "80" as standard. Normally, this should not be changed.

Port Number Pass-Through-HART

Here, enter the port number via which you can configure the connected devices per Telnet. The default value = 3222 should be kept unless this is blocked by the firewall.

10.3.6 SMS Configuration

100-FXAY2Kxx-20-13-00-en-409

Enable SMS Send

When the control box is activated, alarm e-mails are sent via SMS.

SMS Phonenumber 1

In order to be able to receive SMS, enter an SMS telephone number.

SMS Phonenumber 2

Enter another SMS telephone number here if, for example, you want somebody else to be informed as well.

Note!

Measured values cannot be sent periodically via SMS.

Note!

The SMS function is not available while the Fieldgate is connected to a server via a dial-in connection and when using the permanent GPRS mode. SMS messages may be sent at a later stage after a server connection has been broken off or the GPRS mode has been deactivated.

10.3.7 GPRS Configuration

GPRS Configuration	
GPRS-Dial In Permanently	<input checked="" type="checkbox"/>
Access Point Name APN	ca.t-mobile
GPRS Username	t-d1
GPRS Password	****
GPRS QoS	

100-FXA520cx-20-13-00-en-181

GPRS (General Packet Radio Services) is a mobile communications technique, which exploits the advantages of packet-oriented data transmission and channel bundling.

With GPRS, you are only charged for the amount of data actually transmitted (and not for connection time).

Data transmission in packets enables Fieldgate Always-on operation. The Fieldgate is thus permanently in a position to connect to the Internet, an Intranet or a mailbox, whereby data are only transferred as required if a new e-mail is sent or a new Internet page is called up.

Thanks to Always-on-operation, the WAP functions (→ Chap. 12) of the Fieldgate can also be used easily and cost-effectively.

If a user wants to access the web pages of a Fieldgate from the Internet in GPRS Always-on operation, the GSM/GPRS provider has to assign a public IP address. Clarify with the provider in question whether the provider offers such an additional service.

Alternatively, GPRS On Demand operation is also possible in which the Fieldgate only connects to the GPRS network when needed (e.g. for sending an e-mail).

The GPRS mode of the Fieldgate GSM thus offers the easiest and most cost-effective option for connecting a measuring point temporarily or permanently to the Internet or an Intranet.

Note!

Support for WAP interrogation to the Fieldgate in GPRS mode is not offered by every provider. The Fieldgate cannot compose an SMS in this mode.

GPRS-Dial In Permanently

The GPRS function can be switched on by activating the check box. After this, the Fieldgate permanently attempts to connect to a specified mobile Internet Access Point (APN) via GPRS. Previously saved connection parameters are used for this.

The following are some of the connection parameters:

- Access Point Name or APN, the name of the mobile Internet access point of the mobile communications provider
- User name for the mobile Access Point
- Password for the mobile Access Point
- GPRS Quality of Service QoS Parameter

In most cases, GPRS connection parameters are already pre-configured on the SIM card, merely GPRS user name and password still have to be specified in part. For questions regarding this, please ask your mobile communications provider.

If you cannot access the Fieldgate in GPRS mode, it is possible to deactivate the GPRS operation via modem dial-in. To do this, proceed as follows:

- Continue to dial into the Fieldgate using a modem until the connection is accepted. Afterwards, the connection should be broken off immediately. At the first attempt, the connection is not established in the usual way, as the device is still in GPRS mode. Ideally, the device now switches to Ready-to-receive mode for modem connections. You should now wait up to 2 minutes before trying to dial in again.
- For approx. 5 minutes it is now possible to establish a direct modem connection to the Fieldgate. During this time the Fieldgate can also send SMS messages.
- If a modem connection is established within these 5 minutes, GPRS mode is deactivated until the specified control box is switched on again.
- If no modem connection is established within these 5 minutes, the Fieldgate switches back into GPRS mode and connects to the configured Access Point (APN).

In certain circumstances, data connection (CSD) is not possible if using pure GPRS rates.

Note!

If necessary, the specified procedure must be repeated several times in order to establish a successful connection to the Fieldgate. The specified procedure applies in this form only to Fieldgate FXA520.

GPRS On Demand

In On Demand operation, the Fieldgate only connects to the GPRS network when it needs to send an e-mail, optionally with simultaneous time server interrogation.

GPRS On Demand is activated if the check box under GPRS-Dial In Permanently is not selected and no provider is entered under ISP & Modem Configuration.

If a provider is entered here, all e-mails are transmitted using a modem connection via the provider and not via GPRS.

No public IP address is needed for GPRS On Demand.

Advantages:

- Low operating costs thanks to very short period spent in GPRS network for the time to send an e-mail and interrogate the time server.
- No permanent operation in GPRS network (costs, security).
- No public IP address is needed.
- SMS alarms can be sent despite GPRS.
- Direct modem dial-in into Fieldgate is possible any time.

On Demand operation allows the use of GPRS card rates with a low monthly data volume included.

Note!

Fieldgates in GPRS On Demand mode cannot be accessed via the Internet.

Access Point Name APN

The Access Point of the mobile communications provider constitutes the GPRS Gateway to the Internet or Intranet for the Fieldgate. Enter the name of the Access Point here, which you receive from your mobile communications provider or leave the input field empty if the Access Point Name pre-configured on the SIM card is to be used.

Internet access to Fieldgate

In order for you to be able to access the Fieldgate via the Internet, the device has to have a public Internet address assigned to it by the provider.

Not all APNs of the mobile communications providers are suitable for transparent Internet access, meaning that the Fieldgate is not assigned a public Internet address. Fieldgate can only then be accessed within the private mobile communications network but can mostly access the Internet itself and send e-mails (GPRS On Demand).

If you want to access the Fieldgate from the Internet and have any problems, ask your provider for an Access Point, which assigns public IP addresses to GPRS users when you log in and change the name and access parameters, if necessary.

Note!

Private IP addresses also allow the operation of the device as described in GPRS On Demand.

Note!

After every log-in, a new dynamic IP address is assigned to the Fieldgate, under which it can be accessed, for example, on the Internet. The allocated address must be known to the user in order to be able to access the Fieldgate. (see Mail Assigned IP Address, Dynamic DNS Settings)

In the following table, the Access Point Names of the German mobile communications providers are listed as examples:

Internet	T-Mobile (D1)	Vodafone	E-Plus	o2 Germany
Access Point Name APN	internet.t-d1.de	volume.d2gprs.de	internet.eplus.de	internet
IP-Adresse	dynamisch			

Other Internet service provider settings can be found in chapter "Network parameters for GPRS connections" on P. 205.

GPRS Username

Some providers request authentication from the participant in the form of a user name and password for using the GPRS Access Points. This information must always be entered into the fields intended for this purpose, there are no default values stored on the SIM card for this. You can find out from your mobile communications provider which information needs to be entered here.

In the following table, the user name specifications for authentication to the stated Access Points of the German mobile communications providers are listed as examples:

Internet	T-Mobile (D1)	Vodafone	E-Plus	o2 Germany
Benutzername	td1 ¹	-	eplus	-

1) A user name and password must be entered. What is used for this is, however, irrelevant.

Other Internet service provider settings can be found in chapter "Network parameters for GPRS connections" on P. 205.

GPRS Password

In the following table, the password specifications for authentication to the stated Access Points of the German mobile communications providers are listed as examples:

Internet	T-Mobile (D1)	Vodafone	E-Plus	o2 Germany
Password	gprs ¹	-	gprs	-

1) A user name and password must be entered. What is used for this is, however, irrelevant.

Other Internet service provider settings can be found in chapter "Network parameters for GPRS connections" on P. 205.

GPRS QoS

The specifications under GPRS QoS define the required quality of the connection to the GPRS provider. When logging in to the GPRS provider, the Fieldgate can request a certain connection quality and specify a minimum quality for the connection. If the provider cannot fulfil the minimum quality criteria, no connection is made.

In most cases, standard values are stored on the SIM card and no specifications have to be made. Ask your mobile communications provider about this.

In the following table, the standard values of the German mobile communications providers are listed as examples:

Internet	T-Mobile (D1)	Vodafone	E-Plus	o2 Germany
Default QoS	3; 4; 3; 0; 0	3; 4; 3; 7; 31	2; 4; 3; 9; 31	2; 4; 3; 4; 31

Other Internet service provider settings can be found in chapter "Network parameters for GPRS connections" on P. 205.

10.3.8 Dynamic DNS Settings

In many applications, the Fieldgate has a dynamic IP address assigned to it if it is connected via a provider to the Internet or via a company router to an Intranet. Dynamic IP addresses change frequently, a new address is usually assigned each time you dial in or log in. The user requires this IP address in order to be able to access the Fieldgate, e.g. with an Internet browser.

There are basically the following options for finding out the current IP address of the Fieldgate:

- The Fieldgate sends a mail to the user (see "Mail assigned IP Address")
- The user reads the assigned address on-site with the service cable (see "Modem-Log")

The options mentioned are however somewhat inconvenient and difficult to use. The dynamic address management offers a simple solution by using a Dynamic Domain Name Service (DynDNS or DDNS). Here, the Fieldgate is assigned a fixed name (Domain Name), under which it can always be reached in future. DNS servers translated Domain Names into the valid IP addresses, DDNS servers can also manage dynamic addresses.

Get DynDNS URL (http://)

Every time you dial into the Internet, the Fieldgate has to inform the DDNS server of its current IP address. For this, a HTTP-Get-Request is sent to the DDNS server and must be specified under "Get DynDNS URL (http://)". The composition of the Get-Request is dependent on the DDNS provider used.

A known provider for this is, for example, www.DynDNS.org. Here, the request is composed as follows:

`http://username:password@members.dyndns.org/nic/update?system=dyndns&`

`hostname=yourhost.ourdomain.ext`

`myip=`

Example:

`mboeh:mbo30165@members.dyndns.org/nic/update?system=dyndns=FXA520PT01.ath.cx=`

L00-FXAY2Kxx-20-13-00-en-412

Update Cycle DynDNS

Various DDNS providers stipulate that the Fieldgate not only report to the DDNS server with the current IP address once per Internet dial-in, rather cyclically, for example every half an hour, once a day or once a week. The provider www.DynDNS.org does not require cyclic notification. Set the required value here.

Note!

The dynamic DNS function only functions with DynDNS providers which can receive current IP addresses on the basis of the HTTP-Get-Request described above.

10.4 "HART Setup" subfunction

The screenshot displays the 'Scan Control' subfunction with the following configuration options:

- HART Parameters:**
 - Master Type: Primary
 - Retries: 3
 - Preambles: 5
 - Highest HART Address: 15 (3163 allowed only for HART6 compatible installation)
 - Multiplexer Speed/RS485: 9600 Bit/s
 - Multiplexer Loop Search Mode: single analog
- Device Scan Control:**
 - Device Scan Cycle Time: continuously
 - Device Power-up Time: 20 sec
 - Power Down Devices between Scan Cycles: (ALARM relays functionality if set to 'no')
- Data Logging:**
 - Data Logging Cycle Time: 10 min

Buttons for 'Send' and 'Reset' are present at the bottom of each section. A note states: 'Sending will also rescan the HART channels'. The document ID 'L00-FXA20xx-20-13-00-en-001' is visible in the bottom right corner.

In this section, you can configure the parameters for the HART communication of the Fieldgate with the connected devices.

10.4.1 HART

The screenshot displays the 'HART Parameters' subfunction with the following configuration options:

- Master Type: Primary
- Retries: 3
- Preambles: 5
- Highest HART Address: 15 (3163 allowed only for HART6 compatible installation)
- Multiplexer Speed/RS485: 9600 Bit/s
- Multiplexer Loop Search Mode: single analog

Buttons for 'Send' and 'Reset' are present at the bottom. A note states: 'Sending will also rescan the HART channels'. The document ID 'L00-FXA20xx-20-13-00-en-002' is visible in the bottom right corner.

In this section, you can configure the HART interface parameters.

Note!

Generally, these values should not be changed. Approx. 1 second update time is required for every measured value in the overview.

Master Type

Select the master type - primary or secondary.

Retries

Here you can view the number of retries in the event of failed attempts to connect on the HART bus. "3" is the standard.

Preambles

Here you can view the number of preambles. "5" is the standard.

Highest HART Address

Select the number of addresses to be scanned per channel. "**15**" is the standard for HART5 (up to 63 for HART6). Only change this value if you operate over 15 devices on one channel.

Multiplexer Speed/RS485

Select the interface speed. If problems arise, set the speed to **9600 bit/s** (factory setting). The speed values must be the same for the Fieldgate and multiplexer (max. 38400 bit/s).

Note!

The same data transmission speed (= baud rate) must be set in the Fieldgate and multiplexer.

Multiplexer Loop Search Mode

Use this field to specify the HART short-form addresses a connected HART multiplexer should scan for.

- With "single analog," all the transmitters connected to the HART multiplexer are parameterized with the short-form address "0". In such instances, the multiplexer only looks for devices with the address "0".
- With "single unknown", transmitters are connected to the HART multiplexer that are parameterized with short-form addresses not equal to "0". In such instances, the multiplexer looks for devices with the address "0 - 15". This option means that scanning takes more time.

10.4.2 Device Scan Control

In this section, you set the scan options for determining the measured value.

Device Scan Cycle Time

Here, set how often the measured value should be determined. Choose between continuously and up to one day.

You can set the update time using the periodic e-mail sending cycle or the data logging cycle. To do so, select "**use email/log cycle**" to only have the e-mail cycle or data logging cycle specify the update time. In such instances, the measured values are only determined if a measured value mail should be sent or measured values are logged in the history memory.

Device Power-up Time

Once the sensors have been powered up, it is necessary to wait a set amount of time until a stable measured value can be determined. This is known as the "**Device Power-up Time**". Here you set the time which is required at maximum for the slowest measurement after powering up again or which is determined by the slowest connected sensor.

Power Down Devices between Scan Cycles

If you enable this checkbox in the Administrator Mode (a **"yes"** appears in the User Mode), the integrated all-or-nothing relay is opened between two measurements ("Device Scan Cycle Time") ("Power Down Mode). If the checkbox is not enabled, the relay is de-energised in an alarm status. This function can be used to switch off the sensor power supplies between the measurements in order to save energy, e.g. for self-sufficient applications (Power Down Mode). In addition, in the solar version the sensor power supply of the FXA320 is deactivated for both channels between the scan cycles. This may eliminate the use of additional relays for switching off connected sensors.

10.4.3 Data Logging

Data Logging Cycle Time

Use this function to specify how often and when measured values should be logged to the history memory.

You have the following options here:

- Select the cycle between 5 minutes and up to one week
- Select fixed times for saving the measured values.
- Select **"Use Scan Cycle"** to have the scan cycle specify the logging cycle. Here, the measured values are always saved every time the measured value is determined.

A new measurement is always carried out before the measured values are saved.

Log Events

If you switch on this control box in Administrator mode (a **"yes"** appears in User mode), every time an event occurs (e.g. limit value violation or device error), all the data records of the connected devices and internal interfaces are recorded at this moment.

10.5 "Special" subfunction

With this function, the tags are displayed for the 4...20 mA inputs and internal sensors (if these were hidden). The following examples explain how you can activate/deactivate the display of the 4...20 mA inputs and the internal sensors (board temperature and board voltage).

The screenshot shows the 'Special' subfunction interface. At the top, there are navigation tabs: 'AutoRefresh', 'Refresh', and 'Endress+Hauser'. Below these are sub-tabs: 'Overview of connected Devices', 'Switch to User Mode', and 'Information & Configuration...'. A secondary row of tabs includes 'Fieldgate Location', 'User Setup', 'Network Setup', 'Scan Control', 'Special', and 'Information'. The main content area is titled 'Special' and contains a section for 'Internal Sensors'. Under this section, there are links for '4...20mA Channel 1', '4...20mA Channel 2', 'Board Temperature', and '5V Supply'.

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A detailed presentation of the individual sensors can be obtained when you select a tag with the left mouse key (e.g. "5V Supply").

The screenshot shows the 'Tag details:internal:_5V' interface. It features a table for 'Description/Range/Limit/Alarm Setup' with columns: 'Show in Overview', 'Description', 'Actual Value', 'Device Status', 'Limit Status', 'max. Value min. Value', 'Limitsettings', 'Hysteresis Reentering Limit', 'Mail on -Limit Alarm - Alarm Reset', 'Mail on Measurement Gradient (dvidt)', and 'Show Switch level Switch status below / over'. The 'Actual Value' column shows '5.05 V' with a timestamp '19.07.2005 10:50:51'. The 'Device Status' column shows 'ok'. The 'Limit Status' column shows 'OK' with a timestamp '15.07.2005 16:59:04'. Below the table, there are 'Send' and 'Reset' buttons, and a checkbox for 'Email all Device Parameters to Measurement Recipients'. The 'Sensor Tag Setup' section at the bottom has a 'Tag' field with the value '_5V' and 'Send'/'Reset' buttons. The footer shows 'Current Time: 19.07.2005 10:50:57 (UTC+2h)' and 'XML Data'.

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The following examples offer an explanation about how presentation of the 4...20 mA inputs and internal sensors (Board Temperature and Board Voltage) can be activated/deactivated in the "Overview of connection Devices" function.

Example for deactivating the display

AutoRefresh ON		Refresh		Endress+Hauser	
Overview of connected Devices		Switch to User Mode		Information & Configuration...	
Fieldgate 'FXA520-TSR'					
Current Time:			XML Data		
TAG	Description	Actual Value dd.mm.yyyy hh:mi:ss	Devicestatus/Limit dd.mm.yyyy hh:mi:ss	max. Value	min. Value
_TEST	LIC 080 Channel 1	110.00 % -	uncertain	110.00 %	-10.00 %
_TEST	LIC 081 Channel 2	110.00 % -	uncertain	110.00 %	-10.00 %
TSR 2002	Endress+Hauser FMU4xx / Prosonic M	2.42 m -			
_4..20mA-1	Endress+Hauser internal	0.02 mA -			
_4..20mA-2	Endress+Hauser internal	0.03 mA -			
_5V	Endress+Hauser internal	5.10 V -	OK		
_boardtemp	Endress+Hauser internal	31.29 °C -	OK		
Current Time:			XML Data		

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1. Left-click the tag name **"Board Temp"**, for example.
2. Switch to administrator mode.

AutoRefresh ON		Refresh		Endress+Hauser						
Overview of connected Devices		Switch to User Mode		Information & Configuration...						
Tag details: internal: _boardtemp										
Description/Range/Limit/Alarm Setup										
Show in Overview	Description	Actual Value dd.mm.yyyy hh:mi:ss	Device Status	Limit Status dd.mm.yyyy hh:mi:ss	max. Value min. Value	Limitsetting Low Low	Limitsetting High High	Hysteresis Reentering Limit	Mail on -Limit Alarm - Alarm Reset	Mail on Measureme Gradient (dvd/dt)
<input type="checkbox"/> PV		31.29 ° C -	OK			0.00	65.00		<input type="checkbox"/>	C / minute
Send Reset										
SensorHide/SensorError Setup										
Tag		_boardtemp								
Send Reset										
Current Time:			XML Data							

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3. Deactivate the checkbox for **"Show in Overview"** and click **"Send"** to confirm this setting.

- The display of the internal sensor e.g. **"Board Temp"** is thereby deactivated and is no longer displayed in the user interface.

AutoRefresh ON		Refresh		Endress+Hauser	
Overview of connected Devices		Switch to User Mode		Information & Configuration...	
Fieldgate 'FXA520-TSr'					
Current Time:		XML Data			
TAG	Description	Actual Value dd.mm.yyyy hh:miss	Devicestatus/Limit dd.mm.yyyy hh:miss	max. Value min. Value	
TEST	LIC 080 Channel 1	110.00 % -	uncertain	110.00 % -10.00 %	
TEST	LIC 081 Channel 2	110.00 % -	uncertain	110.00 % -10.00 %	
TSR 2002	Endress+Hauser FMU4xx / Prosonic M	2.42 m -			
4..20mA-1	Endress+Hauser internal	0.02 mA -			
4..20mA-2	Endress+Hauser internal	0.03 mA -			
5V	Endress+Hauser internal	5.10 V -	OK		
Current Time:		XML Data			

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Example for activating the display

AutoRefresh ON		Refresh		Endress+Hauser	
Overview of connected Devices		Switch to User Mode		Information & Configuration...	
Fieldgate 'FXA520-TSr'					
Current Time:		XML Data			
TAG	Description	Actual Value dd.mm.yyyy hh:miss	Devicestatus/Limit dd.mm.yyyy hh:miss	max. Value min. Value	
TEST	LIC 080 Channel 1	110.00 % -	uncertain	110.00 % -10.00 %	
TEST	LIC 081 Channel 2	110.00 % -	uncertain	110.00 % -10.00 %	
TSR 2002	Endress+Hauser FMU4xx / Prosonic M	2.42 m -			
4..20mA-1	Endress+Hauser internal	0.02 mA -			
4..20mA-2	Endress+Hauser internal	0.03 mA -			
Current Time:		XML Data			

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1. Switch to administrator mode.
2. Switch to the "Information & Configuration → Special" function

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3. Using the left mouse button, select one of the 4...20 mA inputs or an internal sensor e.g. "5V Supply" for the board voltage.

Show in Overview	Description	Actual Value dd.mm.yyyy hh:miss	Device Status	Limit Status dd.mm.yyyy hh:miss	max. Value min. Value	Limitsetting Low Low	Limitsetting High High	Hysteresis Reentering Limit	Mail on -Limit Alarm - Alarm Reset	Mail on Measureme Gradient (dv/dt)
<input checked="" type="checkbox"/>	PV	5.09 V		OK		4.50	5.50		<input checked="" type="checkbox"/>	V / minute

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4. Activate the checkbox for "Show in Overview" and click "Send" to confirm this setting.

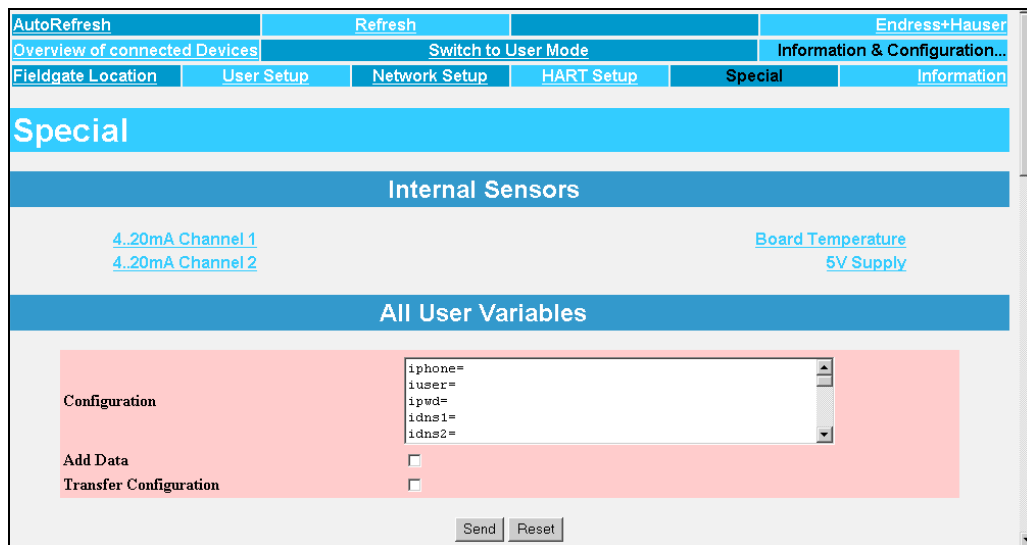
- The display of the internal sensor e.g. "5V" is thereby activated and is displayed in the user interface.

AutoRefresh ON		Refresh		Endress+Hauser	
Overview of connected Devices			Switch to User Mode		Information & Configuration...
Fieldgate 'FXA520-TSr'					
Current Time:		XML Data			
TAG	Description	Actual Value dd.mm.yyyy hh:mi:ss	Devicestatus/Limit dd.mm.yyyy hh:mi:ss	max. Value min. Value	
TEST	LIC 080 Channel 1	110.00 % -	uncertain	110.00 % -10.00 %	
TEST	LIC 081 Channel 2	110.00 % -	uncertain	110.00 % -10.00 %	
TSR 2002	Endress+Hauser FMU4xx / Prosonic M	2.42 m -			
4..20mA-1	Endress+Hauser internal	0.02 mA -			
4..20mA-2	Endress+Hauser internal	0.03 mA -			
5V	Endress+Hauser internal	5.10 V -	OK		
Current Time:		XML Data			

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Example of display in administrator mode

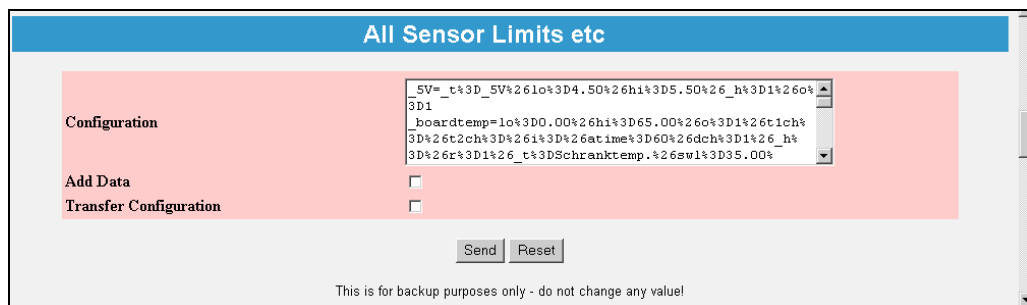
In the administrator mode, the entire configuration, saved as text on this page, is also available.



L00-FXAY2Kxx-20-13-00-en-413

Caution!

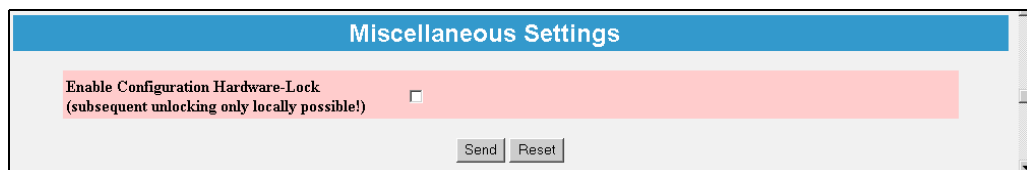
Do not change anything here! These data are for back-up purposes.



L00-FXAY2Kxx-20-13-00-en-324

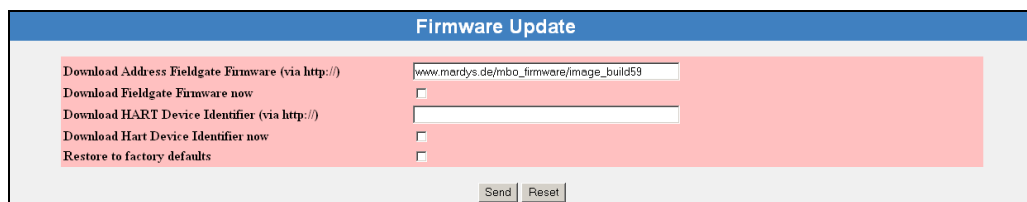
Caution!

Do not change anything here! These data are for back-up purposes.



L00-FXAY2Kxx-20-13-00-en-325

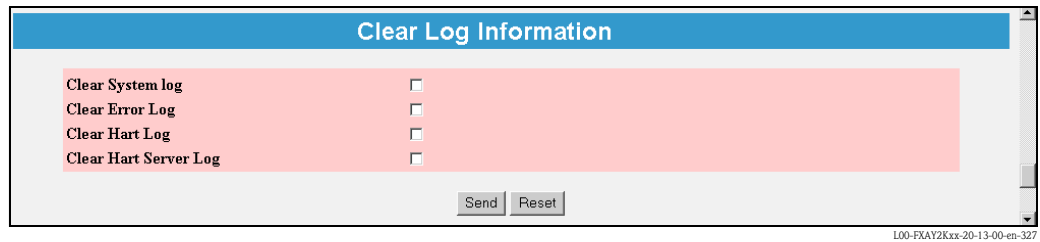
For activating the on-site hardware lock, see → Chap. 11.



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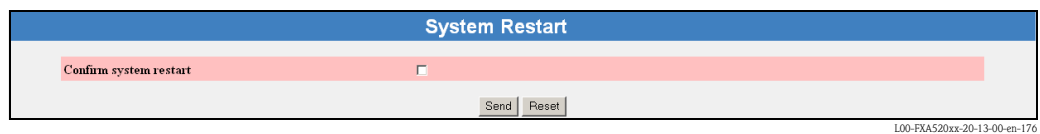
Caution!

Do not change anything here! These data are for back-up purposes.



The screenshot shows a web interface titled "Clear Log Information". It contains four checkboxes for clearing logs: "Clear System log", "Clear Error Log", "Clear Hart Log", and "Clear Hart Server Log". Below these checkboxes are "Send" and "Reset" buttons. The interface is highlighted with a red background. A small reference number "L00-FXA520xx-20-13-00-en-327" is visible in the bottom right corner.

When the individual control boxes are activated, the log files, which are described from
→ Chap. 10.6.2 onwards, are deleted.



The screenshot shows a web interface titled "System Restart". It contains a single checkbox labeled "Confirm system restart". Below the checkbox are "Send" and "Reset" buttons. The interface is highlighted with a red background. A small reference number "L00-FXA520xx-20-13-00-en-176" is visible in the bottom right corner.

When the control box is activated, the Fieldgate software is restarted.

This function takes about 20 seconds. All current connections are interrupted by the system restart and must be set up again, if necessary (analog, GSM, PC cable). Existing connections may need to be closed first.

10.6 "Information" subfunction

AutoRefresh	Refresh	Endress+Hauser		
Overview of connected Devices	Switch to User Mode			Information & Configuration...
Fieldgate Location	User Setup	Network Setup	HART Setup	Special Information
Information				
Hardware Configuration				
General	FXA520-AA1B			
Hardware Versions	V1.00			
Firmware Version	01.02.02-059 20040315			
OS Version	3.18			
Software Checksum	System: 0xd612, DD: 0xdae9			
Serial Number	530048010A0			
MAC address	00:07:05:00:02:ff			
Total Uptime	48d 08h 09m 55s			
Current Uptime	1d 14h 29m 55s			
Reboot Counter	116			
Available Memory	188364			
Bytes Received	48074			
Bytes Sent	607212			
System Log				
<pre> 20040316-215229: time fetched (time) 20040316-215229: internal time 1s behind 20040316-225233: time fetched (time) 20040316-235236: time fetched (time) 20040316-235236: internal time 1s ahead 20040317-000507: email delivered to 1st recipient measurement: FXA520 MBO: Periodic Measurement - 005 20040317-000509: email delivered to 2nd recipient measurement: FXA520 MBO: Periodic Measurement - 005 20040317-005237: time fetched (time) 20040317-005237: internal time 1s behind 20040317-015240: time fetched (time) 20040317-025242: time fetched (time) 20040317-025242: internal time 1s behind 20040317-030507: email delivered to 1st recipient measurement: FXA520 MBO: Periodic Measurement - 005 20040317-030508: email delivered to 2nd recipient measurement: FXA520 MBO: Periodic Measurement - 005 20040317-035246: time fetched (time) 20040317-035246: internal time 1s ahead 20040317-045247: time fetched (time) 20040317-045247: internal time 1s behind 20040317-055251: time fetched (time) 20040317-055251: internal time 1s ahead 20040317-060506: email delivered to 1st recipient measurement: FXA520 MBO: Periodic Measurement - 005 20040317-060508: email delivered to 2nd recipient measurement: FXA520 MBO: Periodic Measurement - 005 20040317-065253: time fetched (time) 20040317-075255: time fetched (time) 20040317-081836: changing config page 'loc' from 195.119.80.252 </pre>				
Error Log				
HART Log				
<pre> 20040315-175256: Device '110e5dc802': detected 20040315-175257: Device '1def1006f6': detected 20040315-175257: Device '1105d50007': detected 20040316-180512: Device '110e5dc802': disconnected </pre>				
HART-Server Log				
Current Time: 17.03.2004 08:32:30 (UTC+1h)				

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In this section, you receive the current hardware configuration, system run times and log files.

10.6.1 Hardware Configuration

Hardware Configuration	
General	FXA520-AA1B
Hardware Versions	V1.00
Firmware Version	01.02.02-059.20040315
OS Version	3.18
Software Checksum	System: 0xd612, DD: 0xdae9
Serial Number	530048010A0
MAC address	00:07:05:00:02:ff
Total Uptime	48d 08h 09m 55s
Current Uptime	1d 14h 39m 55s
Reboot Counter	116
Available Memory	188364
Bytes Received	48074
Bytes Sent	607212

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In this section, you receive an overview of the hardware configuration.

General

The complete product designation of the Fieldgate (see nameplate) is displayed here.

Hardware Versions

The hardware version of the Fieldgate is displayed here.

Firmware Version

The firmware version of the Fieldgate is displayed here.

Software Checksum

The software checksum can be used to check whether the software in the device has been transmitted without error.

Operating System

Version of the operating system used.

Serial Number

The serial number of the Fieldgate is displayed here.

MAC Address

The unique Ethernet MAC address of the Fieldgate is displayed here (only with Ethernet version).

Total Uptime

The total system run time (= operated hours counter) is displayed here.

Current Uptime

The system run time since the last restart or power up is displayed here.

Reboot Counter

The number of reboots caused by restarting and switching on the Fieldgate is displayed here.

Available Memory

The memory still available in the Fieldgate is displayed here in bytes.

Bytes Received

Number of bytes received of the Fieldgate.

Bytes Sent

The number of received/sent bytes of the Fieldgate is displayed here. It is a way of measuring the frequency of access.

IMEI number (only for GSM version)

Stands for **I**nternational **M**obile station **E**quipment **I**ntity and denotes a type of serial number for the GSM end device in use, from the point of view of the mobile communications provider. The mobile communications network can use the IMEI number to identify a particular device each time it dials in and to enable or disable it with regard to particular functions.

DAT Module

This tells us the size of the memory in KBit of the DAT module used for configuration storage and data logging.

Data logging is possible as of a 256K memory.

Copying the Fieldgate configuration to the DAT module

Once you have configured the Fieldgate, you can copy this configuration to the DAT module. To do so, you must switch off the Fieldgate and insert the DAT module in the socket (6) (→ Fig. 10 on Page 16) provided. Then keep button (7) pressed and switch on the Fieldgate. The red LED (2) flashes for approx. 5 s. In this interval, you must release the button (7) and the Fieldgate configuration is stored in the DAT module.

Copying the configuration from the DAT module to the Fieldgate

For this, you must de-energize the Fieldgate and insert the DAT module. When switched on again, the data are copied from the DAT module into the internal EEPROM of the Fieldgate.

10.6.2 System Log

```

System Log
0020719-090807: time fetched (time)
0020719-090811: email delivered to alarm: fxa520-weather: System Rebooted - 100
0020719-090904: email delivered to measurement: fxa520-weather: Periodic Measurement (reboot) - 000
0020719-094017: changing sensor data ' 4.20mk-1' from 193.158.100.74
0020719-120006: email delivered to measurement: fxa520-weather: Periodic Measurement - 005
0020719-180012: email delivered to measurement: fxa520-weather: Periodic Measurement - 005
0020719-180010: email delivered to measurement: fxa520-weather: Periodic Measurement - 005
0020720-060008: email delivered to measurement: fxa520-weather: Periodic Measurement - 005
0020720-120007: email delivered to measurement: fxa520-weather: Periodic Measurement - 005
0020720-180004: email delivered to measurement: fxa520-weather: Periodic Measurement - 005
0020721-000006: email delivered to measurement: fxa520-weather: Periodic Measurement - 005
0020721-060010: email delivered to measurement: fxa520-weather: Periodic Measurement - 005
0020721-120005: email delivered to measurement: fxa520-weather: Periodic Measurement - 005
0020721-180006: email delivered to measurement: fxa520-weather: Periodic Measurement - 005
0020722-000005: email delivered to measurement: fxa520-weather: Periodic Measurement - 005
0020722-060012: email delivered to measurement: fxa520-weather: Periodic Measurement - 005
    
```

L00-FXA520xx-20-13-00-en-031

This section displays all the activities since the last start, e.g. e-mail delivery, time fetch, alarms, etc. Up to 25 lines are displayed. After switch-off, these data are gone.

System log message	Description
changing config page '<page-name>' from <ip-addr>	A configuration page has been changed from the IP address indicated Possible <page-name>s: <ul style="list-style-type: none"> ■ loc: Fieldgate Location ■ user: User Setup ■ if: Network Setup ■ hart: HART Setup ■ special: Special ■ info: Information
changing sensor data '<device-id>' from <ip-addr>	Field device data have been changed from the IP address indicated
DHCP: got ip address '<ip-addr>'	Ethernet: an IP address has been assigned to the Fieldgate by the DHCP server
email delivered to alarm: <subject> email delivered to 1st recipient alarm: <subject> email delivered to 2nd recipient alarm: <subject>	An alarm e-mail has been sent to the alarm address
email delivered to measurement: <subject> email delivered to 1st recipient alarm: <subject> email delivered to 2nd recipient alarm: <subject>	A measured value e-mail has been sent to the measured value address
hardware-lock closed	The hardware lock has been closed (i.e. the configuration of the Fieldgate and the connected field devices can now no longer be remotely altered)
hardware-lock opened	The hardware lock has been opened
<ul style="list-style-type: none"> ■ service adapter connected ■ service adapter aborted ■ service adapter disconnected 	<ul style="list-style-type: none"> ■ service adapter has been connected ■ service adapter cable has been disconnected ■ connection via service adapter has been aborted
time fetched (<protocol>) <ul style="list-style-type: none"> ■ internal time <seconds>s ahead ■ internal time <seconds>s behind 	Time has been fetched from the Internet. The internal clock has been adjusted accordingly.
User '<user>' changed password from <ip-addr>	A user has changed his/her password from the IP address indicated
SMS send to xxxxxx	A short SMS message has been sent to telephone number xx.
Get successful DynDns	The Fieldgate was able to register with its IP address at a dynamic domain server and can now be reached via its configured symbolic address .

10.6.3 Error Log

Error Log
20020807-133847: User 'eh' password change failed from 193.158.100.74 (urpwd)
20020807-133921: User 'eh' password change failed from 193.158.100.74 (urpwd)
20020807-133956: User 'super' password change failed from 193.158.100.74 (urpwd)

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In this section, Fieldgate error messages are stored, e.g. failed password change etc. Up to 25 lines are displayed. After switch-off, these data are gone.

Error log message	Description
cannot deliver email: alarm address not specified	Alarm e-mail could not be sent since the alarm address is not specified
cannot deliver email: measurement address not specified	ditto for measured values
cannot deliver email: transmission failed to alarm cannot deliver mail to 1st recipient transmission failed alarm SMTP Send Error Cannot deliver mail to 2nd recipient transmission failed alarm SMTP Send Error	Alarm e-mail could not be sent. The SMTP gateway returned an error when sending the e-mail (possible causes: invalid address, recipient's mail box full, etc.)
cannot deliver email: transmission failed to measurement	ditto for measured values
cannot deliver email: wrong smtp gateway (or down?) or alarm address specified SMTP OPEN ERROR <errorcode>	Alarm e-mail could not be sent. The SMTP gateway could not be reached. Possible cause: invalid SMTP gateway specified (typo, incorrect gateway address, gateway requires authentication (currently not supported))
cannot deliver email: wrong smtp gateway (or down?) or measurement specified SMTP OPEN ERROR <errorcode>	ditto for measured values
Cannot set IP address	Ethernet: IP address could not be set. Possible cause: impermissible IP address structure (only the format a.b.c.d (e.g. 192.168.22.33) is allowed)
Cannot set netmask	ditto for the netmask (cannot be set by user!)
Constant data scan aborted (timeout)	Constant field device data scan has timed out (300s). This can only occur in extremely disturbed environments
DNS initialization failed	Ethernet: initialisation of the DNS has failed. This indicates incorrect DNS specifications.
email queue full	E-mail queue is full. The error message is triggered if the Fieldgate generates e-mails more quickly than they can be sent (e.g. SMTP gateway cannot be reached, many messages in quick succession)
Limit of 30 HART devices reached	More than 30 HART field devices (incl. P+F multiplexer) are connected to the Fieldgate. The Fieldgate can only handle a maximum of 30 channels.
Modem DNS initialization failed	DNS: initialisation of the DNS has failed. This indicates incorrect DNS specifications.
Sensor Environment Overflow. Removing data fo Sensor <device-id>	Data from the field device configuration memory (memory for limit values etc.) in the Fieldgate must be removed since overflow has occurred. It is guaranteed that the data for 30 field devices can be stored
time service: cannot access http time service	The time cannot be called up from the http server (web server). Select another time protocol.
time service: cannot connect to server	The connection to the time server cannot be established. Check server data specified.
time service: cannot create socket	Should not occur during operation
time service: http server returned <errcode>	The http time served has returned an error
time service: ill time pattern received from server	The http time server has returned an invalid answer. Select another server.

Error log message	Description
time service: illegal reply from sntp server	The sntp time server has returned an invalid answer. Select another server.
time service: incompatible protocol version on server	The sntp time server returns an incompatible protocol version. Select another time protocol or another server.
time service: remote server not synchronized	The sntp time server is not synchronised. Select another server.
time service not correctly configured	The sntp/time server has not been specified correctly
User '<username>' password change failed from <ip-addr> (<errfield>)	A user has attempted to change his/her password. This attempt failed. This can indicate an attack on the Fieldgate
SMS queue full	The SMS queue is full. The error message is triggered when SMSs are generated more quickly than they can be sent.
cannot send SMS to xxxx	An SMS could not be sent to telephone number xxxx. This error message can occur when the Fieldgate does not have a connection to the provider.
cannot get DynDns	The Fieldgate could not transmit its IP address to a dynamic domain name server. This message can occur when there are syntax errors in the GPRS-URL entry or when the server malfunctions.
time service: illegal reply from daytime server	A malfunction response when the time synchronisation is requested via the DAYTIME protocol .

10.6.4 HART Log

```

HART Log
00020719-090857: Device '11e81b80f6': detected
00020719-090857: Device '11070fb7f9': detected
00020719-090857: Device '110f191fc3': detected
00020719-090857: Device '11423b01e0': detected
    
```

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In this section, messages relating to HART communication are stored, e.g. device detected/removed etc. Up to 25 lines are displayed. After switch-off, these data are gone.

HART log message	Description
Device '<device-id>': detected	Device with the HART-ID indicated has been detected
Device '<device-id>': disconnected	Device with the HART-ID indicated has disappeared
Device '<device-id>': ID changed from '<id-old>' to '<id-new>' ¹	
Device '<device-id>': tag '<tag>' already assigned to device '<device-id>' ¹	
Device '<device-id>': tag removed ¹	
Device '<device-id>': tag renamed from '<tag-old>' to '<tag-new>' ¹	

1) Currently not activated!

10.6.5 HART-Server Log

```

HART-Server Log ?
00020807-130059: 'Hallo' logged in with MD5 authorization from 192.168.33.53
00020807-130102: 'Hallo' logged off from 192.168.33.53
    
```

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In this section, messages relating to the HART server are stored, e.g. Telnet login etc. Up to 25 lines are displayed. After switch-off, these data are gone.

HART server log message	Description
'<username>' logged in from <ip-addr>	Someone has logged onto the HART server from the IP address indicated (plain text authentication)
'<username>' logged in with MD5 authorization from <ip-addr>	ditto with MD5 authentication
'<username>' logged off from <ip-addr>	Someone has logged off the HART server
'<username>' selected ill protocol '<protocol>' from <ip-addr>	Protocol selected is invalid
'<username>' wrong user/password form <ip-addr>	Invalid user/password

10.6.6 Modem Log

Up to 25 lines are displayed. After switch-off, these data are gone.

Modem log message	Type of connection	Description
dial in (Server) carrier lost (Server) hangup requested by command (Server) hangup (Server)	Modem / GSM	Diagnosis messages for dial-in with Fieldgate
dial in disabled!	Modem / GSM	Fieldgate was called (with maximum number of rings) but dial-in is not allowed
dial in to ISP <phone-number> authentication failed assigned IP: <ip-addr> carrier lost hangup requested by command hangup	Modem / GSM	Diagnosis messages for dial-in with ISP
initiating call back	Modem / GSM	Call-back to ISP started due to ringing
No Signal!	GSM	The GSM module does not have any reception signal
Pin ERROR	GSM	An invalid pin has been specified
Pin Ok	GSM	Pin is OK
User defined AT: <at-cmd>	Modem / GSM	User-defined AT commando output
FAILED: timeout	Modem / GSM	Command at modem triggered a timeout
FAILED: <modem-response>	Modem / GSM	Command at modem returned an unexpected response
OK: <modem-response>	Modem / GSM	Command at modem returned an expected response
GSM signal = 15	GSM	Signal quality of the GSM signal must be between 10-30 (30: best signal).
No signal!	GSM	No GSM signal or signal quality insufficient .
Provider: "T-Mobile D"	GSM	SM provider to which the Fieldgate has dialled in to.
Pin xxxx ist not correct-> ERROR		An attempt has been made to enter the PIN as xxxx, which is presumably not the correct code.
Last retry to set a correct PIN		After the next incorrect attempt to enter the PIN, the SIM card is locked SIM Card defect SIM card or SIM card holder is defective.
SIM Card defect		SIM card or SIM card holder is defective.
SIM PUK required		The SIM card is locked and can only be unlocked by entering the PUK .
PIN Error -> SIM PIN		The first entry of the PIN code was an incorrect value.
PIN Error ->SIM PUK		The SIM card is locked and can only be unlocked by entering the PUK code .
dial in disabled! No provider		The Fieldgate was not able to dial in to a provider. The dial-in function is, therefore, disabled.
initiating GPRS connection		A GPRS connection is being initiated.
dial in to GPRS-network: APN not set->use defaults		The parameters for the access point name at the GPRS have not been configured. The Fieldgate tries again with the standard parameters of the SIM card.

Modem log message	Type of connection	Description
dial in to GPRS-network: internet.t-d1.de		A GPRS connection to the GPRS access point name APN internet.t-d1.de has been established. The APN is provider-dependent.
GPRS-QOS: not set/use defaults		The parameters for the quality of service have not been configured. The Fieldgate adopts the standard parameters of the SIM card.
GPRS-QOS: 3,4,3,0,0		The parameters for the quality of service have been set to the configured values. The GPRS QOS are provider-dependent.

11 Hardware locking

Fieldgate FXA520 has a mechanism which prevents unauthorized access to the configuration of the Fieldgate and all connected devices by means of an integrated hardware locking system. For this reason, access is also prevented to the connected devices using a HART operating tool via the HART client. If this protective function is activated, read and write access to all the configuration pages apart from the **"User Setup"** is only possible if access was explicitly enabled for a temporary period by pressing the button (7) (→ Fig. 10 on Page 16) locally on the Fieldgate.

Activating the hardware lock

Hardware locking can be activated in the administrator mode.

The corresponding configuration section can be found in

"Information & Configuration → Special → Miscellaneous Settings".

The screenshot shows the configuration interface for the Fieldgate FXA520. The top navigation bar includes 'Overview of connected Devices', 'Refresh', 'Switch to User Mode', and 'Endress+Hauser'. Below this, there are tabs for 'Fieldgate Location', 'User Setup', 'Network Setup', 'HART Setup', 'Special', and 'Information'. The 'Special' menu is selected, showing 'Internal Sensors' and 'All User Variables'. The 'All User Variables' section contains a configuration table with fields for 'iphone=', 'iuser=', 'ipwd=', 'ids1=', and 'ids2='. Below this is a 'Send' and 'Reset' button. The 'All Sensor Limits etc' section contains a configuration table with fields for '4..20mA-2*', 'BoardTemp', and '11070db7f9='. Below this is a 'Send' and 'Reset' button. The 'Miscellaneous Settings' section is highlighted in red and contains the 'Enable Configuration Hardware-Lock' checkbox, which is currently unchecked. Below this is a 'Send' and 'Reset' button. A note at the bottom of the 'Miscellaneous Settings' section reads: 'This is for backup purposes only - do not change any value!'.

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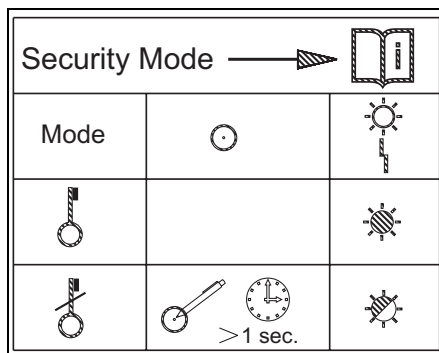
You must first tick the checkbox for **"Enable Configuration Hardware-Lock (subsequent unlocking only locally possible!)"** which can be found here". Hardware locking is then activated by clicking the **"Send"** button.

The close-up screenshot shows the 'Miscellaneous Settings' section. The 'Enable Configuration Hardware-Lock (subsequent unlocking only locally possible!)' checkbox is currently unchecked. Below the checkbox are 'Send' and 'Reset' buttons.

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If button (7) (→ Fig. 10 on Page 16) of the Fieldgate is now kept pressed for longer than one second, access to the Fieldgate configuration is given for five minutes. In addition, exactly one connection via the HART Client can be established in this time, whereby operation of the connected devices is made possible via HART tools such as the ToF Tool.

If the button is pressed down for longer than five seconds, the hardware lock is reset.



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Note!

If necessary, complete access is always possible with the PC cable via the service interface in spite of hardware locking.

Deactivating the hardware lock

To be able to deactivate the hardware lock, you must first press the button to release the system and then proceed as when activating, whereby this time you have to untick the checkbox.

12 WAP function

12.0.1 Wireless Application Protocol

The **Wireless Application Protocol (WAP)** is a standard for mobile end devices to access specially programmed Internet pages, in WML (Wireless Markup Language). This language has been optimised for displaying text and simple graphics on small mobile phone displays. This provides you with all services for mobile use.

Every Fieldgate can deliver information for WAP-capable mobile phones. This is done in the form of specially adapted WML pages with a restricted scope of functions. The WAP function is always useful if the Fieldgate can be accessed with a public IP address on the Internet. The following are examples of conceivable options:

- Ethernet Fieldgate is connected to the Internet via a router
- Analog Fieldgate is dialled into an ISP and is therefore connected to the Internet
- GSM Fieldgate is dialled into an ISP and is therefore connected to the Internet
- GSM Fieldgate is in "Always-on-operation" thanks to GPRS and has a public IP address



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12.0.2 Homepage of the Fieldgate WAP :

To open the WAP homepage for the Fieldgate, use your mobile phone's WAP browser. The access address (URL) is composed as follows:

`http://<IP address or Domain Name>/index.wml`

Example:

`http://www.fieldgate.de/index.wml` or `http://212.227.127.81/index.wml`

12.0.3 How do I use WAP?

A WAP-capable mobile phone is required for using WAP. Virtually all of the devices available today support this function. The mobile communications provider used must also offer the corresponding service. If necessary, various settings have to be made on your mobile phone in order to use the service. Please ask your mobile communications provider about this.

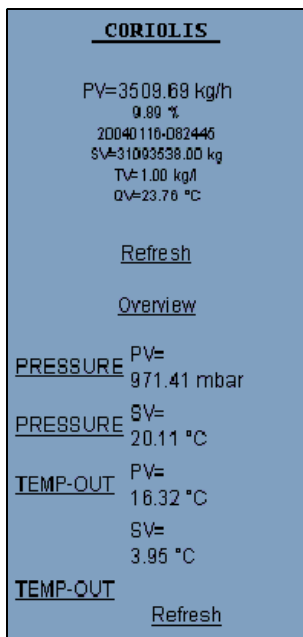
An additional requirement for using the WAP function of the Fieldgate is that basically all pages on the Internet can be accessed via the WAP service of the mobile communications provider.

12.0.4 The Fieldgate provides the following contents via WAP:

■ Startseite/Übersicht

Overview of all available measured values corresponding to the "Overview of connected devices" function restricted to the display of TAG and current measured value

- TAG information.
- Measured value with unit (primary and secondary value if selected in the "show in overview" function). Primary value displayed as PV= <value> <unit>, secondary value displayed as SV, TV, QV=<value> <unit>.

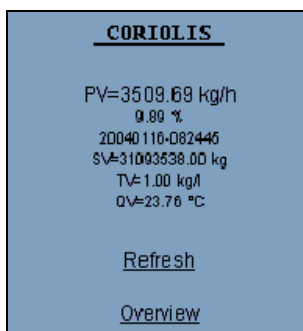


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■ Detailansicht Feldgeräte

Detailed view of the connected devices according to the "TAG" parameter restricted to the measured values specifying the time stamp

- TAG information.
- Measured value with unit and time stamp (primary and secondary value, if selected in the "show in overview" function). Primary value displayed as PV= <value> <unit> <timestamp>, secondary value displayed as SV, TV, QV=<value> <unit> <timestamp>.



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13 Data Logging

Fieldgate FXA520 has a data logging function for buffering measured values and events if a DAT module with min. 256K memory is being used.

The DAT module value currently used can be read out under "DAT Module" (→ Page 119) in the "Hardware Configuration" area on the "Information & Configuration -> Information" page.

In contrast to the old 128K modules, new DAT modules with min. 256K memory have an additional memory section for history data.

If such a DAT module is used, the functions for data logging are activated in the Fieldgate.

Note!

The data logging function can only be used if the time and date are parameterized in Fieldgate. For this purpose, under "Information & Configuration -> Network Setup -> Time Server Configuration" please either enter a time server that can be accessed by Fieldgate or set the time manually.

The measured values of the connected sensors or the internal Fieldgate interfaces are saved in the form of data records in XML format. The logged data are also referred to as history data and can be called up with history.xml or sent as an e-mail.

13.1 Structure and contents of the recorded data in the "history.xml" document

The history.xml document comprises a standard header with basic information on the Fieldgate and the saved measured value data records arranged under this information.

Every measured value data record contains all the available measured value variables of the connected transmitter or the internal interface with a time stamp. The time stamp indicates the time of the measurement. Constant parameters, such as units, designations and limit values are not saved.

13.1.1 Every measured value data record has the following elements in its contents:

Example of data record with 2 measured values / device or interface:

```
<device id="11070fb7f9">
  <vtime>20050601-073140</vtime>
  <vtz>120</vtz>
  <vstslvl>0</vstslvl>
  <v1>988.65</v1>
  <v2>20.56</v2>
</device>
```

Example of data record with 4 measured values / device or interface:

```
<device id="1151fe1dde">
  <vtime>20050602-124303</vtime>
  <vtz>120</vtz>
  <vstslvl>0</vstslvl>
  <v1>3533.85</v1>
  <v2>26637092.00</v2>
  <v3>1.00</v3>
  <v4>23.86</v4>
</device>
```

Device ID - Node Identifier

Unique identifier of the connected device or internal interface channel

`< device id="ID" > ... </device>`

Time Stamp

Measurement time of the device variables

`<vtime>YYYYDDMM-HHMMSS</vtime>` UTC time format

Timezone

`<timezone>minutes</timezone>` time difference to UTC in minutes
negative values signed
positive values unsigned

Status Level of the connected device / internal interface channel

`<vstslvl>status</vstslvl>` valid values:
0 = OK
1 = WARNING
2 = ERROR

Device Variables (without unit)

`<vx>value</vx>` values could be integer or float

Every new data record is appended to the existing data records in the "history.xml" document. If the logging memory overruns, the oldest data record in the memory is overwritten and, in the XML document, the top-most data record disappears from display as a result.

13.1.2 Example

First entry for a device

```
<device id="11070fb7f9">
  <vtime>20050601-073140</vtime>
  <vtz>120</vtz>
  <vstslvl>0</vstslvl>
  <v1>988.65</v1>
  <v2>20.56</v2>
</device>
```

Second entry for a device

```
<device id="11070fb7f9">
  <vtime>20050601-083140</vtime>
  <vtz>120</vtz>
  <vstslvl>0</vstslvl>
  <v1>940.23</v1>
  <v2>21.56</v2>
</device>
```

Third entry for a device

```
<device id="11070fb7f9">
  <vtime>20050601-093140</vtime>
  <vtz>120</vtz>
  <vstslvl>0</vstslvl>
  <v1>902.33</v1>
  <v2>21.16</v2>
</device>
```

13.2 History interrogation with user ID

With every interrogation, the history.xml document contains all the data records stored in the history memory in XML format.

If requested to only call up the latest history data saved since the last interrogation, several markers can be used in the form of user IDs. Data already called up are not transmitted several times unnecessarily.

By specifying a user ID it is thus possible to obtain individual views of the saved logging data. Up to nine user IDs from 1-9 are available.

Example

Calling up an individual view of the history data:

```
"http://fieldgate.endress.com/history.xml?id=1"
```

Following every interrogation, the marker belonging to the ID is set at the end of the logging memory so that only new data are displayed during the next call-up.

13.3 Time stamp with manual time entry

If it is not possible for the Fieldgate to automatically access a time server, the current time must be entered manually to be able to use the data logging function.

The current time is saved by Fieldgate every 10 minutes.

If the device is restarted, Fieldgate first tries to access the time server specified under "Information & Configuration -> Network Setup -> Time Server Configuration -> Time Server" in order to be able to set the time automatically. If this is not possible, the time last saved before the device restart is used.

If the time last saved is used after restarting the device, there is a time difference between this time and the real time. This is determined by the length of time the unit was without current. The "<vtbuf>1</vtbuf>" variable is added to the time stamp of the logged data records until the time is manually or automatically updated. This tells the user/higher-order system that there is a difference between the Fieldgate time and the actual time.

Example:

```
<device id="11070fb7f9">
  <vtime>20050601-093140</vtime>
  <vtz>120</vtz>
  <vtbuf>1</vtbuf>
  <vstslvl>0</vstslvl>
  <v1>902.33</v1>
  <v2>21.16</v2>
</device>
```

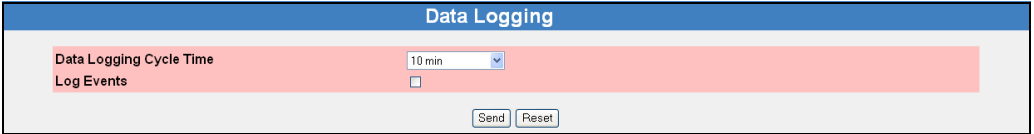
13.4 Maximum number of data records that can be saved

In FXA520, the maximum number of data records is based on the number of HART transmitters connected:

Connected HART sensors	Maximum number of data records per sensor
(4_20mA Only) 0	141
1	112
2	94
3	80
4	70
5	62
6	56
7	51
8	47
9	43
10	40
11	37
12	35
14	33
15	31
16	29
17	28
18	26
19	25
20	24
21	23
22	22
23	21
24	20
25	20
26	19
27	18
28	18
29	17
30	17

13.5 Functions in the "Scan Control1" menu

For a description of the functions, see also "Data Logging" on Page 109.



The screenshot shows a web interface titled "Data Logging". It contains two main settings: "Data Logging Cycle Time" set to "10 min" and "Log Events" which is currently unchecked. Below these settings are "Send" and "Reset" buttons. A small reference code "L00-FXA20xx-20-13-00-en-004" is visible in the bottom right corner of the interface.

13.5.1 Data Logging Cycle Time

Use this function to specify how often and when measured values should be logged to the history memory.

You have the following options here:

- Select the cycle between 5 minutes and up to one week
- Select fixed times for saving the measured values.
- Select "**Use Scan Cycle**" to have the scan cycle specify the logging cycle. Here, the measured values are always saved every time the measured value is determined.

A new measurement is always carried out before the measured values are saved.

13.5.2 Log Events

If you switch on this control box in Administrator mode (a "**yes**" appears in User mode), every time an event occurs (e.g. limit value violation or device error), all the data records of the connected devices and internal interfaces are recorded at this moment.

13.6 Functions in the "Network Setup" menu

For a description of the functions, see also "**Mail Configuration**" on Page 92-Page 96.

13.6.1 Data Logging Email on

Periodic Measurement Mail

If you switch on this control box in Administrator mode (a "**yes**" appears in User mode), every time a measured value mail is sent, all the logged history data are sent to the recipients of the measured values in the form of one or more separate mails in XML format.

Use this function if you want to cyclically send all the measured values recorded in the history over a specified period. The time interval is specified by the option selected under "**Periodic Measurement Mails**".

Log Buffer Full

If you switch on this control box in Administrator mode (a "**yes**" appears in User mode), every time the history memory overruns, its entire content is sent to the recipients of the measured values in the form of several mails in XML format.

Use this function if you do not want to lose any measured values saved in the history in the event of history overrun.

Device Event

If you switch on this control box in Administrator mode (a "**yes**" appears in User mode), every time an event occurs, e.g. limit value violation or device errors, all the logged history data are sent to the recipients of the measured values in the form of one or more separate mails in XML format.

This function makes it possible to analyze all the measured values saved before the event occurred.

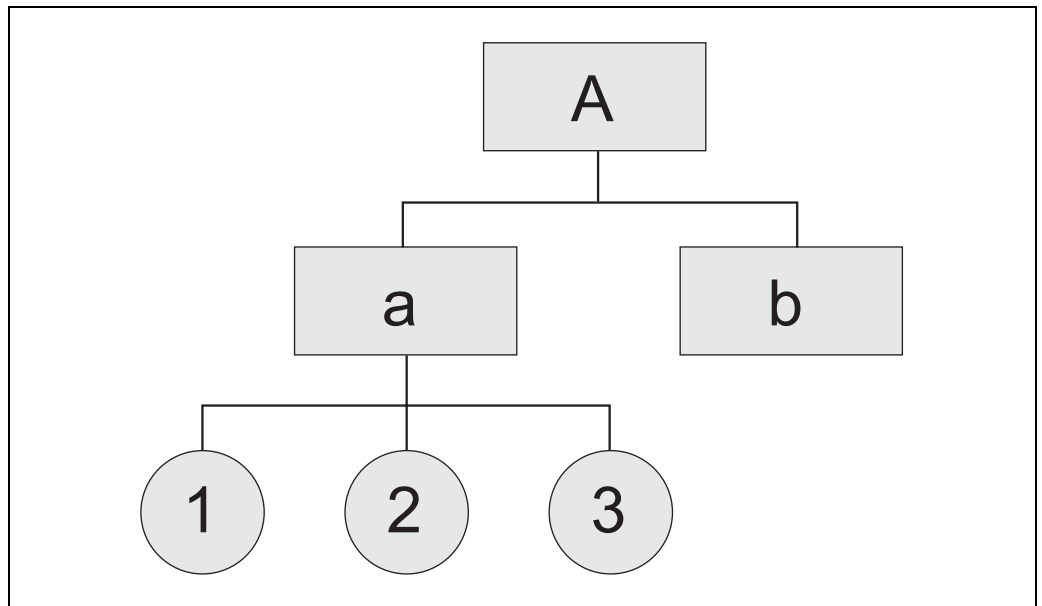
Note!

History data are always sent in XML format.

14 Structure of the XML data

14.1 Basic structure

- Fieldgate XML structures are tree-like structures consisting of a root "A" (see graphic below) with basic information on the Fieldgate such as the serial number, tag name or information on the document type.
- The other nodes in the tree contain data of the connected transmitters or internal interfaces with other lower-order parameters.



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<XML-Version>

Root Node

<Fieldgate Identification>

<Header Elements>

LEVEL 1

<Device 1 Identification>

<Device 1 Values / Parameters>

LEVEL 2

<Device 1 Additional Parameters>

...

LEVEL 1

<Device n Identification>

<Device n Values / Parameters>

LEVEL 2

<Device n Additional Parameters>

...

</Fieldgate>

14.2 Example

The XML data are described in the following table.

Caution!

- The data are examples only, i.e. the data are not necessarily consistent.
- The field order is random.
- Not necessarily all fields appear (depends on connected field device).
- All specifications are in UTC time.

Example	Comment	Type	Description	Version
<?xml version="1.0" encoding="iso-8859-1"?>				
<fieldgate ser="470009010A0" tag="Endress+Hauser Fieldgate" type="full" devices="all">			tag for fieldgate datas <ser>:serialnumber fieldgate <tag>: name fieldgate <type>: "full" / "partial" (short=1), Fields marked as "bold" <devices>: "all" / "single" (id=, tag=)	
<rev_xml>1.0</rev_xml>		string	XML Document Revision	
<time>20020926-065441</time>		timestamp	actual time fieldgate (UTC time)	
<timezone>60</timezone>		unsigned 16	timezone (timeoffset to utc in minutes)	V001.002.000
<ff_version>01.02.00-026 20030228</ff_version>		string	string incl. hardware rev. and software rev.	V001.002.000
<gsmp>Provider: +COPS: 0,0,"T-Mobile D" </gsmp>		string	GSM-Provider	V001.003.000
<gsms>Signal: 18,99 </gsms>		string	Signal quality GSM Signal	V001.003.000
<gsmti>Timestamp: 2266</gsmti>		timestamp	<gsmti>Timestamp: 2266</gsmti>	V001.003.000
<os_version>3.17</os_version>		string	operating system version	V001.002.000
<conf>FXA520-XE1A</conf>		string	hardware configuration fxa520	V001.002.000
<device id="11423b01c0" tag="FLOW" type="HART">			tag field device data: <id>: Unique-ID device <tag>: Tagname device <type>: "HART" / "INTRN"	
<v1>17.49</v1>	cmd001 or cmd003	float	Primary Variable	
<u1>l/s</u1>	cmd001 or cmd003	string	Unit of Primary Variable	
<c1>00 (class)</c1>	cmd008	string	Primary Variable Classification (Hex)	
<v2>14403.25</v2>	cmd003	float	Secondary Variable	
<u2>l</u2>	cmd003	string	Unit of Secondary Variable	
<c2>00 (class)</c2>	cmd008	string	Secondary Variable Classification (Hex)	
<v3>17.49</v3>	cmd003	float	Tertiary Variable	
<u3>kg/s</u3>	cmd003	string	Unit of Tertiary Variable	
<c3>00 (class)</c3>	cmd008	string	Tertiary Variable Classification (Hex)	
<v4>0.00</v4>	cmd003	float	Quaternary Variable	
<u4>not used</u4>	cmd003	string	Unit of Quaternary Variable	
<c4>00 (class)</c4>	cmd008	string	Quaternary Variable Classification (Hex)	
<vstslvl>0</vstslvl>	cmd001 or cmd003	0/1/2	Error Level of Response 0: ok 1: warning 2: error (according to HART6-Spec)	
<vsts>0x00 0x50</vsts>	cmd001 or cmd003	string	Response Code & Field Device Status	
<vtime>20020926-065435</vtime>		timestamp	Timestamp of cmd000 / cmd001 / cmd003	

Example	Comment	Type	Description	Version
<v1_100>39.67</v1_100>	cmd002	float	Primary Variable Percent of Range	
<v1_1c>4.00</v1_1c>	cmd002 or cmd003	float	Primary Variable Loop Current	
<stsext>0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x08 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00 0x00</stsext>	cmd048	string	Additional Device Status	
<fnum>0</fnum>	cmd016	unsigned-24	Final Assembly Number	
<datecode>65892</datecode>	cmd013	HART date	Date Code	
<desc>FLOWMETER</desc>	cmd013	string	Descriptor	
<tag>FLOW</tag>	cmd013	string	Tag	
<msg>FLOWTEC</msg>	cmd012	string	Message	
<serno>3867072</serno>	cmd000	unsigned-24	Serial Number	
<hwrev>4</hwrev>	cmd000	unsigned-8	Hardware Revision Level	
<swrev>10</swrev>	cmd000	unsigned-8	Software Revision Level	
<devrev>2</devrev>	cmd000	unsigned-8	Device Revision Level	
<cmdrev>5</cmdrev>	cmd000	unsigned-8	Universal Command Revision Level	
<preambl>5</preambl>	cmd000	unsigned-8	Minimum Number of Preambles	
<dev>Promag 53</dev>	cmd000	string	Device Type	
<man>Endress+Hauser</man>	cmd000	string	Device Manufacturer	
<stime>20020926-065336</stime>		timestamp	Timestamp of cmd000	
<pid>0x00</pid> ¹		unsigned-8	Device Poll ID	
<chn>0x01</chn> ¹		unsigned-8	Device Channel (0=HART0, 1=HART1, 0x10=RS485)	
<type>HART</type>		string	Type ("HART" / "INTRN")	
<ctime></ctime>		timestamp	Timestamp of first cmd000	
<unid>11423b01c0</unid>	cmd000, cmd130 (PuF-Mux)	string	Sensor Unique ID	
<hide>1</hide>	web interface, internal sensors only	"1"	Hide Device from Device Overview	
<hlsts1>ok</hlsts1>		"ok" / "LL" / "L" / "H" / "HH"	Limit value status ok, LL, L,H,HH) Device Channel1 (PV)	V001.002.000
<hltime1>20030228-185223</hltime1>		Timestamp	Timestamp limit transition Device Channel 1 (PV)	V001.002.000
<hlsts2>ok</hlsts2>		"ok" / "LL" / "L" / "H" / "HH"	Limit value status (ok, LL, L,H,HH) Device Channel2 (SV)	V001.002.000
<hltime2>20030228-185223</hltime2>		Timestamp	Timestamp limit transition Device Channel 2(SV)	V001.002.000
<hlsts3>ok</hlsts3>		"ok" / "LL" / "L" / "H" / "HH"	Limit value status (ok, LL, L,H,HH) Device Channel3 (TV)	V001.002.000
<hltime3>20030228-185223</hltime3>		Timestamp	Timestamp limit transition Device Channel 3 (TV)	V001.002.000
<hlsts4>ok</hlsts4>		"ok" / "LL" / "L" / "H" / "HH"	Limit value status (ok, LL, L,H,HH) Device Channel4 (QV)	V001.002.000
<hltime4>20030228-185223</hltime4>		Timestamp	Timestamp limit transition	V001.002.000
<param>			(only a example)	
<t1ch></t1ch>	web interface	string	additional textinformation line 1 (PV)	V001.002.000
<t2ch></t2ch>	web interface	string	additional textinformation line 2 (PV)	V001.002.000
<t1ch2></t1ch2>	web interface	string	additional textinformation line 1 Device Channel 2 (SV)	V001.002.000

Example	Comment	Type	Description	Version
<t2ch2></t2ch2>	web interface	string	additional textinformation line 2 Device Channel 2 (SV)	V001.002.000
<t1ch3></t1ch3>	web interface	string	additional textinformation line 1 Device Channel 3 (TV)	V001.002.000
<t2ch3></t2ch3>	web interface	string	additional textinformation line 2 Device Channel 3 (TV)	V001.002.000
<t1ch4></t1ch4>	web interface	string	additional textinformation line 1 Device Channel 4 (QV)	V001.002.000
<t2ch4></t2ch4>	web interface	string	additional textinformation line 2 Device Channel 4 (QV)	V001.002.000
<dch>1</dch>	web interface	"" / "1"	device channel1 (PV) in overview	V001.002.000
<dch2>1</dch2>	web interface	"" / "1"	device channel2 (SV) in overview	V001.002.000
<dch3>1</dch3>	web interface	"" / "1"	device channel3 (TV) in overview	V001.002.000
<dch4>1</dch4>	web interface	"" / "1"	device channel4 (QV) in overview	V001.002.000
<r>1</r>	web interface	"" / "1"	Alarm Mail on Sensor Error	
<i>1</i>	web interface	"" / "1"	Alarm Mail on Entering Limits Device Channel 1 (PV)	
<o>1</o>	web interface	"" / "1"	Alarm Mail on Leaving Limits Device Channel 1 (PV)	
<i2>1</i2>	web interface	"" / "1"	Alarm Mail on Entering Limits Device Channel 2 (SV)	V001.002.000
<o2>1</o2>	web interface	"" / "1"	Alarm Mail on Leaving Limits Device Channel 2 (SV)	V001.002.000
<i3>1</i3>	web interface	"" / "1"	Alarm Mail on Entering Limits Device Channel 3 (TV)	V001.002.000
<o3>1</o3>	web interface	"" / "1"	Alarm Mail on Leaving Limits Device Channel 3 (TV)	V001.002.000
<i4>1</i4>	web interface	"" / "1"	Alarm Mail on Entering Limits Device Channel 4 (QV)	V001.002.000
<o4>1</o4>	web interface	"" / "1"	Alarm Mail on Leaving Limits Device Channel 4 (QV)	V001.002.000
<lo>40.00</lo>	web interface	float	PV Low Limit	
<ll>20.00</ll>	web interface	float	PV Low Low Limit	> 01.01.00
<hi>200.00</hi>	web interface	float	PV High Limit	
<hh>220.00</hh>	web interface	float	PV High High Limit	> 01.01.00
<lo2>40.00</lo2>	web interface	float	SV Low Limit	V001.002.000
<ll2>20.00</ll2>	web interface	float	SV Low Low Limit	V001.002.000
<hi2>200.00</hi2>	web interface	float	SV High Limit	V001.002.000
<hh2>220.00</hh2>	web interface	float	SV High High Limit	V001.002.000
<lo3>40.00</lo3>	web interface	float	TV Low Limit	V001.002.000
<ll3>20.00</ll3>	web interface	float	TV Low Low Limit	V001.002.000
<hi3>200.00</hi3>	web interface	float	TV High Limit	V001.002.000
<hh3>220.00</hh3>	web interface	float	TV High High Limit	V001.002.000
<lo4>40.00</lo4>	web interface	float	QV Low Limit	V001.002.000
<ll4>20.00</ll4>	web interface	float	QV Low Low Limit	V001.002.000
<hi4>200.00</hi4>	web interface	float	QV High Limit	V001.002.000
<hh4>220.00</hh4>	web interface	float	QV High High Limit	V001.002.000
<alt>100.00</alt>	web interface	float	PV Diff	

Example	Comment	Type	Description	Version
<atime>60</atime>	web interface	integer	PV Difftime	
<alt2>100.00</alt2>	web interface	float	SV Diff	V001.002.000
<atime2>60</atime2>	web interface	integer	SV Difftime	V001.002.000
<alt3>100.00</alt3>	web interface	float	TV Diff	V001.002.000
<atime3>60</atime3>	web interface	integer	TV Difftime	V001.002.000
<alt4>100.00</alt4>	web interface	float	QV Diff	V001.002.000
<atime4>60</atime4>	web interface	integer	QV Difftime	V001.002.000
<max>100.00</max>	web interface	float	Max. Value Device Channel 1 (PV)	V001.002.000
<min>0.00</min>	web interface	float	Min. Value Device Channel 1 (PV)	V001.002.000
<max2>100.00</max2>	web interface	float	Max. Value Device Channel 2 (SV)	V001.002.000
<min2>0.00</min2>	web interface	float	Min. Value Device Channel 2 (SV)	V001.002.000
<max3>100.00</max3>	web interface	float	Max. Value Device Channel 3 (TV)	V001.002.000
<min3>0.00</min3>	web interface	float	Min. Value Device Channel 3 (TV)	V001.002.000
<max4>100.00</max4>	web interface	float	Max. Value Device Channel 4 (QV)	V001.002.000
<min4>0.00</min4>	web interface	float	Min. Value Device Channel 4 (QV)	V001.002.000
<hy>0.50</hy>	web interface	float	hysteresis for reentering limits device channel1 (PV)	V001.002.000
<hy2>0.50</hy2>	web interface	float	hysteresis for reentering limits device channel2 (SV)	V001.002.000
<hy3>0.50</hy3>	web interface	float	hysteresis for reentering limits device channel3 (TV)	V001.002.000
<hy4>0.50</hy4>	web interface	float	hysteresis for reentering limits device channel4 (QV)	V001.002.000
<swl>50.00</swl>	web interface	float	switch level for display switch status device channel1 (PV)	V001.002.000
<swsts>1</swsts>	web interface	integer	text entries to mark the switch status Device Channel1 (PV) 1 = "uncovered" / "covered" 2 = "covered" / "uncovered" 3 = "on" / "off" 4 = "off" / "on" 5 = "empty" / "full" 6 = "full" / "empty" 7 = "good" / "bad" 8 = "bad" / "good"	V001.002.000
<swl2>50.00</swl2>	web interface	float	switch level for display switch status device channel 2 (SV)	V001.002.000
<swsts2>1</swsts2>	web interface	integer	text entries to mark the switch status Device Channel 2 (SV) 1 = "uncovered" / "covered" 2 = "covered" / "uncovered" 3 = "on" / "off" 4 = "off" / "on" 5 = "empty" / "full" 6 = "full" / "empty" 7 = "good" / "bad" 8 = "bad" / "good"	V001.002.000
<swl3>50.00</swl3>	web interface	float	switch level for display switch status device channel 3 (TV)	V001.002.000

Example	Comment	Type	Description	Version
<swsts3>1</swsts3>	web interface	integer	text entries to mark the switch status Device Channel 3 (TV) 1 = "uncovered" / "covered" 2 = "covered" / "uncovered" 3 = "on" / "off" 4 = "off" / "on" 5 = "empty" / "full" 6 = "full" / "empty" 7= "good" / "bad" 8= "bad" / "good"	V001.002.000
<swl4>50.00</swl4>	web interface	float	Switch-Level for display switch status Device Channel4 (QV)	V001.002.000
<swsts4>1</swsts4>	web interface	integer	text entries to mark the switch status Device Channel4 (QV) 1 = "uncovered" / "covered" 2 = "covered" / "uncovered" 3 = "on" / "off" 4 = "off" / "on" 5 = "empty" / "full" 6 = "full" / "empty" 7= "good" / "bad" 8= "bad" / "good"	V001.002.000
<_t>4..20mA-1</_t>	web interface, internal sensors only	string	Device Name/Tag	
<_h>1</_h>	web interface, internal sensors only	"" / "1"	Hide Device from Device Overview	
<_u>cA</_u>	web interface, internal analogue inputs only	string	Output Unit	
<p4>40.00</p4>	web interface, internal analogue inputs only	float	Output Value at 4.00mA Input Current	
<p20>200.00</p20>	web interface, internal analogue inputs only	float	Output Value at 20.00mA Input Current	
</param>				
</device>				
<device>				
...				
</device>				
...				
</fieldgate>				

1) **Note!** Devices connected to the multiplexer have chn=0x10 entered as the channel and do not have any Poll ID (pid).

15 E-mail contents

15.1 Types of e-mails

There are two different **types** of e-mails:

- **Measured value e-mails**
These can be transmitted as XML, HTML or TEXT.
- **Alarm e-mails**
These are always very short and are in text format.
- **History-E-Mails**
These are always transmitted in XML format.
- **Device Data-E-Mails**
These can be transmitted as XML, HTML or TEXT.

The following is common to all e-mails: the subject contains text with the name of the Fieldgate, then the reason for the e-mail and then a number:

- "**<fieldgate name>** " : "**<reason>** " "**<3-digit code>** "
e.g. "fxa520weather: Periodic Measurement 005"

Note!

The **<device-tag>** is also displayed for some alarm e-mails, e.g. "fxa520mdmdev: Leaving Limits: LVLFLEX - 130".

15.1.1 Measured value e-mails

The following "**<reason>**"s and "**<code>**"s exist in measured value e-mails:

- **"Periodic Measurement (reboot) "** / **"000 "** first measured value e-mails after a reboot
- **"Periodic Measurement "** / **"005 "** periodic measured value e-mail
- **"Device Disconnected (last measurement) "** / **"010 "** device was disconnected
- **"Device Connected (first measurement) "** / **"011 "** device was re-detected
- **"Device Error (measurement) "** / **"020 "** device reports an error
- **"Device Ok (measurement) "** / **"021 "** device returns to warning/ok after error condition
- **"Device Transition Low -> OK (measurement) "** / **"030"** → Measured value undershot Low Limit
- **"Device Transition LowLow -> Low (measurement) "** / **"031"** → Measured value undershot LowLow Limit
- **"Device Transition Low -> LowLow (measurement) "** / **"032"** → Measured value leaving LowLow Limit
- **"Device Transition OK -> Low (measurement) "** / **"033"** → Measured value leaving Low Limit
- **"Device Transition High -> OK (measurement) "** / **"034"** → Measured value exceeds High Limit
- **"Device Transition HighHigh -> High (measurement) "** / **"035"** → Measured value exceeds HighHigh Limit
- **"Device Transition High -> HighHigh (measurement) "** / **"036"** → Measured value leaving HighHigh Limit
- **"Device Transition OK -> High (measurement) "** / **"037"** → Measured value leaving High Limit
- **"Device Transition OK -> HighHigh (measurement) "** / **"038"** → Measured value leaving HighHigh Limit
- **"Device Transition OK -> LowLow (measurement) "** / **"039"** → Measured value leaving LowLow Limit
- **"Device Value Changes (measurement) "** / **"040"** → the measured value has experienced a change greater than the specified limit

15.1.2 Alarm e-mails

The following "<reason>"s and "<code>"s exist in alarm e-mails:

- **"System Rebooted "** / **"100 "** device restart, the Fieldgate uses an update as firmware
- **"System Rebooted from Bootarea "** / **"101 "** device restart, the Fieldgate uses the firmware supplied with delivery
- **"Device Disconnected: "** <device-tag> / **"110 "** device was disconnected
In addition
- **"Device Connected: "** <device-tag> / **"111 "** device was re-detected
- **"Device Error: "** <device-tag> / **"120 "** device reports an error
- **"Device Ok: "** <device-tag> / **"121 "** device returns to warning/ok after error condition
- **"Transition Low -> OK: "** <device-tag> / **"130"** → Measured value undershot Low Limit
- **"Transition LowLow -> Low: "** <device-tag> / **"131"** → Measured value undershot LowLow Limit
- **"Transition Low -> LowLow: "** <device-tag> / **"132"** → Measured value leaving LowLow Limit
- **"Transition OK -> Low: "** <device-tag> / **"133"** → Measured value leaving Low Limit
- **"Transition High -> OK: "** <device-tag> / **"134"** → Measured value exceeds High Limit
- **"Transition HighHigh -> High: "** <device-tag> / **"135"** → Measured value exceeds HighHigh Limit
- **"Transition High -> High High: "** <device-tag> / **"136"** → Measured value leaving HighHigh Limit
- **"Transition OK -> High: "** <device-tag> / **"137"** → Measured value leaving High Limit
- **"Transition OK -> HighHigh: "** <device-tag> / **"138"** → Measured value leaving HighHigh Limit
- **"Transition OK -> LowLow: "** <device-tag> / **"139"** → Measured value leaving LowLow Limit
- **"Assigned IP Address "** / **"150 "** IP address assigned by provider
- **"Firmware Update Result "** / **"160 "** result of a firmware update
- **"illegal User/password combination "** / **"170 "** an invalid user/password combination was used with Pass-Through-HART

15.1.3 History-E-Mails

The following "<reason>"s and "<code>"s exist in measured value e-mails:

- **"History"** / **"007"** → History e-mail with logged measured values

15.1.4 Device Data-E-Mails

- The following "<reason>"s and "<code>"s exist in measured value e-mails:
"Device Data" / **"060"** → Device data e-mail with static parameters of a connected transmitter/
an internal interface

15.2 Explanations and examples

15.2.1 Explanations

- At system start-up, it is presumed that the measured values are within the specified limits. This means that any measured value outside the limits at system start-up triggers an e-mail.
- At system start-up, it is presumed that the field device has the status ok/warning. This means that a device with an error condition at system start-up triggers an e-mail.
- Measured value e-mails can be completely suppressed by selecting "**None**" in "Network Setup/Mail Configuration/Format Measurement Mails"; otherwise a measured value e-mail is generated in the format selected for every event (e.g. Sensor Error, Leaving Limit, Periodic).
- The alarm e-mails with the codes "**110**" and "**111**" can be switched on and off via "Network Setup/Mail Configuration/Alarm Mail on Sensor Connect/Disconnect".
- The alarm e-mail with the code "**170**" can be switched on and off via "Network Setup/Mail Configuration/Alarm on Illegal Password (HART)".
- The alarm e-mails with the code "**130**" can be switched on and off individually via the device settings for each device.
- The alarm e-mails with the code "**131**" can be switched on and off individually via the device settings for each device.
- The alarm e-mails with the code "**132**" can be switched on and off individually via the device settings for each device.
- The alarm e-mails with the code "**133**" can be switched on and off individually via the device settings for each device.
- The alarm e-mails with the code "**134**" can be switched on and off individually via the device settings for each device.
- The alarm e-mails with the code "**135**" can be switched on and off individually via the device settings for each device.
- The alarm e-mails with the code "**136**" can be switched on and off individually via the device settings for each device.
- The alarm e-mails with the code "**137**" can be switched on and off individually via the device settings for each device.
- The alarm e-mails with the code "**120**" and "**121**" can be switched on and off individually via the device settings for each device.
- The alarm e-mail with the code "**150**" can be switched on and off via "Network Setup/Mail Configuration/Mail Assigned IP Address".

15.2.2 Limit values

The limit values can be specified individually for each device.

If the "LowLow Limit" has not been specified, $-\infty$ (ca - 1e38) is taken.

If the "HighHigh Limit" has not been specified, $+\infty$ (ca + 1e38) is taken.

Depending on the information given above, an e-mail with the code "**130**" and "**030**" is triggered if the measured value exceeds the "HighHigh Limit" if only the "HighHigh Limit" is specified, for example; a similar situation applies for the "LowLow Limit".

Note!

Measured value e-mailing in the event of measured value changes should only be used as a point of reference. Precise measurement of the measured value changes is not possible at present!

15.2.3 Saving the device settings

The device settings ("LowLow Limit" etc.) are constantly stored in the internal configuration EEPROM and in the DAT-EEPROM.

If many different devices are connected to the Fieldgate over time, this can overtax the capacity of the EEPROM. In such a situation, unrequired device settings are deleted until the settings can be saved again in the EEPROM.

15.2.4 Examples for measured value e-mails

Example for "Periodic Measurement" in HTML format:

fxa520-weather: Periodic Measurement - 005

From: scm2@surf25.de
To: hardy@mardys.de
Date: Sun, 11 Aug 2002 02:00:19 +0200

Fieldgate 'fxa520-weather'

Status	Limit	Tag	PV timestamp	Manufacturer Device Type	Descriptor Message
ok		TEMPOUT	PV=13.08 °C 20020810-235958	Endress+Hauser TMT 182	PCM TEMPERATURE OUTSIDE TEMPERATURE
ok	ok	L_DRUCK	PV=973.17 mbar 20020810-235959	Endress+Hauser Cerabar S	PCM AIR-PRESSURE LS3 ROOM-AIR-PRESSURE
ok		LEVEL	PV=19.87 % 20020811-000000	Endress+Hauser FMR2xx / Micropilot M
ok		FLOW	PV=17.87 l/s 20020811-000002	Endress+Hauser Promag 53	FLOWMETER FLOWTEC
		% vom Level	PV=-24.81 % 20020810-235955	Endress+Hauser internal	
ok		4..20mA-2	PV=0.03 mA 20020810-235955	Endress+Hauser internal	
ok		5V	PV=5.13 V 20020810-235955	Endress+Hauser internal	
ok		BoardTemp	PV=32.42 °C 20020810-235955	Endress+Hauser internal	

Current Time: 20020811-000003 (UTC) Copyright © 2001-2002 by
Endress+Hauser GmbH+Co.
KG, Product Center Maulburg

100-FXA520xx-20-13-00-en-144

Example for "Device Entering Limit" in HTML format:

fxa520-weather: Device Entering Limits (measurement) - 031

From: scm2@surf25.de
To: hardy@mardys.de
Date: Mon, 12 Aug 2002 06:10:48 +0200

Cerabar S: L_DRUCK

Variables / Status

Primary Variable	977.15 mbar
PV - Loop Current	4.00 mA
PV - Percent of Range	48.86 %
Secondary Variable	21.79 °C
Status	ok: 0x00 0x08 Device Status: Loop Current Fixed
Additional Device Status (raw)	0x00 0x00
Limit	ok
Variable Data Acquired	20020812-041017

Static Data

Tag	Descriptor	Message
L_DRUCK	PCM AIR-PRESSURE	LS3 ROOM-AIR-PRESSURE

Manufacturer	Device Type	Device ID	Channel / Polling Address
Endress+Hauser	Cerabar S	1030137	0x01 0x03

100-FXA520xx-20-13-00-en-145

Example for "Periodic Measurement" in XML format:

```

<?xml version="1.0" encoding="iso-8859-1"?>
<fieldgate ser="-" tag="fxa520-mdm-dev" type="partial" devices="all">
  <time>20020812-095702</time>
  <device id="110a0005a2" tag="HEAD010" type="HART">
    <v2>21.83</v2>
    <u2>°C</u2>
    <v1>24.00</v1>
    <u1>%</u1>
    <vstslvl>0</vstslvl>
    <vsts>0x00 0x00</vsts>
    <vtime>20020812-095651</vtime>
    <v1_100>24.00</v1_100>
    <v1_lc>7.84</v1_lc>
    <dev>FMUx3x / Prosonic T</dev>
    <man>Endress+Hauser</man>
  </device>
  <device id="1112000001" tag="LVLFLEX" type="HART">
    <v1>77.21</v1>
    <u1>t</u1>
    <vstslvl>0</vstslvl>
    <vsts>0x00 0x40</vsts>
    <vtime>20020812-095657</vtime>
    <v1_100>54.42</v1_100>
    <v1_lc>12.71</v1_lc><dev>FMP4xx / Levelflex M</dev>
    <man>Endress+Hauser</man>
  </device>
  <device id="110f000001" tag="DIST. 1" type="HART">
    <v1>66.13</v1>
    <u1>%</u1>
    <vstslvl>0</vstslvl>
    <vsts>0x00 0x00</vsts>
    <vtime>20020812-095700</vtime>
    <v1_100>66.13</v1_100>
    <v1_lc>14.58</v1_lc>
    <dev>FMR2xx / Micropilot M</dev>
    <man>Endress+Hauser</man>
  </device>
  <device id="1def100716" tag="P&#38;F HM" type="HART">
    <v1>NAN</v1>
    <u1>not used</u1>
    <vstslvl>0</vstslvl>
    <vsts>0x00 0x48</vsts>
    <vtime>20020812-095702</vtime>
    <dev>KFD2-HMM-16</dev>
    <man>Pepperl+Fuchs</man>
  </device>
  <device id="_4..20mA-1" tag="_4..20mA-1" type="INTRN">
    <v1>0.03</v1>
    <u1>mA</u1>
    <vtime>20020812-095636</vtime>
    <dev>internal</dev>
    <man>Endress+Hauser</man>
  </device>
  <device id="_4..20mA-2" tag="_4..20mA-2" type="INTRN">

```

```
<v1>0.03</v1>
<u1>mA</u1>
<vtime>20020812-095636</vtime>
<dev>internal</dev>
<man>Endress+Hauser</man>
</device>
<device id="_5V" tag="_5V" type="INTRN">
<v1>5.01</v1>
<u1>V</u1>
<vtime>20020812-095636</vtime>
<dev>internal</dev>
<man>Endress+Hauser</man>
<hlsts>ok</hlsts>
</device>
<device id="_boardtemp" tag="_boardtemp" type="INTRN">
<v1>23.95</v1>
<u1>°C</u1>
<vtime>20020812-095636</vtime>
<dev>internal</dev>
<man>Endress+Hauser</man>
<hlsts>ok</hlsts>
</device>
</fieldgate>
```

Example for "Device Value Changes" in XML format:

```

<?xml version="1.0" encoding="iso-8859-1"?>
<fieldgate ser="-" tag="fxa520-mdm-dev" type="full" devices="single">
  <time>20020812-115737</time>
  <device id="1112000001" tag="LVLFLEX" type="HART">
    <v1>75.21</v1>
    <ul>t</ul>
    <vstslvl>0</vstslvl>
    <vsts>0x00 0x00</vsts>
    <vtime>20020812-115734</vtime>
    <v1_100>50.43</v1_100>
    <v1_lc>12.07</v1_lc>
    <serno>1</serno>
    <hwrev>1</hwrev>
    <swrev>2</swrev>
    <devrev>2</devrev>
    <cmdrev>5</cmdrev>
    <preambl>5</preambl>
    <dev>FMP4xx / Levelflex M</dev>
    <man>Endress+Hauser</man>
    <stime>20020812-115519</stime>
    <stsext>0x00 0x00 0x00 0x00 0x00 0x00</stsext>
    <fnum>0</fnum>
    <datecode>0</datecode>
    <desc>—————</desc>
    <tag>LVLFLEX</tag>
    <msg>—————</msg>
    <chn>0x10</chn>
    <type>HART</type>
    <ctime>20020812-114856</ctime>
    <unid>1112000001</unid>
    <hlsts><</hlsts>
    <param>
      <i>1</i>
      <o>1</o>
      <lo>90.00</lo>
      <hi>100.00</hi>
      <alt>0.10</alt>
      <atime>60</atime>
      <r>1</r>
    </param>
  </device>
</fieldgate>

```

Example for text format e-mail:FXA520-TSr Meldung.

Tag : TSR 2002
Device: FMU4xx / Prosonic M
Device Status: 0 = OK
Channeldescription PV
Prosonic M
Distance

PV Value ; 2.43 m
Timestamp ; 21.01.2003 16:34:22
Maximum ; 5.00
Minimum ; 0.00

Limitstatus ; OK
Time of Limit ; 21.01.2003 10:54:54
LowLow-Limit ; 0.00
Low-Limit ; 0.50
High-Limit ; 4.00
HighHigh-Limit ; 4.80
Channeldescription SV
Prosonic M
Temperature °C

SV Value ; 23.80 °C
Timestamp ; 21.01.2003 16:34:22
Maximum ; 35.00
Minimum ; 15.00

Limitstatus ; OK
Time of Limit ; 21.01.2003 10:54:54
LowLow-Limit ; 18.00
Low-Limit ; 20.00
High-Limit ; 28.00
HighHigh-Limit ; 30.00

Tag : __TEST
Device: FMU862 / Prosonic
Device Status: 1 = WARN
Channeldescription PV
LIC 080
Channel 1

PV Value ; -10.00 %
Timestamp ; 21.01.2003 16:34:24
Maximum ; 110.00
Minimum ; -10.00

Limitstatus ; L
Time of Limit ; 20.01.2003 15:42:44
LowLow-Limit ; 5.00
Low-Limit ; 15.00
High-Limit ; 85.00
HighHigh-Limit ; 100.00
Channeldescription SV
LIC 081
Channel 2

SV Value ; 104.57 %
Timestamp ; 21.01.2003 16:34:24
Maximum ; 110.00
Minimum ; -10.00

Limitstatus ; OK
Time of Limit ; 21.01.2003 14:06:15
LowLow-Limit ; -10.00
Low-Limit ; 0.00
High-Limit ; 110.00
HighHigh-Limit ; 120.00

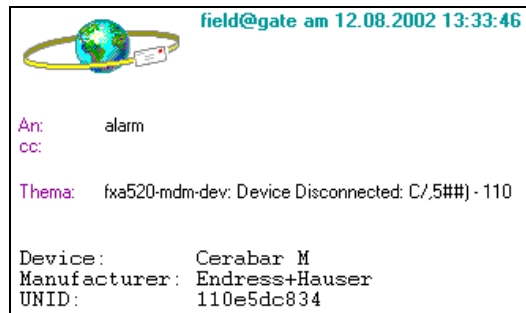
Tag : _5V
Device: internal
Channeldescription PV

PV Value ; 5.09 V
Timestamp ; 21.01.2003 16:34:20

Limitstatus ; OK
Time of Limit ; -
Low-Limit ; 4.50
High-Limit ; 5.50

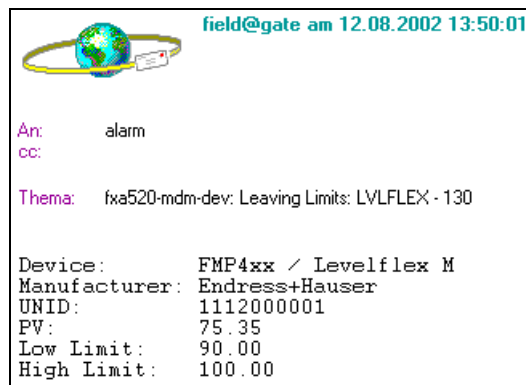
15.2.5 Examples for alarm e-mails

Example for "Device Disconnected"



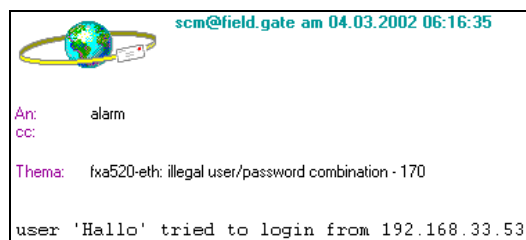
L00-FXA520xx-20-13-00-en-146

Example for "Leaving Limits"



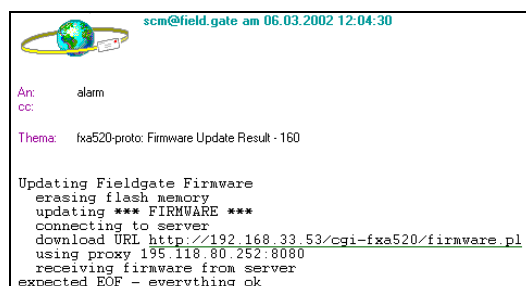
L00-FXA520xx-20-13-00-en-147

Example for "illegal user/password combination"



L00-FXA520xx-20-13-00-en-148

Example for "Firmware Update Result"



L00-FXA520xx-20-13-00-en-149

15.2.6 Examples of alarm e-mails via SMS

Example: SMS System reboot

fxa520: System reboot Bootarea

Example: SMS IP address assigned

fxa520:IP assigned : http://80.187.18.162/

Example: SMS Device Connected

fxa520:Device Connected Dev.:FMR2xx / Micropilot M

Example: SMS Alarm limit violation

fxa520:SILO 1:Transition OK -> High: PV:94.14 Time:25.03.2003 15:48:15 HH:99.00 H:90.00 L:85.00 LL:80.00

Sending an SMS in the event of a limit violation alarm is combined with the producing of e-mails. This means that the function for generating e-mails in the event of limit alarms and alarm resets must be activated.

15.2.7 Example for History E-Mail

```
<?xml version="1.0" encoding="iso-8859-1" ?>
<fieldgate ser="470009010A0" tag="E+H Weather Station Brombach" type="history">
  <rev_xml>1.0</rev_xml>
  <time>20050601-140729</time>
  <timezone>120</timezone>
  <ff_version>FXA520-dev-20050601-155858</ff_version>
  <os_version>3.19</os_version>
  <conf>FXA520-XE1A</conf>
  <device id="11070fb7f9">
    <vtime>20050601-073140</vtime>
    <vtz>120</vtz>
    <vstslvl>0</vstslvl>
    <v1>988.65</v1>
    <v2>20.56</v2>
  </device>
  <device id="110f191fc3">
    <vtime>20050601-073141</vtime>
    <vtz>120</vtz>
    <vstslvl>0</vstslvl>
    <v1>7.44</v1>
  </device>
  <device id="_4..20mA-2">
    <vtime>20050601-073141</vtime>
    <vtz>120</vtz>
    <vstslvl>2</vstslvl>
    <v1>0.04</v1>
    <v2>0.04</v2>
  </device>
  <device id="_4..20mA-1">
    <vtime>20050601-073141</vtime>
    <vtz>120</vtz>
    <vstslvl>2</vstslvl>
    <v1>-24.90</v1>
    <v2>-2490.32</v2>
```

```

</device>
<device id="_5V">
  <vtime>20050601-073141</vtime>
  <vtz>120</vtz>
  <vstslvl>0</vstslvl>
  <v1>5.05</v1>
</device>
<device id="_boardtemp">
  <vtime>20050601-073141</vtime>
  <vtz>120</vtz>
  <vstslvl>0</vstslvl>
  <v1>30.72</v1>
</device>
.
.
.

```

15.2.8 Example for Device Data E-Mail

```

<?xml version="1.0" encoding="iso-8859-1" ?>
<fieldgate ser="470009010A0" tag="E+H Weather Station Brombach" type="full"
devices="single">
  <rev_xml>1.0</rev_xml>
  <time>20050610-083332</time>
  <timezone>120</timezone>
  <ff_version>FXA520-dev-20050609-082557</ff_version>
  <os_version>3.19</os_version>
  <conf>FXA520-XE1A</conf>
  <device id="110f191fc3" tag="LEVEL" type="HART">
    <vstslvl>0</vstslvl>
    <vsts>0x00 0x08</vsts>
    <vtime>20050610-083325</vtime>
    <v1_100>74.41</v1_100>
    <v1_lc>4.00</v1_lc>
    <stsext>0x00 0x00 0x00 0x00 0x00 0x00</stsext>
    <fnum>0</fnum>
    <datecode>312</datecode>
    <desc />
    <tag>LEVEL</tag>
    <msg>MESSEMODELL LEVEL</msg>
    <serno>1646531</serno>
    <hwrev>1</hwrev>
    <swrev>1</swrev>
    <devrev>1</devrev>
    <cmdrev>5</cmdrev>
    <preambl>5</preambl>
    <dev>FMR2xx / Micropilot M</dev>
    <man>Endress+Hauser</man>
    <stime>20050610-082342</stime>
    <pid>0x01</pid>
    <hlsts1>OK</hlsts1>
    <hltime1>20050609-063240</hltime1>
    <u1>m</u1>
    <v1>7.44</v1>
    <chn>0x00</chn>
    <type>HART</type>

```

```
<ctime>20050609-063203</ctime>
<unid>110f191fc3</unid>
  <param>
    <max>10.00</max>
    <min>0.00</min>
    <lo>2.00</lo>
    <ll>1.00</ll>
    <hi>8.00</hi>
    <hh>9.00</hh>
    <i />
    <o />
    <si />
    <so />
    <atime>60</atime>
    <swsts>1</swsts>
    <t1ch>Level Tank 1</t1ch>
    <t2ch>Rothaus Pils</t2ch>
  </param>
</device>
</fieldgate>
```

16 Remote configuration (HART Client)

16.1 HART Client

Note!

The HART Client add-on makes it easier to connect to the Fieldgate and is required for remote configuration, e.g. with ToF Tool.

Caution!

The HART Client (version ≥ 1.5) can be run on the following operating systems:

- WIN 98
- WIN NT 4.0
- WIN 2000
- WIN XP

and with the following tools:

- ToF Tool (version ≥ 3.10)
- FieldTool (version $\geq 1.03.06$)
- ReadWin (version $\geq 1.9.2$)
- Commuwin II (version $\geq 2.08-1$)
- OPC Server (version $\geq 1.4.0.0$)

All other operating systems are not supported!

HART Client connection

There is online help available in the HART Client.

Note!

You can download the current HART Client freeware from the Internet from the Endress+Hauser product pages as follows:

Under "**Products → Product Portfolio → System components → Fieldgate → Fieldgate FXA520**"

Download Technical Information (TI 369F/00)		
ENGLISH	DEUTSCH	
2,321 KB	2,332 KB	
Download Fieldgate HART Client Setup		
Click at the filename in the table below to download the current software. Please you start the .EXE file and follow the installation instructions.		
File	Size	Released on
Fieldgate HART Client 0x6 Setup.exe	2,579 KB	19.07.2002

L00-FXA520xx-20-13-00-en-062

or

With the aid of the download area and the search string "FXA520 "

The screenshot shows the search results page on the Endress+Hauser website. The navigation bar includes links for ENDRESS+HAUSER, NEWS, PRODUCTS, SERVICES, WORLDWIDE LOCATIONS, INDUSTRY SOLUTIONS, and JOBS. The search results are displayed in a table with columns for Name / Description, Language, Type, and File size. The first result is 'Fieldgate HART Client', which is a 2.5 MB file. The description states: 'Fieldgate HART Client provides remote access to Fieldgates and enables you to configure the connected HART devices remotely. To do the device configuration, you can use the same configuration tools you would use if you were at site, e.g. ToF Tool.'

Name / Description	Language	Type	File size
Fieldgate HART Client Fieldgate HART Client provides remote access to Fieldgates and enables you to configure the connected HART devices remotely. To do the device configuration, you can use the same configuration tools you would use if you were at site, e.g. ToF Tool.	UK	EXE	2.5 MB

100-FXA520xx-20-13-00-en-138

HART Client installation

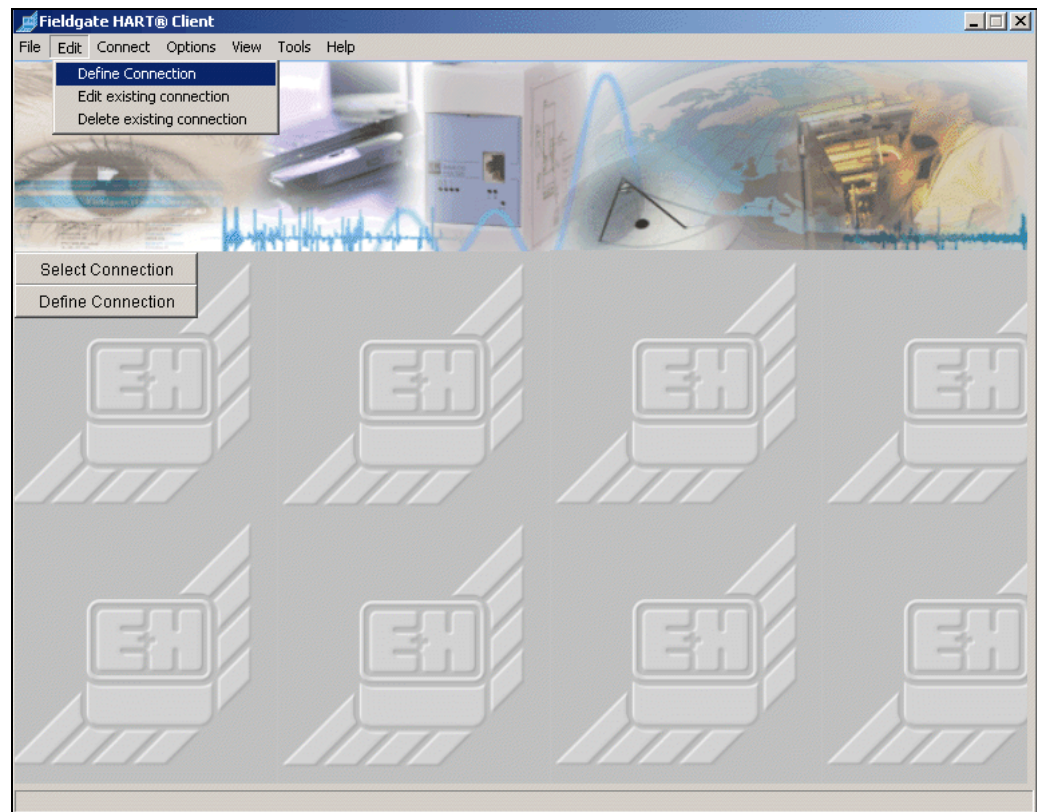
Start the EXE file and follow the installation instructions.

The screenshot shows the 'InstallShield Wizard' window for the 'Fieldgate HART Client setup'. The window title is 'InstallShield Wizard'. The main content area displays 'Fieldgate HART Client setup' and 'Fieldgate HART Client Version 1.5'. The background features a blue graphic with a computer monitor and a circular arrow. At the bottom, there are three buttons: '< Zurück', 'Weiter >', and 'Abbrechen'.

100-FXA520xx-20-13-00-en-150

Starting the program

1. Start the program via "**Start → Programs → Endress+Hauser → Fieldgate HART Client**"
2. In the "**Edit**" menu, click:
 - "**Define Connection**" - to define a new connection
 - "**Edit existing connection**" - to edit a connection already defined
 - "**Delete existing connection**" - to delete a defined connection



L00-FXA520xx-20-13-00-es-151

The following parameters can be configured:

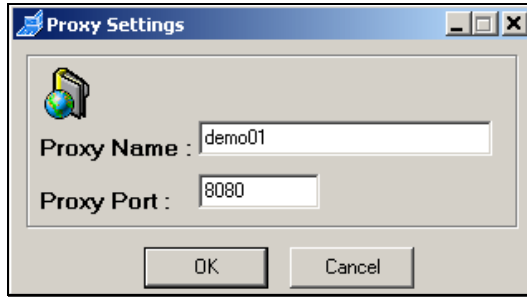
Connection Type	via modem to Fieldgate ethernet		
Connection Name	Test Connection		
Fieldgate Location	Home		
IP-Address	192.168.33.207		
Port Number (Pass-Through-Hart)	3222	Call number	[call-by-call number]
HART® - User Name (Pass-Through-Hart)	eh	PPP-User Name	[Provider account]
HART® - Password (Pass-Through-Hart)	eh	PPP- Password	[Provider password]
OK		Cancel	

L00-FXA520xx-20-13-00-es-152

■ **Connection Type**

You can select the connection type here:

- **"via modem to Fieldgate modem"**
Connection between PC modem and analogue version of the Fieldgate
- **"via modem to Fieldgate ethernet"**
Connection between PC modem and Ethernet version of the Fieldgate
- **"via Ethernet to Fieldgate ethernet (WAN - via proxy)"**
Connection between PC Ethernet and Ethernet version of the Fieldgate



Other types of connection are in preparation.

■ **Connection Name**

The name/description of the Fieldgate is entered here. This entry does not affect the function.

■ **Fieldgate Location**

The name/location of the Fieldgate is entered here. This entry does not affect the function.

■ **IP-Address**

The IP address of the Fieldgate to be selected is entered here.

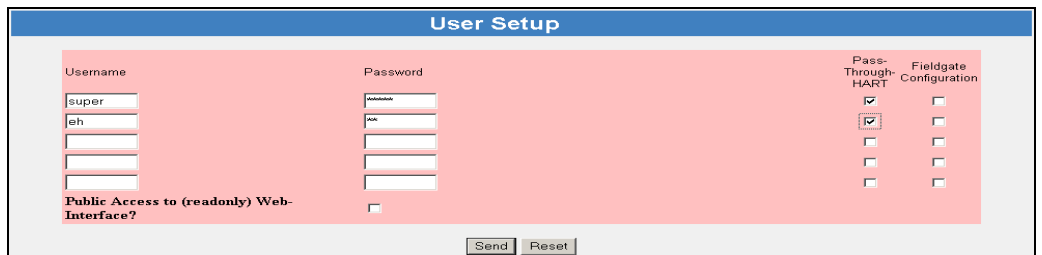
■ **Port Number Pass-Through-Hart**

The factory setting is set to "3222".

Please contact your system administrator if you have any problems with this.

■ **HART User Name / HART Password**

The name and the password of the Fieldgate to be selected is entered here (Pass-Through-HART).



For PC modem → Fieldgate modem or PC modem Fieldgate Ethernet**■ Call Number**

The telephone number of the Fieldgate or of the providers is entered here.

■ PPP-User Name (User Name with Provider)

For PC modem → Fieldgate Ethernet.

The name of the user is entered here. "scm" is preset.

■ PPP-User Password (Password with Provider)

For PC modem → Fieldgate Ethernet.

The user's password is entered here. "scm" is preset.

By clicking "Yes" to confirm, the connection is listed again. Save the defined connection by confirming with "OK".

The screenshot shows a dialog box titled "Connection details" with a sub-header "Save defined connection to Fieldgate?". It contains a table with the following data:

Name	Test Connection
Location	Home
IP-Address	192.168.33.207
Port Pass-Trough-HART	3222
HART Username	eh
HART Password	eh
Phone Number	

At the bottom of the dialog are two buttons: "OK" and "Abbrechen".

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Confirming with "OK" establishes the connection.

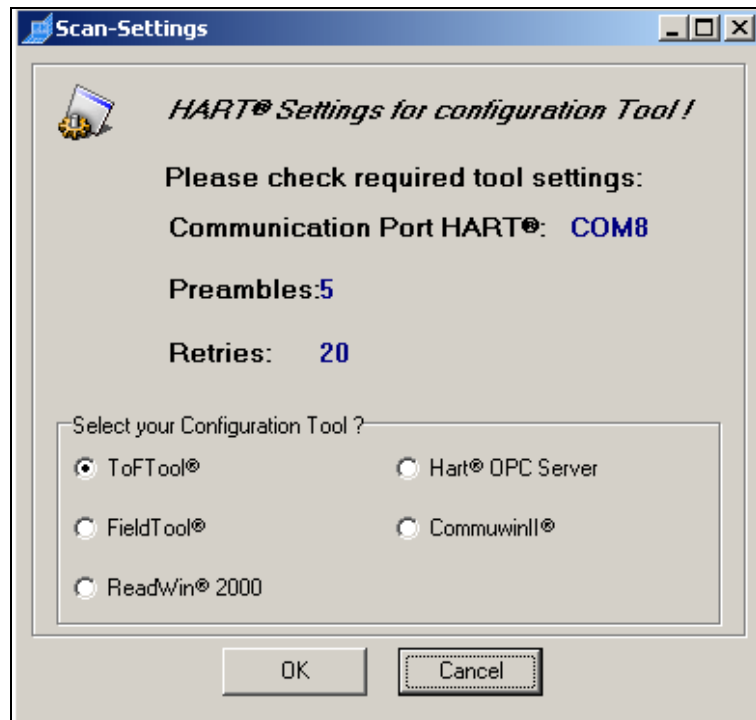
The screenshot shows a dialog box titled "Connection details" with a sub-header "Connect with Fieldgate?". It contains a table with the following data:

Name	Test Connection
Location	Home
IP-Address	192.168.33.207
Port Pass-Trough-HART®	3222
HART® Username	eh
HART® Password	eh
Call number	

At the bottom of the dialog are two buttons: "OK" and "Abbrechen".

L00-FXA520xx-20-13-00-en-154

Select the configuration tool, which is to be used, and confirm with "OK".

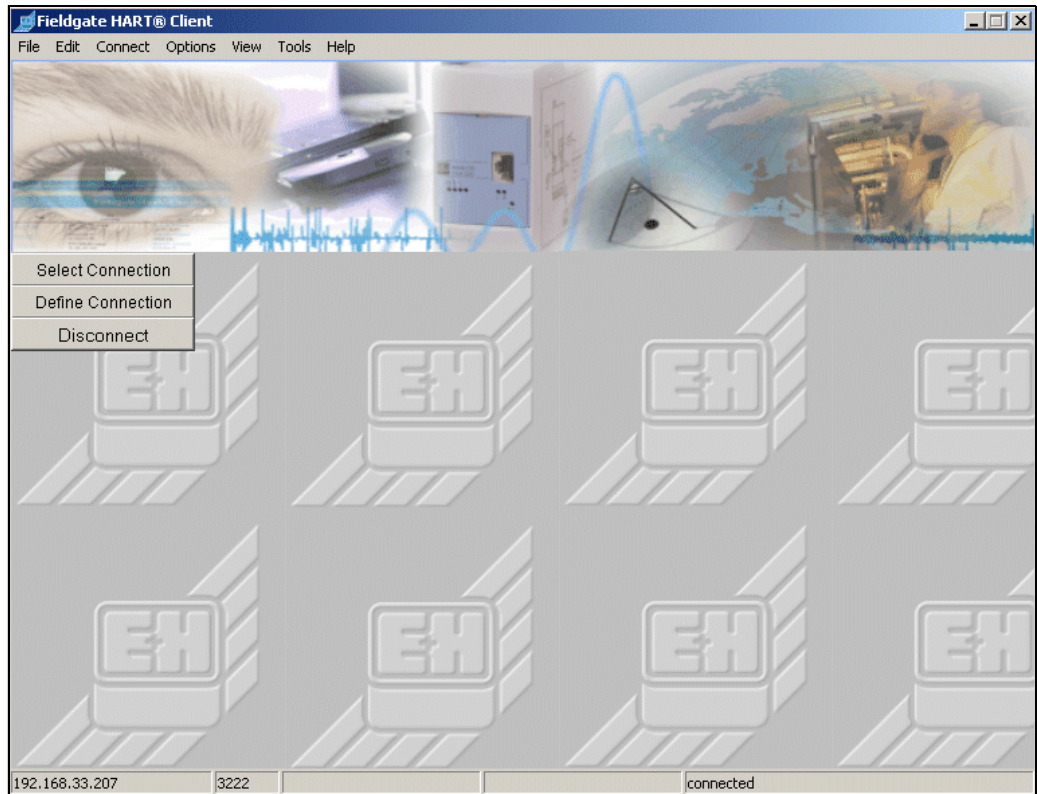


Note!

In the configuration tool (e.g. ToF Tool), the following values must be set for the HART parameters corresponding to the output:

- COM-Port HART = 8
- Retries = 20
- Preambles = 5

The connection is now made and the Fieldgate can be accessed by means of the web browser (e.g. Internet Explorer) or the configuration tool (e.g. ToF Tool). "**connected**" is displayed in the status line of the Fieldgate HART Client window. If you would like to break the connection again, click on the "**Disconnect**" button.

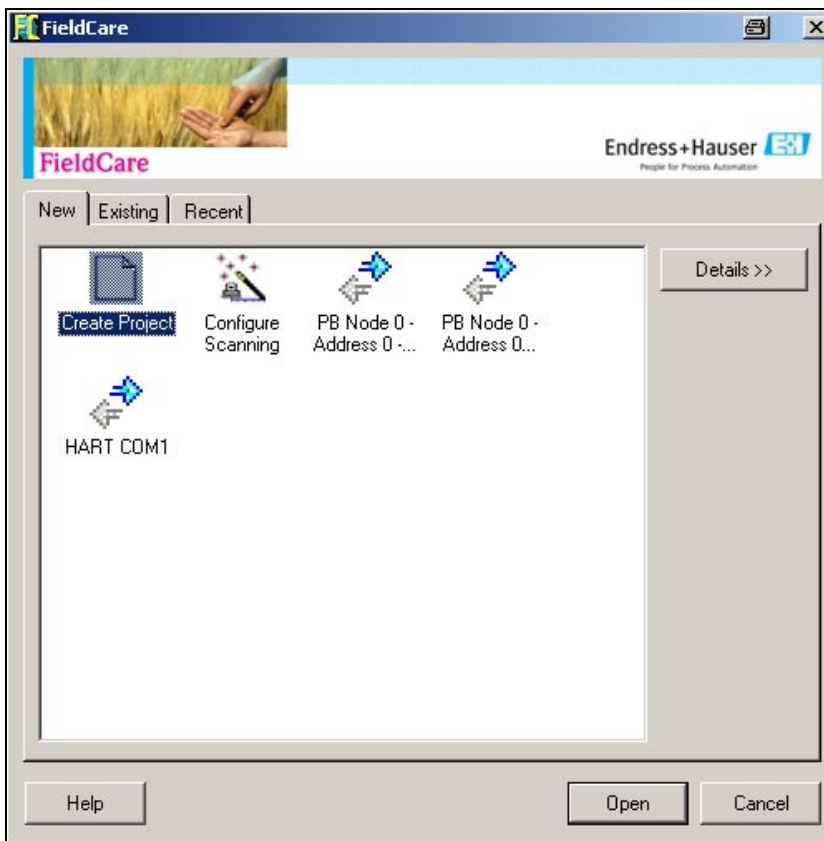


16.2 CommDTM for FieldCare

The Fieldgate FXA520 CommDTM makes it possible to use the Fieldgate functions for remote diagnosis and configuration in software packages with FDT/DTM technology. In this way, FDT frames such as FieldCare can fully access the connected HART transmitters via Fieldgate FXA520. The HART client add-on is not required.

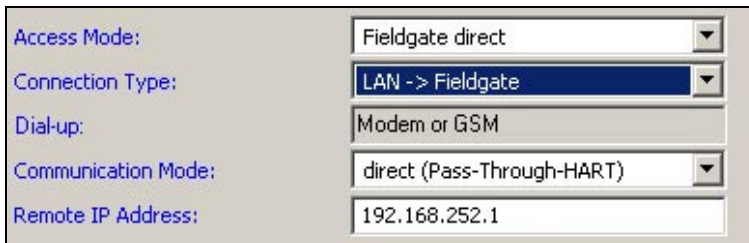
You can parameterize the device for the following tasks using the CommDTM for FXA520:

- Remote interrogation/diagnosis via telephone, Ethernet or mobile communications systems
- Remote parameterization with FieldCare



L00-FXA520xx-20-13-00-en-022

Example of selecting a connection



L00-FXA520xx-20-13-00-en-017

Example of the FieldCare network view

Network Tag	Onl...	Channel	Address	Device type (DTM)	Physical Device
Host PC					
FXA520	▶			FXA520	
TMT1621	▶	HARTCH 0	0	iTemp / TMT 162 / V1.03.00	iTemp / TMT 162
MUX1	▶	RS485CH	0	KFD2-HMM-16 (FDT)	KFD2-HMM-16
KFD0-HMS...	▶	SLAV00		KFD0-HMS-16 (FDT)	KFD0-HMS-16 (FDT)

L00-FXA20xx-20-13-00-en-018

Example of FieldCare with device-DTM online dialog via Fieldgate

The screenshot shows the FieldCare software interface for online parameterization of a TMT162 device. The main window displays the following information:

- Language:** English
- DeviceType:** iTemp - TMT 162 Software rev: 11
- Model:** TMT162
- Tag number:** T_MR1
- PV:** 25.78 degC
- AO:** 7.440 mA
- Error code:** No Fault

The central parameter list shows the following values and units:

Label	Value	Unit
Group Select		
Working parameters		
PV	25.78	degC
Int. temperature	28.13	degC
Filter time	0	s
Bias Input	0.00	degC
Calibration		
Sensor input	Pt100...	degC
Measuring unit	degC	
Direction output	4-20 mA	
Min measurm range	-200.00	degC
Max measurm range	850.00	degC
RTD connection	2 wire	
RTD 2 wire comp.	0.00	Ohm
Sensor error	Max	
Service		
Device Data		

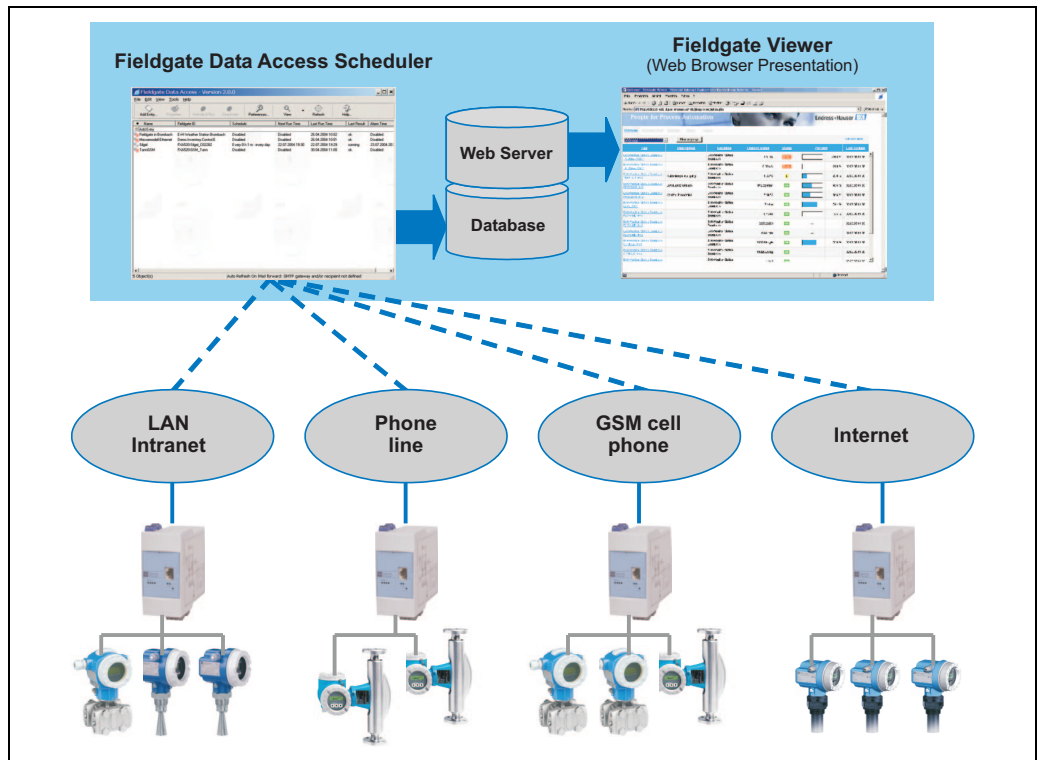
The right-hand configuration panel shows the following settings:

- Sensor input:** Pt100 DIN
- Measuring unit:** degC
- Direction output:** 4-20 mA
- Min measurm range:** -200.00 degC
- Max measurm range:** 850.00 degC
- RTD connection:** 2 wire
- RTD 2 wire comp.:** 0.00 Ohm
- Sensor error:** Max

The status bar at the bottom indicates the device is online and connected. The status bar also shows: Temp / TMT 162 / V1.1 Endress+Hauser 1.4.102.96. Administrator Administrator / L00-FXA20xx-20-13-00-en-019

17 Fieldgate Viewer

17.1 System overview




L00-FCviewer-14-00-06-en-001

Fieldgate Viewer gathers, saves and visualizes data from various Fieldgates distributed across a certain area. The data are gathered automatically by a Data Access Scheduler and stored in an SQL history database. Measured values from different locations can be merged and displayed with a web browser in tabular form, in the form of bar graphs or as line-based graphics.

Thanks to the fact that Fieldgate Viewer is network-enabled, the measured values displayed are available in the entire company via the internal company network. Every user with access authorization can view and visualize the data with a conventional web browser. No individual user licences are required. Optionally, the visualization can be made available worldwide via the Internet. The Fieldgate portal software creates a secure VPN (virtual private network) connection through the Internet firewall of the company, thereby facilitating secure access to the information of the Fieldgate Viewer from the Internet.

17.2 Fieldgate Viewer offers the following functionalities

Measured values displayed by groups and users

People for Process Automation Endress+Hauser 

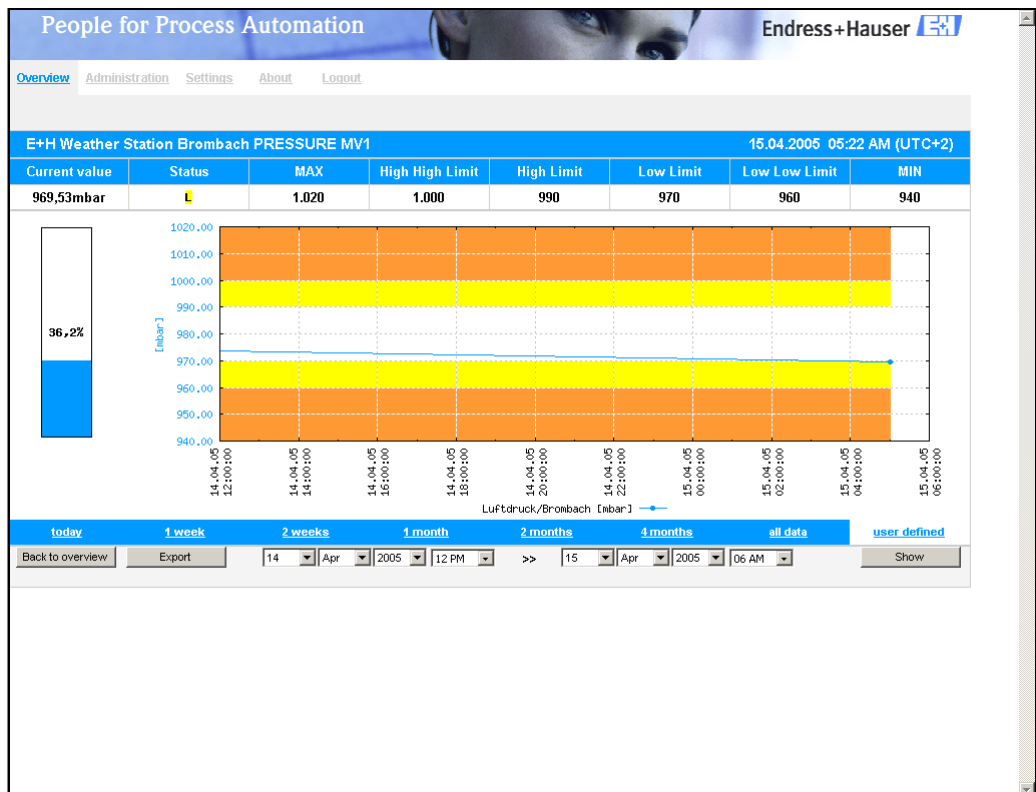
Overview Administration Settings About Logout

All Groups [refresh now](#)

Tag	Description	Location	Current Value	Status	Percent	Last Update
E+H Weather Station Brombach 4_20mA-1 MV1		E+H Weather Station Brombach	400 tA	Error	<div style="width: 0%;"></div>	0% <small>09.03.2005 11:05 AM (UTC+1)</small>
E+H Weather Station Brombach 4_20mA-2 MV1		E+H Weather Station Brombach	0.02 mA	Error	<div style="width: 0%;"></div>	0% <small>09.03.2005 11:05 AM (UTC+1)</small>
E+H Weather Station Brombach PRESSURE MV1	Luftdruck Brombach	E+H Weather Station Brombach	993.44 mbar	H	<div style="width: 49.6%;"></div>	49.6% <small>09.03.2005 11:05 AM (UTC+1)</small>
FXA320-Rothaus RML Tank 1 MV1	Inhalt Tank 1	FXA320-Rothaus	0.993 m³	L	<div style="width: 33.0%;"></div>	33.0% <small>09.03.2005 11:10 AM (UTC+1)</small>
FXA520-Silgel_C02282 SILGEL_B MV1	Silgel Component B E-Kopf Linie Bau 3EG	FXA520-Silgel_C02282	718.5 kg	OK	<div style="width: 79.3%;"></div>	79.3% <small>09.03.2005 11:15 AM (UTC+1)</small>
FXA520-Silgel_C02282 SILGEL_B MV2	Temperatur °C Raum Bau 3EG	FXA520-Silgel_C02282	22.79 °C	OK	<div style="width: 40%;"></div>	40% <small>09.03.2005 11:15 AM (UTC+1)</small>
E+H Weather Station Brombach PRESSURE MV2	Cerabar Temperatur	E+H Weather Station Brombach	9.65 °C	OK	<div style="width: 41.4%;"></div>	41.4% <small>09.03.2005 11:05 AM (UTC+1)</small>
E+H Weather Station Brombach LEVEL MV1		E+H Weather Station Brombach	7.44 m	OK	<div style="width: 74.3%;"></div>	74.3% <small>09.03.2005 11:05 AM (UTC+1)</small>
E+H Weather Station Brombach FLOW.MID MV1		E+H Weather Station Brombach	0.46 l/s	OK	<div style="width: 3.3%;"></div>	3.3% <small>09.03.2005 11:05 AM (UTC+1)</small>
E+H Weather Station Brombach FLOW.MID MV2		E+H Weather Station Brombach	22,828,610 l	OK	---	<small>09.03.2005 11:05 AM (UTC+1)</small>
E+H Weather Station Brombach FLOW.MID MV3		E+H Weather Station Brombach	0.45 kg/s	OK	---	<small>09.03.2005 11:05 AM (UTC+1)</small>
E+H Weather Station Brombach		E+H Weather Station	0.000000	OK	---	<small>09.03.2005</small>

FieldgateViewer-en-100

Measured value pattern display



FieldgateViewer-en-115

Measured data export

	A	B	C	D	E	F	G	H	I	J
1	Timestamp	Timezone	Value	LoLo	Lo	Hi	HiHi	Min	Max	
2	13/04/2005 09:36	120	980.04	960	970	990	1000	940	1020	
3	13/04/2005 09:59	120	980.04	960	970	990	1000	940	1020	
4	13/04/2005 11:00	120	979.9	960	970	990	1000	940	1020	
5	13/04/2005 11:59	120	979.57	960	970	990	1000	940	1020	
6	13/04/2005 12:59	120	979.03	960	970	990	1000	940	1020	
7										
8										

The data are saved in CSV format and can then be processed further in MS Excel.

Measured data integration

	Device-Tag	PV-Index	Fieldgate-Location	Show	PV-Tag	PV-Description
Edit	BoardTemp	1	E+H Weather Station Brombach	yes	E+H Weather Station Brombach BoardTemp MV1	
Edit	CORIOLIS	4	E+H Weather Station Brombach	yes	E+H Weather Station Brombach CORIOLIS MV4	
Edit	CORIOLIS	1	E+H Weather Station Brombach	yes	E+H Weather Station Brombach CORIOLIS MV1	
Edit	CORIOLIS	2	E+H Weather Station Brombach	yes	E+H Weather Station Brombach CORIOLIS MV2	
Edit	CORIOLIS	3	E+H Weather Station Brombach	yes	E+H Weather Station Brombach CORIOLIS MV3	
Edit	FLOW MID	4	E+H Weather Station Brombach	yes	E+H Weather Station Brombach FLOW MID MV4	
Edit	FLOW MID	1	E+H Weather Station Brombach	yes	E+H Weather Station Brombach FLOW MID MV1	
Edit	FLOW MID	2	E+H Weather Station Brombach	yes	E+H Weather Station Brombach FLOW MID MV2	
Edit	FLOW MID	3	E+H Weather Station Brombach	yes	E+H Weather Station Brombach FLOW MID MV3	
Edit	LEVEL	1	E+H Weather Station Brombach	yes	E+H Weather Station Brombach LEVEL MV1	
Edit	PRESSURE	1	E+H Weather Station Brombach	yes	E+H Weather Station Brombach PRESSURE MV1	Luftdruck Brombach
Edit	PRESSURE	2	E+H Weather Station Brombach	yes	E+H Weather Station Brombach PRESSURE MV2	Cerabar Temperatur
Edit	RML Tank 1	1	FXA320-Rothaus	yes	FXA320-Rothaus RML Tank 1 MV1	Inhalt Tank 1
Edit	RML Tank 2	1	FXA320-Rothaus	yes	FXA320-Rothaus RML Tank 2 MV1	RML Tank 2 Säure Fa. Sopura

Note!

Further information on installing and operating the "Fieldgate Viewer" program can be found in Operating Instructions BA305F. This can be found on the Fieldgate Viewer CD-ROM or can be downloaded from the Internet at: "www.de.endress.com → Download" (search text = "Fieldgate Viewer").

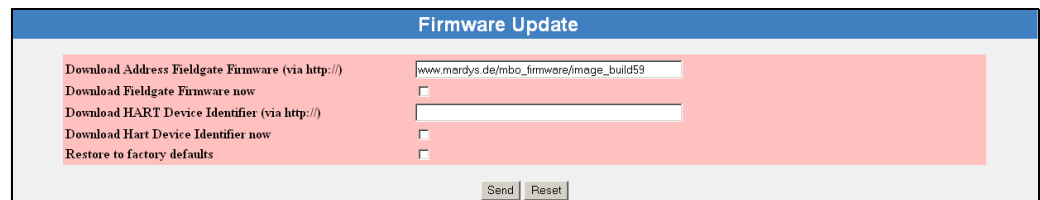
18 Software Update

Note!

This function is in preparation.

Software can be updated in the administrator mode via the web interface as follows:

1. Use the "**Switch to Administrator Mode**" function to switch to the administrator mode.
2. To run a software update, go to the section "**Information & Configuration → Special → Firmware Update**".



The screenshot shows a web interface titled "Firmware Update". It contains a form with the following elements:

- A text input field for "Download Address Fieldgate Firmware (via http://)" containing the URL "www.mardys.de/mbo_firmware/image_build59".
- A checkbox for "Download Fieldgate Firmware now".
- A text input field for "Download HART Device Identifier (via http://)".
- A checkbox for "Download Hart Device Identifier now".
- A checkbox for "Restore to factory defaults".
- At the bottom of the form, there are two buttons: "Send" and "Reset".

L00-FXA520xx-20-13-00-en-175

3. Activate the appropriate checkbox and click the "**Send**" button.

19 FAQs (frequently asked questions)

Error description	Cause	Action
I cannot reach my Fieldgate on GPRS	There are only internal IP addresses 10.x, 172.x, 192.x assigned by the GSM / GPRS provider (Check assigned IP Address: Information -> Information)	Ask GSM / GPRS Provider to assign you a public IP Address or select another GSM Provider
Fieldgate no longer on GPRS after it has been dialed on the phone	Fieldgate is currently programmed in this way	Enable "GPRS always online" checkbox whenever a call via phone is made
HART Client and ToF Tool: no connection	The parameters in Fieldgate do not correspond to the HART Client settings or user has no rights to use "Pass-Through-HART"	Enable user to access via "Pass-Through-HART" (Checkbox) and / or set HART Port No. the in Fieldgate to the same parameters as in the HART Client
HART Client: No stable connection	Wrong operating tool selected in the HART Client	Set the operating tool in the HART Client to the used tool (ToF Tool, Commuwin, ReadWin, FieldTool, OPC Server...)
HART Client and ToF Tool: no stable connection	The interface parameter is not correctly set in the ToF Tool	Set "Busy Retries" AND "Error Retries" to the values given by the HART Client
HART Client and Commuwin II: no stable connection	Parameters in the Commuwin II HART Server not correct	<ol style="list-style-type: none"> Use Commuwin II version 2.08 Add the entry "ModemRequestTimeout=2000" (refer to Commuwin II manual) in the data file C2HART.INI
HART Client: Error opening COM Port	The old version of HART Client has not been correctly uninstalled	Uninstall all versions of the HART Client and re-install the latest version
GSM Fieldgate: a phone call is answered but the modem does not start to synchronize (silence)	Fieldgate is being called on the phone number of the Voice-Channel of the SIM card	Fieldgate has to be called on the phone number of the data channel (can be a different number)
Measurement e-mails are being sent although the checkbox is not enabled	Fieldgate is programmed this way	Delete all values for Limit Settings, where no e-mail should be sent
Fieldgate receives no IP address from a DHCP Server	Currently the Fieldgate supports the BOOTP protocol which is no longer supported from every DHCP Server	Enable BOOTP protocol for the DHCP Server or use a fixed IP Address or ask for a new Fieldgate Software update (End 2003)
After changes via the Service Cable data is not stored in Fieldgate after the next power up	As long as the Service Cable is connected, the configuration data cannot be stored by the Fieldgate to the EEPROM	Either wait about 5 minutes after the disconnection of the service Cable or perform a restart of the software ("Information & Configuration" -> "Special" -> "System restart")
The password super/super or eh/eh does not operate	Pay attention to upper and lower case	Key-in the password correctly
Time is in the CSV file generated by FXADA V 1.0 registered twice (i.e. 1616:54:32 instead of 16:54:32)	In the country settings of Windows the time format is set to H:mm:ss	Choose as time format HH:mm:ss in the Windows control panel
HART Multidrop: no stable connection	There are disturbances on the HART signal	Decrease the number of HART devices operating on the line
HART Multidrop: no connection	Devices have identical (Long) HART addresses (it can arise with some electronic devices, when the unique serial number has not been assigned)	Replace the electronic devices or enter a unique HART serial number
Promag 53 shows different values on the Display than in HART (Fieldgate)	Promag is not configured properly	Use HART OPC Server (http://www.hartcomm.org/develop/server2/index.html) to put the units in accordance with the Promag operating instructions

Question	Answer
How can I send an SMS with Fieldgate? (Analog/ Ethernet Version)	It is not possible to send an SMS directly from an analogue or Ethernet Fieldgate. You have to go to a provider who, for example, automatically sends an SMS when an e-mail arrives. Many freemailers offer such services (e.g. t-email.de, directbox.com, web.de etc.)

20 Accessories

20.1 Protective housing

The protective housing in protection class IP 66 is equipped with an integrated top-hat rail and is close with a transparent cover that can also be lead sealed.

Dimensions:

W 180 / H 182 / D 165

Color:

Light grey RAL 7035. Order number: 52010132.

20.2 DAT module

The DAT module (Order No.: 52013311) makes the data logging function possible and makes it possible to make a back-up of a certain configuration of the Fieldgate. With the aid of a DAT module, you can also duplicate a defined configuration in several Fieldgates.

Note!

Please insert and remove the DAT module in a de-energized state only!

Data logging is possible as of a 256K memory (→ Chap. 13 from Page 130).

20.3 PC cable

A PC can be connected to the FXA 520 for configuration purposes via a serial RS 232 connection. Order number: 52013984.

20.4 Telephone cable

RJ11 (analogue plug, double sided, length: 5 m). Order number: 52014031.

20.5 HART Client

The HART Client is a free add-on which is required for remote configuration via HART tools (e.g. with ToF Tool, FieldTool, ReadWin, ...).

You can download the current software version from the Internet from the Endress+Hauser product pages.

20.6 Antenna

Antenna for communication via mobil communications (GSM). Order number:

- Triband flat antenna. Order number: 52018396
- Dual band station antenna. Order number: 52018395

20.7 Multiplexer

Cable for the HART Multiplexer-System

Order number: 52017687

Operating Instructions BA 265F/00/de - Order number: 52017693

Interface Modul without Communication resistor

Order number: 52017689

Operating Instructions BA 266F/00/en - Order number: 52017694

Interface Modul with Communication resistor

Order number: 52017690

Operating Instructions BA 267F/00/de - Order number: 52017695

HART-Multiplexer Master KFD2-HMM-16

Order number: 52017691

Operating Instructions BA 268F/00/en - Order number: 52017696

Switched power supply

Order number: 52017688

Operating Instructions BA 269F/00/en - Order number: 52017698

HART-Multiplexer Slave KFD0-HMS-16

Order number: 52020232

Operating Instructions BA 283F/00/en - Order number: 52021045

20.8 E+H Multidrop Connector

Operated several devices in multidrop operation for FXA520.

Order number: 52023652.

20.9 E+H power supply units

RMA 422

Multifunctional 1-2-channel top-hat rail device with intrinsically safe current inputs and transmitterpower supply, limit value monitoring, mathematics functions and 1-2 analogue outputs.

RNS 221

Power supply unit for supplying power to two two-wire sensors or transmitters in non-hazardous areas.

RN 221 N

Isolator with power supply for safely isolating 4...20 mA standard signal circuits.

RMA 421

Multifunctional 1-channel top-hat rail device with universal input, transmitter power supply, limitvalue monitoring and analogue output.

20.10 Fieldgate Viewer

Web server for remote monitoring of measured values.

Fieldgate Viewer gathers, saves and visualizes data from various Fieldgates distributed across a certain area. The data are gathered automatically by a Data Access Scheduler and stored in an SQL history database.

Order number: 52027963 (full version) and 52027962 (demo version).

20.11 Fieldgate Solution FXA360, FXA560

Fieldgate Solution FXA360 and FXA560 are customized solutions for applications in the area of "Inventory Control", completely mounted and wired in the cabinet. The customers order and pay for exactly the type of configuration they need to provide the solution to their application.

21 Appendix

21.1 Establishing a connection with a PC cable (Exemplary instruction for Windows NT)

Note!

All Fieldgate versions can be configured with the PC cable.

21.1.1 Installation

Connect your personal computer and the Fieldgate with the PC cable supplied. The service connector (see Fig. 10, item 8) is used to connect the Fieldgate. The COM port selected is used to connect the PC.

21.1.2 Setting up the personal computer

Note!

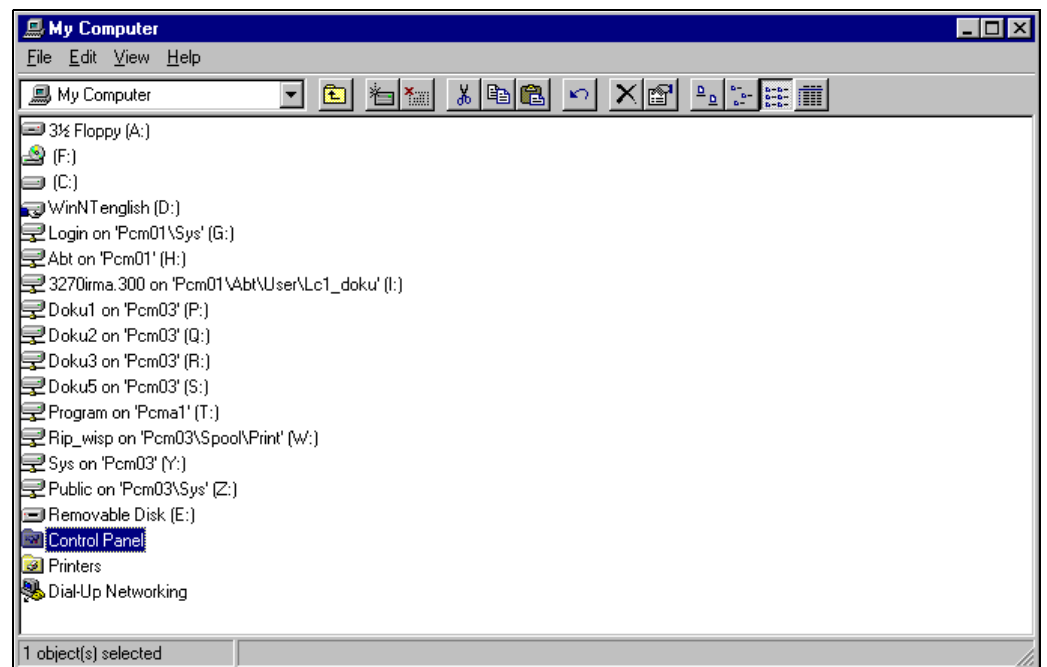
All Fieldgate communication versions can be commissioned via the PC cable with a web browser (Internet Explorer, Netscape Navigator, etc.). The IP address to be contacted via the PC cable is fixed permanently and cannot be changed (**IP = 192.168.253.1**).

Installing a modem

Install a standard modem if this is not yet installed on your PC.

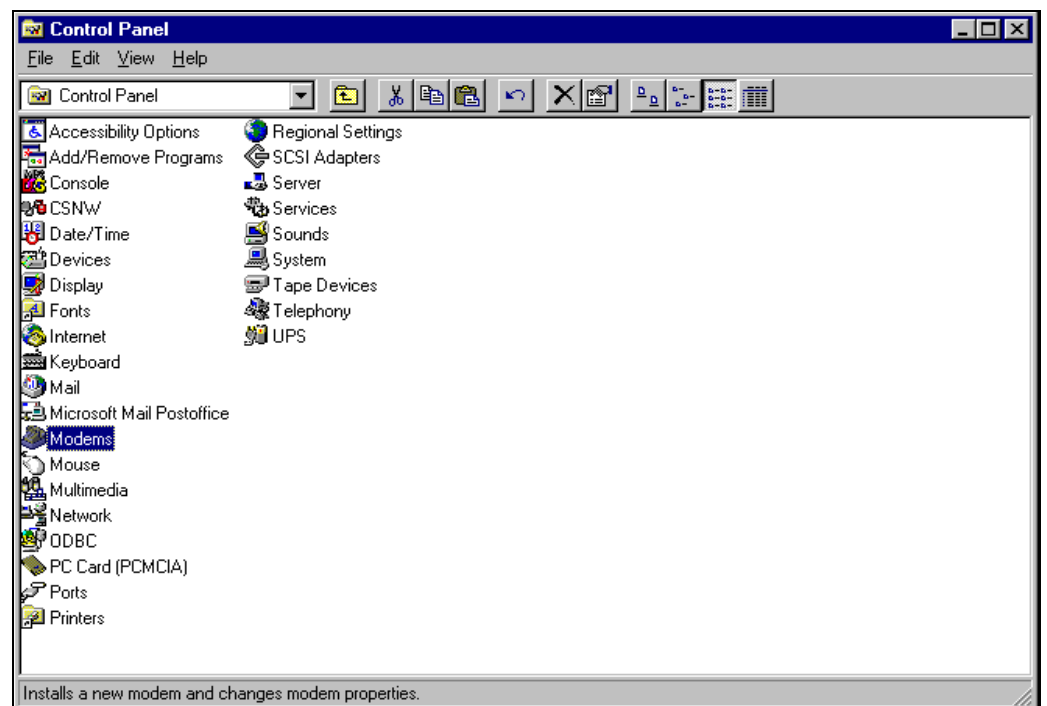
The following are sample instructions for Windows NT® :

1. Using the left mouse button, double-click the "**My Computer**" icon to open the appropriate window.



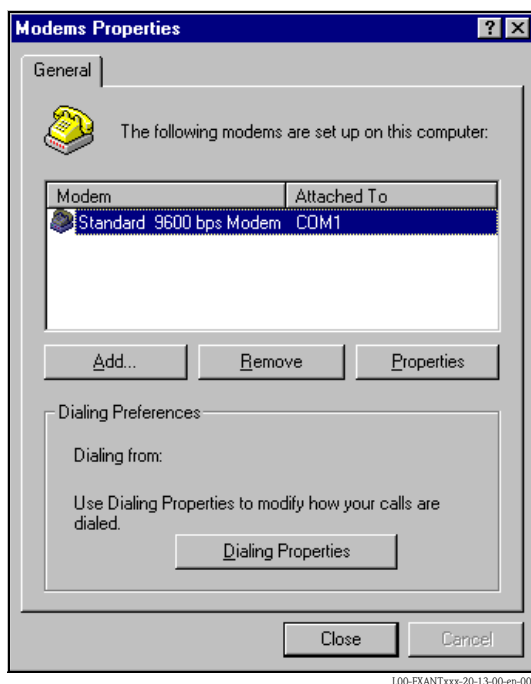
L00-FXANTxxx-20-13-00-en-001

2. Using the left mouse button, double-click the "**Control Panel**" icon to open the appropriate window.

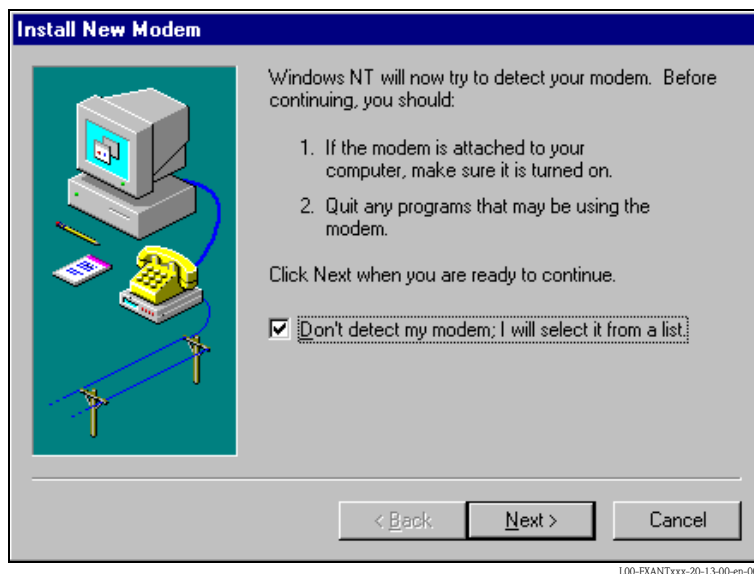


L00-FXANTxxx-20-13-00-en-002

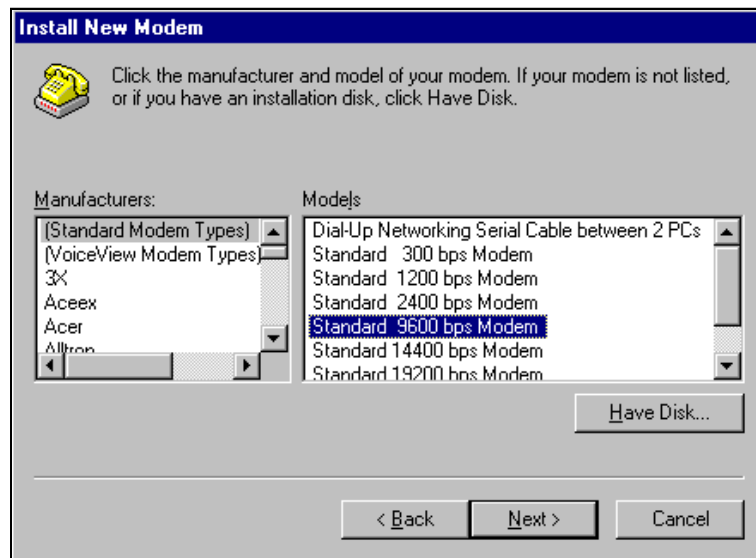
3. Using the left mouse button, double-click the "**Modems**" icon to open the appropriate window.



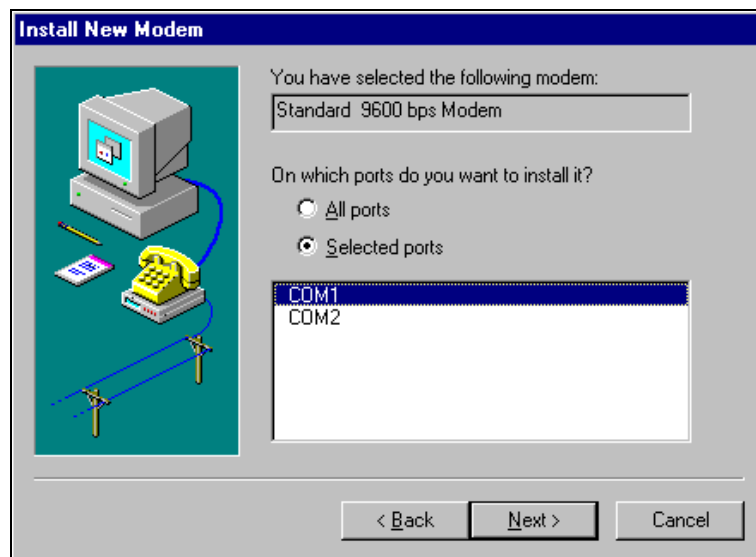
4. Here you must left-click the "**Add...**" button to add a new modem.



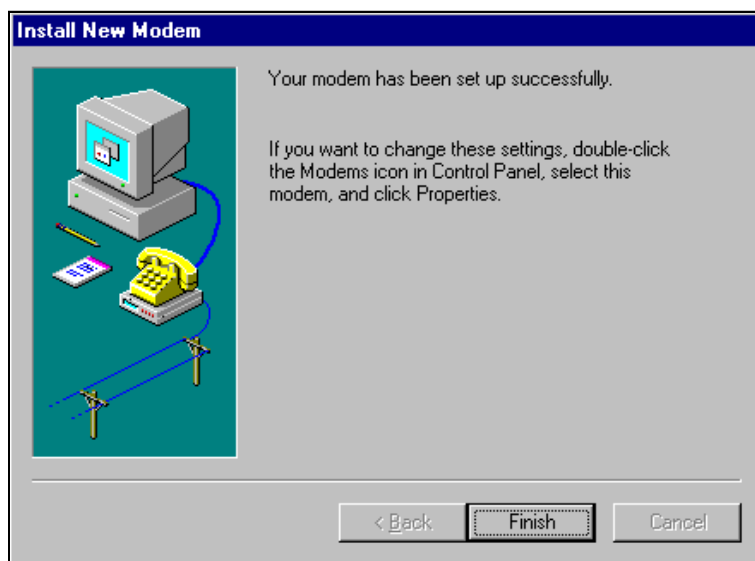
5. Activate the checkbox "**Don't detect my modem; I will select it from a list.**", click "**Next >**" to confirm.



6. Select the following from the picklists "**Manufacturers: → (Standard Modem Types)**" and "**Models: → Standard 9600 bps Modem**" and click "**Next >**" to confirm.



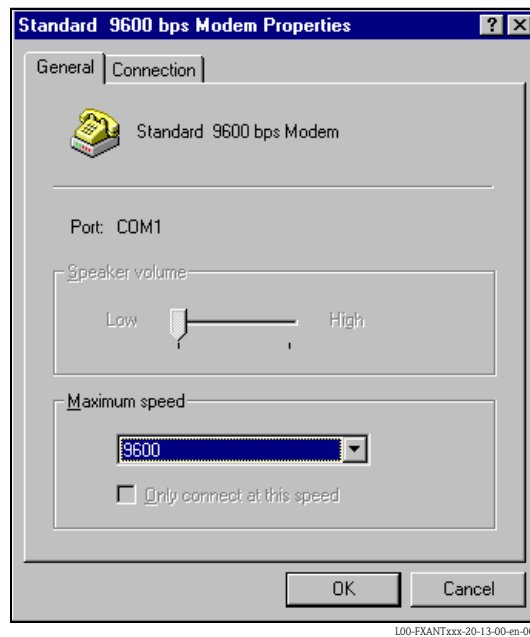
7. Select the desired COM port and click "**Next >**" to confirm.



8. Click "**Finish**" to confirm the modem installation.
9. Using the left mouse button, double-click the "**Modems**" icon to open the appropriate window.

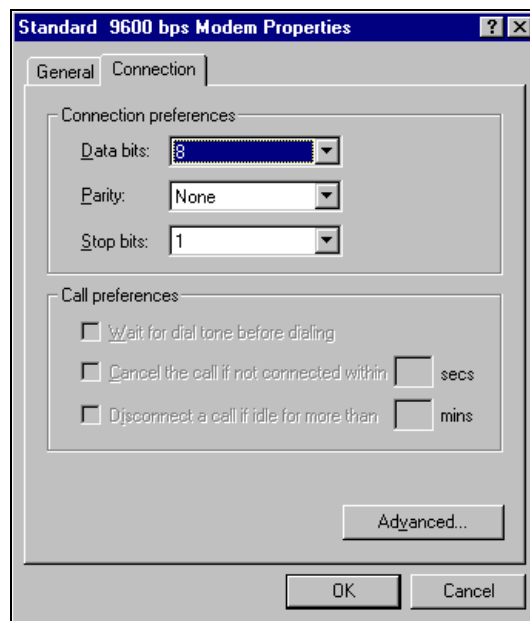


10. Select the newly installed modem "**Standard 9600 bsp Modem**" and left-click the "**Properties**" button.



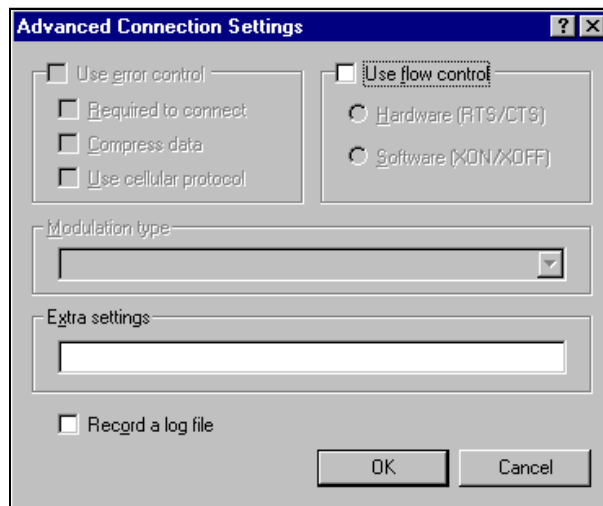
L00-FXANTxxx-20-13-00-en-009

11. Select the tab for "**Connection**".



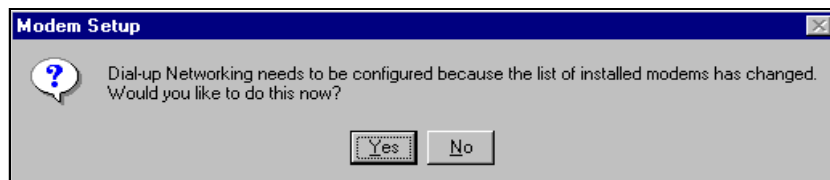
L00-FXANTxxx-20-13-00-en-010

12. Left-click the "**Advanced...**" button.
The checkbox for "**Use flow control**" must be deactivated here.
Click "**OK**" to confirm your settings.



L00-FXANTxxx-20-13-00-en-011

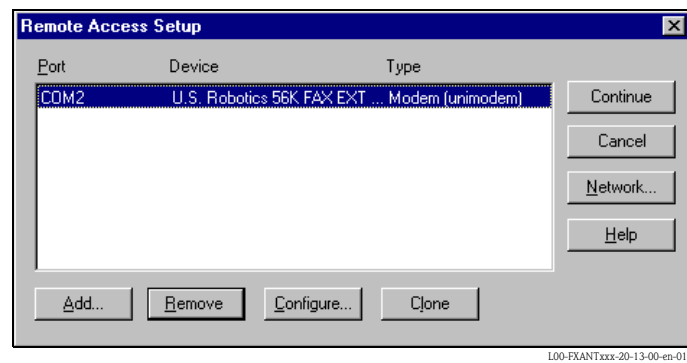
13. Close all windows.
14. Click **"Yes"** to confirm the following message.



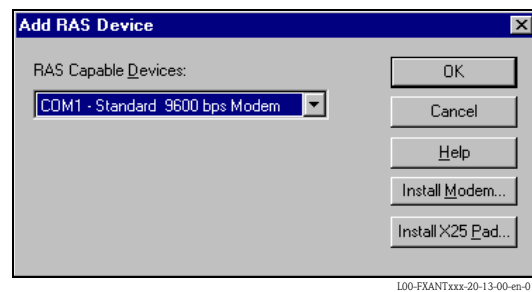
L00-FXANTxxx-20-13-00-en-012

Setting up RAS

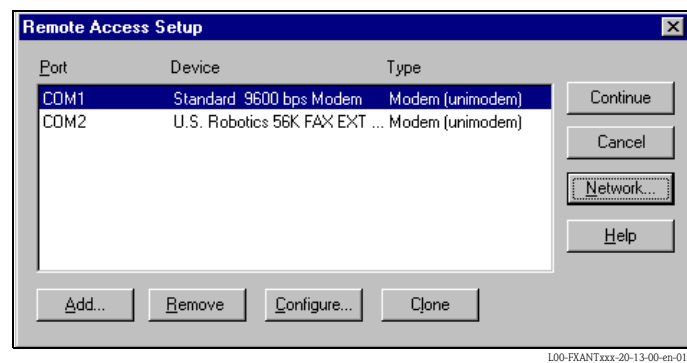
1. In the "RAS setup" window, left-click the "Add..." button.



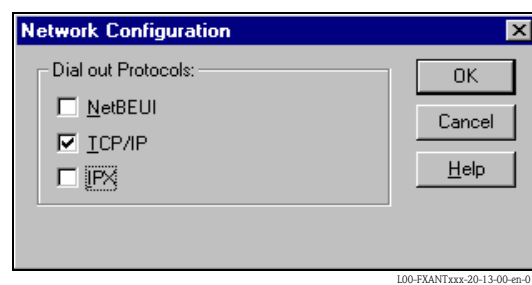
2. Click "OK" to confirm your choice.



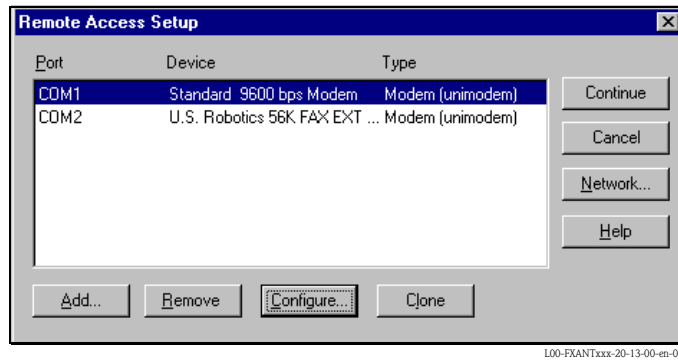
3. Select the newly installed modem and left-click the "Network..." button.



4. Activate the checkbox for "TCP/IP" as the client protocol and click "OK" to confirm the setting.

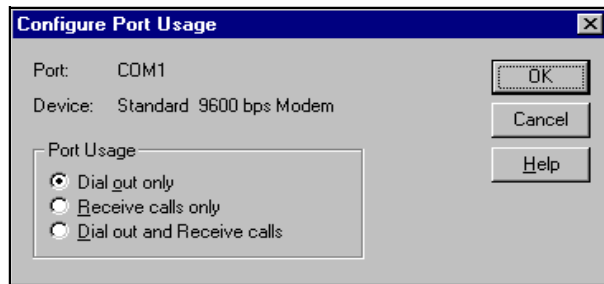


5. Select the newly installed modem and left-click the "Configure..." button.



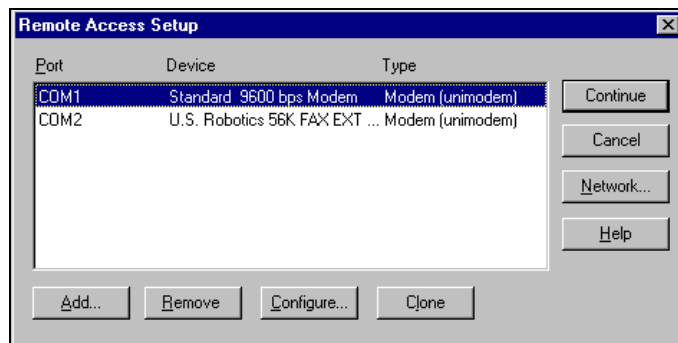
L00-FXANTxxx-20-13-00-en-017

6. For the **"Port Usage"** only activate the option for **"Dial out only"** and click **"OK"** to confirm.



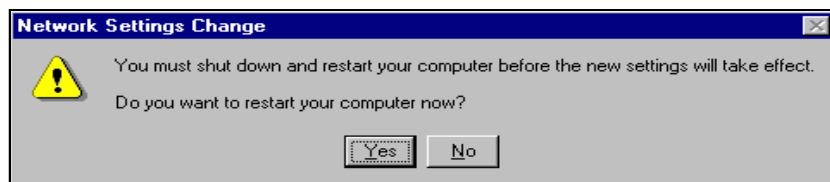
L00-FXANTxxx-20-13-00-en-018

7. Click **"Next >"**.



L00-FXANTxxx-20-13-00-en-019

Your modem for the Fieldgate PC cable is now set up and you are requested to restart your computer. Click **"Yes"** to restart your computer.

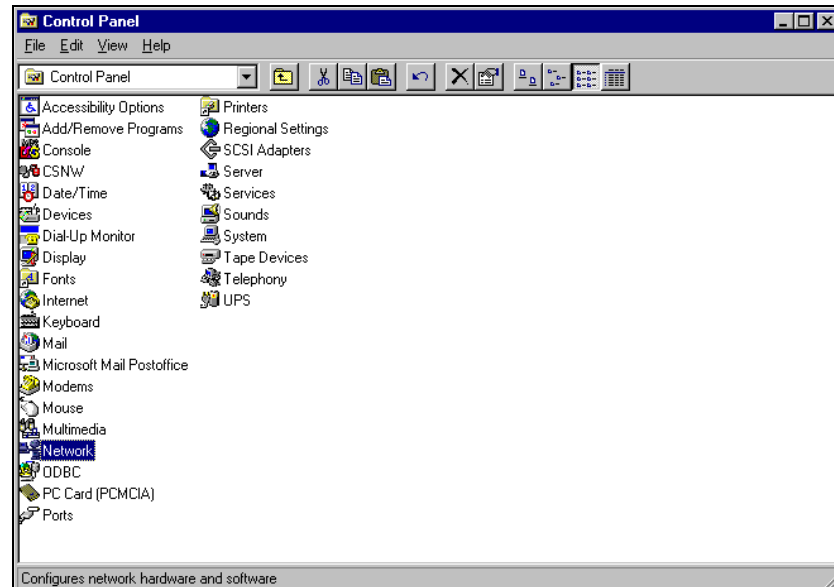


L00-FXANTxxx-20-13-00-en-020

Setting up a dial-up networking connection

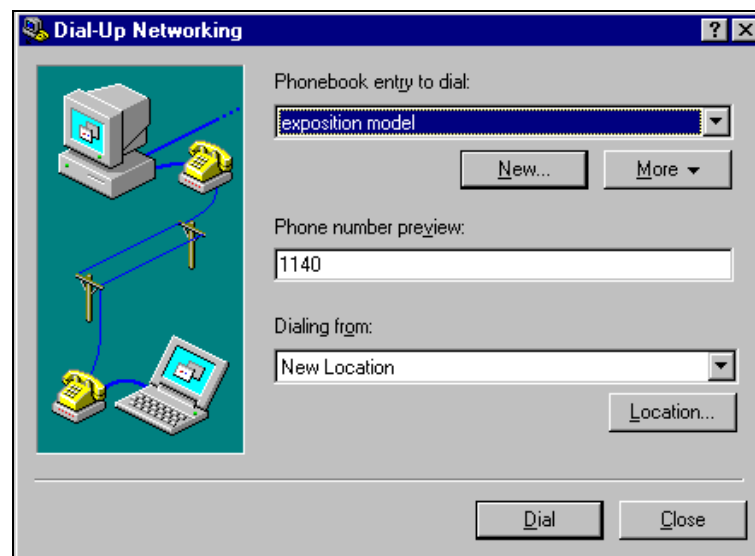
Now you must set up a dial-up networking connection.

1. Using the left mouse button, double-click the **"Network"** icon to open the appropriate window.



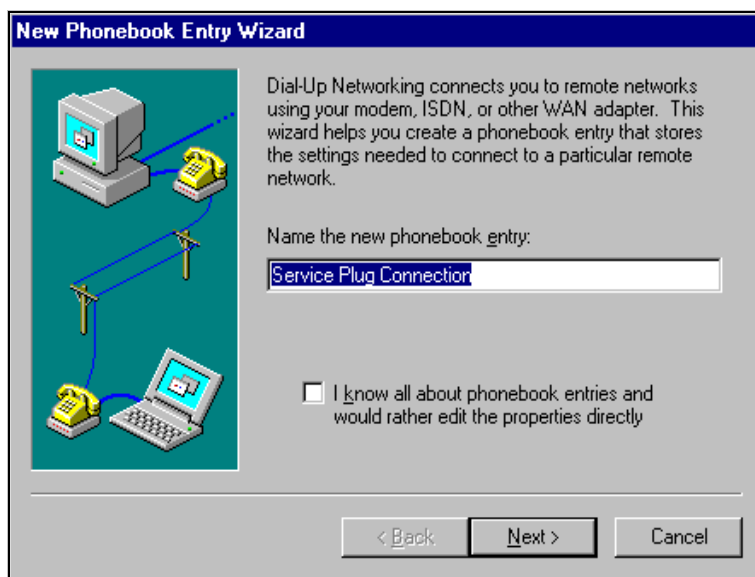
L00-FXANTxxx-20-13-00-en-021

2. Left-click the **"New..."** button.

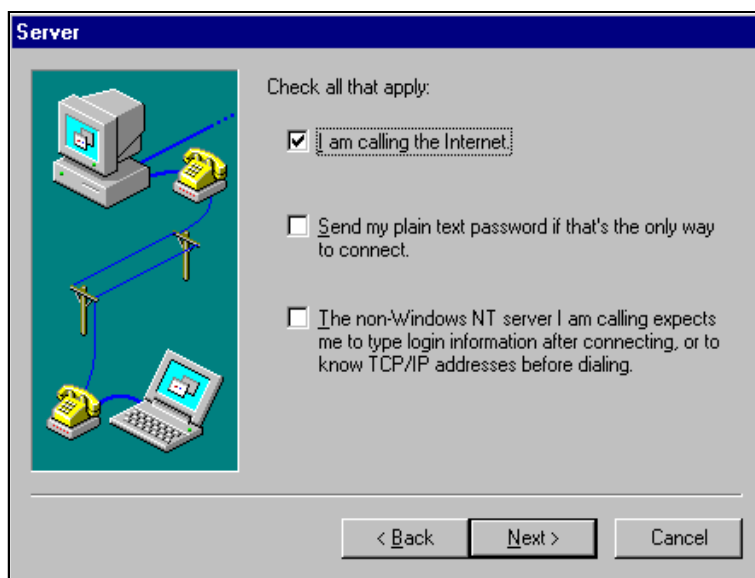


L00-FXANTxxx-20-13-00-en-022

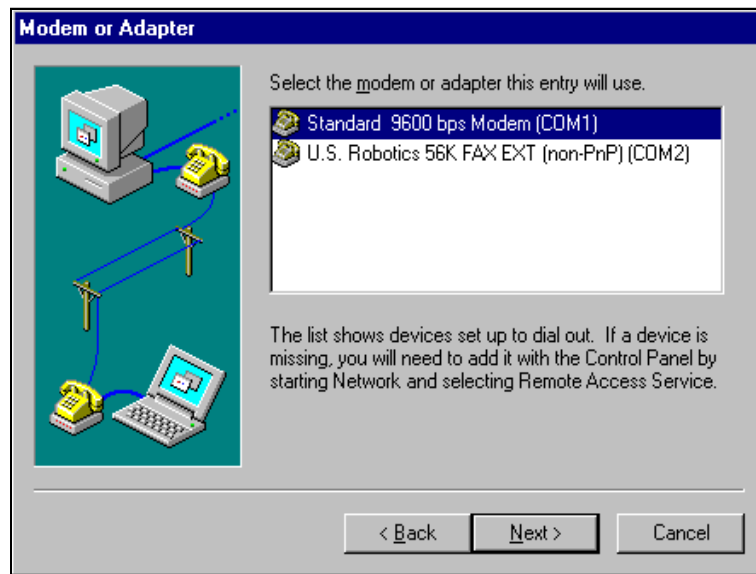
3. Enter the connection name in the **"Name the new phonebook entry:"** field. You can enter any name you choose (e.g. PC cable connection in our example). Click **"Next >"** to confirm the name entered.



4. In the following window, only activate the checkbox for "**I am calling the Internet**" and click "**Next >**" to confirm.

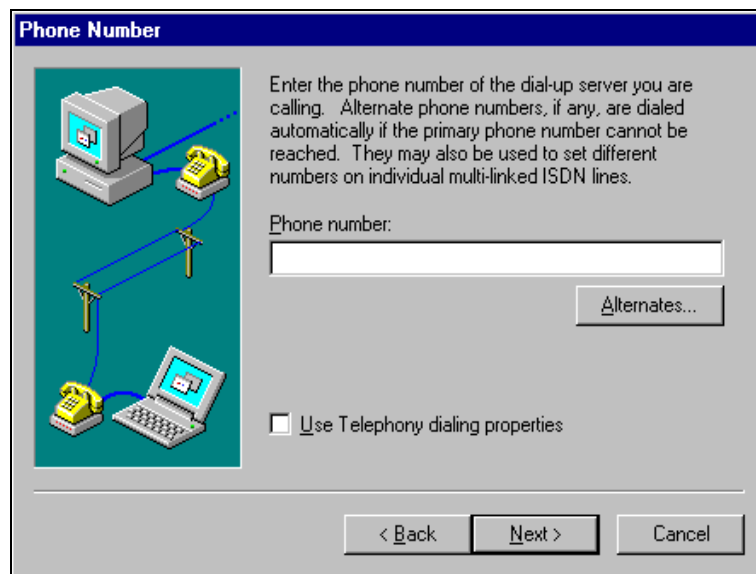


5. Select the standard modem newly set up "**Standard 9600 bsp Modem (COM1)**" and click "**Next >**" to confirm.



100-FXANTxxx-20-13-00-en-025

6. In the following window, enter the telephone number (a hypothetical number of no significance, such as 12345...) and click "**Next >**" to confirm.



100-FXANTxxx-20-13-00-en-026

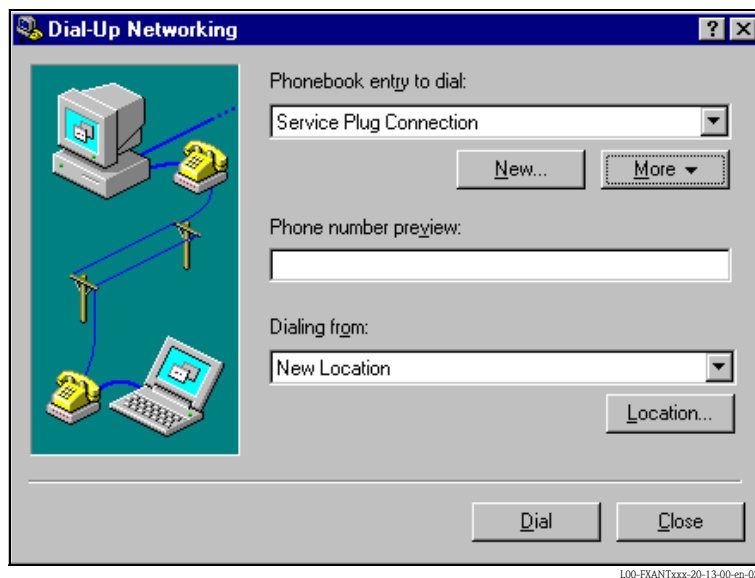
7. Click "**Finish**" to confirm the settings for the new telephone book entry.



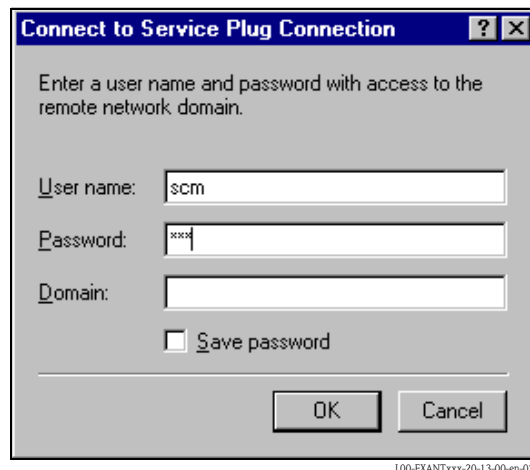
The dial-up networking connection is set up.

21.1.3 Making the connection

1. Using the left mouse button, double-click the "**Network**" icon to open the appropriate window.

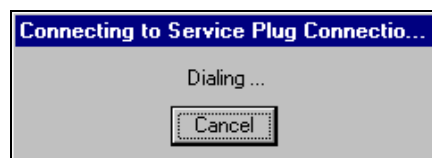


2. Select the connection recently set up (e.g. "PC cable connection"). Check the "**Hardware Settings**". To do so click the "**More**" button. Click "**Dial**" to confirm your settings.
3. In the following window enter:
 - the user name "**scm**"
(This is permanently stored in the Fieldgate and cannot be altered!)
 - and the password "**scm**"
(This is permanently stored in the Fieldgate and cannot be altered!)



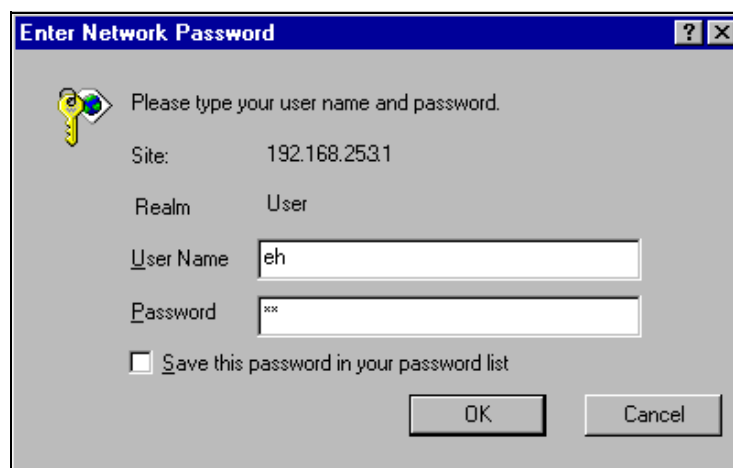
L00-FXANTxxx-20-13-00-en-029

4. Click **"OK"** to confirm your entries.



L00-FXANTxxx-20-13-00-en-030

5. Start the web browser once the connection is made. Enter the IP address **"192.168.253.1"**. This IP address for the PC cable is fixed permanently in the Fieldgate and cannot be changed!
6. In the following window enter:
 - the user name **"eh"**
 - and the password **"eh"** (in the delivery status).
 Click **"OK"** to confirm your entries.



L00-FXANTxxx-20-13-00-en-031

21.1.4 Working in the web browser

The user interface is displayed in the web browser and the Fieldgate can now be commissioned.

The screenshot shows a Microsoft Internet Explorer browser window titled "fxa520 - Device Overview". The address bar shows "http://192.168.253.1/". The page content includes a navigation bar with "Refresh", "Switch to Administrator Mode", and "Information & Configuration..." links. Below this is a large blue header "Fieldgate 'fxa520'". A table lists connected devices with the following data:

Status	Limit	Tag	PV timestamp	Manufacturer Device Type	Descriptor Message
	4.20mA-1		PV=0.00 mA -	Endress+Hauser internal	
	4.20mA-2		PV=0.00 mA -	Endress+Hauser internal	

At the bottom of the page, there is a footer with "Current Time: (UTC)", a link for "XML Data", and copyright information: "Copyright © 2001-2002 by Endress+Hauser GmbH+Co. KG, Product Center Maulburg". The browser status bar shows "http://192.168.252.1/indexs.html" and "Internet".

21.2 Establishing an Ethernet connection (Exemplary instruction for Windows NT)

21.2.1 Installation

Caution!

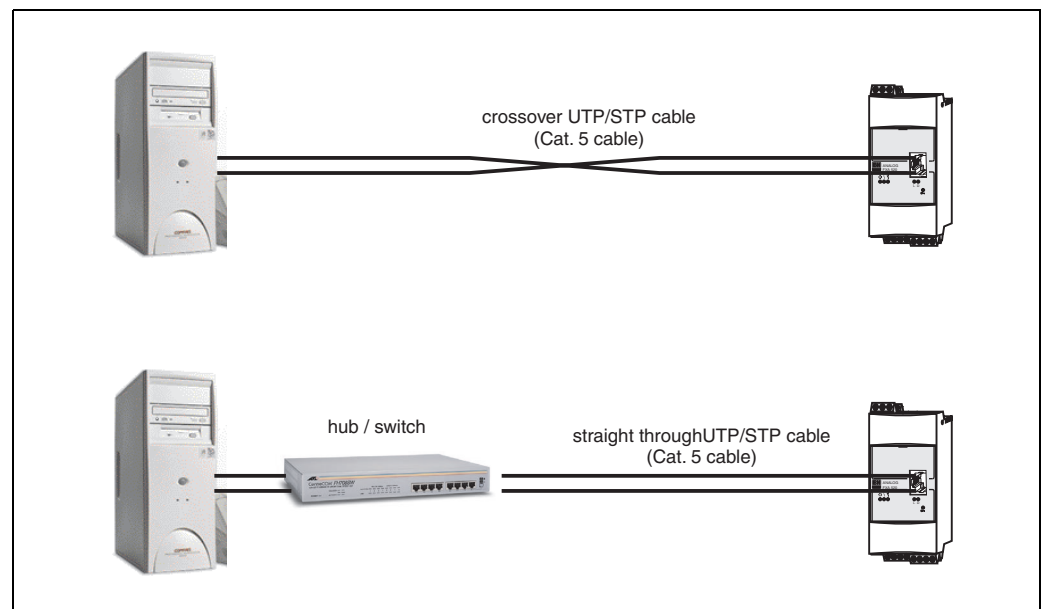
Ensure that the supply voltage matches the specifications on the nameplate.
Please refer also to the online help of your operating system.

21.2.2 Setting up the personal computer

To establish an Ethernet connection, your personal computer must be equipped with a network card and the TCP/IP protocol must be supported.

21.2.3 Making the LAN connection

Use a crossover UTP/STP cable (Cat. 5 cable) to connect the Fieldgate to your PC or use a straight-through UTP/STP cable (Cat. 5 cable) and a hub/switch. For this, please use the socket on the front of the Fieldgate.



L00-FXA520xx-04-00-06-en-003

If the yellow LED "L" for Link (s. Abb. 10, item 4 on Seite 16) lights up, the Fieldgate is physically connected to the Ethernet. If not, check the cable and/or use another cable type (crossover/straight-through).

For connection to the Fieldgate, you must adapt the IP address of your PC to that of the Fieldgate or add another address to the existing IP address.

When delivered, the Fieldgate has the IP address **192.168.252.1** as standard.

Thus, configure an IP address in the address range 192.168.252.2 to 192.168.254.252. For example, 192.168.252.2 network mask 255.255.255.0.

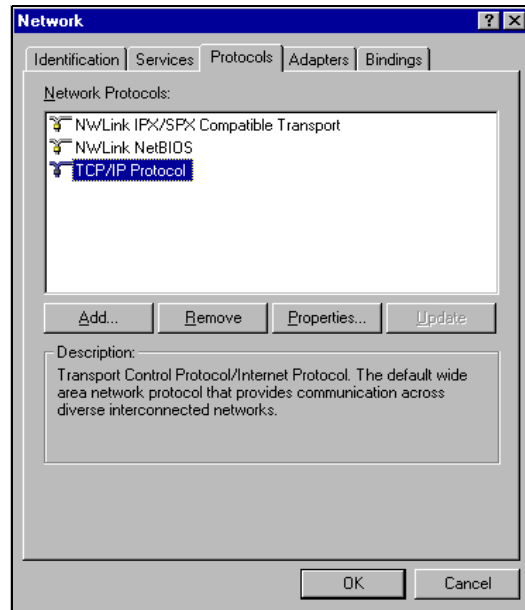
Please refer to your PC manual for information on how to change the IP address of your PC.

Caution!

For the following instructions under Windows® 2000, you require administrator rights. Contact your system administrator.

The following are sample instructions for Windows[®] NT:

1. Right-click "Network < Properties"
2. Select the tab for "Protocols".



L00-FXANTxxx-20-13-00-en-101

3. Now you can enter/change the values and click "OK" to confirm.



L00-FXANTxxx-20-13-00-en-102

4. Now enter "192.168.252.1" in the address field of your browser. The Fieldgate start page is displayed. Click "OK" to confirm.
5. Start the web browser, e.g. Internet Explorer.

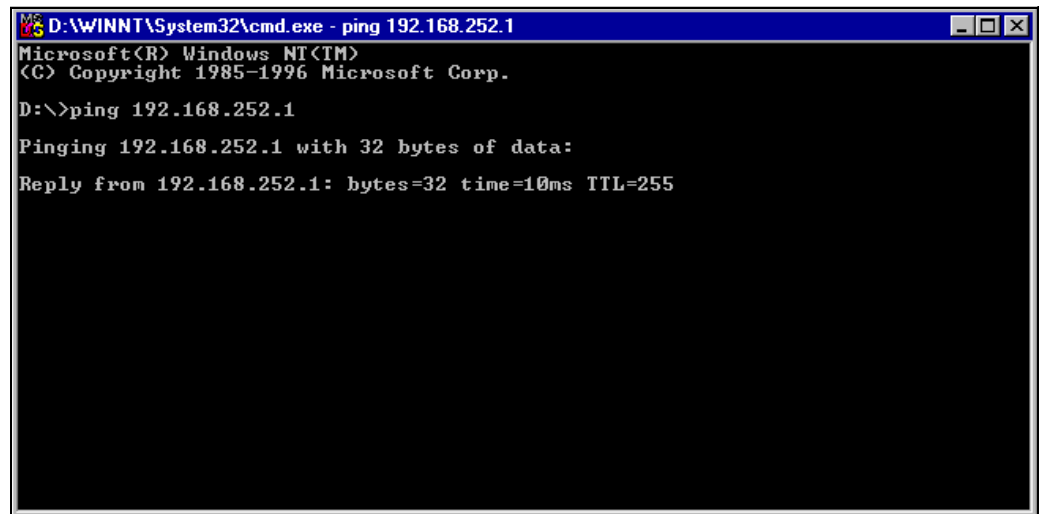
If there is no connection, check the connection to the Fieldgate as follows:

1. Is the Link LED lit on the Fieldgate?
 - Yes, proceed with point 2
 - No, check the cable
2. Is the Link LED of the PC network card lit?
 - Yes, proceed with point 3
 - No, check the cable
3. Open the DOS prompt "**Start → Run → cmd** "



L00-FXANTxxx-20-13-00-en-103

4. Enter "**ping 192.168.252.1**".
Do you get the answer 192.168.254.1 Bytes=32...
 - Yes. The connection is OK. Check your browser settings (If a proxy server is used try to bypass the IP-adress 192.168.254.1).
 - No. There is no connection to the Fieldgate.



L00-FXANTxxx-20-13-00-en-104

21.2.4 Connecting

Start the web browser.

In the address field of your Internet browser, enter the IP address of the Fieldgate.

21.2.5 Disconnecting

Close your web browser.

21.3 Establishing an analogue modem connection (Exemplary instruction for Windows NT)

Note!

The telephone country default setting is set to TBR 21 (basic standard of European countries). You may have to adjust this via the service interface (PC cable).

Please refer also to the online help of your operating system.

21.3.1 Installation

Note!

To be able to configure the Fieldgate, there must be a telephone connection between your personal computer and the Fieldgate.

For this, you require a commercially available analogue modem and 2 analogue telephone connections, one for your analogue modem and one for the Fieldgate. These connections can also be internal ports of a telephone system.

This configuration can also be made using the PC cable ().

21.3.2 Setting up the personal computer

Caution!

An analogue modem must already be installed on your personal computer. Please refer to the operating instructions for the modem and your PC for information on how to install an analogue modem.

Creating a dial-up networking connection

Set up a dial-up networking connection.

Note!

For this purpose, please also refer to the online help of your Windows® operating system on the topic "Setting up a dial-up networking connection".

Note!

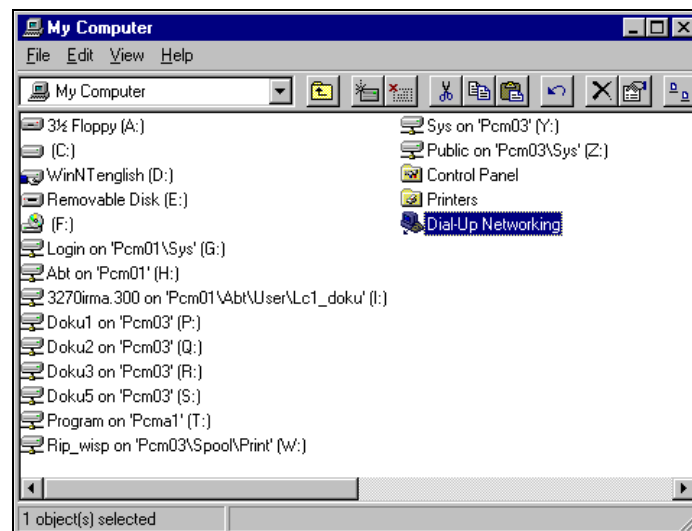
The factory setting for the IP address of the analogue modem version is:

"http://192.168.254.1".

This IP address can be altered as required.

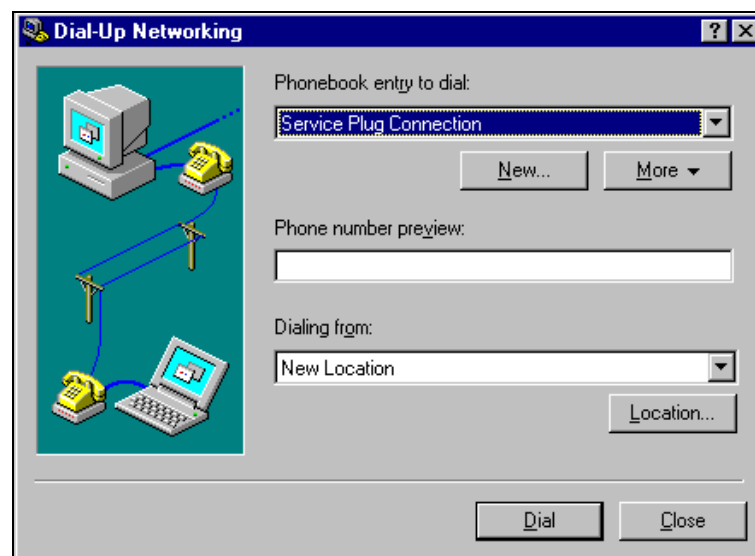
The following are sample instructions for Windows NT® :

- Using the left mouse button, double-click the "Dial-Up Networking" icon to open the appropriate window.



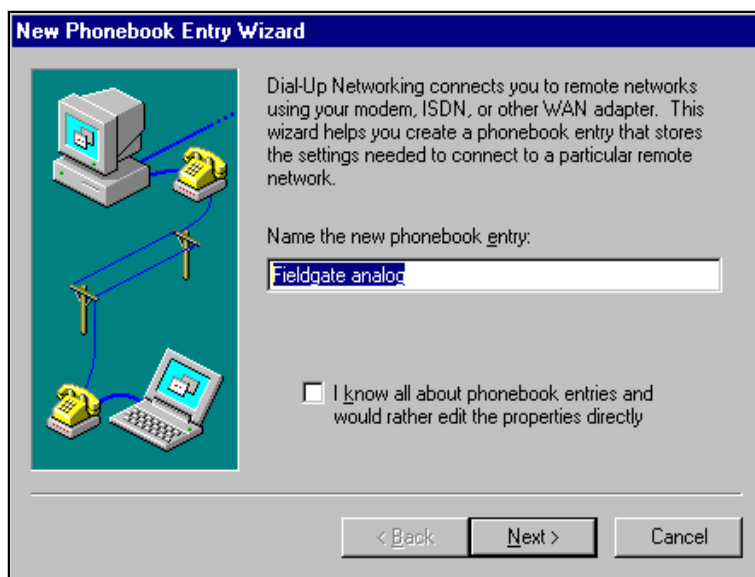
L00-FXANTxxx-20-13-00-en-201

- Left-click the "New..." button.

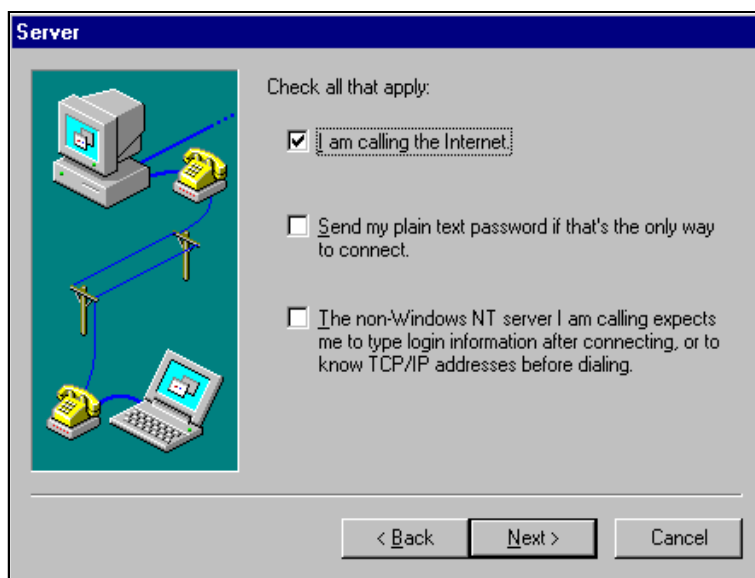


L00-FXANTxxx-20-13-00-en-202

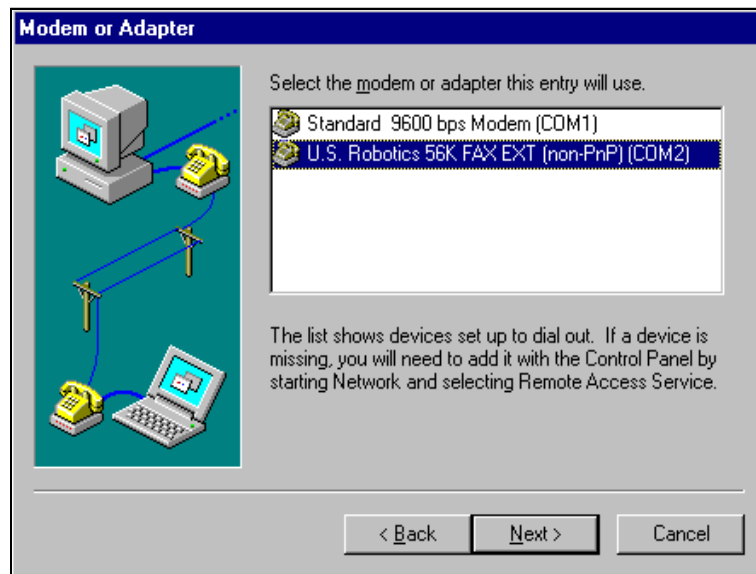
- Enter the connection name in the "Name the new phonebook entry:" field. You can enter any name you choose (e.g. Fieldgate Analog in our example). Click "Next >" to confirm the name entered.



4. In the following window, only activate the checkbox for "I am calling the Internet" and click "Next >" to confirm.

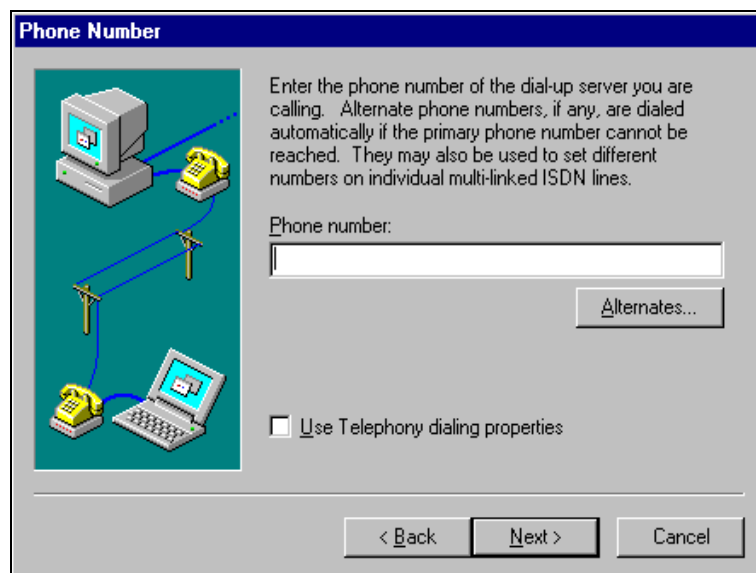


5. Select the analogue modem to be used and click "Next >" to confirm your choice.



100-FXANTxxx-20-13-00-en-205

6. In the following field, specify the telephone number of the Fieldgate. Please also enter the exchange number if it is required. For example, this means the following for the number "00044161XXXX":
- Position 1 (0 = exchange)
 - Positions 2...5 (0044 = country code, here for UK)
 - Positions 6...9 (161 = area code, here for Manchester)
 - Position 10... (XXXX = Fieldgate telephone number)
- Click "Next >" to confirm your entries.



100-FXANTxxx-20-13-00-en-206

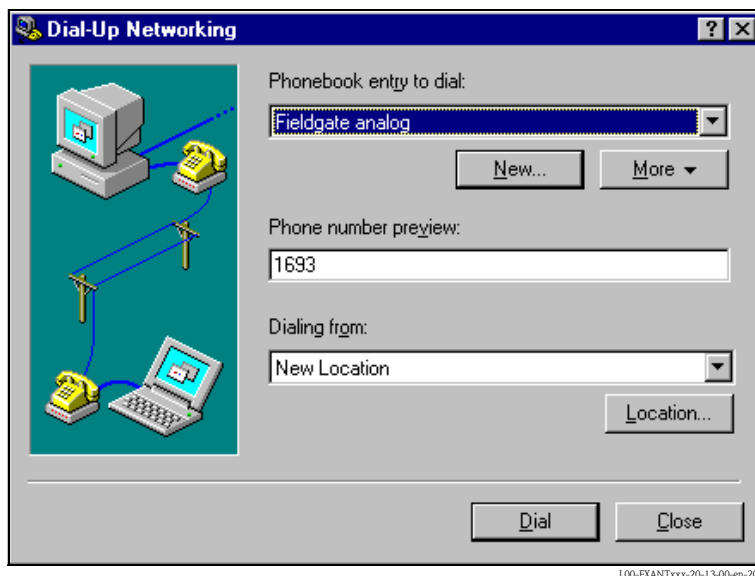
7. Click "Finish" to confirm the settings for the networking connection.



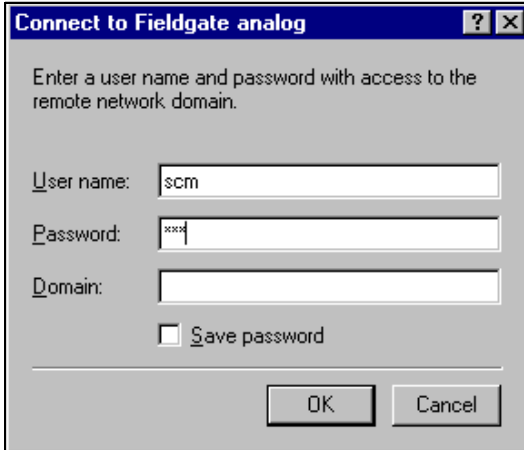
The dial-up networking connection is set up.

21.3.3 Making the connection

1. Using the left mouse button, double-click the "**Dial-up Networking**" icon to open the appropriate window.



2. Select the connection recently set up (e.g. "Fieldgate Analog") and click "**Dial**" to confirm.
3. In the following window enter:
 - the user name "**scm**"
(This is permanently stored in the Fieldgate and cannot be altered!)
 - and the password "**scm**"
(This is permanently stored in the Fieldgate and cannot be altered!)



Connect to Fieldgate analog [?] [X]

Enter a user name and password with access to the remote network domain.

User name:

Password:

Domain:

Save password

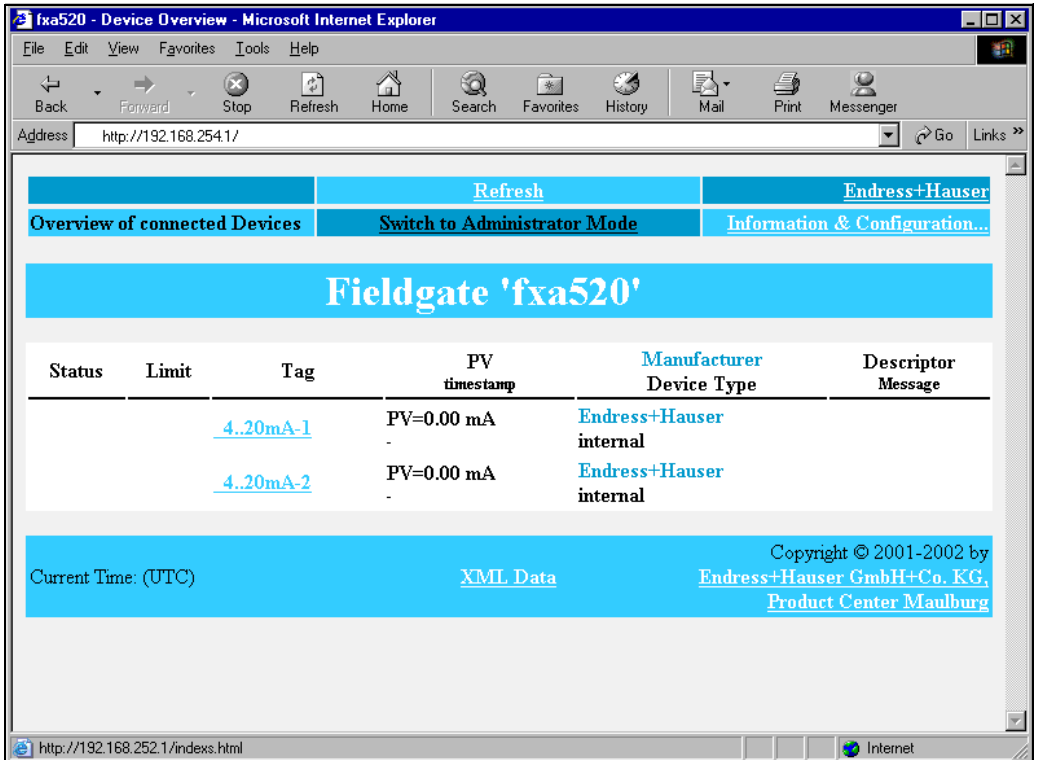
OK Cancel

100-FXANTxxx-20-13-00-en-209

4. Click "OK" to confirm your entries.
5. Start the web browser and enter the IP address. The connection is made.

21.3.4 Working in the web browser

The user interface is displayed in the web browser and the Fieldgate can now be commissioned.



fxa520 - Device Overview - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites History Mail Print Messenger

Address Go Links >>

[Refresh](#) [Endress+Hauser](#)

Overview of connected Devices [Switch to Administrator Mode](#) [Information & Configuration...](#)

Fieldgate 'fxa520'

Status	Limit	Tag	PV timestamp	Manufacturer Device Type	Descriptor Message
		4..20mA-1	PV=0.00 mA -	Endress+Hauser internal	
		4..20mA-2	PV=0.00 mA -	Endress+Hauser internal	

Current Time: (UTC) [XML Data](#) Copyright © 2001-2002 by
Endress+Hauser GmbH+Co. KG,
Product Center Maulburg

http://192.168.252.1/indexs.html Internet

100-FXANTxxx-20-13-00-en-210

21.4 Establishing an GSM modem connection (Exemplary instruction for Windows NT)

21.4.1 Installation

Note!

To be able to configure the Fieldgate, there must be a telephone connection between your personal computer and the Fieldgate.

For this, you require a commercially available analogue modem and 1 analogue telephone connection. If the connection consists of an analog adapter being connected to a digital telephone facility, data communication must be enabled for this connection.

This configuration can also be made using the PC cable ().

21.4.2 Setting up the personal computer

Caution!

An analogue modem must already be installed on your personal computer. Please refer to the operating instructions for the modem and your PC for information on how to install an analogue modem.

Creating a dial-up networking connection

Set up a dial-up networking connection.

Note!

For this purpose, please also refer to the online help of your Windows® operating system on the topic "Setting up a dial-up networking connection".

Note!

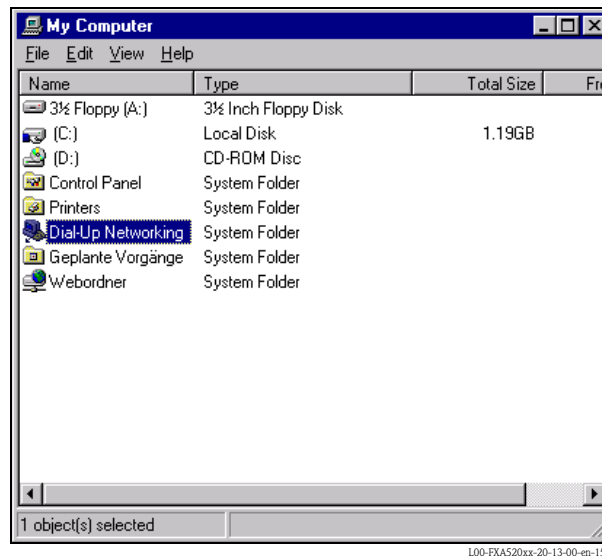
The factory setting for the IP address of the GSM modem version is:

"http://192.168.254.1".

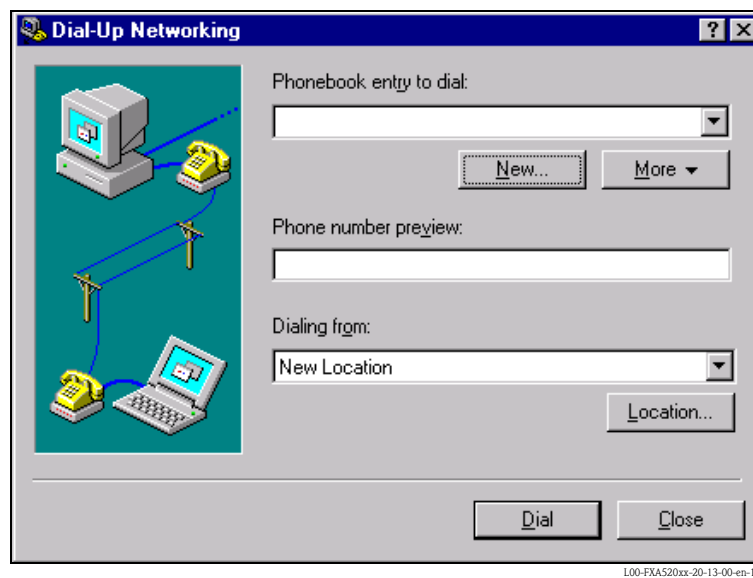
This IP address can be altered as required.

The following are sample instructions for Windows NT® :

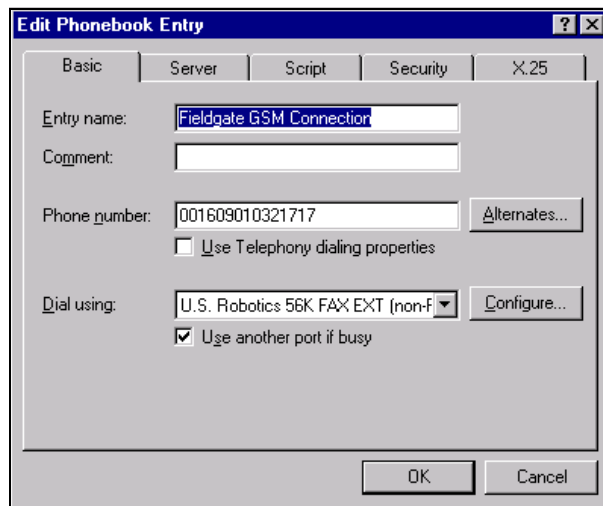
- Using the left mouse button, double-click the "Dial-Up Networking" icon to open the appropriate window.



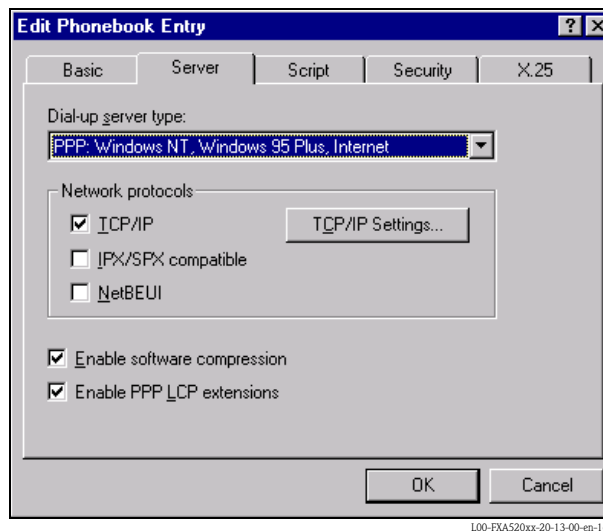
- Left-click the "New..." button.

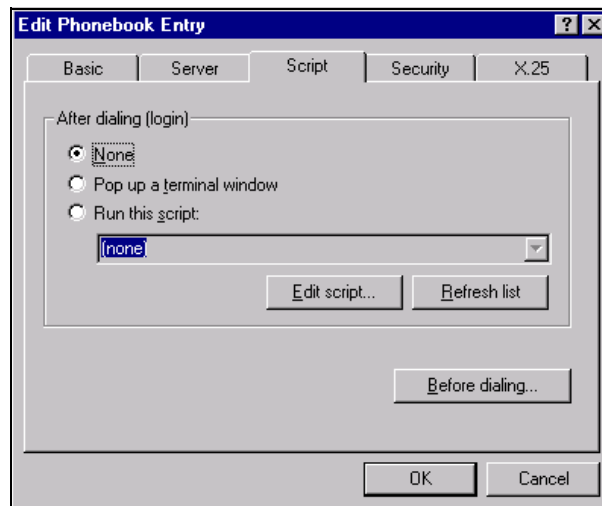


- Enter the connection name in the "New phonebook entry:" field. You can enter any name you choose (e.g. Fieldgate GSM connection in our example). Check the settings on the following register cards.

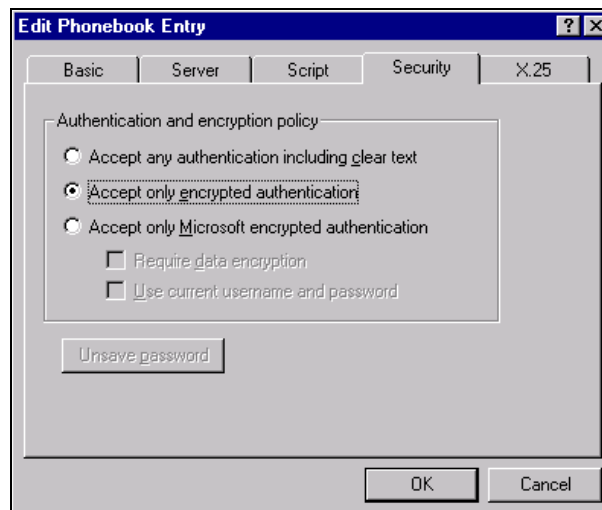


4. Please enter the number of your SIM card as the call number.

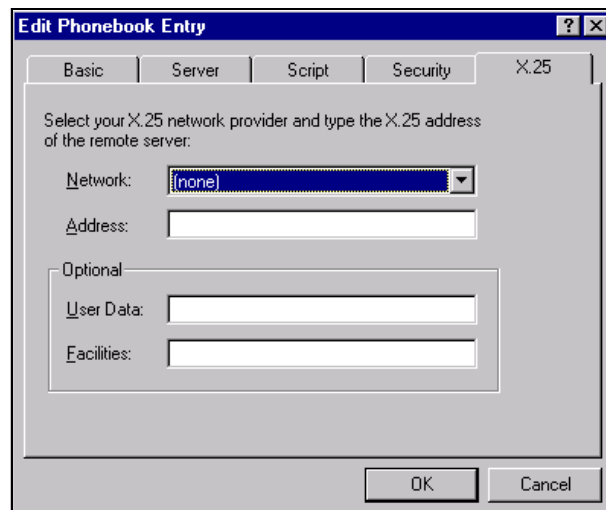




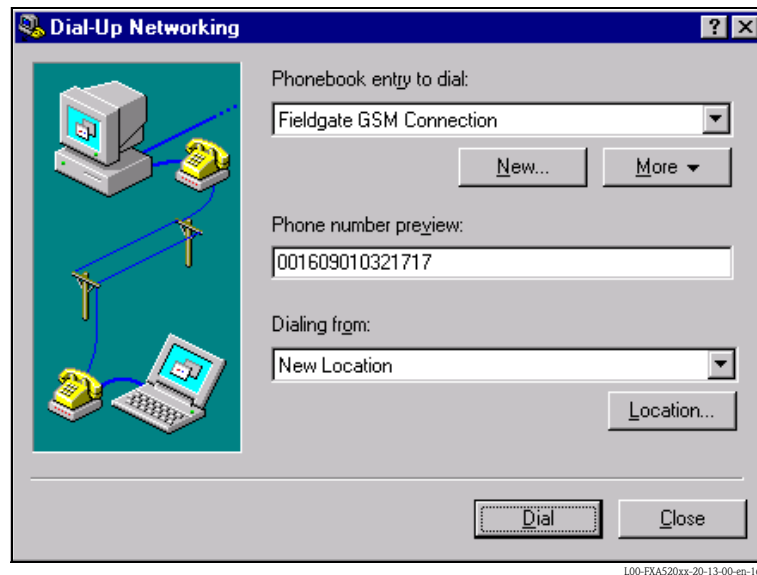
L00-FXA520xx-20-13-00-en-161



L00-FXA520xx-20-13-00-en-162



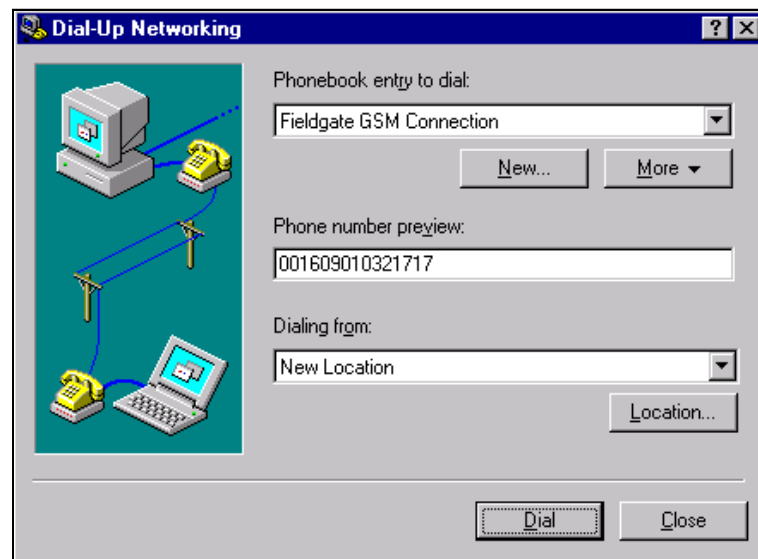
5. Click "OK" to confirm your entries.



The dial-up networking connection is set up. Finish the setup by pressing the "Close" button.

21.4.3 Making the connection

- Using the left mouse button, double-click the "Dial-up Networking" icon to open the appropriate window.



L00-FXA520xx-20-13-00-en-164

- Select the connection recently set up (e.g. "Fieldgate Analog") and click "Dial" to confirm.
- In the following window enter:
 - the user name "scm"
(This is permanently stored in the Fieldgate and cannot be altered!)
 - and the password "scm"
(This is permanently stored in the Fieldgate and cannot be altered!)



L00-FXA520xx-20-13-00-en-165

- Click "OK" to confirm your entries.
- Start the web browser and enter the IP address. The connection is made.

21.4.4 Working in the web browser

The user interface is displayed in the web browser and the Fieldgate can now be commissioned.

The screenshot shows the 'fxa520 - Device Overview' page in Microsoft Internet Explorer. The browser's address bar shows 'http://192.168.254.1/'. The page content includes a navigation bar with 'Refresh', 'Switch to Administrator Mode', and 'Information & Configuration...' links. Below this is a large blue header for 'Fieldgate 'fxa520''. A table lists connected devices with the following data:

Status	Limit	Tag	PV timestamp	Manufacturer Device Type	Descriptor Message
		4..20mA-1	PV=0.00 mA -	Endress+Hauser internal	
		4..20mA-2	PV=0.00 mA -	Endress+Hauser internal	

At the bottom of the page, there is a footer with 'Current Time: (UTC)', a link for 'XML Data', and copyright information: 'Copyright © 2001-2002 by Endress+Hauser GmbH+Co. KG, Product Center Maulburg'. The browser's status bar shows 'http://192.168.252.1/indexs.html' and 'Internet'.

21.5 Network parameters for GPRS connections

Network parameters for GPRS connections

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Network operator	Country	Modem properties: "extra settings"	Additional AT commands	Telephone number	TCP/IP settings IP address, only if not dynamic	TCP/IP settings: DNS 1, only if not dynamic	TCP/IP settings: DNS 2, only if not dynamic	Connection: user name	Connection: Password
Amena	Spain	AT+CGDCONT=1,"IP", "internet";sgauth=2	If you use Windows 95/98 or WindowsNT, please add to "extra settings". Ex.: China Mobile. AT+CGDCONT=1,"IP","cmnet"+C GOREO=1,3,4,3,0,0	*99***1#	dynamic	213.143.33.8	213.143.32.20	CLIENTE	AMENA
AIS (corporate - Intranet)	Thailand	AT+CGDCONT=1,"IP", "ais"		*99***1#	dynamic	202.183.255.20	202.183.255.21	n.a.	n.a.
AIS (Internet)	Thailand	AT+CGDCONT=1,"IP", "internet"		*99***1#	dynamic	202.183.255.20	202.183.255.21	n.a.	n.a.
Aria - Internet	Turkey	AT+CGDCONT=1,"IP", "internet"		*99***1#	dynamic	dynamic	dynamic	user specific	user specific
AT&T Wireless	USA			*99#	dynamic	dynamic	dynamic	n.a.	n.a.
Beeline	Russia	AT+CGDCONT=1,"IP", "internet.beeline.ru"		*99***1#	dynamic	194.190.195.066	194.190.192.034	beeline	beeline
Bite GSM	Lithuania	AT+CGDCONT=1,"IP", "banga"		*99***1#	dynamic	213.226.131.131	193.219.32.13	n.a.	n.a.
BLU Contratto	Italy	AT+CGDCONT=1,"IP", "INTERNET"		*99***1#	dynamic	212.17.192.49	212.17.192.209	n.a.	n.a.
BLU Prepagata	Italy	AT+CGDCONT=1,"IP", "PINTERNET"		*99***1#	dynamic	212.17.192.49	212.17.192.209	n.a.	n.a.
Bouygues Telecom	France	AT+CGDCONT=1,"IP", "bouygtel.com"		*99***1#	dynamic	62.201.129.99	0.0.0.0	n.a.	n.a.
Bouygues Telecom B2Bouygtel	France	AT+CGDCONT=1,"IP", "b2bouygtel.com"		*99***1#	dynamic	62.201.129.99	62.201.159.99	B2B	NET
BPL Mobile	India	AT+CGDCONT=1,"IP", "bplgprs.com"		*99***1#	dynamic	202.169.145.34	202.169.129.40	bplmobile	n.a.
Cesky Mobil- postpaid	Czech Republic	AT+CGDCONT=1,"IP", "internet"		*99***1#	dynamic	dynamic	dynamic	n.a.	n.a.
Cesky Mobil- prepaid	Czech Republic	AT+CGDCONT=1,"IP", "ointernet"		*99***1#	dynamic	dynamic	dynamic	n.a.	n.a.
China Mobile	China	AT+CGDCONT=1,"IP", "cmnet"		*99#	dynamic	dynamic	dynamic	n.a.	n.a.
China Unicom	China	AT+CGQREQ=1,3,4,3,0,0		*99#	dynamic	10.000.002.100	0.0.0.0	n.a.	n.a.
Comviq/Tele2	Sweden	AT+sgauth=1		*99#	dynamic	130.244.127.161	130.244.127.169	gprs	internet

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Subject to changes

Network parameters for GPRS connections

S S S

Network operator	Country	Modem properties: "extra settings"	Additional AT commands	Telephone number	TCP/IP settings IP address, only if not dynamic	TCP/IP settings: DNS 1, only if not dynamic	TCP/IP settings: DNS 2, only if not dynamic	Connection: user name	Connection: Password
		Please enter in "extra settings" Note: in Windows2000 AT commands are restricted to 40 characters! AT+CGDCONT=1,"IP", GREQ=1,3,4,3,0,0			If "dynamic", keep default setting.	If "dynamic", keep default setting.	If "dynamic", keep default setting.	if "n.a.", you do not need to enter user name	if "n.a.", you do not need to enter user name
Connect Austria / One	Austria	AT+CGDCONT=1,"IP", "web.one.at",^sgauth=1	0,0,3,0,0	*99***#	dynamic	194.024.128.100	194.024.128.102	user specific	user specific
Cosmote	Greece	AT+CGDCONT=1,"IP", "internet"		*99***#	dynamic	195.167.065.194	0.0.0.0	n.a.	n.a.
CSL	Hongkong	AT+CGDCONT=1,"IP", "internet"	3,4,3,0,0	*99***#	dynamic	202.84.255.1	203.116.254.150	n.a.	n.a.
D2 Vodafone	Germany	AT+CGDCONT=1,"IP", "volume.d2gprs.de"	3,4,3,7,31	*99***#	dynamic	139.7.30.125	139.7.30.126	n.a.	n.a.
DIGI	Malaysia	AT+CGDCONT=1,"IP", "diginet"		*99***#	dynamic	203.092.128.131	203.092.128.132	n.a.	n.a.
Dna	Finland	AT+CGDCONT=1,"IP", "internet"		*99***#	dynamic	217.78.192.78	217.78.192.22	n.a.	n.a.
DTAC	Thailand	AT+CGDCONT=1,"IP", "www.dtac.co.th"		*99***#	dynamic	203.155.33.1	203.44.144.33	n.a.	n.a.
E-Plus	Germany	AT+CGDCONT=1,"IP", "internet.eplus.de"	2,4,3,9,31	*99***#	dynamic	212.23.97.2	212.23.97.3	eplus	n.a.
ERA	Poland	AT+CGDCONT=1,"IP", "erainternet"	^sgauth=1	*99***#	dynamic	dynamic	dynamic	erainternet	erainternet
etisalat	United Arab Emirates	AT+CGDCONT=1,"IP", "mnet"		*99***#	dynamic	dynamic	dynamic	n.a.	n.a.
Eurotel	Czech Republic	AT+CGDCONT=1,"IP", "internet"		*99***#	dynamic	160.218.10.201	194.228.2.1	n.a.	n.a.
fastlink	Jordan	AT+CGDCONT=1,"IP", "internet"		*99***#	dynamic	dynamic	dynamic	n.a.	n.a.
Globe	Philippines	AT+CGDCONT=1,"IP", "www.globe.com.ph"	^sgauth=1	*99***#	dynamic	203.127.225.010	203.127.225.011	globe	globe
Globtel	Slovakia	AT+CGDCONT=1,"IP", "internet"	0,0,0,0,0	*99***#	dynamic	213.151.200.3	195.012.140.130	n.a.	n.a.
Idea	Poland	AT+CGDCONT=1,"IP", "www.idea.pl"	^sgauth=1	*99***#	dynamic	194.204.159.1	194.9.223.79	idea	idea
KPN Mobile	Netherlands	AT+CGDCONT=1,"IP", "internet"		*99***#	dynamic	62.133.126.28	62.133.126.29	n.a.	n.a.
IM3	Indonesia	AT+CGDCONT=1,"IP", "www.indosat-m3.net"		*99***#	dynamic	dynamic	dynamic	gprs	im3

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Network parameters for GPRS connections

S S S

Network operator	Country	Modem properties: "extra settings"	Additional AT commands	Telephone number	TCP/IP settings IP address, only if not dynamic	TCP/IP settings: DNS 1, only if not dynamic	TCP/IP settings: DNS 2, only if not dynamic	Connection: user name	Connection: Password
M1	Singapore	AT+CGDCONT=1,"IP", "mobilenet",^sgauth=1	If you use Windows 95/98 or WindowsNT, please add to "extra settings": Ex.: China Mobile. AT+CGDCONT=1,"IP","cmnet";+CGREQ=1,3,4,3,0,0	*99***1#	dynamic	202.79.64.21	202.79.64.26	n.a.	n.a.
Maxis	Malaysia	AT+CGDCONT=1,"IP", "internet.gprs.maxis"		*99***1#	dynamic	202.075.129.101	10.216.4.21	n.a.	n.a.
max.gprs	Austria	AT+CGDCONT=1,"IP", "gprsinternet"		*99#	dynamic	213.162.64.1	213.162.64.2	n.a.	n.a.
max.business.gprs	Austria	AT+CGDCONT=1,"IP", "business.gprsinternet"		*99#	dynamic	213.162.64.1	213.162.64.2	n.a.	n.a.
max.metro.gprs	Austria	AT+CGDCONT=1,"IP", "gprsmetro"		*99#	dynamic	213.162.64.1	213.162.64.2	n.a.	n.a.
mobilecom	Jordan	AT+CGDCONT=1,"IP", "internet.mobilecom.jo"		*99***1#	dynamic	dynamic	dynamic	internet	internet
Mobilkom	Austria	AT+CGDCONT=1,"IP", "A1.net"		*99***1#	dynamic	194.48.124.200	194.48.139.254	GPRS@A1p us.at	n.a.
Mobitel (Internet)	Slovenia	AT+CGDCONT=1,"IP", "internet"		*99***1#	dynamic	dynamic	dynamic	mobitel	internet
Mobitel (Internet Pro)	Slovenia	AT+CGDCONT=1,"IP", "internetpro"		*99***1#	dynamic	dynamic	dynamic	mobitel	internet
Mobistar	Belgium	AT+CGDCONT=1,"IP", "officeaccess.internet.be"		*99***1#	212.065.063.143	212.065.063.10	212.065.063.145	mobistar	mobistar
MTS	Russia	AT+CGDCONT=1,"IP", "internet.mts.ru"		*99***1#	dynamic	213.87.0.1	213.87.1.1	n.a.	n.a.
Netcom	Norway			*99#	dynamic	212.45.188.43	212.45.188.44	n.a.	n.a.
New World	Hongkong	AT+CGDCONT=1,"IP", "internet"	3,4,3,0,0	*99***1#	dynamic	dynamic	dynamic	n.a.	n.a.
OMNITEL	Italy	AT+CGDCONT=1,"IP", "web.omnitel.it"	2,4,3,6,31	*99***1#	dynamic	dynamic	dynamic	n.a.	n.a.
Ornitel Lithuania	Lithuania	AT+CGDCONT=1,"IP", "gprs.omnitel.net"	^sgauth=1	*99***1#	dynamic	194.176.32.129	195.22.175.1	n.a.	n.a.
Optimus	Portugal	AT+CGDCONT=1,"IP", "internet"		*99***1#	dynamic	194.79.69.129	0.0.0.0	n.a.	n.a.
Orange HK	Hongkong	AT+CGDCONT=1,"IP", "web.oran.gehk.com"	3,4,3,0,0	*99***1#	dynamic	dynamic	dynamic	n.a.	n.a.

Subject to changes

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Network parameters for GPRS connections

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Network operator	Country	Modem properties: "extra settings"	Additional AT commands	Telephone number	TCP/IP settings IP address, only if not dynamic	TCP/IP settings: DNS 1, only if not dynamic	TCP/IP settings: DNS 2, only if not dynamic	Connection: user name	Connection: Password
Orange UK	UK	Please enter in "extra settings" Note: in Windows2000 AT commands are restricted to 40 characters! AT+CGDCONT=1,"IP", GOREQ=1,3,4,3,0,0	AT+CGDCONT=1,"IP", "orangeinternet"	*99***1#	dynamic	158.43.128.1	158.43.128.1	Orange	n.a.
Orange CH	Switzerland	AT+CGDCONT=1,"IP", "internet";^sgauth=1	AT+CGDCONT=1,"IP", "internet";^sgauth=1	*99***1#	dynamic	213.55.128.1	213.55.128.2	n.a.	n.a.
Paegas GPRS Internet	Czech Republic	AT+CGDCONT=1,"IP", "internet.click.cz"	AT+CGDCONT=1,"IP", "internet.click.cz"	*99***1#	dynamic	62.141.0.1	62.141.0.2	n.a.	n.a.
Paegas GPRS Profil	Czech Republic	"profil.click.cz"	AT+CGDCONT=1,"IP", "net"	*99***1#	dynamic	62.141.0.1	62.141.0.2	n.a.	n.a.
Pannon	Hungary	AT+CGDCONT=1,"IP", "net"	AT+CGDCONT=1,"IP", "net"	*99***1#	dynamic	193.225.155.254	194.149.0.157	n.a.	n.a.
PEOPLE	Hongkong	AT+CGDCONT=1,"IP", "internet"	AT+CGDCONT=1,"IP", "internet"	*99***1#	dynamic	dynamic	dynamic	n.a.	n.a.
Plus GSM	Poland	AT+CGDCONT=1,"IP", "www.plusgsm.pl"	AT+CGDCONT=1,"IP", "www.plusgsm.pl"	*99***1#	dynamic	212.2.96.62	212.2.96.52	n.a.	n.a.
Proximus Internet	Belgium	AT+CGDCONT=1,"IP", "INTERNET.PROXIMUS.BE"	AT+CGDCONT=1,"IP", "INTERNET.PROXIMUS.BE"	*99***1#	dynamic	195.238.002.021	195.238.002.022	n.a.	n.a.
Proximus Intranet	Belgium	AT+CGDCONT=1,"IP", "INTRAPROX.BE"	AT+CGDCONT=1,"IP", "INTRAPROX.BE"	*99***1#	dynamic	195.238.002.021	195.238.002.022	n.a.	n.a.
Quam	Germany	AT+CGDCONT=1,"IP", "quam.de"	AT+CGDCONT=1,"IP", "quam.de"	*99***1#	dynamic	193.189.244.197	193.189.244.205	quam	quam
Radiolinja	Finland	AT+CGDCONT=1,"IP", "internet"	AT+CGDCONT=1,"IP", "internet"	*99***1#	dynamic	213.161.33.200	212.226.226.1	rlnet	internet
SFR	France	AT+CGDCONT=1,"IP", "websfr"	AT+CGDCONT=1,"IP", "websfr"	*99***1#	dynamic	172.20.2.10	0.0.0.0	n.a.	n.a.
Simobil	Slovenia	AT^sgauth=2	AT^sgauth=2	*99#	dynamic	121.30.86.130	193.189.160.11	n.a.	n.a.
Singtel	Singapore	AT+CGDCONT=1,"IP", "internet";^sgauth=1	AT+CGDCONT=1,"IP", "internet";^sgauth=1	*99***1#	dynamic	165.21.100.88	165.21.83.88	n.a.	n.a.
Smart	Philippines	AT+CGDCONT=1,"IP", "internet";^sgauth=1	AT+CGDCONT=1,"IP", "internet";^sgauth=1	*99***1#	dynamic	202.057.096.003	202.057.096.004	n.a.	n.a.
SmartTone	Hongkong	AT+CGDCONT=1,"IP", "hkinternet"	AT+CGDCONT=1,"IP", "hkinternet"	*99***1#	dynamic	202.140.96.51	202.140.96.52	n.a.	n.a.
Sonera	Finland	AT+CGDCONT=1,"IP", "internet"	AT+CGDCONT=1,"IP", "internet"	*99***1#	dynamic	192.89.123.230	192.89.123.231	n.a.	n.a.

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Subject to changes

Network parameters for GPRS connections

S S S

Network operator	Country	Modem properties: "extra settings"	Additional AT commands	Telephone number	TCP/IP settings IP address, only if not dynamic	TCP/IP settings: DNS 1, only if not dynamic	TCP/IP settings: DNS 2, only if not dynamic	Connection: user name	Connection: Password
Sonofon	Denmark	Please enter in "extra settings" Note: in Windows2000 AT commands are restricted to 40 characters!	If you use Windows 95/98 or WindowsNT, please add to "extra settings": Ex.: China Mobile. AT+CGDCONT=1,"IP","cmnet";+CGREQ=1,3,4,3,0,0	*99#	dynamic	212.88.64.14	212.88.64.15	n.a.	n.a.
Starhub	Singapore	AT+CGDCONT=1,"IP", "shwepint"		*99***1#	dynamic	203.116.001.078	203.116.254.150	n.a.	n.a.
SUNDAY	Hongkong	AT+CGDCONT=1,"IP", "internet"	3,4,3,0,0	*99***1#	dynamic	dynamic	dynamic	n.a.	n.a.
Sunrise	Switzerland	AT+CGDCONT=1,"IP", "internet";^sgauth=1		*99***1#	dynamic	212.35.35.35	212.35.35.5	internet	internet
Swisscom	Switzerland	AT+CGDCONT=1,"IP", "gprs.swisscom.ch"	;^sgauth=1	*99***1#	dynamic	164.128.36.34	164.128.76.39	n.a.	n.a.
TDC	Denmark	AT+CGDCONT=1,"IP", "internet"		*99***1#	dynamic	193.162.146.9	193.162.153.31	n.a.	n.a.
Telefonica	Spain	AT+CGDCONT=1,"IP", "movistar.es"	;^sgauth=1	*99***1#	dynamic	194.179.1.100	194.179.1.101	MOVISTAR	MOVISTAR
Telenor Mobil	Norway	AT+CGDCONT=1,"IP", "internet"	0,0,0,0,0+ 0,0,0,0,0	*99***1#	dynamic	212.017.121.003	0,0,0,0	s45	1111
tele.ring	Austria	AT+CGDCONT=1,"IP", "web";^sgauth=1	3,4,3,1,31	*99***1#	dynamic	212.95.31.11	212.95.31.35	web@tele.ring	web
Teleset	Greece	AT+CGDCONT=1,"IP", "gnet.b-online.gr"		*99***1#	dynamic	212.152.079.019	212.152.079.020	MSISDN e.g 3093XXXXXXX	24680
Telia	Sweden			*99#	dynamic	dynamic	dynamic	n.a.	n.a.
Telstra	Australia	AT+CGDCONT=1,"IP", "telstra.internet"		*99***1#	dynamic	139.130.4.4	203.50.170.2	n.a.	n.a.
TIM	Italy	AT+CGDCONT=1,"IP", "uni.tim.it";^sgauth=1		*99***1#	dynamic	dynamic	dynamic	n.a.	n.a.
Timecel	Malaysia	AT+CGDCONT=1,"IP", "timecel.com.my"		*99***1#	dynamic	203.121.16.85	203.121.16.120	n.a.	n.a.
TMN	Portugal	AT+CGDCONT=1,"IP", "internet"	3,4,3,1,31	*99***1#	dynamic	194.65.3.20	194.65.3.21	n.a.	n.a.
T-Mobile D	Germany	AT+CGDCONT=1,"IP", "internet.t-d1.de"		*99***1#	dynamic	193.254.160.1	0,0,0,0	n.a.	n.a.
T-Mobile UK	UK	AT+CGDCONT=1,"IP", "general.t-mobile.uk"		*99***1#	dynamic	dynamic	dynamic	user	one2one

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Subject to changes

Network parameters for GPRS connections

S S

Network operator	Country	Modem properties: "extra settings"	Additional AT commands	Telephone number	TCP/IP settings IP address, only if not dynamic	TCP/IP settings: DNS 1, only if not dynamic	TCP/IP settings: DNS 2, only if not dynamic	Connection: user name	Connection: Password
		Please enter in "extra settings" Note: in Windows2000 AT commands are restricted to 40 characters! AT+CGDCONT=1,"ip","cmnet";+CGREQ=1,3,4,3,0,0	If you use Windows 95/98 or WindowsNT, please add to "extra settings". Ex.: China Mobile: AT+CGDCONT=1,"ip","cmnet";+CGREQ=1,3,4,3,0,0		If "dynamic", keep default setting.	If "dynamic", keep default setting.	If "dynamic", keep default setting.	if "n.a.", you do not need to enter user name	if "n.a.", you do not need to enter user name
TM Touch	Malaysia	AT+CGDCONT=1,"ip", "internet"		*99***#	dynamic	202.188.0.133	0.0.0.0	n.a.	n.a.
Turkcell	Turkey	AT+CGDCONT=1,"ip", "internet"	0,0,0,0,0	*99***#	dynamic	212.252.168.240	212.252.119.4	n.a.	n.a.
Viag Interkom	Germany	AT+CGDCONT=1,"ip", "internet"	0,0,0,0,0	*99***#	dynamic	195.182.096.028	195.182.096.061	n.a.	n.a.
VIPNET	Croatia	AT+CGDCONT=1,"ip", "gprs.vipnet.hr"		*99***#	dynamic	dynamic	dynamic	n.a.	n.a.
Vodafone	Greece	AT+CGDCONT=1,"ip", "internet.vodafone.gr"		*99***#	dynamic	213.249.17.10	213.249.17.11	n.a.	n.a.
Vodafone	Ireland	AT+CGDCONT=1,"ip", "isp.vodafone.ie"	0,0,3,0,0	*99***#	dynamic	dynamic	dynamic	user specific	user specific
Vodafone	Portugal	AT+CGDCONT=1,"ip", "internet.vodafone.pt"	2,4,3,8,31	*99***#	dynamic	212.18.160.133	212.18.160.134	n.a.	n.a.
Vodafone	Spain	AT+CGDCONT=1,"ip", "airtelnet.es"	^sgauth=1	*99***#	dynamic	212.73.32.3	212.73.32.67	wap@wap	wap125
Vodafone	Sweden			*99#	dynamic	dynamic	dynamic	n.a.	n.a.
Vodafone	UK	AT+CGDCONT=1,"ip", "wap.vodafone.co.uk"	^sgauth=1	*99***#	212.183.137.12	dynamic	dynamic	user@vodafone	user
Westel	Hungary	AT^SGAUTH=1;+CGDCONT=1, "ip","internet"		*99***#	dynamic	194.176.224.3	194.176.224.1	user specific	user specific
WIND	Italy	AT+CGDCONT=1,"ip", "internet.wind"		*99***#	dynamic	212.245.255.2	0.0.0.0	n.a.	n.a.
YES OPTUS	Australia	AT+CGDCONT=1,"ip", "internet.optus.net.au"		*99***#	dynamic	202.139.83.3	192.85.91.129	n.a.	n.a.

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