Level Pressure Flow Temperature Liquid Analysis Registration Systems Components Services Solutions
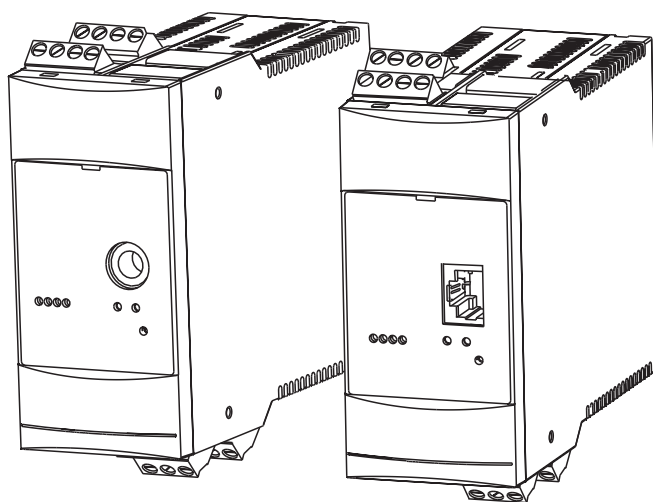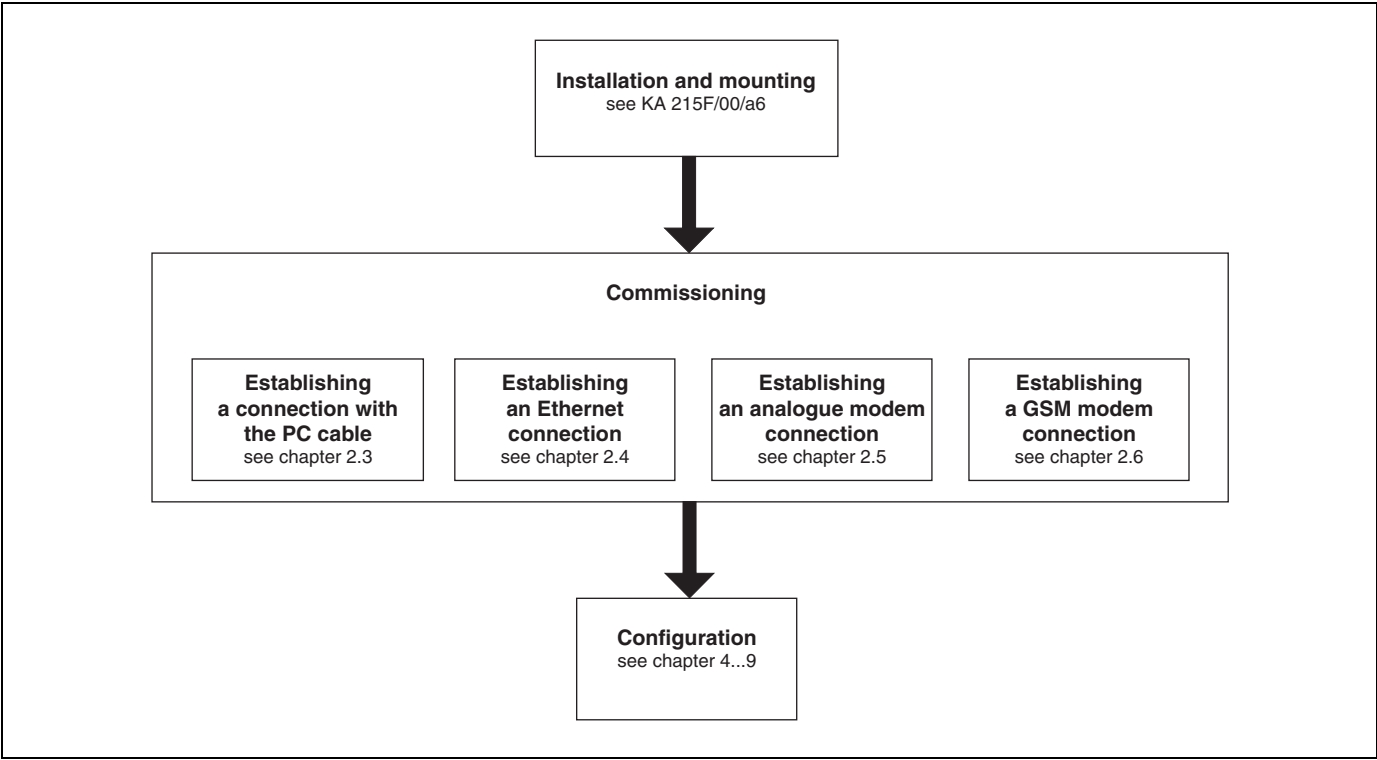
Operating Instructions

Fieldgate FXA320

Gateways/Interfaces

Endress+Hauser

People for Process Automation

Brief operating instructions

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│                      ┌──────────────────────────────┐                         │
│                      │  Installation and mounting    │                        │
│                      │     see KA 215F/00/a6         │                         │
│                      └──────────────────────────────┘                         │
│                                      │                                         │
│                                      ▼                                         │
│     ┌─────────────────────────────────────────────────────────────────┐       │
│     │                        Commissioning                             │       │
│     │                                                                   │       │
│     │  ┌───────────┐  ┌───────────┐  ┌──────────────┐  ┌────────────┐   │       │
│     │  │Establishing│ │Establishing│ │ Establishing  │ │Establishing │   │      │
│     │  │a connection│ │an Ethernet │ │an analogue    │ │a GSM modem  │   │      │
│     │  │with the PC │ │connection  │ │modem          │ │connection   │   │      │
│     │  │cable       │ │            │ │connection     │ │             │   │      │
│     │  │see chapter │ │see chapter │ │see chapter 2.5│ │see chapter  │   │      │
│     │  │2.3         │ │2.4         │ │               │ │2.6          │   │      │
│     │  └───────────┘  └───────────┘  └──────────────┘  └────────────┘   │       │
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│                                      │                                         │
│                                      ▼                                         │
│                      ┌──────────────────────────────┐                         │
│                      │        Configuration          │                        │
│                      │       see chapter 4...9       │                        │
│                      └──────────────────────────────┘                         │
│                                                                  L00-FXA320xx-05-00-00-en-001 │
└─────────────────────────────────────────────────────────────────────────────┘
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Table of contents

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 ($\rightarrow$ 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	$\geq$ 1.0 with current security updates

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 with galvanic isolation. Can be used independently as active or passive input.

Channel 1&2 – active	
Output voltage	15 V ±5% / (22 mA)
No–load voltage	23.5 V ±5%
Output current	max. 23 mA
Short-circuit current	max. 64 mA
short-circuit duration	Unlimited
Connection cable	Instrument cable, unscreened
Cable resistance	max. 25 Ω per core

Channel 1&2 – passive	
Max. input voltage per channel	35 V
Max. input current per channel	45 mA
Input impedance	254 Ω
Accuracy	≤ 0.5 %
Voltage drop (incl. diode against reverse polarity)	≤ 6.4 V
Connection cable	Instrument cable, unscreened
Cable resistance	max. 25 Ω per core

Binary inpute

Galvanic isolation of all channels from the rest of the current circuits. Each 2 channels have the same reference potential.

Number of digital inputs	4
Input signal voltage	L–signal: –3 ... +5 V H–signal: +15 ... +30 V
Input current with H-signal	5 mA
Max. quiescent current with L-signal	1 mA
Measuring range of event counter function	0 ...12.5 kHz
Measuring range of frequency measurement	4.7 Hz (±1%) ... 12.5 kHz (±4%)

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 φ 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

FXA320		AC (at 253 V_{AC})	DC (at 20 V_{DC})	Solar (at 10 V_{DC})
Analogue		8 VA	3.5 W	—
Ethernet		8 VA	3.5 W	—
GSM	Send mode	8 VA	4.8 W	4.6 W
	Standby	6 VA	2.9 W	Sensor Powered: 2.8 W Sensor Powered Down: 0.8 W

2.1.4   Terminals
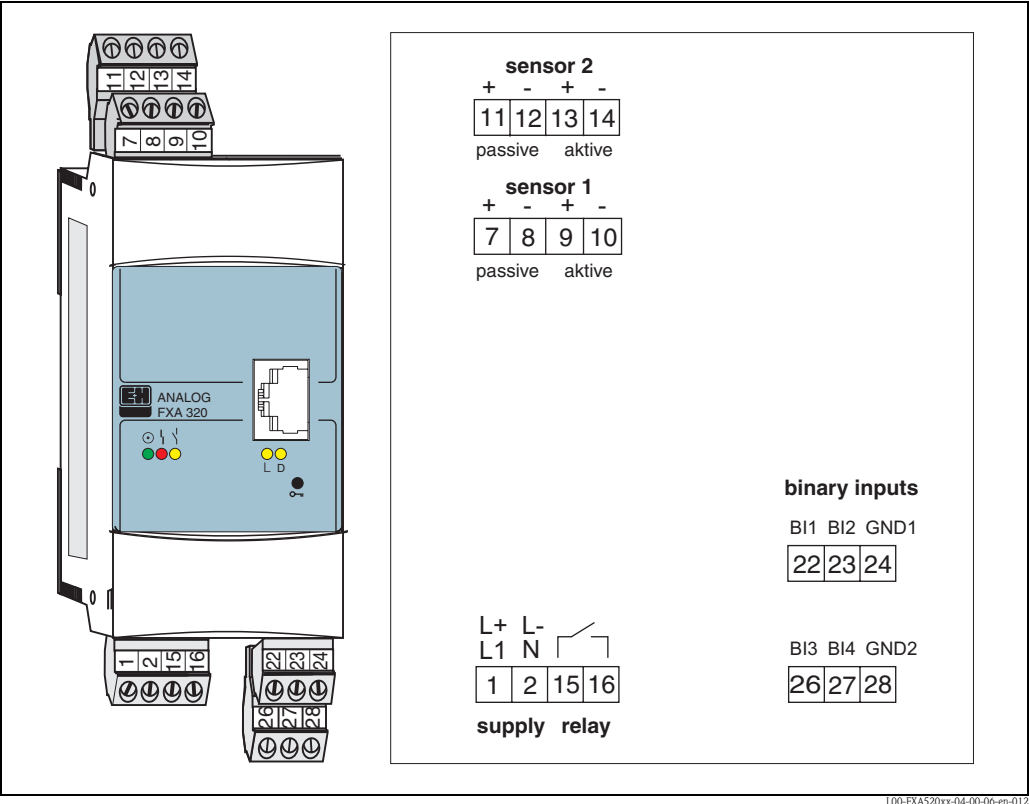
Abb. 1:   Terminal assignment Fieldgate FXA 320

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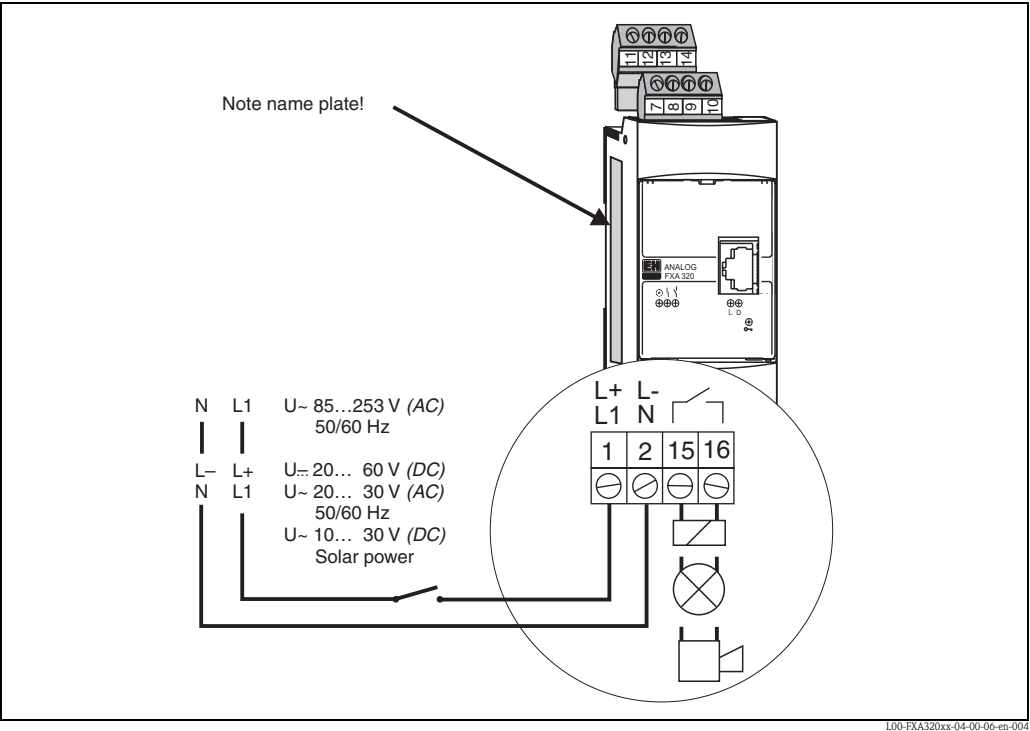
Fig. 2:   Terminal assignment for power supply and all-or-nothing relay

Connection of 4...20 mA sensors active
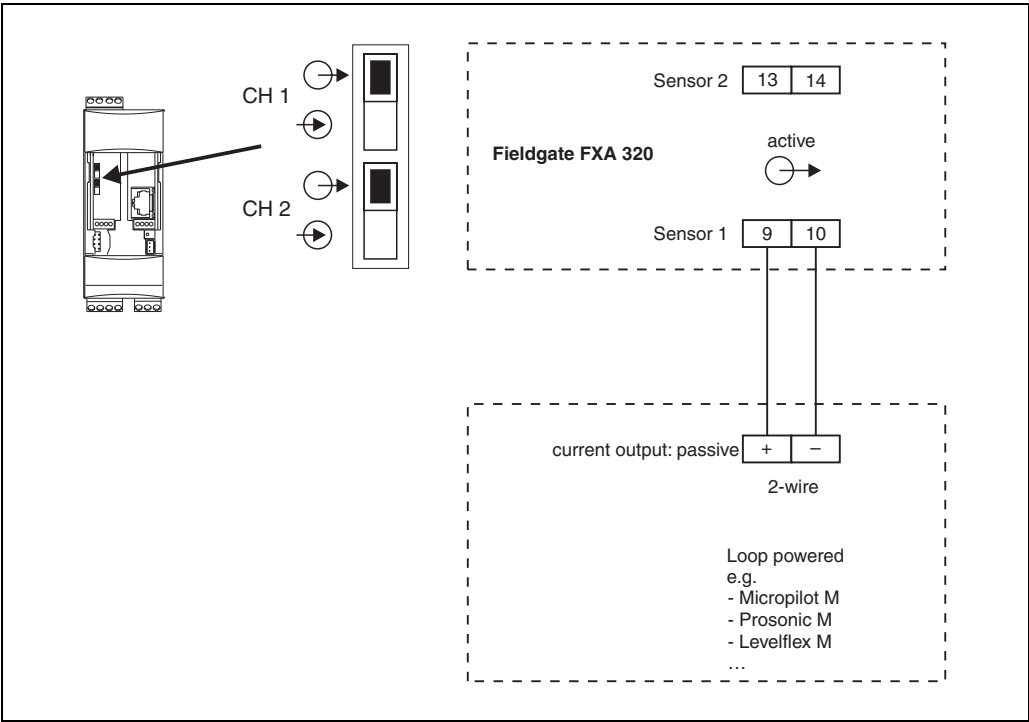
Fig. 3:   Terminal assignment for connection of sensors with passive current output
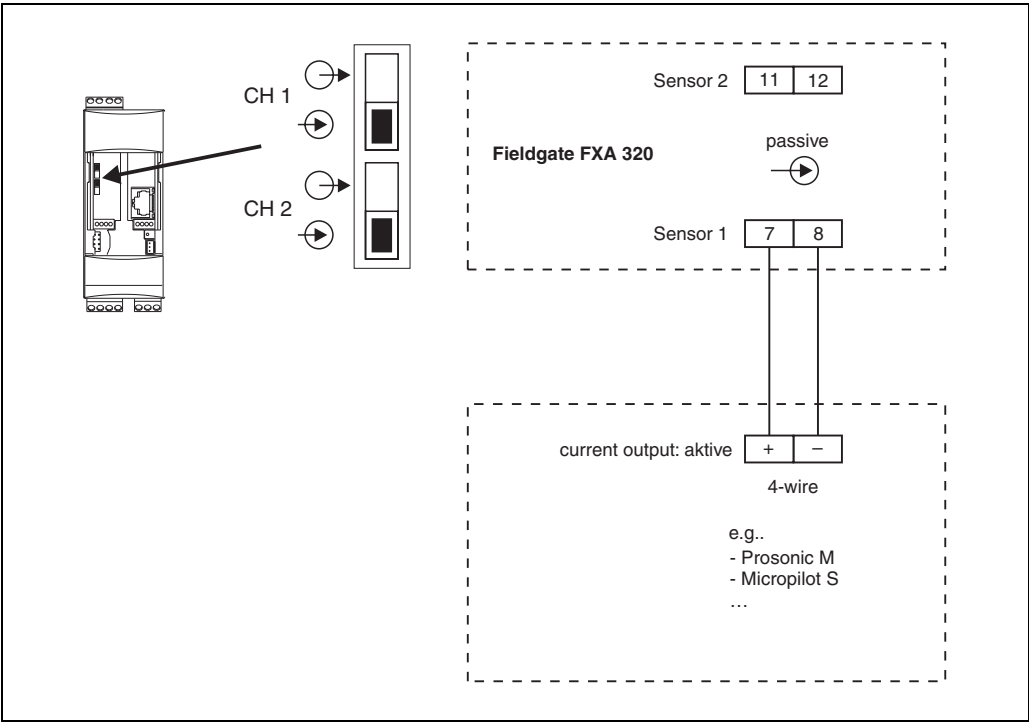
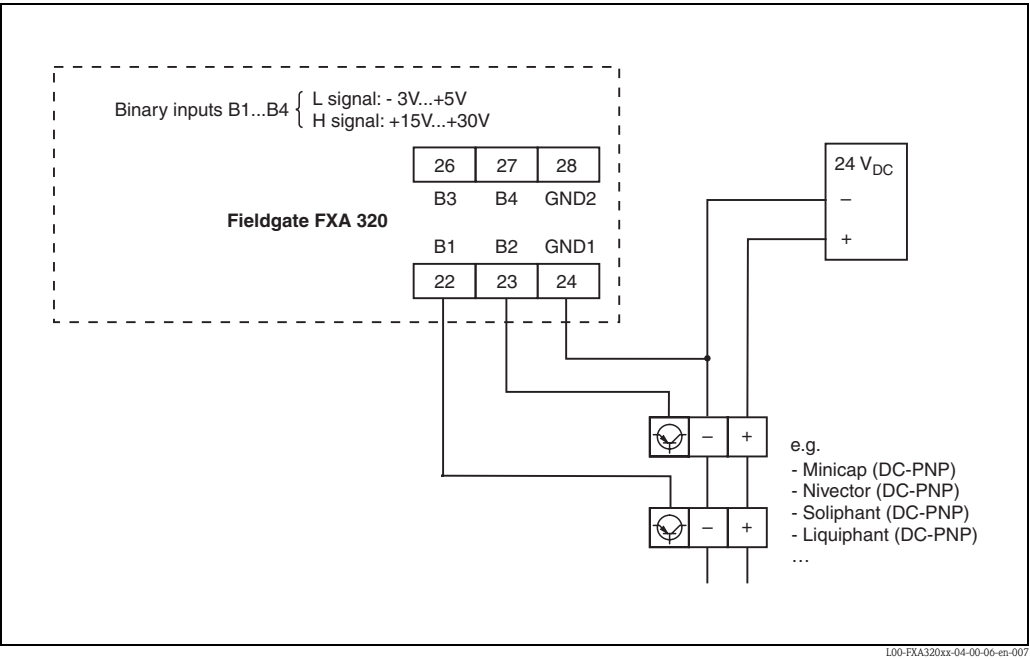**Connection of 4...20 mA sensors passive**

Fig. 4:   Terminal assignment for connection of sensors with active current output

Connection of the binary inputs

L00-FXA320xx-04-00-06-en-007

Fig. 5:   Terminal assignment for connection to the binary inputs (B1 ... B4)

2.2   Display and operating elements

L00-FXA320xx-07-00-06-xx-005
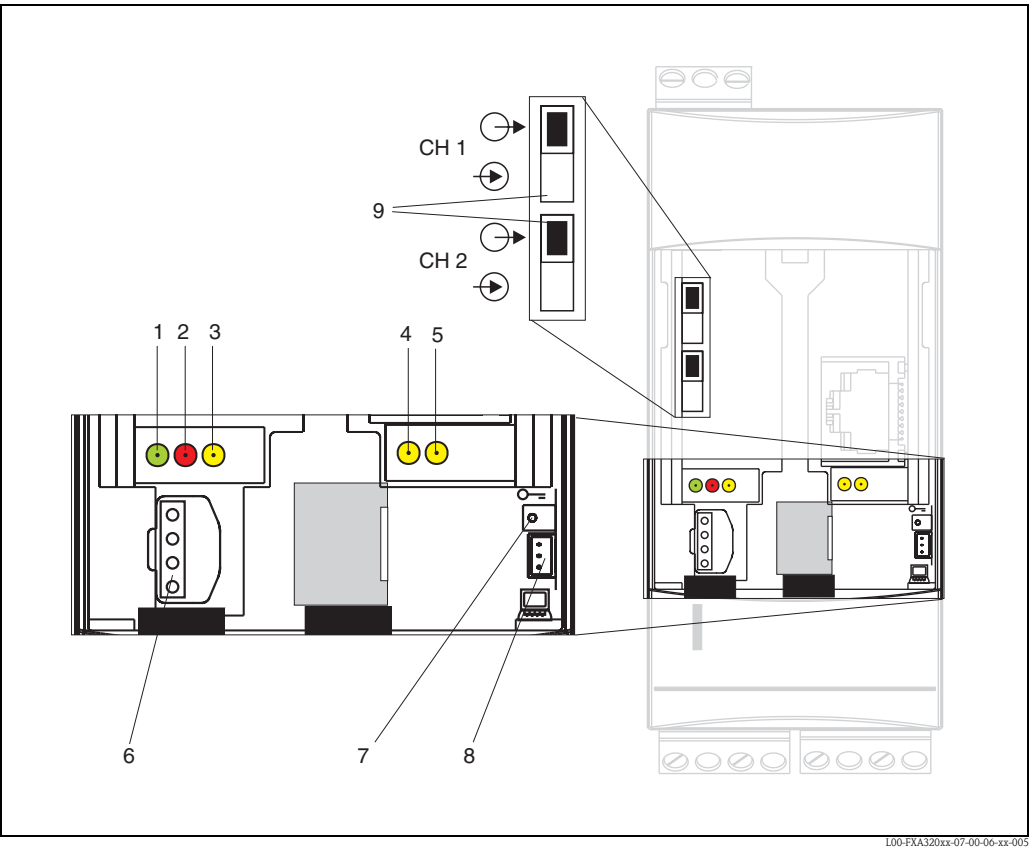
Fig. 6:   Arrangement of display and operating elements on Fieldgate FXA 320

Display elements

Arrangement of elements see Fig. 6.

| 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. 6.

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

Item	Element			Current input channel 1 (CH1)		Current input channel 2 (CH2)	
9	Switch position (up)				aktive		aktive
	Switch position (down)				passive		passive

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
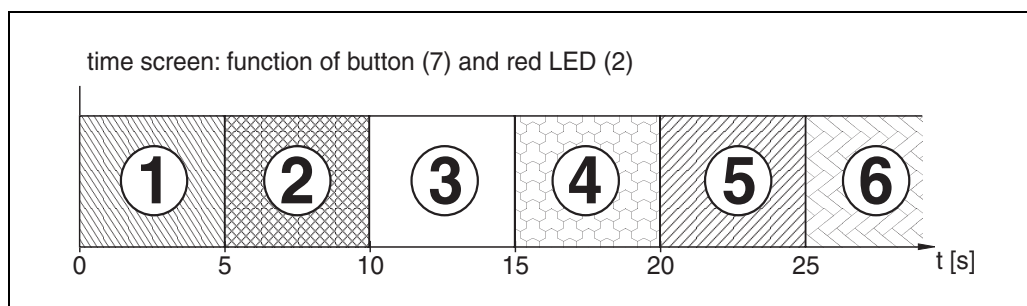
	Time interval [s]	Red LED	Function – release button
1	0 ... 5	Flashes at approx. 5 Hz	The data of the internal EEPROM is first checked, the configuration data is copied from the internal EEPROM to the DAT module
2	5 ... 10	Off	No function when released
3	10 ... 15	Flashes at approx. 2.5 Hz	Configuration 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**. When in user mode a "**no**" appears (delivery condition).

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 on or 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. 10.4.1).

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 ($\rightarrow$ 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. 6, 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.
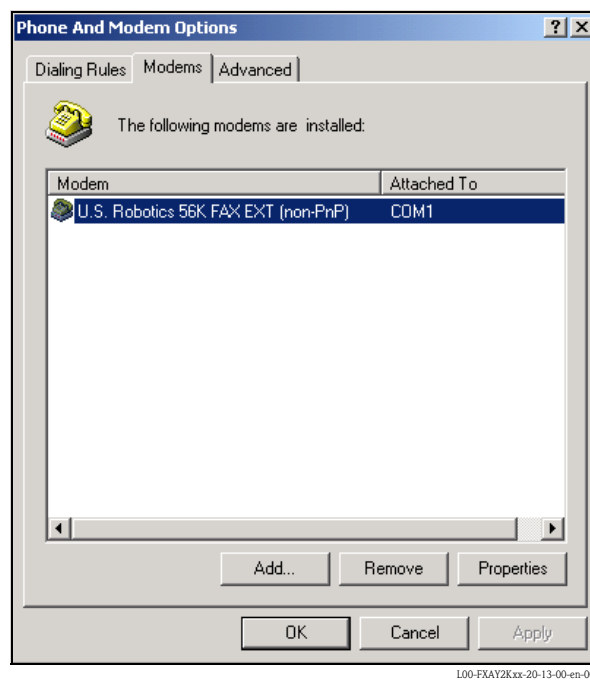
L00-FXAY2Kxx-20-13-00-en-001

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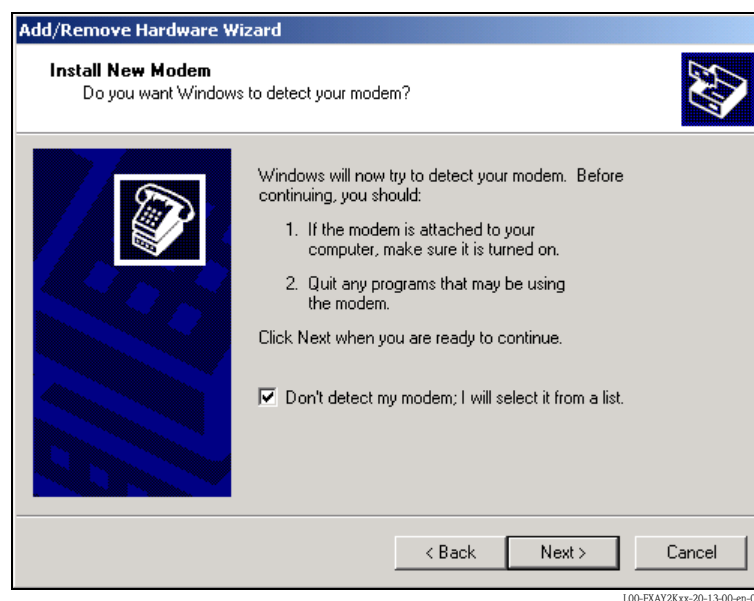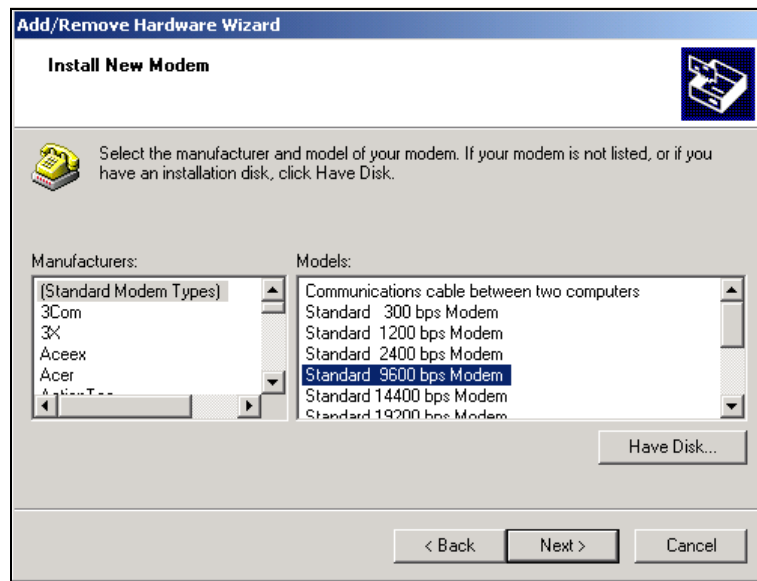   window.

L00-FXAY2Kxx-20-13-00-en-002

3.   Using the left mouse button, double–click the "**Phone and Modem Options**" icon to open
     the appropriate window.
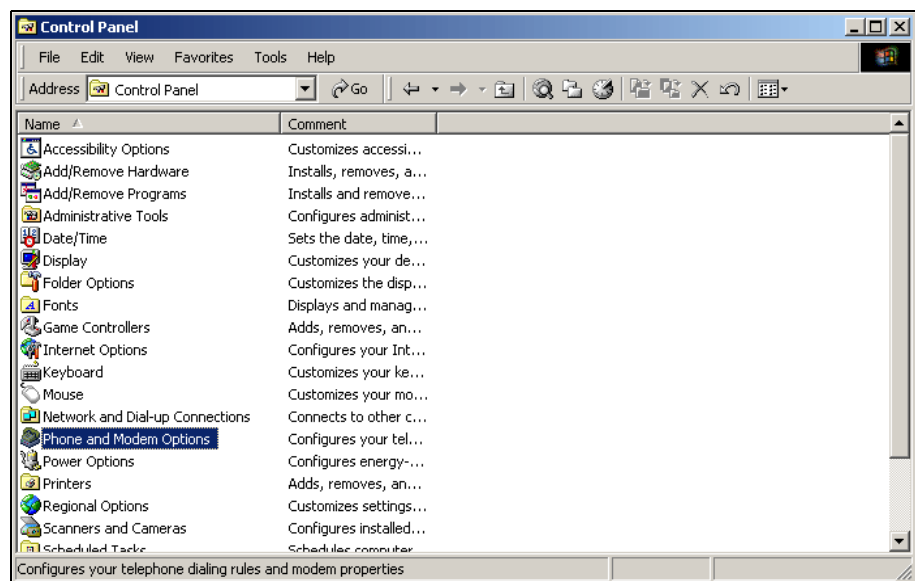
L00-FXAY2Kxx-20-13-00-en-003

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

L00-FXAY2Kxx-20-13-00-en-004

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

L00-FXAY2Kxx-20-13-00-en-005

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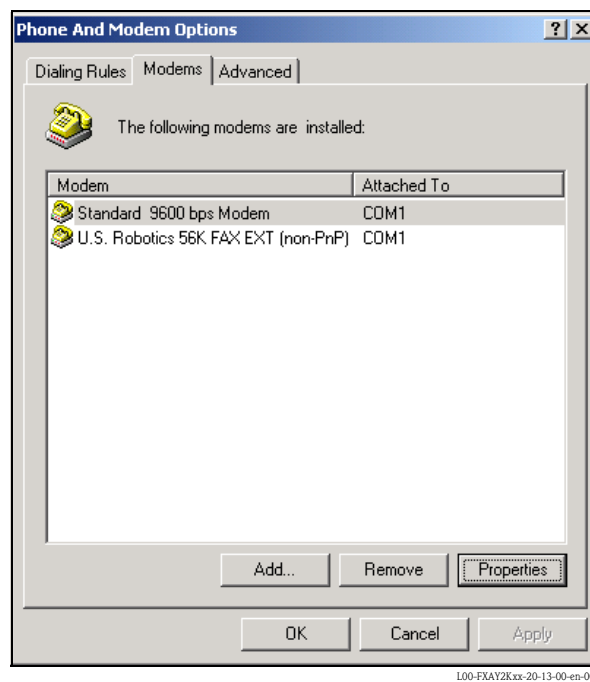   "**Models: → Standard 9600 bsp Modem**" and click "**Next >**" to confirm.


L00-FXAY2Kxx-20-13-00-en-006

7.   Select the desired COM port and click "**Next >**" to confirm.
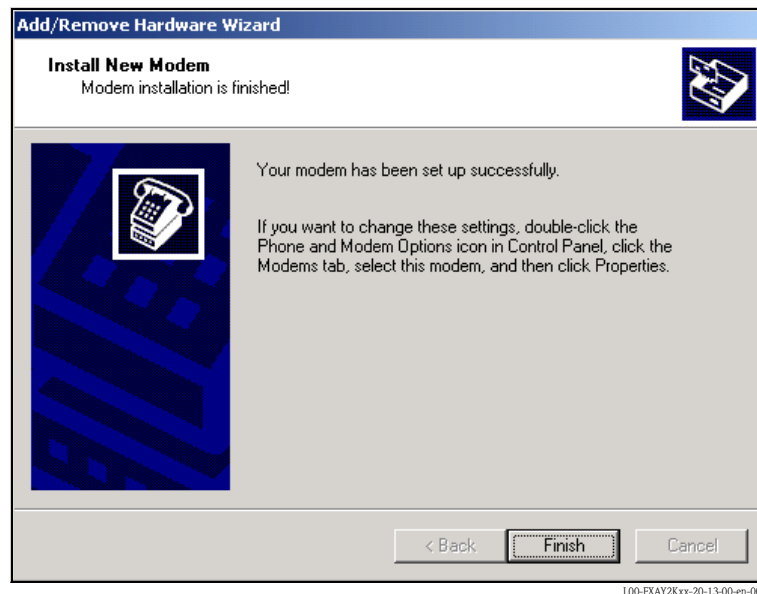
L00-FXAY2Kxx-20-13-00-en-007

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.
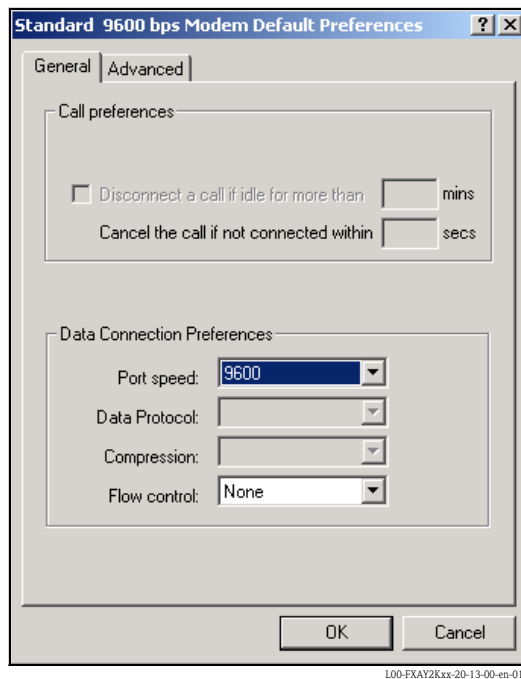

L00-FXAY2Kxx-20-13-00-en-008

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

L00-FXAY2Kxx-20-13-00-en-009
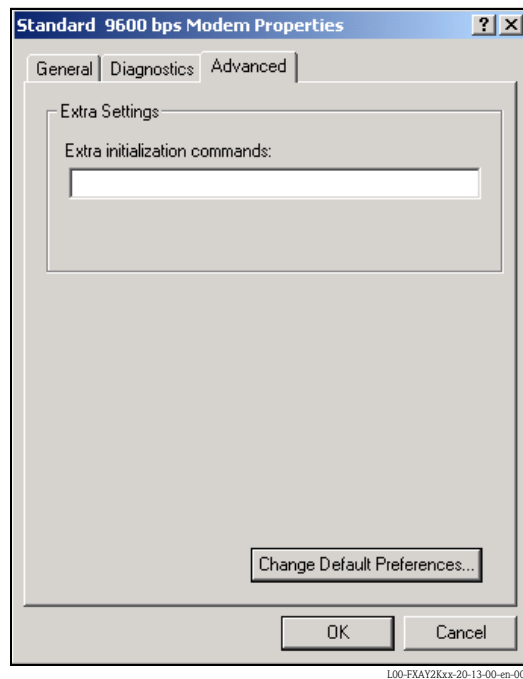
11. Select the "**Advanced**" tab. Left click the "**Change Default Preferences**" button.

L00-FXAY2Kxx-20-13-00-en-010
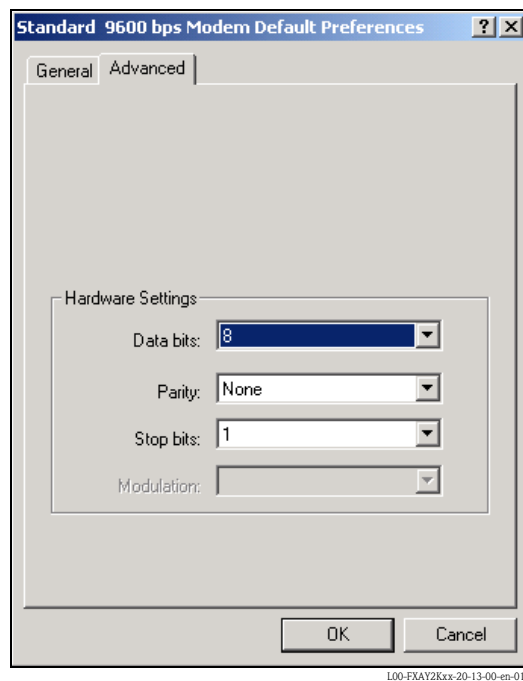
12. Check the "**Hardware Settings**" on the "**Advanced**" tab.

L00-FXAY2Kxx-20-13-00-en-011

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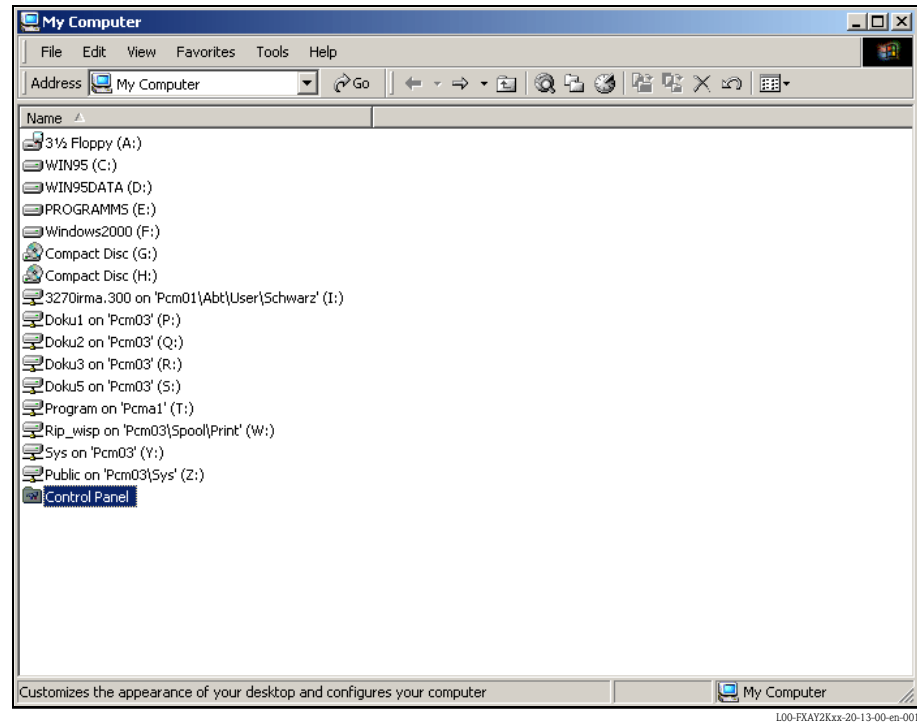Click "**OK**" to confirm your settings.

L00-FXAY2Kxx-20-13-00-en-012
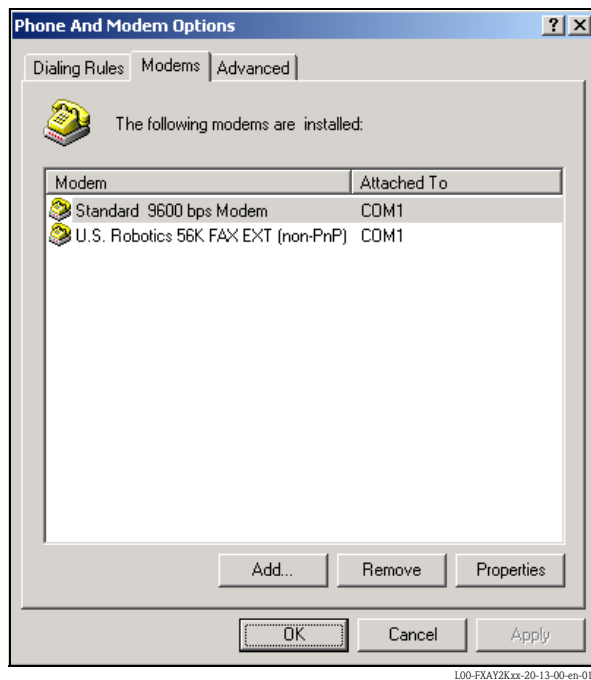
14. Click "**OK**" to confirm your settings.

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.

L00-FXAY2Kxx-20-13-00-en-001

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.
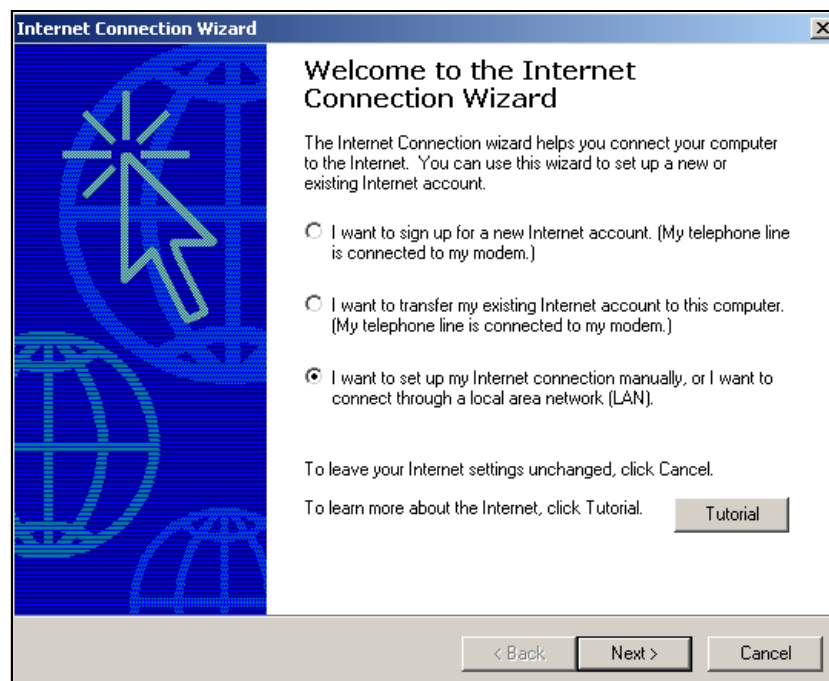

L00-FXAY2Kxx-20-13-00-en-013
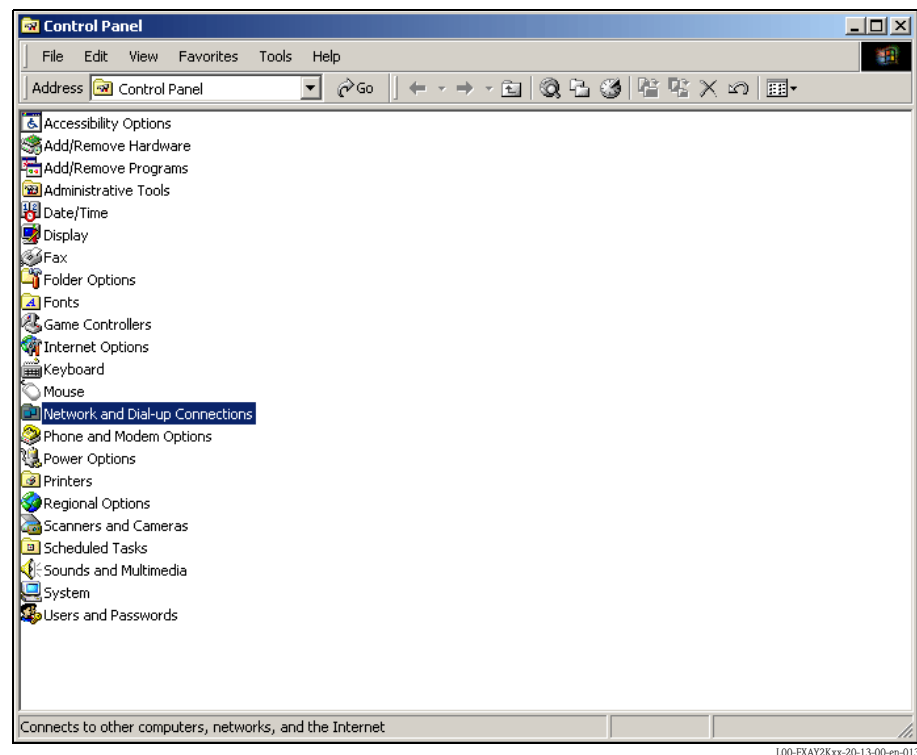
3.   Double-click the "**Make New Connection**" icon. Click "**Next >**" to confirm.
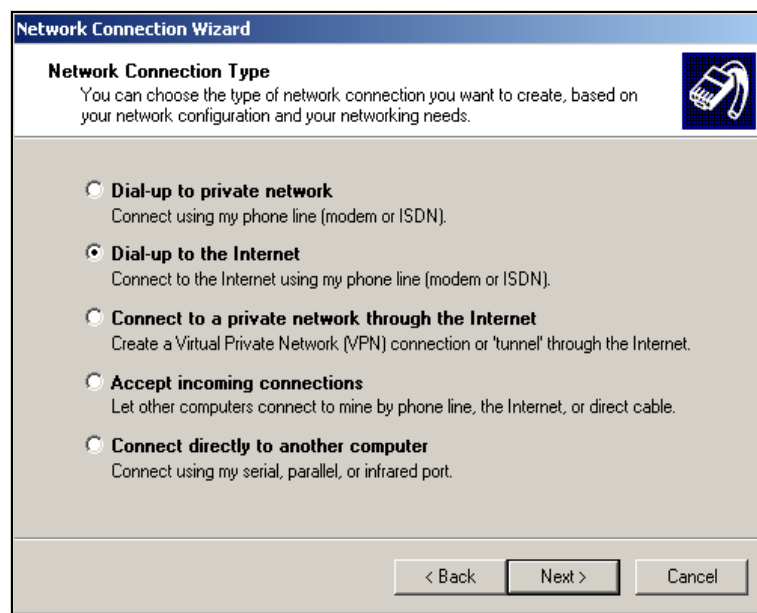
L00-FXAY2Kxx-20-13-00-en-014

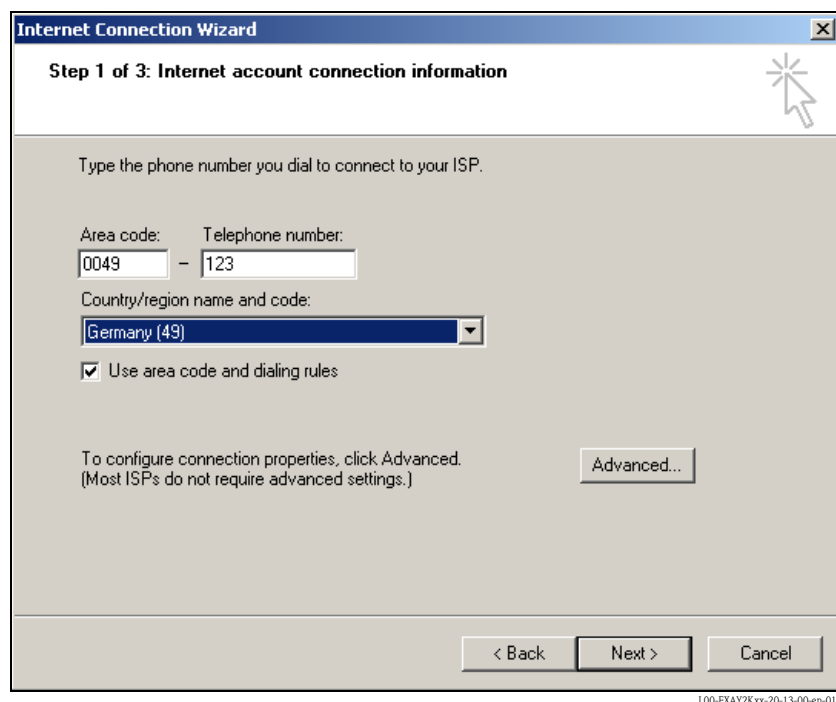4.   Select the "**Dial-up to the Internet**" option and click "**Next >**" to confirm.
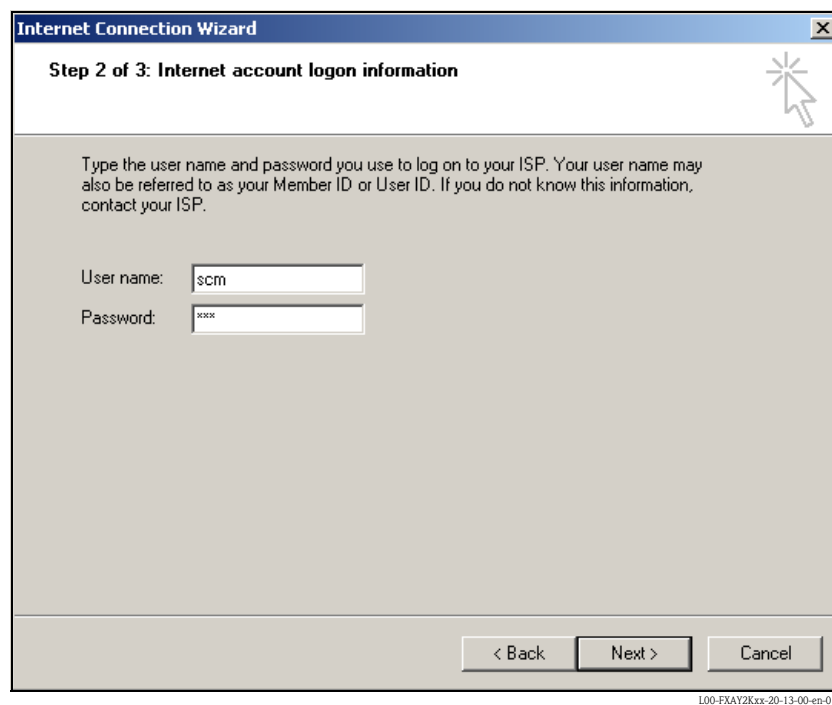

L00-FXAY2Kxx-20-13-00-en-015

5.   Select the "**I want to set up my Internet connection manually, or I want to connect trough 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
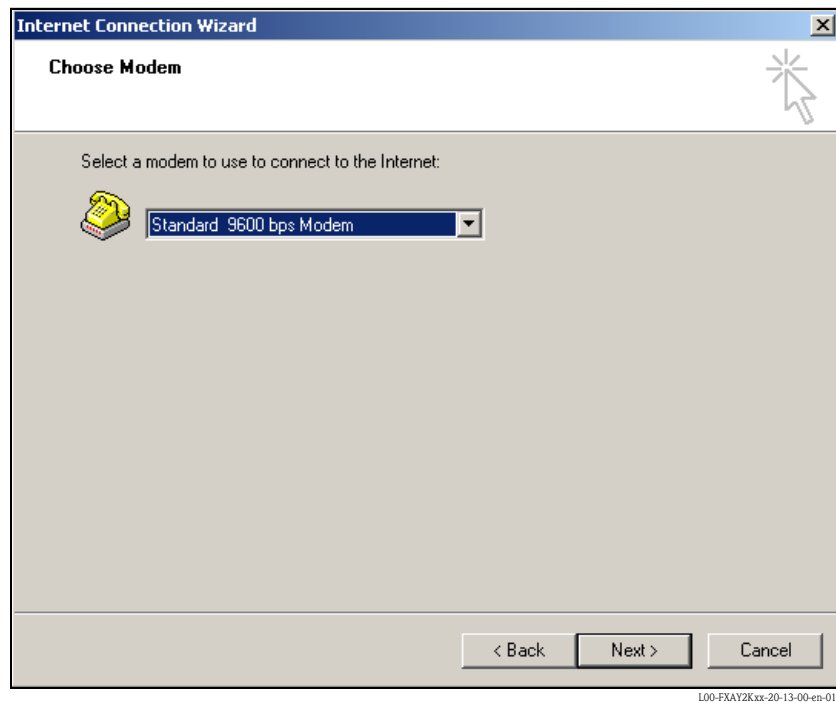
7. Select the newly set up "**Standard 9600 bps Modem**" from the dropdown list and click
    "**Next >**" to confirm. In the following window, enter the telephone number (a hypothetical
    number of no significance, such as 123...) and click "**Next >**" to confirm.

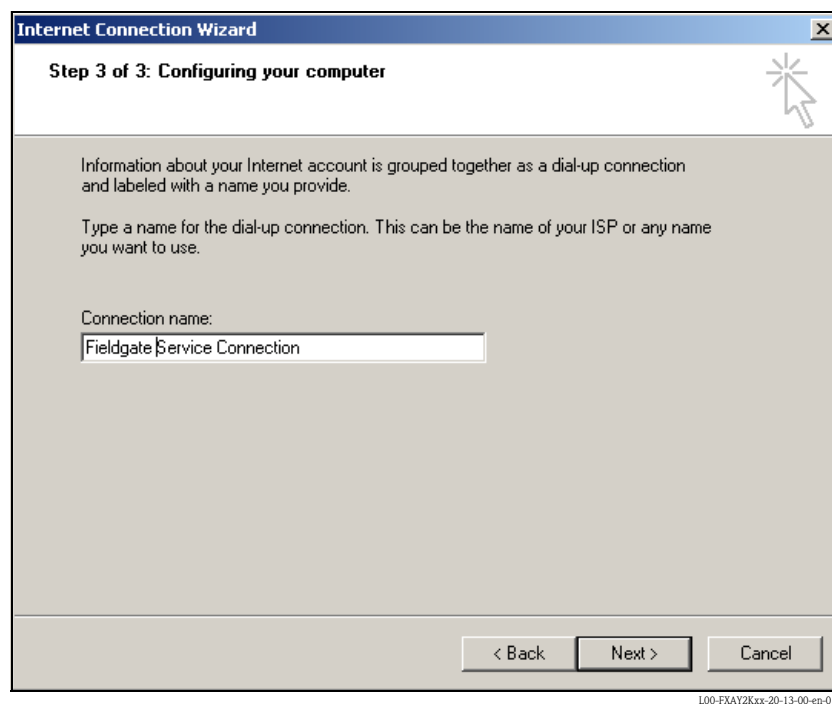L00-FXAY2Kxx-20-13-00-en-017

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

L00-FXAY2Kxx-20-13-00-en-018
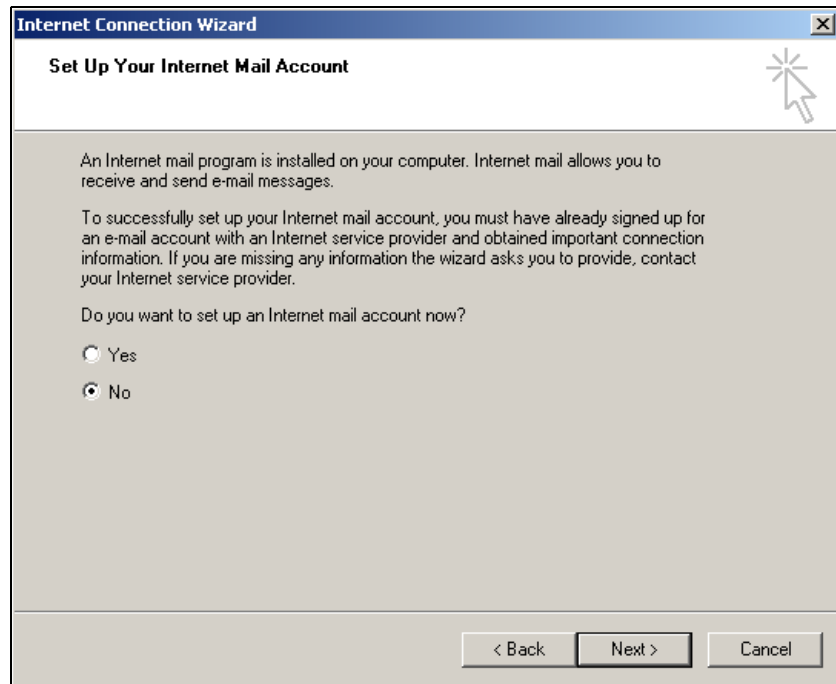
9. Enter the connection name in the "**Connection name:**" field. You can enter any name you choose (e.g. Fieldgate Service Connection in our example). Click "**Next >**" to confirm the name entered.

L00-FXAY2Kxx-20-13-00-en-019

L00-FXAY2Kxx-20-13-00-en-020

10. Click "**No**" and then "**Next >**" to confirm. Click "**Finish**" to confirm.
    The dial-up networking connection is set up.
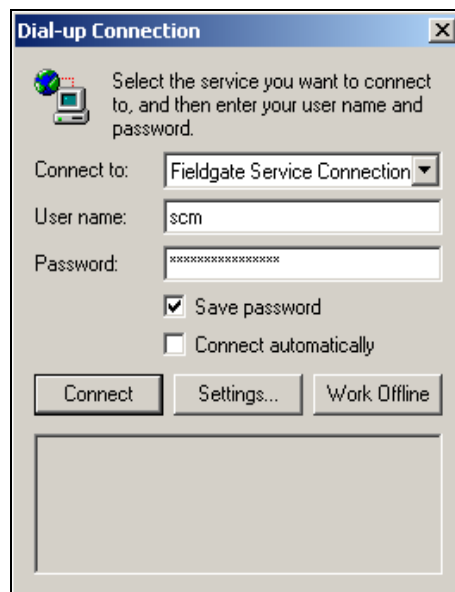
L00-FXAY2Kxx-20-13-00-en-021

11. Left-click the "**Settings...**" button.
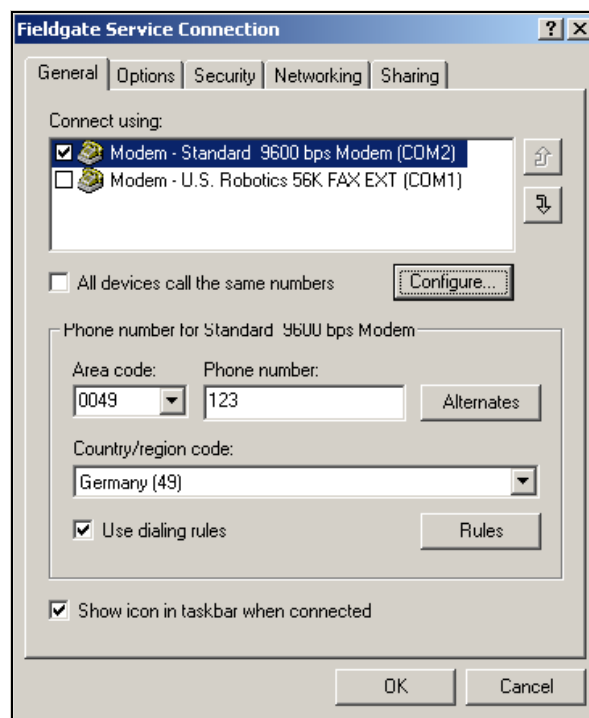
L00-FXAY2Kxx-20-13-00-en-022

12. Check the "**Hardware Settings**". To to so click the "**Configure...**" button.
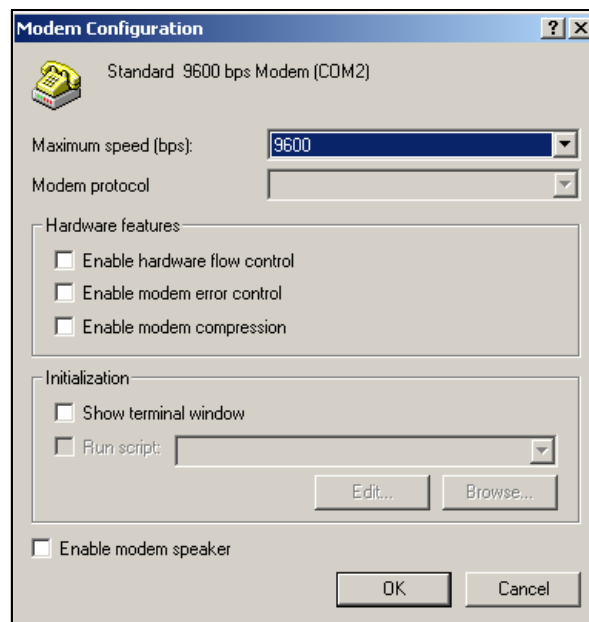
L00-FXAY2Kxx-20-13-00-en-023

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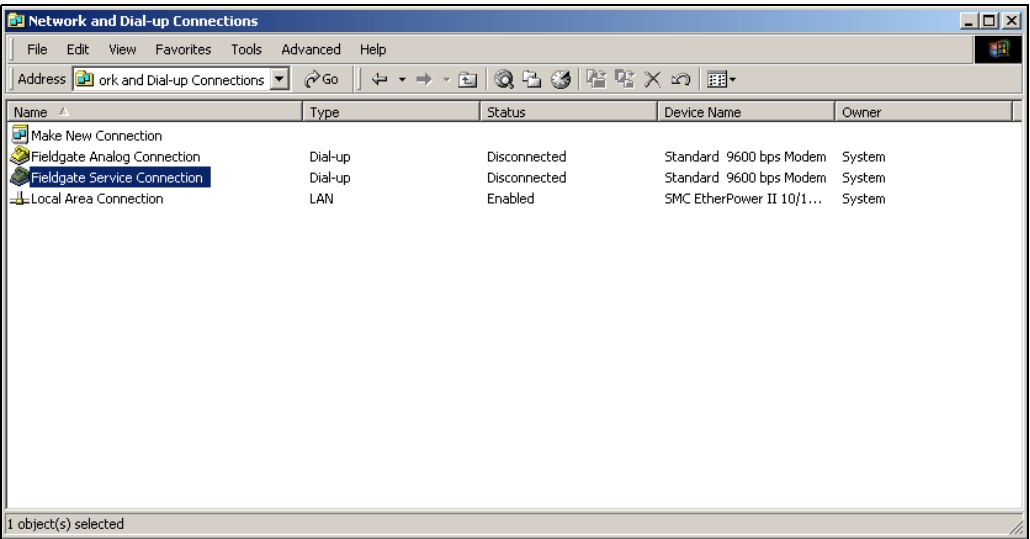
1. Using the left mouse button, double-click the "**Fieldgate Service Connection** " icon to open the appropriate window.

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

2. Click "**Dial**" to confirm the entries.
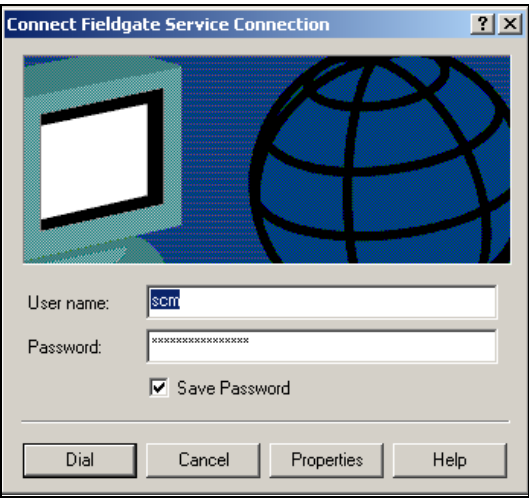
L00-FXAY2Kxx-20-13-00-en-026
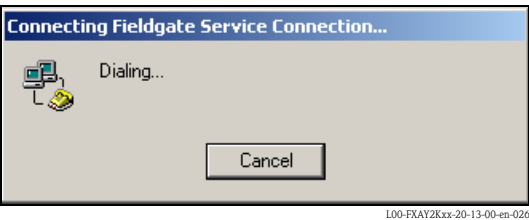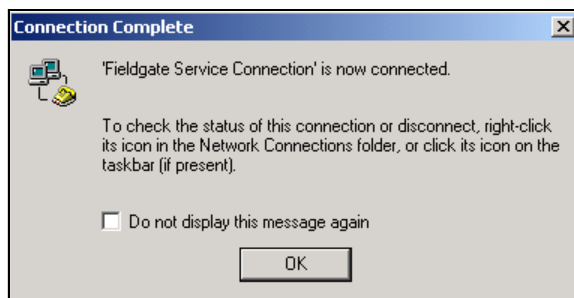
L00-FXAY2Kxx-20-13-00-en-027

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** "
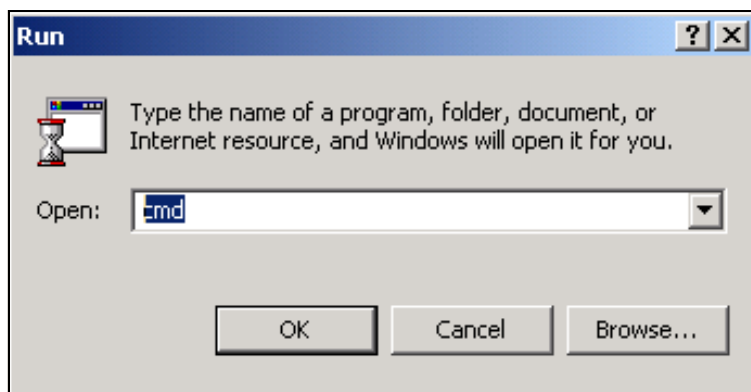
L00-FXAY2Kxx-20-13-00-en-104
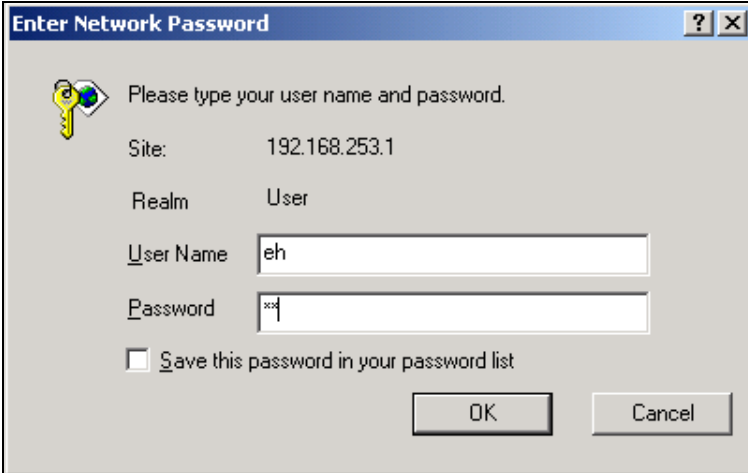
2. Enter "**ping 192.168.253.1**".
    Do you get the answer 192.168.253.1 Bytes=32...
    – Yes. The connection is OK. Check your browser settings (If a proxy server is used try to bypass the IP address 192.168.253.1).
    – No. There is no connection to the Fieldgate.
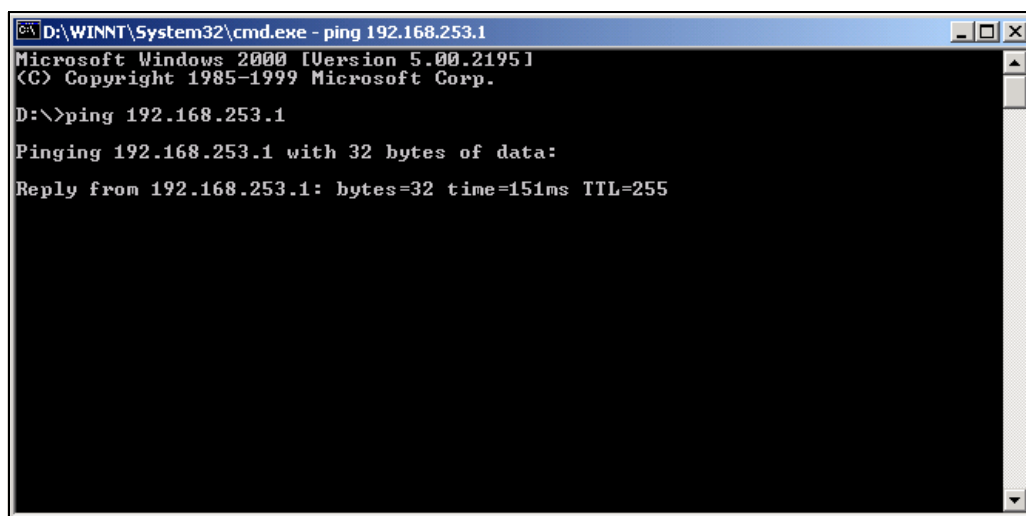
L00-FXAY2Kxx-20-13-00-en-029

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-FXAY2Kxx-20-13-00-en-028

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

L00-FXA320xx-20-13-00-en-001

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.

crossover UTP/STP cable
(Cat. 5 cable)

hub / switch   straight throughUTP/STP cable
(Cat. 5 cable)

L00-FXA520xx-04-00-06-en-003
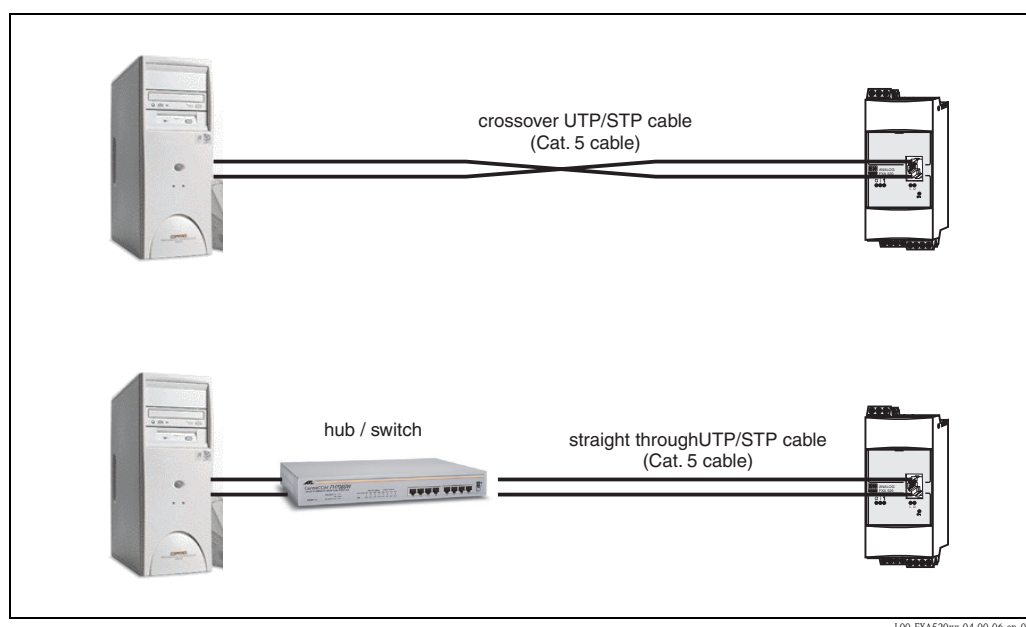
If the yellow LED "**L** " for Link (→ Fig. 6, item 4 on Page 11) lights up, the Fieldgate is physically connected to the Ethernet. If not, check the cable and/or use another cable type (crossover/ straight-through).

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**".

L00-FXAY2Kxx-20-13-00-en-101
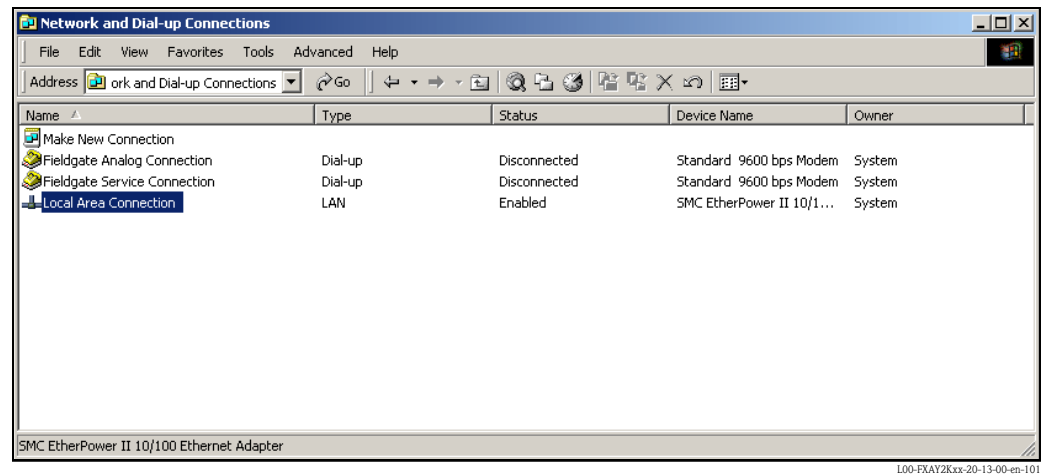
3. Using the left mouse button, double-click "**Internet Protocol (TCP/IP)**".

L00-FXAY2Kxx-20-13-00-en-102
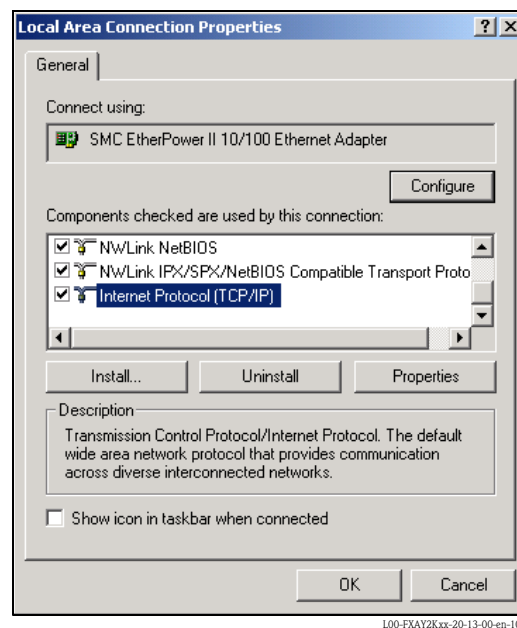
4. Now you can enter/change the values and click "**OK**" to confirm.
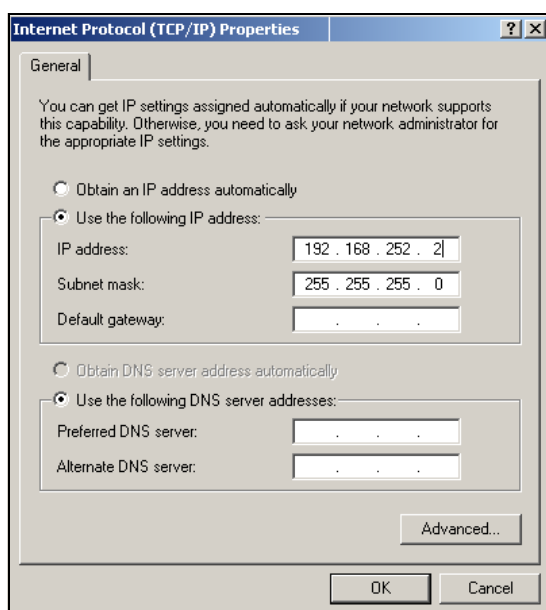
L00-FXAY2Kxx-20-13-00-en-103

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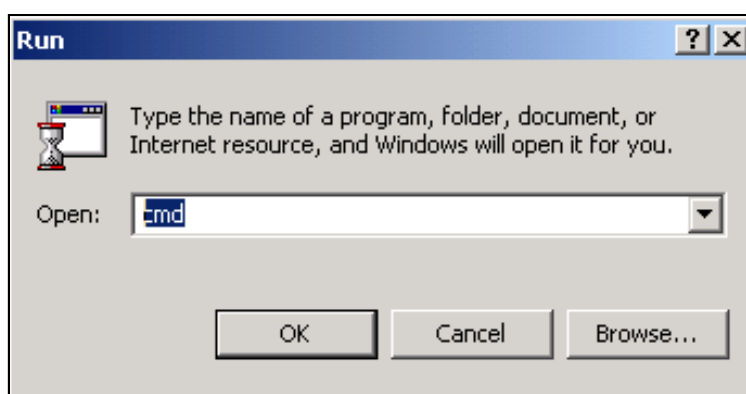
L00-FXAY2Kxx-20-13-00-en-104

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.

L00-FXAY2Kxx-20-13-00-en-105
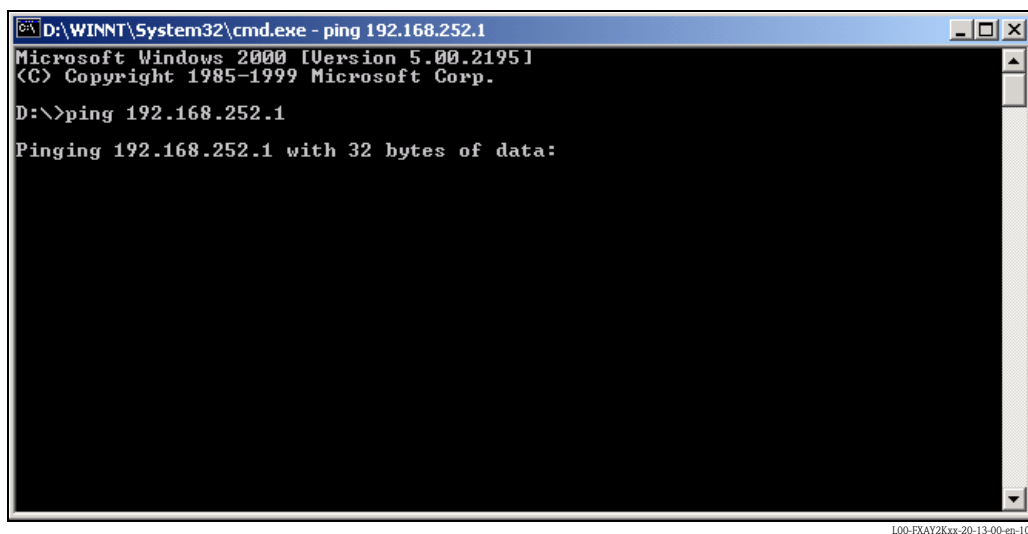
2.4.4   Connecting

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.

L00-FXAY2Kxx-20-13-00-en-203

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.

L00-FXAY2Kxx-20-13-00-en-204

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

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...8 (161 = area code, here for Manchester)
    – Position 9... (XXXX = Fieldgate telephone number)

L00-FXAY2Kxx-20-13-00-en-205

Click "**Next >**" to confirm your entries.

L00-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

L00-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.

L00-FXAY2Kxx-20-13-00-en-208

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

L00-FXAY2Kxx-20-13-00-en-209

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.
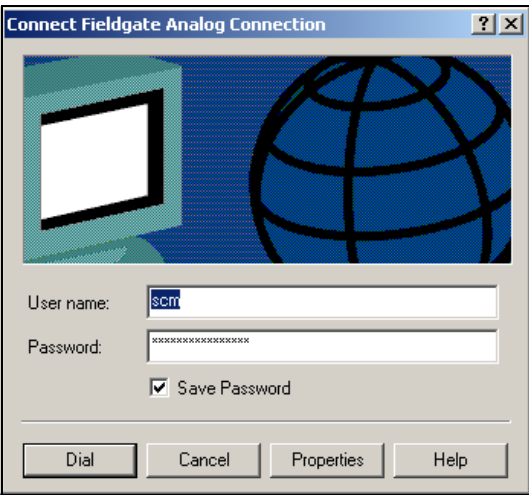
L00-FXAY2Kxx-20-13-00-en-212
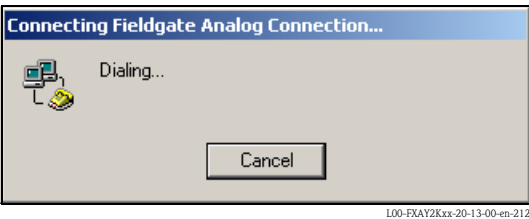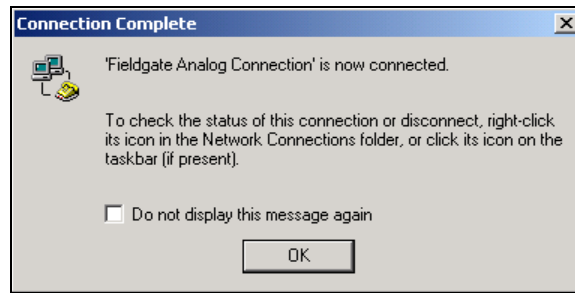
L00-FXAY2Kxx-20-13-00-en-213

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** "

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.

L00-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.

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

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

L00-FXA320xx-20-13-00-en-001

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 ($\rightarrow$ 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 ($\rightarrow$ 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.

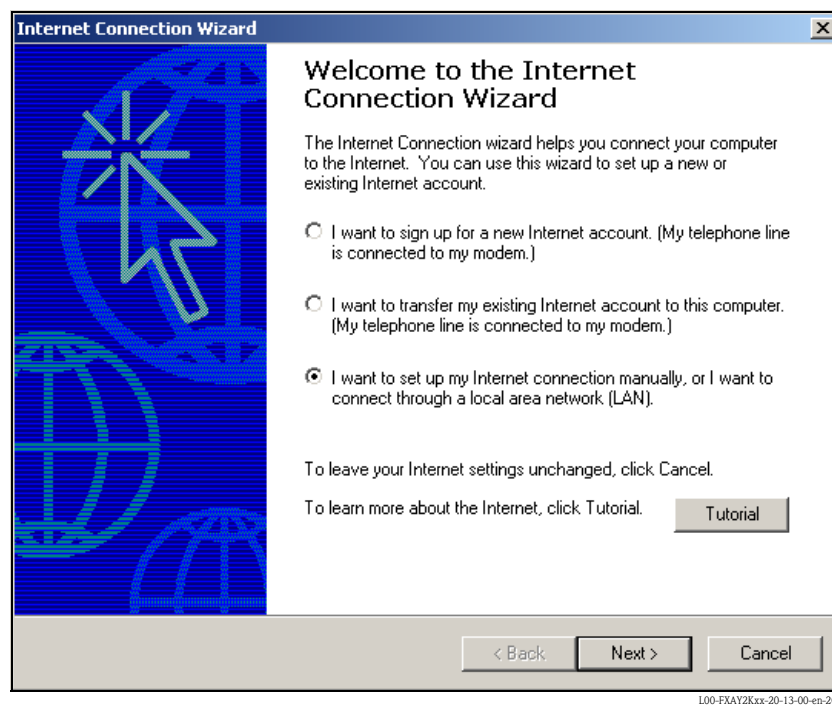**The following are sample instructions for Windows 2000® :**

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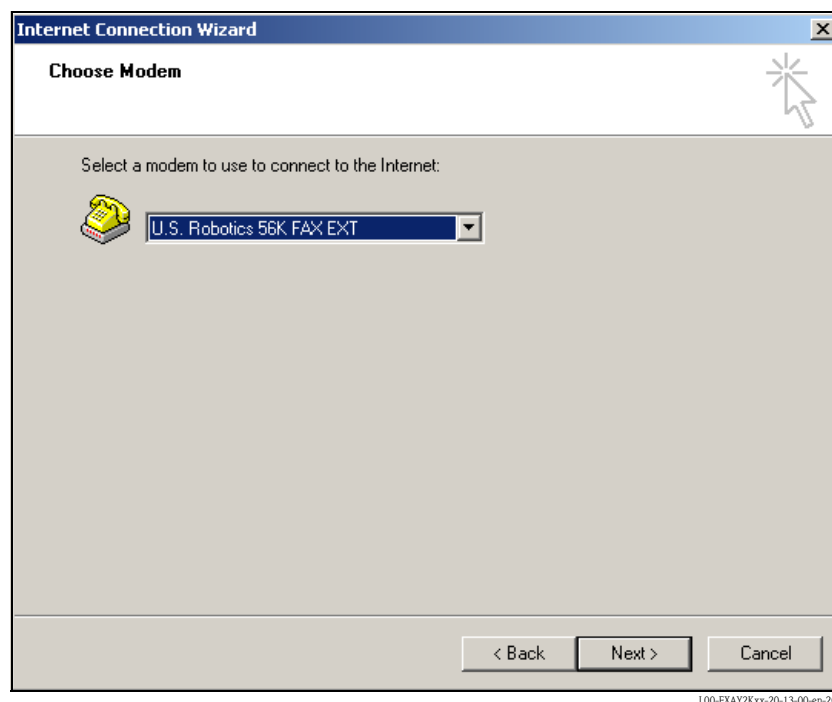Examples of instructions for other operating systems can be found in the appendix.

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.

L00-FXAY2Kxx-20-13-00-en-203

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.

L00-FXAY2Kxx-20-13-00-en-204

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)

L00-FXAY2Kxx-20-13-00-en-411

Click "**Next >**" to confirm your entries.

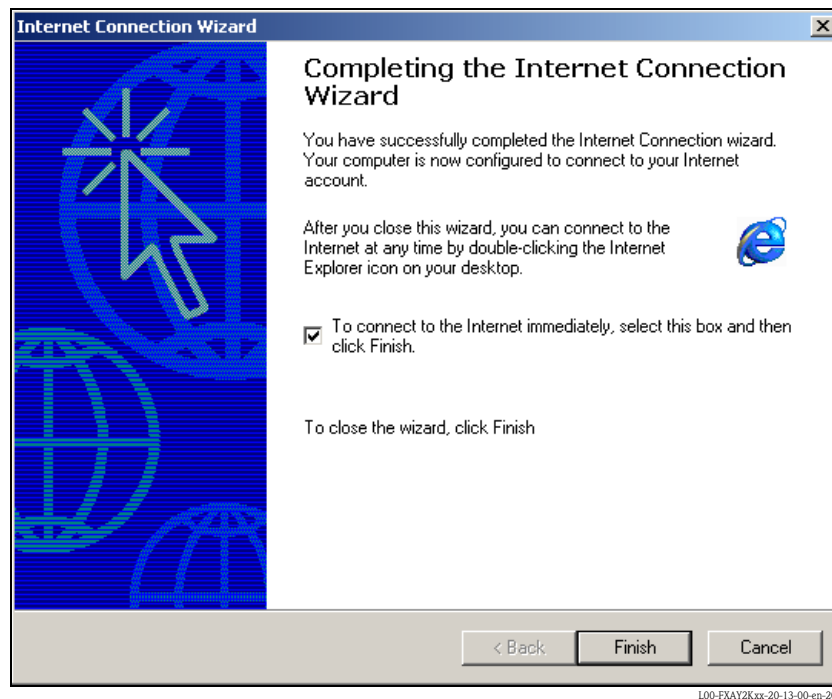L00-FXAY2Kxx-20-13-00-en-206

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

L00-FXAY2Kxx-20-13-00-en-401

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.

L00-FXAY2Kxx-20-13-00-en-208

9. Click "**No**" and then "**Next >**" to confirm.
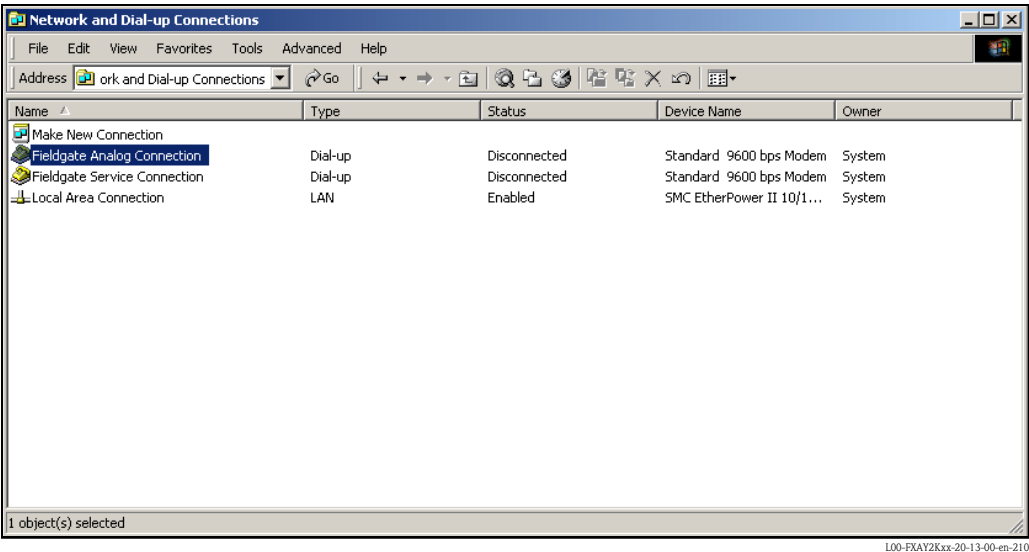
L00-FXAY2Kxx-20-13-00-en-209

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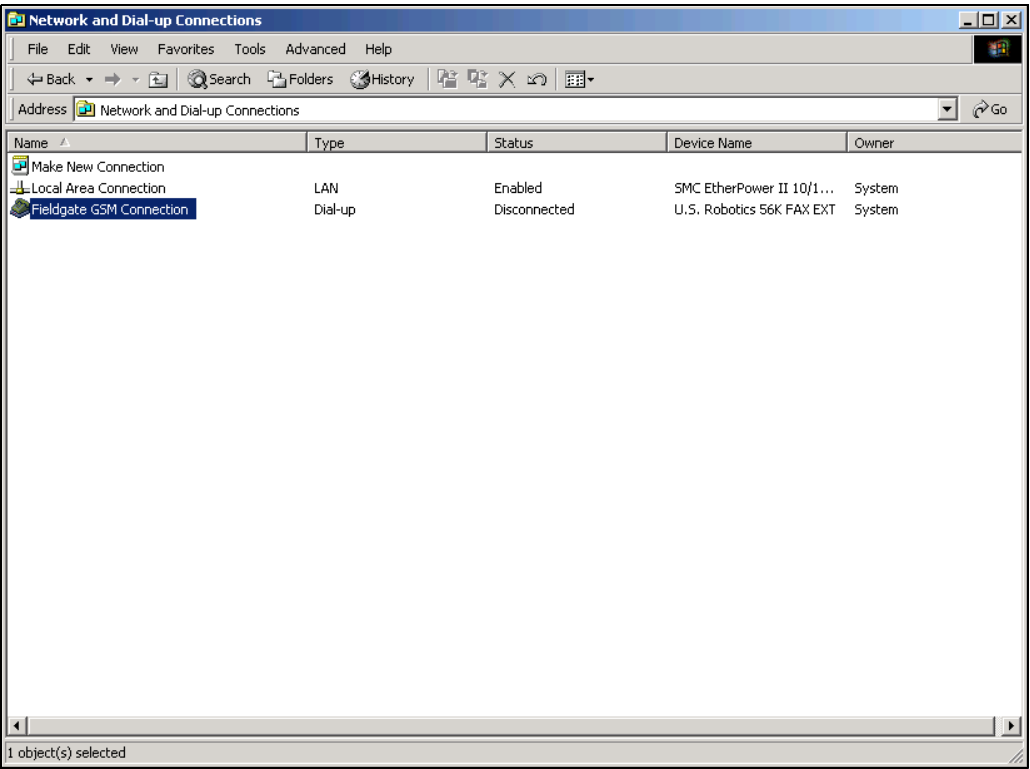
L00-FXAY2Kxx-20-13-00-en-402

1. Using the left mouse button, double-click the "**Fieldgate GSM Connection**" icon to open the appropriate window.
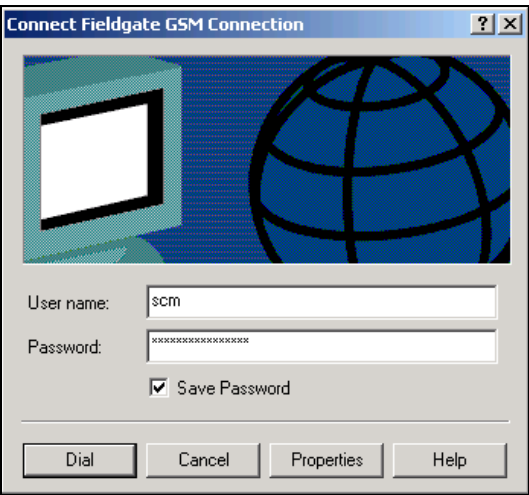
L00-FXAY2Kxx-20-13-00-en-403

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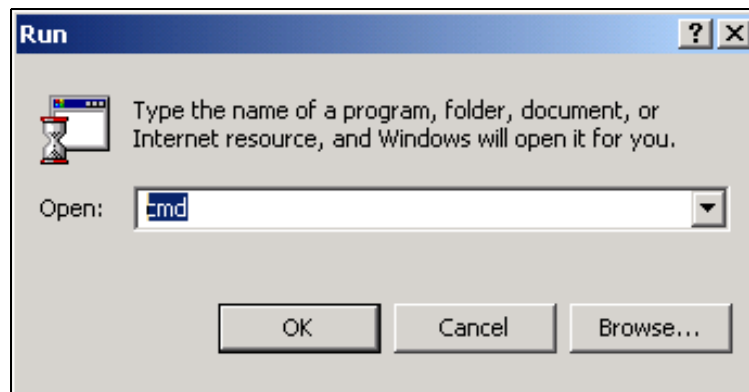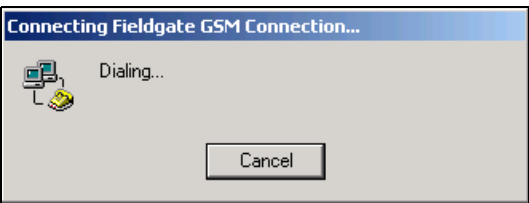

L00-FXAY2Kxx-20-13-00-en-404
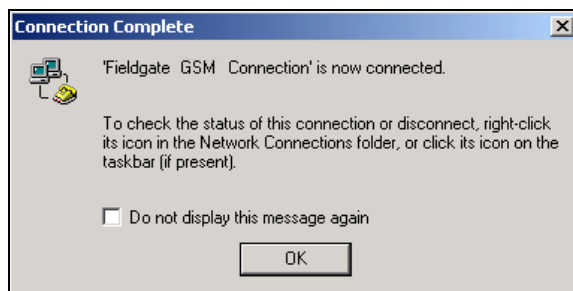
L00-FXAY2Kxx-20-13-00-en-405

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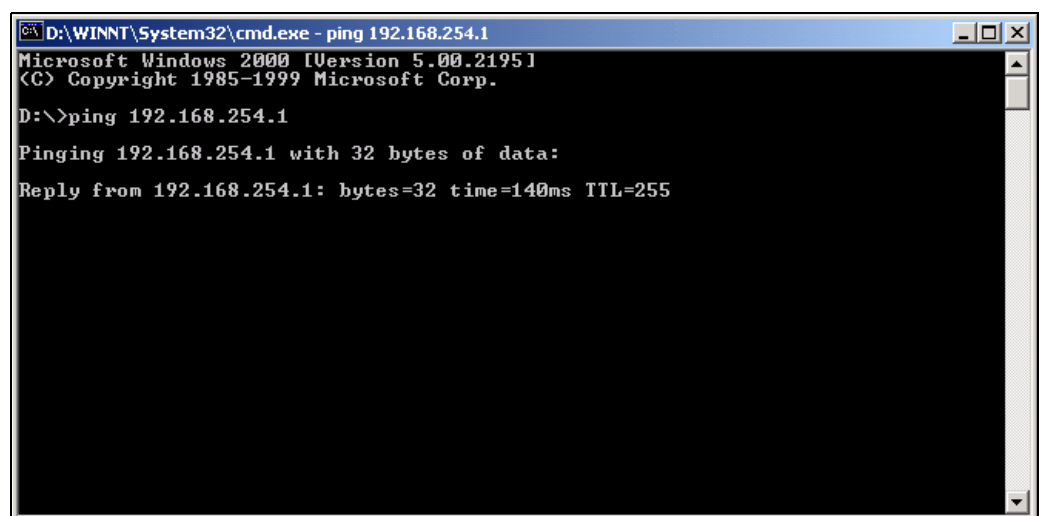
If there is no connection, check the connection to the Fieldgate as follows:

1.   Open the DOS prompt "**Start ➔ Run ➔ cmd** "
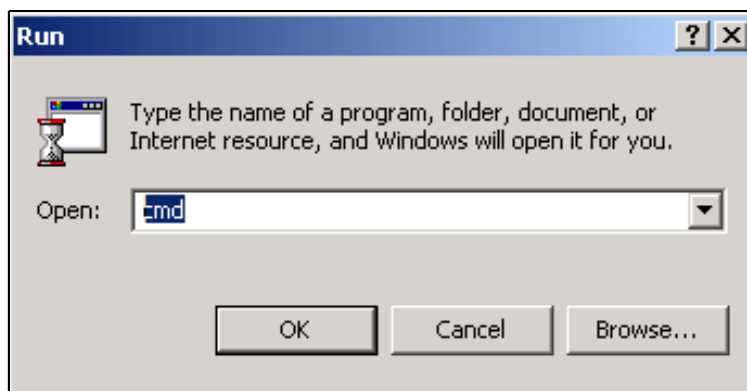
L00-FXAY2Kxx-20-13-00-en-104

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.

L00-FXAY2Kxx-20-13-00-en-215

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.

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

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

L00-FXA320xx-20-13-00-en-001

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**"

L00-FXA520xx-20-13-00-en-016

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):
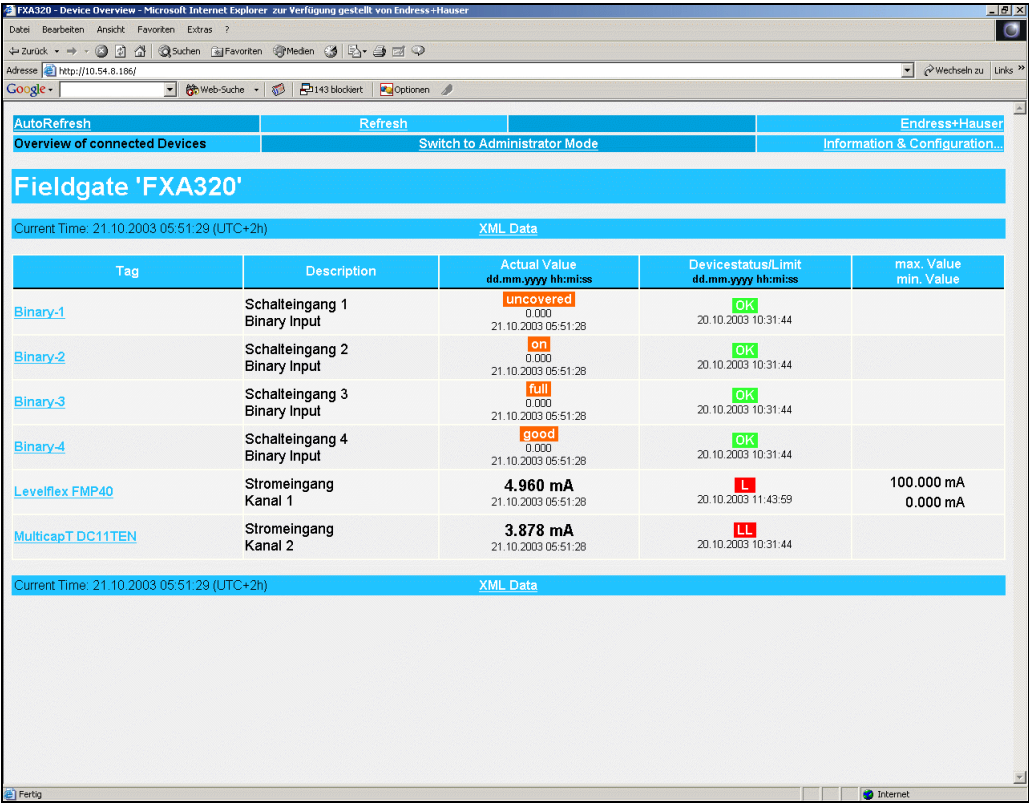
L00-FXA320xx-20-13-00-en-001

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

L00-FXA520xx-20-13-00-en-036
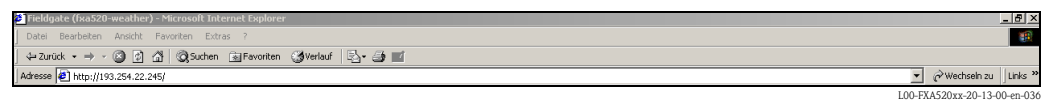
The IP address of the Fieldgate is entered in the address field of the web browser.

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
    - "Scan Control " 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.

L00-FXA320xx-20-13-00-en-002

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.

L00-FXA320xx-20-13-00-en-003

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.

L00-FXA520xx-20-13-00-en-005

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.

L00-FXA520xx-20-13-00-en-050

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)

L00-FXA520xx-20-13-00-en-008
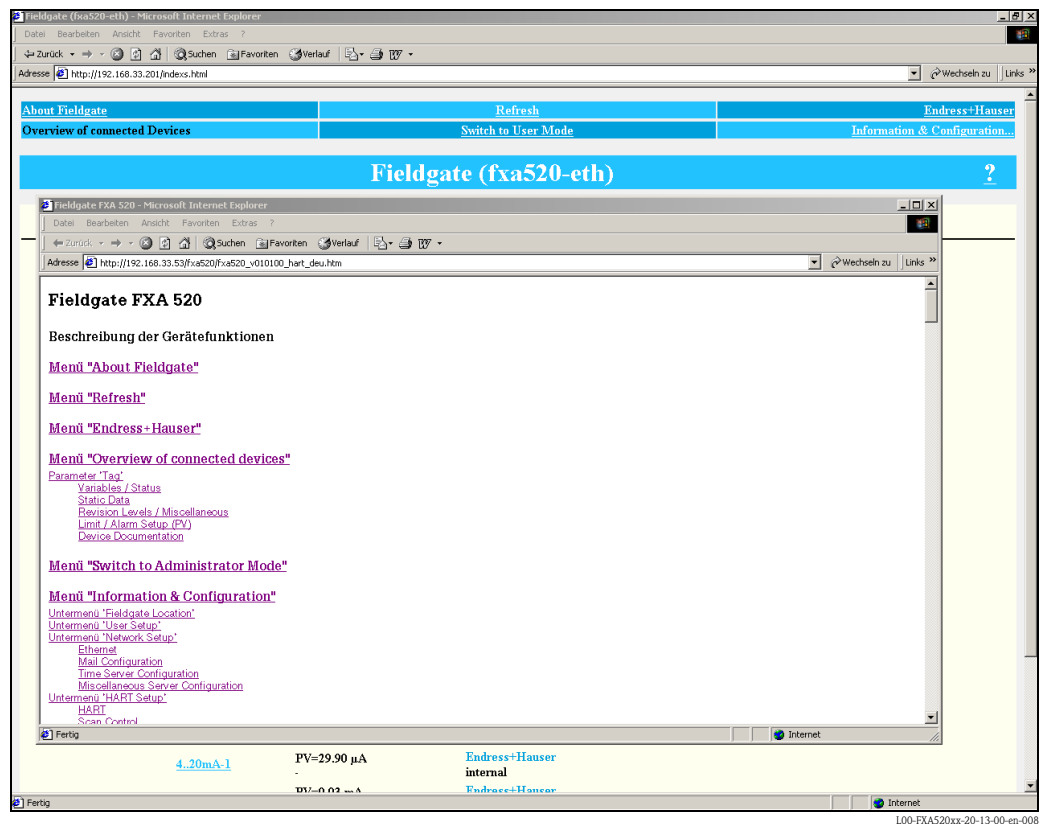
With this function, a separate help window is opened with a complete description of the individual functions, subfunctions and parameters.

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...

L00-FXAY2Kxx-20-13-00-en-300

Click on "AutoRefresh OFF" to deactivate updating.

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

L00-FXAY2Kxx-20-13-00-en-322

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.

L00-FXA520xx-20-13-00-en-009

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.

L00-FXA320xx-20-13-00-en-001

Note!

The maximum which can be shown in the "Overview of connected devices" is:

- Two analogue 4...20 mA measured values

and

- 4 switch statuses, two of which are totalisers or frequency counters (the setting can be configured)

can be displayed.

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) ($\rightarrow$ 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 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

Left clicking on the device designation in the "**Tag** " column brings you to a detailed view of the device (see following examples).

Note!
You can edit the limit values (Limit) in the administrator mode ($\rightarrow$ Chap. 9).

Example of a 4...20 mA current input

Example of selecting a current input, here, for example, by selecting "**MulticapT DC11TEN** " for Multicap T DC11 TEN).

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

Tag details:internal:MulticapT DC11TEN

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 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
yes PV	Stromeingang Kanal 2	3.878 mA 21.10.2003 07:07:20	ok	LL 20.10.2003 10:31:44		19.000 18.000 5.000 4.000		no no	mA / minute	uncovered/covered

Scaling/SensorError/SensorTag Setup

Tag   MulticapT DC11TEN
Alarm Mail on Sensor Error   yes

Current Time: 21.10.2003 07:07:22 (UTC+2h)   XML Data

L00-FXA320xx-20-13-00-en-004

Example of a binary input

Example of selecting a binary input, here, for example, by selecting "**Binary–1** " for switch input 1).

L00-FXA320xx-20-13-00-en-023

8.1.1 Configuration the 4–20 mA analog inputs

L00-FXAx20xx-20-13-00-en-010

Linearization/SensorError/SensorTag Setup

L00-FXA320xx-20-13-00-en-022

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.

8.1.2   Description/Range/Limit/Alarm Setup

L00-FXA320xx-20-13-00-en-021

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

Activation of the checkbox in Administrator mode allows you to establish whether the respective input/measured value should be displayed in the "Overview of connected Devices".

Description

This column can be used to enter further information consisting of 2 x 20 characters (only in Administration Mode). This is stored in the Fieldgate.
The standard setting requires the manufacturer to be written on the first line and the name of the device on 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 column displays the limit value status (setting values in the Fieldgate "":
- 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 / LowLow

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 hysterisis 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.

8.1.3   Linearization/SensorError/SensorTag Setup

L00-FXA320xx-20-13-00-en-022

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).
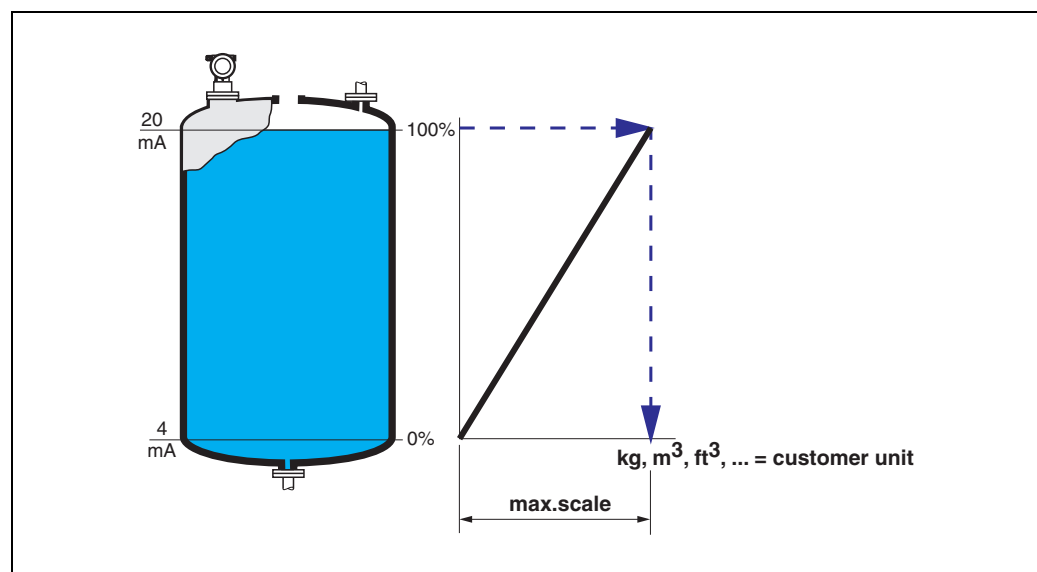
L00-FXAx20xx-14-00-06-en-001

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.

L00-FXAx20xx-14-00-06-de-002
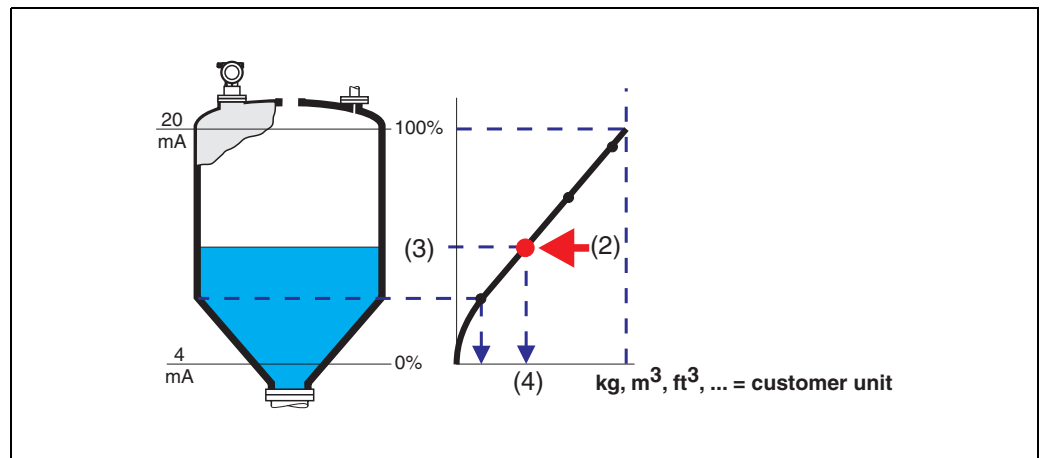
Every point (2) in the table is described by a value pair: level (3) and volume (for example) (4). The last value pair determines the output of 100% (= 20 mA).

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.

Alarm Mail on Sensor Error

Place a tick here if you want to report a sensor error. This function allows malfunctions and failures of the connected sensors to be detected and reported as an alarm. 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

8.1.4   XML Data

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

8.2 Versions with binary inputs

The device is equipped with four binary inputs which also have an event counter or frequency measuring function in addition to evaluating the signal condition:

- Channels 1+3 also offer an event counter function
- Channels 2+4 also offer a frequency measuring function

You will find the section "Operation Mode" in the detailed overview of a binary input

L00-FXA320xx-20-13-00-en-026

8.2.1 Operation Mode

Here you can establish, when in Administrator Mode, whether the additional function for the input is used or whether a binary signal should be evaluated.

L00-FXA320xx-20-13-00-en-018

8.2.2 Sensor Tag/Unit Setup

L00-FXA320xx-20-13-00-en-025

8.2.3 Event counter function

L00-FXA320xx-20-13-00-en-019

Select the option "Event Count" to activate the event counter mode for the input.
The internal counter can count up to 32 bits, which represents 4294967296 counting pulses. The counting frequency is specified at a max. of 12.5 KHz.

Start Value

Here you can enter a start value for counting (the factory setting is 0.000).

Quantisation

Here you can enter the conversion factor for counting steps/unit (the factory setting is 1.000).

Example:
1400 counting steps / litre -> 1400 counting steps represent 1 litre

Down Count

Activation of this checkbox in Administrator Mode (in user mode a "**yes** " is displayed) changes the direction of counting of the event counter to decreasing numbers (the factory setting is for increasing numbers).

Note!
Sending off the section of the form named "Operation Mode" with "Send" causes the current accumulated counter value of the input to be reset to the starting value.

Behaviour when the counter overruns

If the number of counting impulses exceeds the 32 bit limit a sensor error is sent by mail and/or SMS according to the "Alarm Mail on Sensor Error" function and the "Device Status" is set to "ERROR". The counter is then reset and starts anew while the displayed value is reset to the specified start value. The "Device Status" shows "ERROR" until the counter is re-initialised by pressing "Send". Multiple overruns are not reported. This factory setting cannot be deactivated.

Note!
The current count value is periodically saved every 10 minutes in the non-volatile memory. If the system is restarted between two save periods, e.g. due to a power outage etc., totalised count values can be lost in this period.

8.2.4 Frequency measurement function

Operation Mode
○ Binary Input
● Frequency Count (Unit = Hz)
Send   Reset

L00-FXA320xx-20-13-00-en-027

Select the option "Frequency Count" to activate the frequency measurement mode for the input.
The term Hz for Hertz is always set as the basic unit in this mode.
Measuring range: 5Hz – 12.5 KHz; a measured values below 4.7 Hertz are indicated as 0 Hz.
The frequency measurement function offers, for example, the option of recording speeds or displaying flow rates per second.

Note on event counting and frequency measurement function!
To avoid incorrect evaluations, the connected signals should be sufficiently debounced.

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 alloca‐ted.
  Default setting for:
  – user name is "**super**"
  – password is "**super**"

L00-FXA520xx-20-13-00-en-016

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.

L00-FXA520xx-20-13-00-en-059

Example of display in administrator mode

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

L00-FXAY2Kxx-20-13-00-en-311

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.

L00-FXA520xx-20-13-00-en-017

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

10.1 "Fieldgate Location" subfunction

Fieldgate Location	
Fieldgate Identification	FXA320-LS2
Fieldgate Location	Maulburg
	Germany
Remarks	Test device

L00-FXA520xx-20-13-00-en-005

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. FXA320-...) 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.

Change Password	
User name	
Old Password	
New Password	
Retype New Password	
	Send Reset

L00-FXA520xx-20-13-00-en-019

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.

User Setup		Fieldgate Configuration
Username	Password	
super	*****	☑
eh	**	☐
		☐
		☐
		☐
Public Access to (readonly) Web-Interface?	☐	
	Send Reset	

L00-FXA320xx-20-13-00-en-005

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 74). 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 74). 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.

■ 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 "**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:

Endress+Hauser

Example for analogue modem:

L00-FXA520xx-20-13-00-en-139

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:

L00-FXAY2Kxx-20-13-00-en-406

10.3.1   Ethernet

L00-FXA320xx-20-13-00-en-016

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

L00-FXA520xx-20-13-00-en-174

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 analogue/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 intoIP 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

Mail Configuration	
SMTP-Gateway	
SMTP Username	
SMTP Password	
Sender Address	fxa320@example.com
Address Alarm Mails	address.alarm@fxa320.com
Remind pre-Boot Limit Alarms	☑
Address Measurement Mails	address.measurement@fxa320.com
Periodic Measurement Mails	15 min
Format Measurement Mails	TEXT
Data Logging Email on	
- Periodic Measurement Mail	☐
- Log Buffer full	☑
- Device Event	☐

Send   Reset

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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** " ($\rightarrow$ Chap. 10.3.2 "ISP & Modem Configuration" on Page 83).

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 ($\rightarrow$ Chap. 8.1.2 "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 Passwort

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 "Address Alarm Mails"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.

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 100).

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

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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.
Deviationsfrom 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 "" 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

Miscellaneous Server Configuration	
Doc/Download Server	
Proxy Server	
Port Number Proxy Server	
Proxy Server Username	
Proxy Server Password	
Test Connection Server	
Port Number Web Server	80

Send | Reset

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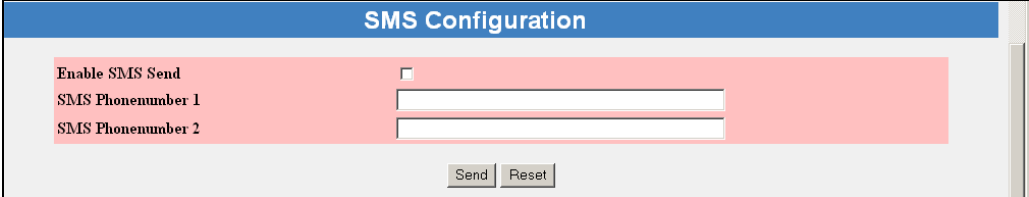
In this case, the setting up of the test connection server ensures that the Fieldgate itself notices a disconnection from the Internet within 1/2 day hours at maximum and then establishes a new GPRS connection.

Port Number Web Server

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

10.3.6   SMS Configuration

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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

L00-FXAY2Kxx-20-13-00-en-410

GPRS (General Packet Radio Services) is a mobile communications technique, which exploits the advantages of packet-oriented data transmission and channel bundling.
Different from normal GSM connections, no complete channel is reserved for the duration of the connection between the mobile device and the basis station, rather the data is packed into packets, which can be sent depending on requirement and capacity. Data transmission in packets enables not only greater transmission rates but also Always-on-operation. The Fieldgate is thus permanently in a position to connect to the Internet, an Intranet or a mailbox, whereby data is only transferred as required if a new e-mail is sent or a new Internet page is called up. Here, you are only charged for the amount of data actually transmitted (and not for connection time).
The GPRS mode of the Fieldgate GSM thus offers the easiest and most cost-effective option for connecting a measuring point permanently to the Internet or an Intranet. Thanks to Always-on-operation, the WAP functions ($\rightarrow$ Chap. 12) of the Fieldgate can also be used easily and cost-effectively.

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 (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 ($\rightarrow$ 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.

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.

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 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. 179.

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. 179.

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
Passwort	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. 179.

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. 179.

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=

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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   "Scan Control " subfunction

L00-FXA320xx-20-13-00-en-028

10.4.1   Devise Scan Control

L00-FXAx20xx-20-13-00-en-003

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. To do so, select "**use e-mail/ log cycle**". In this case the measurement is not started until shortly before the next periodic e-mail so that the measured values in the e-mail are always up to date. In between e-mail times the connected sensors are in power down mode.

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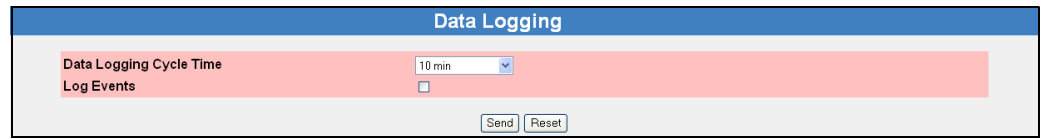
Once the sensors have been powered up, it is necessary to wait a set amount of time until a stable measured value can be determined. This is known as the "**Device Power-up Time**". Here you set the time which is required at maximum for the slowest measurement after powering up again or which is determined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

10.4.2   Data Logging

L00-FXAx20xx-20-13-00-en-004

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, switch inputs and internal sensors (if these were hidden).

L00-FXA320xx-20-13-00-en-020
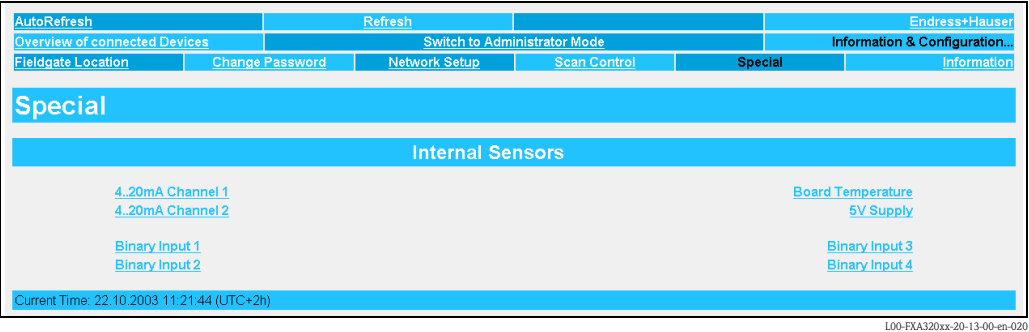
A detailed presentation of the individual sensors can be obtained when you select a tag with the left mouse key (e.g. "5V Supply").

L00-FXA320xx-20-13-00-en-014
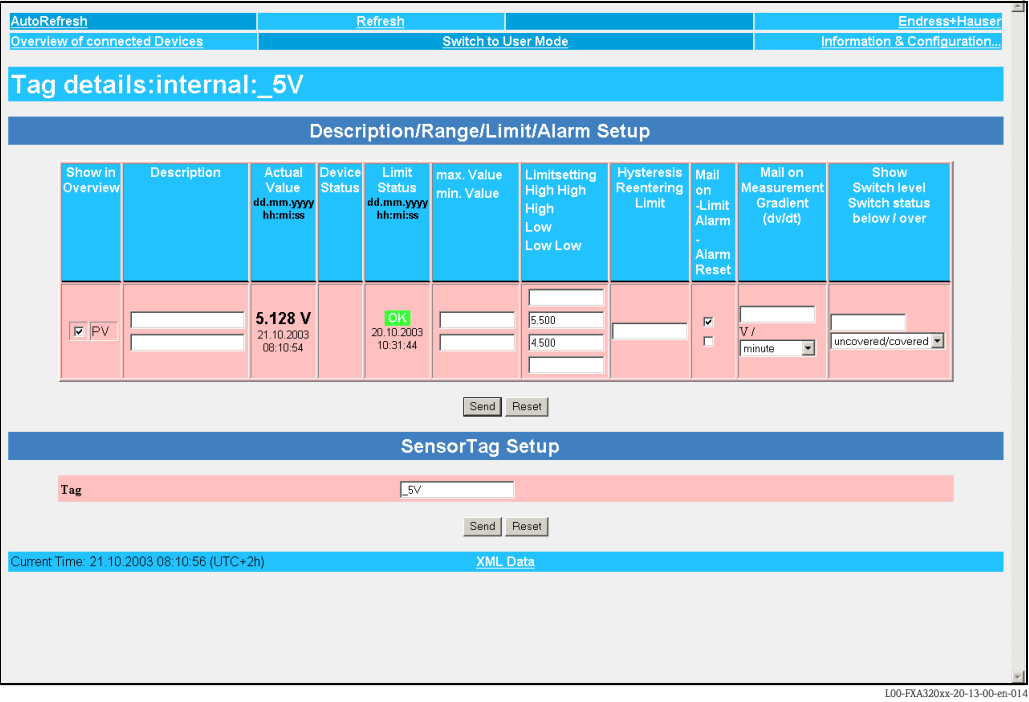
The following examples offer an explanation about how presentation of the 4...20 mA inputs, switch inputs and internal sensors (Board Temperature and Board Voltage) can be activated/ deactivated in the "**Overview of connection Devices** " function.

Example of deactivation of the presentation in the "Overview of connection Devices" function

L00-FXA320xx-20-13-00-en-009

1. Left-click the tag name "**_boardtemp** ", for example

2. Switch to administrator mode.

L00-FXA320xx-20-13-00-en-010

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

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

L00-FXA320xx-20-13-00-en-011

Example of deactivation of the presentation in the "Overview of connection Devices" function

L00-FXA320xx-20-13-00-en-012

1.   Switch to Administrator Mode.

2.   Switch to the "**Information & Configuration ➔ Special** " function

L00-FXA320xx-20-13-00-en-013

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.

L00-FXA320xx-20-13-00-en-014

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

5.   The display of the internal sensor, for example "**_5V** " is thereby activated and is displayed in the user interface.

L00-FXA320xx-20-13-00-en-011

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-323

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

Activation of the local hardware lock, → Chap. 11.

L00-FXAY2Kxx-20-13-00-en-326

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

L00-FXA320xx-20-13-00-en-015

Log files which were written from are deleted on activation of the individual checkboxes.

L00-FXAY2Kxx-20-13-00-en-328

When the checkbox 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 (analogue, GSM, PC connecting 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	Scan Control	Special	Information

Information

Hardware Configuration

General	FXA320-AA1A
Hardware Versions	-
Firmware Version	01.02.00-7 200400312
OS Version	3.17
Software Checksum	System: 0x7777 (boot), 0x4c72 (boot)
Serial Number	Fuchs01
MAC address	00:07:05:00:00:27
Total Uptime	101d 15h 27m 35s
Current Uptime	00h 12m 35s
Reboot Counter	53
Available Memory	119910
Bytes Received	25620
Bytes Sent	259170

System Log

```
DHCP-Server assigned IP:10.54.8.102
hardware-lock opened
20040316-144801: time fetched (time)
20040316-144804: email delivered to 1st recipient alarm: FXA320-LS2: Assigned IP Address - 150
20040316-144805: email delivered to 1st recipient alarm: FXA320-LS2: Device Error: _4..20mA-2 - 120
20040316-144807: email delivered to 1st recipient measurement: FXA320-LS2: Device Error - 020
20040316-144809: email delivered to 1st recipient measurement: FXA320-LS2: Periodic Measurement (reboot) - 000
20040316-144817: email delivered to 1st recipient alarm: FXA320-LS2: System Rebooted from Bootarea - 101
20040316-145013: changing sensor data '_4..20mA-1' from 195.118.80.252
20040316-145325: changing sensor data '_4..20mA-1' from 195.118.80.252
20040316-145727: changing sensor data '_4..20mA-1' from 195.118.80.252
20040316-145743: email delivered to 1st recipient alarm: FXA320-LS2: Transition OK->High: _4..20mA-1 / - 137
20040316-145752: email delivered to 1st recipient measurement: FXA320-LS2: Device Transition OK->High (measurement) - 037
20040316-145759: email delivered to 1st recipient alarm: FXA320-LS2: Transition High->OK: _4..20mA-1 / - 134
20040316-145802: email delivered to 1st recipient measurement: FXA320-LS2: Device Transition High->OK (measurement) - 034
20040316-145836: email delivered to 1st recipient alarm: FXA320-LS2: Transition OK->LowLow: _4..20mA-1 / - 139
20040316-145838: email delivered to 1st recipient measurement: FXA320-LS2: Device Transition OK->LowLow (measurement) - 039
20040316-145839: email delivered to 1st recipient alarm: FXA320-LS2: Transition LowLow->OK: _4..20mA-1 / - 140
20040316-145843: email delivered to 1st recipient measurement: FXA320-LS2: Device Transition LowLow->OK (measurement) - 040
20040316-145844: email delivered to 1st recipient alarm: FXA320-LS2: Transition OK->High: _4..20mA-1 / - 137
20040316-145846: email delivered to 1st recipient measurement: FXA320-LS2: Device Transition OK->High (measurement) - 037
20040316-145848: email delivered to 1st recipient alarm: FXA320-LS2: Transition High->OK: _4..20mA-1 / - 134
20040316-145850: email delivered to 1st recipient measurement: FXA320-LS2: Device Transition High->OK (measurement) - 034
20040316-145852: email delivered to 1st recipient alarm: FXA320-LS2: Transition OK->High: _4..20mA-1 / - 137
20040316-145854: email delivered to 1st recipient measurement: FXA320-LS2: Device Transition OK->High (measurement) - 037
```

Error Log

```
Cannot add route
20040316-150025: cannot deliver email: wrong smtp gateway (or down?) or alarm address specified? SmtpOpen-Error 3
```

Current Time: 16.03.2004 15:00:36 (UTC+2h)

L00-FXA520xx-20-13-00-en-029

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

10.6.1   Hardware Configuration

Hardware Configuration

General	FXA320-AA1A
Hardware Versions	-
Firmware Version	01.01.01-1 20031118
OS Version	3.17
Software Checksum	System: 0x66fd, DD: 0x4c72
Serial Number	Fuchs01
MAC address	00:07:05:00:00:27
Total Uptime	101d 14h 53m 04s
Current Uptime	02h 58m 04s
Reboot Counter	49
Available Memory	135090
Bytes Received	45293
Bytes Sent	448136

L00-FXA320xx-20-13-00-en-029

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**dentity 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) ($\rightarrow$ Fig. 6 on Page 11) 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

```
20040316-103503: email delivered to 1st recipient measurement: FXA320-LS2: Periodic Measurement - 005
20040316-103508: time fetched (time)
20040316-103508:  internal time 1s ahead
20040316-105002: email delivered to 1st recipient measurement: FXA320-LS2: Periodic Measurement - 005
20040316-105104: Error-Log cleared from 195.118.80.252
20040316-110207: changing config page 'if' from 195.118.80.252
20040316-110320: changing sensor data '_4..20mA-1' from 195.118.80.252
20040316-110345: changing sensor data '_4..20mA-1' from 195.118.80.252
20040316-110404: email delivered to 1st recipient alarm: FXA320-LS2: Transition LowLow->OK: Levelflex FMP40 / - 140
20040316-110412: email delivered to 1st recipient measurement: FXA320-LS2: Device Transition LowLow->OK (measurement) - 040
20040316-110414: email delivered to 1st recipient alarm: FXA320-LS2: Transition OK->High: Levelflex FMP40 / - 137
20040316-110416: email delivered to 1st recipient measurement: FXA320-LS2: Device Transition OK->High (measurement) - 037
20040316-110507: changing sensor data '_4..20mA-1' from 195.118.80.252
20040316-110507: email delivered to 1st recipient measurement: FXA320-LS2: Periodic Measurement - 005
20040316-110729: email delivered to 1st recipient alarm: FXA320-LS2: Transition High->OK: Levelflex FMP40 / - 134
20040316-110737: email delivered to 1st recipient measurement: FXA320-LS2: Device Transition High->OK (measurement) - 034
20040316-110802: email delivered to 1st recipient alarm: FXA320-LS2: Transition OK->High: Levelflex FMP40 / - 137
20040316-110810: email delivered to 1st recipient measurement: FXA320-LS2: Device Transition OK->High (measurement) - 037
20040316-112004: email delivered to 1st recipient measurement: FXA320-LS2: Periodic Measurement - 005
20040316-112819: email delivered to 1st recipient alarm: FXA320-LS2: Transition High->OK: Levelflex FMP40 / - 134
20040316-112826: email delivered to 1st recipient measurement: FXA320-LS2: Device Transition High->OK (measurement) - 034
20040316-112828: email delivered to 1st recipient alarm: FXA320-LS2: Device Error: Levelflex FMP40 - 120
20040316-112834: email delivered to 1st recipient measurement: FXA320-LS2: Device Error - 020
20040316-112836: email delivered to 1st recipient alarm: FXA320-LS2: Transition OK->LowLow: Levelflex FMP40 / - 139
20040316-112839: email delivered to 1st recipient measurement: FXA320-LS2: Device Transition OK->LowLow (measurement) - 039
```

L00-FXA320xx-20-13-00-en-030

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: ■ loc: Fieldgate Location ■ user: User Setup ■ if: Network Setup ■ special: Special ■ info: Information
changing sensor data '<device-id>' from <ip-addr>	Field device date 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
■ service adapter connected ■ service adapter aborted ■ service adapter disconnected	■ service adapter has been connected ■ service adapter cable has been disconnected ■ connection via service adapter has been aborted
time fetched (<protocol>) ■ 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
20040316-113013: cannot deliver email: wrong smtp gateway (or down?) or alarm address specified? SmtpOpen-Error 3
Current Time: 16.03.2004 11:33:04 (UTC+2h)

L00-FXA320xx-20-13-00-en-031

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)
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.
time service: illegal reply from sntp server	The sntp time server has returned an invalid answer. Select another server.

Error log message	Description
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 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> authentification 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. 6 on Page 11) 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**".

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

Special

Internal Sensors

4..20mA Channel 1   Board Temperature
4..20mA Channel 2   5V Supply

Binary Input 1   Binary Input 3
Binary Input 2   Binary Input 4

All User Variables

Configuration
```
iphone=
iuser=
ipwd=
idns1=
idns2=
```
Add Data   ☐
Transfer Configuration   ☐

[Send] [Reset]

This is for backup purposes only - do not change any value!

All Sensor Limits etc

Configuration
```
_boardtemp=_t%3D_boardtemp%26o%3D1%26t1ch%3D%
26t2ch%3D%26lo%3D0.000%26hi%3D65.000%26si%
3D%26so%3D%26atime%3D60%26swsts%3D1%26dch%3D%26_h%
3D1
_5V=_t%3D_5V%26o%3D1%26t1ch%3D%26t2ch%3D%26lo%
```
Add Data   ☐
Transfer Configuration   ☐

[Send] [Reset]

This is for backup purposes only - do not change any value!

Miscellaneous Settings

Enable Configuration Hardware-Lock (subsequent unlocking   ☐
only locally possible!)

[Send] [Reset]

Firmware Update

Download Address Fieldgate Firmware (via http://)   `10.54.8.94:81/image_build_SerieV01`
Download Fieldgate Firmware now   ☐
Restore to factory defaults   ☐

[Send] [Reset]

Clear Log Information

Clear System log   ☐
Clear Error Log   ☐

[Send] [Reset]

System Restart

Confirm system restart   ☐

[Send] [Reset]

Current Time: 16.03.2004 11:25:23 (UTC+2h)

L00-FXAY2Kxx-20-13-00-en-323

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.

L00-FXAY2Kxx-20-13-00-en-325
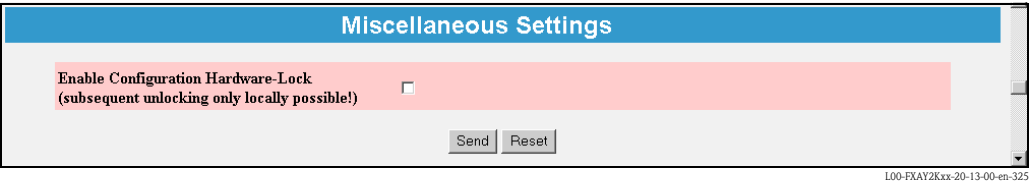
If button (7) ($\rightarrow$ Fig. 6 on Page 11) of the Fieldgate is now kept pressed for longer than one second, access to the Fieldgate configuration is enabled for five minutes.
If the button is pressed down for longer than five seconds, the hardware lock is reset.

L00-FXA520xxx-19-06-xx-xx-005
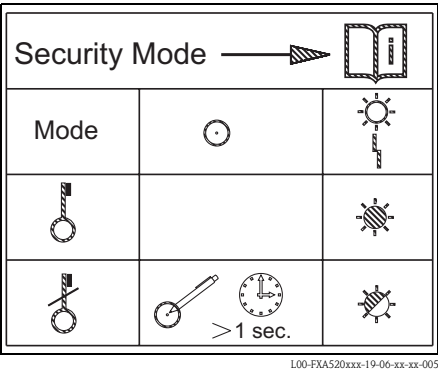
Note!
If necessary, complete access is always possible with the PC cable via the service interface in spite of hardware locking.

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

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

L00-FXA520xx-07-00-06-xx-002

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

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.

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>.

L00-FXAxxxxxx-20-13-00-en-001
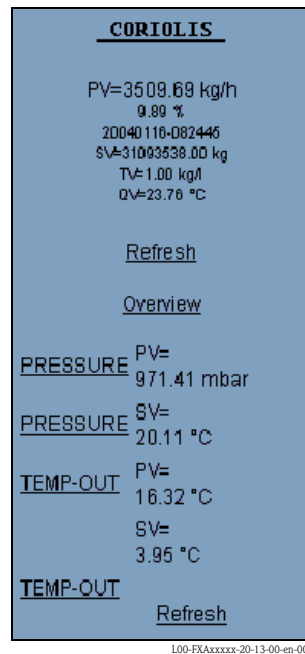
- **Detailansicht Feldgeräte**
  Detailed view of the connected devices according to the "TAG" parameter restricted to the
  measured values specifying the time stamp
  – TAG information.
  – Measured value with unit and time stamp (primary and secondary value, if selected in the
    "show in overview" function). Primary value displayed as PV= <value> <unit> <timestamp>,
    secondary value displayed as SV, TV, QV=<value> <unit> <timestamp>.

L00-FXAxxxxxx-20-13-00-en-002
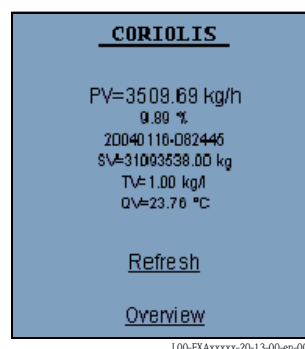
13 Data Logging

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" ($\rightarrow$ Page 112) 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)

<v**x**>**value**</v**x**>   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

- With digital input:
  70 data records per channel/interface can be saved.
- Without digital input:
  141 data records per channel/interface can be saved.

13.5   Functions in the "Scan Control" menu

For a description of the functions, see also "**Data Logging**" on Page 102.

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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 "" on –Page 91.

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.
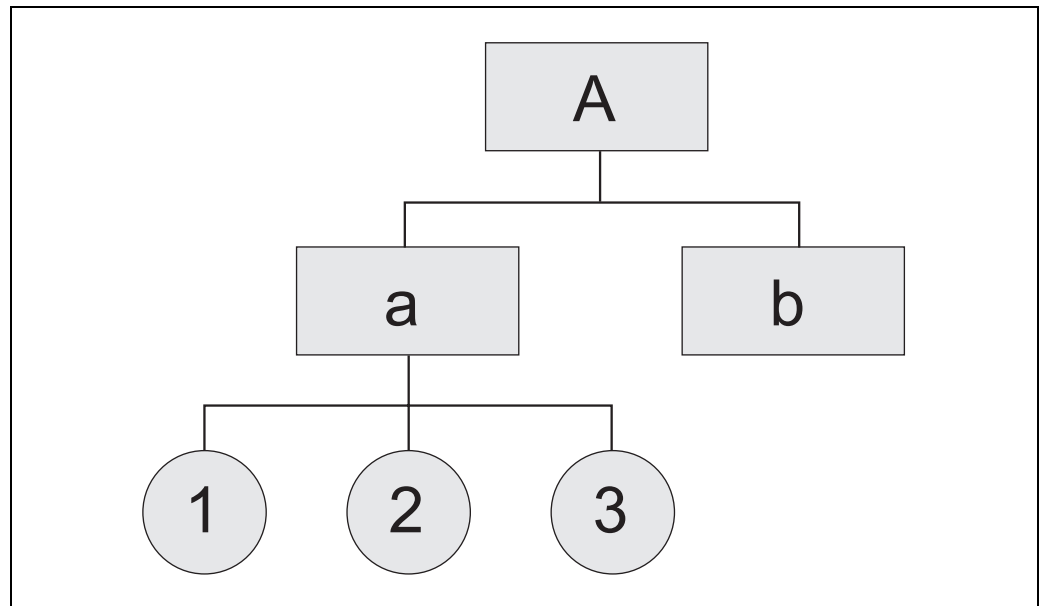
L00-FXAx20xx-05-00-00-xx-001

<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.

Beispiel	Kommentar	Typ	Beschreibung	Version
`<?xml version="1.0" encoding="iso-8859-1"?>`				
`<fieldgate ser="470009010A0" tag="Endress+Hauser Fieldgate" type="full" devices="all">`			Tag für Fieldgate-Daten: `<ser>`: Seriennummer des Fieldgates `<tag>`: Name des Fieldgates `<type>`: "full" / "partial" (short=1), **Felder sind "fett" hervorgehoben** `<devices>`: "all" / "single" (id=, tag=)	
`<rev_xml>1.0</rev_xml>`		string	XML Document Revision	
`<time>20020926-065441</time>`		timestamp	Aktuelle Fieldgate-Uhrzeit (UTC Zeit	
`<timezone>60</timezone>`		unsigned16	Zeitzone(Offset zu UTC-Time in Minuten)	V001.002.000
`<ff_version>01.02.00-026 20030228</ff_version>`		string	Hardware und Firmware Versions String	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	Betriebssytem Version	V001.002.000
`<conf>FXA320-AA4AA</conf>`		string	Hardware-Konfiguration FXA320	V001.002.000
`<device id="_4...20mA-1" tag="Levelflex FMP40" type="INTRN">`			Tag für Feldgeräte-Daten: `<id>`: Unique-ID des Geräts `<tag>`: Tag des Geräts `<type>`: "INTRN"	
`<v1_lc>7.309</v1_lc>`		float	Primary Variable Loop Current	
`<vstslvl>0</vstslvl>`		0/1/2	Error Level of Response 0: ok 1: warning 2: error (gemäß HART6-Spec)	
`<vsts>0x00 0x00</vsts>`		string	Response Code & Field Device Status	
`<vtime>20031030-134728</vtime>`		timestamp	Timestamp of cmd000 / cmd001 / cmd003	
`<tag>Levelflex FMP40</tag>`		string	Tag	
`<v1>1256.689</v1>`		float	Primary Variable	
`<u1>Liter</u1>`		string	Unit of Secondary Variable	
`<hlsts1>ok</hlsts1>`		"ok" / "LL" / "L" /"H" / "HH"	Grenzwertstatus (ok, LL, L,H,HH) (PV)	
`<hltime1>20031030-124405</hltime1>`		Timestamp	Zeitstempel des Grenzwertübergangs (PV)	
`<type>INTRN</type>`		string	Type ("INTRN")	
`<dev>internal</dev>`		string	Device Type	
`<man>Endress+Hauser</man>`		string	Device Manufacturer	
`<unid>_4...20mA-1</unid>`	cmd000	string	Sensor Unique ID	
`<param>`			(nur ein Beispiel!)	
`<t1ch></t1ch>`	web interface	string	(PV)	V001.002.000

Beispiel	Kommentar	Typ	Beschreibung	Version
<t2ch></t2ch>	web interface	string	(PV)	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 (PV)	
<o>1</o>	web interface	"" / "1"	Alarm Mail on Leaving Limits (PV)	
<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
<alt>100.00</alt>	web interface	float	PV Diff	
<atime>60</atime>	web interface	integer	PV Difftime	
<max>100.00</max>	web interface	float	(PV)	V001.002.000
<min>0.00</min>	web interface	float	(PV)	V001.002.000
<hy>0.50</hy>	web interface	float	Hysterese bei Rückkehr in Limits (PV)	V001.002.000
<swl>50.00</swl>	web interface	float	Switch-Level zur Anzeige Schaltzustand (PV)	V001.002.000
<swsts>1</swsts>	web interface	integer	Textanzeige Schaltzustand (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
<p4>40.00</p4>	web interface, analogue inputs only	float	Output Value at 4.00mA Input Current	
<p20>200.00</p20>	web interface, analogue inputs only	float	Output Value at 20.00mA Input Current	
</param>				
</device>				
<device>				
...				
</device>				
...				
</fieldgate>				

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. "fxa320weather: Periodic Measurement 005"

Note!
The **<device-tag>** is also displayed for some alarm e-mails, e.g. "fxa320mdmdev: 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 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**" $\rightarrow$ Measured value undershot Low Limit
- "**Transition LowLow -> Low:** " <device-tag> / "**131**" $\rightarrow$ Measured value undershot LowLow Limit
- "**Transition Low -> LowLow:** " <device-tag> / "**132**" $\rightarrow$ Measured value leaving LowLow Limit
- "**Transition OK -> Low:** " <device-tag> / "**133**" $\rightarrow$ Measured value leaving Low Limit
- "**Transition High -> OK:** " <device-tag> / "**134**" $\rightarrow$ Measured value exceeds High Limit
- "**Transition HighHigh -> High:** " <device-tag> / "**135**" $\rightarrow$ Measured value exceeds HighHigh Limit
- "**Transition High -> High High:** " <device-tag> / "**136**" $\rightarrow$ Measured value leaving HighHigh Limit
- "**Transition OK -> High:** " <device-tag> / "**137**" $\rightarrow$ Measured value leaving High Limit
- "**Transition OK -> HighHigh:** " <device-tag> / "**138**" $\rightarrow$ Measured value leaving HighHigh Limit
- "**Transition OK -> LowLow:** " <device-tag> / "**139**" $\rightarrow$ Measured value leaving LowLow Limit
- "**Assigned IP Address** " / "**150** " IP address assigned by provider
- "**Firmware Update Result** " / "**160** " result of a firmware update

15.1.3 History-E-Mails

The following "**<reason>**"s and "**<code>**"s exist in measured value e-mails:
- "**History**" / "**007**" $\rightarrow$ 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**" $\rightarrow$ 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-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:

L00-FXA320xx-20-13-00-en-032

Example for "Device Entering Limit" in HTML format:

L00-FXA320xx-20-13-00-en-033

Example for "Periodic Measurement" in XML format:

```xml
<?xml version="1.0" encoding="iso-8859-1"?>
<fieldgate  ser="-" tag="fxa320" type="partial" devices="all">
        <time>20040602-120101</time>
        <timezone>120</timezone>
        <ff_version>01.02.00-12- 20040505</ff_version>
        <os_version>3.17</os_version>
        <conf>FXA320-AA2BB</conf>
        <device id="_Binary-4" tag="Digital Input 4" type="INTRN">
                <vtime>20040602-120058</vtime>
                <v1>0</v1>
                <u1></u1>
                <hlsts1>OK</hlsts1>
                <hltime1>-</hltime1>
                <vstslvl>0</vstslvl>
                <vsts>0x00 0x00</vsts>
                <dev>internal</dev>
        </device>
        <device id="_Binary-3" tag="Digital Input 3" type="INTRN">
                <vtime>20040602-120058</vtime>
                <v1>1</v1>
                <u1></u1>
                <hlsts1>OK</hlsts1>
                <hltime1>-</hltime1>
                <vstslvl>0</vstslvl>
                <vsts>0x00 0x00</vsts>
                <dev>internal</dev>
        </device>
        <device id="_Binary-2" tag="Drehzahl" type="INTRN">
                <vtime>20040602-120058</vtime>
                <v1>0</v1>
                <u1>Hz</u1>
                <hlsts1>OK</hlsts1>
                <hltime1>20040530-192035</hltime1>
                <vstslvl>0</vstslvl>
                <vsts>0x00 0x00</vsts>
                <dev>internal</dev>
        </device>
        <device id="_Binary-1" tag="Wasserverbrauch" type="INTRN">
                <vtime>20040602-120058</vtime>
                <v1>17284.311</v1>
                <u1>Liter</u1>
                <hlsts1>OK</hlsts1>
                <hltime1>20040506-171336</hltime1>
                <vstslvl>0</vstslvl>
                <vsts>0x00 0x00</vsts>
                <dev>internal</dev>
        </device>
        <device id="_4..20mA-2" tag="Sonnenenergie" type="INTRN">
```

```
                    <v1_lc>11.675</v1_lc>
                    <v1_100>47.970</v1_100>
                    <vstslvl>0</vstslvl>
                    <vsts>0x00 0x00</vsts>
                    <vtime>20040602-120058</vtime>
                    <v1>719.545</v1>
                    <u1>W/m</u1>
                    <hlsts1>OK</hlsts1>
                    <hltime1>-</hltime1>
                    <dev>internal</dev>
            </device>
            <device id="_4..20mA-1" tag="Wassermenge Tank 1" type="INTRN">
                    <v1_lc>15.770</v1_lc>
                    <v1_100>73.564</v1_100>
                    <vstslvl>0</vstslvl>
                    <vsts>0x00 0x00</vsts>
                    <vtime>20040602-120058</vtime>
                    <v1>4560.973</v1>
                    <u1>Liter</u1>
                    <hlsts1>OK</hlsts1>
                    <hltime1>20040531-012022</hltime1>
                    <dev>internal</dev>
            </device>
            <device id="_5V" tag="_5V" type="INTRN">
                    <vtime>20040602-120058</vtime>
                    <v1>5.093</v1>
                    <u1>V</u1>
                    <hlsts1>OK</hlsts1>
                    <hltime1>-</hltime1>
                    <dev>internal</dev>
            </device>
            <device id="_boardtemp" tag="Boardtemperatur" type="INTRN">
                    <vtime>20040602-120058</vtime>
                    <v1>38.068</v1>
                    <u1>°C</u1>
                    <hlsts1>OK</hlsts1>
                    <hltime1>-</hltime1>
                    <dev>internal</dev>
            </device>
    </fieldgate>
```

Example for text format e-mail:

```
_____

Tag           : Boardtemperatur
Device        : internal
Channeldescription PV
        Innentemperatur
        Gehäuse FXA320

PV Value      ; 38.633 °C
Timestamp     ; 02.06.2004 14:13:22

Limitstatus   ; OK
Time of Limt  ; -
Low–Limit     ; 0.000
High–Limit    ; 45.000
_____

Tag           : Wassermenge Tank 1
Device        : internal
Device Status : 0 = OK
Channeldescription PV
        Innentemperatur
        Gehäuse FXA320

PV Value      ; 4560.973 Liter
Timestamp     ; 02.06.2004 14:13:22
Maximum       ; 0.000
Minimum       ; 6200.000

Limitstatus   ; OK
Time of Limt  ; 31.05.2004 03:20:22
Low–Limit     ; 2000.000
High–Limit    ; 6200.000
_____

Tag           : Wasserverbrauch
Device        : internal
Channeldescription PV
        Verbrauchzähler Tank 1


PV Value      ; 17284.311 Liter
Timestamp     ; 02.06.2004 14:13:22

Limitstatus   ; OK
Time of Limt  ; 06.05.2004 19:13:36
High–Limit    ; 30000.000
HighHigh–Limit ; 50000.000
```

—————————————————
Tag   : Digital Input 4
Device   : internal
Channeldescription PV
        Sammelstörung

PV Value   ; 0
Timestamp   ; 02.06.2004 14:13:22

Limitstatus   ; OK
Time of Limt   ; –
High-Limit   ; 0.500
—————————————————
Tag   : Sonnenenergie
Device   : internal
Device Status: 0 = OK
Channeldescription PV
        Einstrahlungsstärke

PV Value   ; 551.613 W/m
Timestamp   ; 02.06.2004 14:13:22
High-Limit   ; 1500.000
HighHigh-Limit ; 0.000

Limitstatus   ; OK
Time of Limt   ; –
—————————————————
Tag   : Digital Input 3
Device   : internal
Device Status: 0 = OK
Channeldescription PV
        Binary 3

PV Value   ; 1
Timestamp   ; 02.06.2004 14:13:22

Limitstatus   ; OK
Time of Limt   ; –
—————————————————
Tag   : Drehzahl
Device   : internal
Device Status: 0 = OK
Channeldescription PV
        Drehzahl Turbine 1

PV Value   ; 0 Hz
Timestamp   ; 02.06.2004 14:13:22

Limitstatus   ; OK
Time of Limt   ; 30.05.2004 21:20:35
High-Limit   ; 4.800

15.2.5   Examples for alarm e-mails

Example for "Leaving Limits"


```
field@gate am 12.08.2002 13:50:01

An:       alarm
cc:

Thema:    fxa520-mdm-dev: Leaving Limits: LVLFLEX - 130


Device:        FMP4xx / Levelflex M
Manufacturer:  Endress+Hauser
UNID:          1112000001
PV:            75.35
Low Limit:     90.00
High Limit:    100.00
```
L00-FXA520xx-20-13-00-en-147
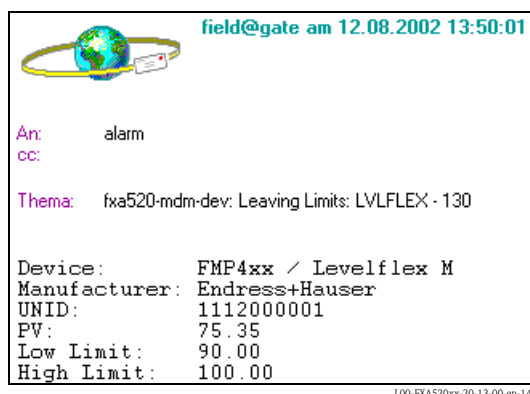
Example for "illegal user/password combination"


```
scm@field.gate am 04.03.2002 06:16:35

An:       alarm
cc:

Thema:    fxa520-eth: illegal user/password combination - 170


user 'Hallo' tried to login from 192.168.33.53
```
L00-FXA520xx-20-13-00-en-148
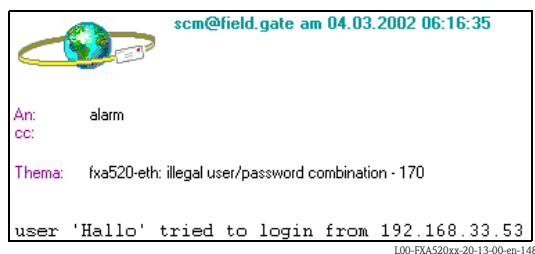
Example for "Firmware Update Result"


```
scm@field.gate am 06.03.2002 12:04:30

An:       alarm
cc:

Thema:    fxa520-proto: Firmware Update Result - 160


Updating Fieldgate Firmware
  erasing flash memory
  updating *** FIRMWARE ***
  connecting to server
  download URL http://192.168.33.53/cgi-fxa520/firmware.pl
  using proxy 195.118.80.252:8080
  receiving firmware from server
expected EOF - everything ok
```
L00-FXA520xx-20-13-00-en-149
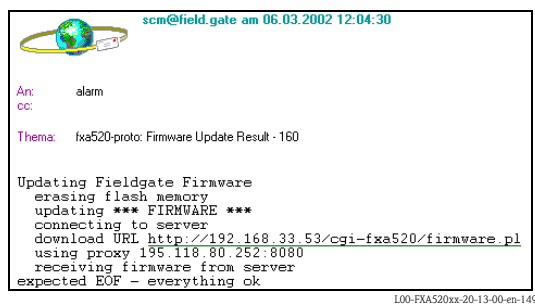
15.2.6   Examples of alarm e-mails via SMS

Example: SMS System reboot

fxa320: System reboot Bootarea

Example: SMS IP address assigned

fxa320:IP assigned : http://80.187.18.162/

Example: SMS Alarm limit violation

fxa320: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 Fieldgate Viewer

16.1 System overview
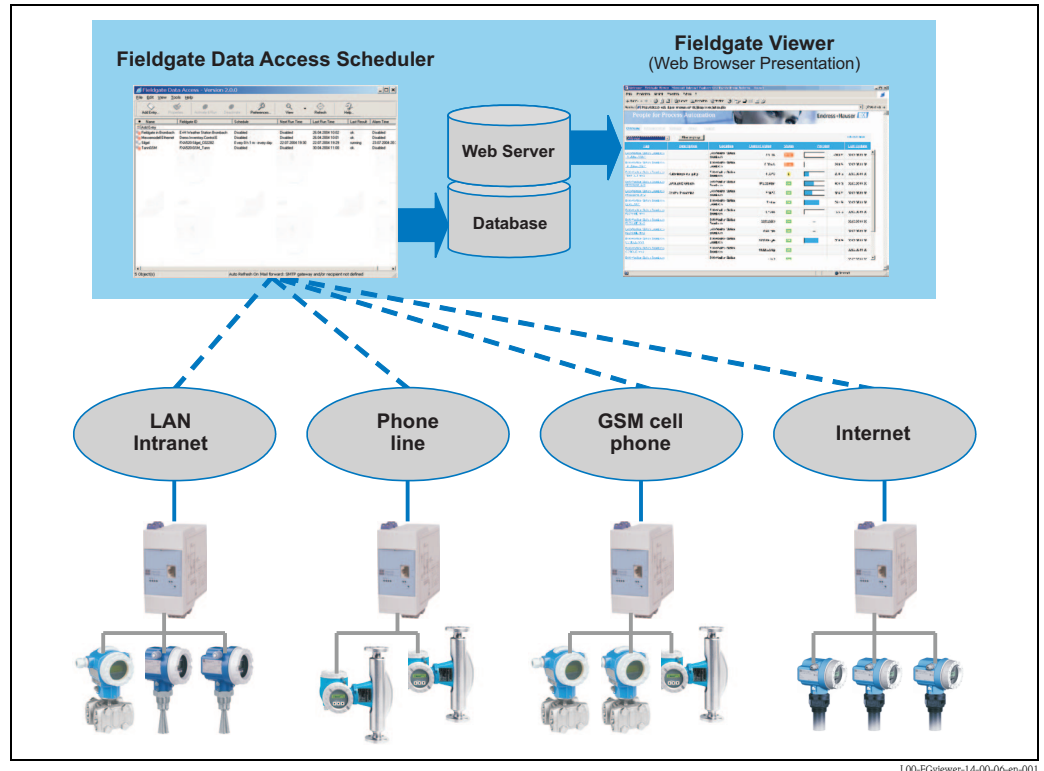
L00-FGviewer-14-00-06-en-001

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.

16.2   Fieldgate Viewer offers the following functionalities

Measured values displayed by groups and users

FieldgateViewer-en-100

Measured value pattern display
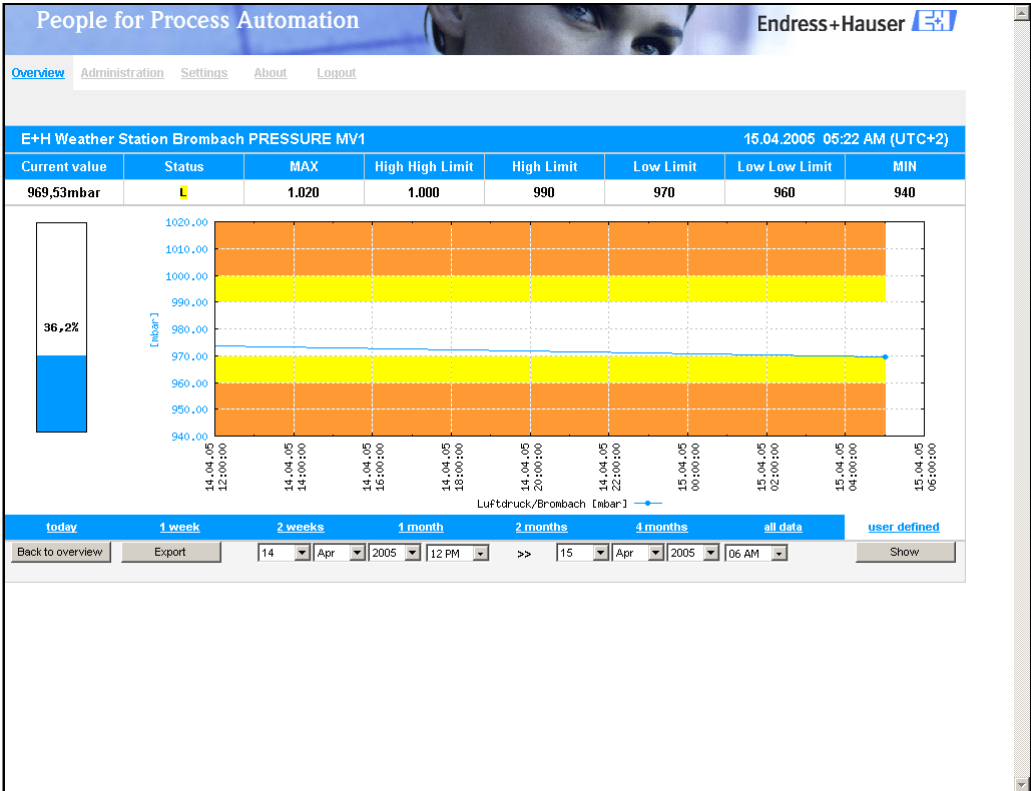
FieldgateViewer-en-115

Measured data export
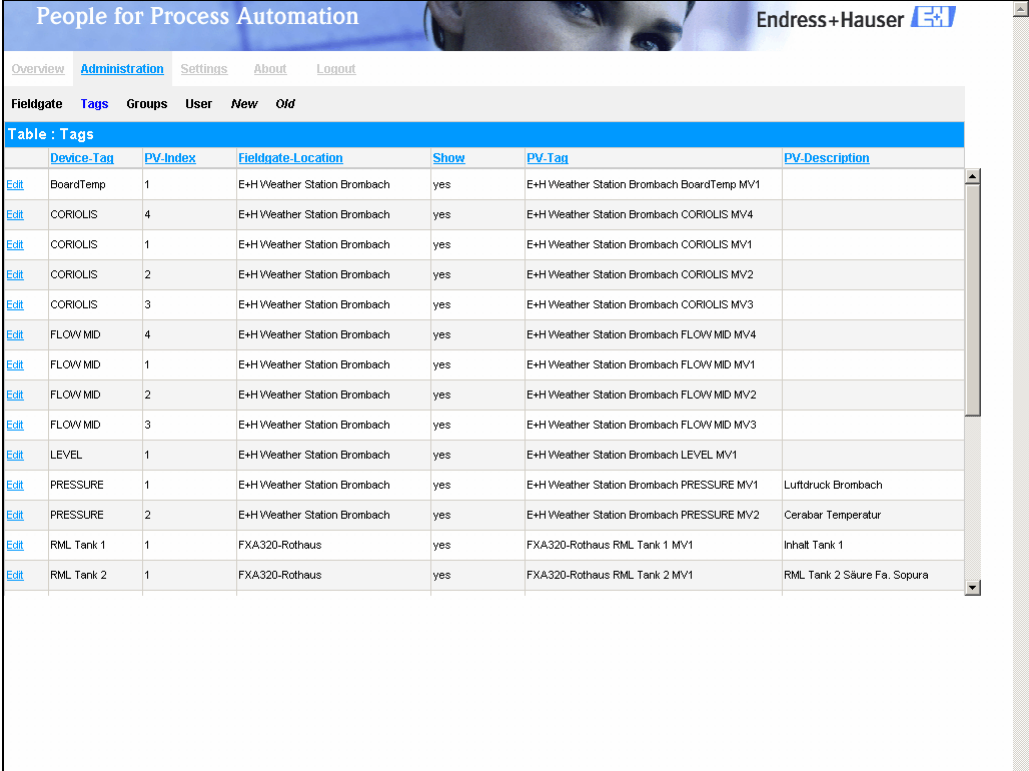
The data are saved in CSV format and can then be processed further in MS Excel.

Measured data integration

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").
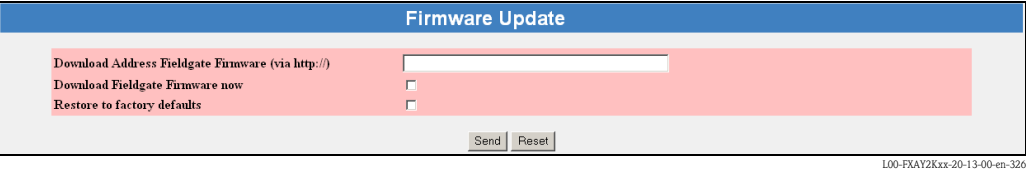
17   Software Update

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**".

Firmware Update	
Download Address Fieldgate Firmware (via http://)	
Download Fieldgate Firmware now	☐
Restore to factory defaults	☐
	Send Reset

L00-FXAY2Kxx-20-13-00-en-326

3.   Activate the appropriate checkbox and click the "**Send**" button.

18   FAQs (frequently asked questions)

Error description	Cause	Action
I cannot reach my Fieldgate on GPRS	There are only internal IP addresses10.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
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
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

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.)

19   Accessories

19.1   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.

Diemensions:
W 180 / H 182 / D 165

Color:
Light grey RAL 7035. Order number: 52010132.

19.2   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 ($\rightarrow$ Chap. 13 from Page 122).

19.3   PC cable

A PC can be connected to the FXA 520 for configuration purposes via a serial RS 232 connection. Order number: 52013984.

19.4   Telephone cable

RJ11 (analogue plug, double sided, length: 5 m). Order number: 52014031.

19.5   Antenna

Antenna for communication via mobil communications (GSM). Order number:
▪ Triband flat antenna. Order number: 52018396
▪ Dual band station antenna. Order number: 52018395

19.6   Solarbox

Self-sufficient current supply unit for FXA320 with solar panel. Order number: 52023445.

19.7   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).

19.8   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.

20   Appendix

20.1   Establishing a connection with a PC cable (Exemplary instruction for Windows NT)

Note!
All Fieldgate versions can be configured with the PC cable.

20.1.1   Installation

Connect your personal computer and the Fieldgate with the PC cable supplied. The service connector (see Fig. 6, item 8) is used to connect the Fieldgate. The COM port selected is used to connect the PC.
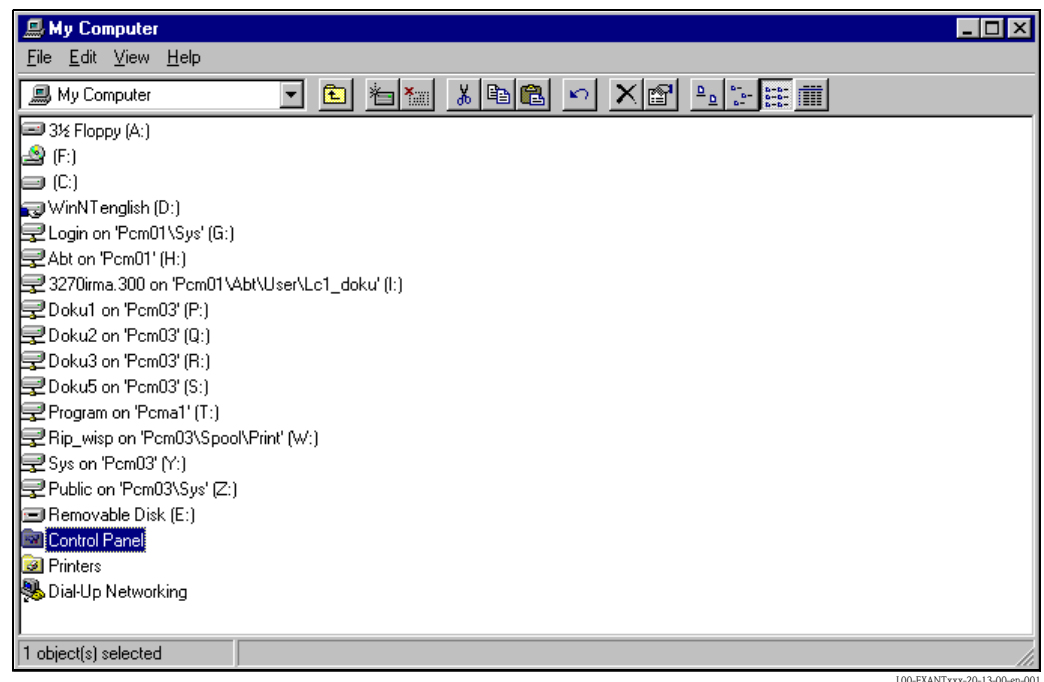
20.1.2   Setting up the personal computer

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.

L00-FXANTxxx-20-13-00-en-003

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

L00-FXANTxxx-20-13-00-en-004

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

L00-FXANTxxx-20-13-00-en-005

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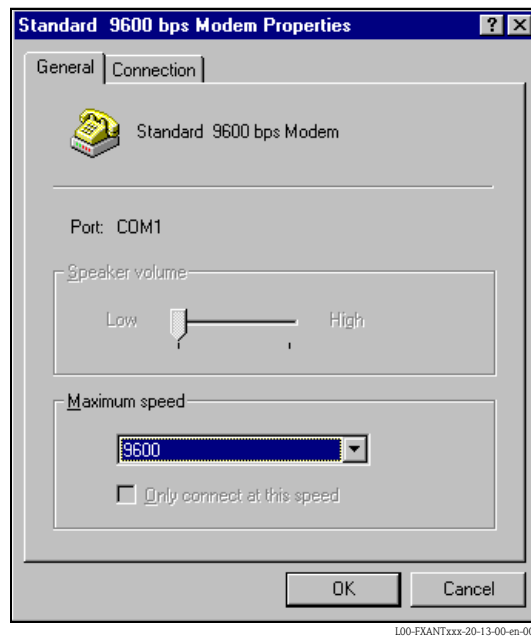

L00-FXANTxxx-20-13-00-en-006

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

L00-FXANTxxx-20-13-00-en-007

8.   Click "**Finish**" to confirm the modem installation.

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

L00-FXANTxxx-20-13-00-en-008

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

L00-FXANTxxx-20-13-00-en-009

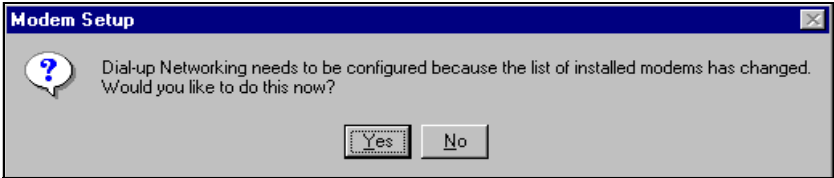11. Select the tab for "**Connection**".

L00-FXANTxxx-20-13-00-en-010
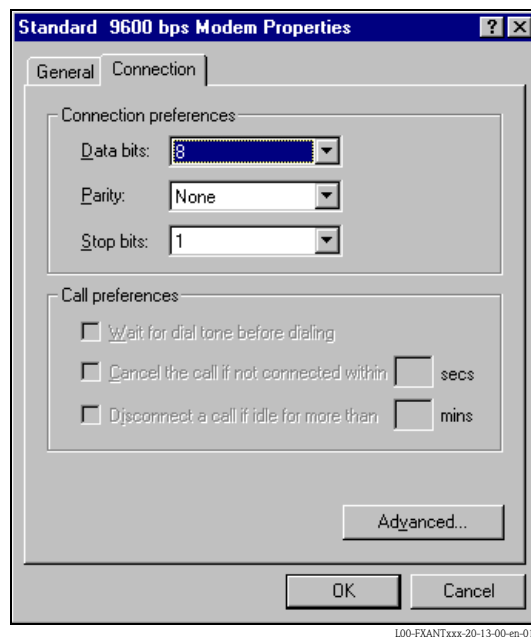
12. Left-click the "**Advanced...**" button.
    The checkbox for "**Use flow control**" must be deactivated here.
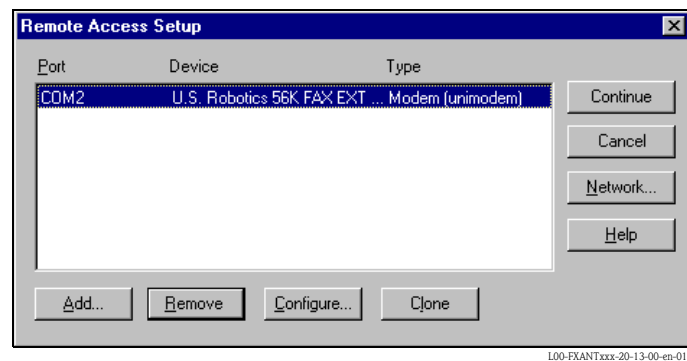   Click "**OK**" to confirm your settings.
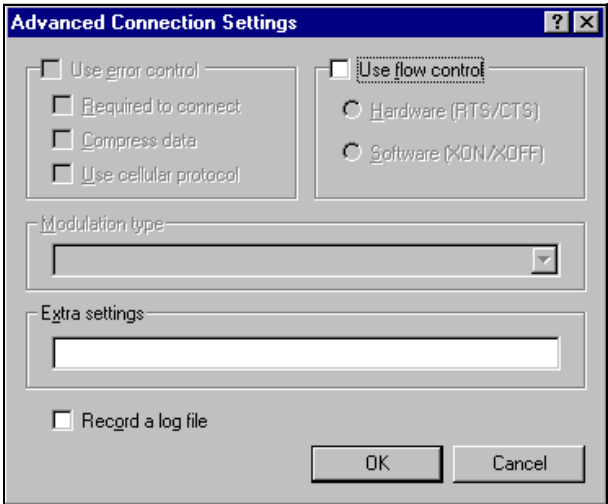
L00-FXANTxxx-20-13-00-en-011

13. Close all windows.
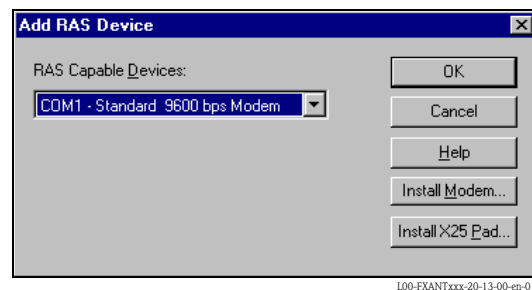
14. Click "**Yes**" to confirm the following message.
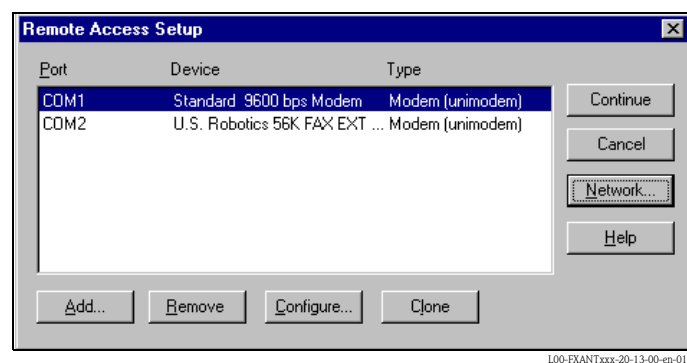

L00-FXANTxxx-20-13-00-en-012

Setting up RAS

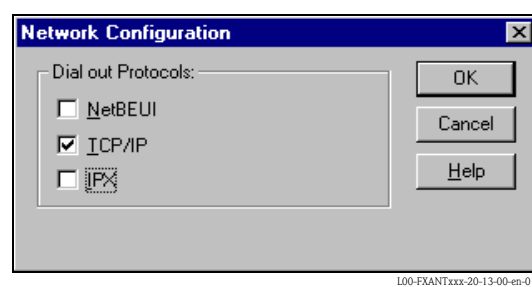1.   In the "**RAS setup**" window, left-click the "**Add...**" button.

L00-FXANTxxx-20-13-00-en-013

2.   Click "**OK**" to confirm your choice.

L00-FXANTxxx-20-13-00-en-014

3.   Select the newly installed modem and left-click the "**Network...**" button.

L00-FXANTxxx-20-13-00-en-015

4.   Activate the checkbox for "**TCP/IP**" as the client protocol and click "**OK**" to confirm the setting.

L00-FXANTxxx-20-13-00-en-016

5.   Select the newly installed modem and left-click the "**Configure...**" button.

L00-FXANTxxx-20-13-00-en-017
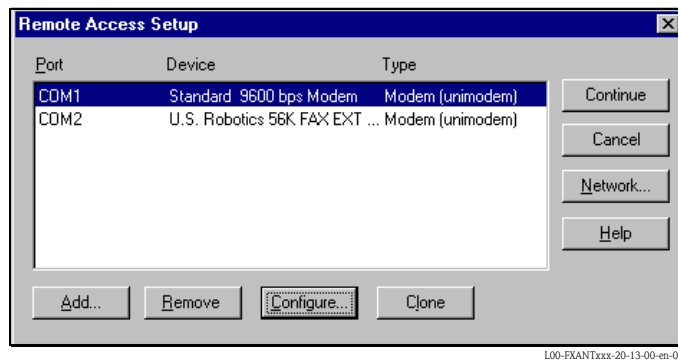
6.   For the "**Port Usage**" only activate the option for "**Dial out only**" and click "**OK**" to confirm.

L00-FXANTxxx-20-13-00-en-018
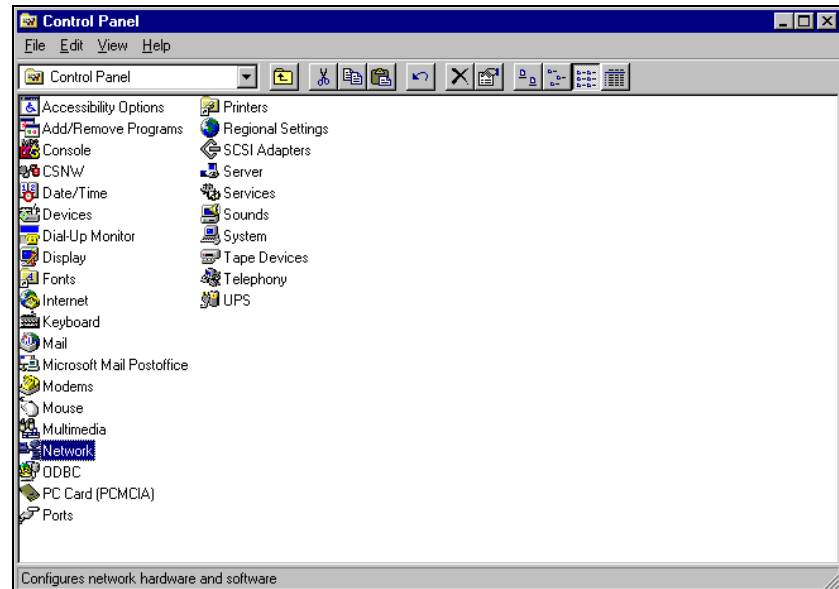
7.   Click "**Next >**".

L00-FXANTxxx-20-13-00-en-019
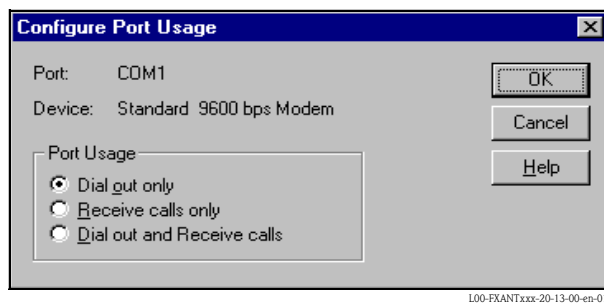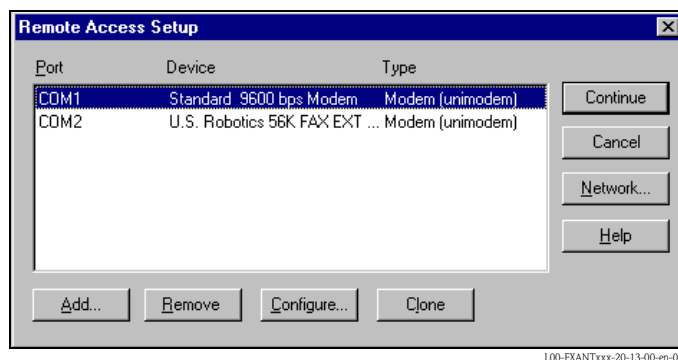
Your modem for the Fieldgate PC cable is now set up and you are requested to restart your computer. Click "**Yes**" to restart your computer.
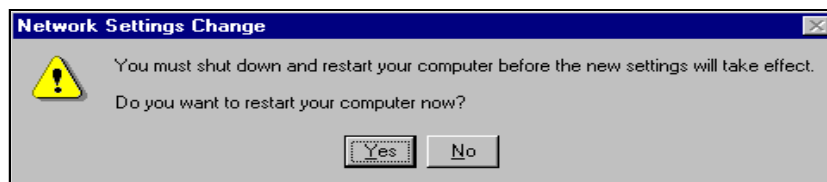
L00-FXANTxxx-20-13-00-en-020
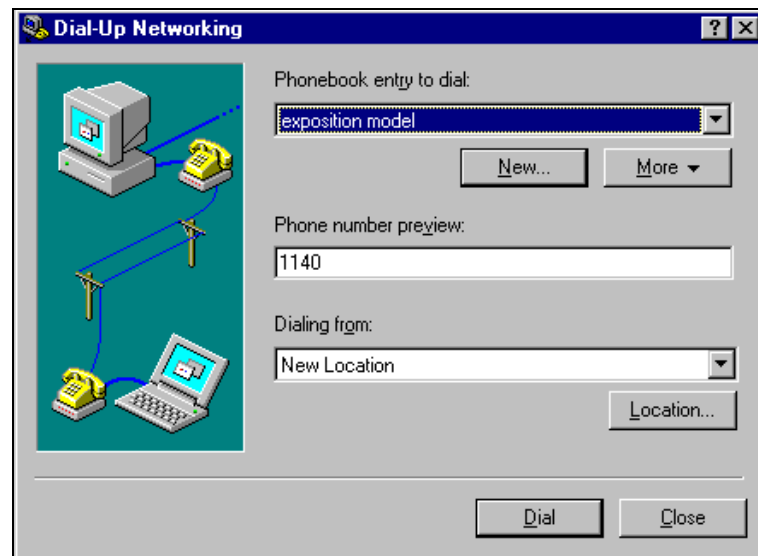
Setting up a dial-up networking connection

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.
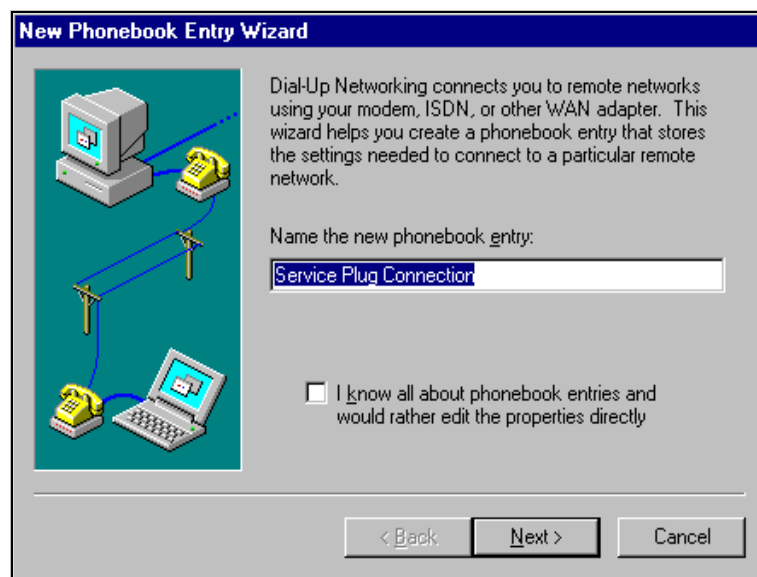

L00-FXANTxxx-20-13-00-en-021

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.

L00-FXANTxxx-20-13-00-en-023

4.   In the following window, only activate the checkbox for "**I am calling the Internet**" and click "**Next >**" to confirm.

L00-FXANTxxx-20-13-00-en-024
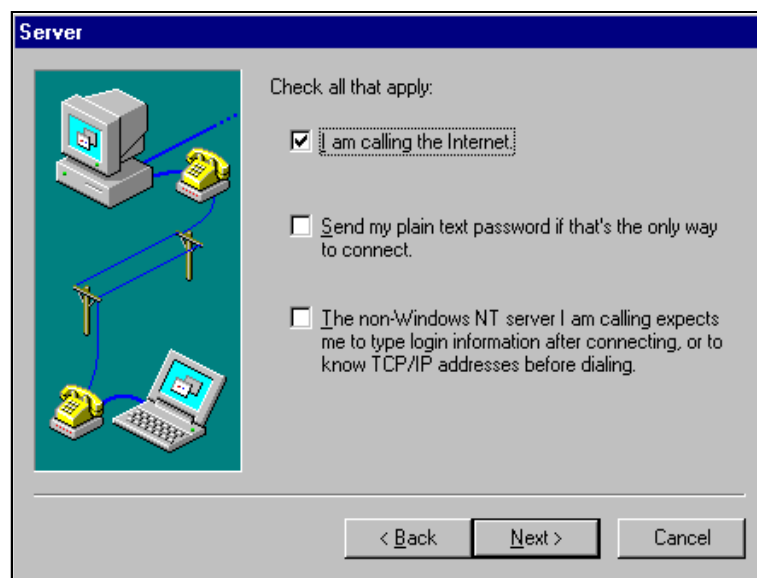
5.   Select the standard modem newly set up "**Standard 9600 bsp Modem (COM1)**" and click "**Next >**" to confirm.
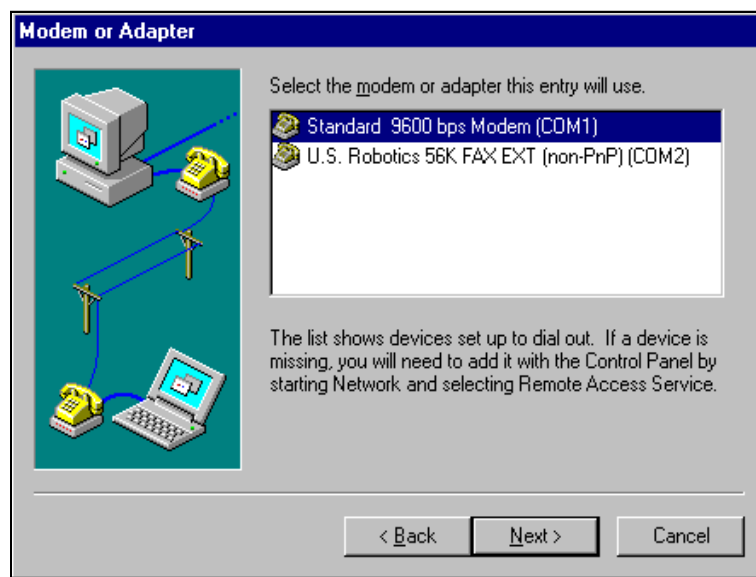
L00-FXANTxxx-20-13-00-en-025

6.   In the following window, enter the telephone number (a hypothetical number of no significance, such as 12345...) and click "**Next >**" to confirm.

L00-FXANTxxx-20-13-00-en-026
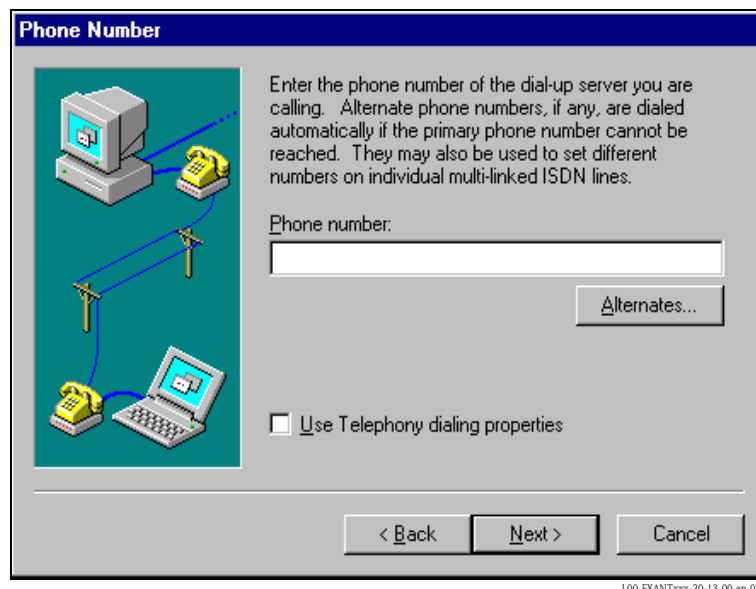
7.   Click "**Finish** " to confirm the settings for the new telephone book entry.

L00-FXANTxxx-20-13-00-en-027
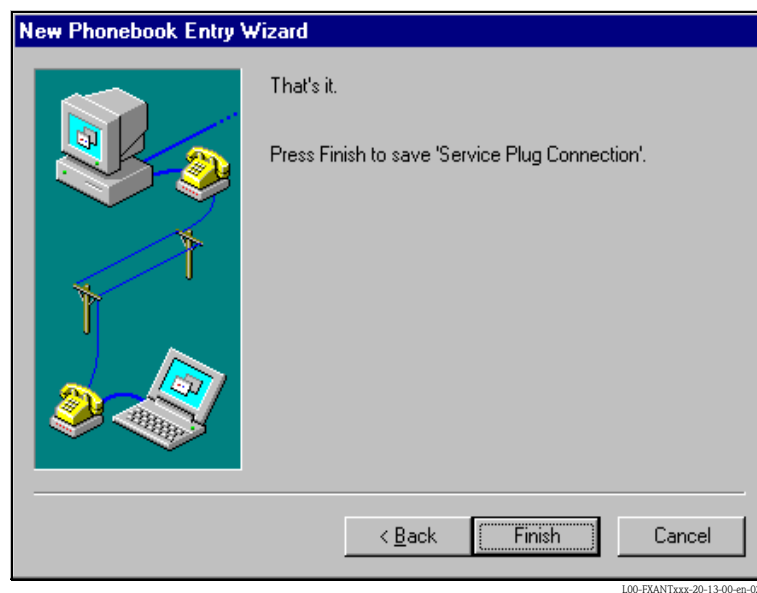
The dial-up networking connection is set up.

20.1.3 Making the connection

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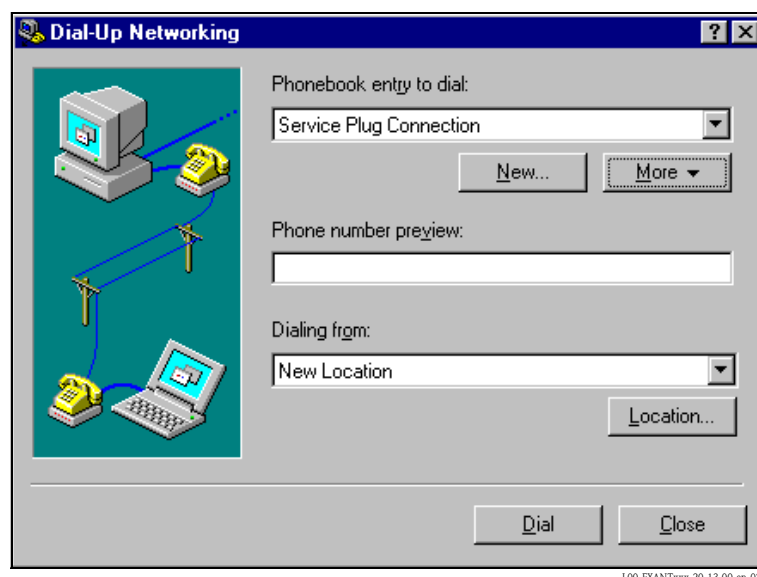

L00-FXANTxxx-20-13-00-en-028

2. Select the connection recently set up (e.g. "PC cable connection").
   Check the "**Hardware Settings**". To to 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!)
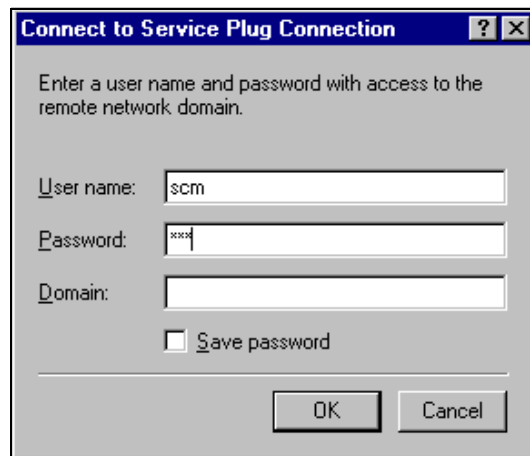
L00-FXANTxxx-20-13-00-en-029

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

20.1.4   Working in the web browser

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

L00-FXA320xx-20-13-00-en-001

20.2 Establishing an Ethernet connection (Exemplary instruction for Windows NT)

20.2.1 Installation

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

20.2.2 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.

20.2.3 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.

crossover UTP/STP cable
(Cat. 5 cable)

hub / switch   straight throughUTP/STP cable
(Cat. 5 cable)
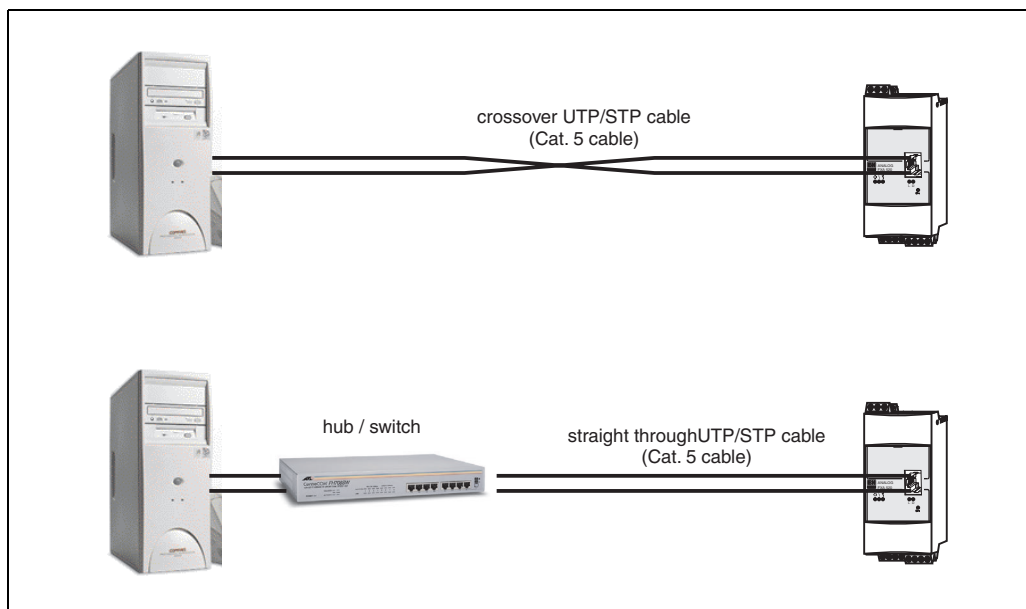
L00-FXA520xx-04-00-06-en-003

If the yellow LED "**L**" for Link (s. Abb. 6, item 4 on Seite 11) 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**".
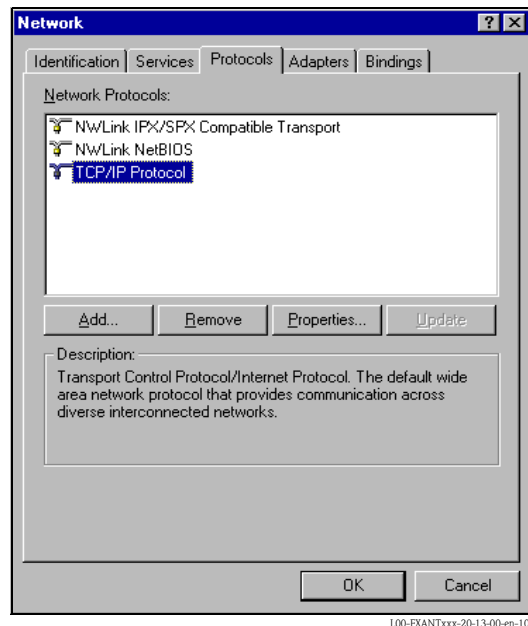
L00-FXANTxxx-20-13-00-en-101

3. Now you can enter/change the values and click "**OK**" to confirm.
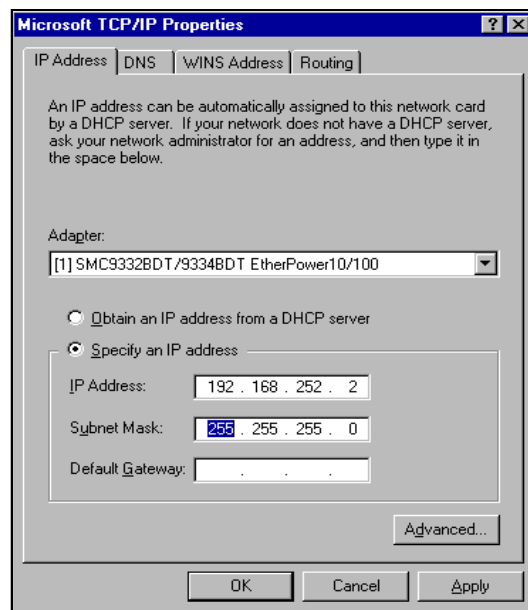
L00-FXANTxxx-20-13-00-en-102

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
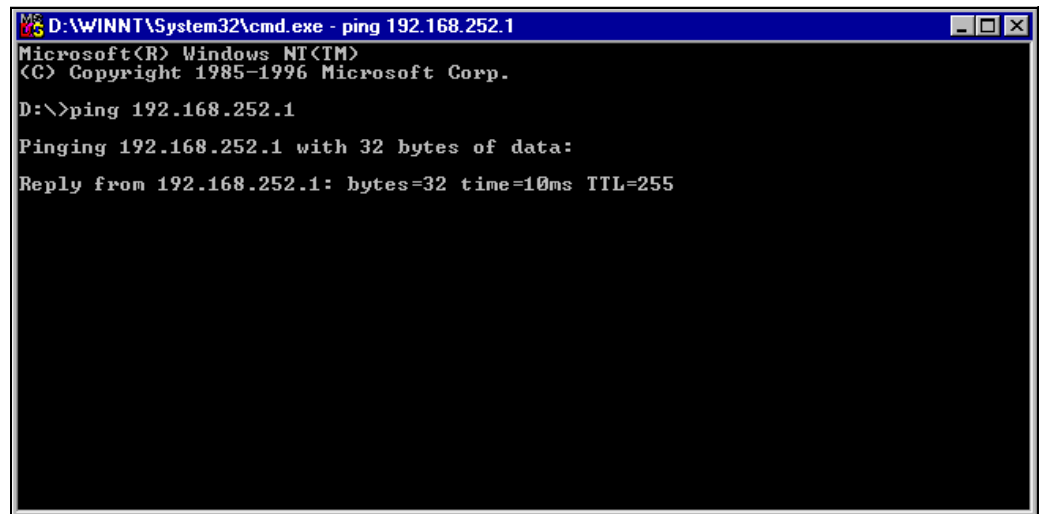
20.2.4   Connecting

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

20.2.5   Disconnecting

Close your web browser.

20.3   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.

20.3.1   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 ().

20.3.2   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® :

1. Using the left mouse button, double-click the "**Dial-Up Networking**" icon to open the appropriate window.

L00-FXANTxxx-20-13-00-en-201

2. Left-click the "**New...**" button.

L00-FXANTxxx-20-13-00-en-202

3. 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.
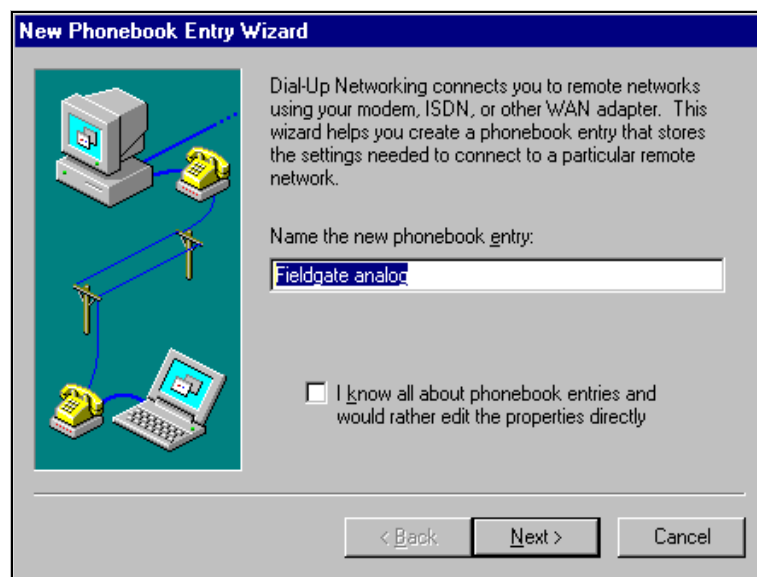
L00-FXANTxxx-20-13-00-en-203

4. In the following window, only activate the checkbox for "**I am calling the Internet**" and click "**Next >**" to confirm.

L00-FXANTxxx-20-13-00-en-204

5. Select the analogue modem to be used and click "**Next >**" to confirm your choice.
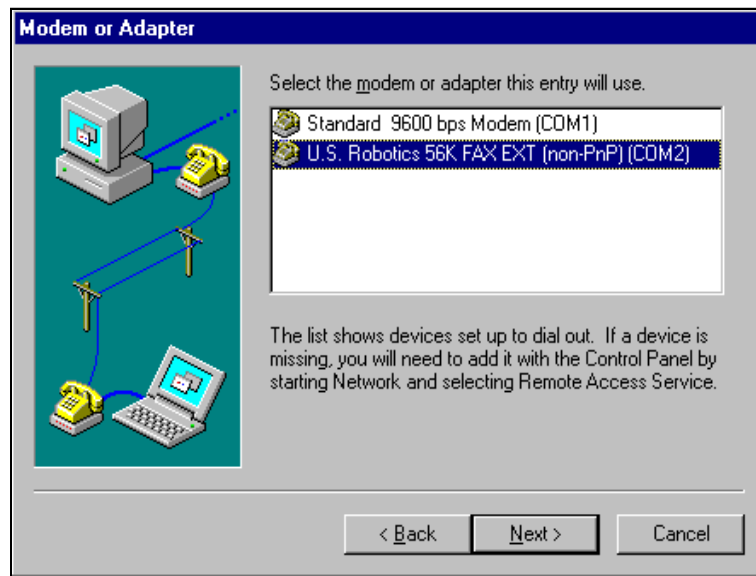
L00-FXANTxxx-20-13-00-en-205

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.
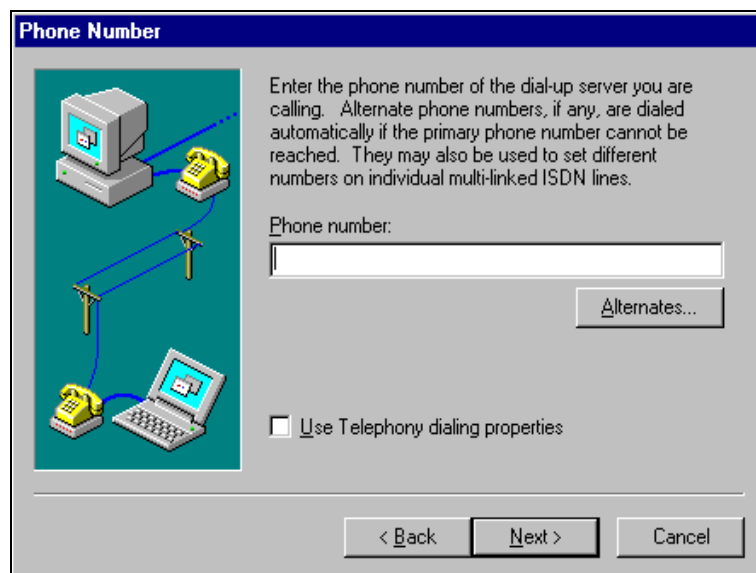
L00-FXANTxxx-20-13-00-en-206

7. Click "**Finish**" to confirm the settings for the networking connection.
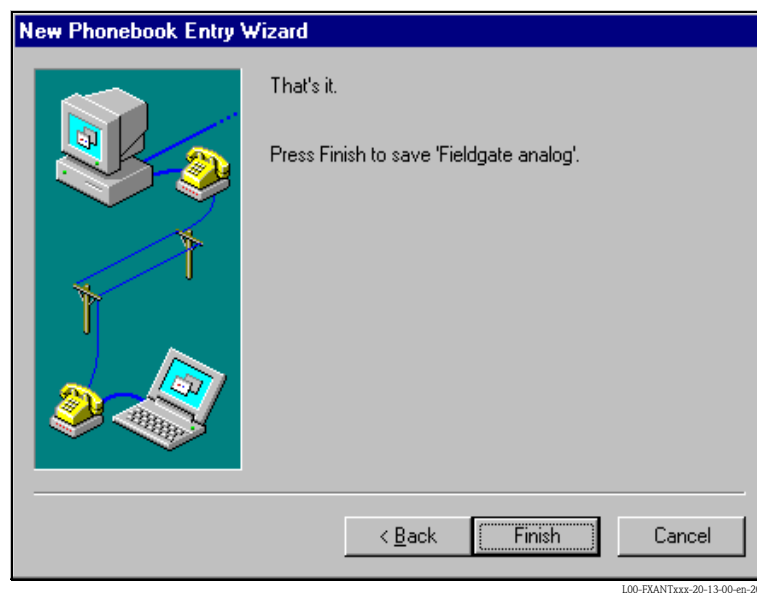
L00-FXANTxxx-20-13-00-en-207

The dial-up networking connection is set up.

20.3.3   Making the connection

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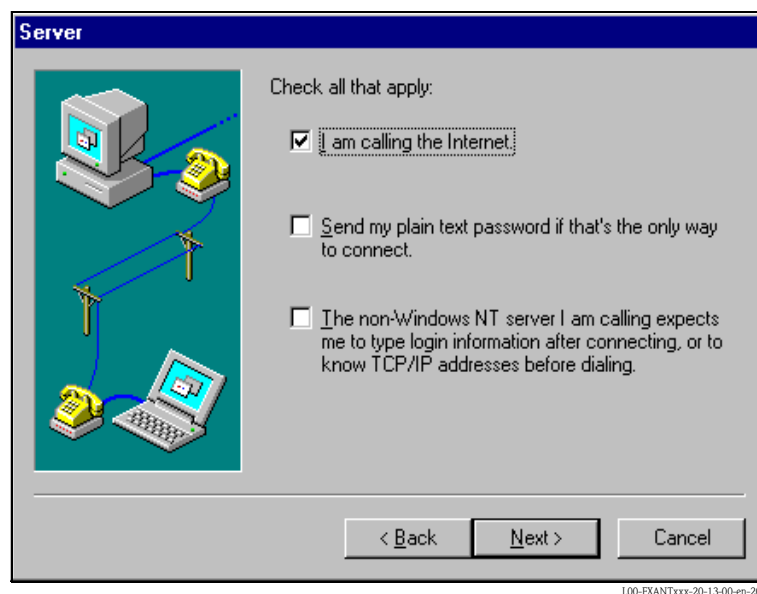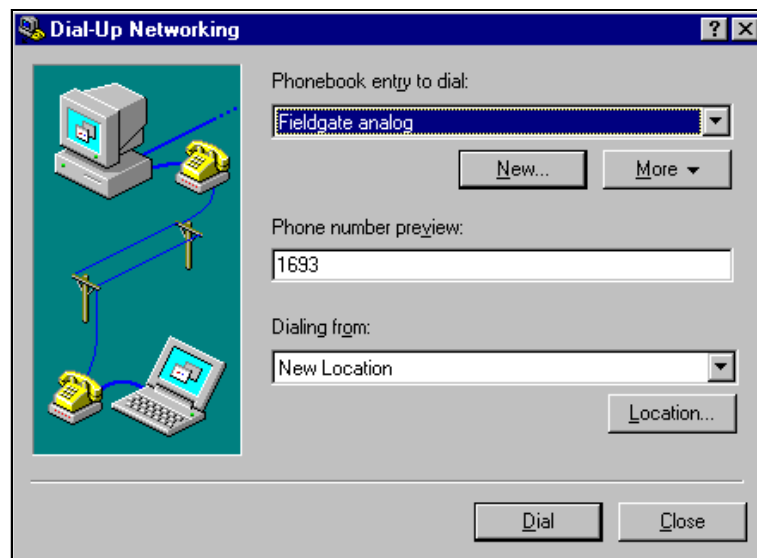

L00-FXANTxxx-20-13-00-en-208

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!)
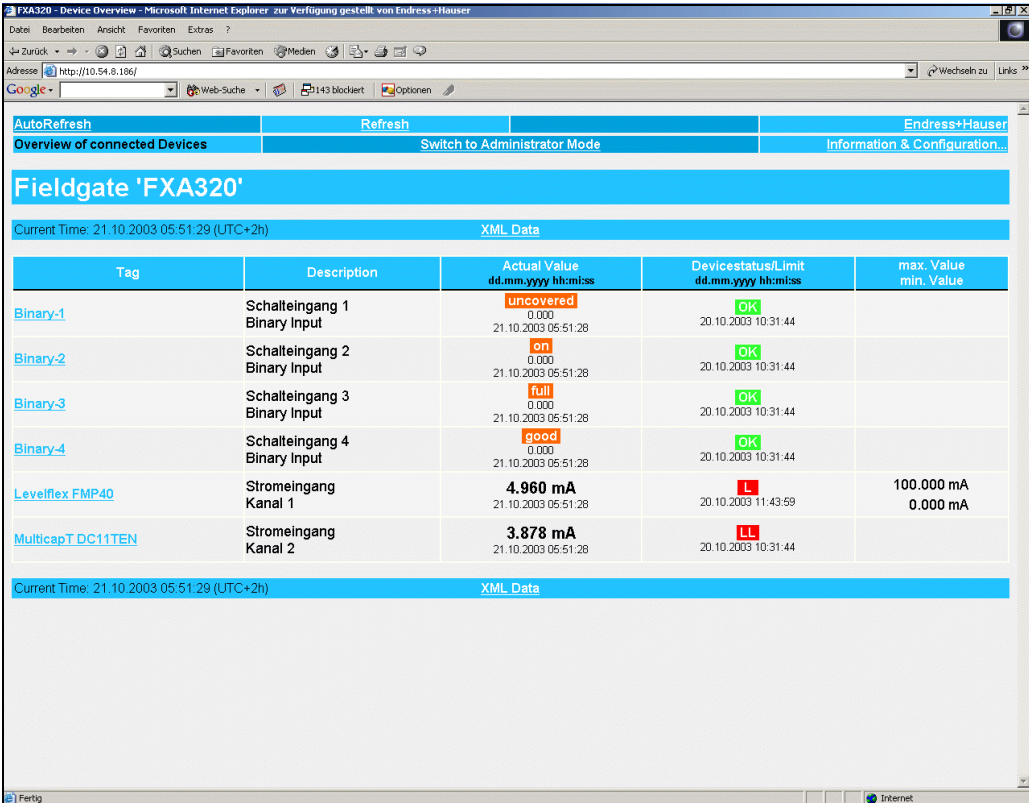
L00-FXANTxxx-20-13-00-en-209

4.   Click "**OK**" to confirm your entries.

5.   Start the web browser and enter the IP address. The connection is made.

20.3.4   Working in the web browser

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

L00-FXA320xx-20-13-00-en-001

20.4   Establishing an GSM modem connection (Exemplary instruction for Windows NT)

20.4.1   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 ().

20.4.2   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® :
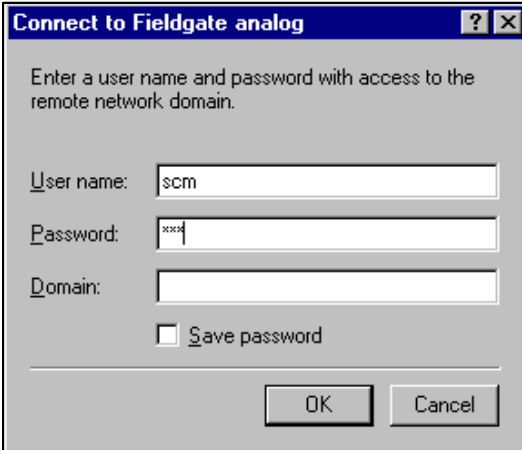
1. Using the left mouse button, double-click the "**Dial-Up Networking**" icon to open the appropriate window.

L00-FXA520xx-20-13-00-en-157

2. Left-click the "**New...**" button.

L00-FXA520xx-20-13-00-en-158

3. 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.

L00-FXA520xx-20-13-00-en-159
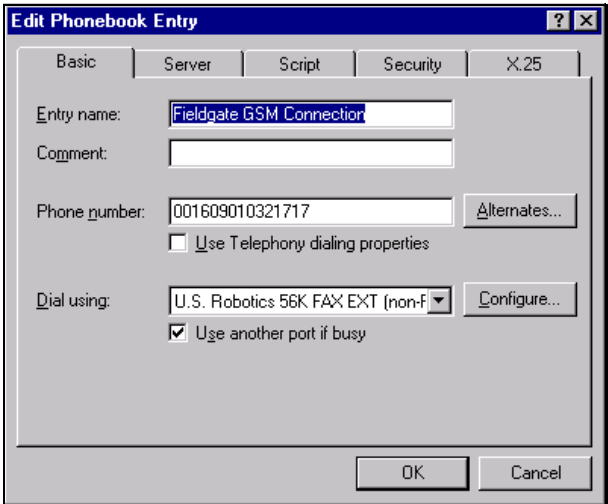
4.   Please enter the number of your SIM card as the call number.

L00-FXA520xx-20-13-00-en-160
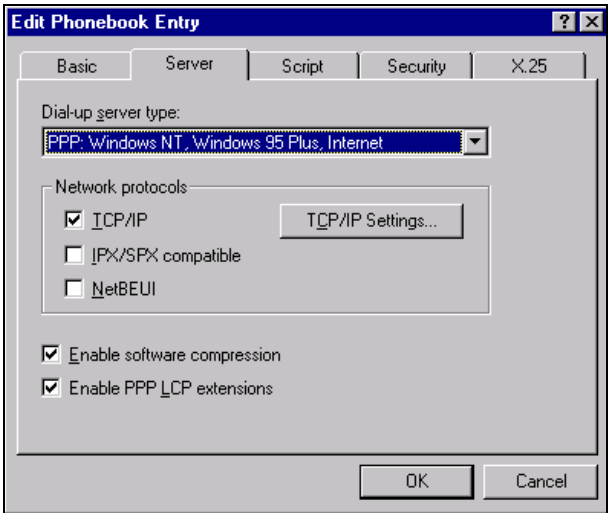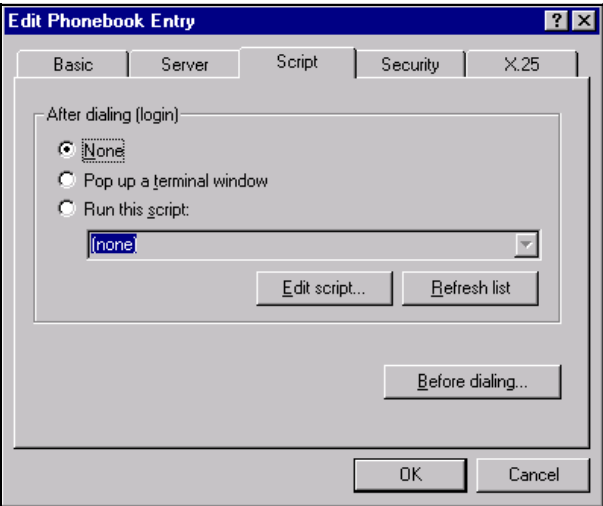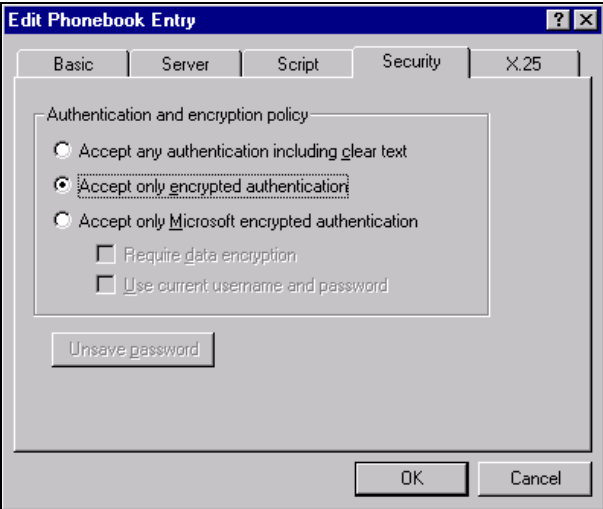
L00-FXA520xx-20-13-00-en-161

L00-FXA520xx-20-13-00-en-162

L00-FXA520xx-20-13-00-en-163

5.   Click "**OK**" to confirm your entries.

L00-FXA520xx-20-13-00-en-164
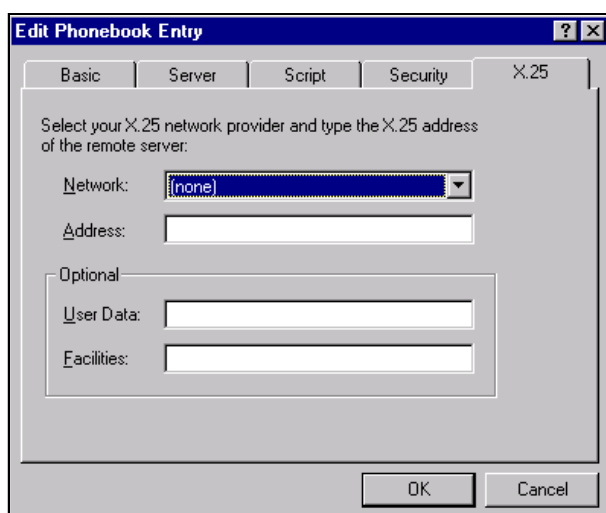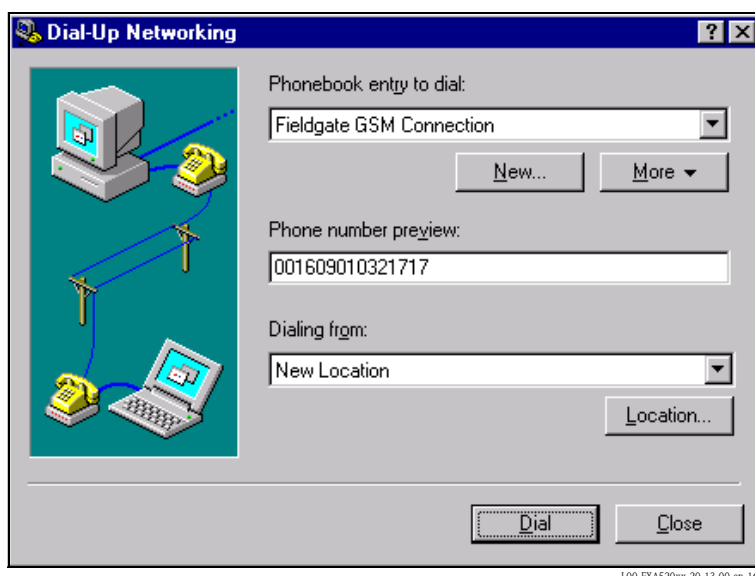
The dial-up networking connection is set up. Finish the setup by pressing the "**Close**" button.

20.4.3   Making the connection

1.   Using the left mouse button, double-click the "**Dial-up Networking**" icon to open the appropriate window.
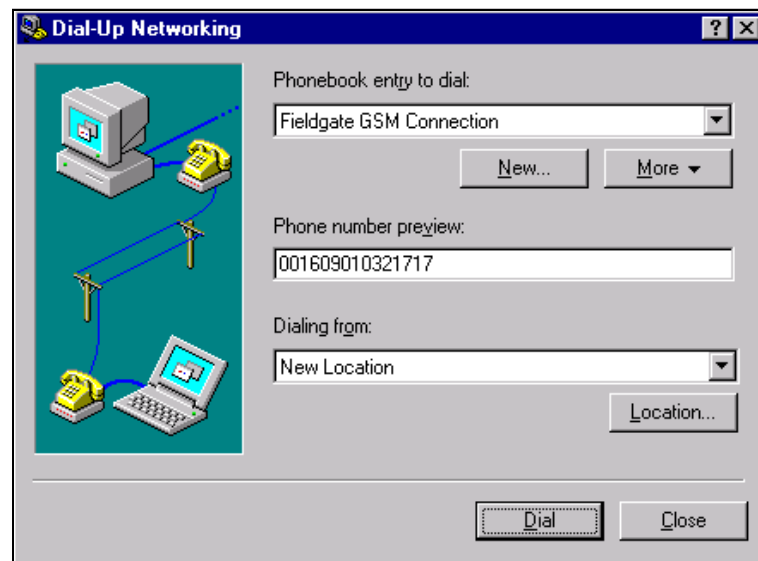
L00-FXA520xx-20-13-00-en-164

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!)
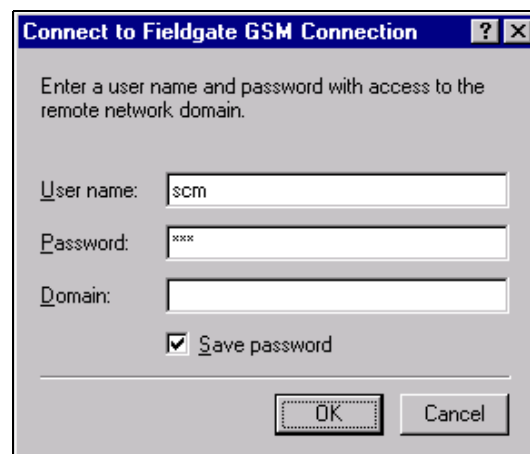
L00-FXA520xx-20-13-00-en-165

4.   Click "**OK**" to confirm your entries.

5.   Start the web browser and enter the IP address. The connection is made.

20.4.4   Working in the web browser

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

L00-FXA320xx-20-13-00-en-001
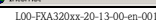
20.5 Network parameters for GPRS connections

Network parameters for GPRS connections

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!	If you use Windows 95/98 or WindowsNT, please add to "extra settings". Ex.: China Mobile: AT+CGDCONT=1,"IP","cmnet","+CGQREQ=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
Amena	Spain	AT+CGDCONT=1,"IP", "internet","^sgauth=2		*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", "ebouygtel.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

Update under: http:/www.my-siemens.com

Subject to changes

Network parameters for GPRS connections

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!	If you use Windows 95/98 or WindowsNT, please add to "extra settings". Ex.: China Mobile: AT+CGDCONT=1,"IP","cmnet",+C GQREQ=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***1#	dynamic	194.024.128.100	194.024.128.102	*user specific*	*user specific*
Cosmote	Greece	AT+CGDCONT=1,"IP", "internet"		*99***1#	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***1#	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***1#	dynamic	139.7.30.125	139.7.30.126	n.a.	n.a.
DIGI	Malaysia	AT+CGDCONT=1,"IP", "diginet"		*99***1#	dynamic	203.092.128.131	203.092.128.132	n.a.	n.a.
Dna	Finland	AT+CGDCONT=1,"IP", "internet"		*99***1#	dynamic	217.78.192.78	217.78.192.22	n.a.	n.a.
DTAC	Thailand	AT+CGDCONT=1,"IP", "www.dtac.co.th"		*99***1#	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***1#	dynamic	212.23.97.2	212.23.97.3	eplus	eplus
ERA	Poland	AT+CGDCONT=1,"IP", "erainternet"	;,^sgauth=1	*99***1#	dynamic	dynamic	dynamic	erainternet	erainternet
etisalat	United Arab Emirates	AT+CGDCONT=1,"IP", "mnet"		*99***1#	dynamic	dynamic	dynamic	n.a.	n.a.
Eurotel	Czech Republic	AT+CGDCONT=1,"IP", "internet"		*99***1#	dynamic	160.218.10.201	194.228.2.1	n.a.	n.a.
fastlink	Jordan	AT+CGDCONT=1,"IP", "internet"		*99***1#	dynamic	dynamic	dynamic	n.a.	n.a.
Globe	Philippines	AT+CGDCONT=1,"IP", "www.globe.com.ph"	;,^sgauth=1	*99***1#	dynamic	203.127.225.010	203.127.225.011	globe	globe
Globtel	Slovakia	AT+CGDCONT=1,"IP", "internet"	0,0,0,0,0	*99***1#	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***1#	dynamic	194.204.159.1	194.9.223.79	idea	idea
KPN Mobile	Netherlands	AT+CGDCONT=1,"IP", "internet"		*99***1#	dynamic	62.133.126.28	62.133.126.29	n.a.	n.a.
IM3	Indonesia	AT+CGDCONT=1,"IP", "www.indosat-m3.net"		*99***1#	dynamic	dynamic	dynamic	gprs	im3

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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
		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",+C GQREQ=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
M1	Singapore	AT+CGDCONT=1,"IP", "mobilenet","^sgauth=1		*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@A1pl 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.
Omnitel 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.orangehk.com"	3,4,3,0,0	*99***1#	dynamic	dynamic	dynamic	n.a.	n.a.

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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
		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",+C GQREQ=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
Orange UK	UK	AT+CGDCONT=1,"IP", "orangeinternet"		*99***1#	dynamic	158.43.192.1	158.43.128.1	Orange	n.a.
Orange CH	Switzerland	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"		*99***1#	dynamic	62.141.0.1	62.141.0.2	n.a.	n.a.
Paegas GPRS Profil	Czech Republic	AT+CGDCONT=1,"IP", "profil.click.cz"		*99***1#	dynamic	62.141.0.1	62.141.0.2	n.a.	n.a.
Pannon	Hungary	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"	3,4,3,0,0	*99***1#	dynamic	dynamic	dynamic	n.a.	n.a.
Plus GSM	Poland	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"		*99***1#	dynamic	195.238.002.021	195.238.002.022	n.a.	n.a.
Proximus Intranet	Belgium	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"	2,4,3,9,31	*99***1#	dynamic	193.189.244.197	193.189.244.205	quam	quam
Radiolinja	Finland	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"		*99***1#	dynamic	172.20.2.10	0.0.0.0	n.a.	n.a.
Simobil	Slovenia	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		*99***1#		165.21.100.88	165.21.83.88	n.a.	n.a.
Smart	Philippines	AT+CGDCONT=1,"IP", "internet","sgauth=1		*99***1#	dynamic	202.057.096.003	202.057.096.004	n.a.	n.a.
SmarTone	Hongkong	AT+CGDCONT=1,"IP", "hkinternet"	3,4,3,0,0	*99***1#	dynamic	202.140.96.51	202.140.96.52	n.a.	n.a.
Sonera	Finland	AT+CGDCONT=1,"IP", "internet"		*99***1#	dynamic	192.89.123.230	192.89.123.231	n.a.	n.a.

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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
		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",+CGQREQ=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
Sonofon	Denmark			*99#	dynamic	212.88.64.14	212.88.64.15	n.a.	n.a.
Starhub	Singapore	AT+CGDCONT=1,"IP", "shwapint"		*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#		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@telering.at	web
Telestet	Greece	AT+CGDCONT=1,"IP", "gnet.b-online.gr"		*99***1#	dynamic	212.152.079.019	212.152.079.020	MSISDN e.g 3093xxxxxx	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", "timenett.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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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!	If you use Windows 95/98 or WindowsNT, please add to "extra settings". Ex.: China Mobile: AT+CGDCONT=1,"IP","cmnet",+CGQREQ=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***1#	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***1#	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***1#	dynamic	195.182.096.028	195.182.096.061	n.a.	n.a.
VIPNET	Croatia	AT+CGDCONT=1,"ip", "gprs.vipnet.hr"		*99***1#	dynamic	dynamic	dynamic	n.a.	n.a.
Vodafone	Greece	AT+CGDCONT=1,"IP", "internet.vodafone.gr"		*99***1#	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***1#	dynamic	dynamic	dynamic	user specific	user specific
Vodafone	Portugal	AT+CGDCONT=1,"IP" "internet.vodafone.pt"	2,4,3,8,31	*99***1#	dynamic	212.18.160.133	212.18.160.134	n.a.	n.a.
Vodafone	Spain	AT+CGDCONT=1,"IP", "airtelnet.es"	;"^sgauth=1	*99***1#	dynamic	212.73.32.3	212.73.32.67	wap@wap	wap125
Vodafone	Sweden		;"^sgauth=1	*99#	dynamic	dynamic	dynamic	n.a.	n.a.
Vodafone	UK	AT+CGDCONT=1,"IP", "wap.vodafone.co.uk"		*99***1#	212.183.137.12	dynamic	dynamic	user@vodafone.net	user
Westel	Hungary	AT^SGAUTH=1;+CGDCONT=1, "IP","internet"		*99***1#	dynamic	194.176.224.3	194.176.224.1	user specific	user specific
WIND	Italy	AT+CGDCONT=1,"IP" "internet.wind"		*99***1#	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***1#	dynamic	202.139.83.3	192.65.91.129	n.a.	n.a.

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