Fieldgate
FXA 720

Operating Instructions

Endress+Hauser

The Power of Know How

.

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Revision History

Designation	Changes	Remarks
BA030S/04/en/06.03	Original manual	

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1   Safety

1.1   Designated use

Fieldgate FXA 720 is a PROFIBUS/Ethernet Gateway with integrated web server that can be used:

- as a PROFIBUS DP/Ethernet gateway within a PROFIBUS monitoring and control system
- as a remote data acquisition module for PROFIBUS devices connected to its PROFIBUS DP channels.

More information on these applications is to be found in the manual, or visit the Fieldgate web page at www.products.endress.com/fieldgate.

1.2   Installation, commissioning and operation

Fieldgate FXA 720 must be installed, connected, operated and maintained according to the instructions in this manual: personnel must be authorised and suitably qualified.

Warning!
- You require a unique IP address to set up Fieldgate. The use of IP addresses is strictly controlled. Usually your system administrator will be authorised to allocate unique addresses for your Fieldgates. Assigning an unauthorised address to a Fieldgate may result in conflicts within your system and the failure of the associated devices!

1.3   Operational safety

The unit must not be used in explosion hazardous areas. The permissible ambient conditions given in the technical data must be complied with.

Repair   Do not open the housing of the Fieldgate FXA 720. It does not contain any parts that need to be maintained or repaired by the user. In the event of a fault or defect, return the unit to the vendor. Opening the unit will void the warranty!

1.4   Technical improvement

Endress+Hauser reserves the right to make technical improvements to its hardware and software at any time and without prior notification. Where such improvements have no effect on the operation of the equipment, they are not documented. If the improvements effect operation, a new version of the operating instructions is normally issued, see Revision History.

1.5   Declaration of conformity

CE Notice

Fieldgate FXA 720 complies with the requirements of the EC Directives 89/336/EEC "Electromagnetic Compatibility" (EMC directive).

- Emission: EN 50022:1998 Class A (ITE Product Standard)
          EN 50011:1998 Group 1 Class A (ISM Product Standard)
- Immunity: EN 61000-4-5:1999 Generic Immunity Standard
          EN 61000-4-3: 1996 RF Electromagnetic Fields

A Declaration of Conformity in compliance with the above standards has been made and can be inspected at Endress+Hauser Process Solutions AG on request.

North America

Fieldgate FXA 720 conforms with the following North American Electromagnetic Compatibility standards:

- UL 508: Industrial Control Equipment
- CSA C22.2 # 14.795: Industrial Control Equipment

Note!
- For compliance with the legal EMC requirements, the other components (AC adapter, PROFIBUS stations, etc.) must also meet these requirements.
- To meet the EMC conditions, the device must be installed and connected in accordance with the Installation Instructions.

Warning!
- This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

FCC

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

1.6 Writing conventions

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 table 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** =>**Endress+Hauser**" 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>

Safety conventions

Safety relevant information is highlighted by an icon in the margin plus the note, caution or warning text.

Icon	Meaning
	Note! A note highlights actions or procedures which, if not performed correctly, may indirectly affect operation or may lead to an instrument response which is not planned
	Caution! Caution highlights actions or procedures which, if not performed correctly, may lead to personal injury or incorrect functioning of the instrument
	Warning! A warning highlights actions or procedures which, if not performed correctly, will lead to personal injury, a safety hazard or destruction of the instrument

1.7   Drawing conventions

The following symbols may be found within technical drawings.

Explosion protection

Icon	Meaning
	Device certified for use in explosion hazardous area If the device has this symbol embossed on its name plate it can be installed in an explosion hazardous area in accordance with the specifications in the certificate or in a safe area
	Explosion hazardous area Symbol used in drawings to indicate explosion hazardous areas. Devices located in and wiring entering areas with the designation "explosion hazardous areas" must conform with the stated type of protection
	Safe area (non-explosion hazardous area) Symbol used in drawings to indicate, if necessary, non-explosion hazardous areas. Devices located in safe areas stiill require a certificate if their outputs run into explosion hazardous areas.

Electrical symbols

Icon	Meaning
	Direct voltage A terminal to which or from which a direct current or voltage may be applied or supplied
	Alternating voltage A terminal to which or from which an alternating (sine-wave) current or voltage may be applied or supplied
	Grounded terminal A grounded terminal, which as far as the operator is concerned, is already grounded by means of an earth grounding system
	Protective grounding (earth) terminal A terminal which must be connected to earth ground prior to making any other connection to the equipment
	Equipotential connection (earth bonding) A connection made to the plant grounding system which may be of type e.g. neutral star or equipotential line according to national or company practice

2 Identification

2.1 Device designation
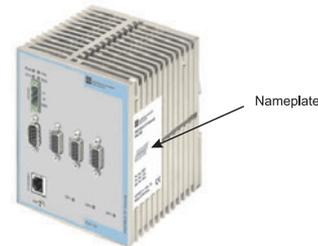
The device designation is to be found on the nameplate affixed to the righthand side of the module. The device type can be derived from the product code as follows:

Root					Description
FXA 720-	1 2 3 9				**No. of Channels** 1x PROFIBUS port 2x PROFIBUS ports 3x PROFIBUS ports Special version
		E Y			**Power Supply** 24 VDC (+/- 20%) Special version
			1 2 9		**Modem Interface** Ethernet 100Base-Tx/10Base-T Analog Modem (in preparation) Special version
				A Y	**DAT Module** Without DAT module Special version

2.2 Scope of delivery

The scope of delivery comprises the following parts:

- Fieldgate FXA 720 gateway
- 24V female plug connector
- Profibus drivers and installation manual (on CD-ROM)
- "Getting Started" manual (printed document)
- If appropriate, additional software licences including documentation

Please check whether the delivery is complete and free of defects before starting installation.

2.3 Licensing agreement

The software required for start-up and commissioning is freely available or is subject to the licensing conditions of its manufacturer. Installation of the software on your computer implies that you accept the terms of the corresponding licensing agreement.
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3 Function and System Design

3.1 Function

Fieldgate FXA 720 connects host systems to PROFIBUS DP networks via Ethernet or modem. It can be equipped with up to three RS-485 ports, each giving access to up to 126 PROFIBUS DP devices.

Fieldgate is designed for Windows and web-based applications such as Information & Configuration, monitoring, and visualisation. Process data can be monitored, e.g. by Java Applets or Microsoft Office applications. Fieldgate can also be integrated into system applications via OPC, DTM or XML, eg.:

- OPC for exchanging data with applications such as SCADA/HMI OPC clients, e.g. P View SPV 100
- DTM for exchanging data with FDT frame applications, e.g. FieldCare
- XML for exchanging data with Microsoft Office applications or simple visualisation applications such as Java Applets for Fieldgate SPV 60

3.2   Design

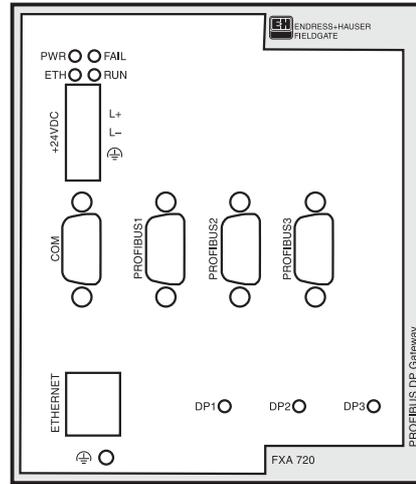A schematic of the front panel of the Fieldgate FXA 720 is shown in Fig. 3.1 below.

Fig. 3-1: Front panel of the Fieldgate FXA 720

3.2.1   Connectors

Power supply	• 24 VDC: a female plug connector is supplied with the device.
Communication ports	• Ethernet 10Base-T/100Base-TX connection • Depending on type, up to three RS-485 ports for PROFIBUS DP • COM service port (not relevant to normal operation

3.2.2   Display elements (LEDs)

PWR	Green LED indicating the power supply status: • On: internal power supply is ensured. • Off: the supply voltage (24 V) is missing or the internal voltage generation is defective. In this case, the unit needs to be returned to the manufacturer for repair..
ETH	Green Ethernet LED: • On: proper communication (link connection to a hub/switch/NIC) via Ethernet is possible. It goes out temporarily during transmission and blinks when Browser clients are connected to the Fieldgate
RUN	Available for application-specific purposes and is off by default.
FAIL	Available for application-specific purposes and is off by default.
DP1, DP2, DP3	Green LEDs that are the token LEDs of the PROFIBUS Master. The corresponding LED lights as soon as the master has received the token (communication authorization). • DPx LEDs will normally not light when the device is used as a pass-through gateway and the scan service for the corresponding channel is set to off. • DPx LEDs will normally light when a channel has been scanned by the web-server within the Fieldgate such as in remote monitoring applications via web. • DPx LEDs may also light up if the bus has not been connected or is defective.

3.3   System architecture

Web-based applications   Fig. 3.1 shows the generic architecture for web-based applications. The devices to be monitored or configured are connected to the Fieldgate FXA 720 via max. 3 RS-485 ports, to which PROFIBUS DP devices can be connected directly. PROFIBUS PA devices are connected to the DP segment via a segment coupler or link.

The remote connection is made either by:
- Ethernet port/Internet
- Ethernet port/Remote wireless LAN access points
- Ethernet port/modem

The following applications may be running on the monitoring station:
- Via XML/CSV format: Microsoft Office applications (on-line/off-line data acquisition and display)
- Via XML: Java Applets (on-line data acquisition and visualisation)
- Via OPC: SCADA/HMI OPC clients, e.g. P View (data acquisition and visualisation with trends and historian)
- Via DTMs: FDT frame applications such as FieldCare (asset management, Information & Configuration) or other Information & Configuration tool
- Any other OPC client, FDT-based or XML/HTML application.

Note!
- Depending upon application or architecture requirements, each channel can be connected to an independent PROFIBUS DP network or used to access the same network.
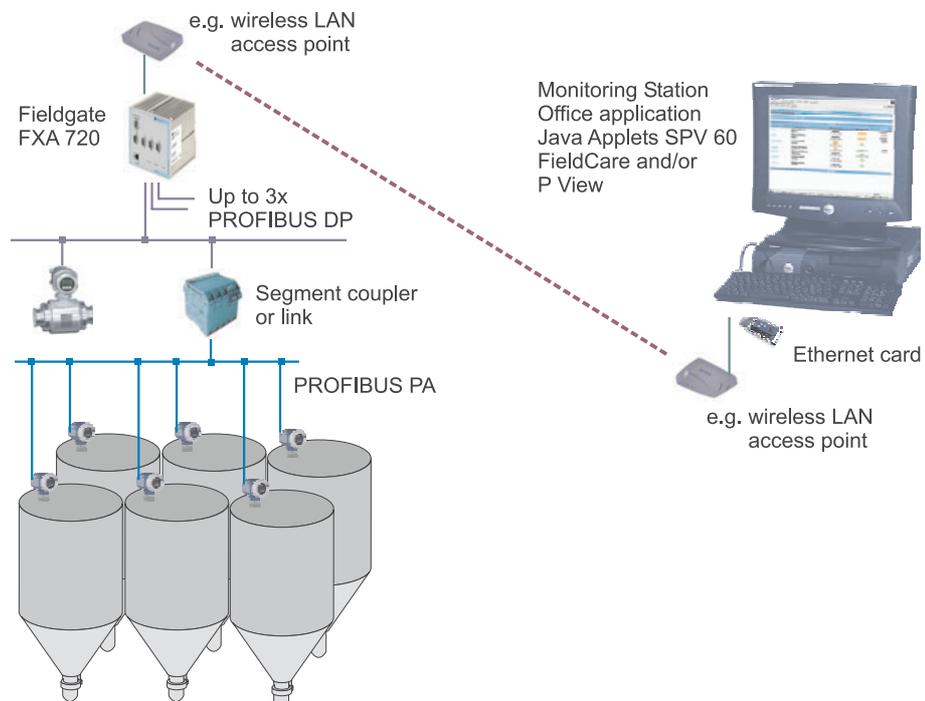

Fig. 3-2: Generic system architecture for web-based visualisation and remote monitoring applications

Network applications   When used as a Ethernet/PROFIBUS gateway, Fieldgate FXA 720 will normally provide the connection between host applications running on Ethernet and PROFIBUS devices connected to a PROFIBUS DP or PROFIBUS PA network. Fig. 3.3 shows a typical example.

Examples of applications running on Ethernet are:
- Via OPC: SCADA/HMI OPC clients, e.g. P View
- Via DTM: Asset management tools based on FDT frames, e.g. FieldCare
- Information & Configuration tools, e.g. FieldCare, Commuwin II or ToF Tool
- Via XML/CSV format: Microsoft Office and e-Commerce applications
- Any other OPC client, FDT-based or XML/HTML application.

Note!
- When Fieldgate is used in connection with the Commuwin II or ToF Tool Information & Configuration tool, the single port version or Port 1 of the dual or three-port version must be used.
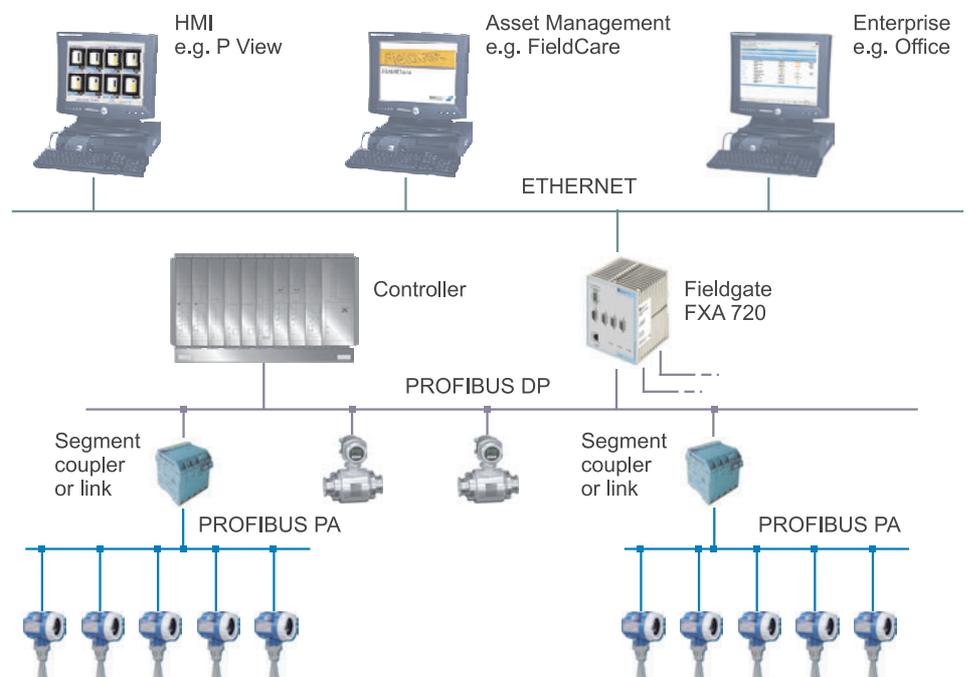

Fig. 3-3:Typical example of a PROFIBUS DP control network

3.4   System requirements

Remote monitoring via web browser

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

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

Remote Information & Configuration with PROFIBUS Client

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

Add-on	Version	Function
Commuwin II	≥ 2.08-1	Commuwin II is the general tool for device Information & Configuration for all smart Endress+Hauser field devices.
P View	≥ 1.0	P View is Endress+Hauser's SCADA tool
FieldCare	≥ 1.0	FieldCare is Endress+Hauser's FDT-based Plant Asset Management tool which can be used to configure all devices
ToF Tool	≥ 3.10	Service and operating program for time-of-flight level transmitters

SCADA and visualisation

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

| Add-on	Version	Function
P View	≥ 1.0	P View is Endress+Hauser's SCADA tool
Java Applets	≥ 1.0	Java Applets for Fieldgate SPV 60 is a simple web viewer for device process values (does not support Windows NT)

4   Hardware Installation

4.1   Mounting

Fieldgate is intended for mounting on TS35 DIN carrier rails (EN 50022) installed in a control cabinet.

The device is convection-cooled. It therefore needs to be installed in such a way that the ventilating ducts are at the top and bottom of the unit.

Please ensure a ventilation space of at least 30 mm above and below the device.
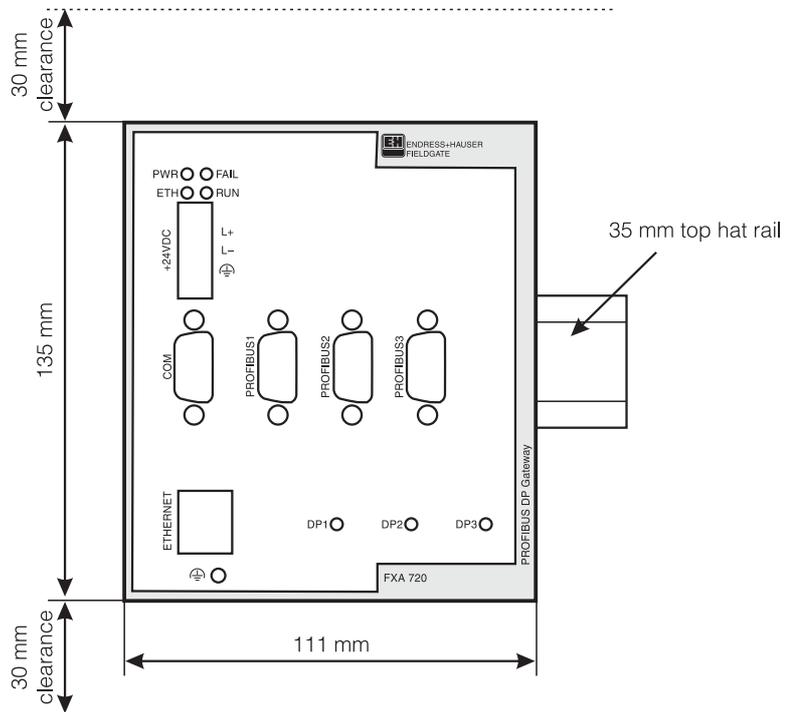
4.2   Wiring

4.2.1   Power supply

The Fieldgate FXA 720 is powered by 24 V DC. The power supply female plug connector is included in the delivery. The power supply male socket connector on the front panel is labeled 24VDC (see Fig. 4.1).

The two power supply terminals are labeled L+ and L−.

- Connect L+ to +24 VDC and connect L− to 0 VDC.

The two terminals are provided with an internal reverse-polarity protection.

Grounding

Proper grounding is prerequisite for compliance with the EMC directives and for ensuring a proper operation.

- The functional ground terminal is labeled ⏚ and must be connected to the protective ground.
- For use in an environment that is highly subject to electromagnetic interference, an additional ground connection can be provided at the grounding screw below the "ETH" connector.

The power supply is connected to the plug connector via flexible wires with a cross-section of 0.75 to 1.5 mm^2. The ground connection wire must have a cross-section of 1.5 mm^2.

Fuse

The Fieldgate FXA 720 has an internal safety fuse which blows if an overvoltage occurs in the power supply (of approx. 30V or higher) or if a fault occurs in the device. The safety fuse can be replaced by the device manufacturer only.

Note!
- The start-up current of the Fieldgate FXA 720 may be up to 3A. The power supply must provide this starting current in compliance with the voltage range to ensure a safe startup.

4.2.2 Communication ports

Ethernet

The Ethernet port is labeled "ETH" and has been implemented as a 10Mbit/s or 100 Mbit/s (10Base-T/100Base-TX) connection with automatic baudrate recognition. The connection is made using a RJ45 connector and a twisted pair category 5 cable.

- Use a crossover cable if Fieldgate is to be connected directly to a Ethernet NIC card in the personal computer
- Use a straight through cable if the connection is to be made via a hub or switch

COM

The COM port is a RS-232C serial interface and for Service use only. The connection is made using a 9-pin male D-sub connector with the following pin assignment:

Pin #	Signal	Description
1	Reserved	Do not connect
2	RXD	Receive Data
3	TXD	Transmit Data
4	Reserved	Do not connect
5	GND	Signal Ground
6	Reserved	Do not connect
7	Reserved	Do not connect
8	Reserved	Do not connect
9	Reserved	Do not connect

Table 4-1: Pin assignment COM RS-232 port

PROFIBUS

Fieldgate FXA 720 may be equipped with up to three PROFIBUS DP channels (RS-485) labeled "PROFIBUS 1", "PROFIBUS 2" and "PROFIBUS 3". Each channel is electrically isolated up to a voltage of 500V DC. The connecting element is a 9-pin female D-sub connector with the following pin assignment:

Pin #	Signal	Description
1	SHIELD	Housing
2	NC	Not assigned
3	RxD/TxD-P	PROFIBUS signal B/B'
4	/RTS	RTS
5	GND	Ground
6	VCC	Bus-termination power supply (load 10mA max.)
7	NC	Not assigned
8	RxD/TxD-N	PROFIBUS signal A/A'
9	NC	Not assigned

Table 4-2: Pin assignment of RS-485 PROFIBUS DP ports

Note!
- Please observe the installation guidelines for PROFIBUS devices, which are available from the PROFIBUS Trade Organization, at www.profibus.com or in Endress+Hasuer Operating Instructions BA034S/04/en.

5   Getting Started

Before you start the installation:

- Check that you have administrator rights for your computer.
- Check that you have a unique IP address for each Fieldgate to be installed.

Warning!
- The use of IP addresses is strictly controlled. Usually your system administrator will be authorised to allocate unique addresses for your Fieldgates. Assigning an unauthorised address to a Fieldgate may result in conflicts within your system and the failure of the associated devices!

5.1   Installing Fieldgate tool

Procedure

1. Place the Fieldgate CD-ROM in your CD-ROM drive, the Setup menu appears just after the CD has been inserted.

2. First check if your computer fulfils the minimum requirements as described below, see also Section 3.4..

3. Then it is advisable to carefully read the **"Release Notes"** before starting the installation.
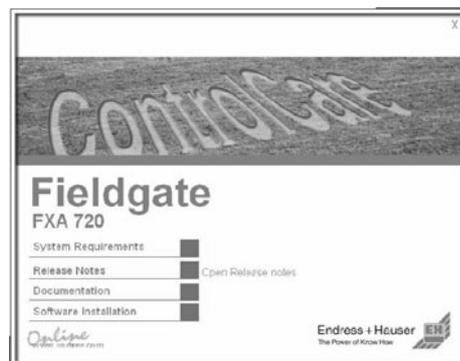
4. Click on **"Software Installation"** to start the software installation process.
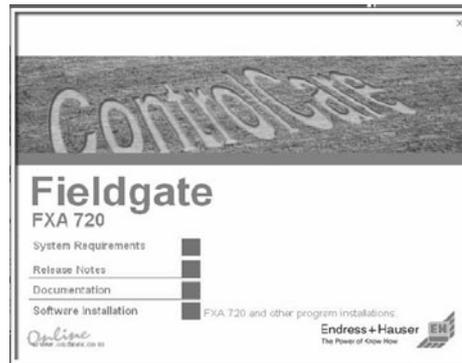
5. Click on **"Fieldgate FXA 720"** to install the Fieldgate tool.

6. The Setup program immediately starts the installation process.

7. To install the program, select **"Modify"** then **"Next".**

8. Now select the features you require, then press **"Next"** to proceed.

9. The installation process is now complete. Press **"Finish"** to close the wizard.

5.2   Making initial contact

Note!

- To make initial contact with the Fieldgate FXA, the IP address of your computer must be temporarily changed to the same domain as the Fieldgate default address (192.168.253.1). If you are unsure of how to do this, consult your system administrator.
- The following procedure applies to internet connection via Windows XP. Procedures for Windows 2000 and Windows NT are described in Chapter 12.
- If you are dialling in via modem, see Chapter 6 (in preparation) on how to set up the connection, then return to Section 5.3.

Before starting, the Fieldgate must either:

- be installed in the network connected to a switch/hub with a straight cable or
- be connected directly to the computer with a cross-link cable.

Procedure

1. Right-click "**Start => Settings => Control Panel => Network Connections**".
   Right-click **"Local Area Connection => Properties"**.
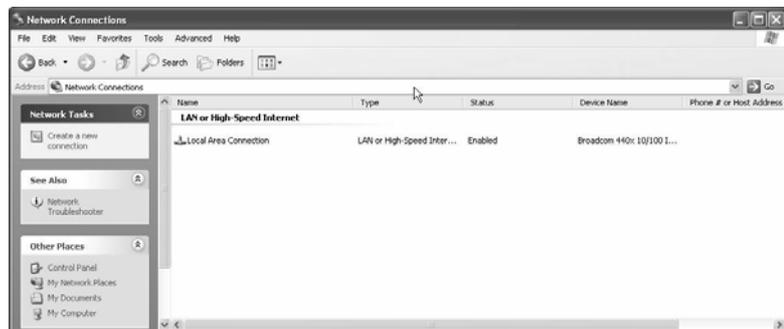
2. Using the left mouse button, double-click **"Internet Protocol (TCP/IP)"** or click once, then click **"Properties"**.
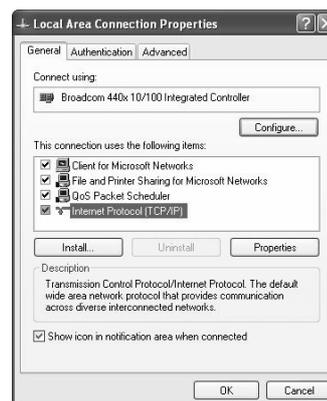
3. Now you can enter/change the values and click **"OK"** to confirm.
   – Enter e.g. **192.168.253.2**
   – In this example, any address in the range 192.168.253.2 – 254 is valid
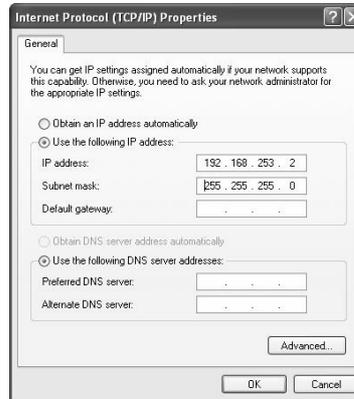
4. Start the web browser, e.g. Internet Explorer.
   Now enter the default address of the Fieldgate "**192.168.253.1**" in the address field
   of your browser and press the **"Enter"** key of your computer.
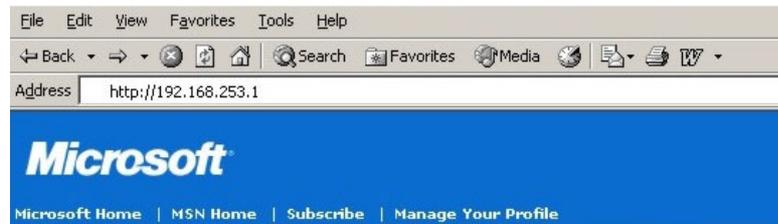
5. The browser makes connection with the Fieldgate, a User Login window appears:
   Enter:
   – user name: "**admin**"
   – password: "**super**"
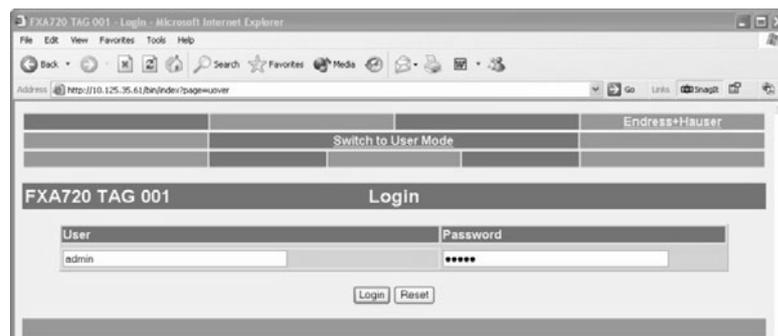
Press **"Login"** to display the entry page of the Fieldgate.
   – If no connection can be made, consult Chapter 12.3.

5.3   Changing the Fieldgate address

Procedure

1. After the password has been entered, the Fieldgate Web Server opens (you will not necessarily see devices at this point):

2. Press "**Information & Configuration**" then "**Network setup**". The network setup screen appears:
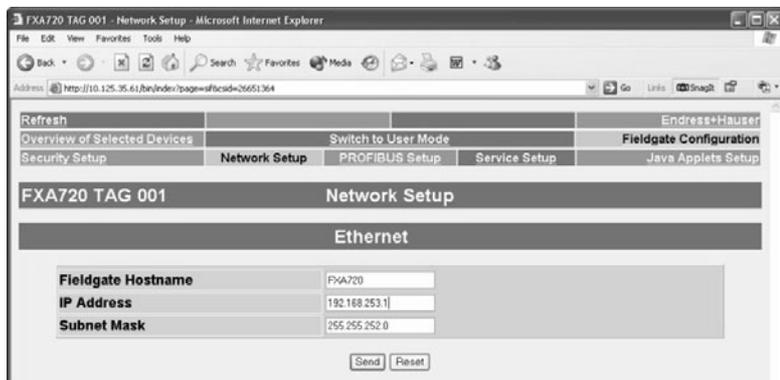
3. In the **Ethernet** screen enter the **IP address** given to you by the system administrator, in this example 10.125.35.61:
   – If appropriate, enter the Netmask as well.
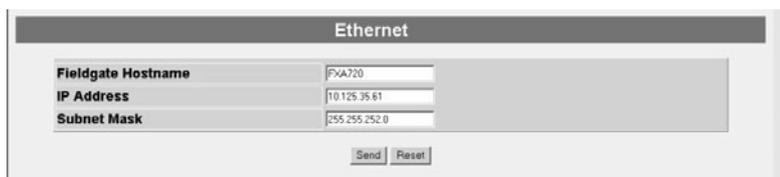
Press "**Send**" to download the parameters to the Fieldgate.
"**Reset**" restores the currently valid settings stored in the Fieldgate.

4. Contact with the Fieldgate may break down at this stage.
   If this is not the case, close the browser.

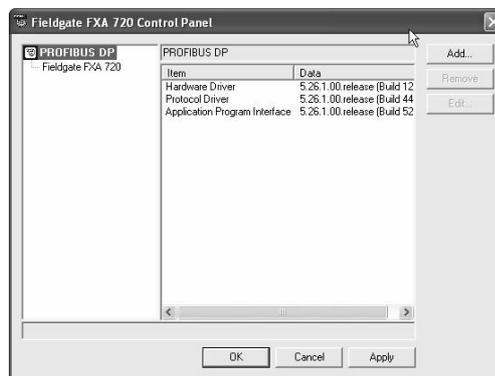5. Reset the IP address in your computer back to the original value, see Section 5.1.

5.4 Configuring the Fieldgate communication driver
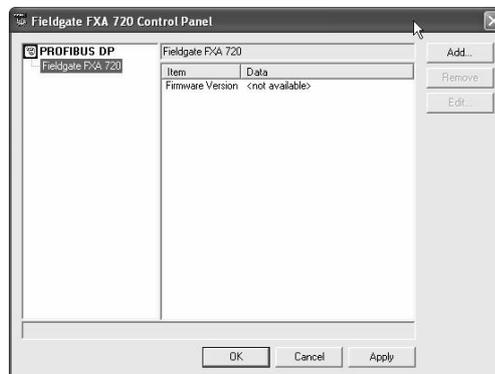
Procedure

1. Open the Control Panel via **START => Settings => Control Panel**.
   Double-click on the "**Fieldgate FXA 720**" icon to open the driver.
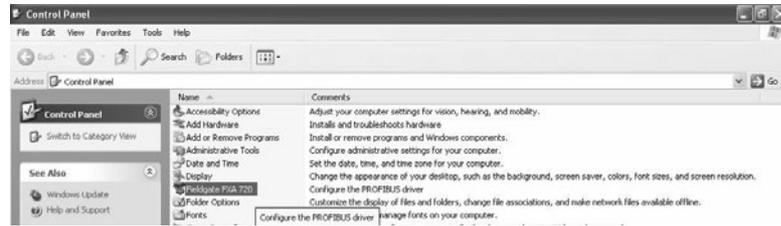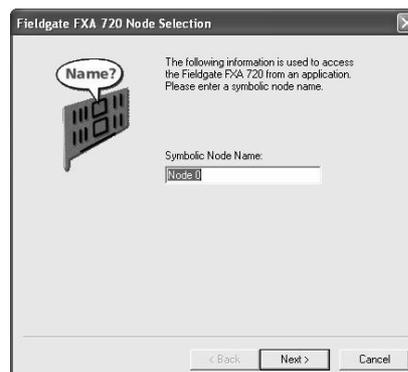

2. Select the **PROFIBUS DP** line, to display the general release information
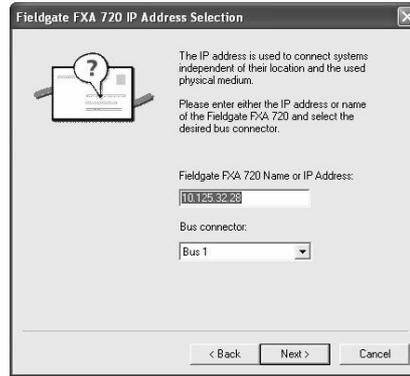

3. Now select the "**Fieldgate FXA 720**" line and press **"Add"**.

4. A symbolic node name for each PROFIBUS DP channel (Default value: "Node 0")
   can now be entered. Click "**Next**" to proceed with the configuration.

5. Enter the current **Fieldgate IP** address and select the **Bus connector** (the channel to be used with the node specified in Step 4).

6. Click "**Finish**" to accept the default timeout settings and end the configuration.
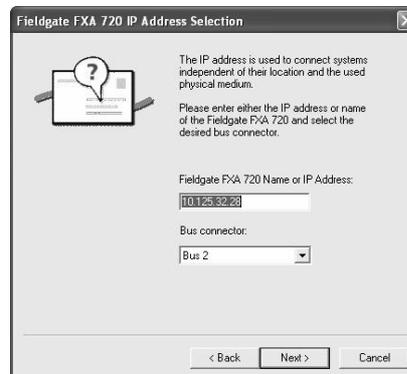**Caution:** Timeout settings should be changed by PROFIBUS specialists only
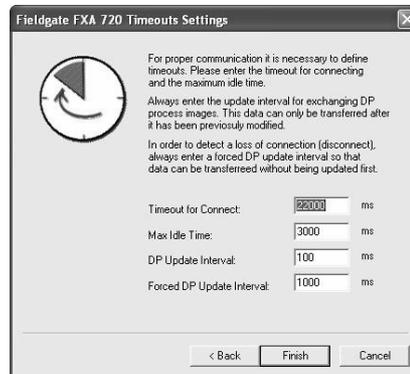
7. If the Fieldgate is found in the network and is working properly, then the Node line will be marked with a green check mark. In addition, Fieldgate information is displayed.
    – The node configuration can be modified from this screen by clicking the "**Edit**" button. To save the configuration please click **"Apply"**.
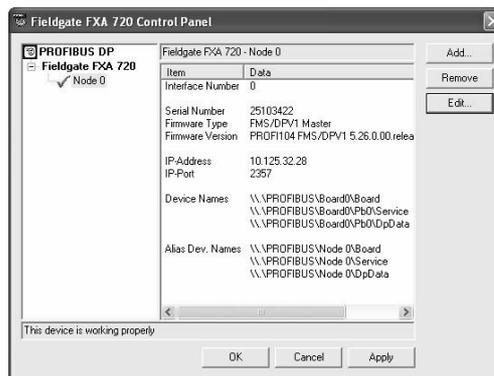
For two and three channel versions

8. Now configure the other channels of your Fieldgate by pressing the **"Add"**. button.
   – Follow the sequence from Step 3 to Step 5 inclusive.
   – Enter the same IP address: Fieldgate requires only one IP address for operation.
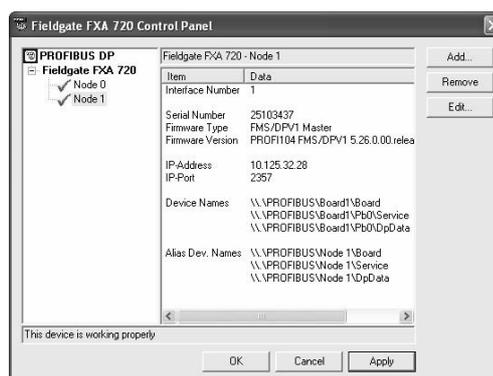   – Select **"Bus 2"** or **"Bus 3"** as appropriate.

9. Click "Finish" to accept the default timeout settings and end the configuration.
   Caution: Timeout settings should be changed by PROFIBUS specialists only
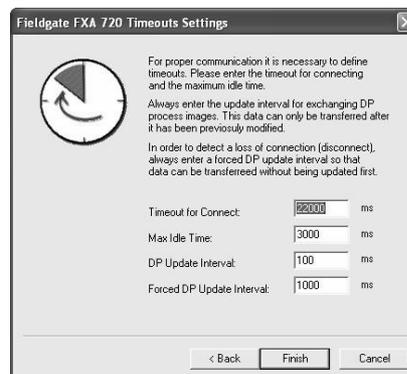
10. On completion, the new node will be added to the network tree:
    – Press **"Apply"** to store the configuration

Note: the screenshot shows the two channel version.

11. When all channels have been configured, press **"OK"** to store the configuration and close the configuration window.

5.5   Configuring the Fieldgate Web server

1. Start the web browser, e.g. Internet Explorer.
Now enter the IP address of the Fieldgate, e.g. "**10.125.35.61**" in the address field of your browser and press the **"Enter"** key of your computer.

2. The browser makes connection with the Fieldgate, a User Login window appears:
Enter:
– user name: "**admin**"
– password: "**super**"

Press **"OK"** to display the entry page of the Fieldgate.

3. The entry page of the Fieldgate opens

4. Now continue with the configuration of the Web Server as as described in Chapter 7.

5.6   Fieldgate product documentation

During installation the complete set of product literature is placed in your computer. You need Adobe Acrobat Reader to view it. It can be accessed as follows:

1. Go to the Windows "**Start**" bar, select the "**Programs**" menu and then choose the desired documentation in english or german language via **"Endress+Hauser" => "Fieldgate" => "FXA 720" => "Manuals" => "English"**.
   – Special Documentation gives a general overview of the product.
   – Technical Information contains the Fieldgate technical data.
   – User Manual contains instructions on how to set up and use Fieldgate.
   – Getting Started is a quick guide to getting the Fieldgate up ad running.

2. You can also open all manuals by selecting "Documentation" option on the main menu of the Fieldgate CD-ROM.
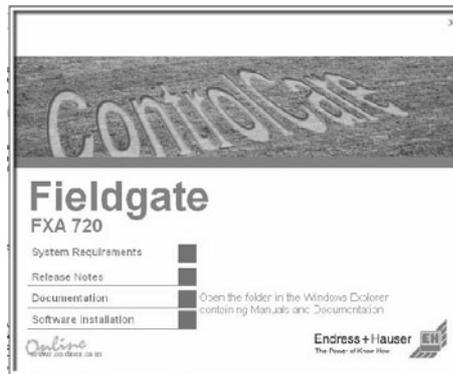
5.7   Adobe Acrobat Reader

The CD-ROM also contains Adobe Acrobat Reader
.
1. To install select the "**Software Installation**" option. Then, choose the menu "**Adobe**" to proceed with Acrobat Reader installation
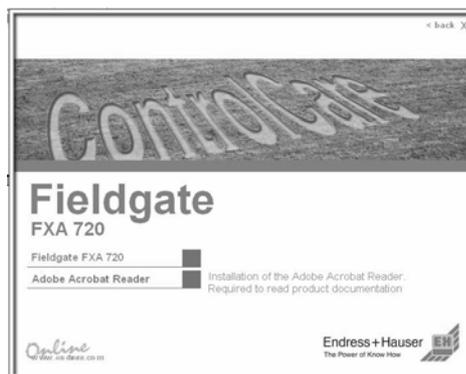
2. Now you can proceed with the installation by clicking the "**Next**" button.

5.8   Modifying, repairing or removing the application

If you have already installed the Fieldgate software, you can modify, repair or remove the application if the Fieldgate Setup Procedure is started again.

1   To install additional applications select **"Modify"** then **"Next".**
    – Now select the components you desire and press **"Next"** to install.
    – Press **"Finish"** to complete the installation.

2   To repeat the installation procedure and install the Fieldgate software again, select "**Repair**".
    – Now select the components you desire and press **"Next"** to install.
    – Press **"Finish"** to complete the installation.

3   To remove the Fieldgate software, select "**Remove**".
    – Press **OK** to confirm

    .

6   Dialling in via Modem

6.1   Analogue modem

In preparation (Future Release).

6.2   GSM, GPRS modems

In preparation (Future Release).

7   Configuring the Web Server

7.1   Logging on

Once the IP address has been entered in your web browser and the connection made, you are prompted to enter a user role and the password.

Fig. 7-1: User login dialogue

User roles and default passwords

Table 7.1 lists the user roles with passwords that are currently available in the Fieldgate:

Role	User name	Default password	Rights
Administrator	admin	super	Can access Fieldgate in both User and and Admistrator mode: • Can configure network settings • Can set all passwords and user IDs • Can change visualisation page settings • Can set events, alarms, e-mail and time parameters • Can configure PROFIBUS and modem settings • Can set special page options • Can reset Fieldgate to factory settings
Executive	exec	superb	Can access Fieldgate in User Mode only • Can view any page with the execption of the factory, communication and special settings, but has no rights to change parameters

Table 7-1: Fieldgate user roles and rights

Note!
• You cannot configure device parameters with the Fieldgate Web Server. This requires the help of a configuration tool, e.g. FieldCare, that uses Fieldgate as a pass-through interface

7.1.1   Disconnecting

Simple close the internet browser.

7.2 User interface

Once logged on, depending upon the devices connected, a display such the following might appear in the web browser. If you are connecting up for the first time, it is also possible that only the Navigation bar appears, see Section 7.2.2, because the Fieldgate still needs to be set up to enable communication with the PROFIBUS devices in the network.
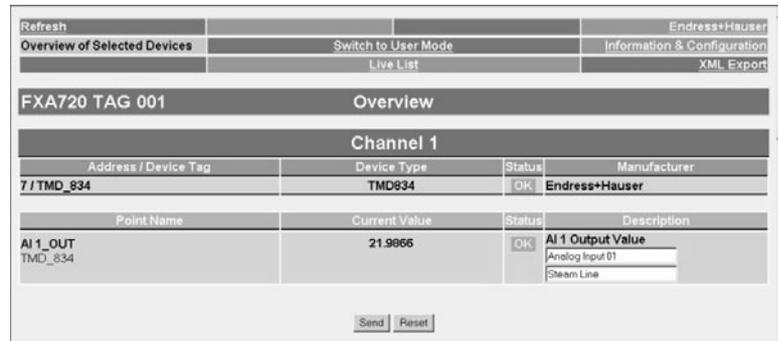

Fig. 7-2: Fieldgate home page

Approx. 1 second update time is required for every measured value in the overview. For a large network, this means that the build up of the overview can be slow.

The user interface consists of the following elements:
- Menu bar (belongs to the web browser installed)
- Navigation bar
- Information & Configuration pages

7.2.1 Menu bar

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

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

Note!
- The menu bar contains the standard functions of the installed web browser. More detailed information on the individual menus is provided in the documentation on the web browser.
- It is possible that additional or modified menu bars appear when Fieldgate is operating with plug-ins from other applications.

7.2.2   Navigation bar

The navigation bar offers the following functions in "**User**" or "**Administration**" mode.

In User mode:

Fig. 7-3: Navigation bar in User mode

Function	Decription
Refresh	Updates the current display with fresh information from the Fieldgate
Endress+Hauser	Calls the Endress+Hauser Fieldgate Web site
Overview of Selected Devices	Displays the values you have selected for monitoring and visualisation
Switch to Administrator Mode	Switches the navigation to administrated mode when the user logged on with corresponding rights
Fieldgate Information & Configuration	Displays information on Fieldbus location and hardware
Live List	Displays all devices connected to the Fieldgate according to channel
XML Export	Exports all information about Fieldgate and the devices connected to it in XML format

Table 7-2: Functions available in User mode

In Administration mode:

Fig. 7-4: Navigation bar in Administration mode

Function	Decription
Refresh	Updates the current display with fresh information from the Fieldgate
Endress+Hauser	Calls the Endress+Hauser Fieldgate Web site
Overview of Selected Devices	Displays the values you have selected for monitoring and allows the list to be modified
Switch to User Mode	Switches the navigation to user mode via login password for executive user.
Fieldgate Information & Configuration	Allows the Fieldgate location to be entered and displays the hardware configuration. Reveals the following Setup menus: • Security Setup – Password adminstration • Network Setup – IP address, etc • PROFIBUS Setup – Communication parameters • Service Setup – Firmware download • Java Applets Setup – Selection of device parameters in Java Applets SPV 60 application
Live List	Displays all devices connected to the Fieldgate and allows them to be configured and selected for display.
XML Export	Exports all information about Fieldgate and the devices connected to it in XML format

Table 7-3: Functions available in Administration mode

7.2.3   Configuration & Information pages

Depending upon the role in which the user logs on, clicking on Information & Configuration field will reveal the Fieldgate configuration or information pages. A change from one view to another is made by clicking on:

Switch to Administrator Mode/ Switch to User Mode

as appropriate and entering the corresponding password.

Fieldgate Configuration   The Fieldgate Configuration page contains additional menus in the navigation bar that allow the configuration of the devices in the overview, user passwords, the network, the PROFIBUS network, firmware downloads and objects in Java Appets SPV 60.

- In addition, user information on the Fieldgate location can be entered, see below
  – The **"Send"** button downloads the changes to the Fieldgate
  – The **"Reset"** button restores the Fieldgate settings stored in its memory:

Fig. 7-5: Fieldgate Configuration page

The page also contains hardware information.

Fieldgate Information   The Fieldgate Information page provides a read-only view of the Fieldgate Location and Hardware Information:

Fig. 7-6: Fieldgate Information page

7.3   PROFIBUS setup

The first time connection is made with the Fieldgate, the PROFIBUS settings should be checked and if necessary changed. This is done in administration mode.

7.3.1   Communication settings

1 If not already selected, press **"Switch to Administrator Mode"**

2 Press **"PROFIBUS Setup"**
   If **"PROFIBUS Setup"** is not visible, press **"Fieldgate Configuration"** to display it.
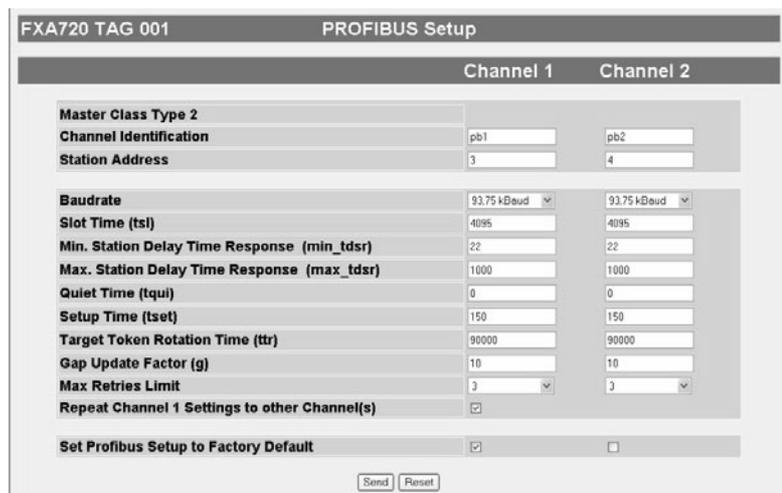   The following screen appears (the number of channels depends on the Fieldgate):

Fig. 7-7: PROFIBUS Setup page

3 Set up each channel by entering or ticking the parameters, see Table 7-4.
   – Press **"Send"** to download the parameters to the Fieldgate.
   – **"Reset"** restores the currently valid settings

Parameters

Parameter	Description
Channel ID	Channel identification (use the communication driver designation, see Chapter 5.4)
Station Address	Fieldgate's PROFIBUS DP address (Master Class 2), default values 3, 4 and 5. If two or more channels are connected to the same network, enter different addresses.
Baudrate	The baudrate can be set separately for each channel - the other communication parameters change to the factory defaults for the selected baudrate when the "Set factory default" box is checked**.** **All the devices and, if appropriate, the controller connected to a particular channel must have the same communication settings**
Max Retries LImit	Determines the number of times the Fieldgate will try to establish communication with a device before it flags it as faulty
Repeat Channel 1 settings..	A tick causes the channel 1 settings to be loaded into the other channels
Set factory default	A tick causes the factory default settings for the selected baudrate to be downloaded to the Fieldgate If the box is not ticked, the values entered in the appropriate fields are used (recommended only if the Fieldgate is operating in a segment with a Master Class 1 device, in which cases its values are taken)

Table 7-4: PROFIBUS communication parameters

7.3.2   Scan settings

1   Now set the scan parameters which are further down the page. For a description
see Table 7-5:

Fig. 7-8: Scan setup

2   Press **"Send"** to download the parameters to the Fieldgate.
"Reset" restores the currently valid settings

Parameters

Parameter	Description
Highest Station Address	The highest PROFIBUS Master address to be found on the channel.
Scan Cycle Time	The interval at which the devices on the channel are to be scanned. • If a specific channel is not being used by the Internet Browser (Web Server), set the **Scan Cycle Time** to **off**. This is the case when an OPC client or configuration tool is using a Fieldgate channel as a hardware interface.
Repeat Channel 1 settings...	A tick causes the channel 1 settings to be loaded into the other channels.

Table 7-5: Scan setup parameters

7.3.3   Live list

1   Now check that the Fieldgate is operating correctly by pressing **"LIve List".**

2   Fieldgate scans each channel and displays a list of all the devices found in the
network attached to it, e.g.:

Fig. 7-9: Live list page

Note!
• If the Scan Cycle Time of a channel has been set to off, Fieldgate will not produce the
associated live list. Normally, this will be generated by the application using the
channel.

7.4   Overview of selected devices

In the administration mode, the **"Live List"** function allows the user to select which devices and which device parameters are to be displayed in the device overview.

1   If not already selected, press **"Switch to Administrator Mode"**
    – Press **"Live List"** to display every device on the network:

Fig. 7-10: Device selection from the live list

2   Click the "**Show in Overview**" checkbox to select the devices, or where a device has several Analog Input blocks, the process values that you want to appear in the "Overview of Selected Devices" page.

3   For each channel, press **"Send"** to download the parameters to the Fieldgate.
    – **"Reset"** restores the currently valid settings

4   Now click on **"Overview of Selected Devices"** to view the process values and status of the selections you have made.

Fig. 7-11: Overview of Selected Devices, Administration mode

5   If required, a short description can be added to the output values:
    – Press **"Send"** to download the parameters to the Fieldgate.
    – **"Reset"** restores the currently valid settings

7.5   Security setup

Caution!
- To avoid unauthorised access to the Fieldgate setup parameters, the administrator password should always be changed from the default settings "admin" and "super"!

Access rights to the Fieldgate can be managed with the **"Security Setup"** function. As the administrator, you can create and manage users here.

1 If not already selected, press **"Switch to Administrator Mode"**,
Now press **"Fieldgate Configuration"** then **"Security Setup"**.
The Security Setup screen appears:

Fig. 7-12: Security Setup page

2 Enter the parameters you require in the screen – their significance is described in the table below:
- Administrator rights allow access to all Fieldgate setup parameters.
- Executive rights allow access for viewing parameters only.
A full description of roles and rights is to be found in Table 7-1 in Section 7.1.

3 Press **"Send"** to download the security parameters to the Fieldgate.
- **"Reset"** restores the currently valid settings

Parameters

Parameter	Description
User Name	Fixed by default: admin or exec respectively
New Password	Enter your new password here.
Retype New Password	Enter your new password again to confirm the change.

Table 7-6: Significance of Security Setup parameters

7.6 Network setup

The network setup function contains parameters necessary to set up the Ethernet connection and other network related parameters as well as addresses for e-mails and SMS messages (in preparation).

1 If not already selected, press **"Switch to Administration Mode"**.
Now press **"Fieldgate Configuration"** then **"Network Setup"**.
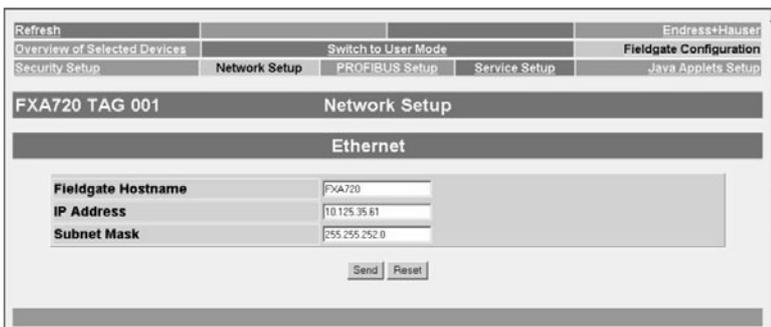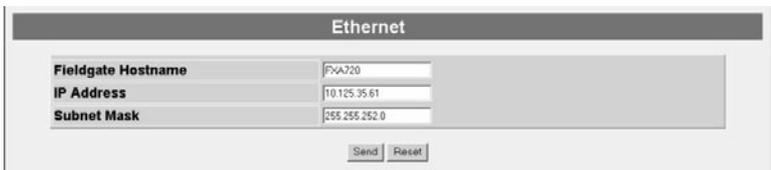The network setup screens appear:

Fig. 7-13: Network Setup page

7.6.1 Ethernet

The Ethernet screen allows you to configure the Ethernet connections 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**".
- If you change the IP address in this screen:
  – Close the connection (it may break off automatically)
  – Enter the new IP address in the PROFIBUS server, see Chapter 5.4
  – Use the new address in your browser to call up the Fieldgate.

Parameters

Parameter	Description
Fieldgate Hostname	Enter a host name for the Fieldgate. This is a symbolic name (string) that can be more easily memorized than an IP address.
IP Address	Enter the IP address of the Fieldgate here (factory setting is 192.168.253.1). You can get this address from your system administrator.
Subnet Mask	Enter the IP address of the netmask.

7.6.2   Analogue modem

In preparation for future Fieldgate versions.

7.6.3   GSM and GPRS modems

In preparation for future Fieldgate versions.

7.7   Fieldgate location page

The Fieldgate location function provides you with the option of entering additional information on the location and characteristics of the Fieldgate. These data are entered in the Administration mode but have no effect on the functionality of the Fieldgate.

1   If not already selected, press **"Switch to Administration Mode"**
    Now press **"Fieldgate Configuration"**.
    The Fieldgate location setup page appears at the top of the page:

Fig. 7-14: Fieldgate Location page

2   Enter the parameters required – their significance is described in the following sections.

3   Press **"Send"** to download the parameters to the Fieldgate.
    – **"Reset"** restores the currently valid settings

Parameters

Parameter	Description
Fieldgate Tag Identification	Enter the name of the Fieldgate (e.g. FXA720-...) 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 (in preparation). **Note!** Please note the characters which are permitted and not permitted for defining the Fieldgate identification (= name of the Fieldgate). Permitted characters are: – Letters "**a** " ... "**z** " and "**A** " ... "**Z** " (without taking case into account) – Numbers "**0** " ... "**9** " – Special characters such as "**.** " (= period) and "**–** " (= minus), not however as the first character – All other characters are **not** permitted. These include German umlauts, symbols such as "&" and spaces.
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.
Installation date	Enter the date of installation or maintenance of the network, etc.
Remarks	You can enter remarks and additional information here, e.g. on the Fieldgate or network maintenance, service etc.. These data have no effect on the functionality and serve solely to provide additional information. When using text e-mails, these remarks are entered in the e-mail (e.g. "We hereby order…").

7.8   Java Applets setup

Java Applets SPV 60 allows the values of devices connected to the Fieldgate to be visualised in a simple template. Only one value per device can be displayed. In order to configure the applets, therefore, the user must decide which value from each device is to be displayed. This page allows you to view the set up a Java applet application

1   If not already selected, press **"Switch to Administration Mode"**
    Now press **"Java Applet Setup"**.
    The Java Applet setup view page appears at the top of the page:

Fig. 7-15: Java Applet Setup view page

2   Click on the arrow to display the values available for the selected device
    – To select, click on the line you require.

3   Work down the list until all values have been set
    – Press **"Send"** to download the parameters to the Fieldgate.
    – **"Reset"** restores the currently valid settings.

4   Make a screenshot of the Setup page and send it to Endress+Hauser so that the Java Applets can be configured.

5   You will receive a CD that automatically installs the preconfigured applets on your computer.

8   Viewing Information (User Mode)

The information provided by the the devices and Fieldgate is viewed in User Mode.

8.1   Logging on

You will be prompted to enter a user role and the password:
- Once the IP address has been entered in your web browser and the connection made or
- If you change from administrator mode to user mode by clicking on **"Switch to User Mode"**,

Fig. 8-1: User login dialogue

To select User mode:
- Enter "exec" in the User field
- Enter your password in the "Password" field (default password = superb)
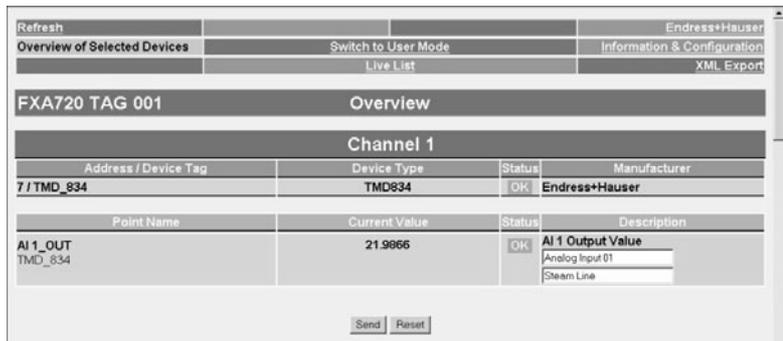
The Fieldgate home page is now shown:

Fig. 8-2: Fieldgate home page

8.2   Live list

The live list provides information on all devices connected to the Fieldgate sorted according to channel.

1   Press **"Live List"**
     If **"Live List"** is hidden press **"Overview of Selected Devices"** first.
     The significance of the parameters is in described in the table below.

Fig. 8-3: Live List view page

Parameters

Parameter	Description
Show in Overview	A tick indicates that data from this device appears in the device overview
Address/ Device Tag	PROFIBUS address and tag number or name of the device
Device Type	Name or model type designation of the device
Status	Device status, general status
Manufacturer	Name of the manufacturer of the device
Serial #	Device serial number
SW Rev #	Revision number of the device firmware
HW Rev #	Revision number of the device hardware
Profile	PROFIBUS Profile version

Table 8-1: Parameters in Live List view page

Note!

- The Live List and Scan functions of Fieldgate Version 1.0 are designed to function with PROFIBUS Profile 3.0 devices. Depending upon the device, Profile 2.0 or earlier may work correctly, but no guarantee can be given.

8.3 Overview of selected devices

The **"Overview of Selected Devices"** function allows the user to view the devices and parameters he has selected. This is the standard view when connection is made to the Fieldgate.

1 Press **"Overview of Selected Devices".**
If **"Overview of Selected Devices"** is hidden press **"Overview"** first.
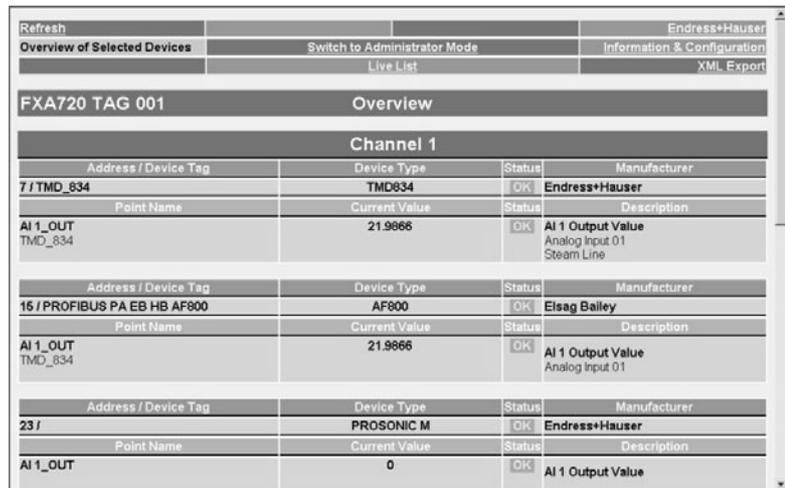The significance of the parameters is in described in the table below.

Fig. 8-4: Overview of Selected Devices view page

Parameters

Parameter	Description
Address/ Device Tag	PROFIBUS address and tag number or name of the device
Device Type	Name or model type designation of the device
Status	Device status, general status
Manufacturer	Name of the manufacturer of the device
Point Name	The name of the parameter that is being monitored at the assocation address
Current value	The current value of the parameter
Status	The status of the parameter
Description	Description of the parameter displayed

Table 8-2: Parameters in Oveview of Selected Devices view page

8.4   Fieldgate information

The information function provides information on the Fieldgate location and hardware.

1   Press **"Information&Configuration".**
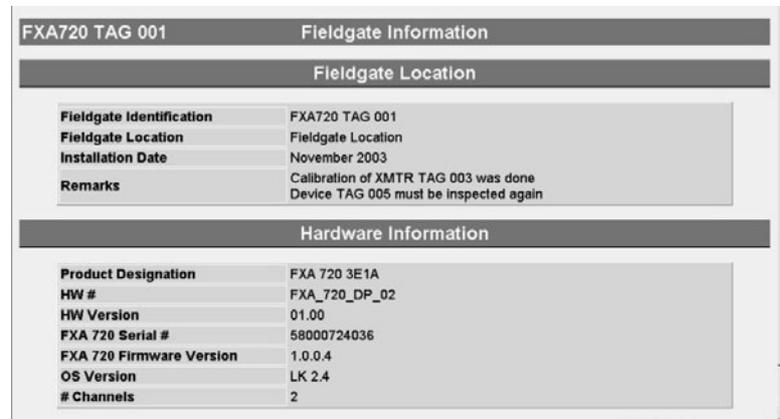   The significance of the parameters is in described in the table below.

Fig. 8-5: Fieldgate Information view page

Parameters

Parameter	Description
Fieldgate Location	
Fieldgate Tag Identification	Fieldgate tag number/name
Fieldgate Location	Place where Fieldgate is installed
Installation date	Date of installation/maintenance
Remarks	User information about Fieldgate
Hardware Information	
Product Designation	Complete product designation of the Fieldgate (see nameplate)
HW#	The name of the Fieldgate/number of channels
Hardware Version	Fieldgate hardware version number
Serial #	Fieldgate serial number
Firmware Version	Fieldgate firmware version
OS Version	Version of the operating system used.
Channels	No. of channels available in the Fieldgate

8.5   XML export

The XML Export function allows the information on the complete Fieldgate configuration plus the parameters and configuration of the connected devices to be downloaded to your computer for use in Office or other applications.

1   Press **"XML Export".**
    The parameters are downloaded into a separate page, from where they can be copied and pasted.

Fig. 8-6: XML Export page

2   More information on the meaning of the XML elements can be found in the Appendix, Section 12.4

8.6   Other view functions

8.6.1   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).

8.6.2   Endress+Hauser function

With the "**Endress+Hauser**" function, you go directly to the Fieldgate homepage on the Endress+Hauser internet site. You require Internet access for this. There is no charge for displaying the page.

Note!
- This page can also be called directly via Internet brower by entering the following address: www.products.endress.com/fieldgate

9   Firmware Update

Fieldgate offers you the possibility of updating the firmware of your device or downloading PROFIBUS device identifiers via Internet. The function is activated through the "Service Setup" option in the Administator mode.

Fieldgate.

1   If not already selected, press **"Switch to Administration Mode"**.
    Press **"Fieldgate Configuration"** then **"Service Setup"**
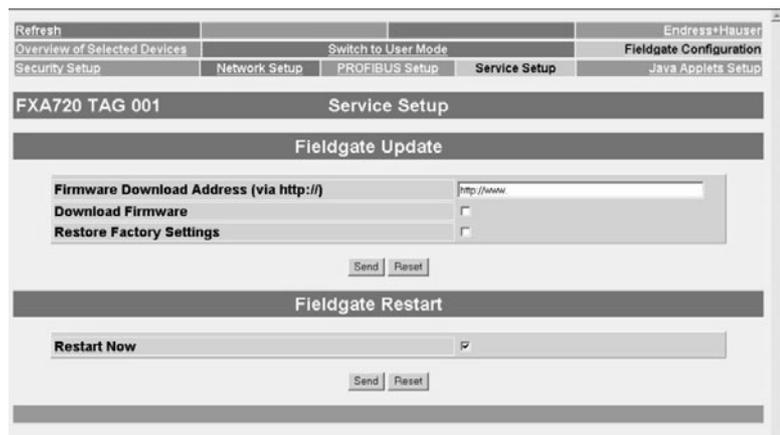   The Service Setup screens appear:

Fig. 9-1: Sevice Setup page

2   Enter the parameters required – their significance is described in the table below.

3   Press **"Send"** to download the parameters to the Fieldgate.
    – **"Reset"** restores the currently valid settings

4   Check the **"Restart Now"** tickbox in the **"Fieldgate Restart"** mask and press **"Send"** to restart Fieldgate with the new parameters.

Parameters

Parameter	Description
Firmware Download...	If firmware is to be downloaded, enter the download address
Download Firmware	If firmware is to be downloaded, tick this box
Restore...	Tick this box if the factory settings are to be reinstated after the download is completed
Restart Now	Check this box if the Fieldgate is to be restarted after the Send button has been pressed.

Table 9-1: Service Setup parameters

10 Trouble-Shooting

10.1 Problems and remedies

Problem	Remedy
Unable to dial into the Fieldgate	• See Chapter 12.3
Unable to connect the Profibus Driver to the FXA720	• The bus scanning must be disabled for the bus to which you wish to connect: – Login with administrator rights. – Select **Information & Configuration**. – Select **Profibus Setup**. – Set channel 1 (2, 3?) scanning to **OFF** – Press **Send** to download the changes – Now return to the **Control Panel** to configure the Profibus driver – When using **FieldCare**, make the appropriate settings in your **Profibus CommDTM**

10.2 FAQ - Frequently Asked Questions

Question	Answer
Is Master Class attribute configurable via OPC and DTM?	• Fieldgate FXA 720 can handle both Master classes without any configuration. If cyclic data exchange is initiated by the application it implicitly becomes a Master Class I. • In case of a configuration tools, all acyclic data inititated by the configurator is forward to devices through the Fieldgate as Master Class II services. For example, PROFIBUS OPC Server normally behaves as Master Class I and CommDTMs as Master Class II.
What parameters are available for configuration via web-server?	• Chapter 7 describes the Fieldgate parameters that can be configured. • The devices connected to the Fieldgate cannot be configured: if this is required, a separate configuration tool is required.
How do I use Fieldgate with link device (LM 157) from Siemens?	• If Fieldgate is operating as an access point for remote diagnosis or inventory monitoring, the link can be used in the normal way. • If you wish to configure the devices with an FDT based tool, e.g. FieldCare, then a CommDTM is required for the link: this is in preparation.
If customers have a PROFIBUS system (PLC, DCS), what is important to know before using a Fieldgate?	• When used for remote diagnosis or inventory control, the Fieldgate acts as a secondary master and must be configured as described in Section 7.2 of this manual. • If you wish to configure PROFIBUS devices with an FDT based tool, e.g. FieldCare, then Device DTMs are required for the devices. A coupler does not require a CommDTM but a Siemens link does: this is in preparation.

11 Accessories

11.1 E+H power supply units

Product	Description
SXP 100	Standard power supply 5A, 24 VDC

12 Appendix

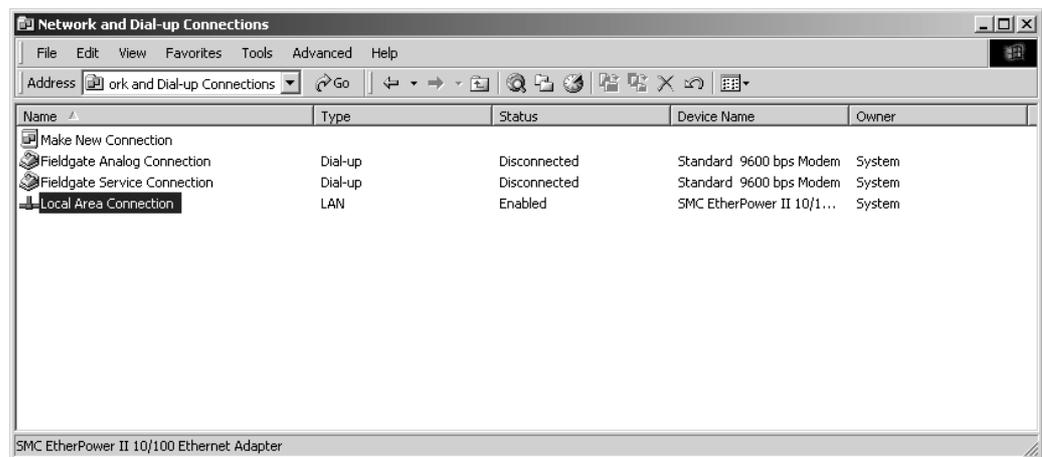## 12.1 Changing the Internet address (Windows 2000)
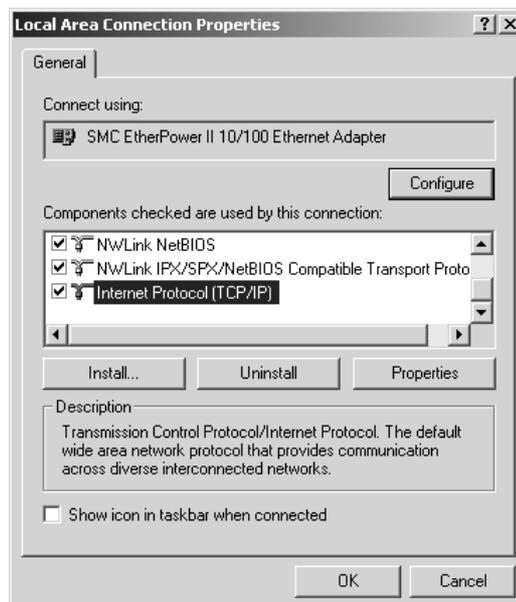
Caution!
- For the following instructions under Windows® 2000, you require administrator rights. Contact your system administrator.
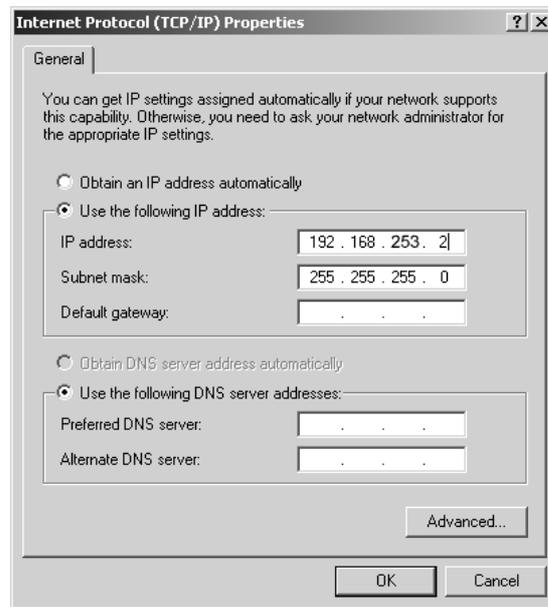
Procedure

1 Right-click on the desktop icon "**My Network Places**" and select "**Properties**". Right-click "**Local Area Connection** => **Properties**".

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

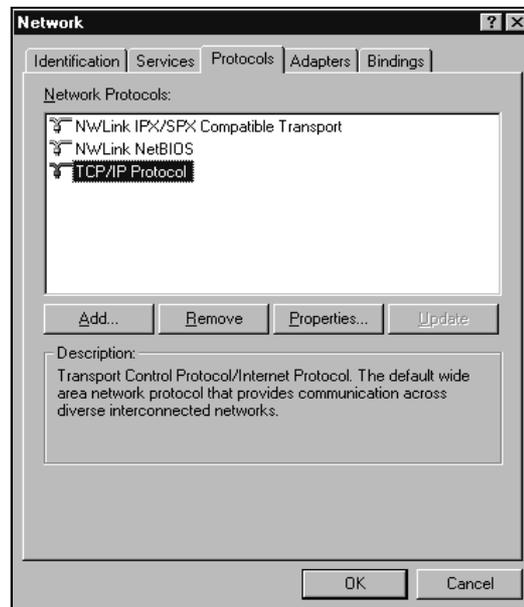3   Now you can enter/change the values and click "**OK**" to confirm.

4   Start the web browser, e.g. Internet Explorer.

5   Now enter the same address, e.g."**192.168.253.1**" in the address field of your browser. The Fieldgate FXA 720 password window is displayed.

12.2 Changing the Internet address (Windows NT)

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

1 Right-click "**Network ‹ Properties**"
   Select the tab for "**Protocols**".

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2 Now enter/change the values and click "**OK**" to confirm.
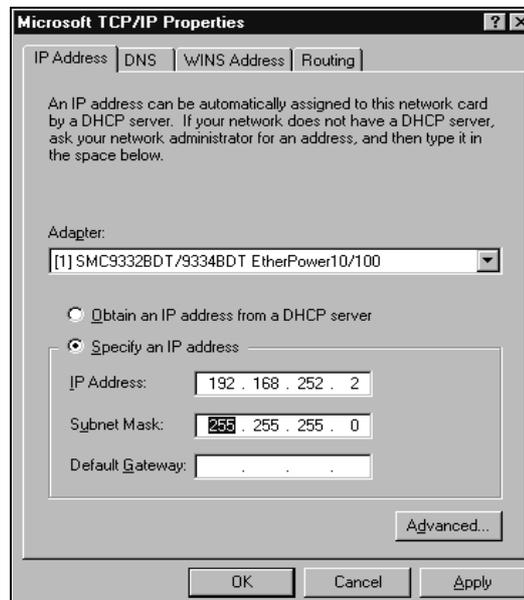
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3 Enter "**192.168.252.1**" in the address field of your browser. The Fieldgate The Fieldgate FXA 720 password window is displayed. .

12.3   Troubleshooting on no connection

1   Is the Link LED lit on the Fieldgate?
    − Yes, proceed with point 2
    − No, check the cable or connection to Fieldgate and PC/Network

2   Is the Link LED of the PC network card lit?
    − Yes, proceed with point 3
    − No, check the cable or connection to Fieldgate and PC/Network

3   Open the DOS prompt "**Start** ‹ **Run** ‹ **cmd** "

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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-address 192.168.254.1).
    − No. There is no connection to the Fieldgate.

5   Check if Fieldgate's IP and Subnet mask are in the same network as your PC:
    − No. Reconfigure the gateway address.

12.4 XML data elements

In preparation.

13 Technical Data

The following summary provides you with the most important technical data:

- Supply voltage: +24V DC (direct current)

- Supply voltage tolerance: ±10% (incl. ripple)

- Typical current consumption during
  operation: 0.6A (depending on operating mode)

- Start-up current: 3A

- Dimensions (W x H x D):   111 x 135 x 111 (in mm)

- Mounting: TS35 DIN carrier rail (EN 50022)

- Weight (approx.):   0.9 kg

- Protection class: III

- Degree of protection: IP 20

- Degree of contamination: 1

- Ambient temperature during operation: 0°C to 55°C

- Ambient temperature for storage: -20°C to 70°C

- Relative air humidity: max. 90% at +25°C (non-condensing)

- Mechanical resistance: Vibration (IEC 60068-2-6)
  $10 =\leq f \leq 57$ Hz: 0.075 mm
  $57 =\leq f \leq 150$ Hz:1.0 g
  Shock (IEC 60068-2-29) 15 g, 11 ms

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