



Level



Pressure



Flow



Temperature



Liquid  
Analysis



Registration



Systems  
Components



Services



Solutions

## Technical Information

# Fieldgate FXA720

Ethernet gateway with integrated Web server  
for communication with PROFIBUS devices



### Application

Fieldgate FXA720 is an Ethernet/PROFIBUS DP gateway with integrated Web server. It may be equipped with up to three PROFIBUS DP ports.

Fieldgate FXA720 is suitable for several applications:

- Inventory control
- Remote monitoring and device diagnosis
- Plant access point

For inventory control, remote monitoring and device diagnosis, the connected devices can be viewed with a Web browser: limit values can be set by the user. In pass through mode, Fieldgate FXA720 acts as a simple PROFIBUS DP gateway for host applications.

### Features and Benefits

- Quick set-up via Web browser
  - No configuration tool necessary
- Communication via Internet
  - Worldwide access to sensor data
- User Management
  - Limits access to authorised persons
- Integrated Web server
  - Values available to any Web browser
- Alarming and event messaging
  - E-mail about device status
- Data offered in HTML and XML format
  - Seamless data integration into MS Office, P View and FieldCare
- ComMDTM supplied
  - Simple integration into FDT frame applications, e.g. FieldCare
- Monitoring via OPC
  - OPC server can be supplied.

## Function and System Design

### Function

Fieldgate FXA720 is an Ethernet/PROFIBUS gateway with integrated Web server that can be used as:

- a pass-through interface within a PROFIBUS monitoring and control system
- a plant access point for device diagnostics and maintenance
- a remote data acquisition module for PROFIBUS devices connected to its output ports

It connects host systems to PROFIBUS DP networks via Ethernet and can be equipped with up to three PROFIBUS DP channels, each giving access to up to 125 PROFIBUS DP devices.

Within a control system, Fieldgate ensures transparent vertical communication by acting as a simple pass-through gateway. A ComMDTM allows it to be integrated into a FDT frame application such as FieldCare. For Web applications, the unit contains a Web server that generates HTML pages for viewing in a standard internet Web browser. It also offers XML data for e.g. Office applications. An optional PROFIBUS OPC server facilitates data exchange with HMI/SCADA applications such as ControlCare P View or with PROFIBUS devices.

### System design Network applications

In this application, Fieldgate FXA720 provides the connection between host applications running on Ethernet and PROFIBUS devices connected to a PROFIBUS DP or PROFIBUS PA network.

Examples of applications running on Ethernet are:

- HMI/SCADA programs, e.g. ControlCare P View
- Asset Management tools, e.g. FieldCare
- Configuration tools, e.g. FieldCare
- Microsoft® Office and ERP applications

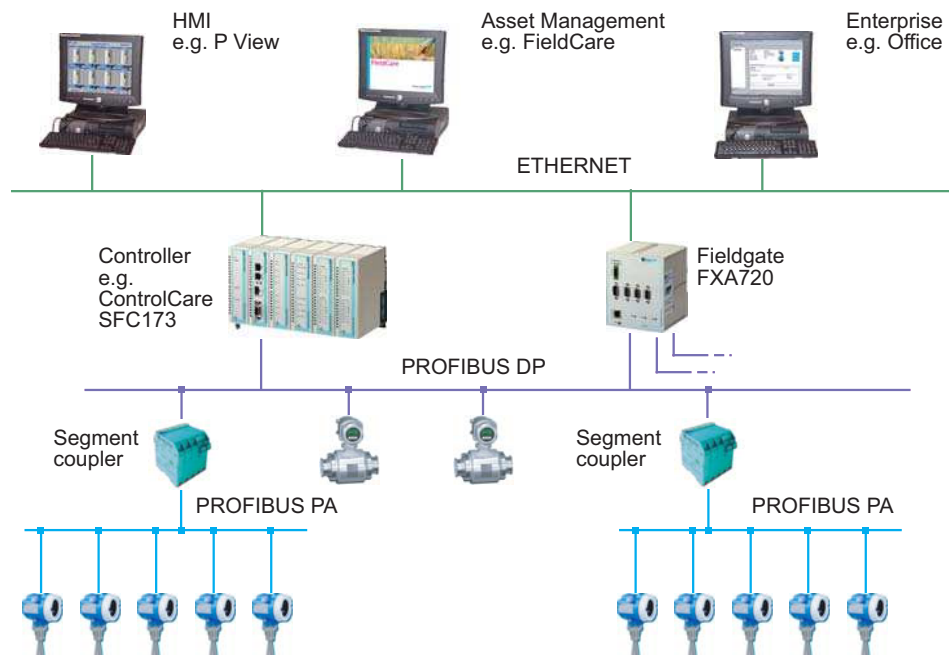


Fig. 1: Transparent communication in a PROFIBUS Network

**Web-based applications**

In this application Fieldgate works together with a standard Web browser and related technologies. The devices to be monitored or configured are connected to the Fieldgate FXA720 via max. three PROFIBUS DP channels, to which PROFIBUS DP devices can be connected directly. PROFIBUS PA devices are connected to the DP segment via a segment coupler.

The remote connection is made either by:

- Ethernet port/Remote wireless LAN access points
- Ethernet port/Internet

The following applications may be running on the monitoring station:

- Microsoft® Office applications (on-line data acquisition and display)
- Fieldgate Viewer (data acquisition and simple visualization)
- ControlCare P View (SCADA application with trends and historian)
- FieldCare (Asset Management, configuration) or other configuration tool

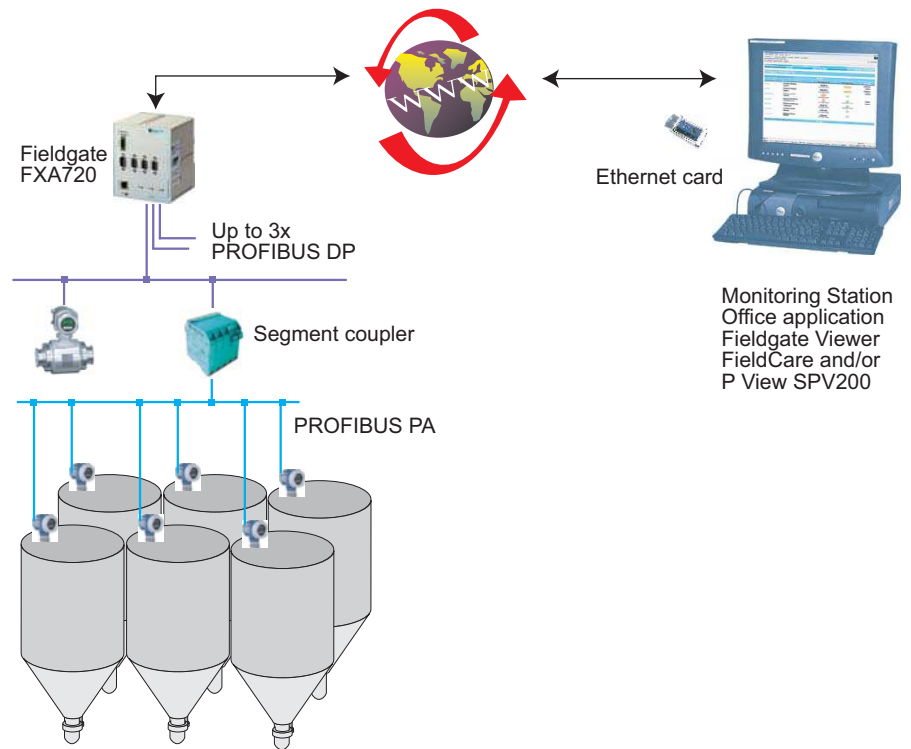


Fig 2: Remote monitoring via Ethernet

# Input

## PROFIBUS DP Input

<b>Channels</b>	One, two or three PROFIBUS DP input channels (RS-485), depending upon version.	
<b>Communication type</b>	PROFIBUS DP/V1, Master Class II	
<b>Profile type:</b>	Profile 3.0 for PROFIBUS PA devices The live list and scan functions are designed to work for PROFIBUS Profile 3.0 devices. Depending upon the device, Profile 2.0 devices may work correctly, but no guarantee can be given	
<b>Transmission rate</b>	Selectable for Web browser:	9.6 kbit/s, 19.2 kbit/s, 45.45 kbit/s, 93.75 kbit/s, 187.5 kbit/s, 500 kbit/s, 750 kbit/s, 1.5 Mbit/s, 3 Mbit/s, 6 Mbit/s, 12 Mbit/s
<b>Galvanic isolation</b>	Up to 500 VDC	
<b>Connector</b>	9-pin female D-sub connector with 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

<b>Cable</b>	Standard RS-485 cable
<b>Cable length</b>	Max. length dependent upon transmission rate:

Transmission rate (kbit/s)	9.6 – 93.75	187.5	500	750	1500	≥ 3000
Max. length (m)	1200	1000	400	300	200	100

Cable length can be increased by the use of max. three repeaters

<b>No. of devices</b>	Physical:	Max. 31 PROFIBUS DP devices per channel, Max. 125 PROFIBUS DP devices if repeaters are used
	Logical	Max. 125 PROFIBUS DP devices

<b>Network topology</b>	In accordance with the recommendations of the PROFIBUS DP specification, see also Operating Instructions BA 034S/04/en. <ul style="list-style-type: none"> <li>■ PROFIBUS PA devices are integrated via segment couplers</li> <li>■ By using the appropriate certified network components, it is possible to operate both PROFIBUS DP and PROFIBUS PA devices in explosion hazardous areas.</li> </ul>
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## Output

### Ethernet Output

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<b>Communication type</b>	10Base-T/100Base-TX
<b>Transmission rate</b>	10 Mbps/s and 100 Mbps/s with automatic recognition
<b>Connector</b>	RJ45 male connector
<b>Cable</b>	Twisted pair category 5 cable. <ul style="list-style-type: none"><li>▪ Use a crossover cable if Fieldgate is to be connected directly to a Ethernet NIC card</li><li>▪ Use a straight through cable if the connection is to be made via a hub or switch</li></ul>
<b>Cable length</b>	In accordance with Ethernet specifications

### Web Server Output

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<b>Access</b>	Via standard Web browser, e.g. Internet Explorer, Netscape etc.
<b>Security</b>	Password protected with user roles executive, maintenance and administrator, each with specific access rights
<b>Main pages</b>	HTML pages with possibility of export as XML document <ul style="list-style-type: none"><li>▪ Overview of measured values and status from PROFIBUS DP networks connected to Web server</li><li>▪ Live list of devices from PROFIBUS DP networks connected to Web server</li></ul>
<b>Functionality</b>	Security setup, Network setup, PROFIBUS setup (Web server connections), Localisation, HH, H, L, LL limit values with corresponding alarming (Web server values), Event monitoring, e-mail service (Web server values)

## Power Supply

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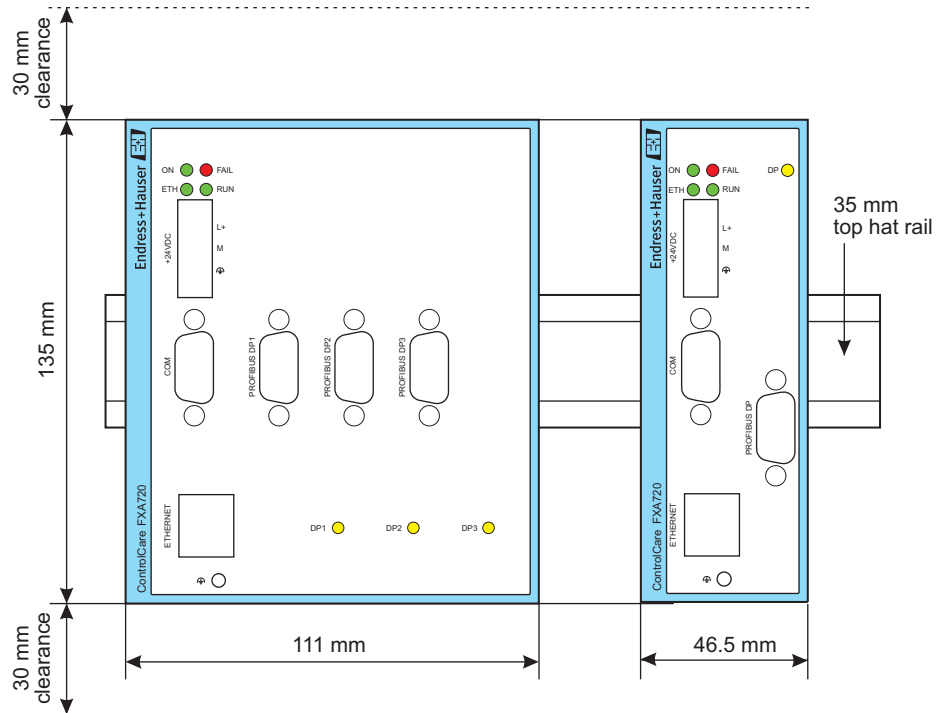
<b>Electrical connection</b>	Via female power supply socket on front panel, Supplied with male power connector for wires of cross-section 0.75 to 1.5 mm <sup>2</sup> Grounding via socket to protective ground with wire of cross-section 1.5 mm <sup>2</sup> Additional grounding screw on front panel for use in areas with high electromagnetic interference
<b>Power supply</b>	24 VDC ± 10%, including residual ripple
<b>Current consumption</b>	0.6 A, depending upon load
<b>Start-up current</b>	Max. 3 A
<b>Fuse</b>	Internal 30 V safety fuse, replaceable by manufacturer only

# Operating Conditions

## Installation

### Installation instructions

Location: Control cabinet or protective outdoor enclosure not mounted in direct sunlight.  
 Mounting: TS35 DIN top hat rails (EN 50022)  
 Orientation: Vertical with ventilating ducts at the top and bottom of the unit  
 Ventilation: The device is convection-cooled.  
 A ventilation space of at least 30 mm above and below the device is required.



## Environment

<b>Mounting location</b>	Cabinet or protective housing	
<b>Ambient temperature range</b>	-0° C to +55° C	
<b>Storage temperature</b>	-20° C to +70° C	
<b>Relative air humidity</b>	max. 90% at +25°C (non-condensing)	
<b>Vibration resistance</b>	EN 60068-2-6:	10 Hz ≤ f ≤ 57 Hz: 0.075 mm 57 Hz ≤ f ≤ 150 Hz: 1.0 g
<b>Shock resistance</b>	EN 60068-2-27	15 g, 11 ms
<b>Electromagnetic compatibility</b>	This device complies with the requirements of the EC Directives 89/336/EEC "Electromagnetic Compatibility" (EMC directive).	
	Emission:	EN 50081-2:1993 Generic Emission Standard (industrial environments) EN 50022:1998 Class A (ITE Product Standard) EN 50011:1998 Group 1 Class A (ISM Product Standard)
	Immunity:	EN 61000-6-2:1999 Generic Immunity Standard (industrial environments)

## Mechanical Construction

<b>Dimensions</b>	(W x H x D): 3-port version 111 mm x 135 mm x 111 mm 1-port version 46.5 mm x 135 mm x 111 mm
<b>Weight</b>	3-port version. 0.9 kg 1-port version 0.4 kg
<b>Material</b>	Housing: ABS Front panel: Aluminium with protective polycarbonate foil Colour: light grey, RAL 7035 with blue
<b>Protection class</b>	III
<b>Degree of protection</b>	IP 20
<b>Degree of contamination</b>	1

## Operability

<b>Display elements</b>	LEDs PWR (green) ETH (green) RUN FAIL DP1, DP2, DP3 (green)	Power supply status Ethernet communication For application-specific purposes, off by default. For application-specific purposes, off by default (reboot). Token LEDs of the PROFIBUS Master Normally off for pass-through and remote monitoring unless bus has not been connected or is defective.
<b>Device address</b>	Default address 192.168.253.1, must be changed on commissioning for safety reasons	
<b>Remote operation</b>	Fieldgate FXA720 is supplied with a PROFIBUS driver that can be installed on the workstation for pass-through connection to a PROFIBUS network. The general software requirements are as follows:	
	Operating system:	Windows 2000, SP 1 or higher Windows XP, Professional
	Web browser:	MS Internet Explorer, > 5.0 with current security updates Netscape Navigator, > 4.7 with current security updates Mozilla Firefox, ≥ 1.0 with current security updates
	Remote configuration	FieldCare, Version ≥ 1.0
	Visualisation	Fieldgate Viewer, Version ≥ 1.0 ControlCare P View, Version ≥ 1.0

Refresh		Endress+Hauser		
Overview of Selected Devices	Switch to Specialist Mode	Information & Configuration		
19.06.2007 09:42:37 (UTC+0)	Live List	XML Export		
FXA720 Overview				
56   Next Channel 1				
56 / PIC 100 CERABAR S Endress+Hauser OK				
Point Name	Description	Current Value	Limit	Range
FB0011_1k_input_analog	Pressure 100	OK 0.978458 bar 19.06.2007 09:10:15	III 19.06.2007 09:42:37	Min: 0.9 bar Max: 1.0 bar
TB0011_1k_pressure	Primary Value	OK 0.978458 19.06.2007 09:10:15	OK 19.06.2007 09:42:37	Min: Max:
19.06.2007 09:42:37 (UTC+0)			Top of page	

Fig. 3: Device overview page

## Ordering information

### Product Structure

Fieldgate FXA720	
<b>No. of Channels</b>	
1	1x PROFIBUS port
2	2x PROFIBUS ports
3	3x PROFIBUS ports
4	1x PROFIBUS port, small housing
9	Special version
<b>Power Supply</b>	
E	24 VDC ( $\pm 10\%$ )
Y	Special version
<b>Modem Interface</b>	
1	Ethernet 100Base-Tx/10Base-T
9	Special version
<b>DAT Module</b>	
A	Without DAT module
Y	Special version
FXA 720-	<b>Product Designation</b>

## Documentation

### Fieldgate FXA720

- |  |  |
|--|--|
| <input type="checkbox"/> Fieldgate FXA720<br>Operating Instructions BA030S/04/en | <input type="checkbox"/> Fieldgate Viewer SPV10<br>Innovation Brochure IN001S/04/en                    |
| <input type="checkbox"/> Fieldgate Solutions<br>Innovation Brochure IN005F/00/en | <input type="checkbox"/> PROFIBUS DP/PA Installation Guidelines<br>Operating Instructions BA034S/04/en |

## Certificates and Approvals

### CE Mark

In attaching the CE Mark, Endress+Hauser confirms that Fieldgate FXA 720 conforms to all relevant EU directives.

### FCC Compliance

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.

### International Headquarters

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People for Process Automation