

Technical Information

Field Xpert SFX350, SFX370

Industrial PDA for commissioning, monitoring and maintenance



Device configurator for HART and FOUNDATION fieldbus devices in Ex and Non-Ex areas

Application

Field Xpert is an industrial PDA with integrated touchscreen for commissioning and maintaining field devices in explosion hazardous and safe areas. It allows efficient configuration of FOUNDATION fieldbus, HART 5/6/7 and WirelessHART devices via Bluetooth and/or Wifi interfaces. A HART or FOUNDATION fieldbus Bluetooth modem allows direct connection with HART or FOUNDATION fieldbus devices, a Wifi interface connects to a HART or FOUNDATION fieldbus network via a corresponding gateway.

Features and benefits

Field Xpert simplifies and optimizes commissioning and maintenance processes:

- Simple device access, optimized device configuration, adaptable configuration templates and clear configuration reports save time during commissioning
- Explicit device documentation saves time during device exchange
- Seamless integration of calibration data into calibration management solutions saves time and increases the quality of device calibrations
- Transparent maintenance, diagnosis and trouble-shooting information increases the safety and availability of the plant
- High ingress protection and explosion protection allows Field Xpert to be used in all industries
- High resolution 3.5" touchscreen (VGA) makes operation simple
- Open, vendor-independent operating system allows additional Asset Management applications to be run
- Cell telephone, RFID, barcode scanner and camera as standard or options increase Field Xpert asset management use cases

Field Xpert SFX370
(Version for explosion-hazardous area)

Function and System Design

Function

Field Xpert is a powerful, compact industrial PDA based on the Windows Embedded Handheld operating system and offering integrated WLAN, USB, Bluetooth and infrared interfaces. Bluetooth and WLAN allow it to communicate with HART or FOUNDATION fieldbus field devices via a modem or gateway. Thanks to its numerous Ex approvals, Field Xpert also fulfils the requirements of the process industry with regard to its use within safe and explosion hazardous areas. Details of the connection possibilities are to be found in the Chapter “Wiring”.

As soon as the Device Xpert software running on Field Xpert establishes communication with a field device, it can be configured. Dependent upon the system architecture, either a single device is displayed, e.g. in HART point-to-point applications, or all devices on a segment, e.g. in a FOUNDATION fieldbus application.

System design

Field Xpert is the mobile platform for Endress+Hauser Plant Asset Management applications:

- Device Xpert software covers all aspects of efficient device configuration and documentation.
- Cal Xpert is a mobile software solution for calibration management which optimizes the efficiency and quality of calibration and supports the quality standards for paperless calibration management
- Flexible design, e.g. extension of functionality through RFID head modules, provides the basis for efficient and comprehensive device management.
- Maintenance procedures are optimally supported
 - Access to extended device diagnostics as well as interactive diagnostic categories, possible causes and remedies
 - Remote connection to maintenance experts via WLAN and telephone

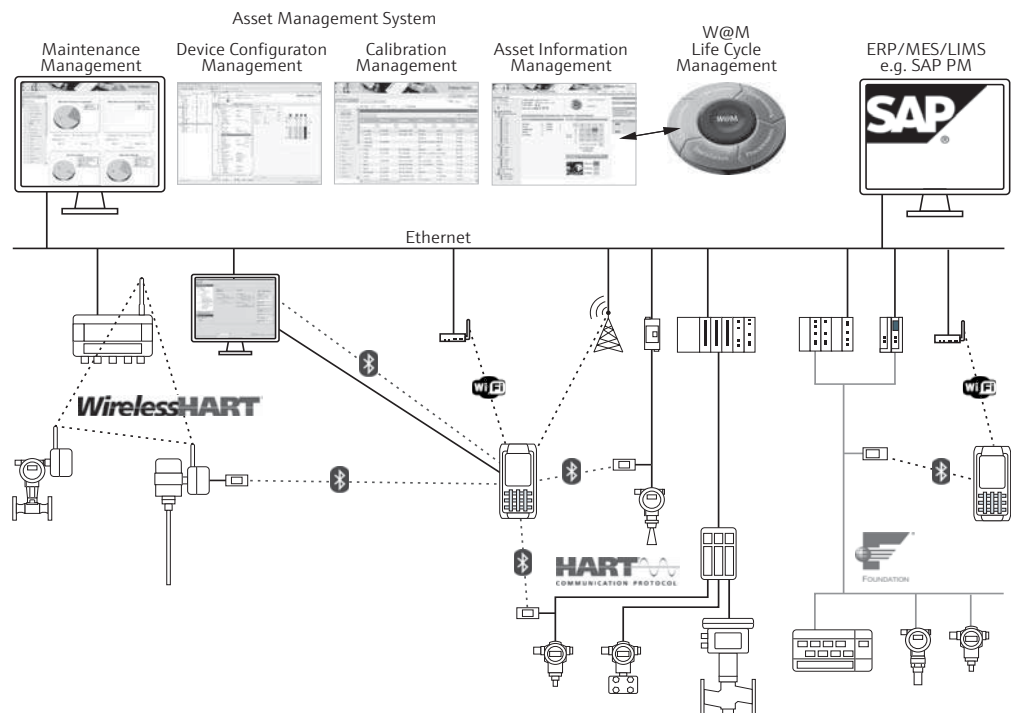


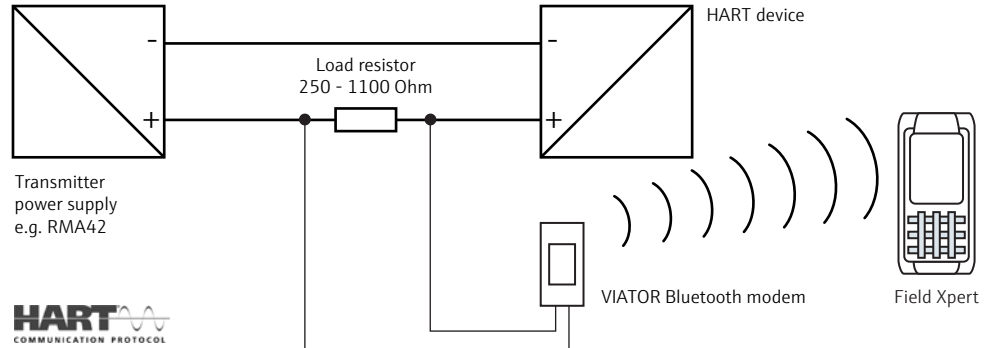
Fig. 1: System environment of a Field Xpert

Electrical Connection

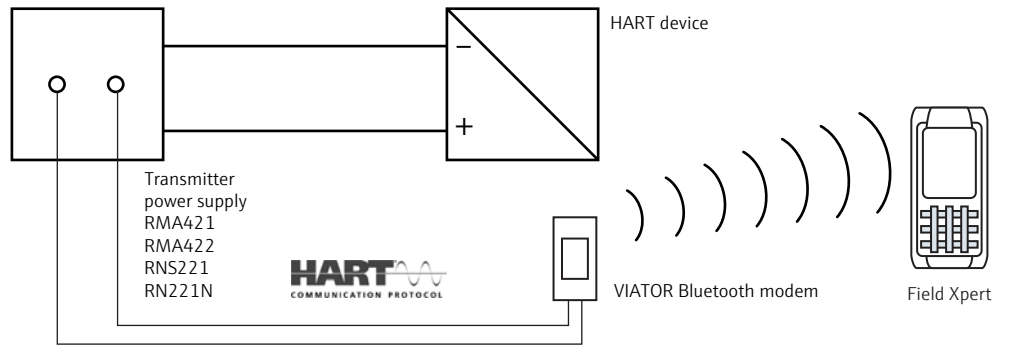
Connection to HART devices

VIATOR Bluetooth modem

Connection via a load resistor

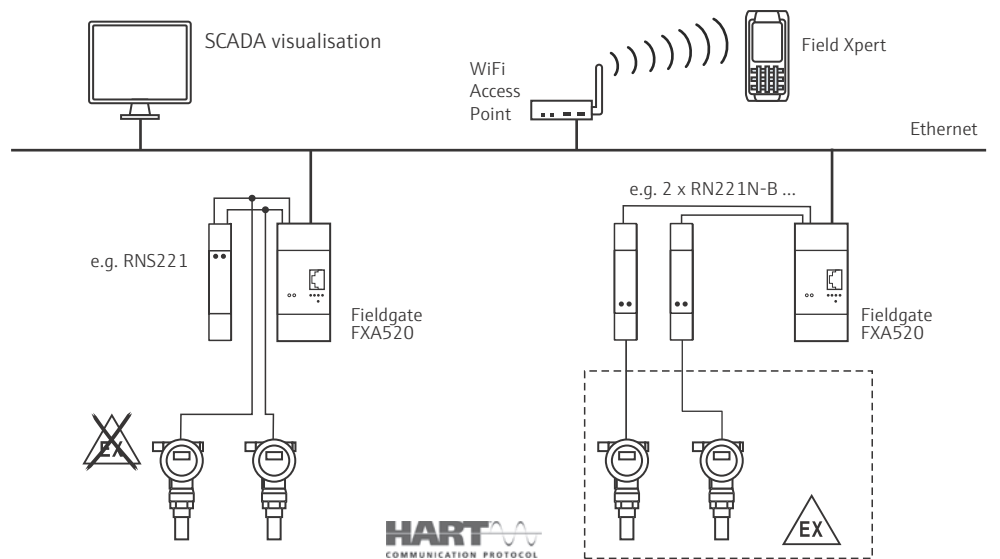


Connection via a HART communication sockets

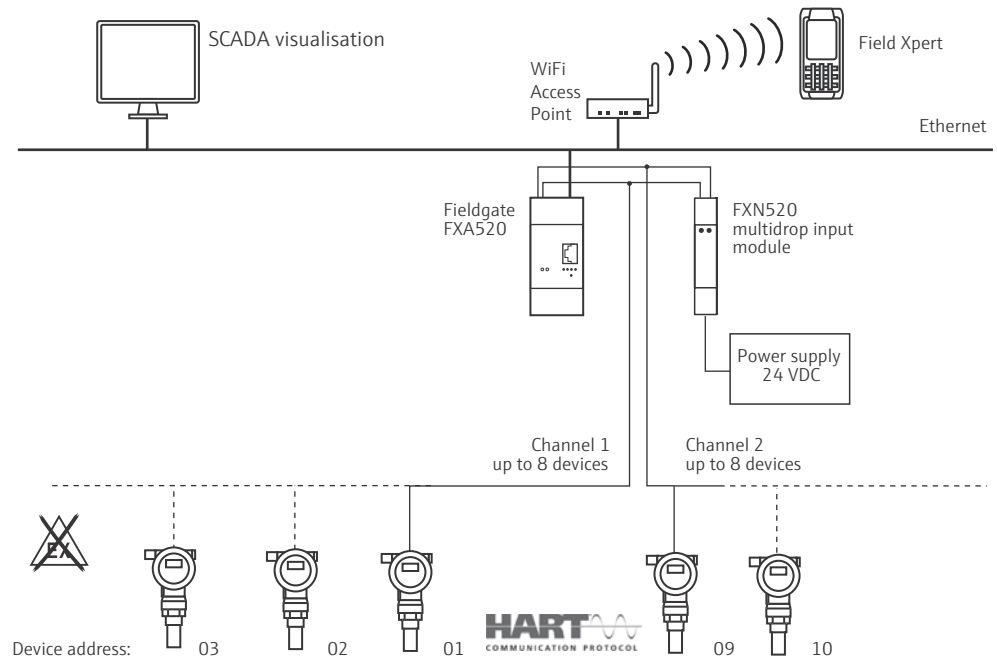


Wifi connection

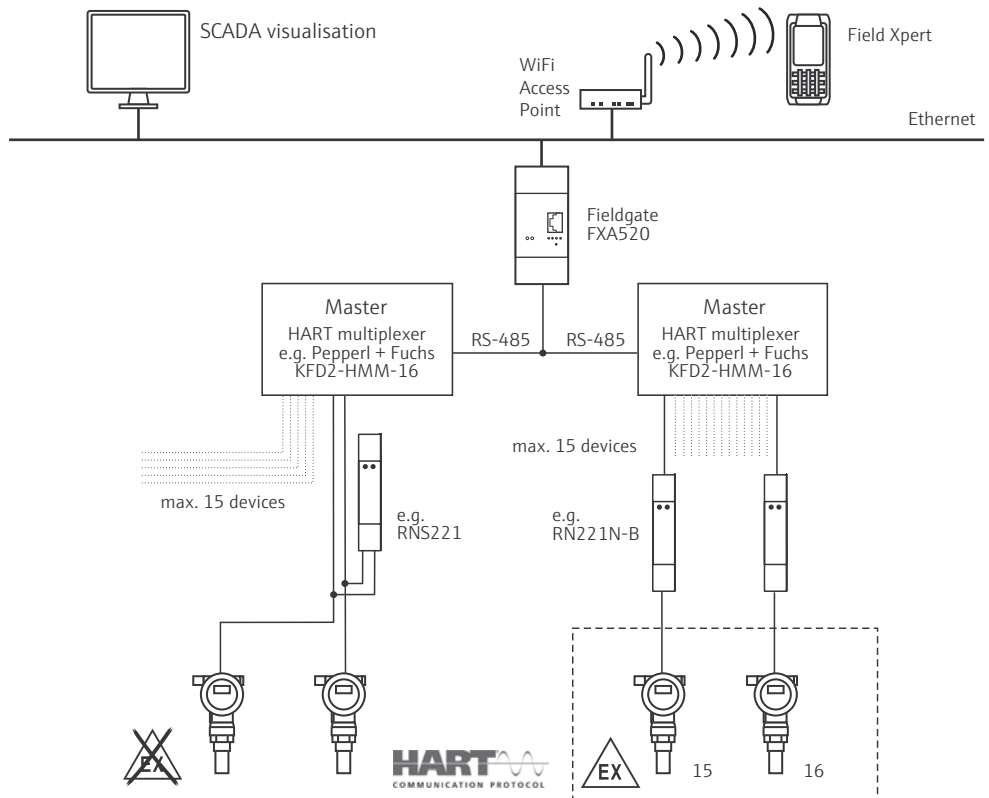
Point-to-point connection via Fieldgate FXA520



Multidrop connection via Fieldgate FXA520



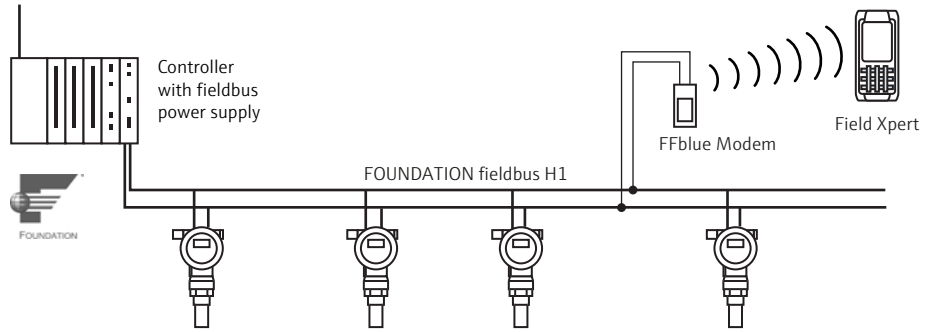
Multiplexer connection via Fieldgate FXA520



Connection to FOUNDATION fieldbus devices

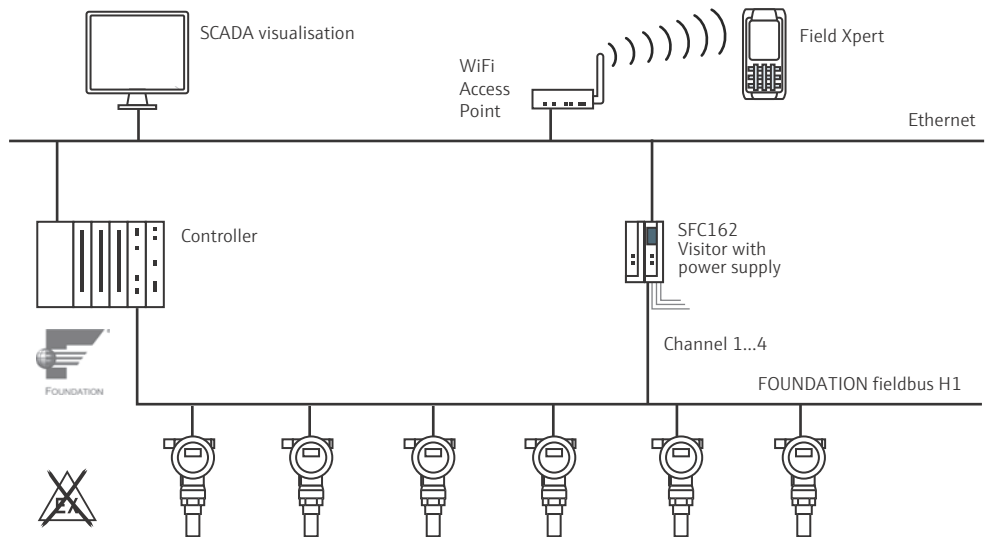
FFblue Bluetooth modem

Direct connection via the bus



Wifi connection

Connection via a SFC162 Visitor



Communication

Standard interfaces

	SFX350	SFX370
USB	Full Speed 2.0 Client + Host	Full Speed 2.0 Client
Wireless LAN	<ul style="list-style-type: none"> ▪ IEEE802.11 a/b/g/n Dual Band (2.4/5 GHz) WLAN ▪ Security: WiFi Certified for WPA2 and WPA ▪ WAPI Certified ▪ Authentication: 802.1x ▪ Cisco Compatibility: CCXv4 ▪ Encryption: WEP (64 or 128 bit), AES, TKIP 	
Bluetooth	Class II Version 2.1+EDR	
Infrared	IrDA Infrared Interface	

Options

	SFX350	SFX370
Wireless WAN	3G WWAN for voice and data communication: <ul style="list-style-type: none"> ▪ UMTS/HSDPA (7.2 Mbps D/L, 5.76 Mbps U/L peak); Frequencies 800, 850, 900, 1900, 2100 MHz ▪ CDMA/EV-DO Rev A (3.1 Mbps D/L, 1.8 Mbps U/L peak); Frequencies: 800, 1900 MHz ▪ GSM, GPRS; Frequencies: 850, 900, 1800, 1900 MHz 	3G WWAN for data communication: <ul style="list-style-type: none"> ▪ UMTS/HSDPA/HSUPA (14.4 Mbps D/L, 5.76 Mbps U/L peak); Frequencies 850, 900, 1800, 1900 MHz ▪ CDMA/EV-DO Rev A (3.1 Mbps D/L, 1.8 Mbps U/L peak); Frequencies: 800, 850, 1900, 2100 MHz ▪ GSM, GPRS, EDGE; Frequencies: 850, 900, 1800, 1900 MHz
GPS	12-channel GPS	A-GPS

Power Supply

Battery

	SFX350	SFX370
Type	Removable, rechargeable Li-ion battery, compliant with IEEE 1725	
Designation	1000AB01	AM Ci70 -Ex
Voltage	3.7 V	
Capacity	4000 mAh	

Operating Conditions Environment

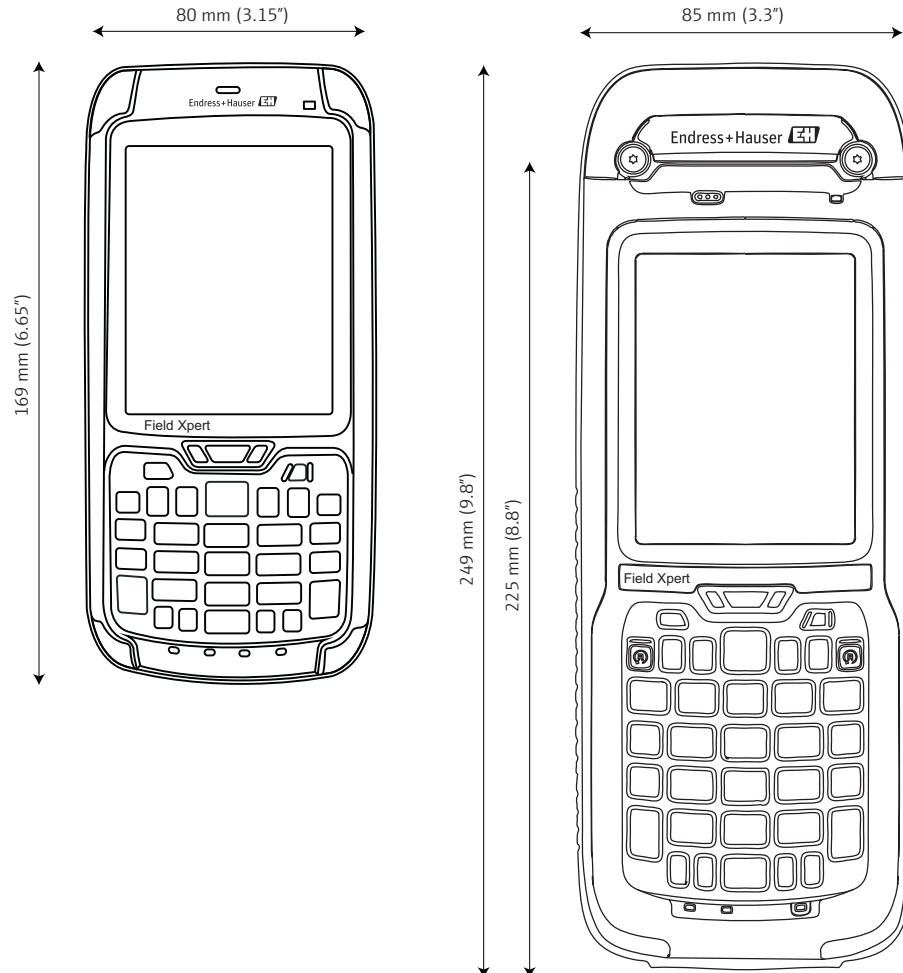
Ambient temperature range	SFX350	SFX370
	-20 °C to +60 °C (-4 °F to +140 °F)	-20 °C to +50 °C (-4 °F to +120 °F)
Storage temperature range	SFX350	SFX370
	-30 °C to +70 °C (-22 °F to +158 °F)	-20 °C to +60 °C (-4 °F to 140 °F)
Battery charging temperature range	SFX350	SFX370
	5 °C to +35 °C (41 °F to 95 °F)	
Relative humidity	SFX350	SFX370
	5 % to 95 %, non-condensing; applies to operation and storage	
Drop specification	SFX350	SFX370
	1.8m (6 ft) to concrete across operating temperature range according to MIL-STD 810G, 2.4 m (8ft) to concrete according to MIL-STD-810G, 2.000 (1m) tumbles according to IEC 60068-2-32 specification	1.2 m (4 ft) to concrete across operating temperature range according to MIL-STD-810G
Electrostatic discharge	SFX350	SFX370
	± 8 KV contact discharge, ± 15KV air discharge	
Electromagnetic Compatibility	SFX350	SFX370
	Interference conformance to <ul style="list-style-type: none"> ▪ EN 55022: 2006 + A1: 2007 ▪ EN 61000-3-2: 2006 ▪ EN 61000-3-3: 2008 Immunity conformance to <ul style="list-style-type: none"> ▪ EN 55024: 1998 + A1: 2001 + A2: 2003 	Interference conformance to <ul style="list-style-type: none"> ▪ EN 55022: 2006 + A1: 2007 Immunity conformance to <ul style="list-style-type: none"> ▪ EN 55024: 1998 + A1: 2001 + A2: 2003

Mechanical Construction

Dimensions

SFX350	SFX370
169 mm x 80 mm x 34 mm (6,65" x 3,15" x 1,34")	<ul style="list-style-type: none"> ■ Standard version 225 mm x 85 mm x 58 mm (8,8" x 3,3" x 2,3") ■ With optional head module 249 mm x 85 mm x 58 mm (9,8" x 3,3" x 2,3")

Front view



Weight	SFX350	SFX370
	approx. 450 g (1 lb) with batteries	approx. 950 g (2 lbs) with battery, without head module
Material	SFX350	SFX370
	Housing: polycarbonate Rubber lining: thermoplastic polyurethane (TPU)	
Ingress protection	SFX350	SFX370
	IP67, NEMA Type 4	IP65, NEMA Type 4
Explosion protection	SFX350	SFX370
	None	ATEX/IECEx - Intrinsically safe Ⓢ II 2G Ex ia IIC T4 Gb IP64 Ⓢ II 2D Ex ia IIIC T135°C Db IP6X Class I Zone 1 IIC T4 - Protection Method North America (USA): AEX ia IIC T4 Gb North America (Canada): AEX ia IIC T4 Gb Class II Zone 21 IIIC T135°C - Protection Method (USA): AEx ia IIIC T135°C Db

Operability

Hardware

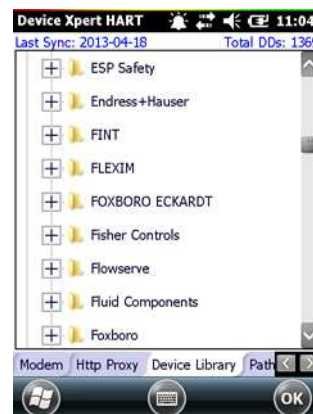
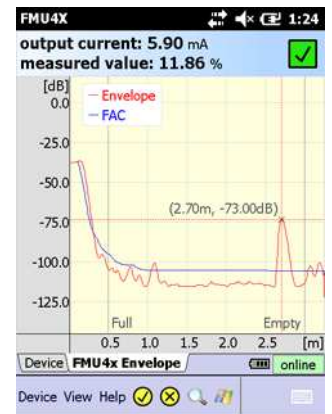
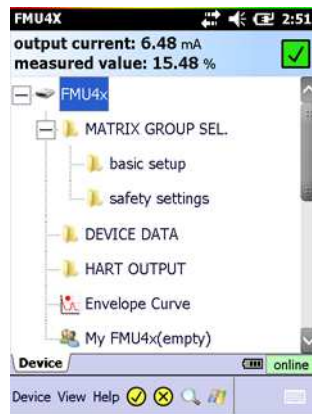
	SFX350	SFX370
Processor	OMAP Multi Core Processor 1GHz	
Memory	512 MB RAM, 1 GB Flash Memory, 4 GB Micro-SD card (up to 32 GB supported)	
Display	3.5" touchscreen display, VGA (640 x 480 pixels), 65.536 colors, ambient light sensor, LED backlight protected by Gorilla glass, automatic portrait/landscape screen rotation	
Keypad	Backlit numeric, laser etched hard key caps; alphanumeric input possible	
Audio	Loudspeaker, Bluetooth wireless head set support, VoIP audio support	
Scanner	2D imager, 1D laser scanner	see head modules
Head modules	None	1D laser scanner RFID HF, RFID LF
Camera	Optional 5 megapixel auto focus color camera with LED flash	None
Telephone	Optional	Via VoIP support (BT headset)

Software

	SFX350	SFX370
Operating system	Microsoft Windows Embedded Handheld 6.5.3, English or German, depending upon order	
Configuration software	Device Xpert HART, Device Xpert FOUNDATION fieldbus or Device Xpert HART and Device Xpert FOUNDATION fieldbus	
Standard software	Calendar, Contacts, E-Mail, SMS, Office Mobile (Word, Excel, Powerpoint), Calculator, Notes, Tasks, Internet Explorer, Picture&Videos, Windows Media, File Explorer, Remote Desktop Mobile	

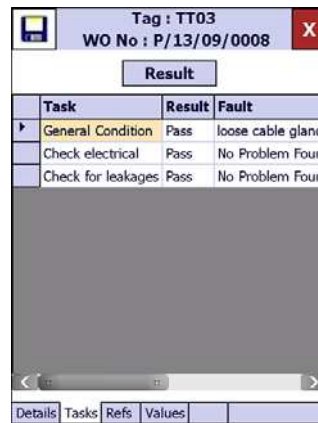
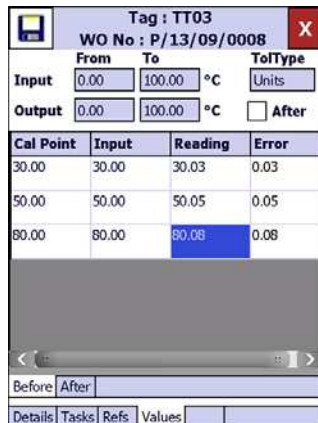
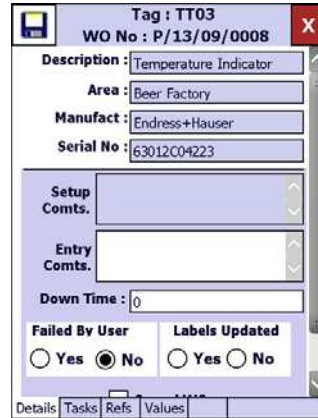
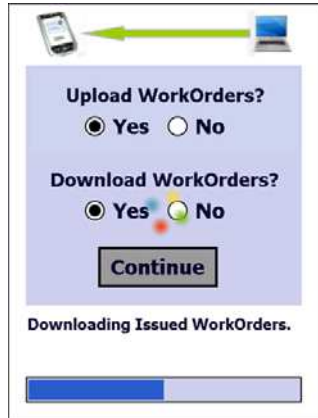
Device Xpert

Designed for commissioning and maintenance tasks, Device Xpert configuration software makes Field Xpert the perfect communication device for HART and FOUNDATION fieldbus. It fulfils the daily requirements of technicians working on site. Through the support of special device functions such as the envelope curve of Endress+Hauser time-of-flight level transmitters and automatic downloading of device descriptions (DDs) via Internet or WLAN, Device Xpert ensures flexible and efficient handling of work orders. Device Xpert supports Endress+Hauser's Fieldgate FXA520, allowing Ethernet communication with remote HART field devices.



Cal Xpert

Cal Xpert calibration management software is designed to support complete paperless calibration work flows. Users can upload issued work orders from a CompuCal calibration management application to the Field Xpert. Field Xpert can then be taken into the field and after the calibration has been made, the documents and/or calibration data can be checked and stored. After all work orders have been executed, the results can be uploaded to CompuCal again. From there it may be stored in Endress+Hauser's W@M database platform and made available to ERP systems, e.g. SAP PM.



Certificates and Approvals

CE Mark With the CE Mark, the manufacturer confirms that Field Xpert SFX350 and Field Xpert SFX370 conform to all relevant EU directives.

Hazardous area approval	SFX350	SFX370
	None	<ul style="list-style-type: none"> ▪ ATEX (Zone 1) IIC T4 ▪ ATEX (Zone 21) IIIC IP 64 ▪ IECEx (Zone 1) IIC T4 ▪ IECEx (Zone 21) IIIC IP 64 ▪ NEC Class I, Division 1, A-D T4 ▪ NEC Class II, Division 1, E-G T4 ▪ NEC Class III

Telecommunication approval	SFX350	SFX370
	FCC w/HAC, Industries Canada, CE, A-tick (AU), C-tick (NZ), NCC, OFTA, IDA, ICASA, POSTEL, NTC, ETA, SIRIM, ANATEL, 61 countries in total	FCC, CE

Electrical safety	SFX350	SFX370
	UL (DEMKO), cULus listed	

Ordering Information

Product structure

Details of the product structure can be found:

- in the product configurator on the Endress+Hauser internet site: www.endress.com → select country → Products → System components & recorders → Device configurator → Field Xpert SFX350/Field Xpert SFX370 → Product Page Function: Configure this product
- at your Endress+Hauser Sales Center: www.addresses.endress.com

Documentation

Field Xpert SFX350, SFX370	<input type="checkbox"/> Field Xpert SFX350, SFX370 Competence Brochure CP00014S/04/en	<input type="checkbox"/> Fieldgate FXA520 Operating Instructions BA00051S/04/en
	<input type="checkbox"/> Field Xpert SFX350, SFX370 Hardware Operating Instructions BA01202S/04/en	<input type="checkbox"/> Fieldgate SFC162 Operating Instructions BA00069S/04/en
	<input type="checkbox"/> Field Xpert SFX350, SFX370 Software Operating Instructions BA01211S/04/en	
Plant Asset Management	<input type="checkbox"/> Plant Asset Management Field of Activities FA00024S/04/en	
W@M	<input type="checkbox"/> W@M - Life Cycle Management Competence Brochure CP001Z/00/en	
CompuCal	<input type="checkbox"/> CompuCal Competence Brochure CP00012S/04/en	

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