

Technical Information

Field Xpert SMT70

Universal, high-performance tablet PC for device configuration



Application

The Field Xpert SMT70 tablet PC for device configuration enables mobile plant asset management in hazardous and non-hazardous areas. It is suitable for commissioning and maintenance staff to manage field instruments with a digital communication interface and to record progress. This tablet PC is designed as a complete solution and is an easy-to-use, touch-enabled tool which can be used to manage field instruments during their entire life cycle. It provides extensive, pre-installed driver libraries and offers access to the "Industrial Internet of Things" as well as to information and documentation during the entire life cycle of the device. Field Xpert SMT70 offers a modern software user interface and the option of online updates based on a secure Microsoft Windows 10 multi-functional environment.

Your benefits

- High-performance, robust tablet with large 11.6" display and a battery runtime of up to 14 hours.
- Touch-enabled device configuration software in 20 languages. Includes NAMUR NE 107 instrument diagnosis.
- Pre-installed device driver libraries for all of the important industrial protocols.
- Fast connection to devices with a single click thanks to automatic hardware detection.
- Integrated Heartbeat Verification incl. PDF documentation.
- Online application software update service offers new functionality and maximum security.
- Access to HART devices in PROFINET systems (ET200SP) with Fieldgate PAM SFG600





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About this document

Symbols used

Safety symbols

Symbol	Meaning
	DANGER! This symbol alerts you to a dangerous situation. Failure to avoid this situation will result in serious or fatal injury.
	WARNING! This symbol alerts you to a dangerous situation. Failure to avoid this situation can result in serious or fatal injury.
	CAUTION! This symbol alerts you to a dangerous situation. Failure to avoid this situation can result in minor or medium injury.
	NOTE! This symbol contains information on procedures and other facts which do not result in personal injury.

Symbols for certain types of information

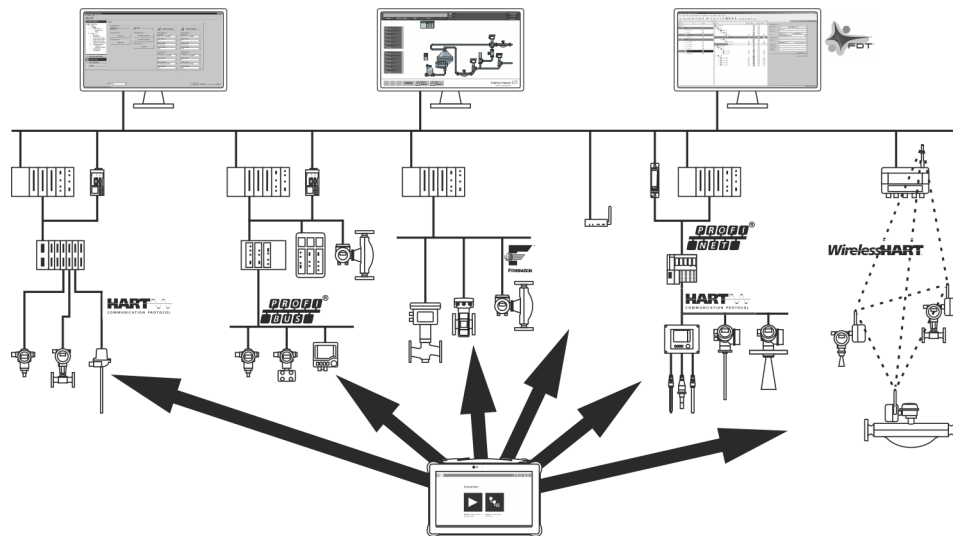
Symbol	Meaning
	Permitted Procedures, processes or actions that are permitted.
	Preferred Procedures, processes or actions that are preferred.
	Forbidden Procedures, processes or actions that are forbidden.
	Tip Indicates additional information.
	Reference to documentation.
	Reference to page.
	Reference to graphic.
	Visual inspection.

Function and system design

Function

The Field Xpert SMT70 tablet PC for universal device configuration supports protocols such as HART, PROFIBUS DP/PA, FOUNDATION Fieldbus, Modbus, and Endress+Hauser service protocols (CDI, ISS, IPC and PCP). The devices can be connected directly via a suitable interface e.g. a modem (point-to-point) or a bus system (point-to-bus). The Field Xpert software package is fast, easy and intuitive to use. The Field Xpert device library has more than 2,700 pre-installed device and communication drivers. They can be used to operate practically all HART and FOUNDATION Fieldbus devices (FieldComm Group libraries). Furthermore all Endress+Hauser field device drivers are installed. Further device drivers (DTMs) can be installed additionally. The generic HART DTM and PROFIBUS profile DTMs also enable operation of all the important basic functionality of the relevant field devices.

System design



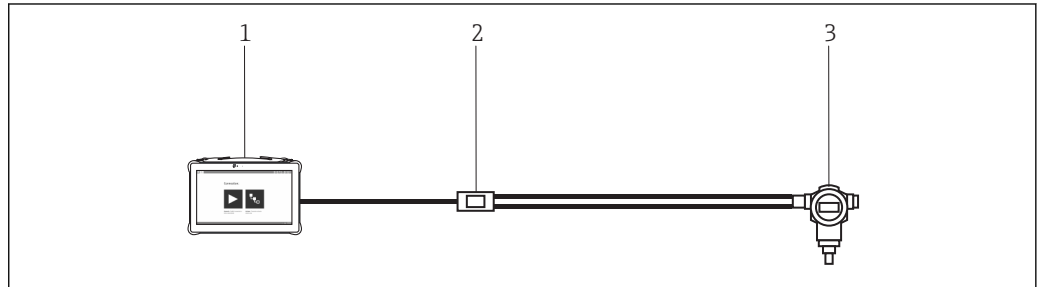
1 Network architecture

The following modems/interfaces are supported by the Field Xpert SMT70 tablet PC:

- HART
 - Commubox FXA195 (4 to 20 mA)
 - MACTek Bluetooth modem (4 to 20 mA)
 - Memograph RSG45 (4 to 20 mA)
 - MACTek USB modem (4 to 20 mA)
- HART via PROFINET together with Fieldgate PAM SFG600
- PROFIBUS
 - Softing PROFlusb
 - Softing PBpro USB
 - Fieldgate SFG500
- FOUNDATION Fieldbus
 - NI USB
 - Softing FFusb
- Modbus
 - Modbus serial
- WirelessHART
 - Wireless HART adapter SWA70
- Endress+Hauser service interfaces
 - Commubox FXA291
 - Commubox FXA193
 - TXU10 V2
 - TXU10 V1
 - CDI USB
 - CDI TCP/IP

HART point-to-point connection via Commubox FXA195

This diagram shows a HART point-to-point connection with an FXA195 USB/HART modem. If an FXA195 is connected to the computer, the Field Xpert SMT70 tablet PC can connect to the device automatically.

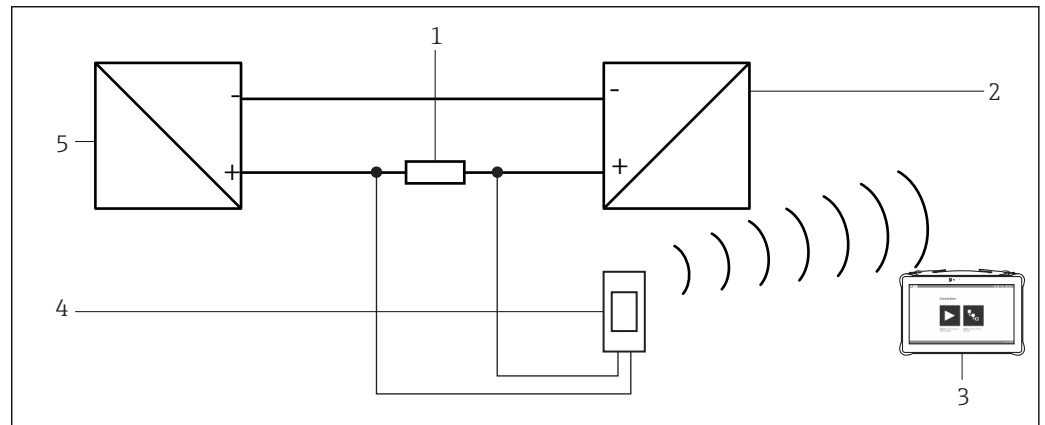


2 Point-to-point connection with a HART field device

- 1 Field Xpert SMT70 tablet PC
- 2 HART Commubox FXA195
- 3 Field device

To establish communication with the HART device, a resistor of at least 250 Ω must be provided in the circuit. The way in which this is done depends upon the system architecture and power source used. Please read the FXA195 manual carefully.

HART point-to-point connection via MACTek Bluetooth modem

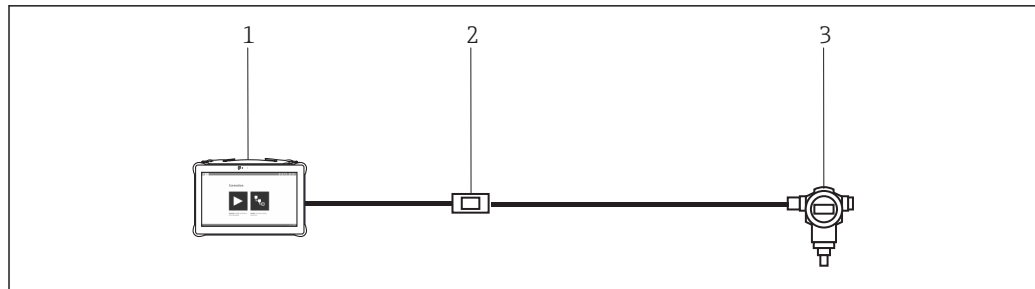


3 Point-to-point connection via a load resistor

- 1 Load resistor: 250 to 1 100 Ω
- 2 HART device
- 3 Field Xpert SMT70 tablet PC
- 4 VIATOR Bluetooth modem
- 5 Transmitter power supply unit

CDI point-to-point connection

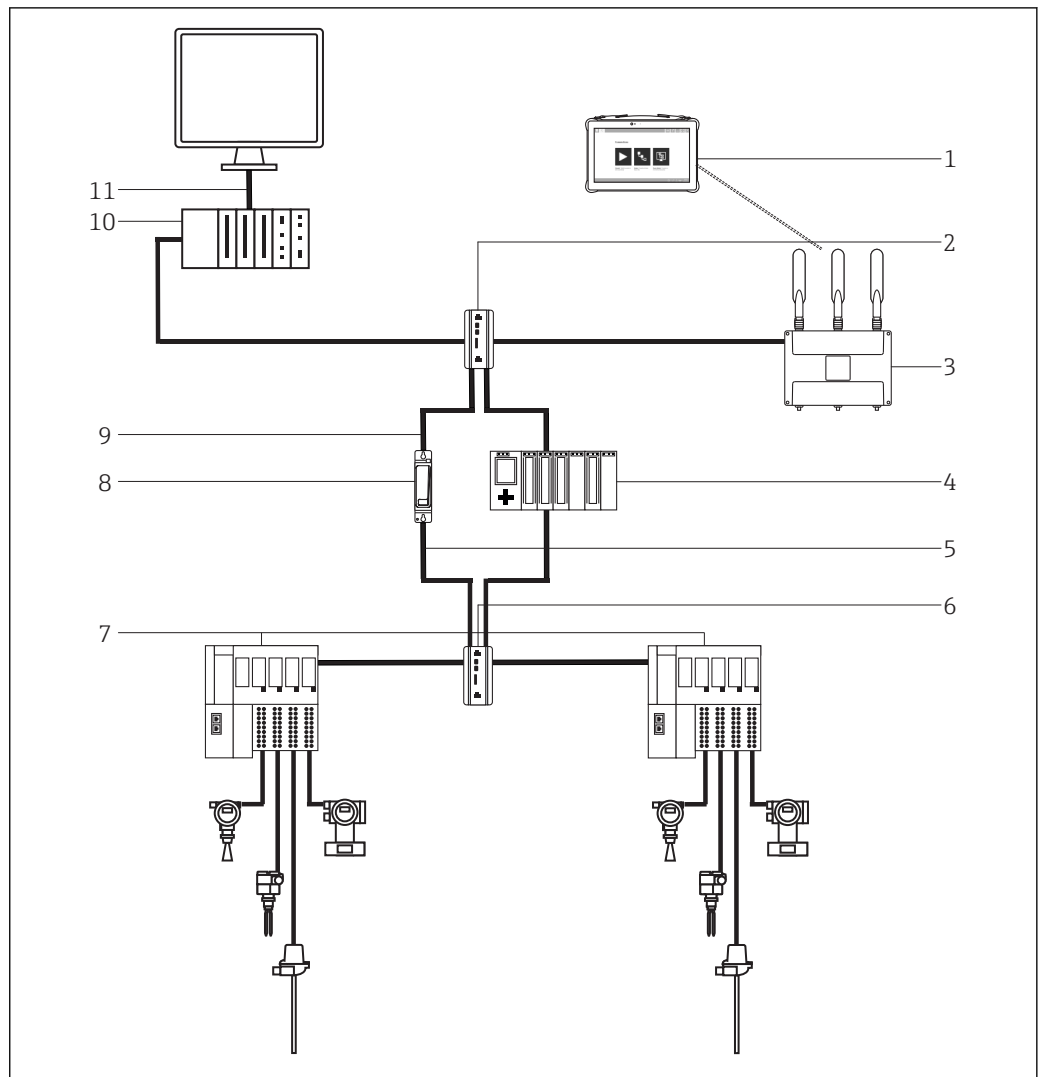
This diagram shows a CDI point-to-point connection with a Commubox FXA291 interface. If this Commubox is connected to the computer, the Field Xpert SMT70 tablet PC can connect to the device automatically.



4 CDI point-to-point connection with a field device

- 1 Field Xpert SMT70 tablet PC
- 2 Commubox FXA291 CDI
- 3 Field device with CDI interface

HART via PROFINET

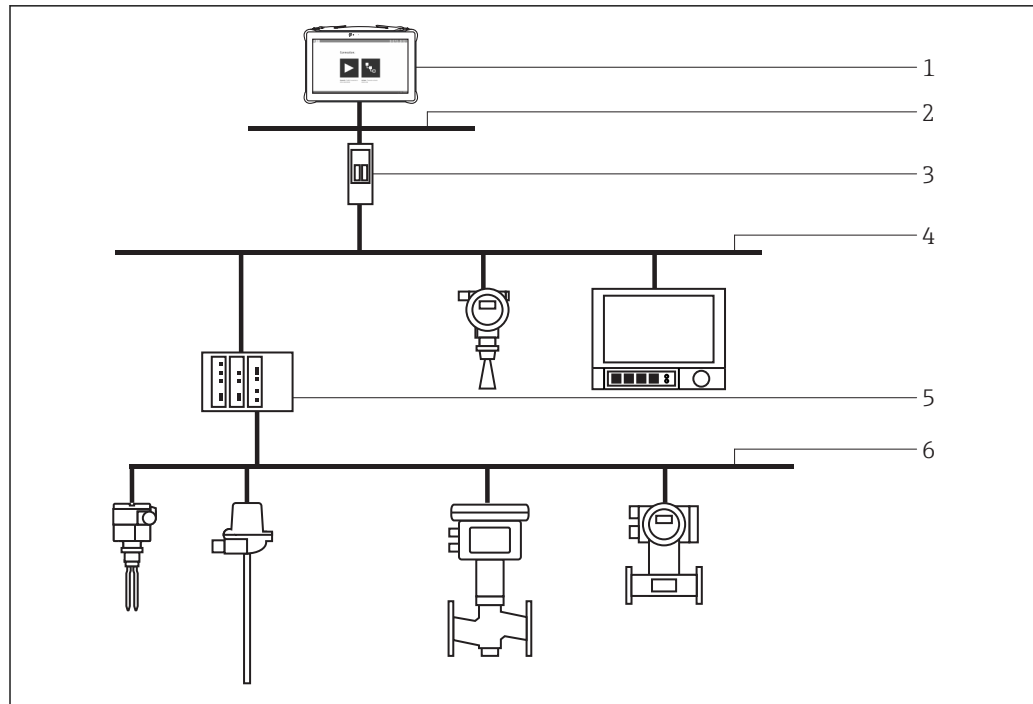


5 Network architecture

- 1 Field Xpert SMT70 tablet PC
- 2 Switch
- 3 Wireless router
- 4 PROFINET controller
- 5 PROFINET segment ETH1
- 6 PROFINET switch
- 7 Siemens ET200SP IM 155-6PN HF
- 8 Fieldgate PAM SFG600
- 9 Plant network PAM Client ETH2
- 10 Firewall
- 11 Office network

PROFIBUS point-to-bus connection

This diagram shows how the connection from PROFIBUS DP to PROFIBUS PA can be established using a Siemens DP/PA Link or a Pepperl+Fuchs SK3.



6 PROFIBUS point-to-bus connection via Fieldgate SFG500

- 1 Field Xpert SMT70 tablet PC
- 2 Ethernet
- 3 Fieldgate SFG500
- 4 PROFIBUS DP
- 5 Segment coupler
- 6 PROFIBUS PA

Communication and data processing

USB	2 x USB 3.0
Wireless LAN	Intel Wireless AC7260 802.11 a/b/g/n/ac, DUAL Band WLAN
Bluetooth	Bluetooth 4.0 BLE, Class 1
Wireless WAN + GPS	4G LTE WWAN + 12 channel GPS (optional)

Power supply

Supply voltage

Voltage	19 V
Current	3.42 A
Capacity	65 W

Battery

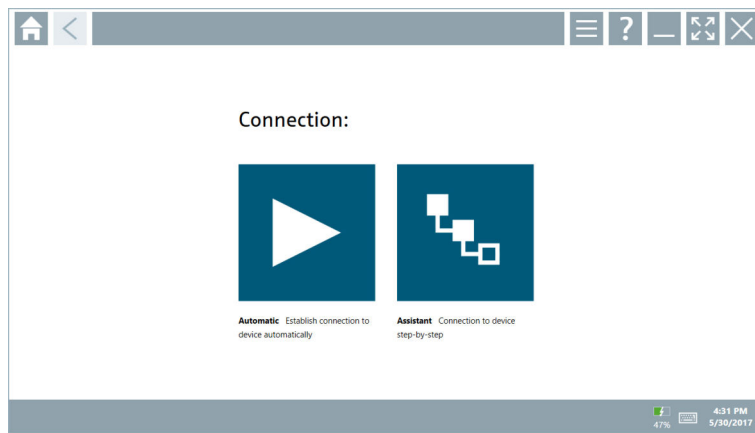
Replaceable, rechargeable lithium polymer battery

Type	R11AH	R11AH2
Voltage	11.1 V _{DC}	11.1 V _{DC}
Capacity	4 100 mAh (45 Wh)	7 800 mAh (86 Wh) (optional)
Battery life	Up to 7 h	Up to 14 h

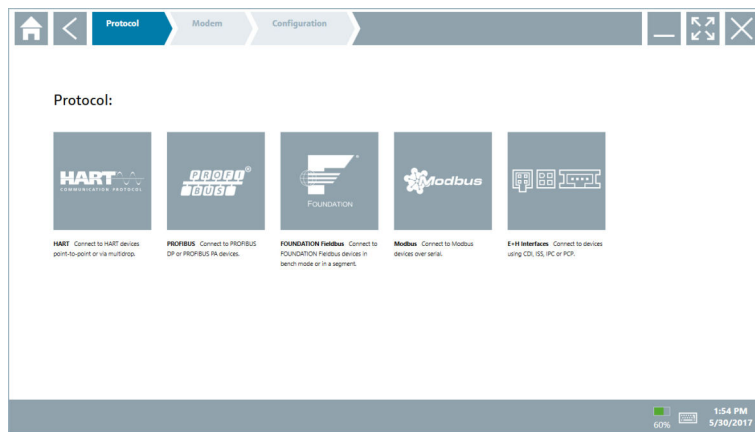
Performance characteristics

Hardware	CPU	Intel Core i5 processor 7300U 2.6 GHz Dual Core
	Storage	SO-DIMM DDR4, 8 192 MByte CFast 64 GByte MLC
	Connections	1x Ethernet PROFINET RJ45 (ETH1) 1x Ethernet PAM Client RJ45 (ETH2) 1x Ethernet service RJ45 (IF Option 2)

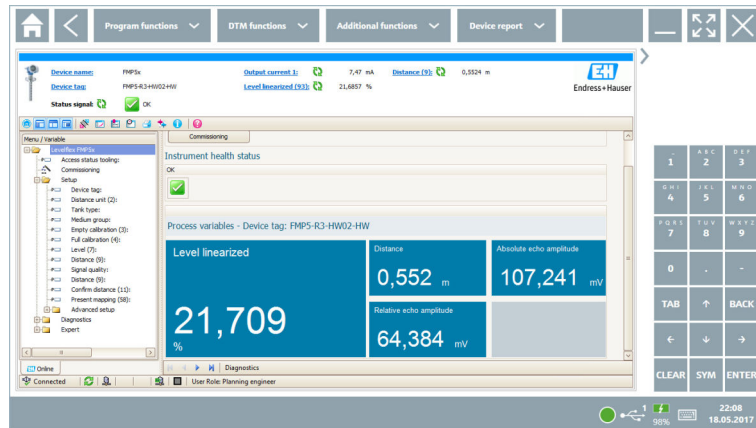
Software	Operating system	Windows 10 Pro (64 Bit)
	Configured software	Touch-enabled device configuration software optimized for Field Xpert
	Standard software	Standard configurable Windows graphical user interface with icons, short cuts etc.



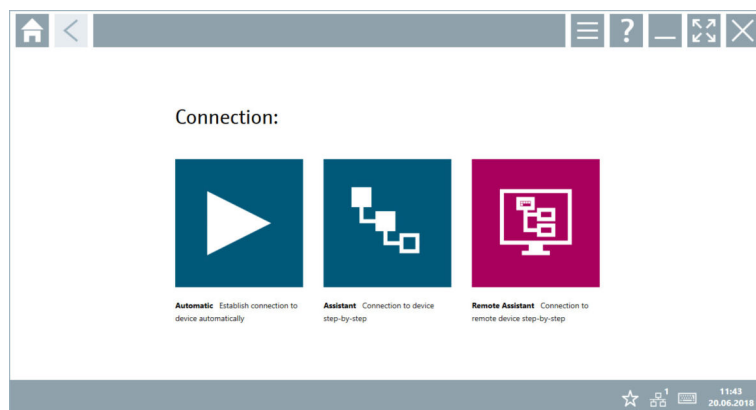
7 Start screen with one-click automatic scan button



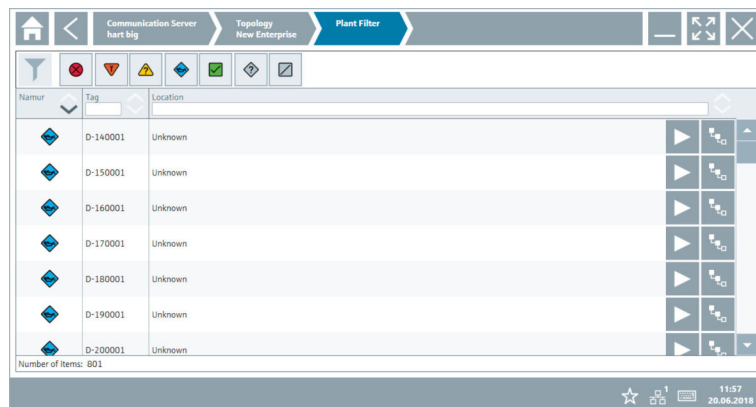
8 Protocol selection for manual selection of connection



9 Device configuration



10 Start screen with Remote Assistant Fieldgate PAM SFG600



11 Plant filter

Environment

Ambient temperature range -10 to 55 °C (14 to 131 °F)

Storage temperature -20 to 60 °C (-4 to 140 °F)

Humidity 5 to 95%

Operating height Max. 4 572 m (15 000 ft)

Degree of protection

IP65

Shock resistance

- MIL-STD 810G 516.6 Procedure IV
- 6 impacts from a height of 1.2 m (4 ft) onto plywood over concrete

Vibration resistance

MIL-STD 810G 514.6 Procedure I Cat. 24, Fig. 514.6E-1

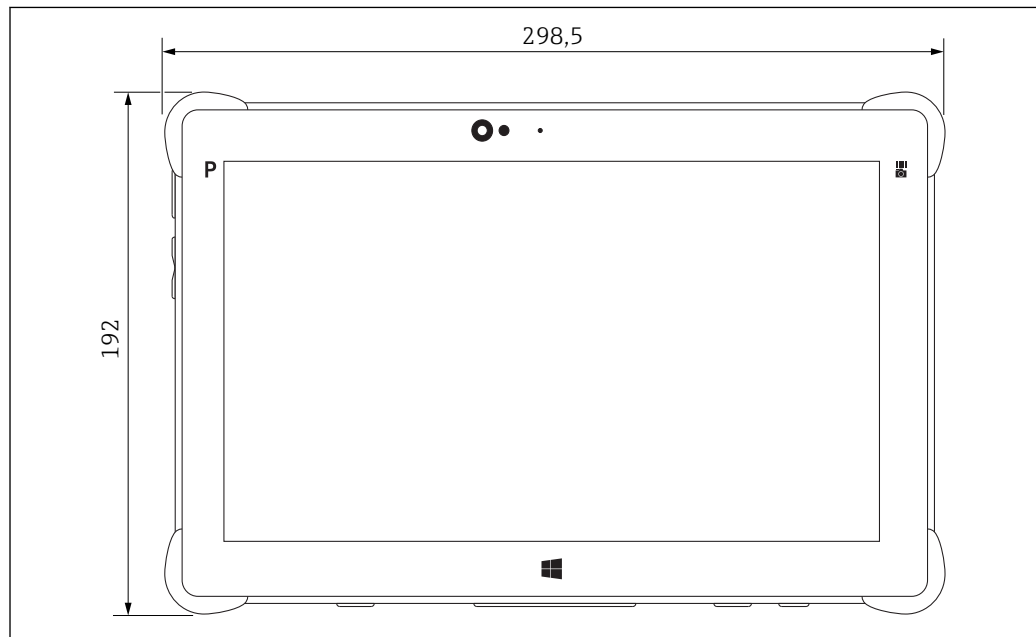
Electromagnetic compatibility

- Interference conformance to:
- EN 55022: 2010+ AC: 2011
 - EN 55022 Class B
 - EN 61000-3-2
 - EN 61000-3-3
- Interference immunity:
- EN 55024: 2010
 - IEC 61000-4-2
 - IEC 61000-4-3
 - IEC 61000-4-4
 - IEC 61000-4-5
 - IEC 61000-4-6
 - IEC 61000-4-8
 - IEC 61000-4-11

Mechanical construction

Design, dimensions

Standard version: 298.5 mm · 192 mm · 20 mm (11.4 in · 7.48 in · 0.78 in)



12 Front view

Weight

1.2 kg (2.65 lb) with standard battery

Materials

Outer housing: MN-3600 type polycarbonate

Inner housing: AlMg metal, type AZ91D

Software operation

- Automatic connection to field devices or via wizard
- Choice of languages within Field Xpert software:
AR, CS, DE, ES, FI, FR, ID, IT, JA, KO, NL, PL, PT, RU, SA, SV, TH, TR, VI, ZH
- DTM graphical user interface and language depend on the device and supplier

Certificates and approvals

CE approval

Field Xpert SMT70 meets all the legal requirements of the relevant EU directives. The manufacturer has affixed the CE mark as confirmation that the Field Xpert SMT70 has been successfully tested.

Radio approval

CE, FCC, IC

Ex approval



This section applies to tablet PC:

- Field Xpert SMT70-B1... (ATEX)
- Field Xpert SMT70-C1... (NEC/CEC)
- Field Xpert SMT70-I1... (IECEX)

ATEX (Europe)

- ATEX II 3G Ex ic IIC T4 Gc IP64
- ATEX II 3D Ex ic IIIB T135°C Dc IP 64

NEC/CEC (North America)

- NEC/CEC Class 1, Div. 2, Group A-D T4
- NEC/CEC Class 1, Zone 2, Group IIC T4

IECEX (International)

- IECEX Ex ic IIC T4 Gc IP64
- IECEX Ex ic IIIB T135° Dc IP64

Ordering Information

Please contact your Endress+Hauser sales center for detailed information on the product structure:
www.addresses.endress.com or at www.endress.com/smt70

Scope of delivery

The scope of delivery comprises:

- Field Xpert SMT70 tablet PC with handle
- AC charger (100 to 240 V_{AC}, 1.5 A, 50 to 60 Hz) with EU connecting cable and international adapter set for 150 countries
- Software and interfaces/modem as per order

Accessories

Optional accessories:

- X-strap
- Shoulder strap
- Leather case
- Office docking station (2 x USB 3.0, 2 x USB 2.0, 1 x RS232, HDMI, 1 Gbit Ethernet)
- Vehicle docking station with vehicle adapter (2 x USB 3.0, 2 x USB 2.0, 1 x RS232, HDMI, 1 Gbit Ethernet, WWAN + GPS antenna connection)
- Extra battery, high-capacity 7 800 mAh
- Extra battery, standard capacity 4 100 mAh
- Battery charger

Please contact your Endress+Hauser sales center for detailed information on accessories:
www.addresses.endress.com or at www.endress.com/smt70

Documentation

Field Xpert SMT70

- Operating Instructions BA01709S/04/EN
- Innovation Brochure IN01069S/04/EN

Fieldgate PAM SFG600

- Technical Information TI01408S/04/EN
- Brief Operating Instructions KA01400S/04/EN

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Intel® Core™ is a registered trademark of Intel Corporation, Santa Clara, USA.

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FOUNDATION™ Fieldbus is the trademark of the FieldComm Group, Austin, TX 78759, USA.

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