

# Technical Information

## Field Xpert SMT70

Universal, high-performance tablet PC for device configuration in Ex Zone 2 and non-Ex areas



### Application

The Field Xpert SMT70 tablet PC for device configuration enables mobile plant asset management in hazardous (Ex Zone 2) and non-hazardous areas. It is suitable for commissioning and maintenance staff. It manages Endress+Hauser and third-party field devices with a digital, wired and wireless communication interface and documents the progress of the work. The SMT70 is designed as a complete solution. It comes with a pre-installed driver library and is an easy-to-use, touch-enabled tool for managing field devices throughout their entire life cycle.

The integrated LTE module ensures that the tablet is online even without a wireless local area network.

### 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 for optimized asset management.
- Direct link to Netilion, Endress+Hauser's IIoT ecosystem.
- 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. Online application software and DTM/driver update service offer new functionality and maximum security.
- Integrated Heartbeat Verification incl. PDF documentation.
- Connection to Endress+Hauser Bluetooth and WLAN devices - perfect for difficult-to-access instruments.

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## About this document

### Symbols

#### Safety symbols

##### **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 potentially dangerous situation. Failure to avoid this situation can result in serious or fatal injury.









##### **CAUTION**

This symbol alerts you to a potentially dangerous situation. Failure to avoid this situation can result in minor or medium injury.

##### **NOTICE**

This symbol alerts you to a potentially harmful situation. Failure to avoid this situation can result in damage to the product or something in its vicinity.

#### Symbols for certain types of information

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

## Function and system design

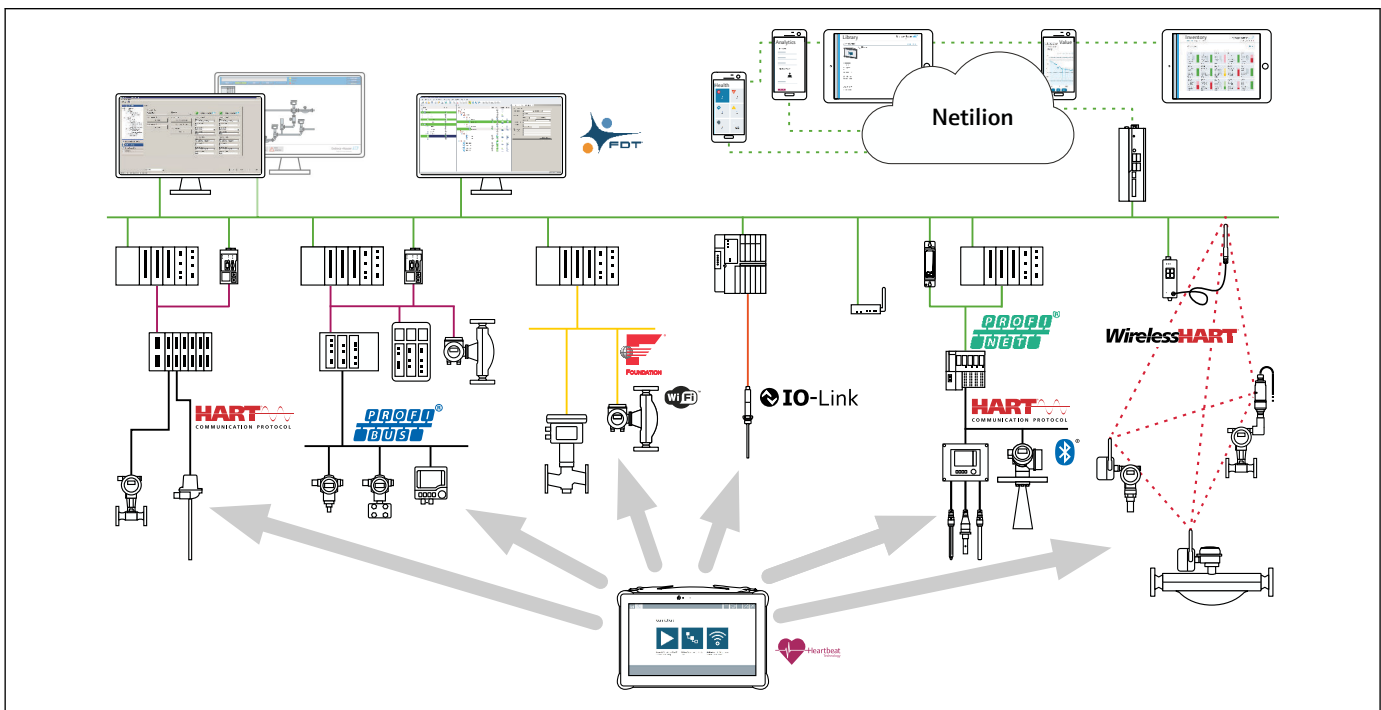
### Function

The Field Xpert SMT tablet PC for universal device configuration supports a variety of protocols, the Endress+Hauser service protocols, and connection to Endress+Hauser Bluetooth field devices and Endress+Hauser WLAN field devices. You can connect the field devices directly via a suitable interface, such as a modem (point-to-point), a bus system (point-to-bus) or a wireless connection (WLAN/Bluetooth).

The Field Xpert software package is fast, easy and intuitive to use.

The Field Xpert device library already has several thousand 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. The generic HART DTM and PROFIBUS profile DTMs also enable operation of all the important basic functionalities of the relevant field devices.

In addition, the tablet PC features the FDI Package Manager for the installation of FDIs and the IODD DTM Configurator for installing IODDs. You can install new device drivers (DTMs, FDIs and IODDs) on the Field tablet PC at any time.



1 Field Xpert SMT70 applications

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### Overview of supported protocols and interfaces


#### Supported field devices and protocols

Endress+Hauser field devices and 3rd-party field devices

- HART
- PROFIBUS DP/PA
- PROFINET
- FOUNDATION Fieldbus
- Modbus
- IO-Link
- Bluetooth: Endress+Hauser field devices with Bluetooth function
- WLAN: Endress+Hauser WLAN field devices

#### Supported Endress+Hauser service protocols

- CDI
- IPC
- ISS
- PCP

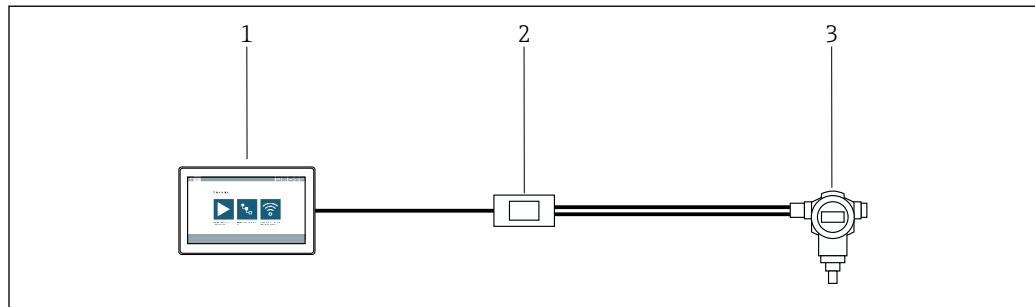
 Note that in the hazardous area, each individual device connected requires an appropriate Ex approval.

Protocol	Interface (interface, modem, gateway)
HART	<ul style="list-style-type: none"> <li>▪ Commubox FXA195</li> <li>▪ Viator Bluetooth IS modem</li> <li>▪ Viator USB modem with PowerXpress</li> <li>▪ FieldPort SFP50</li> <li>▪ Fieldgate SFG250</li> <li>▪ Memograph RSG45</li> <li>▪ Tank Scanner NXA820</li> <li>▪ FieldGate SWG50</li> <li>▪ Fieldgate SWG70</li> </ul>
PROFIBUS	<ul style="list-style-type: none"> <li>▪ Softing PROFIusb</li> <li>▪ Softing PBpro USB</li> <li>▪ FieldPort SFP50 with PROFIBUS license</li> <li>▪ Fieldgate SFG500</li> </ul>
PROFINET	PROFINET Comm DTM
FOUNDATION Fieldbus	<ul style="list-style-type: none"> <li>▪ NI USB</li> <li>▪ FieldPort SFP50 with FOUNDATION Fieldbus license</li> <li>▪ Softing FFusb</li> </ul>
Modbus	Modbus serial
IO-Link	FieldPort SFP20
Endress+Hauser service interfaces	<ul style="list-style-type: none"> <li>▪ Commubox FXA291 CDI</li> <li>▪ Commubox FXA291 IPC, ISS, PCP</li> <li>▪ Commubox FXA193 IPC, ISS</li> <li>▪ TXU10 V2 CDI</li> <li>▪ TXU10 V2 PCP</li> <li>▪ TXU10 V1 PCP, CDI</li> <li>▪ CDI USB</li> <li>▪ CDI TCP/IP</li> </ul>
Bluetooth	Endress+Hauser field devices with Bluetooth function
WLAN	Endress+Hauser WLAN field devices

## Application examples

**HART point-to-point connection via USB/HART modem FXA195**

You can use the Endress+Hauser USB/HART modem FXA195 to establish a connection automatically from the tablet PC to a HART field device.



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

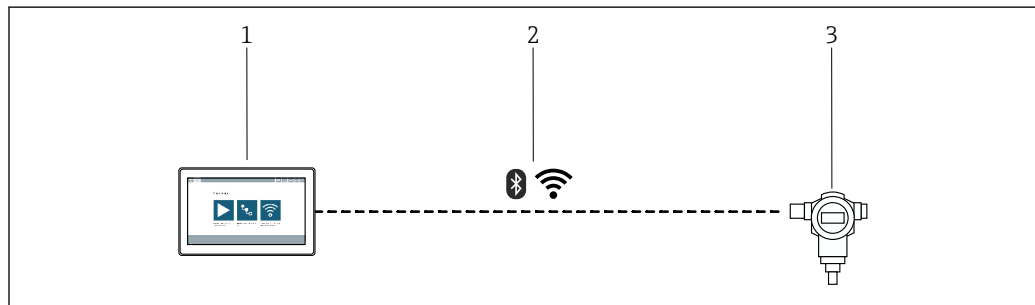
- 1 Field Xpert SMT70 tablet PC
- 2 USB/HART modem Commubox FXA195
- 3 HART field device

**i** To establish communication with the HART field device, a resistor of at least 250  $\Omega$  must be provided in the circuit. The integration of the resistor depends on the system architecture and the power supply used.

For detailed information: Documentation for USB/HART modem Commubox FXA195

**Connecting via WLAN or Bluetooth**

You can connect the tablet PC to a WLAN or Bluetooth-enabled Endress+Hauser field device via a WLAN or Bluetooth.

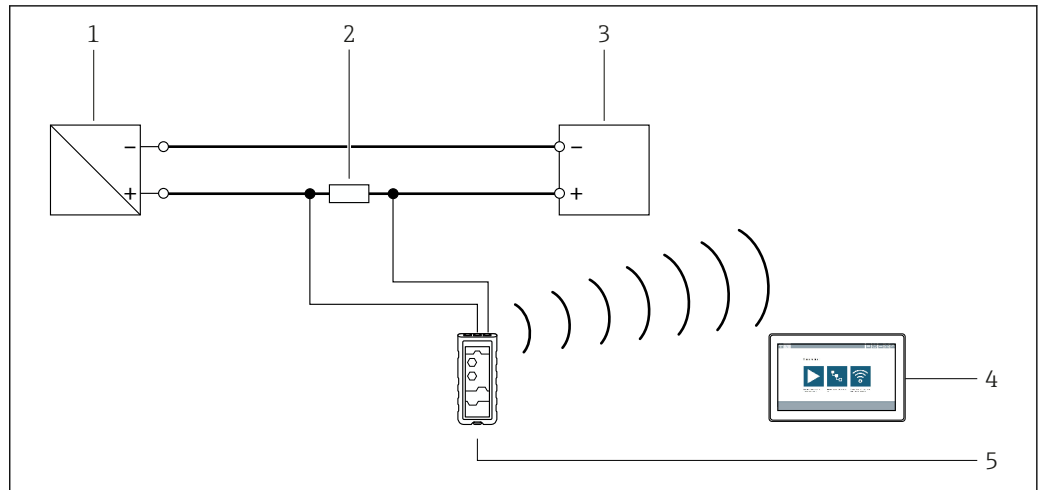


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**3** Connecting via WLAN or Bluetooth

- 1 Field Xpert SMT70 tablet PC
- 2 WLAN or Bluetooth
- 3 Endress+Hauser field device

### HART point-to-point communication via FieldPort SFP50



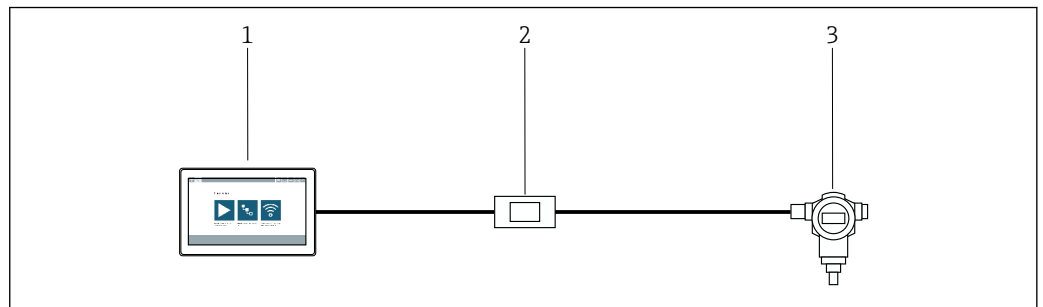
4 Point-to-point connection via FieldPort SFP50

- 1 A transmitter power supply unit
- 2 Load resistance 250 to 1 100  $\Omega$
- 3 HART field device
- 4 Field Xpert SMT70 tablet PC
- 5 FieldPort SFP50

### CDI point-to-point connection via Commubox FXA291

You can connect the tablet PC automatically to an Endress+Hauser field device with CDI interface via the Endress+Hauser Commubox FXA291.

 For detailed information, see Commubox FXA291 documentation

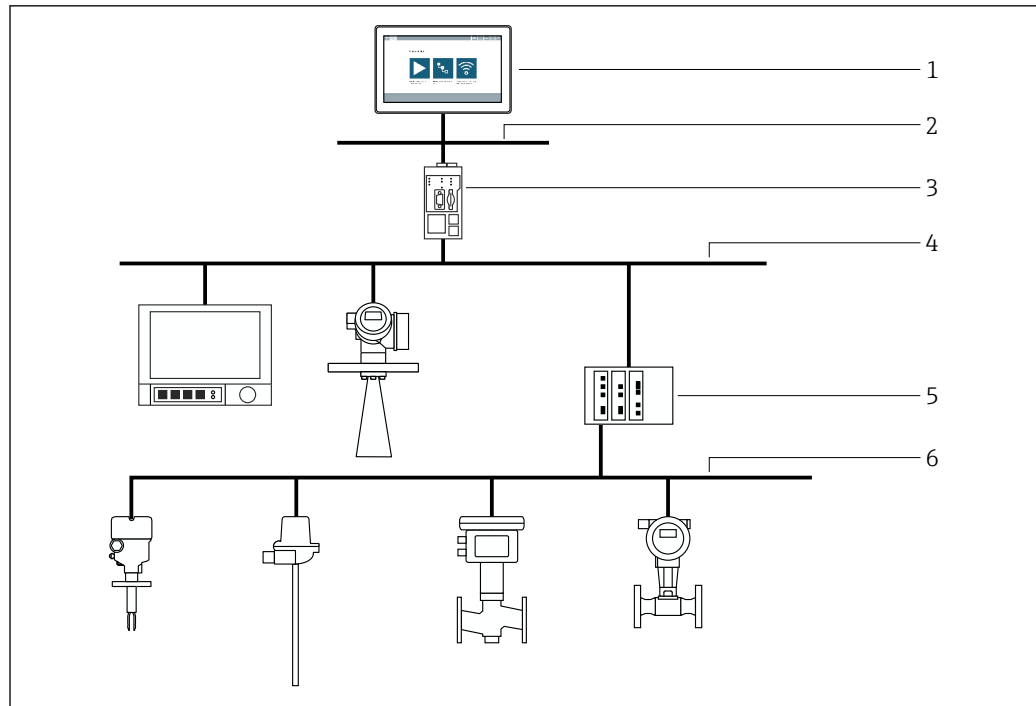


5 CDI point-to-point connection with a field device

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

### PROFIBUS point-to-bus connection

You can establish a connection from the tablet PC to a PROFIBUS PA field device using a wizard by means of the Endress+Hauser Fieldgate SFG500. The connection from PROFIBUS DP to PROFIBUS PA is established via a segment coupler such as Siemens DP/PA link or Pepperl+Fuchs SK3.



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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

### Connections

- Headphones output jack
- Microphone input jack
- Docking port
- Extension connection for add-on modules
- HF pass-through socket for WWAN and GPS

### Expansion slots

- Micro SD card slot, support for SDHC/SDXC
- SIM card slot for WWAN data communication

### USB

2x USB 3.0

### Wireless local area network

Intel Wireless AC7260 IEEE 802.11 a/b/g/n/ac, DUAL Band WLAN

### Bluetooth

Bluetooth® 4.0 (BLE), Class 1

### Wireless WAN + GPS

- 4G LTE WWAN
- Optional: 12-channel GPS



## Energy supply

<b>Supply voltage</b>	<b>Voltage</b> 19 V
	<b>Current consumption</b> 3.42 A
	<b>Power consumption</b> 65 W

**Battery** Replaceable, rechargeable lithium polymer battery

	<b>R11AH</b> Included as standard in the scope of delivery	<b>R11AH2</b> Additional battery (optional)
Voltage	11.1 V <sub>DC</sub>	11.1 V <sub>DC</sub>
Capacity (Energy)	3 950 mAh (45 Wh)	7 800 mAh (86 Wh)
Battery life	Up to 7 h	Up to 14 h

## Performance characteristics

### Hardware

#### CPU

Intel Core i5-5200U or better (2.2 to 2.7 GHz)

#### Working memory

8 GB with DDR3L adapter

#### Memory

256 GB SSD M2-SATA in the robust version

#### Display

- Screen size: 11.6"
- Resolution: 1920 x 1080
- LCD, protected by Gorilla Glass
- Capacitive multi-touch screen
- Optical bonding, sunlight readable, LCD (1 000 cd/m<sup>2</sup>)
- Ambient light sensor

#### Keys

- On/off
- Volume
- Touch button for Windows
- Touch button for barcode/camera
- Programmable touch button

#### Audio

- Speaker 70 dB @ 0.5 m
- Microphone

#### Scanner

1D/2D barcode scanner

#### Camera

- 2 MP camera at the front
- 5 MP camera at the back with auto focus and LED flash with 1 500 mcd
- Supports geotagging (optional)

#### Sensor

Integrated acceleration sensor, gyroscope and eCompass

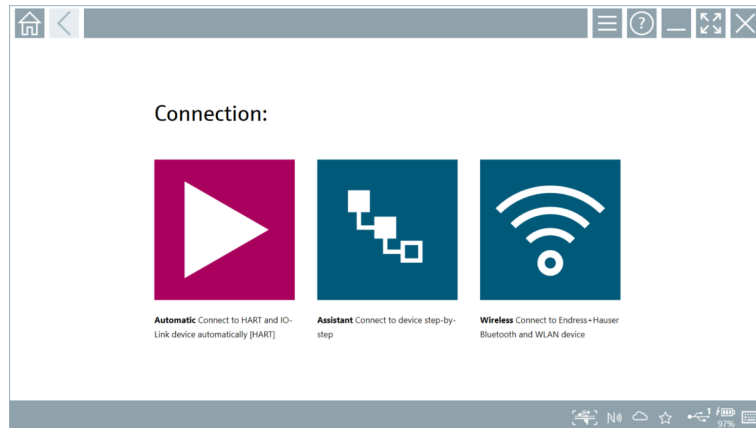
### Software

#### Field Xpert SMT70 tablet PC operating system

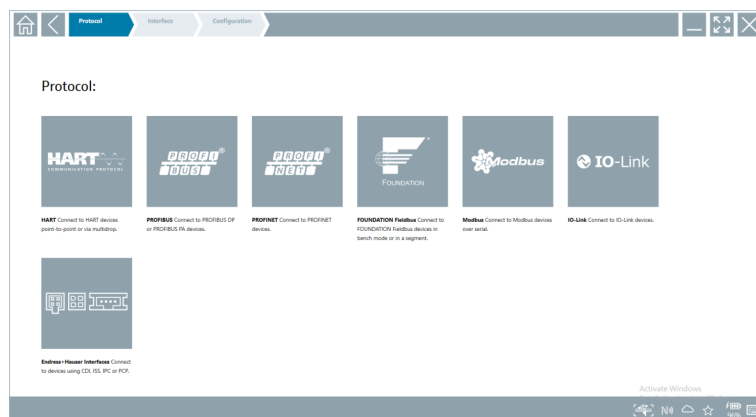
Windows 10 LTSC

#### Field Xpert software

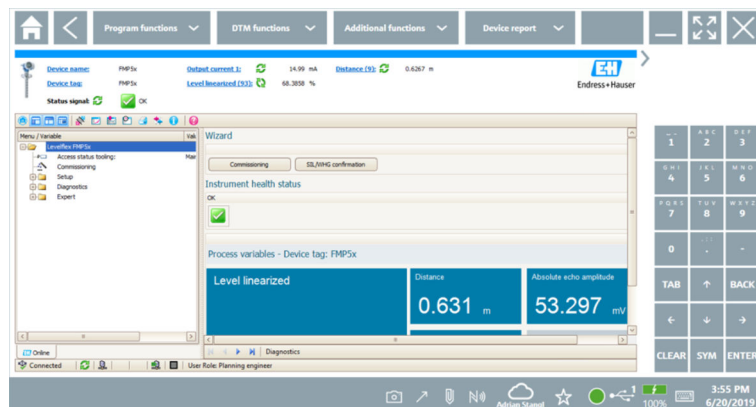
Touch-enabled device configuration software developed for tablet PC



7 Start screen with one-click automatic button



8 Protocol selection for manual selection of connection



9 Example: Device configuration

## Environment

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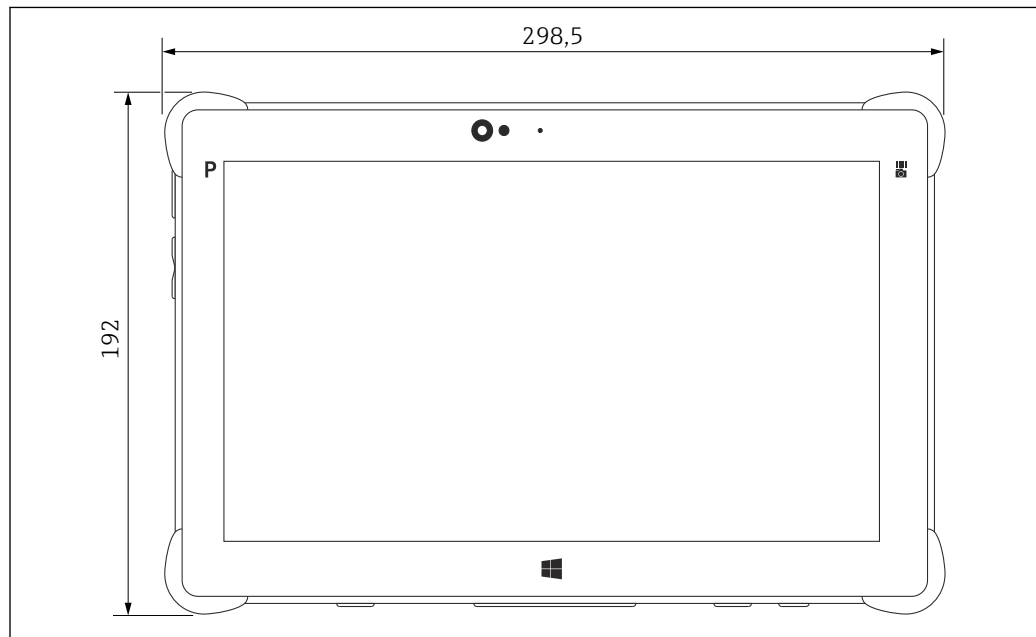
<b>Ambient temperature range</b>	-10 to 55 °C (14 to 131 °F)
<b>Storage temperature</b>	-20 to 60 °C (-4 to 140 °F)
<b>Humidity</b>	5 to 95%
<b>Operating height</b>	Max. 4 572 m (15 000 ft)
<b>Degree of protection</b>	IP65
<b>Vibration resistance</b>	MIL-STD 810G 514.6 Procedure I Cat. 24, Fig. 514.6E-1
<b>Shock resistance</b>	<ul style="list-style-type: none"><li>■ MIL-STD 810G 516.6 Procedure IV</li><li>■ 6 impacts from a height of 1.2 m (4 ft) onto plywood over concrete</li></ul>
<b>Electromagnetic compatibility (EMC)</b>	<p>Interference conformance to:</p> <ul style="list-style-type: none"><li>■ EN 55022: 2010+ AC: 2011</li><li>■ EN 55022 Class B</li><li>■ EN 61000-3-2</li><li>■ EN 61000-3-3</li></ul> <p>Interference immunity:</p> <ul style="list-style-type: none"><li>■ EN 55024: 2010</li><li>■ IEC 61000-4-2</li><li>■ IEC 61000-4-3</li><li>■ IEC 61000-4-4</li><li>■ IEC 61000-4-5</li><li>■ IEC 61000-4-6</li><li>■ IEC 61000-4-8</li><li>■ IEC 61000-4-11</li></ul>

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## Mechanical construction

### Design, dimensions

Standard version: 298.5 mm · 192 mm · 20 mm (11.75 in x 7.56 in x 0.79 in)



10 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

## Operability

### Operation concept

The Field Xpert software provides three different methods to establish a connection to the field device. The version that is possible depends on the protocol, the interface (modem/gateway) and the field device.

- Automatic: Connection to the interface (modem)/field device is established automatically.
- Wizard: You establish a connection to the interface (modem/gateway) and the field device step by step.
- Wireless: Select this option if you wish to establish a connection to an Endress+Hauser Bluetooth or WLAN field device.

### Languages

#### Field Xpert software

Languages for selection: AR, CS, DE, ES, FI, FR, ID, IT, JA, KO, NL, PL, PT, RU, EN, SV, TH, TR, VI, ZH

#### Driver interface for field devices

Depends on the field device

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## Certificates and approvals

Current certificates and approvals for the product are available at [www.endress.com](http://www.endress.com) on the relevant product page:

1. Select the product using the filters and search field.
2. Open the product page.
3. Select **Downloads**.

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### CE mark

The product meets the legal requirements of the relevant EU/EG directives. The manufacturer confirms successful testing of the product by affixing to it the CE mark.

## Ordering information

Detailed ordering information is available from your nearest sales organization [www.addresses.endress.com](http://www.addresses.endress.com) or in the Product Configurator at [www.endress.com](http://www.endress.com):

1. Select the product using the filters and search field.
2. Open the product page.
3. Select **Configuration**.



### Product Configurator - the tool for individual product configuration

- Up-to-the-minute configuration data
- Depending on the device: Direct input of measuring point-specific information such as measuring range or operating language
- Automatic verification of exclusion criteria
- Automatic creation of the order code and its breakdown in PDF or Excel output format
- Ability to order directly in the Endress+Hauser Online Shop

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### Scope of delivery

The scope of delivery comprises:

- Field Xpert tablet PC with handle
- AC charger (100 to 240 V<sub>AC</sub>, 1.5 A, 50 to 60 Hz) with connecting cable EU, US, UK, CH, IT, ZA, AU
- Software and interfaces/modem as per order

## Accessories

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### Device-specific accessories

The accessories currently available for the product can be selected at [www.endress.com](http://www.endress.com):

1. Select the product using the filters and search field.
2. Open the product page.
3. Select **Spare parts & Accessories**.

## Documentation



For an overview of the scope of the associated Technical Documentation, refer to the following:

- *Device Viewer* ([www.endress.com/deviceviewer](http://www.endress.com/deviceviewer)): Enter the serial number from the nameplate
- *Endress+Hauser Operations app*: Enter serial number from nameplate or scan matrix code on nameplate.

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### Standard documentation

#### Field Xpert SMT70

- Innovation brochure IN01096S
- Technical Information TI01342S
- Operating Instructions BA01709S

## Registered trademarks

Windows 10 IoT Enterprise® is a registered trademark of Microsoft Corporation, Redmond, Washington, USA.

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

Durabook is a registered trademark of Twinhead International Corp., Taiwan.

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

HART®, WirelessHART® is the registered trademark of the FieldComm Group, Austin, TX 78759, USA.

PROFIBUS® is a registered trademark of the PROFIBUS User Organization, Karlsruhe/Germany.

PROFINET® is a registered trademark of the PROFIBUS User Organization (PNO), Karlsruhe/Germany

Modbus is the registered trademark of Modicon, Incorporated.

IO-Link® is a registered trademark of the IO-Link Community c/o PROFIBUS User Organization, (PNO) Karlsruhe/Germany - [www.io-link.com](http://www.io-link.com)

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