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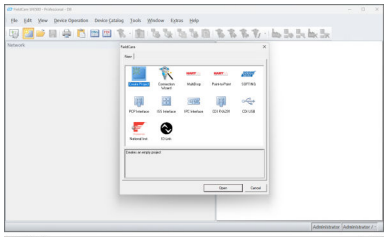
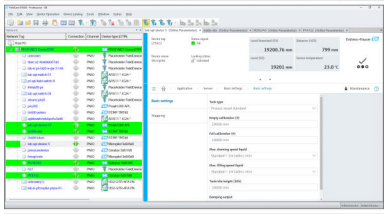
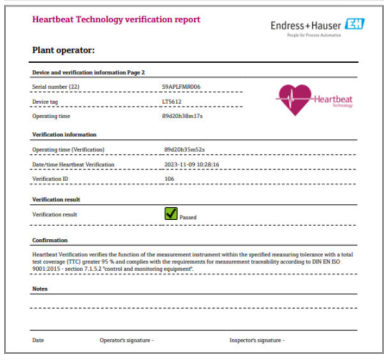
Technical Information
FieldCare SFE500

Universal device configuration







Universal field device configuration tool for HART, PROFIBUS, FOUNDATION Fieldbus, Modbus, IO-Link, EtherNet/IP, PROFINET and PROFINET APL

Application

- Configuration and management of smart field devices in a facility.
- Easy device configuration, maintenance management, condition-based maintenance and plant asset management.
- Can be adapted to different needs depending on the license, and is therefore upgradeable at any time.

Your benefits

- Supplied with a complete library of certified DTMS (Device Type Manager) and FDI packages for operation of all Endress+Hauser field devices, has CommDTMs for HART, PROFIBUS, FOUNDATION Fieldbus, IO-Link, PROFINET and Endress+Hauser protocols.
- Operates third-party gateways, actuators, remote I/O systems and sensors supporting the FDT and FDI standards.
- Ensures full functionality for all Endress+Hauser and third-party field devices with DTMs and FDI packages and offers generic operation with standardized parameters for any third-party fieldbus device that does not have a vendor DTM.
- Integrates all registered HART and FOUNDATION Fieldbus as well as IO-Link field devices without DTMs using iDTM technology.
- Scans, identifies, determines the relevant device driver and enters it in the network automatically.

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Table of contents

Document information

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

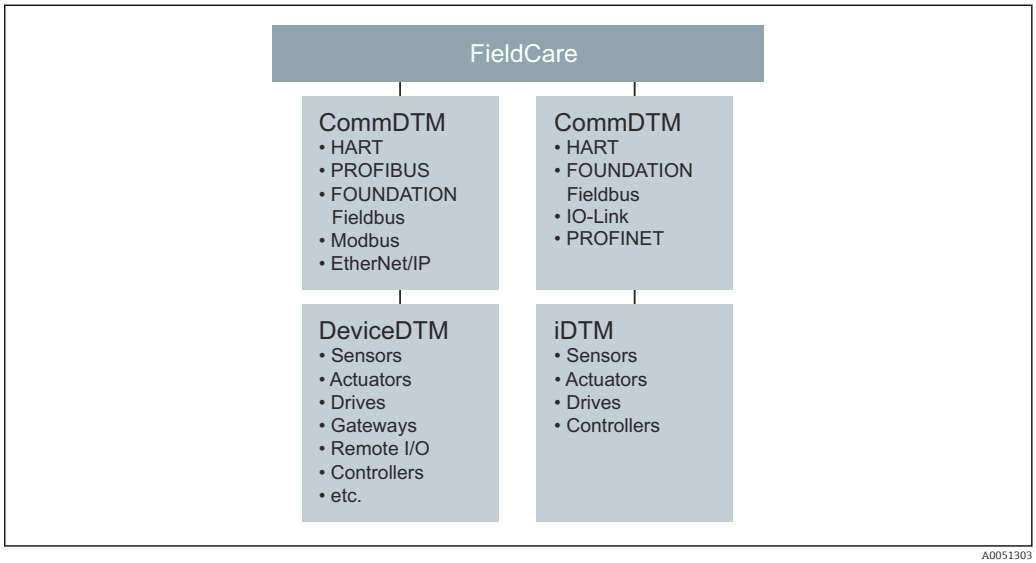
Function and system design

Function

FieldCare enables the configuration of smart field devices in an application. All configuration and communication information is carried in Device Type Management (DTM) programs (DeviceDTMs and CommDTMs) supplied by the individual vendor.

If a DTM is not available, access is possible via iDTM for HART, FOUNDATION Fieldbus and IO-Link. Furthermore, FieldCare also allows the configuration of devices via FDI Packages, which are made available in FieldCare in the usual manner via an iDTM FDI.

FieldCare has the following advantages:
- Open technology, independent of device and system supplier
- Independent of device type (sensor, actuator, remote I/O etc.)
- Full support of installed base
- Full device functionality
- Independent of the communication protocol
- Vertical integration through nested communication enables centralized access to field devices, which in turn enables plant-specific asset management



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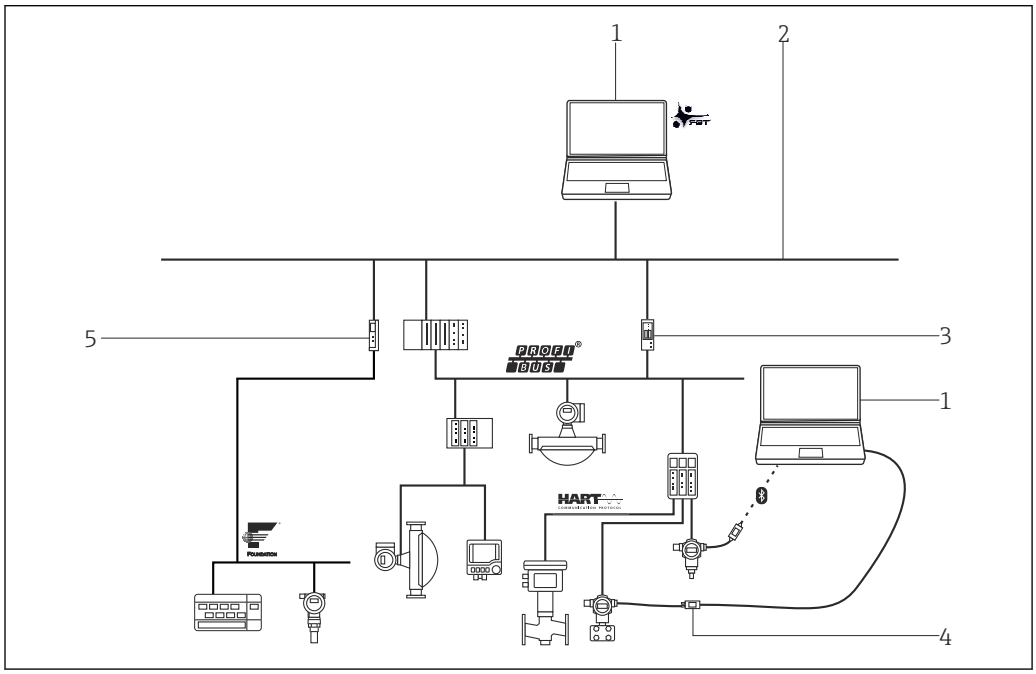
System design

Network connection

Depending on the communication interface offered by the field device, FieldCare may be connected via a network or point-to-point to a powered field device. The software is installed on a Windows PC or laptop, and the connection is established via a network card, an appropriate interface card or a USB or Bluetooth modem. Access may be via a gateway with CommDTM, or if it supports FDT, via a controller. The physical architecture is mirrored by the **nested** CommDTMs and DeviceDTMs.

The devices are configured via DeviceDTMs or FDI Packages. If the device does not have a native DTM or FDI Package, but is registered at FieldComm Group, then it can be operated by the appropriate iDTM. Similarly, IO-Link devices can be found and downloaded via the IODDFinder (https://ioddfinder.io-link.com) and operated with the IODD Interpreter DTM. Interfaces such as PROFIBUS DP/PA couplers must be either transparent or be supplied with a CommDTM if access is to be made to the connected devices. Field devices with 4 to 20 mA without HART, binary or pulse/ frequency outputs cannot be operated.

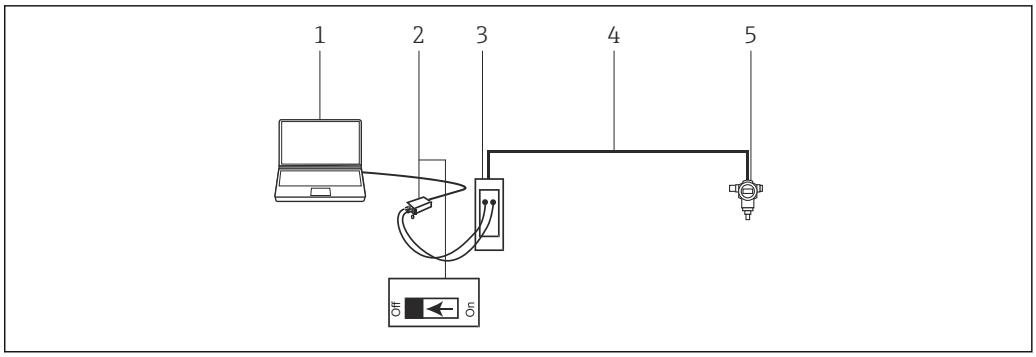


1 *Sample FieldCare architecture showing centralized access to a HART, FOUNDATION Fieldbus and PROFIBUS network via gateway and Ethernet.*

1 *FieldCare*
2 *Ethernet*
3 *Ethernet/PROFIBUS gateway e.g. Fieldgate SFG500*
4 *Commubox FXA195*
5 *Ethernet/FOUNDATION Fieldbus gateway*

HART point-to-point connection

The diagram shows a HART point-to-point connection via a HART power supply using the FXA195 USB/HART modem. Since the power supply has a communication resistor, the communication resistor of the FXA195 must be switched off. The connection can be made at the power supply module or the device terminals as required.



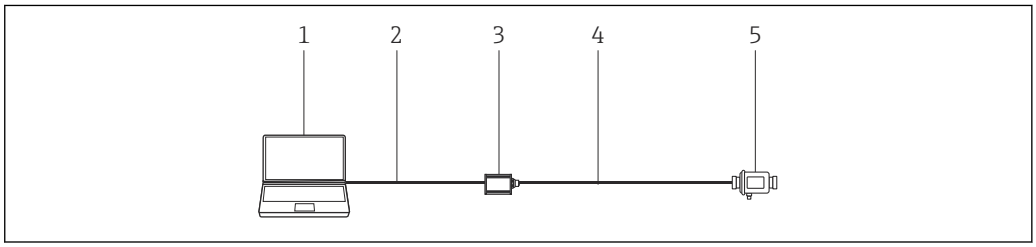
2 *Point-to-point connection with a HART field device*

1 FieldCare
2 Commubox FXA195 with switchable communication resistor
3 HART power supply e.g. RMA422, RN221N with communication resistor
4 HART 4 to 20 mA
5 Field device

If there is no communication resistor in the 4 to 20 mA signal loop, the USB modem FXA195 should be connected via the HART terminals of the field device. In this case, the communication resistor in the modem must be switched on.

IO-Link point-to-point connection

The diagram shows an IO-Link point-to-point connection of an IO-Link field device to a laptop via the FieldPort SFP20 communication interface. The IO-Link device is directly connected via the M12 connector.



3 *IO-Link point-to-point connection*

1 FieldCare
2 USB
3 FieldPort SFP20
4 IO-Link
5 Field device

Operation

- Standard configurable Windows graphical user interface with icons, short cuts etc.
- Creation of projects in network (communication) and plant (logistic) views
- Projects created manually or automatically with a project setup wizard
- Standard Windows functions for saving, opening, printing, editing projects etc.
- FieldCare languages: DE, EN, FR, IT, ES, ZH, JA, RU
- DTM and FDI Package user interface and language dependent on the field device and supplier

System integration

System requirements

Operating systems

Version	End of Microsoft support	FieldCare support status
Windows 10 Professional (64 bit)	October 2025	OK
Windows 10 Enterprise (64 bit)	October 2025	OK
Windows 11 Professional (64 bit)	November 2026	OK
Windows 11 Enterprise (64 bit)	November 2026	OK
Windows Server 2016 LTSC (64 bit)	January 2027	OK
Windows Server 2019 LTSC (64 bit)	January 2029	OK
Windows Server 2022 LTSC (64 bit)	October 2031	OK

Hardware

Item	Recommended
Processor type	Intel Core i9, Intel Core i7 or Intel Core i5 At least 2 GHz
System memory	Minimum 8 GB RAM
Capacity of hard drive	A minimum of 20 GB for a full installation and reasonable reserve.
Min. screen resolution	1280 x 768, 64,000 colors

Software required

- Microsoft .NET 3.5
- Microsoft .NET 4.x
- PDF reader

Supplied support software

- Microsoft .NET Version 3.5 SP1
- Microsoft Management Console version 1.2 [1)]
- Microsoft SQL Server 2022 Express [1)]
- Microsoft Windows Installer 4.5 [2)]

Supported software

- Microsoft SQL Server 2016
- Microsoft SQL Server 2019
- Microsoft SQL Server 2022

FieldCare 2.18 can also use an already installed Microsoft SQL Server 2016 / 2019 / 2022 for operation. We are happy to assist with the setup of FieldCare in projects with this SQL Server. Please contact your Endress+Hauser sales partner.

Software specification

- Configuration and commissioning of Endress+Hauser and third-party field devices based on FDI and FDT technology.
- Supports HART, WirelessHART, PROFIBUS, FOUNDATION Fieldbus, Modbus, IO-Link, EtherNet/IP and PROFINET protocols.
- Supports Endress+Hauser service protocols to enable access to E+H instruments independently of the fieldbus protocol.
- Includes CommDTMs for HART, PROFIBUS, FOUNDATION Fieldbus and PROFINET for the Endress +Hauser interface and gateways for remote maintenance.
- Plant view: logical view of plant with tagging and archiving.
- Document management: storage of key documents together with the device TAG.

1) Program is installed automatically by the FieldCare Installation Manager, if not already available or if a compatible version is not installed.
2) Program is installed automatically by the FieldCare Installation Manager, if not already available.

- Inventory view: list of all devices in the plant with convenient search and filter function.
- Project management: import/export of projects and settings.
- Report generation: configurable and printable reports of device settings, plant configurations, etc.
- User management: configurable list of users.
- Typical application up to 1200 field devices, more on request.
- Complete plant asset management system configurations with PAM gateways (server) and PAM clients on request. Endress+Hauser is pleased to offer advice on the system design of plant asset management maintenance stations.
- iDTM HART operates third-party HART field devices without a DTM in FieldCare and contains more than 1800 registered HART EDDs from a wide range of device manufacturers.
- iDTM FOUNDATION Fieldbus operates third-party FOUNDATION Fieldbus field devices without DTM in FieldCare and contains more than 790 registered FOUNDATION Fieldbus field devices from a wide range of device manufacturers.
- The IO-Link IODD Interpreter DTM "translates" the IODD and makes the information contained therein available to FieldCare in such a way that the parameters are provided in the same way as in a device DTM.
- With the separate Envelope Curve Viewer application, envelope curves recorded by FieldCare can also be viewed and analyzed again later offline. With the Envelope Curve Viewer, the Endress +Hauser Service Hotline can provide assistance with envelope curve analysis.
- FieldCare provides support via EtherNet/IP Rockwell system architectures with the relevant CommDTM for remote IOs from Rockwell.
- Online and offline software license management (SLM) helps the software license manager professionally manage the licenses.
- Simplified access to the Heartbeat Flow Verification DTM for the faster verification of flowmeters.
- Support for new field devices with the FDI Package integration technology. FDI Package device drivers can be easily managed with the FDI Package Manager provided.

Condition monitoring (optional)

Extracts data from selected devices and, depending on the way they are set up, generates alarms directly in the FieldCare maintenance station to alert the user to a potential maintenance requirement.

- Independent solution for the maintenance task
- Focus on critical devices and beneficial information
- NE107 compliant
- Support for HART field devices with relevant DTD
- Support for PROFIBUS field devices - Profile 3.0 and higher - with relevant DTD

CommDTMs

FieldCareCommDTMs

Designation	Protocol	Application
CDI communication	Endress+Hauser	FXA291/RSG45/RSG35: CDI interface, CDI USB, CDI TCP/IP
IPC FXA193/FXA291	Endress+Hauser	FXA193/FXA291: IPC level/pressure interface
PCP TXU10/FXA291	Endress+Hauser	TXU10/FXA291: PCP interface
ISS FXA193/FXA291	Endress+Hauser	FXA193/FXA291: ISS flow interface
HART communication	HART	FXA195 or Pepperl+Fuchs VIATOR (USB/HART) HART point-to-point connection
SFG250	HART	SFG250 Ethernet/HART gateway: direct connection from Ethernet to HART field devices
FXA520	HART	FXA520 Ethernet/HART gateway: pass through connection to HART devices
WirelessHART	WirelessHART, HART, HART IP	SWG50 gateway, SWA70 adapter: connection to WirelessHART field devices
NXA820	HART	NXA820 Tankvision inventory management tank scanner
RSG45	HART	RSG45 Memograph M - Advanced Data Manager
SFG500	PROFIBUS	SFG500: Ethernet/PROFIBUS DP gateway with NAMUR NE107 instrument diagnosis

Designation	Protocol	Application
PROFIdtm DPV1	PROFIBUS	FXA720: Ethernet/PROFIBUS DP connection
PROFIBUS Master DP-V1	PROFIBUS	Softing TH LINK: Ethernet/PROFIBUS DP connection
FOUNDATION Fieldbus H1 CommDTM	FOUNDATION Fieldbus	National Instruments NI-FBUS USB-8486: connection to FOUNDATION Fieldbus H1
Modbus	Modbus serial, Modbus TCP	Schneider Modbus communication
SFP20	IO-Link	FieldPort SFP20: IO-Link master
EtherNet/IP	EtherNet/IP	Schneider Electric
PROFINET	PROFINET/PROFINET APL	Establish connection to PROFINET or PROFINET APL (Advanced Physical Layer) devices

Please pay attention to the individual release notes for the FieldCare communication DTMs. The system requirements of the DTMs may differ from the FieldCare system requirements.

Third-party DTMs

Endress+Hauser recommends an integration test for the use of third-party DTMs, particularly if the DTMs are not certified. A number of DTMs for third-party remote I/Os are known to support FieldCare depending on the network architecture. Please contact your Endress+Hauser sales representative for further information.

Security recommendations

- Restrict physical and electronic access to field devices, networks, computers and systems to a group of authorized persons and use a role-based access system
- Use a correctly configured firewall thats block all data that do not comply with security specifications; disable ports that are not used and use a Demilitarized Zone or an Intrusion Detection System to enhance security
- Establish an organized, real-time patch management process for all products, e.g. operating systems, Internet browsers, programs, apps, databases and drivers
- Run anti-virus software on the PC
- Establish detailed guidelines and processes to only allow authorized persons access to the PC or other equipment
- Only use hardware, software, firmware and other electronic content from trusted sources

For detailed security recommendations, see the Security Manual SD03193S (www.endress.com/SFE500)

Start interface (Launch interface)

FieldCare can be embedded into or started from any SCADA application by using FCL files.

Ordering information

Detailed information about the product structure is available:
- In the Product Configurator on the Endress+Hauser website: www.endress.com/SFE500
- From the Endress+Hauser Sales Center: www.addresses.endress.com

Supplemental documentation

FieldCare SFE500

- Getting Started KA01303S
- Operating Instructions BA00065S
- Tutorial for FieldCare projects SD01928S
- Competence Brochure CP00001S
- Security Manual SD03193S

DeviceCare SFE100	▪ Technical Information TI01134S ▪ Innovations IN01047S
Plant Asset Management	Work areas FA00024S

Registered trademarks

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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.

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