General Specifications

FieldMate
Versatile Device Management Wizard

FieldMate R3.04

GS 01R01A01-01E

1. Features

FieldMate is a PC based configuration tool that performs numerous tasks, including initial setup, daily maintenance, troubleshooting, and configuration backup for device replacement. These tasks are streamlined by FieldMate's intuitive operation and integrated environment, which is independent from communication protocols and device vendors.

Moreover off line database function for up to 500 devices which maintains a complete record for all device configuration and maintenance activities.

FieldMate incorporates the open FDT/DTM standard and is compliant with DTMs per the FDT1.2 and FDT2.0 simultaneously standard. FieldMate supports by Built-in DTM interpreting the existing Device Description (DD) instaneously, for other vendor's devices that do not have DTMs available.

The FDT frame is an integral part of FieldMate. Many DTMs are included with the FieldMate application, and additional DTMs are available from most field device vendors.

* FDT: (Field Device Tool) is a frame application that standardsizes the communication and configuration interface between all field devices and host systems.
* DTM: (Device Type Manager) is the application which defines the Graphical User Interface (GUI) specific to the device.



*PC is not included.

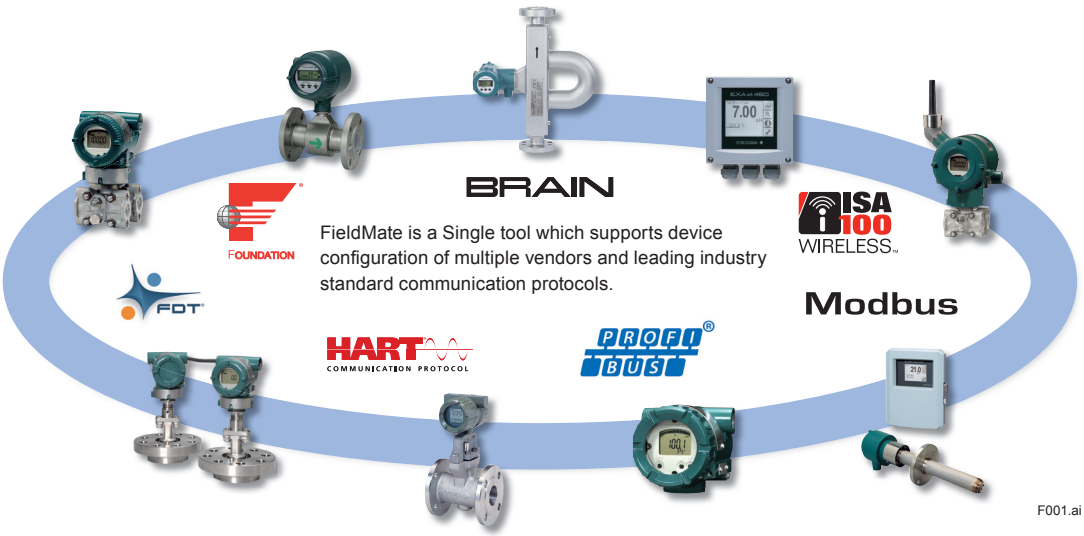
2. Functional Details

■ Communication Function

FieldMate supports the following communication protocols:

- **BRAIN**
- **FOUNDATION™ fieldbus H1** *1
- **HART (HART 7 is supported)**
- **PROFIBUS**
- **ISA100.11a**
- **Modbus**

*1: FieldMate should connect to the devices in FOUNDATION™ fieldbus H1 segment without host system.



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■ Device Interface Function

- **Segment Viewer**
  Displays a list of devices currently connected on the communication lines, grouped by protocol.
  Basic device specific information is displayed depending on protocol (Device ID, Manufacturer ID, address, Device type, Device revision, and status).
  Segment Viewer supports BRAIN, FOUNDATION fieldbus H1, HART, PROFIBUS, ISA100.11a*1, Modbus.
  *1 It displays either via gateway or infrared communication.
- **Device Viewer**
  Displays the current status of the field device, including errors, warnings and good status. The status display icon (red, yellow, green) clearly indicates the device's self-diagnostic status.
  DeviceViewer supports FOUNDATION fieldbus H1, HART, ISA100.11a.
- **Trend Graph Function**
  Displays the acquired data on a trend graph.
  This function is informative for the evaluation of the trend of the acquired data.

■ Configuration Function

Device parameters can be easily configured.

- **BT200 Tablet**
  With the same screen and operation as the BT200, Field engineer can configure and adjust the BRAIN device without changing the conventional procedure.
  In addition, by saving the device's parameter information on the FieldMate. So the printing operation on the field has become useless.
- **Parameter Manager**
  The Parameter Manager is a simple parameter viewing window, in which adjustment and field device configuration can easily be performed.
  Parameter Manager supports FOUNDATION fieldbus H1, HART, ISA100.11a.
- **DTM Works**
  The DTM Works provides not only configuration, but easy setup, calibration, simulation wizards etc. as defined by the device vendors' DTM.
  DTM Works supports BRAIN, FOUNDATION fieldbus H1, HART, PROFIBUS, ISA100.11a, Modbus.
- **DD Menu**
  The existing fieldbus DD is utilized to enable function block configuration.
  DD Menu supports FOUNDATION fieldbus H1.
- **Zero Adjustment**
  The Zero Adjustment function is executed from Segment Viewer with one-click. This function supports YOKOGAWA Differential pressure transmitters (HART/FOUNDATION fieldbus H1/BRAIN).
- **All Parameters Acquisition**
  This function obtains all parameters from device with one-click. Obtained parameters can be compared with recorded parameters and then displayed the difference. Recorded parameters and comparison result can export in various formats (text, HTML etc.).

■ Database Function

- **Device Maintenance Info.**
  Provides advanced maintenance information consisting of:
  - Device Information
  - Sticky Note
  - Images
  - History
  - Parameter (All Parameters of Device, ZERO Adjustment Parameters of Device)
  - Attachment (Memo, Document, Parameter Manager Data, DTM Data)

  All information can be exported / imported.
- **Device Navigator**
  Shows all registered devices and provides a searching function by tag, device name, memo, etc.
  * Online registration and offline registration can directly be implemented from Segment Viewer/Device Navigator. (Up to approx. 500 devices can be registered) Marking it with flags to remind users of outstanding issues etc., simplifying daily maintenance.

■ History Function

FieldMate Operation log are automatically recorded.
- Date & Time
- Device Tag
- Device ID
- User
- Source: DTM works, DD Menu, Parameter Manager, etc.
- Category: Configuration (device parameter change) and System (logs of login, etc.).
- Message: Details log of changes

- **Device Status View**
  Displays the history of the device alarms.

■ Input Loop Check Support

This function is to output test signal from device. Some test pattern(Ex. 3 point check / 5 point check) and signal value can create easily. This test pattern can be saved and read. Any device can be operated through the same user interface - regardless supplier, type or communication protocol (HART/BRAIN).

■ 3rd Party DTM Function

This function provides device interface in compliance with FDT standard, enabling the features defined by the device vendor's DTM.

■ Pressure Calibration Support Function

Guides the calibration work in combination with CA700 pressure calibrator.
This function provides the efficient calibration work by monitoring the pressure value and the current value in real time. Also, the high precision calibration work is provided by automatic recording calibration data. The calibration result can be outputted as calibration report.

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■ FLXA402/SA11 Calibration Management

The dedicated screen is prepared for the new 4-Wire Converter *FLXA402* and the SENCOM™ Smart adapter *SA11* and supported the following functions.

- **Local Display system for *FLXA402***
  It can be connected to the *FLXA402* via the dedicated interface (*1), and the measured value / set value / history display of *FLXA402* can be displayed with graphical display and comfortable operability.
- **Direct access system for *SA11***
  It connects directly to *SA11* and can perform calibration work for the sensor (*SA11*) and setting parameter management in work space other than the site. (*2)

*1: The target *FLXA402* must support Bluetooth, Modbus RTU (RS-485), or Ethernet Modbus TCP/IP.
*2: The Bluetooth interface box IB100 is required.

■ Field Diagnostic Function

NAMUR NE107 is a recommendation to categorize alarms into four status signals (Failure, Function Check, Out of Specification and Maintenance Required), this allows for reliable operation, more efficient planning of maintenance and higher confidence in the instruments operation.
The classification, configuration and status of many device alarms that conform to NE107 can be easily checked, changed and monitored by Field Diagnostic Function.
(It supports FOUNDATION fieldbus H1 and Profibus)

■ 3rd Party COMM DTM support

Provides advanced connections and communication networking enabling:
- Access PROFIBUS-PA/DP devices
- Access HART devices via PROFIBUS
- Access 3rd Party multiplexers.

User defined communication topology can be saved in FDT project.

■ Serial Number Acquisition

Applicable device: HART EJX and EJA series
Acquires serial number of the device and updates it in the Device Maintenance Information. Also exports the following information to a file.
- Serial Number
- Device Tag
- Device ID
- Device Revision
- Model and Suffix Code

■ AXF Verification Tool (/VF option)

Verifies Magnetic flowmeters (AXF) and supports two types of verification. One is standard verification to verify it without having to disconnect from a process line. And another is enhanced verification to verify it more precise than standard one. The Verification result can be printed and stored in the Device Maintenance Information.
Applicable device: HART Magnetic Flowmeter AXF series

Necessary other items for Enhance verification: AM012 Magnetic Flow Converter, CA150 HANDY CAL (or equivalent device) and Insulation checker

■ PRM (Plant Resource Manager) Synchronization

Synchronizes information between FieldMate and PRM to make use of PRM as a master data base.
Bi-directional file transfer operation is supported.

■ FieldMate Validator (/VT option)

Validates the connection between N-IO node and field devices without CENTUM FCS (Field Control Station)/ ProSafe-RS SCS (Safety Control Station). The N-IO node configuration and input/output validation are also possible without FCS/SCS.
This option enables FieldMate to communicate with field devices via N-IO node. (The Device Replacement Tool cannot be used via N-IO node.)

* FieldMate Validator can be used only while the communication between FCS/SCS and the N-IO node is not established.
* The I/O configuration data can be exported/imported between FieldMate Validator and CENTUM VP/ProSafe-RS. For that, the following software is required to be installed in CENTUM VP/ProSafe-RS system.

CENTUM VP:
- VP6E5000 Engineering Server Function
- VP6E5100 Standard Engineering Function
- VP6E5210 Module-based Engineering Package

ProSafe-RS:
- RS4E5000 Engineering Server Function
- RS4E5100 Safety System Engineering and Maintenance Function
- RS4E5210 I/O List Engineering Package

* When the I/O List Conversion Tools are used, Microsoft Excel (Excel 2013 64bit SP1 or later / Excel 2010 64bit SP2 or later) is required to be installed in the FieldMate Validator PC.

■ External Interface Function (Tokuchu)

This is the enhance communication function.
This function provides the capability of uploading FieldMate data to the management system and downloading any information to FieldMate for plant maintenance.
Also, FieldMate can communicate with non-standard communication protocol field devices.
This function is provided as a special order (Tokuchu).
For any inquiries, please contact FieldMate support desk
<FIELD-MATE-SUPPORT-DESK@cs.jp.yokogawa.com>.

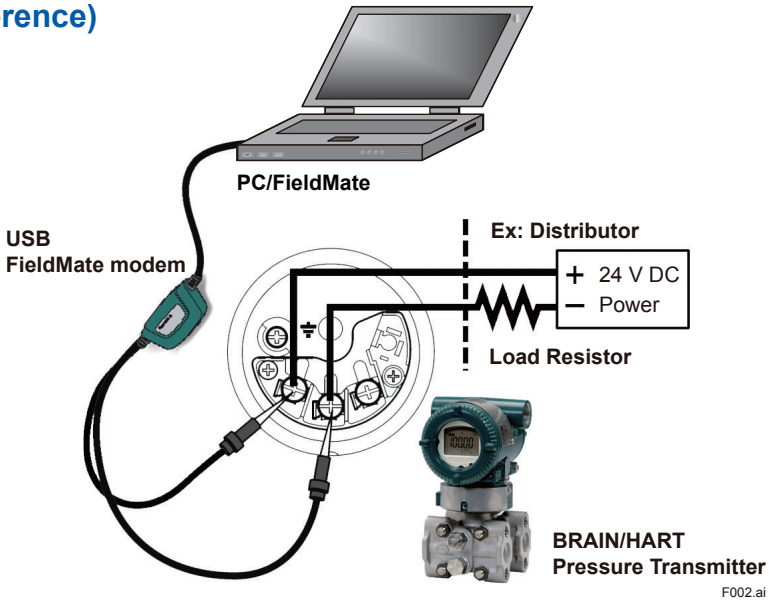
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3. Connection Example (for reference)

Sample of connecting BRAIN/HART pressure transmitter.

[Required Components]

- **BRAIN/HART Pressure Transmitter.**
- **24 V DC Power supply**
- **Load Resistor (250Ω ±10%)**
- **USB FieldMate Modem: BRAIN/HART**



F002.ai

4. System Requirements

Software Operating Environment			
OS		Windows 10 Pro, Home 32bit / 64bit (version 1709, version 1803) Windows 7 Professional, Home Premium 32bit/64bit SP1 or later *6	
OS Language		English, Japanese, Chinese (simplified), German, French, Russian *7	
Hardware Operating Environment			
		Windows 10	**Windows 7**
CPU		1gigahertz (GHz) or faster processor	
Main Memory		2GB or more	
Hard disk space		4GB or more	
DVD-ROM Drive		Windows 10 compatible	Windows 7 compatible
Display		1024×768 or better resolution recommended Windows 10 compatible	1024×768 or better resolution recommended Windows 7 compatible
Network Port			
		Windows 10	**Windows 7**
BRAIN HART	Interface	One USB port USB2.0 standard	
	Modem	USB FieldMate Modem: BRAIN/HART (Yokogawa Option)	
FOUNDATION fieldbus H1 *1	Interface	One PCMCIA card slot	
	Interface board	NI PCMCIA-FBUS Series 2 (National Instruments)	
	Driver	NI-FBUS Communications Manager 15.0 or later	
FOUNDATION fieldbus H1 *1	Interface	One USB port USB2.0 standard	
	Interface board	NI USB-8486 (National Instruments)	
	Driver	NI-FBUS Communications Manager 15.0 or later	
PROFIBUS	Interface	One USB port USB2.0 standard	
	Interface card	PROFIusb (Softing)	
	commDTM & driver	PROFIdtm V2.11.01 or later Driver V5.46.8 or later	PROFIdtm V2.11.01 or later Driver V5.46.8 or later
	DP/PA coupler	KFD2-BR-A.PA.93 (PEPPERL+FUCHS) 6ES7 157-0AC80-0XA (SIEMENS)	
	Interface	One USB port USB2.0 standard	
	Interface card	PBproUSB (Softing)	
	commDTM & driver	PROFIdtm V2.11.01 or later Driver V5.46.8 or later	PROFIdtm V2.11.01 or later Driver V5.46.8 or later
	DP/PA coupler	KFD2-BR-A.PA.93 (PEPPERL+FUCHS) 6ES7 157-0AC80-0XA (SIEMENS)	
HART	Interface	Bluetooth 2.0	
	Modem	VIATOR® Bluetooth® Interface: Model 010041 (MACTek®) *2	
ISA100.11a *3	Interface	One USB port USB2.0 standard	
	Modem	Infrared Adapter : ACT-IR224UN-LN96-LE 9600bps (ACTiSYS) *4	
	Driver	Version 1.5.0 / Version 1.12.0 *8	Version 1.7.0 *9
ISA100.11a *5	Interface	One Ethernet port	
Modbus Serial	Interface	Not supported	One USB port USB2.0 standard
	Modem		Isolated RS422/485 USB adaptor SP390A-R2 (BLACK BOX)
	Driver		Version 2.0.0 or later
Login			
Account		Administrator privilege	

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Communication performance depends on environment and interface you select.

*1 FieldMate should connect to the devices in FOUNDATION fieldbus H1 segment without host system
*2 Microsoft supplied Bluetooth stack is used
*3 ISA100.11a OOB infrared communication
*4 Holder for Infrared Adapter is available (recommended): Gorillamobile Original: GM1 (JOBY, Inc).
*5 ISA100.11a communication via gateway
*6 FieldMate Validator is supported with Windows 10 Pro 64bit and Windows 7 Professional 64bit.
*7 FieldMate Validator is supported with an English OS and a Japanese OS.
*8 Version 1.5.0 driver is used for PL2303 HA/HXA chip and Version 1.12.0 driver is used for PL2303TA chip
*9 Interface recommends to use the driver included OS. Version 1.7.0 driver is used if interface does not work well.

5. Model and Suffix Codes

Field device management software package: FieldMate Release: R3.04

MODEL, SUFFIX CODES

Model	Suffix Codes			Description	Remarks
FSA111	·····			FieldMate	
License	**-S** ·····			Single PC license	License number issued
—		**1**·····		Always 1	
Language			**1**·····	Always 1 *2	
Option Code (1)			**/B** ·····	USB FieldMate Modem	BRAIN/HART
Option Code (2)			**/VF**·····	AXF Verification Tool	
			/VT·····	FieldMate Validator *3	For N-IO Node

CD-ROM (FieldMate Software Media): F9197DS *1
DVD-ROM (Device Files Media): F9197DT *1
USB FieldMate Modem (BRAIN and HART protocols): F9197UF

*1 Replacement disk only
*2 With an English Windows OS, FieldMate English can be installed.
With the following Windows OS, either FieldMate with the following language or FieldMate English can be installed.
Japanese, Chinese (simplified), German, French, Russian
*3 FieldMate Validator software (including user's manual) can be downloaded from Yokogawa web site.
A display language of FieldMate Validator is English.
A commercially available USB cable (Connector type of N-IO node: Micro-B) is necessary to connect to N-IO node.

● **Upgrading from R2 to R3**

- Upgrading from FieldMate Basic to FieldMate R3

Model	Suffix Codes			Description
FRA110	·····			Upgrade from FieldMate Basic to R3
License	**-S**·····			Single PC license
—		**1**·····		Always 1
Language			**1**·····	Always 1

Notice: R2 license number needs to be stated on placing order

- Upgrading from FieldMate Advance to FieldMate R3

Model	Suffix Codes			Description
FRA111	·····			Upgrade from FieldMate Advance to R3
License	**-S**·····			Single PC license
—		**1**·····		Always 1
Language			**1**·····	Always 1
Option Code			**/VF**·····	From R2.x without Verification Tool to R3 with /VF option
			/VFN·····	From R2.x with /VF option to R3. with /VF option

Notice: R2 license number needs to be stated on placing order

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6. External View

External view of USB FieldMate modem: BRAIN/HART

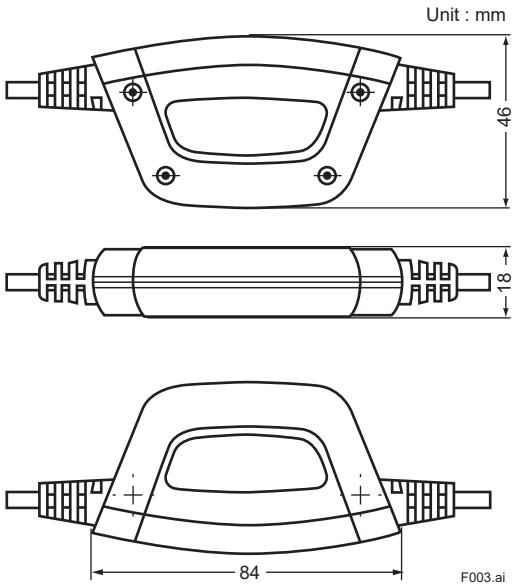


Fig. 3: USB FieldMate Modem

Total cable length: Approximately 2.3 m

Techinical Specifications	USB Interface
SOFTWARE	
USB Interface	USB2.0 standard *1
ELECTRICAL	
Power Supply	System powered by USB Port
Supply Current	40mA@ + 5 V
Pins to Computer	USB Type-A connector
Pins to Device	2-pin, polarity insensitive Mini-grabber test clips. Detachable alligator clips addtionally
Isolation(DC)	1910 VDC between instrument and computer
Isolation(AC)	1350 Vrms (50Hz)
ENVIRONMENTAL	
Operating Temperature	0 °C to 55 °C
Storage Temperature	-40 °C to 70 °C
Storage Humidity	0% to 95% relative humidity
PHYSICAL DIMENSIONS	
Enclosure	84 x 46 x 18 mm, ABS industrial enclosure
Device Interface Cable	190 cm, 2-conductor terminating with two mini grabber clips
USB Cable	27 cm cable terminating in a USB type A connector

*1: USB2.0 also covers USB1.1

EMC Conformity Standards CE, RCM, KC, EAC

- CE
  EN61326-1 Class A, Table1
  RoHS directive: EN50581
- KC Mark
  Registration No: MSIP-REM-YHQ-EEN441
- RMC
  EN61326-1 Class A, Table1
- EAC
  EN61326-1 Class A, Table1

7. Included Items

FieldMate includes the following items:

* Software and User's Manual of FieldMate Validator are not included. Please download Software and User's Manual of FieldMate via Yokogawa web site.

<Product>

- CD-ROM: FieldMate Software Media
- DVD-ROM: Device Files Media
- USB FieldMate modem: BRAIN/HART w/ cables (optional)

<Documentation>

- License number sheet
- Getting Started

Please download User's Manual via Yokogawa web site.
http://www.yokogawa.com/fieldmate/

8. Items Contained in Media

■ Items contained in the Media of FieldMate R3.03:

CD-ROM: FieldMate Media

- FieldMate Program
- USB modem driver

DVD-ROM: Device Files Media

- Device DTM for Yokogawa devices
  - BRAIN
  - FOUNDATION fieldbus H1
  - HART
  - PROFIBUS
  - ISA100.11a
  - Modbus
- Device DTM for the HART devices *1
- Built-in DTMs (DTM interprets DD and works right straight.)
  - FOUNDATION fieldbus H1
  - HART
  - ISA100.11a
- DD for the FOUNDATION fieldbus H1 devices *1
- DD for the HART devices *1

*1: Devices registered with FieldCom Group, some DTM or DD may not be included.

Remarks:
Yokogawa certifies the quality and operability only of DD and DTM which have been registered by Yokogawa.

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9. Compatibility

Compatibility between FieldMate and Device Files is indicated on the web site at the following URL.
For more information, see the “System Requirements”.
http://www.yokogawa.com/fieldmate/

10. User Registration

FieldMate can be installed on a single PC using the license number provided. FieldMate can be used for up to 30 days without registration.

For permanent installation, user registration is required. After registration an Activation Key is provided to the user. User registration can be done on the FieldMate User Registration web site.
https://partner.yokogawa.com/global/fieldmate/
The items required for user registration are the license number and Hard Disk serial number (Volume Serial Number) of the PC to which FieldMate is installed.
Installation of FieldMate Validator requires activation of FieldMate.

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