



## 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 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.






##### **NOTICE**

This symbol contains information on procedures and other facts which do not result in personal injury.

#### 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

#### Electrical symbols

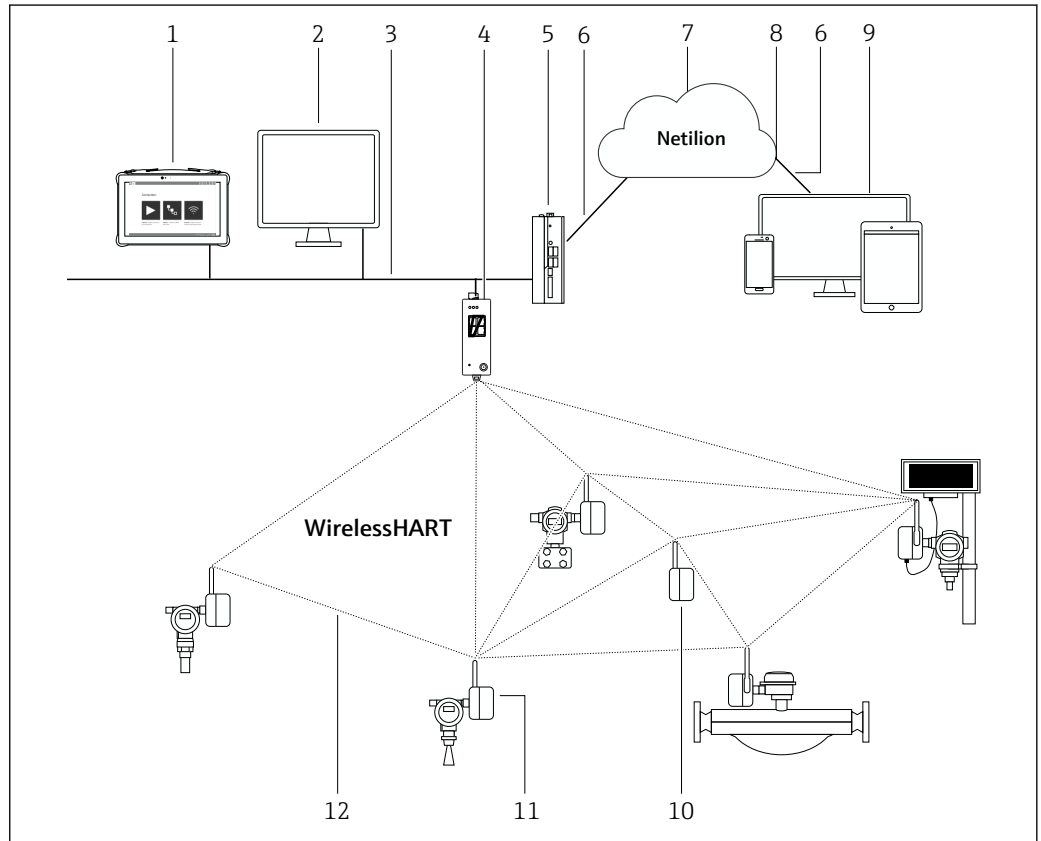
Symbol	Meaning
	Direct current
	Alternating current
	Direct and alternating current
	<b>Ground connection</b> A grounded terminal which, as far as the operator is concerned, is grounded via a grounding system.
	<b>Protective earth (PE)</b> Ground terminals that must be connected to ground prior to establishing any other connections.  The ground terminals are located on the interior and exterior of the device: <ul style="list-style-type: none"> <li>▪ Interior ground terminal: protective earth is connected to the mains supply.</li> <li>▪ Exterior ground terminal: device is connected to the plant grounding system.</li> </ul>

## Function and system design

### Measuring system

The FieldGate SWG50 is a functional WirelessHART gateway. It comprises a network manager application, a WirelessHART (access point) interface module and a gateway application. Up to 100 wireless or corded devices can be connected to the FieldGate SWG50. The application supplies data from the WirelessHART network via Modbus TCP or HART-IP. A CommDTM makes it possible to attach DTMs to connected devices.

### System architecture



1 Example of WirelessHART network architecture with FieldGate SWG50

- 1 Endress+Hauser Field Xpert, e.g. SMTxx
- 2 Host application / FieldCare SFE500
- 3 Ethernet communication
- 4 FieldGate SWG50
- 5 FieldEdge SGC500
- 6 https Internet connection
- 7 Netilion Cloud
- 8 Application Programming Interface (API)
- 9 Internet browser-based Netilion Service app or user application
- 10 WirelessHART adapter SWA70 used as a repeater
- 11 HART field device with WirelessHART adapter SWA70
- 12 Encrypted wireless connection via WirelessHART

### Network connection

The configuration of the FieldGate SWG50 is performed entirely via an embedded web server. The web server is password-protected and uses only secure (HTTPS) connections.

It is possible to save the configuration settings of the gateway as a password-protected file on a PC.

It is also possible to upload the file to a device for easy commissioning of a replacement gateway.

The gateway firmware can be updated via the web server.

It is possible to restore the factory settings via the web server (or the button on the front of the gateway).

**Communication and data processing****HART IP**

The gateway supports HART IP via TCP and UDP. Up to 10 socket connections can be established at the same time.

**Modbus TCP**

The gateway supports Modbus TCP via Ethernet.

## Input

**Measuring range**

Up to 250 m outdoors.

Up to 50 m indoors.

Depending on the type of antenna to be connected and the environment.

**Type of input**

WirelessHART communication interface (IEC 62591)

**Input signal**

Up to 100 WirelessHART-based devices can be connected. Process variables and device status according to HART standard are transmitted by the field devices to the gateway in burst modes.

**Operating frequency**

2.4 GHz ISM band

**Transmission power**

10 dBm

## Output

**Output and input variants**

Ethernet interface in RJ45 format, to which only twisted-pair cables with an impedance of 100 Ω can be connected.

The maximum distance between units is based on Ethernet standards and is determined by the environment and the networks' compliance with these standards.

**Output signal**

HART-IP and MODBUS TCP communication interface

**Transmission behavior**

The transmission rate is 10, 100 or 1000 Mbps.

## Power supply

**Supply voltage**

DC power input range: 10.8 to 30.5 V<sub>DC</sub>



Current outputs P1 and P2 are redundant and have reverse polarity protection.

**Power consumption**

<7 W

**Current consumption**


290 mA at 24 V<sub>DC</sub>.

**Electrical connection**

Reference	Label	Plug type	Signal	Use
J1	1	RJ-45	10/100/1000-T	Ethernet connection
J2	2	RJ-45	10/100/1000-T	Ethernet connection
J3	3	RJ-45	10/100/1000-T	Ethernet connection

Reference	Label	Plug type	Signal	Use
J4	4	RJ-45	10/100/1000-T	Ethernet connection
J5	ANT	RSMA	2.4 GHz	Antenna connection
J6	⊖	Philips screw		Grounding of device
J7	Plug	8-pin Combicon	DC voltage	Power supply

Plug	Signal	Marking
1	DC+	+P1-
2	DC-	
3	DC+	+P2-
4	DC-	
5	N/A	NC
6	N/A	NC
7	N/A	NC
8	N/A	NC

 The holding force of the plug-in connector must be at least 15 N.

**Terminals** Ground ring or spade/fork tongue crimp connection to M3 cap screw and lockwasher on top surface of device housing.

**Cable entries** Screw terminals: 0.2 to 4 mm<sup>2</sup> (solid wire), 0.2 to 2.5 mm<sup>2</sup> (stranded wire (AWG 24-14))

## Performance characteristics

**Hardware**

- Marvel Dual Core ARM-7 with 1.2 GHz, supplemented by 1 GB DDR4-RAM and 4 GB MMC flash memory
- Supervisor processor
- 4-port Ethernet switch
- WirelessHART interface transceiver module
- WirelessHART AP interface module (model M2140)
  - FCC-ID: SJC-M2140
  - IC-ID: 5863-M2140

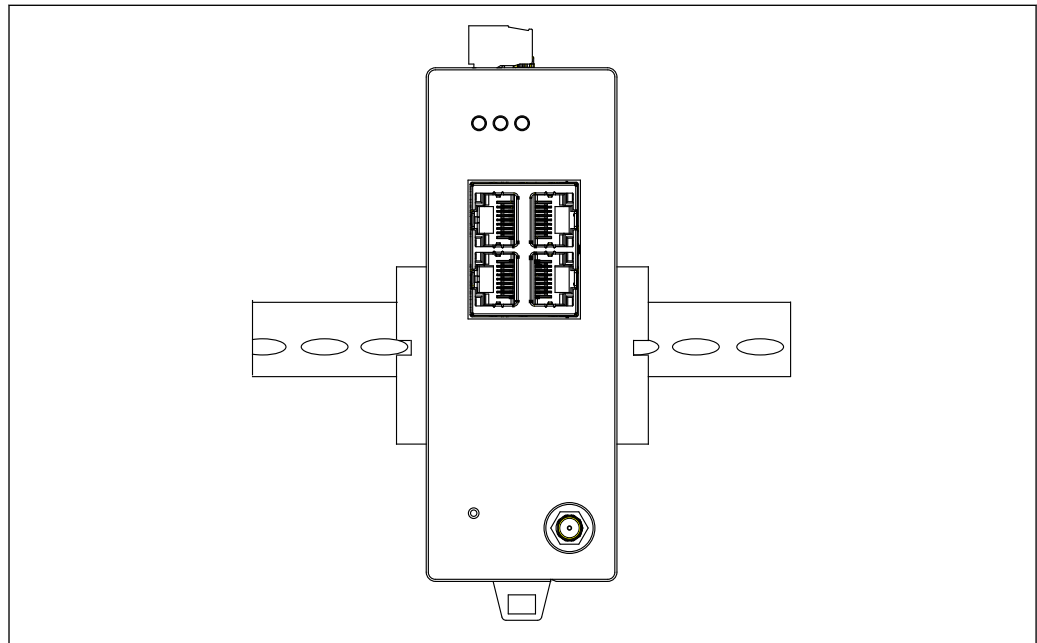
**Software** The gateway application includes an embedded web server, a Modbus TCP interface, a HART-IP interface and logic functions for managing the device.

## Installation

**Mounting location** The device must be installed in a housing that has a minimum protection rating of IP54 as per EN/IEC 60079-15. The device must be used only in areas with a maximum pollution degree of 2 as defined in EN/IEC 60664-1. The device can be installed in Zone 2 hazardous areas. Routing and remote installation of the antenna must comply with the relevant site regulations when installed in unclassified Zone 2 or Class I, Division 2 hazardous areas. Otherwise, the antenna must be installed within the end-use housing .

**Installation instructions**

The FieldGate SWG50 is mounted on an NS 35 mounting rail. To prevent the device from slipping, end clamps must be mounted on both sides. The device can be mounted either horizontally or vertically. The modules are mounted on the mounting rail from left to right.



A0048928

2 Mounting on a standard DIN rail

#### Special mounting instructions

A remote antenna can be mounted outside a cabinet. If there is a risk of lightning, install lightning/EMP protection between the gateway and the remote antenna.

## Environment

<b>Ambient temperature range</b>	-40 to 70 °C
<b>Storage temperature</b>	-40 to 85 °C
<b>Relative humidity</b>	10 to 90 % non-condensing
<b>Operating height</b>	max. 3 048 m (10 000 ft)
<b>Climate class</b>	as per IEC 60068-2-30 Db
<b>Degree of protection</b>	IP20
<b>Vibration resistance</b>	Sinusoidal vibration as per IEC 60068-2-6 10 to 60 Hz 0.070 (p-p mm) amplitude 60 to 150 Hz 60 Hz to 150 Hz 5 g acceleration 1 octave/minute
<b>Shock resistance</b>	Half-sinusoidal shock as per IEC 60068-2-27 15 g Shock 18 ms Pulse
<b>Electromagnetic compatibility (EMC)</b>	Compliance with EMC directive 2014/30/EU



LED	LED	Description
	ST (multicolored)	flashing green: device initializing flashing red: device restarting or troubleshooting lit green: power supply/device is active
	MESH (green)	Device connection: ON: WirelessHART devices connected OFF: no WirelessHART devices found or not connected
	ERR (red)	Error: OFF: no errors ON: internal error

**Service interface** There are four Gigabit Ethernet ports with identical functionality, which act as an unmanaged switch. Each port can be used to access the web server, HART IP or Modbus interfaces.

**Reset button** The reset button restores the standard IP address and resets the FieldGate SWG50 to the factory setting.

## Certificates and approvals

The latest approvals for the product are available from [www.endress.com](http://www.endress.com):

1. Select the product using the filters and search field.
2. Open the product page.
3. Select **Downloads**.
  - ↳ A list of all approvals and declarations appears.

## 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 information specific to the measuring point, such as the 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

## 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

---

### Standard documentation

FieldGate SWG50 Operating Instructions BA02235S/04/EN

## Registered trademarks

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

All other brand and product names are trademarks or registered trademarks of the companies and organizations in question.

---

---



[www.addresses.endress.com](http://www.addresses.endress.com)

---