Special Documentation
Bluetooth® module VU121

Remote operation via Bluetooth® wireless
technology

Endress+Hauser 🔲

People for Process Automation
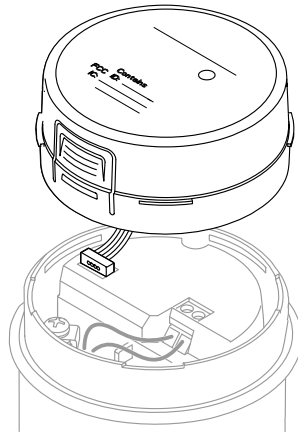
1   About this document

1.1   Symbols

🛈
Tip
Indicates additional information.

📑
Reference to another chapter.

1.2   Documentation

1.2.1   Designated use

Remote operation of devices via Bluetooth® wireless technology

Suitable for the following device versions
- Device: Liquiphant FTL51B
- Firmware version: 01.00.zz or higher
- Device version: 1

Incorrect use

The manufacturer is not liable for damage caused by improper or non-designated use.

Under different operating conditions than those described here, protection may be compromised and the correct functioning of the device cannot be guaranteed.

1.2.2   Declaration of Conformity

The Bluetooth module VU121 meets all the applicable EC Directives.

1.3   Registered trademarks

Bluetooth®
The *Bluetooth®* word mark and logos are registered trademarks owned by the Bluetooth SIG, Inc. and any use of such marks by Endress+Hauser is under license. Other trademarks and trade names are those of their respective owners.

Apple®
Apple, the Apple logo, iPhone, and iPod touch are trademarks of Apple Inc., registered in the U.S. and other countries. App Store is a service mark of Apple Inc.

Android®
Android, Google Play and the Google Play logo are trademarks of Google Inc.

2   Radio approvals

2.1   Europe

This device meets the requirements of the Telecommunications Directive RED 2014/53/EU:
- EN 300 328 V2.1.1
- EN 301 489-1 V2.1.1
- EN 301 489-17 V3.1.1
- EN 62311: 2008

2.2   Canada and United States

2.2.1   English

This device complies with Part 15 of the FCC Rules and with Industry Canada licence-exempt RSS standard(s).

Operation is subject to the following two conditions:
- This device may not cause harmful interference, and
- This device must accept any interference received, including interference that may cause undesired operation.

ℹ️ Changes or modifications made to this equipment not expressly approved by Endress+Hauser SE+Co. KG may void the FCC authorization to operate this equipment.

ℹ️ This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

ℹ️ Radiofrequency radiation exposure information

This equipment complies with FCC and IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 20 cm between the radiator and your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

2.2.2 Français

Le présent appareil est conforme aux CNR d'industrie Canada applicables aux appareils radio exempts de licence.

L'exploitation est autorisée aux deux conditions suivantes :
- L'appareil ne doit pas produire de brouillage, et
- L'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Les changements ou modifications apportés à cet appareil non expressément approuvés par Endress+Hauser SE+Co. KG peuvent annuler l'autorisation FCC d'utiliser cet appareil.

Déclaration d'exposition aux radiations

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20 cm de distance entre la source de rayonnement et votre corps.

Ce transmetteur ne doit pas être placé au même endroit ou utilisé simultanément avec un autre transmetteur ou antenne.

2.3 Japan

Japanese Radio Law and Japanese Telecommunications Business Law Compliance.

This device is granted pursuant to the Japanese Radio Law (電波法) and the Japanese Telecommunications Business Law (電気通信事業法).
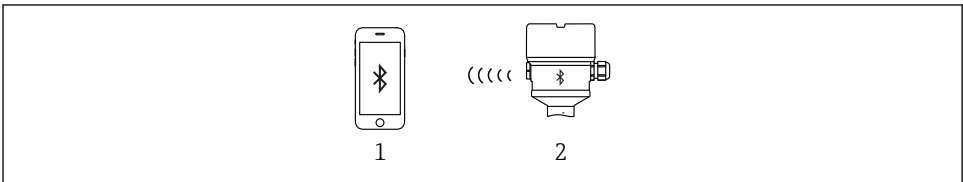
This device should not be modified (otherwise the granted designation number will become invalid).

2.4 Other countries

Other national approvals are available on request.

3 Operation options

3.1 Access via Bluetooth® wireless technology


A0033411

⊠ 1   Remote operation via Bluetooth® wireless technology

1   Smartphone or tablet with SmartBlue (app)
2   Device with optional Bluetooth module

3.2   Preparatory steps

Note down the ID number of the Bluetooth module. The ID number on the nameplate of the Bluetooth module is used as the initial password when establishing the connection for the first time.

The high cover with the window must be used for devices that are operated with the Bluetooth module.
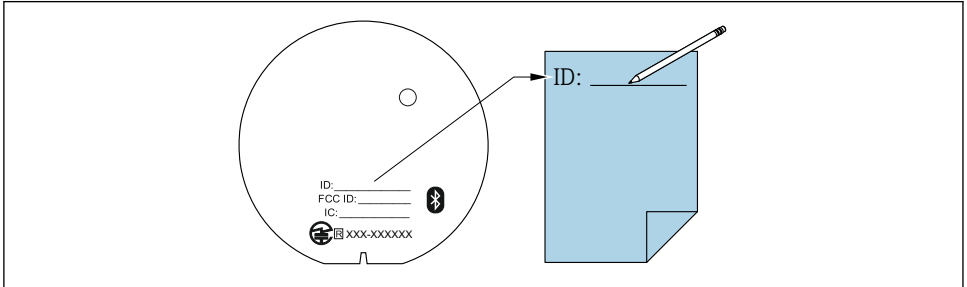
A0039040

3.3   Functions

- Connection via COM interface: Bluetooth module for device diagnostics via a smartphone app or tablet app
- Heartbeat Technology functions
  - Diagnostics: Read out the current diagnostics
  - Verification: Create the verification report
  - Monitoring: Historical record of the frequency
- Display the battery status via app when used with electronic insert FEL68 (NAMUR)
- User guidance (wizard) for SIL/WHG proof testing
- Visible in the livelist 10 seconds after the Bluetooth search commences
- Data can be read out of the Bluetooth module 60 seconds after the supply voltage has been switched on
- Display of the current vibration frequency and the switching state of the device

The yellow LED flashes when the Bluetooth module is connected to another Bluetooth device, e.g. a cellular phone

3.4   Technical data

- Maximum free-field range 50 m (165 ft)
- Operation radius with intervisibility 10 m (33 ft) around the device
- Supply voltage: 3 V_{DC} with max. 5.5 V_{DC} and min. 2.7 V_{DC}
- Power consumption: max. 5.5 mW
- Current consumption: 1 mA
- Pollution degree: 2

- Temperature range: –40 to +85 ℃ (–40 to +185 ℉)
- Relative humidity: operation up to 100 % in the measuring devices (📖 designated use). Do not open in a condensing environment!
- Suitable for wet environments, integrated in measuring devices (📖 designated use).

3.4.1   Replacement batteries for FEL68 (2-wire NAMUR)

🛈 Only the following types of AA 3.6 V lithium batteries made by the following manufacturers are suitable for use:
- SAFT LS14500
- TADIRAN SL-360/s
- XENOENERGY XL-060F

3.4.2   Operating altitude

As per IEC 61010-1 Ed.3:
- Up to 2 000 m (6 600 ft) above sea level
- Can be extended to 3 000 m (9 800 ft) above sea level if overvoltage protection is used

4   Commissioning

4.1   Requirements

Device requirements
Commissioning via SmartBlue is only possible if a Bluetooth module is installed in the device.

System requirements
SmartBlue is available as a download from the Google Play Store for Android devices and from the iTunes Store for iOS devices
- iOS devices: iPhone 4S or higher from iOS9.0; iPad2 or higher from iOS9.0; iPod Touch 5th generation or higher from iOS9.0
- Devices with Android: from Android 4.4 KitKat and *Bluetooth*® 4.0

Initial password
The ID number (serial number) on the nameplate of the Bluetooth module is used as the initial password when establishing the connection for the first time.

🛈 It is important to note the following if the Bluetooth module is removed from one device and installed in another device: all log-in data are only stored in the Bluetooth module and not in the device. This also applies to the password changed by the user.

4.2   Establishing a connection via SmartBlue (app)

1. Scan the QR code or enter "SmartBlue" in the search field.

    ↳
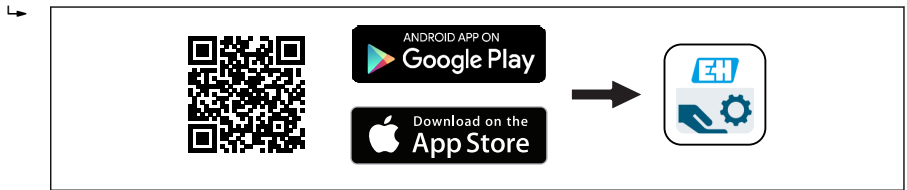
A0039186

   ☒ *2   Download link*

2. Start SmartBlue.

3. Select device from livelist displayed.

4. Log-in:

    ↳ User name: admin
    Password: ID number (serial number) on the Bluetooth module

5. For more information, tap the icons.

ℹ️ Change the password after logging in for the first time!