VU121

Bluetooth® Module

**Remote Operation via Bluetooth®
Wireless Technology**

Manual

Your automation, our passion.

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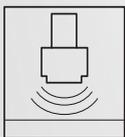
With regard to the supply of products, the current issue of the following document is applicable:
The General Terms of Delivery for Products and Services of the Electrical Industry, published by the Central Association of the Electrical Industry (Zentralverband Elektrotechnik und Elektroindustrie (ZVEI) e.V.) in its most recent version as well as the supplementary clause: "Expanded reservation of proprietorship"

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1 Introduction

1.1 Content of this Document

This document contains information that you need in order to use your product throughout the applicable stages of the product life cycle. These can include the following:

- Product identification
- Delivery, transport, and storage
- Mounting and installation
- Commissioning and operation
- Maintenance and repair
- Troubleshooting
- Dismounting
- Disposal

Note

This document does not substitute the instruction manual.

Note

For full information on the product, refer to the instruction manual and further documentation on the Internet at www.pepperl-fuchs.com.

Note

For specific device information such as the year of construction, scan the QR code on the device. As an alternative, enter the serial number in the serial number search at www.pepperl-fuchs.com.

The documentation consists of the following parts:

- Datasheet – product overview
  The datasheet contains the essential technical data for product selection.
- Technical information (TI) – planning aid
  The document contains all the technical data on the device and provides an overview of the accessories and other products that can be ordered for the device.
- Manual (BA) – complete information
  The manual contains all information from incoming acceptance to disposal.
- Brief instructions (KA) – guide that takes you quickly to the 1st measured value
  The brief instructions contain all the essential information from incoming acceptance to initial commissioning.
- Instruction manual (SI) – safety-relevant document
  Depending on the approval, the required instruction manuals are supplied with the device.

Additionally, the following parts may belong to the documentation, if applicable:

- EU-type examination certificate
- EU declaration of conformity
- Attestation of conformity
- Certificates
- Control drawings
- Functional safety manual
- Additional documents

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1.2　Safety Information

Target Group, Personnel

Responsibility for planning, assembly, commissioning, operation, maintenance, and dismounting lies with the plant operator.

Only appropriately trained and qualified personnel may carry out mounting, installation, commissioning, operation, maintenance, and dismounting of the product. The personnel must have read and understood the instruction manual and the further documentation.

Prior to using the product make yourself familiar with it. Read the document carefully.

1.3　Symbols Used

This document contains symbols for the identification of warning messages and of informative messages.

Warning Messages

You will find warning messages, whenever dangers may arise from your actions.
It is mandatory that you observe these warning messages for your personal safety and in order to avoid property damage.

Depending on the risk level, the warning messages are displayed in descending order as follows:

Danger!

This symbol indicates an imminent danger.

Non-observance will result in personal injury or death.

Warning!

This symbol indicates a possible fault or danger.

Non-observance may cause personal injury or serious property damage.

Caution!

This symbol indicates a possible fault.

Non-observance could interrupt the device and any connected systems and plants, or result in their complete failure.

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Informative Symbols

Note

This symbol brings important information to your attention.

Action

This symbol indicates a paragraph with instructions. You are prompted to perform an action or a sequence of actions.

► Reference to another section or to further documentation

Symbols in Graphics

1, 2, 3 ... Item numbers

A, B, C, ... Views

1.4 Registered Trademarks

Android®

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

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.

Bluetooth®

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2   Basic Safety Instructions

2.1   Designated Use

Remote operation of devices via *Bluetooth*® wireless technology

Suitable for the following device versions:

- Device: Vibration limit switch LVL-M4
- Firmware version: 01.00.zz or higher
- Device version: 1

2.2   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.

2.3   Declaration of Conformity

The *Bluetooth*® module VU121 meets all the applicable EC Directives.

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3 Radio approvals

3.1 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

3.2 Canada and United States

3.2.1 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.

Note

Changes or modifications made to this equipment not expressly approved by Pepperl+Fuchs may void the FCC authorization to operate this equipment.

Note

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.

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

3.2.2 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.

i Les changements ou modifications apportés à cet appareil non expressément approuvés par Pepperl+Fuchs peuvent annuler l'autorisation FCC d'utiliser cet appareil.

i **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.

3.3 Other countries

Other national approvals are available on request.

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4 Operation Options

4.1 *Bluetooth*® Wireless Technology

Access via *Bluetooth*® wireless technology
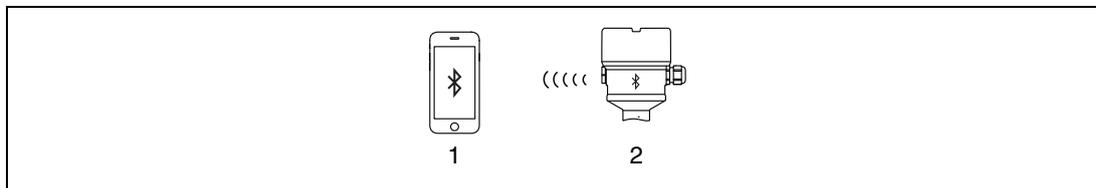

Figure 4.1   Remote operation via *Bluetooth*® wireless technology

1   Mobile phone or tablet with P+F Level app

2   Device with optional *Bluetooth*® module

4.2 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.
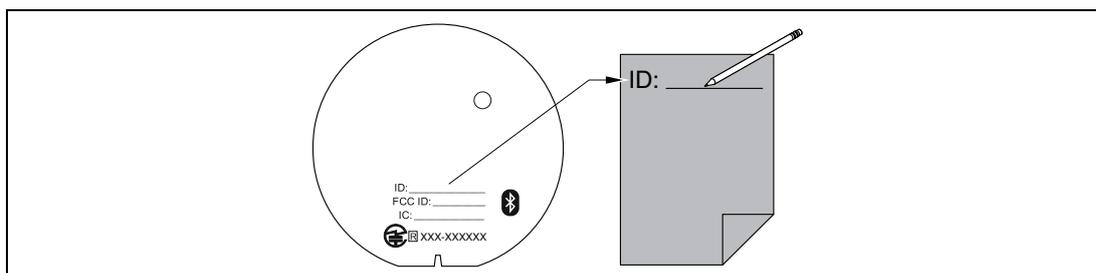

Figure 4.2

4.3 Functions

- Connection via COM interface: *Bluetooth*® module for device diagnostics via a smartphone app or tablet app
- Display the battery status via app when used with electronic insert FEL68 (NAMUR)
- User guidance (wizard) for SIL/WHG proof testing
- Visible in the live-list 10 s seconds after the *Bluetooth*® search commences
- Data can be read from the *Bluetooth*® module 60 s after the supply voltage is switched on .
- Display of the current vibration frequency and the switching state of the device
- Heartbeat Technology functions

The yellow LED flashes when the *Bluetooth*® module is connected to another *Bluetooth*® device, e. g. mobile phone.

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4.4 Technical Data

- Maximum free-field range 50 m (165 foot)
- Operation radius with intervisibility 10 m (33 foot) around the device
- Supply voltage: 3 VDC with max. 5.5 VDC and min. 2.7 VDC
- Power consumption: max. 5.5 mW
- Current consumption: 1 mA
- Pollution degree: 2
- Temperature range: -40 ... +85 °C (-40 ... +185 °F)
- Relative humidity: operation up to 100 % in the measuring devices, see chapter 2.1
  Do not open in a condensing environment!
- Suitable for wet environments, integrated in measuring devices, see chapter 2.1

4.4.1 Replacement Batteries

A special battery is required when using the device with the FEL68 electronic insert (2-wire NAMUR).

i

Note

Replacement batteries can be purchased from a specialist retailer. Only the following types of AA 3.6 V lithium batteries made by the manufacturers listed below are suitable as replacement batteries:

- SAFT LS14500
- TADIRAN SL-360/s
- XENOENERGY XL-060F

4.4.2 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.

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5 Commissioning

5.1 Requirements

Device Requirements

Commissioning via P+F Level app is only possible if a *Bluetooth*® module is installed in the device.

System Requirements

The P+F Level app is available for download for mobile smartphone or tablet devices in the Google Play Store for Android, and in the App Store for iOS.

- iOS devices:
  - iPhone 5S or higher from iOS11
  - iPad 5th Generation or higher from iOS11;
  - iPod Touch 6th Generation or higher from iOS11
- Devices with Android: from Android 6.0 and *Bluetooth*® 4.0

Initial Password

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

i

Note

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.

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5.2 Establishing a Connection via P+F Level App

Downloading and Installing P+F Level App

1. Enter **P+F Level** in the search field of the app store.

Figure 5.1   App-Stores

2. Install the P+F Level app.

3. Start the P+F Level app.

4. Select device from livelist displayed.

5. Log-in:
   ↳ User name: admin
      Password: ID number on the *Bluetooth®* module

6. Tap the icons for more information.

Note

Change the password after logging in for the first time!

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6 Disposal

If required by the Directive 2012/19/EU on waste electrical and electronic equipment (WEEE), the product is marked with the depicted symbol in order to minimize the disposal of WEEE as unsorted municipal waste. Do not dispose of products bearing this marking as unsorted municipal waste. Instead, return them to Pepperl+Fuchs for disposal under the applicable conditions.

6.1 Battery Disposal

- The end user is legally obliged to return used batteries.
- The end user can return old batteries or electronic assemblies containing these batteries free of charge to Pepperl+Fuchs.

In accordance with German law regulating the use of batteries (BattG §28 Para 1 Number 3), this symbol is used to denote electronic assemblies that must not be disposed of as household waste.

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Explosion Protection

- Intrinsic Safety Barriers
- Signal Conditioners
- FieldConnex® Fieldbus
- Remote I/O Systems
- Electrical Ex Equipment
- Purge and Pressurization
- Industrial HMI
- Mobile Computing and Communications
- HART Interface Solutions
- Surge Protection
- Wireless Solutions
- Level Measurement

Industrial Sensors

- Proximity Sensors
- Photoelectric Sensors
- Industrial Vision
- Ultrasonic Sensors
- Rotary Encoders
- Positioning Systems
- Inclination and Acceleration Sensors
- Fieldbus Modules
- AS-Interface
- Identification Systems
- Displays and Signal Processing
- Connectivity

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