

# Instruction Manual

## Marking

Fieldbus diagnostic handheld FDH-1
EC-type examination certificate: ZELM 14 ATEX 0531 Ex II 2(1) G Ex ib [ia Ga] IIC T4 Gb , Ex II 3(1) G Ex ic [ia Ga] IIC T4 Gc , Ex II 3 G Ex ic IIC T4 Gc , Ex II (1 D) [Ex ia IIC Da] , Ex II (3 D) [Ex ic IIC Dc]
IECEX ZLM 14.0012 Ex ib [ia Ga] IIC T4 Gb , Ex ic [ia Ga] IIC T4 Gc , Ex ic IIC T4 Gc , [Ex ia IIC Da] , [Ex ic IIC Dc]

table 1

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table 2

## Validity

Specific processes and instructions in this instruction manual require special provisions to guarantee the safety of the operating personnel.

## Target Group, Personnel

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

The personnel must be appropriately trained and qualified in order to carry out mounting, installation, commissioning, operation, maintenance, and dismantling of the device. The trained and qualified personnel must have read and understood the instruction manual.

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

## Reference to Further Documentation

Observe laws, standards, and directives applicable to the intended use and the operating location. Observe Directive 1999/92/EC in relation to hazardous areas.

The corresponding datasheets, manuals, declarations of conformity, EC-type-examination certificates, certificates, and control drawings if applicable supplement this document. You can find this information under [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com).

Due to constant revisions, documentation is subject to permanent change. Please refer only to the most up-to-date version, which can be found under [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com).

## Intended Use

The fieldbus diagnostic handheld is a portable diagnostic device for online monitoring of intrinsically safe FOUNDATION Fieldbus and PROFIBUS PA installations.

The device has an integrated display and keypad for operation.

The device can be used stand-alone or with a PC via a USB connection.

The device is designed for use in intrinsically safe fieldbus systems according to FISCO, Entity, or DART.

The device is only approved for appropriate and intended use. Ignoring these instructions will void any warranty and absolve the manufacturer from any liability.

## Improper Use

Protection of the personnel and the plant is not ensured if the device is not used according to its intended use.

## Mounting and Installation

The device must only be operated in the specified ambient temperature range and at the specified relative humidity without condensation.

Do not use a damaged or polluted device.

Only use accessories specified by the manufacturer.

## Hazardous Area

Observe the installation instructions according to IEC/EN 60079-14.

Observe the installation instructions according to IEC/EN 60079-25.

Avoid electrostatic charges which could result in electrostatic discharges while installing or operating the device.

Due to the risk of electrostatic discharge, the transport case supplied with the device must not be taken into the hazardous area.

The device may be operated in gas group IIC.

Circuits of intrinsically safe apparatus can be led into hazardous areas, whereby special attention must be paid to maintaining separation distances to all non-intrinsically safe circuits according to the requirements in IEC/EN 60079-14.

For intrinsically safe circuits, the dielectric strength of the insulation against other intrinsically safe circuits and against the shield must be at least 500 V according to IEC/EN 60079-14.

## Limitation Applicable for Connection to the Fieldbus

If the device has been used with an Ex ic circuit with voltage  $U_0$  greater than voltage  $U_i$  specified for type of protection Ex ia or Ex ib, the device must not be connected to Ex ia or Ex ib circuits anymore.

If the device has already been operated in general electrical installations, the device may subsequently no longer be installed in electrical installations used in combination with hazardous areas.

## Zone 0

The intrinsically safe output circuits may lead into Zone 0.

## Zone 1

The device may be operated in Zone 1.

The intrinsically safe output circuits may lead into Zone 1.

The USB connection must not be used in Zone 1.

The device may only be taken into Zone 1 when no battery is inserted.

## Zone 2

The device may be operated in Zone 2.

The intrinsically safe output circuits may lead into Zone 2.

The device may only be taken into Zone 2 when no battery is inserted.

If you use the USB connection in Zone 2, the USB connection must be connected to the circuit with at least the type of protection Ex ic.

## Operation, Maintenance, Repair

Do not use a damaged or polluted device.

If cleaning is necessary while the device is located in a hazardous area, in order to avoid electrostatic charging only use a clean damp cloth.

The device must not be repaired, modified or manipulated.

If there is a defect, always replace the device with an original device from Pepperl+Fuchs.

When USB and trigger connections are used at the same time, ensure that connected devices are both either intrinsically safe or non-intrinsically safe. Do not mix an intrinsically safe device with a non-intrinsically safe device.

For using the device on a DART trunk, a hot work permit for the DART trunk is required.

## Battery-Operated Devices

Leaking battery acid may cause personal injury and damage to the device.

- Never use batteries that are leaking.

- Never use batteries with external damages, even if no battery acid is leaking.

- Check the battery compartment for leaking battery acid at regular time intervals.

When replacing the battery, use batteries of the correct type only. Using the wrong type of battery may cause damage to the device. Furthermore, using the wrong type of battery voids the certification of the device.

Observe the separate safety instructions of the battery manufacturer before storing, handling, transporting and disposing of the batteries.

## Delivery, Transport, Disposal

Check the packaging and contents for damage.

Check if you have received every item and if the items received are the ones you ordered.

Keep the original packaging. Always store and transport the device in the original packaging.

Store the device in a clean and dry environment. The permitted ambient conditions (see datasheet) must be considered.

Disposing of device, packaging, and possibly contained batteries must be in compliance with the applicable laws and guidelines of the respective country.