

Instruction Manual

1. Marking

Vibration Limit Switch for Liquids LVL-M3
ATEX certificate: CSANe 23ATEX1157X ATEX marking: Ⓜ II 1/2G Ex db IIC T6...T1 Ga/Gb Ⓜ II 2G Ex db IIC T6...T1 Gb
IECEX certificate: IECEX CSAE 23.0044X IECEX marking: Ex db IIC T6...T1 Ga/Gb Ex db IIC T6...T1 Gb
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2. Device Versions

Device type	Basic specifications	Optional specifications
LVL-M3	-XXXXXX-XXXXXX-XX	+XX

The X-marked letters of the type code are placeholders for versions of the device.

The following specifications reproduce an extract from the product structure and are used to assign.

Basic specifications

Option	Type of probe
A	Compact version
B	Short tube version
C	Tube extension

Option	Sensor length, material
B	Compact version, 316L
D	Short tube version, 316L
F	Tube extension, length L in mm, 316L, Ra < 3.2 µm/126 µinch
H	Tube extension, length L in inch, 316L, Ra < 3.2 µm/126 µinch

Option	Housing, material
A	Single compartment, aluminum, coated

Option	Electrical connection
F	Thread M20, IP66/68, NEMA type 4X/6P
G ¹	Thread G1/2, IP66/68, NEMA type 4X/6P
I	Thread NPT3/4, IP66/68, NEMA type 4X/6P

¹ Reduction M20x1.5 to G1/2 enclosed

Option	Electrical output
E	FEL42, 3-wire PNP, 10 V DC to 55 V DC
N	FEL48, 2-wire NAMUR
W	FEL44, relay DPDT, 19 V AC to 253 V AC/19 V DC to 55 V DC, contact 253 V/6 A

Option	Approval
E3	ATEX/IEC II 1/2G, 2G Ex db IIC T6 Ga/Gb

Additional options

Option	Accessory enclosed
WP	Weather protection cover, plastic

3. 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.

4. Reference to Further Documentation

Observe directives, standards, and national laws applicable to the intended use and the operating location.

The corresponding datasheets, manuals, declarations of conformity, EU-type examination certificates, certificates, control drawings, and temperature tables if applicable are an integral part of this document. You can find this information under www.pepperl-fuchs.com.

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.

Refer to the relevant EU-type examination certificate to see the relationship between the connected circuit type, the maximum permitted ambient temperature, the temperature class, and the effective inner reactances.

5. Intended Use

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

The device is a vibration limit switch for minimum or maximum detection in tanks, containers and piping with all types of liquids

Use the device only within the specified ambient and operating conditions.

Only use the device in media to which the process-contacting materials of the device are sufficiently resistant.

The EU-type examination certificate in accordance with ATEX Directive applies only to the use of apparatus under atmospheric conditions.

The device can be used in hazardous areas containing gas, vapor, and mist.

6. Improper Use

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

7. Mounting and Installation

Use appropriate protection measures in order to protect persons that have contact with hazardous or toxic substances.

Do not mount a damaged or polluted device.

Mount the device in a way that the device is protected against mechanical hazard.

If you expect dynamic loads, support the extension tube of the device.

Only use accessories specified by the manufacturer.

Include the device into the equipotential bonding.

Avoid inadmissibly high electrostatic charge plastic surfaces.

Avoid inadmissibly high electrostatic charge of insulated capacities or insulated metal parts.

Avoid impact effect or friction during mounting.

Requirements for Cables and Connection Lines

Only use cables and connection lines with a temperature range appropriate to the application.

Install cables and cable glands in a way that they are not exposed to mechanical hazards.

Observe the minimum bending radius of the conductors.

Observe the permissible core cross section of the conductor.

Crimp wire end ferrules on the conductor ends.

When installing the conductors the insulation must reach up to the terminal.

Close all unused cable glands with the appropriate sealing plugs.

Requirements for Hazardous Area

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

Refer to the temperature tables for the relationship between permitted ambient temperature, range of application and temperature class.

The device may be installed in Zone 1.

The measuring equipment of the device may be installed in Zone 0.

If circuits with type of protection Ex i are operated with non-intrinsically safe circuits, they must no longer be used as circuits with type of protection Ex i.

Observe the respective peak values of the field device and the associated apparatus with regard to explosion protection when connecting intrinsically safe field devices with intrinsically safe circuits of associated apparatus (verification of intrinsic safety). Also observe IEC/EN 60079-14 and IEC/EN 60079-25.

Keep the separation distances between all non-intrinsically safe circuits and intrinsically safe circuits according to IEC/EN 60079-14.

Optional specification, feature Accessory Enclosed, option WP

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

8. Operation, Maintenance, Repair

Do not use a damaged or polluted device.

The device is maintenance-free.

Do not repair, modify, or manipulate the device.

If there is a defect, always replace the device with an original device.

Connection or disconnection of energized circuits is only permitted in the absence of a potentially explosive atmosphere.

Avoid inadmissibly high electrostatic charge plastic surfaces.

Avoid inadmissibly high electrostatic charge of insulated capacities or insulated metal parts.

Avoid impact effect or friction during operating.

Optional specification, feature Accessory Enclosed, option WP

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

Return

Take the following precautions before you return the device to Pepperl+Fuchs.

Remove all adhering residues from the device. These residues can be hazardous to health.

Fill in the form **Declaration of Contamination**. You can find this form on the product detail page at www.pepperl-fuchs.com.

Enclose the filled in **Declaration of Contamination** form with the device.

Pepperl+Fuchs can examine and repair a returned device, only if a completed form is included in the return.

If needed, include special handling instructions with the device.

Specify the following information:

- Chemical and physical characteristics of the product
- Description of the application
- Description of the error that occurred (specify error code if possible)
- Operating time of the device

9. 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.

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

The device, built-in components, packaging, and any batteries contained within must be disposed in compliance with the applicable laws and guidelines of the respective country.