Instruction Manual

1. Marking

Guided Level Radar LTC51, LTC57 4 to 20 mA HART
ATEX certificate: DEKRA 14 ATEX 0117 X ATEX marking: Ⓔx II 1/2G Ex ia IIC T6...T1 Ga/Gb Ⓔx II 1/2D Ex ia IIIC Txx°C Da/Db

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2. Device Versions

Device type	Basic specifications	Optional specifications
LTC5X	-X-XXXXX-XXXXX-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	Electrical connection
A	Gland M20, IP66/68, NEMA 4X/6P
B	Thread M20, IP66/68, NEMA 4X/6P
C	Thread G1/2, IP66/68, NEMA 4X/6P
D	Thread NPT1/2, IP66/68, NEMA 4X/6P

Option	Seal
3 [1]	EPDM, -40 to 120 °C
4 [2]	Kalrez, -20 to 200 °C, saturated steam max. 150 °C
5 [1]	Viton, -30 to 150 °C
6 [3]	Kalrez, -5 to 185 °C

[1] LTC51, LTC57

[2] LTC51

[3] LTC57

Option	Housing
A2	GT20 dual compartment, alu coated
A3	GT18 dual compartment, 1.4404/316L

Option	Electrical output
ID	2-wire, 4 to 20 mA HART, switching output (PFS)
IE	2-wire, 4 to 20 mA HART, 4 to 20 mA
IH	2-wire, 4 to 20 mA HART

Option	Display, operation
B	Without display, via communicator
D	SD02 4-line, push-buttons and data backup function
E	SD03 4-line, illuminated, touch control and data backup function

Option	Approval
SX	ATEX II 1/2G Ex ia IIC T6...T1 Ga/Gb ATEX II 1/2D Ex ia IIIC Txx°C Da/Db

Optional specifications

Option	Probe design
B	Sensor remote, 3 m cable, detachable, with mounting bracket
C	Sensor remote, 6 m cable, detachable, with mounting bracket
D	Sensor remote, 9 m cable, detachable, with mounting bracket

3. Target Group, Personnel

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

The personnel must be appropriately trained and qualified in order to carry out mounting, installation, commissioning, operation, maintenance, and dismounting 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/device-information.

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.

Observe the instruction manuals for the associated components.

If you use the device in safety-related applications, observe the requirements for functional safety. You can find these requirements in the functional safety documentation under www.pepperl-fuchs.com.

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.

Only use the device in the industrial location.

The device is used for continuous level measurement in liquids and solids. The device works with high-frequency radar pulses which are emitted and guided along the probe. The distance from the reference point to the product surface is measured.

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 is an intrinsically safe apparatus according to IEC/EN 60079-11.

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

The device can be used in hazardous areas containing combustible dust.

If you use the device in safety-related applications, observe the information for safety function and safe state.

6. Improper Use

Protection of 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.

Avoid impact effect or friction during mounting.

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

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

Secure the device against swinging.

Mount the enclosure at the fixing points provided.

Ensure that all fasteners are fully tightened.

Only use accessories specified by the manufacturer.

If you install the device in safety-related applications, observe the requirements for functional safety.

Include the device into the equipotential bonding.

The intrinsically safe circuit is grounded.

Ensure that the device provides and maintains a degree of protection of at least IP65 according to IEC/EN 60079-0.

Protect the circuit against overvoltage (e. g., lightning).

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.
The device may be installed in Zone 1.
The device may be installed in Zone 21.
The measuring equipment of the device may be installed in Zone 0.
The measuring equipment of the device may be installed in Zone 20.
Refer to the temperature tables for the relationship between permitted ambient temperature, range of application and temperature class.
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.
The type of protection is determined by the connected intrinsically safe circuit.
Connection or disconnection of energized circuits is only permitted in the absence of a potentially explosive atmosphere.

7.1. Specific Conditions of Use

Refer to the temperature tables for the relationship between permitted ambient temperature, range of application and temperature class.
Only use the device in media to which the process-contacting materials of the device are sufficiently resistant.
If you expect dynamic loads, support the extension tube of the device.
Secure the device against swinging.
Include the device into the equipotential bonding.
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.
Keep the separation distances between all non-intrinsically safe circuits and intrinsically safe circuits according to IEC/EN 60079-14.
Avoid inadmissibly high electrostatic charge plastic surfaces.
Avoid inadmissibly high electrostatic charge of insulated capacities or insulated metal parts.
To avoid electrostatic charges, do not rub the surfaces with a dry cloth.

8. Operation, Maintenance, Repair

If you operate the device in safety-related applications, observe the requirements for functional safety. In case of operating in low demand mode, plan appropriate intervals for the proof test.
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.
Mount the enclosure at the fixing points provided.
Ensure that all fasteners are fully tightened.
Connection or disconnection of energized circuits is only permitted in the absence of a potentially explosive atmosphere.
Avoid electrostatic charges which could result in electrostatic discharges while installing, operating, or maintaining the device.
Avoid inadmissibly high electrostatic charge plastic surfaces.
Avoid inadmissibly high electrostatic charge of insulated capacities or insulated metal parts.
Include the device into the equipotential bonding.
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.

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.