Instruction Manual

1. Marking

Level Radar LCR20
ATEX certificate: SEV 20 ATEX 0490 X ATEX marking: Ⓔx II 1G Ex ia IIC T4...T1 Ga Ⓔx II 1/2G Ex ia IIC T4...T1 Ga/Gb
IECEx certificate: IECEx SEV 20.0029X IECEx marking: Ex ia IIC T4...T1 Ga Ex ia IIC T4...T1 Ga/Gb

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2. Device Versions

Device type	Basic specifications	Optional specifications
LCR20	-X-XXXXX-XX-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	Power supply, output, operation
IB	2-wire, 4 to 20 mA HART, HART/Bluetooth (App) configuration
IH	2-wire, 4 to 20 mA HART, HART configuration

Option	Approval
E1	ATEX II 1G Ex ia IIC T4...T1 Ga
EX	ATEX II 1/2G Ex ia IIC T4...T1 Ga/Gb
IA	IEC Ex ia IIC T4...T1 Ga
IB	IEC Ex ia IIC T4...T1 Ga/Gb

Optional specifications
No options specific to hazardous locations are available.

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.
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.

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. 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.

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.
Mount the enclosure at the fixing points provided.
Ensure that all fasteners are fully tightened.
Only use accessories specified by the manufacturer.
Avoid electrostatic charges which could result in electrostatic discharges while installing, operating, or maintaining the device.
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.
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.

Specific Conditions of Use

Refer to the temperature tables for the relationship between permitted ambient temperature, range of application and temperature class.
Avoid impact effect or friction during mounting.
Avoid inadmissibly high electrostatic charge on the device.
Mount the device in a location with low electrostatic charge.

Requirements for Hazardous Area

Observe the installation instructions according to IEC/EN 60079-14.
The device may be installed in Zone 0.
The measuring equipment of the device may be installed in Zone 0.
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.
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.

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

Specific Conditions of Use

Include the device into the equipotential bonding.
Avoid impact effect or friction during operating.
Avoid inadmissibly high electrostatic charge on the 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.

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.