



# (1) EU-Type Examination Certificate

(2) Equipment or protective system intended for use in potentially explosive atmospheres - Directive 2014/34/EU

(3) Certificate number: SEV 20 ATEX 0490 X

(4) Product: Level Radar LCR20

(5) Manufacturer: Pepperl+Fuchs SE

(6) Address: Lilienthalstrasse 200, 68307 Mannheim, Germany

- (7) The equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.
- (8) Eurofins, notified body No. 1258, in accordance with article 17 of Directive 2014/34/EU of the European parliament and of the council, dated 26 February 2014, certifies that this product has been found to comply with the essential health and safety requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report no 20CH-00098.X45

(9) Compliance with the essential health and safety requirements has been assured by compliance with:

EN 60079-11:2012 EN 60079-26:2015 EN IEC 60079-0:2018

Except in respect of those requirements listed at item 18 of the schedule.

- (10) If the sign «X» is placed after the certificate number, it indicates that the product is subjected to special conditions for safe use specified in the schedule to this certificate. The sign "U" is placed after the certificate number. It indicates that this certificate must not be mistaken for a certificate intended for an equipment or protective system. This partial certification may be used as a basis for certification of an equipment or protective system.
- (11) This EU type examination certificate relates only to design and construction of the specified product. Further requirements of this directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

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(12) The marking of the product shall include the following:

X II 1G Ex ia IIC T4...T1 Ga II 1/2G Ex ia IIC T4...T1 Ga/Gb

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Martin Plüss Product Certification

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## **Appendix**

(14) EU-Type Examination Certificate no. SEV 20 ATEX 0490 X

#### (15) Description of product

LCR20 is a level liquid sensor which can be used within tanks as well as in free space. The LCR20 device is designed for use in explosive atmospheres. Its purpose is the continuous liquid level measurement as well as the operation in utility and environmental applications. This complies measurements of the filling level in free-space and within storage tanks and reservoirs, open basins, pumping shafts, canal systems below and above ground. Since the device can be mounted in an explosive atmosphere, it needs to fulfil the common standards of Europe and North America. The measuring device FMR20 is intended for continuous, non-contact level measurement in liquids. Because of its operating frequency of approx. 26 GHz, a maximum radiated pulsed power of 1.0 mW and an average power output of 10  $\mu$ W, unrestricted use outside of closed, metallic vessels is also permitted. Operation does not pose a risk to health or the environment.

Classification of installation and use: stationary Ingress protection: IP68

Rated ambient temperature range (°C): -40 °C to +80 °C

Rated ambient temperature range (°C)

for Ex Components N/A

#### Temperature:

Temperature class	Rated ambient temperature	Rated process temperature
T4T1	-40 °C +80 °C	-40 °C +80 °C

#### Rating:

FMR20 option A and P (2-wire, 4-20mA HART):

Supply circuit: Type of protection Intrinsic Safety Ex ia IIC.

Maximum input voltage 30 V Maximum input current li = 100 mA Maximum input power Ρi = 750 mW Inductance Li = 35 µH Capacitance Ci 15 nF



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FMR20 option R (4-wire, Modbus RS485):

Supply: Type of protection Intrinsic Safety Ex ia IIC.

Maximum input voltage Ui 30 V 100 mA Maximum input current li = Maximum input power Ρi 650 mW = Inductance Li = 20 µH Capacitance Ci = 10 nF Inductance cable =  $0.8 \mu H/m$ Lc Capacitance cable 45 pF/m Cc

RS485-IS-Fieldbus: Type of protection Intrinsic Safety Ex ia IIC.

Maximum output voltage Uo = 4.2 V Maximum output current Io = 149 mA

Linear characteristic

Maximum input voltage Ui = 4.2 V Maximum input current Ii = 4.8 A

Cables (loop resistance) type of cable A or B acc. To IEC 60079-25 with

the following parameters per unit length:

 $L'/R' \leq 15 \mu H/\Omega$ 

Concentrated reactances in the cable run of the external RS485-IS-

fieldbus system are not permitted.

#### (16) Specific conditions of use

Because the risk of electrostatic discharges, there are additional measures necessary during installation and operation. The following warning marking is placed on the equipment: WARNING – POTENTIAL ELECTROSTATIC CHARGING HAZARD – SEE INSTRUCTIONS"

#### (17) Essential health and safety requirements

In addition to the essential health and safety requirements (EHSRs) covered by the standards listed at item 9, the following are considered relevant to this product, and conformity is demonstrated in the report:

Clause Subject None

### (18) Drawings and Documents

See test report "Manufacturer's Documents"



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