



1 **EU-TYPE EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

3 Certificate Number: **CSANe 25ATEX1049X** Issue: **0**

4 Equipment: **Process display, type RU48. Transmitter Unit for Level and Flow Measurement for Ultrasonic Sensors, Type FMA90**

5 Applicant: **Endress+Hauser Wetzer GmbH + Co. KG**

6 Address: **Obere Wank 1
87484 Nesselwang, Germany**

7 This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 CSA Group Netherlands B.V., notified body number 2813 in accordance with Articles 17 and 21 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential reports listed in Section 14.2.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule to this certificate, has been assured by compliance with the following documents:

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

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to Specific Conditions of Use identified in the schedule to this certificate.

11 This EU-Type Examination Certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

12 The marking of the equipment shall include the following:

Panel Version



II (1)GD
[Ex ia Ga] IIC
[Ex ia Da] IIIC
-35°C to +60°C
IP 65 (front)

DIN Version



II (1)GD
[Ex ia Ga] IIC
[Ex ia Da] IIIC
-40°C to +60°C
IP20

Field Unit (Polymeric housing)



II (1)GD
[Ex ia Ga] IIC
[Ex ia Da] IIIC
-35°C to +60°C
IP 65

Signed:

M Halliwell

Title: Senior Director of Operations



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SCHEDULE

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13 DESCRIPTION OF EQUIPMENT

RU48 Process Indicator / FMA 90 Control Unit - DIN mount, Panel mount and Polymeric housing field mounted version for Safe area installation only.

Order Code <**aab cdefghij kklmmnnooppqq**>

aa = BA

b = 1, 2

d = A, B, C

f = 1, 2

ceghij kklmmnnooppqq is neither related to Explosion Safety nor in the scope

Option code

RU48/FMA90- aab cdefghij kklmmnnooppqq – See below for Order code breakdown.

ceghij kklmmnnooppqq is neither related to Explosion Safety nor in the scope.

Process display, type RU48 & Transmitter Unit for Level and Flow Measurement for Ultrasonic Sensors, Type FMA90 are process control instruments.

The RU48 is a process indicator for 4 to 20mA/HART sensors with mathematical functions and data logging.

The FMA90 is a control unit for measuring tasks and supports up to two 4 to 20mA/HART sensors. The RU48 and FMA90 have the same electronics and physical construction. The devices differ in terms of the application.

For Safe Area installation, the DIN rail Version and Panel mount may be installed inside a suitable enclosure. The Field Unit with Polymeric housing is also suitable for Safe Area installation and when installed act as associated apparatus for sensors located in Zone 0 or Zone 20 location.

The device may be powered by 10.5Vdc-32Vdc or 100Vac -230Vac (50/60 Hz) Nominal or 85Vac – 253Vac (extended) depending on Order code, supports WLAN, 4-20mA/HART connections, and contains an optional display.

The device supports the following I/Os depending on the Order code:

- One Ethernet connection + one optional
- One Analog Input for Sensors installed in Zone 0/Zone 20 [Ex ia] - 2-wire 4-20mA(HART) or 4 wire 4-20mA or 4 wire 4-20(HART) + One optional
- Four Digital inputs (External switches)
- One open collector (OC) connection + One Optional
- One Analog Output (4-20mA) + One Optional
- One Relay Contact + 4 Optional

The electronics assembly consists of 1 CPU board, 1 Power/relay board, 1 bus board, and up to 2 IO boards. The connections to the I.S sensors have the following entity parameters:

Analog Input circuit (Sensor connections) – Terminals 11, 12, 13 & 21, 22, 23(Optional)

$U_o = 27.3 \text{ Vdc}$, $I_o = 84.1 \text{ mA}$, $P_o = 574 \text{ mW}$

$C_i = \text{Negligible}$

$L_i = \text{Negligible}$

Maximum connection values for single appearance

EPL	Lo	Co
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Ex ia IIC	1.7 mH	65nF
Ex ia IIB	25 mH	551nF
Ex ia IIA	47 mH	1790nF

Maximum combined values

EPL	Lo	Co
Ex ia IIC	0.5 mH	0.065μF
Ex ia IIB	2 mH	0.390μF
Ex ia IIA	20 mH	1.3μF

RU48-	aabcdefghijjkkllmmnnnooppqq	
	LEVEL TRANSMITTER FMA90	
FMA90-	aabcdefghijjkkllmmnnnooppqq	Comments
aa	Approval:	
BA	ATEX II(1)G [Ex ia Ga] IIC, II(1)D [Ex ia Da] IIIC	
IA	IECEX [Ex ia Ga] IIC, [Ex ia Da] IIIC	
b	Power Supply:	
1	100-230 VAC (Nominal) or 85V _{AC} – 253V _{AC} (extended)	
2	10.5-32 VDC	
c	Application Package:	Not safety relevant
1	Universal (level, pump control, open channel flow measurement, data logging)	
2	Universal + extended process data management	
d	Housing:	
A	DIN rail mounting, Polycarbonate, IP20	
B	Panel mounting, Polycarbonate, front IP65, rear side IP20, 96x96	
C	Field mounting, Polycarbonate, IP65 NEMA4x	
D	Field mounting, Aluminium, IP65 NEMA4x	
e	Display; Operating:	Not safety relevant
1	W/o; RJ45 Ethernet	
2	W/o; RJ45 Ethernet + WLAN	
3	3.5" TFT touch display; RJ45 Ethernet	
4	3.5" TFT touch display; RJ45 Ethernet + WLAN	
f	Sensor Connection, Analog Output:	
1	1x 4-20mA/HART input; 1x 4-20mA output	

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2	2x 4-20mA/HART input; 2x 4-20mA output	
g	Relay Output:	Not safety relevant
1	1x SPDT	
5	5x (2x SPDT, 3x SPST)	
h	Digital Input; Switch Output:	Not safety relevant
A	W/o; 1x open collector	
B	4x; 3x open collector	
i	Communication:	Not safety relevant
A	HART output	
B	PROFINET	
C	EtherNet/IP	
D	Modbus TCP slave	
jj	Operating Language Display:	Not safety relevant
kk	Application Package:	Not safety relevant
ll	Calibration:	Not Safety relevant
mm	Service:	Not Safety relevant
nn	Additional Approval:	Not Safety relevant
oo	Accessory Mounted:	Not Safety relevant
pp	Accessory Enclosed:	Not in the scope
qq	Marking:	Not safety relevant

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 Associated Reports and Certificate History

Issue	Date	Report number	Comment
0	12 June 2025	R80194675A	The release of the prime certificate.

15 SPECIFIC CONDITIONS OF USE (denoted by X after the certificate number)

- 15.1 The DIN/Panel versions shall be installed in a suitable enclosure (IP20 minimum) or higher based on the environmental conditions of the end application and acceptable to the Authority having Jurisdiction.
- 15.2 The polymeric field housing shall be fitted with suitable cable entry devices compatible with the environmental conditions and Ingress protection level required.

16 ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF ANNEX II (EHSRs)

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The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed in the reports listed in Section 14.2.

17 CONDITIONS OF MANUFACTURE

- 17.1 The use of this certificate is subject to the Regulations Applicable to Holders of CSA Group Netherlands B.V. certificates.
- 17.2 Holders of EU-Type Examination Certificates are required to comply with the conformity to type requirements defined in Article 13 of Directive 2014/34/EU.
- 17.3 The Ex critical transformer(s) shall withstand 1500Vrms between primary and secondary winding as a routine di-electric test for 60 sec per Clause 11.2 of EN 60079-11:2011. Alternatively, the test may be conducted at 1.2 times the test voltage, but with reduced duration of 1 sec.

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