

CERTIFICATE OF CONFORMITY

1. HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT PER US REQUIREMENTS

2. Certificate No: FM24US0015X
3. Equipment:
(Type Reference and Name) NAR300 Oil Leak Detector System
4. Name of Listing Company: Endress + Hauser Yamanashi Co. Ltd.
5. Address of Listing Company: 862-1 Mitsukunugi Sakaigawa-cho Fuefuki-shi
Yamanashi Prefecture 406-0846, Japan
6. The examination and test results are recorded in confidential report number:
3049525 dated 4th August 2015

7. FM Approvals LLC, certifies that the equipment described has been found to comply with the following Approval standards and other documents:

FM 3600:2022, FM 3610:2021, FM 3615:2022, FM 3810:2021, FM 7745:2019, NEMA 250:2018,
ANSI/UL 60079-0:2019, CSA C22.2 No. 60079-1:2007, ANSI/UL 60079-1:2020, ANSI/UL 60079-11:2018,
ANSI/IEC 60529:2020, ANSI/UL 61010-1:2018

8. If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to specific conditions of use specified in the schedule to this certificate.
9. This certificate relates to the design, examination and testing of the products specified herein. The FM Approvals surveillance audit program has further determined that the manufacturing processes and quality control procedures in place are satisfactory to manufacture the product as examined, tested and Approved.

10. Equipment Ratings:

See Annex.

11. The marking of the equipment shall include:

See Annex.

12. Description of Equipment:

Certificate issued by:



13 September 2024

J.E. Marquedant
VP, Manager - Electrical Systems

Date

To verify the availability of the Approved product, please refer to www.approvalguide.com

THIS CERTIFICATE MAY ONLY BE REPRODUCED IN ITS ENTIRETY AND WITHOUT CHANGE

FM Approvals LLC. One Technology Way, Norwood, MA 02062 USA

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F 347 (Jul 24)



SCHEDULE

US Certificate of Conformity No: FM24US0015X

FM Approvals

The NAR300 Oil Leak Detector System is designed to detect the presence of hydrocarbon liquid in a dry pit or floating on the surface of water. The system consist of three major components, a sensor a transmitter and a converter. There are three configurations of the system for different installation variations.

See Annex.

13. Specific Conditions of Use:

See Annex.

14. Test and Assessment Procedure and Conditions:

This Certificate has been issued in accordance with FM Approvals US Certification Requirements.

15. Schedule Drawings

A copy of the technical documentation has been kept by FM Approvals.

16. Certificate History

Details of the supplements to this certificate are described below:

Date	Description
4 August 2015	Original Issue.
2 July 2018 to 18 October 2022	<u>Supplement 1 to 3:</u> See certificate dated 18 October 2022 for details.
22 March 2024	<u>Supplement 4:</u> Report Reference: RR239315 dated 22 March 2024. Description of the Change(s): Updates and corrections to nameplates and user manuals. Change of coating material used for terminal board for NRR300.
13 September 2024	<u>Supplement 5:</u> Report Reference: RR242815 dated 13 September 2024. Description of the Change(s): Converted to new certificate format.

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FM Approvals

ANNEX

NAR300-abAcde Float Sensor and Transmitter for Oil Leak Detector System

Equipment Ratings:

Ambient temperature rating: -20°C to +60°C.

Electrical ratings:

Transmitter

Ui = 28 V, Ii = 93 mA, Pi = 650 mW, Ci = 0, Li = 48 μ H

Uo = 13 V, Io = 46.8 mA, Po = 152.1 mW, Co = 0.25 μ F, Lo = 58.3 mH

Sensor

Ui = 16 V, Ii = 52 mA, Pi = 169 mW, Ci = 0, Li = 0

Markings:

Class I, Division 1, Group C,D T5 Ta = -20°C to 60°C

AIS for Class I, Division 1, Groups C,D

Class I, Zone 0, AEx ia IIB T5 Ga Ta = -20°C to 60°C

Class I, Zone 1, AEx ia [ia Ga] IIB T4 Gb Ta = -20°C to 60°

Description of Equipment:

The float sensor is a unit to detect an oil leak. The detector consists of a conductive sensor, a vibrating sensor and electronics. The two sensors are mounted on a stainless steel float which contacts fluid. The electronics are potted in a stainless steel housing. The vibronic sensor detects presence of liquid the conductivity sensor detects non-conductive material and differentiates air or oil. The sensor electronics receives signals from the sensors and is connected to the transmitter electronics. The high temperature version does not implement vibrating sensor. The float sensor and transmitter are rated IP67.

a = Approval C

b = Type 1, 5 or 6

c = Signal Cable A, B, C, D, E, F or Y

d = Float Guide 1, 2, 3 or 9

e = Cable Entry A, B, C, E, or F

Specific Conditions of Use:

None

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NRR261-abc Converter and Transmitter for Oil Leak Detector System

Equipment Ratings:

Ambient temperature rating: -20°C to +60°C.

Electrical ratings:

Converter

Um = 250 V

Uo = 28 V, Io = 85 mA, Po = 595 mW, Co = 0.083 µF, Lo = 2.4 mH or

Uo = 28V, Lo = 93 mA, Po = 650 mW, Co = 0.083 µF, Lo = 3.05 mH

Transmitter

Ui = 28 V, Ii = 93 mA, Pi = 650 mW, Ci = 0, Li = 48 µH

Uo = 13 V, Io = 46.8 mA, Po = 152.1 mW, Co = 0.25 µF, Lo = 58.3 mH

Markings:

Class I, Division 1, Group C and D T6 Ta = -20°C to 60°C

Class I, Zone 1, AEx db ia [ia Ga] IIB T4 Gb Ta = -20°C to 60°C

Class I, Zone 1, AEx db [ia Ga] IIB T6 Gb Ta = -20°C to 60°C

Description of Equipment:

a = Approval C or F

b = Power Supply A or B

c = Cable Entry Q, R, T, U or W

The NRR261 converter is installed in a flameproof housing. The converter provides intrinsically safe circuits to the transmitter via an intrinsically safe shunt diode barrier. The circuits exit the flameproof compartment via a flameproof feed through into the intrinsically safe compartment. The intrinsically safe compartment is mounted directly to the flameproof converter compartment. The intrinsically safe compartment contains the transmitter electronics in one configuration or for the remote configuration the compartment provides connections to a remote transmitter housing. The converter receives the current signal from the transmitter indicating the sensor status. The converter and transmitter are rated IP67.

Specific Conditions of Use:

1. Contact manufacturer for NRR261 flamepath joint details if repair is required.
2. The NRR261 enclosure is a Potential Electrostatic Discharge hazard, clean surfaces with a damp cloth

NRR262-ab Converter for Oil Leak Detector System

Equipment Ratings:

Ambient temperature rating: -20°C to +60°C.

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Electrical ratings:

Um = 250 V

Uo = 28 V, Io = 85 mA, Po = 595 mW, Co = 0.083 μ F, Lo = 2.4 mH or

Uo = 28V, Lo = 93 mA, Po = 650 mW, Co = 0.083 μ F, Lo = 3.05 mH

Markings:

AIS for Class I, Division 1, Groups C, D

Class I, Zone [0] AEx ia Gb] IIB

Description of Equipment:

a = Approval C

b = Power Supply A or B

The NRR262 converter is associated intrinsically safe apparatus installed in the non-hazardous area for DIN rail mounting or installation in another enclosure suitable for the end use. The converter provides intrinsically safe circuits to the transmitter via an intrinsically safe shunt diode barrier and receives the current signal from the transmitter indicating the sensor status.

Specific Conditions of Use:

None.

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