1 # EU-TYPE EXAMINATION CERTIFICATE

2 **Equipment or Protective systems intended for use in Potentially Explosive Atmospheres - Directive 2014/34/EU**

3 **EU-Type Examination Certificate No:** **FM14ATEX0048X**

4 **Equipment or protective system: (Type Reference and Name)** **NAR300 Oil Leak Detector System**

5 **Name of Applicant:** **Endress & Hauser Yamanashi Co., Ltd.**

6 **Address of Applicant:** **882-1 Mitsukunugi Sakaigawa-cho Fuefuki-shi, Yamanashi-Ken 406-0846 Japan**

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

8 FM Approvals Europe Ltd, notified body number 2809 in accordance with Article 17 of Directive 2014/34/EU of 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 confidential report number:

3049525 dated 4th August 2015

9 Compliance with the Essential Health and Safety Requirements, with the exception of those identified in item 15 of the schedule to this certificate, has been assessed by compliance with the following documents:

EN 60079-0: 2012 + A11:2013, EN 60079-1: 2014, EN 60079-11: 2012, EN 60079-25: 2010 and EN 60529:1991 + A1:2000 + A2:2013

10 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.

11 This EU-Type Examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

Richard Zammitt
Certification Manager, FM Approvals Europe Ltd.

Issue date: 13th March 2019

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12 The marking of the equipment or protective system shall include:

NAR300 Float Sensor and Transmitter for Oil Leak Detector System.

II 1 G Ex ia IIB T5 Ta = 60°C Gb - IP67 (Float Sensor)
II 1/2 G Ex ia [ia Ga] IIB T4 Ta = 60°C Gb - IP67 (Transmitter)

NRR261 Converter and Transmitter for Oil Leak Detector System.

II 1/2 G Ex db ia [ia Ga] IIB T4 Ta = 60°C Gb - IP67 (a = A)
II 2 G Ex db [ia] IIB T6 Ta = 60°C Gb - IP67 (a = D)

NRR262 Converter for Oil Leak Detector System.

II (2) G [Ex ia] IIB Ta 60°C

13 **Description of Equipment or Protective System:**

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.

NRR261 Converter – 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.

NRR262 Converter – 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.

NRR300 Float Sensor – 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.

NAR300-AbAcde. Float Sensor and Transmitter for Oil Leak Detector System.

b = Type 1, 5, 6 or 9
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 Y

NRR261-abc. Converter and Transmitter for Oil Leak Detector System.

a = Approval A or D
b = Power Supply A or B
c = Cable Entry Q, R, T, U or W

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NRR262-Ab. Converter for Oil Leak Detector System.
b = Power Supply A or B

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, Li = 93 mA, Po = 650 mW, Ci = 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

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

14 **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

15 **Essential Health and Safety Requirements:**

The relevant EHSRs that have not been addressed by the standards listed in this certificate have been identified and assessed in the confidential report identified in item 8.

16 **Test and Assessment Procedure and Conditions:**

This EU-Type Examination Certificate is the result of testing of a sample of the product submitted, in accordance with the provisions of the relevant specific standard(s), and assessment of supporting documentation. It does not imply an assessment of the whole production.

Whilst this certificate may be used in support of a manufacturer's claim for CE Marking, FM Approvals Europe Ltd accepts no responsibility for the compliance of the equipment against all applicable Directives in all applications.

This Certificate has been issued in accordance with FM Approvals Europe Ltd's ATEX Certification Scheme.

17 **Schedule Drawings**

A list of the significant parts of the technical documentation is annexed to this certificate and a copy has been kept by the Notified Body.

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18 **Certificate History**

Details of the supplements to this certificate are described below:

Date	Description
05th August 2015	Original Issue.
13th April 2016	Supplement 1: Report Reference: RR204657 dated 11th April 2016 Description of the Change: CPU change on CPU Board, Circuit diagram and correction to date of standard EN 60079-25: 2010.
16th July 2018	Supplement 2: Report Reference: PR450372 dated 2nd July 2018 Description of the Change: Another type has been added for the Zener Barrier built-into the NRR261 and NRR262. Available Zener Barrier is 9001/01-280-85 or MTL728+. The edition of EN 60079-0 has been updated from 2012 to 2012 +A11:2013 and EN 60079-1 has been updated from Ed. 6.0 to Ed. 7.0.
13th March 2019	Supplement 3: Description of the Change: Certificate transferred from FM Approvals Ltd., notified body no. 1725, to FM Approvals Europe Ltd., notified body no. 2809.