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Safety Instructions
Oil leak detector NAR300 Converter NRR262

[Ex ia Gb]

Endress+Hauser
People for Process Automation

Oil leak detector NAR300
Converter NRR262

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Associated documentation

This document is an integral part of the following Operating Instructions:

- BA00402G (NAR300 system)
- BA00403G (NAR300 system for high temperature)

Supplementary documentation

Installation guidelines

JNIOSH-TR-No.44: "User guidelines for factory explosion-proof equipment (2012)"

Manufacturer's certificates

Certification

Approval no.:
CML 18JPN8362X

Approval numbers are given for the certification of the following standards (depending on the device version).

- JNIOSH-TR-46-1: 2020 (IEC60079-0:2017 Ed. 7)
- JNIOSH-TR-46-6: 2015 (IEC60079-11:2011 Ed. 6)
- IEC60079-25: 2020-06 Ed 3.0

Manufacturer address

Endress+Hauser Yamanashi Co., Ltd.

406-0846

862-1 Mitsukunugi, Sakaigawa-cho, Fuefuki-shi, Yamanashi

Extended order code

The extended order code is indicated on the nameplate, which is affixed to the device in such a way that it is clearly visible. Additional information about the nameplate is provided in the associated Operating Instructions.

Structure of the extended order code

NRR262	–	*****....*****	+	A*B*C*D*E*F*G*...
(Device type)		*(Basic specifications)*		*(Optional specifications)*

* = Placeholder
At this position, an option (number or letter) selected from the specification is displayed instead of the placeholders.

Basic specifications

The features that are absolutely essential for the device (mandatory features) are specified in the basic specifications. The number of positions depends on the number of features available.
The selected option of a feature can consist of several positions.

Optional specifications

The optional specifications describe additional features for the device (optional features).
The number of positions depends on the number of features available. The features have a 2-digit structure to aid identification (e.g. JA). The first digit (ID) stands for the feature group and consists of a number or a letter (e.g. J = Test, Certificate). The second digit constitutes the value that stands for the feature within the group (e.g. A = 3.1 material (wetted parts), inspection certificate).

More detailed information about the device is provided in the following tables. These tables describe the individual positions and IDs in the extended order code which are relevant to hazardous locations.

Extended order code: NRR262

The following specifications reproduce an extract from the product structure and are used to assign:
- This documentation to the device (using the extended order code on the nameplate).
- The device options cited in the document.

Device type

NRR262

Basic specifications

Specification code 1 (approval)		
Selected option		**Description**
NRR262	4	JPN Ex: [Ex ia Gb] IIB Ta 60 °C

Specification code 2 (power supply)		
Selected option		**Description**
NRR262	A	90 to 25 V_{AC} 50/60 Hz
	B	22 to 26 V_{DC}

Optional specifications

No options specific to hazardous locations are available.

Safety instructions: General

- Staff must meet the following conditions for mounting, electrical installation, commissioning and maintenance of the device:
  - Be suitably qualified for their role and the tasks they perform
  - Be trained in explosion protection
  - Be familiar with national regulations
- Install the device according to the manufacturer's instructions and national regulations.
- Do not operate the device outside the specified electrical, thermal and mechanical parameters.
- Only use the device in media to which the wetted materials have sufficient durability.
- Avoid electrostatic charging:
  - Of plastic surfaces (e.g. housing, sensor element, special varnishing, attached additional plates, ..)
  - Of isolated capacities (e.g. isolated metallic plates)
- Refer to the temperature tables for the relationship between the permitted ambient temperature for the sensor and/or transmitter, depending on the range of application and the temperature class.
- Modifications to the device can affect the explosion protection and must be carried out by staff authorized to perform such work by Endress+Hauser.

Safety instructions: Special conditions

- The ambient temperature range for Converter NRR262 is −20 to 60 °C (−4 to 140 °F).
- Connect the external grounding terminal to class A grounding (≤ 10 Ω) by the shortest practicable route.
- For safe handling of an oil leak detector NAR300 (intrinsically safe device) that is connected to Converter NRR262, adhere to the following conditions.

Oil leak detector	NAR300		Remarks
Converter version	**25******	**26******	
NRR262-4*	☑	☑	Installation in hazardous locations [Ex ia Gb] IIB SIL specifications
☑ : Connectible ☒ : Not connectible			

The maximum external inductance (Lo) and maximum external capacitance (Co) of the intrinsically safe circuit and the maximum inductance (Lw) and maximum capacitance (Cw) of an external connection cable are shown below.

Cw < Co - 0 nF (Ci) = 0.083 µF
and
Lw < Lo - 48 µH (Li) = 2.3 mH

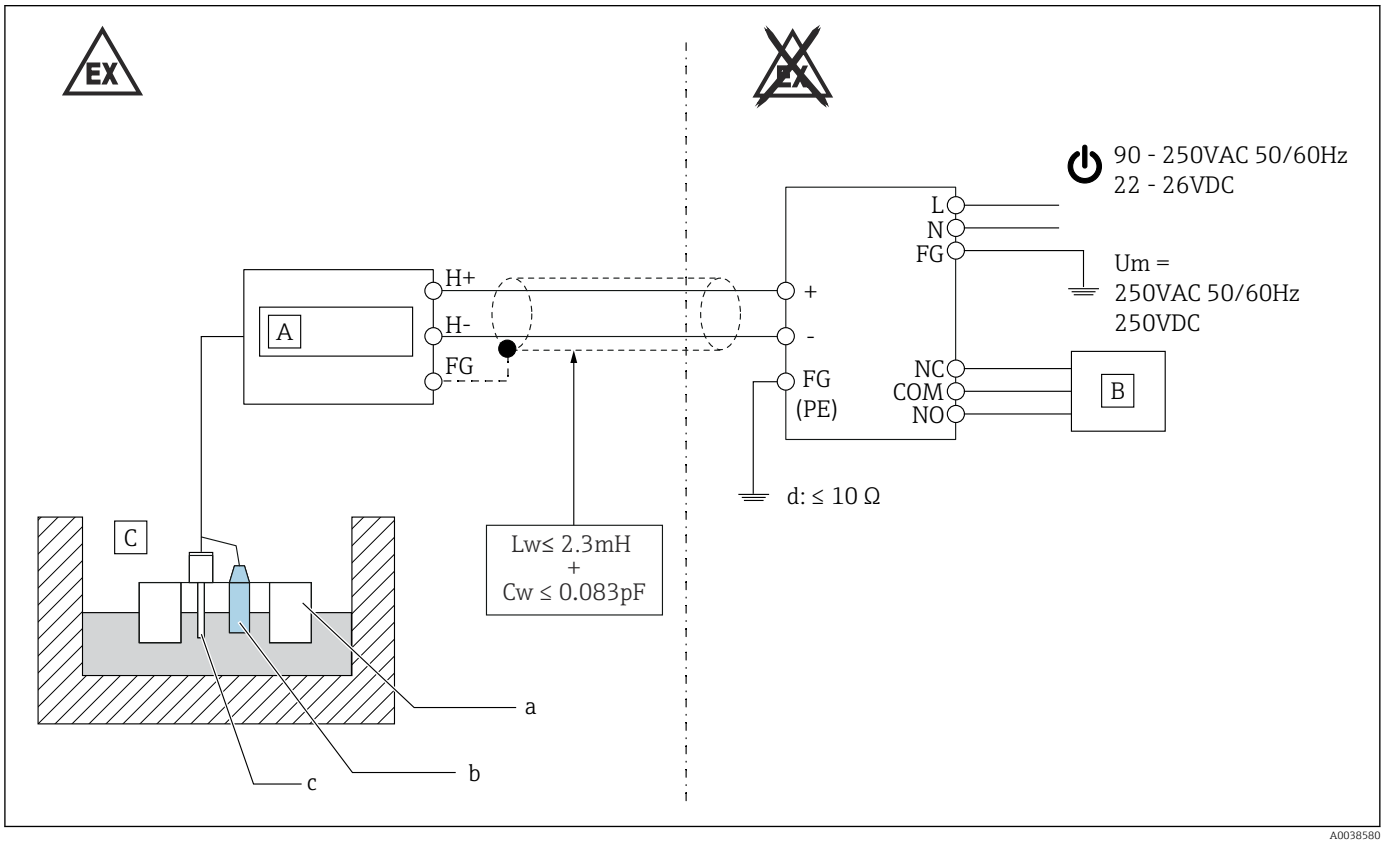
For the above conditions, also refer to the explosion safety instruction manual for the converter in the following table.

Converter version	Approval no.	Explosion safety instruction manual	Remarks
NAR300-2**	CML 18JPN8362X	XA01839G-*	Installation in hazardous locations Float sensor; Ex ia IIB T5 Ga Transmitter; Ex ia [ia Ga] IIB T4 SIL specifications

- The cable that connects an oil leak detector and converter must have a heat-resistant temperature of at least 70 °C (158 °F).
- Ensure that the power supply and non-IS devices do not exceed 250 V_{AC} 50/60 Hz or 250 V_{DC} in both normal and abnormal situations.
- For the connecting wiring of an oil leak detector (intrinsic safety device) and a converter (associated intrinsic safety device), ensure that no current or voltage is generated that could impair the intrinsic safety function of the intrinsic safety circuit due to electromagnetic induction or electrostatic induction.

Safety instructions: Installation

Use Converter NRR262 by configuring it as shown below.



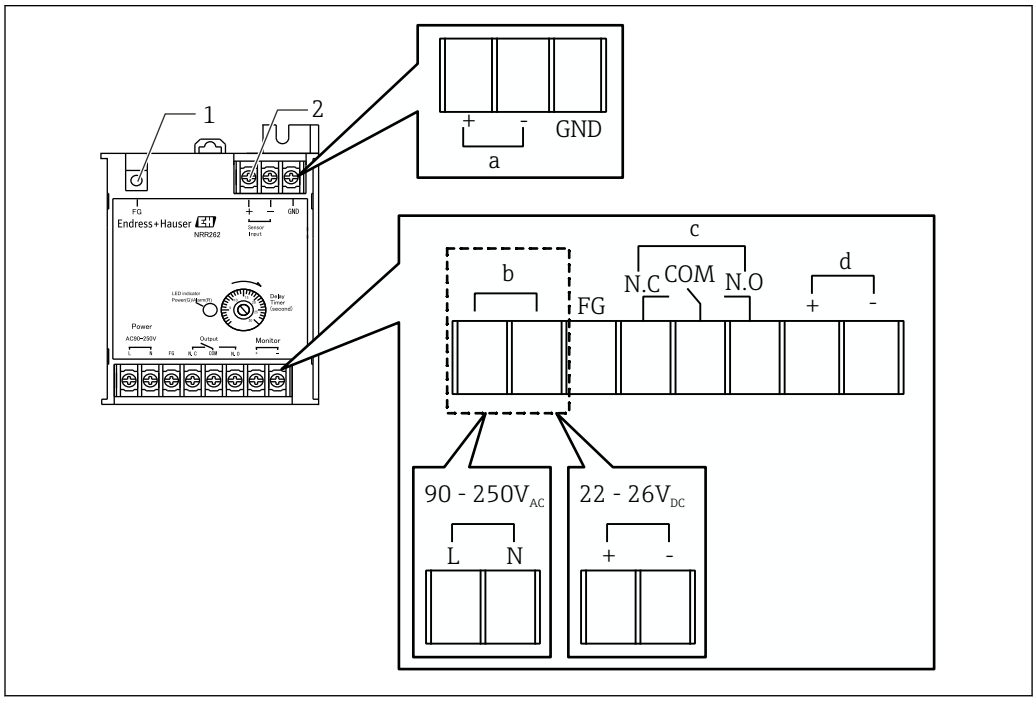
*1 NAR300-25/6**** and NRR262-4* wiring*

A Transmitter
B Non-IS device
C Float sensor
a Float
b Conductivity sensor
c Tuning fork sensor
d Class A grounding

- Refer to XA01839G for details on Float sensor NAR300-25*** and NAR300-26***.
- Refer to BA00402G or BA00403G for details on the following wiring arrangements.
  - Wiring between NAR300 and NRR261/NRR262
  - Wiring between the transmitter of NAR300 and the float sensor

Connection data

Basic specifications



2 *NRR262-4* terminal*

1 Class A grounding for intrinsic safety, screw (M4)
2 NAR300 connection, screw (M3)
*a NAR300-25****/NAR300-26**** connection terminal, screw (M3)*
b Power supply connection terminal, screw (M3)
c Alarm output, screw (M3)
d Monitor output for current check, screw (M3)

Terminal symbol		Intrinsic safety parameters
a	H+	Uo = 28 V Io = 85 mA Po = 595 mW Co = 83 nF Lo = 2.4 mH
	H-	

Use the shortest distance possible to connect the grounding terminal (PE) and class A grounding line.

Items	Terminal symbol	Rating	Remarks
Power supply connection terminal	L	90 to 250 V_{AC}, 50/60 Hz Um = 250 V_{AC}/250 V_{DC}	
	N		
	+	22 to 26 V_{DC} Um = 250 V_{AC}/250 V_{DC}	
	-		
Alarm output	N.C	250 V_{AC} 5 A 30 V_{DC} 5 A Um = 250 V_{AC}/250 V_{DC}	
	COM		
	N.O		
Monitor output for current check	+	Connected to ammeter	NAR300 current measurement terminal
	-		

FG is connected when a power supply cable with FG is used.

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