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# Safety Instructions
# **RN22, RN42**

[Ex ia Ga] IIC
[Ex ia Da] IIIC
Ex ec IIC Gc


Endress+Hauser
People for Process Automation

# RN22, RN42

## Table of contents

**Associated documentation**

To commission the device, please observe the Operating Instructions pertaining to the device:
www.endress.com/<product code>, e.g. RN22

**Supplementary documentation**

Explosion protection brochure: CP00021Z

The explosion protection brochure is available on the Internet:
www.endress.com/Downloads

**Manufacturer's certificates**

**Japan certificate**

Certificate number: CML 23JPN2099X

Affixing the certificate number certifies conformity with the following standards (depending on the device version)

- JNIOSH-TR-46-1:2020
- JNIOSH-TR-46-6:2015

**IECEx certificate**

Certificate number: IECEx EPS 21.0016U

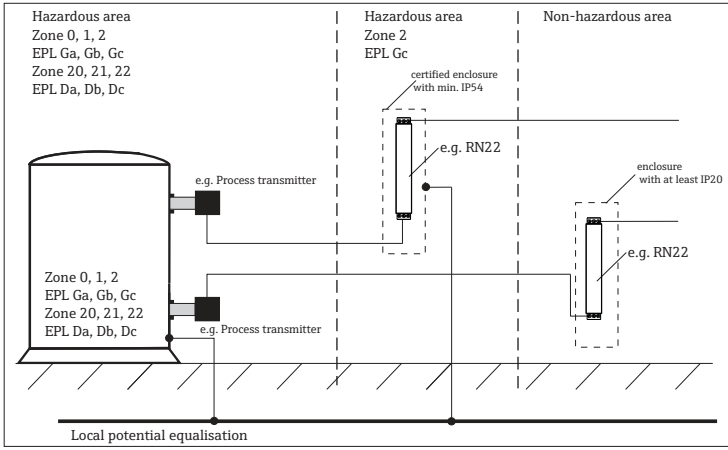
Affixing the certificate number certifies conformity with the following standards (depending on the device version)

- IEC 60079-0 : 2017
- IEC 60079-7 : 2015

**Manufacturer address**

Endress+Hauser Wetzer GmbH + Co. KG
Obere Wank 1
87484 Nesselwang, Germany

## Safety instructions: Intrinsic safety

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- Comply with the installation and safety instructions in the Operating Instructions.
- Install the device according to the manufacturer's instructions and any other valid standards and regulations (e.g. EN/IEC 60079-14).
- The unit is an associated electrical apparatus and can only be installed outside the hazardous area.
- The unit must be installed in such way that a minimum ingress protection of IP 20 is achieved.
- When installing the unit care must be taken that there must be a spacing of at least 50 mm(zone radius) to the intrinsically safe terminals
- Screw tight the unused terminals for keeping the required distances between intrinsically safe circuits/terminals.

**Safety instructions: Installation in Zone 2 (EPL Gc)**

These instructions concern the required enclosure, accessories and supply cables in final application.

- Comply with the installation and safety instructions in the Operating Instructions.
- Install the component according to the manufacturer's instructions and any other valid standards and regulations (e.g. IEC/EN 60079-14).
- Seal the cable entries tight with certified cable glands which have at least type of protection Ex ec suitable for Group IIC (degree of protection IP54).

**Safety instructions: Specific conditions of use**

- If several devices are installed side by side, it is important to ensure that the maximum side wall temperature of the individual device of 80 °C (176 °F) is not exceeded. If this cannot be guaranteed, mount the devices at a distance from one another or ensure sufficient cooling.
- When install the unit in EPL Gc a certified enclosure shall be used providing a degree of protection of at least IP54 and compliance with the enclosure requirements to IEC/EN 60079-0.
- In an explosive atmosphere, do not open the certified enclosure when voltage is supplied (ensure that at least IP 54 is maintained during operation).
- For full certification as an electrical equipment for use in EPL Gc the tests according to IEC 60079-0:2017 section 5.2 and 5.3 have to be carried out. Based on the test results a temperature class shall be assigned.

| Type of protection |
|---|
| [Ex ia Ga] IIC |
| [Ex ia Da] IIIC |
| Ex ec IIC Gc |

Ambient temperature: −40 to +60 °C

## Electrical data

| Type | Electrical data | | | |
|---|---|---|---|---|
| RN22, RN42 | Supply RN22:<br>terminals 1.1 (+), 1.2 (-) | | U = 24V DC (-20%/+25%)<br>Um = 250 V | |
| | Supply RN42:<br>terminals 1.1 (L/+), 1.2 (N/-) | | U = 24 to 230 V AC/DC (-20 %/+10 %) 50/60Hz<br>Um = 250 V | |
| | Output circuit:<br>terminal 3.1 (+), 3.2 (-)<br>terminal 2.1 (+), 2.2 (-) | | U = 30V DC<br>I = 0/4 - 20 mA<br>Um = 30 V | |
| | Input circuit:<br>Connection 2-wire (active)<br>RN22:<br>terminal 4.1 (+), 4.2 (-)<br>terminal 6.1 (+), 6.2 (-)<br>RN42:<br>terminal 4.1 (+), 4.2 (-) | | Uo ≤ 27.3V DC<br>Io ≤ 87. 6 mA<br>Po = 597 mW<br>Ci = negligibly small<br>Li = negligibly small | |
| | Maximum connection values<br>Single values: | Ex ia IIC<br>Ex ia IIB<br>Ex ia IIA | Lo = 5.2 mH<br>Lo = 20.8 mH<br>Lo = 44.8 mH | Co = 88 nF<br>Co = 683 nF<br>Co = 2280 nF |
| | Combined values Lo/Co: | Ex ia IIC | 1.3 mH/0.05 µF; 1 mH/0.052 µF;<br>0.5 mH/0.065 µF | |
| | | Ex ia IIB | 26 mH/0.39 µF; 2 mH/0.44 µF; 1 mH/0.53 µF;<br>0.5 mH/0.64 µF; 0.2 mH/0.683 µF | |
| | | Ex ia IIA | 49 mH/1.3 µF; 20 mH/1.6 µF; 1 mH/1.8 µF;<br>0.5 mH/2.2 µF; 0.2 mH/2.28 µF | |
| | Connection 4-wire (passive)<br>RN22:<br>terminal 4.2 (+), 5.1 (-)<br>terminal 6.2 (+), 5.2 (-)<br>RN42:<br>terminal 4.2 (+), 4.3 (-) | | Uo ≤ 27.3V DC<br>Io ≤ 10 mA<br>Po = 68 mW<br>Ci = negligibly small<br>Li = negligibly small | |
| | Maximum connection values<br>Combined values Lo/Co: | Ex ia IIC | 100 mH/0.065 µF; 2 mH/0.072 µF;<br>1 mH/0.081 µF; 0.5 mH/0.088 µF | |
| | | Ex ia IIB | 100 mH/0.48 µF; 2 mH/0.52 µF;<br>1 mH/0.59 µF; 0.5 mH/0.683 µF | |

| Type | Electrical data | | |
|---|---|---|---|
| | | Ex ia IIA | 100 mH/1.7 µF; 1 mH/1.9 µF; 0.5 mH/2.28 µF |
| | Connection 4-wire (passive)<br>RN22:<br>terminal 4.2 (+), 5.1 (-)<br>terminal 6.2 (+), 5.2 (-)<br>RN42:<br>terminal 4.2 (+), 4.3 (-) | | Ui ≤ 30 V DC<br>Io not applicable when keeping Ui<br>Po not applicable when keeping Ui<br>Ci = negligibly small<br>Li = negligibly small |


www.addresses.endress.com

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