Safety Instructions

RN22, RN42

[Ex ia Ga] IIC
[Ex ia Da] IIIC
Ex ec IIC Gc
RN22, RN42

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**Associated documentation**

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

- Operating instructions: BA02004K
- Brief operating instructions: KA01449K
- Technical information: TI01515K

**Supplementary documentation**

Explosion protection brochure: CP00021Z

The Explosion-protection brochure is available:

- In the download area of the Endress+Hauser website: [www.endress.com -> Downloads -> Brochures and Catalogs -> Text Search: CP00021Z](www.endress.com)
- On the CD for devices with CD-based documentation

**Manufacturer’s certificates**

**NEPSI certificate**

Certificate number: GYJ22.1942U, GYJ22.1806X

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

- GB/T 3836.1-2021
- GB/T 3836.3-2021
- GB/T 3836.4-2021

**CCC certificate**

Certificate number: 2023322316005023

ℹ️ Please refer to NEPSI/CCC certificates for conditions of safe use.

**Manufacturer address**

Endress+Hauser Wetzer GmbH + Co. KG
Obere Wank 1
87484 Nesselwang, Germany
Safety instructions:
Intrinsic safety

- 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.

<table>
<thead>
<tr>
<th>Type of protection</th>
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<tbody>
<tr>
<td>[Ex ia Ga] IIC</td>
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<tr>
<td>[Ex ia Da] IIIC</td>
</tr>
<tr>
<td>Ex ec IIC Gc</td>
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</tbody>
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Ambient temperature: −40 to +60 °C

<table>
<thead>
<tr>
<th>Type</th>
<th>Electrical data</th>
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<tbody>
<tr>
<td>RN22, RN42</td>
<td>Supply RN22: terminals 1.1 (+), 1.2 (-)</td>
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<tr>
<td></td>
<td>U = 24V DC (-20%/+25%) Um = 250 V</td>
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<tr>
<td></td>
<td>Supply RN42: terminals 1.1 (L/+), 1.2 (N/-)</td>
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<tr>
<td></td>
<td>U = 24 to 230 V AC/DC (-20%/+10%) 50/60Hz Um = 250 V</td>
</tr>
<tr>
<td>Type</td>
<td>Electrical data</td>
</tr>
<tr>
<td>------</td>
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<tr>
<td><strong>Output circuit:</strong></td>
<td>terminal 3.1 (+), 3.2 (-) &lt;br&gt; terminal 2.1 (+), 2.2 (-)</td>
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<tr>
<td><strong>Input circuit:</strong></td>
<td>Connection 2-wire (active) &lt;br&gt; RN22: terminal 4.1 (+), 4.2 (-) &lt;br&gt; terminal 6.1 (+), 6.2 (-) &lt;br&gt; RN42: terminal 4.1 (+), 4.2 (-)</td>
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| Maximum connection values | Single values: | Ex ia IIC | Lo = 5.2 mH <br> Co = 88 nF | Ex ia IIB | Lo = 20.8 mH <br> Co = 683 nF | Ex ia IIA | Lo = 44.8 mH <br> Co = 2280 nF |
| Combined values Lo/Co: | Ex ia IIC | 1.3 mH/0.05 μF; 1 mH/0.052 μF; 0.5 mH/0.065 μF | Ex ia IIB | 2.6 mH/0.39 μF; 2 mH/0.44 μF; 1 mH/0.53 μF; 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; 0.5 mH/2.2 μF; 0.2 mH/2.28 μF |

| Connection 4-wire (passive) | RN22: terminal 4.2 (+), 5.1 (-) <br> terminal 6.2 (+), 5.2 (-) <br> RN42: 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 | Combined values Lo/Co: | Ex ia IIC | 100 mH/0.065 μF; 2 mH/0.072 μF; 1 mH/0.081 μF; 0.5 mH/0.088 μF | Ex ia IIB | 100 mH/0.48 μF; 2 mH/0.52 μF; 1 mH/0.59 μF; 0.5 mH/0.683 μF | Ex ia IIA | 100 mH/1.7 μF; 1 mH/1.9 μF; 0.5 mH/2.28 μF |

| Connection 4-wire (passive) | RN22: terminal 4.2 (+), 5.1 (-) <br> terminal 6.2 (+), 5.2 (-) <br> RN42: 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 |