

# Instruction Manual

## Marking





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| Zener barrier  |
| Z040, Z041, Z042<br>Z705, Z710, Z713, Z715, Z715.1K, Z722, Z728, Z728.CL, Z728.H, Z731, Z755, Z757, Z763, Z764, Z765, Z772, Z778, Z779, Z779.H, Z786, Z787, Z787.H, Z788, Z788.R, Z788.H, Z789, Z796<br>Z810, Z810.CL, Z813, Z822, Z828, Z828.H, Z857, Z864, Z865, Z872, Z878, Z886, Z887, Z888, Z888.H, Z896<br>Z905, Z910, Z915, Z915.1K, Z922, Z928, Z954, Z955, Z960, Z961, Z961.H, Z964, Z965, Z966, Z966.H, Z967, Z969, Z972, Z978 |
| EC-Type Examination Certificate: BAS 01 ATEX 7005<br> II (1)G [Ex ia Ga] IIC<br> II (1)D [Ex ia Da] IIIC<br> I (M1) [Ex ia Ma] I   |
| Statement of conformity: TÜV 99 ATEX 1484 X<br> II 3G Ex nA IIC T4 Gc  |

table 1

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table 2

## Target Group, Personnel

Responsibility for planning, assembly, commissioning, operation, maintenance, and dismantling lies with the plant operator.

Only appropriately trained and qualified personnel may carry out mounting, installation, commissioning, operation, maintenance, and dismantling of the device. The personnel must have read and understood the instruction manual.

Prior to using the product make yourself familiar with it. Read the instruction manual carefully.

## Reference to Further Documentation

Observe laws, standards, and directives applicable to the intended use and the operating location.

For mining applications, observe laws, standards, and directives applicable to the operating location.

The corresponding datasheets, declarations of conformity, EC-type-examination certificates, certificates and control drawings if applicable supplement this document. You can find this information under [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com).

## Intended Use

The device is only approved for appropriate and intended use. Ignoring these instructions will void any warranty and absolve the manufacturer from any liability.

The device is used in control and instrumentation technology (C&I technology) for transfer of signals such as 20 mA and 10 V standard signals. The device has intrinsically safe circuits that are used for operating intrinsically safe field devices in hazardous areas.

Use the device only within the specified ambient and operating conditions.

The device is designed for mounting on a 35 mm DIN mounting rail according to EN 60715.

The device is an associated apparatus according to IEC/EN 60079-11.

The device is an electrical apparatus for hazardous areas of Zone 2.

The device may be installed in the non-hazardous area.

## Improper Use

Protection of the personnel and the plant is not ensured if the device is not being used according to its intended use.

## Mounting and Installation

Do not mount a damaged or polluted device.

Mount the device in a way that the device is protected against mechanical hazard. Mount the device in a surrounding enclosure for example.

Do not mount the device in the dust hazardous area.

The device fulfills a degree of protection IP20 according to IEC/EN 60529.

The device must be installed and operated only in an environment that ensures a pollution degree 2 (or better) according to IEC/EN 60664-1.

If used in areas with higher pollution degree, the device needs to be protected accordingly.

All circuits connected to the device must comply with the overvoltage category II (or better) according to IEC/EN 60664-1.

Observe the installation instructions according to IEC/EN 60079-14.

## Requirements for Cables and Connection Lines

Observe the following points when installing cables and connection lines:

Observe the permissible core cross-section of the conductor.

When using stranded conductors, crimp wire end ferrules on the conductor ends.

Use only one conductor per terminal.

When installing the conductors the insulation must reach up to the terminal.

Observe the tightening torque of the terminal screws.

## Requirements for Usage as Associated Apparatus

If circuits with type of protection Ex i are operated with non-intrinsically safe circuits, they must no longer be used as circuits with type of protection Ex i.

Keep the separation distances between all non-intrinsically safe circuits and intrinsically safe circuits according to IEC/EN 60079-14.

Observe the compliance of the separation distances between two adjacent intrinsically safe circuits according to IEC/EN 60079-14.

The respective peak values of the field device and the associated apparatus with regard to explosion protection should be considered when connecting intrinsically safe field devices with intrinsically safe circuits of associated apparatus (verification of intrinsic safety). Make sure to observe IEC/EN 60079-14 and IEC/EN 60079-25.

If no  $L_o$  and  $C_o$  values are specified for the simultaneous appearance of lumped inductances and capacitances, the following rule applies.

- The specified value for  $L_o$  and  $C_o$  is used if one of the following conditions applies:
  - The circuit has distributed inductances and capacitances only, e. g., in cables and connection lines.
  - The total value of  $L_i$  (excluding cable) of the circuit is  $< 1\%$  of the specified  $L_o$  value.
  - The total value of  $C_i$  (excluding cable) of the circuit is  $< 1\%$  of the specified  $C_o$  value.
- A maximum of 50 % of the specified value for  $L_o$  and  $C_o$  is used if the following condition applies:
  - The total value of  $L_i$  (excluding cable) of the circuit is  $\geq 1\%$  of the specified  $L_o$  value.
  - The total value of  $C_i$  (excluding cable) of the circuit is  $\geq 1\%$  of the specified  $C_o$  value.

- The reduced capacitance for gas groups I, IIA and IIB must not exceed the value of 1  $\mu\text{F}$  (including cable). The reduced capacitance for gas group IIC must not exceed the value of 600 nF (including cable).

If more channels of one device are connected in parallel, ensure the parallel connection is made directly at the terminals of the device. When verifying the intrinsic safety, observe the maximum values for the parallel connection.

Observe the grounding requirements for type of protection Ex i according to IEC/EN 60079-14.

Ensure that external ground connections exist, are in good condition, and are not damaged or corroded.

## Requirements for Equipment Protection Level Gc

The device must be installed and operated only in surrounding enclosures that

- comply with the requirements for surrounding enclosures according to IEC/EN 60079-0,
- are rated with the degree of protection IP54 according to IEC/EN 60529.

The device may be installed in gas groups IIC, IIB and IIA.

Connection or disconnection of energized non-intrinsically safe circuits is only permitted in the absence of a potentially explosive atmosphere.

## Operation, Maintenance, Repair

The device must not be repaired, changed or manipulated.

If there is a defect, always replace the device with an original device from Pepperl+Fuchs.

## Requirements for Usage as Associated Apparatus

If circuits with type of protection Ex i are operated with non-intrinsically safe circuits, they must no longer be used as circuits with type of protection Ex i.

Ensure that external ground connections exist, are in good condition, and are not damaged or corroded.

## Requirements for Equipment Protection Level Gc

Connection or disconnection of energized non-intrinsically safe circuits is only permitted in the absence of a potentially explosive atmosphere.

## Delivery, Transport, Disposal

Check the packaging and contents for damage.

Check if you have received every item and if the items received are the ones you ordered.

Always store and transport the device in the original packaging.

Store the device in a clean and dry environment. The permitted ambient conditions (see datasheet) must be considered.

Disposing of device, packaging, and possibly contained batteries must be in compliance with the applicable laws and guidelines of the respective country.