Instruction Manual

1. Marking

Zener barrier Z715.F, Z728.F, Z728.H.F, Z765.F, Z779.F, Z779.H.F, Z787.F, Z787.H.F Z828.H.F, Z865.F, Z879.F, Z879.H.F, Z887.F, Z887.H.F Z960.F, Z961.F, Z966.F
ATEX certificate: BAS 00 ATEX 7096 ATEX marking: Ⓔx II (1)G [Ex ia Ga] IIC , Ⓔx II (1)D [Ex ia Da] IIIC , Ⓔx I (M1) [Ex ia Ma] I ATEX certificate: TÜV 99 ATEX 1484 X ATEX marking: Ⓔx II 3G Ex nA IIC T4 Gc
IECEx certificate: IECEx BAS 18.0033 IECEx marking: [Ex ia Ga] IIC , [Ex ia Da] IIIC , [Ex ia Ma] I
North America Certificates: E106378 (UL) Class I, Division 2, Groups A-D, T4 Class I, Zone 2, AEx nA [ia] IIC T4 (US), Ex nA [ia] IIC T4 (Canada) Associated apparatus with intrinsically safe circuits for: Class I, Division 1, Groups A-D; Class II, Division 1, Groups E-G; Class III, Division 1 Class I, Zone 0, [AEx ia Ga] IIC (US), [Ex ia Ga] IIC (Canada)
USA certificate: FM17US0370 Class I, Division 2, Groups A-D Associated apparatus with intrinsically safe circuits for: Class I, Division 1, Groups A-D; Class II, Division 1, Groups E-G; Class III, Division 1
CCC certificate: 2020322316002774 CCC marking: [Ex ia Ga] IIC, [Ex ia Da] IIIC

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2. Target Group, Personnel

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

The personnel must be appropriately trained and qualified in order to carry out mounting, installation, commissioning, operation, maintenance, and dismounting of the device. The trained and qualified personnel must have read and understood the instruction manual.

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

3. Reference to Further Documentation

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

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

The corresponding datasheets, manuals, declarations of conformity, EU-type examination certificates, certificates, and control drawings if applicable supplement this document. You can find this information under www.pepperl-fuchs.com.

For specific device information such as the year of construction, scan the QR code on the device. As an alternative, enter the serial number in the serial number search at www.pepperl-fuchs.com/device-information.

If you use the device in safety-related applications, observe the requirements for functional safety. You can find these requirements in the functional safety documentation under www.pepperl-fuchs.com.

4. 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.

If you use the device in safety-related applications, observe the information for safety function and safe state.

5. Improper Use

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

6. 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 a controlled 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.

The device must be installed and operated only in an environment of overvoltage category II (or better) according to IEC/EN 60664-1.

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

If you install the device in safety-related applications, observe the requirements for functional safety.

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 copper conductors.

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.

Observe the respective peak values of the field device and the associated apparatus with regard to explosion protection when connecting intrinsically safe field devices with intrinsically safe circuits of associated apparatus (verification of intrinsic safety). Also 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 ≥ 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.
- The reduced capacitance for gas groups I, IIA, and IIB must not exceed the value of 1 µF (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 earth 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.

Only change the replaceable fuse, when the device is de-energized.

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.

Place warning marking "Warning – Do not remove or replace fuse when energized!" visibly on the housing.

7. Operation, Maintenance, Repair

If you operate the device in safety-related applications, observe the requirements for functional safety. In case of operating in low demand mode, plan appropriate intervals for the proof test.

Do not repair, modify, or manipulate the device.

If there is a defect, always replace the device with an original device.

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 earth 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.

Only change the replaceable fuse, when the device is de-energized.

8. 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 must be considered, see datasheet.

The device, built-in components, packaging, and any batteries contained within must be disposed in compliance with the applicable laws and guidelines of the respective country.