

# Instruction Manual

## 1. Marking

FieldBarrier for Cabinet Installation R4D0-FB-IA*
ATEX certificate: BVS 13 ATEX E 121 X ATEX marking: Ⓢ II 2(1)G Ex eb ib mb [ia Ga] IIC T4 Gb Ⓢ II (1)D [Ex ia Da] IIIC Ⓢ I (M1) [Ex ia Ma] I
IECEx certificate: IECEx BVS 13.0119X IECEx marking: Ex eb ib mb [ia Ga] IIC T4 Gb [Ex ia Da] IIIC [Ex ia Ma] I
North America Certificates: 70004139 (cCSAus) Class I, Division 2, Groups A-D, T4 Class I, Zone 1, AEx/Ex e ib mb [ia Ga] IIC T4 Gb Class I, Zone 1, AEx/Ex e ib mb [ia IIIC Da] IIC T4 Gb 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

The \*-marked letters of the type code are placeholders for versions of the device.

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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. Observe Directive 1999/92/EC in relation to hazardous areas. 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](http://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](http://www.pepperl-fuchs.com). Due to constant revisions, documentation is subject to permanent change. Please refer only to the most up-to-date version, which can be found under [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com).

## 4. Intended Use

The device is a device coupler for fieldbus technology that connects field devices through intrinsically safe spurs to the trunk of a segment in accordance with IEC/EN 61158-2. Each spur individually limits or isolates the current during a spur failure, ensuring that the remaining segment is not affected. The device is designed for wall mounting. The device is designed for panel mounting. The device is designed for mounting on a 35 mm DIN mounting rail according to EN 60715. The spurs are intrinsically safe according to FISCO or Entity model. The device must only be operated in the specified ambient temperature range and at the specified relative humidity without condensation.

## 5. Improper Use

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

## 6. Mounting and Installation

Prior to mounting, installation, and commissioning of the device you should make yourself familiar with the device and carefully read the instruction manual.

Do not mount a damaged or polluted device.

The device may be installed in a corrosive atmosphere according to ISA-S71.04, severity level G3.

Observe the tightening torque of the screws.

### 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. The insulation stripping length must be considered.

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

Connectors for non-intrinsically safe circuits must be mechanically secured.

The non-intrinsically safe cables have to be fixed with cable ties at the intended fixtures.

Only manipulate the connections within the specified ambient temperature range.

Temperature range	-5 °C to +70 °C
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The shield of each intrinsically safe circuit is internally connected to the grounding terminal via a capacitor.

Spur cable shield grounding:	Capacitive via 4.4 nF
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The shield of the non-intrinsically safe circuit is internally connected to the grounding terminal via a capacitor.

Trunk cable shield grounding:	Capacitive via 5.7 nF Direct
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The capacitor can be bypassed by setting the plug-in jumper between specified terminals.

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

### 6.1. Hazardous Area

If the device has already been operated in general electrical installations, the device may subsequently no longer be installed in electrical installations used in combination with hazardous areas.

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

Observe the installation instructions according to IEC/EN 60079-25.

Ensure that the trunk is equipped with two terminators, one at each end of the trunk.

#### 6.1.1. Type of Protection

##### 6.1.1.1. Type of Protection Ex i

The intrinsically safe output circuits may lead into Zone 0.

The non-intrinsically safe output circuits may lead into Zone 20.

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

For intrinsically safe circuits, the dielectric strength of the insulation against other intrinsically safe circuits and against the shield must be at least 500 V according to IEC/EN 60079-14.

Avoid electrostatic charges which could result in electrostatic discharges while installing, operating, or maintaining the device.

The connection cover of the device according to the degree of protection IP30 must be attached.

After de-energizing the device, a specified delay before opening the cover has to be maintained.

Minimum delay before opening the IP30 cover:	5 s
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The device provides a grounding terminal to which an equipotential bonding conductor with a minimum cross section of 4 mm<sup>2</sup> must be connected.

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

Only plug and pull the plug-in jumpers in the absence of a potentially explosive atmosphere.

##### 6.1.1.2. Type of Protection Ex e

If intrinsically safe and non-intrinsically safe circuits are being operated together, the connections of the non-intrinsically safe circuits must be covered. The cover must comply with degree of protection IP30 according to IEC/EN 60529.

##### 6.1.2. Gas

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

###### 6.1.2.1. Zone 1

The device may be installed in Zone 1.

###### 6.1.2.2. Zone 2

The device may be installed in Zone 2.

### **6.1.3. Dust**

#### **6.1.3.1. Zone 21**

The device may only be installed and operated in Zone 21 if mounted in a surrounding enclosure, which corresponds to equipment protection level Db.

#### **6.1.3.2. Zone 22**

The device may only be installed and operated in Zone 22 if mounted in a surrounding enclosure, which corresponds to equipment protection level Dc.

## **7. Housings and Surrounding Enclosures**

### **7.1. Degree of Protection**

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.

## **8. Operation, Maintenance, Repair**

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

Do not repair, modify, or manipulate the device.

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

## **9. 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.

Keep the original packaging. 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.