

Instruction Manual

1. Marking

Ethernet-APL Rail Field Switch ARS*-B2-IA*
ATEX certificate: TÜV 21 ATEX 8666 X ATEX marking: Ⓢ II 3 (1) G Ex ic ec [ia Ga] IIC T4 Gc Ⓢ II (1)D [Ex ia Da] IIC
IECEx certificate: IECEx TUR 21.0072X IECEx marking: Ex ic ec [ia Ga] IIC T4 Gc [Ex ia Da] IIC

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

You will find the exact device designation on the nameplate.

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2. Target Group, Personnel

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

The personnel must be appropriately trained and qualified in order to carry out mounting, installation, commissioning, operation, maintenance, and dismantling 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.

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.

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.

In order to access this documentation, enter the product name, i. e. the type code, or the item number of the product in the search field of the website.

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.

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 an Ethernet-APL Field Switch which provides intrinsically safe outputs for connecting 2-WISE and FISCO devices.

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

The intrinsically safe output circuits may lead into Zone 0.

The intrinsically safe output circuits may lead into Zone 20.

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

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

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

5. Improper Use

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

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.

6. Specific Conditions of Use

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.

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.

7. Mounting and Installation

Do not mount a damaged or polluted device.

Mount the device in a surrounding enclosure.

Ensure that the surrounding enclosure can only be opened with a tool.

The device can get very hot during operation. To protect the device from excessive heating, observe the required clearances and sufficient ventilation when installing the device.

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

Observe the mounting position of the device.

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.

Supply the device with a power supply that meets the requirements for safety extra-low voltage (SELV) or protective extra-low voltage (PELV).

7.1.

Requirements for Connectors

Only use the terminals which are supplied with the device.

Ensure that the terminals are in good condition and are not damaged or corroded.

Observe the tightening torque of the terminal screws.

Observe the permissible core cross section of the conductor.

Observe the insulation stripping length.

Use only one conductor per terminal.

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

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

Only manipulate the connections within the specified ambient temperature range.

Temperature range	-5 °C to +70 °C
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Observe the permissible cable type and cable length given in the respective hazardous area certificate.

Only use cables and connection lines with a temperature range appropriate to the application.

7.2. Hazardous Area

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

The device provides a grounding terminal to which an equipotential bonding conductor with a minimum cross section of 4 mm² must be connected.

Observe the warning markings.

7.2.1. Requirements for Usage as Associated Apparatus

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

Observe the installation instructions according to IEC/EN TS 60079-47.

The intrinsically safe circuits are not galvanically isolated from each other.

Disconnect the terminal of the intrinsically safe circuit

at the associated apparatus before installing any components in this intrinsically safe circuit.

Connect the terminal of the intrinsically safe circuit only if all components are installed and connected.

Ensure that the terminals are in good condition and are not damaged or corroded.

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.

Intrinsically safe circuits for field connections are not allowed to be connected together in any mode.

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.

Use separation walls or protective covers to preserve the required separation distances.

Ensure that the separation walls are correctly fitted and are in the correct mounting position.

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

7.2.2. 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.

Connection or disconnection of energized non-intrinsically safe circuits is only permitted in the absence of a potentially explosive atmosphere.
Only use SFP plug-in modules listed in the SFP modules certificate which is referenced in the certificate of this device.
Ensure that the used plug-in modules are in good condition and are not damaged or corroded.
Only use plugs that are in accordance with the IEC/EN 60603-7 series.
Use plugs that are rated for the ambient temperature.
Ensure that the used plugs are in good condition and are not damaged or corroded.
Avoid electrostatic charges which could result in electrostatic discharges while installing, operating, or maintaining the device.
Close unused Ethernet ports with the corresponding covers.

8. Operation, Maintenance, Repair

Do not repair, modify, or manipulate the device.
Do not use a damaged or polluted device.
If there is a defect, always replace the device with an original device.

8.1. Requirements for Usage as Associated Apparatus

Disconnect the terminal of the intrinsically safe circuit at the associated apparatus before maintaining any components in this intrinsically safe circuit.
Connect the terminal of the intrinsically safe circuit only if all components are installed and connected.
Ensure that the terminals are in good condition and are not damaged or corroded.
Keep the separation distances between all non-intrinsically safe circuits and intrinsically safe circuits according to IEC/EN 60079-14.
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Ensure that the separation walls are correctly fitted and are in the correct mounting position.
Observe the grounding requirements for type of protection Ex i according to IEC/EN 60079-14.

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Only use SFP plug-in modules listed in the SFP modules certificate which is referenced in the certificate of this device.
Ensure that the used plugs are in good condition and are not damaged or corroded.
Avoid electrostatic charges which could result in electrostatic discharges while installing, operating, or maintaining the device.
Connection or disconnection of energized non-intrinsically safe circuits is only permitted in the absence of a potentially explosive atmosphere.
The surrounding enclosure may be opened for maintenance while energized in Zone 2 provided that the following conditions are met:

- The connections of the non-intrinsically safe circuits must be protected by a cover with a degree of protection IP30.
- All other devices in the surrounding enclosure must permit the opening of the surrounding enclosure while energized in Zone 2.
- An appropriate marking is placed on the surrounding enclosure.

Close unused Ethernet ports with the corresponding covers.

8.3. Return

Take the following precautions before you return the device to Pepperl+Fuchs.
Remove all adhering residues from the device. These residues can be hazardous to health.
Fill in the form **Declaration of Contamination**. You can find this form on the product detail page at www.pepperl-fuchs.com.
Enclose the filled in **Declaration of Contamination** form with the device. Pepperl+Fuchs can examine and repair a returned device, only if a completed form is included in the return.
If needed, include special handling instructions with the device.
Specify the following information:

- Chemical and physical characteristics of the product
- Description of the application
- Description of the error that occurred (specify error code if possible)
- Operating time of the 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.

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.