

Instruction Manual

1. Marking

Fieldbus Multi-Input /Output *D0-MIO-Ex12-*
ATEX certificate: BVS 16 ATEX E 075 X ATEX marking: Ⓢ II 2 (1) G Ex ib [ia Ga] IIC T4 Gb , Ⓢ II 3 (1) G Ex ic [ia Ga] IIC T4 Gc , Ⓢ II 3 (1) G Ex ec [ia Ga] IIC T4 Gc , Ⓢ I (M1) [Ex ia Ma] I , Ⓢ II (1) D [Ex ia Da] IIIC , Ⓢ II 2 (1) D Ex tb [ia Da] IIIC T130 °C Db (F2D0-MIO-EX12-* only)
IECEx certificate: IECEx BVS 16.0051X IECEx marking: Ex ib [ia Ga] IIC T4 Gb , Ex ic [ia Ga] IIC T4 Gc , Ex ec [ia Ga] IIC T4 Gc , [Ex ia Ma] I , [Ex ia Da] IIIC , Ex tb [ia Da] IIIC T130 °C Db (F2D0-MIO-EX12-* only)
North America Certificates: FM19US0077X, FM19CA0042X Class I, Division 2, Groups A-D, T4 Class II, Division 2, Groups E-G, T130°C (F2D0-MIO-EX12-* only) Associated apparatus with intrinsically safe circuits for: Class I, II, III, Division 1, Groups A-G Class I, Zone 1, AEx/Ex ib [ia Ga] IIC T4 Gb Class I, Zone 2, AEx/Ex ic [ia Ga] IIC T4 Gc Class I, Zone 2, AEx/Ex ec [ia Ga] IIC T4 Gc Zone 20, [AEx/Ex ia Da] IIIC Zone 21 AEx/Ex tb [ia Da] IIIC T130°C Db (F2D0-MIO-EX12-* only)
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2. Validity

Specific processes and instructions in this instruction manual require special provisions to guarantee the safety of the operating personnel.

3. 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.

4. 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. 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. 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.

5. 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 multi-input/output is a fieldbus device with intrinsically safe I/O channels for the connection of valves and binary sensors to a FOUNDATION Fieldbus installation or a PROFIBUS PA installation. The device must only be operated in the specified ambient temperature range and at the specified relative humidity without condensation. The intrinsically safe output circuits may lead into Zone 0. The intrinsically safe output circuits may lead into Zone 20. The spurs are intrinsically safe according to FISCO or Entity model.

6. Improper Use

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

7. Mounting and Installation

Observe the ambient and operating conditions when mounting and installing the device.

Do not mount a damaged or polluted device.

Observe the tightening torque of the terminal screws.

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.

Mark permanently the selected type of protection for your specified application. Use the tick box on the nameplate for that. It is forbidden to change this marking afterwards.

Requirements for Hazardous Area

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

Avoid impact effect or friction during mounting.

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

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

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

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.

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.

If the device has been used with an Ex ic circuit with voltage U_0 greater than voltage U_i specified for type of protection Ex ia or Ex ib, the device must not be connected to Ex ia or Ex ib circuits anymore.

7.1. F2D0-MIO-Ex12.*

Ensure that the housing is not damaged, distorted, or corroded.

Ensure that all seals are clean, undamaged, and correctly fitted.

Only use cable glands that are suitably certified for the application.

For cable glands only use incoming cable diameters of the appropriate size.

Tighten all cable glands with the appropriate torque.

The cables and connection lines must not be strained. Provide an adequate strain relief.

Only use stopping plugs that are suitably certified for the application.

Close all unused enclosure holes with the appropriate stopping plugs.

Specific Conditions of Use

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

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 a controlled environment that ensures a pollution degree 2 (or better) according to ANSI/UL 60664-1.

7.2. R8D0-MIO-Ex12.*

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

Place warning marking "Warning – Non-intrinsically safe circuits protected by internal cover with a degree of protection IP30!" visibly on the surrounding enclosure.

Specific Conditions of Use

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

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 must be installed and operated only in surrounding enclosures that

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

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

8. Operation, Maintenance, Repair

The device must only be operated in the specified ambient temperature range and at the specified relative humidity without condensation.

Do not repair, modify, or manipulate the device.

Do not use a damaged or polluted device.

If cleaning is necessary while the device is located in a hazardous area, in order to avoid electrostatic charging only use a clean damp cloth.

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

Requirements for Hazardous Area

Avoid impact effect or friction during operating.

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

If intrinsically safe and non-intrinsically safe circuits are present, the cover with a degree of protection IP30 may only be removed if the non-intrinsically safe circuits are de-energized (volt-free and currentless) or the absence of a potentially explosive atmosphere.

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.