Instruction Manual

1. Marking

Fieldbus Multi-Input/Output "D0-MIO-Ex12-*"

ATEX Certificate:
BVS 16 ATEX E 075 X

\[\begin{align*}
\& \text{II } 2 (1) \text{ G Ex ib [a Ga] IIC T4 Gb ,} \\
\& \text{II } 3 (1) \text{ G Ex ic [a Ga] IIC T4 Gc ,} \\
\& \text{II } 3 (1) \text{ G Ex ec [a Ga] IIC T4 Gc ,} \\
\& \text{I (M1) Ex ia Ma} \\
\& \text{II } 2 (1) \text{ D Ex tb [a Da] IIC T130 °C Db (F2DO-MIO-EX12-* only) }
\end{align*}\]

IECEx Certificate:
IECEx BVS 16.0051X

Ex ib [a Ga] IIC T4 Gb,
Ex ic [a Ga] IIC T4 Gc,
Ex ec [a Ga] IIC T4 Gc,
Ex ia [Ma],
Ex ia Da) IIC
Ex tb [a Da] IIC T130 °C Db (F2DO-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 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.

4. Reference to Further Documentation
Observe laws, standards, and directives 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.

Due to constant revisions, documentation is subject to permanent change. Please refer only to the most up-to-date version, which can be found on www.pepperl-fuchs.com.

5. Intended Use
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 is only approved for appropriate and intended use. Ignoring these instructions will void any warranty and absorb the manufacturer from any liability. 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
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. Observe the ambient and operating conditions when mounting and installing the device. The device must only be operated in the specified ambient temperature range and at the specified relative humidity without condensation. Observe the tightening torque of the terminal screws. Close all unused enclosure holes with the appropriate stopping plugs. 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.

The device may be installed in gas groups IIC, IIB, and IIA. The intrinsically safe output circuits may lead into Zone 0. The intrinsically safe output circuits may lead into Zone 20. 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 greater than voltage U 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. F2DO-MIO-Ex12-

The device contains aluminum. Thereby the device is considered to constitute an ignition hazard by impact effect or friction. Avoid impact effect or friction during mounting and operating. To ensure the degree of protection, consider the following points:

Ensure that the housing is not damaged, distorted, or corroded. Ensure that all seals are clean, undamaged, and correctly fitted. For cable glands only use incoming cable diameters of the appropriate size. Tighten all cable glands with the appropriate torque.

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

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.

7.2.1. F2DO-MIO-Ex12-

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

7.2.2. Type of Protection Ex ec
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.

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 60654-1.

7.2.2.1. R8DO-MIO-Ex12-

The non-intrinsically safe cables have to be fixed with cable ties at the intended fixtures. 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 IP5x according to IEC/EN 60529.

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

7.2.3. Type of Protection Ex i
Avoid impact effect or friction during mounting. Avoid impact effect or friction during operating.

8. Operation, Maintenance, Repair
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.

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.

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