HIRSCHMANN
A BELDEN BRAND

Safety information

OZD Profi G12DU ATEX 1
OZD Profi G12DK ATEX 1
OZD Profi G12DE ATEX 1

Read and follow the enclosed detailed
Manual
PROFIBUS Fiberoptic Repeater
OZD Profi G12DU ATEX 1, OZD Profi G12DK ATEX 1, OZD Profi G12DE ATEX 1.

Validity

This safety information is considered as operating manual.
Different procedures and instructions in this operating manual require special precautionary measures for ensuring safety of the involved persons.

Safety guidelines

This manual contains guidelines, which must be observed for your personal safety and for avoiding property damage. The information is highlighted by a warning triangle and depending upon the degree of risk is presented as follows:

⚠ **Danger!**
means death, seriousinjury or extensive damageto property may **occur**,
if the appropriate precautions are not taken.

⚠ **Warning!**
means death, seriousinjury or extensive damage to property **may occur**,
if appropriate precautions are not taken.

⚠ **Caution!**
means a minor injury or propertydamage **may occur**, if appropriate precautions are not taken.

Note:
is important information on the product, handling of the product or the respective part of documentation, which must be paid special attention.

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Operator of the system and personnel

Responsibility with respect to planning, assembly, startup, operation and maintenance is that of the operator of the system.
Assembly, installation, startup, maintenance and operation of all devices must be done by qualified personnel only. The operating manual must be read and understood.

Relevant laws, standards, guidelines and other documentation

Laws, standards or guidelines applicable for the usage and/or the planned intended use must be complied just like the appropriate data sheets, declarations of conformity, EC-type examination certficates and certificates where applicable.
Guideline 94/9 EC must be observed for explosive hazardous areas.

Information on CE marking

CE The devices conform with the requirements of thefollowing European directive:
89/336/EEC
council directive on the approximation of legal prosions of the member states concerning electromagnetic compatibility (amended by directives 91/263/EEC, 92/31/EEC and 93/68/EEC).

Prerequisite for the compliance of EMC limits is the strict compliance of guidelines specified in the description and operatingmanual.

Records of the EC declarations of conformity are kept in accordance with the above mentioned EC directive for the competent authorities at:

Hirschmann Automation and Control GmbH
Department 01RD-NT
Stuttgarter Strasse 45-51
72654 Neckartenzlingen
Telephone +49 (0)1805 14-1538
E-Mail HAC.Support@Belden.com

The product is usable in the residential area (residential area, business and commercial areas, smallenterprises) as well as in the industrial area.

- Interference immunity:
  EN 61000-6-2:2001
- Emitted immunity:
  EN 55022:1998+A1:2000+A2:2003 Class A

⚠ **Note!**
This equipment belongs to class A. This may cause radio interference in theresidential area. In this case the operator may request execution of appropriate measures and pay for the same.

Intended use

The PROFIBUS Fiberoptic Repeater in plastic or stainless steel protective housing is intended for use in explosive hazardous area.
The PROFIBUS Fiberoptic Repeater (DIN-rail module) without plastic or stainless steel protective housing must be used only as a replacement for a defective PROFIBUS Fiberoptic Repeater in plastic or stainless steel protective housing. Another use is possible after joint ATEX approval with an approved protective housing.

The PROFIBUS Fiberoptic Repeater is used as an interface between electrical PROFIBUS signals from the explosive hazardous area (ex-area) and the safe area (non-ex-area). Bus and auxiliary power circuits are isolated galvanically.

PROFIBUS Fiberoptic Repeater are intended for use in the optical PROFIBUS networks. They enable implementation of electrical PROFIBUS interfaces (RS 485 level) in optical PROFIBUS interfaces and vice-versa.

By using the known advantages of the optical transmission technology, the devices can be integrated in the existing PROFIBUS fieldbus networks. Likewise, complete structure of a PROFIBUS fieldbus network with devices in line, star and ring topology is possible in any combination.

Applicable laws, standards or guidelines must be observed for usage or the planned purpose. The devices are approved only for proper and intended use. Any guarantee and producer responsibility becomes void in case of infringement.

The devices are not suitable for separation of signals in power measurement, unless stated specifically in the appropriate data sheet.

Protection of operating personnel and system is not guaranteed if the component is not used in accordance with its intended purpose.

Assembly

General information on assembly
Familiarise yourself with the device prior to assembly, installation and startup of the device and read this manual carefully.

The device must not be installed on places with aggressive vapours.

Observe BGR A3 (the Federal Institute for Geosciences and Natural Resources) when working under voltage.

Installation requirements in accordance with IEC/EN 60079-14 / IEC/EN 60079-25 and national deviations must be complied with.

The devices are designed for use in pollution degree 2 and overvoltage category II as per IEC/EN 60664-1 .

If devices are used in general electrical systems, these must not be used thereafter in electrical systems, which are connected to explosive hazardous areas.

The in-built PROFIBUS Fiberoptic Repeater in ex-e-housing contains non-intrinsic circuits.

The non-intrinsic circuits must be covered so that the optical fibre connections are accessible during ongoing operation. The cover must attain protection class IP30 as per IEC/EN 60529.

The devices are designed according to protection class encapsulation as per IEC/EN 60079-18. The housing, the seal and the sealing agent must not be damaged.

The equipment must not be operated with dust deposits $\geq$ 5 mm thickness as per IEC/EN 61241-1. Terminals in increased safety are covered.
The cover may be removed any time during assembly in safe area.

The device types can be installed outside the ex-area. The housing cover may be opened in case of service during ongoing operation.

Non-used inlet openings are to be sealed securely with certified sealing plugs in order to comply with the IP protection class. Likewise, seal inserts appropriate for the respective cable diameter must be used.

Excessive force on the glands may endanger the protection class. For ensuring protection class IP 54:
- all seals must be fitted intact and correctly,
- all screws of the housing/housing cover must be tightened with the appropriate torque,
- only cables of appropriate sizes must be used in the cable glands,
- all cable glands must be tightened with the appropriate torque,
- all free cable glands must be closed with sealing plugs.

Die PROFIBUS Fiberoptic Repeater are delivered in housings of protection class IP 66. The same provisions are applicable for this.

Assembly in zone 1 or zone 21
The devices must be installed in a housing with minimum protection class IP 54 as per gas-ex in zone 1.

IP 6* must be complied for conductive and non-conductive dust.

Temperature class T4 specified in the EC-type examination certification PTB 04 ATEX 1030 must be maintained at maximum ambient temperature of the housing of ≤ 60 °C.

The housing cover may be opened in zone 1 for servicing during ongoing operation.

Terminals in increased safety are covered. The cover may be removed only if there is no explosion hazard circuits are switched to zero potential beforehand.

Assembly in zone 2 or zone 22
The devices must be installed in a housing with minimum protection class IP 54 as per gas-ex in zone 2. For the assembly, besides devices in housing design, even DIN rail modules are available as per the data sheet. The modules must be installed as associated equipment in safe area or in suitable housing in zone 2.

IP 6* must be complied for conductive and non-conductive dust.

Temperature class T4 specified in the statement of conformity must be maintained at maximum ambient-temperature of the housing of ≤ 60 °C under normal operating conditions.

The housing cover may be opened in zone 2 for servicing during ongoing operation. In Zone 22 the housing cover may be opened only in the current-free state.

All terminals are covered. The cover may be removed in zone 2 and also in the safe area in case of servicing. The terminals are then accessible.

Select the assembly location such that climatic limit values specified in the technical data are maintained.

Housing

If the device is installed in zone 1, the housing, in which the device is installed, must be suitable for the intended use. Examination certificate as per directive 94/9/EC must be available for the housing.

Installation in housing not examined by Hirschmann together with the fibre optic coupler is not permitted. For this, separate certification of a notified body may be obtained. Following points must be observed/ evaluated:
- IP protection class as per IEC/EN 60529,
- resistance to light as per IEC/EN 60079-0,
- impact strength as per IEC/EN 60079-0,
- chemical resistance as per IEC/EN 60079-0,
- heat resistance as per IEC/EN 60079-04,
- electrostatics as per IEC/EN 60079-0.

If the seal of the housing cover or a seal of the cable entry is damaged, it should be replaced with a new housing cover or cable glands of the manufacturer.

Installation and startup

The device must be zero-potential during installation and maintenance. Voltage must be applied only after complete assembly and connection of all circuits required for the operation.

The devices must be connected only to the supply voltage printed on the type plate. The devices are designed only for operation with the safety low voltage. Accordingly, only PELV circuits or optionally SELV circuits with voltage restrictions as per IEC/EN 60950 must be connected to the supply voltage connections and the signalling contact. In case that you operate the module with external voltage: supply the system only with a safe low voltage as per IEC/EN 60950.

The optical fibres have an inherently safe optical radiation and must be interconnected only with other inherently safe optical equipment. For this, preferably a similar device of type OZD Profi G12D... ATEX 1 must be used.

Installation regulations as per IEC/EN 60079-14 (VDE 0165-1) for zone 1 or IEC/EN 60079-15 for zone 2 as well as directive 99/92 EC must be complied with.

The devices must be installed by a qualified electrician in consensus with the nationally applicable standards in zone 1 or zone 2 or zone 21 and zone 22.

Explosion group specified on the housing, the temperature class and special ambient conditions must be complied with!

Modifications and changes to the device are not permitted.

The device must be operated as per the intended purpose in undamaged and perfect condition!

Only original parts from the manufacturer must be used as spares.

If foreign bodies enter, these must be removed from the device before the initial startup!

When carrying any work on the device, observe the national safety and accident prevention regulations and warnings specially marked in the operating manual!

For installation and operation of associated equipment, comply with the applicable safety regulalations as per the ordinance on industrial safety and health and equipment and Product Safety Act and the generally recognised rules of the technology!

Before starting the device with the help of technical data, convince yourself that the operating conditions have been complied with and all polarities of the connections have been selected correctly. Also check the auxiliary power supply and your work area.

Operation

Warning!
LASER CLASS 1 as per IEC/EN 60825-1 (2001).

The devices must not be repaired, changed or manipulated. In case of defect, the product must be always replaced by an original one.

If the seal of the housing cover or a seal of the cable entry is damaged, it should be replaced with a new housing cover or cable glands of the manufacturer.

The insulation must reach up to the terminal. The conductor itself must not be damaged.

Fine-wired cables must be secured with a cable lug. If two cables must be led to a common terminal, a double cable lug must be used.

Generally only certified cable entries and sealing plugs must be used. Trumpet shaped cable glands or other suitable entries with additional stress relief must used for flexible cables. Assembly guidelines, which are significant for cable entries, must be observed. When using cable entry with an IP protection class, which is lower than the one applicable for the device, IP protection class of the entire device must be reduced. Non-used inlet openings must be sealed with a certified sealing plug for getting the minimum protection class. When installing the cable entries, ensure that seal inserts suitable for the cable diameter are used during installation. For excisable seal inserts ensure that the insert is suitable for the cable diameter.
All non-used cable entries must be sealed with sealing plugs certified for cable entries. The fibre optic cables are introduced through cable glands with slotted seals so that pre-assembled fibre optic cables can be used. Permissible cladding diameter of the fibre optic cable must be complied with (for this see manual, technical data, cable glands).

Cable entries must be tightened for ensuring the required minimum protection class (for this see manual, technical data, test torque). Excessive tightening may impair the protection class.
When tightening the cap nut of the metal cable entries (type E1WF/e), the gland must be secured against rotation with the help of a suitable tool.

The device must be operated only at the specified ambient temperature and at the specified relative humidity (not condensing).

The housing may be opened under voltage in zone 1. The IP30 cover of the terminals must **not** be opened under voltage. The IP30 cover must be replaced after executing repairs or maintenance. All non-covered control elements such as switches may be actuated. The fibre optic cable may be plugged or removed under voltage.

The devices must not be repaired, changed or manipulated. In case of defect, the device must be always replaced by an original one.

For dust explosion protection, safety measures, which are same as gas explosion protection are applicable. The housing must **not** be opened under voltage if there is dust explosion hazard. Before opening the housing, the dust deposits must be removed and electric voltages must be switched off.

Maintenance

The national regulations are applicable for service, maintenance and testing of associated equipmentequipment.

No maintenance is required if the device is operated properly taking into consideration the assembly instructions and ambient conditions.
According to the ordinance on industrial health and safety the operator of the electrical systems in explosion hazard areas is obliged to get these tested from a qualified electrician for their proper condition.

National regulations applicable for the maintenance/ service of electrical equipment in explosion hazard areas must be complied with.
The required maintenance intervals are application-specific and hence must be determined depending upon the operating conditions. As part of maintenance, primarily parts on which the type of ignition protection is dependent, must be tested (e.g. intactness and tightness of the housing, integrity of the seals and the cable entries as well as the required potential equalisation).

If one determines the need for servicing during maintenance, kindly take the “Operation” chapter (see above) into consideration.
The devices must not be repaired, changed or manipulated. In case of defect, the device must be always replaced by an original one.

Delivery, Transport and Storage

Check the packaging and contents for damage. In case of damage, notify the post and/or the forwarding agent and the supplier.
Check the delivery scope based on the order and the delivery documents for completeness and correctness.
Preserve the original packaging. The device should always be stored or transported in the original packaging.

Always store the device in dry and clean surroundings. Note the permissible storage temperature (see manual, technical data).

Repairs

The devices must not be repaired, changed or manipulated. In case of defect, the product must be always replaced by an original one.

Disposal

The devices and packaging material must be disposed in accordance with the relevant laws and regulations in the respective country.
Batteries are not included in the devices, these must be disposed off separately.

Hirschmann Automation and Control GmbH
Stuttgarter Strasse 45 - 51
72654 Neckartenzlingen
Germany/Allemagne
Tel.: +49 (0)1805 14-1538
Fax: +49 (0)7127 14-1551
E-Mail: HAC.Support@Belden.com
Internet: http://www.beldensolutions.com

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