HIRSCHMANN
A BELDEN BRAND

Startup Information

OZD Profi 12M ... PRO

de
en
fr

Please read and notice the detailed
"Manual F/O Fieldbus Repeater OZD Profi 12M … PRO".

Use the fax form on page 6 of this leaflet to order a free copy of this manual (Order No. 039 690-001).

General Safety Instructions

- This device is electrically operated. Adhere strictly to the safety requirements relating to voltages applied to the device as described in the operating instructions!
- Make sure that the electrical installation meets local or nationally applicable safety regulations.

Warning!
Failure to observe the information given in the warnings could result in serious injury and/or major damage.
Only personnel that have received appropriate training should operate this device or work in its immediate vicinity.
The personnel must be fully familiar with all of the warnings and maintenance measures in these operating instructions.
Correct transport, storage, and assembly as well as careful operation and maintenance are essential in ensuring safe and reliable operation of this device.
Never start operation with damaged components!

Warning!
Any work that may have to be performed on the electrical installation should be performed by fully qualified technicians only.

Warning!
LED- or LASER components according to IEC 60825-1 (2007):
CLASS 1 LASER PRODUCT.
LIGHT EMITTING DIODE - CLASS 1LED PRODUCT.

Certified Usage

Please observe the following:

Warning!
The device may only be employed for the purposes described in the catalog and technical description, and only in conjunction with external devices and components recommended or approved by Hirschmann. The product can only be operated correctly and safely if it is transported, stored, installed and assembled properly and correctly. Furthermore, it must be operated and serviced carefully.

Safety Guidelines Power Supply

- Switch the basic devices on only when the housing is closed.

Warning!
The devices may only be connected to the supply voltage shown on the type plate. The devices are designed for operation with a safety extra-low voltage.Thus, they may only be connected to the supply voltage connections and to the signal contact with PELV circuits or alternatively SELV circuits with the voltage restrictions in accordance with IEC/EN 60950-1.

Relevant for North America:
- The subject unit is to be suppplied by a Class 2 power source complying with the requirements of the National Electrical Code, table 11(b). If power is redundant supplied (two individual power sources) the power sources together should comply with the requirements of the National Electrical Code, table 11(b).
- Use 60/75 °C or 90 °C copper(Cu) wire/conductor only.

Hirschmann. Simply a good Connection.

Safety Guidelines Environment

Warning!
The device may only be operated in the listed ambient temperature range at the listed relative air humidity (non-condensing).

- The installation location is to be selected so as to ensure compliance with the climatic limits listed in the Technical Data (see page 3).
- To be used in a Pollution Degree 2 environment only (IEC 60664-1).

Note on CE Identification

The devices comply with the regulations of the following European directive:

89/336/EEC
Council Directive on the harmonization of the legal regulations of member states on electromagnetic compatibility (amended by Directives 91/263/EEC, 92/31/EEC and 93/68/EEC).

The EU declaration of conformity is kept available for the responsible authorities in accordance with the above-mentioned EU directives at:

Hirschmann Automation and Control GmbH
Stuttgarter Strasse 45 – 51
72654 Neckartenzlingen
Germany

Tel. +49 (0)1805 14-1538
E-Mail HAC.Support@Belden.com

FCC RULES

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

C-Tick

Australia / New Zealand

This product meets the requirements of the AS/NZS 3548 standard.

N13320

Approvals

cUL508 and CSA C22.2 No. 142-M1987
Please note the important information in: ”Relevant information for North America“, below.

ISA 12.12.01 (replaces UL 1604) und CSA C22.2, No. 213-M1987
Hazardous Locations Class1 Div 2 Groups A, B, C und D
Please note the important information in: ”Relevant information for North America“, below.

ATEX Directive 94/9/EC Zone 2 3G
Please note the important information in: ”Relevant information for use in Ex zone 2 according to ATEX 94/9/EC“, see page 5.

Note::
Only the certifications indicated on the label attached to each device are applicable.

Relevant information for use in Hazardous Locations according to ISA 12.12.01:

- Only for connection with a Class 2 power supply.
- For use in Class 2 Circuits.
- Use class 1 wire only.
- Use 60/75 or 90 °C copper(CU)wire only.

Additional Information for Use in Hazardous Locations:

This product may be operated in hazardous locations only if the product label is marked accordingly.
The following information applies when operating this equipment in hazardous locations:

Products marked ”Class I, DIV 2, Group A, B, C and D“ are suitable for use in Class I Division 2 Groups A, B, C, D, Hazardous Locations and nonhazardous locations only. Each product is supplied with markings on the rating nameplate indicating the hazardous location temperature code. When combining products within a system, the most adverse temperature code (lowest ”T“ number) may be used to help determine the overall temperature code of the system. Combinations of equipment in your system are subject to investigation by the local Authority Having Jurisdiction at the time of installation.

- The peripheral equipment must be suitable for the location in which it is used.
- Restrictions to the fault contacts of 7 pole connector for use in Hazardous Locations:
  V < 30 V I < 90 m A L_i = 0.5 µH typ. C_i = 20 pF typ.
- The tightening torque for field wiring terminals is max. 4.4 lb in (0.5 Nm).

Observe the Control Drawing 000144944DNR on page 6.

Technical Data

Operating voltage		NEC Class 2 power source 18 to 32 V DC (typ. 24 V DC) safety extra-low voltage (SELV/PELV) (redundant inputs decoupled), 5 A max., buffer time min. 10 ms at 24 VDC
Current input	for +18 VDC	195 mA
	for +32 VDC	130 mA
	Switched on peak value	220 mA max.
Power consumption		2.6 W
Ambient temperature		
OZD Profi 12M ... PRO without “EEC“ feature“		0 °C to +60 °C
OZD Profi 12M G12(-1300) EEC PRO [1]		–20 °C to +60 °C (IEC 60068-2-1, IEC 60068-2-2)
Relative humidity		
OZD Profi 12M ... PRO without “EEC“ feature		<95 %, non-condensing
OZD Profi 12M G12(-1300) EEC PRO [1]		100 %, condensing [2] (IEC 60068-2-3)
Protection class		IP 20

1) The DIP switches on the OZD Profi 12M G12(-1300) EEC PRO may also only be operated at ambient temperatures between 0 °C and +60 °C.
2) Protect the device against dripping water that may form.

Connections

Operating Voltage

- The repeater should only be supplied with a regulated safety extra-low voltage (SELV) in accordance with IEC/EN 60950-1, EN 61131-2 with a maximum of +32 V DC (typ. +24 V DC).
  It can be fed in using the 7-pin screw-type terminal block (see Fig. 1) on the upper side of the repeater.
  The operating voltage inputs are protected against incorrect pole connection.

Electrical channel

The repeater are fitted with an RS 485 electrical channel. This is a 9-pin Sub-D socket with a screw lock (inside thread UNC 4-40) (see Fig. 2). The pin assignment complies with the PROFIBUS standard. At Pin 6 there is a short circuit-proof 5 V output for supplying external pull-up/pull-down resistors.

Signaling Contacts

At the 7-pin screw-type terminal block (see Fig. 3) on the upper side of the repeater, floating contacts of a relay are provided as a signaling contact.
If the OZD Profi 12M … PRO is functioning correctly the contact is closed.
If a fault or power failure occurs, the contact is opened.

- Always ensure that the correct assignment is provided for the 7-pole terminal block. Make sure that the connecting leads of the signaling contacts are adequately insulated. Incorrect assignment can result in destruction of the repeater.

  Limit values of relay contact
  – Max. switching voltage: 60 V DC; 42 V AC
  – Max. switching current: 1,0 A
  – Max. switching capacity: 30 W (resistive load)

- The voltage connected to the relay must correspond to a safety extra-low voltage (SELV) to IEC/EN 60 950 and must comply with NEC, Class 2, regulations as stipulated by UL/CSA.

Analog Voltage Outputs

The device features two analog voltage outputs: CH2 and CH3. Each of these delivers a short-circuit-proof output voltage in the range 0 - 5 V that is dependent on the optical input power at port 2 or port 3 and is for diagnostic purposes, e.g. for preventive maintenance.

- These voltage outputs are connected to the front side of the repeater with a 3-pin screw terminal (see Fig. 4).
- The screw terminal is suitable for cable leads that have a cross section between 0.2 - 2.5 mm^2.

Assignments

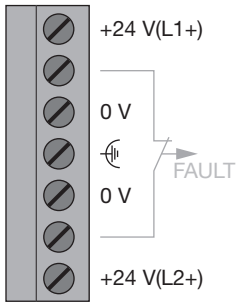


Fig. 1: Operating voltage supply – assignment of 7-pin terminal block

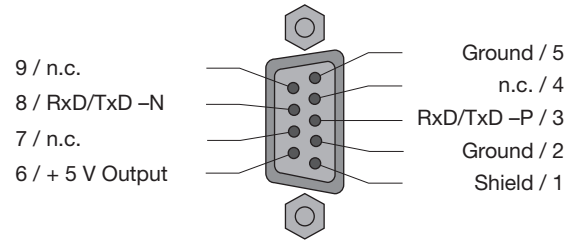


Fig. 2: Electrical channel – assignment of Sub-D socket (Designation in line with PROFIBUS standard)

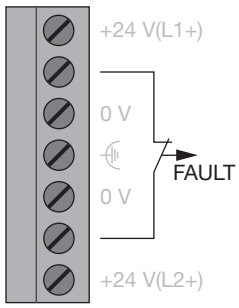


Fig. 3: Fault relay contact – assignment of 7-pin terminal block

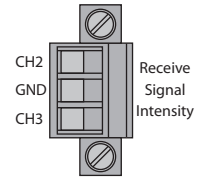


Fig. 4: Analog voltage outputs – connections for 3-pin terminal block

Relevant information for use in Ex zone 2 according to ATEX 94/9/EC

This product may be operated in EX zone 2 only if the product label is marked accordingly.
The following information applies when operating this equipment in EX zone 2 (ATEX 94/9/EC):

II 3G
Ex nA IIC T5 Gc
KEMA 09ATEX0139 X

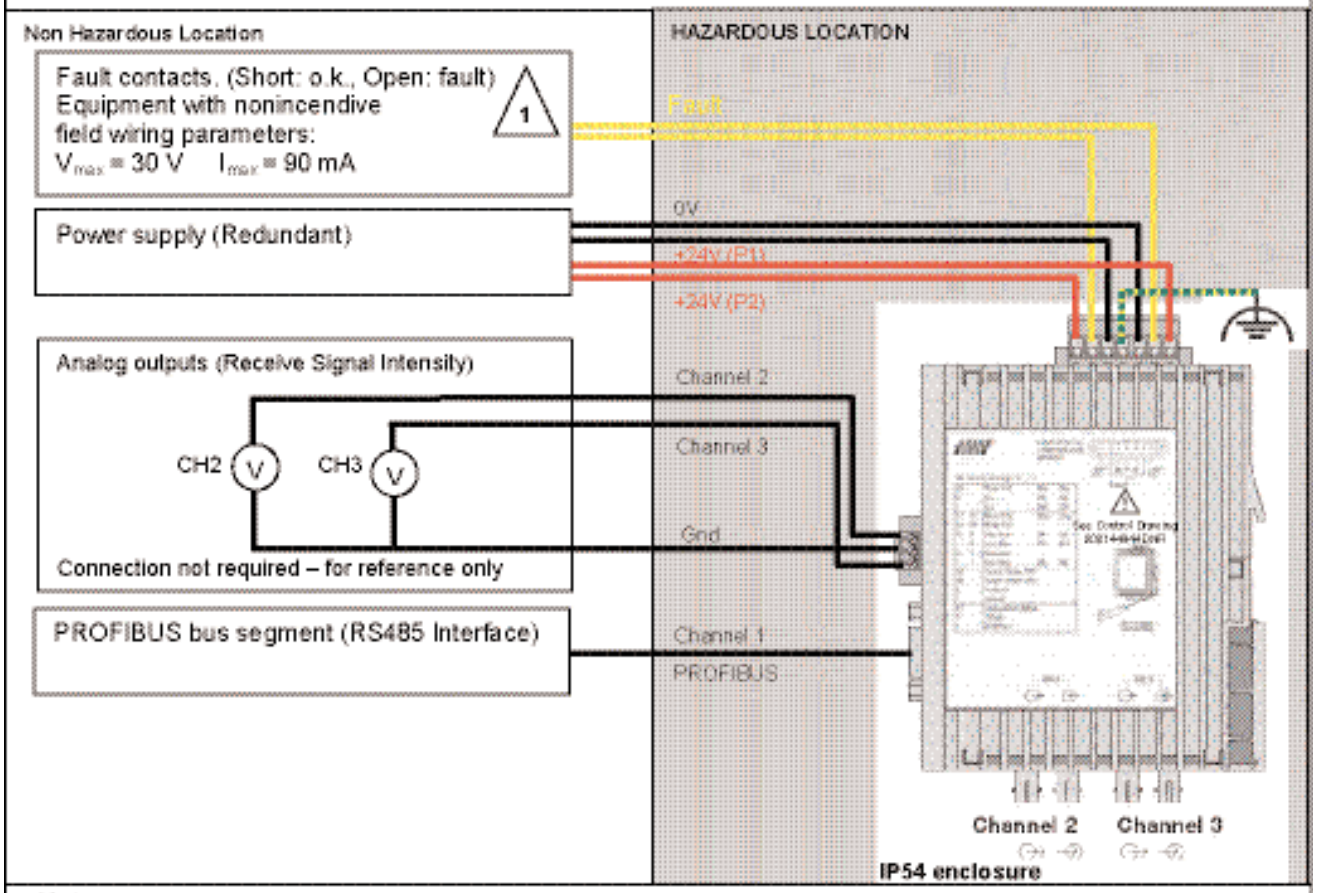
Temperature Code T5	Standard types:	Ambient Ta: 0 … +60 °C
	EEC types:	Ambient Ta: –20 … +60 °C
List of Standards	EN 60079-0 : 2012 + A11:2013	
	EN 60079-15 : 2010	

Special conditions for safe use

- The modules shall be installed in a suitable enclosure in accordance with EN60079-15, taking into account the environmental conditions under which the equipment will be used.
- When the temperature under rated conditions exceeds 70 °C at the cable or conduit entry point, or 80 °C at the branching point of the conductors, the temperature specification of the selected cable shall be in compliance with the actual measured temperature values.
- Installation, addition, removal or replacement of modules, connectors or fuses shall only take place when the system supply and the field supply are switched off, or when the area is known to be non-hazardous.
- Do not open when energized.

Power supply:	24 V DC (18 ... 30 V DC), 195 ... 130 mA
Fault relay contacts:	max. 60 V DC / 42 V DC, 1 A, max. 30 W (resistive load)

CONTROL DRAWING: Hazardous Locations Class I Division 2 Groups A, B, C, D



Notes:

1 The nonincendive field wiring circuit concept allows interconnection of nonincendive field wiring apparatus and associated nonincendive field wiring apparatus using any of the wiring methods permitted for unclassified locations when certain parametric conditions are met.

V_{max} V_{oc} I_{max} I_{SC} $C_a \geq C_i + C_{Cable}$ $L_a \geq L_i + L_{Cable}$

Nonincendive field wiring circuits must be wired in accordance with the National Electrical Code (NEC), NFPA 70 , article 501.10(B)(3)

Nonincendive Field Wiring Parameters:

Entity Parameters ...for Class I Division 2 Groups A, B, C, D =>		V_{max} [V]	I_{max} [mA]	C_i [pF]	L_i [µH]
connector:	**contacts:**				
7 pole	Fault contacts	30	90	20	0.5

WARNING - EXPLOSION HAZARD – SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR HAZARDOUS LOCATIONS OR EXPLOSIVE ATMOSPHERES.

WARNING - EXPLOSION HAZARD - DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NON-HAZARDOUS.

DO NOT OPEN WHEN ENERGIZED.

HIRSCHMANN

Title: **CONTROL DRAWING for OZD Profi 12M Pro**

Size A4	Document No.: 000144944DNR	Rev.
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To

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From

Company _____

Name _____

Dept. _____

Street _____

ZIP _____

City _____

Country _____

Phone _____

Dear customer

You can order your gratuitous manual for the PROFIBUS-Repeater OZD Profi 12M … PRO by letter or fax using this coupon.

Yours Hirschmann Automation and Control GmbH

☐ Please send me a free copy of ”Manual PROFIBUS-Repeater OZD Profi 12M … PRO“.

We apply the following Multimode/Singlemode modules:

☐ OZD Profi 12M P11 PRO ☐ OZD Profi 12M G11 PRO ☐ OZD Profi 12M G11-1300 PRO
☐ OZD Profi 12M P12 PRO ☐ OZD Profi 12M G12 PRO ☐ OZD Profi 12M G12-1300 PRO
☐ OZD Profi 12M G12 EEC PRO ☐ OZD Profi 12M G12-1300 EEC PRO

We apply the following network topology:

☐ Line topology with optical cable monitoring ☐ Star
☐ Line topology without optical cable monitoring ☐ Redundant optical ring

We use the following transmission rate:

☐ 12 Mbit/s ☐ 1.5Mbit/s ☐ 500 kbit/s
☐ 187.5 kbit/s ☐ others: ……

Our PROFIBUS Network consists of _____ participants at this time; _____ Fibre Optic Lines are integrated; it‘s in use for

_____

_____

We submit the following suggestions and desires to new modules for Field Bus Systems witch will be developed:

_____

_____

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