

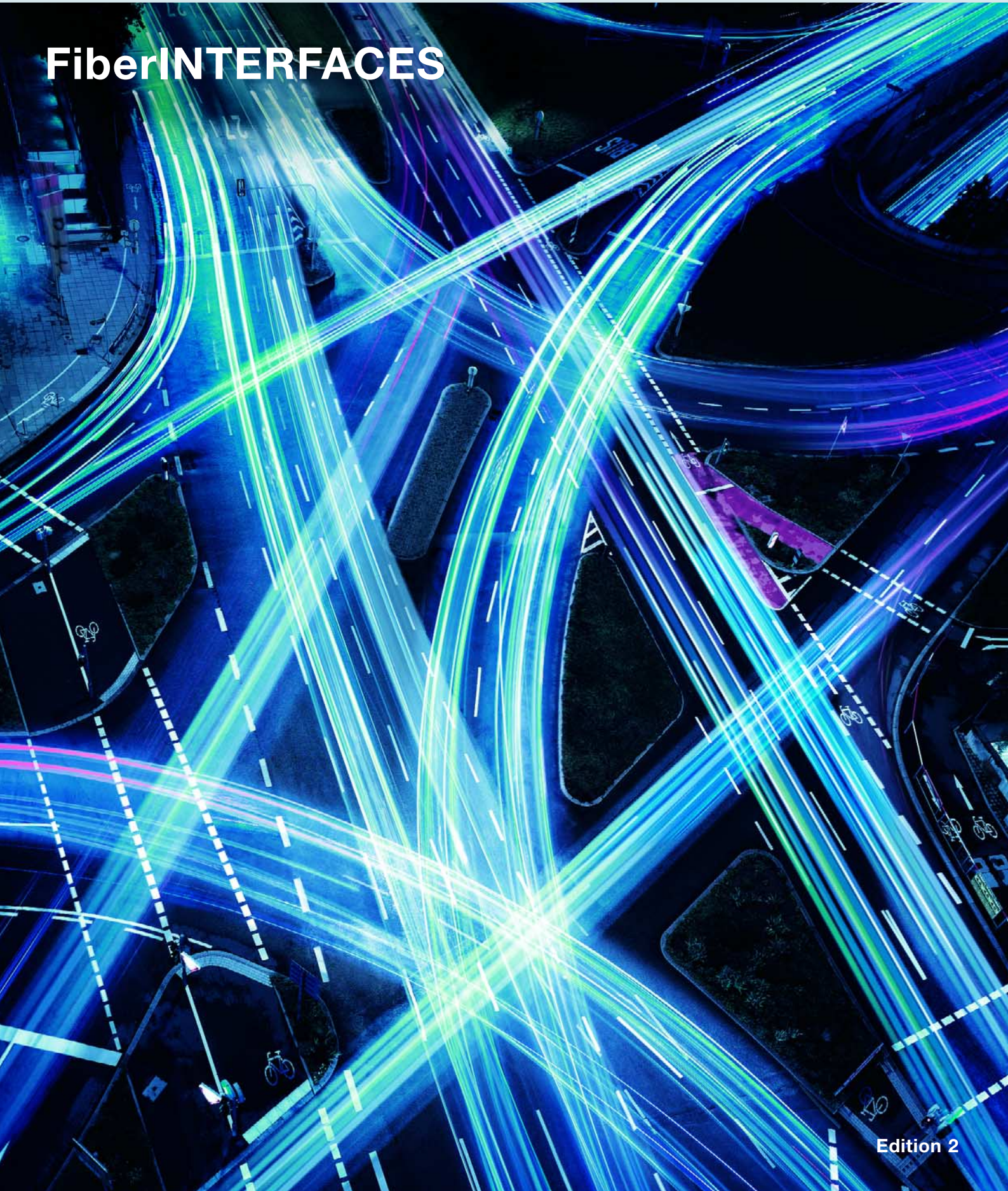


HIRSCHMANN

A Belden Company

Hirschmann. Simply a good Connection.

FiberINTERFACES



Edition 2

Long distances are hardly a problem.

Optical communications take you far beyond the point where conventional transmission systems bite the dust.



Gone are the days when you could choose operating conditions. In today's world of highly demanding process, transport and factory automation, you take what you can get: extreme temperature variations, high moisture levels, electromagnetic interference, shock and vibration (even in explosion endangered areas) – tough working conditions are now routine. Given these circumstances, weak links in data transmission, even over long distances, are not an option, and redundancy mechanisms and a total absence of interference are required even where high transmission speeds and large ranges are involved.

Optical transmission technology therefore offers obvious advantages in the manufacturing and offshore sector, in process and traffic control technology, alarm and signaling systems in control rooms, and inter-building networks: FiberINTERFACES makes it possible to transmit data over several miles/kilometers. They connect terminal devices such as computers, image-processing devices, programmable logic controllers (PLCs) and peripheral devices together. And, with their high availability and redundancy, they are able to hold their own in the harsh world of industrial applications. Fiber optic cables can be laid directly on high-power equipment or parallel to power cables, reducing planning and commissioning costs due to highly flexible topologies, integrated diagnostics and remote monitoring.



It is good to know that there is a optical communications manufacturer you can trust – one who has been active in optics since 1980 and who, with a world's first in 1984, launched its revolutionary fiber optic-based ETHERNET. And its even better if you can rely on a versatile and comprehensive modular system of field bus components, digital modules, hybrid components and OptoQuick components. FiberINTERFACES are just one important aspect of our work in the “Automation and Control” area – the Hirschmann product range extends from electrical interconnection technology to industrial ETHERNET components.

We can therefore give our customers the following unique benefit: under one roof, they obtain an open, highly accessible solution that covers the entire range from the field to the management level. The right product solution for every application.

Optical communication is used wherever the interference-free transmission of high bandwidth signals over large distances is required.

FiberINTERFACES eliminate inductive, capacitive or galvanic interference.

Interference factors that don't interfere.

Temperature extremes, moisture, electromagnetic fields, as well as shock and vibration – fiber optic cables give you the best under the worst of conditions.

As a pioneer in industrial communications and inter-building network technology and a technology leader in FiberINTERFACES, Hirschmann places its many years of industrial experience at the disposal of the client. It should therefore come as no surprise that such renowned solutions providers such as Siemens, Rockwell and Schneider Automation use Hirschmann products in their system solutions. Every user can benefit from our continuous and reliable product policy, the conceptualization of which encompasses much more than the current component system

for field bus components, digital modules, hybrid components and OptoQuick components and related accessories. As a member of international standardization organizations, we actively participate in shaping the future of field bus systems. This ensures that you receive more than the advantages of a state-of-the-art optical transmission technology for your process, transport and factory automation application. You too can harvest the savings potential!

Reliable transmission of field bus signals in spite of RFI/EMI interference.

Field buses

Field buses transmit relatively small amounts of data over large distances quickly and reliably. However, as a result of various legacy systems, there is a wide diversity of protocols and standards in use all over the world. Hirschmann therefore offers a whole range of high-quality optical fiber cable modules for various systems.

- **Universal and optimized devices for Profibus, Modbus, Geniusbus, WorldFIP, among others.**
- **Any desired topology (line, star, ring).**
- **All types of fibers (POF, HCS, Gradients 62.5 μ and 50 μ, Single mode).**
- **Hard real time capability.**
- **Extremely fast redundancy capability.**
- **Preventive maintenance possibilities.**
- **Ex-Class permits (Class 1, Div 2).**
- **Extended temperature and moisture ranges.**
- **DIN rail mechanism.**



OZD Profi 12M PRO



OZD Profi G12 DE ATEX 1



OZD Modbus Plus



OZD Profi Plug 21

Serial media converters

Clip-on modules utilize the fundamental advantages of fiber optic cables to set-up connections between the computer's COM ports and peripheral devices in automation systems – they make RFI/EMI transmission of serial communication feasible without the influence of added ground potential.

- **Ranges of up to 17 km for clip-on modules.**
- **All types of fiber, including easy-to-use polymer/plastic fibers.**



OZDV 2451



OZDV 2471



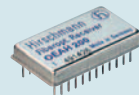
Hybrid components and OptoQuick devices

Hybrid components in various versions are integrated directly on the PCB and are intended to upgrade circuits to handle optic fiber transmission technology at the lowest possible costs. The F-SMA socket is suitable for installation on a front cover. Diode brackets, optical fiber connectors and couplings complete the range of offerings.

- **High-class audio converters.**
- **Fast connecting optical equipments.**



OSAH 200



OSAH 200



OVKS 2,2



OVKD 01



Accessories

As a system provider, we always aim to offer you a solution that is both comprehensive as well as practical. Our products are complete only if original accessories are used. Hirschmann accessories have been developed specially for Hirschmann FiberINTERFACES according to the requirements of practice and the concrete wishes of our clients.

- **DIN rail power supply units.**
- **Plug-in power supplies.**
- **DIN rail adapters.**



RPS 30



RPS 80 EEC



PSW 5-24



OZDV HA



The best connections – in all areas.

Hirschmann productions are convincing all down the line.

Industrial Connectors

As the inventor of the banana plug, Hirschmann stands for the best and extremely reliable connections with constant new generations of connectors. Thanks to our wide performance range we offer the right connector solution in every case: whether with our standard products, the OpenConnector kit, bus connectors or Connectors Unlimited. Ask for information about Industrial Connectors today and have a word with us about your individual requirements.

General catalog
Industrial Connectors

Product overview
Industrial Connectors



General catalog
Industrial ETHERNET

Product overview
Industrial Networking



Industrial ETHERNET

Hirschmann offers you flexible, highly available and future-safe network technology solutions in the usual high quality from simple switches to high-performance ETHERNET components. Plus a comprehensive and highly qualified maintenance and service program – all under one roof.

The specialists from Hirschmann are always on hand to answer your questions and our worldwide distribution network guarantees you an optimum supply. Ask for information about Industrial ETHERNET now.

Under www.hicomcenter.com you will find our extensive maintenance and service offer which ranges from pre-sales consulting to after-sales support.

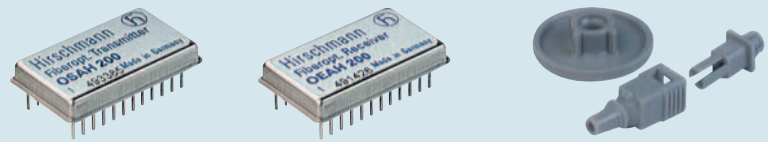
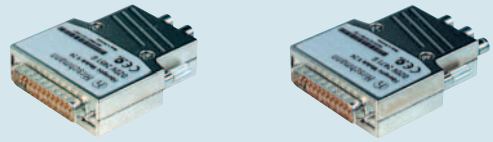
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	Accessories
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Supply,

Passing the ultimate hardness test: Field bus components with Ex-Class clearance.

Hirschmann devices easily handle the most demanding environmental conditions.



Harsh application environments such as oil platforms, ships, driverless trains, semiconductor factories, pipelines, steel and power plants place extreme requirements on automation solutions in terms of temperature and moisture resistance, shock and vibration handling capacity. Permits for explosion-endangered areas and for nuclear power plants are issued only to the most robust devices – like the high-quality Hirschmann optical fiber modules for different field bus systems.

You are therefore free to choose the topology. The HIPER-Ring also makes an important contribution to providing high availability of the installation and secure data transport: due to the constant dynamic ring monitoring, the reconfiguration time in the event of a network fault is only a few bus telegrams (even for long distance applications).

- ***Optical transmission technology closes the gap between the process computers and controllers/PLCs and the operating personnel who are located at a safe distance.***



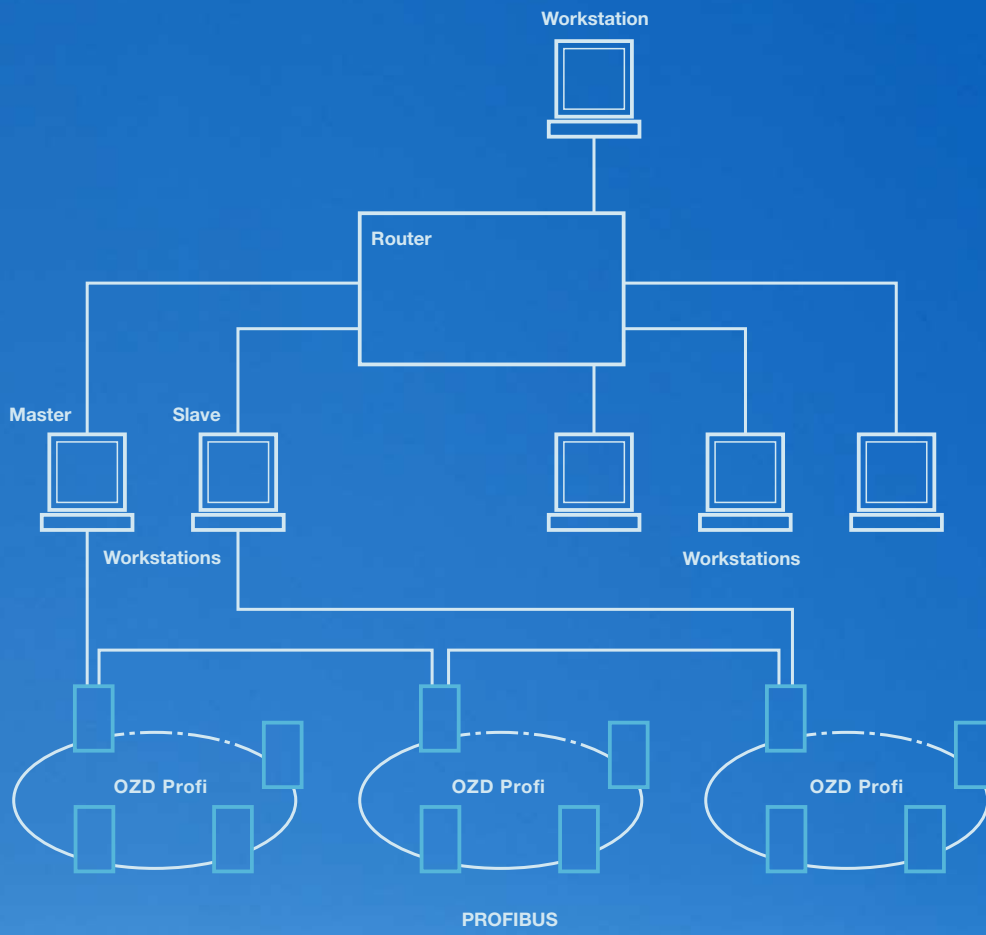
OZD Profi 12M PRO



OZD Modbus Plus








OZD Profi G12 DE ATEX 1



FiberINTERFACES



Field Bus > Profibus Rail Repeaters

Type	OZD Profi 12M P11	OZD Profi 12M P12
Order No.	943 728-221	943 728-321
	 <p>interface converter electrical/optical for PROFIBUS-field bus networks; repeater function; for plastic FO; short-haul version; approval for Ex-zone 2 (Class 1, Div. 2)</p>	 <p>interface converter electrical/optical for PROFIBUS-field bus networks; repeater function; for plastic FO; short-haul version; approval for Ex-zone 2 (Class 1, Div. 2)</p>
Product description Port type and quantity	1 x optical: 2 sockets BFOC 2.5 (STR) 1 x electrical: Sub-D 9-pin, female, pin assignment according to EN 50170 part 1	2 x optical: 4 sockets BFOC 2.5 (STR) 1 x electrical: Sub-D 9-pin, female, pin assignment according to EN 50170 part 1
Electrical interface Signal type Bit rate Signal delay time (optional input/output) Input/output signal Input voltage range Galvanic isolation	PROFIBUS (DP-V0, DP-V1, DP-V2 und FMS) 9.6; 19.2; 45.45; 93.75; 187.5; 500 kbit/s; 1.5; 3; 6; 12 Mbit/s (automatic setting) ≤ 6.5 bit times RS 485 level -7 V ... +12 V no	PROFIBUS (DP-V0, DP-V1, DP-V2 und FMS) 9.6; 19.2; 45.45; 93.75; 187.5; 500 kbit/s; 1.5; 3; 6; 12 Mbit/s (automatic setting) ≤ 6.5 bit times RS 485 level -7 V ... +12 V no
Optical interface Wavelength Cascadability	660 nm not limited	660 nm not limited
More Interfaces Power supply Signaling contact Measuring outputs "Optical input power"	5-pin terminal block, screw mounting 5-pin terminal block, screw mounting 2 mm sockets	5-pin terminal block, screw mounting 5-pin terminal block, screw mounting 2 mm sockets
Network size - length of cable Single mode fiber (SM) 9/125 μm Multimode fiber (MM) 50/125 μm Multimode fiber (MM) 62.5/125 μm Multimode fiber HCS (MM) 200/230 μm Multimode fiber POF (MM) 980/1000 μm	- - - 400 m 8 dB link budget at 660 nm and transmitting power default A = 8 dB/km, 2 dB reserve 50 m 15 dB link budget at 660 nm and transmitting power reduced 80 m 20 dB link budget at 660 nm and transmitting power default A = 0.2 dB/m, 2 dB reserve	- - - 400 m 8 dB link budget at 660 nm and transmitting power default A = 8 dB/km, 2 dB reserve 50 m 15 dB link budget at 660 nm and transmitting power reduced 80 m 20 dB link budget at 660 nm and transmitting power default A = 0.2 dB/m, 2 dB reserve
Power requirements Operating voltage Galvanic isolation Current consumption Power consumption Output voltage/output current (pin6)	18 ... 32 VDC, typ. 24 VDC yes max. 200 mA 4.8 W 5 VDC +5%, -10%, short circuit-proof/90 mA	18 ... 32 VDC, typ. 24 VDC yes max. 200 mA 4.8 W 5 VDC +5%, -10%, short circuit-proof/90 mA
Redundancy Redundancy functions	redundant 24 V infeed	HIPER-Ring (ring structure), redundant 24 V infeed
Ambient conditions Operating temperature Storage/transport temperature Relative humidity	0 °C to +60 °C -40 °C to +70 °C <95% (non-condensing)	0 °C to +60 °C -40 °C to +70 °C <95% (non-condensing)
Mechanical construction Dimensions (W x H x D) Mounting Weight Protection class Housing material	40 x 140 x 77.5 mm DIN rail or mounting plate 500 g IP 40 die-cast zink	40 x 140 x 77.5 mm DIN rail or mounting plate 500 g IP 40 die-cast zink
Approvals Issued or requested approvals	FM Class 1, Div. 2; C-Tick; according to directive 94/9/EG (ATEX 95): Ex II 3 G (Zone 2)	FM Class 1, Div. 2; C-Tick; according to directive 94/9/EG (ATEX 95): Ex II 3 G (Zone 2)
Scope of delivery and accessories Scope of delivery Accessories to order separately	device, 2 optical BFOC ST plugs, start-up instructions manual, order no. 039 629-001	device, 4 optical BFOC ST plugs, start-up instructions manual, order no. 039 629-001

OZD Profi 12M G11	OZD Profi 12M G12	OZD Profi 12M G12 EEC
943 727-221	943 727-321	943 730-321
		
interface converter electrical/optical for PROFIBUS-field bus networks; repeater function; for quartz glass FO; approval for Ex-zone 2 (Class 1, Div. 2)	interface converter electrical/optical for PROFIBUS-field bus networks; repeater function; for quartz glass FO; approval for Ex-zone 2 (Class 1, Div. 2)	interface converter electrical/optical for PROFIBUS-field bus networks; repeater function; for quartz glass FO; approval for Ex-zone 2; (Class 1, Div. 2); extended temperature and humidity range
1 x optical: 2 sockets BFOC 2.5 (STR) 1 x electrical: Sub-D 9-pin, female, pin assignment according to EN 50170 part 1	2 x optical: 4 sockets BFOC 2.5 (STR) 1 x electrical: Sub-D 9-pin, female, pin assignment according to EN 50170 part 1	2 x optical: 4 sockets BFOC 2.5 (STR) 1 x electrical: Sub-D 9-pin, female, pin assignment according to EN 50170 part 1
PROFIBUS (DP-V0, DP-V1, DP-V2 und FMS) 9.6; 19.2; 45.45; 93.75; 187.5; 500 kbit/s; 1.5; 3; 6; 12 Mbit/s (automatic setting) ≤ 6.5 bit times RS 485 level -7 V ... +12 V no	PROFIBUS (DP-V0, DP-V1, DP-V2 und FMS) 9.6; 19.2; 45.45; 93.75; 187.5; 500 kbit/s; 1.5; 3; 6; 12 Mbit/s (automatic setting) ≤ 6.5 bit times RS 485 level -7 V ... +12 V no	PROFIBUS (DP-V0, DP-V1, DP-V2 und FMS) 9.6; 19.2; 45.45; 93.75; 187.5; 500 kbit/s; 1.5; 3; 6; 12 Mbit/s (automatic setting) ≤ 6.5 bit times RS 485 level -7 V ... +12 V no
860 nm not limited	860 nm not limited	860 nm not limited
5-pin terminal block, screw mounting 5-pin terminal block, screw mounting 2 mm sockets	5-pin terminal block, screw mounting 5-pin terminal block, screw mounting 2 mm sockets	5-pin terminal block, screw mounting 5-pin terminal block, screw mounting 2 mm sockets
- 3000 m 13 dB link budget at 860 nm; A = 3 dB/km, 3 dB reserve 3000 m 15 dB link budget at 860 nm; A = 3.5 dB/km, 3 dB reserve 1000 m 18 dB link budget at 860 nm; A = 8 dB/km, 3 dB reserve -	- 3000 m 13 dB link budget at 860 nm; A = 3 dB/km, 3 dB reserve 3000 m 15 dB link budget at 860 nm; A = 3.5 dB/km, 3 dB reserve 1000 m 18 dB link budget at 860 nm; A = 8 dB/km, 3 dB reserve -	- 3000 m 13 dB link budget at 860 nm; A = 3 dB/km, 3 dB reserve 3000 m 15 dB link budget at 860 nm; A = 3.5 dB/km, 3 dB reserve 1000 m 18 dB link budget at 860 nm; A = 8 dB/km, 3 dB reserve -
18 ... 32 VDC, typ. 24 VDC yes max. 200 mA 4.8 W 5 VDC +5%, -10%, short circuit-proof/90 mA	18 ... 32 VDC, typ. 24 VDC yes max. 200 mA 4.8 W 5 VDC +5%, -10%, short circuit-proof/90 mA	18 ... 32 VDC, typ. 24 VDC yes max. 200 mA 4.8 W 5 VDC +5%, -10%, short circuit-proof/90 mA
redundant 24 V infeed	HIPER-Ring (ring structure), redundant 24 V infeed	HIPER-Ring (ring structure), redundant 24 V infeed
0 °C to +60 °C -40 °C to +70 °C <95% (non-condensing)	0 °C to +60 °C -40 °C to +70 °C <95% (non-condensing)	-20 °C to +60 °C -40 °C to +70 °C 100% (condensing)
40 x 140 x 77.5 mm DIN rail or mounting plate 500 g IP 40 die-cast zink	40 x 140 x 77.5 mm DIN rail or mounting plate 500 g IP 40 die-cast zink	40 x 140 x 77.5 mm DIN rail or mounting plate 500 g IP 40 die-cast zink
FM Class 1, Div. 2; C-Tick; according to directive 94/9/EG (ATEX 95): Ex II 3 G (Zone 2)	FM Class 1, Div. 2; C-Tick; according to directive 94/9/EG (ATEX 95): Ex II 3 G (Zone 2)	FM Class 1, Div. 2; C-Tick; according to directive 94/9/EG (ATEX 95): Ex II 3 G (Zone 2)
device, start-up instructions manual, order no. 039 629-001	device, start-up instructions manual, order no. 039 629-001	device, start-up instructions manual, order no. 039 629-001

FiberINTERFACES

Field Bus > Profibus Rail Repeaters

Type	OZD Profi 12M G11-1300	OZD Profi 12M G12-1300
Order No.	943 729-221	943 729-321
		
	interface converter electrical/optical for PROFIBUS-field bus networks; repeater function; for quartz glass FO; long-haul version; approval for Ex-zone 2 (Class 1, Div. 2)	interface converter electrical/optical for PROFIBUS-field bus networks; repeater function; for quartz glass FO; long-haul version; approval for Ex-zone 2 (Class 1, Div. 2)
Product description Port type and quantity	1 x optical: 2 sockets BFOC 2.5 (STR) 1 x electrical: Sub-D 9-pin, female, pin assignment according to EN 50170 part 1	2 x optical: 4 sockets BFOC 2.5 (STR) 1 x electrical: Sub-D 9-pin, female, pin assignment according to EN 50170 part 1
Electrical interface Signal type Bit rate Signal delay time (optional input/output) Input/output signal Input voltage range Galvanic isolation	PROFIBUS (DP-V0, DP-V1, DP-V2 und FMS) 9.6; 19.2; 45.45; 93.75; 187.5; 500 kbit/s; 1.5; 3; 6; 12 Mbit/s (automatic setting) ≤ 6.5 bit times RS 485 level -7 V ... +12 V no	PROFIBUS (DP-V0, DP-V1, DP-V2 und FMS) 9.6; 19.2; 45.45; 93.75; 187.5; 500 kbit/s; 1.5; 3; 6; 12 Mbit/s (automatic setting) ≤ 6.5 bit times RS 485 level -7 V ... +12 V no
Optical interface Wavelength Cascadability	1310 nm not limited	1310 nm not limited
More Interfaces Power supply Signaling contact Measuring outputs "Optical input power"	5-pin terminal block, screw mounting 5-pin terminal block, screw mounting 2 mm sockets	5-pin terminal block, screw mounting 5-pin terminal block, screw mounting 2 mm sockets
Network size - length of cable Single mode fiber (SM) 9/125 μm Multimode fiber (MM) 50/125 μm Multimode fiber (MM) 62.5/125 μm Multimode fiber HCS (MM) 200/230 μm Multimode fiber POF (MM) 980/1000 μm	15000 m 10 dB link budget at 1310 nm; A = 0.5 dB/km, 2 dB reserve 10000 m 12 dB link budget at 1310 nm; A = 1 dB/km, 2 dB reserve 10000 m 12 dB link budget at 1310 nm; A = 1 dB/km, 2 dB reserve - -	15000 m 10 dB link budget at 1310 nm; A = 0.5 dB/km, 2 dB reserve 10000 m 12 dB link budget at 1310 nm; A = 1 dB/km, 2 dB reserve 10000 m 12 dB link budget at 1310 nm; A = 1 dB/km, 2 dB reserve - -
Power requirements Operating voltage Galvanic isolation Current consumption Power consumption Output voltage/output current (pin6)	18 ... 32 VDC, typ. 24 VDC yes max. 200 mA 4.8 W 5 VDC +5%, -10%, short circuit-proof/90 mA	18 ... 32 VDC, typ. 24 VDC yes max. 200 mA- 4.8 W 5 VDC +5%, -10%, short circuit-proof/90 mA
Redundancy Redundancy functions	redundant 24 V infeed	HIPER-Ring (ring structure), redundant 24 V infeed
Ambient conditions Operating temperature Storage/transport temperature Relative humidity	0 °C to +60 °C -40 °C to +70 °C <95% (non-condensing)	0 °C to +60 °C -40 °C to +70 °C <95% (non-condensing)
Mechanical construction Dimensions (W x H x D) Mounting Weight Protection class Housing material	40 x 140 x 77.5 mm DIN rail or mounting plate 500 g IP 40 die-cast zinc	40 x 140 x 77.5 mm DIN rail or mounting plate 500 g IP 40 die-cast zinc
Approvals Issued or requested approvals	FM Class 1, Div. 2; C-Tick; according to directive 94/9/EG (ATEX 95); Ex II 3 G (Zone 2)	FM Class 1, Div. 2; C-Tick; according to directive 94/9/EG (ATEX 95); Ex II 3 G (Zone 2)
Scope of delivery and accessories Scope of delivery Accessories to order separately	device, start-up instructions manual, order no. 039 629-001	device, start-up instructions manual, order no. 039 629-001

OZD Profi 12M G12-1300 EEC

943 256-321



interface converter electrical/optical for PROFIBUS-field bus networks; repeater function; for quartz glass FO; long-haul version; approval for Ex-zone 2 (Class 1, Div. 2); extended temperature and humidity range

2 x optical: 4 sockets BFOC 2.5 (STR)
1 x electrical: Sub-D 9-pin, female, pin assignment according to EN 50170 part 1

PROFIBUS (DP-V0, DP-V1, DP-V2 und FMS)
9.6; 19.2; 45.45; 93.75; 187.5; 500 kbit/s;
1.5; 3; 6; 12 Mbit/s (automatic setting)
≤ 6.5 bit times
RS 485 level
-7 V ... +12 V
no

1310 nm
not limited

5-pin terminal block, screw mounting
5-pin terminal block, screw mounting
2 mm sockets

15000 m
10 dB link budget at 1310 nm; A = 0.5 dB/km,
2 dB reserve
10000 m
12 dB link budget at 1310 nm; A = 1 dB/km,
2 dB reserve
10000 m
12 dB link budget at 1310 nm; A = 1 dB/km,
2 dB reserve
-
-

18 ... 32 VDC, typ. 24 VDC
yes
max. 200 mA
4.8 W
5 VDC +5%, -10%, short circuit-proof/90 mA

HIPER-Ring (ring structure), redundant 24 V
infeed

-20 °C to +60 °C
-40 °C to +70 °C
100% (condensing)



40 x 140 x 77.5 mm
DIN rail or mounting plate
500 g
IP 40
die-cast zink




FM Class 1, Div. 2; C-Tick; according to
directive 94/9/EG (ATEX 95): Ex II 3 G (Zone 2)

device, start-up instructions
manual, order no. 039 629-001

FiberINTERFACES



Field Bus > Profibus Rail Repeaters

Type	OZD Profi 12M P11 PRO	OZD Profi 12M P12 PRO
Order No.	943 904-221 	943 904-321 
	interface converter electrical/optical for PROFIBUS-field bus networks; repeater function; for plastic FO; short-haul version;	interface converter electrical/optical for PROFIBUS-field bus networks; repeater function; for plastic FO; short-haul version
Product description Port type and quantity	1 x optical: 2 sockets BFOC 2.5 (STR) 1 x electrical: Sub-D 9-pin, female, pin assignment according to EN 50170 part 1	2 x optical: 4 sockets BFOC 2.5 (STR) 1 x electrical: Sub-D 9-pin, female, pin assignment according to EN 50170 part 1
Electrical interface Signal type Bit rate Signal delay time (optional input/output) Input/output signal Input voltage range Galvanic isolation	PROFIBUS (DP-V0, DP-V1, DP-V2 und FMS) 9.6; 19.2; 45.45; 93.75; 187.5; 500 kbit/s; 1.5; 3; 6; 12 Mbit/s (automatic setting) ≤ 6.5 bit times RS 485 level -7 V ... +12 V no	PROFIBUS (DP-V0, DP-V1, DP-V2 und FMS) 9.6; 19.2; 45.45; 93.75; 187.5; 500 kbit/s; 1.5; 3; 6; 12 Mbit/s (automatic setting) ≤ 6.5 bit times RS 485 level -7 V ... +12 V no
Optical interface Wavelength Cascadability	660 nm not limited	660 nm not limited
More Interfaces Power supply Signaling contact Measuring outputs "Optical input power"	5-pin terminal block, screw mounting 5-pin terminal block, screw mounting 3-pin terminal block, screw mounting	5-pin terminal block, screw mounting 5-pin terminal block, screw mounting 3-pin terminal block, screw mounting
Network size - length of cable Single mode fiber (SM) 9/125 μm Multimode fiber (MM) 50/125 μm Multimode fiber (MM) 62.5/125 μm Multimode fiber HCS (MM) 200/230 μm Multimode fiber POF (MM) 980/1000 μm	- - - 400 m 8 dB link budget at 660 nm and transmitting power default A = 8 dB/km, 2 dB reserve 50 m 15 dB link budget at 660 nm and transmitting power reduced 80 m 20 dB link budget at 660 nm and transmitting power default A= 0.2 dB/m, 2 dB reserve	- - - 400 m 8 dB link budget at 660 nm and transmitting power default A = 8 dB/km, 2 dB reserve 50 m 15 dB link budget at 660 nm and transmitting power reduced 80 m 20 dB link budget at 660 nm and transmitting power default A= 0.2 dB/m, 2 dB reserve
Power requirements Operating voltage Galvanic isolation Current consumption Power consumption Output voltage/output current (pin6)	18 ... 32 VDC, typ. 24 VDC yes max. 200 mA 4.8 W 5 VDC +5%, -10%, short circuit-proof/90 mA	18 ... 32 VDC, typ. 24 VDC yes max. 200 mA 4.8 W 5 VDC +5%, -10%, short circuit-proof/90 mA
Redundancy Redundancy functions	redundant 24 V infeed	HIPER-Ring (ring structure), redundant 24 V infeed
Ambient conditions Operating temperature Storage/transport temperature Relative humidity	0 °C to +60 °C -40 °C to +70 °C <95% (non-condensing)	0 °C to +60 °C -40 °C to +70 °C <95% (non-condensing)
Mechanical construction Dimensions (W x H x D) Mounting Weight Protection class Housing material	35 x 156 x 119 mm DIN rail 200 g IP 20 plastics	35 x 156 x 119 mm DIN rail 200 g IP 20 plastics
Approvals Issued or requested approvals	cUL508, cUL1604 Class1, Div. 2, Groups A,B,C and D; according to directive 94/9/EG (ATEX 95): Ex II 3 G (Zone 2); C-Tick	cUL508, cUL1604 Class1, Div. 2, Groups A,B,C and D; according to directive 94/9/EG (ATEX 95): Ex II 3 G (Zone 2); C-Tick
Scope of delivery and accessories Scope of delivery Accessories to order separately	device, 2 optical BFOC ST plugs, start-up instructions manual, order no. 039 690-001	device, 4 optical BFOC ST plugs, start-up instructions manual, order no. 039 690-001

OZD Profi 12M G11 PRO	OZD Profi 12M G12 PRO	OZD Profi 12M G12 EEC PRO
943 905-221  interface converter electrical/optical for PROFIBUS-field bus networks; repeater function; for quartz glass FO;	943 905-321  interface converter electrical/optical for PROFIBUS-field bus networks; repeater function; for quartz glass FO	943 907-321  interface converter electrical/optical for PROFIBUS-field bus networks; repeater function; for quartz glass FO; extended temperature and humidity range
1 x optical: 2 sockets BFOC 2.5 (STR) 1 x electrical: Sub-D 9-pin, female, pin assignment according to EN 50170 part 1	2 x optical: 4 sockets BFOC 2.5 (STR) 1 x electrical: Sub-D 9-pin, female, pin assignment according to EN 50170 part 1	2 x optical: 4 sockets BFOC 2.5 (STR) 1 x electrical: Sub-D 9-pin, female, pin assignment according to EN 50170 part 1
PROFIBUS (DP-V0, DP-V1, DP-V2 und FMS) 9.6; 19.2; 45.45; 93.75; 187.5; 500 kbit/s; 1.5; 3; 6; 12 Mbit/s (automatic setting) ≤ 6.5 bit times RS 485 level -7 V ... +12 V no	PROFIBUS (DP-V0, DP-V1, DP-V2 und FMS) 9.6; 19.2; 45.45; 93.75; 187.5; 500 kbit/s; 1.5; 3; 6; 12 Mbit/s (automatic setting) ≤ 6.5 bit times RS 485 level -7 V ... +12 V no	PROFIBUS (DP-V0, DP-V1, DP-V2 und FMS) 9.6; 19.2; 45.45; 93.75; 187.5; 500 kbit/s; 1.5; 3; 6; 12 Mbit/s (automatic setting) ≤ 6.5 bit times RS 485 level -7 V ... +12 V no
860 nm not limited	860 nm not limited	860 nm not limited
5-pin terminal block, screw mounting 5-pin terminal block, screw mounting 3-pin terminal block, screw mounting	5-pin terminal block, screw mounting 5-pin terminal block, screw mounting 3-pin terminal block, screw mounting	5-pin terminal block, screw mounting 5-pin terminal block, screw mounting 3-pin terminal block, screw mounting
- 3000 m 13 dB link budget at 860 nm; A = 3 dB/km, 3 dB reserve 3000 m 15 dB link budget at 860 nm; A = 3.5 dB/km, 3 dB reserve 1000 m 18 dB link budget at 860 nm; A = 8 dB/km, 3 dB reserve -	- 3000 m 13 dB link budget at 860 nm; A = 3 dB/km, 3 dB reserve 3000 m 15 dB link budget at 860 nm; A = 3.5 dB/km, 3 dB reserve 1000 m 18 dB link budget at 860 nm; A = 8 dB/km, 3 dB reserve -	- 3000 m 13 dB link budget at 860 nm; A = 3 dB/km, 3 dB reserve 3000 m 15 dB link budget at 860 nm; A = 3.5 dB/km, 3 dB reserve 1000 m 18 dB link budget at 860 nm; A = 8 dB/km, 3 dB reserve -
18 ... 32 VDC, typ. 24 VDC yes max. 200 mA 4.8 W 5 VDC +5%, -10%, short circuit-proof/90 mA	18 ... 32 VDC, typ. 24 VDC yes max. 200 mA 4.8 W 5 VDC +5%, -10%, short circuit-proof/90 mA	18 ... 32 VDC, typ. 24 VDC yes max. 200 mA 4.8 W 5 VDC +5%, -10%, short circuit-proof/90 mA
redundant 24 V infeed	HIPER-Ring (ring structure), redundant 24 V infeed	HIPER-Ring (ring structure), redundant 24 V infeed
0 °C to +60 °C -40 °C to +70 °C <95% (non-condensing)	0 °C to +60 °C -40 °C to +70 °C <95% (non-condensing)	-20 °C to +60 °C -40 °C to +70 °C 100% (condensing)
35 x 156 x 119 mm DIN rail 200 g IP 20 plastics	35 x 156 x 119 mm DIN rail 200 g IP 20 plastics	35 x 156 x 119 mm DIN rail 200 g IP 20 plastics
cUL508, cUL1604 Class1, Div. 2, Groups A,B,C and D; according to directive 94/9/EG (ATEX 95): Ex II 3 G (Zone 2); C-Tick	cUL508, cUL1604 Class1, Div. 2, Groups A,B,C and D; according to directive 94/9/EG (ATEX 95): Ex II 3 G (Zone 2); C-Tick	cUL508, cUL1604 Class1, Div. 2, Groups A,B,C and D; according to directive 94/9/EG (ATEX 95): Ex II 3 G (Zone 2); C-Tick
device, start-up instructions manual, order no. 039 690-001	device, start-up instructions manual, order no. 039 690-001	device, start-up instructions manual, order no. 039 690-001

FiberINTERFACES

Field Bus > Profibus Rail Repeaters

Type	OZD Profi 12M G11-1300 PRO	OZD Profi 12M G12-1300 PRO
Order No.	943 906-221 	943 906-321 
	interface converter electrical/optical for PROFIBUS-field bus networks; repeater function; for quartz glass FO; long-haul version;	interface converter electrical/optical for PROFIBUS-field bus networks; repeater function; for quartz glass FO; long-haul version;
Product description Port type and quantity	1 x optical: 2 sockets BFOC 2.5 (STR) 1 x electrical: Sub-D 9-pin, female, pin assignment according to EN 50170 part 1	2 x optical: 4 sockets BFOC 2.5 (STR) 1 x electrical: Sub-D 9-pin, female, pin assignment according to EN 50170 part 1
Electrical interface Signal type Bit rate Signal delay time (optional input/output) Input/output signal Input voltage range Galvanic isolation	PROFIBUS (DP-V0, DP-V1, DP-V2 und FMS) 9.6; 19.2; 45.45; 93.75; 187.5; 500 kbit/s; 1.5; 3; 6; 12 Mbit/s (automatic setting) ≤ 6.5 bit times RS 485 level -7 V ... +12 V no	PROFIBUS (DP-V0, DP-V1, DP-V2 und FMS) 9.6; 19.2; 45.45; 93.75; 187.5; 500 kbit/s; 1.5; 3; 6; 12 Mbit/s (automatic setting) ≤ 6.5 bit times RS 485 level -7 V ... +12 V no
Optical interface Wavelength Cascadability	1310 nm not limited	1310 nm not limited
More Interfaces Power supply Signaling contact Measuring outputs "Optical input power"	5-pin terminal block, screw mounting 5-pin terminal block, screw mounting 3-pin terminal block, screw mounting	5-pin terminal block, screw mounting 5-pin terminal block, screw mounting 3-pin terminal block, screw mounting
Network size - length of cable Single mode fiber (SM) 9/125 μm Multimode fiber (MM) 50/125 μm Multimode fiber (MM) 62.5/125 μm Multimode fiber HCS (MM) 200/230 μm Multimode fiber POF (MM) 980/1000 μm	15000 m 10 dB link budget at 1310 nm; A = 0.5 dB/km, 2 dB reserve 10000 m 12 dB link budget at 1310 nm; A = 1 dB/km, 2 dB reserve 10000 m 12 dB link budget at 1310 nm; A = 1 dB/km, 2 dB reserve 10000 m 12 dB link budget at 1310 nm; A = 1 dB/km, 2 dB reserve - -	15000 m 10 dB link budget at 1310 nm; A = 0.5 dB/km, 2 dB reserve 10000 m 12 dB link budget at 1310 nm; A = 1 dB/km, 2 dB reserve 10000 m 12 dB link budget at 1310 nm; A = 1 dB/km, 2 dB reserve 10000 m 12 dB link budget at 1310 nm; A = 1 dB/km, 2 dB reserve - -
Power requirements Operating voltage Galvanic isolation Current consumption Power consumption Output voltage/output current (pin6)	18 ... 32 VDC, typ. 24 VDC yes max. 200 mA 4.8 W 5 VDC +5%, -10%, short circuit-proof/90 mA	18 ... 32 VDC, typ. 24 VDC yes max. 200 mA 4.8 W 5 VDC +5%, -10%, short circuit-proof/90 mA
Redundancy Redundancy functions	redundant 24 V infeed	HIPER-Ring (ring structure), redundant 24 V infeed
Ambient conditions Operating temperature Storage/transport temperature Relative humidity	0 °C to +60 °C -40 °C to +70 °C <95% (non-condensing)	0 °C to +60 °C -40 °C to +70 °C <95% (non-condensing)
Mechanical construction Dimensions (W x H x D) Mounting Weight Protection class Housing material	35 x 163 x 119 mm DIN rail 200 g IP 20 plastics	35 x 163 x 119 mm DIN rail 200 g IP 20 plastics
Approvals Issued or requested approvals	cUL508, cUL1604 Class1, Div. 2, Groups A,B,C and D; according to directive 94/9/EG (ATEX 95): Ex II 3 G (Zone 2); C-Tick	cUL508, cUL1604 Class1, Div. 2, Groups A,B,C and D; according to directive 94/9/EG (ATEX 95): Ex II 3 G (Zone 2); C-Tick
Scope of delivery and accessories Scope of delivery Accessories to order separately	device, start-up instructions manual, order no. 039 690-001	device, start-up instructions manual, order no. 039 690-001

OZD Profi 12M G12-1300 EEC PRO

943 908-321



interface converter electrical/optical for PROFIBUS-field bus networks; repeater function; for quartz glass FO; long-haul version; extended temperature and humidity range

2 x optical: 4 sockets BFOC 2.5 (STR)
1 x electrical: Sub-D 9-pin, female, pin assignment according to EN 50170 part 1

PROFIBUS (DP-V0, DP-V1, DP-V2 und FMS)
9.6; 19.2; 45.45; 93.75; 187.5; 500 kbit/s;
1.5; 3; 6; 12 Mbit/s (automatic setting)
≤ 6.5 bit times
RS 485 level
-7 V ... +12 V
no

1310 nm
not limited

5-pin terminal block, screw mounting
5-pin terminal block, screw mounting
3-pin terminal block, screw mounting

15000 m
10 dB link budget at 1310 nm; A = 0.5 dB/km,
2 dB reserve
10000 m
12 dB link budget at 1310 nm; A = 1 dB/km,
2 dB reserve
10000 m
12 dB link budget at 1310 nm; A = 1 dB/km,
2 dB reserve
-
-

18 ... 32 VDC, typ. 24 VDC
yes
max. 200 mA
4.8 W
5 VDC +5%, -10%, short circuit-proof/90 mA

HIPER-Ring (ring structure), redundant 24 V
infeed

-20 °C to +60 °C
-40 °C to +70 °C
100% (condensing)

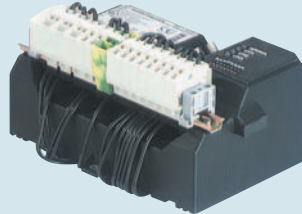

35 x 163 x 119 mm
DIN rail
200 g
IP 20
plastics

cUL508, cUL1604 Class1, Div. 2, Groups
A,B,C and D; according to directive 94/9/EG
(ATEX 95): Ex II 3 G (Zone 2); C-Tick

device, start-up instructions
manual, order no. 039 690-001

FiberINTERFACES

Field Bus > Profibus Ex-Zone 1 Repeaters

Type	OZD Profi G12DU ATEX 1	OZD Profi G12DK ATEX 1
Order No.	943 881-321	943 882-321
	 <p>interface converter electrical/optical for PROFIBUS networks; for assembly in cabinet; repeater function; approvals for protection zones 1,21, 2 and 22</p>	 <p>interface converter electrical/optical for PROFIBUS networks; in plastics cabinet; repeater function; approvals for protection zones 1,21, 2 and 22</p>
Product description		
Port type and quantity	2 x optical: 4 sockets BFOC 2.5 (STR) 1 x electrical: Ex-e single clamp	2 x optical: 4 sockets BFOC 2.5 (STR) 1 x electrical: Ex-e single clamp
Electrical interface		
Signal type	PROFIBUS (DP-V0, DP-V1, DP-V2 und FMS)	PROFIBUS (DP-V0, DP-V1, DP-V2 und FMS)
Bit rate	9,6; 19,2; 45,45; 93,75; 187,5; 500 kbit/s; 1,5; 3; 6; 12 Mbit/s (automatic setting)	9,6; 19,2; 45,45; 93,75; 187,5; 500 kbit/s; 1,5; 3; 6; 12 Mbit/s (automatic setting)
Signal delay time (optional input/output)	≤ 6.5 bit times	≤ 6.5 bit times
Input/output signal	RS 485 level	RS 485 level
Input voltage range	-7 V ... +12 V	-7 V ... +12 V
Galvanic isolation	no	no
Optical interface		
Wavelength	860 nm	860 nm
Cascadability	not limited	not limited
More Interfaces		
Power supply	Ex-e single clamp	Ex-e single clamp
Signaling contact	Ex-e single clamp	Ex-e single clamp
Measuring outputs "Optical input power"	Ex-e single clamp	Ex-e single clamp
Network size - length of cable		
Single mode fiber (SM) 9/125 μm	3000 m	3000 m
Multimode fiber (MM) 50/125 μm	13 dB link budget at 860 nm; A = 3 dB/km, 3 dB reserve	13 dB link budget at 860 nm; A = 3 dB/km, 3 dB reserve
Multimode fiber (MM) 62.5/125 μm	3000 m	3000 m
	15 dB link budget at 860 nm; A = 3.5 dB/km, 3 dB reserve	15 dB link budget at 860 nm; A = 3.5 dB/km, 3 dB reserve
Multimode fiber HCS (MM) 200/230 μm	1000 m	1000 m
	18 dB link budget at 860 nm; A = 8 dB/km, 3 dB reserve	18 dB link budget at 860 nm; A = 8 dB/km, 3 dB reserve
Multimode fiber POF (MM) 980/1000 μm		
Power requirements		
Operating voltage	18 ... 32 VDC, typ. 24 VDC	18 ... 32 VDC, typ. 24 VDC
Galvanic isolation	yes	yes
Current consumption	max. 200 mA	max. 200 mA
Power consumption	4.8 W	4.8 W
Output voltage/output current (pin6)	5 VDC +5%, -10%, short circuit-proof/90 mA	5 VDC +5%, -10%, short circuit-proof/90 mA
Redundancy		
Redundancy functions	HIPER-Ring (ring structure), redundant 24 V infeed	HIPER-Ring (ring structure), redundant 24 V infeed
Ambient conditions		
Operating temperature	-20 °C to +60 °C	-20 °C to +55 °C
Storage/transport temperature	-40 °C to +80 °C	-40 °C to +80 °C
Relative humidity	10% to 100%	10% to 100%
Mechanical construction		
Dimensions (W x H x D)	156 x 125 x 75	165 x 194 x 138 mm
Mounting	Screw mountings in cabinet	screw mounting on the mounting plate
Weight	1.5 kg	2.4 kg
Protection class		IP 66
Housing material	plastics	plastics
Approvals		
Issued or requested approvals	According to directive 94/9/EG (ATEX 95): Ex II 2 G and D (zones 1, 21, 2, 22); cUL 1604 Class 1 Div 2 Groups A, B, C and D; C-Tick	According to directive 94/9/EG (ATEX 95): Ex II 2 G and D (zones 1, 21, 2, 22); cUL 1604 Class 1 Div 2 Groups A, B, C and D; C-Tick
Scope of delivery and accessories		
Scope of delivery	device, start-up instructions	device, start-up instructions
Accessories to order separately	manual	plastics cap with inspection window OZD SFK ATEX1 order no.: 943 884-001, manual

OZD Profi G12DE ATEX 1

943 883-321



interface converter electrical/optical for PROFIBUS networks; repeater function; in stainless steel cabinet; approvals for protection zones 1,21, 2 and 22

2 x optical: 4 sockets BFOC 2.5 (STR)
1 x electrical: Ex-e single clamp

PROFIBUS (DP-V0, DP-V1, DP-V2 und FMS)
9,6; 19,2; 45,45; 93,75; 187,5; 500 kbit/s;
1,5; 3; 6; 12 Mbit/s (automatic setting)
≤ 6.5 bit times
RS 485 level
-7 V ... +12 V
no

860 nm
not limited

Ex-e single clamp
Ex-e single clamp
Ex-e single clamp

3000 m
13 dB link budget at 860 nm; A = 3 dB/km, 3 dB reserve
3000 m
15 dB link budget at 860 nm; A = 3.5 dB/km, 3 dB reserve
1000 m
18 dB link budget at 860 nm; A = 8 dB/km, 3 dB reserve

18 ... 32 VDC, typ. 24 VDC
yes
max. 200 mA
4.8 W
5 VDC +5%, -10%, short circuit-proof/90 mA

HIPER-Ring (ring structure), redundant 24 V infeed

-20 °C to +55 °C
-40 °C to +80 °C
10% to 100%



230 x 219 x 108 mm
screw mounting on the mounting plate
3.7 kg
IP 66
stainless steel

According to directive 94/9/EG (ATEX 95): Ex II
2 G and D (zones 1, 21, 2, 22); cUL 1604 Class
1 Div 2 Groups A, B, C and D; C-Tick

device, start-up instructions
manual



FiberINTERFACES

Field Bus > Profibus Plug-on Repeaters

Type	OZD ProfiPlug P21	OZD ProfiPlug P11
Order No.	943 924-321	943 924-221
	 <p>interface converter electrical/optical for PROFIBUS-field bus networks; repeater function; for plasti- and HCS optical fibers, additional D-Sub connector</p>	 <p>interface converter electrical/optical for PROFIBUS-field bus networks; repeater function; for plasti- and HCS optical fibers</p>
Product description Port type and quantity	1 x optical: 2 sockets BFOC 2.5 (STR) 1 x electrical Sub-D 9-pin, male, wired through to 1 x electrical Sub-D 9-pin female, pin assignment according to EN 50170 part 1	1 x optical: 2 sockets BFOC 2.5 (STR) 1 x electrical: Sub-D 9-pin, male, pin assignment according to EN 50170 part 1
Electrical interface Signal type Bit rate Signal delay time (optional input/output) Input/output signal Input voltage range Galvanic isolation	PROFIBUS (DP-V0, DP-V1, DP-V2 und FMS) 9.6; 19.2; 45.45; 93.75; 187.5; 500 kbit/s; 1.5 MBit/s (automatic setting) < 1,3 µs RS 485 level -7 V ... +12 V no	PROFIBUS (DP-V0, DP-V1, DP-V2 und FMS) 9.6; 19.2; 45.45; 93.75; 187.5; 500 kbit/s; 1.5 MBit/s (automatic setting) < 1,3 µs RS 485 level -7 V ... +12 V no
Optical interface Wavelength Cascadability	650 nm not limited	650 nm not limited
Network size - length of cable Multimode fiber HCS (MM) 200/230 µm Multimode fiber POF (MM) 980/1000 µm	100 m propagation time limites 4 dB link budget A = 8 dB/km, 3 dB reserve 75 m 17 dB link budget A = 0,2 dB/m, 2 dB Reserve	100 m propagation time limites 4 dB link budget A = 8 dB/km, 3 dB reserve 75 m 17 dB link budget A = 0,2 dB/m, 2 dB Reserve
Power requirements Operating voltage Galvanic isolation Current consumption Power consumption	5 VDC +/- 10% out of pin 6 of the profibus unit's Sub-D connector yes max. 11 mA 55 mW	5 VDC +/- 10% out of pin 6 of the profibus unit's Sub-D connector yes max. 11 mA 55 mW
Ambient conditions Operating temperature Storage/transport temperature Relative humidity	0 °C to +55 °C -40 °C to +70 °C 10% to 95% (non-condensing)	0 °C to +55 °C -40 °C to +70 °C 10% to 95% (non-condensing)
Mechanical construction Dimensions (W x H x D) Mounting Weight Protection class Housing material	16 x 90 x 57 mm plugging onto the profibus device 50 g IP 40 plastics	16 x 90 x 52 mm plugging onto the profibus device 50 g IP 40 plastics
Approvals Issued or requested approvals	C-Tick	C-Tick
Scope of delivery and accessories Scope of delivery	device, 2 optical BFOC ST plugs, start-up instructions	device, 2 optical BFOC ST plugs, start-up instructions



FiberINTERFACES

Field Bus > Genius Bus Repeaters

Type	OZD Genius G12	OZD Genius G12-1300
Order No.	933 989-021 	934 233-021 
	interface converter electrical/optical for Genius field bus networks; repeater function; for quartz glass und PCF (HCS) FO; approval for Ex-zone 2 (Class 1, Div. 2)	interface converter electrical/optical for Genius field bus networks; repeater function; for quartz glass FO; approval for Ex-zone 2 (Class 1, Div. 2); long-haul version
Product description Port type and quantity	2 x optical: 4 sockets BFOC 2.5 (STR) 1 x electrical: 4-pin connector with self-locking mechanism	2 x optical: 4 sockets BFOC 2.5 (STR) 1 x electrical: 4-pin connector with self-locking mechanism
Electrical interface Signal type Bit rate Signal delay time (optional input/output) Input/output signal Genius cable Connection capability Terminator Galvanic isolation	Geniusbus 38.4; 76.8; 153.6 kbit/s 800 ns Geniusbus length: >250 m attenuation at 1 MHz: <8 dB for 150 Ohm cable <5 dB for 100 Ohm cable max. 32 terminal devices external shielding in/shielding out: yes; data lines/housing: yes	Geniusbus 38.4; 76.8; 153.6 kbit/s 800 ns Geniusbus length: >250 m attenuation at 1 MHz: <8 dB for 150 Ohm cable <5 dB for 100 Ohm cable max. 32 terminal devices external shielding in/shielding out: yes; data lines/housing: yes
Optical interface Wavelength Cascadability	860 nm not limited	1310 nm not limited
More Interfaces Power supply Signaling contact	5-pin terminal block, screw mounting 5-pin terminal block, screw mounting	5-pin terminal block, screw mounting 5-pin terminal block, screw mounting
Network size - length of cable Single mode fiber (SM) 9/125 µm Multimode fiber (MM) 50/125 µm Multimode fiber (MM) 62.5/125 µm Multimode fiber HCS (MM) 200/230 µm	- 2700 m 11 dB link budget at 860 nm; A = 3 dB/km, 3 dB reserve 2600 m 12 dB link budget at 860 nm; A = 3.5 dB/km, 3 dB reserve 1500 m 16 dB link budget at 860 nm; A = 8 dB/km, 3 dB reserve	10000 m 8 dB link budget at 1310 nm; A = 0.5 dB/km, 2 dB reserve 7000 m 10 dB link budget at 1310 nm; A = 1 dB/km, 3 dB reserve 7000 m 10 dB link budget at 1310 nm; A = 1 dB/km, 3 dB reserve -
Power requirements Operating voltage Current consumption Power consumption	24 VDC (19 ... 35 VDC), non-interchangeable, safety extra-low voltage 130 mA 3.1 W	24 VDC (19 ... 35 VDC), non-interchangeable, safety extra-low voltage 130 mA 3.1 W
Redundancy Redundancy functions	HIPER-Ring (ring structure), redundant 24 V infeed	HIPER-Ring (ring structure), redundant 24 V infeed
Ambient conditions Operating temperature Storage/transport temperature Relative humidity	0 °C to +55 °C -40 °C to +80 °C <95% (non-condensing)	0 °C to +55 °C -40 °C to +80 °C <95% (non-condensing)
Mechanical construction Dimensions (W x H x D) Mounting Weight Protection class Housing material	40 x 111 x 73.5 mm DIN rail or mounting plate 500 g IP 40 die-cast zink	40 x 111 x 73.5 mm DIN rail or mounting plate 500 g IP 40 die-cast zink
Approvals Issued or requested approvals	cUL508, cUL1604 Class1, Div. 2, Groups A,B,C and D; ccording to directive 94/9/EG (ATEX 95): Ex II 3 G (Zone 2)	cUL508, cUL1604 Class1, Div. 2, Groups A,B,C and D; ccording to directive 94/9/EG (ATEX 95): Ex II 3 G (Zone 2)
Scope of delivery and accessories Scope of delivery Accessories to order separately	device, start-up instructions manual, order no. 933 989-901	device, start-up instructions manual, order no. 933 989-901



FiberINTERFACES

Field Bus > WorldFIP Repeaters

Type	OZD FIP G3	OZD FIP G3 T
Order No.	933 847-421	933 847-521
		
	interface converter electrical/optical for FIP-field bus networks; repeater function; for quartz glass und PCF (HCS) FO	interface converter electrical/optical for FIP-field bus networks; repeater function; for quartz glass und PCF (HCS) FO; integrated bus termination
Product description Port type and quantity	2 x optical: 4 sockets BFOC 2.5 (STR) 1 x electrical: Sub-D 9-pin, male, pin assignment acc. to French Standard NF-C 46-604	2 x optical: 4 sockets BFOC 2.5 (STR) 1 x electrical: Sub-D 9-pin, male, pin assignment acc. to French Standard NF-C 46-604
Electrical interface Signal type Bit rate Signal delay time (optional input/output) Input/output signal Length of FIP cable Connection capability Terminator Galvanic isolation	World FIP 1 Mbit/s <1 µs FIP Bus 100 m max. 16 terminal data devices no shielding/housing: no; data lines/housing: yes	World FIP 1 Mbit/s <1 µs FIP Bus 100 m max. 16 terminal data devices yes, 150 Ohm shielding/housing: no; data lines/housing: yes
Optical interface Wavelength Cascadability	860 nm at a maximal line attenuation of the optical network with fiber G 50/125: 0 ... 60 dB with fiber G 62.5/125: 0 ... 75 dB with fiber S 200/230: 0 ... 60 dB	860 nm at a maximal line attenuation of the optical network with fiber G 50/125: 0 ... 60 dB with fiber G 62.5/125: 0 ... 75 dB with fiber S 200/230: 0 ... 60 dB
More Interfaces Power supply Signaling contact	5-pin terminal block, screw mounting 5-pin terminal block, screw mounting	5-pin terminal block, screw mounting 5-pin terminal block, screw mounting
Network size - length of cable Multimode fiber (MM) 50/125 µm Multimode fiber (MM) 62.5/125 µm Multimode fiber HCS (MM) 200/230 µm	2500 m 11 dB link budget at 860 nm; A = 3 dB/km, 3 dB reserve 2500 m 12 dB link budget at 860 nm; A = 3.5 dB/km, 3 dB reserve 1500 m 16 dB link budget at 860 nm; A = 8 dB/km, 3 dB reserve	2500 m 11 dB link budget at 860 nm; A = 3 dB/km, 3 dB reserve 2500 m 12 dB link budget at 860 nm; A = 3.5 dB/km, 3 dB reserve 1500 m 16 dB link budget at 860 nm; A = 8 dB/km, 3 dB reserve
Power requirements Operating voltage Current consumption Power consumption	24 VDC -20% ... 48 VDC +10% non-interchangeable, safety extra-low voltage 150 mA at +24 VDC; 85 mA at + 48 VDC 4.1 W	24 VDC -20% ... 48 VDC +10% non-interchangeable, safety extra-low voltage 150 mA at +24 VDC; 85 mA at + 48 VDC 4.1 W
Redundancy Redundancy functions	HIPER-Ring (ring structure), redundant 24 V infeed	HIPER-Ring (ring structure), redundant 24 V infeed
Ambient conditions Operating temperature Storage/transport temperature Relative humidity	0 °C to +60 °C -40 °C to +70 °C <95% (non-condensing)	0 °C to +60 °C -40 °C to +70 °C <95% (non-condensing)
Mechanical construction Dimensions (W x H x D) Mounting Weight Protection class Housing material	40 x 111 x 73.5 mm DIN rail or mounting plate 500 g IP 40 die-cast zink	40 x 111 x 73.5 mm DIN rail or mounting plate 500 g IP 40 die-cast zink
Approvals Issued or requested approvals	C-Tick	C-Tick
Scope of delivery and accessories Scope of delivery Accessories to order separately	device, start-up instructions manual, order no. 933 847-901	device, start-up instructions manual, order no. 933 847-901



FiberINTERFACES

Field Bus > Modbus Plus Repeaters

Type	OZD Modbus Plus G12	OZD Modbus Plus G12-1300
Order No.	943 740-021 	943 821-021 
	interface converter electrical/optical for Modbus Plus-field bus networks; repeater function; for quartz glass und PCF (HCS) FO; approval for Ex-zone 2 (Class 1, Div. 2)	interface converter electrical/optical for Modbus Plus-field bus networks; repeater function; for quartz glass FO; long-haul version
Product description Port type and quantity	2 x optical: 4 sockets BFOC 2.5 (STR) 1 x electrical: Sub-D 9-pin, female, pin assignment according to Modbus Plus-Standard	2 x optical: 4 sockets BFOC 2.5 (STR) 1 x electrical: Sub-D 9-pin, female, pin assignment according to Modbus Plus-Standard
Electrical interface Signal type Bit rate Signal delay time (optional input/output) Input/output signal Length of Modbus cable Connection capability Terminator Galvanic isolation	Modbus Plus 1 Mbit/s <1 µs Modbus Plus Bus 100 m max. 31 terminal devices external shielding/housing: no; data lines/housing: yes	Modbus Plus 1 Mbit/s <1 µs Modbus Plus Bus 100 m max. 31 terminal devices external shielding/housing: no; data lines/housing: yes
Optical interface Wavelength Cascadability	860 nm not limited	1310 nm not limited
More Interfaces Power supply Signaling contact	5-pin terminal block, screw mounting 5-pin terminal block, screw mounting	5-pin terminal block, screw mounting 5-pin terminal block, screw mounting
Network size - length of cable Single mode fiber (SM) 9/125 µm Multimode fiber (MM) 50/125 µm Multimode fiber (MM) 62.5/125 µm Multimode fiber HCS (MM) 200/230 µm	- 2300 m 10 dB link budget at 860 nm; A = 3 dB/km, 3 dB reserve 2300 m 11 dB link budget at 860 nm; A = 3.5 dB/km, 3 dB reserve 1500 m 16 dB link budget at 860 nm; A = 8 dB/km, 3 dB reserve	8000 m 8 dB link budget at 1310 nm; A = 0.5 dB/km, 2 dB reserve 7000 m 10 dB link budget at 1310 nm; A = 1 dB/km, 3 dB reserve 7000 m 10 dB link budget at 1310 nm; A = 1 dB/km, 3 dB reserve -
Power requirements Operating voltage Current consumption Power consumption	24 VDC -20% ... 48 VDC +10% non-interchangeable, safety extra-low voltage 120 mA at +24 VDC; 65 mA at + 48 VDC 3.1 W	24 VDC -20% ... 48 VDC +10% non-interchangeable, safety extra-low voltage 120 mA at +24 VDC; 65 mA at + 48 VDC 3.1 W
Redundancy Redundancy functions	HIPER-Ring (ring structure), redundant 24 V infeed	HIPER-Ring (ring structure), redundant 24 V infeed
Ambient conditions Operating temperature Storage/transport temperature Relative humidity	0 °C to +60 °C -40 °C to +70 °C <95% (non-condensing)	0 °C to +60 °C -40 °C to +70 °C <95% (non-condensing)
Mechanical construction Dimensions (W x H x D) Mounting Weight Protection class Housing material	40 x 111 x 73.5 mm DIN rail or mounting plate 620 g IP 40 die-cast zink	40 x 111 x 73.5 mm DIN rail or mounting plate 620 g IP 40 die-cast zink
Approvals Issued or requested approvals	cUL Class 1, Div.2; C-Tick	C-Tick
Scope of delivery and accessories Scope of delivery Accessories to order separately	device, start-up instructions manual, order no. 933 989-901	device, start-up instructions manual, order no. 933 989-901

FiberINTERFACES

Field Bus > RS 485 Repeaters

Type	OZD 485 G12 PRO	OZD 485 G12-1300 PRO
Order No.	943 894-321 	943 895-321 
	interface converter electrical/optical for RS 485 field bus networks; repeater function; for quartz glass FO; electrical full duplex or semi-duplex mode	interface converter electrical/optical for RS 485 field bus networks; repeater function; for quartz glass FO; electrical full duplex or semi-duplex mode; long-haul version
Product description Port type and quantity	2 x optical: BFOC 2.5 (STR) socket 1 x electrical: 12-pin terminal block	2 x optical: BFOC 2.5 (STR) socket 1 x electrical: 6-pin terminal block
Electrical interface Signal type Input resistance Input voltage range Jitter Distortion of bit duration Bit rate	RS 485 10 kOhm -7 V ... +12 V typ. 10 nspp typ. 1 nspp 0 to 1.5 Mbit/s NRZ	RS 485 10 kOhm -7 V ... +12 V typ. 10 nspp typ. 1 nspp 0 to 1.5 Mbit/s NRZ
Optical interface Wavelength Optical input power	860 nm -30 dBm	1310 nm -31 dBm
More Interfaces Power supply Signaling contact Voltage output	7-pin terminal block 7-pin terminal block 3-pin terminal block	7-pin terminal block 7-pin terminal block 3-pin terminal block
Network size - length of cable Single mode fiber (SM) 9/125 µm Multimode fiber (MM) 50/125 µm Multimode fiber (MM) 62.5/125 µm System delay time	- 2300 m 10 dB link budget at 860 nm; A = 3 dB/km, 3 dB reserve 3100 m 14 dB link budget at 860 nm; A = 3.5 dB/km, 3 dB reserve <1,56 µs	22000 m 13 dB link budget at 1310 nm; A = 0.5 dB/km, 2 dB reserve 16000 m 18 dB link budget at 1310 nm; A = 1.0 dB/km, 2 dB reserve 16000 m 18 dB link budget at 1310 nm; A = 1.0 dB/km, 2 dB reserve <1.56 µs
Power requirements Operating voltage Current consumption Power consumption	18 ... 32 VDC (typ. 24 VDC) 140 mA at 24 VDC, 65 mA at 32 VDC <3.5 W	18 ... 32 VDC (typ. 24 VDC) 140 mA at 24 VDC, 65 mA at 32 VDC <3.5 W
Redundancy Redundancy functions	redundant ring, redundant power supply	redundant ring, redundant power supply
Ambient conditions Operating temperature Storage/transport temperature Relative humidity	-25 °C to +70 °C -25 °C to +80 °C <95% (non-condensing)	-25 °C to +70 °C -25 °C to +80 °C <95% (non-condensing)
Mechanical construction Dimensions (W x H x D) Mounting Weight Protection class Housing material	35 x 156 x 119 DIN rail 195 g IP 20 plastics	35 x 163 x 119 DIN rail 215 g IP 20 plastics
Approvals Issued or requested approvals	cUL508, cUL1604 Class1, Div. 2, Groups A,B,C and D; according to directive 94/9/EG (ATEX 95): Ex II 3 G (Zone 2); C-Tick	cUL508, cUL1604 Class1, Div. 2, Groups A,B,C and D; according to directive 94/9/EG (ATEX 95): Ex II 3 G (Zone 2); C-Tick
Scope of delivery and accessories Scope of delivery Accessories to order separately	device, start-up instructions manual, order no. 039 516-001	device, start-up instructions manual, order no. 039 516-001

OZD 485 G12 BAS

943 893-321



interface converter electrical/optical for RS 485 field bus networks; repeater function; for quartz glass FO; electrical semi-duplex mode

2 x optical: BFOC 2.5 (STR) socket
1 x electrical: 6-pin terminal block

RS 485
10 kOhm
-7 V ... +12 V
typ. 10 nspp
typ. 1 nspp
0 to 1.5 Mbit/s NRZ

860 nm
-30 dBm

5-pin terminal block
-
-

-

2300 m
10 dB link budget at 860 nm; A = 3 dB/km,
3 dB reserve
3100 m
14 dB link budget at 860 nm; A = 3.5 dB/km,
3 dB reserve
<1,56 us

18 ... 32 VDC (typ. 24 VDC)
80 mA at 24 VDC, 65 mA at 32 VDC
<2,1 W

-

0 °C to +60 °C
-25 °C to +80 °C
<95% (non-condensing)

35 x 156 x 119
DIN rail
180 g
IP 20
plastics

C-Tick

device, start-up instructions
manual, order no. 039 516-001

The shortest data link between office and factory.

Clip-on modules connect two different worlds together.



Hirschmann's digital modules are perfectly suited for all situations requiring the interference-free transmission of classical RS 232/serial signals under highly demanding operating conditions over long distances between computers and peripheral devices such as printers, terminals and machines in automation technology.

Optical fiber transmission systems effectively eliminate the risk of RFI/EMI. At the same time, they protect valuable terminal devices against possible damage through optical isolation, thereby contributing to the protection of investments.

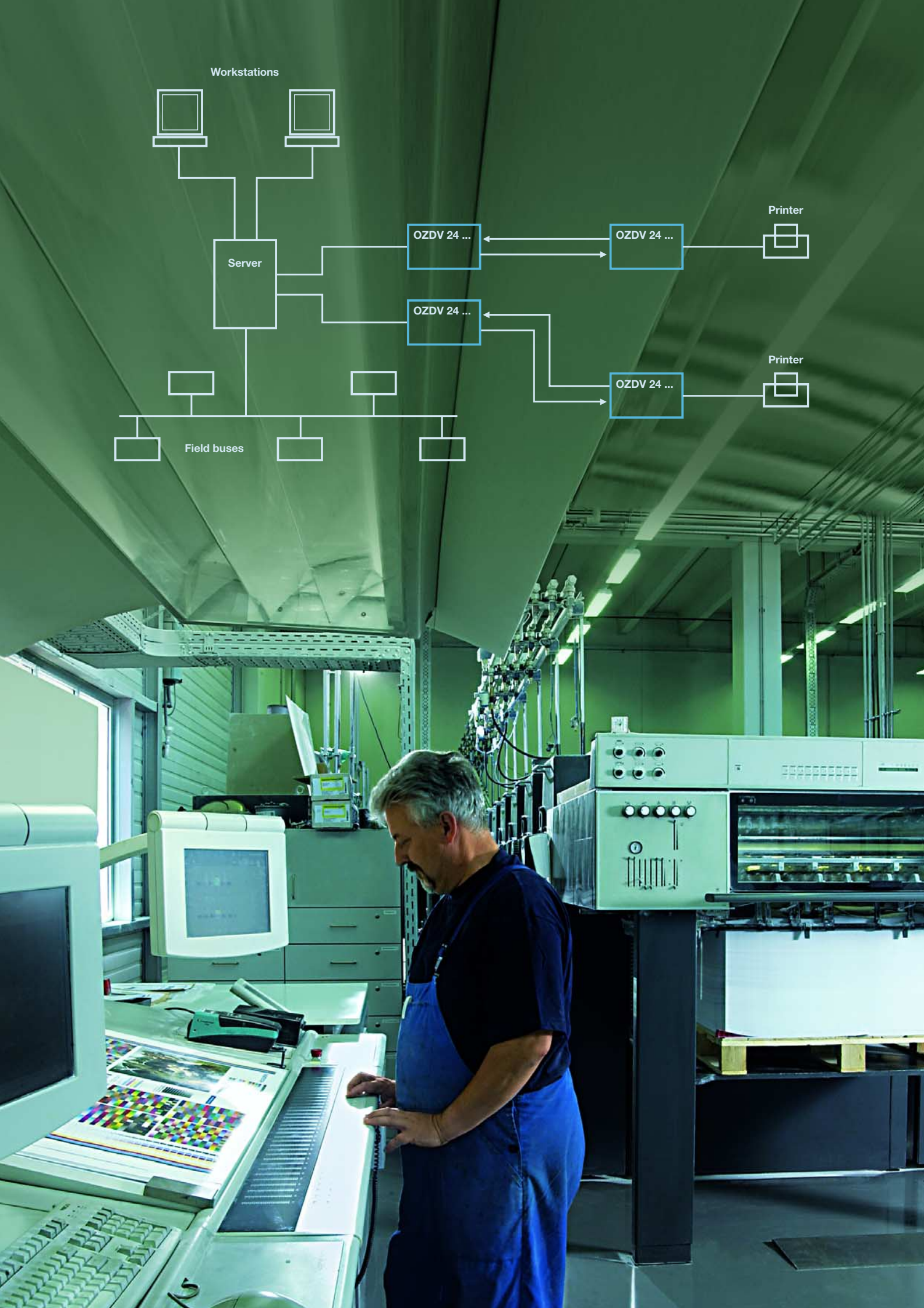
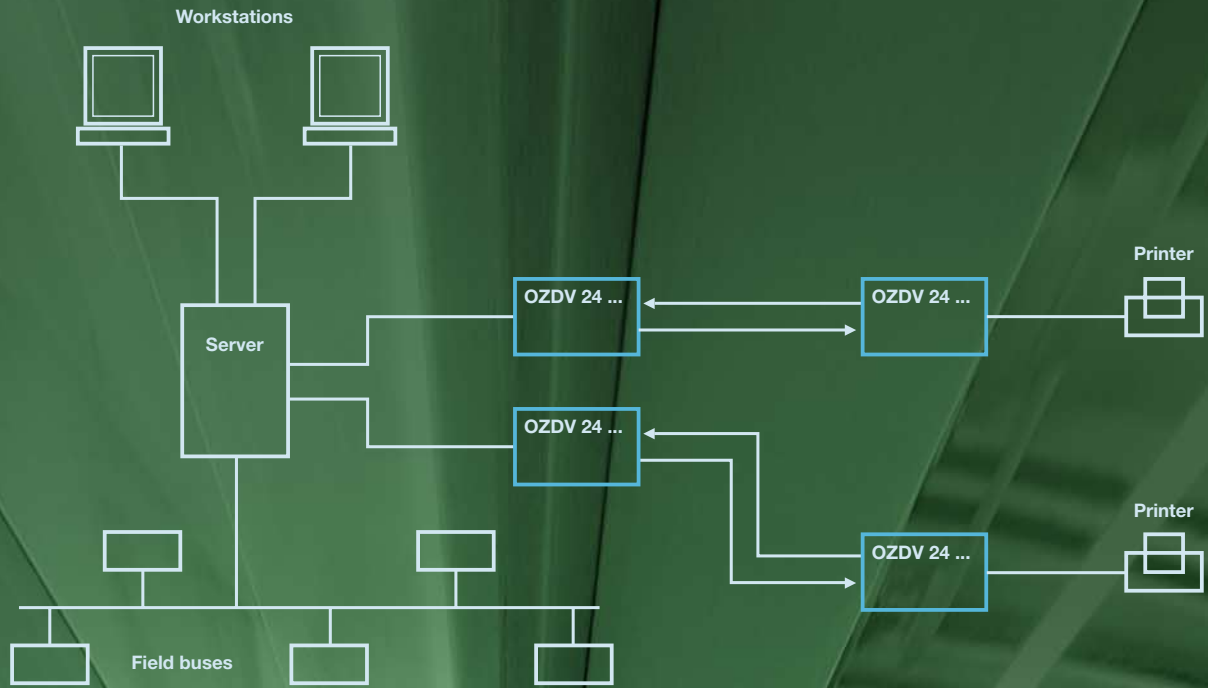
- *In large companies where data is centrally collected, the switch to Hirschmann FiberINTERFACES will extend the transmission paths and permit the placement of cables in interference-prone environments.*
- *The modules, in compact clip-on housings made of stable centrifugal cast zinc, can be placed directly on the terminal device or mounted on a DIN rail via an adapter. Some of the modules obtain their voltage supply from the data signal and are therefore not dependent on an external voltage source.*



OZDV 2451 G



OZDV 2471 G



Overview V.24/RS 232 Media Converters.

Fiber S 980/1 000 ¹⁾

650 nm



OZDV 2451 P

OZDV 2471 P



OZDV 2451 P



OZDV 2471 P

	OZDV 2451 P	OZDV 2471 P
	0 – 60 m	0 – 50 m
	17 dB	14 dB
	0 – 50 m	0 – 100 m
	14 dB	29 dB



860 nm



OZDV 2451 G

OZDV 2471 G



OZDV 2451 G



OZDV 2471 G

0 – 1500 m	0 – 800 m
7.5 dB	5.5 dB
0 – 800 m	0 – 6 700 m
5.5 dB	23 dB

Faser G 50/125 ²⁾

860 nm



OZDV 2451 G

OZDV 2471 G



OZDV 2451 G



OZDV 2471 G

0 – 2 000 m	0 – 1 400 m
10 dB	8 dB
0 – 1 400 m	0 – 6 600 m
8 dB	26 dB

Faser G 62,5/125 ³⁾



¹⁾ with fiber S 980/1000 µm (0.25 dB/m attenuation and 2 dB system reserve)




²⁾ with fiber G 50/125 µm (3 dB/km attenuation and 3 dB system reserve)

³⁾ with fiber G 62.5/125 µm (3.5 dB/km attenuation and 3 dB system reserve)

FIBERINTERFACES

Serial > V.24/RS 232 Media Converters

Type	OZDV 2451 P	OZDV 2451 G
Order No.	943 316-021	943 299-021
	 <p>interface converter electrical/optical for V.24; power supply through data signal; for plastic FO; for plugging onto the Sub-D socket provided on the terminal or mounting onto a DIN rail (with DIN rail adapter accessories)</p>	 <p>interface converter electrical/optical for V.24; power supply through data signal; for quartz glass FO; for plugging onto the Sub-D socket provided on the terminal or mounting onto a DIN rail (with DIN rail adapter accessories)</p>
Product description Port type and quantity Setting possibilities	1 electrical port: 25-pin Sub-D connector, male; 1 optical port: 2 sockets BFOC 2.5 (STR) DTE- or DCE operating mode external voltage supply via pin 11 or internally from the data signal shield ground galvanically connected or not connected to signal ground	1 electrical port: 25-pin Sub-D connector, male; 1 optical port: 2 sockets BFOC 2.5 (STR) DTE- or DCE operating mode external voltage supply via pin 11 or internally from the data signal shield ground galvanically connected or not connected to signal ground
Electrical interface Signal type Bit rate Bit error frequency Terminal assignment data	V.24 (RS 232 D) interface level DC to 20 kbit/s (DC coupling) < 10 ⁻⁹ pin 1: PGND; pin 7: GND; pin 11: Vcc; pin 4+5 and pin 6+8+20 bridged DTE operation: pin 2 TxD, pin 3 RxD DCE operation: pin 2 RxD, pin 3 TxD	V.24 (RS 232 D) interface level DC to 20 kbit/s (DC coupling) < 10 ⁻⁹ pin 1: PGND; pin 7: GND; pin 11: Vcc; pin 4+5 and pin 6+8+20 bridged DTE operation: pin 2 TxD, pin 3 RxD DCE operation: pin 2 RxD, pin 3 TxD
Optical interface Wavelength	665 nm	860 nm
More Interfaces Power supply	from the data signal (electrical interface) or 25-pin Sub-D connector (pin 11)	from the data signal (electrical interface) or 25-pin Sub-D connector (pin 11)
Network size - length of cable Single mode fiber (SM) 9/125 μm Multimode fiber (MM) 50/125 μm Multimode fiber (MM) 62.5/125 μm Multimode fiber HCS (MM) 200/230 μm Multimode fiber POF (MM) 980/1000 μm	- - - - 0 - 60 m 17 dB link budget, A = 0.25 dB/m, 2 dB reserve	- 0 - 1500 m 7.5 dB link budget, A = 3.0 dB/km, 3 dB reserve 0 - 2000 m 10 dB link budget, A = 3.5 dB/km, 3 dB reserve -
Power requirements Operating voltage Current consumption Power consumption	no external power supply required; with supply via pin 11: -20 V ... -5 V or +5 V ... +20 V 3.3 mA (max. 3.8 mA) via data signal 20 mW at 4.5 V	no external power supply required; with supply via pin 11: -20 V ... -5 V or +5 V ... +20 V 3.3 mA (max. 3.8 mA) via data signal 20 mW at 4.5 V
Ambient conditions Operating temperature Storage/transport temperature Relative humidity	0 °C to +50 °C -20 °C to +70 °C 10% to 90%	0 °C to +50 °C -20 °C to +70 °C 10% to 90%
Mechanical construction Dimensions (W x H x D) Mounting Weight Protection class Housing material	56.5 x 18 x 76 mm plugging onto the terminal unit 110 g IP 40 die-cast zinc	56.5 x 18 x 76 mm plugging onto the terminal unit 110 g IP 40 die-cast zinc
Approvals Issued or requested approvals	C-Tick	C-Tick
Scope of delivery and accessories Scope of delivery Accessories to order separately	device, operating instructions, 2 BFOC ST optical plugs DIN rail adapter OZDV HA	device, operating instructions DIN rail adapter OZDV HA

OZDV 2471 P	OZDV 2471 G	OZDV 2471 G-1300
943 340-021 	943 341-021 	933 990-021 
interface converter electrical/optical for V.24; for plastic FO; for plugging onto the Sub-D socket provided on the terminal or mounting onto a DIN rail (with DIN rail adapter accessories)	interface converter electrical/optical for V.24; for quartz glass FO; for plugging onto the Sub-D socket provided on the terminal or mounting onto a DIN rail (with DIN rail adapter accessories)	interface converter electrical/optical for V.24; for quartz glass FO; for plugging onto the Sub-D socket provided on the terminal or mounting onto a DIN rail (with DIN rail adapter accessories); long-haul version
1 electrical port: 25-pin Sub-D connector, male; 1 optical port: 2 sockets BFOC 2.5 (STR) DTE- or DCE operating mode voltage supply internally via pin 11/pin 18 Sub-D socket or externally via low voltage socket shield ground galvanically connected or not connected to signal ground	1 electrical port: 25-pin Sub-D connector, male; 1 optical port: 2 sockets BFOC 2.5 (STR) DTE- or DCE operating mode voltage supply internally via pin 11/pin 18 Sub-D socket or externally via low voltage socket shield ground galvanically connected or not connected to signal ground	1 electrical port: 25-pin Sub-D connector, male; 1 optical port: 2 sockets BFOC 2.5 (STR) DTE- or DCE operating mode voltage supply internally via pin 11/pin 18 Sub-D socket or externally via low voltage socket shield ground galvanically connected or not connected to signal ground
V.24 (RS 232 D) interface level DC to 115 kbit/s (DC coupling) < 10-9 pin 1: PGND; pin 7: GND; pin 11: Vcc; pin 4+5 and pin 6+8+20 bridged DTE operation: pin 2 TxD, pin 3 RxD DCE operation: pin 2 RxD, pin 3 TxD	V.24 (RS 232 D) interface level DC to 115 kbit/s (DC coupling) < 10-9 pin 1: PGND; pin 7: GND; pin 11: Vcc; pin 4+5 and pin 6+8+20 bridged DTE operation: pin 2 TxD, pin 3 RxD DCE operation: pin 2 RxD, pin 3 TxD	V.24 (RS 232 D) interface level DC to 115 kbit/s (DC coupling) < 10-9 pin 1: PGND; pin 7: GND; pin 11: Vcc; pin 4+5 and pin 6+8+20 bridged DTE operation: pin 2 TxD, pin 3 RxD DCE operation: pin 2 RxD, pin 3 TxD
665 nm	860 nm	1300 nm
4-pin low voltage plug, M8 shape according to IEC 947-5-2 or 25-pin Sub-D connector (pin 11/pin 18)	4-pin low voltage plug, M8 shape according to IEC 947-5-2 or 25-pin Sub-D connector (pin 11/pin 18)	4-pin low voltage plug, M8 shape according to IEC 947-5-2 or 25-pin Sub-D connector (pin 11/pin 18)
- - - 0 - 2100 m 20 dB link budget, A = 8.0 dB/km, 3 dB reserve 0 - 100 m 29 dB link budget, A = 0.25 dB/m, 2 dB reserve	- 0 - 6700 m 23 dB link budget, A = 3.0 dB/km, 3 dB reserve 0 - 6600 m 26 dB link budget, A = 3.5 dB/km, 3 dB reserve 0 - 3100 m 28 dB link budget, A = 8.0 dB/km, 3 dB reserve -	0 - 32000 m 18 dB link budget, A = 0.5 dB/km, 2 dB reserve 0 - 19000 m 21 dB link budget, A = 1.0 dB/km, 2 dB reserve 0 - 12000 m 21 dB link budget, A = 1.5 dB/km, 2 dB reserve - -
+5 VDC via PSW 5-24 plug-in power supply or + 5 VDC +-5% external supply or +8 ... +15 VDC external supply 90 mA (max. 120 mA) 0.6 W/1.8 W	+5 VDC via PSW 5-24 plug-in power supply or + 5 VDC +-5% external supply or +8 ... +15 VDC external supply 90 mA (max. 120 mA) 0.6 W/1.8 W	+5 VDC via PSW 5-24 plug-in power supply or + 5 VDC +-5% external supply or +8 ... +15 VDC external supply 90 mA (max. 120 mA) 0.6 W/1.8 W
-20 °C to +50 °C -20 °C to +70 °C 10% to 90%	-20 °C to +50 °C -20 °C to +70 °C 10% to 90%	-20 °C to +50 °C -20 °C to +70 °C 10% to 90%
56.5 x 18 x 76 mm plugging onto the terminal unit 110 g IP 40 die-cast zink	56.5 x 18 x 76 mm plugging onto the terminal unit 110 g IP 40 die-cast zink	56.5 x 18 x 80 mm plugging onto the terminal unit 135 g IP 40 die-cast zink
C-Tick	C-Tick	C-Tick
device, operating instructions, 2 BFOC optical plugs plug-in power supply PSW 5-24 DIN rail adapter OZDV HA	device, operating instructions plug-in power supply PSW 5-24 DIN rail adapter OZDV HA	device, operating instructions plug-in power supply PSW 5-24 DIN rail adapter OZDV HA

The upgradation training for transmission paths.

Hybrid components and OptoQuick components make circuits fit for fiber optic cables.



The upgrade to fiber optics can be as easy as this: hybrid components made by Hirschmann consist of a transmission and receiving unit, both installed in a compact metal housing. Together, they constitute a transmission system for digital data. Hybrid components are directly integrated on the printed circuit board of the user – that is all that is required. The advantages of optical fiber transmission technology are therefore available – without the expenditure on

optical fiber development, namely: no risk of RF/EMI, no disturbance from ground potential, increased transmission distances. Optical transmission and reception elements are also available from Hirschmann in the OptoQuick range. These also include optical coupling units and connectors with quick-connection optical technology.

- ***The use of hybrid components makes it possible to reap the benefits of optical transmission technology such as distortion-free transmission in sensitive medical investigation devices – without high levels of expenditure.***
- ***All Hirschmann hybrid components offer reliable protection against electromagnetic radiation thanks to their compact metal housing.***



OSAH 200



OVKS 2,2



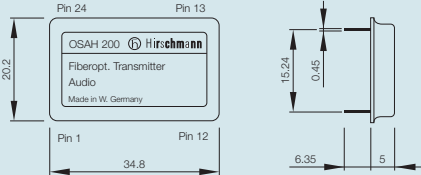
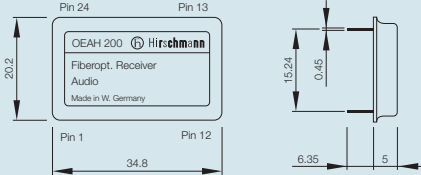


OVKD 01



FIBERINTERFACES


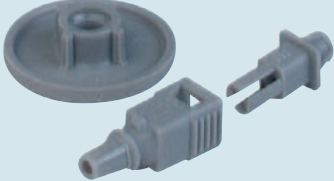
Hybrids modules and OptoQuick components > **Audio Hybrids**



Type	OSAH 200	OEAH 200
Order No.	943 043-001  optical audio transmitter hybrid; PCB mounting	943 044-001  optical audio receiver hybrid; PCB mounting
Product description Port type and quantity	1 electrical port: 1 pin	1 electrical port: 1 pin
Electrical interface Input voltage Input resistance Output voltage Admissible load resistance at the output Linear distortion (30 Hz to 20 kHz) Distorsion factor (at 0 dBm/1kHz) Unweighted signal-to-noise-ratio (relative 0 dBm) Bandwidth (-3 dB)	0 dBm = 0.775 Veff >10 kOhm - - ≤0.5 dB at 0 °C to +50 °C / ≤0.8 dB at -40 °C to +80 °C ≤0.1% at 0 °C to +50 °C / ≤0.15% at -40 °C to +80 °C >73 dB at 0 °C to +50 °C / >68 dB at -40 °C to +80 °C 10 Hz to 30 kHz at 0 °C to +50 °C / 15 Hz to 30 kHz at -40 °C to +80 °C	- - 0 dBm = 0.775 Veff (no load) >=600 Ohm ≤0.5 dB at 0 °C to +50 °C / ≤0.8 dB at -40 °C to +80 °C ≤0.1% at 0 °C to +50 °C / ≤0.15% at -40 °C to +80 °C >73 dB at 0 °C to +50 °C / >68 dB at -40 °C to +80 °C 10 Hz to 30 kHz at 0 °C to +50 °C / 15 Hz to 30 kHz at -40 °C to +80 °C
Optical interface Wavelength Launchable optical power in multi-mode fiber (MM) POF 980/1000 Optical input power	660 nm with OVKD 01-B (LED 013) (accessories) >500 μWpp, -3 dBm at 0 °C to +50 °C with OVKD 01-B (LED 013) (accessories) -	- - >2.0 μWpp, -27 dBm at 0 °C to +50 °C with OVKD 01-B (SFH 203 P) (accessories)
Network size - length of cable Multimode fiber POF (MM) 980/1000 μm	88 m 24 dB link budget, A = 0.25 dB/m, 2 dB system reserve with OVKD 01-B (LED 013) (accessories) and OEAH 200 with OVKD 01-B (SFH 203 P) (accessories)	88 m 24 dB link budget, A = 0.25 dB/m, 2 dB system reserve with OSAH 200 with OVKD 01-B (LED 013) (accessories) and OVKD 01-B (SFH 203 P) (accessories)
Power requirements Operating voltage Current consumption Power consumption	+12 VDC +-10% 55 mA 0.7 W	+12 VDC +-10% 35 mA 0.4 W
Drawing		
Ambient conditions Operating temperature Storage/transport temperature Relative humidity (non-condensing)	-40 °C to +80 °C -40 °C to +80 °C 10% to 90%	-40 °C to +80 °C -40 °C to +80 °C 10% to 90%
Mechanical construction Dimensions (W x H x D) Mounting Weight Protection class Pin assignment	see "Drawing" on PCB 15 g IP 65 see "Drawing" pin 1: input; pin 2, 4-8, 10-12: GND; pin 3: gain setting; pin 9: LED pin 13-20: VCC; pin 21-24: N.C.	see "Drawing" on PCB 15 g IP 65 see "Drawing" pin 1: pin diode; pin 2-10: GND; pin 11: output pin 12: gain setting; pin 13-24: VCC
Scope of delivery and accessories Scope of delivery Accessories to order separately	1 hybrid, 1 operating instructions optical converter OVKD 01-B (LED 013), order no. 936 215-009 scope of delivery: 1 converter housing with integrated and adjusted transmitter element, type OVK for platic fiber On request, we will be pleased to supply a data sheet indicating the dimensions and terminal assignment of the converter housing.	1 hybrid, 1 operating instructions optical converter OVKD 01-B (SFH 203 P), order no. 936 215-037 scope of delivery: 1 converter housing with integrated and adjusted receiver element, type OVK for platic fiber On request, we will be pleased to supply a data sheet indicating the dimensions and terminal assignment of the converter housing.







FIBERINTERFACES

Hybrids modules and OptoQuick components > **OptoQuick Components**

Type	OVKS 2,2 schwarz/black	OVKS 2,2 grau/grey
Order No.	936 200-001	936 200-002
	 <p>fiber optic plug; for plastic fiber with an external diameter of 2.2 mm, strain relief 40 N</p>	 <p>fiber optic plug; for plastic fiber with an external diameter of 2.2 mm, strain relief 40 N</p>
Product description Construction type Colour	OVK OptoQuick black	OVK OptoQuick grey
Mechanical construction Mounting	-	-
Scope of delivery and accessories Scope of delivery	20 fiber optic plugs, each consisting of a plug body and a strain relief 1 polishing tool 1 operating instructions	20 fiber optic plugs, each consisting of a plug body and a strain relief 1 polishing tool 1 operating instructions

Type	OVKD 01 schwarz/black	OVKD 01 grau/grey
Order No.	936 205-001	936 205-002
	 <p>diode socket; for plastic FO</p>	 <p>diode socket; for plastic FO</p>
Product description Construction type Colour	OVK OptoQuick black	OVK OptoQuick grey
Mechanical construction Mounting	on PCB	on PCB
Scope of delivery and accessories Scope of delivery	20 diode sockets 1 operating instructions	20 diode sockets 1 operating instructions

OVKK 01 schwarz/black	OVKK 01 grau/grey
<p>934 101-100</p>  <p>fiber optic coupling; for plastic FO</p>	<p>934 101-106</p>  <p>fiber optic coupling; for plastic FO</p>
<p>OVK OptoQuick black</p>	<p>OVK OptoQuick grey</p>
<p>for use in housing sidewalls and for use as an independent coupling</p>	<p>for use in housing sidewalls and for use as an independent coupling</p>
<p>20 couplings, 20 retaining nuts 1 operating instructions</p>	<p>20 couplings, 20 retaining nuts 1 operating instructions</p>

OVKD 01-B (LED 013)	OVKD 01-B (SFH 203 P)
<p>936 215-009</p>  <p>diode socket with optical transmitter element; for plastic FO</p>	<p>936 215-037</p>  <p>diode socket with optical receiver element; for plastic FO</p>
<p>OVK OptoQuick black</p>	<p>OVK OptoQuick black</p>
<p>on PCB</p>	<p>on PCB</p>
<p>diode socket with integrated and adjusted transmitter element LED 013 1 operating instructions</p>	<p>diode socket with integrated and adjusted receiver element SFH 203 P 1 operating instructions</p>

For a complete product solution, you need accessories.

Workable ideas for your application.



Hirschmann system accessories for FiberINTERFACES offer practical and workable solutions that are perfectly adapted to the product in question, enabling easy assembly while ensuring secure power supply. Several reasons why there is only one optimum addition to our field buses and digital modules: Hirschmann DIN rail power supplies, plug-in power supplies and DIN rail adapters.

This is one-stop shopping that saves real money. You not only benefit from a complete solution that has been thought through to the last detail, but you also benefit from our worldwide distribution network. This way you don't just have the latest technology working for you ... you also get time on your side.

- ***Like every product from the comprehensive Hirschmann range, our accessories satisfy the high expectations of our clients in terms of material selection, processing quality, reliability and long life.***
- ***As the ideal supplement to Hirschmann FiberINTERFACES, our accessories not only offer solutions that have been thought-out down to the finest details, but also save valuable time during installation.***



RPS 30



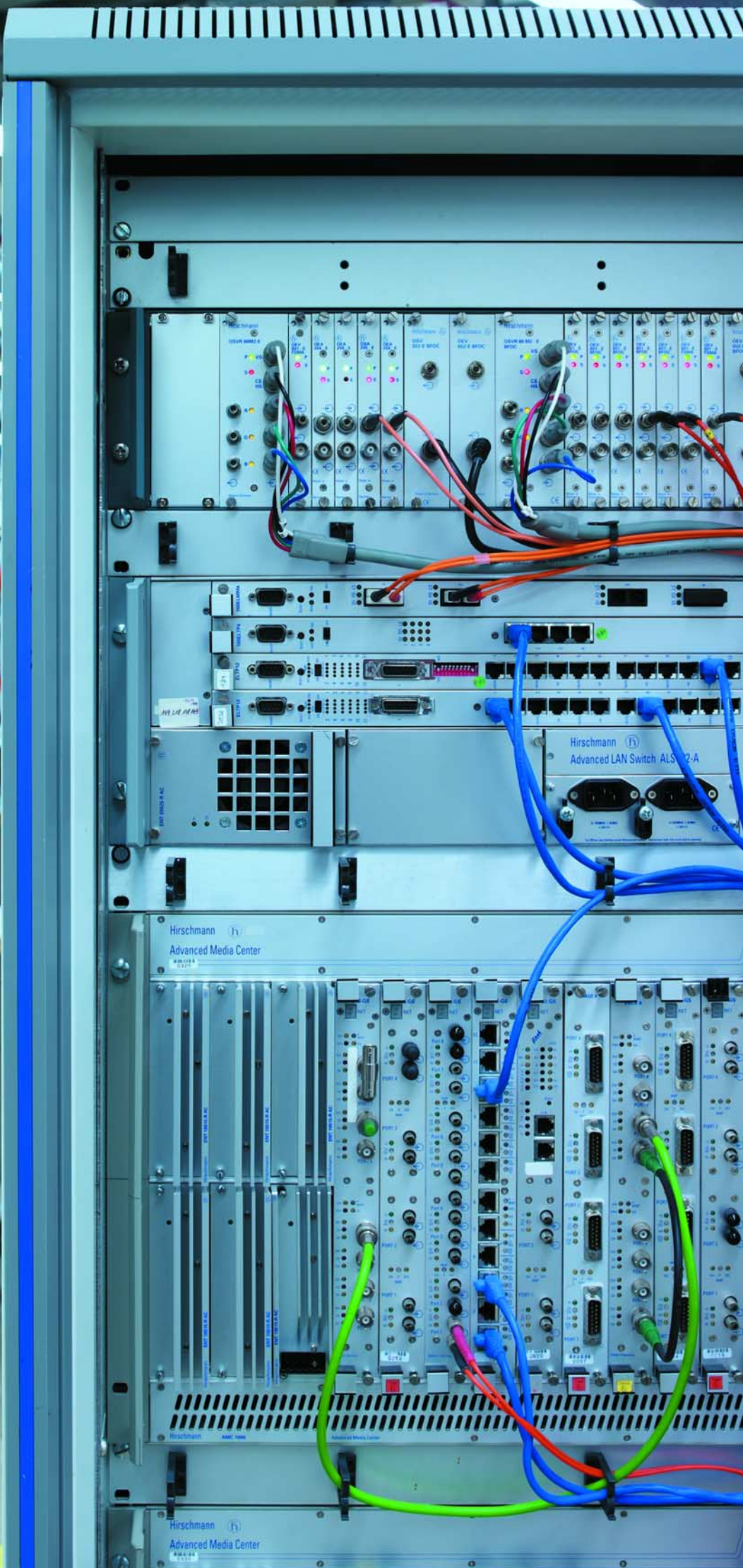
RPS 80 EEC



PSW 5-24



OZDV HA



FIBERINTERFACES

Accessories > **DIN Rail Power Supplies**

Type	RPS 30	RPS 80 EEC
Order No.	943 662-003	943 662-080
		
	24 V DC DIN rail power supply unit	24 V DC DIN rail power supply unit
More Interfaces		
Voltage input	1 terminal block, 3-pin	1 Bi-stable, quick-connect spring clamp terminals, 3-pin
Voltage output	1 terminal block, 5-pin	1 Bi-stable, quick-connect spring clamp terminals, 4-pin
Power requirements		
Operating voltage	230 V	230 V
Input data		
230 V	100 to 240 V AC; 47 to 63 Hz or 85 to 375 V DC	100-240 V AC (+/-15%); 50-60Hz or 110 to 300 V DC (-20/+25%)
Current consumption		
230 V	max. 0,35 A at 296 V AC	max. 1.8-1.0 A at 100-240 V AC max. 0.85 - 0.3 A at 110 - 300 V DC < 13 A at 230 V AC
Activation current	< 36 A at 240 V AC and cold start	
Output data		
Output voltage	24 V DC (-0,5%, +0,5%)	24 - 28 V DC (typ. 24.1 V) external adjustable
Output current		
230 V	1,3 A at 100 - 240 V AC	3,4-3,0 A continuous min 5,0-4,5 A for typ. 4 sec
Service		
Diagnostics	LED (power, DC ON)	LED (DC OK, Overload)
Redundancy		
Redundancy functions	Power supply units can be connected in parallel	Power supply units can be connected in parallel
Ambient conditions		
Operating temperature	-10 °C to +70 °C (from 60 °C derating)	-25 °C to +70 °C (ab 60 °C Derating)
Storage/transport temperature	-25 °C to +85 °C	-40 °C to +85 °C
Relative humidity (non-condensing)	max. 95% without condensation	5 to 95 %
MTBF	74.2 years; Siemensnorm SN 29500 : 40 °C	-
Mechanical construction		
Dimensions (W x H x D)	45 mm x 75 mm x 98 mm	32 mm x 124 mm x 102 mm
Mounting	DIN Rail 35 mm	DIN Rail 35 mm
Weight	230 g	440 g
Protection class	IP 20	IP 20
EMC interference immunity		
EN 50082-1	EN 61000-6-2 (includes EN 55024)	EN 61000-6-1
EN 50082-2	EN 61000-6-2 (includes EN 55024)	EN 61000-6-2 (includes EN 55024)
EMC emitted immunity		
EN 50081-1	EN 50081-1	EN 61000-3-2, 61000-3-3, 61000-6-3, 61000-6-4
EN 50081-2	EN 50081-2	-
Approvals		
Safety of industrial control equipment	cUL 508 (E 198865)	cUL 508 (E 198865)
Safety of information technology equipment	cUL 60950 (E 137006)	cUL 60950 (E 137006)
Hazardous locations	UL 1604 Class 1 Div. 2 (E246877)	UL 1604 Class 1 Div. 2 (E246877)
Scope of delivery and accessories		
Scope of delivery	Rail power supply, Description and operating manual	Rail power supply, Description and operating manual

RPS 120 EEC

943 662-120



24 V DC DIN rail power supply unit

1 Bi-stable, quick-connect spring clamp terminals, 3-pin

1 Bi-stable, quick-connect spring clamp terminals, 6-pin

230 V

100-240 V AC (-15/+10%); 50-60Hz or
110 to 300 V DC (+/-20%)

max. 1,4-0,65 A at 100-240 V AC
max. 1,2 - 0,45 A bei 120 - 300 V DC
< 15 A at 100 and 230 V AC

24-28 V DC (typ. 24,1 V); externally adjustable

min. 5 - 4,5 A continuous
7,5 - 6,7 A for typ. 4 sec

LED (DC OK, Overload)

Power supply units can be connected in parallel

-25 °C to +70 °C (ab 60 °C Derating)
-40 °C to +85 °C
5 to 95 %
-

40 mm x 124 mm x 117 mm
DIN Rail 35 mm
620 g
IP 20

EN 61000-6-1
EN 61000-6-2 (includes EN 55024)


EN 61000-3-2, 61000-3-3, 61000-6-3,
61000-6-4
-

cUL 508 (E 198865)
cUL 60950 (E 137006)
UL 1604 Class 1 Div. 2 (E246877)

Rail power supply,
Description and operating manual

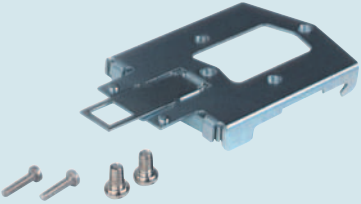
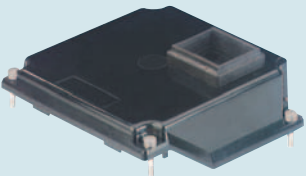
FIBERINTERFACES

Accessories > **Plug-in Power Supplies**

Type	PSW 5-24
Order No.	943 008-001  plug-in power supply
Electrical interfaces Input voltage Current consumption Power consumption Output voltage Output current Ripple voltage	90 to 260 VAC; 47 to 60 Hz 400 mA - +5 V max. 2.4 A max. 75 mVpp
More Interfaces Voltage output	extra-low voltage plug, design M8 acc. IEC 947-5-2
Ambient conditions Operating temperature Storage/transport temperature Relative humidity (non-condensing)	0 °C to +40 °C -40 °C to +70 °C 5% to 95%
Mechanical construction Weight	200 g
EMC interference immunity EN 61000-6-2 Immunity for industrial environments	EN 61000-6-2
EMC emitted immunity EN 55022	EN 55022 limit class B
Scope of delivery and accessories Scope of delivery	device

FIBERINTERFACES

Accessories > **Mounting accessories**

Type	OZDV HA	OZD SFK ATEX 1
Order No.	<p data-bbox="539 241 647 264">933 920-001</p>  <p data-bbox="539 483 919 568">mechanical adapter for the plug-on modules OZDV 2451 P, OZDV 2451 G, OZDV 2471 P, OZDV 2471 G, OZDV 2471 G- 1300</p>	<p data-bbox="986 241 1094 264">943 884-001</p>  <p data-bbox="986 483 1299 506">Plastics cap with inspection window.</p>
Scope of delivery and accessories	1 device, 1 operating instructions	1 Plastics cap
Scope of delivery		

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OSAH 200	943 043-001	36
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OVKD 01 schwarz/black	936 205-001	38
OVKD 01-B (LED 013)	936 215-009	39
OVKD 01-B (SFH 203 P)	936 215-037	39
OVKK 01 grau/grey	934 101-106	39
OVKK 01 schwarz/black	934 101-100	39
OVKS 2,2 grau/grey	936 200-002	38
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OZD 485 G12 PRO	943 894-321	26
OZD 485 G12-1300 PRO	943 895-321	26
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OZD FIP G3 T	933 847-521	24
OZD Genius G12	933 989-021	23
OZD Genius G12-1300	934 233-021	23
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OZD Modbus Plus G12-1300	943 821-021	25
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OZD Profi 12M G11-1300	943 729-221	14
OZD Profi 12M G11-1300 PRO	943 906-221	18
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OZD Profi 12M G12 EEC	943 730-321	13
OZD Profi 12M G12 EEC PRO	943 907-321	17
OZD Profi 12M G12 PRO	943 905-321	17
OZD Profi 12M G12-1300	943 729-321	14
OZD Profi 12M G12-1300 EEC	943 256-321	15
OZD Profi 12M G12-1300 EEC PRO	943 908-321	19
OZD Profi 12M G12-1300 PRO	943 906-321	18
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