## True plug and play:

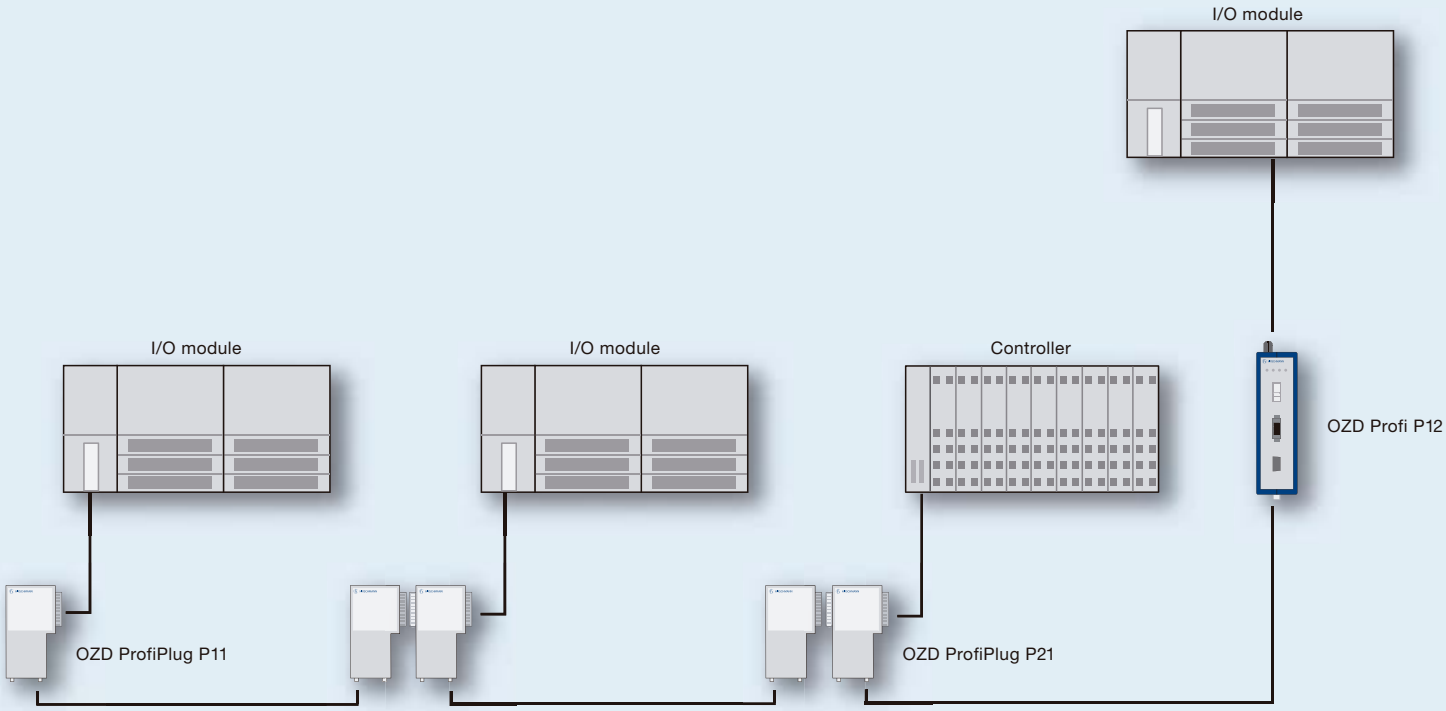
# The new Hirschmann ProfiPlug.

- Compact fiber optic repeater for plastic or HCS fiber
- Good RFI/EMI immunity for reliable Profibus data transmission
- Plug it right into the controller – it doesn't get any easier than this
- Bus powered, designed to prevent accidental misuse

HIRSCHMANN

A Belden Company

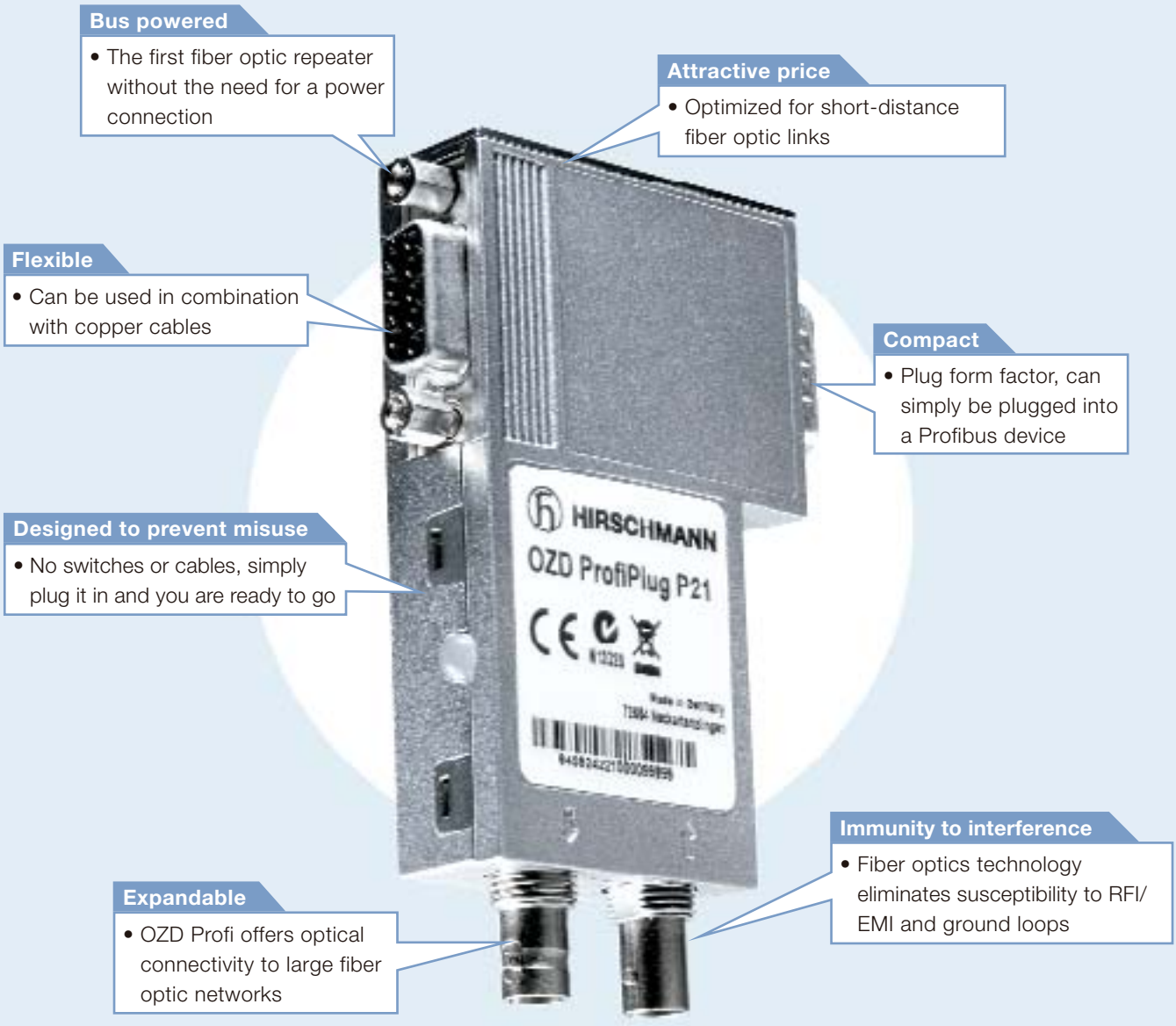
# Plug and Play – right at the controller: The new fiber optic repeaters.




## Applications

Fiber optic technology is the state-of-the-art solution for large systems. Fiber optics guarantee dependable data transmission and users do not want to sacrifice this advantage when they expand their systems, transmit data over short distances or operate small networks. User-friendly fiber optic links are ideal for petrochemical applications, traffic surveillance in tunnels and production lines in factory automation projects. The new OZD ProfiPlug P11 and OZD ProfiPlug P21 are the ideal choice when economical and simple to install fiber optic repeaters are required to give you reliable performance – even in the presence of extreme RFI/EMI interference.

# The first fiber optic repeater that looks like a plug – and works like one, too.




## Requirements and solutions

At a time when companies have to minimize costs and maximize performance, reliable fiber optic technology provides cost-effective solutions which can be installed simply and quickly right at the controller – without any cabling. Hirschmann's new compact Profibus repeaters deliver reliable fiber optic transmission over short distances up to 100 m. The clever plug & play devices, which are an enhancement to the familiar OZD Profi family, are designed for short-distance data transmission. They are plugged directly into a Profibus device just like an electrical cable and they do not even require a power supply. This efficient solution gives users all of the benefits of fiber optic technology.

## Profibus Fiberoptic Repeater

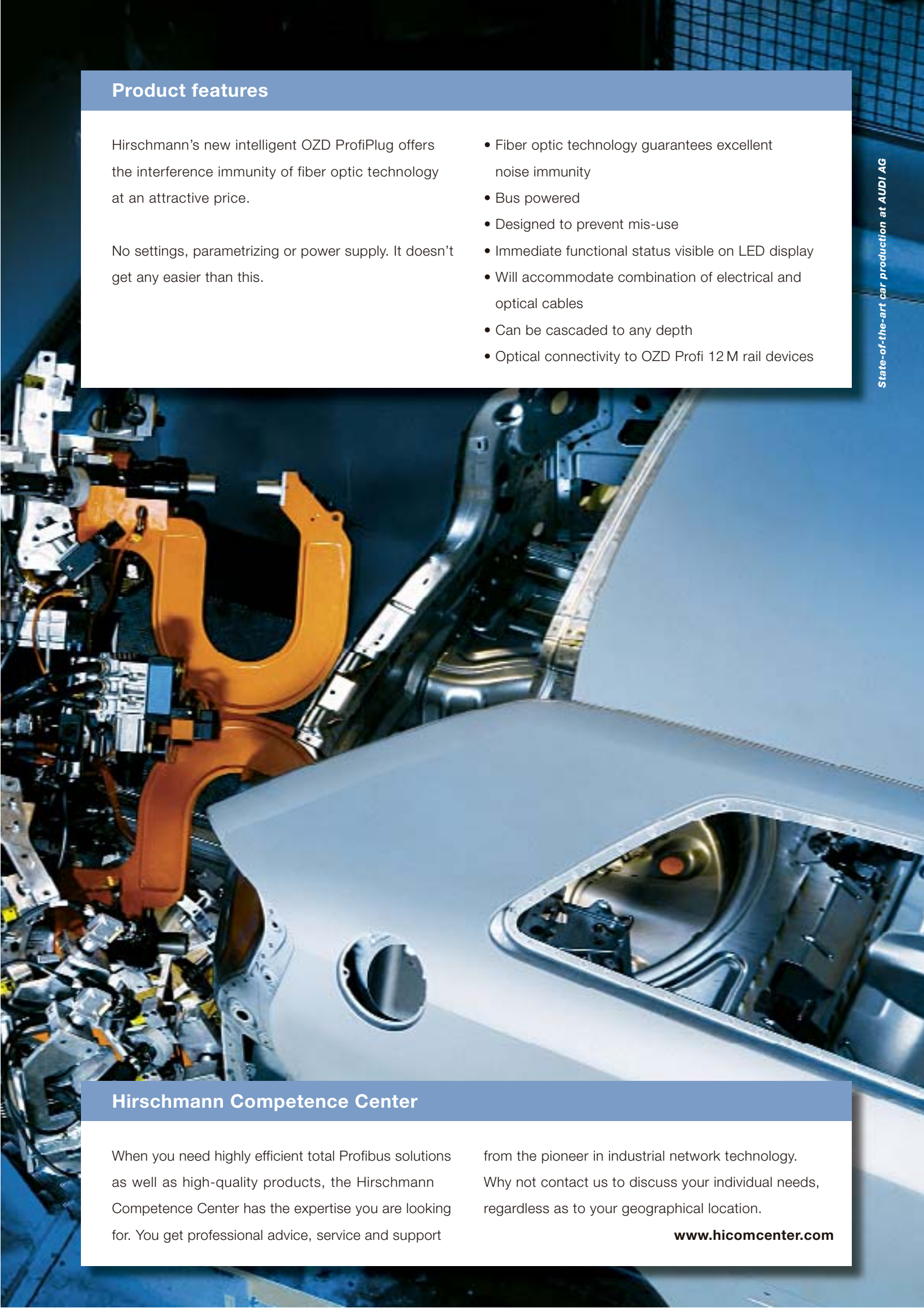
| Product name | OZD ProfiPlug P11 | OZD ProfiPlug P21 |
|---|---|---|
| **Product description** | | |
| Description | interface converter electrical/optical for profibus field bus networks; repeater function; for plastic and HCS optical fibers | interface converter electrical/optical for profibus field bus networks; repeater function; for plastic and HCS optical fibers<br>additional D-Sub connector |
| Port type and quantity | 1 x optical: 2 sockets BFOC 2.5 (STR)<br>1 x electrical: Sub-D 9-pin, male, pin assignment according to EN 50170 part 1 | 1 x optical: 2 sockets BFOC 2.5 (STR)<br>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 |
| Type | OZD ProfiPlug P11 | OZD ProfiPlug P21 |
| Order No. | 943 924-221 | 943 924-321 |
| **Electrical interface** | | |
| Signal type | profibus (DP-V0, DP-V1, DP-V2 and FMS) | profibus (DP-V0, DP-V1, DP-V2 and FMS) |
| Bit rate | 9.6; 19.2; 45.45; 93.75; 187.5; 500 kbit/s; 1.5 MBit/s (automatic setting) | 9.6; 19.2; 45.45; 93.75; 187.5; 500 kbit/s; 1.5 MBit/s (automatic setting) |
| Signal delay time (optional input/output) | < 1,3 µs | < 1,3 µs |
| 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 | 650 nm | 650 nm |
| Launchable optical power in multimode fiber (MM) HCS 200/230 | – 23 dBm | – 23 dBm |
| Launchable optical power in multimode fiber (MM) POF 980/1000 | – 10 dBm | – 10 dBm |
| Optical input power | min. – 27 dBm, max. – 2 dBm | min. – 27 dBm, max. – 2 dBm |
| Cascadibility | not limited | not limited |
| **Network size – length of cable** | | |
| Multimode fiber HCS (MM) 200/230 µm | 100 m propagation time limited<br>4 dB link budget<br>A = 8 dB/km, 3 dB reserve | 100 m propagation time limited<br>4 dB link budget<br>A = 8 dB/km, 3 dB reserve |
| Multimode fiber POF (MM) 980/1000 µm | 75 m<br>17 dB link budget<br>A = 0.2 dB/m, 2 dB reserve | 75 m<br>17 dB link budget<br>A = 0.2 dB/m, 2 dB reserve |
| **Power requirements** | | |
| Operating voltage | 5 VDC +/– 10 % out of pin 6 of the profibus unit's Sub-D connector | 5 VDC +/– 10 % out of pin 6 of the profibus unit's Sub-D connector |
| Galvanic isolation | no | no |
| Current consumption | max. 11 mA | max. 11 mA |
| Power consumption | 55 mW | 55 mW |
| **Displays** | | |
| LED green/yellow | operating voltage/input data | operating voltage/input data |
| **Ambient conditions** | | |
| Operating temperature | 0° C up to + 55° C | 0° C up to + 55° C |
| Storage/transport temperature | – 40° C up to + 70° C | – 40° C up to + 70° C |
| Relative humidity | 10 % up to 95 % (non-condensing) | 10 % up to 95 % (non-condensing) |
| **Mechanical construction** | | |
| Dimensions (W x H x D) | 16 mm x 90 mm x 52 mm | 16 mm x 90 mm x 57 mm |
| Mounting | plugging onto the profibus device | plugging onto the profibus device |
| Weight | 50 g | 50 g |
| Protection class | IP 40 | IP 40 |
| Housing material | plastics | plastics |
| **EMC interference immunity** | | |
| EN 61000-4-2 electrostatic discharge (ESD) | contact discharge: +/– 4 kV, air discharge: +/– 8 kV | contact discharge: +/– 4 kV, air discharge: +/– 8 kV |
| EN 61000-4-3 electromagnetic field | 10 V/m (80 – 2700 MHz) | 10 V/m (80 – 2700 MHz) |
| EN 61000-4-4 fast transients (burst) | power line: 2 kV, data line: 1 kV | power line: 2 kV, data line: 1 kV |
| EN 61000-4-5 surge voltage | data line: 1 kV | data line: 1 kV |
| EN 61000-4-6 conducted immunity | 3 V (150 kHz – 80 MHz) | 3 V (150 kHz – 80 MHz) |
| **EMC emitted immunity** | | |
| EN 55022 limit class A | FCC CFR 47 part 15, Class A | FCC CFR 47 part 15, Class A |
| **Approvals** | | |
| Issued 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 |

## Product features

Hirschmann's new intelligent OZD ProfiPlug offers the interference immunity of fiber optic technology at an attractive price.

No settings, parametrizing or power supply. It doesn't get any easier than this.

- Fiber optic technology guarantees excellent noise immunity
- Bus powered
- Designed to prevent mis-use
- Immediate functional status visible on LED display
- Will accommodate combination of electrical and optical cables
- Can be cascaded to any depth
- Optical connectivity to OZD Profi 12 M rail devices



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## Hirschmann Competence Center

When you need highly efficient total Profibus solutions as well as high-quality products, the Hirschmann Competence Center has the expertise you are looking for. You get professional advice, service and support from the pioneer in industrial network technology. Why not contact us to discuss your individual needs, regardless as to your geographical location.

**www.hicomcenter.com**

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