# PSM-LWL-RUGGED-FLEX-980/1000

## Polymer fiber cable, duplex 980/1000 μm, heavy, highly flexible version for drag chain applications

# Data sheet 100332 en 03

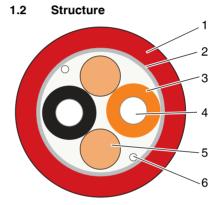
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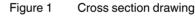
## 1 Description

The **PSM-LWL-RUGGED-FLEX-...** fiber optic cable is a highly flexible round cable for use in drag cables or drag chains.

#### 1.1 Properties

- Highly flexible round cable for use in drag cables or drag chains
- Designed for an alternating bending frequency of up to 5,000,000 cycles
- Polyurethane (PUR) outer sheath
- 2.2 mm single wires made from extremely hard-wearing polyamide (PA)
- Halogen-free, ozone and UV resistant





- 1 PUR outer sheath
- 2 Fleece wrapping
- 3 PA sheath
- 4 Fibers
- 5 Strain relief
- 6 Tearing wire

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Make sure you always use the latest documentation. It can be downloaded at <u>www.phoenixcontact.net/catalog</u>.



This data sheet is valid for all products listed on the following page:



# 2 Ordering data

#### Cables

| Description   | Туре                             | Order No. | Pcs. / Pkt. |
|---|----------------------------------|-----------|-------------|
| Polymer fiber cable, duplex 980/1000 $\mu\text{m},$ heavy, highly flexible version for drag chain applications, by the meter without plug           | PSM-LWL-RUGGED-FLEX-980/<br>1000 | 2744335   | 1           |
| <b>Polymer fiber cable</b> , duplex 980/1000 µm, heavy, highly flexible version for drag chain applications, assembled with plugs (IP20 heads only) | FOC-RUGGED-FLEX-1013/IP20/       | 2901549   | 1           |
| Polymer fiber cable, duplex 980/1000 $\mu m$ , heavy, highly flexible version for drag chain applications, assembled with plugs                     | FOC-RUGGED-FLEX-1013/            | 1402187   | 1           |

#### Accessories

| Description  | Туре                           | Order No. | Pcs. / Pkt. |
|--|--------------------------------|-----------|-------------|
| Fiber optic plug-in connector, SCRJ plug set for polymer fibers, consisting of two duplex quick mounting plugs with bend protection  | PSM-SET-SCRJ-DUP/2-POF         | 2708656   | 1           |
| Fiber optic plug-in connector, F-SMA plug set, for polymer fibers, consisting of four quick mounting plugs with bend protection  | PSM-SET-FSMA/4-KT              | 2799720   | 1           |
| <b>Polymer fiber assembly kit</b> , consisting of: stripping blade, stripping pliers, polishing wheels for F-SMA and SCRJ quick mounting plugs, polishing pad and emery paper  | PSM-POF-KONFTOOL               | 2744131   | 1           |
| Polymer fiber polishing set, for F-SMA quick mounting plugs  | PSM-SET-FSMA-POLISH            | 2799348   | 1           |
| Refilling set, for VS-SCRJ-POF-POLISH, consisting of two polishing discs and a polisher  | VS-SCRJ-POF-POLISH             | 1656673   | 1           |
| Stripping tool, for removing cables (especially fiber optic cables) of Ø 4 mm $\ldots$ 16 mm   | WIREFOX-D 16                   | 1212173   | 1           |
| Fiber optic measuring case, consisting of an optical power meter, F-SMA and B-FOC adapters, reference fibers, and operating instructions   | PSM-FO-POWERMETER              | 2799539   | 1           |
| Fiber optic measuring case supplementary set, for devices with SCRJ in-<br>terface, consisting of one-meter polymer reference fiber, (SC Simplex to F-<br>SMA plug), one-meter HCS GI reference fiber (SC Simplex to B-FOC plug),<br>and SCRJ coupling | PSM-FO-POWERMETER SCRJ-<br>SET | 2901560   | 1           |

## 3 Technical data

| General data             |                                  |
|--------------------------|----------------------------------|
| Cable type               | Polymer fiber, 980/1000 μm       |
| Cable abbreviation       | J-V11Y 4Y2P 980/1000 180A 10     |
| Cable length             | Free input (0.4 100.0 m)         |
| Weight                   | 54 kg/km                         |
| Temperature range        |                                  |
| Installation             | -5°C +50°C                       |
| Operation                | -20°C +70°C                      |
| Storage                  | -40°C +80°C                      |
| Altitude                 | 5000 m                           |
| Fibers                   |                                  |
| Туре                     | 980/1000 μm                      |
| Material                 | РММА                             |
| Attenuation              |                                  |
| At 650 nm                | $\leq$ 180 dB/km (monochromatic) |
| With 660 nm              | ≤ 275 dB/km (LED)                |
| Bandwidth length product |                                  |
| At 650 nm                | ≥ 10 MHz x 100 m                 |
| Numerical aperture       | 0.50                             |

| Single wires                         |  |
|--------------------------------------|--|
| Material                             | Polyamide (PA)   |
| Color                                | Black and orange   |
| Wire diameter                        | 2.2 mm ±0.07 mm  |
| Strain relief elements, outer sheath | Non-metallic, aramide yarn   |
| Stranding                            | Two single elements and two strain relief elements wrapped in fleece |
| Outer sheath                         |  |
| Material                             | Polyurethane (PLIR)  |

| Material               | Polyurethane (PUR)  |
|------------------------|---|
| Color                  | Red   |
| Diameter               | 8 mm  |
| Strain relief elements | Non-metallic  |
| Imprint                | PHOENIX CONTACT FIBER OPTIC CABLE<br>J-V11Y 4Y2P 980/1000 180A 10 RUGGEDFLEX<br>and running length specification in m,<br>date of manufacture |

Two tearing wires beneath outer sheath

Tearing wire

#### Mechanical properties according to IEC 60794-1-2

|                            |                         | Cables                       |                                 | Single wi      | res                  |
|----------------------------|-------------------------|------------------------------|---------------------------------|----------------|----------------------|
| Bending radius             | Method E11, test type A | Temporary                    | At least 50 mm                  | Temporary      | At least 30 mm       |
|                            |                         | Permanent                    | At least 50 mm                  | Permanent      | At least 20 mm       |
| Tensile strength           | Method E1               | Temporary                    | Maximum 200 N                   | Temporary      | Maximum 60 N         |
|                            |                         | Permanent                    | Maximum 100 N                   | Permanent      | Maximum 10 N         |
| Lateral strength           | Method E3               | Temporary                    | Maximum 200 N/cm                |                |                      |
|                            |                         | Permanent                    | Maximum 20 N/cm                 |                |                      |
| Impact strength            | Method E4               | At least 2 Nm                | n, 10 impacts                   |                |                      |
| Resistance to abrasion     | Method E2, test type A  | At least 5000 steel point, 7 | cycles 0.45 mm, radius of the N |                |                      |
| Roller change bending test | Method E8               |                              |                                 | At least 50,00 | 00 cycles, r = 20 mm |
| Repeated bending           | Method E7               | 10 x Ø, 5 N, a               | at least 100,000 cycles         |                |                      |
| Drag chain test            | Radius                  | 10 x Ø, at lea               | st 5,000,000 cycles             |                |                      |
| Torsion                    | Method E7               | ±360°, 50 N,                 | 10,000 cycles                   |                |                      |

#### **Material properties**

| · ·                      |  |
|--------------------------|--|
| Resistance to oil        | IRM 902 100°C according to DIN VDE 0473-811-2-1  |
| Paint or varnish coating | Free from substances that would ruin a paint or varnish coating according to central standard P-VW 3.10.757 65 0 of VW, Audi, Seat |
| Halogen-free             | According to IEC 60754-2 A1  |
| Resistance to ozone      | According to DIN VDE 0472-805, test type B   |
| UV resistance            | According to DIN EN ISO 4892-2, method A   |
| Fire load                | 1.68 MJ/m (0.40 kWh/m)   |
| RoHS conformance         | Cable meets EU directive 2002/95/EC  |