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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

1.2 Structure

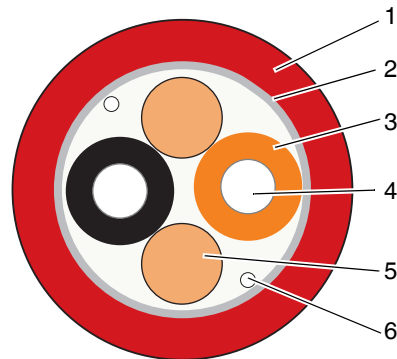


Figure 1 Cross section drawing

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



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

2 Ordering data

Cables

Description	Type	Order No.	Pcs. / Pkt.
Polymer fiber cable , duplex 980/1000 µm, heavy, highly flexible version for drag chain applications, by the meter without plug	PSM-LWL-RUGGED-FLEX-980/1000	2744335	1
Polymer fiber cable , 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 µm, heavy, highly flexible version for drag chain applications, assembled with plugs	FOC-RUGGED-FLEX-1013/	1402187	1

Accessories

Description	Type	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
Polymer fiber assembly kit , 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 ... 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 interface, consisting of one-meter polymer reference fiber, (SC Simplex to F-SMA plug), one-meter HCS GI reference fiber (SC Simplex to B-FOC plug), and SCRJ coupling	PSM-FO-POWERMETER SCRJ-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	
Type	980/1000 µm
Material	PMMA
Attenuation	
At 650 nm	≤ 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 (PUR)
Color	Red
Diameter	8 mm
Strain relief elements	Non-metallic
Imprint	PHOENIX CONTACT FIBER OPTIC CABLE J-V11Y 4Y2P 980/1000 180A 10 RUGGEDFLEX and running length specification in m, date of manufacture
Tearing wire	Two tearing wires beneath outer sheath

Mechanical properties according to IEC 60794-1-2

		Cables	Single wires
Bending radius	Method E11, test type A	Temporary At least 50 mm Permanent At least 50 mm	Temporary At least 30 mm Permanent At least 20 mm
Tensile strength	Method E1	Temporary Maximum 200 N Permanent Maximum 100 N	Temporary Maximum 60 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, 10 impacts	
Resistance to abrasion	Method E2, test type A	At least 5000 cycles 0.45 mm, radius of the steel point, 7 N	
Roller change bending test	Method E8		At least 50,000 cycles, r = 20 mm
Repeated bending	Method E7	10 x Ø, 5 N, at least 100,000 cycles	
Drag chain test	Radius	10 x Ø, at least 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