Plastic optical fiber (POF)-cable 980/1000µm
simplex, PE* jacket

Technical Data

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>core diameter</th>
<th>980µm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>cladding diameter</td>
<td>1000+/-60µm</td>
</tr>
<tr>
<td></td>
<td>cable diameter</td>
<td>2,2+/-0,07mm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Outer jacket</th>
<th>Material/colour</th>
<th>PE*, black</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivery</td>
<td>per reel</td>
<td>500m altern. 2100m</td>
</tr>
<tr>
<td>Weight</td>
<td>nominal value</td>
<td>3,8kg/km</td>
</tr>
</tbody>
</table>

Tensile strength acc. DIN VDE 0888
Part 100 Method 501
Operating: operating max. 10N
Temporary during installation: max. 60N

Bending radius
Operating: min. 30mm
Temporary during installation: min. 10mm

Transverse compressive stress strength
Operating: max. 6N/cm
Temporary during installation: max. 40N/cm

Temperatures
Operating: -40°c bis +85°c

Attenuation
At 650nm: max. 160db/km

Numerical aperture
Nominal value: 0,485

Further characteristics:
- step index profile
- simple and quick connectorizing

Field of application:
- laying within buildings

Part-no: 903 IP 001 01 001

* Polyethylene
** Polymethylmethacrylat
Plastic optical fiber (POF)-cable 980/1000µm, simplex, acc. to MOST*-specification, PA** jacket

![Diagram of POF cable layers]

**Technical Data**

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>core diameter</th>
<th>980±/-45µm</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>cladding diameter</td>
<td>1000±/-45µm</td>
</tr>
<tr>
<td></td>
<td>inner jacket diameter</td>
<td>1,51±/-0,04mm</td>
</tr>
<tr>
<td></td>
<td>cable diameter</td>
<td>2,3±/-0,07mm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Material</th>
<th>Core PMMA***</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Flou Polymer</td>
</tr>
<tr>
<td></td>
<td>PA** black (attached on cladding)</td>
</tr>
<tr>
<td></td>
<td>PA** yellow RAL1016 (non flammable)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Delivery</th>
<th>per reel</th>
<th>2,000m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>nominal value</td>
<td>4,4kg/km</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tensile strength acc. DIN VDE 0888 Part 100 method 501</th>
<th>operating</th>
<th>max. 60N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bending radius</td>
<td>operating</td>
<td>min. 25mm</td>
</tr>
<tr>
<td></td>
<td>temporary during installation</td>
<td>min. 10mm</td>
</tr>
<tr>
<td>Transverse compressive stress strength</td>
<td>operating</td>
<td>max. 70N/cm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Temperatures</th>
<th>operating</th>
<th>-40° C bis +85° C at 95% humidity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attenuation</td>
<td>at 650nm (monocromatic)</td>
<td>&lt; 230db/km</td>
</tr>
<tr>
<td>Numerical aperture</td>
<td>nominal value</td>
<td>0,485</td>
</tr>
</tbody>
</table>

Further characteristics:
- robust plastic optical fiber
- simple and quick connectorizing

Field of application:
- applications acc. to MOST* specification
- automotive, industrial area for rugged requirements

Part-no: **903 IP 001 01 008**

* Media Oriented Systems Transport
** Polyamid
*** Polymethacrylat
Protective cap

FO cable, POF**duplex
art.-no.: 903 IP 001 02 001

FSMA connector with
bend protection boot
art.-no: 902 SS 001 SM 021

Lengths tolerances:

<table>
<thead>
<tr>
<th>Length (m)</th>
<th>Tolerance (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 1,0</td>
<td>±10</td>
</tr>
<tr>
<td>1,0 to 2,0</td>
<td>±15</td>
</tr>
<tr>
<td>2,0 to 5,0</td>
<td>±50</td>
</tr>
<tr>
<td>5,0 to 10,0</td>
<td>±100</td>
</tr>
<tr>
<td>10,0 to 20,0</td>
<td>±200</td>
</tr>
<tr>
<td>&gt; 20,0</td>
<td>±500</td>
</tr>
</tbody>
</table>

Determination of art.-no.:

To determine the individual art.-no. for different cable lengths, complete the last 5 digits (------) of the below mentioned drawing-no. by adding the selected cable length in cm as shown in the following examples:

e.g. for cable length 1,5m(150cm) = Art.-Nr.: 922 MM 002 00150

for cable length 12,5m(1250cm) = Art.-Nr.: 922 MM 002 01250

Connector:

Material: Nickel silver
Hole for fiber: Ø1,05mm

Cable:

Fiber: 0,98/1,0mm PMMA
Jacket: 2,2mm PE, black

Numerical aperture: 0.47
Max. tensile load: 10N
Min. bending radius: 30mm
Fiber attenuation: <160dB/km at 660nm
Temperatures: -40°C to +85°C

Connectorizing:

Insertion loss: <2,0dB per connector
Retaining force: >50N

** Plastic Optical Fiber
Connector:
- Material: Nickel silver
- Hole for fiber: Ø1,05mm

Cable:
- Fiber: 0,98/1,0mm PMMA
- Jacket: 2,2mm PE, black
- Numerical aperture: 0,47
- Max. tensile load: 10N
- Min. bending radius: 30mm
- Fiber attenuation: <160dB/km at 660nm
- Temperatures: -40°C to +85°C

Connectorizing:
- Insertion loss: <2,0dB per connector
- Retaining force: >50N

** Plastic Optical Fiber

Lengths tolerances:
- 0 to 1,0m: L±10mm
- 1,0 to 2,0m: L±15mm
- 2,0 to 5,0m: L±50mm
- 5,0 to 10,0m: L±100mm
- 10,0 to 20,0m: L±200mm
- > 20,0m: L±500mm

** Determination of art.-no.:
To determine the individual art.-no. for different cable lengths, complete the last 5 digits (-----) of the below mentioned drawing-no. by adding the selected cable length in cm as shown in the following examples:
- e.g. for cable length 1,5m (150cm) = Art.-Nr.: 922 TT 002 00150
- for cable length 12,5m (1250cm) = Art.-Nr.: 922 TT 002 01250

<table>
<thead>
<tr>
<th>Verwendungsbereich</th>
<th>Zul. Abweichung</th>
<th>Oberfläche</th>
<th>Maßstab</th>
<th>Gewicht</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 : 2</td>
<td></td>
</tr>
</tbody>
</table>

Bearb. 8.02.03 K. Karle
Ger. PE-Jacket, Dim: 2,2 x 4,4mm, Bend protection boot

Ratioplast-Optoelectronics GmbH
Zeichnungsnummer: 922 TT 002 (-----)
Product Information

Product: Easy to assemble optical fiber connector RP F-05 Series

The RP F-05 connector is designed for fast and easy termination with the 2.2 mm polymer optical fiber within the F 05 standard.

The RP F-05 connector is applicable for manual and machined assembly. It can be supplied as a single component as well as ready assembled components for various polymer optical fibers or in customer specified lengths.

The RP F-05 is compatible to Toslink connectors.

Areas of application
- Optical Networks
- Industrial Electronics
- Power Electronics
- Consumer Electronics (Audio/Video Applications)

RP F-05 Connector

RP F-05 Connector

RP F-05 Patchcable
POF 1 / 2.2 mm, PE - Coating, length 1.00 m

Articel # 902 SS 001 DL 001

Articel # 912 55 002 00100
1 General

The FO-Connector style F-05 is optimized in particular for applications using standard 1mm polymer optical fiber demanding a fast and easy cable assembly with high reliability, very good optical and mechanical characteristics.

2 Application

Due to the good optical features and the easy cable assembly, the RP F-05 connector is useable in several applications:

- optical networking
- Industrial electronics
- Power electronics
- Consumer electronics

3 Ordering Information

<table>
<thead>
<tr>
<th>Model</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>RP F-05</td>
<td>902 SS 001 DL 001</td>
</tr>
</tbody>
</table>

4 Features

- single part full plastic connector
- compatible to `Japan`-standard
- useable with PA, PE, PVC jacketed POF-
cable with 2,2mm outer diameter
- low insertion loss
- easy assembly

5 Technical Drawing

*Polymer-Optical-Fiber*
6 Technical Data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Condition</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insertion loss</td>
<td>PA-jacket</td>
<td>0.6</td>
<td>dB</td>
</tr>
<tr>
<td></td>
<td>PE-jacket</td>
<td>0.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PVC-jacket</td>
<td>0.7</td>
<td></td>
</tr>
<tr>
<td>Retention force of FO-cable</td>
<td>PA-jacket</td>
<td>110</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>PE-jacket</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PVC-jacket</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td>Insertion force into receptacle</td>
<td>TOTX /-RX module</td>
<td>14</td>
<td>N</td>
</tr>
<tr>
<td>Tensile force out of Receptacle</td>
<td>TOTX /-RX module</td>
<td>13</td>
<td>N</td>
</tr>
<tr>
<td>Press force for connector assembly</td>
<td>PA-jacket</td>
<td>195</td>
<td>N</td>
</tr>
<tr>
<td></td>
<td>PE-jacket</td>
<td>175</td>
<td></td>
</tr>
<tr>
<td></td>
<td>PVC-jacket</td>
<td>155</td>
<td></td>
</tr>
<tr>
<td>Temperature range</td>
<td>-</td>
<td>-40 to +85</td>
<td>°C</td>
</tr>
</tbody>
</table>

7 Cable Assembly

Used tools:
- Fiber stripper 910 AB 001 00 001
- Polishing disc 910 PS TOC 00 001
- Polish film, grain size 1000 910 PB 001 00 001

a) Strip off app. 7mm of the outer jacket from the 2,2mm POF-cable with fiber stripper.

b) Insert stripped POF-cable from backside into F-05 connector until mechanical stop reached. 1mm Polymer fiber should protrude the connector top by app. 1 - 2mm.

c) Turn down the latch cover and snap it into the connector body. When the latch cover snaps into the body with a hearable sound, proper connector-to-cable attachment is achieved.

d) Insert the F-05 connector fully into the polishing disc with the fiber protruding from the bottom of the disc. Press the polishing disc down on the polish film and polish the fiber until the connector is flush with the bottom of the disc. Wipe the connector with a clean tissue. Best insertion loss results are achieved by wet grinding.