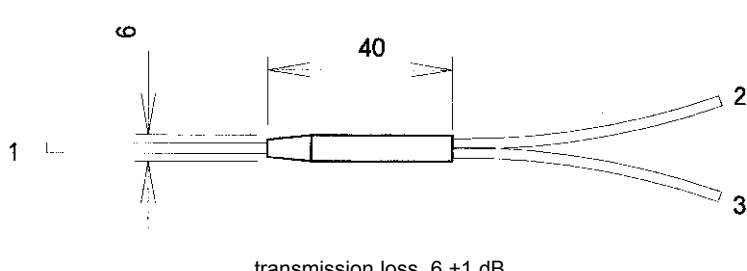


Fibre Optic Coupler



Description

- Field of application: optical, passive networks
- Large temperature range (-30 ... +85°C)
- Robust design
- Small size
- Low attenuation
- Low crosstalk
- Especially suitable for applications in the field of automotive and sensors
- Light weight

Identification	Part-Number	Drawing	Dimensions in mm
1 x 2 coupler	20 30 001 1120	 <p>transmission loss. 6 ± 1 dB</p>	

Technical Details

Fibre: 980/1000 μm POF²⁾
2.2 mm PE-jacket

Total length: 2 m

Face: polished, without connector

Additional versions are available on request in different fibre lengths, in alternative fibres and pre-assembled with connectors.

Description

The components offered by HARTING in the field of fibre optical data transmission are suitable in combination with different types of FOC. With view to the optical transmission characteristics we differentiate between the following types of fibre:

Cables with Multimode-Gradient-Fibres (GI-Fibres)

- Suitable for transmission distances up to approx. 2 km (850 nm), approx. 5 km (1300 nm)
- Typical POF-connector termination: adhesive technique
- Typical wave length: 850/1300 nm

Cable with HCS-Step-Index-Fibres (HCS-Fibres)

- Suitable for transmission distances up to approx. 2 km (850 nm), approx. 400 m (660 nm)
- Typical POF-connector termination: Crimp termination
- Typical wave length: 660/850 nm

Cable with Plastic-Optical-Fibres (POF)

- Suitable for transmission distances up to approx. 100 m
- Typical POF-connector termination: Crimp termination, or HARTING quick assembly technique, no special tool necessary
- Typical wave length: 660 nm

¹⁾ HCS® = Hard Clad Silica, registered trade mark of SpecTran Corporation ²⁾ POF = Polymer Optical Fibre

Fibre Types (typical characteristics)

	Plastic-Optical Fibre	HCS-Optical Fibre	Glass-Optical Fibre	
Fibre type	SI	SI	GI	GI
Core / jacket Ø (µm)	980 / 1000	200 / 230	62.5 / 125	50 / 125
Attenuation coefficient (dB/km)				
at 660 nm	200	10	-	-
at 850 nm	2000	8	≤ 3.5	≤ 3.0
at 1300 nm	-	-	≤ 0.80	≤ 0.70
typ. wave length	660	660 / 850	850 / 1300	850 / 1300
Bandwidth (MHz*km)				
at 660 nm	10	-	-	-
at 850 nm	-	≥ 17	≥ 200	≥ 400

Cable Plastic Materials

Material designation		Polymers (Low Smoke Zero Halogen)	Polyvinylchloride	Polyethylene	Polyurethane	Polyamide
Abbreviation		LSOH	PVC	PE	PUR	PA
Halogen free		yes	no	yes	yes	yes
Fire behaviour		self-extinguishing	self-extinguishing	combustible	self-extinguishing	combustible
Resistance	to UV radiation	fair - good	fair	good	fair - good	good
	to oil	poor	fair	fair	fair - good	good
	with hydrolysis	fair	good	good	poor - fair	fair
Abrasion resistance		good	fair	good	excellent	good
Mechanical resistance		good	fair	good	good	good



for internal and external applications
with polymer fibres (POF²⁾)

Description

- Robust and cost-effective alternative to standard glass fibres
- SI-fibre with 980 µm PMMA-core
- For short distance transmission up to 100 m
- Operating wave length 660 nm
- Easy mechanical crimp technology

Identification	Part-Number	Drawing	Dimensions in mm
FO cable POF²⁾ Standard cable Simplex ø 2.2 mm PE fibre coating Duplex ø 2.2 x 4.4 mm PE fibre coating	20 20 001 1011 20 20 001 1021	<p>Technical Details:</p> <p>PMMA-Fibre: 980 / 1000 µm Temperature range: -40°C ... +85°C Bending radius min.: 30 mm</p>	
Special cable with strain relief suitable for SERCOS applications Simplex ø 6.0 mm PE fibre coating PUR cable coating Simplex ø 3.6 mm PE fibre coating PUR cable coating Duplex round ø 5.5 mm PE fibre coating PUR cable coating	20 21 001 1011 20 21 001 1012 20 21 001 1021	<p>When ordering please specify cable length in metres.</p>	
Hybrid-cable suitable for DESINA® applications PUR cable coating 2 x POF PA fibre coating 4 x 1.5 mm² 300V/300V ø 10.6 mm	20 23 041 1023		

²⁾ POF = Polymer Optical Fibre

for assembly and control of cables

Description

The tools of the HARTING FO tool kit are suitable for the installation of FO connectors in site conditions.

Detailed instructions for assembling the different connector types are included.

Identification

Part-Number

Drawing

Dimensions in mm

Tool kit POF²⁾
without optical
measuring device

20 99 000 3016



Hight : 360 mm
Width : 470 mm
Depth : 170 mm

Tool kit for FO connector assembly to all POF²⁾ cables, without optical measuring instruments.

Tool kit POF²⁾
with optical
measuring device

20 99 000 3013



Hight : 360 mm
Width : 470 mm
Depth : 170 mm

Tool kit for FO connector assembly and control of the FO transmission links for 1 mm polymer-optical fibres (POF²⁾).

When applying these tools, FO connector types F-SMA, FH-ST and R 15 can be assembled without adhesive and grinding.
The measuring instruments are easy to handle and suitable for service and maintenance. The tool kit contains a complete set of tools and test equipment.

FO kit measuring
instruments

20 99 000 3014



Suitable cables are included in the delivery range.

²⁾ POF = Polymer optical fibre

Identification	Part-Number	Drawing	Dimensions in mm
Tool kit GI-Faser	20 99 000 3015		Height : 360 mm Width : 470 mm Depth : 170 mm Tool kit for connector mounting of glass fibres, using adhesive e.g.: GI 50/125 µm.
HARTING Crimping tool for FO connector (glass fibre) SW 4.3 and 3.8 mm	20 99 000 1031		
HARTING Crimping tool for FO connector (plastic fibre) SW 6.95; 4.95 and 3.0 mm	20 99 000 1033		For crimping the strain relief to the connector ... 1031 FO cable for glass fibre ... 1033 POF ²⁾ and SERCOS cable Ø 6.0; 3.6
Crimping tool Han-Brid® for electrical and optical crimp contacts	09 99 000 0362		
Cutting tool 2.2 mm POF ²⁾	20 99 000 1049		Delivery range 10 pieces / set
Fibre stripper 1 mm POF ²⁾	20 99 000 1041 20 99 000 1045 20 99 000 1046	 0.3 mm 1 mm 0.18/0.3 mm	
BUCHANAN Crimping tool for crimping installations of FO connectors to POF ²⁾ 1 mm Ø Positioning device POF-R 15 POF-F-SMA/ST/DIN Ferrule Han® E Plug gauge Ø 1.45 mm Ø 1.8 mm Ø 2.0 mm	20 99 000 1032 20 99 000 0036 20 99 000 0037 20 99 000 0038 20 99 001 1032 20 99 002 1032 20 99 003 1032	 Adjustable crimping tool setting: FOC R 15 Ø 1.45 mm POF ²⁾ DIN 41 626 Ø 1.8 mm POF Ferrule Ø 1.8 mm POF F-SMA, -ST Ø 2.0 mm	This tool is suitable only for FO contacts. Crimping tool for electrical contacts see catalogue "Heavy Duty Connectors Han®". Suitable plug gauges and positioning devices to be ordered separately.

²⁾ POF = Polymer optical fibre

Identification	Part-Number	Drawing	Dimensions in mm
Polishing tool for FO connectors:			
F-SMA	20 99 000 1091		
DIN 41 626	20 99 000 1092		
POF ²⁾ cable Ø 2.2	20 99 000 1093		
F-TNC	20 99 000 1094		
FH-ST	20 99 000 1095		
Ferrule	20 99 000 1096		
Polishing kit	20 80 001 9914	Delivery range: Duplex polishing tool 2 x polish paper	
Epoxy adhesive glass fibre	20 80 001 9902	2 ml EPO-TEK 360 with hardener (10:1), 4g foil pack	
Polishing paper for POF ²⁾ -grain size 1000 for GI 9µ-grain size for GI 1µ-grain size	20 80 001 9911 20 80 001 9912 20 80 001 9913	Delivery range: Each part number ordered comprises 5 pieces.	

²⁾ POF = Polymer optical fibre



Identification	Part-Number	Drawing	Dimensions in mm
<p>Power supply</p> <p>for mounting on 35 mm standard rails acc. to DIN 50 022</p>	20 80 000 3023	<p>Termination: Screw Assembly: Standard rail, 53 mm acc. to DIN 50 022 Input voltage: AC 94-264 V, 50-60 Hz Output voltage: DC 24 V, 1.25 A Contact arrangement: Double clamp DC 24 V / 0 V, max. 2.5 mm² Tripple clamp AC 94-264 V / N / PE max. 2.5 mm²</p>	
<p>Power supply 230 V / 12 V</p>	20 80 000 3012	<p>Input voltage: AC 230 V, 50 Hz Output voltage: DC 8 - 12 V, 300 A</p>	