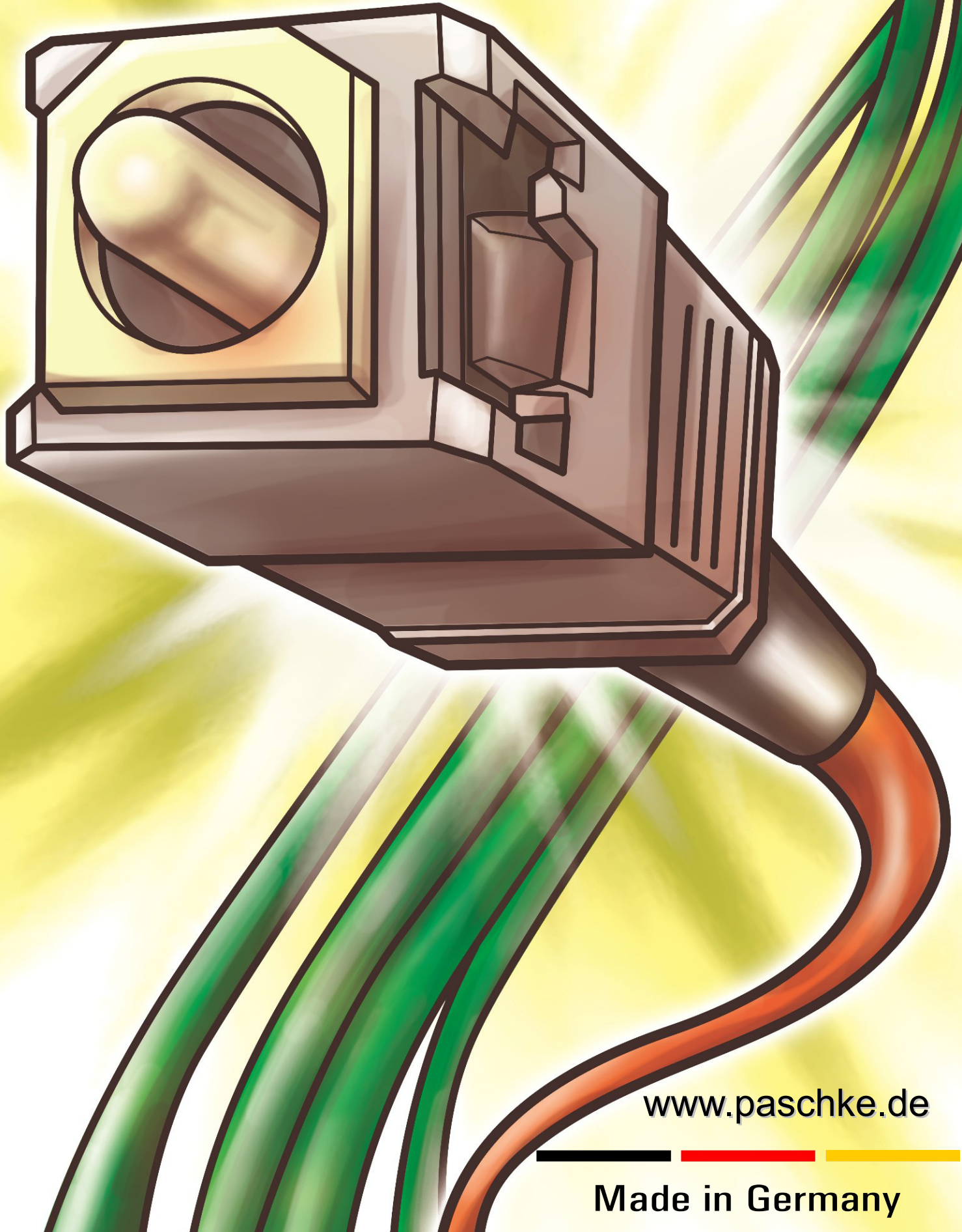


PASCHKE®

Datensysteme



www.paschke.de

Made in Germany

Dear clients, business partners and prospective clients,

We are pleased to present to you our company and our product range with all details in this brochure. Paschke Datensysteme GmbH celebrated its 25th anniversary in 2023.

Since the first market launch of a unique pre-assembled marketable modular fanout-system for fiber optical loose tube cables in 1999, by Paschke Datensysteme GmbH, the HOTPAC® product has made a name for itself on the German and European market, standing for quality, continuity and top performance.

We would like to take this opportunity to thank our business partners who have been with us from the very beginning and have placed their trust in our products. This brochure describes the unique HOTPAC® fanout system in detail, so that no questions remain unanswered. Over the years, the complete product portfolio has been continuously expanded, which we would like to introduce to you on the following pages.

If you have any further questions about our product range, special requests, custom-made products, large or small series, please do not hesitate to contact us. We look forward to support you with our know-how.

We hope you enjoy browsing through our brochure and would be delighted, if our company and our products appeal to you as well.

Your
Kerstin Paschke
Paul-Armand Siegel
Christian Zirngibl

Managing Directors of Paschke Datensysteme GmbH

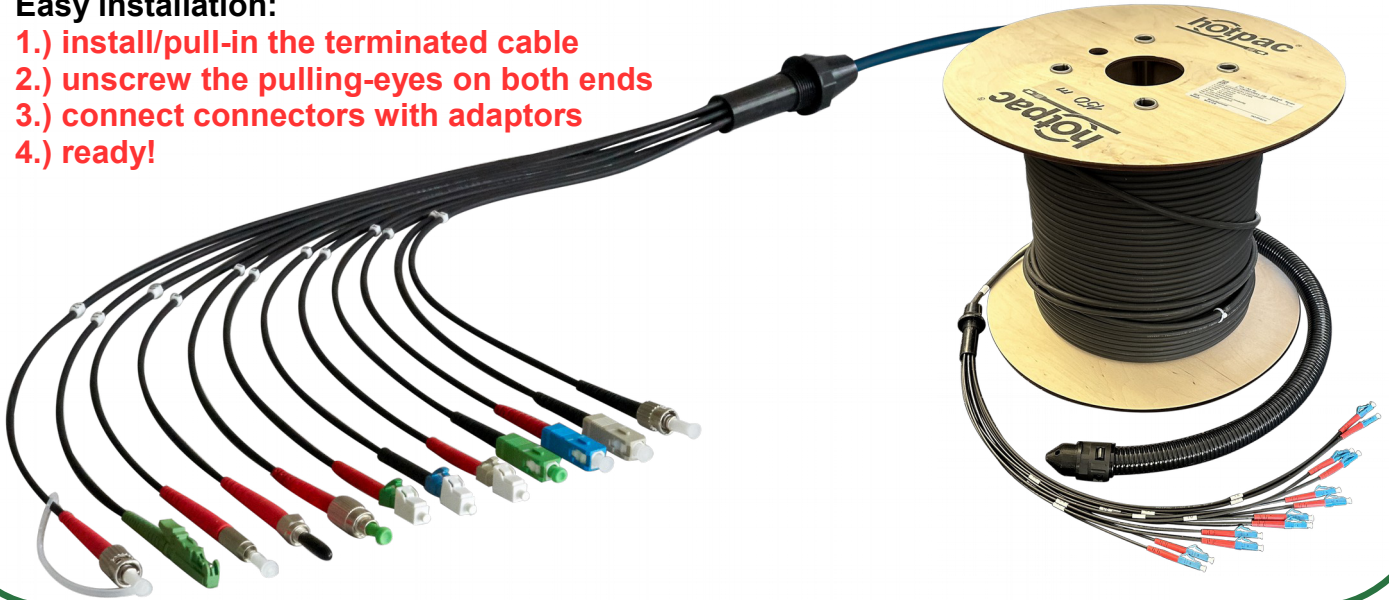
HOTPAC® is a brand of Paschke® Datensysteme GmbH

www.paschke.de

Fiber Optic HOTPAC® Trunk-cables terminated with connectors

Easy installation:

- 1.) install/pull-in the terminated cable
- 2.) unscrew the pulling-eyes on both ends
- 3.) connect connectors with adaptors
- 4.) ready!



Development

The core of the HOTPAC® fanout-system

This unique fanout-system, developed by Paschke Datensysteme GmbH back in 1999, design protected and patented in Austria, guarantees maximum load-bearing capacity for all fiber optic cables, e.g. waterproof up to the connector and tensile strength of up to 1000N on the components. Over the years, the system has been continuously developed and optimized to meet customer and market requirements.

Application

HOTPAC® can be used in optical transmission technology applications for data transmission in general cabling, in television, video and studio technology, in data centers, as well as in the FTTB, FTTC and FTTH sectors. Thanks to the large selection of cables, all areas of indoor and outdoor installation between and within buildings, floors, systems and even workplaces are covered.

Free of fusion splice

HOTPAC® is a fiber optic connection without any type of splicing or field assembly need. The connectors are terminated directly to the optical fibers of the cable in our production. This gives you best attenuation values and tensile forces.

Non-toxic

The HOTPAC® fanout-system as well as the accessories are free of metal and halogens

Properties

Best attenuation values are always achieved thanks to the use of high-quality components and optimized processing of the fiber optic connectors with machine polishing. All cables meet the highest standards in terms of mechanical resilience and operational reliability. Only standard connectors are used for all terminations, so there is no need to install expensive special adaptors. The HOTPAC® fanout system is compatible with all commercially available fiber optic components.

Technical advantage:

- no fusion splice, resulting lowest insertion loss on the cable runs
- terminated from 1 to 96 fibers in your desired cable length
- very high load capacity on all components
- all standard fiber optical connectors available
- all standard cable types matching
- very slim cable diameters
- low bending radius

The standard:

- special synthetic material, with integrated cable gland
- shortest delivery times due to our German production
- cables >30m with high resolution OTDR test protocol
- cables < 30m with IL test report per fiber
- from 100m on wooden cable reel (cardboard material optional)
- as standard strong reusable pulling-eyes on both ends
- fanouts: 1.8/2.8mm reinforced with Kevlar®aramide

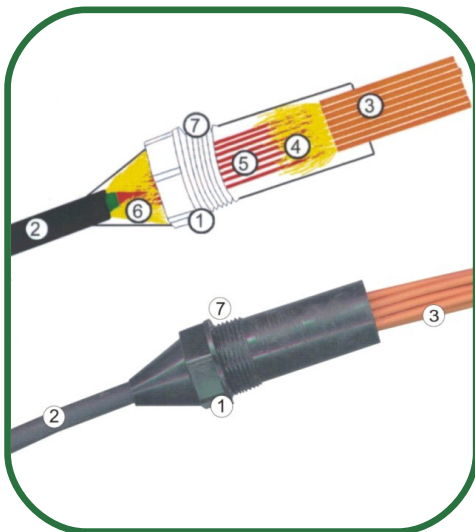
Product

Fiber Optic HOTPAC®
Trunk-cable terminated
with connectors



Details

The following drawing of the HOTPAC® fanout system shows the internal structure. The complicated structure has been simplified. HOTPAC® is a registered trademark. The HOTPAC® fanout element is produced and manufactured in high-tech molds using plastic injection molding machines exclusively in Germany.



Structure

- 1 **The HOTPAC®-element**
is made of special plastic, flexible but still hard, in one piece and connects to form a unit with no.: 2, 3, 4 & 6
- 2 **Fiber optical cable**
matching material: see following pages
- 3 **HOTPAC® fanout tubes for fiber optical connectors**
are the connection between the HOTPAC® fanout element and the fiber optic connectors, with several layers of 1110-Kevlar® for maximum strain relief
- 4 **Kevlar®**
connects completely to the HOTPAC® fanout element, is crimped onto the connector on the other side and additionally glued, if necessary
- 5 **Bare fiber**
The optical fiber with 250µm primary coating is routed directly from the fiber optic cable to the connector in one piece, without any type of fusion splice
- 6 **Kevlar® or e-glass yarns**
of the fiber optic cable connect completely to the HOTPAC® fanout element, strain reliefs of up to 1000N are possible
- 7 **Cable gland (M16 / M20 / M25 / M32)**
the pulling-eyes are attached here. After installation, the cable is firmly screwed onto the patchpanel, DIN rail-box or other housings using a lock nut

Product

Fiber Optic HOTPAC®
Trunk-cable terminated
with connectors



Cable

The following cable types* are compatible with the HOTPAC® fanout system:	
• Loose tube universal I/O cable LSZH	free of metal, free of halogens, flame retardant
1 to 96 fibers	rodent-, longitudinally water-protected, UV-resistant
• Loose tube outdoor cable PE	free of metal, free of halogens
2 to 48 fibers	rodent-, fully water-protected, high-UV-resistant
• Loose tube universal I/O cable LSZH steel	metal armoring, free of halogens, flame retardant
2 to 48 fibers	rodent-, longitudinally water-protected, UV-resistant
• Loose tube outdoor cable PE steel	metal armoring, free of halogens
2 to 48 fibers	rodent-, fully water-protected, high-UV-resistant
• Mini-breakout cable 0.9mm buffered	free of halogens
2 to 48 fibers	flexible, easy installation
• TPU-Mini-breakout cable 0.9mm buffered	TPU , non-abrasive
2 to 24 fibers	highly flexible, crush resistant, oil resistant

*various other cable types matching too, above cable types show just a small selection with the standard types

Fiber &
quality

Fibers with 9/125, 50/125 and 62,5/125µm core diameter are matching:				
9µm:	G652.D	G657.A1	G657.A2	
50µm:	OM2	OM3	OM4	OM5
62,5µm:	OM1		OM1e*	

*special fibers upon request

Connectors
Polishing
Norms (IEC)

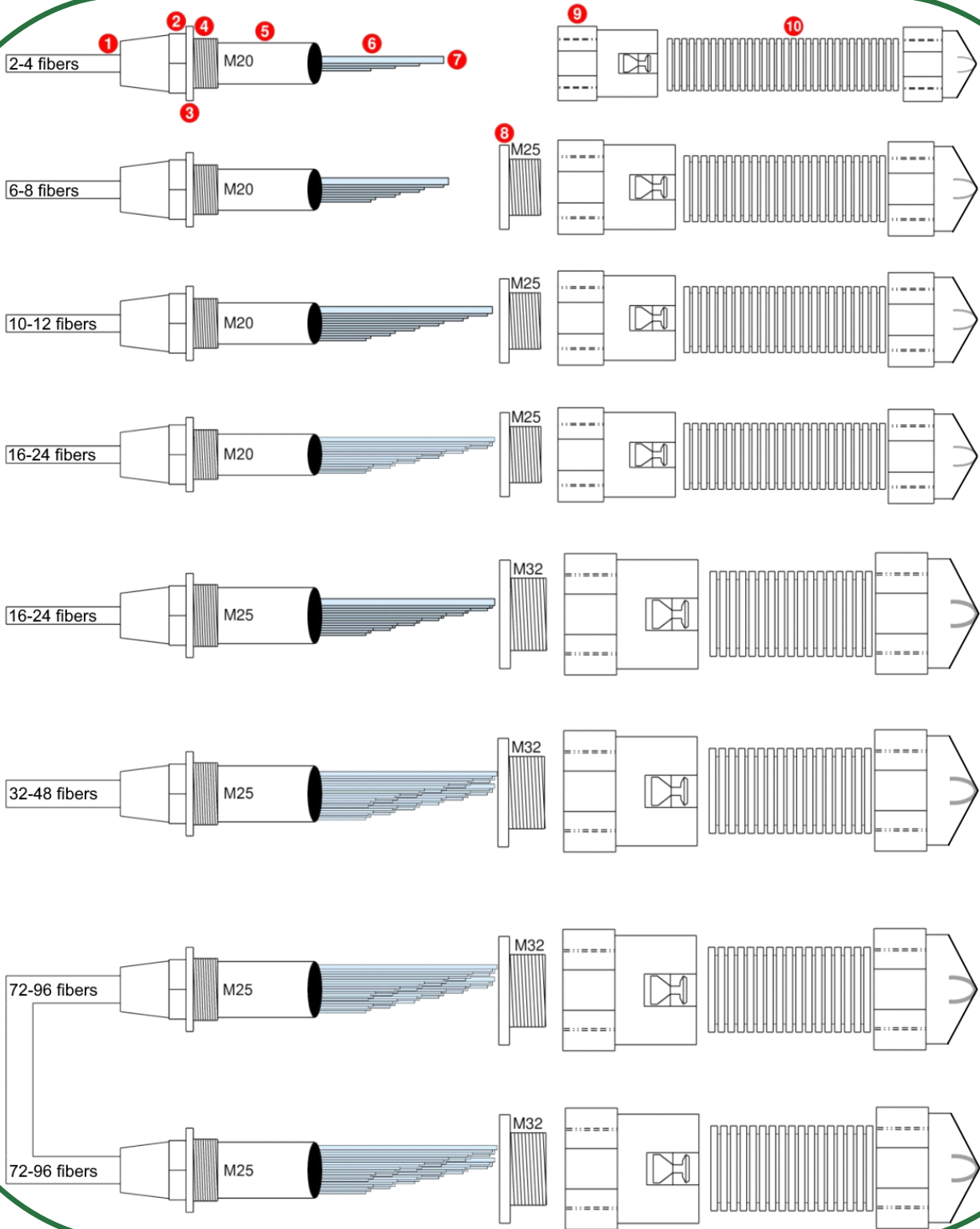
Following standard connectors are available:									
ST	SC	LC	FC	DIN	MTRJ	SMA 905	E-2000®	MU	MPO
PC	PC/APC	PC/APC	PC/APC	PC	-	PC	PC/APC	PC	PC/APC
61754-2	61754-4	61754-20	61754-13	874-6	61754-18	61754-22	61754-15	61754-6	61754-7

Optional finishing and accessories on request:	
• reinforced pulling-eyes • water tight pulling-eyes (IP68) • shortened or angled boots • assembling on mobile cable reels (broadcast) • 3D-Interferometer-tests	• small version HOTPAC® fanout elements • undetachable dust caps • customized fanout lengths • customized labeling • customer requested cable brands

Product **Fiber Optic HOTPAC® Trunk-cable terminated with connectors**



Technical sizes (part 1)



Product

Fiber Optic HOTPAC® Trunk-cable terminated with connectors



Technical sizes (part 2)

STANDARD-fanout		Fiber count						
Details	unit	2	4	6	8	12	16	24
1. cable diameter (may vary)	mm	7	7	7	7	7	7	8
2. wrench size	mm	24	24	24	24	24	24	24
3. fanout counter ring	mm	30	30	30	30	30	34	34
4. fanout thread	metric	M20	M20	M20	M20	M20	M20	M20
5. cylinder length	mm	40	40	40	40	40	40	40
6. fanout tubes diameter	mm	2.8	2.8	2.8	2.8	2.8	1.8	1.8
7.1 fanout tube length* (shortest)	cm	42	42	42	42	42	42	42
7.2 fanout tube length* (longest)	cm	45.5	52.5	49	52.5	59.5	66.5	80.5
8. reduction (diameter)	mm	n/a	n/a	32	32	32	32	32
9. pulling-eye screw (diameter)	mm	29.2	29.2	36.7	36.7	36.7	36.7	36.7
10. flex tube (diameter)	mm	22	22	29	29	29	29	29
Max. tension on HOTPAC® fanout	Newton	400	400	400	400	400	400	400
Max. tension on pulling-eye	Newton	300	300	300	300	300	300	300
Max. tension on cable only	Newton	1500	1500	1500	1500	1500	1500	1500
Max. crush on cable only	N/cm	150	150	150	150	150	150	150
Smallest bending	mm	70	70	70	70	70	70	80

Details	unit	32	36	48	72	96	16	24
1. cable diameter (may vary)	mm	11	11	11	15-18	15-18	8	8
2. wrench size	mm	24	24	24	24	24	24	24
3. fanout counter ring	mm	34	34	34	2x34	2x34	34	34
4. fanout thread	metric	M25	M25	M25	2xM25	2xM25	M25	M25
5. cylinder length	mm	40	40	40	40	40	40	40
6. fanout tubes diameter	mm	1.8	1.8	1.8	1.8	1.8	2.8	2.8
7.1 fanout tube length* (shortest)	cm	42	42	42	42	42	42	42
7.2 fanout tube length* (longest)	cm	94.5	101.5	122.5	122.5	122.5	66.5	80.5
8. reduction (diameter)	mm	40	40	40	2x40	2x40	40	40
9. pulling-eye screw (diameter)	mm	42	42	42	2x42	2x42	42	42
10. flex tube (diameter)	mm	29	29	29	2x29	2x29	29	29
Max. tension on HOTPAC® fanout	Newton	400	400	400	400	400	400	400
Max. tension on pulling-eye	Newton	300	300	300	300	300	300	300
Max. tension on cable only	Newton	4000	4000	4000	4000	4000	1500	1500
Max. crush on cable only	N/cm	300	300	300	300	300	150	150
Smallest bending	mm	175	175	175	220	220	80	80

*fanout tube lengths:

- between the longest and shortest, the connectors are stepped in pairs by approx. 3.5 cm (except for 2-4 fibers: single stepped)
- matching for standard 19" patchpanels

*Note for LC-connectors (> 24 fibers): fanouts stepped in double-pairs
That means 4 connectors have same lengths and then stepwise displaced*

= biggest diameter on the finished product

Cable example: Central loose tube indoor/outdoor LSZH cable

Product

Fiber Optic HOTPAC® Trunk-cable terminated with connectors



Other fanout-systems

Slim fanout

- ideal for narrow wall openings and special housings



Mini fanout

- ideal for narrow wall openings, small bendings and mini-housings



Fanout with higher tensile

- for extra long cables and cables with reinforced tensile strengths



Metal fanout

- for full outdoor- or ex-zones; brass or stainless steel



Long boot fanout

- for extreme installation with corners and edges



In 6 steps all urgent data, which is needed for an offer:

- ①cable type + ②fiber count + ③fiber type
+ ④fiber quality + ⑤connector + ⑥length

⇒ application indoor and outdoor: free of halogens & flame retardant (UV-resistant)
recommended type of cable: *Loose tube universal I/O LSZH cable*

fiber count:	fiber type:	quality:
4 / 8 / 12 / 24 / 48 / 72 / 96 / 144	9/125µm Singlemode	G652.D / G657.Ax
4 / 8 / 12	50/125µm Multimode	OM2
4 / 8 / 12 / 24 / 48 / 72 / 96	50/125µm Multimode	OM3
4 / 8 / 12 / 24 / 48	50/125µm Multimode	OM4
4 / 8 / 12 / 24	50/125µm Multimode	OM5
(other types upon request)		

⇒ application only outdoor/ground installation: PE-sheath (high UV-resistant)
recommended type of cable: *Loose tube outdoor PE cable*

fiber count:	fiber type:	quality:
4 / 8 / 12 / 24 / 48	9/125µm Singlemode	G652.D / G657.Ax
4 / 8 / 12	50/125µm Multimode	OM2
4 / 8 / 12 / 24 / 48	50/125µm Multimode	OM3
4 / 8 / 12 / 24	50/125µm Multimode	OM4
(other types upon request)		

Connector types:	
9/125µm Singlemode	50/125µm Multimode
LC/PC 0°	LC/PC 0°
LC/APC 8°	SC/PC 0°
SC/PC 0°	ST/PC 0°
SC/APC 8°	E-2000® PC 0°
ST/PC 0°	MTRJ
E-2000® PC 0° or APC 8°	MU (Mini-SC)
MPO/MTP® APC 8°	MPO/MTP®
other connector types: SMA,FC,DIN/LSA...	other connector types: SMA,FC,DIN/LSA

Cable lengths: from 2.0 till 2000.0m (in 1m-steps) available

all connectors as standard simplex-version, except MTRJ or MPO	each cable delivered with a test report, >30m tested with OTDR per fiber
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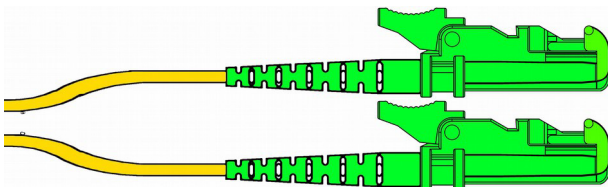
Link lengths + color codes

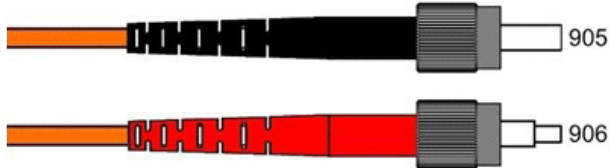
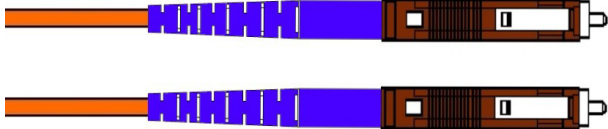


Application	protocol (IEE 802.3)	wavelength	62.5µm	50µm	50µm	50µm	50µm	9µm
			OM1	OM2	OM3	OM4	OM5	G652.D / G657.x
Fast Ethernet	100BASE-FX	1300nm	2000m	2000m	2000m	2000m	2000m	20km (-LX)
1 Gigabit Ethernet	1000BASE-SX	850nm	275m	550m	1000m	1100m	1100m	-
	1000BASE-LX	1300nm	550m	550m	550m	550m	550m	20km (u.w.)
10 Gigabit Ethernet	10GBASE-SR	850nm	-	-	300m	550m	650m	-
	10GBASE-LR	1300nm	-	-	-	-	-	10km
	10GBASE-ER	1550nm	-	-	-	-	-	30km
40 Gigabit Ethernet	40GBASE-SR4	850nm	-	-	100m	150m	300m	-
	40GBASE-LX4	1300nm	300m	300m	300m	550m	550m	10km
100 Gigabit Ethernet	100GBASE-SR10	850nm	-	-	100m	125m	150m	-
	100GBASE SWDM -4	850-940nm	-	-	70m	100m	150m	-
	100GBASE DWDM -LR	1310nm DWDM	-	-	-	-	-	10km
	100GBASE DWDM -ER	1550nm DWDM	-	-	-	-	-	40km
400 / 800 Gigabit Ethernet	upon request							
Fiber Channel & InfiniBand	upon request							

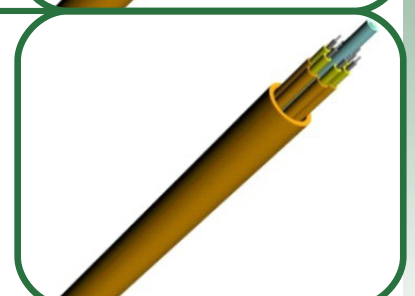
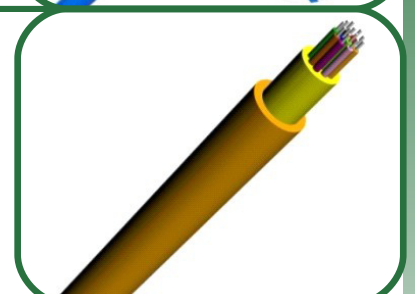
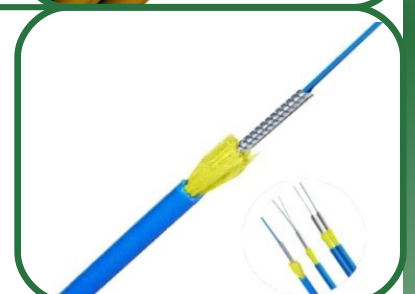
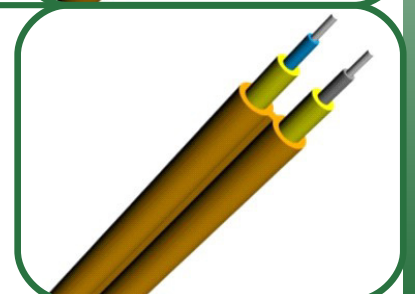
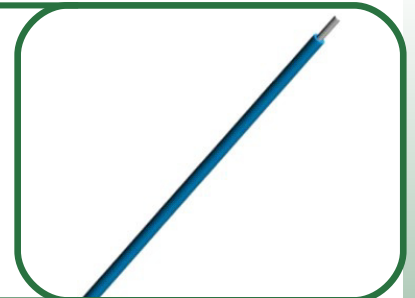
Color codes	62.5µm		50µm		50µm		50µm		50µm		9µm		9µm	
	OM1		OM2		OM3		OM4		OM5		OS2 / G657.x		OS2 / G657.x APC 8°	
Pigtail fiber (1 pc. unit)	BLUE		GREEN		AQUA		erikaviolet		lime green		YELLOW		YELLOW	
Pigtail fiber (12 pcs. unit) (acc. to IEC 60304)	red	green	blue	yellow	white	grey	brown	violet	aqua	black	orange	pink		
Patchcords	ORANGE		ORANGE		AQUA		erikaviolet		lime green		YELLOW		YELLOW	
Adaptors (SCd,LCd, LC-Quad)	BEIGE		BEIGE		AQUA		erikaviolet		lime green		BLUE		GREEN	
Adaptors (ST, FC, DIN, SMA)	metal		metal		metal		metal		metal		metal		-	
Adaptors (E-2000®)	BEIGE		BEIGE		BEIGE		BEIGE		BEIGE		BLUE		GREEN	
Connectors (SC or LC)	BEIGE		BEIGE		BEIGE		BEIGE		BEIGE		BLUE		GREEN	
Connectors (ST, FC, DIN, SMA)	metal		metal		metal		metal		metal		metal		-	
Connectors (E-2000®)	BEIGE		BEIGE		BEIGE		BEIGE		BEIGE		BLUE		GREEN	

HOTPAC® is a brand and product of Paschke Datensysteme GmbH, D-90471 Nürnberg
E-2000® is a brand of Diamond SA, Losone

The most recent connectors as overview		Part 1 of 2
LC-PC 0° / APC 8°/9°  boots: 0.9/2.0/2.8mm	Properties norms: IEC 61754-20 version: SIMPLEX/DUPLEX/UNIBOOT typical values IL*: 0,2dB/0,3dB RL**: MM 25/35dB / SM 45dB / APC 60dB connector matings: 1000x material (body): plastic LSZH material (ferrule): ceramic (1.25mm) application: data center, LAN, WAN, switches (SFP) frequency: most frequent connector characteristics: compact (high density)	
SC-PC 0° / APC 8°/9°  boots: 0.9/2.0/2.8mm	Properties norms: IEC 61754-4 version: SIMPLEX/DUPLEX typical values : IL*: 0,2dB/0,3dB RL**: MM 25/35dB / SM 45dB / APC 60dB connector matings: 1000x material (body): plastic LSZH material (ferrule): ceramic (2.5mm) application: data center, LAN frequency: very frequent characteristics: robust	
ST-PC 0°  boots: 0.9/2.0/2.8mm	Properties norms: IEC 61754-2 version: SIMPLEX typical values : IL*: 0,2dB/0,3dB RL**: MM 25/35dB / SM 45dB connector matings: 1000x material (body): metal material (ferrule): ceramic (2.5mm) application: industry, LAN frequency: frequent characteristics: bayonet nut	
E-2000® PC 0° / APC 8°/9° // LSH  boots: 0.9/2.0/2.8mm	Properties norms: IEC 61754-15 version: SIMPLEX/DUPLEX/Compact typical values : IL*: 0,2dB RL**: MM 25/35dB / SM 45dB / APC 60dB connector matings: 1000x material (body): plastic LSZH material (ferrule): ceramic (2.5mm) application: data center, LAN, WAN frequency: frequent characteristics: integrated laser shutter	
MTRJ (Male or Female)  boots: 0.9/2.0*4.0mm	Properties norms: IEC 61754-18 version: DUPLEX typical values : IL*: 0,4dB/0,5dB RL**: MM 25/35dB / SM 40dB connector matings: 500x material (body): plastic LSZH material (ferrule): plastic LSZH application: data center, LAN, switches frequency: seldom characteristics: compact (only duplex available)	
*IL = Insertion Loss / **RL = Return Loss HOTPAC® is a brand and product of Paschke Datensysteme GmbH, D-90471 Nürnberg E-2000® is a brand of Diamond SA, Losone		

The most recent connectors as overview		Part 2 of 2
MPO/MTP® PC 0° / APC 8° (Male or Female)		Properties norms: IEC 61754-7 / TIA/EIA 604-5 version: 8 / 12 / 24 / 48 / 96 Fasern typical values : IL*: 0,35dB/0,75dB RL**: MM 20dB / SM 45dB / APC 60dB connector matings: 500x material (body): plastic LSZH material (ferrule): plastic LSZH application: data center, LAN, switches (QSFP) frequency: seldom, but growing characteristics: extremely high density
FC-PC 0° / APC 8°/9°		Properties norms: IEC 61754-13 / CECC 86115 version: SIMPLEX typical values : IL*: 0,2dB/0,3dB RL**: MM 25/35dB / SM 45dB / APC 60dB connector matings: 1000x material (body): metal material (ferrule): ceramic (2.5mm) application: satellite-TV, LAN, WAN frequency: seldom characteristics: robust & screwable
DIN-PC 0° (other name: LSA)		Properties norms: IEC 874-6 / DIN 47256 version: SIMPLEX typical values : IL*: 0,2dB/0,3dB RL**: MM 25/35dB / SM 45dB / APC 60dB connector matings: 1000x material (body): metal material (ferrule): ceramic (2.5mm) application: industry, LAN frequency: very seldom characteristics: compact & screwable
SMA / F-SMA (Typ 905 o. 906)		Properties norms: IEC-SC 86B(CO)20 / CECC 86104-801 version: SIMPLEX (Typ 905 oder 906) typical values : IL*: 0,5dB/1,0dB RL**: MM 25/35dB / SM 45dB connector matings: 1000x material (body): metal material (ferrule): ceramic or metal (3.175mm) application: industry, energy sector, LAN frequency: seldom characteristics: robust & screwable
MU PC 0° / APC 8° (other name: Mini-SC)		Properties norms: IEC 61754-6 version: SIMPLEX/DUPLEX typical values : IL*: 0,2dB/0,3dB RL**: MM 25/35dB / SM 45dB / APC 60dB connector matings: 1000x material (body): plastic LSZH material (ferrule): ceramic (1.25mm) application: data center, LAN frequency: very seldom characteristics: very compact connector
HOTPAC® is a brand and product of Paschke Datensysteme GmbH, D-90471 Nürnberg MTP® is a brand and product of US Conec Ltd		

Product	Pigtail fiber with secondary coating
application	Pigtails, fusion splice
material	LSZH, PVC, PU, PE or UL-listed sheath
fibers	9/125 G657.Ax, 50/125 (OM2-OM5), 62,5/125
types	diameter: 0.6 / 0.9mm (secondary coated)
custom	OEM-printing, special colors
options	bend insensitive, high temperature range
Product	Simplex patchcord (round) <i>(option duplex for uniboot)</i>
application	connector termination, fusion splice option
material	LSZH, PVC, PU, PE or UL-listed sheath
fibers	9/125 G657.Ax, 50/125 (OM2-OM5), 62,5/125
types	1.8 & 2.8mm <i>(other sizes upon request)</i>
custom	OEM-printing, special colors
options	bend insensitive, high temperature range
Product	Duplex patchcord (figure 8)
application	connector termination, fusion splice option
material	LSZH, PVC, PU, PE or UL-listed sheath
fibers	9/125 G657.Ax, 50/125 (OM2-OM5), 62,5/125
types	1.8*3.7, 2.8*5.7mm <i>(other sizes upon request)</i>
custom	OEM-printing, special colors
options	bend insensitive, high temperature range
Product	Simplex/Duplex patchcord (steelwire armored)
application	connector termination, fusion splice option
material	LSZH, PVC, PU, PE or UL-listed sheath
fibers	9/125 G657.Ax, 50/125 (OM2-OM5), 62,5/125
types	1.8 & 2.8mm / 1.8*3.7, 2.8*5.7mm <i>(other sizes upon request)</i>
custom	OEM-printing, special colors
options	bend insensitive, high temperature range, treadable
Product	Mini-Breakout cable (4-48 fibers) - 0.9mm buffered
application	connector termination, fusion splice option
material	LSZH, PVC, PU, PE or UL-listed sheath
fibers	9/125 G657.Ax, 50/125 (OM2-OM5), 62,5/125
types	elements diameter: 0.6 / 0.9mm (secondary coated)
custom	OEM-printing, special colors
options	low termination costs, for short connections
Product	Full-Breakout cable (2-48 fibers) - 2/3mm buffered
application	connector termination, fusion splice option
material	LSZH, PVC, PU, PE or UL-listed sheath
fibers	9/125 G657.Ax, 50/125 (OM2-OM5), 62,5/125
types	sub-cables diameter: 2.0 / 3.0mm
custom	OEM-printing, special colors
advantage	low termination costs, for short rough connections



Product	Central loose tube indoor/outdoor cable (non-metallic)
application	HOTPAC® fanout system, fusion splice
material	LSZH sheath (free of halogens & flame retardant)
fibers	9/125 G652.D/G657.Ax, 50/125 (OM2,OM3,OM4,OM5)
types	4-24 fibers (250µm primary coating)
custom	OEM-printing, special colors
advantage	UV-resistant, for long distances, non-metallic rodent protection



Product	Multi loose tube indoor/outdoor cable (non-metallic)
application	HOTPAC® fanout system, fusion splice
material	LSZH sheath (free of halogens & flame retardant)
fibers	9/125 G652.D/G657.Ax, 50/125 (OM2,OM3,OM4,OM5)
types	12-288 fibers (250µm primary coating)
custom	OEM-printing, special colors
advantage	UV-resistant, for long distances, non-metallic rodent protection



Product	Central loose tube outdoor cable (non-metallic)
application	HOTPAC® fanout system, fusion splice
material	PE sheath (free of halogens)
fibers	9/125 G652.D/G657.Ax, 50/125 (OM2,OM3,OM4,OM5)
types	4-24 fibers (250µm primary coating)
custom	OEM-printing, special colors
advantage	high UV-resistant, for long distances, non-metallic rodent protection



Product	Multi loose tube outdoor cable (non-metallic)
application	HOTPAC® fanout system, fusion splice
material	PE sheath (free of halogens)
fibers	9/125 G652.D/G657.Ax, 50/125 (OM2,OM3,OM4,OM5)
types	12-288 fibers (250µm primary coating)
custom	OEM-printing, special colors
advantage	high UV-resistant, for long distances, non-metallic rodent protection



Product	Mobile broadcast cable (2-12 fibers) (option Full-Breakout)
application	HOTPAC® fanout system or direct connector termination
material	PU or UL-sheath (TPU-LSZH optional)
fibers	9/125 G652.D/G657.Ax, 50/125 (OM2,OM3,OM4,OM5)
types	elements diameter: 0.9mm / 2.0mm
custom	OEM-printing, special colors
advantage	high flexible (option drag-chain support), treadable



Product	Central loose tube indoor or outdoor cables (metallic)
application	HOTPAC® fanout system, fusion splice
material	LSZH- or PE-sheath
fibers	9/125 G652.D/G657.Ax, 50/125 (OM2,OM3,OM4,OM5)
types	4-24 fibers (250µm primary coating)
custom	OEM-printing, special colors
advantage	UV-resistant, for long distances, metallic rodent protection



Product FTTH Micro-cable

application	fusion splice, blowing installation, MPO termination
material	LSZH, PVC, PU, PE or UL-listed sheath
fibers	9/125 G657.Ax, 50/125 (OM2-OM5), 62,5/125
types	2-24 fibers (250µm primary coating)
custom	OEM-printing, special colors
options	bend insensitive, high temperature range



Product FTTH Figure 8 Drop-cable

application	fusion splice, indoor/outdoor surface installing
material	LSZH- or PE sheath
fibers	9/125 G652.D/G657.Ax
types	1-4 fibers (250µm primary coating)
custom	OEM-printing, special colors
options	high temperature range, steelwire armoring



Product Aerial cable ADSS

application	HOTPAK® fanout system, fusion splice, aerial installation
material	PE-sheath (high UV-resistant)
fibers	9/125 G652.D/G657.Ax (Multimode upon request)
types	2-24 fibers (250µm primary coating)
custom	OEM-printing, special colors
options	high temperature range, long span conditions



Product Aerial cable Figure 8

application	fusion splice, aerial installatin
material	PE-sheath (high UV-resistant)
fibers	9/125 G652.D/G657.Ax (Multimode upon request)
types	2-144 fibers (250µm primary coating)
custom	OEM-printing, special colors
options	bend insensitive, high temperature range



Product Multi-Mini-Breakout cable (12-144 fibers)

application	connector termination, fusion splice option
material	LSZH, PVC, PU, PE or UL-listed sheath
fibers	9/125 G657.Ax, 50/125 (OM2-OM5), 62,5/125
types	elements diameter: 0.6 / 0.9mm (secondary coated)
custom	OEM-printing, special colors
options	bend insensitive, high temperature range



Product Other special cables

application	HOTPAK® fanout system, fusion splice
material	LSZH, PVC, PU, PE or UL-listed sheath
fibers	9/125 G657.Ax, 50/125 (OM2-OM5), 62,5/125
types	2-144 fibers (250µm primary coating)
custom	OEM-printing, special colors
options	high temperature range, alumium shield, double/triple armor



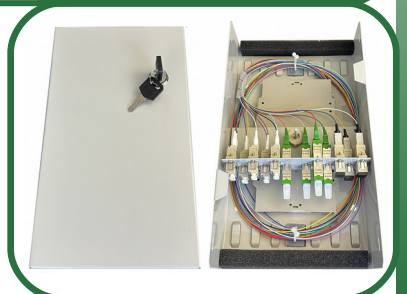
Product	19" patchpanels (1 / 2 / 3 / 4U) – for splicing use
connection	LCd, SCd, ST, E-2000®, LC-Quad, FC-PC, and others
material	cold rolled steel, fix or sliding-version
ports	1-96 adaptors (= up to 192 fibers)
fibers	9/125 G652.D/G657.A2, 50/125 (OM2,OM3 OM4,OM5),62,5
custom	OEM-printing, custom painting
options	depth-adjustable, standard colors: RAL 7035/RAL 9005



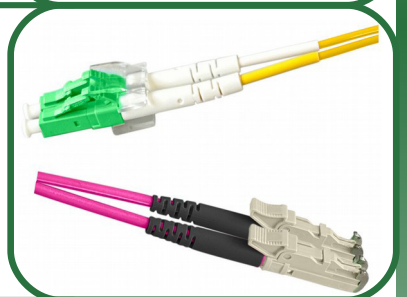
Product	19" patchpanels (1 / 2 / 3 / 4U) – breakout version
connection	LCd, SCd, ST, E-2000®, LC-Quad, FC-PC, and others
material	cold rolled steel, fix or sliding-version
ports	1-96 adaptors (Simplex, Duplex, Quad)
fibers	9µm PC 0°/APC 8°, Multimode OM1/OM2,OM3,OM4,OM5
custom	OEM-printing, custom painting
options	depth-adjustable, standard colors: RAL 7035/RAL 9005



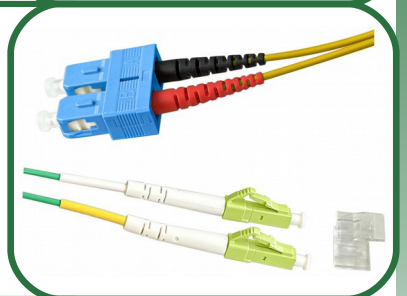
Product	Wall mount enclosures IP20 (fully or partial assembled)
connection	LCd, SCd, ST, E-2000®, LC-Quad, FC-PC, and others
material	cold rolled steel, (RAL 7035 grey)
ports	1-24 adaptors (Simplex, Duplex, Quad)
fibers	9µm PC 0°/APC 8°, Multimode OM1/OM2,OM3,OM4,OM5
custom	lockable, OEM-printing, custom assembling
options	available in 3 standard sizes



Product	Patchcords - German production
connection	LCd, SCd, ST, E-2000®, FC-PC, DIN, MTRJ, and others
material	LSZH sheath (outdoor versions -PE/PU)
version	Simplex/Duplex/Breakout (flat/twin)
fibers	9/125 G652.D/G657.A2, 50/125 (OM2,OM3 OM4,OM5),62,5
colors	standard normed colors, other colors upon request (MOQ)
options	OEM-printing, shortened or angled boots



Product	Patchcords – EU-made / Import
connection	LCd, SCd, ST, E-2000®, FC-PC, DIN, MTRJ, and others
material	LSZH, PVC, PU, PE or UL-listed sheath
version	Simplex/Duplex/Breakout (flat/twin)
fibers	9/125 G652.D/G657.A2, 50/125 (OM2,OM3 OM4,OM5),62,5
colors	standard normed colors, other colors upon request (MOQ)
options	OEM-printing, shortened or angled boots



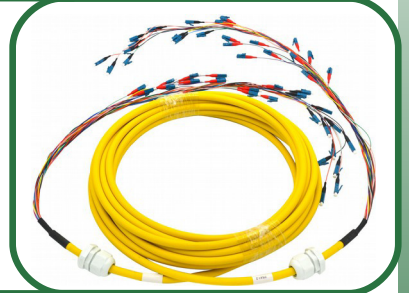
Product	Patchcords - uniboot
connection	LC-Duplex (Standard / HD / Reverse)
material	LSZH, PVC, PU, PE or UL-listed sheath
version	Duplex round version (3 or 5mm)
fibers	9/125 G652.D/G657.A2, 50/125 (OM3, OM4, OM5)
colors	standard normed colors, other colors upon request (MOQ)
options	OEM-printing, 3D-Interferometer-tests



Product	Full-Breakout cable (high fiber count)
connection	LC, SC, ST, E-2000®, FC-PC; DIN, MTRJ, and others
material	LSZH, PVC, PU, PE or UL-listed sheath
version	from 2 to 48 fibers
fibers	9/125 G652.D/G657.A2, 50/125 (OM2,OM3 OM4,OM5),62,5
colors	standard normed colors, other colors upon request (MOQ)
options	OEM-printing, shortened or angled boots



Product	Mini-Breakout-cable (high fiber count)
connection	LC, SC, ST, E-2000®, FC-PC; DIN, MTRJ, and others
material	LSZH, PVC, PU, PE or UL-listed sheath
version	from 2 to 144 fibers
fibers	9/125 G652.D/G657.A2, 50/125 (OM2,OM3 OM4,OM5),62,5
colors	standard normed colors, other colors upon request (MOQ)
options	OEM-printing, shortened or angled boots



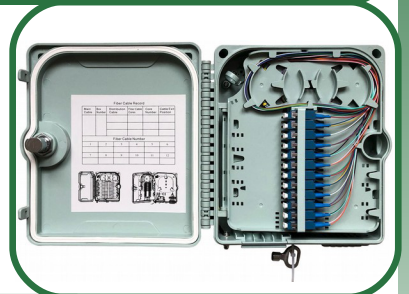
Product	MPO/MTP® Trunkkabel (Standard or LowLoss)
connection	MPO/MTP® and/or on LC, SC or E-2000®
material	LSZH, PVC, PU, PE or UL-listed sheath
version	from 8 to 144 fibers
fibers	9/125 G652.D/G657.A2, 50/125 (OM2, OM3, OM4, OM5)
colors	standard normed colors, other colors upon request (MOQ)
options	OEM-printing, shortened or angled boots



Product	MPO/MTP® housings
connection	MPO/MTP® and/or MPO/MTP® on LCd, LC-Quad or SCd
material	cold rolled steel or alumium
ports	Subrack 1-4U, for ex. up to 288 fibers on 3U
fibers	9/125 G652.D/G657.A2, 50/125 (OM3, OM4, OM5)
colors	black RAL 9005 (other colors upon request)
options	special frame designs, special assembling



Product	FTTx / IP67 wall mount enclosures
connection	LCd, SCs, E-2000®, with PC 0° and APC 8°, or others
material	plastic ABS+PC (steel version upon request)
ports	2-24 ports (max. 48 fibers)...bigger versions upon request
fibers	9/125 G652.D/G657.A2, 50/125 (OM3, OM4, OM5)
colors	grey, similar to RAL 7035
options	special assembling, lockable versions

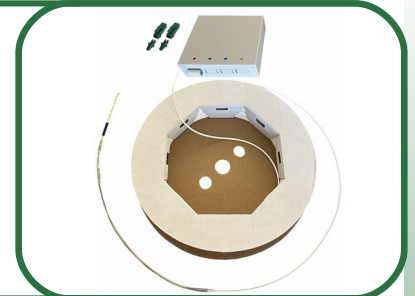


Product	FTTH outlets - flush-mounted or surface-mounted
connection	LCd, SCs, E-2000®, with PC 0° and APC 8°, and others
material	plastic ABS+PC
ports	1-4 ports available (max. 8 fibers)
fibers	9/125 G652.D/G657.A2, 50/125 (OM3, OM4, OM5)
colors	white, similar to RAL 9010
options	special assembling, custom design



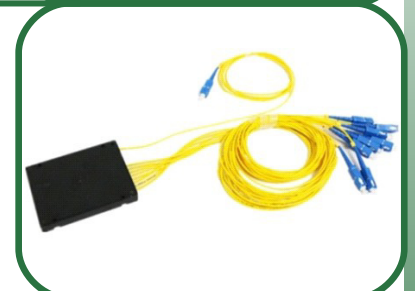
Product FTTH blow-sets / installations-Sets

connection	LC, SC, with PC 0° or APC 8°, and others
material	LSZH (2.2/3.0/4.5mm) - high flame retardant
version	1-4 fibers
fibers	9/125 G657.A2 (other fibers available)
colors	standard color: white (other colors upon request)
options	OEM-printing, special lengths, custom designs



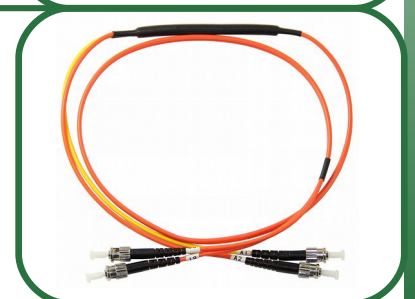
Product FTTx PLC-splitter / coupler

connection	LC, SC, with PC 0° or APC 8°, and others
material	LSZH (250µm/900µm/3mm buffered)
ports	1:2 to 1:64 / 2:2 to 2:64
fibers	9/125 G657.A2 (other Singlemode fibers available)
colors	standard normed colors, (other colors upon request)
options	OEM-printing, special lengths, custom designs



Product Modeconditioning cables

connection	LCd, SCd, ST, E-2000®, FC-PC, DIN, MTRJ, and others
material	LSZH, PVC, PU, PE or UL-listed sheath
version	Simplex/Duplex/Breakout (flat/twin)
fibers	9/125 G652.D/G657.A2, 50/125 (OM2,OM3 OM4,OM5),62,5
colors	standard normed colors, other colors upon request (MOQ)
options	OEM-printing, shortened or angled boots



Product DIN rail enclosures (with pigtails and/or adaptors only)

connection	LCd, SCd, ST, E-2000®, LC-Quad, FC-PC, and others
material	cold rolled steel, (RAL 7035 grey)
ports	1-12 adaptors (Simplex, Duplex, Quad)
fibers	9/125 G652.D/G657.A2, 50/125 (OM2,OM3 OM4,OM5),62,5
colors	OEM-printing, custom assembling
options	various cable entry options



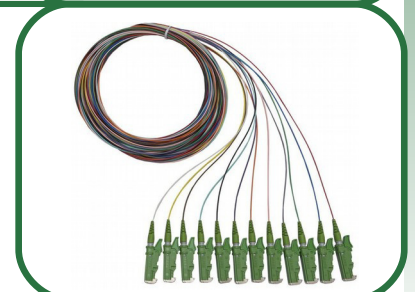
Product Adaptors

connection	LCd, SCd, ST, E-2000®, LC-Quad, FC-PC, and others
material	plastic LSZH or metal (sleeves: ceramic ZR/O2)
ports	Simplex, Duplex, Quad, Hybrid
fibers	9µm PC 0°/APC 8°, Multimode OM1/OM2,OM3,OM4,OM5
colors	standard or custom, various footprints
options	option integrated laser shutter, non-loosing dust caps



Product Pigtails

connection	LC, SC, ST, E-2000®, FC-PC; DIN, MTRJ, and others
material	0.9mm easy-strip-fiber LSZH
version	Simplex/Duplex (optional 3mm-buffered version)
fibers	9/125 G652.D/G657.A2, 50/125 (OM2,OM3 OM4,OM5),62,5
colors	standard colors (sets with 12 pcs. acc. to IEC60304)
options	individual labeling, custom lengths



Product Media converters

connection	LCd, SCd, ST to RJ45
material	body: metal black, similar to RAL 9005
types	standalone unmanaged (Single- oder Duplex-versions)
version	100Mbit / 1000Mbit / 10Gbit, and others
customs	custom colors, other designs, mini-version
options	OEM-labeling, PoE, internal power supply, 110V-version



Product Mini switches

connection	LCd, SCd, ST to RJ45 (max. 10 connections)
material	body: metal black, similar to RAL 9005
types	standalone unmanaged (Single- oder Duplex-versions)
version	100Mbit / 1000Mbit
customs	custom colors, other designs
options	OEM-labeling, PoE, 110V-version



Product Industry/DIN rail converter/switches

connection	LCd, SCd, ST to RJ45
material	body: metal black, similar to RAL 9005
types	unmanaged or managed Layer2/3, PoE, DC-connection
version	100Mbit / 1000Mbit / 10G
customs	custom colors, other designs, OEM-labeling
options	hoher Temperaturbereich (-40°C bis +85°C)



Product Transceiver SFP, SFP+, QSFP, XFP

connection	LC, LCd, SC, MPO, RJ45
material	metal versions
types	single fiber, duplex, QSF
version	100M, 1G, 2.5G, 5G, 10G, 40G, 100G, and others
customs	other designs, OEM-labeling
options	standard or industry-design, EEPROM programming



Product DAC-cable / AOC-cable / QSFP+-cable

connection	SFP, SFP+, QSFP+, and others
material	metall-body mit copper cable (AWG30-24)
types	active, passive
version	1Gbit / 10Gbit / 25Gbit / 100Gbit, and others
customs	other designs, custom lengths
options	EEPROM programming for all common brands



Product Cleaning equipment

connection	SC/ST/FC/E-2000®/LC/MU (2.5 and 1.25mm)
material	plastic ABS+PC
types	dry cleaner oder special liquid (free of alcohol)
version	cleaning pens, cleaning cassettes
customs	OEM-packing, MPO version available
options	up to 800+ cleanings



Product Mobile broadcast reels

connection	LC, SC, ST, E-2000®, FC-PC; DIN, MTRJ, and others
material	LSZH- or PU-cable (high flexible and treadable)
version	from 2 to 24 fibers
fibers	9/125 G657.Ax, 50/125 (OM2-OM5), 62,5/125
colors	standard normed colors, other colors upon request (MOQ)
finishing	mounted on cable reels (plastic or metal), IP-rating option



Product IP68-protected cables

connection	LCd, SC, MPO, and others
material	cable with PU-sheath or outdoor-breakouts
version	1 to 4 fibers (MPO: 12-24 fibers)
fibers	9/125 G657.Ax, 50/125 (OM2-OM5), 62,5/125
colors	standard normed colors, other colors upon request (MOQ)
options	IP-housing made from plastic or metal, OEM



Product OTDR launch fibers

connection	LC, SC, ST, E-2000®, FC-PC; DIN, SMA, and others
material	plastic ring body, IP-case option
version	1 to 2 fibers
fibers	9/125 G657.Ax, 50/125 (OM2-OM5), 62,5/125
colors	standard cable colors, OEM available
options	lengths from 100m to 2000m



Product Field assembly connectors

connection	LC, SC, ST und FC-PC
material	pre-polished with or without integrated fiber
version	0.9mm, 3mm & drop cable
fibers	9/125 G657.Ax, 50/125 (OM2-OM5), 62,5/125
colors	reusable, typical IL 0,3dB / max. IL 0,5dB
options	including template tool, cleaver option



Product Fiber optical closures

capacity	12-288 fibers (including splice cassettes)
IP-class	IP65-IP68 rating, with various accessories
cable insert	variable (various designs in program)
cable-ø	from 7mm upto 20mm
temp. range	-40°C to +80°C
options	crimp- & shrink-technology



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Fiber optical production in Limbach-Oberfrohna on over 1200sqm

