



High Density System H.D.S.

Data network cabling for data centers



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AVAILABILITY:



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General Information

GENERAL INFORMATION

- All **dimensioned drawings** are displayed within the confines of available space on the page and are only intended as a guide.
- All **circuit diagrams** are schematic wiring diagrams which are intended to allow better understanding of the function, and will need to be edited/added to during the course of project planning.
- All **images** represent samples of the product and are intended for information purposes only.

Unless otherwise stipulated, the current version of the General Terms of Delivery issued by The Association of the Austrian Electrical and Electronics Industries "EEL" shall apply. You can find a copy of these at the end of this catalogue.

No liability for errors in text, type or images; we reserve the right to make changes to technical specifications of the product range.

The user information contained in this catalogue reflect the opinion of the company at the time of writing. The information contained in it was assembled on the basis of published norms, specialist industry presentations, specialist literature and in-house expertise. The content is for informational purposes only and has no validity in law.

Availability information:

Check availabilities in your Schrack Technik Online Shop!

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Data network cabling



stock

manufacturing

Product Range

The EasyLan® system is continuously expanded with innovative products in the area of passive network technology. This ever-growing family of products makes your network more secure, thereby significantly increasing availability. See the benefits of the EasyLan® product range for yourself.

Customized Products

These include assembled copper and fiber optic cables, complete wiring sets for transmission networks, passive network connection components and special solutions tailored to customer requirements.

Tailored Manufacturing

The market doesn't have solutions for everything. Need to make adaptations to existing products, special assemblies or new products? Our research and development department works with you on "your product". In addition, you'll receive technical data sheets, support during the certification process, and PR-related images and information.

Quality Label

No product leaves European EasyLan® manufacturing facilities without undergoing extensive checks. Measurement results are stored centrally in databases. Individual test reports are provided upon request.

The business philosophy of ZVK GmbH, Germany, which manufactures EasyLan® products, is to only source goods from certified suppliers, ensuring maximum quality and safety for all EasyLan® products.

H.D.S.

High Density System H.D.S. Cabinet to cabinet cabling



► H.D.S. Cabinet to cabinet cabling

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H.D.S. Fiber optic
H.D.S. MPO

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H.D.S. Copper
H.D.S. on H.D.S.
H.D.S. on preLink®
H.D.S. on RJ45

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H.D.S. Panel



Easy installation

Plug and Play: All components of the H.D.S.-system are preterminated in accordance with the highest quality specifications and delivered together with clearly allocatable-measuring predocols. Therefore, assembly or other down times are not required in the data center. Contaminations of sensitive glass fiber connections are therefore prevented.



Climate friendly and space saving: The cable diameter of an H.D.S. copper connection is 16.4 mm (fig. 1) and therefore app. 60% smaller than conventional trunk cabling. This reduces the air resistance and the fire load in the distributor cabinet, allowing the air conditioning to be used optimally. An almost perfect result is achieved with the special H.D.S. fastenings at the side. Side panels (fig. 2) are installed in the installation space next to the 19" level.



Fig. 1



Fig. 2

Ease of maintenance

Allocation through LED signaling: Fast and clear allocation through integrated LED signaling, clearly identifies the ports and therefore the installation times after relocations, expansions and changes are significantly reduced.



Process safety in operation:

- GHMT certified: 2-Connector-Permanent-Link and Power over Ethernet
- Continuous quality control in DIN ISO/IEC 17025 certified laboratory
 - Surfaces and material
 - Climate and environment
 - Signal integrity
 - Fiber optic



► H.D.S. Splice system

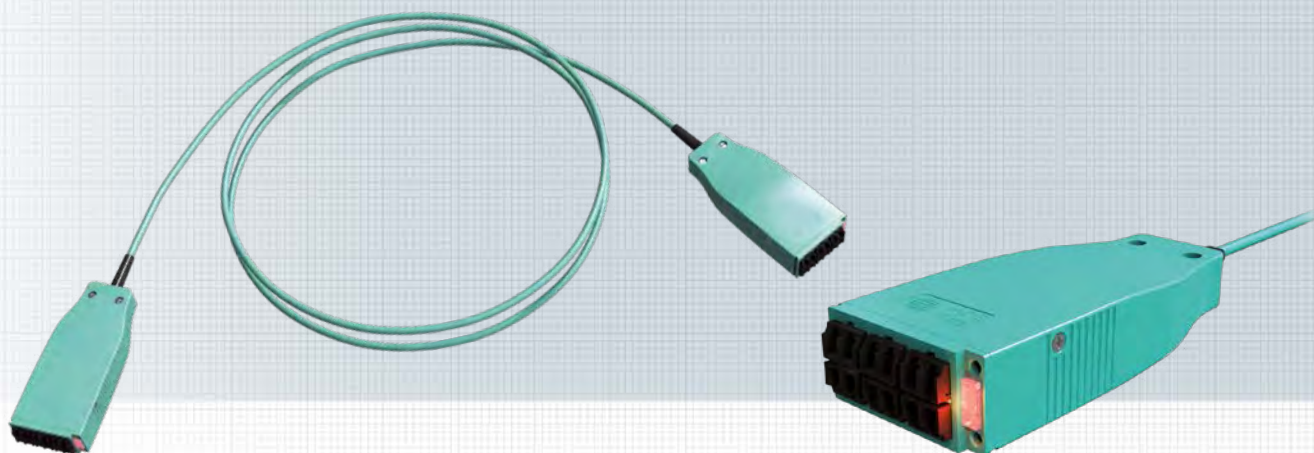
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Accessories



H.D.S. Fiber optic trunk cable 6x LC duplex with LED signaling



H.D.S. Fiber-optic trunk cables are designed for cabinet to cabinet connections and for the connection of consolidation points. The preterminated solution, which is covered with test predocols, is designed with LC duplex connections in the trunk cable for 10 Gbit Ethernet transmissions (in accordance with IEEE 802.3). The H.D.S. fiber optic trunk cables can be delivered at any link length in singlemode (OS2) or multimode fibers (OM3, OM4). The maximum packing density is 168 LC duplex ports on 3 HE or 48 LC duplex ports on 1 HE.

The associated remote end of the line can be safely located during operation using the integrated LED signaling.

Standards:

IEEE 802.3; IEC 888; 10GBase-SR/SW; DIS14165-111

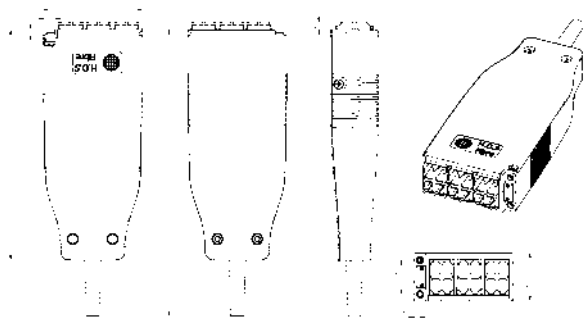
Specifications:

Cable

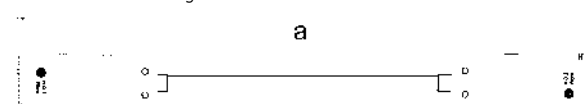
Designation	I-DA2(ZN)H 2x6 XX + 2xAWG26
Optical data	OS2; OM3; OM4
Sheath	FR-LSOH; color OS2 yellow; OM3 aqua; OM4 heather violet
Fire test	IEC 60332-3
Bending radius (inst.)	for installation 100 mm after installation 50 mm
Pull-in force	< 320 N

Module

Material	plastic; color: OM4 violet, OM3 aqua; OM2/APC green; OM2/PC blue
Sockets	6 x LC Duplex modules



The trunk length is measured from front face to front face



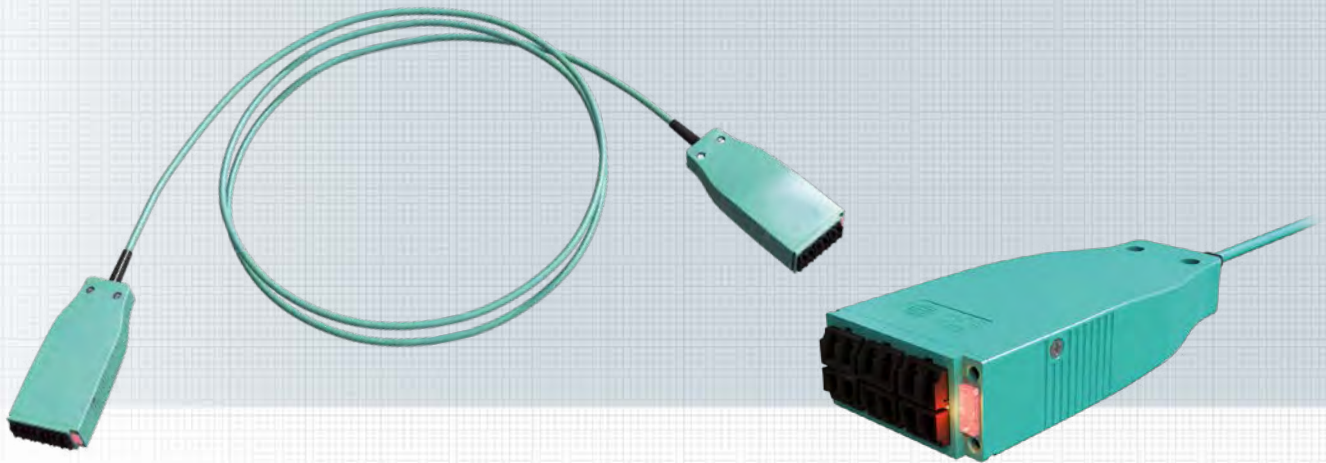
Ordering information

Description	Type	Order No.
H.D.S. FO 6x LC-D MM OM4 violet with LED illumination function 1.0m	LH642200010	HDSL4LL01L
H.D.S. FO 6x LC-D MM OM4 violet with LED illumination function 2.0m	LH642200020	HDSL4LL02L
H.D.S. FO 6x LC-D MM OM4 violet with LED illumination function 3.0m	LH642200030	HDSL4LL03L
H.D.S. FO 6x LC-D MM OM4 violet with LED illumination function 4.0m	LH642200040	HDSL4LL04L
H.D.S. FO 6x LC-D MM OM4 violet with LED illumination function 5.0m	LH642200050	HDSL4LL05L
H.D.S. FO 6x LC-D MM OM4 violet with LED illumination function 6.0m	LH642200060	HDSL4LL06L
H.D.S. FO 6x LC-D MM OM4 violet with LED illumination function 7.0m	LH642200070	HDSL4LL07L
H.D.S. FO 6x LC-D MM OM4 violet with LED illumination function 8.0m	LH642200080	HDSL4LL08L
H.D.S. FO 6x LC-D MM OM4 violet with LED illumination function 9.0m	LH642200090	HDSL4LL09L
H.D.S. FO 6x LC-D MM OM4 violet with LED illumination function 10.0m	LH642200100	HDSL4LL10L
H.D.S. FO 6x LC-D MM OM4 violet with LED illumination function 11.0m	LH642200110	HDSL4LL11L
H.D.S. FO 6x LC-D MM OM4 violet with LED illumination function 12.0m	LH642200120	HDSL4LL12L
H.D.S. FO 6x LC-D MM OM4 violet with LED illumination function 13.0m	LH642200130	HDSL4LL13L
H.D.S. FO 6x LC-D MM OM4 violet with LED illumination function 14.0m	LH642200140	HDSL4LL14L
H.D.S. FO 6x LC-D MM OM4 violet with LED illumination function 15.0m	LH642200150	HDSL4LL15L
H.D.S. FO 6x LC-D MM OM4 violet with LED illumination function 16.0m	LH642200160	HDSL4LL16L
H.D.S. FO 6x LC-D MM OM4 violet with LED illumination function 17.0m	LH642200170	HDSL4LL17L
H.D.S. FO 6x LC-D MM OM4 violet with LED illumination function 18.0m	LH642200180	HDSL4LL18L
H.D.S. FO 6x LC-D MM OM4 violet with LED illumination function 19.0m	LH642200190	HDSL4LL19L
H.D.S. FO 6x LC-D MM OM4 violet with LED illumination function 20.0m	LH642200200	HDSL4LL20L
H.D.S. FO 6x LC-D MM OM4 violet with LED illumination function 21.0m	LH642200210	HDSL4LL21L
H.D.S. FO 6x LC-D MM OM4 violet with LED illumination function 22.0m	LH642200220	HDSL4LL22L
H.D.S. FO 6x LC-D MM OM4 violet with LED illumination function 23.0m	LH642200230	HDSL4LL23L
H.D.S. FO 6x LC-D MM OM4 violet with LED illumination function 24.0m	LH642200240	HDSL4LL24L
H.D.S. FO 6x LC-D MM OM4 violet with LED illumination function 25.0m	LH642200250	HDSL4LL25L
H.D.S. FO 6x LC-D MM OM4 violet with LED illumination function 30.0m	LH642200300	HDSL4LL30L
H.D.S. FO 6x LC-D MM OM4 violet with LED illumination function 35.0m	LH642200350	HDSL4LL35L
H.D.S. FO 6x LC-D MM OM4 violet with LED illumination function 40.0m	LH642200400	HDSL4LL40L
H.D.S. FO 6x LC-D MM OM4 violet with LED illumination function 45.0m	LH642200450	HDSL4LL45L
H.D.S. FO 6x LC-D MM OM4 violet with LED illumination function 50.0m	LH642200500	HDSL4LL50L
H.D.S. FO 6x LC-D MM OM4 violet with LED illumination function 55.0m	LH642200550	HDSL4LL55L



Order No. blue fat: on stock, usually ready for delivery on the day of order! **Order No. blue thin:** on request!

H.D.S. Fiber optic trunk cable 6x LC duplex with LED signaling – Continuation



Ordering information

Description	Type	Order No.
H.D.S. FO 6x LC-D MM OM3 aqua with LED illumination function 1.0m	LH632200010	HDSL3LL01L
H.D.S. FO 6x LC-D MM OM3 aqua with LED illumination function 2.0m	LH632200020	HDSL3LL02L
H.D.S. FO 6x LC-D MM OM3 aqua with LED illumination function 3.0m	LH632200030	HDSL3LL03L
H.D.S. FO 6x LC-D MM OM3 aqua with LED illumination function 4.0m	LH632200040	HDSL3LL04L
H.D.S. FO 6x LC-D MM OM3 aqua with LED illumination function 5.0m	LH632200050	HDSL3LL05L
H.D.S. FO 6x LC-D MM OM3 aqua with LED illumination function 6.0m	LH632200060	HDSL3LL06L
H.D.S. FO 6x LC-D MM OM3 aqua with LED illumination function 7.0m	LH632200070	HDSL3LL07L
H.D.S. FO 6x LC-D MM OM3 aqua with LED illumination function 8.0m	LH632200080	HDSL3LL08L
H.D.S. FO 6x LC-D MM OM3 aqua with LED illumination function 9.0m	LH632200090	HDSL3LL09L
H.D.S. FO 6x LC-D MM OM3 aqua with LED illumination function 10.0m	LH632200100	HDSL3LL10L
H.D.S. FO 6x LC-D MM OM3 aqua with LED illumination function 11.0m	LH632200110	HDSL3LL11L
H.D.S. FO 6x LC-D MM OM3 aqua with LED illumination function 12.0m	LH632200120	HDSL3LL12L
H.D.S. FO 6x LC-D MM OM3 aqua with LED illumination function 13.0m	LH632200130	HDSL3LL13L
H.D.S. FO 6x LC-D MM OM3 aqua with LED illumination function 14.0m	LH632200140	HDSL3LL14L
H.D.S. FO 6x LC-D MM OM3 aqua with LED illumination function 15.0m	LH632200150	HDSL3LL15L
H.D.S. FO 6x LC-D MM OM3 aqua with LED illumination function 16.0m	LH632200160	HDSL3LL16L
H.D.S. FO 6x LC-D MM OM3 aqua with LED illumination function 17.0m	LH632200170	HDSL3LL17L
H.D.S. FO 6x LC-D MM OM3 aqua with LED illumination function 18.0m	LH632200180	HDSL3LL18L
H.D.S. FO 6x LC-D MM OM3 aqua with LED illumination function 19.0m	LH632200190	HDSL3LL19L
H.D.S. FO 6x LC-D MM OM3 aqua with LED illumination function 20.0m	LH632200200	HDSL3LL20L
H.D.S. FO 6x LC-D MM OM3 aqua with LED illumination function 21.0m	LH632200210	HDSL3LL21L
H.D.S. FO 6x LC-D MM OM3 aqua with LED illumination function 22.0m	LH632200220	HDSL3LL22L
H.D.S. FO 6x LC-D MM OM3 aqua with LED illumination function 23.0m	LH632200230	HDSL3LL23L
H.D.S. FO 6x LC-D MM OM3 aqua with LED illumination function 24.0m	LH632200240	HDSL3LL24L
H.D.S. FO 6x LC-D MM OM3 aqua with LED illumination function 25.0m	LH632200250	HDSL3LL25L
H.D.S. FO 6x LC-D MM OM3 aqua with LED illumination function 30.0m	LH632200300	HDSL3LL30L
H.D.S. FO 6x LC-D MM OM3 aqua with LED illumination function 35.0m	LH632200350	HDSL3LL35L
H.D.S. FO 6x LC-D MM OM3 aqua with LED illumination function 40.0m	LH632200400	HDSL3LL40L
H.D.S. FO 6x LC-D MM OM3 aqua with LED illumination function 45.0m	LH632200450	HDSL3LL45L
H.D.S. FO 6x LC-D MM OM3 aqua with LED illumination function 50.0m	LH632200500	HDSL3LL50L
H.D.S. FO 6x LC-D MM OM3 aqua with LED illumination function 55.0m	LH632200550	HDSL3LL55L

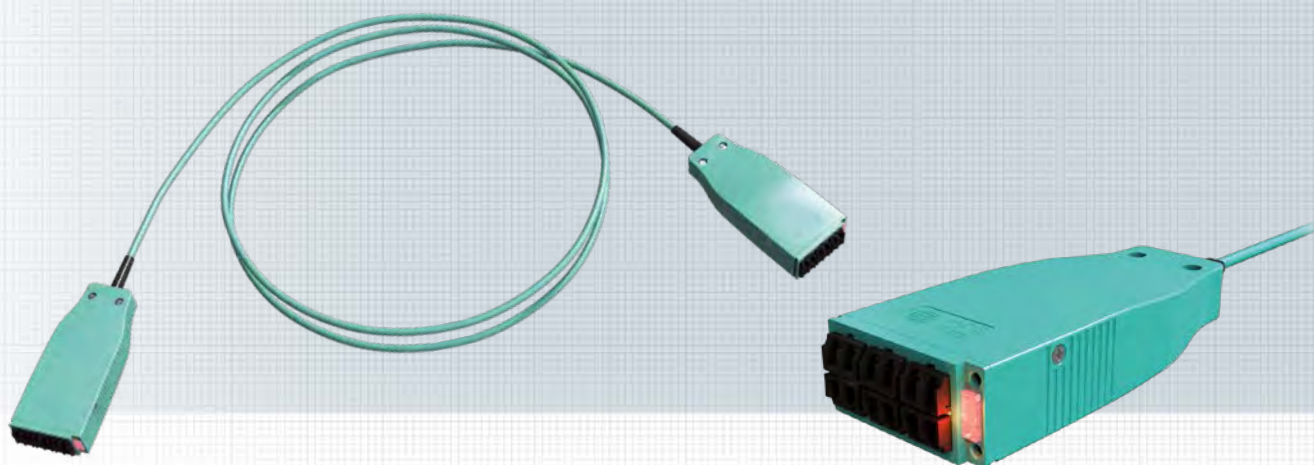
Ordering information

Description	Type	Order No.
H.D.S. FO 6x LC-D SM OS2 blue with LED illumination function 1.0m	LH602200010	HDSL9LL01L
H.D.S. FO 6x LC-D SM OS2 blue with LED illumination function 2.0m	LH602200020	HDSL9LL02L
H.D.S. FO 6x LC-D SM OS2 blue with LED illumination function 3.0m	LH602200030	HDSL9LL03L
H.D.S. FO 6x LC-D SM OS2 blue with LED illumination function 4.0m	LH602200040	HDSL9LL04L
H.D.S. FO 6x LC-D SM OS2 blue with LED illumination function 5.0m	LH602200050	HDSL9LL05L
H.D.S. FO 6x LC-D SM OS2 blue with LED illumination function 6.0m	LH602200060	HDSL9LL06L
H.D.S. FO 6x LC-D SM OS2 blue with LED illumination function 7.0m	LH602200070	HDSL9LL07L
H.D.S. FO 6x LC-D SM OS2 blue with LED illumination function 8.0m	LH602200080	HDSL9LL08L
H.D.S. FO 6x LC-D SM OS2 blue with LED illumination function 9.0m	LH602200090	HDSL9LL09L
H.D.S. FO 6x LC-D SM OS2 blue with LED illumination function 10.0m	LH602200100	HDSL9LL10L
H.D.S. FO 6x LC-D SM OS2 blue with LED illumination function 11.0m	LH602200110	HDSL9LL11L
H.D.S. FO 6x LC-D SM OS2 blue with LED illumination function 12.0m	LH602200120	HDSL9LL12L
H.D.S. FO 6x LC-D SM OS2 blue with LED illumination function 13.0m	LH602200130	HDSL9LL13L
H.D.S. FO 6x LC-D SM OS2 blue with LED illumination function 14.0m	LH602200140	HDSL9LL14L
H.D.S. FO 6x LC-D SM OS2 blue with LED illumination function 15.0m	LH602200150	HDSL9LL15L
H.D.S. FO 6x LC-D SM OS2 blue with LED illumination function 16.0m	LH602200160	HDSL9LL16L
H.D.S. FO 6x LC-D SM OS2 blue with LED illumination function 17.0m	LH602200170	HDSL9LL17L
H.D.S. FO 6x LC-D SM OS2 blue with LED illumination function 18.0m	LH602200180	HDSL9LL18L
H.D.S. FO 6x LC-D SM OS2 blue with LED illumination function 19.0m	LH602200190	HDSL9LL19L
H.D.S. FO 6x LC-D SM OS2 blue with LED illumination function 20.0m	LH602200200	HDSL9LL20L
H.D.S. FO 6x LC-D SM OS2 blue with LED illumination function 21.0m	LH602200210	HDSL9LL21L
H.D.S. FO 6x LC-D SM OS2 blue with LED illumination function 22.0m	LH602200220	HDSL9LL22L
H.D.S. FO 6x LC-D SM OS2 blue with LED illumination function 23.0m	LH602200230	HDSL9LL23L
H.D.S. FO 6x LC-D SM OS2 blue with LED illumination function 24.0m	LH602200240	HDSL9LL24L
H.D.S. FO 6x LC-D SM OS2 blue with LED illumination function 25.0m	LH602200250	HDSL9LL25L
H.D.S. FO 6x LC-D SM OS2 blue with LED illumination function 30.0m	LH602200300	HDSL9LL30L
H.D.S. FO 6x LC-D SM OS2 blue with LED illumination function 35.0m	LH602200350	HDSL9LL35L
H.D.S. FO 6x LC-D SM OS2 blue with LED illumination function 40.0m	LH602200400	HDSL9LL40L
H.D.S. FO 6x LC-D SM OS2 blue with LED illumination function 45.0m	LH602200450	HDSL9LL45L
H.D.S. FO 6x LC-D SM OS2 blue with LED illumination function 50.0m	LH602200500	HDSL9LL50L



Order No. blue fat: on stock, usually ready for delivery on the day of order! **Order No. blue thin:** on request!

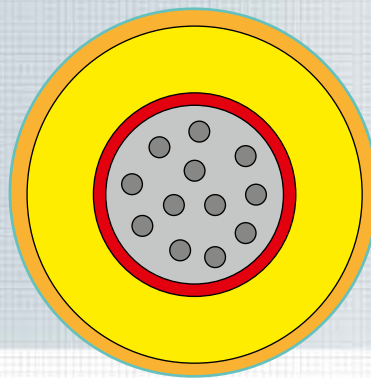
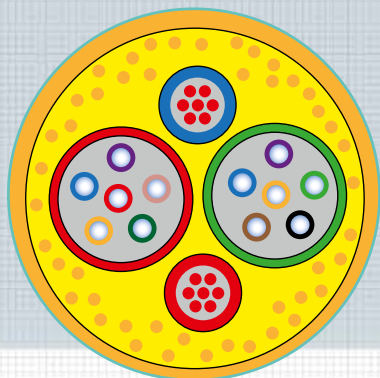
H.D.S. Fiber optic trunk cable 6x LC duplex with LED signaling – Continuation



Ordering information

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H.D.S. FO 6x LC-D-APC OS2 green with LED illumination function 2.0m	LH692290020	HDSL9MM02L
H.D.S. FO 6x LC-D-APC OS2 green with LED illumination function 3.0m	LH692290030	HDSL9MM03L
H.D.S. FO 6x LC-D-APC OS2 green with LED illumination function 4.0m	LH692290040	HDSL9MM04L
H.D.S. FO 6x LC-D-APC OS2 green with LED illumination function 5.0m	LH692290050	HDSL9MM05L
H.D.S. FO 6x LC-D-APC OS2 green with LED illumination function 6.0m	LH692290060	HDSL9MM06L
H.D.S. FO 6x LC-D-APC OS2 green with LED illumination function 7.0m	LH692290070	HDSL9MM07L
H.D.S. FO 6x LC-D-APC OS2 green with LED illumination function 8.0m	LH692290080	HDSL9MM08L
H.D.S. FO 6x LC-D-APC OS2 green with LED illumination function 9.0m	LH692290090	HDSL9MM09L
H.D.S. FO 6x LC-D-APC OS2 green with LED illumination function 10.0m	LH692290100	HDSL9MM10L
H.D.S. FO 6x LC-D-APC OS2 green with LED illumination function 11.0m	LH692290110	HDSL9MM11L
H.D.S. FO 6x LC-D-APC OS2 green with LED illumination function 12.0m	LH692290120	HDSL9MM12L
H.D.S. FO 6x LC-D-APC OS2 green with LED illumination function 13.0m	LH692290130	HDSL9MM13L
H.D.S. FO 6x LC-D-APC OS2 green with LED illumination function 14.0m	LH692290140	HDSL9MM14L
H.D.S. FO 6x LC-D-APC OS2 green with LED illumination function 15.0m	LH692290150	HDSL9MM15L
H.D.S. FO 6x LC-D-APC OS2 green with LED illumination function 16.0m	LH692290160	HDSL9MM16L
H.D.S. FO 6x LC-D-APC OS2 green with LED illumination function 17.0m	LH692290170	HDSL9MM17L
H.D.S. FO 6x LC-D-APC OS2 green with LED illumination function 18.0m	LH692290180	HDSL9MM18L
H.D.S. FO 6x LC-D-APC OS2 green with LED illumination function 19.0m	LH692290190	HDSL9MM19L
H.D.S. FO 6x LC-D-APC OS2 green with LED illumination function 20.0m	LH692290200	HDSL9MM20L
H.D.S. FO 6x LC-D-APC OS2 green with LED illumination function 21.0m	LH692290210	HDSL9MM21L
H.D.S. FO 6x LC-D-APC OS2 green with LED illumination function 22.0m	LH692290220	HDSL9MM22L
H.D.S. FO 6x LC-D-APC OS2 green with LED illumination function 23.0m	LH692290230	HDSL9MM23L
H.D.S. FO 6x LC-D-APC OS2 green with LED illumination function 24.0m	LH692290240	HDSL9MM24L
H.D.S. FO 6x LC-D-APC OS2 green with LED illumination function 25.0m	LH692290250	HDSL9MM25L
H.D.S. FO 6x LC-D-APC OS2 green with LED illumination function 30.0m	LH692290300	HDSL9MM30L
H.D.S. FO 6x LC-D-APC OS2 green with LED illumination function 35.0m	LH692290350	HDSL9MM35L
H.D.S. FO 6x LC-D-APC OS2 green with LED illumination function 40.0m	LH692290400	HDSL9MM40L
H.D.S. FO 6x LC-D-APC OS2 green with LED illumination function 45.0m	LH692290450	HDSL9MM45L
H.D.S. FO 6x LC-D-APC OS2 green with LED illumination function 50.0m	LH692290500	HDSL9MM50L
H.D.S. FO 6x LC-D-APC OS2 green with LED illumination function 55.0m	LH692290550	HDSL9MM55L

H.D.S. Fiber optic LED indoor cable I-D(ZN)H 2x6 xxx+2xAWG26



The fibers of the Fiber optic LED indoor cable are distributed in two tubes with 6 fibers each. 2 additional Copper cores are also installed for the LED identification function. The Fiber optic pigtail indoor cable was developed especially for the use in tight and angled spaces (distributor cabinet, etc.). The 12 fibers are combined in a bundle. The sheath of both cables consists of a flexible FR-LSOH material.

Caution:

This cable is used exclusively for assembly of trunks and is not supplied by the meter!

Optical characteristics:

Maximum link length	maximum permissible link length depending on the standard
OM4	Loss typical <0,25 dB Backflow loss >35 dB
OM3	Loss typical <0,25 dB Backflow loss >35 dB
OS2/PC	Loss typical <0,35 dB Backflow loss >45 dB
OS2/APC	Loss typical <0,25 dB Backflow loss >65 dB

Environment:

Connection class	IP20
Temperature	-20°C – +60°C

Technical data cable (FO-LED indoor cable):

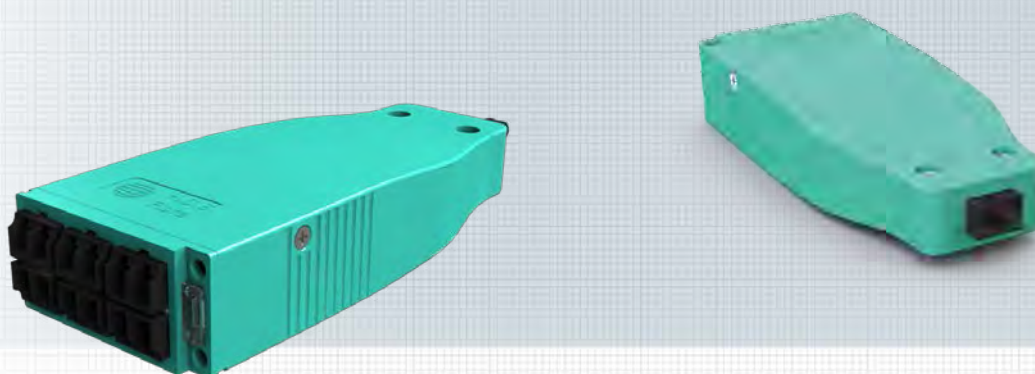
Optical values	OS2 A2, OM3, OM4
Number of fibers	12
Cable diameter	5 mm
Strain-relief	Aramid yarn
Cable sheath	FR-LSOH
Sheath color	OS2 yellow; OM3 aqua; OM4 violet
Fire test	IEC 60332-3
Tensile force	short term 540 N, permanent tensile force 320 N
Bending radius	for installation 100 mm after installation 50 mm

Technical data cable (FO pigtail indoor cable):

Optical values	OS2 A2, OM3, OM4
Number of fibers	12
Cable diameter	3 mm
Strain-relief	Aramid yarn
Cable sheath	FR-LSOH
Sheath color	OS2 yellow; OM3 aqua; OM4 violet
Fire test	IEC 60332-1
Tensile force	short term 220 N, permanent tensile force 110 N
Bending radius	> 20 mm

Only for ready-made trunks, not available by the meter!

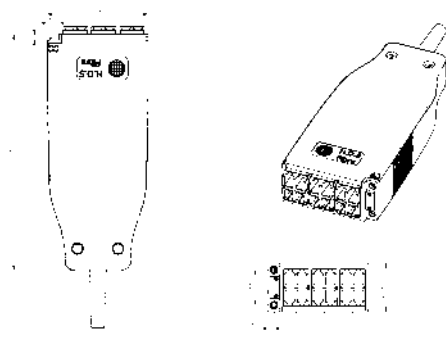
H.D.S. Fiber optic – MPO/MTP® Distribution head



The H.D.S. fiber optic - MPO/MTP® trunk system is designed for cabinet to cabinet connections and for the connection of consolidation points.

It consists of preterminated H.D.S. LC duplex distribution heads, which are connected through MPO/MTP® connections with 12 fiber MPO/MTP® cables. The system is designed for 10 Gbit Ethernet transmissions (as per IEEE 802.3).

Depending on the existing infrastructure, the user can choose between singlemode (OS2) and multimode fibers (OM3, OM4) as MPO/MTP® version. The maximum packing density is 168 LC duplex ports on 3U or 48 LC duplex ports on 1U.



Standards:

IEEE 802.3; IEC 888; 10GBase-SR/SW; DIS14165-111

Specifications:

Module

Material plastic; color OM4 heather violet, OM3 aqua; OM2/APC green; OM2/PC blue

Sockets 6 x LC duplex modules + 1 x MPO

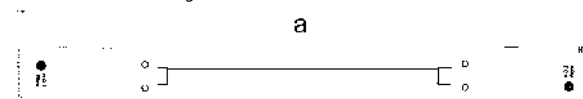
Optical specifications:

Maximum link length	maximum permissible link length depending on the standard
OM4	Loss typical <0,25 dB Backflow loss >35 dB
OM3	Loss typical <0,25 dB Backflow loss >35 dB
OS2/PC	Loss typical <0,35 dB Backflow loss >45 dB
OS2/APC	Loss typical <0,25 dB Backflow loss >65 dB

Environment:

Connection class	IP20
Temperature	-20°C – +60°C

The trunk length is measured from front face to front face



Description

H.D.S. MPO/MTP® Distribution head 12xLC OS2

H.D.S. MPO/MTP® Distribution head 12xLC/APC OS2

H.D.S. MPO/MTP® Distribution head 12xLC OM3

H.D.S. MPO/MTP® Distribution head 12xLC OM4

Type

on request

on request

on request

on request

Order No.

on request

on request

on request

on request

MPO/MTP® cable



The MPO/MTP® Distribution head cables are especially developed for high packing density requirements. This makes a reversible and space saving Fiber optic cabling in data centers possible.

The different fiber qualities are identified through connectors with different colors.

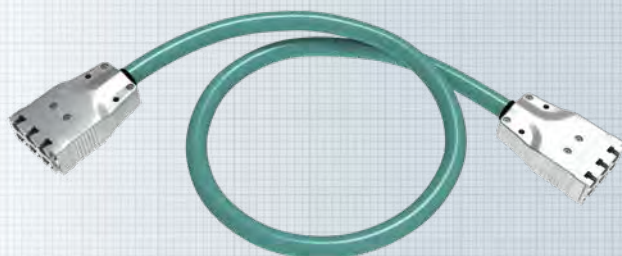
Characteristics:

- 12 or 24 fibers
- Spring-loaded ferrules
- PushPull locking
- PC and APC polishing
- Additional lettering on request (e.g. room numbers, etc.)

Description	Multimode	Multimode	Singlemode
MTP® Multi-fiber connector type	MTP® Elite PC 0°	MTP® Elite PC 0°	MTP® Elite APC 8°
Color MTP® housing	aqua	violet	yellow
IL Insertion loss	typ. 0.15 dB	typ. 0.15 dB	typ. 0.15 dB
RL Backflow loss	typ. > 35 dB	typ. > 35 dB	typ. > 65 dB
Polarity *	Method A / B / C	Method A / B / C	Method A / C
Color single connector housing	aqua	violet	blue (LC) / green (LC APC)
Standard	IEC 61754-7	IEC 61754-7	IEC 61754-7
Temperature Range (°C)	-20 – +60°C	-20 – +60°C	-20 – +60°C
Plug cycles	1000	1000	1000

* The preferred polarity is in accordance with method C; If no different assignment is requested, then this assignment will be delivered.

H.D.S. Copper trunk cable 6x RJ45 with LED signaling



The H.D.S. copper trunk cable is designed for cabinet to cabinet connections and for the connection of consolidation points.

The preterminated solution with six RJ45 connections in the trunk cable is designed for 10 Gigabit Ethernet transmissions and is in accordance with class E_A as per ISO/IEC 11801 or EN 50173. The cables are preterminated on both sides with six port H.D.S. modules and available in any length up to 60 meters.

The associated remote end of the wire can be easily located during operation using the integrated LED signaling.

Standards:

10BaseT; 100BaseT; 1000BaseT; 10GBaseT; ISDN; ATM; Phone; IEC 60603-7-51

Characteristics:

Cable

Designation	H.D.S. cable 6x(4x2xAWG24/1) + 2xAWG26 S-FTP
Electr. data	cat. 7 / cat. 6A
Sheath	FRNC; color aqua
Fire test	IEC 60332-3
Bending radius (inst.)	150mm
Bending radius (rest)	66mm
Max. pull-in force	120N

Module

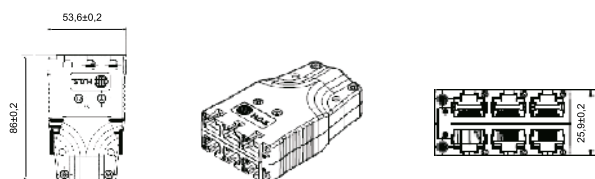
Material	Zinc diecasting nickel plated
Sockets	6 x preLink® modules

Electrical characteristics:

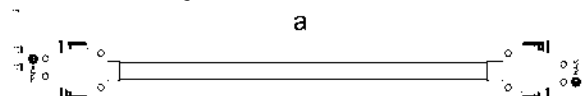
Maximum link length	60m
Transmission	class E _A PoE+ capable
Current load at 50°C	1.25A

Environment:

Connection class	IP20
Temperature	20 – +60°C



The trunk length is measured from front face to front face

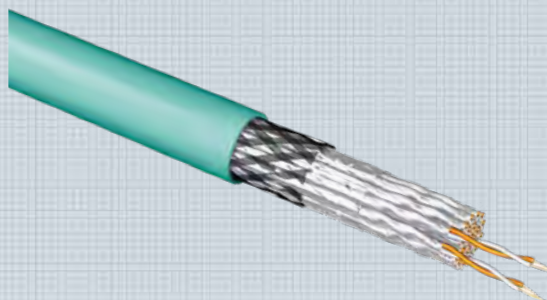
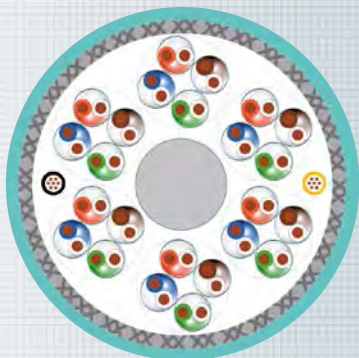


Ordering information

Description	Type	Order No.
H.D.S. Cu class E _A 500 MHz. 1:1 assignment with LED illumination function 1.0m	CHCT6420010	HDSKLI01K0
H.D.S. Cu class E _A 500 MHz. 1:1 assignment with LED illumination function 2.0m	CHCT6420020	HDSKLI02K0
H.D.S. Cu class E _A 500 MHz. 1:1 assignment with LED illumination function 3.0m	CHCT6420030	HDSKLI03K0
H.D.S. Cu class E _A 500 MHz. 1:1 assignment with LED illumination function 4.0m	CHCT6420040	HDSKLI04K0
H.D.S. Cu class E _A 500 MHz. 1:1 assignment with LED illumination function 5.0m	CHCT6420050	HDSKLI05K0
H.D.S. Cu class E _A 500 MHz. 1:1 assignment with LED illumination function 6.0m	CHCT6420060	HDSKLI06K0
H.D.S. Cu class E _A 500 MHz. 1:1 assignment with LED illumination function 7.0m	CHCT6420070	HDSKLI07K0
H.D.S. Cu class E _A 500 MHz. 1:1 assignment with LED illumination function 8.0m	CHCT6420080	HDSKLI08K0
H.D.S. Cu class E _A 500 MHz. 1:1 assignment with LED illumination function 9.0m	CHCT6420090	HDSKLI09K0
H.D.S. Cu class E _A 500 MHz. 1:1 assignment with LED illumination function 10.0m	CHCT6420100	HDSKLI10K0
H.D.S. Cu class E _A 500 MHz. 1:1 assignment with LED illumination function 11.0m	CHCT6420110	HDSKLI11K0
H.D.S. Cu class E _A 500 MHz. 1:1 assignment with LED illumination function 12.0m	CHCT6420120	HDSKLI12K0
H.D.S. Cu class E _A 500 MHz. 1:1 assignment with LED illumination function 13.0m	CHCT6420130	HDSKLI13K0
H.D.S. Cu class E _A 500 MHz. 1:1 assignment with LED illumination function 14.0m	CHCT6420140	HDSKLI14K0
H.D.S. Cu class E _A 500 MHz. 1:1 assignment with LED illumination function 15.0m	CHCT6420150	HDSKLI15K0
H.D.S. Cu class E _A 500 MHz. 1:1 assignment with LED illumination function 16.0m	CHCT6420160	HDSKLI16K0
H.D.S. Cu class E _A 500 MHz. 1:1 assignment with LED illumination function 17.0m	CHCT6420170	HDSKLI17K0
H.D.S. Cu class E _A 500 MHz. 1:1 assignment with LED illumination function 18.0m	CHCT6420180	HDSKLI18K0
H.D.S. Cu class E _A 500 MHz. 1:1 assignment with LED illumination function 19.0m	CHCT6420190	HDSKLI19K0
H.D.S. Cu class E _A 500 MHz. 1:1 assignment with LED illumination function 20.0m	CHCT6420200	HDSKLI20K0
H.D.S. Cu class E _A 500 MHz. 1:1 assignment with LED illumination function 21.0m	CHCT6420210	HDSKLI21K0
H.D.S. Cu class E _A 500 MHz. 1:1 assignment with LED illumination function 22.0m	CHCT6420220	HDSKLI22K0
H.D.S. Cu class E _A 500 MHz. 1:1 assignment with LED illumination function 23.0m	CHCT6420230	HDSKLI23K0
H.D.S. Cu class E _A 500 MHz. 1:1 assignment with LED illumination function 24.0m	CHCT6420240	HDSKLI24K0
H.D.S. Cu class E _A 500 MHz. 1:1 assignment with LED illumination function 25.0m	CHCT6420250	HDSKLI25K0
H.D.S. Cu class E _A 500 MHz. 1:1 assignment with LED illumination function 30.0m	CHCT6420300	HDSKLI30K0
H.D.S. Cu class E _A 500 MHz. 1:1 assignment with LED illumination function 35.0m	CHCT6420350	HDSKLI35K0
H.D.S. Cu class E _A 500 MHz. 1:1 assignment with LED illumination function 40.0m	CHCT6420400	HDSKLI40K0
H.D.S. Cu class E _A 500 MHz. 1:1 assignment with LED illumination function 45.0m	CHCT6420450	HDSKLI45K0
H.D.S. Cu class E _A 500 MHz. 1:1 assignment with LED illumination function 50.0m	CHCT6420500	HDSKLI50K0
H.D.S. Cu class E _A 500 MHz. 1:1 assignment with LED illumination function 55.0m	CHCT6420550	HDSKLI55K0
H.D.S. Cu class E _A 500 MHz. 1:1 assignment with LED illumination function 60.0m	CHCT6420600	HDSKLI60K0



H.D.S. Copper LED indoor cable 6x (4 x 2 x AWG 24/1) FTP, cat.7, shielded



The H.D.S. indoor cable cat.7 6x(4x2xAWG24/1) S/FTP is suitable for the simple cabinet to cabinet cabling in data centers for multi-connections from distributor rooms to sub-distributions. The cable design consists of 24 pairs of shielded cable elements, 4 pairs each are combined to a stranded element. Each stranded element includes a number band for easier identification.

The flexible central strain-relief element protects the cable especially well during installation. The sheath consists of a flexible LSOH material. The test cores are AWG 28/7.

Caution:

This cable is used exclusively for assembly of trunks and is not supplied by the meter!

Technical data:

Electrical values	cat. 7
Wire	AWG 24/1
Fire test	IEC 60332-1, IEC 60332-3, IEC 60754-1/2, IEC 61034-1/2
Standard	IEC 61156-6, IEEE 802.3at (PoE+), ISO/IEC 11801, RoHS-2 2011/65/EU
Wire diameter	1.04 mm nom.
Cable diameter	16.4 mm nom.
Weight	270 kg/km
Cable sheath	FR-LSOH
Sheath color	aqua
Transmission length	Class E _A ≤ 60 m
Fire load	1.83 MJ/m; 0.51 kWh/m
Temperature range	-20°C – +60°C
Max. pull-in force	190 N
perm. bending radius	>65,6 mm (resting) >130 mm (during pull-in)

Transmission specifications

Frequency in MHz	Loss [dB/100m] 20°C Typical value	PSNEXT Loss [dB] Typical value	NEXT Loss [dB] Typical value	RL [dB] Typical value	PS ANEXT [dB] Typical value	PS ELFEXT [dB] Typical value	ELFEXT [dB] Typical value
1	2.6	105.0	108.0	22.0	68.0	95.0	98.0
4	4.9	100.0	101.0	25.0	68.0	90.0	93.0
10	7.7	95.0	98.0	28.0	68.0	86.0	89.0
20	10.9	90.0	93.0	28.0	68.0	80.0	83.0
30	13.4	85.0	88.0	27.0	68.0	76.0	79.0
100	25.0	80.0	83.0	24.0	68.0	66.0	69.0
150	31.0	78.0	81.0	22.0	65.0	63.0	66.0
200	36.0	78.0	81.0	21.0	65.0	60.0	63.0
250	40.8	75.0	78.0	20.0	62.0	58.0	61.0
300	44.8	75.0	78.0	19.0	62.0	52.0	55.0
400	52.5	70.0	73.0	19.0	62.0	49.0	52.0
500	59.5	70.0	73.0	19.0	62.0	47.0	50.0
600	62.0	70.0	73.0	19.0	62.0	47.0	50.0

Only for ready-made trunks, not available by the meter!

H.D.S. Cu trunks with 6-fold cable bundle



The High Density System Cu is designed for copper connections in data centers, it is especially suited for cabinet to cabinet connections or for the connection of consolidation points.

The preterminated solution with six RJ45 connections in the 6-fold cable bundle is designed for 10 Gigabit Ethernet transmission and in accordance with class E_A as per ISO/IEC 11801 or EN 50173-1. The cables are preterminated on both sides with six port H.D.S. modules and delivered in any length up to 45 meters. Test predocol is included.

After the cable installation, the two 6-port modules can be mounted in an H.D.S. rack in the distribution cabinet or a floor tank.

It is possible to connect up to 168 RJ45 ports in 3U or up to 18 ports in an underfloor installation.

Standards:

10BaseT; 100BaseT; 1000BaseT; 10GBaseT; ISDN; ATM; Phone; IEC 60603-7-51

Characteristics:

Cable

Designation	6 x Flex AWG 4x2xAWG26/7 + 1xAWG28/7
Electr. data	cat. 7 / cat. 6 _A
Sheath	FRNC; gray
Fire test	IEC 60332-1
Bending radius (inst.)	≥40mm
Bending radius (rest)	≥20mm
Max. pull-in force	120N

Module

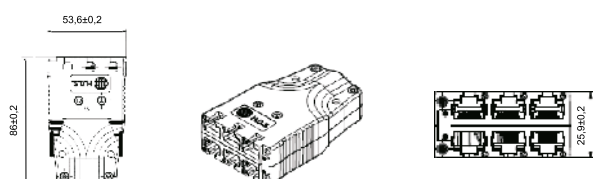
Material	Zinc diecast nickel plated
Sockets	6 x preLink® modules

Electrical characteristics:

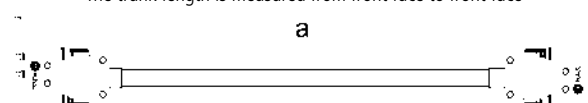
Maximum link length	45m
Transmission	class E _A PoE+ capable
Current load at 50°C	1.25A

Environment:

Connection class	IP20
Temperature	-20°C – +60°C



The trunk length is measured from front face to front face



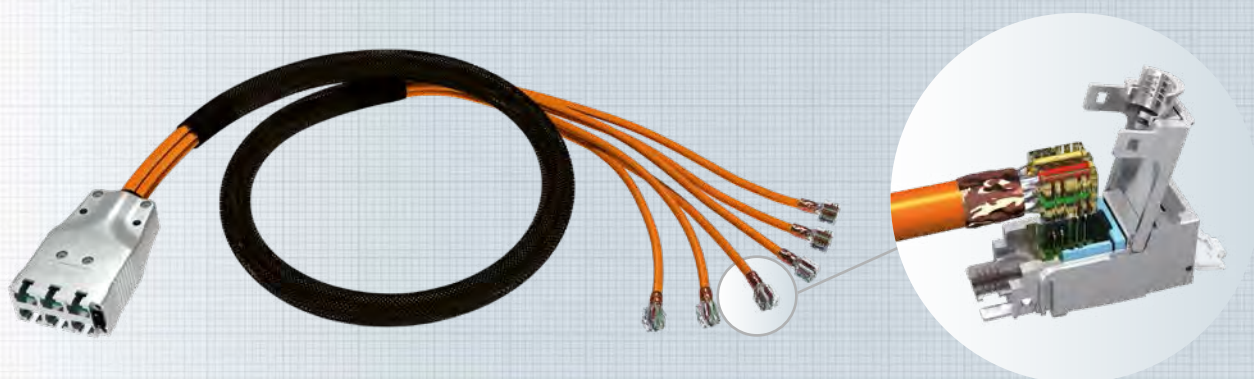
Ordering information

Description	Type	Order No.
H.D.S. Cu trunks with 6-fold cable bundle 1.0m	CHBD6620010	HDSKMF01KO
H.D.S. Cu trunks with 6-fold cable bundle 2.0m	CHBD6620020	HDSKMF02KO
H.D.S. Cu trunks with 6-fold cable bundle 3.0m	CHBD6620030	HDSKMF03KO
H.D.S. Cu trunks with 6-fold cable bundle 4.0m	CHBD6620040	HDSKMF04KO
H.D.S. Cu trunks with 6-fold cable bundle 5.0m	CHBD6620050	HDSKMF05KO
H.D.S. Cu trunks with 6-fold cable bundle 6.0m	CHBD6620060	HDSKMF06KO
H.D.S. Cu trunks with 6-fold cable bundle 7.0m	CHBD6620070	HDSKMF07KO
H.D.S. Cu trunks with 6-fold cable bundle 8.0m	CHBD6620080	HDSKMF08KO
H.D.S. Cu trunks with 6-fold cable bundle 9.0m	CHBD6620090	HDSKMF09KO
H.D.S. Cu trunks with 6-fold cable bundle 10.0m	CHBD6620100	HDSKMF10KO
H.D.S. Cu trunks with 6-fold cable bundle 11.0m	CHBD6620110	HDSKMF11KO
H.D.S. Cu trunks with 6-fold cable bundle 12.0m	CHBD6620120	HDSKMF12KO
H.D.S. Cu trunks with 6-fold cable bundle 13.0m	CHBD6620130	HDSKMF13KO
H.D.S. Cu trunks with 6-fold cable bundle 14.0m	CHBD6620140	HDSKMF14KO
H.D.S. Cu trunks with 6-fold cable bundle 15.0m	CHBD6620150	HDSKMF15KO
H.D.S. Cu trunks with 6-fold cable bundle 16.0m	CHBD6620160	HDSKMF16KO
H.D.S. Cu trunks with 6-fold cable bundle 17.0m	CHBD6620170	HDSKMF17KO
H.D.S. Cu trunks with 6-fold cable bundle 18.0m	CHBD6620180	HDSKMF18KO
H.D.S. Cu trunks with 6-fold cable bundle 19.0m	CHBD6620190	HDSKMF19KO
H.D.S. Cu trunks with 6-fold cable bundle 20.0m	CHBD6620200	HDSKMF20KO
H.D.S. Cu trunks with 6-fold cable bundle 21.0m	CHBD6620210	HDSKMF21KO
H.D.S. Cu trunks with 6-fold cable bundle 22.0m	CHBD6620220	HDSKMF22KO
H.D.S. Cu trunks with 6-fold cable bundle 23.0m	CHBD6620230	HDSKMF23KO
H.D.S. Cu trunks with 6-fold cable bundle 24.0m	CHBD6620240	HDSKMF24KO
H.D.S. Cu trunks with 6-fold cable bundle 25.0m	CHBD6620250	HDSKMF25KO
H.D.S. Cu trunks with 6-fold cable bundle 26.0m	CHBD6620260	HDSKMF26KO
H.D.S. Cu trunks with 6-fold cable bundle 27.0m	CHBD6620270	HDSKMF27KO
H.D.S. Cu trunks with 6-fold cable bundle 28.0m	CHBD6620280	HDSKMF28KO
H.D.S. Cu trunks with 6-fold cable bundle 29.0m	CHBD6620290	HDSKMF29KO
H.D.S. Cu trunks with 6-fold cable bundle 30.0m	CHBD6620300	HDSKMF30KO
H.D.S. Cu trunks with 6-fold cable bundle 31.0m	CHBD6620310	HDSKMF31KO
H.D.S. Cu trunks with 6-fold cable bundle 32.0m	CHBD6620320	HDSKMF32KO
H.D.S. Cu trunks with 6-fold cable bundle 33.0m	CHBD6620330	HDSKMF33KO
H.D.S. Cu trunks with 6-fold cable bundle 34.0m	CHBD6620340	HDSKMF34KO
H.D.S. Cu trunks with 6-fold cable bundle 35.0m	CHBD6620350	HDSKMF35KO
H.D.S. Cu trunks with 6-fold cable bundle 36.0m	CHBD6620360	HDSKMF36KO
H.D.S. Cu trunks with 6-fold cable bundle 37.0m	CHBD6620370	HDSKMF37KO
H.D.S. Cu trunks with 6-fold cable bundle 38.0m	CHBD6620380	HDSKMF38KO
H.D.S. Cu trunks with 6-fold cable bundle 39.0m	CHBD6620390	HDSKMF39KO
H.D.S. Cu trunks with 6-fold cable bundle 40.0m	CHBD6620400	HDSKMF40KO
H.D.S. Cu trunks with 6-fold cable bundle 41.0m	CHBD6620410	HDSKMF41KO
H.D.S. Cu trunks with 6-fold cable bundle 42.0m	CHBD6620420	HDSKMF42KO
H.D.S. Cu trunks with 6-fold cable bundle 43.0m	CHBD6620430	HDSKMF43KO
H.D.S. Cu trunks with 6-fold cable bundle 44.0m	CHBD6620440	HDSKMF44KO
H.D.S. Cu trunks with 6-fold cable bundle 45.0m	CHBD6620450	HDSKMF45KO



Order No. blue fat: on stock, usually ready for delivery on the day of order! **Order No. blue thin:** on request!

H.D.S. / preLink® trunk system



The H.D.S./preLink® trunk system is designed for copper connections in data centers. It is especially suited for cabinet connections or for the connection to consolidation points. The preterminated solution with six RJ45 connections in a braided sleeve is designed for 10 Gigabit Ethernet transmissions and is in accordance with class E_A as per ISO/IEC 11801 or EN 50173-1.

The cables are delivered preterminated on both sides with 6-port H.D.S. modules and preLink® terminal blocks, the Y-connector length on the preLink® module side can be freely selected. The H.D.S. preLink® trunk cables are delivered bundled in any length up to 45 meters (individual cables up to 90 m) together with test predocols.

After the cable installation, the H.D.S. 6-port module can be mounted in an H.D.S. installation frame in the distribution cabinet or the floor tank. The preLink® terminal blocks can be mounted in the selected pre-Link® module (see section: preLink® module).

It is possible to connect up to 168 RJ45 ports (H.D.S. side) in 3U or up to 18 ports (H.D.S. side) in an underfloor installation. The module housing can be opened for maintenance and the individual Keystone sockets can be exchanged without the need to cut the cable and to re-configure it.

Standards:

10BaseT; 100BaseT; 1000BaseT; 10GBaseT; ISDN; ATM; Phone; IEC 60603-7-51

Specifications:

Cable

Designation	6 x Flex AWG 4x2xAWG26/7 + 1xAWG28/7
Electr. data	cat. 7 / cat. 6 _A
Sheath	FRNC; gray
Fire test	IEC 60332-1
Bending radius (inst.)	≥40mm
Bending radius (rest)	≥20mm
Max. pull-in force	120N

Module

Material	Zinc diecast nickel plated
Sockets	6 x preLink® modules

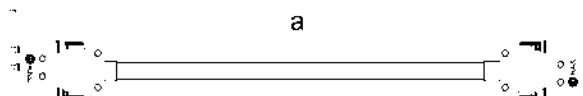
Electrical characteristics:

Maximum link length	45m (90m)
Transmission	class E _A PoE+ capable
Current load at 50°C	1.25A

Environment:

Connection class	IP20
Temperature	-20°C – +60°C

The trunk length is measured from front face to front face

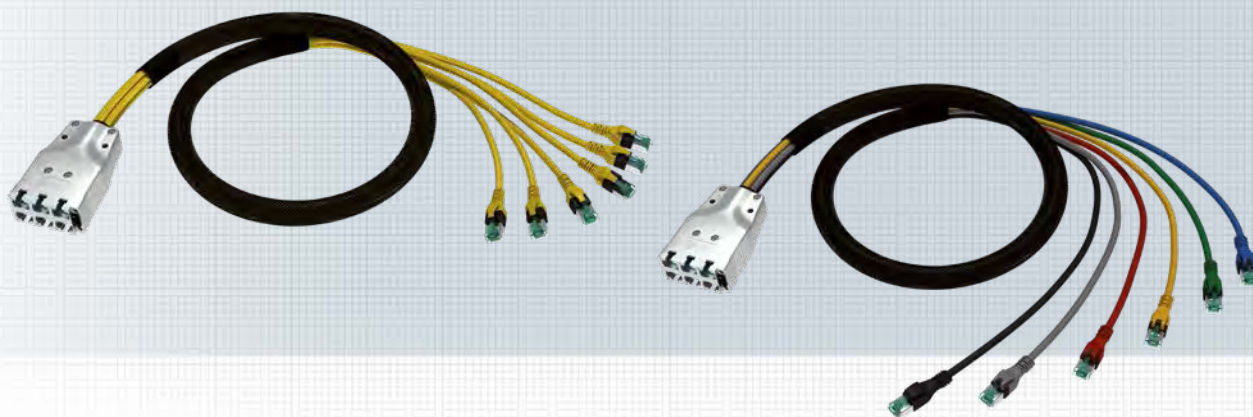


Ordering information

Description	Type	Order No.
H.D.S. preLink® trunk cable 1.0m	CHBD66W0010	HDSKPF01K0
H.D.S. preLink® trunk cable 2.0m	CHBD66W0020	HDSKPF02K0
H.D.S. preLink® trunk cable 3.0m	CHBD66W0030	HDSKPF03K0
H.D.S. preLink® trunk cable 4.0m	CHBD66W0040	HDSKPF04K0
H.D.S. preLink® trunk cable 5.0m	CHBD66W0050	HDSKPF05K0
H.D.S. preLink® trunk cable 6.0m	CHBD66W0060	HDSKPF06K0
H.D.S. preLink® trunk cable 7.0m	CHBD66W0070	HDSKPF07K0
H.D.S. preLink® trunk cable 8.0m	CHBD66W0080	HDSKPF08K0
H.D.S. preLink® trunk cable 9.0m	CHBD66W0090	HDSKPF09K0
H.D.S. preLink® trunk cable 10.0m	CHBD66W0100	HDSKPF10K0
H.D.S. preLink® trunk cable 11.0m	CHBD66W0110	HDSKPF11K0
H.D.S. preLink® trunk cable 12.0m	CHBD66W0120	HDSKPF12K0
H.D.S. preLink® trunk cable 13.0m	CHBD66W0130	HDSKPF13K0
H.D.S. preLink® trunk cable 14.0m	CHBD66W0140	HDSKPF14K0
H.D.S. preLink® trunk cable 15.0m	CHBD66W0150	HDSKPF15K0
H.D.S. preLink® trunk cable 16.0m	CHBD66W0160	HDSKPF16K0
H.D.S. preLink® trunk cable 17.0m	CHBD66W0170	HDSKPF17K0
H.D.S. preLink® trunk cable 18.0m	CHBD66W0180	HDSKPF18K0
H.D.S. preLink® trunk cable 19.0m	CHBD66W0190	HDSKPF19K0
H.D.S. preLink® trunk cable 20.0m	CHBD66W0200	HDSKPF20K0
H.D.S. preLink® trunk cable 21.0m	CHBD66W0210	HDSKPF21K0
H.D.S. preLink® trunk cable 22.0m	CHBD66W0220	HDSKPF22K0
H.D.S. preLink® trunk cable 23.0m	CHBD66W0230	HDSKPF23K0
H.D.S. preLink® trunk cable 24.0m	CHBD66W0240	HDSKPF24K0
H.D.S. preLink® trunk cable 25.0m	CHBD66W0250	HDSKPF25K0
H.D.S. preLink® trunk cable 26.0m	CHBD66W0260	HDSKPF26K0
H.D.S. preLink® trunk cable 27.0m	CHBD66W0270	HDSKPF27K0
H.D.S. preLink® trunk cable 28.0m	CHBD66W0280	HDSKPF28K0
H.D.S. preLink® trunk cable 29.0m	CHBD66W0290	HDSKPF29K0
H.D.S. preLink® trunk cable 30.0m	CHBD66W0300	HDSKPF30K0
H.D.S. preLink® trunk cable 31.0m	CHBD66W0310	HDSKPF31K0
H.D.S. preLink® trunk cable 32.0m	CHBD66W0320	HDSKPF32K0
H.D.S. preLink® trunk cable 33.0m	CHBD66W0330	HDSKPF33K0
H.D.S. preLink® trunk cable 34.0m	CHBD66W0340	HDSKPF34K0
H.D.S. preLink® trunk cable 35.0m	CHBD66W0350	HDSKPF35K0
H.D.S. preLink® trunk cable 36.0m	CHBD66W0360	HDSKPF36K0
H.D.S. preLink® trunk cable 37.0m	CHBD66W0370	HDSKPF37K0
H.D.S. preLink® trunk cable 38.0m	CHBD66W0380	HDSKPF38K0
H.D.S. preLink® trunk cable 39.0m	CHBD66W0390	HDSKPF39K0
H.D.S. preLink® trunk cable 40.0m	CHBD66W0400	HDSKPF40K0
H.D.S. preLink® trunk cable 41.0m	CHBD66W0410	HDSKPF41K0
H.D.S. preLink® trunk cable 42.0m	CHBD66W0420	HDSKPF42K0
H.D.S. preLink® trunk cable 43.0m	CHBD66W0430	HDSKPF43K0
H.D.S. preLink® trunk cable 44.0m	CHBD66W0440	HDSKPF44K0
H.D.S. preLink® trunk cable 45.0m	CHBD66W0450	HDSKPF45K0



H.D.S. / RJ45 DualBoot®



The H.D.S. system with a direct RJ45 connection provides a disentanglement of the server Ethernet connections to the connections at the network switches, especially in high density racks (e.g. IBM® iDataPlex® rack systems). The RJ45 sockets can be positioned directly at the height of the servers. This means that only short patchcords (e.g. PushPull) are required for the connection.

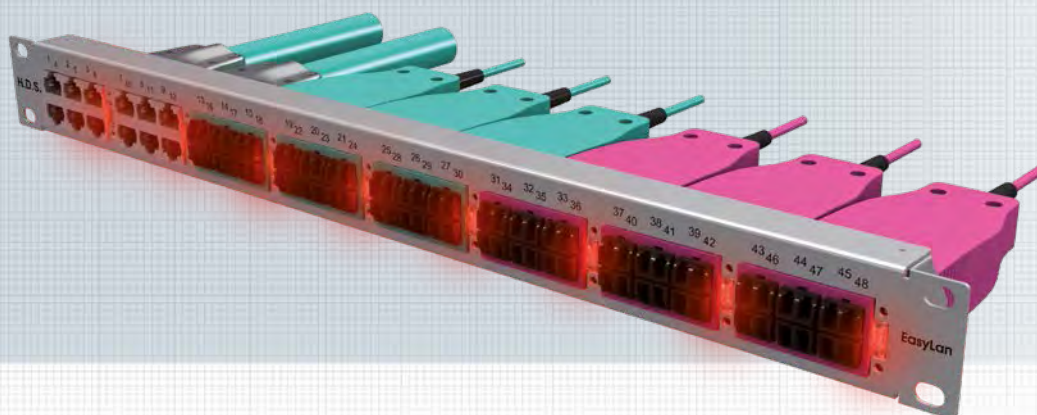
Result: The maintainability of the network components increases significantly through better accessibility.

The Ethernet cable harness is routed inside the rack to a large extent, which means that the space in traditional cabling areas is available for other cable types, e.g. InfiniBand.

Optimal bending radii and adapted lengths permit an efficient use. Networks can be separated logically and physically through the free color selection, the allocation (switch port – server port) can be freely defined. For example, ports of two switches can be placed next to each other, to achieve the 1:1 correlation to the server.

The H.D.S. panels can be freely mounted and upgraded as needed.

H.D.S. panel empty for H.D.S. fiber optic and copper modules



Using the H.D.S. panels, you can fasten the H.D.S. fiber optic and H.D.S. copper modules in the patch field of the distribution cabinets. The H.D.S. panels are available in 19" 1U designs.

Standards:

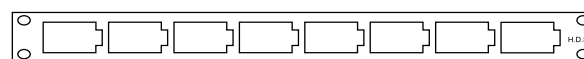
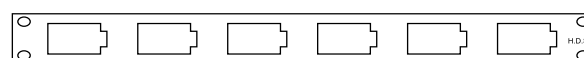
IEC 60603-7, IEC 61754-20, TIA 604-10-A

Specifications:

Installation dimension	19" 1U, depth 35mm
Front	Cutout for up to 8 H.D.S. modules
Housing material	Steel sheet painted RAL 7035
Materials	as per RoHS 2002/95/EG

Environmental requirements:

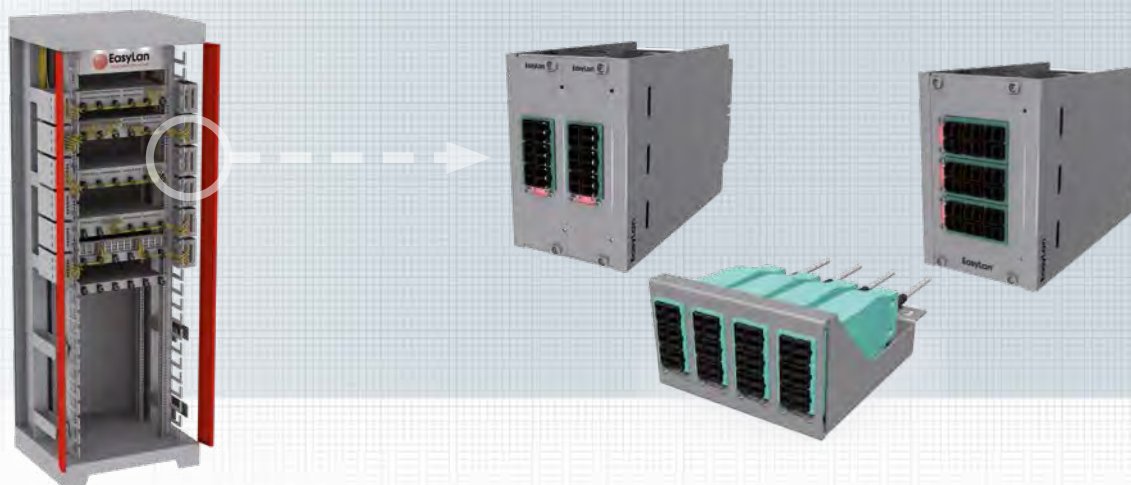
Connection class	IP20
Temperature	-40°C – +60°C



Description	Type	Order No.
H.D.S. panel empty, 6x H.D.S. 1U, RAL 7035	AHVPL06101E	HDSPG6----
H.D.S. panel empty, 8x H.D.S. 1U, RAL 7035	AHVPL08101E	HDSPG8----
Blind plate for H.D.S. cutout	AHVZMB001	HDSPGCOVER



H.D.S. side module carrier empty 3U / 14HP



H.D.S. side module carriers are 14HP wide 3U assembly carriers for the insertion of H.D.S. modules. Up to 24 ports can be distributed to 2 individual modules. The slide-in modules can be pulled out completely.

Units are fastened on thread plates. This permits a fast and easy installation. The mini-module carrier can be combined with H.D.S. modules.

The side cabinet mounting makes it possible to realize a space saving, especially climate friendly cabling without disturbing the air flow.

Characteristics:

Material	Metal
Color	Gray, RAL 7035
Color	metallic glossy
Installation depth	190 mm
Keystone module	Distributed for max. 24 ports to 2 individual modules
Application area	Little space in the cabinet, high flexibility, individual expansions, e.g. in data centers, no influence on the cold duct due to side mounting
Packaging unit	1 unit in cardboard box

Description	Type	Order No.
H.D.S. side module carrier empty	AVMSB314	HDSPSMTL--
H.D.S. side module carrier slide-in empty 1x H.D.S., 7HP	AHVSPV01	HDSPSE3H-1
H.D.S. side module carrier slide-in empty 3x H.D.S., 14HP	AHVSPH03	HDSPSE3H-3
H.D.S. side module carrier slide-in empty 4x H.D.S.	AVHSPB04	HDSPSP3H-4
Blind plate	AVMB00001E	HEKBB001--

H.D.S. sub-distribution empty

H.D.S. floor carrier empty for underfloor systems



The H.D.S. sub-distributions are available in 10" and 19". According to customer requirements, the removable module receptacle will be delivered with suitable cutouts (e.g. 8x H.D.S.). Based on the very robust steel design, the sub-distribution can be installed at any location (e.g. suspended ceiling, false floor, etc.).

Characteristics:

Installation dimension	10" or 19" 1HE
Housing material	Steel sheet painted , RAL 7035
Materials	RoHS 2002/95/EG

Environmental requirements:

Connection class	IP20
Temperature range	-20°C – +60°C

The carrier plate replaces the device carrier and therefore offers the largest possible space in the cable feed. The angled feed and lead-away permits a safe cable routing even in case of very low false floors. A combination with installation plates for 4x preLink®/fixLink® modules or 1x H.D.S. is provided. The installation plates are fastened to the carrier plate using two screws, fields of the carrier plate that are not used can be covered using dust proof blind plates.

Specifications:

Dimensions	According to the specifications of Ackermann underfloor systems
Material	Steel sheet, hot-dip galvanized
Color	Black, RAL 9005
Material thickness	1.5 mm
Assembly	- with max. 12 Keystone modules preLink®/fixLink® - with max. 3 H.D.S. Cu modules GB2 or GB3
Design	

* The module inserts are not painted or hot-dip galvanized for optimal shielding. The black color in the picture was only selected for technical photo considerations.

Packaging unit	1 unit each
----------------	-------------

Description	Type	Order No.
Sub-distributor empty, 3x H.D.S., black, RAL9005	CPPF1HDS1E	HDSPC1HS-3
Sub-distributor empty, 6x H.D.S., black, RAL9005	CPPF1HDS2E	HDSPC1HG-3
Sub-distributor empty, 3x H.D.S., grey, RAL7035	CPPF2HDS1E	HDSPC1HS-6
Sub-distributor empty, 6x H.D.S., grey, RAL7035	CPPF2HDS2E	HDSPC1HG-6
Ackermann carrier plate empty GB2	ABG00011	HEKFPZBT01
Ackermann carrier plate empty GB3	ABG00012	HEKFPZBT02
Blind plate black RAL 9005	ABG00013	HEKFPZBT06
Installation plate empty 1x H.D.S.	ABG00015	HEKFPZBT05

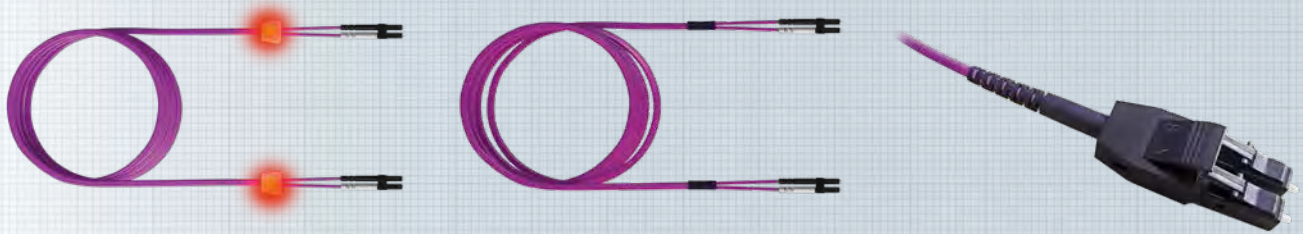
other module receptacles and additional installation plates on request



Order No. blue fat: on stock, usually ready for delivery on the day of order! **Order No. blue thin:** on request!

Accessories

Fiber optic patchcord multimode



LED patchcord

- Using the LED detector, the user can illuminate both ends of the cable by pressing a button. The detector can be found in the accessories.
- thermally and mechanically robust in accordance with Telcordia GR-326-CORE
- Duplex design with OM3 and OM4 fibers
- Connector: LC, SC or E2000®



Standard patchcord

- Duplex design with OM3 and OM4 fibers
- Connector: LC, SC, E2000®
- can be delivered on request with all popular connector types, also with MU or MPO.

UniBoot duplex patchcord

- slim bundle loader patchcord
- only available in duplex design for OM3 and OM4 fibers and LCD connectors.

Ordering information

LED multimode patchcord

Description	Type	Order No.
LED-MM 2xLCD OM3 1.0m	LSD32200010	HEL23LL01L
LED-MM 2xLCD OM3 2.0m	LSD32200020	HEL23LL02L
LED-MM 2xLCD OM3 3.0m	LSD32200030	HEL23LL03L
LED-MM 2xLCD OM3 5.0m	LSD32200050	HEL23LL05L
LED-MM 2xLCD OM3 7.5m	LSD32200075	HEL23LL07L
LED-MM 2xLCD OM3 10.0m	LSD32200100	HEL23LL10L
LED-MM 2xLCD OM4 1.0m	LSD42200010	HEL24LL01L
LED-MM 2xLCD OM4 2.0m	LSD42200020	HEL24LL02L
LED-MM 2xLCD OM4 3.0m	LSD42200030	HEL24LL03L
LED-MM 2xLCD OM4 5.0m	LSD42200050	HEL24LL05L
LED-MM 2xLCD OM4 7.5m	LSD42200075	HEL24LL07L
LED-MM 2xLCD OM4 10.0m	LSD42200100	HEL24LL10L
LED-MM 2xE2000®-D OM3 1.0m	LSD34400010	HEL23EE01L
LED-MM 2xE2000®-D OM3 2.0m	LSD34400020	HEL23EE02L
LED-MM 2xE2000®-D OM3 3.0m	LSD34400030	HEL23EE03L
LED-MM 2xE2000®-D OM3 5.0m	LSD34400050	HEL23EE05L
LED-MM 2xE2000®-D OM3 7.5m	LSD34400075	HEL23EE07L
LED-MM 2xE2000®-D OM3 10.0m	LSD34400100	HEL23EE10L
LED-MM 2xE2000®-D OM4 1.0m	LSD44400010	HEL24EE01L
LED-MM 2xE2000®-D OM4 2.0m	LSD44400020	HEL24EE02L
LED-MM 2xE2000®-D OM4 3.0m	LSD44400030	HEL24EE03L
LED-MM 2xE2000®-D OM4 5.0m	LSD44400050	HEL24EE05L
LED-MM 2xE2000®-D OM4 7.5m	LSD44400075	HEL24EE07L
LED-MM 2xE2000®-D OM4 10.0m	LSD44400100	HEL24EE10L
LED-MM 2xSCD OM3 1.0m	LSD31100010	HEL23CC01L
LED-MM 2xSCD OM3 2.0m	LSD31100020	HEL23CC02L
LED-MM 2xSCD OM3 3.0m	LSD31100030	HEL23CC03L
LED-MM 2xSCD OM3 5.0m	LSD31100050	HEL23CC05L
LED-MM 2xSCD OM3 7.5m	LSD31100075	HEL23CC07L
LED-MM 2xSCD OM3 10.0m	LSD31100100	HEL23CC10L
LED-MM 2xSCD OM4 1.0m	LSD41100010	HEL24CC01L
LED-MM 2xSCD OM4 2.0m	LSD41100020	HEL24CC02L
LED-MM 2xSCD OM4 3.0m	LSD41100030	HEL24CC03L
LED-MM 2xSCD OM4 5.0m	LSD41100050	HEL24CC05L
LED-MM 2xSCD OM4 7.5m	LSD41100075	HEL24CC07L
LED-MM 2xSCD OM4 10.0m	LSD41100100	HEL24CC10L
LED detector	CPZLWLA1	HLEDTOOL--



Accessories

Fiber optic patchcord multimode – Continuation

Ordering information

Multimode - Standard patchcord

Description	Type	Order No.
MM 2xLCD OM3 1.0m	LPD32200010	HEL23LL01V
MM 2xLCD OM3 2.0m	LPD32200020	HEL23LL02V
MM 2xLCD OM3 3.0m	LPD32200030	HEL23LL03V
MM 2xLCD OM3 5.0m	LPD32200050	HEL23LL05V
MM 2xLCD OM3 7.5m	LPD32200075	HEL23LL07V
MM 2xLCD OM3 10.0m	LPD32200100	HEL23LL10V
MM 2xLCD OM4 1.0m	LPD42200010	HEL24LL01V
MM 2xLCD OM4 2.0m	LPD42200020	HEL24LL02V
MM 2xLCD OM4 3.0m	LPD42200030	HEL24LL03V
MM 2xLCD OM4 5.0m	LPD42200050	HEL24LL05V
MM 2xLCD OM4 7.5m	LPD42200075	HEL24LL07V
MM 2xLCD OM4 10.0m	LPD42200100	HEL24LL10V
MM 2xE2000®-D OM3 1.0m	LPD34400010	HEL23EE01V
MM 2xE2000®-D OM3 2.0m	LPD34400020	HEL23EE02V
MM 2xE2000®-D OM3 3.0m	LPD34400030	HEL23EE03V
MM 2xE2000®-D OM3 5.0m	LPD34400050	HEL23EE05V
MM 2xE2000®-D OM3 7.5m	LPD34400075	HEL23EE07V
MM 2xE2000®-D OM3 10.0m	LPD34400100	HEL23EE10V
MM 2xE2000®-D OM4 1.0m	LPD44400010	HEL24EE01V
MM 2xE2000®-D OM4 2.0m	LPD44400020	HEL24EE02V
MM 2xE2000®-D OM4 3.0m	LPD44400030	HEL24EE03V
MM 2xE2000®-D OM4 5.0m	LPD44400050	HEL24EE05V
MM 2xE2000®-D OM4 7.5m	LPD44400075	HEL24EE07V
MM 2xE2000®-D OM4 10.0m	LPD44400100	HEL24EE10V
MM 2xSCD OM3 1.0m	LPD31100010	HEL23CC01V
MM 2xSCD OM3 2.0m	LPD31100020	HEL23CC02V
MM 2xSCD OM3 3.0m	LPD31100030	HEL23CC03V
MM 2xSCD OM3 5.0m	LPD31100050	HEL23CC05V
MM 2xSCD OM3 7.5m	LPD31100075	HEL23CC07V
MM 2xSCD OM3 10.0m	LPD31100100	HEL23CC10V
MM 2xSCD OM4 1.0m	LPD01100010	HEL29CC01V
MM 2xSCD OM4 2.0m	LPD41100020	HEL24CC02V
MM 2xSCD OM4 3.0m	LPD41100030	HEL24CC03V
MM 2xSCD OM4 5.0m	LPD41100050	HEL24CC05V
MM 2xSCD OM4 7.5m	LPD41100075	HEL24CC07V
MM 2xSCD OM4 10.0m	LPD41100100	HEL24CC10V

Ordering information

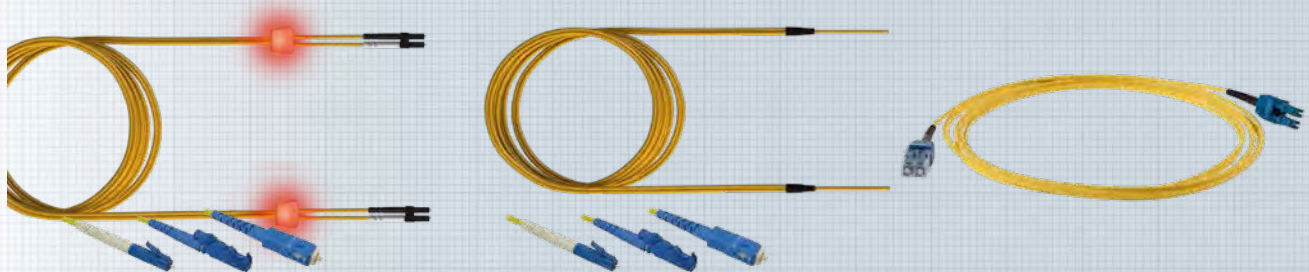
UniBoot duplex multimode patchcord

Description	Type	Order No.
UniBoot MM 2xLCD OM3 1.0m	LUD3220010	HEL23LL01U
UniBoot MM 2xLCD OM3 2.0m	LUD3220020	HEL23LL02U
UniBoot MM 2xLCD OM3 3.0m	LUD3220030	HEL23LL03U
UniBoot MM 2xLCD OM3 5.0m	LUD3220050	HEL23LL05U
UniBoot MM 2xLCD OM3 7.5m	LUD3220075	HEL23LL07U
UniBoot MM 2xLCD OM3 10.0m	LUD3220100	HEL23LL10U
UniBoot MM 2xLCD OM4	LUD4220000	on request



Accessories

Fiber optic patchcord singlemode



LED patchcord

- Using the LED detector, the user can illuminate both ends of the cable by pressing a button. The detector can be found in the accessories.
- thermally and mechanically robust in accordance with Telcordia GR-326-CORE
- Simplex and Duplex design with the connectors LC, SC, E2000® respectively with PC and APC polishing

Colors:

- Connector with APC polishing green
- PC variants blue
- Cable yellow



Standard patchcord

- in simplex and duplex design
- Standard: with the connectors LC, SC, LSH PC and APC each
- can be delivered on request with all popular connector types, also with MU or MPO

General information:

The duplex cables will be delivered cross-wise. The connector assignments for SCD or LCD connectors can be changed retroactively. All singlemode patchcords are available as adapter cables with different connector (variants) at the ends.

UniBoot duplex patchcord

- slim bundle loader patchcord
- only as duplex design with LCD and LCD-APC connectors

In addition, LC and SC variants of the standard patchcord are available in premium and standard designs, the APC-tuned are the exception. These and all other connector types are only available in premium quality.

Ordering information

LED singlemode patchcord

Description	Type	Order No.
LED-SM 2xLCD 1.0m	LSD02200010	HEL29LL01L
LED-SM 2xLCD 2.0m	LSD02200020	HEL29LL02L
LED-SM 2xLCD 3.0m	LSD02200030	HEL29LL03L
LED-SM 2xLCD 5.0m	LSD02200050	HEL29LL05L
LED-SM 2xLCD 7.5m	LSD02200075	HEL29LL07L
LED-SM 2xLCD 10.0m	LSD02200100	HEL29LL10L
LED-SM 2xLCD-APC	LSD92290000	on request
LED-SM LCD+LCD-APC	LSD92200000	on request
LED-SM 2xE2000®-D 1.0m	LSD04400010	HEL29EE01L
LED-SM 2xE2000®-D 2.0m	LSD04400020	HEL29EE02L
LED-SM 2xE2000®-D 3.0m	LSD04400030	HEL29EE03L
LED-SM 2xE2000®-D 5.0m	LSD04400050	HEL29EE05L
LED-SM 2xE2000®-D 7.5m	LSD04400075	HEL29EE07L
LED-SM 2xE2000®-D 10.0m	LSD04400100	HEL29EE10L
LED-SM 2xE2000®-D-APC	LSD94490000	on request
Simplex-LED-SM 2xLC 1.0m	LSS02200010	HEL19LL01L
Simplex-LED-SM 2xLC 2.0m	LSS02200020	HEL19LL02L
Simplex-LED-SM 2xLC 3.0m	LSS02200030	HEL19LL03L
Simplex-LED-SM 2xLC 5.0m	LSS02200050	HEL19LL05L
Simplex-LED-SM 2xLC 7.5m	LSS02200075	HEL19LL07L
Simplex-LED-SM 2xLC 10.0m	LSS02200100	HEL19LL10L
Simplex-LED-SM 2xLC-APC	LSS92290000	on request
Simplex-LED-SM 2xE2000® 1.0m	LSS04400010	HEL19EE01L
Simplex-LED-SM 2xE2000® 2.0m	LSS04400020	HEL19EE02L
Simplex-LED-SM 2xE2000® 3.0m	LSS04400030	HEL19EE03L
Simplex-LED-SM 2xE2000® 5.0m	LSS04400050	HEL19EE05L
Simplex-LED-SM 2xE2000® 7.5m	LSS04400075	HEL19EE07L
Simplex-LED-SM 2xE2000® 10.0m	LSS04400100	HEL19EE10L
Simplex-LED-SM 2xE2000®-APC	LSS94490000	on request
Simplex-LED-SM 2xSC 1.0m	LSS01100010	HEL19CC01L
Simplex-LED-SM 2xSC 2.0m	LSS01100020	HEL19CC02L
Simplex-LED-SM 2xSC 3.0m	LSS01100030	HEL19CC03L
Simplex-LED-SM 2xSC 5.0m	LSS01100050	HEL19CC05L
Simplex-LED-SM 2xSC 7.5m	LSS01100075	HEL19CC07L
Simplex-LED-SM 2xSC 10.0m	LSS01100100	HEL19CC10L
Simplex-LED-SM 2xSC-APC	LSS91190000	on request
LED detektor	CPZLWLA1	HLEDTOOL--



Accessories

Fiber optic patchcord singlemode – Continuation

Ordering information

Singlemode - Standard patchcord

Description	Type	Order No.
SM 2xLCD 1.0m	LPD02200010	HEL29LL01V
SM 2xLCD 2.0m	LPD02200020	HEL29LL02V
SM 2xLCD 3.0m	LPD02200030	HEL29LL03V
SM 2xLCD 5.0m	LPD02200050	HEL29LL05V
SM 2xLCD 7.5m	LPD02200075	HEL29LL07V
SM 2xLCD 10.0m	LPD02200100	HEL29LL10V
SM 2xLCD-APC	LPD92290000	on request
SM 2xE2000®-D 1.0m	LPD04400010	HEL29EE01V
SM 2xE2000®-D 2.0m	LPD04400020	HEL29EE02V
SM 2xE2000®-D 3.0m	LPD04400030	HEL29EE03V
SM 2xE2000®-D 5.0m	LPD04400050	HEL29EE05V
SM 2xE2000®-D 7.5m	LPD04400075	HEL29EE07V
SM 2xE2000®-D 10.0m	LPD04400100	HEL29EE10V
SM 2xE2000®-D-APC	LPD94490000	on request
SM 2xSCD 1.0m	LPD01100010	HEL29CC01V
SM 2xSCD 2.0m	LPD01100020	HEL29CC02V
SM 2xSCD 3.0m	LPD01100030	HEL29CC03V
SM 2xSCD 5.0m	LPD01100050	HEL29CC05V
SM 2xSCD 7.5m	LPD01100075	HEL29CC07V
SM 2xSCD 10.0m	LPD01100100	HEL29CC10V
SM 2xSCD-APC	LPD91190000	on request
Simplex-SM 2xLC 1.0m	LPS02200010	HEL19LL01V
Simplex-SM 2xLC 2.0m	LPS02200020	HEL19LL02V
Simplex-SM 2xLC 3.0m	LPS02200030	HEL19LL03V
Simplex-SM 2xLC 5.0m	LPS02200050	HEL19LL05V
Simplex-SM 2xLC 7.5m	LPS02200075	HEL19LL07V
Simplex-SM 2xLC 10.0m	LPS02200100	HEL19LL10V
Simplex-SM 2xLC-APC	LPS92290000	on request
Simplex-SM 2xE2000® 1.0m	LPS04400010	HEL19EE01V
Simplex-SM 2xE2000® 2.0m	LPS04400020	HEL19EE02V
Simplex-SM 2xE2000® 3.0m	LPS04400030	HEL19EE03V
Simplex-SM 2xE2000® 5.0m	LPS04400050	HEL19EE05V
Simplex-SM 2xE2000® 7.5m	LPS04400075	HEL19EE07V
Simplex-SM 2xE2000® 10.0m	LPS04400100	HEL19EE10V
Simplex-SM 2xE2000®-APC	LPS94490000	on request
Simplex-SM 2xSC 1.0m	LPD01100010	HEL19CC01V
Simplex-SM 2xSC 2.0m	LPD01100020	HEL19CC02V
Simplex-SM 2xSC 3.0m	LPD01100030	HEL19CC03V
Simplex-SM 2xSC 5.0m	LPD01100050	HEL19CC05V
Simplex-SM 2xSC 7.5m	LPD01100075	HEL19CC07V
Simplex-SM 2xSC 10.0m	LPD01100100	HEL19CC10V
Simplex-SM 2xSC-APC	LPS91190000	on request

Ordering information

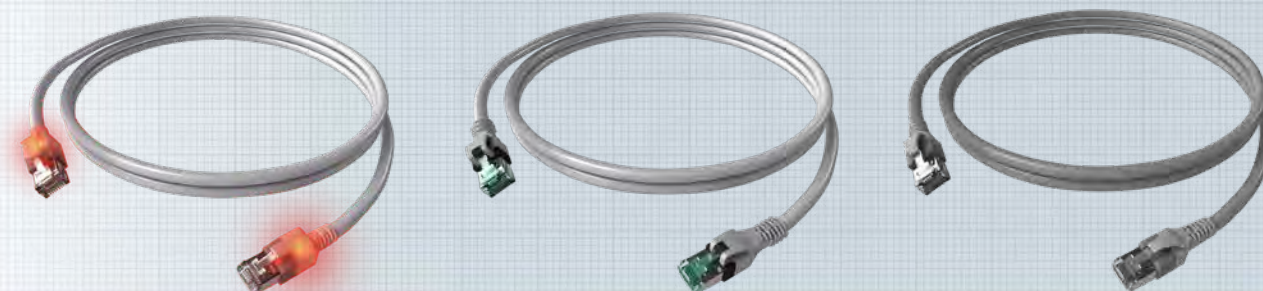
UniBoot duplex singlemode patchcord

Description	Type	Order No.
UniBoot SM 2xLCD 1.0m	LUD02200010	HEL29LL01U
UniBoot SM 2xLCD 2.0m	LUD02200020	HEL29LL02U
UniBoot SM 2xLCD 3.0m	LUD02200030	HEL29LL03U
UniBoot SM 2xLCD 5.0m	LUD02200050	HEL29LL05U
UniBoot SM 2xLCD 7.5m	LUD02200075	HEL29LL07U
UniBoot SM 2xLCD 10.0m	LUD02200100	HEL29LL10U
UniBoot SM 2xLCD-APC	LUD92290000	on request



Accessories

Copper patchcord



DualBoot® LED patchcord Cat. 6_A

- Using the LED detector, the user can illuminate both ends of the cable by pressing a button.
- PiMF cable
- equivalent to Category 6_A ISO/IEC 11801
- also available in Category 6 shielded and unshielded



DualBoot® PushPull patchcord Cat. 6_A

- The connectors include a PushPull unlocking and are qualified, for example, for high density switches or places that are difficult to access. The user only pulls at the predictive sleeve to unlock the connector; suitable for any standard RJ45 socket or socket.
- Foil shielded
- in accordance with Category 6_A (ISO/IEC)

DualBoot® patchcord Cat. 6_A

- The DualBoot® spraying achieves an optimal strain-relief and prevents the jamming of the lock levers
- PiMF cable
- equivalent to Category 6_A ISO/IEC 11801

DualBoot® LED patchcord, Cat. 6_A ISO/IEC, shielded

Description	Type	Order No.
DualBoot® LED patchcord, grey 1.0m	CS10AADAD0010	H6GSG01K0G
DualBoot® LED patchcord, grey 2.0m	CS10AADAD0020	H6GSG02K0G
DualBoot® LED patchcord, grey 3.0m	CS10AADAD0030	H6GSG03K0G
DualBoot® LED patchcord, grey 5.0m	CS10AADAD0050	H6GSG05K0G
DualBoot® LED patchcord, grey 7.5m	CS10AADAD0070	H6GSG07K0G
DualBoot® LED patchcord, grey 10.0m	CS10AADAD0100	H6GSG10K0G
DualBoot® LED patchcord, red 1.0m	CS10RADAD0010	H6GSR01K0R
DualBoot® LED patchcord, red 2.0m	CS10RADAD0020	H6GSR02K0R
DualBoot® LED patchcord, red 3.0m	CS10RADAD0030	H6GSR03K0R
DualBoot® LED patchcord, red 5.0m	CS10RADAD0050	H6GSR05K0R
DualBoot® LED patchcord, red 7.5m	CS10RADAD0075	H6GSR07K0R
DualBoot® LED patchcord, red 10.0m	CS10RADAD0100	H6GSR10K0R

Ordering information

DualBoot® LED patchcord, Cat. 6_A ISO/IEC, shielded – Continuation

Description	Type	Order No.
DualBoot® LED patchcord, blue 1.0m	CS10BADAD0010	H6GSB01K0B
DualBoot® LED patchcord, blue 2.0m	CS10BADAD0020	H6GSB02K0B
DualBoot® LED patchcord, blue 3.0m	CS10BADAD0030	H6GSB03K0B
DualBoot® LED patchcord, blue 5.0m	CS10BADAD0050	H6GSB05K0B
DualBoot® LED patchcord, blue 7.5m	CS10BADAD0075	H6GSB07K0B
DualBoot® LED patchcord, blue 10.0m	CS10BADAD0100	H6GSB10K0B
DualBoot® LED patchcord, yellow 1.0m	CS10YADAD0010	H6GSY01K0Y
DualBoot® LED patchcord, yellow 2.0m	CS10YADAD0020	H6GSY02K0Y
DualBoot® LED patchcord, yellow 3.0m	CS10YADAD0030	H6GSY03K0Y
DualBoot® LED patchcord, yellow 5.0m	CS10YADAD0050	H6GSY05K0Y
DualBoot® LED patchcord, yellow 7.5m	CS10YADAD0075	H6GSY07K0Y
DualBoot® LED patchcord, yellow 10.0m	CS10YADAD0100	H6GSY10K0Y
DualBoot® LED patchcord, green 1.0m	CS10GADAD0010	H6GSU01K0U
DualBoot® LED patchcord, green 2.0m	CS10GADAD0020	H6GSU02K0U
DualBoot® LED patchcord, green 3.0m	CS10GADAD0030	H6GSU03K0U
DualBoot® LED patchcord, green 5.0m	CS10GADAD0050	H6GSU05K0U
DualBoot® LED patchcord, green 7.5m	CS10GADAD0075	H6GSU07K0U
DualBoot® LED patchcord, green 10.0m	CS10GADAD0100	H6GSU10K0U
DualBoot® LED patchcord, black 1.0m	CS10SADAD0010	H6GSS01K0S
DualBoot® LED patchcord, black 2.0m	CS10SADAD0020	H6GSS02K0S
DualBoot® LED patchcord, black 3.0m	CS10SADAD0030	H6GSS03K0S
DualBoot® LED patchcord, black 5.0m	CS10SADAD0050	H6GSS05K0S
DualBoot® LED patchcord, black 7.5m	CS10SADAD0075	H6GSS07K5S
DualBoot® LED patchcord, black 10.0m	CS10SADAD0100	H6GSS10K0S
DualBoot® LED patchcord, orange 1.0m	CS10OADAD0010	H6GSN01K0N
DualBoot® LED patchcord, orange 2.0m	CS10OADAD0020	H6GSN02K0N
DualBoot® LED patchcord, orange 3.0m	CS10OADAD0030	H6GSN03K0N
DualBoot® LED patchcord, orange 5.0m	CS10OADAD0050	H6GSN05K0N
DualBoot® LED patchcord, orange 7.5m	CS10OADAD0075	H6GSN07K5N
DualBoot® LED patchcord, orange 10.0m	CS10OADAD0100	H6GSN10K0N
DualBoot® LED patchcord, white 1.0m	CS10WADAD0010	H6GSW01K0W
DualBoot® LED patchcord, white 2.0m	CS10WADAD0020	H6GSW02K0W
DualBoot® LED patchcord, white 3.0m	CS10WADAD0030	H6GSW03K0W
DualBoot® LED patchcord, white 5.0m	CS10WADAD0050	H6GSW05K0W
DualBoot® LED patchcord, white 7.5m	CS10WADAD0075	H6GSW07K5W
DualBoot® LED patchcord, white 10.0m	CS10WADAD0100	H6GSW10K0W
DualBoot® LED patchcord, turquoise	CS10TADAD0000	on request
DualBoot® LED patchcord, violet 1.0m	CS10VADAD0010	H6GSV01K0V
DualBoot® LED patchcord, violet 2.0m	CS10VADAD0020	H6GSV02K0V
DualBoot® LED patchcord, violet 3.0m	CS10VADAD0030	H6GSV03K0V
DualBoot® LED patchcord, violet 5.0m	CS10VADAD0050	H6GSV05K0V
DualBoot® LED patchcord, violet 7.5m	CS10VADAD0075	H6GSV07K5V
DualBoot® LED patchcord, violet 10.0m	CS10VADAD0100	H6GSV10K0V
LED-Detektor	CPZLWLA1	HLEDTOOL--



Accessories

Copper patchcord – Continuation

Ordering information

DualBoot® PushPull patchcord Cat. 6_A ISO/IEC, shielded

Description	Type	Order No.
DualBoot® PushPull patchcord, grey 1.0m	CPP1OAAAAA0010	H6GPG01K0G
DualBoot® PushPull patchcord, grey 2.0m	CPP1OAAAAA0020	H6GPG02K0G
DualBoot® PushPull patchcord, grey 3.0m	CPP1OAAAAA0030	H6GPG03K0G
DualBoot® PushPull patchcord, grey 5.0m	CPP1OAAAAA0050	H6GPG05K0G
DualBoot® PushPull patchcord, grey 7.5m	CPP1OAAAAA0075	H6GPG07K5G
DualBoot® PushPull patchcord, grey 10.0m	CPP1OAAAAA0100	H6GPG10K0G
DualBoot® PushPull patchcord, red 1.0m	CPP1ORARAR0010	H6GPR01K0R
DualBoot® PushPull patchcord, red 2.0m	CPP1ORARAR0020	H6GPR02K0R
DualBoot® PushPull patchcord, red 3.0m	CPP1ORARAR0030	H6GPR03K0R
DualBoot® PushPull patchcord, red 5.0m	CPP1ORARAR0050	H6GPR05K0R
DualBoot® PushPull patchcord, red 7.5m	CPP1ORARAR0075	H6GPR07K5R
DualBoot® PushPull patchcord, red 10.0m	CPP1ORARAR0100	H6GPR10K0R
DualBoot® PushPull patchcord, blue 1.0m	CPP1OBABAB0010	H6GPB01K0B
DualBoot® PushPull patchcord, blue 2.0m	CPP1OBABAB0020	H6GPB02K0B
DualBoot® PushPull patchcord, blue 3.0m	CPP1OBABAB0030	H6GPB03K0B
DualBoot® PushPull patchcord, blue 5.0m	CPP1OBABAB0050	H6GPB05K0B
DualBoot® PushPull patchcord, blue 7.5m	CPP1OBABAB0075	H6GPB07K5B
DualBoot® PushPull patchcord, blue 10.0m	CPP1OBABAB0100	H6GPB10K0B
DualBoot® PushPull patchcord, yellow 1.0m	CPP1OYAYAY0010	H6GPY01K0Y
DualBoot® PushPull patchcord, yellow 2.0m	CPP1OYAYAY0020	H6GPY02K0Y
DualBoot® PushPull patchcord, yellow 3.0m	CPP1OYAYAY0030	H6GPY03K0Y
DualBoot® PushPull patchcord, yellow 5.0m	CPP1OYAYAY0050	H6GPY05K0Y
DualBoot® PushPull patchcord, yellow 7.5m	CPP1OYAYAY0075	H6GPY07K5Y
DualBoot® PushPull patchcord, yellow 10.0m	CPP1OYAYAY0100	H6GPY10K0Y
DualBoot® PushPull patchcord, green 1.0m	CPP1OGAGAG0010	H6GPU01K0U
DualBoot® PushPull patchcord, green 2.0m	CPP1OGAGAG0020	H6GPU02K0U
DualBoot® PushPull patchcord, green 3.0m	CPP1OGAGAG0030	H6GPU03K0U
DualBoot® PushPull patchcord, green 5.0m	CPP1OGAGAG0050	H6GPU05K0U
DualBoot® PushPull patchcord, green 7.5m	CPP1OGAGAG0075	H6GPU07K5U
DualBoot® PushPull patchcord, green 10.0m	CPP1OGAGAG0100	H6GPU10K0U
DualBoot® PushPull patchcord, black 1.0m	CPP1OSASAS0010	H6GPS01K0S
DualBoot® PushPull patchcord, black 2.0m	CPP1OSASAS0020	H6GPS02K0S
DualBoot® PushPull patchcord, black 3.0m	CPP1OSASAS0030	H6GPS03K0S
DualBoot® PushPull patchcord, black 5.0m	CPP1OSASAS0050	H6GPS05K0S
DualBoot® PushPull patchcord, black 7.5m	CPP1OSASAS0075	H6GPS07K5S
DualBoot® PushPull patchcord, black 10.0m	CPP1OSASAS0100	H6GPS10L0S
DualBoot® PushPull patchcord, orange 1.0m	CPP1OOAOAO0010	H6GPN01K0N
DualBoot® PushPull patchcord, orange 2.0m	CPP1OOAOAO0020	H6GPN02K0N
DualBoot® PushPull patchcord, orange 3.0m	CPP1OOAOAO0030	H6GPN03K0N
DualBoot® PushPull patchcord, orange 5.0m	CPP1OOAOAO0050	H6GPN05K0N
DualBoot® PushPull patchcord, orange 7.5m	CPP1OOAOAO0075	H6GPN07K5N
DualBoot® PushPull patchcord, orange 10.0m	CPP1OOAOAO0100	H6GPN10K0N

Ordering information

DualBoot® PushPull patchcord Cat. 6_A ISO/IEC, shielded – Continuation

Description	Type	Order No.
DualBoot® PushPull patchcord, white 1.0m	CPP1OWAWAW0010	H6GPW01K0W
DualBoot® PushPull patchcord, white 2.0m	CPP1OWAWAW0020	H6GPW02K0W
DualBoot® PushPull patchcord, white 3.0m	CPP1OWAWAW0030	H6GPW03K0W
DualBoot® PushPull patchcord, white 5.0m	CPP1OWAWAW0050	H6GPW05K0W
DualBoot® PushPull patchcord, white 7.5m	CPP1OWAWAW0075	H6GPW07K5W
DualBoot® PushPull patchcord, white 10.0m	CPP1OWAWAW0100	H6GPW10K0W
DualBoot® PushPull patchcord, turquoise 1.0m	CPP1OTATAT0010	H6GPA01K0A
DualBoot® PushPull patchcord, turquoise 2.0m	CPP1OTATAT0020	H6GPA02K0A
DualBoot® PushPull patchcord, turquoise 3.0m	CPP1OTATAT0030	H6GPA03K0A
DualBoot® PushPull patchcord, turquoise 5.0m	CPP1OTATAT0050	H6GPA05K0A
DualBoot® PushPull patchcord, turquoise 7.5m	CPP1OTATAT0075	H6GPA07K5A
DualBoot® PushPull patchcord, turquoise 10.0m	CPP1OTATAT0100	H6GPA10K0A
DualBoot® PushPull patchcord, violet 1.0m	CPP1OVAVAV0010	H6GPV01K0V
DualBoot® PushPull patchcord, violet 2.0m	CPP1OVAVAV0020	H6GPV02K0V
DualBoot® PushPull patchcord, violet 3.0m	CPP1OVAVAV0030	H6GPV03K0V
DualBoot® PushPull patchcord, violet 5.0m	CPP1OVAVAV0050	H6GPV05K0V
DualBoot® PushPull patchcord, violet 7.5m	CPP1OVAVAV0075	H6GPV07K5V
DualBoot® PushPull patchcord, violet 10.0m	CPP1OVAVAV0100	H6GPV10H0V

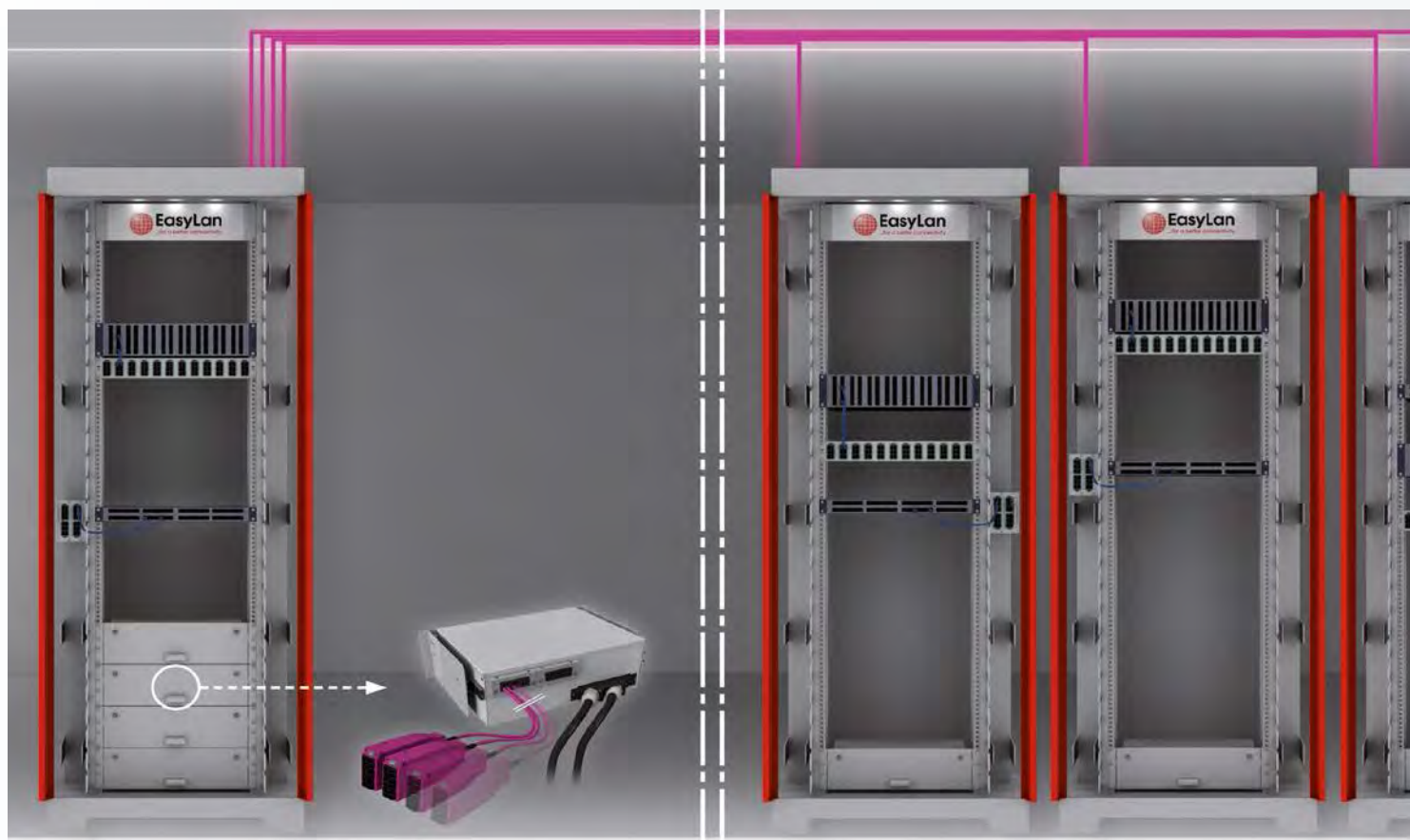
DualBoot® patchcord RJ45 Cat. 6_A ISO/IEC, shielded

Description	Type	Order No.
DualBoot® patchcord, grey	CP1OAAAAA0000	on request
DualBoot® patchcord, red	CP1ORARAR0000	on request
DualBoot® patchcord, blue	CP1OBABAB0000	on request
DualBoot® patchcord, yellow	CP1OYAYAY0000	on request
DualBoot® patchcord, green	CP1OGAGAG0000	on request
DualBoot® patchcord, black	CP1OSASAS0000	on request
DualBoot® patchcord, orange	CP1OOA0A0000	on request
DualBoot® patchcord, white	CP1OWAWAW0000	on request
DualBoot® patchcord, turquoise	CP1OTATAT0000	on request
DualBoot® patchcord, violet	CP1OVAVAV0000	on request



H.D.S.

High Density System H.D.S. Splice distribution system



central backbone cabling

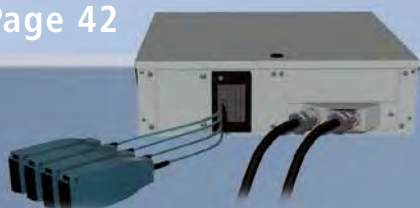
The H.D.S. splice distribution system offers the largest possible flexibility in the data cabinet. The Fiber optic cable ends at the usage point without including the rigid Fiber optic cable in the cabinet cabling. As of now, there is an Fiber optic transfer point in the computer center or in the distribution cabinet. The Fiber optic cables that are in part very rigid will be collected at one point and will be connected in the

distributed cabinet cabling

H.D.S. splice box with the required Fiber optic patch points through flexible but extremely stable H.D.S. Fiber optic cables. In case of upgrade installations, the Fiber optic links already in operation will almost not be influenced. Based on the proven splice cassette, which can be browsed it is guaranteed that the already existing splice connection continue to exist reliably.

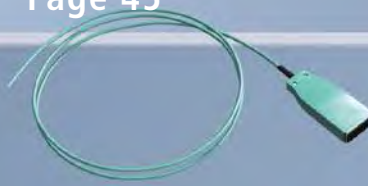
H.D.S. Splice system

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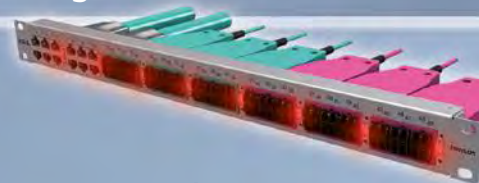
H.D.S. Splice distribution box
H.D.S. Splice wall distributor
H.D.S. Modular splice distributor

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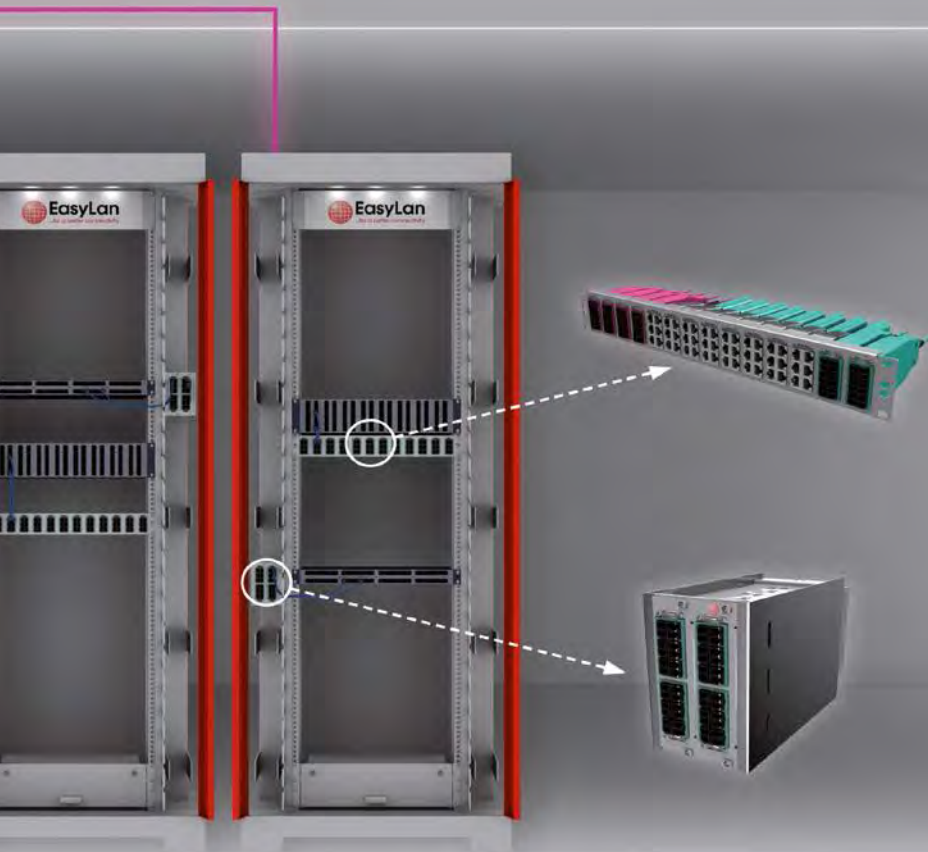


H.D.S. Pigtail

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H.D.S. Panel



Specifications:

- perfect separation between splicing area and patch area
- central transfer point of the backbone cables to flexible (3 mm) 12-fiber H.D.S. pigtails -> distributed cabinet cabling
- better air conditioning, splice boxes are not required
- very high packaging density with 336 outlets in 3U



H.D.S.-Splice distribution box

H.D.S. splice distribution box 19" 3U extractable for the installation in IT cabinets. Splice cassettes are pre-assembled as required either with 12 splice cassettes (for up to 144 fibers) or 24 cassettes (for up to 288 fibers). The cassettes are installed to be browsed. The boxes can be locked with two locks each.

H.D.S. cable pigtail

The H.D.S. cable pigtail is preterminated at the factory with a 6-fold LC-D module. The H.D.S. cable pigtails are available in multimode (OM3, OM4) and in singlemode (OS2, OS2 APC).

► Technical data

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Accessories

H.D.S. splice distribution box 19" 3U extendable for up to 288 fibers



The H.D.S. splice distribution box 19" 3U is extendable and designed for installation in IT cabinets. Depending on your requirements, the splice distributors will be pre-assembled with splice cassettes. 12 splices are provided for each splice cassette. The cassettes are installed to be browsed. The boxes can be locked with two locks each.

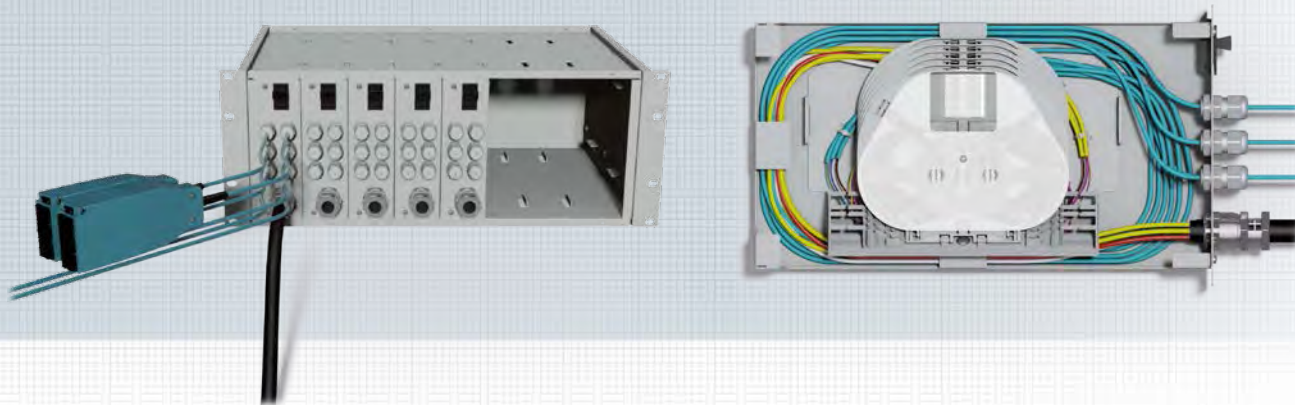
The H.D.S. splice distributor offers the largest possible flexibility in the data cabinet. The Fiber optic cable ends at the usage point without including the rigid Fiber optic cable in the cabinet cabling. As of now, there is an Fiber optic transfer point in the computer center or in the distribution cabinet. The Fiber optic cables that are in part very rigid will be collected at one point and will be connected in the H.D.S. splicing box with the required Fiber optic patch points through flexible but extremely stable H.D.S. Fiber optic cables. In case of upgrade installations, the Fiber optic links already in operation will almost not be influenced. Based on the proven splice cassette, which can be browsed, it is guaranteed that the already existing splice connections continue to exist reliably.

Specifications:

Material	Steel sheet zinc coated powder coated
Color	gray, RAL 7035
Dimensions	H.D.S. Splice box for 288 fibers 19" 3HE Depth: 370 mm
Cover	powder coated
Locking	2 locks
Cable inlet:	
FO route cable	M-screw connection straight or angled
FO module feed	Feed comb with cable binder strain-relieved
Pull out	Ball bearing pull out
Design	Variant for up to 288 fibers - 24 x splice cassettes, - 1 x cable feed comb - 1 x M20 screw connection straight - 2 x lock

Description	Type	Order No.
H.D.S. splice distribution box 19" 3U extendable with 24 splice cassettes (for up to 244 fibers)	LVH3ADSV24	HDSPV53H--
H.D.S. splice cassette set 6ers	LVZSKC06	HELSP00005

H.D.S. module carrier 19" 4U for 8 modular splice distribution boxes



H.D.S. module carrier

The H.D.S. module carrier can be equipped with modules, as required, from the front or the rear. The modules are anchored safely in the module carrier using a snap-in lock. The cumbersome screw-in is not required. The incoming and outgoing cables can be fed comfortably through strain-relief rails. Despite the high packing density, a later expansion is possible at any time due to the modular design.

Characteristics:

Material	Steel sheet zinc coated powder coated
Color	gray, RAL 7035
Dimensions	cover; metallic glossy 19" 4U H.D.S. module carriers for 8 modular splice distributors in a 19" data cabinet
Module feed	both sides (front and rear mounting possible)
Module fastening	8 slots, module in snap-in fastening

H.D.S. module slide-in

The H.D.S. modular splice distribution box 19" 4U 10HP has been developed for the installation in 19" 4U module carriers. The splice distributors are pre-equipped with 6 splice cassettes. 12 splices are provided for each splice cassette. The cassettes are installed to be browsed. The modules can be slid in the 4U module carrier from the front or the rear. When fully equipped, 8 modules can be installed in a 19" 4U module receptacle, therefore 576 splice connections on 19" 4U are possible.

Characteristics:

Material	Steel sheet zinc coated powder coated
Color	gray, RAL 7035
Dimensions	H.D.S. modular splice distributors for 72 fibers 19" 4U 10HP
Cover	powder coated
Installation	19" 4U module carrier
Cable inlet:	
FO route cable	M-screw connection straight
FO module feed	individual through screw connections strain-relieved Design 6 x splice cassettes, 1 x M20 screw connection straight 6 x cable screw connection for outgoing 12ers H.D.S. pigtails

Description	Type	Order No.
H.D.S. Module carrier 19" 4U for 8 modular splice distribution boxes	on request	on request
H.D.S. modular splice distributors 19" 4U 10HP with 6 splice cassettes (for up to 72 fibers)	on request	on request
H.D.S. splice cassette set 6ers	LVZSKC06	HELSP00005



H.D.S. splice wall distributor for up to 288 fibers



H.D.S. splice wall distributor for mounting on walls, under false floors or suspended ceilings. Depending on your requirements, the splice wall distributor is pre-assembled with splice cassettes. 12 splices are provided for each splice cassette. The cassettes are installed to be browsed. The boxes can be locked with a lock.

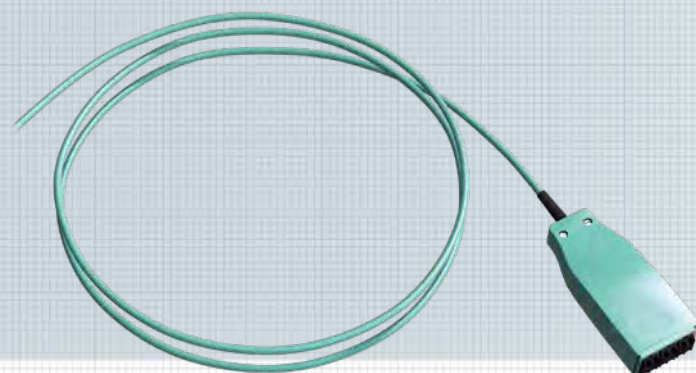
The H.D.S. splice wall distributor offers the highest possible flexibility in the splice area. The FO cable ends at the usage point without including the rigid FO cable in the cabinet cabling. Now, there is an FO transfer point in the computer center or at the usage location. The FO cables that are in part very rigid will be collected at one point and will be connected in the H.D.S. splice wall box with the required FO patch points through flexible but extremely stable H.D.S. FO cables. In case of later installations, the FO links already in operation will almost not be influenced. Based on the proven splice cassette, which can be browsed, it is guaranteed that the already existing splice connections continue to exist reliably.

Specifications:

Material	Steel sheet zinc coated powder coated
Color	gray, RAL 7035
Dimensions	495 x 435 x 133 mm
Cover	powder coated
Locking	1 lock
Cable inlet:	
FO route cable	M-screw connection straight or angled
FO module feed	Feed comb with cable binder strain-relieved
Design	24x splice cassettes, 1 x cable feed comb 2 x M20 screw connection straight 1 x lock

Description	Type	Order No.
H.D.S. splice wall distributor with 24 splice cassettes (for up to 288 fibers)	on request	on request
H.D.S. splice cassettes set 6ers	LVZSKC06	HELSP00005

H.D.S. High Density System Fiber optic 12 fiber pigtail



The H.D.S. Fiber optic 12ers pigtail is designed with the different H.D.S. splicing distributors, it is exceptionally qualified for Fiber optic connections in the data cabinet environment or for the connection of consolidation points. The pre-terminated 12ers pigtails, delivered with test predocols, are designed with six LC duplex connections for 10 Gbit Ethernet transmissions (as per IEEE 802.3). The complete wire bundle is divided in the module housing and connected at the factory directly in the LC duplex modules. This means that an additional connection in the module is not required, achieving significantly lower losses. Depending on the existing infrastructure and the required link length, the user can choose between singlemode OS2 A2 and multimode fibers OM3 and OM4 trunk cables. After the cable installation, the 6-port module is mounted in an H.D.S. rack in the distribution cabinet or floor tank. The system offers different racks for the 19 inch distributor and the floor tank. It is possible to place up to 168 LCD ports on three height units or up to 18 LCD ports in an underfloor installation.

Standards:

IEEE 802.3; IEC 888; 10GBase-SR/SW; DIS14165-111

Specifications:

Cable

Designation	I-D(ZN)H 1x12 xxx
Optical data	OS2 OS2; OM3; OM4
Sheath	FR-LSOH;
Color	OS2 yellow; OM3 aqua; OM4 violet
Fire test	IEC 60332-3
Pull-in force	short term 220N, permanent tensile force 110 N
Bending radius	≥ 20mm

Module

Material	plastic;
Color:	OM4 violet; OM3 aqua; OM2/APC green; OM2/PC blue
Sockets	6 x LC Duplex modules

H.D.S. High Density System Fiber optic 12 fiber pigtail – Continuation

Ordering information

OM4

Description	Type	Order No.
H.D.S. 1.0 FO 6x LC-D MM OM4 violet 1.0m	LH1420P0010	HDSL4LP01-
H.D.S. 1.0 FO 6x LC-D MM OM4 violet 2.0m	LH1420P0020	HDSL4LP02-
H.D.S. 1.0 FO 6x LC-D MM OM4 violet 3.0m	LH1420P0030	HDSL4LP03-
H.D.S. 1.0 FO 6x LC-D MM OM4 violet 4.0m	LH1420P0040	HDSL4LP04-
H.D.S. 1.0 FO 6x LC-D MM OM4 violet 5.0m	LH1420P0050	HDSL4LP05-
H.D.S. 1.0 FO 6x LC-D MM OM4 violet 6.0m	LH1420P0060	HDSL4LP06-
H.D.S. 1.0 FO 6x LC-D MM OM4 violet 7.0m	LH1420P0070	HDSL4LP07-
H.D.S. 1.0 FO 6x LC-D MM OM4 violet 8.0m	LH1420P0080	HDSL4LP08-
H.D.S. 1.0 FO 6x LC-D MM OM4 violet 9.0m	LH1420P0090	HDSL4LP09-
H.D.S. 1.0 FO 6x LC-D MM OM4 violet 10.0m	LH1420P0100	HDSL4LP10-
H.D.S. 1.0 FO 6x LC-D MM OM4 violet 11.0m	LH1420P0110	HDSL4LP11-
H.D.S. 1.0 FO 6x LC-D MM OM4 violet 12.0m	LH1420P0120	HDSL4LP12-
H.D.S. 1.0 FO 6x LC-D MM OM4 violet 13.0m	LH1420P0130	HDSL4LP13-
H.D.S. 1.0 FO 6x LC-D MM OM4 violet 14.0m	LH1420P0140	HDSL4LP14-
H.D.S. 1.0 FO 6x LC-D MM OM4 violet 15.0m	LH1420P0150	HDSL4LP15-
H.D.S. 1.0 FO 6x LC-D MM OM4 violet 16.0m	LH1420P0160	HDSL4LP16-
H.D.S. 1.0 FO 6x LC-D MM OM4 violet 17.0m	LH1420P0170	HDSL4LP17-
H.D.S. 1.0 FO 6x LC-D MM OM4 violet 18.0m	LH1420P0180	HDSL4LP18-
H.D.S. 1.0 FO 6x LC-D MM OM4 violet 19.0m	LH1420P0190	HDSL4LP19-
H.D.S. 1.0 FO 6x LC-D MM OM4 violet 20.0m	LH1420P0200	HDSL4LP20-
H.D.S. 1.0 FO 6x LC-D MM OM4 violet 21.0m	LH1420P0210	HDSL4LP21-
H.D.S. 1.0 FO 6x LC-D MM OM4 violet 22.0m	LH1420P0220	HDSL4LP22-
H.D.S. 1.0 FO 6x LC-D MM OM4 violet 23.0m	LH1420P0230	HDSL4LP23-
H.D.S. 1.0 FO 6x LC-D MM OM4 violet 24.0m	LH1420P0240	HDSL4LP24-
H.D.S. 1.0 FO 6x LC-D MM OM4 violet 25.0m	LH1420P0250	HDSL4LP25-
H.D.S. 1.0 FO 6x LC-D MM OM4 violet 30.0m	LH1420P0300	HDSL4LP30-
H.D.S. 1.0 FO 6x LC-D MM OM4 violet 35.0m	LH1420P0350	HDSL4LP35-
H.D.S. 1.0 FO 6x LC-D MM OM4 violet 40.0m	LH1420P0400	HDSL4LP40-
H.D.S. 1.0 FO 6x LC-D MM OM4 violet 45.0m	LH1420P0450	HDSL4LP45-
H.D.S. 1.0 FO 6x LC-D MM OM4 violet 50.0m	LH1420P0500	HDSL4LP50-

Ordering information

OM3

Description	Type	Order No.
H.D.S. 1.0 FO 6x LC-D MM OM3 aqua 1.0m	LH1320P0010	HDSL3LP01-
H.D.S. 1.0 FO 6x LC-D MM OM3 aqua 2.0m	LH1320P0020	HDSL3LP02-
H.D.S. 1.0 FO 6x LC-D MM OM3 aqua 3.0m	LH1320P0030	HDSL3LP03-
H.D.S. 1.0 FO 6x LC-D MM OM3 aqua 4.0m	LH1320P0040	HDSL3LP04-
H.D.S. 1.0 FO 6x LC-D MM OM3 aqua 5.0m	LH1320P0050	HDSL3LP05-
H.D.S. 1.0 FO 6x LC-D MM OM3 aqua 6.0m	LH1320P0060	HDSL3LP06-
H.D.S. 1.0 FO 6x LC-D MM OM3 aqua 7.0m	LH1320P0070	HDSL3LP07-
H.D.S. 1.0 FO 6x LC-D MM OM3 aqua 8.0m	LH1320P0080	HDSL3LP08-
H.D.S. 1.0 FO 6x LC-D MM OM3 aqua 9.0m	LH1320P0090	HDSL3LP09-
H.D.S. 1.0 FO 6x LC-D MM OM3 aqua 10.0m	LH1320P0100	HDSL3LP10-
H.D.S. 1.0 FO 6x LC-D MM OM3 aqua 11.0m	LH1320P0110	HDSL3LP11-
H.D.S. 1.0 FO 6x LC-D MM OM3 aqua 12.0m	LH1320P0120	HDSL3LP12-
H.D.S. 1.0 FO 6x LC-D MM OM3 aqua 13.0m	LH1320P0130	HDSL3LP13-
H.D.S. 1.0 FO 6x LC-D MM OM3 aqua 14.0m	LH1320P0140	HDSL3LP14-
H.D.S. 1.0 FO 6x LC-D MM OM3 aqua 15.0m	LH1320P0150	HDSL3LP15-
H.D.S. 1.0 FO 6x LC-D MM OM3 aqua 16.0m	LH1320P0160	HDSL3LP16-
H.D.S. 1.0 FO 6x LC-D MM OM3 aqua 17.0m	LH1320P0170	HDSL3LP17-
H.D.S. 1.0 FO 6x LC-D MM OM3 aqua 18.0m	LH1320P0180	HDSL3LP18-
H.D.S. 1.0 FO 6x LC-D MM OM3 aqua 19.0m	LH1320P0190	HDSL3LP19-
H.D.S. 1.0 FO 6x LC-D MM OM3 aqua 20.0m	LH1320P0200	HDSL3LP20-
H.D.S. 1.0 FO 6x LC-D MM OM3 aqua 21.0m	LH1320P0210	HDSL3LP21-
H.D.S. 1.0 FO 6x LC-D MM OM3 aqua 22.0m	LH1320P0220	HDSL3LP22-
H.D.S. 1.0 FO 6x LC-D MM OM3 aqua 23.0m	LH1320P0230	HDSL3LP23-
H.D.S. 1.0 FO 6x LC-D MM OM3 aqua 24.0m	LH1320P0240	HDSL3LP24-
H.D.S. 1.0 FO 6x LC-D MM OM3 aqua 25.0m	LH1320P0250	HDSL3LP25-
H.D.S. 1.0 FO 6x LC-D MM OM3 aqua 30.0m	LH1320P0300	HDSL3LP30-
H.D.S. 1.0 FO 6x LC-D MM OM3 aqua 35.0m	LH1320P0350	HDSL3LP35-
H.D.S. 1.0 FO 6x LC-D MM OM3 aqua 40.0m	LH1320P0400	HDSL3LP40-
H.D.S. 1.0 FO 6x LC-D MM OM3 aqua 45.0m	LH1320P0450	HDSL3LP45-
H.D.S. 1.0 FO 6x LC-D MM OM3 aqua 50.0m	LH1320P0500	HDSL3LP50-



H.D.S. High Density System Fiber optic 12 fiber pigtail – Continuation

Ordering information

OM2

Description	Type	Order No.
H.D.S. 1.0 FO 6x LC-D SM OS2 blue 1.0m	LH1020P0010	HDSL9LP01-
H.D.S. 1.0 FO 6x LC-D SM OS2 blue 2.0m	LH1020P0020	HDSL9LP02-
H.D.S. 1.0 FO 6x LC-D SM OS2 blue 3.0m	LH1020P0030	HDSL9LP03-
H.D.S. 1.0 FO 6x LC-D SM OS2 blue 4.0m	LH1020P0040	HDSL9LP04-
H.D.S. 1.0 FO 6x LC-D SM OS2 blue 5.0m	LH1020P0050	HDSL9LP05-
H.D.S. 1.0 FO 6x LC-D SM OS2 blue 6.0m	LH1020P0060	HDSL9LP06-
H.D.S. 1.0 FO 6x LC-D SM OS2 blue 7.0m	LH1020P0070	HDSL9LP07-
H.D.S. 1.0 FO 6x LC-D SM OS2 blue 8.0m	LH1020P0080	HDSL9LP08-
H.D.S. 1.0 FO 6x LC-D SM OS2 blue 9.0m	LH1020P0090	HDSL9LP09-
H.D.S. 1.0 FO 6x LC-D SM OS2 blue 10.0m	LH1020P0100	HDSL9LP10-
H.D.S. 1.0 FO 6x LC-D SM OS2 blue 11.0m	LH1020P0110	HDSL9LP11-
H.D.S. 1.0 FO 6x LC-D SM OS2 blue 12.0m	LH1020P0120	HDSL9LP12-
H.D.S. 1.0 FO 6x LC-D SM OS2 blue 13.0m	LH1020P0130	HDSL9LP13-
H.D.S. 1.0 FO 6x LC-D SM OS2 blue 14.0m	LH1020P0140	HDSL9LP14-
H.D.S. 1.0 FO 6x LC-D SM OS2 blue 15.0m	LH1020P0150	HDSL9LP15-
H.D.S. 1.0 FO 6x LC-D SM OS2 blue 16.0m	LH1020P0160	HDSL9LP16-
H.D.S. 1.0 FO 6x LC-D SM OS2 blue 17.0m	LH1020P0170	HDSL9LP17-
H.D.S. 1.0 FO 6x LC-D SM OS2 blue 18.0m	LH1020P0180	HDSL9LP18-
H.D.S. 1.0 FO 6x LC-D SM OS2 blue 19.0m	LH1020P0190	HDSL9LP19-
H.D.S. 1.0 FO 6x LC-D SM OS2 blue 20.0m	LH1020P0200	HDSL9LP20-
H.D.S. 1.0 FO 6x LC-D SM OS2 blue 21.0m	LH1020P0210	HDSL9LP21-
H.D.S. 1.0 FO 6x LC-D SM OS2 blue 22.0m	LH1020P0220	HDSL9LP22-
H.D.S. 1.0 FO 6x LC-D SM OS2 blue 23.0m	LH1020P0230	HDSL9LP23-
H.D.S. 1.0 FO 6x LC-D SM OS2 blue 24.0m	LH1020P0240	HDSL9LP24-
H.D.S. 1.0 FO 6x LC-D SM OS2 blue 25.0m	LH1020P0250	HDSL9LP25-
H.D.S. 1.0 FO 6x LC-D SM OS2 blue 30.0m	LH1020P0300	HDSL9LP30-
H.D.S. 1.0 FO 6x LC-D SM OS2 blue 35.0m	LH1020P0350	HDSL9LP35-
H.D.S. 1.0 FO 6x LC-D SM OS2 blue 40.0m	LH1020P0400	HDSL9LP40-
H.D.S. 1.0 FO 6x LC-D SM OS2 blue 45.0m	LH1020P0450	HDSL9LP45-
H.D.S. 1.0 FO 6x LC-D SM OS2 blue 50.0m	LH1020P0500	HDSL9LP50-

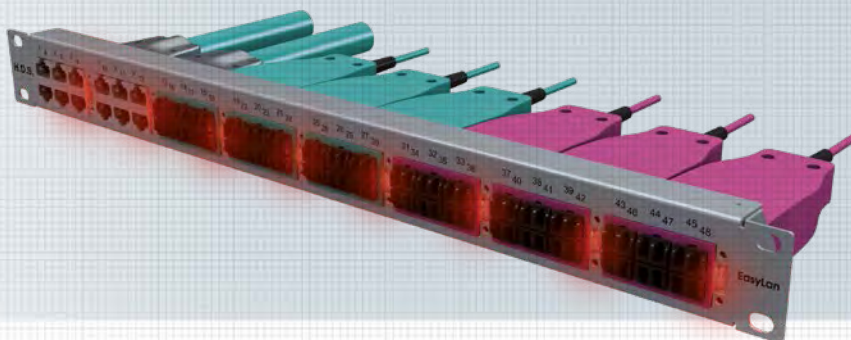
Ordering information

OM2

Description	Type	Order No.
H.D.S. 1.0 FO 6x LC-D APC OS2 green 1.0m	LH1920P0010	HDSL9MP01-
H.D.S. 1.0 FO 6x LC-D APC OS2 green 2.0m	LH1920P0020	HDSL9MP02-
H.D.S. 1.0 FO 6x LC-D APC OS2 green 3.0m	LH1920P0030	HDSL9MP03-
H.D.S. 1.0 FO 6x LC-D APC OS2 green 4.0m	LH1920P0040	HDSL9MP04-
H.D.S. 1.0 FO 6x LC-D APC OS2 green 5.0m	LH1920P0050	HDSL9MP05-
H.D.S. 1.0 FO 6x LC-D APC OS2 green 6.0m	LH1920P0060	HDSL9MP06-
H.D.S. 1.0 FO 6x LC-D APC OS2 green 7.0m	LH1920P0070	HDSL9MP07-
H.D.S. 1.0 FO 6x LC-D APC OS2 green 8.0m	LH1920P0080	HDSL9MP08-
H.D.S. 1.0 FO 6x LC-D APC OS2 green 9.0m	LH1920P0090	HDSL9MP09-
H.D.S. 1.0 FO 6x LC-D APC OS2 green 10.0m	LH1920P0100	HDSL9MP10-
H.D.S. 1.0 FO 6x LC-D APC OS2 green 11.0m	LH1920P0110	HDSL9MP11-
H.D.S. 1.0 FO 6x LC-D APC OS2 green 12.0m	LH1920P0120	HDSL9MP12-
H.D.S. 1.0 FO 6x LC-D APC OS2 green 13.0m	LH1920P0130	HDSL9MP13-
H.D.S. 1.0 FO 6x LC-D APC OS2 green 14.0m	LH1920P0140	HDSL9MP14-
H.D.S. 1.0 FO 6x LC-D APC OS2 green 15.0m	LH1920P0150	HDSL9MP15-
H.D.S. 1.0 FO 6x LC-D APC OS2 green 16.0m	LH1920P0160	HDSL9MP16-
H.D.S. 1.0 FO 6x LC-D APC OS2 green 17.0m	LH1920P0170	HDSL9MP17-
H.D.S. 1.0 FO 6x LC-D APC OS2 green 18.0m	LH1920P0180	HDSL9MP18-
H.D.S. 1.0 FO 6x LC-D APC OS2 green 19.0m	LH1920P0190	HDSL9MP19-
H.D.S. 1.0 FO 6x LC-D APC OS2 green 20.0m	LH1920P0200	HDSL9MP20-
H.D.S. 1.0 FO 6x LC-D APC OS2 green 21.0m	LH1920P0210	HDSL9MP21-
H.D.S. 1.0 FO 6x LC-D APC OS2 green 22.0m	LH1920P0220	HDSL9MP22-
H.D.S. 1.0 FO 6x LC-D APC OS2 green 23.0m	LH1920P0230	HDSL9MP23-
H.D.S. 1.0 FO 6x LC-D APC OS2 green 24.0m	LH1920P0240	HDSL9MP24-
H.D.S. 1.0 FO 6x LC-D APC OS2 green 25.0m	LH1920P0250	HDSL9MP25-
H.D.S. 1.0 FO 6x LC-D APC OS2 green 30.0m	LH1920P0300	HDSL9MP30-
H.D.S. 1.0 FO 6x LC-D APC OS2 green 35.0m	LH1920P0350	HDSL9MP35-
H.D.S. 1.0 FO 6x LC-D APC OS2 green 40.0m	LH1920P0400	HDSL9MP40-
H.D.S. 1.0 FO 6x LC-D APC OS2 green 45.0m	LH1920P0450	HDSL9MP45-
H.D.S. 1.0 FO 6x LC-D APC OS2 green 50.0m	LH1920P0500	HDSL9MP50-



H.D.S. panel empty for H.D.S. fiber optic and copper modules



Using the H.D.S. panels, you can mount the H.D.S. fiber optic and H.D.S. copper modules in the patch field of the distribution cabinets. The H.D.S. panels are available in 19" 1U design.

Standards:

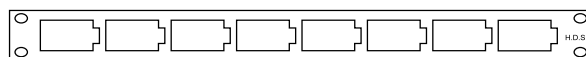
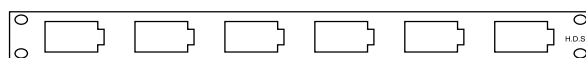
IEC 60603-7, IEC 61754-20, TIA 604-10-A

Specifications:

Installation dimension	19" 1U, depth 35mm
Front	Cutout for up to 8 H.D.S. modules
Housing material	Steel sheet painted RAL 7035
Materials	as per RoHS 2002/95/EG

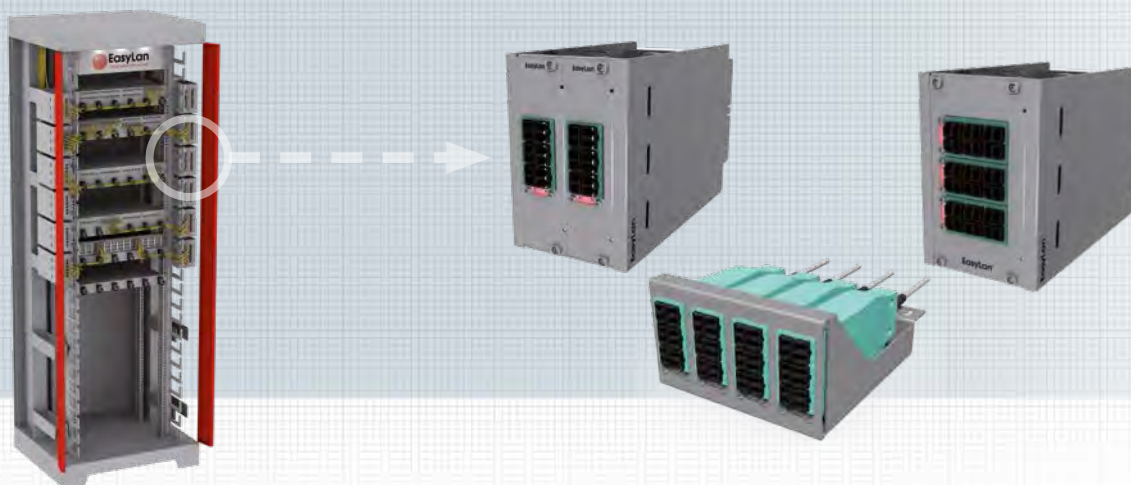
Environmental requirements:

Connection class	IP20
Temperature	-20°C – +60°C



Description	Type	Order No.
H.D.S. panel empty, 6x H.D.S. 1U, RAL 7035	AHVPL06101E	HDSPG6----
H.D.S. panel empty, 8x H.D.S. 1U, RAL 7035	AHVPL08101E	HDSPG8----
Blind plate for H.D.S. cutout	AHVZMB001	HDSPGCOVER

H.D.S. side module carrier empty 3U / 14HP



H.D.S. side module carriers are 14HP wide 3U assembly carriers for the insertion of H.D.S. modules. Up to 24 ports can be distributed to 2 individual modules. The slide-in modules can be pulled out completely. They are fastened on thread plates. This permits a fast and easy installation. The mini-module carrier can be combined with H.D.S. modules. The side cabinet mounting makes it possible to realize a space saving, especially climate friendly cabling without disturbing the air flow.

Characteristics:

Material	Metal
Color	Gray, RAL 7035
Color	metallic glossy
Installation depth	190 mm
Keystone module	Distributed for max. 24 ports to 2 individual modules
Application area	Little space in the cabinet, high flexibility, individual expansions, e.g. in computer centers, no influence on the cold duct due to side wise installation
Packaging unit	1 unit in cardboard box

Description	Type	Order No.
H.D.S. side module carrier empty	AVMSB314	HDSPSMTL--
H.D.S. side module carrier slide-in empty 1x H.D.S., 7HP	AHVSPLV01	HDSPSE3H-1
H.D.S. side module carrier slide-in empty 3x H.D.S., 14HP	AHVSPLH03	HDSPSE3H-3
H.D.S. side module carrier slide-in empty 4x H.D.S.	AVHSPBH04	HDSPSP3H-4
Dummy plate	AVMB0000	HEKBB001--



H.D.S. sub-distribution empty



H.D.S. sub-distribution

The H.D.S. sub distributions are available in 10" and 19". Depending on customer requirements, the removable module receptacle are delivered with suitable cutouts (e.g. 8x H.D.S.). Based on the very robust steel design, the sub-distribution can be installed at any location (e.g. suspended ceiling, false floor, etc.).

Specifications:

Installation dimension	10" or 19" 1U
Housing material	Steel sheet painted , RAL 7035
Materials	RoHS 2002/95/EG

Environmental requirements:

Connection class	IP20
Temperature range	-20°C – +60°C

Description	Type	Order No.
Sub-distributor empty, 3x H.D.S., black, RAL9005	CPPF1HDS1E	HDSPC1HS-3
Sub-distributor empty, 6x H.D.S., black, RAL9005	CPPF1HDS2E	HDSPC1HG-3
Sub-distributor empty, 3x H.D.S., grey, RAL7035	CPPF2HDS1E	HDSPC1HS-6
Sub-distributor empty, 6x H.D.S., grey, RAL7035	CPPF2HDS2E	HDSPC1HG-6
other module receptacles on request		

H.D.S. floor carrier empty for underfloor systems



H.D.S. floor carrier for underfloor systems

The carrier plate replaces the device carrier and therefore offers the largest possible space in the cable feed. The angled feed and lead-away permits a safe cable routing even in case of very low false floors. A combination with installation plates for 4x preLink®/fixLink® modules or 1x H.D.S. is possible. The installation plates will be fastened to the carrier plate using two screws, fields of the carrier plate that are not used can be covered with dust proof blind plates.

Specifications:

Dimensions	According to the specifications of Ackermann underfloor systems
Material	Steel sheet, hot-dip galvanized
Color	Black, RAL 9005
Material thickness	1.5 mm
Assembly	- with max. 12 Keystone modules preLink®/fixLink® - with max. 3 H.D.S. Cu modules
Design	GB2 or GB3

* The module inserts are not painted or hot-dip galvanized for optimal shield transition reasons. The black color in the picture was only selected for technical photo considerations.

Packaging unit 1 unit each

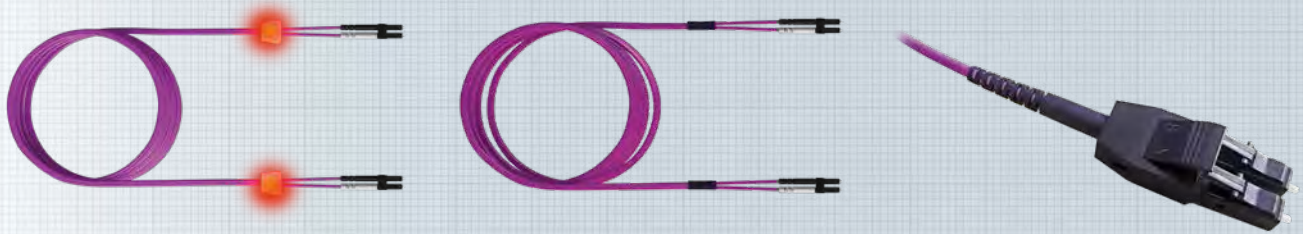
Description	Type	Order No.
Ackermann carrier plate empty GB2	ABG00011	HEKFPZBT01
Ackermann carrier plate empty GB3	ABG00012	HEKFPZBT02
Blind plate black RAL 9005	ABG00013	HEKFPZBT06
Installation plate empty 1x H.D.S.	ABG00015	HEKFPZBT05
additional installation plates on request		



Order No. blue fat: on stock, usually ready for delivery on the day of order! **Order No. blue thin:** on request!

Accessories

Fiber optic patchcord multimode



LED patchcord

- Using the LED detector, the user can illuminate both ends of the cable by pressing a button. The detector can be found in the accessories.
- thermally and mechanically robust in accordance with Telcordia GR-326-CORE
- Duplex design with OM3 and OM4 fibers
- Connector: LC, SC or E2000®



Standard patchcord

- Duplex design with OM3 and OM4 fibers
- Connector: LC, SC, E2000®
- can be delivered on request with all popular connector types, also with MU or MPO.

UniBoot duplex patchcord

- slim bundle loader patchcord
- only available in duplex design for OM3 and OM4 fibers and LCD connectors.

Ordering information

LED multimode patchcord

Description	Type	Order No.
LED-MM 2xLCD OM3 1.0m	LSD32200010	HEL23LL01L
LED-MM 2xLCD OM3 2.0m	LSD32200020	HEL23LL02L
LED-MM 2xLCD OM3 3.0m	LSD32200030	HEL23LL03L
LED-MM 2xLCD OM3 5.0m	LSD32200050	HEL23LL05L
LED-MM 2xLCD OM3 7.5m	LSD32200075	HEL23LL07L
LED-MM 2xLCD OM3 10.0m	LSD32200100	HEL23LL10L
LED-MM 2xLCD OM4 1.0m	LSD42200010	HEL24LL01L
LED-MM 2xLCD OM4 2.0m	LSD42200020	HEL24LL02L
LED-MM 2xLCD OM4 3.0m	LSD42200030	HEL24LL03L
LED-MM 2xLCD OM4 5.0m	LSD42200050	HEL24LL05L
LED-MM 2xLCD OM4 7.5m	LSD42200075	HEL24LL07L
LED-MM 2xLCD OM4 10.0m	LSD42200100	HEL24LL10L
LED-MM 2xE2000®-D OM3 1.0m	LSD34400010	HEL23EE01L
LED-MM 2xE2000®-D OM3 2.0m	LSD34400020	HEL23EE02L
LED-MM 2xE2000®-D OM3 3.0m	LSD34400030	HEL23EE03L
LED-MM 2xE2000®-D OM3 5.0m	LSD34400050	HEL23EE05L
LED-MM 2xE2000®-D OM3 7.5m	LSD34400075	HEL23EE07L
LED-MM 2xE2000®-D OM3 10.0m	LSD34400100	HEL23EE10L
LED-MM 2xE2000®-D OM4 1.0m	LSD44400010	HEL24EE01L
LED-MM 2xE2000®-D OM4 2.0m	LSD44400020	HEL24EE02L
LED-MM 2xE2000®-D OM4 3.0m	LSD44400030	HEL24EE03L
LED-MM 2xE2000®-D OM4 5.0m	LSD44400050	HEL24EE05L
LED-MM 2xE2000®-D OM4 7.5m	LSD44400075	HEL24EE07L
LED-MM 2xE2000®-D OM4 10.0m	LSD44400100	HEL24EE10L
LED-MM 2xSCD OM3 1.0m	LSD31100010	HEL23CC01L
LED-MM 2xSCD OM3 2.0m	LSD31100020	HEL23CC02L
LED-MM 2xSCD OM3 3.0m	LSD31100030	HEL23CC03L
LED-MM 2xSCD OM3 5.0m	LSD31100050	HEL23CC05L
LED-MM 2xSCD OM3 7.5m	LSD31100075	HEL23CC07L
LED-MM 2xSCD OM3 10.0m	LSD31100100	HEL23CC10L
LED-MM 2xSCD OM4 1.0m	LSD41100010	HEL24CC01L
LED-MM 2xSCD OM4 2.0m	LSD41100020	HEL24CC02L
LED-MM 2xSCD OM4 3.0m	LSD41100030	HEL24CC03L
LED-MM 2xSCD OM4 5.0m	LSD41100050	HEL24CC05L
LED-MM 2xSCD OM4 7.5m	LSD41100075	HEL24CC07L
LED-MM 2xSCD OM4 10.0m	LSD41100100	HEL24CC10L
LED detector	CPZLWLA1	HLEDTOOL--



Accessories

Fiber optic patchcord multimode – Continuation

Ordering information

Multimode - Standard patchcord

Description	Type	Order No.
MM 2xLCD OM3 1.0m	LPD32200010	HEL23LL01V
MM 2xLCD OM3 2.0m	LPD32200020	HEL23LL02V
MM 2xLCD OM3 3.0m	LPD32200030	HEL23LL03V
MM 2xLCD OM3 5.0m	LPD32200050	HEL23LL05V
MM 2xLCD OM3 7.5m	LPD32200075	HEL23LL07V
MM 2xLCD OM3 10.0m	LPD32200100	HEL23LL10V
MM 2xLCD OM4 1.0m	LPD42200010	HEL24LL01V
MM 2xLCD OM4 2.0m	LPD42200020	HEL24LL02V
MM 2xLCD OM4 3.0m	LPD42200030	HEL24LL03V
MM 2xLCD OM4 5.0m	LPD42200050	HEL24LL05V
MM 2xLCD OM4 7.5m	LPD42200075	HEL24LL07V
MM 2xLCD OM4 10.0m	LPD42200100	HEL24LL10V
MM 2xE2000®-D OM3 1.0m	LPD34400010	HEL23EE01V
MM 2xE2000®-D OM3 2.0m	LPD34400020	HEL23EE02V
MM 2xE2000®-D OM3 3.0m	LPD34400030	HEL23EE03V
MM 2xE2000®-D OM3 5.0m	LPD34400050	HEL23EE05V
MM 2xE2000®-D OM3 7.5m	LPD34400075	HEL23EE07V
MM 2xE2000®-D OM3 10.0m	LPD34400100	HEL23EE10V
MM 2xE2000®-D OM4 1.0m	LPD44400010	HEL24EE01V
MM 2xE2000®-D OM4 2.0m	LPD44400020	HEL24EE02V
MM 2xE2000®-D OM4 3.0m	LPD44400030	HEL24EE03V
MM 2xE2000®-D OM4 5.0m	LPD44400050	HEL24EE05V
MM 2xE2000®-D OM4 7.5m	LPD44400075	HEL24EE07V
MM 2xE2000®-D OM4 10.0m	LPD44400100	HEL24EE10V
MM 2xSCD OM3 1.0m	LPD31100010	HEL23CC01V
MM 2xSCD OM3 2.0m	LPD31100020	HEL23CC02V
MM 2xSCD OM3 3.0m	LPD31100030	HEL23CC03V
MM 2xSCD OM3 5.0m	LPD31100050	HEL23CC05V
MM 2xSCD OM3 7.5m	LPD31100075	HEL23CC07V
MM 2xSCD OM3 10.0m	LPD31100100	HEL23CC10V
MM 2xSCD OM4 1.0m	LPD01100010	HEL29CC01V
MM 2xSCD OM4 2.0m	LPD41100020	HEL24CC02V
MM 2xSCD OM4 3.0m	LPD41100030	HEL24CC03V
MM 2xSCD OM4 5.0m	LPD41100050	HEL24CC05V
MM 2xSCD OM4 7.5m	LPD41100075	HEL24CC07V
MM 2xSCD OM4 10.0m	LPD41100100	HEL24CC10V

Ordering information

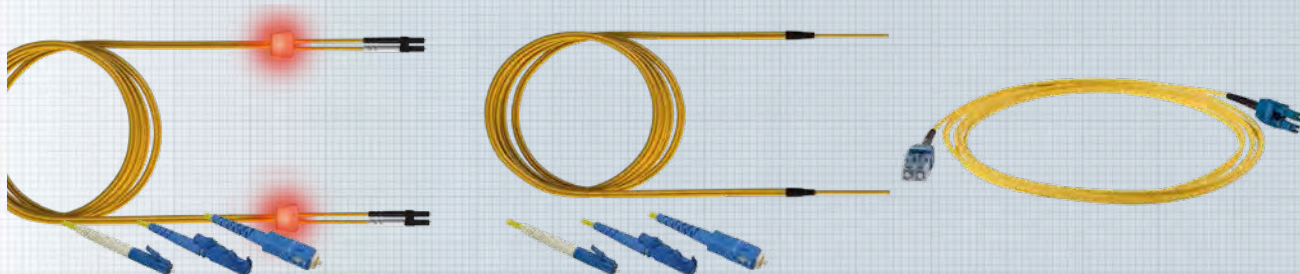
UniBoot duplex multimode patchcord

Description	Type	Order No.
UniBoot MM 2xLCD OM3 1.0m	LUD3220010	HEL23LL01U
UniBoot MM 2xLCD OM3 2.0m	LUD3220020	HEL23LL02U
UniBoot MM 2xLCD OM3 3.0m	LUD3220030	HEL23LL03U
UniBoot MM 2xLCD OM3 5.0m	LUD3220050	HEL23LL05U
UniBoot MM 2xLCD OM3 7.5m	LUD3220075	HEL23LL07U
UniBoot MM 2xLCD OM3 10.0m	LUD3220100	HEL23LL10U
UniBoot MM 2xLCD OM4	LUD4220000	on request



Accessories

Fiber optic patchcord singlemode



LED patchcord

- Using the LED detector, the user can illuminate both ends of the cable by pressing a button. The detector can be found in the accessories.
- thermally and mechanically robust in accordance with Telcordia GR-326-CORE
- Simplex and Duplex design with the connectors LC, SC, E2000® respectively with PC and APC polishing

Colors:

- Connector with APC polishing green
- PC variants blue
- Cable yellow



Standard patchcord

- in simplex and duplex design
- Standard: with the connectors LC, SC, LSH PC and APC each
- can be delivered on request with all popular connector types, also with MU or MPO

General information:

The duplex cables will be delivered cross-wise. The connector assignments for SCD or LCD connectors can be changed retroactively. All singlemode patchcords are available as adapter cables with different connector (variants) at the ends.

UniBoot duplex patchcord

- slim bundle loader patchcord
- only as duplex design with LCD and LCD-APC connectors

In addition, LC and SC variants of the standard patchcord are available in premium and standard designs, the APC-tuned are the exception. These and all other connector types are only available in premium quality.

Ordering information

LED singlemode patchcord

Description	Type	Order No.
LED-SM 2xLCD 1.0m	LSD02200010	HEL29LL01L
LED-SM 2xLCD 2.0m	LSD02200020	HEL29LL02L
LED-SM 2xLCD 3.0m	LSD02200030	HEL29LL03L
LED-SM 2xLCD 5.0m	LSD02200050	HEL29LL05L
LED-SM 2xLCD 7.5m	LSD02200075	HEL29LL07L
LED-SM 2xLCD 10.0m	LSD02200100	HEL29LL10L
LED-SM 2xLCD-APC	LSD92290000	on request
LED-SM LCD+LCD-APC	LSD92200000	on request
LED-SM 2xE2000®-D 1.0m	LSD04400010	HEL29EE01L
LED-SM 2xE2000®-D 2.0m	LSD04400020	HEL29EE02L
LED-SM 2xE2000®-D 3.0m	LSD04400030	HEL29EE03L
LED-SM 2xE2000®-D 5.0m	LSD04400050	HEL29EE05L
LED-SM 2xE2000®-D 7.5m	LSD04400075	HEL29EE07L
LED-SM 2xE2000®-D 10.0m	LSD04400100	HEL29EE10L
LED-SM 2xE2000®-D-APC	LSD94490000	on request
Simplex-LED-SM 2xLC 1.0m	LSS02200010	HEL19LL01L
Simplex-LED-SM 2xLC 2.0m	LSS02200020	HEL19LL02L
Simplex-LED-SM 2xLC 3.0m	LSS02200030	HEL19LL03L
Simplex-LED-SM 2xLC 5.0m	LSS02200050	HEL19LL05L
Simplex-LED-SM 2xLC 7.5m	LSS02200075	HEL19LL07L
Simplex-LED-SM 2xLC 10.0m	LSS02200100	HEL19LL10L
Simplex-LED-SM 2xLC-APC	LSS92290000	on request
Simplex-LED-SM 2xE2000® 1.0m	LSS04400010	HEL19EE01L
Simplex-LED-SM 2xE2000® 2.0m	LSS04400020	HEL19EE02L
Simplex-LED-SM 2xE2000® 3.0m	LSS04400030	HEL19EE03L
Simplex-LED-SM 2xE2000® 5.0m	LSS04400050	HEL19EE05L
Simplex-LED-SM 2xE2000® 7.5m	LSS04400075	HEL19EE07L
Simplex-LED-SM 2xE2000® 10.0m	LSS04400100	HEL19EE10L
Simplex-LED-SM 2xE2000®-APC	LSS94490000	on request
Simplex-LED-SM 2xSC 1.0m	LSS01100010	HEL19CC01L
Simplex-LED-SM 2xSC 2.0m	LSS01100020	HEL19CC02L
Simplex-LED-SM 2xSC 3.0m	LSS01100030	HEL19CC03L
Simplex-LED-SM 2xSC 5.0m	LSS01100050	HEL19CC05L
Simplex-LED-SM 2xSC 7.5m	LSS01100075	HEL19CC07L
Simplex-LED-SM 2xSC 10.0m	LSS01100100	HEL19CC10L
Simplex-LED-SM 2xSC-APC	LSS91190000	on request
LED detektor	CPZLWLA1	HLEDTOOL--



Accessories

Fiber optic patchcord singlemode – Continuation

Ordering information

Singlemode - Standard patchcord

Description	Type	Order No.
SM 2xLCD 1.0m	LPD02200010	HEL29LL01V
SM 2xLCD 2.0m	LPD02200020	HEL29LL02V
SM 2xLCD 3.0m	LPD02200030	HEL29LL03V
SM 2xLCD 5.0m	LPD02200050	HEL29LL05V
SM 2xLCD 7.5m	LPD02200075	HEL29LL07V
SM 2xLCD 10.0m	LPD02200100	HEL29LL10V
SM 2xLCD-APC	LPD92290000	on request
SM 2xE2000®-D 1.0m	LPD04400010	HEL29EE01V
SM 2xE2000®-D 2.0m	LPD04400020	HEL29EE02V
SM 2xE2000®-D 3.0m	LPD04400030	HEL29EE03V
SM 2xE2000®-D 5.0m	LPD04400050	HEL29EE05V
SM 2xE2000®-D 7.5m	LPD04400075	HEL29EE07V
SM 2xE2000®-D 10.0m	LPD04400100	HEL29EE10V
SM 2xE2000®-D-APC	LPD94490000	on request
SM 2xSCD 1.0m	LPD01100010	HEL29CC01V
SM 2xSCD 2.0m	LPD01100020	HEL29CC02V
SM 2xSCD 3.0m	LPD01100030	HEL29CC03V
SM 2xSCD 5.0m	LPD01100050	HEL29CC05V
SM 2xSCD 7.5m	LPD01100075	HEL29CC07V
SM 2xSCD 10.0m	LPD01100100	HEL29CC10V
SM 2xSCD-APC	LPD91190000	on request
Simplex-SM 2xLC 1.0m	LPS02200010	HEL19LL01V
Simplex-SM 2xLC 2.0m	LPS02200020	HEL19LL02V
Simplex-SM 2xLC 3.0m	LPS02200030	HEL19LL03V
Simplex-SM 2xLC 5.0m	LPS02200050	HEL19LL05V
Simplex-SM 2xLC 7.5m	LPS02200075	HEL19LL07V
Simplex-SM 2xLC 10.0m	LPS02200100	HEL19LL10V
Simplex-SM 2xLC-APC	LPS92290000	on request
Simplex-SM 2xE2000® 1.0m	LPS04400010	HEL19EE01V
Simplex-SM 2xE2000® 2.0m	LPS04400020	HEL19EE02V
Simplex-SM 2xE2000® 3.0m	LPS04400030	HEL19EE03V
Simplex-SM 2xE2000® 5.0m	LPS04400050	HEL19EE05V
Simplex-SM 2xE2000® 7.5m	LPS04400075	HEL19EE07V
Simplex-SM 2xE2000® 10.0m	LPS04400100	HEL19EE10V
Simplex-SM 2xE2000®-APC	LPS94490000	on request
Simplex-SM 2xSC 1.0m	LPD01100010	HEL19CC01V
Simplex-SM 2xSC 2.0m	LPD01100020	HEL19CC02V
Simplex-SM 2xSC 3.0m	LPD01100030	HEL19CC03V
Simplex-SM 2xSC 5.0m	LPD01100050	HEL19CC05V
Simplex-SM 2xSC 7.5m	LPD01100075	HEL19CC07V
Simplex-SM 2xSC 10.0m	LPD01100100	HEL19CC10V
Simplex-SM 2xSC-APC	LPS91190000	on request

Ordering information

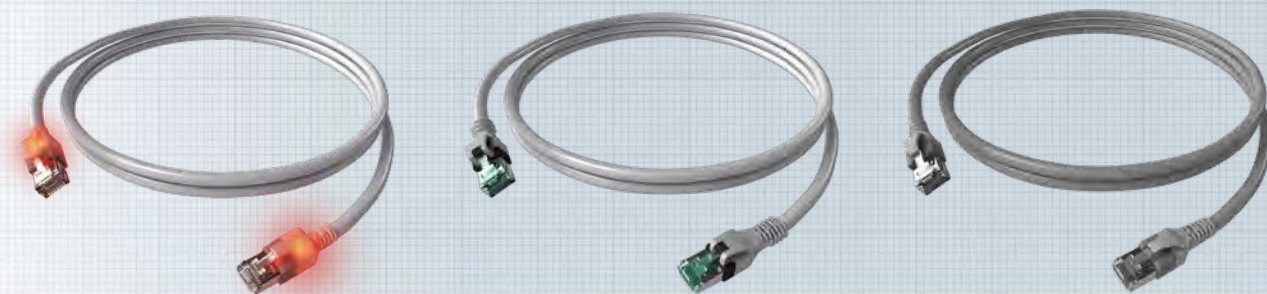
UniBoot duplex singlemode patchcord

Description	Type	Order No.
UniBoot SM 2xLCD 1.0m	LUD02200010	HEL29LL01U
UniBoot SM 2xLCD 2.0m	LUD02200020	HEL29LL02U
UniBoot SM 2xLCD 3.0m	LUD02200030	HEL29LL03U
UniBoot SM 2xLCD 5.0m	LUD02200050	HEL29LL05U
UniBoot SM 2xLCD 7.5m	LUD02200075	HEL29LL07U
UniBoot SM 2xLCD 10.0m	LUD02200100	HEL29LL10U
UniBoot SM 2xLCD-APC	LUD92290000	on request



Accessories

Copper patchcord



DualBoot® LED patchcord Cat. 6_A

- Using the LED detector, the user can illuminate both ends of the cable by pressing a button.
- PiMF cable
- equivalent to Category 6_A ISO/IEC 11801
- also available in Category 6 shielded and unshielded



DualBoot® PushPull patchcord Cat. 6_A

- The connectors include a PushPull unlocking and are qualified, for example, for high density switches or places that are difficult to access. The user only pulls at the predictive sleeve to unlock the connector; suitable for any standard RJ45 socket or socket.
- Foil shielded
- in accordance with Category 6_A (ISO/IEC)

DualBoot® patchcord Cat. 6_A

- The DualBoot® spraying achieves an optimal strain-relief and prevents the jamming of the lock levers
- PiMF cable
- equivalent to Category 6_A ISO/IEC 11801

DualBoot® LED patchcord, Cat. 6_A ISO/IEC, shielded

Description	Type	Order No.
DualBoot® LED patchcord, grey 1.0m	CS10AADAD0010	H6GSG01K0G
DualBoot® LED patchcord, grey 2.0m	CS10AADAD0020	H6GSG02K0G
DualBoot® LED patchcord, grey 3.0m	CS10AADAD0030	H6GSG03K0G
DualBoot® LED patchcord, grey 5.0m	CS10AADAD0050	H6GSG05K0G
DualBoot® LED patchcord, grey 7.5m	CS10AADAD0070	H6GSG07K0G
DualBoot® LED patchcord, grey 10.0m	CS10AADAD0100	H6GSG10K0G
DualBoot® LED patchcord, red 1.0m	CS10RADAD0010	H6GSR01K0R
DualBoot® LED patchcord, red 2.0m	CS10RADAD0020	H6GSR02K0R
DualBoot® LED patchcord, red 3.0m	CS10RADAD0030	H6GSR03K0R
DualBoot® LED patchcord, red 5.0m	CS10RADAD0050	H6GSR05K0R
DualBoot® LED patchcord, red 7.5m	CS10RADAD0075	H6GSR07K0R
DualBoot® LED patchcord, red 10.0m	CS10RADAD0100	H6GSR10K0R

Ordering information

DualBoot® LED patchcord, Cat. 6_A ISO/IEC, shielded – Continuation

Description	Type	Order No.
DualBoot® LED patchcord, blue 1.0m	CS10BADAD0010	H6GSB01K0B
DualBoot® LED patchcord, blue 2.0m	CS10BADAD0020	H6GSB02K0B
DualBoot® LED patchcord, blue 3.0m	CS10BADAD0030	H6GSB03K0B
DualBoot® LED patchcord, blue 5.0m	CS10BADAD0050	H6GSB05K0B
DualBoot® LED patchcord, blue 7.5m	CS10BADAD0075	H6GSB07K0B
DualBoot® LED patchcord, blue 10.0m	CS10BADAD0100	H6GSB10K0B
DualBoot® LED patchcord, yellow 1.0m	CS10YADAD0010	H6GSY01K0Y
DualBoot® LED patchcord, yellow 2.0m	CS10YADAD0020	H6GSY02K0Y
DualBoot® LED patchcord, yellow 3.0m	CS10YADAD0030	H6GSY03K0Y
DualBoot® LED patchcord, yellow 5.0m	CS10YADAD0050	H6GSY05K0Y
DualBoot® LED patchcord, yellow 7.5m	CS10YADAD0075	H6GSY07K0Y
DualBoot® LED patchcord, yellow 10.0m	CS10YADAD0100	H6GSY10K0Y
DualBoot® LED patchcord, green 1.0m	CS10GADAD0010	H6GSU01K0U
DualBoot® LED patchcord, green 2.0m	CS10GADAD0020	H6GSU02K0U
DualBoot® LED patchcord, green 3.0m	CS10GADAD0030	H6GSU03K0U
DualBoot® LED patchcord, green 5.0m	CS10GADAD0050	H6GSU05K0U
DualBoot® LED patchcord, green 7.5m	CS10GADAD0075	H6GSU07K0U
DualBoot® LED patchcord, green 10.0m	CS10GADAD0100	H6GSU10K0U
DualBoot® LED patchcord, black 1.0m	CS10SADAD0010	H6GSS01K0S
DualBoot® LED patchcord, black 2.0m	CS10SADAD0020	H6GSS02K0S
DualBoot® LED patchcord, black 3.0m	CS10SADAD0030	H6GSS03K0S
DualBoot® LED patchcord, black 5.0m	CS10SADAD0050	H6GSS05K0S
DualBoot® LED patchcord, black 7.5m	CS10SADAD0075	H6GSS07K5S
DualBoot® LED patchcord, black 10.0m	CS10SADAD0100	H6GSS10K0S
DualBoot® LED patchcord, orange 1.0m	CS10OADAD0010	H6GSN01K0N
DualBoot® LED patchcord, orange 2.0m	CS10OADAD0020	H6GSN02K0N
DualBoot® LED patchcord, orange 3.0m	CS10OADAD0030	H6GSN03K0N
DualBoot® LED patchcord, orange 5.0m	CS10OADAD0050	H6GSN05K0N
DualBoot® LED patchcord, orange 7.5m	CS10OADAD0075	H6GSN07K5N
DualBoot® LED patchcord, orange 10.0m	CS10OADAD0100	H6GSN10K0N
DualBoot® LED patchcord, white 1.0m	CS10WADAD0010	H6GSW01K0W
DualBoot® LED patchcord, white 2.0m	CS10WADAD0020	H6GSW02K0W
DualBoot® LED patchcord, white 3.0m	CS10WADAD0030	H6GSW03K0W
DualBoot® LED patchcord, white 5.0m	CS10WADAD0050	H6GSW05K0W
DualBoot® LED patchcord, white 7.5m	CS10WADAD0075	H6GSW07K5W
DualBoot® LED patchcord, white 10.0m	CS10WADAD0100	H6GSW10K0W
DualBoot® LED patchcord, turquoise	CS10TADAD0000	on request
DualBoot® LED patchcord, violet 1.0m	CS10VADAD0010	H6GSV01K0V
DualBoot® LED patchcord, violet 2.0m	CS10VADAD0020	H6GSV02K0V
DualBoot® LED patchcord, violet 3.0m	CS10VADAD0030	H6GSV03K0V
DualBoot® LED patchcord, violet 5.0m	CS10VADAD0050	H6GSV05K0V
DualBoot® LED patchcord, violet 7.5m	CS10VADAD0075	H6GSV07K5V
DualBoot® LED patchcord, violet 10.0m	CS10VADAD0100	H6GSV10K0V
LED-Detektor	CPZLWLA1	HLEDTOOL--



Accessories

Copper patchcord – Continuation

Ordering information

DualBoot® PushPull patchcord Cat. 6_A ISO/IEC, shielded

Description	Type	Order No.
DualBoot® PushPull patchcord, grey 1.0m	CPP1OAAAAA0010	H6GPG01K0G
DualBoot® PushPull patchcord, grey 2.0m	CPP1OAAAAA0020	H6GPG02K0G
DualBoot® PushPull patchcord, grey 3.0m	CPP1OAAAAA0030	H6GPG03K0G
DualBoot® PushPull patchcord, grey 5.0m	CPP1OAAAAA0050	H6GPG05K0G
DualBoot® PushPull patchcord, grey 7.5m	CPP1OAAAAA0075	H6GPG07K5G
DualBoot® PushPull patchcord, grey 10.0m	CPP1OAAAAA0100	H6GPG10K0G
DualBoot® PushPull patchcord, red 1.0m	CPP1ORARAR0010	H6GPR01K0R
DualBoot® PushPull patchcord, red 2.0m	CPP1ORARAR0020	H6GPR02K0R
DualBoot® PushPull patchcord, red 3.0m	CPP1ORARAR0030	H6GPR03K0R
DualBoot® PushPull patchcord, red 5.0m	CPP1ORARAR0050	H6GPR05K0R
DualBoot® PushPull patchcord, red 7.5m	CPP1ORARAR0075	H6GPR07K5R
DualBoot® PushPull patchcord, red 10.0m	CPP1ORARAR0100	H6GPR10K0R
DualBoot® PushPull patchcord, blue 1.0m	CPP1OBABAB0010	H6GPB01K0B
DualBoot® PushPull patchcord, blue 2.0m	CPP1OBABAB0020	H6GPB02K0B
DualBoot® PushPull patchcord, blue 3.0m	CPP1OBABAB0030	H6GPB03K0B
DualBoot® PushPull patchcord, blue 5.0m	CPP1OBABAB0050	H6GPB05K0B
DualBoot® PushPull patchcord, blue 7.5m	CPP1OBABAB0075	H6GPB07K5B
DualBoot® PushPull patchcord, blue 10.0m	CPP1OBABAB0100	H6GPB10K0B
DualBoot® PushPull patchcord, yellow 1.0m	CPP1OYAYAY0010	H6GPY01K0Y
DualBoot® PushPull patchcord, yellow 2.0m	CPP1OYAYAY0020	H6GPY02K0Y
DualBoot® PushPull patchcord, yellow 3.0m	CPP1OYAYAY0030	H6GPY03K0Y
DualBoot® PushPull patchcord, yellow 5.0m	CPP1OYAYAY0050	H6GPY05K0Y
DualBoot® PushPull patchcord, yellow 7.5m	CPP1OYAYAY0075	H6GPY07K5Y
DualBoot® PushPull patchcord, yellow 10.0m	CPP1OYAYAY0100	H6GPY10K0Y
DualBoot® PushPull patchcord, green 1.0m	CPP1OGAGAG0010	H6GPU01K0U
DualBoot® PushPull patchcord, green 2.0m	CPP1OGAGAG0020	H6GPU02K0U
DualBoot® PushPull patchcord, green 3.0m	CPP1OGAGAG0030	H6GPU03K0U
DualBoot® PushPull patchcord, green 5.0m	CPP1OGAGAG0050	H6GPU05K0U
DualBoot® PushPull patchcord, green 7.5m	CPP1OGAGAG0075	H6GPU07K5U
DualBoot® PushPull patchcord, green 10.0m	CPP1OGAGAG0100	H6GPU10K0U
DualBoot® PushPull patchcord, black 1.0m	CPP1OSASAS0010	H6GPS01K0S
DualBoot® PushPull patchcord, black 2.0m	CPP1OSASAS0020	H6GPS02K0S
DualBoot® PushPull patchcord, black 3.0m	CPP1OSASAS0030	H6GPS03K0S
DualBoot® PushPull patchcord, black 5.0m	CPP1OSASAS0050	H6GPS05K0S
DualBoot® PushPull patchcord, black 7.5m	CPP1OSASAS0075	H6GPS07K5S
DualBoot® PushPull patchcord, black 10.0m	CPP1OSASAS0100	H6GPS10L0S
DualBoot® PushPull patchcord, orange 1.0m	CPP1OOAOAO0010	H6GPN01K0N
DualBoot® PushPull patchcord, orange 2.0m	CPP1OOAOAO0020	H6GPN02K0N
DualBoot® PushPull patchcord, orange 3.0m	CPP1OOAOAO0030	H6GPN03K0N
DualBoot® PushPull patchcord, orange 5.0m	CPP1OOAOAO0050	H6GPN05K0N
DualBoot® PushPull patchcord, orange 7.5m	CPP1OOAOAO0075	H6GPN07K5N
DualBoot® PushPull patchcord, orange 10.0m	CPP1OOAOAO0100	H6GPN10K0N

Ordering information

DualBoot® PushPull patchcord Cat. 6_A ISO/IEC, shielded – Continuation

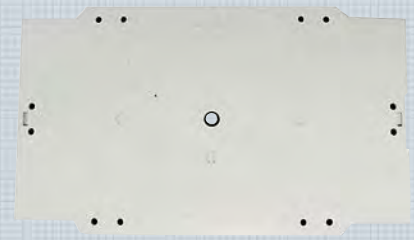
Description	Type	Order No.
DualBoot® PushPull patchcord, white 1.0m	CPP1OWAWAW0010	H6GPW01K0W
DualBoot® PushPull patchcord, white 2.0m	CPP1OWAWAW0020	H6GPW02K0W
DualBoot® PushPull patchcord, white 3.0m	CPP1OWAWAW0030	H6GPW03K0W
DualBoot® PushPull patchcord, white 5.0m	CPP1OWAWAW0050	H6GPW05K0W
DualBoot® PushPull patchcord, white 7.5m	CPP1OWAWAW0075	H6GPW07K5W
DualBoot® PushPull patchcord, white 10.0m	CPP1OWAWAW0100	H6GPW10K0W
DualBoot® PushPull patchcord, turquoise 1.0m	CPP1OTATAT0010	H6GPA01K0A
DualBoot® PushPull patchcord, turquoise 2.0m	CPP1OTATAT0020	H6GPA02K0A
DualBoot® PushPull patchcord, turquoise 3.0m	CPP1OTATAT0030	H6GPA03K0A
DualBoot® PushPull patchcord, turquoise 5.0m	CPP1OTATAT0050	H6GPA05K0A
DualBoot® PushPull patchcord, turquoise 7.5m	CPP1OTATAT0075	H6GPA07K5A
DualBoot® PushPull patchcord, turquoise 10.0m	CPP1OTATAT0100	H6GPA10K0A
DualBoot® PushPull patchcord, violet 1.0m	CPP1OVAVAV0010	H6GPV01K0V
DualBoot® PushPull patchcord, violet 2.0m	CPP1OVAVAV0020	H6GPV02K0V
DualBoot® PushPull patchcord, violet 3.0m	CPP1OVAVAV0030	H6GPV03K0V
DualBoot® PushPull patchcord, violet 5.0m	CPP1OVAVAV0050	H6GPV05K0V
DualBoot® PushPull patchcord, violet 7.5m	CPP1OVAVAV0075	H6GPV07K5V
DualBoot® PushPull patchcord, violet 10.0m	CPP1OVAVAV0100	H6GPV10H0V

DualBoot® patchcord RJ45 Cat. 6_A ISO/IEC, shielded

Description	Type	Order No.
DualBoot® patchcord, grey	CP1OAAAAA0000	on request
DualBoot® patchcord, red	CP1ORARAR0000	on request
DualBoot® patchcord, blue	CP1OBABAB0000	on request
DualBoot® patchcord, yellow	CP1OYAYAY0000	on request
DualBoot® patchcord, green	CP1OGAGAG0000	on request
DualBoot® patchcord, black	CP1OSASAS0000	on request
DualBoot® patchcord, orange	CP1OOA0A0000	on request
DualBoot® patchcord, white	CP1OWAWAW0000	on request
DualBoot® patchcord, turquoise	CP1OTATAT0000	on request
DualBoot® patchcord, violet	CP1OVAVAV0000	on request



Accessories



H.D.S. splice cassette

Compact H.D.S. splice cassette in a set of 6 with cover.

FO splice cassette

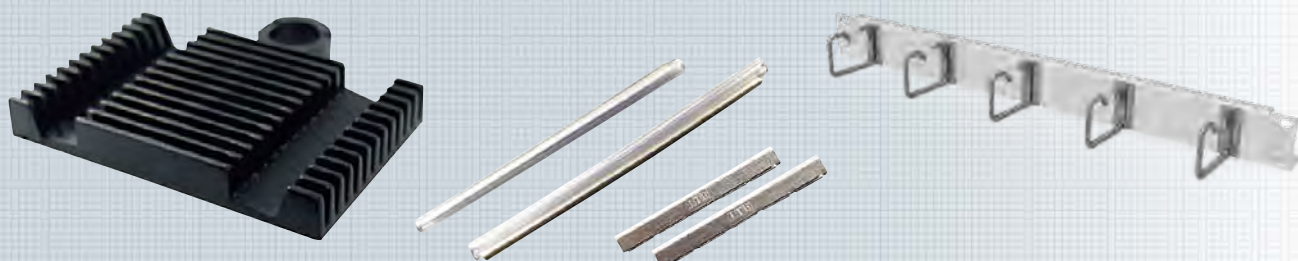
FO splice cassette without cover, stackable, for 12x (max. 24) crimp splice predction or 6x (max. 12) fusion splice predction by using the appropriate splice predction brackets.
Color: BG

FO splice cassette cover

FO splice cassette cover for splice cassette.
Color: BG

Description	Type	Order No.
H.D.S. splice cassette set 6x	LVZSKC06	HELSP00005
FO splice cassette without cover, stackable, for polymer coupling	LVZ00001	on request
FO splice cassette without cover, stackable, for metal coupling	LVZ00002	on request

Accessories



FO splice predetection bracket

FO splice predetection bracket for up to max. 6x fusion splice predetection or 12x crimp splice predetection for splice cassette.
Color: SW

Splice predetection/fusion splice predetection

FO splice predetection 31 x 3 x 1 mm
FO splice predetection 60 mm or 40 mm.
Color: Silver

Packaging unit: 10 unit each

19" patch panel 1HE

19 inch installation patch panel for the routing of patchcords. Available in gray and black with the following variants:

- with 5 or 6 plastic bracket, which pre-drudes 78 mm each to the front or
- with 5 steel brackets 60 mm long for little cable or 110 mm long for large capacity

Description	Type	Order No.
FO splice predetection bracket, crimp	LVZ0003	on request
FO splice predetection bracket, fusion	LVZ0004	HELSP00008
FO splice predetection 31 x 3 x 1 mm	LVZ0005	HELSP00009
FO fusion splice predetection 40 mm	LVZ0006	HELSP00010
FO fusion splice predetection 60 mm	LVZ0007	HELSP00011
Patch panel/installation 19" 1U, 5 plastic brackets, 78 mm long	AVR5KSTB1E	HEKDBK01--
Patch panel/installation 19" 1U, 5 iron brackets, 60 mm long	AVR5METB1E	HEKDBC01--
Patch panel/installation 19" 1U, 5 iron brackets, 110 mm long	AVR5METC1E	HEKDBC02--



Order No. blue fat: on stock, usually ready for delivery on the day of order! **Order No. blue thin:** on request!

Technical informations

Cu and FO systems



CU FO

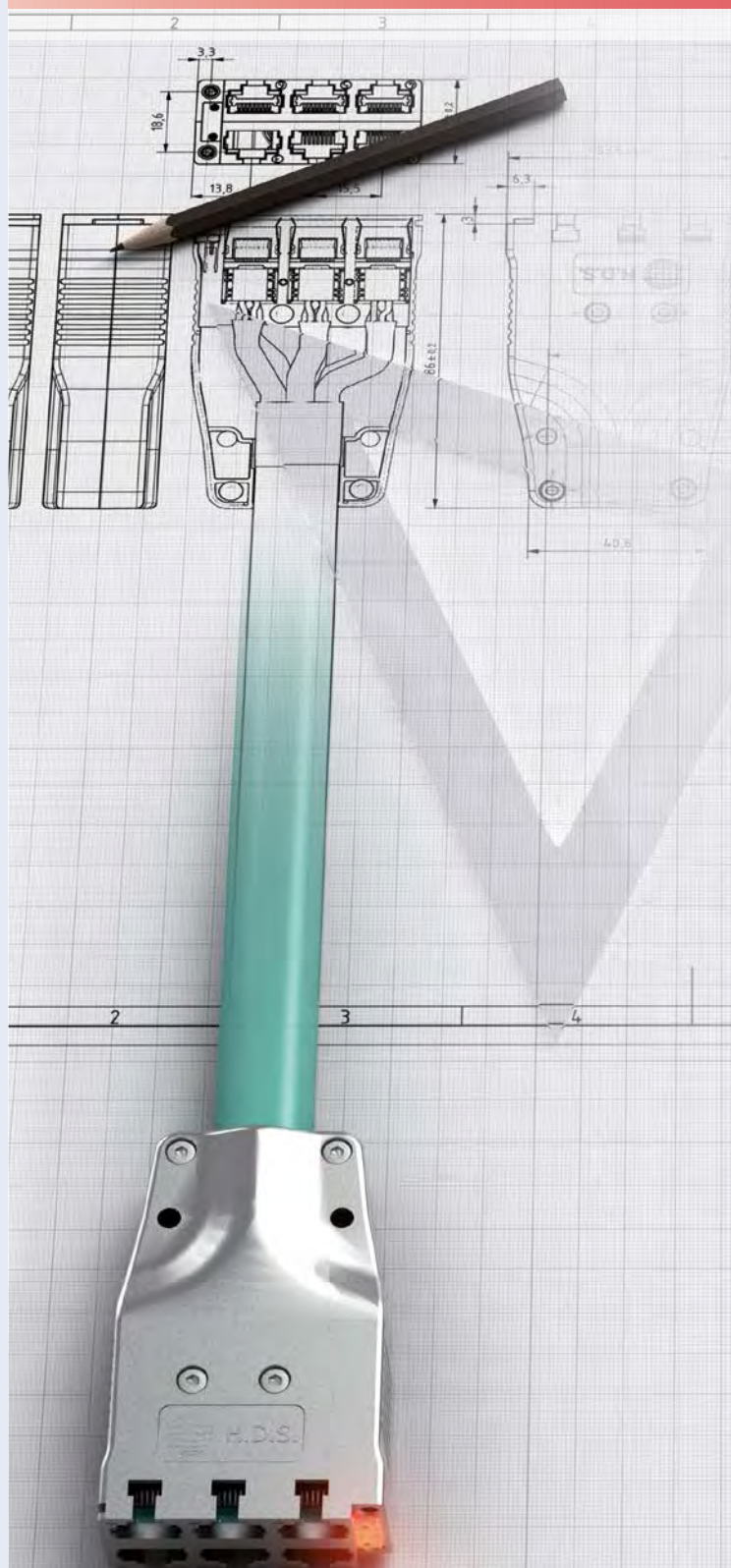
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Technical informations

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...from an idea
to a product...



Idea

Our products come to life as a result of constant market observation and the consistent implementation of requirements.

Feasibility study

An experienced team of engineers and technicians turns ideas into products and verifies their feasibility through simulation programs.

Predotypes

With the help of 3D printers, the initial predotypes are produced and developed together with users.

Testing

All newly developed products undergo a rigorous quality program. Testing is not restricted to electronic parameters – we place even more emphasis on using selected environmental tests to ensure long-term performance and product reliability.

Series production

Once all tests have been successfully completed, series production begins. Every product is designed so that installation errors are automatically eliminated.

QM

Each component is promptly tested with a careful selection of our suppliers guaranteeing the highest reliability.

Patents

95% of EasyLan® products are unique and are protected worldwide by various intellectual property rights.

Commitment to quality...

25

25 year PPA-EL system warranty for copper and glass fiber products for EasyLan® products

The 25 year "PPA EL System Warranty" on certified EL fiber-optic and copper systems consists of the following:

Product warranty:

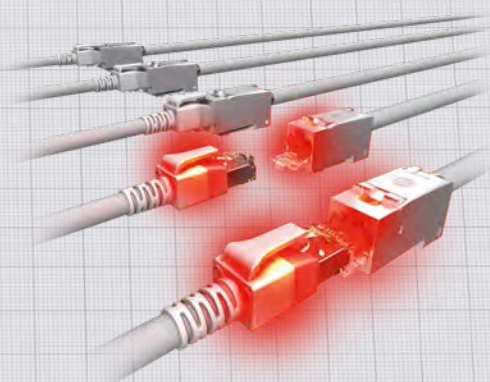
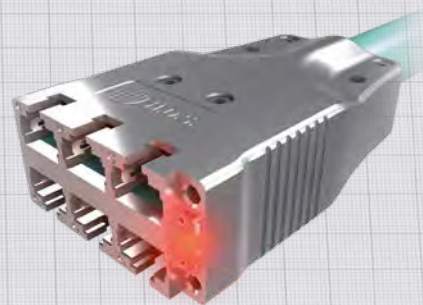
The product warranty covers all components in an EL fiber-optic or copper cabling system that were installed and tested by a qualified installer in accordance with EL specifications and the applicable installation standards contained in EN50174. The parent company of the EasyLan® product range (ZVK GmbH, Germany) guarantees that during the 25 year system warranty starting from the date of purchase (EL invoice date) all EL system components will meet or exceed the cabling standards ISO/IEC 11801, EN50173 and EIA/TIA 568B applicable at the time of installation, as well as the link requirements.

Performance guarantee:

In addition to the application (Ethernet, Fiber Channel, ATM, etc.), the performance guarantee covers system features such as transfer speed (10MBit, 100MBit, 1GBit and 10GBit). The parent company of the EasyLan® product range (ZVK GmbH, Germany) guarantees that the transmission speed of all specified applications, which are based on the following cabling standards applicable at the time of installation – ISO/IEC 11801, EN50173 and EIA/TIA 568B – will not be affected by the EL cabling system.

Application guarantee:

The application guarantee covers all specified applications (Ethernet, Fiber Channel, ATM, etc.), which are based on the relevant cabling standards as per ISO/IEC 11801, EN50173 and EIA/TIA 568B applicable at the time of installation.



Units of measurement and color codes for Cu data cable

AWG cable standards

AWG stands for **A**merican **W**ire **G**auge and refers to the wire size. This number represents the diameter of the cross-section of the wire.

Calculation outer diameter [millimeter] in AWG [d/mm]:

$$D = 8.2515 \times 0.89053 \text{AWG [mm]}$$

Calculation of AWG [d/mm] in outer diameter [mm]:

$$\text{AWG} = 18.2 - 8.62 \times \ln(d) \text{ [d/mm]}$$

AWG number	Diameter (Ø) in mm	Cross section in mm ²
16	1.290	1.305
17	1.140	1.010
18	1.020	0.790
19	0.910	0.650
20	0.810	0.510
21	0.720	0.407
22	0.640	0.320
23	0.570	0.255
24	0.510	0.205
25	0.455	0.162
26	0.400	0.125
27	0.360	0.102
28	0.320	0.080
29	0.287	0.646
30	0.254	0.516

Color codes for cable and predector

Color	Beige	White	Yellow	Orange	Red	Violet	Blue	Green	Light green	Gray	Black
Code	BG	WH	YE	OR	RD	VI	BL	GN	AQ	GR	BK
RAL	1001	9013	1021	2003	3000	4003	5015	6016	6027	7035	9005

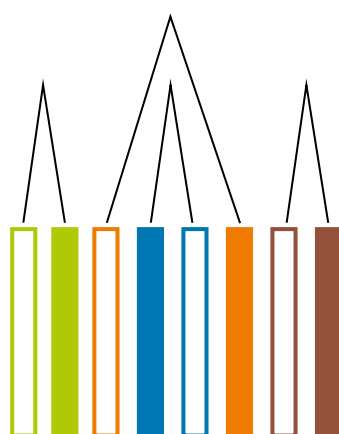
The listed color codes only represent an approximate value.

Classification of modular connectors in copper connection technology

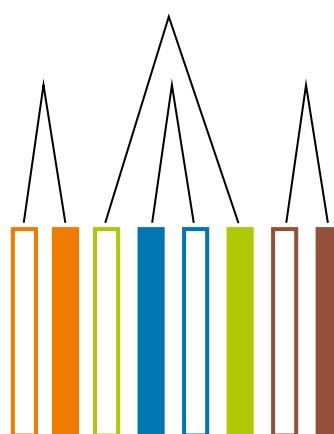
Classification of modular connectors

Network applications	Contacts 1 & 2	Contacts 3 & 6	Contacts 4 & 5	Contacts 7 & 8
PBX	Class A	Class A	Class A	Class A
X.21		Class A	Class A	
S0-Bus		Class B	Class B	
S1 / S2	Class B		Class B	
10Base-T	Class C	Class C		
100Base-T		Class C	Class C	
TR 16 Mbit/s		Class D	Class D	
TR 100 Mbit/s		Class D	Class D	
TP-PMD	Class D			Class D
ATM 155,52	Class D			Class D
1000 Base-T	Class D	Class D	Class D	Class D
ATM 1200	Class E	Class E	Class E	Class E
10 GBase-T	Class E _A	Class E _A	Class E _A	Class E _A

Pair configuration for modular connectors



EIA/TIA 568A

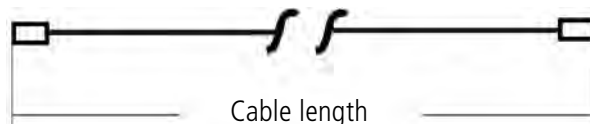


EIA/TIA 568B

Cable length

Copper patchcord • pigtails

This cable data sheet is valid for all copper and FO patchcords (assumed that no deviating length tolerances are defined):



Tolerance definition:

Cable lengths < 5.01m - 0.00m + 0.07m

Cable lengths > 5.00m +/- 1%

Cable length	Length min.	Length max.
0.50	0.50	0.57
1.00	1.00	1.07
1.50	1.50	1.57
2.00	2.00	2.07
2.50	2.50	2.57
3.00	3.00	3.07
4.00	4.00	4.07
5.00	5.00	5.07
	Length min. -1%	Length max. 1%
10.00	9.90	10.10
15.00	14.85	15.15
20.00	19.80	20.20

all dimensions in meters

These parameters describe the ZVK standard and is valid for at least 98% of pre-assembled cables.

In addition, deviation permits may be granted when tolerances are exceeded. A deviation permit can be dispensed with if tolerances are exceeded by a maximum of 2 cm in a maximum of 2% of cables.

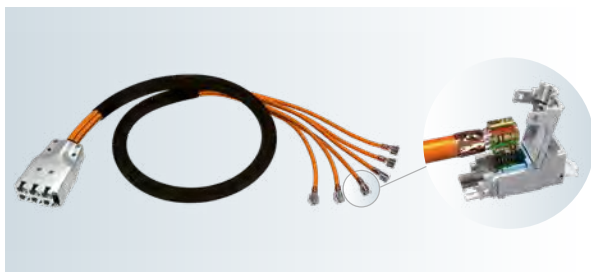
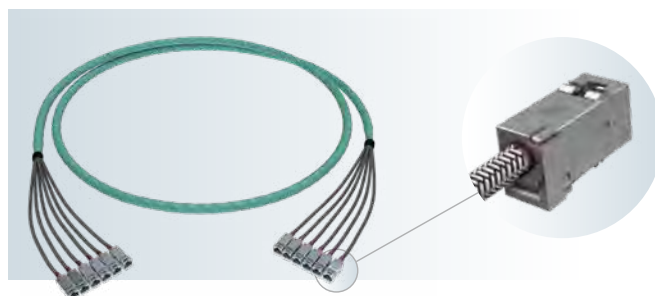
Deviations from this data sheet must be defined in writing.

A written note must be included with all orders if a different definition or customer specifications is/are used.

Cable Lengths

Cable systems Cu trunks, Cu H.D.S. and FO H.D.S.

All Cu trunks, Cu-H.D.S. and FO-H.D.S.:



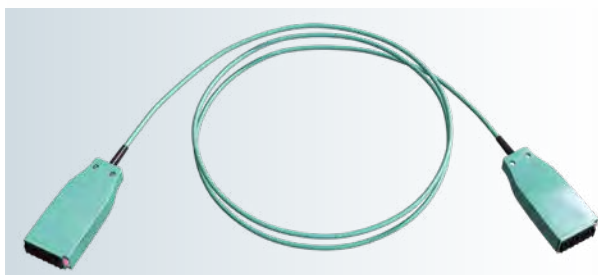
The length specification in the as-delivered condition is defined as being from the connector face (or socket) to the connector face (or socket).



Tolerance specifications:

Cable lengths smaller/equal 5m = +/- 10 cm

Cable lengths from 5.01 m to ∞ = +/- 2 %



These parameters describe the ZVK standard.

In the event of the failure to comply with the nominal length of a product, a special deviation permit must be obtained from the customer.

Deviations from this data sheet must be specified in writing by the customer and must be visible in the written order.

FO system: EasyLan quality standard (premium and standard quality)

Transmission parameter requirements for FO connectors:

The IEC 61753-1 standard defines the transmission parameters for FO singlemode connectors. Class A through Class D for insertion loss, and Class 1 through Class 4 for return loss.

The above standard refers to singlemode, however it may also be applied to multimode with respect to insertion loss (IL).

EasyLan® Premium products achieve 97% compliance with the threshold values of Class B or Class MM2 or SM2.

EasyLan® Standard products achieve 97% compliance with the Threshold values of Class C or Class MM3 or SM2. This is only possible by:

- UPC face design (i.e. 20 dB less return loss than PC)
- Certification by the market leader in the field of FO connectors
- Cutting-edge assembly and polishing devices
- Exclusive use of premium fibers by the market leaders
- Interferometric supervision of production

1. Technical characteristics of FO connectors (Performance acc. to IEC 61753-1)

1.1 Insertion loss (IL):

Insertion loss (IL) Measurement acc. to IEC 61300-3-34	Class A	Class B	Class C	Class X acc. to En 50173	Class D
Attenuation 97%	≤ 0.1dB	≤ 0.25dB	≤ 0.50dB	≤ 0.75dB	≤ 1.00dB
Typical attenuation	≤ 0.1dB	≤ 0.12dB	≤ 0.25dB	≤ 0.35dB	≤ 0.50dB

Class A is solely intended for SM, and in addition to special processing also requires connectors and fibers which are approved for Class A.

Class B can only be completely achieved by fiber tuning. By using high quality FO connectors, we currently achieve Class B with a probability of > 97%.

Class X reflects the requirements of EN 50173; values must not fall below this standard.

Consequently, Class D is solely permitted for non-standard based applications, e.g. applications which involve sensors.

1.2 Return loss (RL)

Return loss (RL) for singlemode (SM) Measurement acc. to IEC 61300-3-6	Class SM1	Class SM2	Class SM3	Class SM4	Class SMX acc. to En 50173
Attenuation (RL)	> 65dB plugged in ≥ 15dB unplugged	> 45dB	> 35dB	> 26dB	> 20dB

Return loss (RL) for multimode (MM) Measurement acc. to IEC 61300-3-6	Class MM1	Class MM2	Class MM3	Class MM4	Class MMX acc. to En 50173
Attenuation (RL)	--	> 40dB	> 35dB	> 30dB	≥ 20dB

Class SM1 is obtained only by angled polishing (8°). For classes 1 to 3 (SM and MM), additional surface treatment is necessary.

Class SMX the requirements of EN 50173; values must not fall below this standard.

2. Technical characteristics of FO connectors for premium and standard couplings (performance acc. to IEC 61753-1)

Insertion loss (IL) Measurement acc. to IEC 61300-3-34	Class A	Class B	Class C	Class D	Class X acc. to En 50173
Sleeve material	N/A	Ceramic	Ceramic	Ceramic	Phosphorous Bronze
Maximum attenuation change	N/A	≤ 0.20dB	≤ 0.20dB	≤ 0.20dB	≤ 0.30dB

Class A is currently not defined in the standard IEC 61753-1.

Class X reflects the requirements of EN 50173; values must not fall below this standard.
Return loss must not vary during repeated plugging of the connector.

Sources: Norm IEC 61731-1-X, Norm IEC 61300-3-X, Norm EN 50173

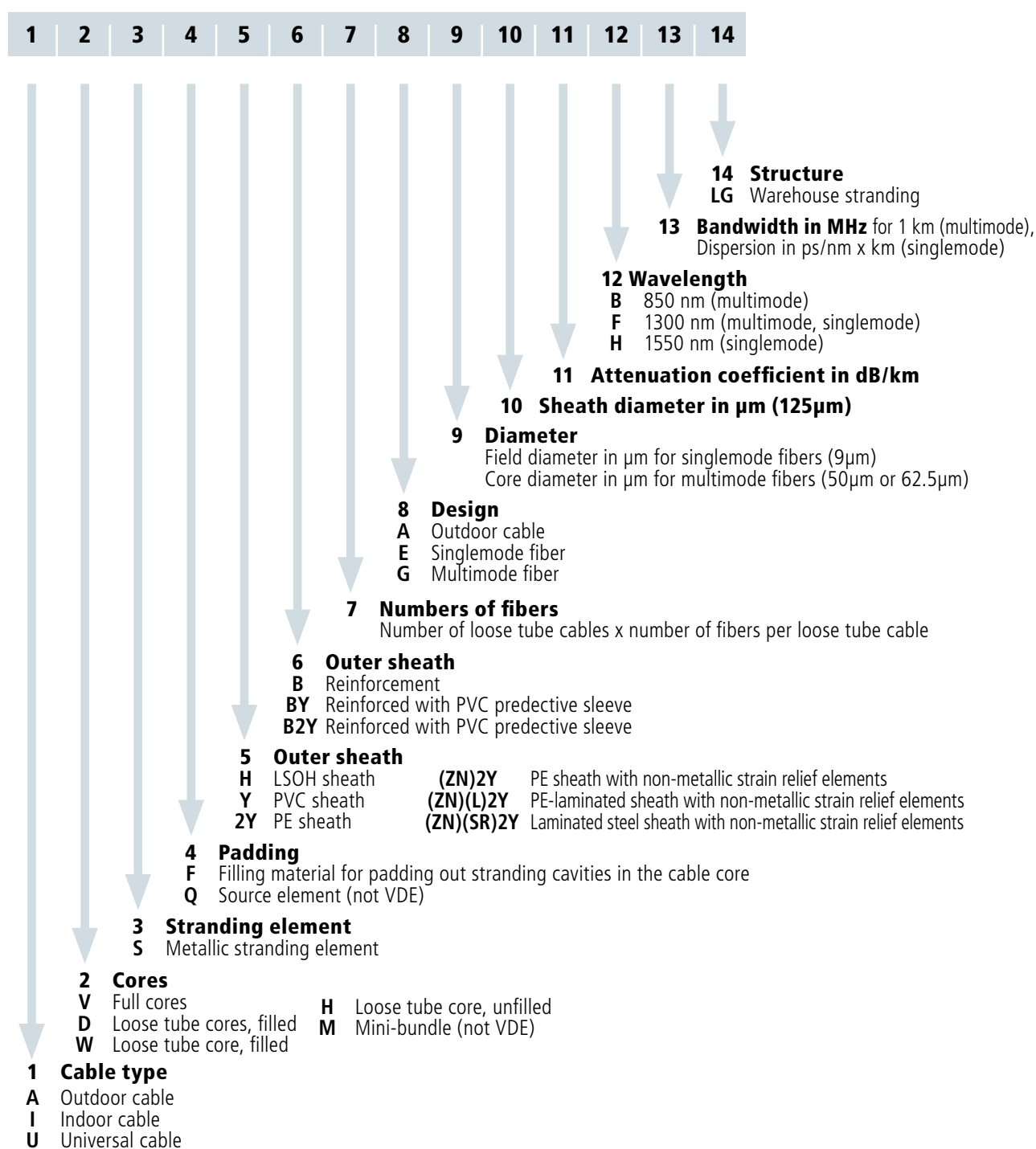
Status: 10.2015

Type abbreviation

Classification of structural elements

Type abbreviation






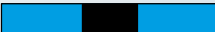

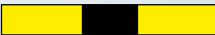

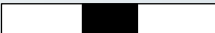

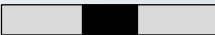

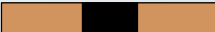

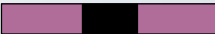

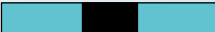

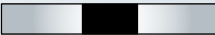




Classification of structural elements in FO cables acc. to IEC 0888









Color codes

FO color code for loose tube cores acc. to VDE 0888

Fiber color code acc. to IEC 60304

Fiber no.	Fiber color	Fiber no.	Fiber color/ Ring coloring
1	 red	13	 red/black
2	 green	14	 green/black
3	 blue	15	 blue/black
4	 yellow	16	 yellow/black
5	 white	17	 white/black
6	 gray	18	 gray/black
7	 brown	19	 brown/black
8	 violet	20	 violet/black
9	 turquoise	21	 turquoise/black
10	 black	22	 transparent/black
11	 orange	23	 orange/black
12	 pink	24	 pink/black

Strand color code

Strand type	Color of cable bunch	RAL no.	Fiber type
Count strand	 red	3020	all
Direction strand	 green	6018	all
Follow strands	 white	9016	E09 / 125
Follow strands	 light green	6019	G50 / 125
Follow strands	 blue	5015	G62 / 125
Filling elements	 black	9005	9005

Optical fiber cables generally contain optical fibers with colored cladding or coating in order to permit them to be distinguished. IEC 60304 contains a color code for cables of up to 24 optical fibers, see table 1. There are other

schemes for color-based identification of optical fibers. If cables do not contain color-coded optical fibers, an optical identification system must be used to comply with requirements.

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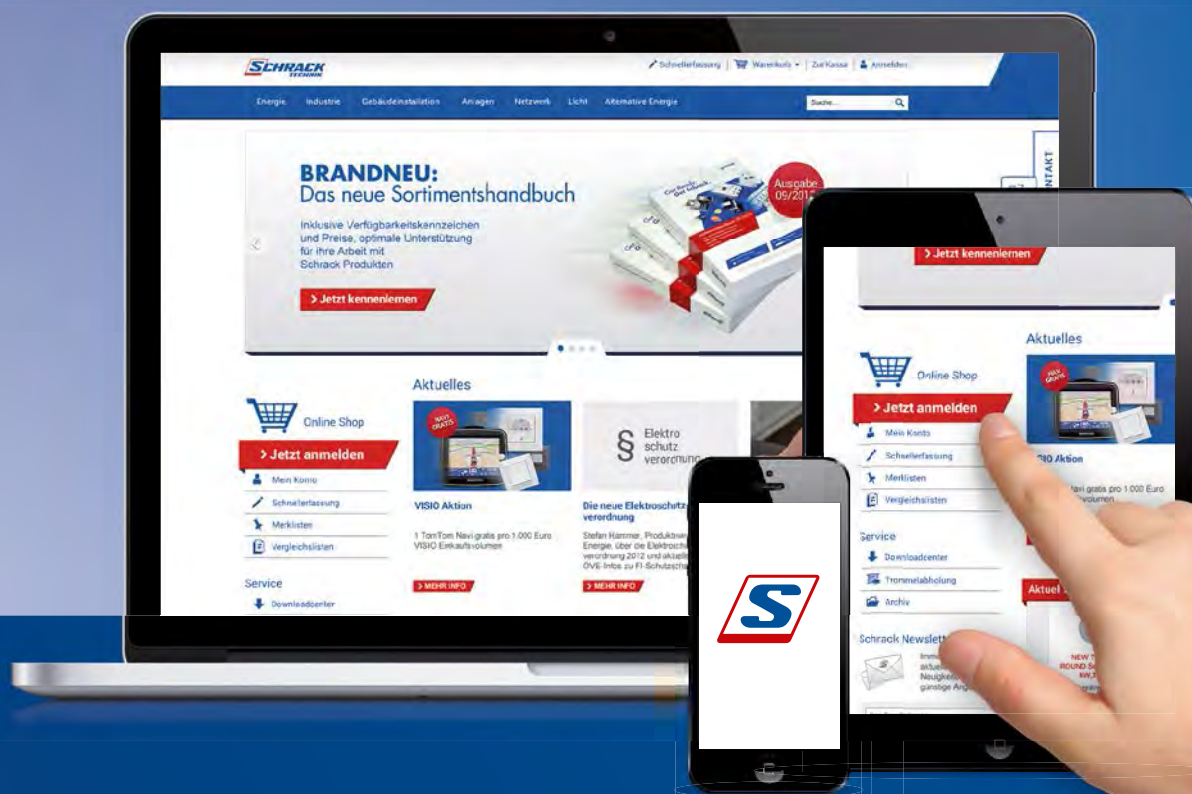


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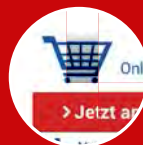
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General Terms of Delivery

issued by the Austrian Electrical and Electronics Industry Association (FEEL)

1. Scope

- 1.1. These General Terms shall govern legal transactions between business enterprises, namely the delivery of commodities and, mutatis mutandis, the rendering of services. Software transactions are with precedence governed by the Software Conditions issued by the Austrian Electrical and Electronics Industry Association, assembly work by the Terms and Conditions for Assembly Work issued by the Austrian Power Current and Light Current Engineering Industry and/or (where applicable) the Terms and Conditions for the Assembly of Electrical Equipment used in Medicine issued by the Austrian Electrical and Electronics Industry (the current versions are available at www.feel.at).
- 1.2. Any departure from the terms and conditions mentioned in 1.1 above shall be valid only if expressly accepted in writing by Seller.

2. Submission of offers

- 2.1. Seller's offers shall be deemed offers without engagement.
- 2.2. Tender documents and project documentation must not be duplicated nor made available to third parties without the permission of Seller. They may be claimed back at any time and shall be returned to Seller immediately if the order is placed elsewhere.

3. Conclusion of contract

- 3.1. The contract shall be deemed concluded upon written confirmation by Seller of an order received or upon dispatch of a delivery.
- 3.2. Particulars appearing in catalogues, folders etc. as well as any oral or written statements shall only be binding if Seller makes express reference to them in the confirmation of the order.
- 3.3. Subsequent amendments of or additions to the contract shall be subject to written confirmation.

4. Prices

- 4.1. Prices shall be quoted ex works or ex Seller's warehouse without VAT, packing and packaging, loading, disassembly, take-back and proper recycling and disposal of waste electrical and electronic equipment for commercial purposes as defined by the Ordinance Regulating the Handling of Waste Electrical Equipment. Buyer shall be liable for any and all charges, taxes or other duties levied in respect of delivery. If the terms of delivery include transport to a destination designated by Buyer, transport costs as well as the cost of any transport insurance desired by Buyer shall be borne by the latter. Delivery does not, however, include unloading and subsequent handling. Packaging materials will be taken back only by express agreement.
- 4.2. Seller reserves the right to modify prices if the order placed is not in accordance with the offer submitted.
- 4.3. Prices are based on costs obtaining at the time of the first quotation. In the event that the costs have increased by the time of delivery, Seller shall have the right to adjust prices accordingly.
- 4.4. In carrying out repair orders, Seller shall provide all services deemed expedient and shall charge Buyer for the same on the basis of the work input and/or expenditures required. The same holds for any services or additional services the expediency of which becomes apparent only as the repair order is executed. In such an event special notification of Buyer shall not be required.
- 4.5. Expenses for estimates of costs of repair and maintenance or for expert valuations shall be invoiced to Buyer.

5. Delivery

- 5.1. The period allowed for delivery shall commence at the latest of the following dates:
 - a) the date of order confirmation by Seller;
 - b) the date of fulfilment by Buyer of all the conditions, technical, commercial and other, for which he is responsible;
 - c) the date of receipt by Seller of a deposit or security due before delivery of the goods in question.
- 5.2. Buyer shall obtain whatever licences or approvals may be required from authorities or third parties for the construction of plant and equipment. If the granting of such licences or approvals is delayed for any reason the delivery period shall be extended accordingly.
- 5.3. Seller may carry out, and charge Buyer for, partial or advance deliveries. If delivery on call is agreed upon, the commodity shall be deemed called off at the latest one year after the order was placed.
- 5.4. In case of unforeseeable circumstances or circumstances beyond the parties control, such as all cases of force majeure, which impede compliance with the agreed period of delivery, the latter shall be extended in any case for the duration of such circumstances; these include in particular armed conflicts, official interventions and prohibitions, delays in transport or customs clearance, damages in transit, energy shortage and raw materials scarcity, labour disputes, and default on performance by a major component supplier who is difficult to replace. The aforesaid circumstances shall be deemed to prevail irrespective of whether they affect Seller or his subcontractor(s).
- 5.5. If a contractual penalty for default of delivery was agreed upon by contracting parties when the contract was concluded, it shall be executed as follows, and any deviations concerning individual items shall not affect the remaining provisions: Where delay in performance can be shown to have occurred solely through the fault of Seller, Buyer may claim for each completed week of delay an indemnity

of at most one half of one per cent, a total of no more than 5 %, however, of the value of that part of the goods to be delivered which cannot be used on account of Seller's failure to deliver an essential part thereof, provided the Buyer has suffered a damage to the aforesaid extent. Assertion of rights of damages exceeding this extent is precluded.

6. Passage of risk and place of performance

- 6.1. Unless otherwise agreed, the delivery of goods is considered sold EXW in accordance with INCOTERMS® 2010.
- 6.2. For services, the place of performance shall be the place indicated in the written order confirmation, secondary to that at which the service is actually rendered by Seller. The risk in respect of such services or any part thereof shall pass to Buyer at the time the services have been rendered.

7. Payment

- 7.1. Unless otherwise agreed, one third of the purchase price shall fall due at the time of receipt by Buyer of the order confirmation of Seller, one third after half the delivery period has elapsed and the balance at the time of delivery. Irrespective thereof the turnover tax comprised in the amount of the invoice shall be paid within 30 days of the invoice date. If bankruptcy proceedings are instituted against the assets of Buyer or if an application for bankruptcy proceedings is not granted for insufficiency of assets, deliveries shall only be made against cash in advance.
- 7.2. In the case of part settlements the individual part payments shall fall due upon receipt of the respective invoices. The same shall apply to amounts invoiced for additional deliveries or resulting from additional agreements beyond the scope of the original contract, irrespective of the terms of payment agreed upon for the principal delivery.
- 7.3. Payment shall be made without any discount free Seller's domicile in the agreed currency. Drafts and checks shall be accepted on account of payment only, with all interest, fees and charges in connection therewith (such as collection and discounting charges) to be borne by Buyer.
- 7.4. Buyer shall not be entitled to withhold or offset payment on the grounds of any warranty claims or other counterclaims.
- 7.5. Payment shall be deemed to have been effected on the date at which the amount in question is at Seller's disposal.
- 7.6. If Buyer fails to meet the terms of payment or any other obligation arising from this or other legal transactions, Seller may without prejudice to his other rights
 - a) suspend performance of his own obligations until payments have been made or other obligations fulfilled, and exercise his right to extend the period of delivery to a reasonable extent,
 - b) call in debts arisen from this or any other legal transactions and charge default interest amounting to 1.25 % per month plus turnover tax for these amounts beginning with the due dates, unless Seller proves costs exceeding this.
 - c) only perform other legal transactions against cash in advance in the case of qualified insolvency, in other words, following two delays in payment.In any case Seller has the right to invoice all expenses arising prior to a lawsuit, especially reminder charges and lawyer's fees.
- 7.7. Discounts or bonuses are subject to complete payment in due time.
- 7.8. Seller retains title to all goods delivered by him until receipt of all amounts invoiced including interests and charges. Buyer herewith assigns his claim out of a resale of conditional commodities, even if they are processed, transformed or combined with other commodities, to Seller to secure the latter's purchase money claim. In the case of resale granting respite Buyer shall have the power of disposal of the product under retention of ownership only with the proviso that upon reselling Buyer notifies the secondary buyer of the assignment for security or enters the assignment in his account books. Upon request Buyer has to notify the assigned claim and the debtor thereof to Seller, and to make all information and material required for his debt collection available and to notify the assignment to the third-party debtor. If the goods are attached or otherwise levied upon, Buyer shall draw attention to Seller's title and immediately inform Seller of the attachment or levy.

8. Warranty and acceptance of obligation to repair defects

- 8.1. Once the agreed terms of payment have been complied with, Seller shall, subject to the conditions hereunder, remedy any defect existing at the time of acceptance of the article in question whether due to faulty design, material or manufacture, that impairs the functioning of said article. From particulars appearing in catalogues, folders, promotional literature as well as written or oral statements which have not been included in the agreement no warranty obligations may be deduced.
- 8.2. Unless special warranty periods operate for individual items the warranty period shall be 12 months. These conditions shall also apply to any goods supplied, or services rendered in respect of goods supplied, that are firmly attached to buildings or the ground. The warranty period begins at the point of passage of risk acc. to paragraph 6.
- 8.3. For improved or exchanged parts, the warranty period shall start again, but shall end in any case 6 months after the original warranty period has expired.
- 8.4. If delivery or the performance of services is delayed for reasons outside the control of Seller, the warranty period shall begin 2 weeks after Seller is ready to deliver or perform services.

- 8.5. The foregoing warranty obligations are conditional upon the Buyer giving within a reasonable period notice in writing of any defects that have occurred and such notice reaching the Seller. Buyer shall prove within a reasonable period the presence of a defect, in particular he shall make available within a reasonable period to Seller all material and data in his possession. Upon receipt of such notice Seller shall, in the case of a defect covered by the warranty under 8.1 above, have the option to replace the defective goods or defective parts thereof or else to repair them on Buyer's premises or have them returned for repair, or to grant a fair and reasonable price reduction.
- 8.6. Any expenses incurred in connection with rectifying defects (e. g. expenses for assembly and disassembly, transport, waste disposal, travel and siteto-quarters time) shall be borne by Buyer. For warranty work on Buyer's premises Buyer shall make available free of charge any assistance, hoisting gear, scaffolding and sundry supplies and incidentals that may be required. Replaced parts shall become the property of Seller.
- 8.7. If an article is manufactured by Seller on the basis of design data, design drawings, models or other specifications supplied by Buyer, Seller's warranty shall be restricted to non-compliance with Buyers specifications.
- 8.8. Seller's warranty obligation shall not extend to any defects due to assembly and installation work not undertaken by Seller, inadequate equipment, or due to non-compliance with installation requirements and operating conditions, overloading of parts in excess of the design values stipulated by Seller, negligent or faulty handling or the use of inappropriate materials, nor for defects attributable to material supplied by Buyer. Nor shall Seller be liable for damage due to acts of third parties, atmospheric discharges. Excess voltage and chemical influences. The warranty does not cover the replacement of parts subject to natural wear and tear. Seller accepts no warranty for the sale of used goods.
- 8.9. The warranty shall lapse immediately if, without written consent of Seller, Buyer himself or a third party not expressly authorised undertakes modifications or repairs on any items delivered.
- 8.10. Claims acc. to § 933b ABGB are struck by the statute of limitation with lapse of the period mentioned under point 8.2.
- 8.11. The provisions of sub-paragraphs 8.1 to 8.10 shall apply, mutatis mutandis, to all cases where the obligation to repair defects has to be accepted for other reasons laid down by law.
- 9. Withdrawal from contract**
- 9.1. Buyer may withdraw from the contract only in the event of delays caused by gross negligence on the part of Seller and only after a reasonable period of grace has elapsed. Withdrawal from contract shall be notified in writing by registered mail.
- 9.2. Irrespective of his other rights Seller shall be entitled to withdraw from the contract
- a) if the execution of delivery or the inception or continuation of services to be rendered under the contract is made impossible for reasons within the responsibility of Buyer and if the delay is extended beyond a reasonable period of grace allowed;
 - b) if doubts have arisen as to Buyer's creditworthiness and if same fails, on Seller's request, to make an advance payment or to provide adequate security prior to delivery, or
 - c) if, for reasons mentioned in 5.4, the period allowed for delivery is extended by more than half of the period originally agreed or by at least 6 months, or
 - d) if Buyer does not or does not properly meet the obligations imposed as per paragraph 13.
- 9.3. For the reasons given above withdrawal from the contract shall also be possible in respect of any outstanding part of the delivery or service contracted for.
- 9.4. If bankruptcy proceedings are instituted against Buyer or an application for bankruptcy proceedings is not granted for insufficiency of assets, Seller may withdraw from the contract without allowing a period of grace. If this withdrawal is taken, it shall take effect immediately upon the decision that the business will not be continued. If the business will be continued, a withdrawal shall not take effect until 6 months after the institution of bankruptcy proceedings or after an application for bankruptcy proceedings has not been granted for insufficiency of assets. In any case, the contract shall be terminated immediately unless the bankruptcy law to which Buyer is subject conflicts with this or if termination of the contract is necessary to prevent significant damages to Seller.
- 9.5. Without prejudice to Seller's claim for damages including expenses arising prior to a lawsuit, upon withdrawal from contract any open accounts in respect of deliveries made or services rendered in whole or in part shall be settled according to contract. This provision also covers deliveries or services not yet accepted by Buyer as well as any preparatory acts performed by Seller. Seller shall, however, have the option alternatively to require the restitution of articles already delivered.
- 9.6. Withdrawal from contract shall have no consequences other than those stipulated above.
- 9.7. The assertion of claims on the ground of *laesio enormis*, error, or lapse of purpose by the Buyer is excluded.

10. Disposal of waste electrical and electronic equipment

- 10.1. The Buyer of electrical/electronic equipment for commercial purposes, incorporated in Austria, is responsible for the financing of the collection and treatment of waste electrical and electronic equipment as defined by the Ordinance Regulating the Handling of Waste Electrical Equipment, if he is himself the user of the electrical/electronic equipment. If the Buyer is not the end user, he shall transfer the full financial commitment to his customer by agreement and furnish proof thereof to the Seller.
- 10.2. The Buyer incorporated in Austria shall ensure that the Seller is provided with all information necessary to meet the Seller's obligations as manufacturer/importer, particularly according to §§ 11 and 24 of the Ordinance Regulating the Handling of Waste Electrical Equipment and the Waste Management Act.
- 10.3. The Buyer incorporated in Austria is liable vis-à-vis the Seller for any damage and other financial disadvantages incurred by Seller due to Buyer's failure to meet or fully meet his financing commitment or any other obligations according to Article 10. The Buyer shall bear the burden of proof of performance of this obligation.

11. Seller's liability

- 11.1. Outside the scope of the Product Liability Act, Seller shall be liable only if the damage in question is proved to be due to intentional acts or acts of gross negligence, within the limits of statutory provisions. Seller's total liability in cases of gross negligence is limited to the net value of the order or EUR 500,000, depending on which amount is lower.
- 11.2. For each incident of damage, Seller shall be liable for 25% of the net value of the order or EUR 125,000, depending on which amount is lower.
- 11.3. Seller shall not be liable for damage due to acts of ordinary negligence nor for consequential damages or damages for pure economic loss, indirect damages, loss of production, financing costs, costs for replacement energy, loss of energy, data or information, loss of profits, loss of savings or interest, or damage resulting from third-party claims against buyer.
- 11.4. Seller shall not be liable for damages in case of non-compliance with instructions for assembly, commissioning and operation (such as are contained in instructions for use) or non-compliance with licensing requirements.
- 11.5. Claims that exceed the contractual penalties that were agreed on are excluded from the respective title. The provisions of paragraph 11 apply exclusively for all claims by Buyer against Seller, regardless of the legal basis or entitlement, and also apply to all employees, subcontractors and subsuppliers of Seller.

12. Industrial property rights and copyrights

- 12.1. Buyer shall indemnify Seller and hold him harmless against any claims for any infringement of industrial property rights raised against him if Seller manufactures an article pursuant to any design data, design drawings, models or other specifications made available to him by Buyer.
- 12.2. Design documents such as plans and drawings and other technical specifications as well as samples, catalogues, prospectuses, pictures and the like shall remain the intellectual property of Seller and are subject to the relevant statutory provisions governing reproduction, imitation, competition etc. The provisions of 2.2 above shall also cover design documents.

13. Compliance with export provisions

- 13.1. When passing on goods delivered by Seller to third parties (as well as any related documentation, regardless of the method of provision or the services performed by Seller [including technical support of any kind]), Buyer must comply with the applicable regulations of national and international (re-)export provisions. In any case, Buyer must observe the (re-)export provisions of Seller's country of residence, the European Union and the United States of America.
- 13.2. If necessary for export controls, Buyer must provide Seller with all necessary information immediately after being requested to do so, for example, information about the final recipient, final destination and purpose of the goods or services.

14. General

Should individual provisions of the contract or of these provisions be invalid the validity of the other provisions shall not be affected. The invalid provision shall be replaced by a valid one, which comes as close to the target goal as possible.

15. Jurisdiction and applicable law

Any litigations arising under the contract including litigations over the existence or non-existence thereof shall fall within the exclusive jurisdiction of the competent court at Seller's domicile; the competent court of the Bezirksgericht Innere Stadt, Vienna, shall have exclusive jurisdiction if Seller is domiciled in Vienna. The contract is subject to Austrian law excluding the referral rules. Application of the UN Convention on Contracts for the International Sale of Goods is renounced.

16. Proviso

The execution of the contract by Seller is subject to the condition that there are no obstacles standing in the way of execution due to national or international (re-)export provisions, and especially no embargos and/or other sanctions.

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THE COMPANY

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