COMPETENCE IN CABLE TECHNOLOGY

KERPEN

Competence in Cable Technology

ELine™, MegaLine™, FLine™, GigaLine™

Solutions@KERPEN

Cabling systems for LAN Office, LAN Home, LAN Industry, Access/MAN/WAN networks, SAN

Who are we?

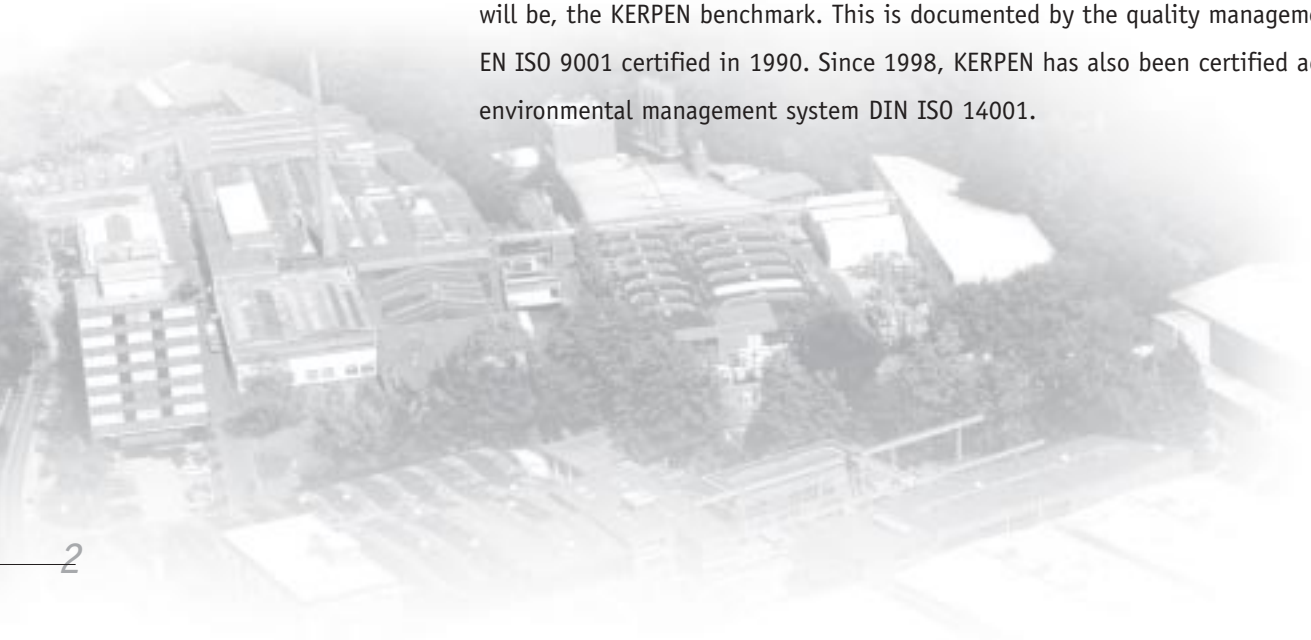
For more than 80 years now, KERPEN as one of the leading independent companies in the cable industry has been successfully meeting the complex demands of international markets. The company now employs more than 600 people. A central element of the KERPEN philosophy is the quest for constant improvement – feet firmly planted in the past and head in the world of the future! And it is to the future that we look, producing high-quality, innovative cable and cabling products which are always one step ahead of the standards of the time.

As a competent developer and manufacturer of cables and cabling systems, we now cater to high end requirements in information technology and industrial markets. LAN Office, LAN Industry, city networks/telecom and LAN Home with the common denominator of Ethernet and Internet Protocol (IP) are integrating and changing the world of telecommunications. KERPEN has the necessary passive system solutions in the form of copper data cables and optical fibre cables. MegaLine™ copper data cables and ELine™ systems engineering are used to build high-performance systems for structured in-house cabling. When broadband data transfer over long distances in LANs and city networks is required, GigaLine™ optical fibre cables with the new improved Gigabit Ethernet quality and KERPEN FLine™ systems engineering are now the solution of choice.

For the purposes of industry and the international project business in plant engineering, KERPEN provides high-quality cables for measurement and control engineering which comply fully with the national and international standards and material specifications and are custom-made according to the specific wishes of our customers.

The development and production of compounds for the cable and plastics industry rounds off our varied product portfolio.

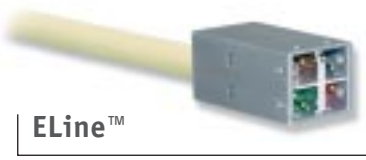
KERPEN with its committed, creative and competent employees is at home in the markets of the world, by way of branches and sales offices or via representatives. Quality is, and always will be, the KERPEN benchmark. This is documented by the quality management system DIN EN ISO 9001 certified in 1990. Since 1998, KERPEN has also been certified according to the environmental management system DIN ISO 14001.



Contents

Services on the Internet and/or CD

- Specifications and tender texts
- Planning documents
- Certificates
- "Link Matrix"
- Warranty programme
- References
- Technical articles
- Certification programme "KERPEN Trained Networker"
- Seminars and roadshows
- Up-to-date information



ELine™

MegaLine™

FLine™

GigaLine™

Solutions@KERPEN – competence and performance all from one supplier

High-quality universal cables and optimised high-performance cabling systems – KERPEN offers investors, planners, system integrators, fitters or dealers economic solutions for an infrastructure with a secure future in the fields LAN Office, LAN Industry, LAN Home, Access, MAN, WAN and SAN.
Why not profit from our know-how as one of the leading developers and suppliers on the European cable market? You can rely on tried and tested high-quality products, matching components and comprehensive services with regard to the advice and assistance for your projects! Let us help you to implement the optimum solution for your network!
Our up-to-date Solutions@KERPEN catalogue puts our whole range of products and services in the field of IT cabling at your disposal.

Copper solutions – high-performance cables and systems for LAN Office, LAN Industry and LAN Home

Universal high-performance MegaLine™ copper data cables and innovative ELine™ systems engineering from KERPEN give you high-performance copper solutions for all categories and classes.
With the new MegaLineTM e-types, KERPEN has yet again raised the standards for copper data cables.

Optical fibre solutions for LAN, Access, MAN, WAN and SAN

GigaLineTM optical fibre cables and FLine™ systems engineering are just what you need for high-speed optical fibre cabling on all network levels.
GigaLineTM optical fibre cables with optimised multimode as well as single-mode fibres allow the implementation of powerful and economical solutions.

Added value – helpful tools for your planning

Besides detailed information on our range of products, this catalogue provides you with important supplementary information with regard to the standards situation and technical trends and developments. We can also assist you in project planning via

- specifications and tender texts on CD
- planner tools at kerpen.com
- your personal contacts

Competence, efficiency, advice – why not have a talk with us?

We assist your project and help you to bring it to a successful finish. Here's what you can expect from us as your partner:

We advice you and our competent employees give you project support, on location if required.
We provide you with supporting information on the standards situation and demonstrate their interpretation, application and consequences.
We prepare tender texts and send them to you so you can integrate them into your technical specifications.
We advice you in detail and support you in the use of all products and provide you with arguments for using KERPEN products.
Without any obligation on your part, we reserve the quantities you require for your projects.
We offer you training and support.

We won't be satisfied until you are!

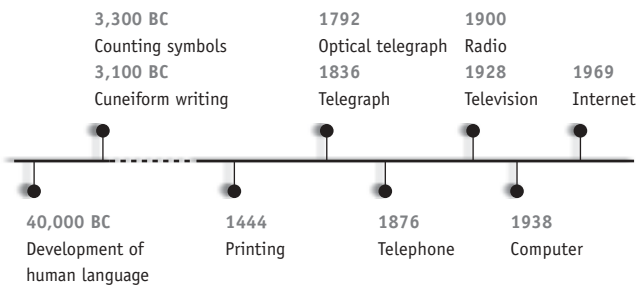
The world uses language – things weren't always that way

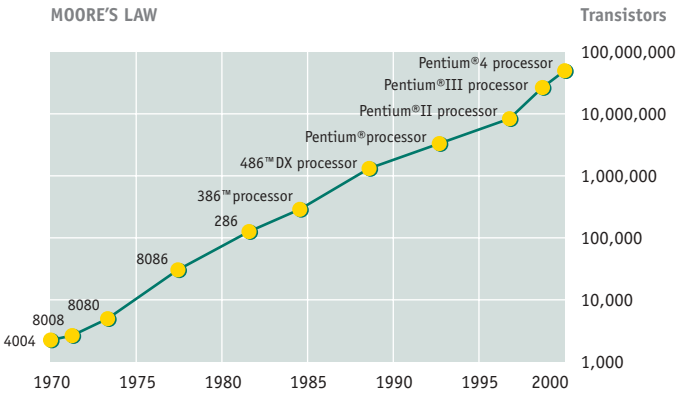
Language is something we take for granted. Almost everything we say or experience every day is conditioned by our language – no matter whether we're thinking something over, writing a letter or communicating by electronic means. But are we also conscious of the fact that the emergence of language was one of the fundamental developments of the human race?

The development of language is closely connected to the development of human beings, i.e. the evolution of Homo sapiens.

Homo sapiens developed in Africa about 500,000 to 200,000 years ago. Language experts assume that human speech developed 100,000 years ago at the latest.

In contrast, the first writing only came up around 3100 BC with the development of the cuneiform writing of the Sumerians in Mesopotamia (the area of modern Iraq, Turkey and Syria). At last it was possible to record speech, and thus knowledge, for later generations. However, a few fundamental technical developments were necessary before the written word could be fixed and spread by simple means. About 2200 years ago, the Chinese invented paper, and the printing press was invented in the 15th century – now we're in the stage of electronic media.





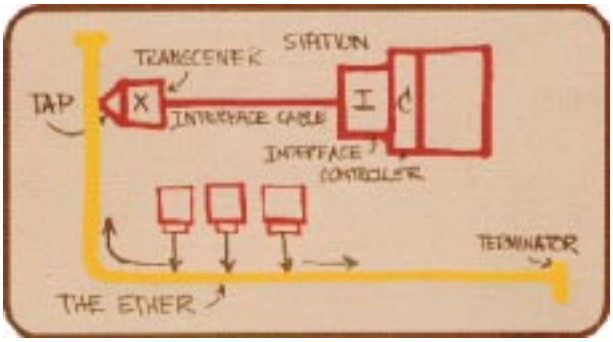
New forms of communication

Modern network technologies are now creating the conditions necessary for this new form of electronic communication, allowing the worldwide exchange of information within seconds.

Just a few years ago, this would not have been thought possible. However, in 1965 Gordon Moore, one of the co-founders of Intel in 1972, put forward an interesting hypothesis:

The number of transistors doubles every 18 to 24 months, he said.

And Intel did all it could to press ahead with this development.



Ethernet everywhere – a standard goes around the world

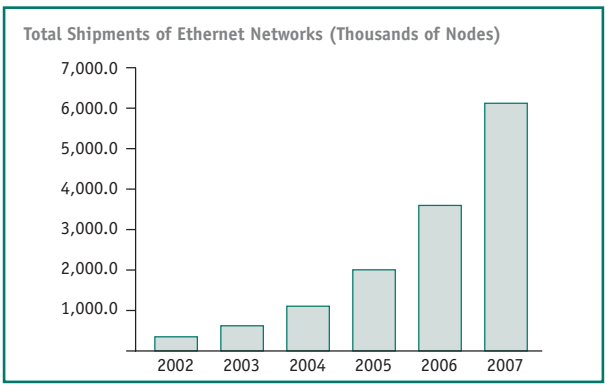
Ethernet was 30 in 2003!

The term ETHER first appeared in a paper written by former XEROX employee Bob Metcalfe dated 25 May 1973. The paper described a bus typology based on yellow coax cables (see above illustration).

Ethernet was put onto the market in the early eighties by Rank Xerox, Intel and Digital Equipment, thus ringing in the age of network technology.

Nobody could have foreseen in those days that Ethernet would become such a success story. Today Ethernet is the "transport medium". With a market share of over 90 %, Ethernet dominates the IT world in the field of office communication, pushing competitors such as Token Ring (IBM), FDDI and ATM aside. The players at the start have now left the game. The same goes for the "yellow cable" (coax) originally used.

The bus topology was the foundation stone for success at the time, but the success of Ethernet technology, which has continued up to the present, was not possible until the introduction of the star structure via the 10Base T standard in 1990 and the development of the bridge and switching technologies.



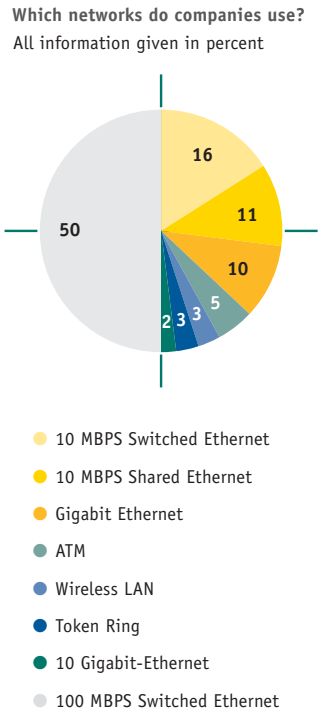
Switching technology also allows a virtually unlimited scalability of the Ethernet protocol. In theory at least, the software configuration allows bandwidths to be assigned with a precision of 1 Mbit/s.

Other highlights were the introduction of Gigabit Ethernet in 1998 and that of the 10 Gigabit Ethernet standard in the year 2002.

In particular the 10 Gigabit Ethernet standard opens up new possibilities today. The technology is now no longer restricted to the company backbone, and it is all set to take new market segments by storm:

- The building up of storage area networks (SAN)
- The construction of municipal area networks (MAN)
- The implementation of wide area networks (WAN)

The spread of Ethernet into these sectors is assisted by the uniform management of a general and scalable Ethernet infrastructure.



The different market segments in detail

LAN Office

This was the starting point for the Ethernet success story more than 30 years ago. Ethernet is now virtually the dominant transfer protocol in this field. In addition to the classical LAN Office applications, the Ethernet protocol has staked an increasingly stronger place for itself in the fields LAN Industry and LAN Home.

LAN Home

Whereas the LAN Office field still focuses on the networking of printers and PCs and has recently been complemented by the implementation of IP telephony, interest in additional applications is growing in the LAN Home segment:
Thus, the components with network capabilities recently presented allow the music system in the living room to be networked with the PC in the study or children's room, thus permitting the reproduction of Web radio or MP3 files stored on the computer etc.

LAN Industry

For LAN Industry, the Ethernet protocol is the alternative, or at least an addition, to bus systems for machine or process control.
In industrial automation, too, increasingly higher speeds are required, and these can no longer be achieved using conventional serial bus engineering. The use of Ethernet in industry is thus on the increase, not only on the information level, but also on the control and device level.

MAN

The networking of the individual branches of a company within a city is usually achieved via a public MAN (Metropolitan Area Network). The introduction of the 10 GbE standard provided a reasonably priced alternative to the classical telecommunication standards. Here, too, the uniform management which Ethernet provides is one more advantage.

WAN

Ethernet also provides alternatives in the field of long-distance communications. Thus, standard single-mode fibres allow rapid WANs (**W**ide **A**rea **N**etworks) to be operated over distances of up to 40 km without additional active components.
However, Ethernet technology has entered WANs for lower data rates too. Thus, since late 2003 Deutsche Telekom has been giving its customers the opportunity to interconnect local area networks (LANs) via Ethernet WANs at different locations. The bandwidth provided starts at 10 MBit/s and can be increased to up to 100 MBit/s depending on the requirements.

SAN

Large companies often also have extensive **S**torage **A**rea **N**etworks (SANs) the high demands of which can also be met using 10 Gigabit Ethernet. Besides price and performance, the general serviceability of the company network plays a major role here.

Conclusion: Ethernet technology now offers solutions for virtually all segments, in particular via the rapid Gigabit and 10 Gigabit Ethernet protocols.

KERPEN also offers optimised cabling solutions for these applications and market segments.

High-performance cables and systems for LAN Office, LAN Industry and LAN Home

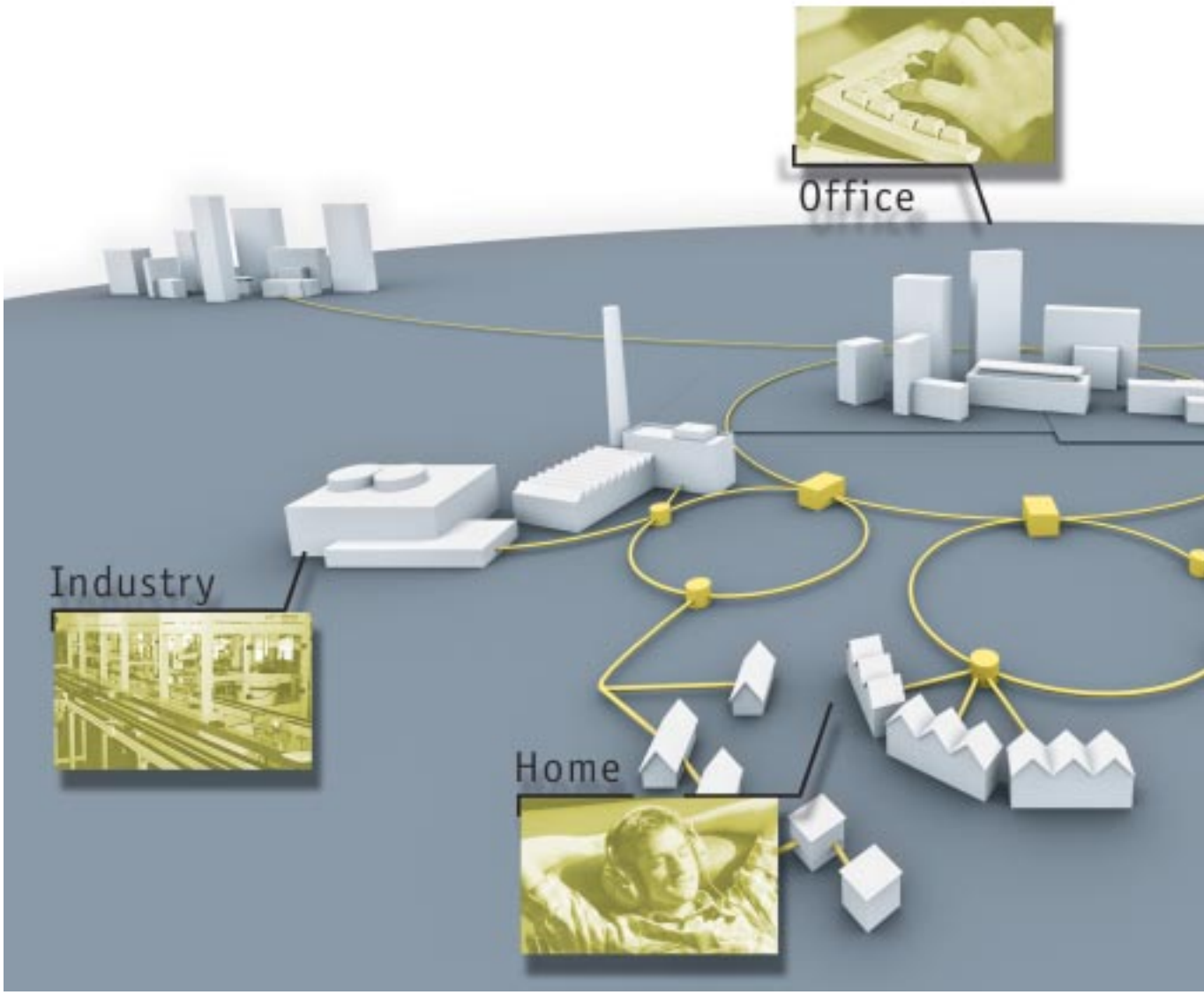
With copper solutions from KERPEN, the market now has top-quality products in certified quality all from the same supplier.

ELine™ –
high-end systems for all categories and classes

The competitiveness of every company is increasingly determined by its commitment in information and communication technology. Of necessity, different companies have different needs and demands. Since 2002, KERPEN has been offering its customers high-end copper-based cabling systems for all categories and classes and is at present the only manufacturer to be doing so.

ELine™ 1200 EC7 –
Multimedia up to 1.5 GHz and more

Streets ahead of the standard, with high reserve performance and a wide installed basis (over 3 million ports), ELine™ 1200 EC7 is at present the most effective multimedia system available on the market: ELine™ 1200 EC7 transmits data, voice, SAT TV/CATV via one port and one cable – with bandwidths of up to 1.5 GHz!

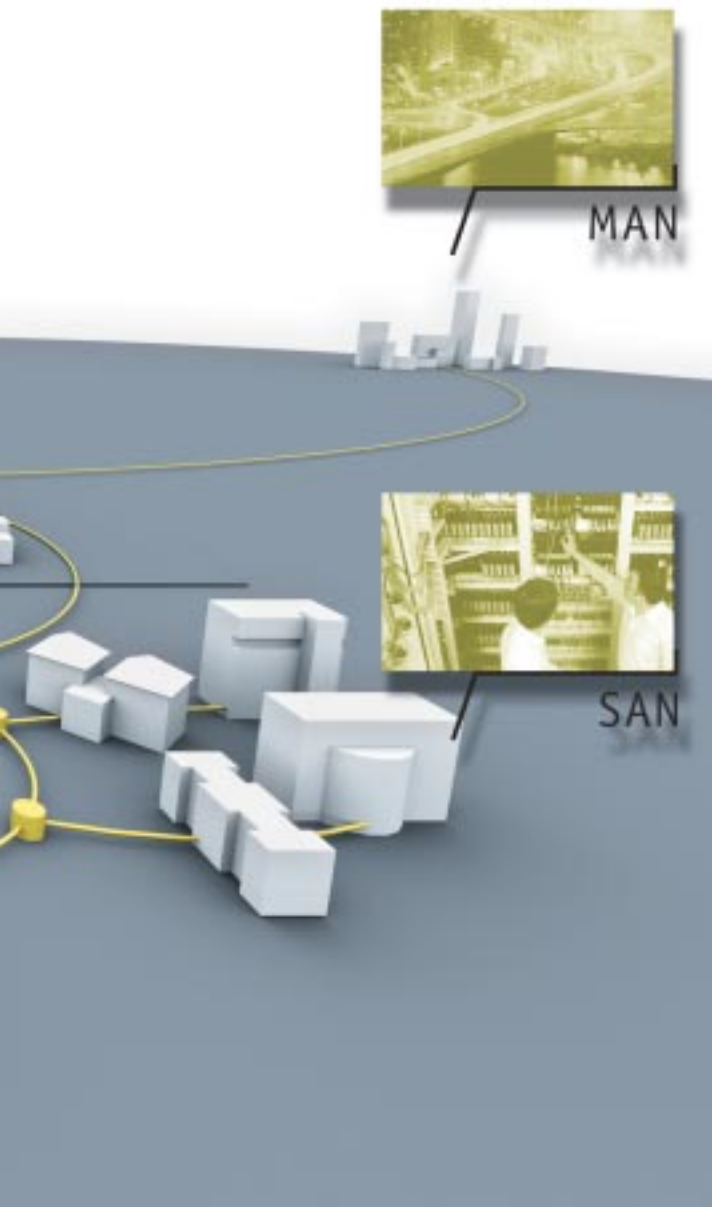


ELine™ 600 GG45 –
two in one: Cat. 6 and Cat. 7

ELine™ 600 GG45 is the Cat. 7 cabling system with the first and only standardised Cat. 7 plug connector with downward-compatibility to Cat. 6 and Cat. 5. The system offers optimum performance and allows step-by-step migration from today's installed base to Cat. 7 cabling.

ELine™ 250 RJ45 –
the real Cat. 6

ELine™ 250 RJ45 provides optimum performance with reserves on all components and also offers decisive advantages in design and assembly: ELine™ RJ45 is considerably smaller than other RJ45 plug connectors. Thus, a standard outlet has 3 ports. The system is also very convincing due to its rapid and easy assembly.

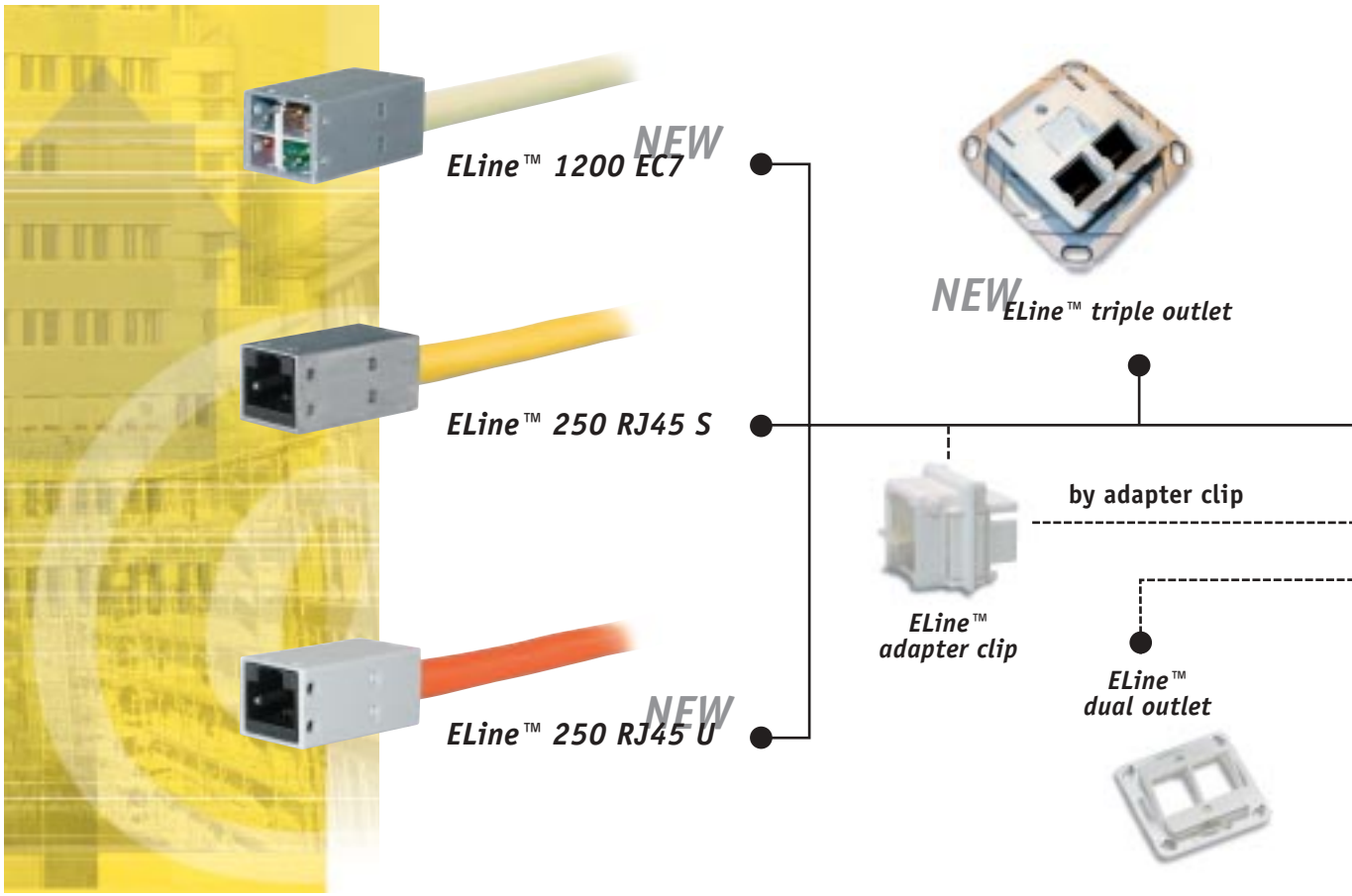


MegaLine™ copper data cables:
Top quality and a long service life

In the field of cables for information technology, KERPEN has been the market leader with its MegaLine™ copper data cables since 1991. MegaLine™ guarantees economy as well as universal capabilities and performance and is fully able to meet the demands of today and tomorrow.

With the new MegaLine™ e-types, KERPEN has yet again raised the standards for copper data cables: MegaLine™ 723e offers bandwidths of up to 1,000 MHz, whereas MegaLine™ 722e provides bandwidths of up to 1,200 MHz. At the very top is MegaLine™ 8e – the "Next Generation" of multimedia cables with a bandwidth of up to 1,500 MHz.

The ELine™ PREMIUM system



A combination meeting top requirements

The ELine™ PREMIUM system includes both the modular ELine™ 250 RJ45 jack (categorie 6 de-embedded) as well as the state-of-the-art ELine™ 1200 EC7 multimedia jack. Due to their especially compact design those high-performance connectors can easily be integrated in special high-density racks and wall outlets. The ELine™ wall outlet provides space for up to three modular jacks, and - besides the standard ELine™ 24 port panel – KERPEN also offers an ELine™ 48 port panel, thus providing double density capacity on one rack unit only. The ELine™ PREMIUM programme is rounded off by an extensive set of accessories for under-floor installation.

All the necessary PLANNING DOCUMENTS are available in the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

ELine™ 24 24 ports/1 U panel

NEW

ELine™ 48 ports/1 U panel

NEW

ELine™ Floorbox adapter
(Ackermann, Kleinhuis, Deutsche Elektraplan)

compatible to the PREMIUM serie

ELine™ 32 ports/2 U panel

ELine™ 16 ports/1 U panel

ELine™ mini patch 6, 8 and 16 ports

	Class E/Cat. 6 UTP		Class E/Cat. 6 shielded		Multimedia	
	ELine™ 250 RJ45 U	**Product no.**	**ELine™ 250 RJ45 S**	**Product no.**	**ELine™ 1200 EC7**	**Product no.**
MegaLine™ cable	ML 6 Ue PVC	7KS01376	ML 623 S	7KS01557	ML 8	7KS01138
	ML 6 Ue H	7KS01375	ML 623 DS	7KS01167	ML 722	7KS00915
			ML 623	7KS00533	ML 723	7KS00916
ELine™ jack	RJ45 U	9ZE30009	RJ45 S	9ZE30001	EC7	9ZE44444
ELine™ outlet	G 50x50 1 - 3 ports	9ZE30010	D 50x50 1 - 3 ports	9ZE30010	D 50x50 1 - 3 ports	9ZE30010
ELine™ panel	24 ports 1U	9ZE30002	24 ports 1U	9ZE30002	24 ports 1U	9ZE30002
	48 ports 1U	9ZE30008	48 ports 1U	9ZE30008	48 ports 1U	9ZE30008
ELine™ floorbox solution:						
Floorbox holder*	GB2 E complete for a maximum of 2 inserts					9ZE60001
Floorbox holder*	GB3 E E complete for a maximum of 3 inserts					9ZE60002
Insert for floorbox holder	Insert for floorbox holder (up to 3 jacks)					9ZE60006
ELine™ patch cord	ML 6 Ue flex 1.0 m	9KY79010	ML 727 SC flex 1.0 m	9KY26010	ML 727 EC7-RJ45 0.5 m	9KE03005
(Selection)	ML 6 Ue flex 2.0 m	9KY79020	ML 727 SC flex 2.0 m	9KY26020	ML 727 EC7-RJ45 1.0 m	9KE03010
	ML 6 Ue flex 3.0 m	9KY79030	ML 727 SC flex 3.0 m	9KY26030	ML 727 EC7-RJ45 2.0 m	9KE03020
	ML 6 Ue flex 5.0 m	9KY79050	ML 727 SC flex 5.0 m	9KY26050	ML 727 EC7-RJ45 3.0 m	9KE03030
	ML 6 Ue flex 10.0 m	9KY79100	ML 727 SC flex 10.0 m	9KY26100	ML 727 EC7-RJ45 5.0 m	9KE03050

* Other floorbox holders on request

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

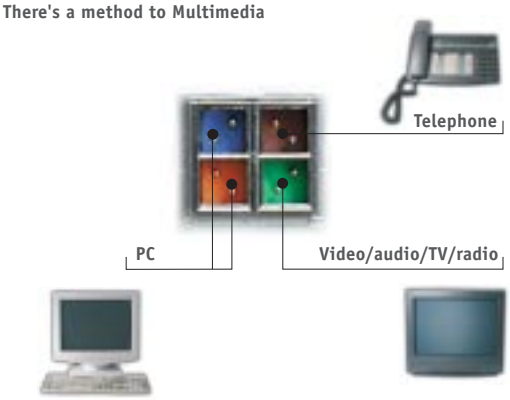
ELine™ 1200 EC7 – Multimedia up to 1.5 GHz via twisted pairs!

If a passive cabling system is connected with the term "multimedia", the question which immediately arises is "how does that all go together?" – after all, the term is more well-known in connection with products from entertainment electronics.
But ELine™ 1200 EC7 really does manage multimedia, because it allows the parallel use of different media via structured in-house cabling: data, voice, image and even television.

ELine™ 1200 EC7 — the concept

Since the early 1990s, KERPEN has been offering 100 | data cables of the MegaLine™ series with individual shielding of each pair. This principle was the model for the chamber system used in the ELine™ 1200 plug connector.

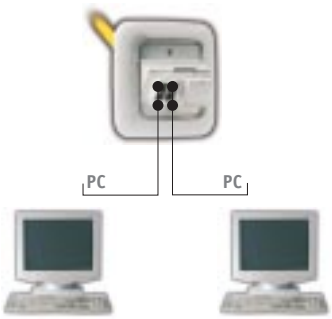
There's a method to Multimedia



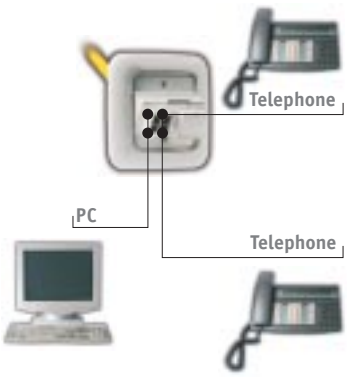
The 4 individually shielded chambers, each containing one pair, make the EC7 plug connector an ideal improvement on individually shielded S/FTP cables.

Cable and plug connector form the ideal symbiosis: 4 pairs = 4 chambers with GHz performance.
The advantages are obvious: Consistent separation of the signal paths in an ideally matched system expands the possible applications in unimagined ways.
It is thus also possible to use two data services of Class A to F simultaneously via only one cable and one EC7 jack. However, different services such as telephone and data services can also be operated in parallel without the risk of NEXT problems. These possibilities are referred to under the name of „cable-sharing" or "service-sharing".
The units are connected via appropriately matched 4-, 2- or 1-pair ELine™ EC7 work area cords:

2 data services of Class A to F



Mixed telephone/data services



All the necessary PLANNING DOCUMENTS are available in the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

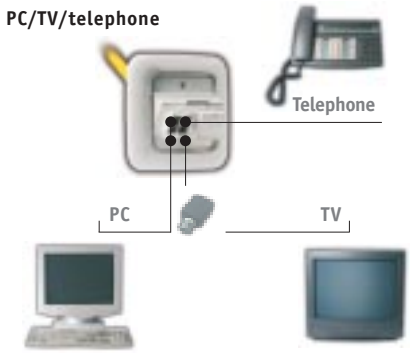
TV via twisted pairs!

The task of transmitting analogue CATV services via twisted pairs is technically very demanding. In order to be able to transmit all channels, transmission frequencies of up to 862 MHz are necessary – this demands the utmost in reserve performance of the system and especially good attenuation characteristics.
During development, ELine™ 1200 EC7 was optimised especially for this purpose, the current product range providing a wide range of tools for transmitting CATV signals.
The world of twisted pairs (100 Ω) is connected to the world of television (75 Ω) via twisted passive work area cords with an integrated balun.
In contrast to conventional solutions, outlets can be used flexibly: Thus, from being a telephone or data outlet, EC7 is easy to turn into a TV connection later if necessary.

Economy!

There is a price to pay for „high-tech" and "added value". In the long run, it is not necessary for the system to cost more than conventional systems, which usually require a special cable and a special plug connector for each service.

EC7 ELine™ 1200 allows you to save up to 50 % of the cables, plug connectors, outlets and patch fields.
Multiple use reduces the system costs by between 15 and 35 % (depending on the services used).



The reduction of number of cables and outlets required usually allows reductions in the costs for cable channels, switching cabinets etc. "Service-sharing" via ELine™ 1200 allows you to cut costs.

Our experience!

EC7 ELine™ 1200 includes many innovative new ways of going about things. This is why it could come as a surprise to discover that Kerpen introduced it into the market as early as 1996. Since then we have cooperated closely with our customers at all times, so that many of our customers' ideas on adding to or optimising our products have been included into the system concept over the last years.
Thus, ELine™ 1200 EC7 now includes a sophisticated system solution which follows the market requirements and is unparalleled at present!
As a four-lane data highway, ELine™ 100TM EC7 provides true multimedia "to the desk".

This is appreciated by customers all over the world – we can refer you to a widely installed basis with top references. Why not ask us for our up-to-date list?

Subject to printing errors, mistakes and technical changes

New jack design!

The ELine™ 1200 EC7 jack has been completely redesigned. Its robust full-metal design allows it to be integrated completely into the panel and the outlets used for the ELine™ PREMIUM series. This allows the use of up to 3 EC7 jacks in the Premium outlet and up to 48 ports on one height unit in the switching cabinet! The PREMIUM series also allows the mixed equipping of outlets and panel with the Cat. 6 jacks ELine™ 250 RJ45 S and ELine™ 250 RJ45 U (mixed-media application).

Last but not least, the assembly time is reduced dramatically in comparison with the EC7 jack used up to now! The new jack consists of 3 individual elements only, thus allowing rapid and extremely easy assembly. The completely redesigned EC7 jack makes assembly child's play and further improves performance while leaving the interface unchanged!

Backward-compatible!

Our multimedia system has been put to widespread use over the years and made many friends. This is why it was especially important for us to keep the system backward-compatible to the old range although the jack was redesigned:
It goes without saying that all patch cords and work area cords ever supplied also fit into the new EC7 jack. Adapter clips allow the retrofitting of existing panels from the old ELine™ outlet/panel program.
More bandwidth, more flexibility with regard to connections, a more reliable future and more unbeatable value for money are not provided by any other system solution!

ELine™ EC7-Jack, Pair Separator and strain relief

All the necessary PLANNING DOCUMENTS are available in the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

Technical data

Compatible outlets/panels etc.

- PREMIUM
- ELine™ 1200 EC7 (old series) via ELine™ mounting clip (product no.: 9ZE30006)

Category

- Better than Category 7/Class F according to ISO/IEC 11801 and EN 50173 2nd Edition (up to 600 MHz)

Jack type

- EC7 multimedia jack
- New design:
  Full metal body
  3-part jack set
- Shielded
- Connection method: push-in, gas-tight IDC
- Shielding: 360°
- Recommended conductors: AWG 23/..22
- Colour coding

Subject to printing errors, mistakes and technical changes

Jacks, outlets and patch panels

Multimedia – 1.5 GHz

ELine™ 1200 EC7 jack

16 x 14 x 36.9 mm (WxHxD)

Mounting depth 40 mm

Product description:

- Jack body:
  Zinc die-cast, copper- and silver-plated
- Strain relief: nickel silver
- Contacts: gold-plated
- IDC contacts: bronze, tinned
- Short assembly time
- Suitable for use in patch panels and outlet inserts of the PREMIUM and NOVUM series (clip required1)

Product no.: 9ZE44444

Pcs. per packing unit: 8

ELine™ 250 RJ45 triple outlet insert

50 x 50 x 30.5 mm (WxHxD)

Mounting depth 25 mm

Inclination 26°

Product description:

- Without components
- Suitable for mounting in ducts and for surface mounting, concealed mounting and many underfloor systems
- M4 thread for earth connection
- Dust protection cover
- Supplied without cover frame
- For up to 3 jacks
- Compatible with ELine™ 250 RJ45 S, ELine™ 250RJ45 U and ELine™ 1200 EC7 NEW jacks
- Pure white, RAL 9010

Product no.: 9ZE30010

Pcs. per packing unit: 8

ELine™ 250 RJ45 dual outlet insert

50 x 50 x 21 mm (WxHxD)

Mounting depth 25 mm

Inclination 60°

Product description:

- Without components
- Suitable for mounting in ducts and for surface mounting and concealed mounting
- For up to 2 jacks
- Incl. 2 adapter clips
- Compatible with ELine™ 250 RJ45 S and ELine™ 1200 EC7 NEW jacks
- Pure white, RAL 9010

Product no.: 9ZE30004

Pcs. per packing unit: 8

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

Jacks, outlets and patch panels

Multimedia – 1.5 GHz

PREMIUM patch panel, 1 U, 24 ports (RJ45/EC7)

483 x 1 U x 98 mm (WxHxD)

Product description:

- Without components, takes up a maximum of 24 jacks (also mixed media): ELine™ 250 RJ45 S, ELine™ 250 RJ45 U, ELine™ 1200 EC7 NEW
- Front panel RAL 7035
- Snap-in assembly
- Mounting clip not required
- Strain relief
- Earth connection

Product no.: 9ZE30002

Pcs. per packing unit: 1

PREMIUM patch panel, 1 U, 48 ports (RJ45/EC7)

483 x 1 U x 98 mm (WxHxD)

Product description:

- Without components, takes up a maximum of 48 jacks (also mixed media): ELine™ 250 RJ45 S, ELine™ 250 TM RJ45 U, ELine™ 1200 EC7 on one U!
- Front panel RAL 7035
- Snap-in assembly
- Mounting clip not required
- Strain relief
- Earth connection

Product no.: 9ZE30008

Pcs. per packing unit: 1

ELine™ EC7 adapter clip

Product description:

- For mounting ELine™ 250 RJ45 and ELine™ 1200 EC7 NEW in patch panel/outlets from existing ELine™ range
- Pure white, RAL 9010

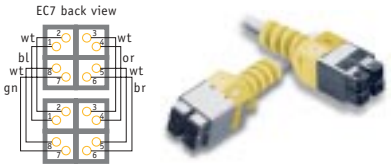
Product no.: 9ZE30006

Pcs. per packing unit: 8

For other accessories please see page 29

Subject to printing errors, mistakes and technical changes

Patch cords and work area cords (data)

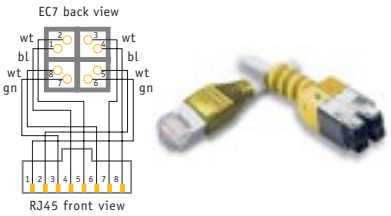


ELine™ 1200 EC7 patch cord/work area cord

Product description:

- 4P (7KS01189), grey
- A end equipped with 4-pair EC7 plug
- B end equipped with 4-pair EC7 plug
- Assignment: 1/1
- Colour of bending protection sleeve EC7/EC7: yellow
- Application: Gigabit Ethernet

Product no.:	9KEC1010
	9KEC1020
	9KEC1030
	9KEC1050
Pcs. per packing unit:	1

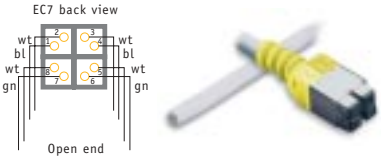


ELine™ 1200 EC7 patch cord/work area cord

Product description:

- 4P (7KS01189), grey
- A end equipped with 4-pair EC7 plug
- B end equipped with RJ45 plug
- Assignment EC7-RJ45:
- Colour of bending protection sleeve EC7/RJ45: yellow
- Application: Gigabit Ethernet

Product no.:	9KEC2010
	9KEC2020
	9KEC2030
	9KEC2050
Pcs. per packing unit:	1



ELine™ 1200 EC7 patch cord/work area cord

Product description:

- 4P (7KS01189), grey
- A end equipped with 4-pair EC7 plug
- Colour of bending protection sleeve EC7/RJ45: yellow
- B end without components (for self-mounted RJ45 plug etc.)

Product no.:	9KEC0010
	9KEC0020
	9KEC0030
	9KEC0050
Pcs. per packing unit:	1

ELine™ 1200 EC7 patch cord/work area cord

Product description:

- 2P (7KS01068), grey
- A end equipped with 2-pair EC7 plug
- B end equipped with 2-pair EC7 plug
- Colour of bending protection sleeve EC7/EC7: grey

Product no.:	9KE01005 – 0.5 m
	9KE01010 – 1.0 m
	9KE01020 – 2.0 m
	9KE01030 – 3.0 m
	9KE01050 – 5.0 m
Pcs. per packing unit:	1

ELine™ 1200 EC7 patch cord/work area cord

Product description:

- 2P (7KS01068), grey
- A end equipped with 2-pair EC7 plug
- B end unterminated (for self-mounted RJ45 plug etc.)
- Colour of bending protection sleeve EC7/EC7: grey

Product no.:	9KE02005 – 0.5 m
	9KE02010 – 1.0 m
	9KE02020 – 2.0 m
	9KE02030 – 3.0 m
	9KE02050 – 5.0 m
Pcs. per packing unit:	1

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

Patch cords and work area cords (data)

ELine™ 1200 EC7 patch cord/work area cord

Product description:

- 2P (7KS01068), grey
- A end equipped with 2-pair EC7 plug
- B end equipped with RJ45 plug
- Assignment RJ45: 1/2, 3/6
- Colour of bending protection sleeve EC7/RJ45: yellow
- Sticker: **Crossover**

Application: Ethernet crossover

Product no.:	9KE31005 – 0.5 m
	9KE31010 – 1.0 m
	9KE31020 – 2.0 m
	9KE31030 – 3.0 m
	9KE31050 – 5.0 m
Pcs. per packing unit:	1

ELine™ 1200 EC7 patch cord/work area cord

Product description:

- 2P (7KS01068), grey
- A end equipped with 2-pair EC7 plug
- B end equipped with RJ45 plug
- Assignment RJ45: 1/2, 3/6
- Colour of bending protection sleeve EC7/RJ45: yellow
- Application: Ethernet

Product no.:	9KE03005 – 0.5 m
	9KE03010 – 1.0 m
	9KE03020 – 2.0 m
	9KE03030 – 3.0 m
	9KE03050 – 5.0 m
Pcs. per packing unit:	1

ELine™ 1200 EC7 patch cord/work area cord

Product description:

- 2P (7KS01068), grey
- A end equipped with 2-pair EC7 plug
- B end equipped with RJ45 plug
- Assignment RJ45: 1/2, 3/6
- Colour of bending protection sleeve EC7/RJ45: blue
- Application: Token Ring

Product no.:	9KE04005 – 0.5 m
	9KE04010 – 1.0 m
	9KE04020 – 2.0 m
	9KE04030 – 3.0 m
	9KE04050 – 5.0 m
Pcs. per packing unit:	1

ELine™ 1200 EC7 patch cord/work area cord

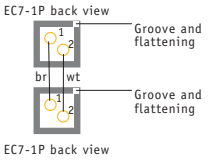
Product description:

- 2P (7KS01068), grey
- A end equipped with 2-pair EC7 plug
- B end equipped with RJ45 plug
- Assignment RJ45: 1/2, 3/6
- Colour of bending protection sleeve EC7/RJ45: green
- Application: ATM and TP-PMD

Product no.:	9KE05005 – 0.5 m
	9KE05010 – 1.0 m
	9KE05020 – 2.0 m
	9KE05030 – 3.0 m
	9KE05050 – 5.0 m
Pcs. per packing unit:	1

Subject to printing errors, mistakes and technical changes

Patch cords and work area cords (telephone)

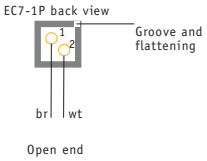


ELine™ 1200 EC7 patch cord/work area cord

Product description:

- 3 conductors (7KS01184), black
- A end equipped with 1-pair EC7 plug
- B end equipped with 1-pair EC7 plug
- Colour of bending protection sleeve: black
- Application: analog and digital telecommunications systems

Product no.:	9KE74005 – 0.5 m
	9KE74010 – 1.0 m
	9KE74020 – 2.0 m
	9KE74030 – 3.0 m
	9KE74050 – 5.0 m
Pcs. per packing unit:	1

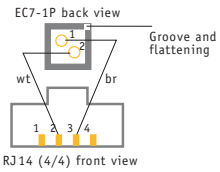


ELine™ 1200 EC7 patch cord/work area cord

Product description:

- 3 conductors (7KS01184), black
- A end equipped with 1-pair EC7 plug
- Colour of bending protection sleeve: black
- B end unterminated (for self-mounted RJ11 plug etc.)
- Application: analog and digital telecommunications systems

Product no.:	9KE75005 – 0.5 m
	9KE75010 – 1.0 m
	9KE75020 – 2.0 m
	9KE75030 – 3.0 m
	9KE75050 – 5.0 m
Pcs. per packing unit:	1

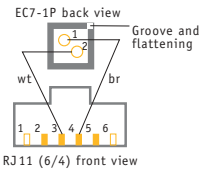


ELine™ 1200 EC7 patch cord/work area cord

Product description:

- 3 conductors (7KS01184), black
- A end equipped with 1-pair EC7 plug
- Colour of bending protection sleeve: black
- B end equipped with RJ14 plug (4/4)
- Application: analog and digital telecommunications systems

Product no.:	9KE76005 – 0.5 m
	9KE76010 – 1.0 m
	9KE76020 – 2.0 m
	9KE76030 – 3.0 m
	9KE76050 – 5.0 m
Pcs. per packing unit:	1



ELine™ 1200 EC7 patch cord/work area cord

Product description:

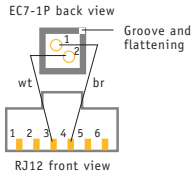
- 3 conductors (7KS01184), black
- A end equipped with 1-pair EC7 plug
- Colour of bending protection sleeve: black
- B end equipped with RJ11 plug (6/4)
- Application: analog and digital telecommunications systems

Product no.:	9KE78005 – 0.5 m
	9KE78010 – 1.0 m
	9KE78020 – 2.0m
	9KE78030 – 3.0 m
	9KE78050 – 5.0 m
Pcs. per packing unit:	1

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

Patch cords and work area cords (telephone)

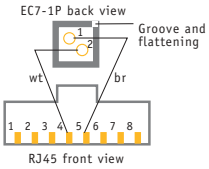


ELine™ 1200 EC7 patch cord/work area cord

Product description:

- 3 conductors (7KS01184), black
- A end equipped with 1-pair EC7 plug
- Colour of bending protection sleeve: black
- B end equipped with RJ12 plug (6/6)
- Typical assignment – other assignments on request
- Application: analog and digital telecommunications systems

Product no.:	9KE73010 – 1.0 m
	9KE73020 – 2.0 m
	9KE73030 – 3.0 m
	9KE73050 – 5.0 m
Pcs. per packing unit:	1

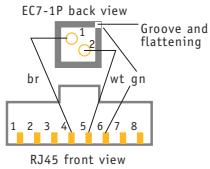


ELine™ 1200 EC7 patch cord/work area cord

Product description:

- 3 conductors (7KS01184), black
- 3A end equipped with 1-pair EC7 plug
- 3Colour of bending protection sleeve: black
- 3B end equipped with RJ45 plug
- 3Application: digital telephony

Product no.:	9KE79005 – 0.5 m
	9KE79010 – 1.0 m
	9KE79020 – 2.0 m
	9KE79030 – 3.0 m
	9KE79050 – 5.0 m
Pcs. per packing unit:	1

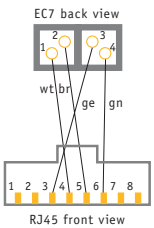


ELine™ 1200 patch cord/work area cord

Product description:

- 3 conductors (7KS01184), black
- A end equipped with 1-pair EC7 plug
- Colour of bending protection sleeve: black
- B end equipped with RJ45 plug
- Application: analog telephony for terminal devices with earth key

Product no.:	9KE80005 – 0.5 m
	9KE80010 – 1.0 m
	9KE80020 – 2.0 m
	9KE80030 – 3.0 m
	9KE80050 – 5.0 m
Pcs. per packing unit:	1



ELine™ 1200 patch cord/work area cord

Product description:

- 4 conductors (7KS01184), black
- A end equipped with 2-pair EC7 plug
- Colour of bending protection sleeve: black
- B end equipped with RJ45 plug, without bending protection
- Assignment RJ45 = 3/6, 4/5
- Application: ISDN

Product no.:	9KE67005 – 0.5 m
	9KE67010 – 1.0 m
	9KE67020 – 2.0 m
	9KE67030 – 3.0 m
	9KE67050 – 5.0 m
Pcs. per packing unit:	1

Subject to printing errors, mistakes and technical changes

Components for CATV use

ELine™ 1200 EC7-CATV work area cord

Product description:

- 1 conductor (7KS01072), grey
- A end equipped with EC7 1P plug
- Colour of bending protection sleeve: black
- B end equipped with CATV balun 100/75 | F plug (slide-on)
- Additional adapter: F jack to IEC plug
- Application: CATV cable

Product no.: 9KE30002 – 0.2 m
9KE30010 – 1.0 m

Pcs. per packing unit: 1

ELine™ 1200 EC7-CATV patch cord

Product description:

- 1 conductor (7KS01072), grey
- A end equipped with EC7 1P plug
- B end equipped with EC7 1P plug
- Colour of bending protection sleeve: black
- Application: CATV patch cord for 2 x quadruple balun etc.

Product no.: 9KE69005 – 0.5 m
9KE69010 – 1.0 m
9KE69020 – 2.0 m
9KE69030 – 3.0 m
9KE69050 – 5.0 m

Pcs. per packing unit: 1

ELine™ 1200 EC7-CATV dual quadruple balun 75/100 |
(Distributor insert)
49 x 26 x 103 mm (WxHxD)

Product description:

- Input: 2 x coax, F jack (75 |)
- Output: 2 x ELine™ 1200 EC7 jack (8x1P 100 |)
- Metal housing with cover and mounting thread, also suitable for earth connection
- When mounted in ELine™ 1200 EC7 distributor: occupies two ports
- 7 x terminating resistors
- Application: 2 x quadruple CATV balun function
- Only in conjunction with ELine™ patch panel (16 ports) (product no. 9ZE10127, see p. 29 – additional accessories

Product no.: 9ZE10271

Pcs. per packing unit: 1

ELine™ 1200 EC7 equalizer

Product description:

- Input: coax, F jack (75 |)
- Output: coax, F jack (75 |)
- Switchable via jumper: 9 dB, 18 dB, 27 dB

Product no.: 9ZE10242

Pcs. per packing unit: 1

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

Components for telephone use

ELine™ 1200 EC7 telephone patch panel

485 x 44 x 106 mm (WxHxD)

Mounting depth 104 mm

Product description:

- Complete with 25 x (1 x 4) two-conductor jacks
- 100 double conductors for operation with up to 100 telephone services on 1 U
- Rear connections 25 x 8 LSA
- Punch-down connections on 5 x 5 basic modules

Product no.: 9ZE10221

Pcs. per packing unit: 1

Subject to printing errors, mistakes and technical changes

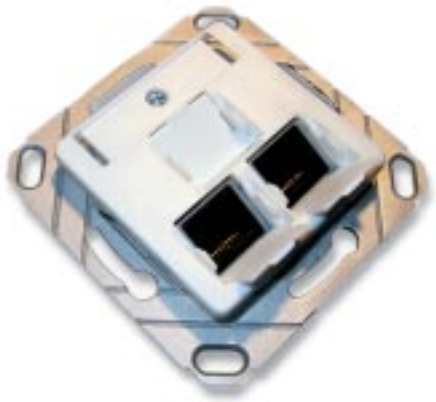
ELine™ 250 RJ45 – the real Category 6

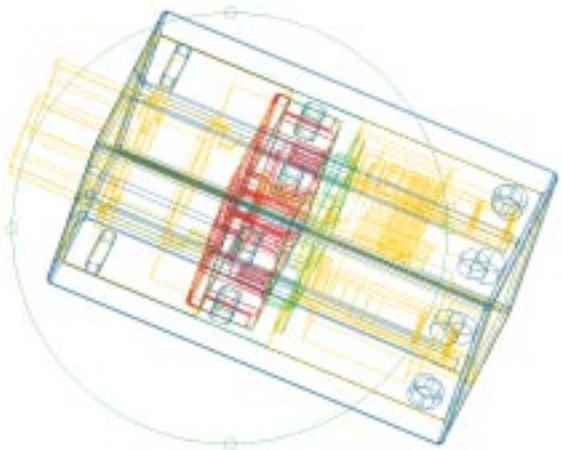
ELine™ 250 RJ45 S (shielded) and ELine™ 250 RJ45 U (unshielded)

ELine™ 250 RJ45 jacks of the PREMIUM system were developed for the highest of demands: Optimum performance, easy assembly and compact design for high packing density make this series unique.
In addition, the dimensions of the housing are compatible with the multimedia jack ELine™ 1200 EC7. This ensures problem-free upgrading within the PREMIUM system.
ELine™ 250 RJ45 jacks in conjunction with MegaLine™ 7 cables provide sufficient reserve performance for future services such as 10 Gigabit Ethernet which require more bandwidth.

ELine™ 250 RJ45: the concept

ELine™ 250 RJ45 plug connectors are based on completely redesigned plug connections. Extremely short individual contacts and a multilayer circuit board of a very short design are used. The concept makes parallel conductors largely unnecessary, thus minimising coupling between the individual pairs of contacts.





Extremely easy to mount!

ELine™ 250 RJ45 is a convincing solution due to its simple, rapid and flexible (modular) connecting technology. Only three components in one compact zinc die-cast housing – the ELine™ 250 RJ45 is easy to mount quickly and safely. The clear colour coding virtually makes mounting errors and the resulting additional costs a thing of the past.

The benefits!

Space-saving

The ELine™ 250 RJ45 is very much smaller than conventional RJ45 plug connectors and provides maximum performance in a small space. The components of the ELine™ 250 RJ45 system have especially small dimensions.
A triple outlet only takes up the space of a conventional dual outlet. A new panel with 1 HU provides room for 24 ports. Of course, the conventional panels in the ELine™ system can also be used via mounting clips.

Protection from incorrect use via RJ11, RJ12 or incorrectly pressed RJ45 work area cords increases safety. The compact ELine™ 250 RJ45 modules can be mounted in panels and outlets from the front and from the back.

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

The fully shielded ELine™ 250 RJ45 offer good electromagnetic compatibility and supports EN 55022/50082.

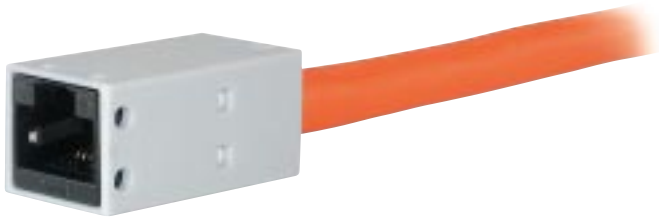
The real Cat. 6!

Thanks to the revolutionary design, a worldwide first, ELine™ 250 RJ45 goes far beyond all requirements of Class E/Category 6 according to ISO/IEC 11801 and EN 50173, 2nd Edition. Measurements and certificates from the accredited test laboratory GHMT prove the excellent electrical characteristics of the system. ELine™ 250 RJ45 offers maximum performance even in worst case configurations in a 4-connector channel and a 3-connector permanent link. The excellent values for NEXT, ELFEXT and ACR provide maximum headroom in comparison to the standard for all pair combinations up to 250 MHz.
The certification of the ELine™ 250 RJ45 module according to Category 6 (de-embedded measuring method according to IEC 60603-7-5 and TIA 586 B 2.1) gives the system the rating 'real Category 6'.

What we recommend today:

Invest in ELine™ 250 RJ45 for standardised Class E cabling with excellent transmission characteristics, for example in connection with MegaLine™ 723 4P H and MegaLine™ 727 flex.

Technical data



Compatible outlets/panels etc.

- PREMIUM (See pages 10-11)

Category

- Better than Category 5 and Category 6 according to ISO/IEC 11801 and EN 50173 2nd Edition for Class D (up to 100 MHz) and Class E (up to 250 MHz)
- Cat. 6 de-embedded according to EIA/TIA-568-B.2-1

Jack type

- RJ45, Cat. 6 (de-embedded) for 250 MHz performance
- Shielded (ELine™ 250 RJ45 S, product no. 9ZE30001) or
- Unshielded (ELine™ 250 RJ45 U, product no.: 9ZE30009)
- Connecting method: punch-down, gas-tight IDC
- Recommended conductors: AWG 23/ ..22
- Colour coding

Certificates

- Certified by GHMT* according to:
  - Class E in a 3-connector permanent link
  - Class E in a 4-connector channel
  - According to ISO/IEC 11801 and EN 50173 2nd Edition
- Cat. 6 de-embedded

Subject to printing errors, mistakes and technical changes

Jacks, outlets and patch panels

ELine™ 250 RJ45 S

16 x 14 x 36.9 mm (WxHxD)

Mounting depth 40 mm

Product description:

- Shielded
- 8-pole RJ45 jack
- Suitable for use in patch panels and outlet inserts of the PREMIUM series
- Category 6

Product no.: 9ZE30001

Pcs. per packing unit: 8

ELine™ 250 RJ45 U

16 x 14 x 36.9 mm (WxHxD)

Mounting depth 40 mm

Product description:

- Unshielded
- 8-pole RJ45 jack
- Suitable for use in patch panels and outlet inserts of the PREMIUM series
- Category 6

Product no.: 9ZE30009

Pcs. per packing unit: 8

ELine™ 250 RJ45 triple outlet insert

50 x 50 x 30.5 mm (WxHxD)

Mounting depth: 25 mm

Inclination: 26°

Product description:

- Without components
- Suitable for mounting in ducts and for surface mounting, concealed mounting and many under-floor systems
- M4 thread for earth connection
- Dust protection cover
- Delivery without cover frame
- For up to 3 jacks
- Compatible with ELine™ 250 RJ45 S, ELine™ 250RJ45 U and ELine™ 1200 EC7 NEW jacks
- Pure white, RAL 9010

Product no.: 9ZE30010

Pcs. per packing unit: 8

ELine™ 250 RJ45 dual outlet insert

50 x 50 x 21 mm (WxHxD)

Mounting depth: 25 mm

Inclination: 60°

Product description:

- Without components
- Suitable for mounting in ducts and for surface mounting and concealed mounting
- For up to 2 jacks
- Incl. 2 adapter clips
- Compatible with ELine™ 250 RJ45 and ELine™ 1200 EC7 jacks
- Pure white, RAL 9010

Product no.: 9ZE30004

Pcs. per packing unit: 8

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

Jacks, outlets and patch panels

ELine™ patch panel, 1 U, 24 ports (RJ45/EC7)

483 x 1HE x 98 mm (WxHxD)

Product description:

- Without components, takes up a maximum of 24 jacks (incl. mixed media): ELine™ 250 RJ45 S, ELine™ 250 RJ45 U, ELine™ 1200 EC7 NEW
- Front panel RAL 7035
- Snap-in assembly
- Mounting clip not required
- Strain relief
- Earth connection

Product no.: 9ZE30002

Pcs. per packing unit: 1

ELine™ patch panel, 1 U, 48 ports (RJ45/EC7)

483 x 1 U x 98 mm (WxHxD)

Product description:

- Without components, takes up a maximum of 48 jacks (also mixed media): ELine™ 250 RJ45 S, ELine™ 250 RJ45 U, ELine™ 1200 EC7 on one U!
- Front panel RAL 7035
- Snap-in assembly
- Mounting clip not required
- Strain relief
- Earth connection

Product no.: 9ZE30008

Pcs. per packing unit: 1

ELine™ EC7 adapter clip

Product description:

- For mounting ELine™ 250 RJ45 and ELine™ 1200 EC7 NEW in patch panel/outlets from existing ELine™ range
- Pure white, RAL 9010

Product no.: 9ZE30006

Pcs. per packing unit: 8

For other accessories please see page 29-31

Subject to printing errors, mistakes and technical changes

ELine™ floorbox solutions

ELine™ device adapter

Product description:

- For mounting in ELine™ floorbox insert (for Ackermann UF system GES – other underfloor systems on request!)
- Mass connection Earth connection
- Integrated strain relief
- Adapter made of 1.5 mm sheet steel
- Surfaces electroplated
- Device adapter for:
  1-3 pcs. ELine™ 250 RJ45 S
  1-3 pcs. ELine™ 250 RJ45 U
  1-3 pcs. ELine™ 250 EC7 NEW

Product no.: 9ZE60006

Pcs. per packing unit: 1

ELine™ floorbox insert

Product description:

- GES6 insert for a maximum of 2 mounting plates
- For mounting in Ackermann floor-box GES 6
- Device cup and locking device made of 1.5 mm sheet steel
- Surfaces powder-coated deep black RAL 9005
- Self-adhesive marking strips for marking as required
- Adjustable cable strain relief for up to 9 individual cables/copper. The cable strain relief is not part of the scope of delivery)
- Dust protection cover for optical fibre (optional)
- Optionally available mounting plates:
  - FLine™: 4 x SC duplex
  - FLine™: 4 x E2000/SC/MTRJ
  - ELine™ Premium device adapter
  - Dummy cover
- The following system accessories are available:
  Separate strain relief 45 mm and 64.5 mm

Product no.: 9ZE60001

Pcs. per packing unit: 1

ELine™ floorbox insert

Product description:

- GES6 insert for a maximum of 3 mounting plates
- For mounting in Ackermann floor-box GES 6
- Device cup and locking device made of 1.5 mm sheet steel
- Surfaces powder-coated deep black RAL 9005
- Self-adhesive marking strips for marking as required
- Adjustable cable strain relief for up to 9 individual cables/copper. (The cable strain relief is not part of the scope of delivery)
- Dust protection cover for optical fibre (optional)
- Optionally available mounting plates:
  - FLine™: 4 x SC duplex
  - FLine™: 4 x E2000/SC/MTRJ
  - ELine™ Premium device adapter
  - Dummy cover
- The following system accessory is available:
  Separate strain relief 45 mm and 64.5 mm

Product no.: 9ZE60002

Pcs. per packing unit: 1

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

Other accessories for ELine™ 1200 EC7 and ELine™ 250 RJ45

ELine™ patch panel, 1 U

485 x 44 x 150 mm (WxHxD)

Mounting depth 148 mm

Product description:

- Without components
- Takes up a maximum of 16 ELine™ 1200 EC7 or ELine™ 250 RJ45 jacks for mounting with adapter clip, product no. 9ZE30006
- 1 U
- RAL 7035

Product no.: 9ZE10127

Pcs. per packing unit: 1

ELine™ patch panel, 2 U

485 x 88 x 150 mm (WxHxD)

Mounting depth 148 mm

Product description:

- Without components
- Takes up a maximum of 32 ELineTM1200 EC7 or ELine™ 250 RJ45 jacks for mounting with adapter clip, product no. 9ZE30006
- 2 U
- RAL 7035

Product no.: 9ZE10128

Pcs. per packing unit: 1

Subject to printing errors, mistakes and technical changes

Other accessories for ELine™ 1200 EC7 and ELine™ 250 RJ45

ELine™ mini patch panel

184 x 47 x 82 mm (WxHxD)

Product description:

- Closed
- Without components
- For mounting on wall, floor or ceiling, in industrial environments etc.
- 6 dual ports to take up a maximum of 6 ELine™ 1200 EC7 or ELine™ 250 RJ45 jacks for mounting with adapter clip (product no. 9ZE30006)

Product no.: 9ZE10007

Pcs. per packing unit: 1

ELine™ mini patch panel

237 x 47 x 82 mm (WxHxD)

Product description:

- Closed
- Without components
- For mounting on wall, floor or ceiling in industrial environments etc.
- 8 dual ports to take up a maximum of 8 ELine™ 1200 EC7 or ELine™ 250 RJ45 jacks for mounting with adapter clip (product no. 9ZE30006)

Product no.: 9ZE10108

Pcs. per packing unit: 1

ELine™ mini patch panel

457 x 47 x 82 mm (WxHxD)

Product description:

- Closed
- Without components
- For mounting on wall, floor or ceiling, in industrial environments etc.
- 16 dual ports to take up a maximum of 16 ELine™ 1200 EC7 or ELine™ 250 RJ45 jacks for mounting with adapter clip (product no. 9ZE30006)

Product no.: 9ZE10106

Pcs. per packing unit: 1

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

Other accessories for ELine™ 1200 EC7 and ELine™ 250 RJ45

ELine™ 1200 EC7 bending protection sleeve

Product description:

- For ELine™ 1200 EC7 patch cords and work area cords
- Reversible fastening
- Available in different colours for optical coding

Product no.:	9ZE10069 – red
	9ZE10070 – blue
	9ZE10071 – yellow
	9ZE10072 – green
	9ZE10074 – black
	9ZE10075 – grey
Pcs. per packing unit:	50

ELine™ 1200 EC7 terminator plug

Product description:

- EC7 resistive plug, 2P, with 2 x 100 | terminator resistors
- Application: Pluggable terminator for ISDN So-Bus networks ELine™ 1200 EC7

Product no.:	9ZE10104
Pcs. per packing unit:	1

ELine™ assembly tool

Product description:

- For simple, safe connection of the jacks
  ELine™ 250 RJ45 S
  ELine™ 250 RJ45 U and
  ELine™ 1200 EC7

Product no.:	9ZE30007
Pcs. per packing unit:	1

Subject to printing errors, mistakes and technical changes

The ELine™ NOVUM system

ELine™ 250 MLS
RJ45 Cat. 6, shielded

ELine™ 250 MLU
RJ45 Cat. 6,
unshielded

ELine™ 600 GG45
+ adapter clip (in preparation)

ELine™ walloutlets MLS/MLU
(86 x 86 mm)

ELine™ 250 MLU and ELine™ 250 MLS – with flexible NOVUM technology

The universal NOVUM technology is a concept for flexibly combining ELine™ jacks of different power stages with NOVUM outlets and panels.
At the centre of the NOVUM series are RJ45 ELine™ 250 MLU (unshielded) and ELine™ 250 MLS (shielded) jacks*.
Extremely easy mounting and good performance in conjunction with MegaLine™ data cables guarantee optimum value for money!

* Both models can be mounted in the NOVUM panel and the NOVUM outlets

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

ELine™ walloutlets MLS/MLU (45 x 45 mm)

ELine™ walloutlets MLS/MLU (80 x 80 mm)

ELine™ 24 port/1U panel MLS/MLU

Product family ELine™ – recommanded combinations

	NOVUM		**NOVUM**		**NOVUM**	
	Class E U/UTP		Class E F/UTP, U/FTP, F/FTP, S/FTP		Class F / Kat 7 S/FTP **Backward-compatible**	
	ELine™ MLU	**Product no.**	**ELine™ 250 MLS**	**Product no.**	**ELine™ 600 GG45**	**Product no.**
Cabel	ML 6U PVC ML 6U H ML 6Ue PVC ML 6Ue H	7KS01168 7KS01175 7KS01376 7KS01375	ML 6Se H ML 623 S H ML 623 DS H ML 623 H	7KS01598 7KS01557 7KS01167 7KS00533	ML 723 GG45 H	7KS01568
Jack	MLU	9ZK00002	MLS	9ZK00001	GG45	9ZE20001
Outlet	german 80 x 80 mm / 50 x 50 mm 2 p flat	9ZK00005	german 80 x 80 mm / 50 x 50 mm 2 p flat	9ZK00005	german 50 x 50 mm 2 p	9ZE20005
	german 80 x 80 mm / 50 x 50 mm 2 p 45°	9ZK00004	german 80 x 80 mm / 50 x 50 mm 2 p 45°	9ZK00004		
	french 80 x 80 mm / 45 x 45 mm 1 p flat	9ZK00011	french 80 x 80 mm / 45 x 45 mm 1 p flat	9ZK00011		
	french 80 x 80 mm / 45 x 22,5 mm 1 p flat	9ZK00010	french 80 x 80 mm / 45 x 22,5 mm 1 p flat	9ZK00010		
	UK 86 x 86 mm / 50 x 60 mm 2 p flat	9ZK00007	UK 86 x 86 mm / 50 x 60 mm 2 p flat	9ZK00007		
	UK 86 x 86 mm / 50 x 60 mm 2 p 45°	9ZK00006	UK 86 x 86 mm / 50 x 60 mm 2 p 45°	9ZK00006		
Panel	24 ports 1U	9ZK00003	24 ports 1U	9ZK00003	24 ports 1U (by integrated keystone-clip)	9ZK00003
Patch cord	ML 6 Ue flex 1 m	9KY79010	ML 727 SC flex 1 m	9KY26010	ML 727 SC flex 1 m	9KY26010
	ML 6 Ue flex 2 m	9KY79020	ML 727 SC flex 2 m	9KY26020	ML 727 SC flex 2 m	9KY26020
	ML 6 Ue flex 3 m	9KY79030	ML 727 SC flex 3 m	9KY26030	ML 727 SC flex 3 m	9KY26030
	ML 6 Ue flex 5 m	9KY79050	ML 727 SC flex 5 m	9KY26050	ML 727 SC flex 5 m	9KY26050
ML = MegaLine™	ML 6 Ue flex 10 m	9KY79100	ML 727 SC flex 10 m	9KY26100	ML 727 SC flex 10 m	9KY26100
	Keystone modular		**Keystone modular**		**Keystone modular (panel)**	

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

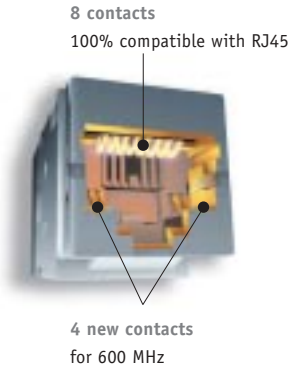
Subject to printing errors, mistakes and technical changes

ELine™ 600 GG45 – two in one: Cat. 6 and Cat. 7

At the 27th meeting of the international cabling committee ISO/IEC JTC1/SC25/WG3 in July 1999, the IEC-60603-7 interface (GG45) was selected for connecting Class F/Category 7 cabling up to 600 MHz in information technology.
It's official since 22 March 2002: With the adoption of IEC 60603-7-7, the data connector GG45 is the only standardised plug connector of Category 7 worldwide with backward compatibility to Cat. 6 and 5. The ELine™ 600 GG45 from KERPEN is a Class F cabling system with an integrated GG45.

ELine™ 600 GG45: the concept

At the heart of the GG45 concept is the snap-in connector. For the development of the GG45, four new contacts for Cat. 7 transmission were added to the RJ45. These are activated via a switch mechanism in the jack. The GG45 jack thus has the first ever switching mechanism for passive cabling.



In conjunction with the GG45 plug, transmission up to 600 MHz is possible on the outer 4 contacts with a suitable cable. The GG45 plug activates the switch via a spacer on the front which activates the 4 new contacts responsible for Cat. 7 transmission.

If the RJ45 is snapped in, the usual 8 contacts are activated and 100 or 250 MHz are transmitted depending on the cable used. The integrated switch is extremely robust and reliable mechanically. Even after over 1500 plug-in cycles (RJ45 onto new contacts), there is virtually no wear on the switch. The RJ45 leaves no plastic deposits in the jack and does not affect performance in any way.

Two in one: Cat. 6 and Cat. 7!

As a two-in-one connector (complete RJ45 and new 600 MHz interface), GG45 is fully backward-compatible and meets all requirements of Categories 5, 6 and 7. If you invest in ELine™ 600 GG45 for Class E and F today, considerable savings are guaranteed in comparison with other Class F cabling: For patch and work area purposes, you can for example continue to use the conventional RJ45 patch cords/work area cords. If necessary, you can then successively invest in Category 7 patch cords/work area cords.

Class E

Class F

GG45 is a registered trademark of Nexans HQ, Paris

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

A secure future and backward compatibility!

ELine™ 600 GG45 allows economical migration from Cat. 5e and 6 to Cat. 7 by simply replacing the patch cords. This makes the decision for later Class F cabling a "just-in-time" investment: the performance is not paid for until it is required!

Compatibility matrix

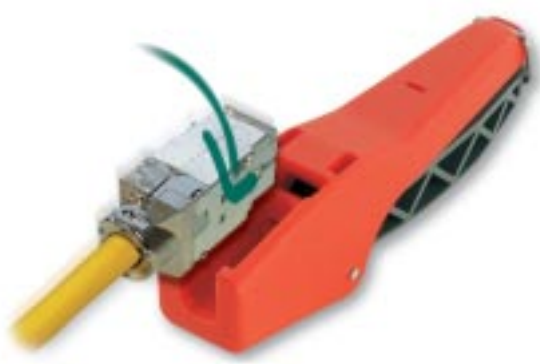
Jack	Plug	Cable	Performance of channel
GG45	GG45	600 MHz	600 MHz
GG45	GG45	250 MHz	250 MHz
GG45	RJ45	600 MHz	250 MHz (depending on quality of RJ45)
RJ45	GG45	600 MHz	Not compatible

Flexibility of use – only with panels and outlets of the NOVUM series!

The choice is yours: The ELine™ 600 GG45 jack can be mounted into the specially designed GG45 patch panel and in outlet inserts – or integrated into the NOVUM series via an adapter clip.

Easy assembly in standard environments

The GG45 is integrated into standard technology and can be used with standard components like a standard cover frame and standard floorboxes. The installation is based on existing technology and is comparable with Cat. 5 and Cat. 6 installations.
The EMC covers on the back of the connector ensure optimum EMC protection via 360° shielding.



Optimum performance – certified

Measurements by the Gesellschaft für Hochfrequenztechnik GHMT (society for high-frequency measuring technology) prove the excellent electrical performance of ELine™ 600 GG45 systems for Class E and F. Even in the worst-case configuration with 4 connectors, the system provides real Cat. 6 and Cat. 7 respectively and high NEXT reserves.

Who needs Class E and F?

If it's a secure future and reserve performance you're after, the answer is obvious: everybody does! One look at the current standardisation shows that Cat. 5/Class D is being phased out.
Use for 1000Base-TX specified in draft standard 4657-1 of ANSI TIA/EIA-854 requires a Class E cabling. In contrast to the Gigabit Ethernet standard 1000Base-T used up to now, this standardisation project includes only 2 pairs each for transmitting and receiving, i.e. it allows a considerable reduction in the Gigabit Ethernet cards required ("low-cost Gigabit Ethernet").
Cell-based 1000 Mbit/s (CB1G), the use specified by the ATM Forum in af-phy-0162000, is not supported by Class D/Cat. 5 cabling.
Applications requiring Class F are also planned. Key word: Standardisation for TP and Fibre Channel via Class F (ISO/IEC CD 14165-114).

However, the largest project of all is 10 GbE via copper: Under IEEE 802.3al, 10 GbE via Class E (approx. 60m) and Class F (100 m) are to be supported.

Subject to printing errors, mistakes and technical changes

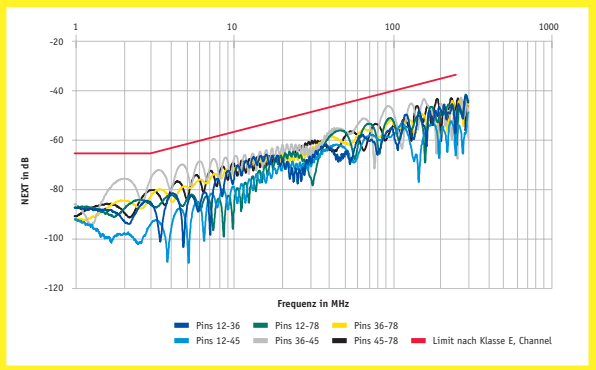
Class F and multimedia

The GG45 is at present designed for connecting information technology at the workplace. The concept will be expanded in future to include additional products.

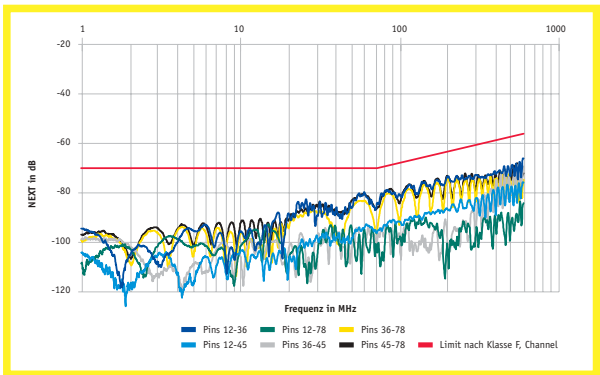
Conclusion:
The ELine™ 600 GG45 cabling system offers considerable advantages and potential savings:
When you first take it into operation, you can connect reasonably priced RJ45 patch cords to the GG45 jack. If more performance is expected of the LAN in later years, you can upgrade the system to a Class F system by simply replacing the RJ45 patch cords by GG45 patch cords. The advantage of this upgrading method is that it can be carried out by the network operator himself.

The purchase cost is reduced via "just-in-time" investments (work area cords). And you get the security which only a product standardised worldwide provides!
Excellent electrical performance is guaranteed, even in worst case configurations.
A cabling system remains in a building for an average of 15 years. It is impossible to foresee today what new demands will be made on networks during this period. If it's economy and a secure future you're looking for, you should invest in Class F right away.

Today we recommend that you invest in ELine™ 600 GG45 for a Class E and F cabling, for example in conjunction with the MegaLine™ 7 GG45 system cable!



NEXT Class E



NEXT Class F

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

Technical data

Compatible outlets/panels etc

- NOVUM (in preparation) and ELine™ 600 GG45

Category

- Mode 1: Cat. 6 IEC 60603-7-4 FJ45 up to 250 MHz
- Mode 2: Cat. 7 IEC 60603-7-7 up to 600 MHz

Jack type

- GG45, Cat. 7 – backward-compatible to RJ45 plug connectors
- Product no.: 9ZE20001
- Connecting technology: punch-down, gas-tight IDC

System cable

- Recommended system cable: MegaLine 7 ELine™ 600 GG45
- Product no.: 7KS1568

Certificate

- GHMT certificate for Mode 1 Category 6/Class E
- GHMT certificate for Mode 2 Category 7/Class F 600

Zertifikat

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

Jacks, outlets and patch panels

Category 6/7 – 250/600 MHz

ELine™ 600 GG45 jack (individual module)	ELine™ 600 GG45 dual outlet insert, long	ELine™ 600 GG45 dual outlet insert, short
17 x 20 x 42 mm (WxHxD)	50 x 50 x 20 mm (WxHxD)	50 x 50 x 20 mm (WxHxD)
Mounting depth 45 mm	Mounting depth 35 mm	Mounting depth 35 mm
	Inclination 45°	Inclination 45°

Product description:

- Snap-in jack for use in panels/outlet inserts of the following series: ELine™ 600 GG45 or NOVUM via NOVUM GG45 adapter clips: in preparation

Product description:

- Without components
- For concealed and underfloor mounting
- Can be equipped with up to 2 ELine™ 600 GG45 jacks, screwless mounting of jacks
- Connecting point for an additional terminal clamp for strain relief or earthing
- Suitable for 50 x 50 frames
- Pure white, RAL 9010
- Scope of delivery: central panel (50 x 50), snap-in mounting ring, marking window (delivery without cover frame)

Product description:

- Without components
- For concealed and cable duct mounting
- Can be equipped with up to 2 ELine™ 600 GG45 jacks, screwless mounting of jacks
- Suitable for 45 mm round hole frames and 50 x 50 frames
- Pure white, RAL 9010
- Scope of delivery: central panel (50 x 50), snap-in mounting ring, marking window (delivery without cover frame)

Product no.: 9ZE20001	Product no.: 9ZE20005	Product no.: 9ZE20004
Pcs. per packing unit: 8	Pcs. per packing unit: 8	Pcs. per packing unit: 8

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

Jacks, outlets and patch panels

Category 6/7 – 250/600 MHz

ELine™ 600 GG45 patch panel, 24 ports 4 x 6

19“, 1 U, 480 x 44 x 135 mm (WxHxD)

Mounting depth 155 mm

Product description:

- Without components
- Steel design, can be equipped with up to 24 ELine™ 600 GG45 outlets, 4 x sextuple mounting clips, snap-in assembly of outlets, clip-on cable guide with large-contact area to shield, insertable marking strips, front panel colour: RAL 7035
- Scope of delivery: Modular patch panel, marking strips
- 1 U

Product no.: 9ZE20012, fixed	
9ZE20010, telescopic	
Pcs. per packing unit: 1	

ELine™ 600 GG45 Cat. 7 patch cord and work area cord

Product description:

- 4P (ML 727 7KS01189)
- A end equipped with 4-pair GG45 plug
- B end equipped with 4-pair GG45 plug
- Assignment: 1/1
- Colour of bending protection sleeve GG45/GG45: black
- Application: Cat. 7 services

Product no.: 9KN01010 – 1.0 m	
9KN01020 – 2.0 m	
9KN01030 – 3.0 m	
9KN01050 – 5.0 m	
Pcs. per packing unit: 1	

Subject to printing errors, mistakes and technical changes

Technical data

Compatible outlets/panels etc.

- ELine™ walloutlets MLS/MLU
- ELine™ panel MLS/MLU

Jack type

- RJ45, Cat. 6 (mated) for 250 MHz performance
- Shielded (ELine™ 250 MLS, product no.: 9ZK00001) or
- Unshielded (ELine™ 250 MLU, product no.: 9ZK00002)
- Connecting method: 110 type punch-down, gas-tight IDC
- Recommended conductors: AWG 24 / AWG 23
- Colour coding according to 568A and 568B

Certificates

- ETL, certified according to Cat. 6 (mated link)
- UL certified according to EIA/TIA-568-A-5 (UL/cUL 1863 listed)

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

Jacks, outlets and patch panels

ELine™ 250 MLU RJ45 jack, unshielded

Product description:

- Unshielded
- 8-pole RJ45 jack
- Suitable for use in patch panels and outlet inserts of the NOVUM series (refer to page 32-33)
- Category 6

Product no.: 9ZK00002

Pcs. per packing unit: 24

ELine™ 250 MLS RJ45 jack, shielded

Product description:

- Shielded
- 8-pole RJ45 jack
- Suitable for use in patch panels and outlet inserts of the NOVUM series (refer to page 32-33)
- Category 6

Product no.: 9ZK00001

Pcs. per packing unit: 12

ELine™ dual outlet insert

86 x 86 mm (WxH)

Product description:

For a maximum of
- 2 x RJ45 ELine™ MLS 9ZK00001 or
- 2 X RJ45 ELine™ MLU 9ZK00002
- or mixed media
- Pearl white, RAL 9016

2 models: 45° – product no.: 9ZK00006

Pcs. per packing unit: 12

90° – product no.: 9ZK00007

Pcs. per packing unit: 12

ELine™ dual outlet insert

80 x 80 mm (WxH)

Product description:

For a maximum of
- 2 x RJ45 ELine™ MLS 9ZK00001 or
- 2 X RJ45 ELine™ MLU 9ZK00002
- or mixed media
- Pure white, RAL 9010

2 models: 45° – product no.: 9ZK00004

Pcs. per packing unit: 12

90° – product no.: 9ZK00005

Pcs. per packing unit: 30

Subject to printing errors, mistakes and technical changes

Jacks, outlets and patch panels

ELine™ single outlet insert

45 x 45 mm (WxH)

Product description:

For a maximum of
- 1 x RJ45 ELine™ MLS (9ZK00001) or
  1 x RJ45 ELine™ MLU (9ZK00002)
- Pure white, RAL 9010

Model: 90° – product no.: 9ZK00011

Pcs. per packing unit: 12

ELine™ single module for outlet insert

22.4 x 45 mm (WxH)

Product description:

ELine™ ELine single outlet insert for dual outlets
- 1 x RJ45 ELine™ MLS (9ZK00001) or
  1 x RJ45 ELine™ MLU (9ZK00002)
- Pure white, RAL 9010

Model: 90° – product no.: 9ZK00010

Pcs. per packing unit: 24

ELine™ patch panel 24 ports/1 U

483 mm (=19") x 44 mm x 150 mm

Product description:

For a maximum of
- 24 x RJ45 ELine MLS/MLU
  or mixed applications (mixed media)
- Frontplate: lightgrey RAL 7035
- Very easy assembly
- Strain relief on the backside
- Earth connection on both sides
- Complete equipment with cages-nuts, srews, labelling strips, earth-connection-srews etc.

Product no.: 9ZK00003

Pcs. per packing unit: 1

ELine™ assembly tool

Product description:

- For simple, safe connection of the jacks ELine™ 250 RJ45 MLS/MLU

Product no.: 9ZK00009

Pcs. per packing unit: 1

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

Acceptance tests for ELine™ cabling systems

The acceptance tests for ELine™ cabling systems are carried out according with the requirements of ISO/IEC 11801 / EN 50173 2nd Edition for channels and permanent links.

Further standards with regard to acceptance tests (execution of tests): DIN EN 50346 and DIN EN 61935

Channel Class F

Frequency/MHZ	1	16	100	250	600
Attenuation/dB	4.0	8.1	20.8	33.8	54.6
Near-end cross-talk attenuation/dB	65.0	65.0	62.9	56.9	51.2
PS NEXT/dB	62.0	62.0	59.9	53.9	48.2
PS ACR/dB	61.0	56.9	42.1	23.1	-3.4
PS ACR/dB	58.0	53.9	39.1	20.1	-6.4
ELFEXT/dB	65.0	57.5	44.4	37.8	31.3
PS ELFEXT/dB	62.0	54.5	41.4	34.8	28.3
Reflection attenuation/dB	19.0	18.0	12.0	8.0	8.0
Asymmetry attenuation/dB	–	–	–	–	–
Time delay/µs	0.580	0.553	0.548	0.564	0.545
me delay difference/µs	0.030	0.030	0.030	0.030	0.030

Max. loop resistance 25
Max. loop resistance asymmetry 0.75

Channel Class E

Frequency/MHZ	1	16	100	250	600
Attenuation/dB	4.0	8.3	21.7	35.9	–
Near-end cross-talk attenuation/dB	65.0	53.2	39.9	33.1	–
PS NEXT/dB	62.0	50.6	37.1	30.2	–
PS ACR/dB	61.0	44.9	18.2	-2.8	–
PS ACR/dB	58.0	42.3	15.4	-5.8	–
ELFEXT/dB	63.3	39.2	23.3	15.3	–
PS ELFEXT/dB	60.3	26.2	20.3	12.3	–
Reflection attenuation/dB	19.0	18.0	12.0	8.0	–
Asymmetry attenuation/dB	–	–	–	–	–
Time delay/µs	0.580	0.553	0.548	0.546	–
Time delay difference/µs	0.050	0.050	0.050	0.050	–

Max. loop resistance 25
Max. loop resistance asymmetry 1.0

Subject to printing errors, mistakes and technical changes

Acceptance test for ELine™ 1200 EC7

Standard acceptance test up to 300 MHz

- Acceptance test according to Class F – 300 MHz permanent link or channel
- recommended measuring instruments (as of May 2004):

- Fluke OMNIScanner 2 (information on other recommended measuring instrument on request)
- KERPEN EC7 measuring adapter for Fluke DSP4xxx measuring instrument
  Permanent link or channel measurement up to 300 MHz according to Class F,
  KERPEN product no.: 9KEH0020
  (software upgrade necessary for permanent link, download under: www.kerpen.com

Standard acceptance test up to 600 MHz

A measuring adapter cable for the LAN-tek-7 measuring instrument from Ideal Industries which measures up to 750 MHz (according to the information provided by the manufacturer) is currently in preparation.

Acceptance test with laboratory measuring instrument up to 600 MHz or 1000 MHz

For further quality assurance in the upper frequency range, you can assign a neutral, independent service provider in the field of data network technology from the Gesellschaft für Hochfrequenzmesstechnik (GHMT AG) to carry out measurements on location using a laboratory measuring instrument.

The results serve as a facultative measure for quality assurance in the upper frequency range up to 600 MHz or as expanded multimedia measurement up to 1000 MHz.

For more information:
Tel. +49/68 26/92 28-0
Fax: +49/68 26/92 28-99
E-mail: info@ghmt.de
www.ghmt.de

Acceptance test for ELine™ 600 GG45

Standard acceptance test up to 300 MHz/600 MHz

- Acceptance test according to Class F – permanent link*,**
- A separate Class E measurement is not necessary, but a continuous test of contacts 36 and 45 is
- Recommended measuring instruments (as of May 2004):

- Fluke OMNIScanner 2 (information on other recommended measuring instrument on request)
- Fluke measuring adapter: GG45 Class F permanent link adapter (8262-47)

- Approved measuring instruments: (as of January 2004)

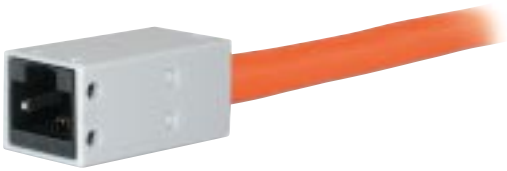
- Fluke: OMNIScanner II*
- Ideal: LANTEK 7**

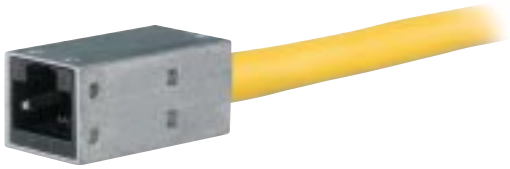
* 300 MHz **600 MHZ

GG45 Class F measuring adapter for OMNIScanner2

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes





Acceptance test for ELine™ 250 RJ45 S
ELine™ 250 RJ45 U
ELine™ 250 MLS
ELine™ 250 MLU

Standard acceptance test up to 250 MHz

- Acceptance test according to Class E – 250 MHz permanent link:
- Recommended measuring instruments (as of May 2004):

- Fluke OMNIScanner2, OMNIScanner, DSP 4300, DSP 4100 or DSP 4000, DTX 1800
  Ideal: LANTEK 7, LANTEK 6
  (information on other recommended measuring instruments on request)

User information under www.fluke.com

A selection of measuring instruments (examples):

Fluke OMNIScanner2

Fluke DSP 4300

IDEAL Industries LANTEK 7

Subject to printing errors, mistakes and technical changes

MegaLine™ copper-cables for LAN Office applications

The demands made on cabling are varied and often contradictory. MegaLine™ data and communication cables made of copper combine high performance, universal application and economy. A quality level which can only be achieved via a holistic cable design.

MegaLine™ cables of all categories and classes feature convincing transmission performance and provide high security reserves.

The dual shielding and the pimf shielding with S/STP cables offer excellent electromagnetic compatibility.

Optimum fire and environmental protection due to the standard use of halogen-free flame-retardant materials.

Thanks to innovative insulation techniques such as physical foaming, MegaLine™ combines maximum performance with the lowest possible space requirements. The small outer diameter, a defined bending radius and the low weight make installation easier.

New type designations

There are a large number of different type designations. The standardisation proposed in ISO/IEC 11801 2nd Edition determines the elements of the design in an unambiguous way:

xx/xxx

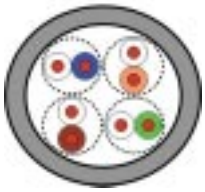
- Balanced element ___ TP
- Individual shield ___ U = unshielded; F = foil shield
- Overall shield ___ F = foil shield; S = braided shield; SF = braided and foil shield

Example:

SF/UTP = Cable with overall braided and foil shield with unshielded individual elements.

S/FTP = Cable with overall braided shield and individual elements with foil shield

Cable types



U/UTP

F/UTP

SF/UTP

U/FTP

F/FTP

S/FTP

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

Electromagnetic compatibility (EMC)

Depending on the structure and the type of shield used, data cables have differing efficiencies with regard to electromagnetic compatibility:

a) Unshielded data cables are balanced very well, are not shielded against electromagnetic influences and the EMC is highly sensitive to the installation environment.
b) Data cables with an overall shield are balanced very well and have good shielding characteristics and the EMC is only marginally dependent on the installation environment.
c) Data cables with an overall shield and individually shielded data cables are sufficiently balanced and their dependence on the installation environment is negligible.

S/FTP data cables with overall shield and individually shielded S/FTP data cables achieve the best performance with regard to EMC and are therefore an obvious choice for high transmission rates such as those offered by 10 Gigabit Ethernet etc.

Electromagnetic compatibility

Service-specific approach ▲ Requirements depending on the application	Universal approach ▼ Typical cable designs		
	U/UTP	F/UTP	S/FTP
Cable symmetry	X X X	X X	X
Shield characteristics	–	X X	X X X
Influence of installation	X X X	X X	X
Assessment of EMC	0	2	3

Capacity

Depending on the structure and the type of shield used, data cables have different capacities or bandwidths. The performance is assessed via the assignment of categories 5 to "8". Only the S/FTP design covers the complete range.

	U/UTP	F/UTP	SF/UTP	U/FTP	F/FTP	S/FTP
Category 5	Yes	Yes	Yes	Yes	Yes	Yes
Category 6	Yes	Yes	Yes	Yes	Yes	Yes
Category 7	No	No	No	No	Yes	Yes
Category "8"	No	No	No	No	No	Yes

Subject to printing errors, mistakes and technical changes

MegaLine™ 8 – the NEXT generation

ATM, Gigabit Ethernet and 10 Gigabit Ethernet – the demands which data transmission makes on speed and bandwidth are increasing rapidly. MegaLine 8e represents the highest level of development available in an S/STP data cable up to now.
As a state-of-the-art data cable, MegaLine™ 8e offers universal use and a performance only previously achieved using optical fibres.

MegaLine™ 7 – the trendsetters

The MegaLine™ 7-S/FTP cables go far beyond the requirements of Category 7/Class F. In this case, 'trendsetter' means that present and future applications can be transmitted via reserve capacities of up to 1200 MHz.
MegaLine™ 7 is thus synonymous with excellent investment protection and a secure future. Single and duplex versions allow the user to choose from a product program which meets all practical requirements.

MegaLine™ 6 – classics with a future

MegaLine™ 6 was and still is a development with a vision. As early as 1991, MegaLine™ 622 4P was presented as the first S/STP cable in 100 | technology.

MegaLine™ 623 means that a Category 6, Class E cable is now available which, with its bandwidth of 450 MHz, has exceptional reserve capacities

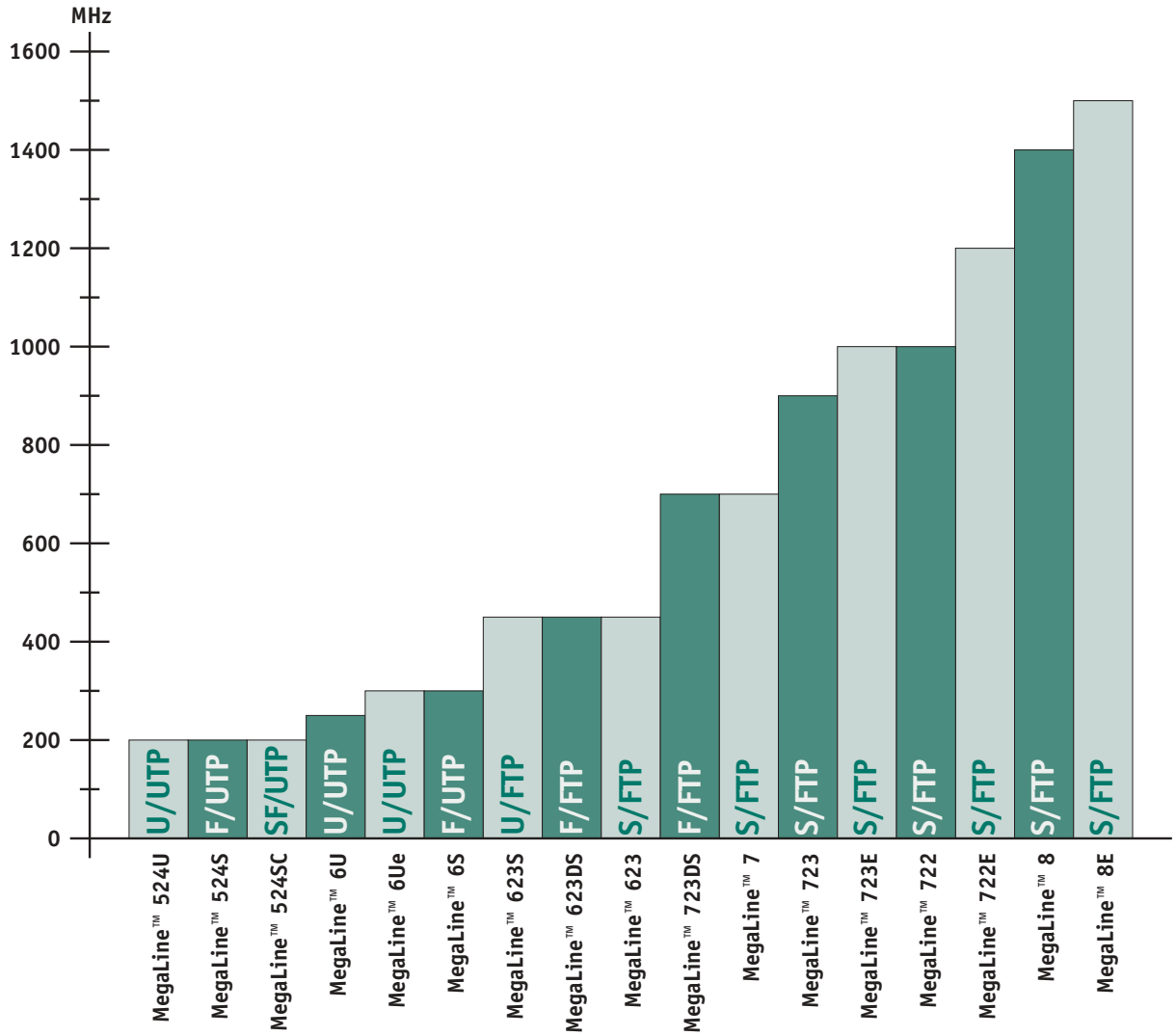
All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

MegaLine™ 5 – compact cables

The tried-and-tested MegaLine™ cables have been optimised to match the characteristics of the new Category 5.
Their compact design gives them advantages with regard to dimensions, weight, fire load and handling.
MegaLine™ 5 cables are available in single or duplex versions.

MegaLine™ designs and performance – overview



For specifications and tender texts: www.kerpen.com

Subject to printing errors, mistakes and technical changes

MegaLine™ 8e
MegaLine™ 8

Communication cable S/FTP, considerably better than Category 7, attenuation optimized for TV transmission

KS-02YSCH 4x2xAWG 22/1 pimf 100 |

Structure:
4 pairs AWG 22/1
Individual shield: aluminium foil
Overall shield: copper braid: approx. 65 % coverage
Outer sheath: light ivory RAL 1015, LSFROH

Flame retardance:
Acc. to IEC 60332-3 Cat. C

Field of application:
Secondary and tertiary cabling acc. to EN 50173 and ISO/IEC 11801 2nd Edition
ISO/IEC 15018 (SOHO)
Category 7 acc. to EN 50288 and IEC 61156

Temperature range:
-20°C to +60°C

Type	Outer-ø	Weight	Fire load		Electrical characteristics (rated values)				Product no.
	approx. mm	approx. kg/km	approx. MJ/m	approx. kW/m	Bandwidth MHz	NEXT@ bandwidth frequency dB	Attenuation@ bandwidth frequency dB/100 m	Interference power suppression up to 1 GHz dB	
ML 8e	8.6	80	0.74	0.21	1,500	73	65	90	7KS01544
ML 8	8.6	80	0.74	0.21	1,400	75	61	90	7KS01138

MegaLine™ 722e
MegaLine™ 722e Duplex
MegaLine™ 722
MegaLine™ 722 Duplex

Communication cable S/FTP, considerably better than Category 7

KS-02YSCH 4x2xAWG 22/1 pimf 100 |
KS-02YSCH 2x(4x2xAWG 22/1 pimf) 100 |

Structure:
4 pairs AWG 22/1
Individual shield: aluminium foil
Overall shield: copper braid: approx. 65 % coverage
Outer sheath: yellow RAL 1021, LSFROH

Flame retardance:
Acc. to IEC 60332-3 Cat. C

Field of application:
Secondary and tertiary cabling acc. to EN 50173 and ISO/IEC 11801 2nd Edition
Category 7 acc. to EN 50288 and IEC 61156

Temperature range:
-20°C to +60°C

Type	Outer-ø	Weight	Fire load		Electrical characteristics (rated values)				Product no.
	approx. mm	approx. kg/km	approx. MJ/m	approx. kW/m	Bandwidth MHz	NEXT@ bandwidth frequency dB	Attenuation@ bandwidth frequency dB/100 m	Interference power suppression up to 1 GHz dB	
ML 722e	8.6	80	0.72	0.20	1,200	70	63	90	7KS01542
ML 722e Duplex	8.6 x 17.5	162	1.5	0.44	1,200	70	63	90	7KS01543
ML 722	8.6	80	0.72	0.20	1,000	78	56	90	7KS00915
ML 722 Duplex	8.6 x 17,5	162	1.5	0.44	1,000	78	56	90	7KS01543

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

MegaLine™ 723e
MegaLine™ 723e Duplex
MegaLine™ 723
MegaLine™ 723 Duplex

Communication cable S/FTP, better than Category 7

KS-02YSCH 4x2xAWG 23/1 pimf 100 |
KS-02YSCH 2x(4x2xAWG 23/1 pimf) 100 |

Structure:
4 pairs AWG 23/1
Individual shield: aluminium foil
Overall shield: copper braid: approx. 65 % coverage
Outer sheath: yellow RAL 1021, LSFROH

Flame retardance:
Acc. to IEC 60332-3 Cat. C

Field of application:
Secondary and tertiary cabling acc. to EN 50173 and ISO/IEC 11801 2nd Edition
Category 7 acc. to EN 50288 and IEC 61156

Temperature range:
-20°C to +60°C

Type	Outer-ø	Weight	Fire load		Electrical characteristics (rated values)				Product no.
	approx. mm	approx. kg/km	approx. MJ/m	approx. kW/m	Bandwidth MHz	NEXT@ bandwidth frequency dB	Attenuation@ bandwidth frequency dB/100 m	Interference power suppression up to 1 GHz dB	
ML 723e	7.5	67	0.6	0.17	1,000	75	63	90	7KS01540
ML 723e Duplex	7.5 x 15.2	136	1.3	0.36	1,000	75	63	90	7KS01541
ML 723	7.5	67	0.6	0.17	900	80	59	90	7KS00916
ML 723 Duplex	7.5 x 15.2	136	1.3	0.36	900	80	59	90	7KS01100

MegaLine™ 623
MegaLine™ 623 Duplex

Communication cable S/FTP, considerably better than Category 6

KS-02YSCH 4x2xAWG 23/1 pimf 100 |
KS-02YSCH 2x(4x2xAWG 23/1 pimf) 100 |

Structure:
4 pairs AWG 23/1
Individual shield: aluminium foil
Overall shield: copper braid: approx. 65 % coverage
Outer sheath: pastel orange RAL 2003, LSFROH

Flame retardance:
Acc. to IEC 60332-3 Cat. C

Field of application:
Secondary and tertiary cabling acc. to EN 50173 and ISO/IEC 11801 2nd Edition
Category 6 acc. to EN 50288 and IEC 61156

Temperature range:
-20°C to +60°C

Type	Outer-ø	Weight	Fire load		Electrical characteristics (rated values)				Product no.
	approx. mm	approx. kg/km	approx. MJ/m	approx. kW/m	Bandwidth MHz	NEXT@ bandwidth frequency dB	Attenuation@ bandwidth frequency dB/100 m	Interference power suppression up to 1 GHz dB	
ML 623	7.5	67	0.6	0.17	450	62	42	90	7KS00533
ML 623 Duplex	7.5 x 15.2	136	1.3	0.36	450	62	42	90	7KS00758

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

MegaLine™ 623DS
MegaLine™ 623DS Duplex

Communication cable F/FTP, better than Category 6

KS-02YS(St)H 4x2xAWG 23/1 pimf 100 |
KS-02YS(St)H 2x(4x2xAWG 23/1 pimf) 100 |

Structure:
4 pairs AWG 23/1
Individual shield: aluminium foil
Overall shield: aluminium foil
Outer sheath: pastel orange RAL 2003, LSFROH

Flame retardance:
Acc. to IEC 60332-3 Cat. C

Field of application:
Secondary and tertiary cabling acc. to EN 50173 and ISO/IEC 11801 2nd Edition
Category 6 acc. to IEC 61156

Temperature range:
-20°C to +60°C

Type	Outer-ø	Weight	Fire load		Electrical characteristics (rated values)				Product no.
	approx. mm	approx. kg/km	approx. MJ/m	approx. kW/m	Bandwidth MHz	NEXT@ bandwidth frequency dB	Attenuation@ bandwidth frequency dB/100 m	Interference power suppression up to 100 MHz dB	
ML 623DS	7.4	57	0.6	0.17	450	62	42	55	7KS01167
ML 623DS Duplex	7.4 x 15	120	1.2	0.34	450	62	42	55	7KS01336

MegaLine™ 623S
MegaLine™ 623S Duplex

Communication cable U/FTP, better than Category 6

KS-02YSH 4x2xAWG 23/1 pimf 100 |
KS-02YSH 2x(4x2xAWG 23/1 pimf) 100 |

Structure:
4 pairs AWG 23/1
Individual shield: aluminium foil
Overall shield: none.
Outer sheath: pastel orange RAL 2003, LSFROH

Flame retardance:
Acc. to IEC 60332-3 Cat. C

Field of application:
Secondary and tertiary cabling acc. to EN 50173 and ISO/IEC 11801 2nd Edition
Category 6 acc. to IEC 61156

Temperature range:
-20°C to +60°C

Type	Outer-ø	Weight	Fire load		Electrical characteristics (rated values)				Product no.
	approx. mm	approx. kg/km	approx. MJ/m	approx. kW/m	Bandwidth MHz	NEXT@ bandwidth frequency dB	Attenuation@ bandwidth frequency dB/100 m	Interference power suppression up to 100 MHz dB	
ML 623S	7.2	55	0.6	0.17	450	62	42	40	7KS01557
ML 623S Duplex	7.2 x 14.6	120	1.2	0.34	450	62	42	40	7KS01558

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

MegaLine™ 6S

Communication cable F/UTP, Category 6

KS-2Y(St)H 4x2xAWG 23/1 100
KS-2Y(St)Y 4x2xAWG 23/1 100

Structure:
4 pairs AWG 23/1
Individual shield: none
Overall shield: aluminium foil
Outer sheath: pastel orange RAL 2003, LSOH or PVC

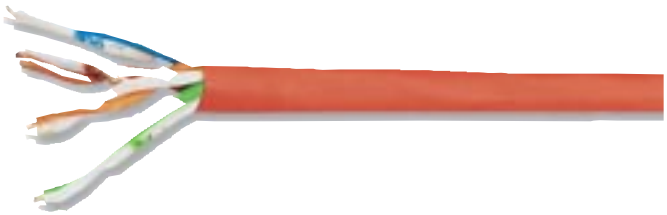
Flame retardance:
Acc. to IEC 60332-1

Field of application:
Secondary and tertiary cabling acc. to EN 50173 and ISO/IEC 11801 2nd Edition
Category 6 acc. to EN 61156

Temperature range:
-20°C to +60°C

Type	Outer-ø	Weight	Fire load		Electrical characteristics (rated values)				Product no.
	approx. mm	approx. kg/km	approx. MJ/m	approx. kW/m	Bandwidth MHz	NEXT@ bandwidth frequency dB	Attenuation@ bandwidth frequency dB/100 m	Interference power suppression up to 100 MHz dB	
ML 6S LSOH	7.2	55	0.75	0.20	300	38	33	70	7KS01599
ML 6S PVC	7.2	55	0.8	0.22	300	38	33	70	7KS01598

MegaLine™ 6Ue



Communication cable U/UTP, better than Category 6

KS-2YH 4x2xAWG 23/1 100
KS-2YY 4x2xAWG 23/1 100

Structure:
4 pairs AWG 23/1
Individual shield: none
Overall shield: none
Outer sheath: pastel orange RAL 2003, LSOH or PVC

Flame retardance:
Acc. to IEC 60332-1

Field of application:
Secondary and tertiary cabling acc. to EN 50173 and ISO/IEC 11801 2nd Edition
Category 6 acc. to IEC 61156

Temperature range:
-20°C to +60°C

Type	Outer-ø	Weight	Fire load		Electrical characteristics (rated values)				Product no.
	approx. mm	approx. kg/km	approx. MJ/m	approx. kW/m	Bandwidth MHz	NEXT@ bandwidth frequency dB	Attenuation@ bandwidth frequency dB/100 m	Interference power suppression up to 100 MHz dB	
ML 6Ue LSOH	6.4	45	0.75	0.20	300	50	33	-	7KS01375
ML 6Ue PVC	6.4	45	0.8	0.22	300	50	33	-	7KS01376

Subject to printing errors, mistakes and technical changes

MegaLine™ 524SC
MegaLine™ 524SC Duplex

Communication cable SF/UTP, better than Category 5

KS-02YS(St+C)H 4x2xAWG 24/1 100 |
KS-02YS(St+C)H 2x(4x2xAWG 24/1) 100 |

Structure:
4 pairs AWG 24/1
Individual shield: none
Overall shield: aluminium foil + copper braid: approx. 65 % coverage
Outer sheath: squirrel grey RAL 7000, LSFROH or PVC

Flame retardance:
Acc. to IEC 60332-3 Cat. C

Field of application:
Secondary and tertiary cabling acc. to EN 50173 and ISO/IEC 11801 2nd Edition
Category 5 acc. to EN 50288 and IEC 61156

Temperature range:
-20°C to +60°C

Type	Outer-ø	Weight	Fire load		Electrical characteristics (rated values)				Product no.
	approx. mm	approx. kg/km	approx. MJ/m	approx. kW/m	Bandwidth MHz	NEXT@ bandwidth frequency dB	Attenuation@ bandwidth frequency dB/100 m	Interference power suppression up to 1 GHz dB	
ML 524SC	6.0	42	0.37	0.1	200	33	27	90	7KS00643
ML 524SC Duplex	6.4 x 12.5	86	0.8	0.14	200	33	27	90	7KS00763

MegaLine™ 524S

Communication cable F/UTP, better than Category 5

KS-2Y(St)H 4x2xAWG 24/1 100 |
KS-2Y(St)Y 4x2xAWG 24/1 100 |

Structure:
4 pairs AWG 24/1
Individual shield: none
Overall shield: aluminium foil
Outer sheath: squirrel grey RAL 7000, LSOH or PVC

Flame retardance:
Acc. to IEC 60332-1

Field of application:
Secondary and tertiary cabling acc. to EN 50173 and ISO/IEC 11801 2nd Edition
Category 5 acc. to IEC 61156

Temperature range:
-20°C to +60°C

Type	Outer-ø	Weight	Fire load		Electrical characteristics (rated values)				Product no.
	approx. mm	approx. kg/km	approx. MJ/m	approx. kW/m	Bandwidth MHz	NEXT@ bandwidth frequency dB	Attenuation@ bandwidth frequency dB/100 m	Interference power suppression up to 1 GHz dB	
ML 524S LSOH	6.4	47	0.5	0.14	200	33	27	55	7KS01488
ML 524S PVC	6.4	47	0.5	0.14	200	33	27	55	7KS01487

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

MegaLine™ 524Ue

Communication cable U/UTP, better than Category 5

KS-2YH 4x2xAWG 24/1 100 |
KS-2YY 4x2xAWG 24/1 100 |

Structure:
4 pairs AWG 24/1
Individual shield: none
Overall shield: none
Outer sheath: squirrel grey RAL 7000, LSOH or PVC

Flame retardance:
Acc. to IEC 60332-1

Field of application:
Secondary and tertiary cabling acc. to EN 50173 and ISO/IEC 11801 2nd Edition
Category 5 acc. to IEC 61156

Temperature range:
-20°C to +60°C

Type	Outer-ø	Weight	Fire load		Electrical characteristics (rated values)				Product no.
	approx. mm	approx. kg/km	approx. MJ/m	approx. kW/m	Bandwidth MHz	NEXT@ bandwidth frequency dB	Attenuation@ bandwidth frequency dB/100 m	Interference power suppression up to 100 MHz dB	
ML 524Ue LSOH	5.5	30	0.3	0.11	200	36	28.5	-	7KS01180
ML 524Ue PVC	5.5	30	0.37	0.17	200	36	28.5	-	7KS01179

Subject to printing errors, mistakes and technical changes

MegaLine™ 6Ue flex

Communication cable U/UTP, better than Category 6

KS-2YH 4x2xAWG 24/7 100 |

Structure:
4 pairs AWG 24/7
Individual shield: none
Overall shield: none
Outer sheath: light grey RAL 7035, LSOH

Flame retardance:
Acc. to IEC 60332-1

Field of application:
Workplace, work area and patch panel acc. to EN 50173 and ISO/IEC 11801 2nd Edition
Category 6 acc. to IEC 61156

Temperature range:
-20°C to +60°C

Type	Outer-ø	Weight	Fire load		Electrical characteristics (rated values)				Product no.
	approx. mm	approx. kg/km	approx. MJ/m	approx. kW/m	Bandwidth MHz	NEXT@ bandwidth frequency dB	Attenuation@ bandwidth frequency dB/100 m	Interference power suppression up to 1 GHz dB	
ML 6Ue flex	6.2	45	0.60	0.17	300	42	5.6	-	7KS01471

MegaLine™ 726 flex

Communication cable S/FTP, better than Category 7

KS-02YSCH 2x2xAWG 26/7 pimf 100 |
KS-02YSCH 4x2xAWG 26/7 pimf 100 |

Structure:
4 pairs AWG 26/7
Individual shield: aluminium foil
Overall shield: aluminium foil + copper braid: approx. 65 % coverage
Outer sheath: light grey RAL 7035, LSFROH

Flame retardance:
Acc. to IEC 60332-3 Cat. C

Field of application:
Workplace, work area and patch panel acc. to EN 50173 and ISO/IEC 11801 2nd Edition
Category 7 acc. to EN 50288 and IEC 61156

Temperature range:
-20°C to +60°C

Type	Outer-ø	Weight	Fire load		Electrical characteristics (rated values)				Product no.
	approx. mm	approx. kg/km	approx. MJ/m	approx. kW/m	Bandwidth MHz	NEXT@ bandwidth frequency dB	Attenuation@ bandwidth frequency dB/10 m	Interference power suppression up to 1 GHz dB	
ML 726 flex 2P	3.8 x 5.3	27	0.35	0.10	900	65	10.5	90	7KS01068
ML 726 flex 4P	6.0	42	0.38	0.11	900	65	10.5	90	7KS01067

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

MegaLine™ 727 flex

Communication cable S/FTP, better than Category 6

KS-02YSCH 4x2xAWG 27/7 pimf 100

Structure:
4 pairs AWG 27/7
Individual shield: aluminium foil
Overall shield: copper braid: approx. 65% coverage
Outer sheath: light grey RAL 7035, LSFROH

Flame retardance:
Acc. to IEC 60332-3 Cat. C

Field of application:
Workplace, work area and patch panel acc. to EN 50173 and ISO/IEC 11801 2nd Edition
Category 7 acc. to EN 50288 and IEC 61156

Temperature range:
-20°C to +60°C

Type	Outer-ø	Weight	Fire load		Electrical characteristics (rated values)				Product no.
	approx. mm	approx. kg/km	approx. MJ/m	approx. kW/m	Bandwidth MHz	NEXT@ bandwidth frequency dB	Attenuation@ bandwidth frequency dB/10 m	Interference power suppression up to 1 GHz dB	
ML 727 flex	5.7	34	0.33	0.09	600	63	7.7	90	7KS01189 (grey)
ML 727 flex	5.7	34	0.33	0.09	600	63	7.7	90	7KS01338 (red)
ML 727 flex	5.7	34	0.33	0.09	600	63	7.7	90	7KS01034 (yellow)
ML 727 flex	5.7	34	0.33	0.09	600	63	7.7	90	7KS01479 (green)
ML 727 flex	5.7	34	0.33	0.09	600	63	7.7	90	7KS01480 (blue)

Subject to printing errors, mistakes and technical changes

MegaLine™ 526SC flex

Communication cable SF/UTP, better than Category 5

KS-02YS(St+C)H 4x2xAWG 26/7 100 |
KS-02YS(St+C)Y 4x2xAWG 26/7 100 |

Structure:
4 pairs AWG 26/7
Individual shield: none
Overall shield: aluminium foil + copper braid: approx. 65% coverage
Outer sheath: light grey RAL 7035, LSFROH or PVC

Flame retardance:
Acc. to IEC 60332-3 Cat. C

Field of application:
Workplace, work area and patch panel acc. to EN 50173 and ISO/IEC 11801 2nd Edition
Category 5 acc. to EN 50288 and IEC 61156

Temperature range:
-20°C to +60°C

Type	Outer-ø	Weight	Fire load		Electrical characteristics (rated values)				Product no.
	approx. mm	approx. kg/km	approx. MJ/m	approx. kW/m	Bandwidth MHz	NEXT@ bandwidth frequency dB	Attenuation@ bandwidth frequency dB/10 m	Interference power suppression up to 1 GHz dB	
ML 526 flex LSFROH	5.3	32	0.30	0.08	200	36	3.9	55	7KS00773 (grey)
ML 526 flex PVC	5.3	32	0.31	0.09	200	36	3.9	55	7KS00248 (grey)
ML 526 flex PVC	5.3	32	0.31	0.09	200	36	3.9	55	7KS00645 (yellow)
ML 526 flex PVC	5.3	32	0.31	0.09	200	36	3.9	55	7KS00678 (red)
ML 526 flex PVC	5.3	32	0.31	0.09	200	36	3.9	55	7KS00680 (blue)
ML 526 flex PVC	5.3	32	0.31	0.09	200	36	3.9	55	7KS00682 (green)

MegaLine™ 525S flex

Communication cable F/UTP, better than Category 5

KS-2Y(St)H 4x2xAWG 25/7 100 |

Structure:
4 pairs AWG 25/7
Individual shield: none
Overall shield: aluminium foil
Outer sheath: light grey RAL 7035, LSOH or PVC

Flame retardance:
Acc. to IEC 60332-1

Field of application:
Workplace, work area and patch panel acc. to EN 50173 and ISO/IEC 11801 2nd Edition
Category 5 acc. to IEC 61156

Temperature range:
-20°C to +60°C

Type	Outer-ø	Weight	Fire load		Electrical characteristics (rated values)				Product no.
	approx. mm	approx. kg/km	approx. MJ/m	approx. kW/m	Bandwidth MHz	NEXT@ bandwidth frequency dB	Attenuation@ bandwidth frequency dB/10 m	Interference power suppression up to 1 GHz dB	
ML 525S flex LSOH	5.8	40	0.23	0.06	100	55	2.3	55	7KS01604

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

MegaLine™ 524Ue flex

Communication cable U/UTP, better than Category 5

KS-2YH 4x2xAWG 24/7 100 |

Structure:
4 pairs AWG 27/7
Individual shield: none
Overall shield: none.
Outer sheath: light grey RAL 7035, LSOH

Flame retardance:
Acc. to IEC 60332-1

Field of application:
Workplace, work area and patch panel acc. to EN 50173 and ISO/IEC 11801 2nd Edition
Category 5 acc. to IEC 61156

Temperature range:
-20°C to +60°C

Type	Outer-ø	Weight	Fire load		Electrical characteristics (rated values)				Product no.
	approx. mm	approx. kg/km	approx. MJ/m	approx. kW/m	Bandwidth MHz	NEXT@ bandwidth frequency dB	Attenuation@ bandwidth frequency dB/10 m	Interference power suppression up to 1 GHz dB	
ML 524Ue flex LSOH	5.6	37	0.22	0.06	100	58	3.0	-	7KS01591

Subject to printing errors, mistakes and technical changes

MegaLine™ Copper data cables for LAN Industry

In contrast to the office environment, the industrial environment is quite different and often presents harsh conditions, such as:

- High dust load
- High humidity
- Mechanical stress due to vibrations or impact
- High temperatures and temperature fluctuations
- Corrosive or contaminating media such as acids, alkalis and oils

For cables in "harsh environments", IEC 62012 offers design elements and materials adapted to industrial environmental conditions, for example:

- 2-pair designs support Ethernet (10 Mbit/sec) and Fast Ethernet (100 Mbit/sec). GigaBit Ethernet (1000 Mbit/sec) is not supported.

- 4-pair designs support all current and future protocols, i.e.: Ethernet (10 Mbit/s), Fast Ethernet (100 Mbit/s) and GigaBit Ethernet (1000 Mbit/sec).

- S/FTP cables have one dual shield consisting of an individual and an overall shield. They have excellent EMC characteristics and superior electrical performance and are designed for industrial use. They also support the transmission of several services under one sheath (cable sharing).

- **Flame-retardant**
- **Halogen-free**
- **Oil-resistant**
- **Radiation-proof**
- **Perspiration-proof**
- **Abrasion-proof**
- **Suitable for draglines**
- **Heat-resistant**
- **LBS-free**
- **Explosion-protected**
- **For underground installation**
- **Flexible or fixed installation**

	PVC (polyvinyl chloride)	**FRNC (thermoplastic polyolefin)**	**PE (polyethylene)**	**PUR (polyurethane)**
Abbreviation according to DIN VDE Temperature limits	Y -40°C to +115°C	H -25°C to +70°C	2Y -35°C to +85°C	11Y -40°C to +85°C
UV-resistant Flame-retardant	yes* very good	yes* very good	yes* no	yes* good
Oil-resistant Chemical-resistant	good good	no no	good good	very good very good
Abrasion-resistant Foodstuff-resistant	good no	low no	good yes	very good no
Water absorption Suitable for outdoor installation	low yes	high yes, if in a protective polyethylene sleeve	very low yes	low yes
Typical use	for outdoor installation and mobile use	for fix indoor-outdoor installation for maximum fire protection requirements	for outdoor installation: suitable for food, drink and tobacco industry	extremely mobile use in draglines; in heavily contaminated environments

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

Data cables with dragline capabilities for IP67

KERPEN has now expanded the Industrial Ethernet product range by adding new data cables with dragline capabilities following Category 5e:

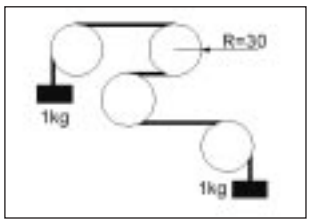
- **MegaLine™ 526 MC superflex**
- **MegaLine™ 524 MC superflex**

The design:
The data cables consist of extremely fine copper conductors (AW 26/19 and AWG 24/19) covered by extremely durable insulation material with very good electrical characteristics.
In order to ensure that the requirements for NEXT and the dragline capabilities are met, the data pairs are manufactured with very short stranding lay lengths and embedded in a rubber-like flexible inner sheath. This is covered by a high-density braided shield and an abrasion- and oil-resistant outer sheath.

Electrical characteristics:
The data cables have exceptionally good NEXT values: 45 dB at 100 MHz.
With the necessary BTR and Phoenix plug connectors suitable for IP 67, a channel according to EN 50173 and ISO/IEC 11801 is guaranteed.
The recommended maximum link length is as follows: 50 m for MegaLine™ 526 MC superflex and 60 m for MegaLine™ MC superflex.
Applications supported: 10BASE-T, 100BASE-T (Fast Ethernet), 1,000BASE-T (GigaBit Ethernet).

Dragline capabilities:
The data cables were subjected
a) to the extremely stringent VDE bending test (the cables were loaded with weights of 1 kg each at a bending radius of lower than 5 x outer diameter)
b) to normal tests in a standard dragline environment.

With 5 million bending cycles at a bending radius of 7.5 x outer diameter, a moving speed of 3 m/sec and an acceleration of 9 m/s, KERPEN data cables showed considerably better results than products previously available.



Alternating bending test (with load) according to VDE 0472 Part 603.

Environmental conditions:
MegaLine™ 526 and 524 MC superflex data cables are included in the M_I_C_E class according to the so-called MICE concept. This makes them suitable for the roughest of environmental conditions such as IP 67 etc. Standard data cables with dragline capabilities pass the oil resistance test according to EN 60811-2-1. The sheath material used is also UV-resistant, halogen-free and flame-retardant.
A special design meets the requirements for resistance to perspiration according to DIN VDE 04702 Part 817 and 282 Part 2, Chapter 5.

Designs:
KERPEN data cables with dragline capabilities are available by the metre for later assembly or ready-made. The following plug connectors are used:
a) Matched RJ45 industrial plug connectors or
b) Specially selected RJ45 office plug connectors (for MegaLine™ 526 MC superflex)

Special features:

- Dragline capabilities: 5 million bending cycles
- Environmental conditions according to M_I_C_E
- Small diameter and bending radius
- Meets the requirements for Class D networks
- Supports Gigabit Ethernet
- Can be connected to RJ45 plug connectors

Subject to printing errors, mistakes and technical changes

MegaLine™ 722 HDIE

Communication cable S/FTP, considerably better than Category 7

KS-02YSCH 4x2xAWG 22/1 pimf 100 |
KS-02YSC11Y 4x2xAWG 22/1 pimf 100 |

Structure:
4 pairs AWG 22/1
Individual shield: aluminium foil
Overall shield: copper braid: approx. 65% coverage
Outer sheath: yellow RAL 1021, LSFROH or PUR

Flame retardance:
Acc. to IEC 60332-3 Cat. C (LSFROH)
Acc. to IEC 60332-1 (PUR)

Field of application:
Industrial secondary and tertiary cabling acc. to prEN 50173-3 and prISO/IEC 24702
Category 7 acc. to EN 50288 and IEC 61156

Temperature range:
-20°C to +60°C

Type	Outer-ø	Weight	Fire load		Electrical characteristics (rated values)				Product no.
Heavy Duty Industrial Ethernet	approx. mm	approx. kg/km	approx. MJ/m	approx. kW/m	Bandwidth MHz	NEXT@ bandwidth frequency dB	Attenuation@ bandwidth frequency dB/100 m	Interference power suppression up to 1 GHz dB	
ML 722 LSFROH	8.8	85	0.9	0.25	1,000	78	56	90	7KS01553
ML 722 PUR	9	81	1.02	0.28	1,000	78	56	90	7KS01555

MegaLine™ 723 HDIE

Communication cable S/FTP, better than Category 7

KS-02YSCH 4x2xAWG 23/1 pimf 100 |
KS-02YSC11Y 4x2xAWG 23/1 pimf 100 |

Structure:
4 pairs AWG 23/1
Individual shield: aluminium foil
Overall shield: copper braid: approx. 65% coverage
Outer sheath: yellow RAL 1021, LSFROH or PUR

Flame retardance:
Acc. to IEC 60332-3 Cat. C (LSFROH)
Acc. to IEC 60332-1 (PUR)

Field of application:
Industrial secondary and tertiary cabling acc. to prEN 50173-3 and prISO/IEC 24702
Category 7 acc. to EN 50288 and IEC 61156

Temperature range:
-20°C to +60°C

Type	Outer-ø	Weight	Fire load		Electrical characteristics (rated values)				Product no.
Heavy Duty Industrial Ethernet	approx. mm	approx. kg/km	approx. MJ/m	approx. kW/m	Bandwidth MHz	NEXT@ bandwidth frequency dB	Attenuation@ bandwidth frequency dB/100 m	Interference power suppression up to 1 GHz dB	
ML 723 LSFROH	8	74	0.81	0.22	900	80	59	90	7KS01552
ML 723 PUR	8.4	72	0.91	0.25	900	80	59	90	7KS01554

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

MegaLine™ 522MSC HDIE

Communication cable SF/UTP, better than Category 5

KS-2YH(St+C)H 2x2xAWG 22/1 100 |
KS-2YH(St+C)11Y 2x2xAWG 22/1 100 |

Structure:
4 pairs (star quad) AWG 22/1
Individual shield: none
Inner sheath
Overall shield: aluminium foil + copper braid: approx. 85% coverage
Outer sheath: yellow RAL 1021, LSFROH or PUR

Flame retardance:
Acc. to IEC 60332-3 Cat. C (LSFROH)
Acc. to IEC 60332-1 (PUR)

Field of application:
Industrial secondary and tertiary cabling acc. to prEN 50173-3 and prISO/IEC 24702 as well as ProfiNET A Category 5 acc. to EN 50288 and IEC 61156

Temperature range:
-20°C to +60°C

Type	Outer-ø	Weight	Fire load		Electrical characteristics (rated values)				Product no.
Heavy Duty Industrial Ethernet	approx. mm	approx. kg/km	approx. MJ/m	approx. kW/m	Bandwidth MHz	NEXT@ bandwidth frequency dB	Attenuation@ bandwidth frequency dB/100 m	Interference power suppression up to 1 GHz dB	
ML 522MSC LSFROH	6.6	62	0.69	0.2	200	33	24	90	7KS01503
ML 522MSC PUR	6.8	59	0.72	0.21	200	33	24	90	7KS01504

MegaLine™ 524SC HDIE

Communication cable SF/UTP, better than Category 5

KS-02YS(St+C)H 4x2xAWG 24/1 100 |
KS-02YS(St+C)11Y 4x2xAWG 24/1 100 |

Structure:
4 pairs AWG 24/1
Individual shield: none
Overall shield: aluminium foil + copper braid: approx. 65% coverage
Outer sheath: yellow RAL 1021, LSFROH or PUR

Flame retardance:
Acc. to IEC 60332-3 Cat. C (LSFROH)
Acc. to IEC 60332-1 (PUR)

Field of application:
Industrial secondary and tertiary cabling acc. to prEN 50173-3 and prISO/IEC 24702
Category 5 acc. to EN 50288 and IEC 61156

Temperature range:
-20°C to +60°C

Type	Outer-ø	Weight	Fire load		Electrical characteristics (rated values)				Product no.
Heavy Duty Industrial Ethernet	approx. mm	approx. kg/km	approx. MJ/m	approx. kW/m	Bandwidth MHz	NEXT@ bandwidth frequency dB	Attenuation@ bandwidth frequency dB/100 m	Interference power suppression up to 1 GHz dB	
ML 524SC LSFROH	7	53	0.58	0.17	200	33	27	90	7KS01516
ML 524SC PUR	7	49	0.72	0.21	200	33	27	90	7KS01517

Subject to printing errors, mistakes and technical changes

MegaLine™ 724 flex HDIE

Communication cable S/FTP, better than Category 7

KS-02YSCH 4x2xAWG 24/7 pimf 100 |
KS-02YSC11Y 4x2xAWG 24/7 pimf 100 |

Structure:
4 pairs AWG 24/7
Individual shield: aluminium foil
Overall shield: copper braid: approx. 65% coverage
Outer sheath: yellow RAL 1021, LSFROH or PUR

Flame retardance:
Acc. to IEC 60332-3 Cat. C (LSFROH)
Acc. to IEC 60332-1 (PUR)

Field of application:
Industrial secondary and tertiary cabling acc. to prEN 50173-3 and prISO/IEC 24702
Category 7 acc. to EN 50288 and IEC 61156

Temperature range:
-20°C to +60°C

Type	Outer-ø	Weight	Fire load		Electrical characteristics (rated values)				Product no.
Heavy Duty Industrial Ethernet	approx. mm	approx. kg/km	approx. MJ/m	approx. kW/m	Bandwidth MHz	NEXT@ bandwidth frequency dB	Attenuation@ bandwidth frequency dB/10 m	Interference power suppression up to 1 GHz dB	
ML 724 flex LSFROH	8.8	75	0.9	0.26	600	68	5.2	90	7KS01505
ML 724 flex PUR	9	71	1.15	0.33	600	68	5.2	90	7KS01506

MegaLine™ 727 flex HDIE

Communication cable S/FTP, better than Category 6

KS-02YSC11Y 4x2xAWG 27/7 pimf 100 |

Structure:
4 pairs AWG 27/7
Individual shield: aluminium foil
Overall shield: copper braid: approx. 65% coverage
Outer sheath: yellow RAL 1021, PUR

Flame retardance:
Acc. to IEC 60332-1

Field of application:
Industrial workplace, work area and patch panel acc. to prEN 50173-3 and prISO/IEC 24702
Category 6 acc. to EN 50288 and IEC 61156

Temperature range:
-20°C to +60°C

Type	Outer-ø	Weight	Fire load		Electrical characteristics (rated values)				Product no.
Heavy Duty Industrial Ethernet	approx. mm	approx. kg/km	approx. MJ/m	approx. kW/m	Bandwidth MHz	NEXT@ bandwidth frequency dB	Attenuation@ bandwidth frequency dB/100 m	Interference power suppression up to 1 GHz dB	
ML 727 flex PUR	6.3	35	0.46	0.13	600	63	7.7	90	7KS01556

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

MegaLine™ 526SC flex HDIE

Communication cable SF/UTP, better than Category 5

KS-02YS(St+C)11Y 4x2xAWG 26/7 100 |

Structure:
4 pairs AWG 26/7
Individual shield: none
Overall shield: aluminium foil + copper braid: approx. 65% coverage
Outer sheath: yellow RAL 1021, PUR

Flame retardance:
Acc. to IEC 60332-1

Field of application:
Industrial workplace, work area and patch panel acc. to prEN 50173-3 and prISO/IEC 24702
Category 5 acc. to EN 50288 and IEC 61156

Temperature range:
-20°C to +60°C

Type	Outer-ø	Weight	Fire load		Electrical characteristics (rated values)				Product no.
Heavy Duty Industrial Ethernet	approx. mm	approx. kg/km	approx. MJ/m	approx. kW/m	Bandwidth MHz	NEXT@ bandwidth frequency dB	Attenuation@ bandwidth frequency dB/10 m	Interference power suppression up to 1 GHz dB	
ML 526SC flex PUR	6	35	0.46	0.13	200	36	3.9	55	7KS001550

Subject to printing errors, mistakes and technical changes

MegaLine™ 526/24MC superflex HDIE

Communication cable SF/UTP, better than Category 5

KS-6Y3GC11Y 4x2xAWG 26/7 100
KS-6Y3GC11Y 4x2xAWG 24/7 100

Structure:
4 pairs AWG 26/19, 24/19
Individual shield: none
Inner sheath: 3G
Overall shield: copper braid: approx. 65% coverage
Outer sheath: yellow RAL 1021, PUR

Flame retardance:
Acc. to IEC 60332-1

Oil resistance:
Acc. to IEC 60811-2-1

Field of application:
Industrial communication
Drag chain
Acc. to prEN 50173-3 and prISO/IEC 24702
Following Category 5 acc. to EN 50288 and IEC 61156

Temperature range:
-20°C to +60°C

Type	Outer-ø	Weight	Fire load		Electrical characteristics (rated values)				Product no.
Heavy Duty Industrial Ethernet	approx. mm	approx. kg/km	approx. MJ/m	approx. kW/m	Bandwidth MHz	NEXT@ bandwidth frequency dB	Attenuation@ bandwidth frequency dB/100 m	Interference power suppression up to 1 GHz dB	
ML 526MC superflex	6.9	60	1.00	0.28	100	45	4.3	55	7KS01508
ML 524MC superflex	8.0	82	1.25	0.36	100	45	3	55	7KS01507

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

MegaLine™ 722 HDIE

Communication cable S/FTP, considerably better than Category 7

KS-02YSCH(L)2Y 4x2xAWG 22/1 pimf 100

Structure:
4 pairs AWG 22/1
Individual shield: aluminium foil
Overall shield: copper braid: approx. 65% coverage
Inner sheath: yellow RAL 1021, LSFROH
Outer sheath: jet black RAL 9005, aluminium tape and PE

Flame retardance (up to inner sheath):
Acc. to IEC 60332-3 Cat.C (LSFROH)

Field of application:
Industrial communication. Outdoor installation.
Acc. to prEN 50173-3 and prISO/IEC 24702
Category 7 acc. to EN 50288 and IEC 61156

Temperature range:
-20°C to +60°C

Type	Outer-ø	Weight	Fire load		Electrical characteristics (rated values)				Product no.
Heavy Duty Industrial Ethernet	approx. mm	approx. kg/km	approx. MJ/m	approx. kW/m	Bandwidth MHz	NEXT@ bandwidth frequency dB	Attenuation@ bandwidth frequency dB/100 m	Interference power suppression up to 1 GHz dB	
ML 722 LSFROH/(L)2Y	12	150	3.0	0.87	1.000	78	56	90	7KS01566

Subject to printing errors, mistakes and technical changes

Optical fibre solutions – cables and systems for LAN, MAN, WAN and SAN

As the degree of automation increases in industry and the information density rises in office communication, higher and higher demands are made on the transmission of analog and digital data. In this situation, conventional links based on copper cable engineering often reach the limits of their performance.

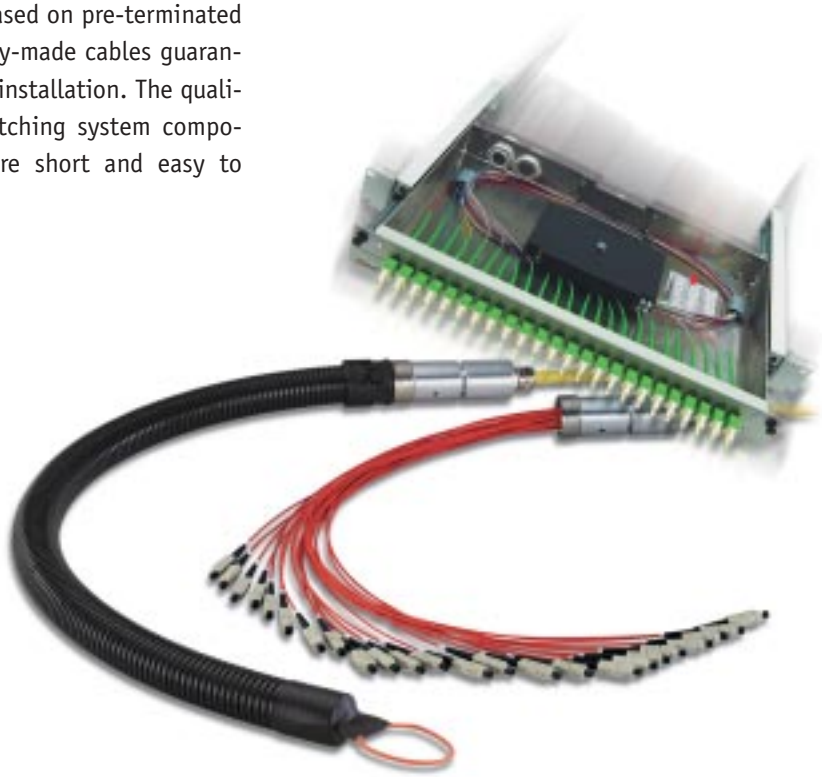
FLine™ – the system for glass fibres

The constant increase in Internet and Intranet traffic, multimedia applications and the implementation of so-called SANs or Storage Area Networks in companies has led to fundamental changes in the traffic and load distribution in the networks. Also, new media require new passive network infrastructures.
On the basis of EN 50173, KERPEN has introduced the new FLine™ classes FLine™ 110, FLine™ 300 and FLine™ 550 for link lengths for 10 GbE and GbE.

FLine™ systems engineering is based on pre-terminated ready-to-connect units. The ready-made cables guarantee rapid, reliable and economic installation. The quality of the link is ensured by matching system components. The installation times are short and easy to calculate.

GigaLine™ – enhanced fibre technology

In conjunction with multimode fibres and single-mode fibres, GigaLine™ optical fibre cables offer reserves which go far beyond the specifications of the standard. Following the fibre categories OM1, OM2, OM3 and OS1 according to EN 50173, KERPEN offers the quality grades OM1e, OM2e, OM3e and OS1e with optimised transmission characteristics.

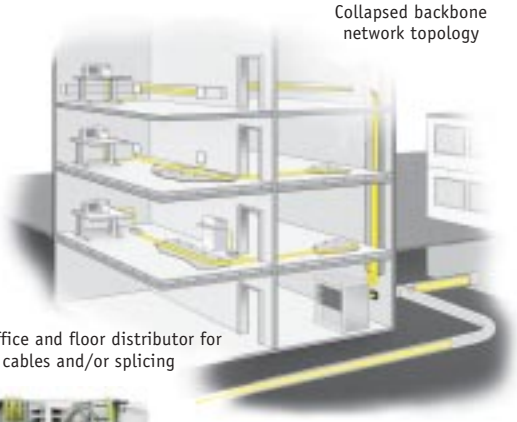


All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

FLine™ – the complete system for fibre-to-the-desk and fibre-to-the-office at maximum quality and security

Collapsed backbone network topology



Building distributor

Multifunctional office and floor distributor for ready-made cables and/or splicing

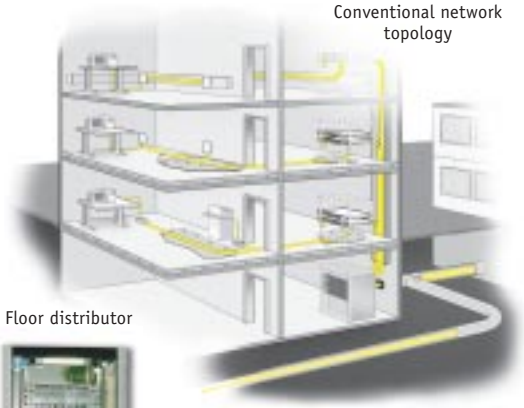
19″ patch panel for ready-made cables and/or splicing with coloured pigtails

FLine™
FLine™ smart
FLine™ compact

Ready-made components, high-fibre count ready-made universal cables for the secondary and backbone area

Ready-made mini-breakout and breakout cables for floor cabling

Conventional network topology



Building distributor

Floor distributor

19″ patch panel for ready-made cables and/or splicing with coloured pigtails

FLine™
FLine™ smart
FLine™ compact

Ready-made components, high-fibre count preassembled universal cables for the secondary and backbone area

Ready-made mini-breakout and breakout cables for floor cabling

Subject to printing errors, mistakes and technical changes

FLine™ 110, FLine™ 300 und FLine™ 550 – the new FLine™ classes

In order to give the user a clear protocol-dependent planning foundation building up-on EN 50173 for link lengths at 10 GbE and GbE, KERPEN has introduced the new FLine™ classes:

- **FLine™ – 110**
- **FLine™ – 300**
- **FLine™ – 550**

110, 300 and 550 refer to the maximum link lengths for 10 GbE.

These FLine™ classes include components optimised for performance and quality which together provide an ideally matched system.
The interaction of high-quality fibres (OM2e, OM3, OM3e) which go far beyond the standard and of high-quality plug connectors allow maximum range and performance for the applications involved (GbE / 10 GbE).

The system components are selected in such a way that the demands made on the link length (110, 300 and 550) and on the data rate are met.
This is why KERPEN consistently uses the same fibre quality for each system (cables, pigtails, patch cords).

For the user, this means that he selects the FLine™ class (system) he requires depending on the link length he needs and the protocols to be transmitted (GbE / 10 GbE). Tables 1 and 2 give him the protocol-dependent attenuation budget according to EN 50173. From this he can derive the number of possible plug connections for the entire link.

When the FLine™ classes were put together, the following matched system components were taken into account:

- Optical fibre cables (GigaLine™) with laser-/dispersion-optimised multimode fibres which go far beyond the requirements of the standard (OM2e, OM3 or OM3e) and have the necessary reserve performance.
  (For fibre specifications please see GigaLine™)

- Optical fibre plug connectors (LC or SC etc.) with low insertion losses and high return losses attenuation.

Maximum link lengths for 10 Gigabit Ethernet system solutions

Multimode G 50	FLine™ classes for 10 GbE		
	FLine™ 110	FLine™ 300	FLine™ 550
Maximum link length for 10 GbE 10GBASE-SR	110	300	550
Attenuation budget for the link and for 10 GbE application	1,8 dB	2,6 dB	2,6 dB
Recommended plug connectors	ST, SC, LC FC-PC E 2000	SC, LC	SC,LC
Number of possible plug connections	4	8	6

All data refer to the first optical window, 850 nm

Maximum link lengths for 1 Gigabit Ethernet system solutions

Multimode G 50	FLine™ classes for 10 GbE		
	FLine™ 110	FLine™ 300	FLine™ 550
Maximum link length for GbE	750	900	1000
Attenuation budget for the link and for GbE application	3,56 dB	3,56 dB	3,56 dB
Recommended plug connectors	ST, SC, LC FC-PC E 2000	SC, LC	SC,LC
Number of possible plug connections	4	6	5

All data refer to the first optical window, 850 nm

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

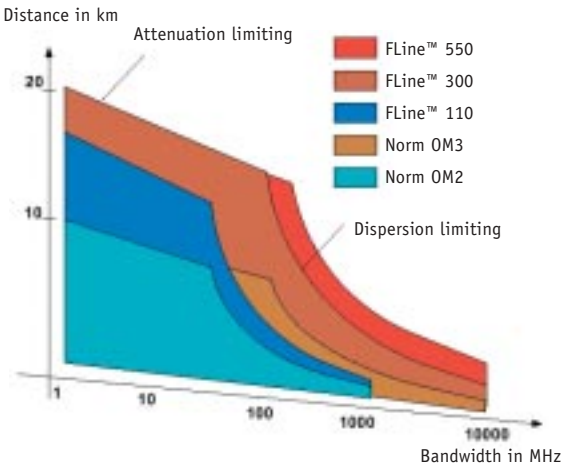
Subject to printing errors, mistakes and technical changes

Diagram 1 shows the system reserves resulting from the high-quality fibres and plug connectors in relation to the EN 50173 standard.

The main advantages of these system reserves are as follows:

- Longer transmission distances for certain applications (100 Mb/s, 1 GbE/s, 10 GbE/s)
- The option of inserting more patch cords or splices
- Additional losses resulting from aging processes can be compensated for
- Network extensions can be implemented more easily and with a certain degree of security within the link lengths

Diagram 1: FLine™ 110, 300 and 550 system reserves in relation to the standard



Quality is our benchmark

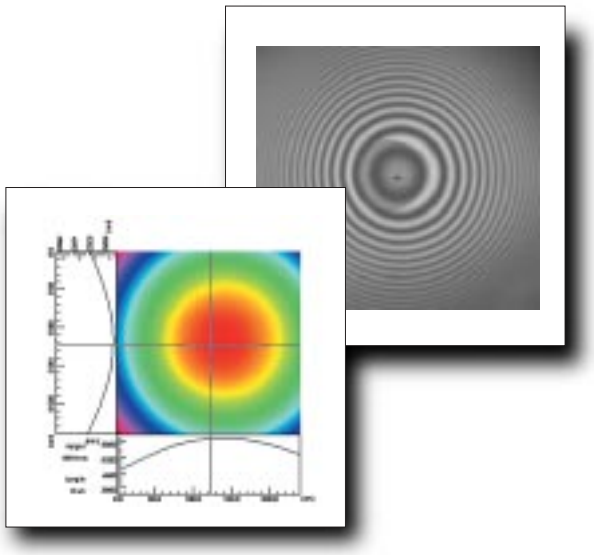
In the manufacturing of optical fibre plug connectors, sophisticated grinding and polishing processes are necessary in addition to the adjustment of the fibres in the ferrule. The aim here is to use precisely optimised processes to fashion the plug connector in such a way that insertion losses and reflections are kept to a minimum. For this purpose, the so-called PC (physical contact) finish was developed, mainly for multimode fibres but also for single-mode ones. The spherical polish of the ferrule, which is flexibly supported in the plug housing, results in a fibre/fibre transition on the end faces. Thus, when two plug connectors are inserted into a coupling, the spring pressure causes all of the air between the two fibres of both plugs to be pushed out.
The glass/glass transition then has virtually no reflections and low losses.

In order to maximise the performance of a PC plug, the surface parameters of the plugs must be carefully monitored during the polishing process. The interferometer is a leading edge measuring instrument for this purpose. The overlapping of coherent light waves is used as a basis for measuring the quality of optical surfaces (ferrule surfaces).

The most important parameters are as follows:

- The pole offset: this is the distance between the highest point of the ferrule and the centre of the fibre (eccentricity of the polish)
- The tolerances of the ferrule opening to the diameter of the fibre
- The optimum radius of the ferrule and the fibre
- The fibre height in the ferrule (undercut, protrusion)

Subject to printing errors, mistakes and technical changes

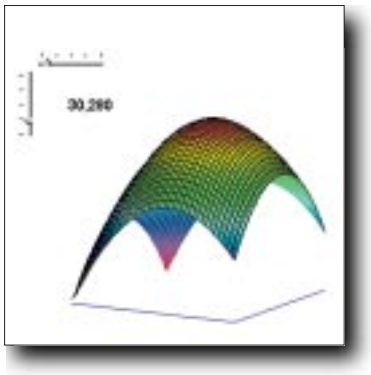


These parameters are important factors determining the long-term behaviour of a plug connector after plastic deformation. The following are derived in this way:

- Physical contact
- Insertion losses / return losses
- Fibre stress
- Fibre migration

All FLine™ components are subjected to the most stringent of pre-delivery inspections. These include the following:

- The attenuation measurement of each individual ready-made component. The defined limits for attenuation measurement go far beyond the requirements of the international standards.
- Optional OTDR measurement, for example for ready-made components
- The monitoring of the individual process flows for plug manufacture via interferometer



Application: 10 GbE; attenuation budget OM2 = 1.8 dB, OM3 = 2.6 dB

	Number of plug connectors						
	4	**6**	**8**	**10**	**12**	**14**	**Insertion attenuation of plug connector in dB**
Link length in meters							
FLine™ 110	110	/	/	/	/	/	< 0,4
FLine™ 300	300	300	300	240	80	/	< 0,2
FLine™ 550	550	550	400	240	80	/	< 0,2

All data refer to the first optical window (850 nm)

Application: 1 GbE; attenuation budget 3.56 dB

	Number of plug connectors							
	4	**6**	**8**	**10**	**12**	**14**	**16**	**Insertion attenuation of plug connector in dB**
Link length in meters								
FLine™ 110	750	460	140	/	/	/	/	< 0,4
FLine™ 300	900	900	780	620	460	300	140	< 0,2
FLine™ 550	550	550	550	550	460	300	140	< 0,2

All data refer to the first optical window (850 nm)

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

GigaLine™ ready-made components – safely through "thick and thin"

Ready-to-connect units are at the heart of FLine™ systems engineering. Ready-made GigaLine™ cables guarantee rapid, reliable and economic installation. The quality of the link is ensured by matched system components. The installation times can now be calculated.

A permanent solution

On site installation often takes place in unfavourable conditions. Humidity, dirt and inaccessible places are common.
In order to do justice to the conditions involved, KERPEN has developed Distribution heads and installation tubes of different protection classes for optical fibre cables with filled loose tubes.

- **IP50** dust-proof) for in-house cabling
- **IP67** (splash-proof) for rough construction site environments and for outdoor cabling

Ready-made GigaLine™ ensures that these conditions do not affect the quality of the links, either during installation or afterwards.
The installation tube is flexible and has a small diameter. This means that the ready-made trunk can be easily fed into narrow, intricate shafts for secondary cabling and installation ducts.
There is a power grip connection to the distribution head. Like all other strain relief elements, it works on the cladding, not the cores. This means that the fibres remain stress-free. The design of the distribution head ensures the stability of the physical parameters and a long life.

Time is money

GigaLine™ VKT stands for reliable and predictable installations. Reduced install time. Subsequent down times, for example due to the interruption of current operation of a computer system, are minimised.
This makes it possible to dispense with the splicing of cables or mounting of plugs, which often take place under adverse conditions on location. High investments in splicing devices and specially trained expert personnel can also be dispensed with.
GigaLine™ VKT can also be used as cables with one end ready-made.

Fields of application

is ideally suitable for backbone cabling in the primary and secondary area and for collapsed backbones.

Quality means maximum safety

The assembly of plugs with high-quality ceramic ferrules is carried out in a clean environment. The end faces of the plugs are polished in an optimum way, this ensuring excellent plug transitions in reproducible quality (insertion and return losses).
A test report showing the attenuation values for each fibre is supplied with the unit. As an option, OTDR measurements can also be carried out.

Subject to printing errors, mistakes and technical changes

VKT IP67 – GigaLine™ DQ 100, 500, 625 N

Ready-made outdoor optical fibre cable, longitudinally watertight, with non-metallicnon-metallic rodent protection

Type: KL-A-DQ(ZNS)2Y

Aluminium distribution head with installation tube

- Protection from water and dirt
- Strain relief via distribution head
- Stress-free fibres
- Stability of transmission parameters
- Long life

Characteristics of the distribution head:

Number of fibres	Ø of distribution head in mm (max)	Ø of installation tube in mm (max)	Strain relief N (max)
2 to 12	28	41	750
16 to 24	36	48	750
48	36	60	750

Characteristics of plug:

Single-mode standard	Insertion losses: < 0.4 dB; return losses: > 40 dB
Multimode standard, FLine™ 110	Insertion losses: < 0.4 dB; return losses: > 25 dB
Multimode FLine™ 300, FLine 550	Insertion losses: < 0.4 dB; return losses: > 35 dB

Characteristics of fibre:

E9...10/125	Single-mode fibre, transmission characteristics better than OS1. Attenuation coefficient: 0.36 dB/km at 1310 nm; 0.25 dB/km at 1550 nm
G50/125	Multimode fibre optimised for Gigabit Ethernet, transmission characteristics better than OM1, OM2.
FLine™ 110	Attenuation coefficient: 2.5 dB/km at 850 nm; 0.7 dB/km at 1300 nm Bandwidth: min. 600 MHz x km at 850 nm; min. 1200 MHz x km at 1300 nm Segment length with Gigabit Ethernet: min. 750 m at 850 nm; min. 2000 m at 1300 nm Segment length with 10-Gigabit Ethernet: min. 110 m at 850 nm; min. 900 m at 1300 nm
G50/125 OM3	Multimode fibre optimised for 10-Gigabit Ethernet, transmission characteristics better than OM3.
FLine™ 300	Attenuation coefficient: 2.5 dB/km at 850 nm; 0.7 dB/km at 1300 nm Laser bandwidth: min. 2000 MHz x km at 850 nm Bandwidth: min. 1500 MHz x km at 850 nm; min. 500 MHz x km at 1300 nm Segment length with Gigabit Ethernet: min. 900 m at 850 nm; min. 550 m at 1300 nm Segment length with 10-Gigabit Ethernet: min. 300 m at 850 nm; min. 300 m at 1300 nm
G50/125 OM3"e"	Multimode fibre optimised for 10-Gigabit Ethernet, transmission characteristics better than OM3.
FLine™ 550	Attenuation coefficient: 2.5 dB/km at 850 nm; 0.7 dB/km at 1300 nm Laser bandwidth: min. 4000 MHz x km at 850 nm Bandwidth: min. 3000 MHz x km at 850 nm; min. 500 MHz x km at 1300 nm Segment length with Gigabit Ethernet: min. 1000 m at 850 nm; min. 550 m at 1300 nm Segment length with 10-Gigabit Ethernet: min. 550 m at 850 nm; min. 300 m at 1300 nm
G62,5/125	Multimode fibre optimised for 10-Gigabit Ethernet, transmission characteristics better than OM1. Attenuation coefficient: 3.0 dB/km at 850 nm; 0.7 dB/km at 1300 nm Bandwidth: min. 250 MHz x km at 850 nm; min. 800 MHz x km at 1300 nm Segment length with Gigabit Ethernet: min. 500 m at 850 nm; min. 1000 m at 1300 nm Segment length with 10-Gigabit Ethernet: min. 65 m at 850 nm; min. 450 m at 1300 nm

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

Single-mode standard: Insertion losses < 0.4 dB; Return losses: > 40 dB

No. of fibres	SC	ST	E2000	E2000HRL	FC-PC	FC-PC HRL
4	9VA00XXX	9VA09XXX	9VA0IXXX	9VA0SXXX	9VA33XXX	9VA3CXXX
6	9VA01XXX	9VA0AXXX	9VA0JXXX	9VA0TXXX	9VA34XXX	9VA3DXXX
8	9VA02XXX	9VA0BXXX	9VA0KXXX	9VA0UXXX	9VA35XXX	9VA3EXXX
12	9VA03XXX	9VA0CXXX	9VA0LXXX	9VA0VXXX	9VA36XXX	9VA3FXXX
16	9VA04XXX	9VA0DXXX	9VA0MXXX	9VA0WXXX	9VA37XXX	9VA3GXXX
24	9VA06XXX	9VA0FXXX	9VA0PXXX	9VA0YXXX	9VA39XXX	9VA3IXXX
48	9VA08XXX	9VA0HXXX	9VA0RXXX	9VA10XXX	9VA3BXXX	9VA3KXXX

FLine™ 110, Multimode G50/125 OM2: Insertion losses: < 0.4 dB; Return losses: > 25 dB

No. of fibres	SC	ST	E2000	MT-RJ	FC-PC	LC
4	9VA11XXX	9VA1AXXX	9VA1JXXX	9VA2KXXX	9VA3LXXX	9VA4WXXX
6	9VA12XXX	9VA1BXXX	9VA1KXXX	9VA2LXXX	9VA3MXXX	9VA4XXXX
8	9VA13XXX	9VA1CXXX	9VA1LXXX	9VA2MXXX	9VA3NXXX	9VA4YXXX
12	9VA14XXX	9VA1DXXX	9VA1MXXX	9VA2NXXX	9VA3PXXX	9VA4ZXXX
16	9VA15XXX	9VA1EXXX	9VA1NXXX	9VA2PXXX	9VA3QXXX	9VA50XXX
24	9VA17XXX	9VA1GXXX	9VA1QXXX	9VA2RXXX	9VA3SXXX	9VA52XXX
48	9VA19XXX	9VA1IXXX	9VA1SXXX	9VA2TXXX	9VA3UXXX	9VA54XXX

FLine™ 300, Multimode G50/125 OM3: Insertion losses: < 0.2 dB; Return losses: > 35 dB

No. of fibres	SC	ST	E2000	MT-RJ	FC-PC	LC
4	9VA5XXXX	–	–	–	–	9VA55XXX
6	9VA5YXXX	–	–	–	–	9VA56XXX
8	9VA5ZXXX	–	–	–	–	9VA57XXX
12	9VA60XXX	–	–	–	–	9VA58XXX
16	9VA61XXX	–	–	–	–	9VA59XXX
24	9VA63XXX	–	–	–	–	9VA5BXXX
48	9VA65XXX	–	–	–	-	9VA5DXXX

FLine™ 550, Multimode G50/125 OM3"e": Insertion losses: < 0.2 dB; Return losses: > 35 dB

No. of fibres	SC	ST	E2000	MT-RJ	FC-PC	LC
4	9VAXXXXXX	–	–	–	–	9VA5EXXX
6	9VAXXXXXX	–	–	–	–	9VA5FXXX
8	9VAXXXXXX	–	–	–	–	9VA5GXXX
12	9VAXXXXXX	–	–	–	–	9VA5HXXX
16	9VAXXXXXX	–	–	–	–	9VA5IXXX
24	9VAXXXXXX	–	–	–	–	9VA5KXXX
48	9VAXXXXXX	–	–	–	–	9VA5MXXX

Multimode G62.5/125 OM1, standard: Insertion losses: < 0.4 dB; Rückflussdämpfung: > 25 dB

No. of fibres	SC	ST	E2000	MT-RJ	FC-PC	LC
4	9VA1TXXX	9VA22XXX	9VA2BXXX	9VA2UXXX	9VA3VXXX	–
6	9VA1UXXX	9VA23XXX	9VA2CXXX	9VA2VXXX	9VA3WXXX	–
8	9VA1VXXX	9VA24XXX	9VA2DXXX	9VA2WXXX	9VA3XXXX	–
12	9VA1WXXX	9VA25XXX	9VA2EXXX	9VA2XXXX	9VA3YXXX	–
16	9VA1XXXX	9VA26XXX	9VA2FXXX	9VA2YXXX	9VA3ZXXX	–
24	9VA1ZXXX	9VA28XXX	9VA2HXXX	9VA30XXX	9VA41XXX	–
48	9VA21XXX	9VA2AXXX	9VA2JXXX	9VA32XXX	9VA43XXX	–

XXX – length in m; other designs on request

Subject to printing errors, mistakes and technical changes

VKT IP50 – GigaLine™ DQ 100, 500, 625 U

Ready-made universal optical fibre cable, longitudinally watertight, with non-metallic rodent protection

Type: KL-U-DQ(ZNS)H

Aluminium distribution head with installation tube

- Protection from water and dirt
- Strain relief via distribution head
- Stress-free fibres
- Stability of transmission parameters
- Long life

Characteristics of the distribution head:

Number of fibres	Ø of distribution head in mm (max)	Ø of installation tube in mm (max)	Strain relief N (max)
2 to 12	28	37	750
16 to 24	36	44	750
48	36	54	750

Characteristics of plug:

Single-mode standard	Insertion losses: < 0.4 dB; return losses: > 40 dB
Multimode standard, FLine™ 110	Insertion losses: < 0.4 dB; return losses: > 25 dB
Multimode FLine™ 300, FLine™ 550	Insertion losses: < 0.4 dB; return losses: > 35 dB

Fibre characteristics:

E9...10/125	ESingle-mode fibre, transmission characteristics better than OS1. Attenuation coefficient: 0.36 dB/km at 1310 nm; 0.25 dB/km at 1550 nm Dispersion: max. 3.5 ps/nm x km at 1310 nm; max. 18 ps/nm x km at 1550 nm
G50/125	Multimode fibre optimised for Gigabit Ethernet, transmission characteristics better than OM1, OM2.
FLine™ 110	Attenuation coefficient: 2.5 dB/km at 850 nm; 0.7 dB/km at 1300 nm Bandwidth: min. 600 MHz x km at 850 nm; min. 1200 MHz x km at 1300 nm Segment length with Gigabit Ethernet: min. 750 m at 850 nm; min. 2000 m at 1300 nm Segment length with 10-Gigabit Ethernet: min. 110 m at 850 nm; min. 900 m at 1300 nm
G50/125 OM3	Multimode fibre optimised for 10-Gigabit Ethernet, transmission characteristics better than OM3.
FLine™ 300	Attenuation coefficient: 2.5 dB/km at 850 nm; 0.7 dB/km at 1300 nm Laser bandwidth: min. 2000 MHz x km at 850 nm Bandwidth: min. 1500 MHz x km at 850 nm; min. 500 MHz x km at 1300 nm Segment length with Gigabit Ethernet: min. 900 m at 850 nm; min. 550 m at 1300 nm Segment length with 10-Gigabit Ethernet: min. 300 m at 850 nm; min. 300 m at 1300 nm
G50/125 OM3"e"	Multimode fibre optimised for 10-Gigabit Ethernet, transmission characteristics better than OM3.
FLine™ 550	Attenuation coefficient: 2.5 dB/km at 850 nm; 0.7 dB/km at 1300 nm Laser bandwidth: min. 4000 MHz x km at 850 nm Bandwidth: min. 3000 MHz x km at 850 nm; min. 500 MHz x km at 1300 nm Segment length with Gigabit Ethernet: min. 1000 m at 850 nm; min. 550 m at 1300 nm Segment length with 10-Gigabit Ethernet: min. 550 m at 850 nm; min. 300 m at 1300 nm
G62,5/125	Multimode fibre optimised for 10-Gigabit Ethernet, transmission characteristics better than OM1. Attenuation coefficient: 3.0 dB/km at 850 nm; 0.7 dB/km at 1300 nm Bandwidth: min. 250 MHz x km at 850 nm; min. 800 MHz x km at 1300 nm Segment length with Gigabit Ethernet: min. 500 m at 850 nm; min. 1000 m at 1300 nm Segment length with 10-Gigabit Ethernet: min. 65 m at 850 nm; min. 450 m at 1300 nm

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

FLine™ VKT IP50, equipped with plugs at both ends and installation tube

Single-mode standard: Insertion losses < 0.4 dB; Return losses: > 40 dB

No. of fibres	SC	ST	E2000	E2000HRL	FC-PC	FC-PC HRL
4	9VUI0XXX	9VUI9XXX	9VUIIXXX	9VUISXXX	9VUL3XXX	9VULCXXX
6	9VUI1XXX	9VUIAXXX	9VUIJXXX	9VUITXXX	9VUL4XXX	9VULDXXX
8	9VUI2XXX	9VUIBXXX	9VUIKXXX	9VUIUXXX	9VUL5XXX	9VULEXXX
12	9VUI3XXX	9VUICXXX	9VUILXXX	9VUIVXXX	9VUL6XXX	9VULFXXX
16	9VUI4XXX	9VUIDXXX	9VUIMXXX	9VUIWXXX	9VUL7XXX	9VULGXXX
24	9VUI6XXX	9VUIFXXX	9VUIPXXX	9VUIYXXX	9VUL9XXX	9VULIXXX
48	9VUI8XXX	9VUIHXXX	9VUIRXXX	9VUJ0XXX	9VULBXXX	9VULKXXX

FLine™ 110, Multimode G50/125 OM2: Insertion losses: < 0.4 dB; Return losses: > 25 dB

No. of fibres	SC	ST	E2000	MT-RJ	FC-PC	LC
4	9VUJ1XXX	9VUJAXXX	9VUJJXXX	9VUKKXXX	9VULLXXX	9VUMWXXX
6	9VUJ2XXX	9VUJBXXX	9VUJKXXX	9VUKLXXX	9VULMXXX	9VUMXXXX
8	9VUJ3XXX	9VUJCXXX	9VUJLXXX	9VUKMXXX	9VULNXXX	9VUMYXXX
12	9VUJ4XXX	9VUJDXXX	9VUJMXXX	9VUKNXXX	9VULPXXX	9VUMZXXX
16	9VUJ5XXX	9VUJEXXX	9VUJNXXX	9VUKPXXX	9VULQXXX	9VUN0XXX
24	9VUJ7XXX	9VUJGXXX	9VUJQXXX	9VUKRXXX	9VULSXXX	9VUN2XXX
48	9VUJ9XXX	9VUJIXXX	9VUJSXXX	9VUKTXXX	9VULUXXX	9VUN4XXX

FLine™ 300, Multimode G50/125 OM3: Insertion losses: < 0.2 dB; Return losses: > 35 dB

No. of fibres	SC	ST	E2000	MT-RJ	FC-PC	LC
4	9VUNXXXX	–	–	–	–	9VUN5XXX
6	9VUNYXXX	–	–	–	–	9VUN6XXX
8	9VUNZXXX	–	–	–	–	9VUN7XXX
12	9VUP0XXX	–	–	–	–	9VUN8XXX
16	9VUP1XXX	–	–	–	–	9VUN9XXX
24	9VUP3XXX	–	–	–	–	9VUNBXXX
48	9VUP5XXX	–	–	–	–	9VUNDXXX

FLine™ 550, Multimode G50/125 OM3"e": Insertion losses: < 0.2 dB; Return losses: > 35 dB

No. of fibres	SC	ST	E2000	MT-RJ	FC-PC	LC
4	9VAXXXXXX	–	–	–	–	9VUNEXXX
6	9VAXXXXXX	–	–	–	–	9VUNFXXX
8	9VAXXXXXX	–	–	–	–	9VUNGXXX
12	9VAXXXXXX	–	–	–	–	9VUNHXXX
16	9VAXXXXXX	–	–	–	–	9VUNIXXX
24	9VAXXXXXX	–	–	–	–	9VUNKXXX
48	9VAXXXXXX	–	–	–	–	9VUNMXXX

Multimode G62.5/125 OM1, standard: Insertion losses: < 0.4 dB; Rückflussdämpfung: > 25 dB

No. of fibres	SC	ST	E2000	MT-RJ	FC-PC	LC
4	9VUJTXXX	9VUK2XXX	9VUKBXXX	9VUKUXXX	9VULVXXX	–
6	9VUJUXXX	9VUK3XXX	9VUKCXXX	9VUKVXXX	9VULWXXX	–
8	9VUJVXXX	9VUK4XXX	9VUKDXXX	9VUKWXXX	9VULXXXX	–
12	9VUJWXXX	9VUK5XXX	9VUKEXXX	9VUKXXXX	9VULYXXX	–
16	9VUJXXXX	9VUK6XXX	9VUKFXXX	9VUKYXXX	9VULZXXX	–
24	9VUJZXXX	9VUK8XXX	9VUKHXXX	9VUL0XXX	9VUM1XXX	–
48	9VUK1XXX	9VUKAXXX	9VUKJXXX	9VUL2XXX	9VUM3XXX	–

XXX – length in m; other designs on request

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

FLine™ VKT Mini-Breakout IP50
GigaLine™ M 100, 500, 625

Ready-made optical fibre mini-breakout cable.

Type: KL-J-V(ZN)H

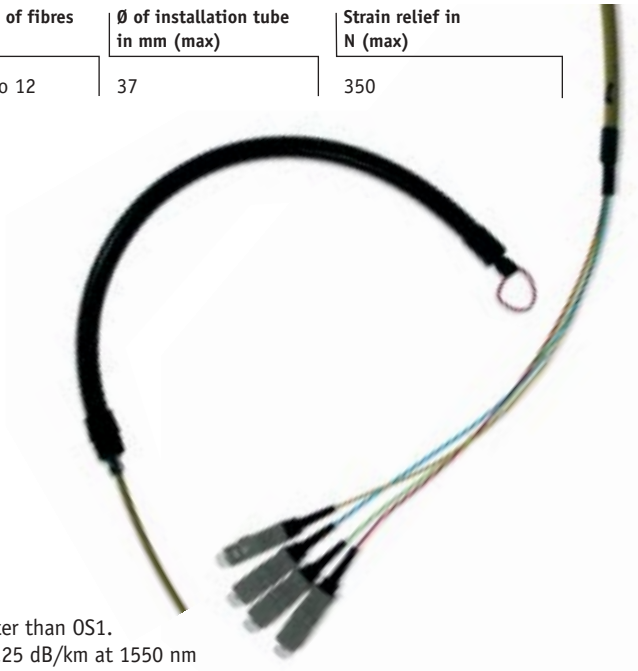
Splice-free distribution with installation tube

- Protection from dirt
- Stability of transmission parameters
- Long life

Field of application: Floor cabling

Characteristics of installation tube:

No. of fibres	Ø of installation tube in mm (max)	Strain relief in N (max)
2 to 12	37	350



Characteristics of plug:

Single-mode standard	Insertion losses: < 0.4 dB; return losses: > 40 dB
Multimode standard, FLine™ 110	Insertion losses: < 0.4 dB; return losses: > 25 dB
Multimode FLine™ 300, FLine™ 550	Insertion losses: < 0.4 dB; return losses: > 35 dB

Fibre characteristics:

E9...10/125	Single-mode fibre, transmission characteristics better than OS1. Attenuation coefficient: 0.36 dB/km at 1310 nm; 0.25 dB/km at 1550 nm Dispersion: max. 3.5 ps/nm x km at 1310 nm; max. 18 ps/nm x km at 1550 nm
G50/125	Multimode fibre optimised for Gigabit Ethernet, transmission characteristics better than OM1, OM2.
FLine™ 110	Attenuation coefficient: 2.5 dB/km at 850 nm; 0.7 dB/km at 1300 nm Bandwidth: min. 600 MHz x km at 850 nm; min. 1200 MHz x km at 1300 nm Segment length with Gigabit Ethernet: min. 750 m at 850 nm; min. 2000 m at 1300 nm Segment length with 10-Gigabit Ethernet: min. 110 m at 850 nm; min. 900 m at 1300 nm
G50/125 OM3	Multimode fibre optimised for 10-Gigabit Ethernet, transmission characteristics better than OM3.
FLine™ 300	Attenuation coefficient: 2.5 dB/km at 850 nm; 0.7 dB/km at 1300 nm Laser bandwidth: min. 2000 MHz x km at 850 nm Bandwidth: min. 1500 MHz x km at 850 nm; min. 500 MHz x km at 1300 nm Segment length with Gigabit Ethernet: min. 900 m at 850 nm; min. 550 m at 1300 nm Segment length with 10-Gigabit Ethernet: min. 300 m at 850 nm; min. 300 m at 1300 nm
G50/125 OM3"e"	Multimode fibre optimised for 10-Gigabit Ethernet, transmission characteristics better than OM3.
FLine™ 550	Attenuation coefficient: 2.5 dB/km at 850 nm; 0.7 dB/km at 1300 nm Laser bandwidth: min. 4000 MHz x km at 850 nm Bandwidth: min. 3000 MHz x km at 850 nm; min. 500 MHz x km at 1300 nm Segment length with Gigabit Ethernet: min. 1000 m at 850 nm; min. 550 m at 1300 nm Segment length with 10-Gigabit Ethernet: min. 550 m at 850 nm; min. 300 m at 1300 nm
G62,5/125	Multimode fibre optimised for 10-Gigabit Ethernet, transmission characteristics better than OM1. Attenuation coefficient: 3.0 dB/km at 850 nm; 0.7 dB/km at 1300 nm Bandwidth: min. 250 MHz x km at 850 nm; min. 800 MHz x km at 1300 nm Segment length with Gigabit Ethernet: min. 500 m at 850 nm; min. 1000 m at 1300 nm Segment length with 10-Gigabit Ethernet: min. 65 m at 850 nm; min. 450 m at 1300 nm

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

FLine™ VKT (ready-made) mini-breakout IP50, equipped with plugs at both ends and installation tube

Single-mode standard: Insertion losses < 0.4 dB; Return losses: > 40 dB

No. of fibres	SC	ST	E2000	E2000HRL	FC-PC	FC-PC HRL
2	9VM00XXX	9VM06XXX	9VM0PXXX	9VM0VXXX	9VM0CXXX	9VM0IXXX
4	9VM01XXX	9VM07XXX	9VM0QXXX	9VM0WXXX	9VM0DXXX	9VM0JXXX
6	9VM02XXX	9VM08XXX	9VM0RXXX	9VM0XXXX	9VM0EXXX	9VM0KXXX
18	9VM03XXX	9VM09XXX	9VM0SXXX	9VM0YXXX	9VM0FXXX	9VM0LXXX
10	9VM04XXX	9VM0AXXX	9VM0TXXX	9VM0ZXXX	9VM0GXXX	9VM0MXXX
12	9VM05XXX	9VM0BXXX	9VM0UXXX	9VM10XXX	9VM0HXXX	9VM0NXXX

FLine™ 110, Multimode G50/125 OM2: Insertion losses: < 0.4 dB; Return losses: > 25 dB

No. of fibres	SC	ST	E2000	MT-RJ	FC-PC	LC
4	9VM11XXX	9VM17XXX	9VM1DXXX	9VM1QXXX	9VM1JXXX	9VUMWXXX
6	9VM12XXX	9VM18XXX	9VM1EXXX	9VM1RXXX	9VM1KXXX	9VUMXXXX
8	9VM13XXX	9VM19XXX	9VM1FXXX	9VM1SXXX	9VM1LXXX	9VUMYXXX
12	9VM14XXX	9VM1AXXX	9VM1GXXX	9VM1TXXX	9VM1MXXX	9VUMZXXX
16	9VM15XXX	9VM1BXXX	9VM1HXXX	9VM1UXXX	9VM1NXXX	9VUN0XXX
24	9VM16XXX	9VM1CXXX	9VM1IXXX	9VM1VXXX	9VM1PXXX	9VUN2XXX

FLine™ 300, Multimode G50/125 OM3: Insertion losses: < 0.2 dB; Return losses: > 35 dB

No. of fibres	SC	ST	E2000	MT-RJ	FC-PC	LC
4	9VM3LXXX	–	–	–	–	9VM3SXXX
6	9VM3MXXX	–	–	–	–	9VM3TXXX
8	9VM3NXXX	–	–	–	–	9VM3UXXX
12	9VM3PXXX	–	–	–	–	9VM3VXXX
16	9VM3QXXX	–	–	–	–	9VM3WXXX
24	9VM3RXXX	–	–	–	–	9VM3XXXX

FLine™ 550, Multimode G50/125 OM3"e": Insertion losses: < 0.2 dB; Return losses: > 35 dB

No. of fibres	SC	ST	E2000	MT-RJ	FC-PC	LC
4	9VM3YXXX	–	–	–	–	9VM44XXX
6	9VM3ZXXX	–	–	–	–	9VM45XXX
8	9VM40XXX	–	–	–	–	9VM46XXX
12	9VM41XXX	–	–	–	–	9VM47XXX
16	9VM42XXX	–	–	–	–	9VM48XXX
24	9VM43XXX	–	–	–	–	9VM49XXX

Multimode G62.5/125 OM1, standard: Insertion losses: < 0.4 dB; Rückflussdämpfung: > 25 dB

No. of fibres	SC	ST	E2000	MT-RJ	FC-PC	LC
4	9VM1WXXX	9VM22XXX	9VM2EXXX	9VM2KXXX	9VM28XXX	–
6	9VM1XXXX	9VM23XXX	9VM2FXXX	9VM2LXXX	9VM29XXX	–
8	9VM1YXXX	9VM24XXX	9VM2GXXX	9VM2MXXX	9VM2AXXX	–
12	9VM1ZXXX	9VM25XXX	9VM2HXXX	9VM2NXXX	9VM2BXXX	–
16	9VM20XXX	9VM26XXX	9VM2IXXX	9VM2PXXX	9VM2CXXX	–
24	9VM21XXX	9VM27XXX	9VM2JXXX	9VM2QXXX	9VM2DXXX	–

XXX – length in m; other designs on request

Subject to printing errors, mistakes and technical changes

FLine™ VKT Breakout IP50
GigaLine™ AT 100, 500, 625

Ready-made optical fibre breakout cable

Type: KL-J-V(ZN)H

Splice-free distribution with installation tube

- Protection from dirt
- Stability of transmission parameters
- Long life

Characteristics of installation tube:

No. of fibres	Ø of installation tube in mm (max)	Strain relief in N (max)
2 to 12	37	350

Field of application: Floor cabling

Characteristics of plug:

Single-mode standard	Insertion losses: < 0.4 dB; return losses: > 40 dB
Multimode standard, FLine™ 110	Insertion losses: < 0.4 dB; return losses: > 25 dB
Multimode FLine™ 300, FLine™ 550	Insertion losses: < 0.4 dB; return losses: > 35 dB

Fibre characteristics:

E9...10/125	Single-mode fibre, transmission characteristics better than OS1. Attenuation coefficient: 0.36 dB/km at 1310 nm; 0.25 dB/km at 1550 nm Dispersion: max. 3.5 ps/nm x km at 1310 nm; max. 18 ps/nm x km at 1550 nm
G50/125	Multimode fibre optimised for Gigabit Ethernet, transmission characteristics better than OM1, OM2.
FLine™ 110	Attenuation coefficient: 2.5 dB/km at 850 nm; 0.7 dB/km at 1300 nm Bandwidth: min. 600 MHz x km at 850 nm; min. 1200 MHz x km at 1300 nm Segment length with Gigabit Ethernet: min. 750 m at 850 nm; min. 2000 m at 1300 nm Segment length with 10-Gigabit Ethernet: min. 110 m at 850 nm; min. 900 m at 1300 nm
G50/125 OM3	Multimode fibre optimised for 10-Gigabit Ethernet, transmission characteristics better than OM3
FLine™ 300	Attenuation coefficient: 2.5 dB/km at 850 nm; 0.7 dB/km at 1300 nm Laser bandwidth: min. 2000 MHz x km at 850 nm Segment length with Gigabit Ethernet: min. 900 m at 850 nm; min. 550 m at 1300 nm Segment length with 10-Gigabit Ethernet: min. 300 m at 850 nm; min. 300 m at 1300 nm
G50/125 OM3"e"	Multimode fibre optimised for 10-Gigabit Ethernet, transmission characteristics better than OM3.
FLine™ 550	Attenuation coefficient: 2.5 dB/km at 850 nm; 0.7 dB/km at 1300 nm Laser bandwidth: min. 4000 MHz x km at 850 nm Bandwidth: min. 3000 MHz x km at 850 nm; min. 500 MHz x km at 1300 nm Segment length with Gigabit Ethernet: min. 1000 m at 850 nm; min. 550 m at 1300 nm Segment length with 10-Gigabit Ethernet: min. 550 m at 850 nm; min. 300 m at 1300 nm
G62,5/125	Multimode fibre optimised for 10-Gigabit Ethernet, transmission characteristics better than OM1. Attenuation coefficient: 3.0 dB/km at 850 nm; 0.7 dB/km at 1300 nm Bandwidth: min. 250 MHz x km at 850 nm; min. 800 MHz x km at 1300 nm Segment length with Gigabit Ethernet: min. 500 m at 850 nm; min. 1000 m at 1300 nm Segment length with 10-Gigabit Ethernet: min. 65 m at 850 nm; min. 450 m at 1300 nm

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

FLine™ VKT breakout IP50, equipped with plugs at both ends and installation tube

Single-mode standard: Insertion losses < 0.4 dB; Return losses: > 40 dB

No. of fibres	SC	ST	E2000	E2000HRL	FC-PC	FC-PC HRL
2	9VB00XXX	9VB06XXX	9VB0PXXX	9VB0VXXX	9VB0CXXX	9VB0IXXX
4	9VB01XXX	9VB07XXX	9VB0QXXX	9VB0WXXX	9VB0DXXX	9VB0JXXX
6	9VB02XXX	9VB08XXX	9VB0RXXX	9VB0XXXX	9VB0EXXX	9VB0KXXX
18	9VB03XXX	9VB09XXX	9VB0SXXX	9VB0YXXX	9VB0FXXX	9VB0LXXX
10	9VB04XXX	9VB0AXXX	9VB0TXXX	9VB0ZXXX	9VB0GXXX	9VB0MXXX
12	9VB05XXX	9VB0BXXX	9VB0UXXX	9VB10XXX	9VB0HXXX	9VB0NXXX

FLine™ 110, Multimode G50/125 OM2: Insertion losses: < 0.4 dB; Return losses: > 25 dB

No. of fibres	SC	ST	E2000	MT-RJ	FC-PC	LC
4	9VB11XXX	9VB17XXX	9VB1DXXX	9VB1QXXX	9VB1JXXX	9VUBWXXX
6	9VB12XXX	9VB18XXX	9VB1EXXX	9VB1RXXX	9VB1KXXX	9VUBXXXX
8	9VB13XXX	9VB19XXX	9VB1FXXX	9VB1SXXX	9VB1LXXX	9VUBYXXX
12	9VB14XXX	9VB1AXXX	9VB1GXXX	9VB1TXXX	9VB1MXXX	9VUBZXXX
16	9VB15XXX	9VB1BXXX	9VB1HXXX	9VB1UXXX	9VB1NXXX	9VUB0XXX
24	9VB16XXX	9VB1CXXX	9VB1IXXX	9VB1VXXX	9VB1PXXX	9VUB2XXX

FLine™ 300, Multimode G50/125 OM3: Insertion losses: < 0.2 dB; Return losses: > 35 dB

No. of fibres	SC	ST	E2000	MT-RJ	FC-PC	LC
4	9VB3LXXX	–	–	–	–	9VB3SXXX
6	9VB3MXXX	–	–	–	–	9VB3TXXX
8	9VB3NXXX	–	–	–	–	9VB3UXXX
12	9VB3PXXX	–	–	–	–	9VB3VXXX
16	9VB3QXXX	–	–	–	–	9VB3WXXX
24	9VB3RXXX	–	–	–	–	9VB3XXXX

FLine™ 550, Multimode G50/125 OM3"e": Insertion losses: < 0.2 dB; Return losses: > 35 dB

No. of fibres	SC	ST	E2000	MT-RJ	FC-PC	LC
4	9VB3YXXX	–	–	–	–	9VB44XXX
6	9VB3ZXXX	–	–	–	–	9VB45XXX
8	9VB40XXX	–	–	–	–	9VB46XXX
12	9VB41XXX	–	–	–	–	9VB47XXX
16	9VB42XXX	–	–	–	–	9VB48XXX
24	9VB43XXX	–	–	–	–	9VB49XXX

Multimode G62.5/125 OM1, standard: Insertion losses: < 0.4 dB; Rückflussdämpfung: > 25 dB

No. of fibres	SC	ST	E2000	MT-RJ	FC-PC	LC
4	9VM1WXXX	9VM22XXX	9VM2EXXX	9VM2KXXX	9VM28XXX	–
6	9VM1XXXX	9VM23XXX	9VM2FXXX	9VM2LXXX	9VM29XXX	–
8	9VM1YXXX	9VM24XXX	9VM2GXXX	9VM2MXXX	9VM2AXXX	–
12	9VM1ZXXX	9VM25XXX	9VM2HXXX	9VM2NXXX	9VM2BXXX	–
16	9VM20XXX	9VM26XXX	9VM2IXXX	9VM2PXXX	9VM2CXXX	–
24	9VM21XXX	9VM27XXX	9VM2JXXX	9VM2QXXX	9VM2DXXX	–

XXX – length in m; other designs on request

Subject to printing errors, mistakes and technical changes

FLine™ and FLine™ smart – multifunctional housing engineering

FLine™ and FLine™ smart patch and splice housings can be used in all areas of in-house data cabling. The components are designed in such a way that speed and reliability are ensured in initial installation, maintenance and extensions.

FLine™ patch and splice housings

A replaceable cable entry on the back offers the user all the freedom he requires during installation, no matter whether a straight cable entry, a 45° angled entry or breakout cable support is required. These parts can be replaced easily on location.

FLine™ smart patch and splice housings

FLine™ smart panel engineering differs in design due to a prespecified straight cable and distribution head entry (VKT). Here it is possible to mount up to four PG glands or two distribution heads.

Facts which guarantee rapid and reliable initial installation:

General

- Standard versions of the housings are available as 1 or 2 U
- The front panel is RAL 7035
- One U can be equipped with up to 24 x SC-Duplex, 24 x LC-Duplex, 24 x MT_RJ, 24 x E 2000, 24 x ST, 24 x FC couplings
- The body of the housing is made of aluminium, ensuring low weight
- The couplings are premounted
- The admissible bending radii and the ease of assembly are observed even at high packing densities
- A telescopic extension makes the connecting components easy to access for the purposes of measurements and maintenance work
- Replaceable front panels to accommodate all usual optical fibre couplings

Splice housings

- Splice cassettes with pigtails already included. The wires in the splice cassette are ready for splicing
- Pigtails are coloured (primary and secondary coating) according to the DIN IEC 60304 colour code
- The result is rapid, safe assembly as it is no longer necessary to mark the individual pigtails

Patch housings

- The strain relief of the distribution head is based on fixing the distribution head into a V groove immediately on the housing. This means that no other complicated fixing measures are required for the distribution head on the housing
- The distribution head of the ready-made trunk is secured on the housing to prevent twisting

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

FLine™ patch/splice housing, telescopic

FLine™ splice housing

19" housing, 1 / 2 U

Characteristics:

- Installation of a maximum of 2 optical fibre cables with a maximum total of 48 fibres
- Body of housing made of aluminium, replaceable front panel made of sheet steel
- Telescopic, extension depth at least 300 mm
- Colour of front panel: grey (RAL 7035)
- Cable entry at an angle of 45° for better cable management
- Strain relief for the ready-made distribution head on the housing or PG gland for cable entries
- Dust protection
- Splice cassette with coloured pigtails,
  Gigabit Ethernet fibres (MM)
  Pigtail colour code:
  E9...10/125 according to DIN IEC 60304
  G50/125 according to DIN IEC 60304 G62,5/125 green
- Pigtails already inserted into splice cassette, splice protector
- Height: 44 mm (1 U)
  Width: 483 mm (19")
  Depth: 284 mm
  Weight: 2.4 kg
- Screen-printed markings: Channel 1-12 / 1-24, A/B coding with SC/ST/FC components

FLine™ patch housing

Components:

- Available with up to 24 slots or without components
- The following couplings can be used:
  SC-Duplex/SC-Duplex
  FC-PC, FC-PC(HRL) (SM)
  ST/ST
  E2000/E2000
  E2000HRL/E2000HRL (SM)
  MT-RJ/MT-RJ (MM)
  LC-Duplex

FLine™ breakout housing

Accessories:

- Blind plug for front panel, Splice protector (maximum of 12 pcs. in one splice cassette)

Subject to printing errors, mistakes and technical changes

FLine™ splice housing, telescopic

Single-mode standard: Insertion losses: < 0.4 dB; Return losses: > 40 dB

No. of fibres	SC-DX (Met/Cer)	ST (Met/Cer)	E2000 (Plastic/Cer)	E2000HRL (Plastic/Cer)	FC-PC (Met/Cer)	FC-PC HRL (Met/Cer)
4	9FX90204	9FX90223	9FX90232	9FX90236	9FX90240	9FX90245
8	9FX90404	9FX90423	9FX90432	9FX90436	9FX90440	9FX90445
12	9FX90604	9FX90623	9FX90632	9FX90636	9FX90640	9FX90645
24	9FX91204	9FX91223	9FX91232	9FX91236	9FX91240	9FX91245
48	9FX92404*	9FX92423*	9FX92432*	9FX92436*	9FX92440*	9FX92445*

FLine™ 110, Multimode G50/125 OM2: Insertion losses: < 0.4 dB; Return losses: > 25 dB

No. of fibres	SC-DX (Met/Cer)	SC-DX (Plastic/Ker)	ST (Met/Cer)	E2000 (Plastic/Ker)	MT-RJ (Plastic)	LC-DX (Plastic/Ker)
4	9FX50204	9FX50203	9FX50223	9FX50232	9FX50237	9FX50255
8	9FX50404	9FX50403	9FX50423	9FX50432	9FX50437	9FX50455
12	9FX50604	9FX50603	9FX50623	9FX50632	9FX50637	9FX50655
24	9FX51204	9FX51203	9FX51223	9FX51232	9FX51237	9FX51255
48	9FX52404*	9FX52403*	9FX52423*	9FX52432*	9FX52437	9FX52455

FLine™ 300, Multimode G50/125 OM3: Insertion losses: < 0.2 dB; Return losses: > 35 dB

No. of fibres	SC-DX (Met/Cer)	SC-DX (Plastic/Cer)	ST (Met/Cer)	E2000 (Plastic/Cer)	MT-RJ (Plastic)	LC-DX (Plastic/Ker)
4	9FXB0204	–	–	–	–	9FXB0255
8	9FXB0404	–	–	–	–	9FXB0455
12	9FXB0604	–	–	–	–	9FXB0655
24	9FXB1204	–	–	–	–	9FXB1255
48	9FXB2404*	–	–	–	–	9FXB2455

FLine™ 550, Multimode G50/125 OM3"e": Insertion losses: < 0.2 dB; Return losses: > 35 dB

No. of fibres	SC-DX (Met/Cer)	SC-DX (Plastic/Cer)	ST (Met/Cer)	E2000 (Plastic/Cer)	MT-RJ (Plastic)	LC-DX (Plastic/Ker)
4	9FXD0204	–	–	–	–	9FXD0255
8	9FXD0404	–	–	–	–	9FXD0455
12	9FXD0604	–	–	–	–	9FXD0655
24	9FXD1204	–	–	–	–	9FXD1255
48	9FXD2404*	–	–	–	–	9FXD2455

Multimode G62,5/125 OM1, Standard: Insertion losses: < 0.4 dB; Return losses: > 25 dB

No. of fibres	SC-DX (Met/Cer)	SC-DX (Plastic/Cer)	ST (Met/Cer)	E2000 (Plastic/Cer)	MT-RJ (Plastic)	LC-DX (Plastic/Ker)
4	9FX60204	9FX60203	9FX60223	9FX60232	9FX60237	9FX60255
8	9FX60404	9FX60403	9FX60423	9FX60432	9FX60437	9FX60455
12	9FX60604	9FX60603	9FX60623	9FX60632	9FX60637	9FX60655
24	9FX61204	9FX61203	9FX61223	9FX61232	9FX61237	9FX61255
48	9FX62404*	9FX62403*	9FX62423*	9FX62432*	9FX62437	9FX62455

*2U version, other or hybrid versions available on request
are part of the supply: mounting, splice box(es) with cover, splice protector with holder, 1xPG16 gland, pigtails plugged into couplings ready for splicing, possibly with blind plugs

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

FLine™ distribution panel, telescopic

Singlemode-standard

No. of fibres	SC-DX (Met/Cer)	ST (Met/Cer)	E2000 (Plastic/Cer)	E2000HRL (Plastic/Cer)	FC-PC (Met/Cer)	FC-PC HRL (Met/Cer)
4	9FV90204	9FV90223	9FV90232	9FV90236	9FV90240	9FV90245
8	9FV90404	9FV90423	9FV90432	9FV90436	9FV90440	9FV90445
12	9FV90604	9FV90623	9FV90632	9FV90636	9FV90640	9FV90645
24	9FV91204	9FV91223	9FV91232	9FV91236	9FV91240	9FV91245
48	9FV92404*	9FV92423*	9FV92432*	9FV92436*	9FV92440*	9FV92445*

FLine™ 110, FLine™ 300, FLine™ 550, Multimode-G50, G62.5

No. of fibres	SC-DX (Met/Cer)	SC-DX (Plastic/Cer)	ST (Met/Cer)	E2000 (Plastic/Cer)	MT-RJ (Plastic)	LC-DX (Plastic/Ker)
4	9FV90204	9FVM0203	9FV90223	9FVM0232	9FVM0237	9FVM0255
8	9FV90404	9FVM0403	9FV90423	9FVM0432	9FVM0437	9FVM0455
12	9FV90604	9FVM0603	9FV90623	9FVM0632	9FVM0637	9FVM0655
24	9FV91204	9FVM1203	9FV91223	9FVM1232	9FVM1237	9FVM1255
48	9FV92404*	9FVM2403*	9FV92423*	9FVM2432*	9FVM2437	9FVM2455

*2U version, other or hybrid versions available on request
part of supply: mounting, 1xVKT-holder, possibly with blind plugs

Subject to printing errors, mistakes and technical changes

FLine™ patch/splice housing, fixed

19" housing, 1 / 2 U

Characteristics:

- Installation of a maximum of 2 optical fibre cables with a maximum total of 48 fibres
- Body of housing made of aluminium, replaceable front panel made of sheet steel
- Colour of front panel: grey (RAL 7035)
- Cable entry at 45° angle for better cable management
- Strain relief for the ready-made distribution head on the housing or PG gland for cable entries
- Dust protection
- Splice cassette with coloured pigtails, Gigabit Ethernet fibres (MM)
- Pigtail colour code:
  E9...10/125 according to DIN IEC 60304
  G50/125 according to DIN IEC 60304
  G62.5/125 green
- Pigtails already inserted into splice cassette, splice protector
- Height: 44 mm (1 U)
  Width: 483 mm (19")
  Depth: 240 mm
  Weight: 1.2 kg
- Screen-printed markings: Channel 1-12 / 1-24, A/B coding with SC/ST/FC components

Components:

- Available with up to 24 slots or without components
- The following couplings can be used:
  SC-Duplex/SC-Duplex
  FC-PC, FC-PC(HRL) (SM)
  ST/ST
  E2000/E2000
  E2000HRL/E2000HRL (SM)
  MT-RJ/MT-RJ (MM)
  LC-Duplex

Accessories:

- Blind plug for front panel, splice protector (maximum of 12 pcs. in one splice cassette)

FLine™ patch/splice housing, fixed

Single-mode standard:

No. of fibres	SC-DX (Met/Cer)	ST (Met/Cer)	E2000 (Plastic/Cer)	E2000HRL (Plastic/Cer)	FC-PC (Met/Cer)	FC-PC HRL (Met/Cer)
4	9FW90204	9FW90223	9FW90232	9FW90236	9FW90240	9FW90245
8	9FW90404	9FW90423	9FW90432	9FW90436	9FW90440	9FW90445
12	9FW90604	9FW90623	9FW90632	9FW90636	9FW90640	9FW90645
24	9FW91204	9FW91223	9FW91232	9FW91236	9FW91240	9FW91245
48	9FW92404*	9FW92423*	9FW92432*	9FW92436*	9FW92440*	9FW92445*

FLine™ 110, FLine™ 300, FLine™ 550, Multimode-G50, G62.5

No. of fibres	SC-DX (Met/Cer)	SC-DX (Plastic/Cer)	ST (Met/Cer)	E2000 (Plastic/Cer)	MT-RJ (Plastic)	LC-DX (Plastic/Ker)
4	9FW90204	9FWM0203	9FW90223	9FWM0232	9FWM0237	9FWM0255
8	9FW90404	9FWM0403	9FW90423	9FWM0432	9FWM0437	9FWM0455
12	9FW90604	9FWM0603	9FW90623	9FWM0632	9FWM0637	9FWM0655
24	9FW91204	9FWM1203	9FW91223	9FWM1232	9FWM1237	9FWM1255
48	9FW92404*	9FWM2403*	9FW92423*	9FWM2432*	9FWM2437	9FWM2455

*2U version, other or hybrid versions available on request
part of supply: mounting, 1xVKT-holder, possibly with blind plugs

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

FLine™ patch/splice housing, fixed

Singlemode E9..10/125, Insertion losses: < 0.4 dB; Return losses: > 40 dB

No. of fibres	SC-DX (Met/Cer)	ST (Met/Cer)	E2000 (Plastic/Cer)	E2000HRL (Plastic/Cer)	FC-PC (Met/Cer)	FC-PC HRL (Met/Cer)
4	9FY90204	9FY90223	9FY90232	9FY90236	9FY90240	9FY90245
8	9FY90404	9FY90423	9FY90432	9FY90436	9FY90440	9FY90445
12	9FY90604	9FY90623	9FY90632	9FY90636	9FY90640	9FY90645
24	9FY91204	9FY91223	9FY91232	9FY91236	9FY91240	9FY91245
48	9FY92404*	9FY92423*	9FY92432*	9FY92436*	9FY92440*	9FY92445*

FLine™ 110, Multimode G50/125 OM2: Insertion losses: < 0.4 dB; Return losses: > 25 dB

No. of fibres	SC-DX (Met/Cer)	SC-DX (Plastic/Cer)	ST (Met/Cer)	E2000 (Plastic/Cer)	MT-RJ (Plastic)	LC-DX (Plastic/Ker)
4	9FY50204	9FY50203	9FY50223	9FY50232	9FY50237	9FY50255
8	9FY50404	9FY50403	9FY50423	9FY50432	9FY50437	9FY50455
12	9FY50604	9FY50603	9FY50623	9FY50632	9FY50637	9FY50655
24	9FY51204	9FY51203	9FY51223	9FY51232	9FY51237	9FY51255
48	9FY52404*	9FY52403*	9FY52423*	9FY52432*	9FY52437	9FY52455

FLine™ 300, Multimode G50/125 OM3: Insertion losses: < 0.2 dB; Return losses: > 35 dB

No. of fibres	SC-DX (Met/Cer)	SC-DX (Plastic/Cer)	ST (Met/Cer)	E2000 (Plastic/Cer)	MT-RJ (Plastic)	LC-DX (Plastic/Ker)
4	9FYB0204	–	–	–	–	9FYB0255
8	9FYB0404	–	–	–	–	9FYB0455
12	9FYB0604	–	–	–	–	9FYB0655
24	9FYB1204	–	–	–	–	9FYB1255
48	9FYB2404*	–	–	–	–	9FYB2455

FLine™ 550, Multimode G50/125 OM3"e": Insertion losses: < 0.2 dB; Return losses: > 35 dB

No. of fibres	SC-DX (Met/Cer)	SC-DX (Plastic/Cer)	ST (Met/Cer)	E2000 (Plastic/Cer)	MT-RJ (Plastic)	LC-DX (Plastic/Ker)
4	9FYD0204	–	–	–	–	9FYD0255
8	9FYD0404	–	–	–	–	9FYD0455
12	9FYD0604	–	–	–	–	9FYD0655
24	9FYD1204	–	–	–	–	9FYD1255
48	9FYD2404*	–	–	–	–	9FYD2455

Multimode G62,5/125 OM1, standard: Insertion losses: < 0.4 dB; Return losses: > 25 dB

No. of fibres	SC-DX (Met/Cer)	SC-DX (Plastic/Cer)	ST (Met/Cer)	E2000 (Plastic/Cer)	MT-RJ (Plastic)	LC-DX (Plastic/Ker)
4	9FY60204	9FY60203	9FY60223	9FY60232	9FY60237	9FY60255
8	9FY60404	9FY60403	9FY60423	9FY60432	9FY60437	9FY60455
12	9FY60604	9FY60603	9FY60623	9FY60632	9FY60637	9FY60655
24	9FY61204	9FY61203	9FY61223	9FY61232	9FY61237	9FY61255
48	9FY62404*	9FY62403*	9FY62423*	9FY62432*	9FY62437	9FY62455

*Model with 2 U; other or mixed designs available on request
Included in delivery: assembly, splice cassette(s) with cover, splice protector with holder, 1xPG16 gland, pigtails plugged into couplings ready for splicing, possibly blind plugs.

Subject to printing errors, mistakes and technical changes

FLine™ patch/splice housing smart, telescopic

19" housing, 1 / 2 U

Characteristics:

- Installation of a maximum of 2 optical fibre cables with a maximum total of 48 fibres
- Body of housing made of aluminium, replaceable front panel made of sheet steel
- Telescopic extension, extension depth at least 300 mm
- Colour of front panel: grey (RAL 7035)
- Strain relief for the ready-made distribution head on the housing or PG gland for cable entries
- Dust protection
- Splice cassette with coloured pigtails, Gigabit Ethernet fibres (MM)
- Pigtail colour code:
  E9...10/125 according to DIN IEC 60304
  G50/125 according to DIN IEC 60304
  G62.5/125 green
- Pigtails already inserted into splice cassette, splice protector
- Height: 44 mm (1 U)
  Width: 483 mm (19")
  Depth: 282 mm
  Weight: 2.4 kg
- Screen-printed markings: Channel 1-12 / 1-24, A/B coding with SC/ST/FC components

Components:

- Available with up to 24 slots or without components
- The following couplings can be used:
  SC-Duplex/SC-Duplex
  FC-PC, FC-PC(HRL) (SM)
  ST/ST
  E2000/E2000
  E2000HRL/E2000HRL (SM)
  MT-RJ/MT-RJ (MM)
  LC-Duplex

Accessories:

- Blind plug for front panel, splice protector (maximum of 12 pcs. in one splice cassette)

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

FLine™ patch/splice housing smart, telescopic

Singlemode E9..10/125, Insertion losses: < 0.4 dB; Return losses: > 40 dB

No. of fibres	SC-DX (Met/Cer)	ST (Met/Cer)	E2000 (Plastic/Cer)	E2000HRL (Plastic/Cer)	FC-PC (Met/Cer)	FC-PC HRL (Met/Cer)
4	9FS90204	9FS90223	9FS90232	9FS90236	9FS90240	9FS90245
8	9FS90404	9FS90423	9FS90432	9FS90436	9FS90440	9FS90445
12	9FS90604	9FS90623	9FS90632	9FS90636	9FS90640	9FS90645
24	9FS91204	9FS91223	9FS91232	9FS91236	9FS91240	9FS91245
48	9FS92404*	9FS92423*	9FS92432*	9FS92436*	9FS92440*	9FS92445*

FLine™ 110, Multimode G50/125 OM2: Insertion losses: < 0.4 dB; Return losses: > 25 dB

No. of fibres	SC-DX (Met/Cer)	SC-DX (Plastic/Cer)	ST (Met/Cer)	E2000 (Plastic/Cer)	MT-RJ (Plastic)	LC-DX (Plastic/Cer)
4	9FS50204	9FS50203	9FS50223	9FS50232	9FS50237	9FS50255
8	9FS50404	9FS50403	9FS50423	9FS50432	9FS50437	9FS50455
12	9FS50604	9FS50603	9FS50623	9FS50632	9FS50637	9FS50655
24	9FS51204	9FS51203	9FS51223	9FS51232	9FS51237	9FS51255
48	9FS52404*	9FS52403*	9FS52423*	9FS52432*	9FS52437	9FS52455

FLine™ 300, Multimode G50/125 OM3: Insertion losses: < 0.2 dB; Return losses: > 35 dB

No. of fibres	SC-DX (Met/Cer)	SC-DX (Plastic/Cer)	ST (Met/Cer)	E2000 (Plastic/Cer)	MT-RJ (Plastic)	LC-DX (Plastic/Cer)
4	9FSB0204	–	–	–	–	9FSB0255
8	9FSB0404	–	–	–	–	9FSB0455
12	9FSB0604	–	–	–	–	9FSB0655
24	9FSB1204	–	–	–	–	9FSB1255
48	9FSB2404*	–	–	–	–	9FSB2455

FLine™ 550, Multimode G50/125 OM3"e": Insertion losses: < 0.2 dB; Return losses: > 35 dB

No. of fibres	SC-DX (Met/Cer)	SC-DX (Plastic/Cer)	ST (Met/Cer)	E2000 (Plastic/Cer)	MT-RJ (Plastic)	LC-DX (Plastic/Cer)
4	9FSD0204	–	–	–	–	9FSD0255
8	9FSD0404	–	–	–	–	9FSD0455
12	9FSD0604	–	–	–	–	9FSD0655
24	9FSD1204	–	–	–	–	9FSD1255
48	9FSD2404*	–	–	–	–	9FSD2455

Multimode G62,5/125 OM1, standard: Insertion losses: < 0.4 dB; Return losses: > 25 dB

No. of fibres	SC-DX (Met/Cer)	SC-DX (Plastic/Cer)	ST (Met/Cer)	E2000 (Plastic/Cer)	MT-RJ (Plastic)	LC-DX (Plastic/Cer)
4	9FS60204	9FS60203	9FS60223	9FS60232	9FS60237	9FS60255
8	9FS60404	9FS60403	9FS60423	9FS60432	9FS60437	9FS60455
12	9FS60604	9FS60603	9FS60623	9FS60632	9FS60637	9FS60655
24	9FS61204	9FS61203	9FS61223	9FS61232	9FS61237	9FS61255
48	9FS62404*	9FS62403*	9FS62423*	9FS62432*	9FS62437	9FS62455

*Model with 2 U; other or mixed designs available on request
Included in delivery: assembly, splice cassette(s) with cover, splice protector with holder, 1xPG16 gland, pigtails plugged into couplings ready for splicing, possibly blind plugs.

Subject to printing errors, mistakes and technical changes

FLine™ patch/splice housing smart, fixed

19" housing, 1 / 2 U

Characteristics:

- Installation of a maximum of 2 optical fibre cables with a maximum total of 48 fibres
- Body of housing made of aluminium, replaceable front panel made of sheet steel
- Colour of front panel: grey (RAL 7035)
- Strain relief for the ready-made distribution head on the housing or PG gland for cable entries
- Dust protection
- Splice cassette with coloured pigtails, Gigabit Ethernet fibres (MM)
- Pigtail colour code:
  E9...10/125 according to DIN IEC 60304
  G50/125 according to DIN IEC 60304
  G62.5/125 green
- Pigtails already inserted into splice cassette, splice protector
- Height: 44 mm (1 U)
  Width: 483 mm (19")
  Depth: 240 mm
  Weight: 1.2 kg
- Screen-printed markings: Channel 1-12 / 1-24, A/B coding with SC/ST/FC components

Components:

- Available with up to 24 slots or without components
- The following couplings can be used:
  SC-Duplex/SC-Duplex
  FC-PC, FC-PC(HRL) (SM)
  ST/ST
  E2000/E2000
  E2000HRL/E2000HRL (SM)
  MT-RJ/MT-RJ (MM)
  LC-Duplex

Accessories:

- Blind plug for front panel, splice protector (maximum of 12 pcs. in one splice cassette)

FLine™ patch/splice housing smart, fixed

Single-mode standard:

No. of fibres	SC-DX (Met/Cer)	ST (Met/Cer)	E2000 (Plastic/Cer)	E2000HRL (Plastic/Cer)	FC-PC (Met/Cer)	FC-PC HRL (Met/Cer)
4	9FF90204	9FF90223	9FF90232	9FF90236	9FF90240	9FF90245
8	9FF90404	9FF90423	9FF90432	9FF90436	9FF90440	9FF90445
12	9FF90604	9FF90623	9FF90632	9FF90636	9FF90640	9FF90645
24	9FF91204	9FF91223	9FF91232	9FF91236	9FF91240	9FF91245
48	9FF92404*	9FF92423*	9FF92432*	9FF92436*	9FF92440*	9FF92445*

FLine™ 110, FLine™ 300™, FLine™ 550, Multimode-G50, G62.5

No. of fibres	SC-DX (Met/Cer)	SC-DX (Plastic/Cer)	ST (Met/Cer)	E2000 (Plastic/Cer)	MT-RJ (Plastic)	LC-DX (Plastic/Cer)
4	9FF90204	9FFM0203	9FF90223	9FFM0232	9FFM0237	9FFM0255
8	9FF90404	9FFM0403	9FF90423	9FFM0432	9FFM0437	9FFM0455
12	9FF90604	9FFM0603	9FF90623	9FFM0632	9FFM0637	9FFM0655
24	9FF91204	9FFM1203	9FF91223	9FFM1232	9FFM1237	9FFM1255
48	9FF92404*	9FFM2403*	9FF92423*	9FFM2432*	9FFM2437	9FFM2455

*Model with 2 U; other or mixed designs available on request
Included in delivery: assembly, 1 ready-made holder, possibly blind plugs.

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

FLine™ patch/splice housing smart, fixed

Singlemode E9..10/125, Insertion losses: < 0.4 dB; Return losses: > 40 dB

No. of fibres	SC-DX (Met/Cer)	ST (Met/Cer)	E2000 (Plastic/Cer)	E2000HRL (Plastic/Cer)	FC-PC (Met/Cer)	FC-PC HRL (Met/Cer)
4	9FG90204	9FG90223	9FG90232	9FG90236	9FG90240	9FG90245
8	9FG90404	9FG90423	9FG90432	9FG90436	9FG90440	9FG90445
12	9FG90604	9FG90623	9FG90632	9FG90636	9FG90640	9FG90645
24	9FG91204	9FG91223	9FG91232	9FG91236	9FG91240	9FG91245
48	9FG92404*	9FG92423*	9FG92432*	9FG92436*	9FG92440*	9FG92445*

FLine™ 110, Multimode G50/125 OM2, Insertion losses: < 0.4 dB; Return losses: > 25 dB

No. of fibres	SC-DX (Met/Cer)	SC-DX (Plastic/Cer)	ST (Met/Cer)	E2000 (Plastic/Cer)	MT-RJ (Plastic)	LC-DX (Plastic/Cer)
4	9FG50204	9FG50203	9FG50223	9FG50232	9FG50237	9FG50255
8	9FG50404	9FG50403	9FG50423	9FG50432	9FG50437	9FG50455
12	9FG50604	9FG50603	9FG50623	9FG50632	9FG50637	9FG50655
24	9FG51204	9FG51203	9FG51223	9FG51232	9FG51237	9FG51255
48	9FG52404*	9FG52403*	9FG52423*	9FG52432*	9FG52437	9FG52455

FLine™ 300, Multimode G50/125 OM3: Insertion losses: < 0.2 dB; Return losses: > 35 dB

No. of fibres	SC-DX (Met/Cer)	SC-DX (Plastic/Cer)	ST (Met/Cer)	E2000 (Plastic/Cer)	MT-RJ (Plastic)	LC-DX (Plastic/Cer)
4	9FGB0204	–	–	–	–	9FGB0255
8	9FGB0404	–	–	–	–	9FGB0455
12	9FGB0604	–	–	–	–	9FGB0655
24	9FGB1204	–	–	–	–	9FGB1255
48	9FGB2404*	–	–	–	–	9FGB2455

FLine™ 550, Multimode G50/125 OM3"e": Insertion losses: < 0.2 dB; Return losses: > 35 dB

No. of fibres	SC-DX (Met/Cer)	SC-DX (Plastic/Cer)	ST (Met/Cer)	E2000 (Plastic/Cer)	MT-RJ (Plastic)	LC-DX (Plastic/Cer)
4	9FGD0204	–	–	–	–	9FGD0255
8	9FGD0404	–	–	–	–	9FGD0455
12	9FGD0604	–	–	–	–	9FGD0655
24	9FGD1204	–	–	–	–	9FGD1255
48	9FGD2404*	–	–	–	–	9FGD2455

Multimode G62,5/125 OM1, standard: Insertion losses: < 0.4 dB; Return losses: > 25 dB

No. of fibres	SC-DX (Met/Cer)	SC-DX (Plastic/Cer)	ST (Met/Cer)	E2000 (Plastic/Cer)	MT-RJ (Plastic)	LC-DX (Plastic/Cer)
4	9FG60204	9FG60203	9FG60223	9FG60232	9FG60237	9FG60255
8	9FG60404	9FG60403	9FG60423	9FG60432	9FG60437	9FG60455
12	9FG60604	9FG60603	9FG60623	9FG60632	9FG60637	9FG60655
24	9FG61204	9FG61203	9FG61223	9FG61232	9FG61237	9FG61255
48	9FG62404*	9FG62403*	9FG62423*	9FG62432*	9FG62437	9FG62455

*Model with 2 U; other or mixed designs available on request
Included in delivery: assembly, splice cassette(s) with cover, splice protector with holder, 1xPG16 gland, pigtails plugged into couplings ready for splicing (primary and secondary coating), possibly blind plugs.

Subject to printing errors, mistakes and technical changes

FLine™ compact – high packing density and maximum flexibility

FLine™ compact is a user-friendly optical fibre cable patch system to hold a maximum of up to 144 fibres with conventional couplings like SC, ST, E 2000 and even 240 fibres with LC and 288 fibres at MT-RJ. In spite of its compactness, the system offers optimum optical fibre cable management. FLine™ compact is used when there is little room and maximum flexibility is required (computer centres, subnetworks).

Characteristics of FLine™ compact

- 3 U high, 7 DU deep, aluminium front panels with screen printing (exception for LC, 8 DU)
- Maximum flexibility through optional equipping with SC, ST, E2000, E2000 HRL, FC-PC, MT-RJ, LC, LC HRL and FC-PC (by the module)
- Can be equipped with up to 12 modules (10 with LC-Duplex)
- Protection of pigtails through closable cable management and splice cassettes
- The pigtails are coloured (primary and secondary coating) according to the DIN IEC colour code for safe and rapid installation
- The wires in the splice cassette are ready for splicing
- The couplings can be mounted at any time later

Cable management bar

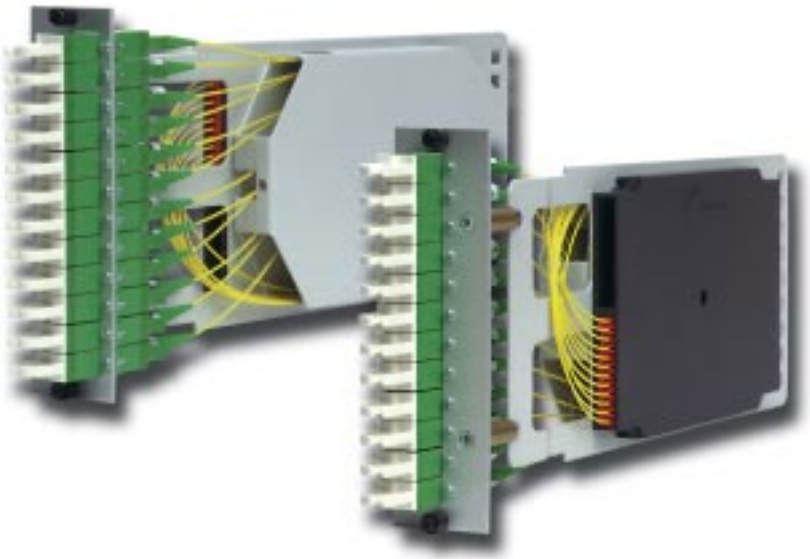
- The cable management bar can be pulled out to the rear, takes up the filled loose tube reserve loops and serves to fix the optical fibre cables
- The switching channel in the front organises the patch cord guidance while observing the bending radii.

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

Compact module

Characteristics:
- Installation of a maximum of 24 fibres
- Body of housing made of sheet steel
- Front panel made of aluminium
- Colour of front panel: aluminium
- With cable management and splice cassette rest
- With splice cassette incl. pigtails, Gigabit Ethernet fibres (MM)
- Pigtail colour code:
  E9...10/125 according to DIN IEC 60304
  G50/125 according to DIN IEC 60304
  G62.5/125 green
- Pigtails already inserted into splice cassette, splice protector
- Depth: 220 mm (without components)
- Protection of pigtails via closable cable management and splice cassettes
- The wires in the splice cassette are ready for splicing
- Fixing screws



Components:
- Available with up to 4, 8 or 12 slots or without components
- The following couplings can be used:
  SC-Duplex/SC-Duplex
  FC-PC, FC-PC(HRL) (SM)
  ST/ST
  E2000/E2000
  E2000HRL/E2000HRL (SM)
  MT-RJ/MT-RJ (MM)
  LC-Duplex (8TE)

Compact Modul with LC-Duplex 8 TE

Accessories:
- Blind plug for front panel, splice protector

Subject to printing errors, mistakes and technical changes

FLine™ compact 3 U/7 DU splice plug-in module

Splice solution:

Singlemode E9..10/125, Insertion losses: < 0.4 dB; Return losses: > 40 dB

No. of fibres	SC-DX (Met/Cer)	ST (Met/Cer)	E2000 (Plastic/Cer)	E2000HRL (Plastic/Cer)	FC-PC (Met/Cer)	FC-PC HRL (Met/Cer)
4	9FK90204	9FK90223	9FK90232	9FK90236	9FK90240	9FK90245
8	9FK90404	9FK90423	9FK90432	9FK90436	9FK90440	9FK90445
12	9FK90604	9FK90623	9FK90632	9FK90636	9FK90640	9FK90645

FLine™ 110, Multimode G50/125 OM2, Insertion losses: < 0.4 dB; Return losses: > 25 dB

No. of fibres	SC-DX (Met/Cer)	SC-DX (Plastic/Cer)	ST (Met/Cer)	E2000 (Plastic/Cer)	MT-RJ (Plastic)	LC-DX* (Plastic/Cer)
4	9FK50204	9FK50203	9FK50223	9FK50232	9FK50237	9FK50255
8	9FK50404	9FK50403	9FK50423	9FK50432	9FK50437	9FK50455
12	9FK50604	9FK50603	9FK50623	9FK50632	9FK50637	9FK50655
24	–	–	–	–	9FK51237	9FK51255

FLine™ 300, Multimode G50/125 OM3: Insertion losses: < 0.2 dB; Return losses: > 35 dB

No. of fibres	SC-DX (Met/Cer)	SC-DX (Plastic/Cer)	ST (Met/Cer)	E2000 (Plastic/Cer)	MT-RJ (Plastic)	LC-DX* (Plastic/Cer)
4	9FKB0204	–	–	–	–	9FKB0255
8	9FKB0404	–	–	–	–	9FKB0455
12	9FKB0604	–	–	–	–	9FKB0655
24	–	–	–	–	–	9FKB1255

FLine™ 550, Multimode G50/125 OM3"e": Insertion losses: < 0.2 dB; Return losses: > 35 dB

No. of fibres	SC-DX (Met/Cer)	SC-DX (Plastic/Cer)	ST (Met/Cer)	E2000 (Plastic/Cer)	MT-RJ (Plastic)	LC-DX* (Plastic/Cer)
4	9FKD0204	–	–	–	–	9FKD0255
8	9FKD0404	–	–	–	–	9FKD0455
12	9FKD0604	–	–	–	–	9FKD0655
24	–	–	–	–	–	9FKD1255

Multimode G62.5/125 OM1, standard: Insertion losses: < 0.4 dB; Return losses: > 25 dB

No. of fibres	SC-DX (Met/Cer)	SC-DX (Plastic/Cer)	ST (Met/Cer)	E2000 (Plastic/Cer)	MT-RJ (Plastic)	LC-DX* (Plastic/Cer)
4	9FK60204	9FK60203	9FK60223	9FK60232	9FK60237	9FK60255
8	9FK60404	9FK60403	9FK60423	9FK60432	9FK60437	9FK60455
12	9FK60604	9FK60603	9FK60623	9FK60632	9FK60637	9FK60655
24	–	–	–	–	9FK61237	9FK61255

* 8 DU splice plug-in-module
Other or mixed designs available on request
Included in delivery: assembly, splice cassette(s) with cover, splice protector with holder, pigtails plugged into couplings ready for splicing, possibly blind plugs.

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

FLine™ compact 3 U/7 DU patch plug-in module

Solution for preconnectorised breakoutcables:

Single-mode standard:

No. of fibres	SC-DX (Met/Cer)	ST (Met/Cer)	E2000 (Plastic/Cer)	E2000HRL (Plastic/Cer)	FC-PC (Met/Cer)	FC-PC HRL (Met/Cer)
4	9FKS0204	9FKS0223	9FKS0232	9FKS0236	9FKS0240	9FKS0245
8	9FKS0404	9FKS0423	9FKS0432	9FKS0436	9FKS0440	9FKS0445
12	9FKS0604	9FKS0623	9FKS0632	9FKS0636	9FKS0640	9FKS0645

FLine™ 110, FLine™ 300, FLine™ 550, Multimode-G50, G62.5

No. of fibres	SC-DX (Met/Cer)	SC-DX (Plastic/Cer)	ST (Met/Cer)	E2000 (Plastic/Cer)	MT-RJ (Plastic)	LC-DX* (Plastic/Cer)
4	9FKS0204	9FKM0203	9FKS0223	9FKM0232	9FKM0237	9FKM0255
8	9FKS0404	9FKM0403	9FKS0423	9FKM0432	9FKM0437	9FKM0455
12	9FKS0604	9FKM0603	9FKS0623	9FKM0632	9FKM0637	9FKM0655
24	–	–	–	–	9FKM1237	9FKM1255

* 8 DU splice plug-in-module
Other or mixed designs available on request
Included in delivery: assembly, splice cassette(s) with cover, splice protector with holder, pigtails plugged into couplings ready for splicing, possibly blind plugs.

Splice distributor Compact

Product description:

- 19" component chassis, 3 U, 84 DU, mounted and without components
- Body of housing made of aluminium
- Colour of housing: aluminium
- Colour of front panel: aluminium
- Depth: 243 mm (without compact module)

Product no.: 9FKZ0001

Cable management bar

Product description:

- 19" component chassis, 1 U
- Front panel with patch cord guidance/ cable management
- Drawer for clear organisation of filled loose tube reserve loops and fixing
- Drawer can be extended backwards
- Completely assembled incl. fastening material
- Colour: RAL 7035
- Depth: 350 mm

Product no.: 9FKZ0004

Subject to printing errors, mistakes and technical changes

FLine™ patch cords
GigaLine™ DX 100, 500, 625

Ready-made optical fibre duplex cables for patch field and workplace cabling

Type: KL-J-V(ZN)H

Sheath material: halogen-free, flame-retardant compound
Sheath colour: yellow (single-mode), orange (multimode)

Single-mode standard:: Insertion losses: < 0.4 dB; Return losses: > 40 dB

SC-Duplex/SC-Duplex	SC-Duplex/ST	ST/ST	FC-PC
9FP40XXX	9FP41XXX	9FP42XXX	9FP45XXX
FC-PC HRL/FC-PC HRL	**E2000/E2000**	**E2000 HRL/E2000 HRL**	**LC/LC**
9FP46XXX	9FP43XXX	9FP44XXX	9FP1AXXX

FLine™ 110, Multimode G50/125 OM2: Insertion losses: < 0.4 dB; Return losses: > 25 dB

SC-Duplex/SC-Duplex	SC-Duplex/ST	ST/ST	E2000/E2000
9FP02XXX	9FP05XXX	9FP08XXX	9FP11XXX
MT-RJ/MT-RJ	**SC-Duplex/MT-RJ**	**LC/LC**	**SC-Duplex/LC**
9FP14XXX	9FP17XXX	9FP5AXXX	9FP47XXX

FLine™ 300, Multimode G50/125 OM3: Insertion losses: < 0.2 dB; Return losses: > 35 dB

SC-Duplex/SC-Duplex	SC-Duplex/LC	LC/LC	
9FP3CXXX	9FP3XXXX	9FP3YXXX	

FLine™ 550, Multimode G50/125 OM3"e": Insertion losses: < 0.2 dB; Return losses: > 35 dB

SC-Duplex/SC-Duplex	SC-Duplex/LC	LC/LC	
9FP4CXXX	9FP4XXXX	9FP4YXXX	

Multimode G62.5/125 OM1, standard: Insertion losses: < 0.4 dB; Return losses: > 25 dB

SC-Duplex/SC-Duplex	SC-Duplex/ST	ST/ST	E2000/E2000
9FP03XXX	9FP06XXX	9FP09XXX	9FP12XXX
MT-RJ/MT-RJ	**SC-Duplex/MT-RJ**	**LC/LC**	**SC-Duplex/LC**
9FP15XXX	9FP18XXX	9FP6AXXX	9FP6XXXX

XXX – length in decimetres
Other or mixed designs available on request
Example: KL-J-V(ZN)H 2 E9...10/125 with SC-Duplex/SC-Duplex ready-made, length: 2 meters: 9fP40020

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

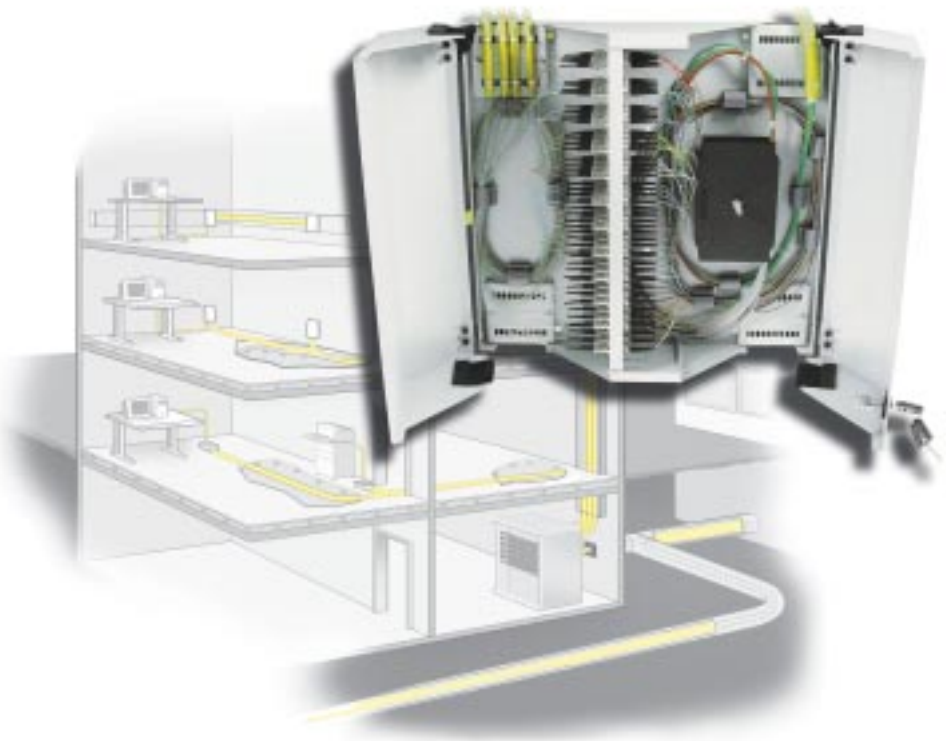
FLine™ office and floor distributors – multifunctional housings for FTTD/FTTO cabling

Network installations are increasingly being implemented with disturbance-proof optical fibre systems technology with future capabilities.
This allows EMC problems as well as different earthing potentials to be avoided for cabling reaching through whole buildings.

When a fibre-optic cabling with a star structure is used in a building, the long ranges involved make it possible to dispense with active components in the individual floors.
19" distributor cabinets and separate security areas (rooms) are no longer necessary.
The space-saving office and floor cables are perfectly suited for the transitions from high-fibre backbone cables to breakout cables for workplace cabling.

Characteristics which ensure a high degree of flexibility

- The FLine™ office and floor distributors can be optionally equipped with splice cassettes and/or distributor plates for taking up optical fibre couplings.
- Later modifications to the components used are possible at any time
- Takes up a maximum of up to 192 fibres
- The pigtails are coloured (primary and secondary coating) according to the DIN IEC 60304 colour code for safe and reliable installation
- The pigtails in the splice cassette are ready for splicing
- The arriving and departing optical fibre cables are fixed to a strain relief strip in the housing
- The cable entries are sealed via brush strips or PG glands
- Housing with two pivoted doors, lockable
- Housing colour RAL 7035



Subject to printing errors, mistakes and technical changes

FLine™ office and floor distributors – multifunctional housings for FTTD/FTTO cabling

Size A: 300 x 250 x 110 mm
The wall distributor/splice box/ can be equipped with the following components:
- Up to 8 splice cassettes with a total of 96 fibres
- One integrated coupling panel can be equipped with up to 48 couplings for optical fibre plug connectors
- Optionally, 2 different cable entry modules can be used (1 x at top and 1 x at bottom)

Size B: 410 x 410 x 110 mm
The wall distributor/splice box can be equipped with the following components:
- Up to 16 splice cassettes with a total of 192 fibres
- One integrated coupling panel can be equipped with up to 96 couplings for optical fibre plug connectors
- Optionally, 4 different cable entry modules can be used (2 x at top and 2 x at bottom)

Coupling panel

Cable entry modules

In general:
- Optionally, 4 different cable entry modules can be used (2 x at top at 2 x at bottom)
  - Brush strip
  - 2 x PG 16
  - 2 x PG 21

Scope of delivery:
- Optical fibre wall distributor/splice box housing empty, without cable entry modules with standard closing cylinder

Accessories:
- Coupling panel to take up ST, SC-Duplex, E 2000, LC-Duplex, MT-RJ
- Splice cassette with holder and cover
- Pigtails
- Crimp/shrink splice protector
- Cable guide bar with velcro® band
- Dummy plates

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

Office/wall distributor/splice box		Product no.	Office/wall distributor/splice box		Product no.
Size A:	300 x 250 x 110 mm Housing empty	9FW048V	**Size B:**	410 x 410 x 110 mm Housing empty	9FW096V

Coupling panel

for a max. of	12 x SC-Duplex	9FZW1204	for a max. of	24 x SC-Duplex	9FZW2404
for a max. of	24 x ST 24 x FC-PC	9FZW1223	for a max. of	48 x ST 48 x FC-PC	9FZW2423
for a max. of	24 x E 2000, 12 x LC-Duplex 24 x MT-RJ	9FZW1232	for a max. of	48 x E 2000 24 x LC-Duplex 48 x MT-RJ	9FZW2432

Couplings

Multimode		Single-mode	
SC-Duplex	9FZ90004	SC-Duplex	9FZ90004
ST	9FZ90023	ST	9FZ90023
LC-Duplex	9FZM0055	LC-Duplex	9FZ90055
E 2000	9FZM0032	E 2000	9FZ90032
MT-RJ	9FZM0037	MT-RJ	9FZ90037
FC-PC	9FZM0040	FC-PC	9FZ90040

Cable entry modules

2 x PG 16	9FZZ0069
2 x PG 21	9FZZ0070
Brush strip	9FZZ0071
Dummy plate	9FZZ0072
Cable guide bar with velcro® band	9FZZ0073
Splice cassette	9FZZ0005
Cover for the splice cassette	9FZZ0021
Splice protector	9FZZ0006
Splice protector holder	9FZZ0007

Subject to printing errors, mistakes and technical changes

Splice cassettes with inserted pigtails	Product no.
FLine™ 110, Multimode G 50/125, Insertion losses < 0.4 dB; Return losses > 25 dB „OM2e"	
Splice cassette with 12 x SC-pigtails	9F350601
Splice cassette with 12 x ST-pigtails	9F350620
Splice cassette with 12 x LC-pigtails	9F350655
Splice cassette with 12 x E 2000-pigtails	9F350632
Splice cassette with 12 x FC-PC-pigtails	9F350640
FLine™ 300, Multimode G 50/125, Insertion losses < 0.2 dB; Return losses > 35 dB „OM3"	
Splice cassette with 12 x SC-pigtails	9F3B0601
Splice cassette with 12 x LC-pigtails	9F3B0655
FLine™ 550, Multimode G 50 / 125 , Insertion losses < 0.2 dB; Return losses > 35 dB „OM3e"	
Splice cassette with 12 x SC-pigtails	9F3D0601
Splice cassette with 12 x LC-pigtails	9F3D0655
Single-mode E 9...10/125, Insertion losses < 0.4 dB, Return losses > 40 dB	
Splice cassette with 12 x SC-pigtails	9F390601
Splice cassette with 12 x ST-pigtails	9F390620
Splice cassette with 12 x LC-pigtails	9F390655
Splice cassette with 12 x E 2000 HRL-pigtails	9F390636
Splice cassette with 12 x E 2000-pigtails	9F390632
Splice cassette with 12 x FC-PC-pigtails	9F390640
Splice cassette with 12 x FC-PC-HRL-pigtails	9F390645

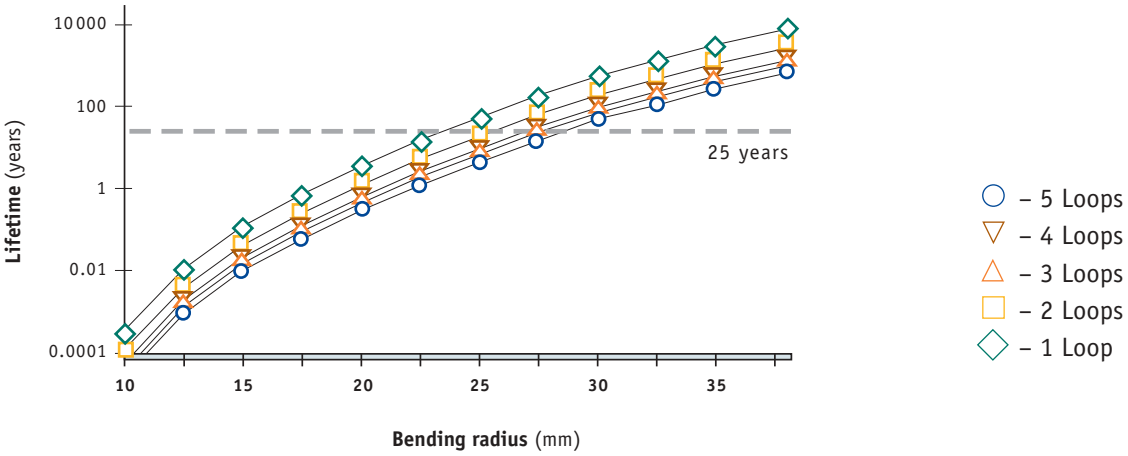
All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

FLine™ – the complete fibre-to-the-desk system

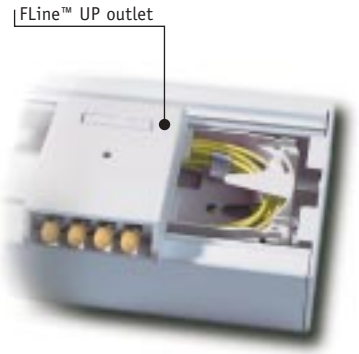
Compact optical fibre connection engineering – high performance, immunity to disturbances, future capabilities

Of course, the FLine™ system also includes comprehensive connectivity solutions for fibre-to-the-desk. Here it is possible to use a wide range of outlets with the corresponding materials for installation in ducts and Floorbox solutions



As a result of a specific outlet design, bending never goes below the admissible bending radii of the fibres, thus ensuring that the fibre keeps its full functionality even in the long term.

- A defined bending radius of the fibre ensures the lifetime
- An effective strain relief for cables and pigtails and clean guidance within the outlet ensure minimum strain on the fibre and preservation of the physical characteristics
- The dimensions of the outlets are as small as possible



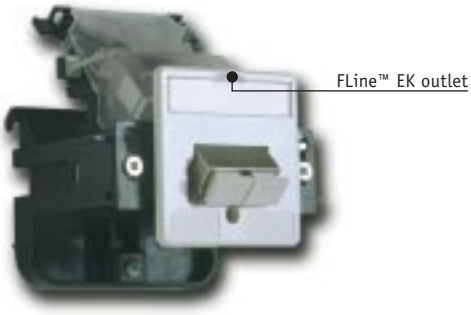
FLine™ UP outlet

The UP outlet can be installed in ducts or concealed mounting can be used. The special features of this professional version are as follows:

- It can be equipped with up to two duplex or 4 simplex couplings
- Possible types of coupling: SC-Duplex, ST-Simplex, E 2000, LC-Duplex
- The bending radius of the fibre of at least 30 mm is ensured by the cable reservoir and the cable guide
- The outlet has a downward inclination of 10°. This ensures optimum protection against mechanical stress.
- The universal carrying frame is compatible with usual mounting cups
- All current connecting techniques are supported:
  - Mounting of optical fibre plugs on location
  - Use of ready-made cables
  - Splicing of pigtails

Subject to printing errors, mistakes and technical changes

FLine™ EK outlet



The advantage of the EK outlet is its compact design. It can be installed in ducts in a horizontal or vertical position.

The EK outlet has the following characteristics:

- It can be equipped with up to one duplex coupling or two simplex couplings
- Possible types of coupling: SC-Duplex, ST-Simplex, E 2000, LC-Duplex
- The integrated cable guide ensures compliance with the admissible bending radius
- The universal central piece can be combined with various different switch programs
- Ready-mounted plugs as well as plugs mounted on location can be used

Designation, coupling	Product no.
ST/ST Monomode, ceramic	9FK03010
SC/ST Monomode, ceramic	9FK03011
SC/SC Monomode, ceramic	9FK03012
ST/ST Multimode, ceramic	9FK03043
SC/ST Multimode, ceramic	9FK03044

Designation, coupling	Product no.
SC/SC Multimode, ceramic	9FK03045
ST/ST Multimode, PhBz	9FK03046
SC/ST Multimode, PhBz	9FK03047
SC/SC Multimode, PhBz	9FK03048

Installation systems for Ackermann floorbox GES 6 and GES 9

More and more frequently, modern office infrastructures are being based on flexible underfloor systems (double floors, duct systems).
KERPEN has followed the leading manufacturers of these systems and developed suitable connecting components.

Product features:

- The device cup can take up 4 X SC Duplex, 4 x E 2000, 4 x MT-RJ and 4 X LC Duplex
- The device cup consists of 1.5 mm sheet steel
- Surface powder-coated RAL 9005
- Self-adhesive marking strips for marking as required

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

Solution for ready-made cables

FLine™ Device cup (dual)

Product description:

- For taking up the mounting plates for optical fibre couplings
- For Ackermann floorboxes GES 6

Product no.: 9ZE60001

FLine™ Device cup (triple)

Product description:

- For taking up the mounting plates for optical fibre couplings (as in examples on top right)
- For Ackermann floorboxes GES 6

Product no.: 9ZE60002

FLine™ Adjustable cable strain relief

Product description:

- For up to 9 individual cables

Product no.: 9ZE60004

FLine™ Mounting plate

Product description:

- For up to 4 x SC-Duplex couplings

Product no.: 9FZZ0038

FLine™ Mounting plate

Product description:

- For up to 4 x LC/Duplex and/or 4 x E 2000 Simplex

Product no.: 9FZZ0079

Floorbox solutions for splices (pigtails)

FLine™ Overlength module

Product description:

- For storing the wires and for the strain relief of the optical fibre cables

Product no. (GES 9): 9FZZ0080

Product no. (GES 6): 9FZZ00180

FLine™ Splice tray with splice holder

Product description:

- For 12 x splice protector

Product no.: 9FZZ0080

Subject to printing errors, mistakes and technical changes

GigaLine™ – enhanced optical fibre technology

**The increasing degree of automation in industry and the rising information density in office communication make increasing demands on the transmission of analog and digital data.
Conventional links based on copper cables are now often reaching the limits of their capacity.
The problems caused by electromagnetic effects, differences in potential and operation in explosive environments require technical and economical solutions.
The use of GigaLine™ optical fibre cables solves these problems more reliably than the use of conventional copper cables.**

The special advantages of GigaLine™ optical fibre cables make them suitable in the following cases:

- When electromagnetic effects can occur
- When reliable potential separation is required
- When low attenuation and thus long channels are necessary
- When crosstalk must not occur
- When sparks must not form (for explosive environments)
- When low weight and small dimensions are an advantage
- When increase security against tapping is required

KERPEN GigaLine™ means a comprehensive delivery program for optical fibre cables for virtually all applications.

Besides easy-to-assemble internal cables with compact wire technology for the patch and floor area, universal cables for the backbone indoors and outdoors and the classical outdoor cables for LAN/MAN and WAN, KERPEN offers manufacturing options for a large number of additional designs such as GigaLine™ outdoor cables with a corrugated steel sheath, a steel band or SWA armour or with an additional lead covering as a protection against chemicals.

Gigabit and 10-Gigabit Ethernet: new demands on the quality of the optical fibre cabling

Improved multimode fibres for Gigabit Ethernet ("OM2e")

Gigabit Ethernet in the backbone of structured in-house cabling is now often a reality or is soon to be implemented. The corresponding standard IEEE 802.3z was made official as early as July 1998.

As a consequence of the requirements this entails, since the beginning of this year GigaLine™ has been delivered with improved multimode fibres. The process used to manufacture the fibres has been optimised in such a way that the profile of the multimode fibre is extremely precise and disturbances in the fibre core are virtually eliminated. As differential mode delay does not occur under these circumstances, mode-conditioning patch cords are not necessary.

For four years now, the standard versions of GigaLine™ optical fibre cables with an improved multimode fibre G50/125 ("M2e") have provided bandwidth/distance products of 600 MHz x km in the first window and 1200 MHz x km in the second window as well as Gigabit Ethernet segment lengths of 750 / 2000 m.

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

Improved multimode fibres for 10 Gigabit Ethernet (OM3, "OM3e")

Just a few months after publication of this standard, IEEE started work on the next stage of development with a higher speed: 10-Gigabit Ethernet.

The draft of this new 10-Gigabit Ethernet standard was ratified as early as June 2002. The official standard was also published by the IEEE in autumn 2002.

The development of a 50 µm multimode fibre for 10 GbE applications up to 300 m and optimised for 850 nm lasers was also successful. This type of fibre was not only given a standard of its own (OM3) in the 2nd Edition of the cabling standard EN 50173 – it was also included in the GigaLine™ product program as early as spring 2002.

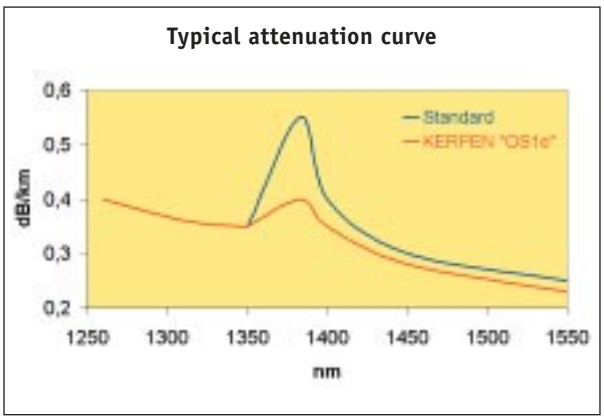
However, development continues even with the newly developed OM3 fibre. In many cases, the distances to be bridged in the backbone exceed the 300 m possible with a standard OM3 fibre. For this field of application, KERPEN has been offering GigaLine™ optical fibre cables with further improved "OM3e" fibres since November 2002. These fibres offer optimum conditions for transmitting 10 GbE at segment lengths of up to 550 m. This allows the economical implementation of 10 GbE in the backbone of a building in virtually all possible cases.

Improved single-mode fibres for increased transmission capacity ("OS1e")

In order to bridge even longer distances, since November 2003 KERPEN has complemented the GigaLine™ optical fibre cables with high-quality multimode fibres of the categories "OM2e", OM3 and "OM3e" by also offering GigaLine™ cables with improved single-mode fibres of the category "OS1e".

Besides the maximum possible 10 Gigabit Ethernet segment lengths of 10 / 40 km, KERPEN GigaLine™ cables with "OS1e" fibres also an increased transmission capacity via a higher maximum degree of utilisation of the fibre.

This higher maximum degree of utilisation of the "OS1e" fibre is achieved by reducing the OH peak usual for single-mode fibres up to now, an attenuation peak at 1383 nm.



These fibres allow the use of CWDM (Coarse Wavelength Division Multiplex), a method for the parallel transmission of different wavelengths with a channel separation of 20 nm in the so-called E band (1360 – 1460 nm).

The minimum demands made on these improved single-mode fibres with a reduced OH peak are defined in the ITU G.652.C (International Telecommunication Union). Among other requirements, the fibre attenuation must be < 0.4 dB/km over the entire wavelength range.

With attenuation values of 0.36 dB/km at 1310 nm and 0.22 dB/km at 1550 nm, KERPEN GigaLine™ cables with "OS1e" fibres are far below these maximum values. Thus, at 1550 nm these fibres also provide a more than 10% longer range than the standard fibres used up to now.

The control of the data flows of the future therefore requires maximum care in the planning and execution of the passive network infrastructure.

Subject to printing errors, mistakes and technical changes

Comparison of the transmission characteristics of KERPEN GigaLine™ with the requirements of the standard:

Comparison between fibre category OM1 and KERPEN GigaLine™ G62.5/125 "OM1e"

	850 nm		1300/1310 nm	
	Requirements of standard	KERPEN GigaLine™	Requirements of standard	KERPEN GigaLine™
Attenuation	3.5 dB/km	3.0 dB/km	1.5 dB/km	0.7 dB/km
Bandwidth/length product	200 MHz x km	250 MHz x km	500 MHz x km	800 MHz x km
Gigabit Ethernet segment length	275 m	500 m	550 m	1000 m
10 Gigabit Ethernet segment length	33 m	65 m	300 m	450 m

Comparison between fibre category OM2 and KERPEN GigaLine™ G50/125 "OM2e"

	850 nm		1300/1310 nm	
	Requirements of standard	KERPEN GigaLine™	Requirements of standard	KERPEN GigaLine™
Attenuation	3.5 dB/km	2.5 dB/km	1.5 dB/km	0.7 dB/km
Bandwidth/length product	500 MHz x km	600 MHz x km	500 MHz x km	1200 MHz x km
Gigabit Ethernet segment length	550 m	750 m	550 m	2000 m
10 Gigabit Ethernet segment length	82 m	110 m	300 m	900 m

Comparison between fibre category OM3 and KERPEN GigaLine™ G50/125 OM3

	850 nm		1300/1310 nm	
	Requirements of standard	KERPEN GigaLine™	Requirements of standard	KERPEN GigaLine™
Attenuation	3.5 dB/km	2.5 dB/km	1.5 dB/km	0.7 dB/km
Bandwidth/length product	1500 MHz x km	1500 MHz x km	500 MHz x km	500 MHz x km
Gigabit Ethernet segment length	550 m	900 m	550 m	550 m
10 Gigabit Ethernet segment length	300 m	300 m	300 m	300 m

Comparison between fibre category OM1 and KERPEN GigaLine™ G50/125 "OM3e"

	850 nm		1300/1310 nm	
	Requirements of standard	KERPEN GigaLine™	Requirements of standard	KERPEN GigaLine™
Attenuation	3.5 dB/km	2.5 dB/km	1.5 dB/km	0.7 dB/km
Bandwidth/length product	1500 MHz x km	3000 MHz x km	500 MHz x km	500 MHz x km
Gigabit Ethernet segment length	550 m	1000 m	550 m	550 m
10 Gigabit Ethernet segment length	300 m	550 m	300 m	300 m

Comparison between fibre category OS1 and KERPEN GigaLine™ E9...10/125 "OS1e"

	850 nm		1300/1310 nm	
	Requirements of standard	KERPEN GigaLine™	Requirements of standard	KERPEN GigaLine™
Attenuation	1.0 dB/km	0.36 dB/km	1.0 dB/km	0.22 dB/km
Attenuation bei 1383 nm			nicht definiert	" 0.4 dB/km
10 Gigabit Ethernet segment length	10,000 m	40,000 m	10,000 m	40,000 m

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

GigaLine™ indoor optical fibre cables

GigaLine™ DX 100, 500, 625
GigaLine™ DXO 100, 500, 625
GigaLine™ AT 100, 500, 625
GigaLine™ M 100, 500, 625

Easy plug assembly and good splicing behaviour are the characteristics of GigaLine™ indoor cables.

In the standard version, all designs of indoor cables are supplied with a halogen-free outer sheath compound.

GigaLine™ indoor cables are flame-retardant according to IEC 60332-1 and usually also according to IEC 60332-3.

They also have the following characteristics:

- High flexibility
- Excellent resistance to transverse and longitudinal stress and to thermal stress
- High tensile strength

Subject to printing errors, mistakes and technical changes

GigaLine™ DX 100
GigaLine™ DX 500
GigaLine™ DX 625

Indoor optical fibre cables (Duplex Figure 8)
KL-J-V(ZN)H 26/E ...

Structure:

Two compact wires in a figure 8 sheath with a separator and strain relief.
Sheath: halogen-free compound

Field of application:

Work area/patch cords, suitable for direct plug mounting and splicing

Dimensions	Outer Ø	Weight	Tensile strength	Transverse compression strength		Fire load		Product no.	Sheath colour
	mm (approx.)	kg/km (approx.)	N (approx.)	permanent N/cm (approx.)	short-term N/cm (approx.)	MJ/m (approx.)	kWh/m (approx.)		
2 G50/125	2.8x5.6	18	500 (2x250)	50	100	0.36	0.10	8DA20003	orange
2 G50/125 OM3	2.8x5.6	18	500 (2x250)	50	100	0.36	0.10	8DA50003	orange
2 G62.5/125	2.8x5.6	18	500 (2x250)	50	100	0.36	0.10	8DB70003	orange
2 E9...10/125	2.8x5.6	18	500 (2x250)	50	100	0.36	0.10	8DC72001	yellow

GigaLine™ DXO 100
GigaLine™ DXO 500
GigaLine™ DXO 625

Indoor optical fibre cables (Duplex Figure 0)
KL-AT-V(ZN)HH 26/E ...

Structure:

Two individual cables with strain relief (Ø 2.1 mm; compact wires in inner sheath).
Sheath: halogen-free compound

Field of application:

Floor cabling, suitable for direct plug mounting and splicing

Dimensions	Outer ø	Weight	Tensile strength	Transverse compression strength		Fire load		Product no.			
	mm (approx.)	kg/km (approx.)	N (approx.)	permanent N/cm (max.)	short-term N/cm (max.)	MJ/m (approx.)	kWh/m (approx.)	G 50/125	G 50/125 OM3	G 62.5/125	E 9...10/125
2 G/E	3.1x5.2	17	600 (2x300)	50	100	0.39	0.11	8DA20011 colour: orange	8DA50011 colour: orange	8DB70011 colour: orange	8DC70010 colour: yellow

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

GigaLine™ AT 100
GigaLine™ AT 500
GigaLine™ AT 625

Indoor optical fibre cables, splittable (breakout cables)
KL-AT-V(ZN)HH n G/E ...

Structure:

Up to 12 individual cables with strain relief (Ø 2.1 mm; compact wires in inner sheath) stranded under an outer sheath. Sheath: halogen-free compound, colour: yellow

Field of application:

Floor cabling, suitable for direct plug mounting and splicing

Dimensions	Outer ø	Weight	Tensile strength	Transverse compression strength		Fire load		Product no.			
				permanent	short-term						
	mm (approx.)	kg/km (approx.)	N (approx.)	N/cm (max.)	N/cm (max.)	MJ/m (approx.)	kWh/m (approx.)	G 50/125	G 50/125 OM3	G 62.5/125	E 9...10/125
4 G/E	7.0	46	1200	50	100	1.00	0.28	8BA20002	8BA50002	8BB70002	8BC70002
6 G/E	8.2	66	1800	50	100	1.60	0.44	8BA20003	8BA50003	8BB70003	8BC70003
8 G/E	9.6	83	2400	50	100	2.25	0.63	8BA20004	8BA50004	8BB70004	8BC70004
10 G/E	11.2	113	3000	50	100	2.75	0.76	8BA20005	8BA50005	8BB70005	8BC70005
12 G/E	12.4	135	3600	50	100	3.05	0.85	8BA20006	8BA50006	8BB70006	8BC70006

GigaLine™ M 100
GigaLine™ M 500
GigaLine™ M 625

Indoor optical fibre cables, (multi)
KL-J-V(ZN)H n G/E ...

Structure:

Up to 12 individual cables stranded under an outer sheath, with common strain relief.
Sheath: halogen-free compound, colour: yellow

Field of application:

Floor cabling, suitable for direct plug mounting and splicing.

Dimensions	Outer ø	Weight	Tensile strength	Transverse compression strength		Fire load		Product no.			
				permanent	short-term						
	mm (approx.)	kg/km (approx.)	N (approx.)	N/cm (max.)	N/cm (max.)	MJ/m (approx.)	kWh/m (approx.)	G 50/125	G 50/125 OM3	G 62.5/125	E 9...10/125
4 G/E	5.2	24	400	50	100	0.45	0.13	8MA20002	8MA50002	8MB70002	8MC70002
6 G/E	5.8	28	600	50	100	0.50	0.15	8MA20003	8MA50003	8MB70003	8MC70003
8 G/E	5.8	30	600	50	100	0.55	0.17	8MA20004	8MA50004	8MB70004	8MC70004
10 G/E	6.3	34	800	50	100	0.60	0.18	8MA20005	8MA50005	8MB70005	8MC70005
12 G/E	6.3	37	800	50	100	0.65	0.19	8MA20006	8MA50006	8MB70006	8MC70006

Subject to printing errors, mistakes and technical changes

GigaLine™ universal optical fibre cables

GigaLine™ smart DQ 100, 500, 625 s
GigaLine™ DQ 100, 500, 625 U

GigaLine™ universal cables can be used for house lead-ins without additional transfer points: universal... and they cut costs.

GigaLine™ universal cables can be used outdoors and indoors, especially in the case of increased mechanical requirements.

GigaLine™ – the smarter solution for campus and backbone:

Now there is a universal cable with optimised performance:

- Space-saving
- Easy to assemble
- Reliable installation

At an outer diameter of only approx. 6.7 mm, the 12-fibre model with a central filled loose tube achieves a strength of 1500 N.

GigaLine™ universal cables with rodent protection:

Equipped with a non-metallic rodent protection made of glass fibres.
Another guarantee of safety: flame-retardant according to IEC 60332-3 Cat. C.

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

GigaLine™ smart DQ 100 s
GigaLine™ smart DQ 500 s
GigaLine™ smart DQ 625 s

Universal optical fibre cable, longitudinally watertight
KL-U-DQ(ZN)H n x m G/E ...

Structure:

Filled loose tube, central or stranded, water blocking tape, strain relief.
Sheath: halogen-free compound, colour: yellow

Field of application:

Campus/backbone cabling, suitable for splicing, indoor installation in the case of increased mechanical requirements, outdoor installation in dry tubes, house lead-ins possible without additional transfer points (splices).

Dimensions	Outer ø	Weight	Tensile strength	Transverse compression strength		Fire load		Product no.			
				permanent	short-term			G 50/125	G 50/125 OM3	G 62.5/125	E 9...10/125
	mm (approx.)	kg/km (approx.)	N (approx.)	N/cm (max.)	N/cm (max.)	MJ/m (approx.)	kWh/m (approx.)				
1 x 2	6.7	44	1500	100	300	0.78	0.22	8EA20021	8EA50021	8EB70021	8EC70021
1 x 4	6.7	44	1500	100	300	0.78	0.22	8EA20022	8EA50022	8EB70022	8EC70022
1 x 6	6.7	44	1500	100	300	0.78	0.22	8EA20023	8EA50023	8EB70023	8EC70023
1 x 8	6.7	44	1500	100	300	0.78	0.22	8EA20024	8EA50024	8EB70024	8EC70024
1 x 10	6.7	44	1500	100	300	0.78	0.22	8EA20025	8EA50025	8EB70025	8EC70025
1 x 12	6.7	44	1500	100	300	0.78	0.22	8EA20026	8EA50026	8EB70026	8EC70026
1 x 16	7.8	56	1500	100	300	1.09	0.30	8EA20027	8EA50027	8EB70027	8EC70027
1 x 20	7.8	56	1500	100	300	1.09	0.30	8EA20028	8EA50028	8EB70028	8EC70028
1 x 24	7.8	56	1500	100	300	1.09	0.30	8EA20029	8EA50029	8EB70029	8EC70029
2 x 8	12.0	122	2500	100	300	2.20	0.61	8EA20201	8EA50201	8EB70201	8EC70201
2 x 10	12.0	122	2500	100	300	2.20	0.61	8EA20202	8EA50202	8EB70202	8EC70202
3 x 10	12.0	122	2500	100	300	2.20	0.61	8EA20203	8EA50203	8EB70203	8EC70203
4 x 10	12.0	122	2500	100	300	2.20	0.61	8EA20204	8EA50204	8EB70204	8EC70204
5 x 10	12.0	122	2500	100	300	2.20	0.61	8EA20205	8EA50205	8EB70205	8EC70205
2 x 12	12.0	122	2500	100	300	2.20	0.61	8EA20206	8EA50206	8EB70206	8EC70206
3 x 12	12.0	122	2500	100	300	2.20	0.61	8EA20207	8EA50207	8EB70207	8EC70207
4 x 12	12.0	122	2500	100	300	2.20	0.61	8EA20208	8EA50208	8EB70208	8EC70208
5 x 12	12.0	122	2500	100	300	2.20	0.61	8EA20209	8EA50209	8EB70209	8EC70209

Subject to printing errors, mistakes and technical changes

GigaLine™ DQ 100 U
GigaLine™ DQ 500 U
GigaLine™ DQ 625 U

Universal optical fibre cable, longitudinally watertight, with non-metallic rodent protection
KL-U-DQ(ZNS)H n x m G/E ...

Structure:

Filled loose tube, central or stranded, water blocking tape, non-metallic rodent protection.
Sheath: halogen-free compound, colour: yellow

Field of application:

Campus/backbone cabling, suitable for splicing, indoor installation in the case of increased mechanical requirements and danger through rodents, outdoor installation in dry tubes, house lead-ins possible without additional transfer points (splices).

Dimensions	Outer ø	Weight	Tensile strength	Transverse compression strength		Fire load		Product no.			
				permanent	short-term						
	mm (approx.)	kg/km (approx.)	N (approx.)	N/cm (max.)	N/cm (max.)	MJ/m (approx.)	kWh/m (approx.)	G 50/125	G 50/125 OM3	G 62.5/125	E 9...10/125
1 x 2	9.2	85	2500	200	500	1.00	0.30	8UA20001	8UA50001	8UB70001	8UC70001
1 x 4	9.2	85	2500	200	500	1.00	0.30	8UA20002	8UA50002	8UB70002	8UC70002
1 x 6	9.2	85	2500	200	500	1.00	0.30	8UA20003	8UA50003	8UB70003	8UC70003
1 x 8	9.2	85	2500	200	500	1.00	0.30	8UA20004	8UA50004	8UB70004	8UC70004
1 x 10	9.2	85	2500	200	500	1.00	0.30	8UA20005	8UA50005	8UB70005	8UC70005
1 x 12	9.2	85	2500	200	500	1.00	0.30	8UA20006	8UA50006	8UB70006	8UC70006
1 x 16	9.7	90	2500	200	500	1.10	0.32	8UA20007	8UA50007	8UB70007	8UC70007
1 x 20	9.7	90	2500	200	500	1.10	0.32	8UA20008	8UA50008	8UB70008	8UC700080
1 x 24	9.7	90	2500	200	500	1.10	0.32	8UA20009	8UA50009	8UB70009	8UC70009
2 x 8	13.1	175	6000	200	500	2.84	0.79	8UA20N01	8UA50N01	8UB70N01	8UC70N01
2 x 10	13.1	175	6000	200	500	2.84	0.79	8UA20N02	8UA50N02	8UB70N02	8UC70N02
3 x 10	13.1	175	6000	200	500	2.84	0.79	8UA20N03	8UA50N03	8UB70N03	8UC70N03
4 x 10	13.1	175	6000	200	500	2.84	0.79	8UA20N04	8UA50N04	8UB70N04	8UC70N04
5 x 10	13.1	175	6000	200	500	2.84	0.79	8UA20N05	8UA50N05	8UB70N05	8UC70N05
2 x 12	13.1	175	6000	200	500	2.84	0.79	8UA20N06	8UA50N06	8UB70N06	8UC70N06
3 x 12	13.1	175	6000	200	500	2.84	0.79	8UA20N07	8UA50N07	8UB70N07	8UC70N07
4 x 12	13.1	175	6000	200	500	2.84	0.79	8UA20N08	8UA50N08	8UB70N08	8UC70N08
5 x 12	13.1	175	6000	200	500	2.84	0.79	8UA20N09	8UA50N09	8UB70N09	8UC70N09
6 x 12	15.4	225	6000	200	500	4.10	1.14	8UA20N10	8UA50N10	8UB70N10	8UC70N10
8 x 12	15.4	225	6000	200	500	4.10	1.14	8UA20N11	8UA50N11	8UB70N11	8UC70N11
10 x 12	16.9	265	6000	200	500	5.14	1.43	8UA20N12	8UA50N12	8UB70N12	8UC70N12
12 x 12	18.7	320	6000	200	500	6.20	1.72	8UA20N13	8UA50N13	8UB70N13	8UC70N13

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

GigaLine™ outdoor optical fibre cables

GigaLine™ DQ 100, 500, 625 N
GigaLine™ DQ 100, 500, 625 SR

Excellent performance, robust design but still easy to handle: these are the features of GigaLine™ outdoor cables.

GigaLine™ outdoor cables were designed for use in city networks and industrial plants and in the campus and backbone area of LAN cabling and meet all demands made on transmission and installation conditions.

Besides the designs with non-metallic rodent protection, the GigaLine product range also includes versions with a corrugated steel armour.

If neither rodent protection nor mechanical protection are required, there are versions with a simple non-metallic strain relief, alternatively with an easy-to-assemble dry twisted structure or a classical petrolate filling, the latter optionally with a layered sheath as a perfect protection from humidity.

A wide range of additional designs can also be manufactured, for example GigaLine™ outdoor cables with steel band or SWA armour or with an additional lead covering as a protection against chemicals.

Subject to printing errors, mistakes and technical changes

GigaLine™ DQ 100 N
GigaLine™ DQ 500 N
GigaLine™ DQ 625 N

Outdoor optical fibre cable, longitudinally watertight,
with non-metallic rodent protection
KL-A-DQ(ZNS)2Y n x m G/E ...

Structure:

Filled loose tube, central or stranded, water blocking tape, non-metallic rodent protection.
Sheath: PE, colour: black

Field of application:

Outdoor cable for direct ground burial or in tubes, for MAN (city networks) and LAN (campus/backbone), suitable for splicing.

Dimensions	Outer ø	Weight	Tensile strength	Transverse compression strength		Fire load		Product no.			
				permanent	short-term			G 50/125	G 50/125 OM3	G 62.5/125	E 9...10/125
	mm (approx.)	kg/km (approx.)	N (approx.)	N/cm (max.)	N/cm (max.)	MJ/m (approx.)	kWh/m (approx.)				
1 x 2	9.2	70	2500	200	500	1.75	0.51	8AA20001	8AA50001	8AB70001	8AC70001
1 x 4	9.2	70	2500	200	500	1.75	0.51	8AA20002	8AA50002	8AB70002	8AC70002
1 x 6	9.2	70	2500	200	500	1.75	0.51	8AA20003	8AA50003	8AB70003	8AC70003
1 x 8	9.2	70	2500	200	500	1.75	0.51	8AA20004	8AA50004	8AB70004	8AC70004
1 x 10	9.2	70	2500	200	500	1.75	0.51	8AA20005	8AA50005	8AB70005	8AC70005
1 x 12	9.2	70	2500	200	500	1.75	0.51	8AA20006	8AA50006	8AB70006	8AC70006
1 x 16	9.7	75	2500	200	500	1.85	0.55	8AA20007	8AA50007	8AB70007	8AC70007
1 x 20	9.7	75	2500	200	500	1.85	0.55	8AA20008	8AA50008	8AB70008	8AC70008
1 x 24	9.7	75	2500	200	500	1.85	0.55	8AA20009	8AA50009	8AB70009	8AC70009
2 x 8	13.1	140	6000	200	500	4.13	1.15	8AA20N01	8AA50N01	8AB70N01	8AC70N01
2 x 10	13.1	140	6000	200	500	4.13	1.15	8AA20N02	8AA50N02	8AB70N02	8AC70N02
3 x 10	13.1	140	6000	200	500	4.13	1.15	8AA20N03	8AA50N03	8AB70N03	8AC70N03
4 x 10	13.1	140	6000	200	500	4.13	1.15	8AA20N04	8AA50N04	8AB70N04	8AC70N04
5 x 10	13.1	140	6000	200	500	4.13	1.15	8AA20N05	8AA50N05	8AB70N05	8AC70N05
2 x 12	13.1	140	6000	200	500	4.13	1.15	8AA20N06	8AA50N06	8AB70N06	8AC70N06
3 x 12	13.1	140	6000	200	500	4.13	1.15	8AA20N07	8AA50N07	8AB70N07	8AC70N07
4 x 12	13.1	140	6000	200	500	4.13	1.15	8AA20N08	8AA50N08	8AB70N08	8AC70N08
5 x 12	13.1	140	6000	200	500	4.13	1.15	8AA20N09	8AA50N09	8AB70N09	8AC70N09
6 x 12	15.4	178	6000	200	500	5.73	1.59	8AA20N10	8AA50N10	8AB70N10	8AC70N10
8 x 12	15.4	178	6000	200	500	5.73	1.59	8AA20N11	8AA50N11	8AB70N11	8AC70N11
10 x 12	16.9	211	6000	200	500	6.87	1.91	8AA20N12	8AA50N12	8AB70N12	8AC70N12
12 x 12	18.7	262	6000	200	500	8.15	2.26	8AA20N13	8AA50N13	8AB70N13	8AC70N13

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

GigaLine™ DQ 100 SR
GigaLine™ DQ 500 SR
GigaLine™ DQ 625 SR

Outdoor optical fibre cable, longitudinally watertight, armoured with corrugated steel sheath
KL-A-DQ(ZN)2Y(SR)2Y n x m G/E ...

Structure:

Filled loose tube, central or stranded, water blocking tape, strain relief
Inner sheath: PE, armour: corrugated steel sheath
Outer sheath: PE, colour: black

Field of application:

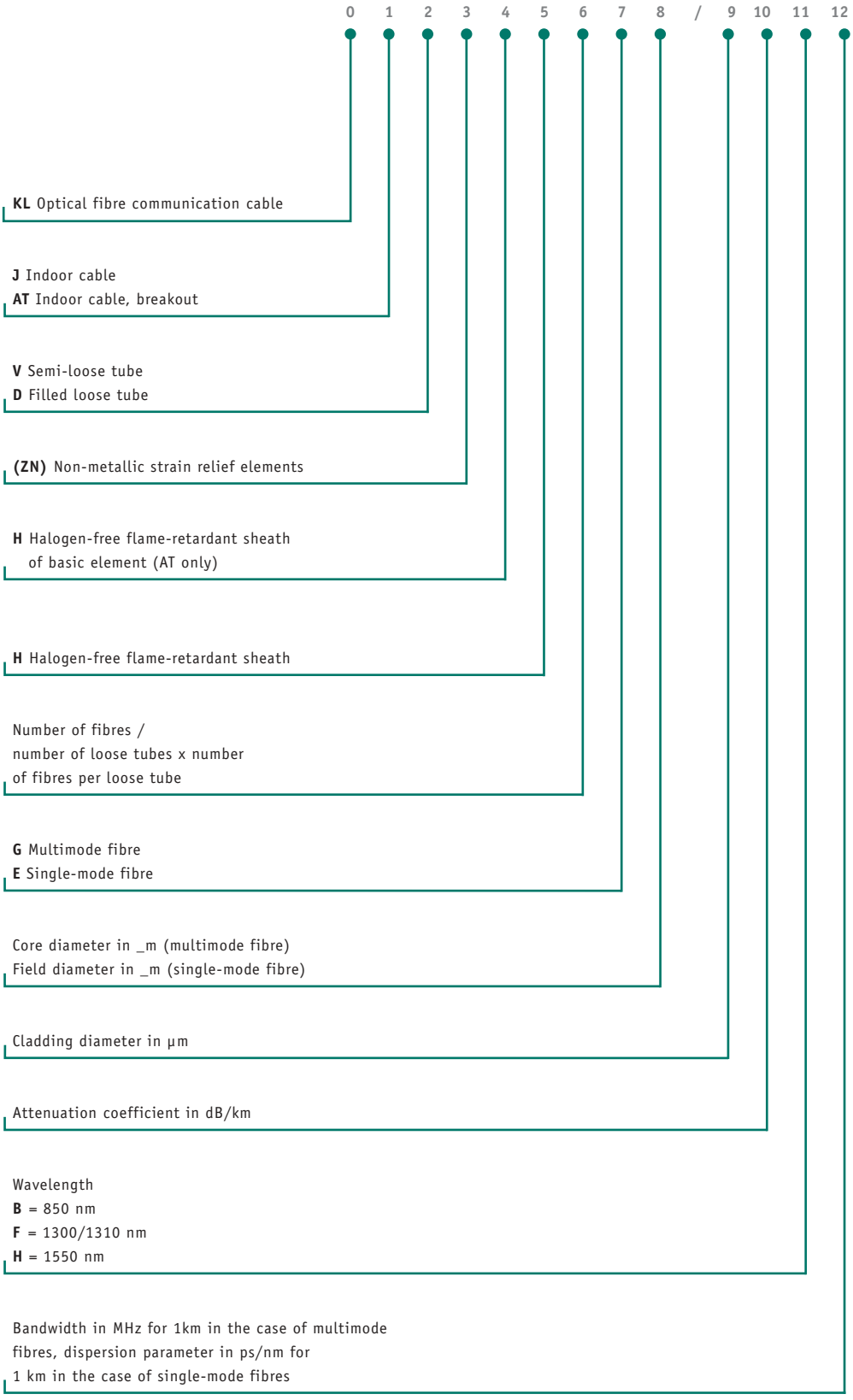
Outdoor cable for installing direct ground burial or in tubes, for MAN (city networks) and LAN (campus/backbone), suitable for splicing.

Dimensions	Outer ø	Weight	Tensile strength	Transverse compression strength		Product no.				
	mm (approx.)	kg/km (approx.)	N (approx.)	permanent N/cm (max.)	short-term N/cm (max.)	G 50/125	G 50/125 OM3	G 62.5/125	E 9...10/125	
1 x 2	12.5	135	1000	100	300	8AA20041	8AA50041	8AB70041	8AC70041	
1 x 4	12.5	135	1000	100	300	8AA20042	8AA50042	8AB70042	8AC70042	
1 x 6	12.5	135	1000	100	300	8AA20043	8AA50043	8AB70043	8AC70043	
1 x 8	12.5	135	1000	100	300	8AA20044	8AA50044	8AB70044	8AC70044	
1 x 10	12.5	135	1000	100	300	8AA20045	8AA50045	8AB70045	8AC70045	
1 x 12	12.5	135	1000	100	300	8AA20046	8AA50046	8AB70046	8AC70046	
1 x 16	13.0	140	1000	100	300	8AA20047	8AA50047	8AB70047	8AC70047	
1 x 20	13.0	140	1000	100	300	8AA20048	8AA50048	8AB70048	8AC70048	
1 x 24	13.0	140	1000	100	300	8AA20049	8AA50049	8AB70049	8AC70049	
2 x 8	18.5	270	2500	100	300	8AA20901	8AA50901	8AB70901	8AC70901	
2 x 10	18.5	270	2500	100	300	8AA20902	8AA50902	8AB70902	8AC70902	
3 x 10	18.5	270	2500	100	300	8AA20903	8AA50903	8AB70903	8AC70903	
4 x 10	18.5	270	2500	100	300	8AA20904	8AA50904	8AB70904	8AC70904	
5 x 10	18.5	270	2500	100	300	8AA20905	8AA50905	8AB70905	8AC70905	
2 x 12	18.5	270	2500	100	300	8AA20906	8AA50906	8AB70906	8AC70906	
3 x 12	18.5	270	2500	100	300	8AA20907	8AA50907	8AB70907	8AC70907	
4 x 12	18.5	270	2500	100	300	8AA20908	8AA50908	8AB70908	8AC70908	
5 x 12	18.5	270	2500	100	300	8AA20909	8AA50909	8AB70909	8AC70909	
6 x 12	22.0	365	3000	100	300	8AA20910	8AA50910	8AB70910	8AC70910	
8 x 12	22.0	365	3000	100	300	8AA20911	8AA50911	8AB70911	8AC70911	
10 x 12	23.5	440	4000	100	300	8AA20912	8AA50912	8AB70912	8AC70912	
12 x 12	27.0	545	5000	100	300	8AA20913	8AA50913	8AB70913	8AC70913	

Subject to printing errors, mistakes and technical changes

GigaLine™ Abbreviations – for easy identification of the structural elements to be found in optical fibre cables

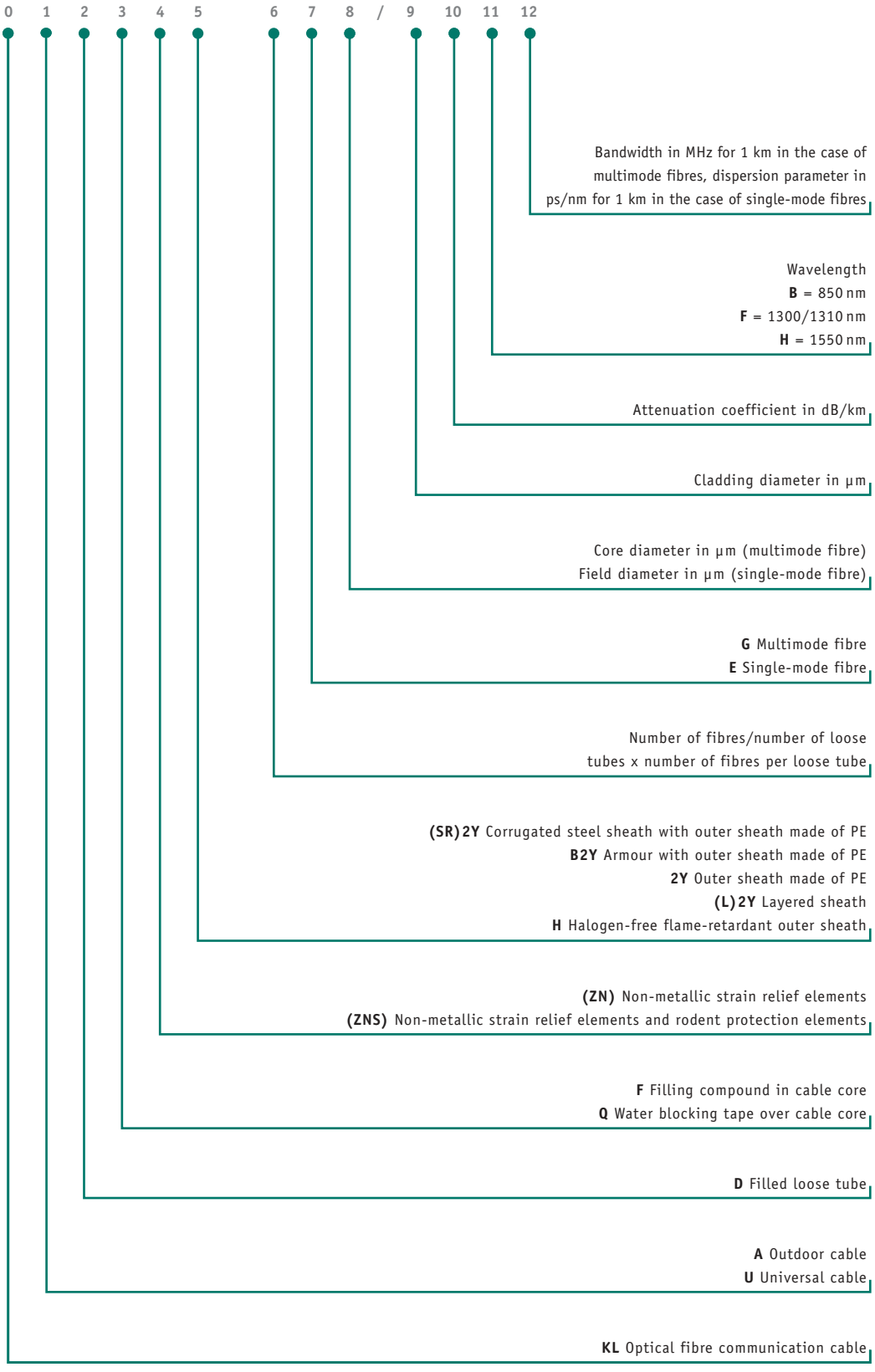
Indoor optical fibre cable



All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

Universal optical fibre/outdoor cables



Subject to printing errors, mistakes and technical changes

GigaLine™ Fibre qualities

	G50/125 „OM2e“	G50/125 „OM3“	G 50/115 „OM3e“	G62.5/125 „OM1e“	E9...10/12 „OS1e“
Attenuation coefficient					
at 850 nm:	max. 2.5 dB/km	max. 2.5 dB/km	max. 2.5 dB/km	max. 3.0 dB/km	
at 1300 nm:	max. 0.7 dB/km	max. 0.7 dB/km	max. 0.7 dB/km	max. 0.7 dB/km	
at 1310 nm:					max. 0.36 dB/km
at 1383 nm:					max. 0.40 dB/km
at 1550 nm:					max. 0.22 dB/km
Bandwidth					
at 850 nm:	min. 600 MHz x km	min. 1500 MHz x km	min. 3000 MHz x km	min. 250 MHz x km	
at 1300 nm:	min. 1200 MHz x km	min. 500 MHz x km	min. 500 MHz x km	min. 800 MHz x km	
Laser bandwidth					
at 850 nm:		min. 2000 MHz x km	min. 4000 MHz x km		
Dispersion					
at 1310 nm:					max. 3.5 ps/nm x km
at 1550 nm:					max. 18 ps/nm x km
Segment length at Gigabit-Ethernet					
at 850 nm (1000BASE-SX):	min. 750 m	min. 900 m	min. 1000 m	min. 500 m	
at 1300 nm (1000BASE-LX):	min. 2000 m	min. 550 m	min. 550 m	min. 1000 m	
Segment length at 10 Gigabit-Ethernet					
at 850 nm (10GBASE-SR):	min. 110 m	min. 300 m	min. 550 m	min. 65 m	
at 1300 nm (10GBASE-LX4):	min. 900 m	min. 300 m	min. 300 m	min. 450 m	
Numerical aperture	Nominal value 0.20	Nominal value 0.20	Nominal value 0.20	Nominal value 0.275	Nominal value 0.12
Refraction index					
at 850 nm:	Nominal value 1.482	Nominal value 1.482	Nominal value 1.482	Nominal value 1.496	
at 1300 nm:	Nominal value 1.477	Nominal value 1.477	Nominal value 1.482	Nominal value 1.491	
at 1310 nm:					Nominal value 1.4675
at 1550 nm:					Nominal value 1.4681
Test load	100 kpsi	100 kpsi	100 kpsi	100 kpsi	100 kpsi

Other fibre qualities on request

All the necessary PLANNING DOCUMENTS are available on the Internet: www.kerpen.com

Subject to printing errors, mistakes and technical changes

GigaLine™ Colour codes

Wires (in the case of stranded loose tubes)

Counting wire	red
Other wires	green for G50/125 blue for G62.5/125 yellow for E9...10/125
Dummy elements	Natural colour

The wires are counted consecutively starting with the wire adjacent to the counting element. Dummy elements are not included in counting.

Fibres (in the case of loose tubes)

Fibre no.	Colour
1	Red
2	Green
3	Blue
4	Yellow
5	White
6	Grey
7	Brown
8	Violet
9	Turquoise
10	Black
11	Orange
12	Pink
13	Red-black
14	Green-black
15	Blue-black
16	Yellow-black
17	Withe-black
18	Grey-black
19	Brown-black
20	Violet-black
21	Turquoise-black
22	Natural-black
23	Orange-black
24	Pink-black