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STRUCTURED CABLING SOLUTIONS
CATALOG

member of the TKH Group

TKH GROUP SOLUTION OF TKH GROUP

Multimedia Connect:
Structured Cabling Solutions by TKH Group

TKH GROUP NV

TKH intend to be an innovative leading niche player by providing Telecom, Building and Industrial Solutions based on technologically advanced system concepts, products and related services.
Founded in 1930 as BV Twentsche Kabelfabriek – Haaksbergen, Holland, the company started as a manufacturer of paper lead cables.
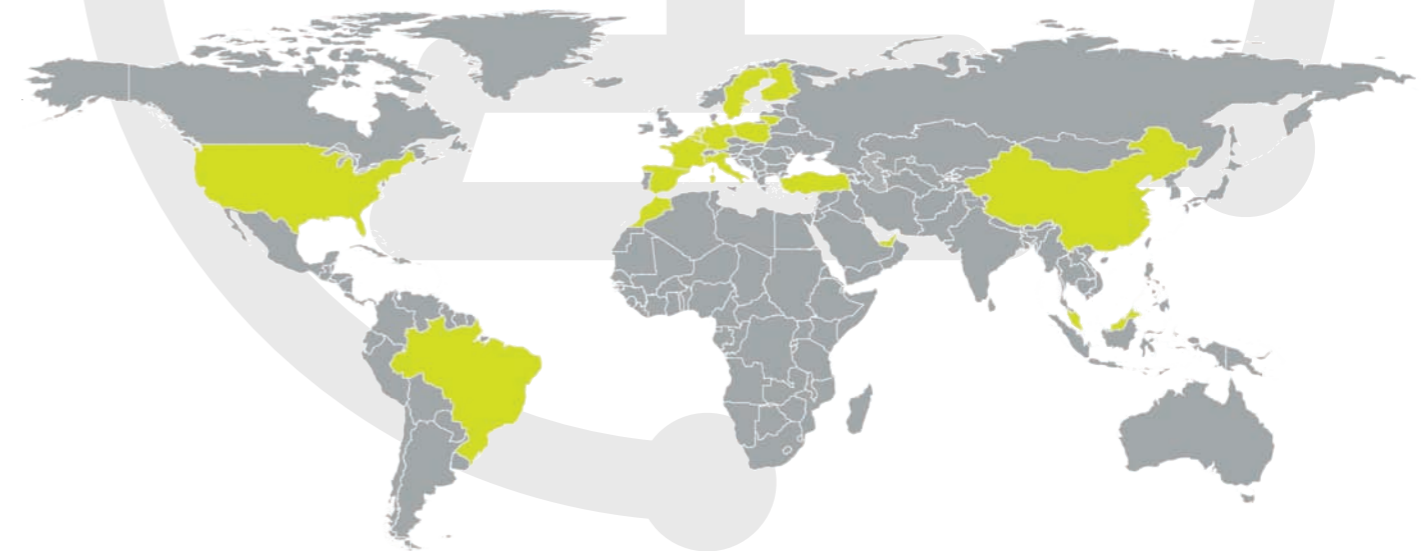In 1980 N.V. Twentsche Kabel Holding was founded due to its growth through acquisitions
The name N.V. Twentsche Kabel Holding was changed to TKH Group NV in 2005
The TKH Group is a public listed company (Euronext Amsterdam Stock Exchange)

TKH Group NV Key Figures (2008)
- Turnover: 997 million euros
- Number of Employees (FTEs): 3,880
- Companies: 60

TKH Group in the world

TKH GROUP, A LEADING PLAYER IN STRUCTURED CABLING

Over the years, and through several acquisitions, TKH Group has strengthened its position on the Structured Cabling market. Although it operates through different brand names, TKH Group is now the leading player in Europe.
Through its global brand, MULTIMEDIA CONNECT, TKH Group concentrates its R&D, industrial and commercial resources into innovative solutions.

Multimedia Connect:
Structured Cabling Solutions by TKH Group

INNOVATIVE SOLUTIONS ...
Multimedia Connect innovative solutions will bring you high-performance adapted to your current and future needs.
All our systems exceed standard specifications, including the latest Category 6A (component certification – direct pro-bing – by Delta Electronics).
We offer a 25 years warranty program.
Our products are users friendly, easy to manage and fast to install.
Our specialized teams offer expert advice and support from the design stage to the installation.
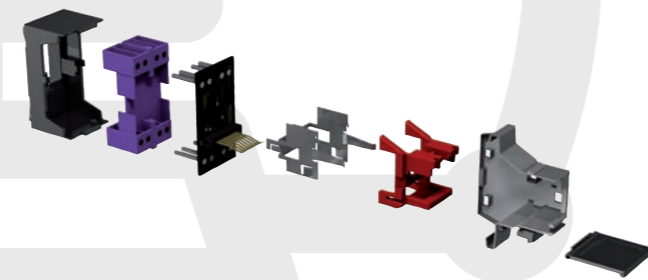
... DESIGNED AND MANUFACTURED BY TKH GROUP

Fiber optic is an increasingly important component of most Structured Cabling installations.
Through its subsidiaries TFO and TKF, the TKH Group manufactures fibre cores and fibre optic cables.

Multimedia Connect also benefits from the performance of ZTC, the group's manufacturing plant dedicated to copper data cables.

To develop its own connectivity range, TKH has invested in two R&D and manufacturing units: Axilogic and CMF. Our products combine the highest performance, with long-term reliability and user-friendly features.

## ≣ SUMMARY ≣

CATEGORY 5E SYSTEMS 5e 100MHz

With an operational bandwidth of 100 MHz, the CAT5e System can be considered the economical solution for basic IT cabling. It allows to operate a 100 megabits/s network with a comfortable margin and complies with the minimum requirements of 1000 megabits/s networks like 1000BASE-T (Gigabit Ethernet).

The CAT5e system is well suited for analogue telephone communication and may support VoIP communication.
It is not really recommended when the phone is powered directly through the twisted pair cable using a PoE system. CAT5e systems are usually implemented with AWG24 cable, which is not really able to support sustained DC current.

As backbone cabling, CAT5e system supports 600 m links for telephone and 100 m links for IT networks.
If the CAT5e system is under 1000BaseT, a Multimode Fibre is recommended for the backbone connection.

Performance	Standard	Multimedia Connect Solutions			TYPICAL USE
		Copper Connectivity	Copper Cables	Copper Patch cords	
Unshielded	- EIA/TIA 568-B.2 - ISO/IEC 11801 Ed2.0 - EN50173-1	BC5eNB	VGBx – VGBxSH	VG400xyM	- Analogue & Digital Phone - 100BASE-Tx
Shielded		BC5eFS	SGBx – SGBxSH	TX400xyM	

Based on a 200 MHz quality control procedure instead of 100 MHz (standard requirement), our CAT5e system offers excellent headroom in Permanent link as well as in Channel. Our connectors are tested according to the DE-embedded methods for category 5e (9 cases) to ensure good interoperability in all cases:

| TYPICAL HEADROOM (dB)	Permanent Link	Channel
NEXT	7.0 dB	8.2dB
RETURN LOSS	7.5 dB	8.0dB
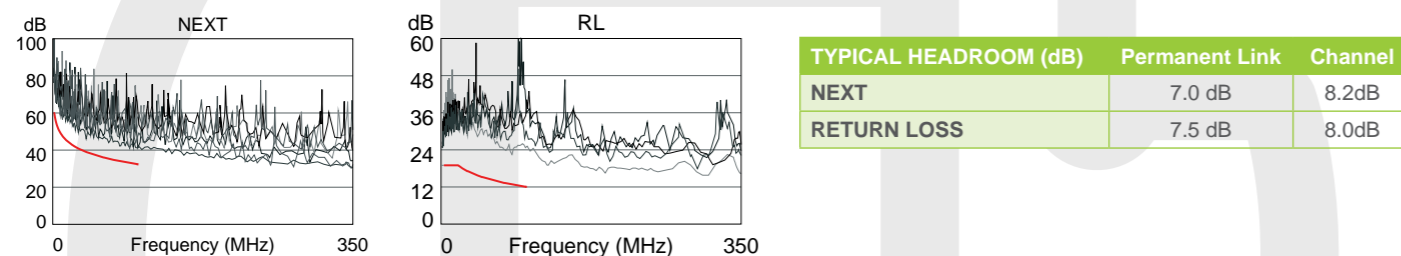
CATEGORY 6 SYSTEMS 6 250MHz

Validated since 2002, the CAT6 system is now the most used in the world.
Whether shielded or unshielded, CAT6 cabling is the right answer to current building cabling needs. For IT cabling needs, it supports up to 1000Base-T with a low Bit Error Rate (BER) making it the best solutions for Gigabit Ethernet.

Regarding phone cabling, analogue, digital and IP-based phones are supported without any restriction. CAT6 cables are usually AWG23 and, as a consequence, they can support DC currents up to 350 mA without rise in temperature.
For the same reason, CAT6 systems are recommended for PoE (Power over Ethernet) equipment. CCTV over twisted pair may be installed for a link of 300 meters with a good balun (balanced-unbalanced) adaptation.

In a CAT6 system, the backbone cabling may be implemented using CAT6 cables if the maximum length is not greater than 100 meters, otherwise OM2 fibre is the better choice for the cabling infrastructure.

Performance	Standard	Multimedia Connect Solutions			TYPICAL USE
		Copper Connectivity	Copper Cables	Copper Patch cords	
Unshielded	- EIA/TIA 568-B.2-1 - ISO/IEC 11801 Ed2.0 - EN50173-1	BC6NB	VG6x – VG6xSH	VG204xyM	- VoIP - PoE - 100 /1000BASE-T
Shielded		BC6FS	CX6xSH	TX204xyM	

Our CAT6 system offers an excellent margin compared to the standard. Successful field test results at the end of the installation are guaranteed:

TYPICAL HEADROOM (dB)	Permanent Link	Channel
NEXT	6.0 dB	6.5dB
RETURN LOSS	5.8 dB	6.0dB
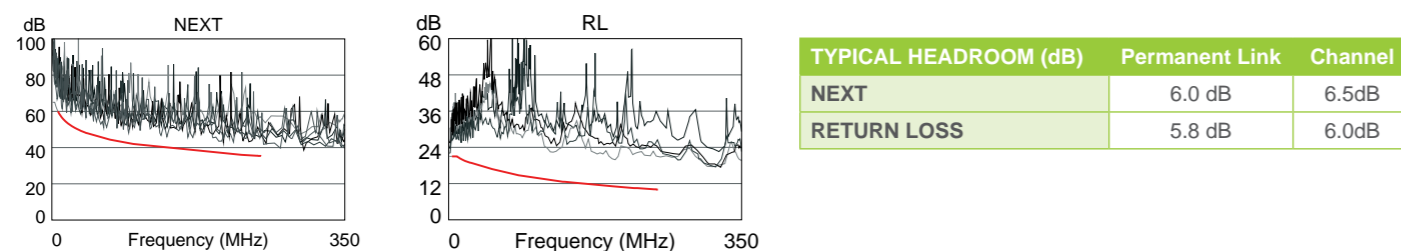
CATEGORY 6-10G SYSTEMS 6 10G 10

The IEEE has ratified the 10GBASE-T in 2006. This protocol uses a PAM16 modulation (16 coding amplitude levels), a pre-coding Tomlinson-Harashima and an Error correction rule. For all these reasons, 10G networks are very sensitive and require specific cabling rules.
The first concern of the CAT6-10G system is to propose a noise immunity at high frequencies for Alien Crosstalk cancellation.
Secondly, electrical parameters stability at high frequencies is the key to allow a comfortable network access. Indeed, with the measurements' extrapolation to 500 MHz, the cabling must be ready to absorb high insertion loss and crosstalk growing.

It is proven that the IT network are more and more oriented toward high-consumption systems (3D imaging, video streaming, real time transmission...). So, with a CAT6-10G solution, your network is ready to support the highest bit rate of the world over twisted pairs, providing a comfortable use of your network capabilities.

Performance	Standard	Multimedia Connect Solutions			TYPICAL USE
		Copper Connectivity	Copper Cables	Copper Patch cords	
Unshielded	- TIA TSB155 - ISO TR24750	MK6NB	VG500xSH	VG504xyM	- VoIP - PoE - 10GBASE-T
Shielded		MK6FS	500xSH	TX504xyM	

To validate the 10G application, you need to use TSB155 or TR27450, which are literally assessment of installed balanced cabling channels in order to support IEEE802.3 10GBASE-T. This technical bulletin defines the extrapolation to 500 MHz of the electrical parameters.
Our system remains stable up to these high frequencies, offering full bandwidth efficiency.

TYPICAL HEADROOM (dB)	Permanent Link	Channel
NEXT	6.0dB	6.2 dB
RETURN LOSS	6.7dB	7.1dB
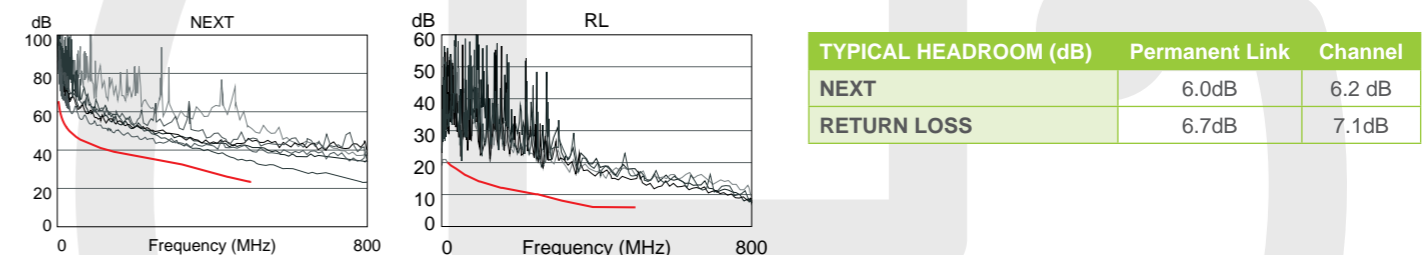
CATEGORY 6A SYSTEMS 6A 500MHz

In recent years, the CAT6A system, which is especially adapted to high-speed applications like Data Center cabling, has become the most performant infrastructure still using RJ45 connectors, which is a big advantage compared to the CAT7 system.

The deployment of a CAT6A solution guarantees an excellent 10 gigabit performance, without any restrictions (length, cabling mitigation…). Moreover, this option makes it possible to anticipate future trends like the one speculated by the Higher Speed Study Group of the IEEE (40G or 100G over twisted pairs).

Performance	Standard	Multimedia Connect Solutions			TYPICAL USE
		Copper Connectivity	Copper Cables	Copper Patch cords	
Shielded	- EIA/TIA 568-B.2-10 - AD1.0 & AD2.0 ISO 11801 - EN50173-1	MK6AFS	525xSH –F555xSH	CORD6ASxMSH	- VoIP - PoE - PoEP - 10GBASE-T

The CAT6A is the most exigent of the categories; at the point those 5 years ago it was an Inconceivable step for the RJ45. With a very stable margin, our CAT6A system provides you an "Open" system for the next years…

TYPICAL HEADROOM (dB)	Permanent Link	Channel
NEXT	4.0 dB	4.5 dB
RETURN LOSS	6.5 dB	6.5 dB
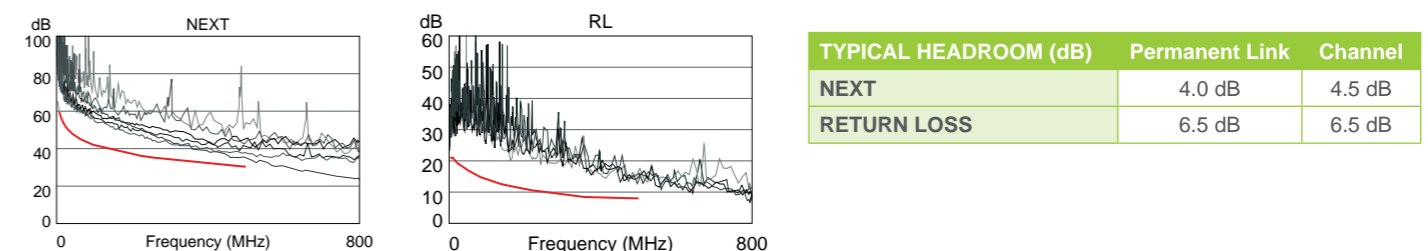
INFRASTRUCTURE CHOICE

Office cabling represents 80% of all structured cabling systems. In such configuration, the choice of the system category is based entirely on IT resources that need to be supported, and especially on the future development of the system.

If we apply Moore's law to IT networks, 10G Ethernet will be the norm in less than five years… The estimated life of a cabling system being around 12 years, the best choice is a system that is able, from the onset, to support 10G over twisted pair. At the same time, a cabling solution of this type supports the deployment a full IP system (IP Phones, IP Cams, IP Building Management System….) without any restrictions or infrastructure changes. CAT6 10G system or CAT6A are highly recommended when you are looking to implement a "future-proof" architecture.

In the IT room, the connection between the servers and the first switch is the bottleneck of the network, so this link needs to be high-speed and easily upgradable. We advise a CAT6A link or fiber to run a 40G network in the near future.

For the backbone, in order not to loose network capacity, an OM3 fibre may be used to provide 10G over 300 meters using an inexpensive active system. Indeed, the "restricted" source active materials use VCSEL (Vertical Cavity Surface Emitting Laser) technology which is 3 times cheaper compared to LASER for singlemode fiber.
On the other hand, single mode fiber is really recommended if the company has a MAN (Metropolitan Area Network) to interconnect e.g. several departments. In this case, a 10G connection can be realized over several kilometers.

OFFICE CABLING FLEXIBILITY

It is a proven fact that modularity enhances productivity. A cabling system must be able to support the growth of the company in a highly flexible manner, and without requiring huge investments.
The consolidation point offers a high-performance connection with the possibility to change the cabling configuration simply and quickly.

If you decide to use an Interconnect – CP topology, there are some points you need to consider.
It is very important to locate and securely attach the consolidation point box on the roof or on the floor.
To do that, there exist different accessories in terms of number of points and type of fixture. The second point is the identification of the link, indeed in this configuration; you multiply by two the patching. It is a good idea to use an identification system such as cable stickers or face plates with label holders.
The Length of the CP links is also very important. Normally it should not exceed 10 meters, but the standards define calculation rules according to cabling category. (See technical pages for more details)

CABLING SUCCESS WARRANTY

Pre-terminated links are a very good solution for new cabling infrastructure. The benefits for the end-users are considerable:

- Uniform quality of the installation
- Details of intervention and deployment
- Better work planning
- Reduced implementation time

And also for the installers:

- Optimization of the team's management, especially in case of subcontracting.
- A guaranteed margin
- Schedules of realization
- The assurance of a carefree installation during the final field test

In this respect, Multimedia Connect offers you:

- Technical support in the design-stage of your project. We realize the entire link prototype to help you to define your needs.
- The links are manufactured according to a strict process, including quality procedures and testing.
- Logistics support is an important factor in the success of the project. For this reason, Multimedia Connect has a dedicated team to manage all deliveries and make sure the schedule is observed.

CABLING MANAGEMENT

From an end-user's point of view, the most important aspect of a structured cabling system is its ease of maintenance. Indeed, fast troubleshooting and problem resolution times are critical the during exploitation of the cabling system.
In order to address this issue, we have especially developed an aesthetic vertical patch cable management system.

FRONT VERTICAL CABLE MANAGER

TOP CABLE ACCESS

INTEGRATED LABEL SYSTEM

FRONT RING CABLE ORGANISER
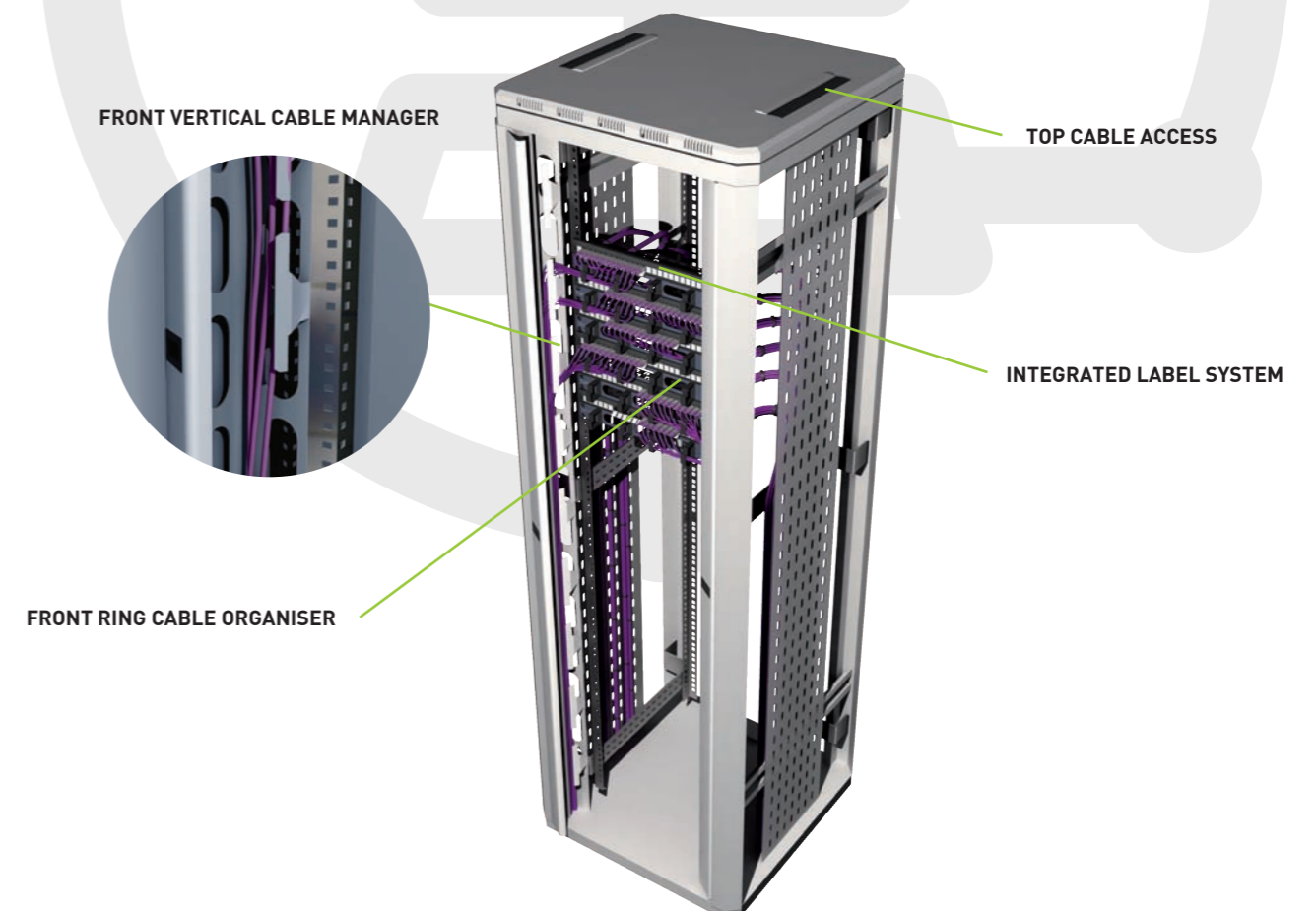
IT Networks cabling (Computer part)

Switch

CAT5e – from 10 Mbits to 1000 Mbits

CAT6 10G – from 10 Mbits to 10 Gbits

Patch Panel

CAT6A – from 10 Mbits to 40 Gbits*

* Under considerations
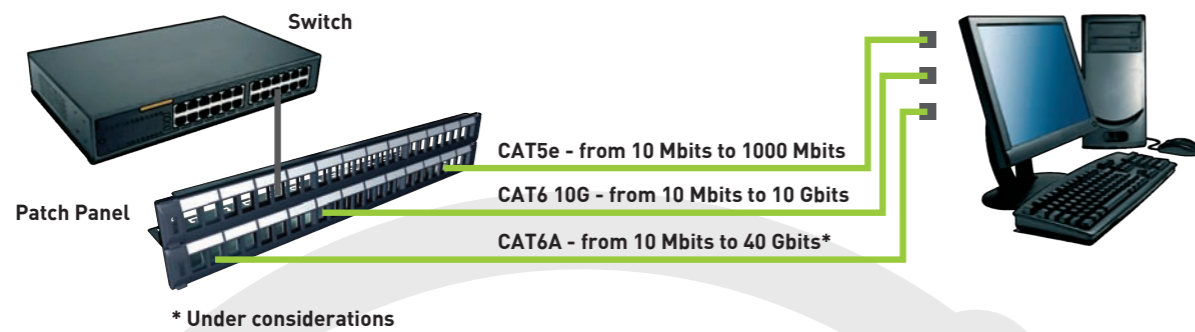
Main considerations for IT cabling:

- Targeted bit rate in Megabits/s or Gigabits/s
- Protocol type: Ethernet, ATM or other
- Installation environment: Office, Data Center, Industry, Home.

The cabling category defines the bandwidth available for data transmission.
For data networks the relevant value is the SNR (Signal-to-Noise Ratio), while the cabling level is the translation of the network bit capacity.
In the office environment ever more users are connected at 1,000 Mbits as a result of advances in computer technology. It is also no longer rare today to come across 1,000 Mbits directly in the motherboard of the computer.

As a result, CAT6 solutions have become the category most frequently used in the world today.
The choice between Unshielded and Shielded solutions is to be made in accordance with the installation field, while keeping the EMC environment in mind. Up to CAT6 unshielded solutions are well suited to the office environment. In CAT6A consideration must be given to exogenous crosstalk (Alien Crosstalk) created by the communications cables. Shielded solutions are a good option to act as a barrier for high frequency disturbances.

Fiber optic is currently the best option in terms of investment and anticipation of technological advances. If there is a 10G deployment plan for the building, the best option is to use OM3 fibre for lengths shorter than 300m and OS1 fiber for longer links.

IP Phone cabling

VoIP (Voice over IP) technology is not a bandwidth consuming application for horizontal cabling because the data transfer rate is not very high. Nevertheless, there are three very important points to be given consideration for IP phone cabling:

The first and perhaps main consideration is the quality of the patch cords. Linear resistance must be very stable in order to facilitate the locking circuit procedure of VoIP. Full copper products must be used and high linear resistance products such as C.C.A. (Copper Cladding Aluminium) are not recommended.

The second key point is backbone cabling. The number of cables must not be decreased too much when compared to a standard phone application. The usage of multi-pairs or multi-assembly cable is still very important to ensure fluid communication.

Finally, IP phones are most of the time powered by PoE (Power Over Ethernet) protocols and, for this reason, we recommend that consistent gauge cables of at least AWG23 be used, which are well adapted to capacitance coupling cancellation and DC current transmission.

Wireless Access Point cabling

WSCS (Wireless Structured Cabling System) is a very strange acronym used to define cabling requirements for connecting the access point to the rest of the wired network.

Most often wireless and cabling networks are used concurrently in buildings. The wired network often provides majority access to the IT resources, while wireless networks are available in meeting rooms, lobbies and other public areas. The EMC aspect is very important because of this cohabitation.

The wired network must not cause interference in the wireless network and vice versa.
Wave interference therefore brings us to recommend that high crosstalk headroom products such as CAT6 or CAT6A systems be used.

A good alternative is to use shielded solutions that are capable of cancelling out EMI (electromagnetic interferences), but that requires a grounding system in the building.
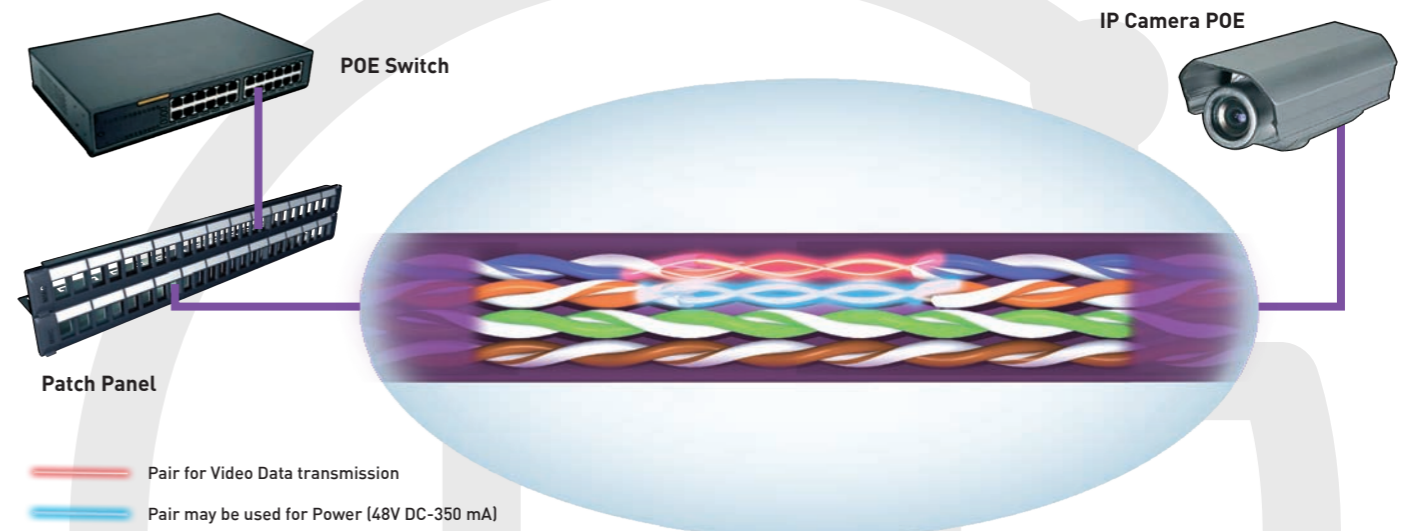
IP Cameras

IP cameras are genuine "Plug and Play" applications and act as the third usage option of twisted pair networks, after computer and phones. The video signal is transmitted over a 5 Mbits/s stream, which means that a CAT5e system can accept many transmissions.

In order to save on cabling expenses, however, IP cameras (including zoom/tilt) are most often powered through the PoE (Power over Ethernet) protocol. A CAT6 system is therefore recommended to guarantee a longer life for the cabling infrastructure.

POE WITH IP CAMERA

POE Switch

IP Camera POE

Patch Panel

Pair for Video Data transmission

Pair may be used for Power (48V DC-350 mA)

IP display & IPTV cabling

In public areas such as airports and train stations, dynamic display information is managed through IP-based communication. Due to the importance and time-critical nature of the information delivered, transmission must be 100% secured. We recommended fully shielded solutions to protect data in these specific areas.

IPTV systems are becoming ever more popular in the hotel, leisure and hospitality sector.
Knowing that the requested bandwidth is approximately 5 Mbits/s for an SD (Standard Definition) Channel and 10 Mbits for an HD (High Definition) channel, it is easy to understand that the IPTV system requires cabling that is

well suited for the purpose.

A CAT6 solution seems to be good, but CAT6A certainly is the best option.
In these buildings the computer networks will also be included in the cabling requirements.

Finally, IPTV solutions are very popular in hospitals and retirement homes where there are many disturbances due to the proximity of various types of electrical equipment. These imaging, medical and life instruments produce high electromagnetic discharges, so it may be well worth using full shielded solutions in these areas.

Building Management Cabling

Access control, sensors, smoke detectors and alarm systems are all fitted with RJ45 ports and IP-based communication. Normally, the needs of these systems in terms of bit rates are low, which makes them very effective in CAT5e systems.

In addition, more and more BMS (Building Management Solution) equipment in the construction area is IP-based,

in order to be administrated under the same network as the computer section. CISCO, for instance, has recently unveiled energy management software that is capable of measuring and controling the energy consumption of IP-connected devices such as phones, video surveillance cameras and wireless routers. Savings are therefore not limited to cabling expenses, but also on power management for IP equipment.

Information is now increasingly, and often exclusively, managed in digital format.
Secured storage and fast access to this information has therefore become a strategic issue for most companies and organizations.
Data Centers are designed to centralize the management of information and ensure efficient exchanges with all users within the organization.
From a Structured Cabling perspective, Data Centers require high-speed networks and are characterized by a very high density of passive communication points and active components. Specific cabling solutions have to be designed to ensure that these strategic investments operate efficiently today and tomorrow.

SYSTEM PERFORMANCE

As they are at the heart of IT networks, Data Centers must meet the requirements of the latest structured cabling standards and anticipate on future evolutions.
A full fibre optic infrastructure will guarantee the best performance (10 Gigabit) and will be compatible with future 40 to 100 Gigabit networks. However, fibre optic equipment is still up to twice as expensive as copper.

For economic reasons, most Data Centers use copper cabling infrastructures.
Category 6A systems offer the most performing solution for 10 Gigagbit networks and should be able to support the future 40 Gigabit protocols over short distances – the average length of links in Data Centers is 20 meters.

We strongly recommend Shielded CAT6a systems for Data Centre environments.
Data Centers involve a very high concentration of very short links. This cabling organization maximizes cable-to-cable interferences (Alien Cross Talk) which deteriorate the data transmission at high frequencies.
According to the ISO Standard, Alien Cross Talk parameters are met "by construction" (no field test required) when the Coupling Attenuation (immunity to electromagnetic noises) of the system is higher than 55dB.
The Multimedia Connect CAT6a shielded solution has a Coupling Attenuation of 75 dB and ensures a very high level of protection against cable-to-cable interference in the very dense cabling infrastructures of Data Centers.

MANAGING HEAT AND HIGH-DENSITY CABLING

The high concentration of servers and active equipment generates a lot of heat and requires cooling solutions.
Copper data cables are also a source of heat and their organisation must enable air circulation.
Active air conditioning and ventilation is the obvious answer but it is expensive and not environmentally friendly.
It is therefore combined with passive ventilation like chimneys or perforated doors and other solutions which facilitate air flows.
For example, installations can be simplified by using multi-assembly cables and bundles which can easily be fitted to the side of a cabinet. This will ensure a more efficient air circulation from the front to the back of the cabinet.
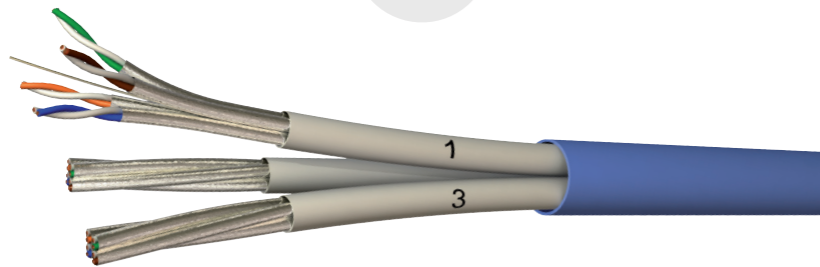
CABLING MANAGEMENT

In Data Centers, it is essential to optimize space and concentrate a very high density of connection ports.
Standard data cabinets cannot be fully loaded with patch panels since one patch cable management unit has to be inserted for every patch panel. (42U cabinets will only include 21 x 24 ports = 504 RJ45 ports)
In order to address the specific needs of Data Centers, Multimedia Connect has developed a 42U data cabinet which can be loaded with up to 1,000 RJ45 ports thanks to its unique V-shaped structure.
Patch cable management is organized through axial and lateral exits and horizontal cables are properly guided in cable trays at the back of the cabinet.
This cabinet requires special 10'' panels and accessories, available for copper and fibre connectivity.
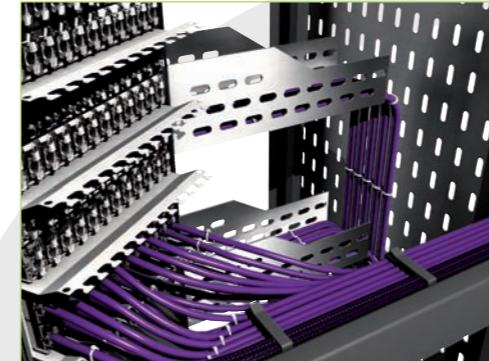
SERVER MANAGEMENT

Active components, such as switches and servers, must be fitted in server cabinets that are specifically designed to provide high temperature dissipation.

Temperature regulation with 80% perforation rate in door aperture

Vertical Cooling system
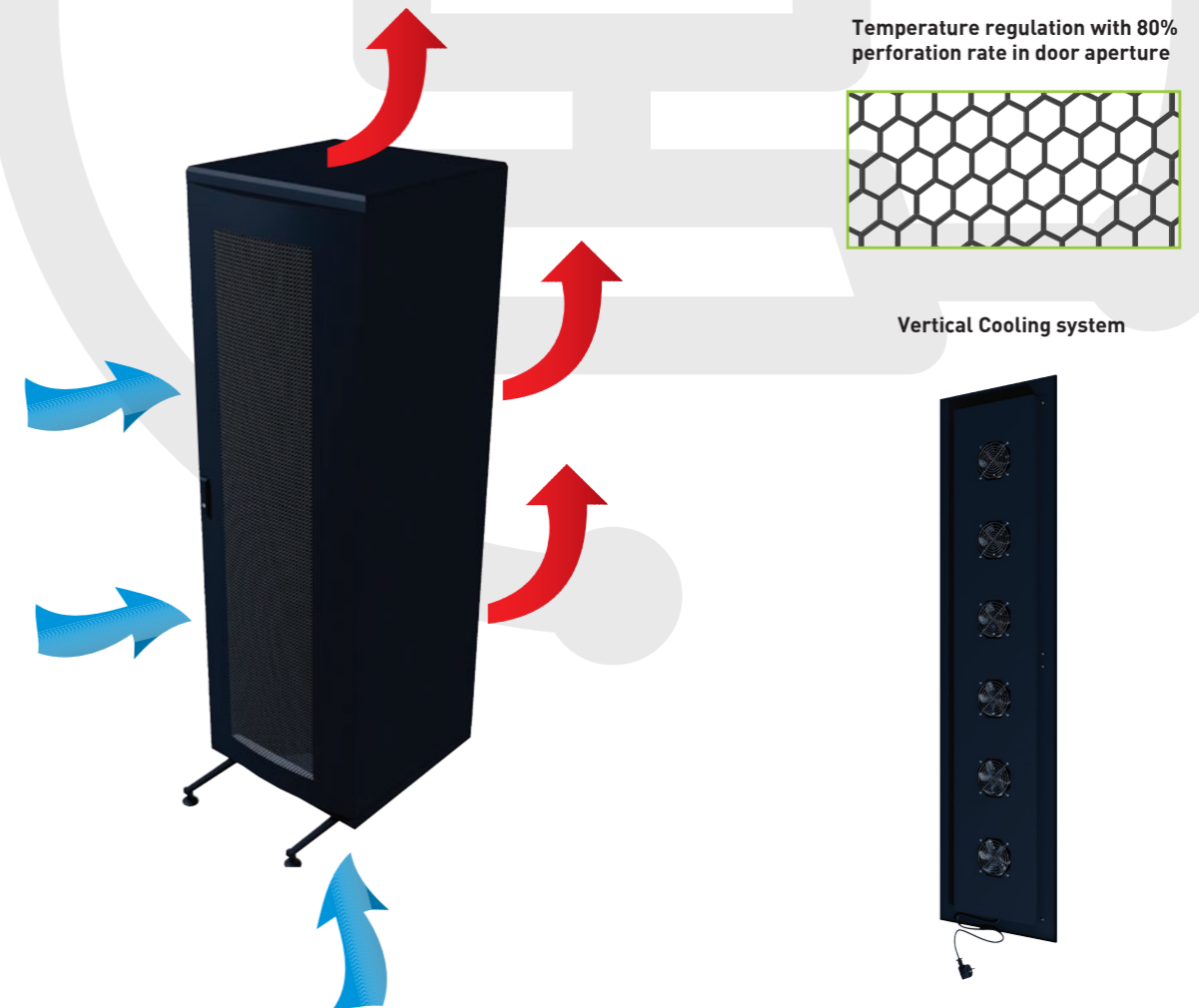
In many places such as lawyers' offices, dentists' practices, etc. there is a need for structured cabling, but with low requirements in terms of bit rate and number of outlets. We offer a specific product range for these so-called SOHO (Small Office Home Office) applications.

CABLING PERFORMANCE

Using CAT5e or CAT6 cabling, you can cover all office communication needs and requirements. The SOHO range also includes a Fiber part for the far end of an FTTH system (Fiber to the Home). A solution that is becoming more and more common is to connect with a two core single mode fiber for Internet access. Instead of using a Fiber/Copper converter, with this system, you can have the fiber up to your computer.

FIBER OPTIC OUTLET

10-INCH SOLUTIONS

It is not always easy to locate the cabling rack inside these constructions because there is no dedicated room. With the 10-inch system, you save almost two times the space in comparison with standard 19" racks or cabinets.
With a full selection of cabling management accessories or specific telephone modules, this range caters to all the communication needs of the modern office.

KEYSTONE PATCH PANEL

SC OPTIC FIBER MODULE

TYPICAL INFRASTRUCTURE
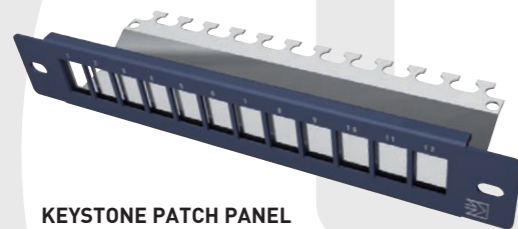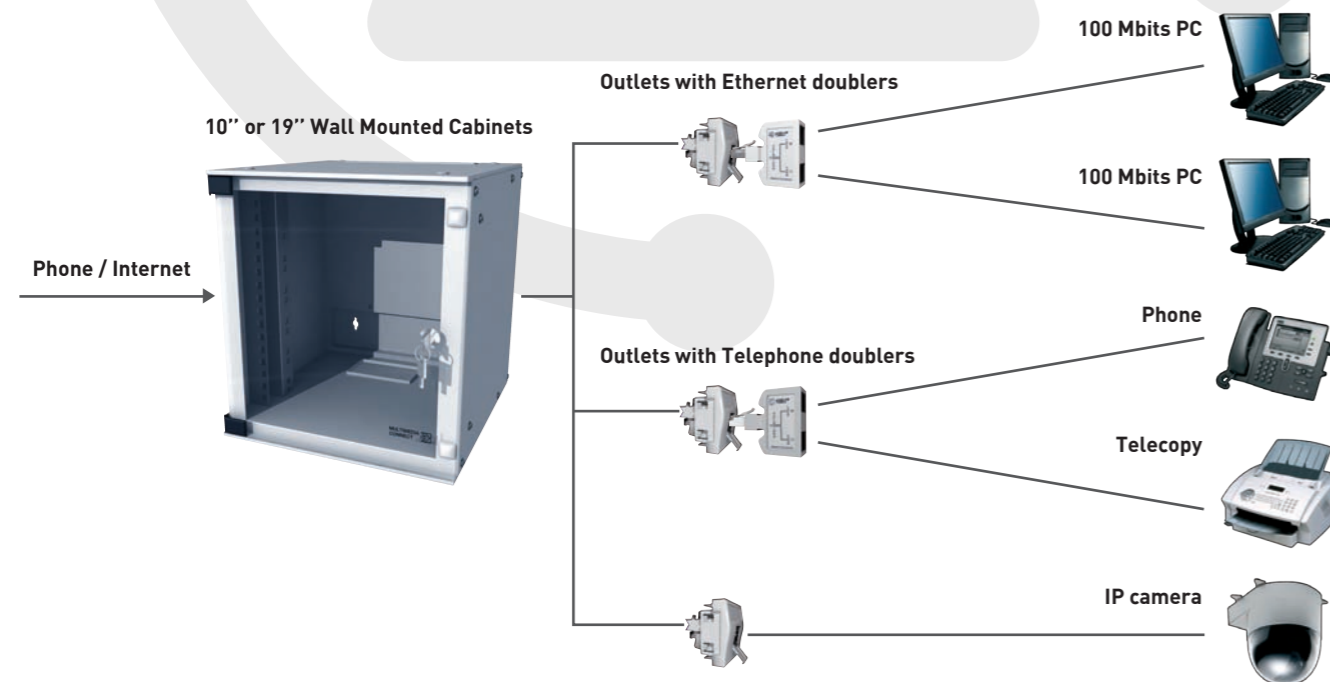
Using RJ45 doublers, a simple cabling system can become a full-fledged multimedia platform

100 Mbits PC

Outlets with Ethernet doublers

10'' or 19'' Wall Mounted Cabinets

100 Mbits PC

Phone / Internet

Phone

Outlets with Telephone doublers

Telecopy

IP camera

THE NEED OF IT CABLING IN INDUSTRY FIELD

Ethernet has already established itself in the 1980s in the field of office automation applications. Today it is also stepping into the world of industry because it is so simple to configure, administer and maintain.
It facilitates the realization of distribution automation, the integration of the existing equipment and the operation of sharp and real-time applications.
Ethernet is inexpensive, it is universal, well understood and mastered and it is not unique to any vendor.

A major part of field busses had shown a decline in IP-based communication, so much so that at a time of convergence and standardization Ethernet became the network of choice for the management and the optimization of parks hatches.

Field BUS	ETHERNET equivalent	Minimum CABLING requirements
DeviceNet /ControlNet	Ethernet/IP	Minimum CAT5e/CLASS D
ModBus	ModBus TCP	Minimum CAT5e/CLASS D
ProfiBus	ProfiNet	Minimum CAT5e/CLASS D
Foundation	HSE	Minimum CAT5e/CLASS D

Structured cabling is now adapted to the industry environment in particular through specific cabling standards, such as EN50173-3 and ISO/IEC 24702 (Information Technology, Generic cabling, Industrial premises).
In terms of performance, industrial networks do not require large bit rates, and CAT5e or CAT6 performances are well suited for transmission requirements.

Most importantly, in industrial environments EMI sources such as synchronous engines, asynchronous engines and transformers are ubiquitous. To be immunized, cables must be composed of armour made from aluminium ribbon and tinned copper braid to ensure electromagnetic compatibility.

Low frequencies protection

Polyurethane jacket

High frequencies protection
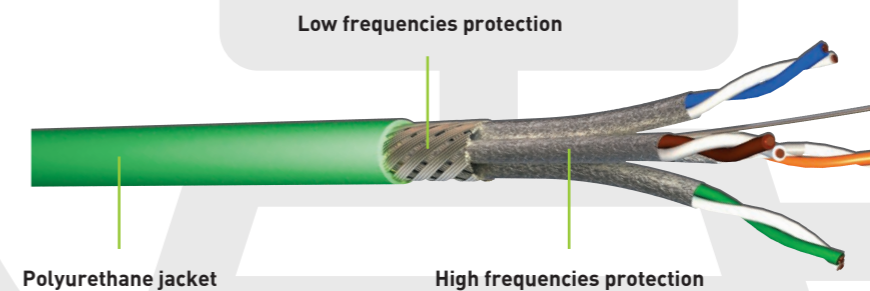
In harsh environments, the cabling system must be protected against impact, vibrations, humidity, acid and basic chemical agents, oil and gas, dust, temperature fluctuations, etc.
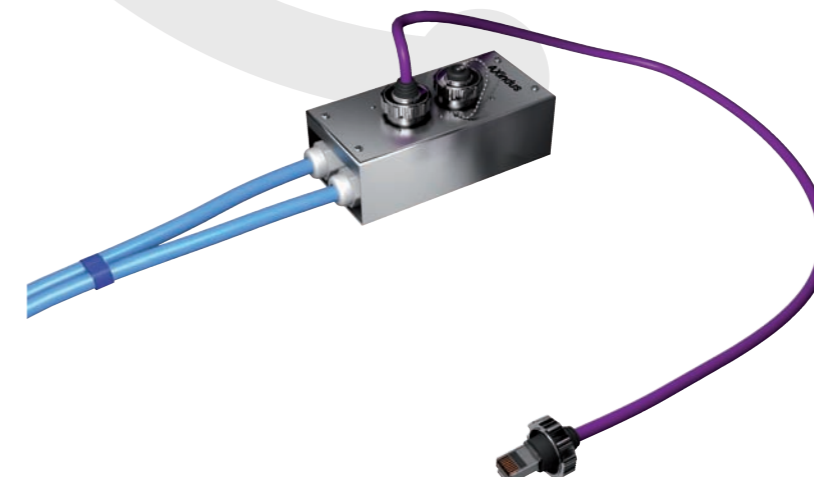
25 YEARS WARRANTY PROGRAM

MULTIMEDIA CONNECT'S DIRECT COMMITMENT TO THE END-USER

Our warranty contract is signed between Multimedia Connect and the owner of the installation. As manufacturer of all components of the link, we control the performance and reliability of the communication chain.

We guarantee during 25 years, that the copper (permanent link) and fibre links will continue to perform according to the standards defined at the time of installation.
This concern, at the date when this catalogue is printed: CAT5e/Class D, CAT6 / Class E, CAT6 10 Gigabits, CAT6 A/ Class Ea, Fiber Optic (ISO/IEC 11801)

CERTIFIED INSTALLERS PROGRAM

The Multimedia Connect warranty only applies to installations made by MMC Certified Installers.
Installation conditions are an essential part of the performance of your data network and select of our installation partners with the greatest care.
The Multimedia Connect Certified Installers Program includes technical training courses and regular updates about the evolution of cabling standards and installation procedures.

MULTIMEDIA CONNECT

25 YEARS SYSTEM WARRANTY

Multimedia Connect certifies that the structured cabling network, here below identified, benefits from a 25 year system warrantee. All details about this warranty are formalized in a contract between Multimedia Connect and the owner of the network.

Warranty registration number : 2009/213

Installation site:	DELTA BANK Ltd
	Delta Court
	xxxxxx xxxxxxx
	The Netherlands

| Copper standards: | CAT6A EN50173-1 / EIA/TIA 568-B.2-10 | Number of links: | 2 730 |
| Fiber standards: | ISO/IEC 11801 | Number of links: | 53 |

Owner:	DELTA BANK REAL ESTATE
	xxxxxx xxxxxxx
	xxxxxx xxxxxxx

Certified installer:	DATACOM INSTALLATIONS
	xxxxxx xxxxxxx
	xxxxxx xxxxxxx
	Certification number: 2008/125

Date: 17/09/2009

For Multimedia Connect

Multimedia Connect is a brand of the TKH Group NV. The Multimedia Connect Warranty scheme is legally managed by a subsidiary of the TKH Group :
CAE GROUPE SAS, rue du Chemin Blanc, 91160, Longjumeau cedex, France

SOLUTION OF TKH GROUP

SUMMARY TABLE

	Copper System							Fiber System			
	Unshielded			Shielded				Multimode			Singlemode
PRODUCTS	CAT 5e	CAT 6	CAT 6-10G	CAT 5e	CAT 6	CAT 6-10G	CAT 6A	OM1	OM2	OM3	OS1
Connectivity	BC5e	BC6	MK6-10G	BC5e	BC6	MK6-10G	MK6A	All series ST, SC, LC…			
Cables	VGBx	VG6x	VG500x	SGBx	CX6x	500x	F555/525	All series MULTIxIE, INTEXx, MULTIEXx…			
Patch cords	VG400x	V204x	VG504x	TX400x	TX204x	TX504x	CORD6ASx	All series ST, SC, LC…			

APPLICATIONS	CAT 5e	CAT 6	CAT 6-10G	CAT 5e	CAT 6	CAT 6-10G	CAT 6A	OM1	OM2	OM3	OS1
IT networks 10 /100 megabits/s	●	●	●	●	●	●	●	●	●	●	●
IT networks 1000 megabits/s	●	●	●	●	●	●	●	●	●	●	●
IT networks 10 gigabits/s	○	○	●	○	○	●	●	◐	●	●	●
IT networks 40 gigabits/s	○	○	○	○	○	○	◐	○	○	◐	●
IT networks 100 gigabits/s	○	○	○	○	○	○	◐	○	○	○	●
Analog & Digital Phone	●	●	●	●	●	●	●	-	-	-	-
IP Phone (VoIP)	●	●	●	●	●	●	●	●	●	●	●
IP Phone (VoIP) + PoE	◐	●	●	◐	●	●	●	-	-	-	-
Xdsl	●	●	●	●	●	●	●	●	●	●	●
Wifi Access Point	◐	●	●	◐	●	●	●	●	●	●	●
Bluetooth Access Point	◐	●	●	◐	●	●	●	●	●	●	●
CCTV with baluns	◐	●	●	◐	●	●	●	-	-	-	-
IP Camera	●	●	●	●	●	●	●	●	●	●	●
IP Camera + PoE	◐	●	●	◐	●	●	●	-	-	-	-
Analog & Digital TV (900 Mhz max)	○	○	○	○	○	○	●*	-	-	-	-
IPTV	◐	●	●	◐	●	●	●	●	●	●	●
IP Alarms & Safety systems	◐	●	●	◐	●	●	●	-	-	-	-
PoE system	◐	●	●	◐	●	●	●	-	-	-	-
PoEP system	○	◐	◐	○	◐	●	●	-	-	-	-

COMPLEMENTARY FEATURES	CAT 5e	CAT 6	CAT 6-10G	CAT 5e	CAT 6	CAT 6-10G	CAT 6A	OM1	OM2	OM3	OS1
De-Embedded	●	●	●	●	●	●	-	-	-	-	-
Direct Probing	-	-	-	-	-	-	●	-	-	-	-

* with 900 MHz cable

● Recommanded

◐ Adapted

○ Non-adapted
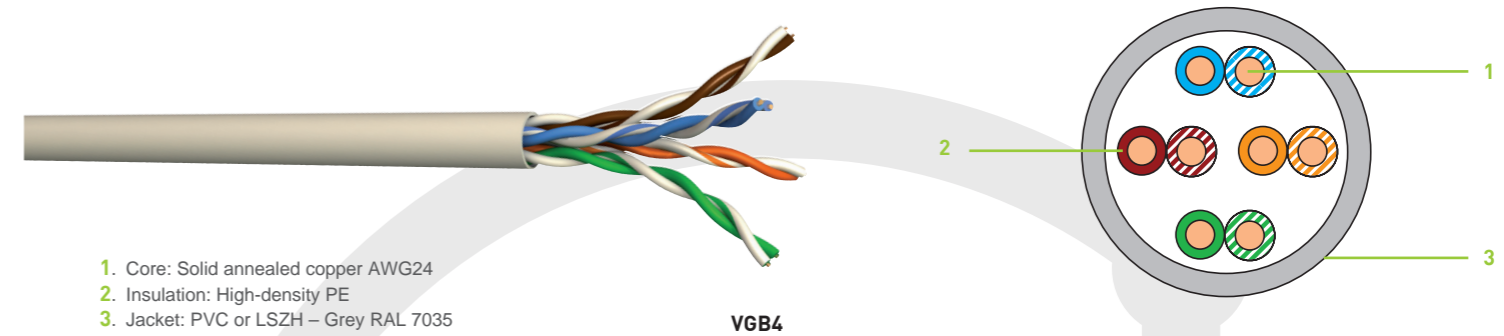
COPPER CABLES

Cable Category
5+ 5e 6 6+ 6 IO G 6A 7 7A

BandWith
100 MHz 250 MHz 350 MHz 500 MHz 525 MHz 555 MHz 600 MHz 1200 MHz

Product suited for 10 gigabit Ethernet

Voice over IP

Power Over Ethernet

Power Over Ethernet Plus

Coupling attenuation

Alien Crosstalk

Fire resistance:
IEC 60332-1 / NF C 32070 C2

Terrestrial TV signals

Product certified by
DELTA ELECTRONICS

Loose tube fiber

Tight buffer fiber

Indoor use

Outdoor use

Indoor and outdoor use

Humidity resistant level

Rodent resistant level

CATEGORY 5E CABLES - U/UTP

5e 100 MHz

1. Core: Solid annealed copper AWG24
2. Insulation: High-density PE
3. Jacket: PVC or LSZH – Grey RAL 7035

VGB4

FEATURES AND BENEFITS
- Exceed CAT5e standard requirements

NETWORK APPLICATIONS
- ISDN - VoIP
- TOKEN RING 4/16 Mbits - 100 VG-AnyLAN
- TP-PMD/TP-DDI - ATM 155, 622,1200 Mbits
- ETHERNET: 10 Base T, 100 Base Tx, 100 Base T4, 1000 Base T

CABLING STANDARDS
- CABLE: -   IEC 61156-5
          -   EN 50288-3-1
- SYSTEM: -   ISO/IEC 11801 Edition 2 – CLASS D
          -   EN 50173 Edition 2 – CLASS D
          -   EIA/TIA 568-B.2 CAT5e

TECHNICAL CHARACTERISTICS
- Linear resistance (max.): 94 Ω / Km
- Characteristic impedance: (from 1 to 100 MHz) 100 +/- 15 Ω
- Mutual capacity (nom.): 50 pF / m
- Nominal velocity propagation: 66 %
- Operating temperature: - 20° C / + 70°C
- Bending radius (min.): 8 x Cable diameter

F (MHz)	INSERTION LOSS (dB/100 m)		NEXT (dB/100 m)		ACR-N (dB/100 m)		PSNEXT (dB/100 m)		ACR-F (dB/100 m)		PSACR-F (dB/100 m)		RETURN LOSS (dB/100 m)	
	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C
1	2.0	1.8	65.3	76	63.3	74	62.3	78	63.8	75	60.8	72	20.0	35
4	4.1	4.0	56.3	75	52.2	69	53.3	72	51.8	60	48.8	66	23.0	36
10	6.5	6.2	50.3	70	43.8	64	47.3	69	43.8	53	40.8	50	25.0	38
16	8.2	8.0	47.2	64	39.1	56	44.2	61	39.7	52	36.7	49	25.0	38
20	9.3	9.0	45.8	63	36.5	54	42.0	60	37.8	50	34.8	47	25.0	37
25	10.4	10.3	44.3	61	33.9	51	41.3	58	35.8	48	32.8	45	24.3	36
31.25	11.7	11.5	42.9	59	31.2	48	39.9	56	33.9	47	30.9	44	23.6	35
62.5	17.0	16.8	38.4	54	21.4	37	35.4	51	27.9	41	24.9	38	21.5	30
100	22.0	21.7	35.3	51	13.3	30	32.3	48	23.8	39	20.8	36	20.1	29

ORDERING INFORMATION

Part Number	Pairs	Core Section	Shielding	Jacket	Outer Diameter	Weight	Packaging
VGB4	4	AWG24	U/UTP	PVC	5.5 mm	34 kg/km	B305M – 500M -1000M
VGB4SH	4	AWG24	U/UTP	LSZH	5.5 mm	34 kg/km	B305M -1000M
VGB8	2 x 4	AWG24	U/UTP	PVC	5.5 x 11 mm	68 kg/km	1000M
VGB8SH	2 x 4	AWG24	U/UTP	LSZH	5.5 x 11 mm	68 kg/km	1000M

COPPER CABLES

CATEGORY 5E CABLES - F/UTP
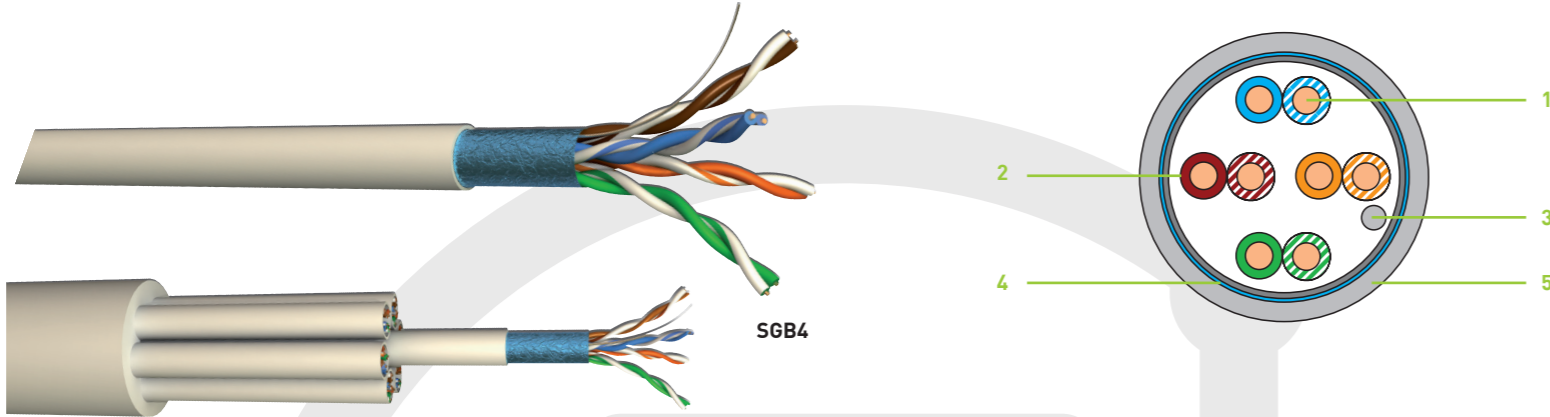
SGB4

SGB32

1. Core: Solid annealed copper AWG24
2. Insulation: High-density PE
3. Drain wire: Solid tinned copper AWG24
4. Shielding: Al/PE foil – 110% coverage
5. Jacket: PVC or LSZH – Grey RAL 7035

CABLING STANDARDS

- CABLE: - IEC 61156-5
  - EN 50288-2-1
- SYSTEM: - ISO/IEC 11801 Edition 2 – CLASS D
  - EN 50173 Edition 2 – CLASS D
  - EIA/TIA 568-B.2 CAT5e

FEATURES AND BENEFITS

- Exceed CAT5e standard requirements
- Available in 3 x 4, 8 x 4 and 16 x 4 versions

TECHNICAL CHARACTERISTICS

- Linear resistance (max.): 94 Ω / Km
- Characteristic impedance: (from 1 to 100 MHz) 100 +/- 15 Ω
- Mutual capacity (nom.): 50 pF / m
- Coupling attenuation (nom.): 65 dB
- Nominal velocity propagation: 66 %
- Operating temperature: - 20° C / + 70°C
- Bending radius (min.): 8 x Cable diameter

NETWORK APPLICATIONS

- ISDN - VoIP
- TOKEN RING 4/16 Mbits - 100 VG-AnyLAN
- TP-PMD/TP-DDI - ATM 155, 622,1200 Mbits
- ETHERNET: 10 Base T, 100 Base Tx, 100 Base T4, 1000 Base T

F (MHz)	INSERTION LOSS (dB/100 m)		NEXT (dB/100 m)		ACR-N (dB/100 m)		PSNEXT (dB/100 m)		ACR-F (dB/100 m)		PSACR-F (dB/100 m)		RETURN LOSS (dB/100 m)	
	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C
1	2.0	1.7	65.3	75	63.3	73	62.3	72	63.8	79	60.8	76	20.0	28
4	4.1	4.0	56.3	69	52.2	65	53.3	66	51.8	73	48.8	70	23.0	30
10	6.5	6.2	50.3	62	43.8	56	47.3	59	43.8	63	40.8	60	25.0	38
16	8.2	8.1	47.2	58	39.1	50	44.2	55	39.7	61	36.7	58	25.0	38
20	9.3	9.1	45.8	56	36.5	45	42.0	53	37.8	60	34.8	57	25.0	37
25	10.4	10.2	44.3	54	33.9	44	41.3	51	35.8	55	32.8	52	24.3	36
31.25	11.7	11.5	42.9	53	31.2	42	39.9	50	33.9	53	30.9	50	23.6	35
62.5	17.0	16.8	38.4	49	21.4	33	35.4	46	27.9	50	24.9	47	21.5	34
100	22.0	21.7	35.3	45	13.3	24	32.3	42	23.8	49	20.8	46	20.1	32

ORDERING INFORMATION

Part Number	Pairs	Core Section	Shielding	Jacket	Outer Diameter	Weight	Packaging
SGB4	4	AWG24	F/UTP	PVC	5.8 mm	38 kg/km	C100M - B305M - 500M -1000M
SGB4SH	4	AWG24	F/UTP	LSZH	5.8 mm	38 kg/km	C100M - B305M - 500M - 1000M
SGB8	2 x 4	AWG24	F/UTP	PVC	5.8 x 13 mm	76 kg/km	500 M - 1000M
SGB8SH	2 x 4	AWG24	F/UTP	LSZH	5.8 x 13 mm	76 kg/km	500 M - 1000M
SGB12SH	3 x 4	AWG24	F/UTP	LSZH	17 mm	175 kg/km	1000M
SGB32SH	8 x 4	AWG24	F/UTP	LSZH	23 mm	445 kg/km	500M
SGB64SH	16 x 4	AWG24	F/UTP	LSZH	32 mm	830 kg/km	500M

CATEGORY 5E CABLES - SF/UTP
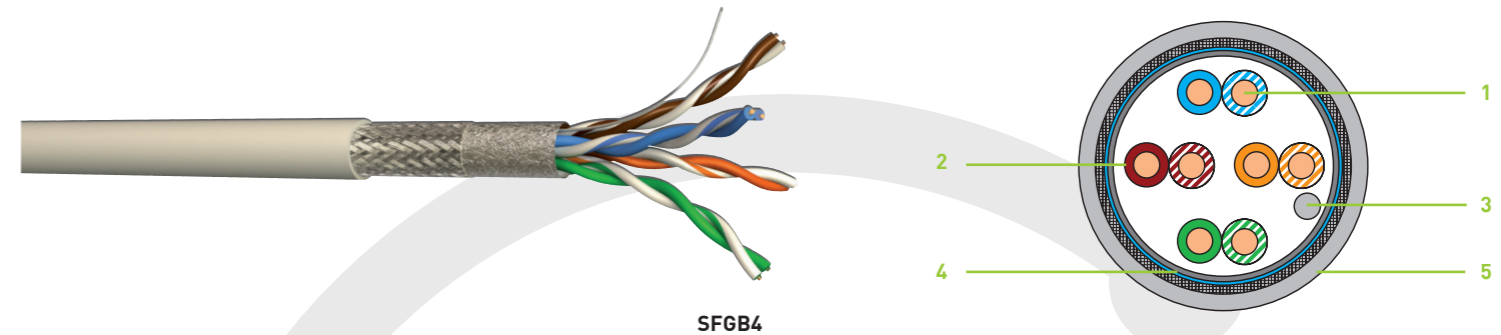
SFGB4

1. Core: Solid annealed copper AWG24
2. Insulation: High-density PE
3. Drain wire: Solid tinned copper AWG24
4. Shielding 1: Al/PE foil – 110% coverage
5. Shielding 2: Tinned copper braid – Minimum coverage 50%
6. Jacket: LSZH – Grey RAL 7035

FEATURES AND BENEFITS

- Exceed CAT5e standard requirements
- Double shielding (aluminium foil + tinned copper braid) gives excellent protection against electromagnetic interferences. This cable is therefore recommended for installations in industrial and harsh environments

CABLING STANDARDS

- CABLE: - IEC 61156-5
  - EN 50288-2-1
- SYSTEM: - ISO/IEC 11801 Edition 2 – CLASS D
  - EN 50173 Edition 2 – CLASS D
  - EIA/TIA 568-B.2 CAT5e

NETWORK APPLICATIONS

- ISDN - VoIP
- TOKEN RING 4/16 Mbits - 100 VG-AnyLAN
- TP-PMD/TP-DDI - ATM 155, 622,1200 Mbits
- ETHERNET: 10 Base T, 100 Base Tx, 100 Base T4, 1000 Base T

TECHNICAL CHARACTERISTICS

- Linear resistance (max.): 94 Ω / Km
- Characteristic impedance: (from 1 to 100 MHz) 100 +/- 15 Ω
- Mutual capacity (nom.): 48 pF / m
- Coupling attenuation (nom.): 75 dB
- Nominal velocity propagation: 69 %
- Operating temperature: - 20° C / + 70°C
- Bending radius (min.): 8 x Cable diameter

F (MHz)	INSERTION LOSS (dB/100 m)		NEXT (dB/100 m)		ACR-N (dB/100 m)		PSNEXT (dB/100 m)		ACR-F (dB/100 m)		PSACR-F (dB/100 m)		RETURN LOSS (dB/100 m)	
	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C
1	2.0	1.7	65.3	79	63.3	77	62.3	76	63.8	79	60.8	76	20.0	35
4	4.1	4.0	56.3	72	52.2	68	53.3	69	51.8	73	48.8	70	23.0	37
10	6.5	6.2	50.3	70	43.8	64	47.3	67	43.8	63	40.8	60	25.0	38
16	8.2	8.1	47.2	66	39.1	58	44.2	63	39.7	61	36.7	58	25.0	38
20	9.3	9.1	45.8	65	36.5	56	42.0	62	37.8	60	34.8	57	25.0	37
25	10.4	10.2	44.3	63	33.9	53	41.3	60	35.8	55	32.8	52	24.3	37
31.25	11.7	11.5	42.9	60	31.2	49	39.9	57	33.9	53	30.9	50	23.6	35
62.5	17.0	16.8	38.4	55	21.4	39	35.4	52	27.9	50	24.9	47	21.5	34
100	22.0	21.7	35.3	51	13.3	30	32.3	48	23.8	49	20.8	46	20.1	32

ORDERING INFORMATION

Part Number	Pairs	Core Section	Shielding	Jacket	Outer Diameter	Weight	Packaging
SFGB4SH	4	AWG24	SF/UTP	LSZH	6.5 mm	58 kg/km	500M -1000M
SFGB8SH	2 x 4	AWG24	SF/UTP	LSZH	6.5 x 14 mm	116 kg/km	500 M - 1000M

CATEGORY 6 CABLES - U/UTP - 250 MHZ
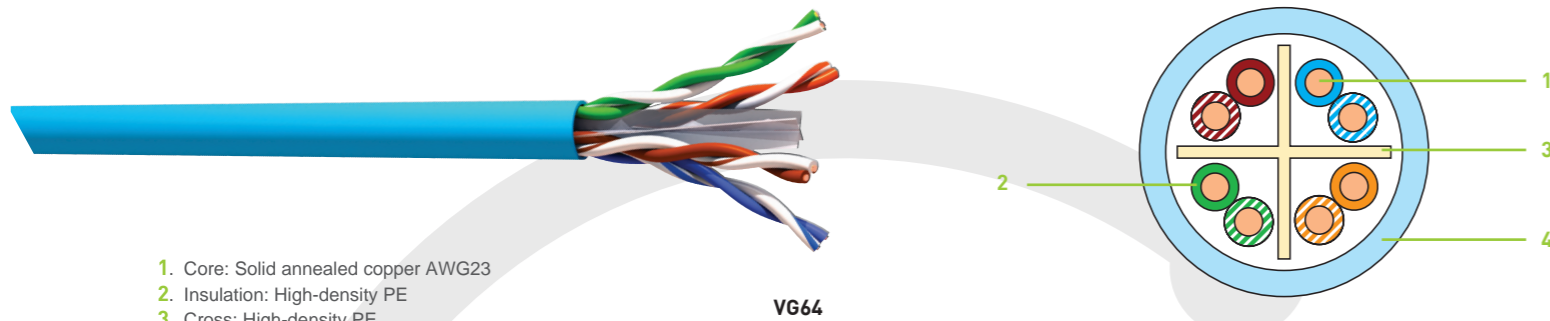
VG64

1. Core: Solid annealed copper AWG23
2. Insulation: High-density PE
3. Cross: High-density PE
4. Jacket: PVC or LSZH – Blue RAL 5024

FEATURES AND BENEFITS

- Exceed CAT6 standard requirements
- Reduced outer diameter
- Excellent flexibility during installation

NETWORK APPLICATIONS

- ISDN - VoIP
- TOKEN RING 4/16 Mbits - 100 VG-AnyLAN
- TP-PMD/TP-DDI - ATM 155, 622,1200 Mbits
- ETHERNET: 10 Base T, 100 Base Tx, 100 Base T4, 1000 Base T

CABLING STANDARDS

- CABLE: - IEC 61156-5
  - EN 50288-5-1
- SYSTEM: - ISO/IEC 11801 Edition 2 – CLASS E
 - EIA/TIA 568-B.2-1 CAT6

TECHNICAL CHARACTERISTICS

- Linear resistance (max.): 150 Ω / Km
- Characteristic impedance: (from 1 to 100 MHz) 100 +/- 15 Ω (from 100 to 250 MHz) 100 +/- 20 Ω
- Mutual capacity (nom.): 48 pF / m
- Nominal velocity propagation: 69 %
- Operating temperature: - 20° C / + 70°C
- Bending radius (min.): 8 x Cable diameter

F (MHz)	INSERTION LOSS (dB/100 m)		NEXT (dB/100 m)		ACR-N (dB/100 m)		PSNEXT (dB/100 m)		ACR-F (dB/100 m)		PSACR-F (dB/100 m)		RETURN LOSS (dB/100 m)	
	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C
1	2.0	1.8	74.3	78	72.3	76	72.3	79	67.8	83	64.8	81	20.0	31
4	3.8	3.2	65.3	71	61.5	68	63.3	70	55.8	84	52.8	80	23.0	32
10	6.0	5.0	59.3	65	53.3	60	57.3	64	47.8	81	44.8	70	25.0	29
16	7.6	6.5	56.2	62	48.6	55	54.2	61	43.7	79	40.7	62	25.0	31
25	9.5	8.7	53.3	54	43.8	51	51.3	58	39.8	75	36.8	60	24.3	33
31.25	10.7	9.6	51.9	57	41.2	49	49.9	57	37.9	72	34.9	56	23.6	30
100	19.8	17.4	44.3	49	24.5	32	42.3	49	27.8	62	24.8	45	20.1	26
200	29.0	25.8	39.8	45	10.8	23	37.8	45	21.8	53	18.8	36	18.0	23
250	32.8	30.4	38.3	42	5.5	16	36.3	44	19.8	47	16.8	35	17.3	21

ORDERING INFORMATION

Part Number	Pairs	Core Section	Shielding	Jacket	Outer Diameter	Weight	Packaging
VG64	4	AWG23	U/UTP	PVC	6.2 mm	41 kg/km	B305M - 500M - 1000M
VG64SH	4	AWG 23	U/UTP	LSZH	6.2 mm	41 kg/km	B305M - 500M - 1000M
VG68	2X4	AWG23	U/UTP	PVC	6.2 X13.5mm	85 kg/km	500M - 1000M
VG68SH	2X4	AWG 23	U/UTP	LSZH	6.2 X13.5mm	85 kg/km	500M - 1000M

CATEGORY 6 CABLES - F/UTP – 350 MHZ

CX64SH
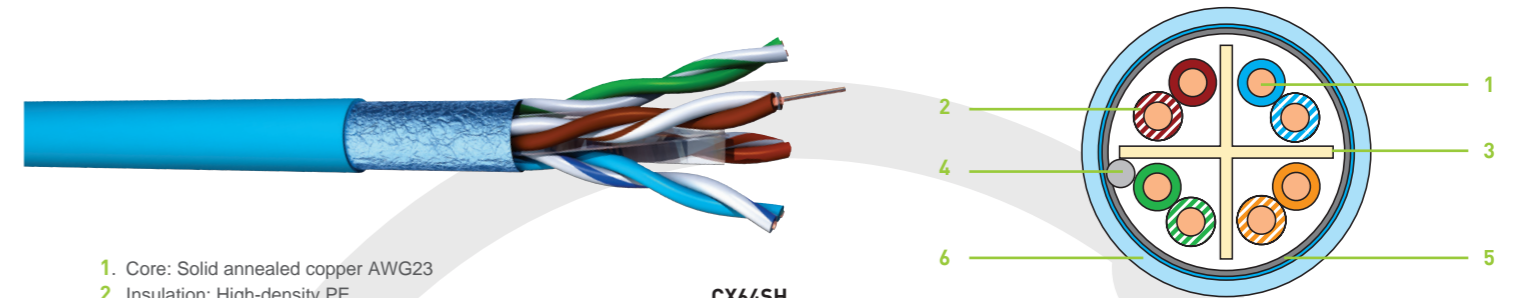
1. Core: Solid annealed copper AWG23
2. Insulation: High-density PE
3. Cross: High-density PE
4. Drain wire: solid tinned copper AWG24
5. Shielding: Al/PE foil – coverage 110%
6. Jacket: LSZH – Blue RAL 5024

FEATURES AND BENEFITS

- Exceed CAT6 standard requirements, tested up to 350 MHz
- Adapted to VoIP applications

NETWORK APPLICATIONS

- ISDN - VoIP
- TOKEN RING 4/16 Mbits - 100 VG-AnyLAN
- TP-PMD/TP-DDI - ATM 155, 622,1200 Mbits
- ETHERNET: 10 Base T, 100 Base Tx, 100 Base T4, 1000 Base T

CABLING STANDARDS

- CABLE: - IEC 61156
  - EN 50288-4-1
- SYSTEM: - ISO/IEC 11801 Edition 2 – CLASS E
  - EN 50173 EDITION 2 – CLASS E
  - EIA/TIA 568-B.2-1 CAT6

TECHNICAL CHARACTERISTICS

- Linear resistance (max.): 186 Ω / Km
- Characteristic impedance: (from 1 to 100 MHz) 100 +/- 15 Ω (from 100 to 250 MHz) 100 +/- 20 Ω
- Mutual capacity (nom.): 52 pF / m
- Coupling attenuation (nom.): 60 dB
- Nominal velocity propagation: 69 %
- Operating temperature: - 20° C / + 70°C
- Bending radius (min.): 8 x Cable diameter

F (MHz)	INSERTION LOSS (dB/100 m)		NEXT (dB/100 m)		ACR-N (dB/100 m)		PSNEXT (dB/100 m)		ACR-F (dB/100 m)		PSACR-F (dB/100 m)		RETURN LOSS (dB/100 m)	
	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C
1	2.0	1.8	74.3	82	72.3	80	72.3	87.3	67.8	83	64.8	82.5	20.0	36
4	3.8	3.0	65.3	73	61.5	70	63.3	84.7	55.8	80.7	52.8	81.6	23.0	35
10	6.0	4.7	59.3	67	53.3	63	57.3	83.2	47.8	77.2	44.8	76	25.0	35
16	7.6	6.3	56.2	64	48.6	58	54.2	82	43.7	72.6	40.7	72.2	25.0	32.5
25	9.5	8.1	53.3	61	43.8	53	51.3	78.5	39.8	71.1	36.8	71	24.3	35
31.25	10.7	9.3	51.9	60	41.2	51	49.9	73.8	37.9	69	34.9	69.3	23.6	34
100	19.8	17.6	44.3	52	24.5	45	42.3	70.1	27.8	67.5	24.8	67.1	20.1	33
200	29.0	25.6	39.8	48	10.8	23	37.8	62.4	21.8	66.4	18.8	66.2	18.0	32
250	32.8	30.7	38.3	47	5.5	17	36.3	60.8	19.8	65.2	16.8	65.1	17.3	31
300	-	34.2	-	45	-	11	-	58	-	63	-	62.7	-	28
350	-	37.3	-	42	-	5	-	55	-	60.2	-	59.8	-	27

ORDERING INFORMATION

| Part Number	Pairs	Core Section	Shielding	Jacket	Outer Diameter	Weight	Packaging
CX6-4SH	4	AWG 23	F/UTP	LSZH	7.5 mm	58 kg/km	B305M - 500M -1000M
CX6-8SH	2 x 4	AWG 23	F/UTP	LSZH	7.5 x 15.0 mm	120 kg/km	500M -1000M

COPPER CABLES

CATEGORY 6 / 10G CABLES - U/UTP – 500 MHZ
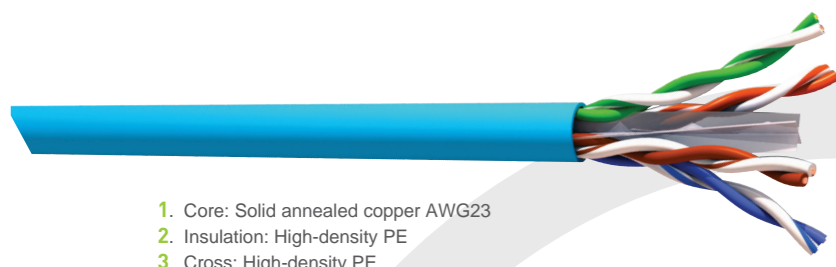
1. Core: Solid annealed copper AWG23
2. Insulation: High-density PE
3. Cross: High-density PE
4. Jacket: LSZH – Blue RAL 5024

VG5004SH
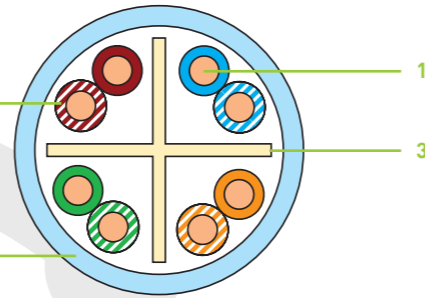
FEATURES AND BENEFITS

- Exceed CAT6 standard requirements, tested up to 500 MHz
- In system, exceed CAT6 10G specifications (EIA/TIA TSB-155, ISO/IEC TR 24750)
- Adapted to VoIP and PoE applications.

NETWORK APPLICATIONS

- ISDN - VoIP
- TOKEN RING 4/16 Mbits - 100 VG-AnyLAN
- TP-PMD/TP-DDI - ATM 155, 622,1200 Mbits
- ETHERNET: 10 Base T, 100 Base Tx, 100 Base T4, 1000 Base T, 10 G Base T
- IEEE 802.3af – PoE (Power Over Ethernet)

CABLING STANDARDS

- CABLE: - IEC 61156-5
  - EN 50288-5-1
- SYSTEM: - EIA/TIA TSB-155 10G OVER CAT6
  - ISO/IEC TR 24750 10G OVER CLASS E
  - ISO/IEC 11801 Edition 2 – CLASS E
  - EIA/TIA 568-B.2-1 CAT6

TECHNICAL CHARACTERISTICS

- Linear resistance (max.): 150 Ω / Km
- Characteristic impedance: (from 1 to 100 MHz) 100 +/- 15 Ω
  (from 100 to 250 MHz) 100 +/- 20 Ω
- Mutual capacity (nom.): 48 pF / m
- Nominal velocity propagation: 69 %
- Operating temperature: - 20° C / + 70°C
- Bending radius (min.): 8 x Cable diameter

F (MHz)	INSERTION LOSS (dB/100 m)		NEXT (dB/100 m)		ACR-N (dB/100 m)		PSNEXT (dB/100 m)		ACR-F (dB/100 m)		PSACR-F (dB/100 m)		RETURN LOSS (dB/100 m)	
	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C
1	2.0	1.7	74.3	82	72.3	80	72.3	79	67.8	83	64.8	81	20.0	32
4	3.8	2.9	65.3	73	61.5	70	63.3	70	55.8	84	52.8	80	23.0	33
10	6.0	4.8	59.3	67	53.3	62	57.3	64	47.8	81	44.8	70	25.0	30
16	7.6	6.3	56.2	64	48.6	58	54.2	61	43.7	79	40.7	62	25.0	32
25	9.5	8.4	53.3	61	43.8	52	51.3	58	39.8	75	36.8	60	24.3	34
31.25	10.7	9.3	51.9	60	41.2	50	49.9	57	37.9	72	34.9	56	23.6	31
100	19.8	17.2	44.3	52	24.5	35	42.3	49	27.8	62	24.8	45	20.1	27
200	29.0	25.3	39.8	48	10.8	23	37.8	45	21.8	53	18.8	36	18.0	24
250	32.8	30.0	38.3	47	5.5	17	36.3	44	19.8	47	16.8	35	17.3	22
300	-	34.3	-	46	-	11.7	-	43	-	46	-	34	-	20
400	-	38.5	-	42	-	3.5	-	39	-	45		33	-	18
500	-	39.0	-	41	-	2.0	-	39	-	43		32	-	17.5

ORDERING INFORMATION

Part Number	Pairs	Core Section	Shielding	Jacket	Outer Diameter	Weight	Packaging
VG5004SH	4	AWG 23	U/UTP	LSZH	6.5 mm	43 kg/km	B305M -500M -1000M
VG5008SH	2 x 4	AWG 23	U/UTP	LSZH	6.5 x 13.0 mm	89 kg/km	500M -1000M

CATEGORY 6 / 10G CABLES - U/FTP - 500 MHZ
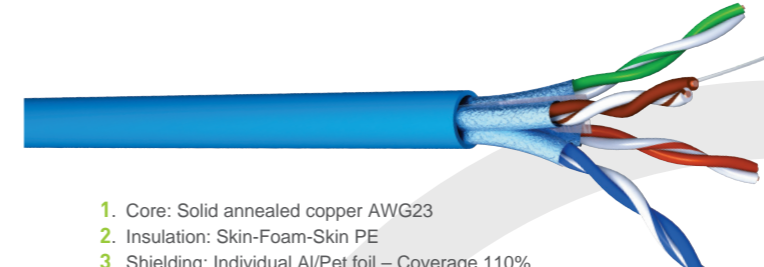
1. Core: Solid annealed copper AWG23
2. Insulation: Skin-Foam-Skin PE
3. Shielding: Individual Al/Pet foil – Coverage 110%
4. Drain wire: Solid tinned copper AWG24
5. Jacket: LSZH – Blue RAL 5024

5004SH
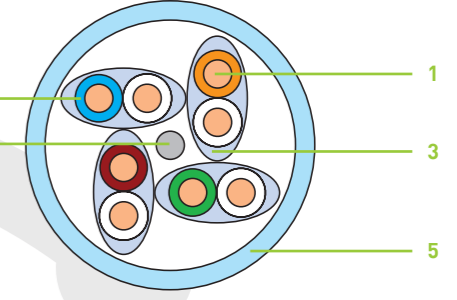
FEATURES AND BENEFITS

- Exceed CAT6 standard requirements, tested up to 500 MHz
- In system, exceed CAT6 10G specifications (EIA/TIA TSB-155, ISO/IEC TR 24750)
- Excellent protection against electromagnetic interferences thanks to individual shielding
- Perfectly adapted to VoIP and PoE applications, including the future 802.3 at standard
- Limited outer diameter and fast termination, compared to Cat6 F/UTP cables
- Available in 2x4 pair, 3x4 pair and 4x4 pair versions

NETWORK APPLICATIONS

- ISDN - VoIP
- TOKEN RING 4/16 Mbits - 100 VG-AnyLAN
- TP-PMD/TP-DDI - ATM 155, 622,1200 Mbits
- ETHERNET: 10 Base T, 100 Base Tx, 100 Base T4, 1000 Base T, 10 G Base T
- IEEE 802.3at – PoE (Power Over Ethernet)
- Future 802.3af – PoEP (Power over Ethernet Plus)

CABLING STANDARDS

- CABLE: - IEC 61156-5
  - EN 50288-5-1
- SYSTEM: - EIA/TIA TSB-155 10G OVER CAT6
  - ISO/IEC TR 24750 10G OVER CLASS E
  - ISO/IEC 11801 Edition 2 – CLASS E
  - EIA/TIA 568-B.2-1 CAT6

TECHNICAL CHARACTERISTICS

- Linear resistance (max.): 150 Ω / Km
- Characteristic impedance: (from 1 to 100 MHz) 100 +/- 15 Ω
  (from 100 to 250 MHz) 100 +/- 20 Ω
- Mutual capacity (nom.): 42 pF / m
- Coupling attenuation (nom.): 65 dB
- Nominal velocity propagation: 79 %
- Operating temperature: - 20° C / + 70°C
- Bending radius (min.): 8 x Cable diameter

F (MHz)	INSERTION LOSS (dB/100 m)		NEXT (dB/100 m)		ACR-N (dB/100 m)		PSNEXT (dB/100 m)		ACR-F (dB/100 m)		PSACR-F (dB/100 m)		RETURN LOSS (dB/100 m)	
	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C
1	2.0	1.8	74.3	85	72.3	83	72.3	83	67.8	83	64.8	80	20.0	36
4	3.8	3.0	65.3	83	61.5	79	63.3	81	55.8	84	52.8	81	23.0	35
10	6.0	4.7	59.3	84	53.3	79	57.3	83	47.8	81	44.8	78	25.0	35
16	7.6	6.3	56.2	85	48.6	76	54.2	82	43.7	79	40.7	76	25.0	32
25	9.5	8.1	53.3	81	43.8	81	51.3	79	39.8	75	36.8	72	24.3	35
31.25	10.7	9.3	51.9	80	41.2	69	49.9	78	37.9	72	34.9	69	23.6	34
100	19.8	17.6	44.3	79	24.5	60	42.3	77	27.8	62	24.8	59	20.1	33
200	29.0	25.6	39.8	76	10.8	48	37.8	74	21.8	53	18.8	50	18.0	32
250	32.8	30.7	38.3	74	5.5	43	36.3	72	19.8	47	16.8	44	17.3	31
300	-	34.2	-	73	-	-	-	71	-	45	-	42	-	28
400	-	38.3	-	70	-		-	68	-	44	-	41	-	24
500	-	42.7	-	70	-		-	68	-	44	-	41	-	22

ORDERING INFORMATION

Part Number	Pairs	Core Section	Shielding	Jacket	Outer Diameter	Weight	Packaging
5004SH	4	AWG 23	U/FTP	LSZH	7.3 mm	56 kg/km	500M -1000M
5008SH	2 x 4	AWG 23	U/FTP	LSZH	7.3 x 14.8 mm	115 kg/km	500M -1000M
50012SH	3 x 4	AWG 23	U/FTP	LSZH	19.4 mm	307 kg/km	500M -1000M
50016SH	4 x 4	AWG 23	U/FTP	LSZH	21.4 mm	387 kg/km	500M

COPPER CABLES

CATEGORY 6A CABLES - U/FTP – 525 MHZ
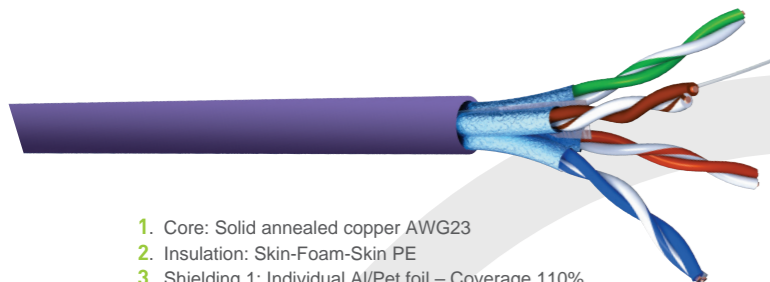
5254SH
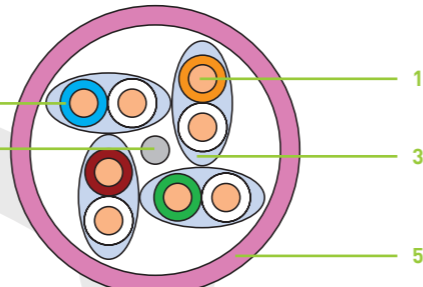
1. Core: Solid annealed copper AWG23
2. Insulation: Skin-Foam-Skin PE
3. Shielding 1: Individual Al/Pet foil – Coverage 110%
4. Drain wire: Solid tinned copper AWG24
5. Jacket: LSZH – Violet RAL 4001

FEATURES AND BENEFITS

- Exceed CAT6A standard requirements, tested up to 525 MHz
- Excellent protection against electromagnetic interferences thanks to individual shielding
- Perfectly adapted to VoIP and PoE applications, including the future 802.3at standard
- Limited outer diameter and fast termination, compared to Cat6A F/UTP cables

NETWORK APPLICATIONS

- ISDN - VoIP
- TOKEN RING 4/16 Mbits - 100 VG-AnyLAN
- TP-PMD/TP-DDI - ATM 155, 622,1200 Mbits
- ETHERNET: 10 Base T, 100 Base Tx, 100 Base T4, 1000 Base T, 10 G Base T
- IEEE 802.3af – PoE (Power Over Ethernet)
- Future 802.3at – PoEP (Power over Ethernet Plus)

CABLING STANDARDS

- CABLE: - EIA/TIA 568-B2-10 CAT6A
  - IEC 61156-5 Ed2 CAT6A
  - EN 50288-10-1 CAT6A
- SYSTEM: - AD1.0 & AD2.0 ISO11801 CLASSE Ea
  - EIA/TIA 568-B.2-10 CAT6A
 - EN 50173-1 – CLASSE Ea

TECHNICAL CHARACTERISTICS

- Linear resistance (max.): 145 Ω / Km
- Characteristic impedance: (from 1 to 100 MHz) 100 +/- 15 Ω
  (from 100 to 500 MHz) 100 +/- 25 Ω
- Mutual capacity (nom.): 45 pF / m
- Coupling attenuation (nom.): 65 dB
- Nominal velocity propagation: 79 %
- Operating temperature: - 20° C / + 70°C
- Bending radius (min.): 8 x Cable diameter

F (MHz)	INSERTION LOSS (dB/100 m)		NEXT (dB/100 m)		ACR-N (dB/100 m)		PSNEXT (dB/100 m)		ACR-F (dB/100 m)		PSACR-F (dB/100 m)		RETURN LOSS (dB/100 m)	
	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C
1	2.0	1.8	75.0	85	73.0	83	72.0	83	67.8	83	64.8	80	20.0	36
4	3.7	3.0	65.3	83	61.6	79	62.3	81	55.8	84	52.8	81	23.0	35
10	5.8	4.7	59.3	84	53.5	79	56.3	83	47.8	81	44.8	78	25.0	35
16	7.4	6.3	56.2	85	48.8	76	53.2	82	43.7	79	40.7	76	25.0	32
25	9.2	8.1	53.3	81	44.1	81	50.3	79	39.8	75	36.8	72	24.5	35
31.25	10.4	9.3	51.9	80	41.5	69	48.9	78	37.9	72	34.9	69	23.8	34
100	19.0	17.6	44.3	79	25.3	60	41.3	77	27.8	62	24.8	59	20.1	33
200	27.5	25.6	39.8	76	12.3	48	36.8	74	21.8	53	18.8	50	18.0	32
250	31.0	30.7	38.3	74	7.3	43	35.3	72	19.8	47	16.8	44	17.3	31
300	34.2	34.2	37.1	73	2.9	48	34.1	71	19.8	45	16.8	42	17.3	28
400	40.0	38.3	35.3	70	4.7	32	32.3	68	19.8	44	16.8	41	17.3	24
500	45.3	42.7	33.8	70	11.5	28	30.8	68	19.8	44	16.8	41	17.3	22
525	-	45.0	-	68	-	23	-	66	-	42	-	38	-	21

ORDERING INFORMATION

Part Number	Pairs	Core Section	Shielding	Jacket	Outer Diameter	Weight	Packaging
5254SH	4	AWG 23	U/FTP	LSZH	7.4 mm	56 kg/km	500M -1000M
5258SH	2 x 4	AWG 23	U/FTP	LSZH	7.4 x 14.8 mm	115 kg/km	500M -1000M

CATEGORY 6A CABLES - F/FTP - 555 MHZ
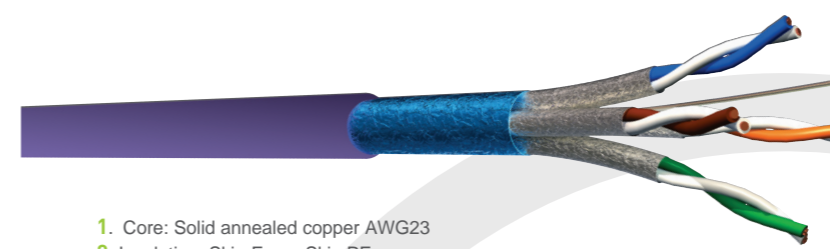
F5554SH
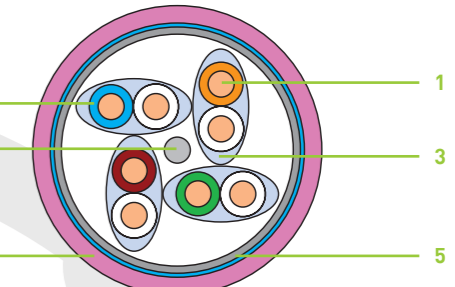
1. Core: Solid annealed copper AWG23
2. Insulation: Skin-Foam-Skin PE
3. Shielding 1: Individual Al/Pet foil – Coverage 110%
4. Drain wire: Solid tinned copper AWG24
5. Shielding 2: Al/Pet foil– Coverage 110%
6. Jacket: LSZH –Violet RAL 4001

FEATURES AND BENEFITS

- Exceed CAT6A standard requirements, tested up to 555 MHz
- Installed as component of a shielded Class Ea/CAT6A link, its high coupling attenuation level enables the Alien Cross Talk performance to be « guaranteed by construction ». No field test will be necessary for this parameter.
- Excellent protection against electromagnetic interferences thanks to double shielding
- Perfectly adapted to VoIP and PoE applications, including the future 802.3 at standard

NETWORK APPLICATIONS

- ISDN - VoIP
- TOKEN RING 4/16 Mbits - 100 VG-AnyLAN
- TP-PMD/TP-DDI - ATM 155, 622,1200 Mbits
- ETHERNET: 10 Base T, 100 Base Tx, 100 Base T4, 1000 Base T, 10 G Base T
- IEEE 802.3af – PoE (Power Over Ethernet)
- Future 802.3at – PoEP (Power over Ethernet Plus)

CABLING STANDARDS

- CABLE: - EIA/TIA 568-B2-10 CAT6A
  - IEC 61156-5 Ed2 CAT6A
  - EN 50288-10-1 (CAT6A)
- SYSTEM: - AD1.0 & AD2.0 ISO11801 CLASSE Ea
  - EIA/TIA 568-B.2-10 CAT6A
  - EN 50173-1 – CLASSE Ea

TECHNICAL CHARACTERISTICS

- Linear resistance (max.): 95 Ω / Km
- Characteristic impedance: (from 1 to 100 MHz) 100 +/- 15 Ω
  (from 100 to 250 MHz) 100 +/- 20 Ω
  (from 250 to 500 MHz) 100 +/- 25 Ω
- Mutual capacity (nom.): 45 pF / m
- Coupling attenuation (nom.): 70 dB
- Nominal velocity propagation: 79 %
- Operating temperature: - 20° C / + 70°C
- Bending radius (min.): 8 x Cable diameter

F (MHz)	INSERTION LOSS (dB/100 m)		NEXT (dB/100 m)		ACR-N (dB/100 m)		PSNEXT (dB/100 m)		ACR-F (dB/100 m)		PSACR-F (dB/100 m)		RETURN LOSS (dB/100 m)	
	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C
1	2.0	1.8	75.0	90	73.0	83	72.0	87	67.8	87	64.8	84	20.0	36
4	3.7	2.9	65.3	88	61.6	79	62.3	79	55.8	86	52.8	83	23.0	35
10	5.8	4.6	59.3	86	53.5	79	56.3	83	47.8	83	44.8	80	25.0	35
16	7.4	6.1	56.2	85	48.8	76	53.2	82	43.7	82	40.7	79	25.0	32
25	9.2	8.6	53.3	84	44.1	74	50.3	81	39.8	77	36.8	74	24.5	35
31.25	10.4	9.1	51.9	83	41.5	69	48.9	80	37.9	72	34.9	69	23.8	34
100	19.0	17.3	44.3	80	25.3	60	41.3	77	27.8	64	24.8	61	20.1	33
200	27.5	25.5	39.8	78	12.3	48	36.8	75	21.8	55	18.8	52	18.0	32
250	31.0	30.5	38.3	75	7.3	43	35.3	72	19.8	49	16.8	46	17.3	31
300	34.2	33.6	37.1	74	2.9	41	34.1	71	19.8	47	16.8	44	17.3	28
400	40.0	38.0	35.3	72	-4.7	34	32.3	69	19.8	46	16.8	43	17.3	24
500	45.3	42.5	33.8	72	-11.5	29	30.8	69	19.8	46	16.8	43	17.3	22
555	-	47.0	-	71	-	24	-	68	-	44		41	-	20

ORDERING INFORMATION

Part Number	Pairs	Core Section	Shielding	Jacket	Outer Diameter	Weight	Packaging
F5554SH	4	AWG 23	F/FTP	LSZH	7.4 mm	58 kg/km	500M - 1000M
F5558SH	2 x 4	AWG 23	F/FTP	LSZH	7.4 x 14.8 mm	116 kg/km	500M - 1000M

CATEGORY 7 CABLES - S/FTP - 600 Mhz
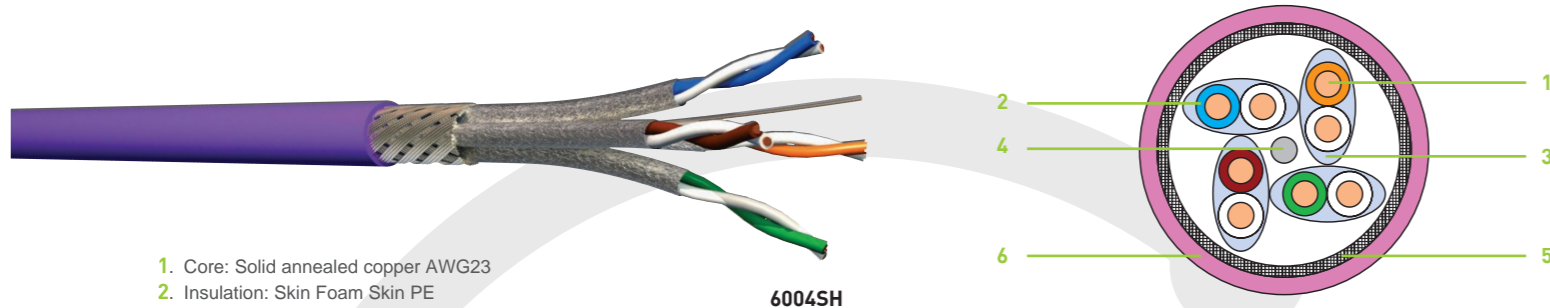
6004SH

1. Core: Solid annealed copper AWG23
2. Insulation: Skin Foam Skin PE
3. Shielding 1: Individual Al/Pet foil –Coverage 110%
4. Drain wire: Solid tinned copper AWG24
5. Shielding 2: Tinned copper braid –Coverage Min.50%
6. Jacket: LSZH –Violet RAL 4001

FEATURES AND BENEFITS

- Exceed CAT7 standard requirements . Enable your cabling infrastructure to be ready for future upgrading of communications standards
- Excellent protection against electro-magnetic interferences thanks to double shielding
- Perfectly adapted to VOIP and POE applications, including the future 802.3 at standard

NETWORK APPLICATIONS

- ISDN - VoIP
- TOKEN RING 4/16 Mbits - 100 VG-AnyLAN
- TP-PMD/TP-DDI - ATM 155, 622,1200 Mbits
- ETHERNET: 10 Base T, 100 Base Tx, 100 Base T4, 1000 Base T, 10 G Base T
- IEEE 802.3af – PoE (Power Over Ethernet)
- Future 802.3at – PoEP (Power over Ethernet Plus)

CABLING STANDARDS

- CABLE: - IEC 61156-5
              - EN 50288-4-1
- SYSTEM: - ISO 11801 Edition 2.0 – CLASS F
              - EN 50173 Edition 2.0 – CLASS F

TECHNICAL CHARACTERISTICS

- Linear resistance (max.): 140 Ω / Km
- Characteristic impedance: (from 1 to 100 MHz) 100 +/- 15 Ω
                              (from 100 to 250 MHz) 100 +/- 20 Ω
                              (from 250 to 600 MHz) 100 +/- 25 Ω
- Mutual capacity (nom.): 45 pF / m
- Coupling attenuation (nom.): 80 dB
- Nominal velocity propagation: 80 %
- Operating temperature: - 20° C / + 70°C
- Bending radius (min.): 8 x Cable diameter

F (MHz)	INSERTION LOSS (dB/100 m)		NEXT (dB/100 m)		ACR-N (dB/100 m)		PSNEXT (dB/100 m)		ACR-F (dB/100 m)		PSACR-F (dB/100 m)		RETURN LOSS (dB/100 m)	
	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C
1	2.0	1.8	80.0	100	78.0	98	77.0	97	80.0	105	77.0	102	20.0	27
10	5.7	5.4	80.0	100	74.3	94	77.0	97	74.0	97	71.0	94	25.0	30
16	7.2	6.8	80.0	100	72.8	93	77.0	97	69.9	93	66.9	90	25.0	30
20	8.1	7.7	80.0	98	71.9	90	77.0	95	68.0	91	65.0	88	25.0	30
31.25	10.1	9.6	80.0	98	69.9	88	77.0	95	64.1	87	61.1	84	25.0	30
62.5	14.5	13.7	75.1	98	60.6	84	72.5	95	58.1	81	55.1	78	23.0	30
100	18.5	17.4	72.4	98	53.9	80	69.4	95	54.0	77	51.0	74	20.0	30
200	28.0	25.0	68.0	92	40.0	67	65.0	89	49.0	71	46.0	68	16.0	25
300	33.3	30.9	65.3	89	32.0	58	62.3	86	44.5	67	41.5	64	15.0	24
600	48.9	44.8	60.8	85	11.9	40	57.8	85	38.4	61	35.4	58	15.0	22

ORDERING INFORMATION

Part Number	Pairs	Core Section	Shielding	Jacket	Outer Diameter	Weight	Packaging
6004SH	4	AWG 23	S/FTP	LSZH	7.6 mm	65 Kg/Km	500M - 1000M
6008SH	2 x 4	AWG 23	S/FTP	LSZH	7.7 x 16 mm	130 Kg/Km	500M - 1000M

CATEGORY 7A CABLES - S/FTP - 1200 Mhz

SF12004SH
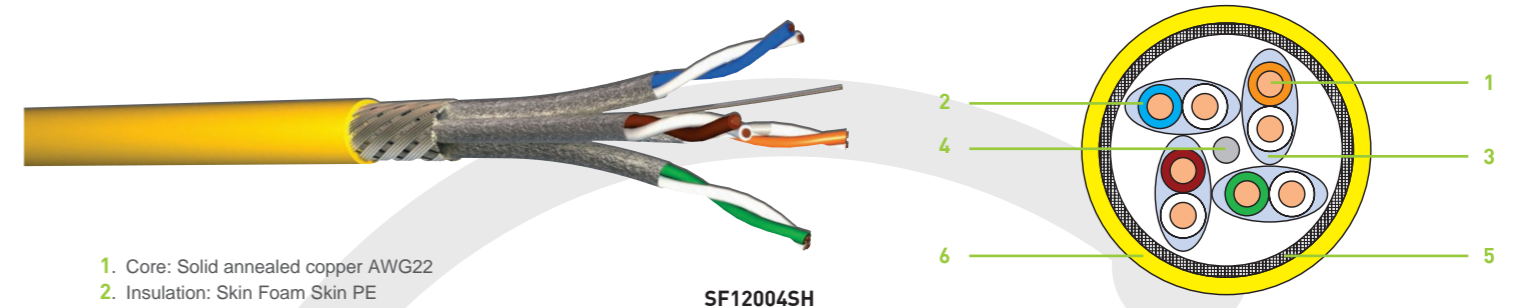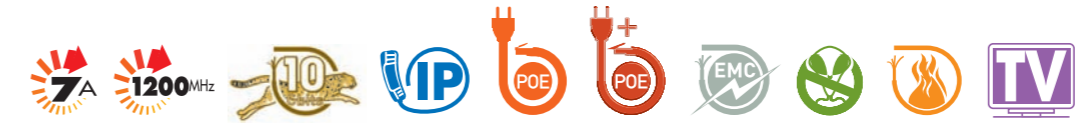
1. Core: Solid annealed copper AWG22
2. Insulation: Skin Foam Skin PE
3. Shielding 1: Individual Al/Pet foil –Coverage 110%
4. Drain wire: Solid tinned copper AWG24
5. Shielding 2: Tinned copper braid –Coverage Min.50%
6. Jacket: LSZH –Yellow RAL 1021

FEATURES AND BENEFITS

- Exceed CAT7A standard requirements. Enable your cabling infrastructure to be ready for future upgrading of communications standards
- Excellent protection against electro-magnetic interferences thanks to double shielding
- Perfectly adapted to VOIP and POE applications, including the future 802.3 at standard
- Enable transmisison of UHF/VHF TV signals up to 50 meters

NETWORK APPLICATIONS

- ISDN - VoIP
- TOKEN RING 4/16 Mbits - 100 VG-AnyLAN
- TP-PMD/TP-DDI - ATM 155, 622,1200 Mbits
- ETHERNET: 10 Base T, 100 Base Tx, 100 Base T4, 1000 Base T, 10 G Base T
- IEEE 802.3at – PoE (Power Over Ethernet)
- Future 802.3at – PoEP (Power over Ethernet Plus)
- Terrestrial TV (Analogue and digital)

CABLING STANDARDS

- CABLE: - IEC 61156-5 (CAT7A)
              - EN 50288-4-1
- SYSTEM: - AD1 & AD2 ISO 11801 – CLASSE FA
              - ISO 11801 Edition 2.0 – CLASSE F
              - EN 50173:2002

TECHNICAL CHARACTERISTICS

- Linear resistance (max.): <75 Ω / Km
- Characteristic impedance: (from 1 to 100 MHz) 100 +/- 15 Ω
                              (from 100 to 250 MHz) 100 +/- 20 Ω
                              (from 250 to 1000 MHz) 100 +/- 25 Ω
- Mutual capacity (nom.): 45 pF / m
- Coupling attenuation (nom.): 85 dB
- Nominal velocity propagation: 78 %
- Operating temperature: - 20° C / + 70°C
- Bending radius (min.): 8 x Cable diameter

F (MHz)	INSERTION LOSS (dB/100 m)		NEXT (dB/100 m)		ACR-N (dB/100 m)		PSNEXT (dB/100 m)		ACR-F (dB/100 m)		PSACR-F (dB/100 m)		RETURN LOSS (dB/100 m)	
	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C
4	3.7	3.5	78.0	100	78.0	96	75.0	97	78.0	105	77.0	102	23.0	25
10	5.8	5.6	78.0	100	74.3	94	75.0	97	74.0	97	71.0	94	25.0	26
16	7.3	7.1	78.0	100	72.8	92	75.0	97	70.0	93	66.9	90	25.0	26
20	8.2	8.0	78.0	98	71.9	90	75.0	95	68.0	91	65.0	88	25.0	26
31.25	10.3	10.1	78.0	98	69.9	87	75.0	95	64.0	87	61.1	84	23.6	25
62.5	14.6	14.3	75.0	98	60.6	83	72.0	95	58.0	81	55.1	78	21.5	23
100	18.5	18.3	72.0	98	53.9	79	69.0	95	54.0	77	51.0	74	20.1	21
300	32.7	32.5	65.0	92	40.0	59	62.0	89	44.0	71	46.0	68	17.3	18
600	47.1	46.8	61.0	88	32.0	41	58.0	86	38.0	67	41.5	64	17.3	18
1000	61.9	61.6	57.0	85	11.9	23	54.0	85	34.0	61	35.4	58	17.3	18
1200	NC	63.1	NC	82	NC	19	NC	83	NC	58	NC	52	NC	18

ORDERING INFORMATION

Part Number	Pairs	Core Section	Shielding	Jacket	Outer Diameter	Weight	Packaging
SF12004SH	4	AWG 22	S/FTP	LSZH	7.7 mm	68 Kg/Km	1000M
SF12008SH	2 x 4	AWG 22	S/FTP	LSZH	7.7 x 16 mm	139 Kg/Km	500M - 1000M

BC SERIE: **CATEGORY 5E MODULAR JACKS**

BC5ENB

BC5EAN

BC5EFS

FEATURES AND BENEFITS

- Exceed CAT5e standard specifications
- Two possible termination methods: - Punch down tool
                                                        - Special BC Tool
- Very clear label for 568 A or B wiring
- Solid conductors diameter from AWG24 to AWG22
- Keystone format – 32 mm depth
- Snaps in BC serie modular panels and faceplates

FULLY SHIELDED VERSIONS

- 360° electromagnetic protection
- Direct grouding contact to patch panel
- Back cap enabling 90˚ or straight cable exit

NETWORK APPLICATIONS

- ISDN - VoIP
- TOKEN RING 4/16 Mbits - 100 VG-AnyLAN
- TP-PMD/TP-DDI - ATM 155, 622,1200 Mbits
- ETHERNET: 10 Base T, 100 Base Tx, 100 Base T4, 1000 Base T

CABLING STANDARDS

- EIA/TIA 568-B.2 Category 5e
- ISO 11801 Edition 2 – Class D
- EN 50173 Edition 2 – Class D

TECHNICAL CHARACTERISTICS

- IDC for toolless termination: bronze + platinum / Cu + SnPb 8µ
- Contacts: bronze platinium Ni+ Au 0.2 µm
- Plastic housing: ABS, PVC UL94V0
- Metal cover (Fully shielded version): Zamak
- Nominal solid conductor diameter: from 0.48 mm to 0.64mm
- Flammability rating: UL V0
- Operating temperature: - 20°C / + 60°C
- Plug insertion life: > 400 mating cycles minimum
- Dimensions: IEC 60603-7
- Contact resistance: < 10mΩ
- Input/Output resistance: < 150 mΩ
- Insulation resistance: > 500 m Ω at 100V d.c.
- Voltage test: > 1000 V d.c. contact-to-contact
                          > 1500 V d.c. contact-to-shield
- Current: < 0.175mA per conductor
- Operating voltage: <72 V d.c.
- Power capacity: < 15 W
- Vibration: < 10µs [25-250 Hz, 5g, 3 axes]
- Coupling attenuation (shielded versions): 65 dB

ORDERING INFORMATION

Part Number	Description	Shielding	Colour	Packaging
BC5ENB	CAT5e Modular jack	Unshielded	White	50
BC5EAN	CAT5e Modular jack	Half-Shielded	White	50
BC5EFS	CAT5e Modular jack	Fully Shielded	Metal	50
BC5ENB8	CAT5e Modular jack	Unshielded	White	8
BC5EAN8	CAT5e Modular jack	Half-Shielded	White	8
BC5EFS8	CAT5e Modular jack	Fully Shielded	Metal	8

BC SERIE: **CATEGORY 5E LOADED PATCH PANELS**

BC5ENBPAN24

BC5ENBPAN48

FEATURES AND BENEFITS

- Exceed CAT5e standard specifications
- Punch down tool termination - Dual IDC termination blocks
- 568 A or B wiring
- Solid conductors diameter from AWG24 to AWG22
- Label holders
- Only available in unshielded version

NETWORK APPLICATIONS

- ISDN - VoIP
- TOKEN RING 4/16 Mbits - 100 VG-AnyLAN
- TP-PMD/TP-DDI - ATM 155, 622, 1200 Mbits
- ETHERNET: 10 Base T, 100 Base Tx, 100 Base T4, 1000 Base T

CABLING STANDARDS

- EIA/TIA 568-B.2 Category 5e
- ISO 11801 Edition 2 – Class D
- EN 50173 Edition 2 – Class D

TECHNICAL CHARACTERISTICS

- IDC for toolless termination: bronze + platinum / Cu + SnPb 8µ
- Contacts: bronze platinum Ni+ Au 0.2 µm
- Plastic housing: ABS, PVC UL94V0

ORDERING INFORMATION

Part Number	Description	Shielding	Colour	Packaging
BC5ENBPAN24	CAT5e 24 PORTS PRELOADED PATCH PANEL – 1 U	Unshielded	Dark Grey	1
BC5ENBPAN48	CAT5e 48 PORTS PRELOADED PATCH PANEL – 2 U	Unshielded	Dark Grey	1

COPPER CONNECTIVITY

BC SERIE: CATEGORY 6 MODULAR JACKS
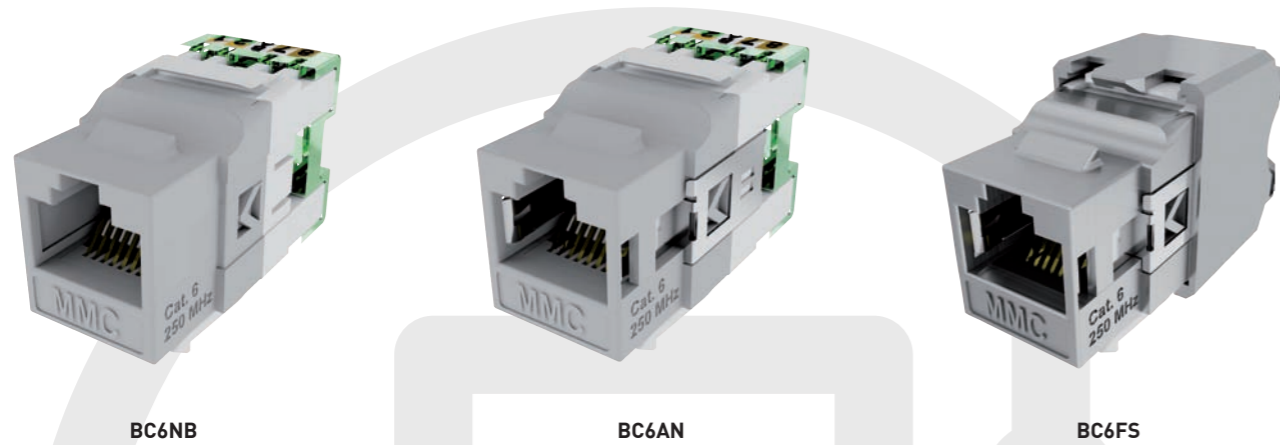
BC6NB　　　　BC6AN　　　　BC6FS

FEATURES AND BENEFITS

- Exceed CAT6 standard spécifications
- Two possible termination methods: - Punch down tool
  - Special BC Tool
- Very clear label for 568 A or B wiring
- Solid conductors diameter from AWG24 to AWG22
- Keystone format – 32 mm depth
- Snaps in BC serie modular panels and faceplates

FULLY SHIELDED VERSIONS

- 360° electromagnetic protection
- Direct grouding contact to patch panel
- Back cap enabling 90° or straight cable exit + cable tight

NETWORK APPLICATIONS

- ISDN - VoIP
- TOKEN RING 4/16 Mbits - 100 VG-AnyLAN
- TP-PMD/TP-DDI - ATM 155, 622,1200 Mbits
- ETHERNET: 10 Base T, 100 Base Tx,100 Base T4, 1000 Base T

CABLING STANDARDS

- EIA/TIA 568-B.2-1 Category 6
- ISO 11801 Edition 2 – Class E
- EN 50173 Edition 2 – Class E

TECHNICAL CHARACTERISTICS

- IDC for tool –less termination: bronze + platinum / Cu + SnPb 8µ
- Contacts: bronze platinum Ni+ Au 0.2 µm
- Plastic housing: ABS, PVC UL94V0
- Metal cover (Fully shielded version): Zamak
- Nominal solid conductor diameter: from 0.48 mm to 0.64mm
- Flammability rating: UL V0
- Operating temperature: - 20°C / + 60°C
- Plug insertion Life: >400 mating cycles minimum
- Dimensions: IEC 60603-7
- Contact resistance: < 10mΩ
- Input/Output resistance: < 150 mΩ
- Insulation resistance: > 500 m Ω at 100V d.c.
- Voltage test: > 1000 V d.c. contact-to-contact
  - > 1500 V d.c. contact-to-shield
- Current: < 0.175mA per conductor
- Operating voltage: <72 V d.c.
- Power capacity: < 15 W
- Vibration: < 10µs [25-250 Hz, 5g, 3 axes]
- Coupling attenuation (shielded versions): 65 dB

ORDERING INFORMATION

Part Number	Description	Shielding	Colour	Packaging
BC6NB	CAT6 Modular jack	Unshielded	Grey	50
BC6AN	CAT6 Modular jack	Half-Shielded	Grey	50
BC6FS	CAT6 Modular jack	Fully Shielded	Metal	50
BC6NB8	CAT6 Modular jack	Unshielded	Grey	8
BC6AN8	CAT6 Modular jack	Half-Shielded	Grey	8
BC6FS8	CAT6 Modular jack	Fully Shielded	Metal	8

BC SERIE: CATEGORY 6 LOADED PATCH PANELS

BC6NBPAN24

BC6NBPAN48

FEATURES AND BENEFITS

- Exceed CAT6 standard specifications
- Punch down tool termination - Dual IDC termination blocks
- 568 A or B wiring
- Solid conductors diameter from AWG24 to AWG22
- Label holders
- Only available in unshielded version

NETWORK APPLICATIONS

- ISDN - VoIP
- TOKEN RING 4/16 Mbits - 100 VG-AnyLAN
- TP-PMD/TP-DDI - ATM 155, 622, 1200 Mbits
- ETHERNET: 10 Base T, 100 Base Tx, 100 Base T4, 1000 Base T

CABLING STANDARDS

- EIA/TIA 568-B.2-1 Category 6
- ISO 11801 Edition 2 – Class E
- EN 50173 Edition 2 – Class E

TECHNICAL CHARACTERISTICS

- IDC for toolless termination: bronze + platinum / Cu + SnPb 8µ
- Contacts: bronze platinum Ni+ Au 0.2 µm
- Plastic housing: ABS, PVC UL94V0

ORDERING INFORMATION

Part Number	Description	Shielding	Colour	Packaging
BC6NBPAN24	CAT6 24 PORTS PRELOADED PATCH PANEL – 1 U	Unshielded	Dark Grey	1
BC6NBPAN48	CAT6 48 PORTS PRELOADED PATCH PANEL – 2 U	Unshielded	Dark Grey	1

BC SERIE: **UNLOADED PATCH PANELS**

FEATURES AND BENEFITS

- To be loaded with BC SERIES modular jacks
- Suitable for shielded connectors: conductive panel ensures automatic grounding
- Unique rear cable holding system – Y concept – for reduced installation time
- 1 port blank module available
- 24 ports 1U and 48 ports 2U

BCPAN1U

ORDERING INFORMATION

Part Number	Description	Packaging
BCPAN1U	24 Ports 1U unloaded patch panel	1
BCPAN2U	48 ports 2U unloaded patch panel	1
BCOB	1 Port blank module for BCPAN1U or BCPAN2U	10

BC TERMINATION TOOL

FEATURES AND BENEFITS

- Fast termination of BC SERIES modular jacks
- Integrated cable stripper (1)
- Blade to cut wire extra length (2)
- Scale to measure the length of jacket to be taken out (3)
- Integrated LED light (4)

BCTOOLS

ORDERING INFORMATION

Part Number	Description	Packaging
BCTOOLS	BC SERIES Multipurpose termination tool	1

PUNCH DOWN TOOL

FEATURES AND BENEFITS

- Impact cutting tools
- Delivered with two blades (110 & Krone)
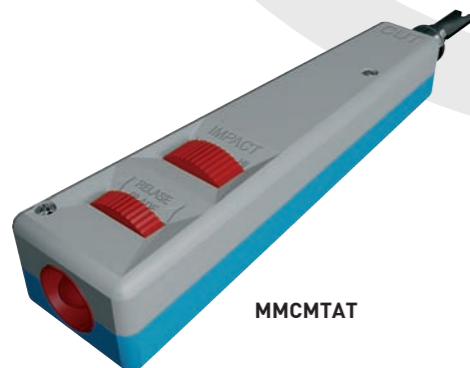
MMCMTAT

ORDERING INFORMATION

Part Number	Description	Packaging
MMCMTAT	"Punch Down" termination tool for BC SERIES Modular jacks and Pre-loaded patch panels	1

BC SERIE: **45 x 45 mm FACEPLATES (French style)**

FEATURES AND BENEFITS

- To be loaded with BC series modular jacks
- Angled label display for better visibility
- Flapping crystal window
- Integrated dust covers
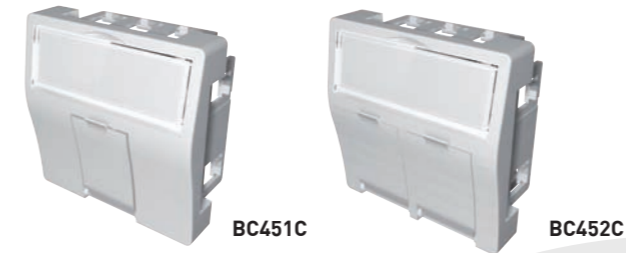
BC451C   BC452C

ORDERING INFORMATION

Part Number	Description	Packaging
BC451C	1 port 45 x 45 faceplate for BC Series modular jacks	50
BC45 2C	2 ports 45 x 45 faceplate for BC Series modular jacks	50
BC451C8	1 port 45 x 45 faceplate for BC Series modular jacks	8
BC45 2C8	2 ports 45 x 45 faceplate for BC Series modular jacks	8

BC SERIE: **86 X 86 mm WALLPLATES (UK style)**

BC862C   BC864C

ORDERING INFORMATION

| Part Number	Description	Packaging
BC861C	1 port 86 x 86 mm wallplate – to be loaded with BC series modular jacks	10
BC862C	2 ports 86 x 86 mm wallplate – to be loaded with BC series modular jacks	10
BC864C	4 ports 86 x 86 mm wallplate – to be loaded with BC series modular jacks	10

SURFACE MOUNTING BOX

WPF45   WP8686

ORDERING INFORMATION

Part Number	Description	Packaging
WPF45	86 x 86 mm wallplate – to be loaded with 45x45 faceplates	10
WP8686	86 x 86 mm back box – 35 mm depth	1
WP8686P	86 x 86 mm back box – 45 mm depth	1

COPPER CONNECTIVITY

MK SERIES: **CATEGORY 6 10G MODULAR JACKS**

DELTA

MK6NB   MK6AN   MK6FS   MK6SP
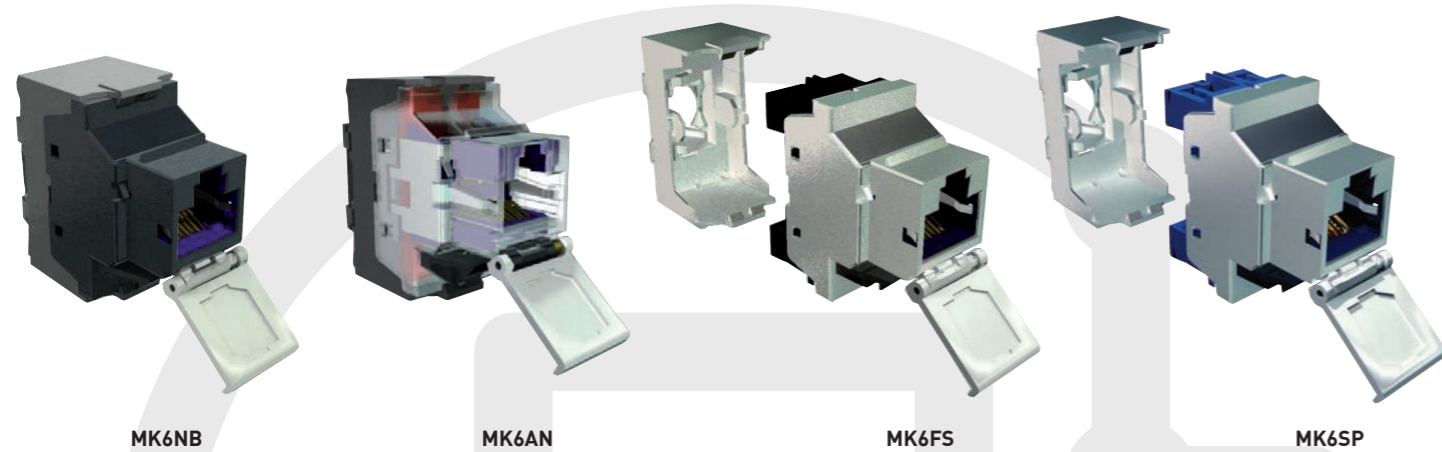
FEATURES AND BENEFITS

- Exceed CAT6 10 giga standard specifications in system (EIA/TIA TSB-155 – ISO/IEC TR24750)
- Exceed CAT6 de-embedded component standard specifications
- Component certification by DELTA ELECTRONICS
- Fast toolless termination in less than 130 sec
- Very clear label for 568 A or B wiring
- Unique modular cap enabling straight or lateral cable exit
- Removable dust-protecting shutter, available in 4 colours
- Snaps in MK series modular panels and faceplates

SHIELDED VERSIONS

- Drain wire termination through specific Anchor
- 360 electromagnetic protection (fully shielded version)
- Direct grounding contact to patch panel thanks to metal blades
- MK6SP version adapted to termination with stranded core cables

NETWORK APPLICATIONS

- ISDN - VoIP
- TOKEN RING 4/16 Mbits - 100 VG-AnyLAN
- TP-PMD/TP-DDI - ATM 155, 622,1200 Mbits
- ETHERNET: 10 Base T, 100 Base Tx, 100 Base T4, 1000 Base T, 10 G Base T
- IEEE 802.3af – PoE (Power Over Ethernet)
- Future 802.3at – PoEP (Power over Ethernet Plus)

CABLING STANDARDS

- CONNECTOR: - IEC 60603-7
  - EIA/TIA 568-B.2.-1 CAT6 DE-EMBEDDED
- SYSTEM: - EIA/TIA 568-B.2-1 CAT6
  - ISO 11801 Edition 2 CLASS E
  - EN 50173 Edition 2 CLASS E
  - EIA/TIA TSB-155 – 10G over CAT6
  - ISO/IEC – TR24750 – 10G over Class E

TECHNICAL CHARACTERISTICS

- IDC for toolless termination: bronze + platinum / Cu + SnPb 8µ
- Contacts: bronze platinum Ni+ Au 0.2 µm
- Plastic housing: ABS, PVC UL94V0 or PP + fibre
- Metal cover (Fully shielded version): Metalized ABS
- Nominal solid conductor diameter: 0.50mm to 0.62mm
- Nominal stranded conductor diameter: 7x0.145 to 7x0.25 mm
- Flammability rating: UL V0
- Operating temperature: -20°C / +70°C
- Plug insertion Life: > 700 mating cycles
- Contact resistance: < 10mΩ
- Input/Output resistance: < 150 mΩ
- Insulation resistance: > 500 m Ω at 100V d.c.
- Voltage test: > 1000 V d.c. contact-to-contact
  > 1500 V d.c. contat-to-shield
- Current: < 0.300mA per conductor
- Operating voltage: <72 V d.c.
- Power capacity: < 30 W
- Vibration: < 10µs [25-250 Hz, 5g, 3 axis]
- Coupling attenuation (shielded versions): 65 dB

ORDERING INFORMATION

Part Number	Description	Shielding	Colour	Packaging
MK6NB	CAT6 10G Modular jack	Unshielded	Dark grey	8 - 500
MK6AN	CAT6 10G Modular jack	Half Shielded	Translucent	8 - 500
MK6FS	CAT6 10G Modular jack	Fully Shielded	Metal	8 - 500
MK6SP	CAT6 10G Modular jack for stranded conductors only	Fully Shielded	Metal	8
MK6V x	Coloured dust-protecting shutters for MK SERIES Blue (MK6VB) – Yellow (MK6VJ) – Red (MK6VR) – Green (MK6VV)			8

MK SERIES: **CATEGORY 6 A MODULAR JACKS**

DELTA

MK6AFS   MK6ASP
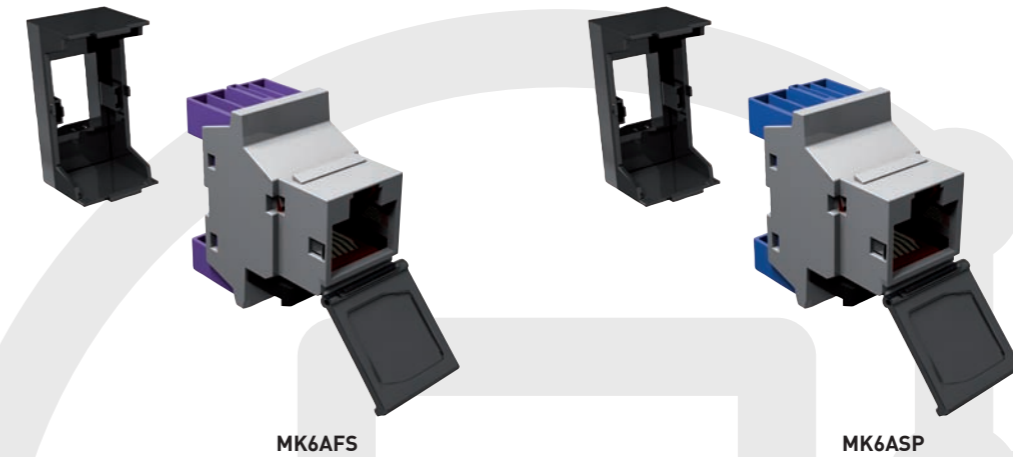
FEATURES AND BENEFITS

- Exceed CAT6 A standard specifications in system
- Exceed CAT6 A component standard specifications (direct probing testing methodology)
- Component certification by DELTA ELECTRONICS
- Fast toolless termination in less than 130 sec
- Very clear label for 568 A or B wiring
- Unique modular cap enabling straight or lateral cable exit
- Removable dust-protecting shutter, available in 4 colours
- Snaps in MK series modular panels and faceplates
- Drain wire termination through specific Anchor
- 360° electromagnetic protection
- Direct grounding contact to patch panel thanks to metal blades
- MK6ASP version adapted to termination with stranded core cables

NETWORK APPLICATIONS

- ISDN - VoIP
- TOKEN RING 4/16 Mbits   -   100 VG-AnyLAN
- TP-PMD/TP-DDI - ATM 155, 622,1200 Mbits
- ETHERNET: 10 Base T, 100 Base Tx, 100 Base T4, 1000 Base T, Ethernet 10 G Base T
- IEEE 802.3at – PoE (Power Over Ethernet)
- Future 802.3at – PoEP (Power over Ethernet Plus)
- Terrestrial TV (analogue and digital) with 900 Mhz cables

CABLING STANDARDS

- CONNECTOR: - IEC 60603-7
  - EIA/TIA 568-B.2.-10 CAT6A Direct probing
  - Draft IEC 60603-7-51
- SYSTEM: - EIA/TIA 568-B.2-10 Cat6 Augmented
  - AD1.0 and AD2.0 ISO 11801 CLASS Ea

### TECHNICAL CHARACTERISTICS

- IDC for toolless termination: bronze + platinum / Cu + SnPb 8µ
- Contacts: bronze platinum Ni+ Au 0.2 µm
- Metal cover (Fully shielded version): Zamak 5
- Nominal solid conductor diameter: 0.5mm to 0.62mm
- Nominal stranded conductor diameter: 7x0.145 to 7x0,25 mm
- Operating temperature: -20°C/ +70°C
- Plug insertion Life: > 700 mating cycles
- Contact resistance: < 10mΩ
- Input/Output resistance: < 150 mΩ
- Insulation resistance: > 500 m Ω at 100V d.c.
- Voltage test: > 1000 V d.c. contact to contact
  > 1500 V d.c. contat to shield
- Current: < 0.300mA per conductor
- Operating voltage: <72 V d.c.
- Power capacity: < 30 W
- Vibration: < 10µs [25-250 Hz, 5g, 3 axis]
- Coupling attenuation 75 dB

ORDERING INFORMATION

Part Number	Description	Shielding	Colour	Packaging
MK6AFS	CAT6A Modular jack	Fully Shielded	Metal	8 - 500
MK6ASP	CAT6A Modular jack for stranded conductors only	Fully Shielded	Metal	8

MK SERIES: **24 & 48 PORTS UNLOADED PATCH PANELS**

MK6 PAN1U

MK6 PAN2U
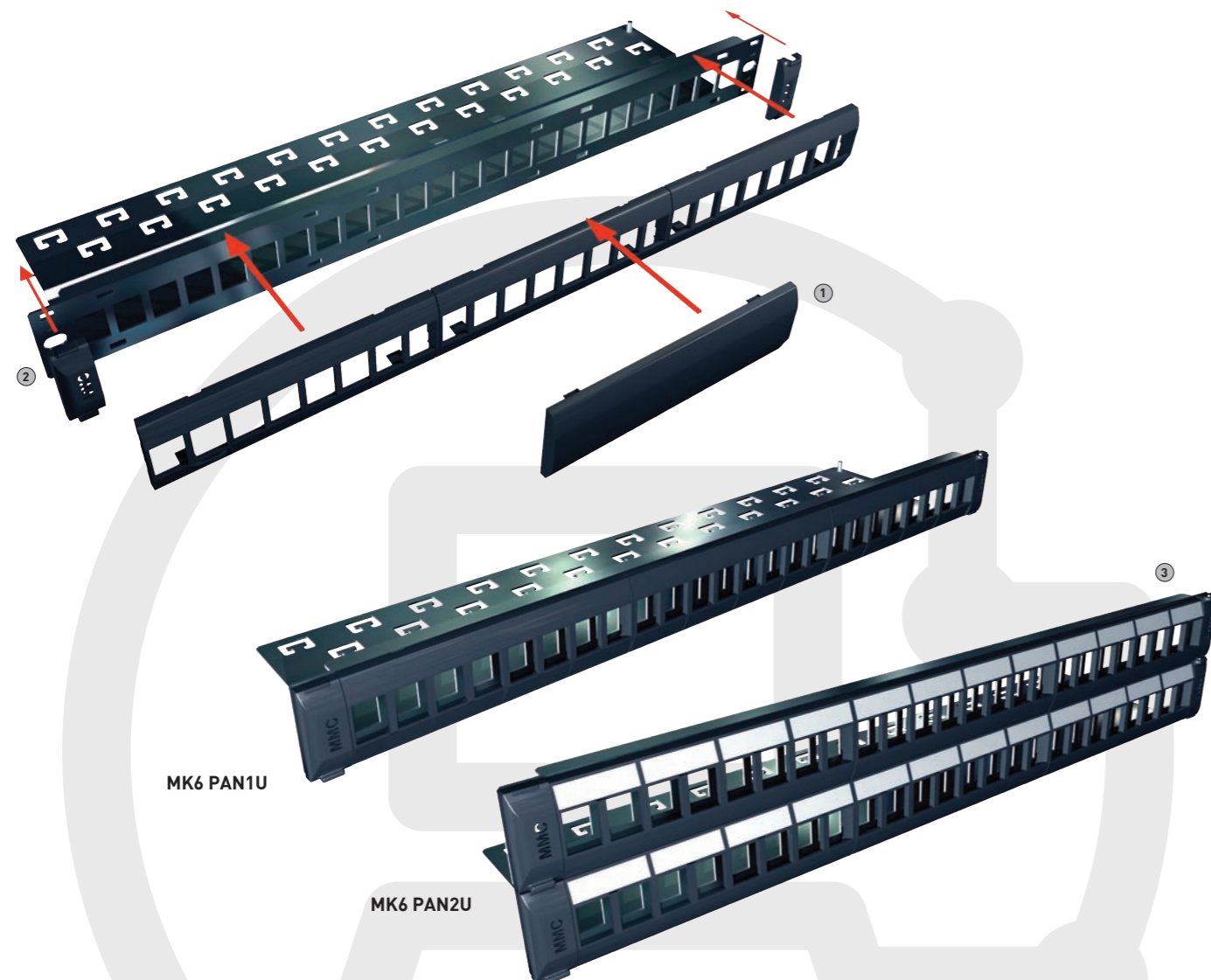
FEATURES AND BENEFITS

- To be equipped with MK SERIES modular jacks
- Suitable for shielded connectors:
  conductive panel ensure automatic grounding
- Fully modular, using 1 port and 8 ports blank modules (1)
- Very fast installation of the 24 ports panel thanks to:
  - Fixing with 2 bolts (vs. 4 for standard panels) (2)
- Flexible labelling system
  - Modular label holders (3)
  - Labels can be positioned at the top or bottom of each panel to ensure perfect readability, regardless of the patch cables organisation
  - Panel identification, using coloured snap in protections on each edge

TECHNICAL CHARACTERISTICS

- Dark grey metal panel
- Conductive coating at the rear to ensure grounding
- Plastic modules in semi-flexible polypropylene
- Label holder window in Crystal PVC

ORDERING INFORMATION

Part Number	Description	Packaging
MK6PAN1U	24 PORTS 1U UNLOADED PATCH PANEL FOR MK SERIES MODULAR JACKS	1
MK6PAN2U	48 PORTS 2U UNLOADED PATCH PANEL FOR MK SERIES MODULAR JACKS	1
MK6OB8PAN	8 PORTS BLANK MODULE FOR MK SERIES UNLOADED PATCH PANELS	1
MK6OB1	1 PORT SNAP-IN BLANK MODULE FOR MK SERIES UNLOADED PATCH PANEL	1
MK6CLIP x	COLOURED SNAP-IN SIDE MODULES FOR MK SERIES PATCH PANELS Blue (MK6CLIP B) – Yellow (MK6CLIP J) – Red (MK6CLIP R) – Green (MK6CLIP V)	8

MK SERIES: **45 x 45 mm FACEPLATES (French style)**

MK6451C

MK6452C
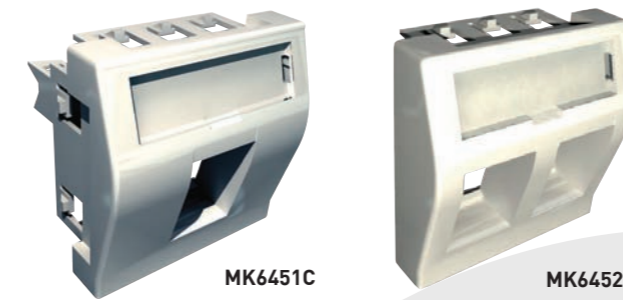
FEATURES AND BENEFITS

- To be loaded with MK Series modular jacks
- Angled label display for better visibility
- Crystal PVC label holder
- Fits in all 45x45 frames or trunckings
- MK645 1C includes a rear cable tight system

ORDERING INFORMATION

Part Number	Description	Packaging
MK6451C	1 port 45 x 45 faceplate for MK Series modular jacks	8 / 250
MK6452C	2 ports 45 x 45 faceplate for MK Series modular jacks	8

MK SERIES: **86 X 86 mm WALLPLATES (UK style)**

WP1KS

WP2KS

ORDERING INFORMATION

| Part Number	Description	Packaging
WP1KS	1 port 86 x 86 mm wallplate – to be loaded with MK series modular jacks	8
WP2KS	2 ports 86 x 86 mm wallplate – to be loaded with MK series modular jacks	8

SURFACE MOUNTING BOX

WPF45

WP8686

ORDERING INFORMATION

Part Number	Description	Packaging
WPF45	86 x 86 mm wallplate – to be loaded with 45x45 faceplates	10
WP8686	86 x 86 mm back box – 35 mm depth	1
WP8686P	86 x 86 mm back box – 45 mm depth	1

COPPER PATCH CORDS

CATEGORY 5E PATCH CORDS

5e **100 MHz**

VG4001M

TX4001M
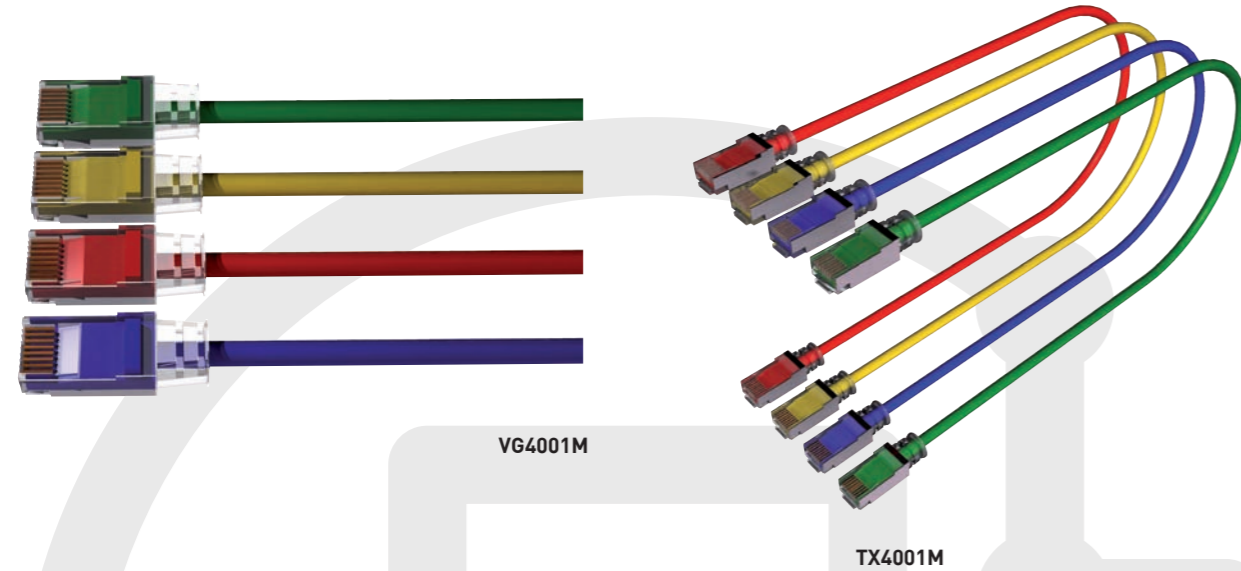
FEATURES AND BENEFITS

- Exceed CAT5e standard specifications
- Gold-plated contacts 15μ
- Moulded plugs
- Available in 5 colours and 5 lengths as standard

NETWORK APPLICATIONS

- ISDN
- TOKEN RING 4/16 Mbits - 100 VG-AnyLAN
- TP-PMD/TP-DDI - ATM 155, 622, 1200 Mbits
- ETHERNET: 10 Base T, 100 Base Tx, 100 Base T4, 1000 Base T

CABLING STANDARDS

- PATCH CORD : - EIA/TIA 568-B.2 CAT5e
- SYSTEM: - EIA/TIA 568-B.2 CAT5e
  - ISO 11801 Edition 2 CLASS D
  - EN 50173 Edition 2 CLASS D

TECHNICAL CHARACTERISTICS

F (MHz)	NEXT (dB/100m)				RETURN LOSS (dB/100 m)			
	1 m	2 m	5 m	10 m	1 m	2 m	5 m	10 m
1	67.0	67.0	67.0	67.0	21.80	21.80	21.80	21.80
4	64.6	64.3	63.5	62.4	23.61	23.61	23.61	23.61
10	56.8	56.5	55.7	54.8	24.80	24.80	24.80	24.80
16	52.7	52.4	51.7	50.9	25.41	25.41	25.41	25.41
20	50.8	50.5	49.9	49.1	25.70	25.70	25.70	25.70
31.25	47.0	46.8	46.2	45.5	25.05	25.05	25.05	25.05
62.5	41.1	40.9	40.5	40.1	22.04	22.04	22.04	22.04
100	37.2	37.1	36.8	36.6	20.00	20.00	20.00	20.00

ORDERING INFORMATION

Part Number	Description	Shielding	Colour	Length	Packaging
VG400 X M	CAT5e unshielded patch cord	U/UTP	Grey	X= 0.5 / 1 / 2 / 3 / 5 / 10 m	1
VG 400 XY M	CAT5e unshielded patch cord	U/UTP	Y = B/J/R/V	X= 0.5 / 1 / 2 / 3 / 5 / 10 m	1
TX400 X M	CAT5e shielded patch cord	F/UTP	Grey	X= 0.5 / 1 / 2 / 3 / 5 / 10 m	1
TX400 XY M	CAT5e shielded patch cord	F/UTP	Y = B/J/R/V	X= 1 / 2 / 3 / 5 / 10 m	1

* Blue: B, Yellow: J, Red: R, Green: V

CATEGORY 6 PATCH CORDS

6 **250 MHz** **IP** **POE**

VG2041M **TX2041M**
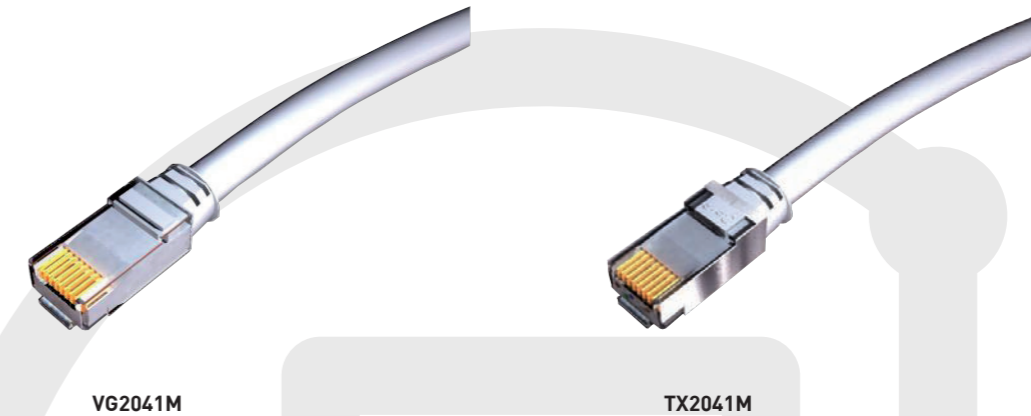
FEATURES AND BENEFITS

- Exceed CAT6 standard specifications
- High performance CAT6 plugs
- Gold-plated contacts 15μ
- Moulded plugs
- Available in 5 colours and 5 lengths as standard

NETWORK APPLICATIONS

- ISDN - VoIP
- TOKEN RING 4/16 Mbits - 100 VG-AnyLAN
- TP-PMD/TP-DDI - ATM 155, 622, 1200 Mbits
- ETHERNET: 10 Base T, 100 Base Tx, 100 Base T4, 1000 Base T

CABLING STANDARDS

- PATCH CORD : - EIA/TIA 568-B.2-1 CAT6
- SYSTEM: - EIA/TIA 568-B.2 Cat 6
  - ISO 11801 Edition 2 CLASS E
  - EN 50173 Edition 2 CLASS E

TECHNICAL CHARACTERISTICS

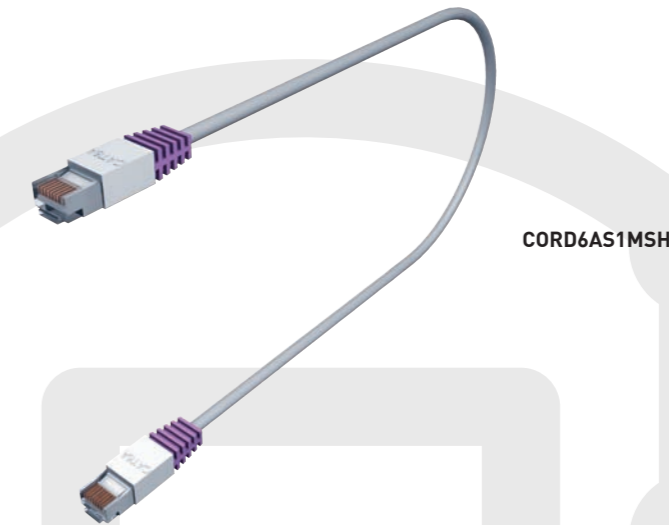| F (MHz)	NEXT (dB/100m)				RETURN LOSS (dB/100 m)			
	1 m	2 m	5 m	10 m	1 m	2 m	5 m	10 m
1	65.0	65.0	65.0	65.0	19.80	19.80	19.80	19.80
4	65.0	65.0	65.0	65.0	21.61	21.61	21.61	21.61
10	65.0	65.0	64.5	62.9	22.80	22.80	22.80	22.80
16	62.6	62.0	60.5	59.0	23.41	23.41	23.41	23.41
20	60.7	60.1	58.6	57.2	23.70	23.70	23.70	23.70
31.25	56.9	56.2	54.9	53.6	23.05	23.05	23.05	23.05
62.5	51.0	50.4	49.2	48.1	20.04	20.04	20.04	20.04
100	47.0	46.4	45.3	44.4	18.00	18.00	18.00	18.00
250	39.2	38.8	38.1	37.6	14.00	14.00	14.00	14.00

ORDERING INFORMATION

Part Number	Description	Shielding	Colour	Length	Packaging
VG204 X M	CAT6 unshielded patch cord	U/UTP	Grey	X= 1 / 2 / 3 / 5 / 10 m	1
VG204 XY M	CAT6 unshielded patch cord	U/UTP	Y = B/J/R/V	X= 1 / 2 / 3 / 5 / 10 m	1
TX204 X M	CAT6 shielded patch cord	F/UTP	Grey	X= 0.5 / 1 / 2 / 3 / 5 / 10 m	1
TX204 XY M	CAT6 shielded patch cord	F/UTP	Y = B/J/R/V	X= 1 / 2 / 3 / 5 / 10 m	1

* Blue: B, Yellow: J, Red: R, Green: V

COPPER PATCH CORDS

CATEGORY 6 /10G PATCH CORDS

VG504XM

TX504XM
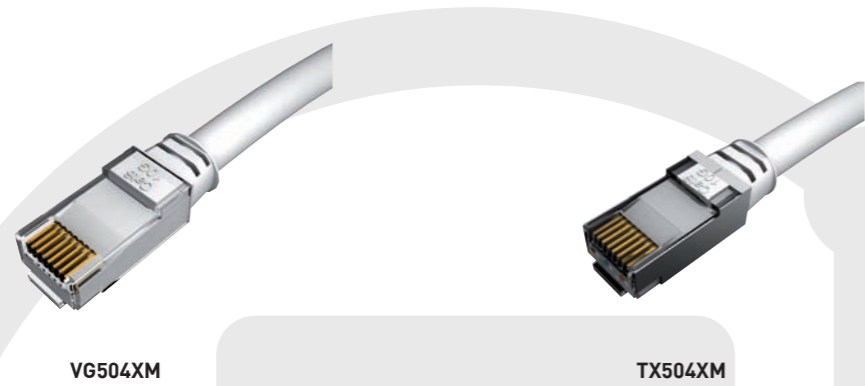
FEATURES AND BENEFITS

- Exceed CAT6 standard specifications - 10G compliant
- High performance CAT6 plugs
- Gold-plated contacts 50µ
- Moulded plugs
- Available in 5 colours and 5 lengths as standard

NETWORK APPLICATIONS

- ISDN - VoIP
- TOKEN RING 4/16 Mbits - 100 VG-AnyLAN
- TP-PMD/TP-DDI - ATM 155, 622,1200 Mbits
- ETHERNET: 10 Base T, 100 Base Tx, 100 Base T4,
    1000 Base T, 10G Base T

CABLING STANDARDS

- PATCH CORD: - EIA/TIA 568-B.2-1 CAT6
- SYSTEM: - EIA/TIA TSB155 : 10G over CAT6
    - ISO TR24750 : 10G over CLASS E

TECHNICAL CHARACTERISTICS

F (MHz)	NEXT (Db/100m)				RETURN LOSS (dB/100 m)			
	1 m	2 m	5 m	10 m	1 m	2 m	5 m	10 m
1	65.0	65.0	65.0	65.0	19.80	19.80	19.80	19.80
4	65.0	65.0	65.0	65.0	21.61	21.61	21.61	21.61
10	65.0	65.0	64.5	62.9	22.80	22.80	22.80	22.80
16	62.6	62.0	60.5	59.0	23.41	23.41	23.41	23.41
20	60.7	60.1	58.6	57.2	23.70	23.70	23.70	23.70
31.25	56.9	56.2	54.9	53.6	23.05	23.05	23.05	23.05
62.5	51.0	50.4	49.2	48.1	20.04	20.04	20.04	20.04
100	47.0	46.4	45.3	44.4	18.00	18.00	18.00	18.00
250	39.2	38.8	38.1	37.6	14.00	14.00	14.00	14.00
300	34.4	34.2	33.5	33.6	11.80	11.80	11.80	11.80
400	28.8	28.9	28.5	28.1	10.50	10.50	10.50	10.50
500	25.2	25.1	25.1	25.0	9.00	9.00	9.00	9.00

ORDERING INFORMATION

Part Number	Description	Shielding	Colour	Length	Packaging
VG504XM	CAT6 10G unshielded patch cord	U/UTP	Grey	X= 1 / 2 / 3 / 5 / 10 m	1
TX504XM	CAT6 10G shielded patch cord	U/FTP	Grey	X= 0.5 / 1 / 2 / 3 / 5 / 10 m	1

CATEGORY 6A PATCH CORDS

CORD6AS1MSH

FEATURES AND BENEFITS

- Exceed CAT6A standard specifications
- Shielded cable – pairs assembled with separator
- Special high-performance plug
    - Wire termination on two levels to ensure improved
      NEXT performance
    - 8C gold-plated contacts 50µ
    - Individual shielding of pairs maintained in the plug
      thanks to unique separators
    - Moulded plugs
- Available in 5 lengths as standard
- LSZH cable

NETWORK APPLICATIONS

- ISDN - VoIP
- TOKEN RING 4/16 Mbits - 100 VG-AnyLAN
- TP-PMD/TP-DDI - ATM 155, 622,1200 Mbits
- ETHERNET: 10 Base T, 100 Base Tx, 100 Base T4,
    1000 Base T, 10 G Base T

CABLING STANDARDS

- PATCH CORD : - EIA/TIA 568-B.2-10
- SYSTEM: - EIA/TIA 568-B.2-10 CAT6A
    - Ad1.0 11801 CLASS Ea

TECHNICAL CHARACTERISTICS

F (MHz)	NEXT (dB/100m)				RETURN LOSS (dB/100 m)			
	1 m	2 m	5 m	10 m	1 m	2 m	5 m	10 m
1	65.0	65.0	65.0	65.0	19.80	19.80	19.80	19.80
4	65.0	65.0	65.0	65.0	21.61	21.61	21.61	21.61
10	65.0	65.0	64.5	62.9	22.80	22.80	22.80	22.80
16	62.6	62.0	60.5	59.0	23.41	23.41	23.41	23.41
20	60.7	60.1	58.6	57.2	23.70	23.70	23.70	23.70
31.25	56.9	56.2	54.9	53.6	23.05	23.05	23.05	23.05
62.5	51.0	50.4	49.2	48.1	20.04	20.04	20.04	20.04
100	47.0	46.4	45.3	44.4	18.00	18.00	18.00	18.00
200	41.1	40.6	39.8	39.3	15.0	15.0	15.0	15.0
250	39.2	38.8	38.1	37.6	14.0	14.0	14.0	14.0
300	36.4	36.2	35.9	35.8	12.8	12.8	12.8	12.8
400	31.8	31.9	32.1	32.5	10.9	10.9	10.9	10.9
500	28.2	28.4	29.0	29.8	9.5	9.5	9.5	9.5

ORDERING INFORMATION

Part Number	Description	Shielding	Colour	Length	Packaging
CORD6ASXMSH	CAT6A shielded patch cord	U/FTP	grey	X= 1 / 2 / 3 / 5 / 10 m	1

LED IDENTIFICATION CAT 6 A PATCH CORDS

LEDTOOL

CORD6AS01LED

FEATURES AND BENEFITS

- Unique LED based identification system
- The MMC detector plugged at one end of the patch cord, immediately activates the LED at the other end, enabling immediate identification
- The activated plug is clearly visible from 2/3 m distance
- This system helps the maintenance of high density data cabinets and data centres
- Exceed CAT6A standard specifications
- Shielded cable – pairs assembled with separator
- Special high-performance plug
  - Wire termination on two levels to ensure improved NEXT performance
  - 8C gold-plated contacts 50µ
  - Individual shielding of pairs maintained in the plug thanks to unique separators
  - Moulded plugs
- Available in 5 lengths as standard
- LSZH cable

NETWORK APPLICATIONS

- ISDN - VoIP
- TOKEN RING 4/16 Mbits - 100 VG-AnyLAN
- TP-PMD/TP-DDI - ATM 155, 622,1200 Mbits
- ETHERNET: 10 Base T, 100 Base Tx, 100 Base T4, 1000 Base T, 10 G Base T

CABLING STANDARDS

- PATCH CORD: - EIA/TIA 568-B.2-10
- SYSTEM: - EIA/TIA 568-B.2-10 CAT6A
  - Ad 1.0 11801 CLASS Ea

TECHNICAL CHARACTERISTICS

F (MHz)	NEXT (dB/100m)				RETURN LOSS (dB / 100 m)			
	1 m	2 m	5 m	10 m	1 m	2 m	5 m	10 m
1	65.0	65.0	65.0	65.0	19.80	19.80	19.80	19.80
4	65.0	65.0	65.0	65.0	21.61	21.61	21.61	21.61
10	65.0	65.0	64.5	62.9	22.80	22.80	22.80	22.80
16	62.6	62.0	60.5	59.0	23.41	23.41	23.41	23.41
20	60.7	60.1	58.6	57.2	23.70	23.70	23.70	23.70
31.25	56.9	56.2	54.9	53.6	23.05	23.05	23.05	23.05
62.5	51.0	50.4	49.2	48.1	20.04	20.04	20.04	20.04
100	47.0	46.4	45.3	44.4	18.00	18.00	18.00	18.00
200	41.1	40.6	39.8	39.3	15.0	15.0	15.0	15.0
250	39.2	38.8	38.1	37.6	14.0	14.0	14.0	14.0
300	36.4	36.2	35.9	35.8	12.8	12.8	12.8	12.8
400	31.8	31.9	32.1	32.5	10.9	10.9	10.9	10.9
500	28.2	28.4	29.0	29.8	9.5	9.5	9.5	9.5

ORDERING INFORMATION

| Part Number	Description	Shielding	Colour	Length	Packaging
CORD6AS0XLED	LED ID CAT6A shielded patch cord	S/FTP	grey	X= 1 / 2 / 3 / 5 / 10 m	1
LEDTOOL	LED activation tool				1
LEDCOIN	Coin cell for LED activation tool				1
LEDCOLX	Coloured marking sets for plugs		Yellow Red Blue Green		100

* X = colour

PRE-TERMINATED LINKS
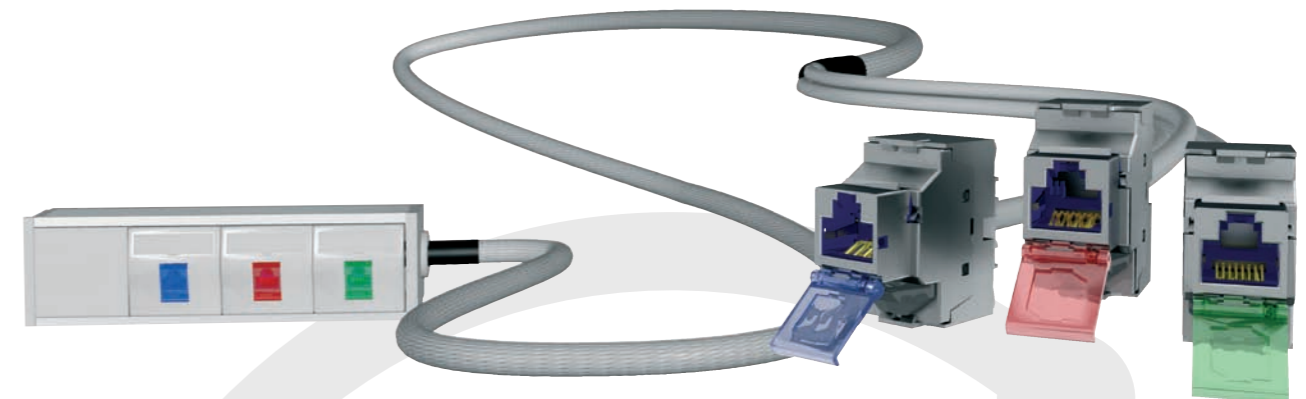
FEATURES AND BENEFITS

- Enable drastic reduction of installation time
- Require specific installation conditions: precise measuring of link's length, cable installation on open raceways/truncking
- Each link can be provided with test report: No need for time-consuming field testing
- From Cat5e/Class D to CAT6A Class Ea
- Shielded and unshielded links
- We offer various solutions for cable assembly (jacketed cables – plastic lies – Velcro ties – Polyamid braid)
- Pre-labeling of each link and possibility of colour identification

CONSOLIDATION POINTS
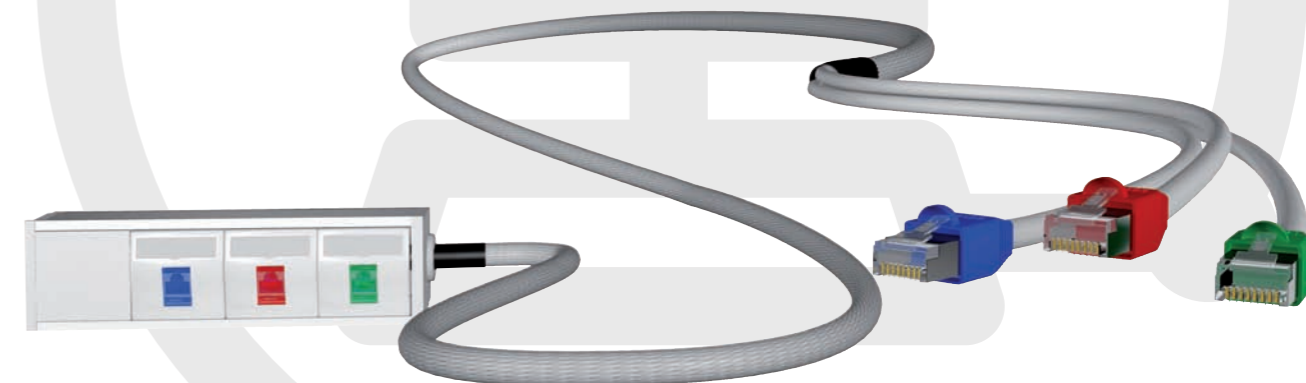
## CONSOLIDATION POINTS AND CABLING STANDARDS

- Consolidation points are mainly used to enable flexible cabling infrastructure in open office spaces.
- An intermediate connection box (Consolidation Point) is positioned centrally in the work area (double ceiling or double floor). Wall outlets are connected to this "Consolidation point" with pre-terminated links.
- The location of wall outlets in the working area can therefore easily be changed.
- Cabling infrastructures using Consolidation Points have to comply with specific conditions according to Cabling Standards.

FEATURES AND BENEFITS

- Consolidation Point Links can be made with stranded core cables or solid core cables
- Each link can be provided with a test report
- From Cat5e/Class D to Cat6a Class Ea
- Shielded and unshielded links
- We offer various solutions for cable assembly (jacketed cables – plastic lies – Velcro ties – Polyamid braid)
- Pre-labeling of each link and possibility of colour identification
- Various consolidation boxes are available, from 4 ports aluminium boxes to a 19'' solution offering up to 72 ports
- Specific Ordering Form available on Multimedia Connect web site

CABLE ASSEMBLY SOLUTIONS
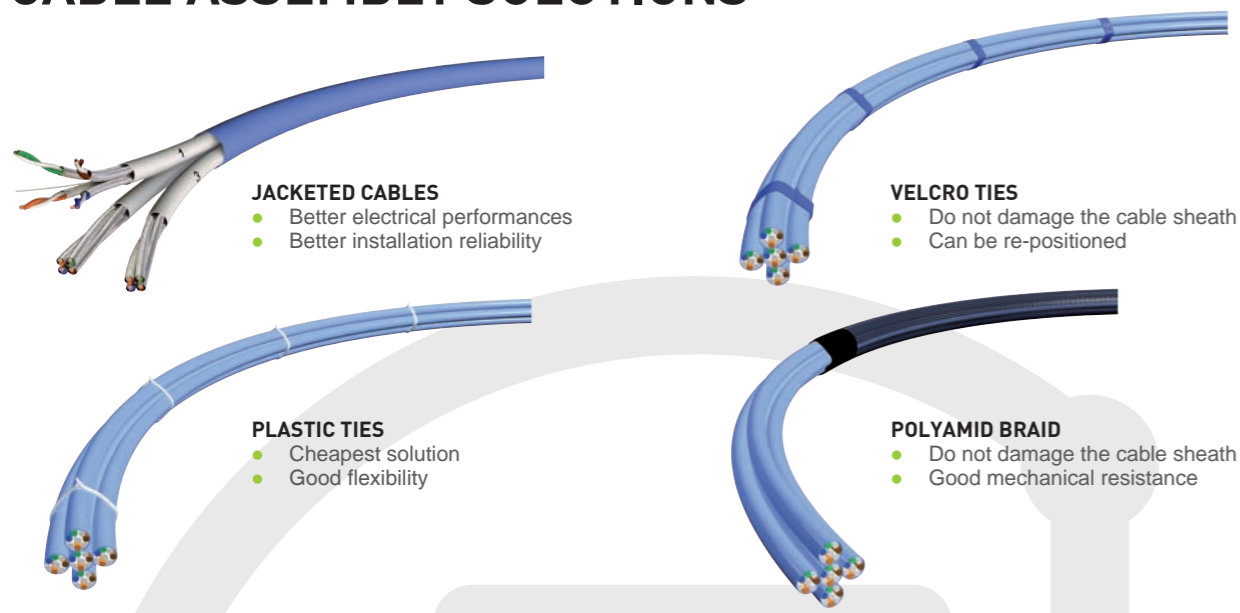
JACKETED CABLES
- Better electrical performances
- Better installation reliability

VELCRO TIES
- Do not damage the cable sheath
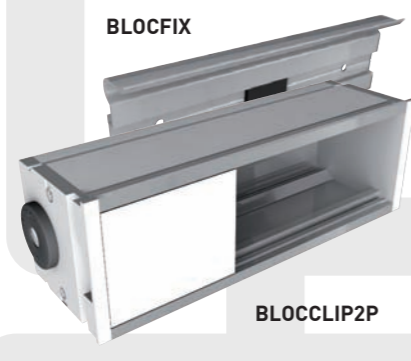- Can be re-positioned

PLASTIC TIES
- Cheapest solution
- Good flexibility

POLYAMID BRAID
- Do not damage the cable sheath
- Good mechanical resistance

MOUNT BOXES

CPBOX4

BLOCFIX

BLOCCLIP2P

FEATURES AND BENEFITS

CONSOLIDATION BOX
- Consolidation box to be loaded with 4 keystone jacks
- Dark metal

ALUMINIUM BOX
- Aluminium box to be loaded with 45x45 data or electrical outlets (French style)
- Available in different lengths: from 2 to 6 45x45 mm modules
- Specific lengths available on request
- Cable entry can accept up to 7 data cables

ORDERING INFORMATION

Part Number	Description	Packaging
BLOCCLIP X *	Aluminium box – to be loaded with X 45x45 modules	Unit
BLOCFIX	150 mm hanging rail	Unit
BLOCCABLEFIL	150 mm hanging rail with adjustable rivets	Unit
CPBOX4	Consolidation box - to be loaded with 4 keystone jacks	Unit

* X = Number of 45x45 mm modules – 2 to 8 as standard

19'' CONSOLIDATION BOX

49BOX2U19

FEATURES AND BENEFITS

- Enables high concentration (up to 72 ports) of consolidation points
- To be equipped with 19'' patch panels
- Available in 1U, 2U or 3U sizes
- Dark grey metal

ORDERING INFORMATION

| Part Number	Description	LxWxH	Packaging
49BOX1U19	19'' Consolidation box – 1 U – Dark grey metal	300x500x44.5	Unit
49BOX2U19	19'' Consolidation box – 2 U – Dark grey metal	300x500x89	Unit
49BOX3U19	19'' Consolidation box – 3 U – Dark grey metal	300x500x133.5	Unit

ETHERNET SPLITTERS
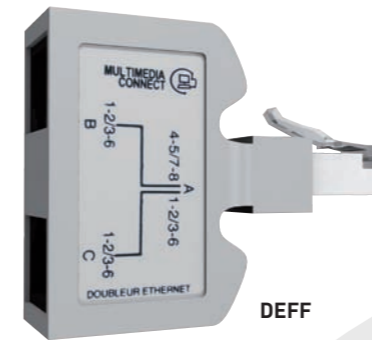
DEFF
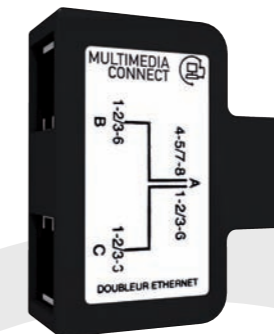
DEFM

FEATURES AND BENEFITS

- Enable to use a cable link for two Ethernet connections
- Only for Ethernet 10 Base T and 10 Base TX – Using 1-2/3-6 pairs
- Splitters must be installed on both ends (patch panel – wall outlet) of the link
- DEFF splitter is directly inserted in RJ 45 outlets
- DEFM requires a patch cord
- Can be used for shielded or unshielded links

ORDERING INFORMATION

Part Number	Description	Packaging
DEFF	Ethernet splitter – 2 female inputs / 1 male output	Unit
DEFM	Ethernet splitter – 2 female inputs / 1 female output	Unit

RJ45 MODULAR PLUGS
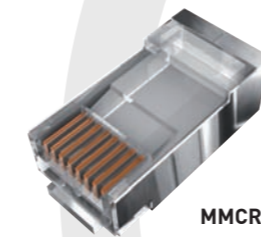
MMCRJ45 UC5 UNIV

MMCRJ45SC6SI

FEATURES AND BENEFITS

- High-performance CAT6 plugs
- 50 µ gold covered contacts ensuring excellent conductivity
- Unscotched contacts ensuring a limitation of interferences between conductors
- Integrated inserts reducing termination time (MMC RJ45SC6SI)
- UNIV version adapted to solid core termination

ORDERING INFORMATION

| Part Number	Description	Shielding	Inserts	Cable Core	Packaging
MMCRJP8ER X	CAT5E RJ45 modular plug – 8 contacts	Unshielded	Standard	Stranded	100 - 1000
MMCRJP8BLMER	CAT5E RJ45 modular plug – 9 contacts	Shielded	Standard	Stranded	100 - 1000
MMCRJ45 UC5 UNIV	CAT5E RJ45 modular plug – 8 contacts	Unshielded	Standard	Solid & stranded	100 - 1000
MMCRJ45 SC5 UNIV	CAT5E RJ45 modular plug – 9 contacts	Shielded	Standard	Solid & stranded	100 - 1000
MMC RJ45 UC 6 SI	CAT6 RJ45 modular plug – 8 contacts	Unshielded	Integrated & unscotched	Solid & stranded	100
MMC RJ45 SC 6 SI	CAT6 RJ45 modular plug – 9 contacts	Shielded	Integrated & unscotched	Solid & stranded	100

BOOTS & TOOLS

MRJSR

MMCP86MET

ORDERING INFORMATION

Part Number	Description	Packaging
MRJSRx	Boots for RJ45 – cable diameter < 6 mm Black: MRJSR6N – Yellow: MRJSR6J – Red: MRJSR6R – Green: MRJSR6V – Grey: MRJSR6G – Blue : MRJSR6B	100
MRJTSx	Boots for RJ45 – slim type – cable diameter <6mm – 12 colours available	100
MMCP86MET	Crimp tool for 6/8 contacts modular plugs – For intensive use	Unit

CAT5+ U/UTP 2 PAIRS STRANDED CORE CABLE
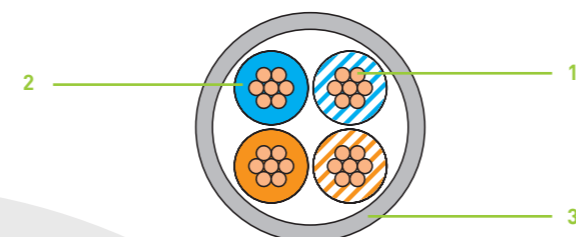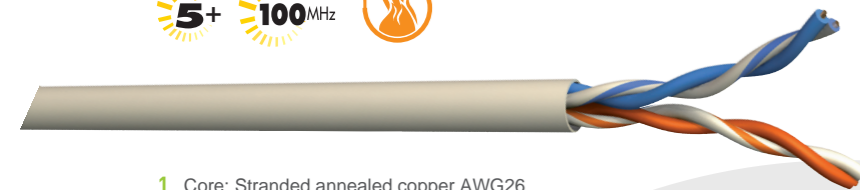
1. Core: Stranded annealed copper AWG26
2. Insulation: High-density PE
3. Jacket: PVC–Grey RAL 7035

VGP210EV

FEATURES AND BENEFITS

- Reduced outer diameter (4 mm)
- To be used for Cat5+ patch cords
- Not suitable for GIGABIT Ethernet applications

NETWORK APPLICATIONS

- ISDN - VoIP
- TOKEN RING 4/16 Mbits
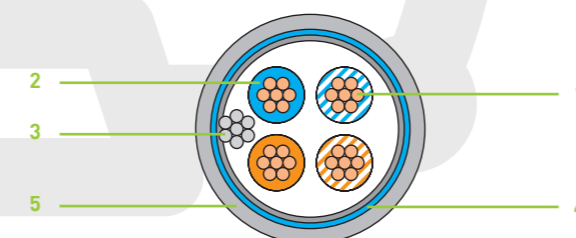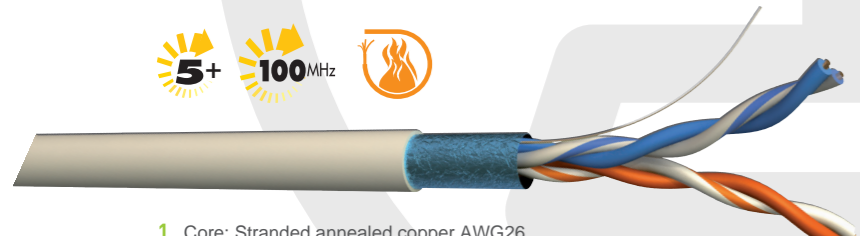- TP-PMD/TP-DDI - ATM 155,
- ETHERNET: 10 Base T, 100 Base Tx

CABLING STANDARDS

- CABLE: - IEC 61156
           - EN 50288-3-2
- SYSTEM: - EIA/TIA 568-B.2 – CAT5
            - ISO 11801 CLASS D
   - EN 50173 – CLASS D

TECHNICAL CHARACTERISTICS

- Linear resistance (max.): <170 Ω / Km
- Characteristic impedance: (from 1 to 100 MHz) 100 +/- 15 Ω
- Mutual capacity (nom.): 50 pF / m
- Nominal velocity propagation: 66 %
- Operating temperature: - 20° C / + 70°C
- Bending radius (min.): 8 x Cable diameter

ORDERING INFORMATION

Part Number	Pairs	Core Section	Shielding	Jacket	Outer Diameter	Weight	Packaging
VGP210EV	2	AWG 26	U/UTP	PVC	4.00 mm	25 kg/km	1000M

CAT5+ F/UTP 2 PAIRS STRANDED CORE CABLE

1. Core: Stranded annealed copper AWG26
2. Insulation: High-density PE
3. Drain Wire: stranded tinned copper AWG26
4. Shielding: Al/Pet foil – 110% coverage
5. Jacket: PVC–Grey RAL 7035

STXP2

FEATURES AND BENEFITS

- Reduced outer diameter (4.7 mm)
- To be used for Cat5+ patch cords
- Shielded version
- Not suitable for GIGABIT Ethernet applications

NETWORK APPLICATIONS

- ISDN - VoIP
- TOKEN RING 4/16 Mbits
- TP-PMD/TP-DDI - ATM 155
- ETHERNET: 10 Base T, 100 Base Tx

CABLING STANDARDS

- CABLE: - IEC 61156
           - EN 50288-3-2
- SYSTEM: - EIA/TIA 568-B.2 – CAT5
            - ISO 11801 CLASS D
            - EN 50173 – CLASS D

TECHNICAL CHARACTERISTICS

- Linear resistance (max.) : <170 Ω / Km
- Characteristic impedance: (from 1 to 100 MHz) 100 +/- 15 Ω
- Mutual capacity (nom.): 50 pF / m
- Nominal velocity propagation: 66 %
- Operating temperature: - 20° C / + 70°C
- Bending radius (min.): 8 x Cable diameter

ORDERING INFORMATION

Part Number	Pairs	Core Section	Shielding	Jacket	Outer Diameter	Weight	Packaging
STXP2	2	AWG 26	F/UTP	PVC	4.70 mm	30 kg/km	500 M - 1000M

CAT5E U/UTP STRANDED CORE CABLE
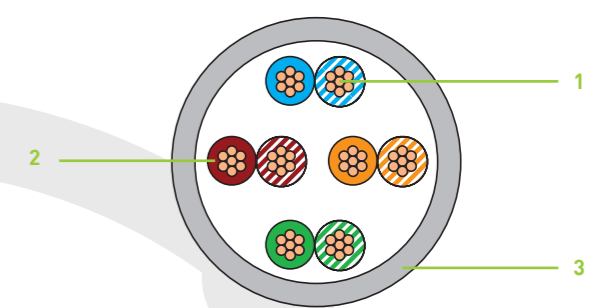
1. Core: Stranded annealed copper AWG26
2. Insulation: High-density PE
3. Jacket: PVC or LSZH –Grey RAL 7035

VGBP4

FEATURES AND BENEFITS

- Exceeds CAT5e standard specifications
- To be used for CAT5e patch cords
- Available in different colours on request

NETWORK APPLICATIONS

- ISDN - VoIP
- TOKEN RING 4/16 Mbits - 100 VG-AnyLAN
- TP-PMD/TP-DDI - ATM 155, 622,1200 Mbits
- ETHERNET: 10 Base T, 100 Base Tx, 100 Base T4, 1000 Base T

CABLING STANDARDS

- CABLE: - IEC 61156
           - EN 50288-3-2
- SYSTEM: - EIA/TIA 568-B.2 – CAT5e
            - ISO 11801 Edition 2 - CLASS D
            - EN 50173 Edition 2 – CLASS D

TECHNICAL CARACTERISTICS

- Linear resistance (max.): <170 Ω / Km
- Characteristic impedance: from 1 to 100 MHz) 100 +/- 15 Ω
- Mutual capacity (nom.): 50 pF / m
- Nominal velocity propagation: 66 %
- Operating temperature: - 20° C / + 70°C
- Bending radius (min.): 8 x Cable diameter

F (MHz)	INSERTION LOSS (dB/100 m)		NEXT (dB/100 m)		RETURN LOSS (dB/100 m)	
	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C
1	3.0	2.4	65.3	73	20.0	23
4	6.2	4.9	56.3	63	23.3	26
10	9.8	7.8	50.3	56	25.0	27
16	12.3	9.8	47.2	53	25.0	28
20	14.0	11.2	45.8	51	25.0	28
25	15.7	12.5	44.3	50	24.2	26
31.25	17.7	14.1	42.9	48	23.3	25
62.5	25.6	20.5	38.4	43	20.7	23
100	33.0	26.4	35.3	39	19.0	21

ORDERING INFORMATION

Part Number	Pairs	Core Section	Shielding	Jacket	Outer Diameter	Weight	Packaging
VGBP4X	4	AWG 26	U/UTP	PVC	5.40 mm	25 kg/km	100M - 500 M - 1000M
VGBP4SH	4	AWG 26	U/UTP	LSZH	5.40 mm	25 kg/km	500 M - 1000M

* X = colour

CAT5E F/UTP STRANDED CORE CABLE

SGBP4

1. Core: Stranded annealed copper AWG26
2. Insulation: High-density PE
3. Drain Wire: stranded tinned copper AWG26
4. Shielding: Al/Pet foil – 110% coverage
3. Jacket: PVC or LSZH –Grey RAL 7035

FEATURES AND BENEFITS

- Exceeds CAT5e standard specifications
- To be used for CAT5e patch cords
- Available in different colours on request

NETWORK APPLICATIONS

- ISDN - VoIP
- TOKEN RING 4/16 Mbits - 100 VG-AnyLAN
- TP-PMD/TP-DDI - ATM 155, 622,1200 Mbits
- ETHERNET: 10 Base T, 100 Base Tx, 100 Base T4, 1000 Base T

CABLING STANDARDS

- CABLE: - IEC 61156
          - EN 50288-3-2
- SYSTEM: - EIA/TIA 568-B.2 – CAT5e
          - ISO 11801 Edition 2 - CLASS D
          - EN 50173 Edition 2 – CLASS D

TECHNICAL CHARACTERISTICS

- Linear resistance (max.) : <170 Ω / Km
- Characteristic impedance : from 1 to 100 MHz) 100 +/- 15 Ω
- Mutual capacity (nom.) : 50 pF / m
- Nominal velocity propagation : 66 %
- Operating temperature : - 20° C / + 70°C
- Bending radius (min.) : 8 x Cable diameter

F (MHz)	INSERTION LOSS (dB/100 m)		NEXT (dB/100 m)		RETURN LOSS (dB/100 m)	
	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C
1	3.0	2.4	65.3	73	20.0	23
4	6.2	4.9	56.3	63	23.3	26
10	9.8	7.8	50.3	56	25.0	27
16	12.3	9.8	47.2	53	25.0	28
20	14.0	11.2	45.8	51	25.0	28
25	15.7	12.5	44.3	50	24.2	26
31.25	17.7	14.1	42.9	48	23.3	25
62.5	25.6	20.5	38.4	43	20.7	23
100	33.0	26.4	35.3	39	19.0	21

ORDERING INFORMATION

Part Number	Pairs	Core Section	Shielding	Jacket	Outer Diameter	Weight	Packaging
SGBP4X	4	AWG 26	F/UTP	PVC	5.60 mm	38 Kg/Km	100M - 500M - 1000M
SGBP4SH	4	AWG 26	F/UTP	LSZH	5.60 mm	38 Kg/Km	500M - 1000M

* X = colour

CAT6 U/UTP STRANDED CORE CABLE
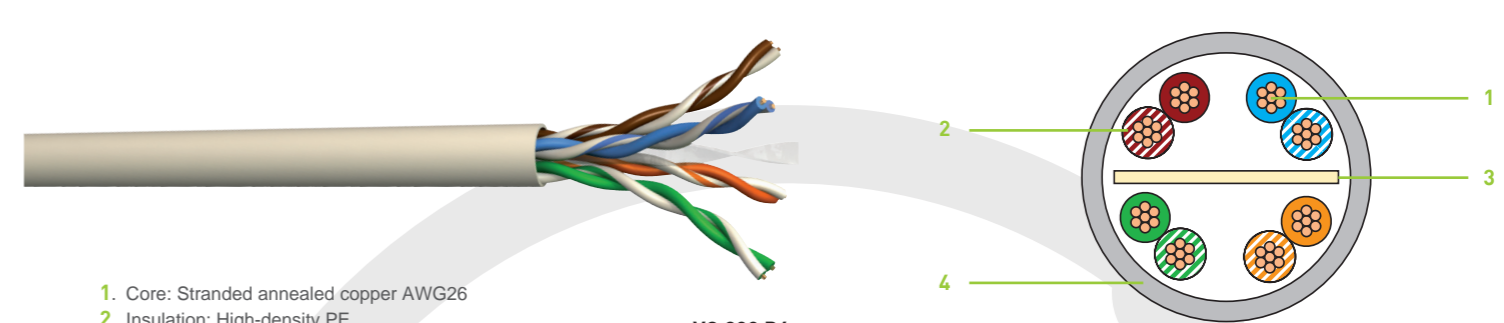
VG 200 P4

1. Core: Stranded annealed copper AWG26
2. Insulation: High-density PE
3. Flat Filler: Low density PE
4. Jacket: PVC – Grey RAL 7035

FEATURES AND BENEFITS

- Exceeds CAT6 standard specifications
- To be used for CAT6 patch cords
- Available in different colours on request

NETWORK APPLICATIONS

- ISDN - VoIP
- TOKEN RING 4/16 Mbits - 100 VG-AnyLAN
- TP-PMD/TP-DDI - ATM 155, 622,1200 Mbits
- ETHERNET : 10 Base T, 100 Base Tx, 100 Base T4, 1000 Base T

CABLING STANDARDS

- CABLE: - IEC 61156-6
          - EN 50288-6-2
- SYSTEM: - EIA/TIA 568-B.2-1 CAT6
          - ISO 11801 Edition 2 - CLASS E
          - EN 50173 Edition 2 – CLASS E

TECHNICAL CARACTERISTICS

- Linear resistance (max.): <154 Ω / Km
- Characteristic impedance: from 1 to 100 MHz : 100 +/- 15 Ω
                            from 100 to 250 MHz : 100 +/- 20 Ω
- Mutual capacity (nom.): 42 pF / m
- Nominal velocity propagation: 66 %
- Operating temperature: - 20° C / + 70°C
- Bending radius (min.): 8 x Cable diameter

| F (MHz)	INSERTION LOSS (dB/100 m)		NEXT (dB/100 m)		PSNEXT (dB/100 m)		RETURN LOSS (dB/100 m)	
	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C
1	3.0	2.8	74.3	80.0	72.3	82.0	20.0	25.0
4	6.0	5.6	65.3	76.0	63.3	78.0	23.0	28.0
10	9.0	8.7	59.3	68.0	57.3	70.0	25.0	29.0
16	11.0	10.2	56.2	64.0	54.2	66.0	25.0	29.0
20	13.0	12.0	53.3	62.0	51.3	64.0	24.2	28.4
31.25	16.0	14.9	51.9	62.0	49.9	64.0	23.3	26.4
100	30.0	27.8	44.3	60.0	42.3	62.0	19.0	22.0
200	44.0	41.2	39.8	58.0	37.8	60.0	16.4	19.0
250	49.0	46.9	38.3	56.0	36.3	58.0	15.6	17.8

ORDERING INFORMATION

Part Number	Pairs	Core Section	Shielding	Jacket	Outer Diameter	Weight	Packaging
VG200 P4	4	AWG 26	U/UTP	PVC	5.70 mm	40 Kg/Km	500M - 1000M

CAT6 U/FTP STRANDED CORE CABLE

TX 200 P4
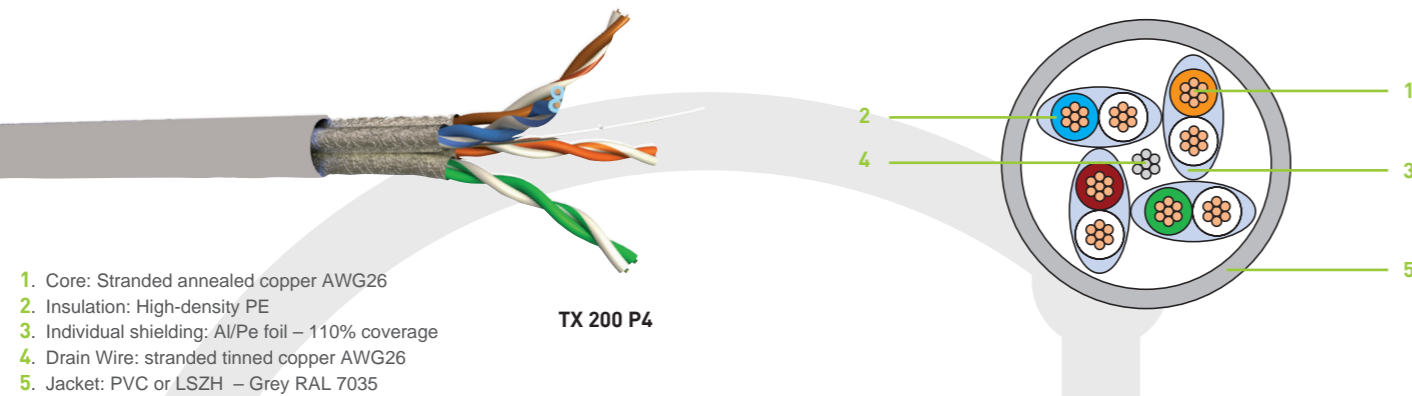
1. Core: Stranded annealed copper AWG26
2. Insulation: High-density PE
3. Individual shielding: Al/Pe foil – 110% coverage
4. Drain Wire: stranded tinned copper AWG26
5. Jacket: PVC or LSZH – Grey RAL 7035

FEATURES AND BENEFITS

- Exceeds CAT6 standard specifications
- To be used for CAT6 shielded patch cords
- Available in different colours on request

NETWORK APPLICATIONS

- ISDN - VoIP
- TOKEN RING 4/16 Mbits - 100 VG-AnyLAN
- TP-PMD/TP-DDI - ATM 155, 622,1200 Mbits
- ETHERNET : 10 Base T, 100 Base Tx, 100 Base T4, 1000 Base T

CABLING STANDARDS

- CABLE: - IEC 61156-6
  - EN 50288-6-2
- SYSTEM: - EIA/TIA 568-B.2-1 CAT6
  - ISO 11801 Edition 2 - CLASS E
  - EN 50173 Edition 2 – CLASS E

TECHNICAL CHARACTERISTICS

- Linear resistance (max.): <154 Ω / Km
- Characteristic impedance: from 1 to 100 MHz: 100 +/- 15 Ω
  from 100 to 250 MHz: 100 +/- 20 Ω
- Mutual capacity (nom.): 42 pF / m
- Nominal velocity propagation: 66 %
- Operating temperature: - 20° C / + 70°C
- Bending radius (min.): 8 x Cable diameter

F (MHz)	INSERTION LOSS (dB/100 m)		NEXT (dB/100 m)		PSNEXT (dB/100 m)		RETURN LOSS (dB/100 m)	
	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C
1	3.0	2.8	74.3	80.0	72.3	82.0	20.0	25.0
4	6.0	5.6	65.3	76.0	63.3	78.0	23.0	28.0
10	9.0	8.7	59.3	68.0	57.3	70.0	25.0	29.0
16	11.0	10.2	56.2	64.0	54.2	66.0	25.0	29.0
20	13.0	12.0	53.3	62.0	51.3	64.0	24.2	28.4
31.25	16.0	14.9	51.9	62.0	49.9	64.0	23.3	26.4
100	30.0	27.8	44.3	60.0	42.3	62.0	19.0	22.0
200	44.0	41.2	39.8	58.0	37.8	60.0	16.4	19.0
250	49.0	46.9	38.3	56.0	36.3	58.0	15.6	17.8

ORDERING INFORMATION

Part Number	Pairs	Core Section	Shielding	Jacket	Outer Diameter	Weight	Packaging
TX200 P4	4	AWG 26	U/FTP	PVC	5.70 mm	40 Kg/Km	500M - 1000M
TX200 P4SH	4	AWG 26	U/FTP	LSZH	5.70 mm	40 Kg/Km	500M - 1000M

* X = colour

CAT6A U/FTP STRANDED CORE CABLE

555 P4 SH
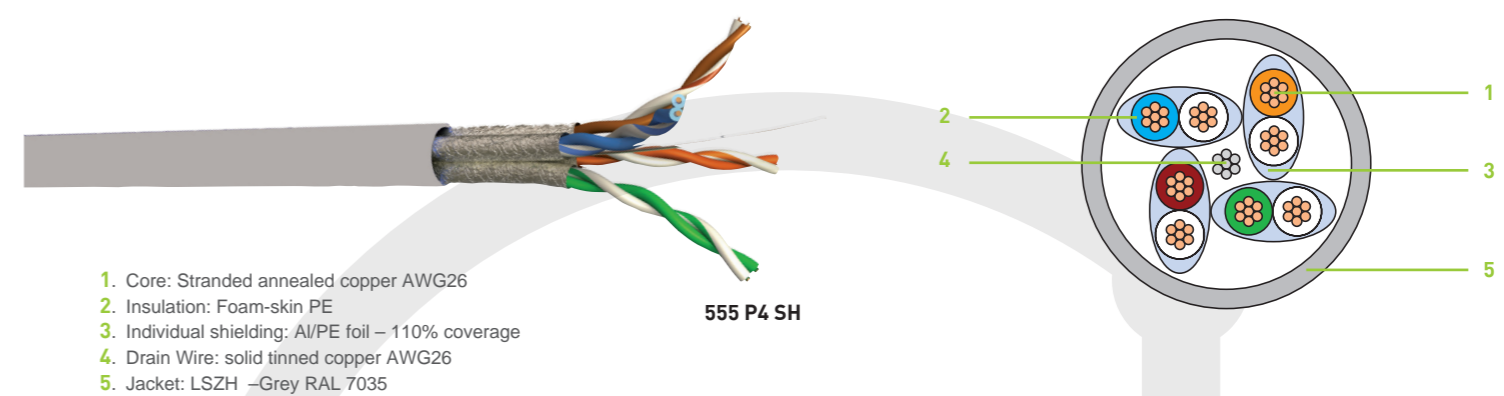
1. Core: Stranded annealed copper AWG26
2. Insulation: Foam-skin PE
3. Individual shielding: Al/PE foil – 110% coverage
4. Drain Wire: solid tinned copper AWG26
5. Jacket: LSZH –Grey RAL 7035

FEATURES AND BENEFITS

- Exceeds CAT6A standard specifications
- To be used for CAT6A shielded patch cords or CAT6A consolidation point links
- Available in different colours on request

NETWORK APPLICATIONS

- ISDN - VoIP
- TOKEN RING 4/16 Mbits - 100 VG-AnyLAN
- TP-PMD/TP-DDI - ATM 155, 622,1200 Mbits
- ETHERNET : 10 Base T, 100 Base Tx, 100 Base T4, 1000 Base T, 10G Base T

CABLING STANDARDS

- CABLE: - IEC 61156-6
  - EN 50288-10-2
  - EIA/TIA 568-B.2-10 CAT6A
- SYSTEM: - EIA/TIA 568-B.2-10 CAT6A
  - AD 1.0 & AD2.0 ISO 11801

TECHNICAL CARACTERISTICS

- Linear resistance (max.): <154 Ω / Km
- Characteristic impedance: from 1 to 100 MHz: 100 +/- 15 Ω
  from 100 to 250 MHz : 100 +/- 20 Ω
  from 250 to 500 MHz : 100 +/- 25 Ω
- Mutual capacity (nom.): 42 pF / m
- Nominal velocity propagation: 76 %
- Operating temperature: - 20° C / + 70°C
- Bending radius (min.): 8 x Cable diameter

F (MHz)	INSERTION LOSS (dB/100 m)		NEXT (dB/100 m)		PSNEXT (dB/100 m)		RETURN LOSS (dB/100 m)	
	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C
1	3.0	2.8	74.3	80.0	72.3	82.0	20.0	25.0
4	6.0	5.6	65.3	76.0	63.3	78.0	23.0	28.0
10	9.0	8.7	59.3	68.0	57.3	70.0	25.0	29.0
16	11.0	10.2	56.2	64.0	54.2	66.0	25.0	29.0
20	13.0	12.0	53.3	62.0	51.3	64.0	24.2	28.4
31.25	16.0	14.9	51.9	62.0	49.9	64.0	23.3	26.4
100	30.0	27.8	44.3	60.0	42.3	62.0	19.0	22.0
200	44.0	41.2	39.8	58.0	37.8	60.0	16.4	19.0
250	49.0	46.9	38.3	56.0	36.3	58.0	15.6	17.8
300	56.0	53.4	37.1	53.0	34.1	55.0	15.6	16.6
400	65.0	62.4	35.3	50.0	32.3	52.0	15.6	16.2
500	74.0	72.3	33.8	49.0	30.8	51.0	15.6	16.2

ORDERING INFORMATION

Part Number	Pairs	Core Section	Shielding	Jacket	Outer Diameter	Weight	Packaging
555P4SH	4	AWG 26	U/FTP	LSZH	5.80 mm	42 Kg/Km	500M - 1000M

A reliable Ethernet Network for industrial and harsh environments

BENEFITS AND APPLICATIONS

Ethernet communication protocols are increasingly used in non-office environments. Industries, warehouses, hospitals, outdoor applications … Standard cabling components are not designed to withstand the constraints of these new applications.
Axindus System is specifically designed to resists the toughest conditions and guarantee a reliable cabling infrastructure.

- Watertight IP67
- Mechanical resistance IK10
- Resistance to oil and chemical agents
- Stainless steel versions available
- EMC protection

AXINDUS SYSTEM PERFORMANCE

- Exceeds CAT6/Class E standard specifications
- Exceeds CAT6 10 giga standard specifications in system (EIA/TIA TSB-155 – ISO/IEC – TR24750)
- Certification by DELTA ELECTRONICS
- Conforming to EN50173-3 and ISO / IEC 24702

IP67 CAT6 SHIELDED RJ45 JACKS

FEATURES AND BENEFITS

- Watertight IP67
- High mechanical resistance IK10
- Resistant to chemical agents, salt sprays and oil.
- Fully shielded – protected against electromagnetic interferences

- Exceed CAT6 10 giga standard specifications in system
- Certification by DELTA ELECTRONICS
- Tool less termination (from AWG24 to AWG 22)

- To associated with IP67 screw caps
- Available in Zamac or stainless steel versions

AXA332110   AXA362110   AXA230001

ORDERING INFORMATION

| Part Number	Description	Shielding	Version	Packaging
AXA 33 2110	IP67 CAT6 modular jack	Fully Shielded	Zamac	Unit
AXA 36 2110	IP67 CAT6 modular jack	Fully Shielded	Stainless Steel	Unit
AXA 23 0001	Screw cap	Fully Shielded	Zamac	Unit
AXA 23 0002	Screw cap	Fully Shielded	Stainless Steel	Unit

IP67 CAT6 RJ45 PATCH CORDS
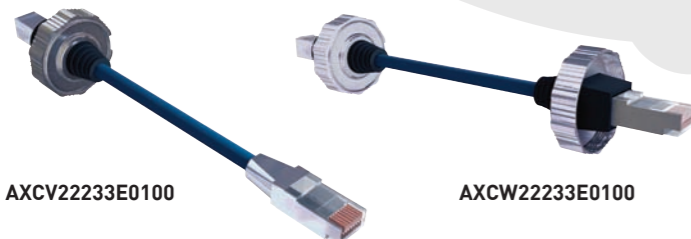
FEATURES AND BENEFITS

- Watertight IP67
- Shielded cable with Polyurethane jacket
- IP67 Zamac screw

- Two versions available: - Standard RJ45 plug / IP67 screw
                           - IP67 screw / IP67 screw

AXCV22233E0100   AXCW22233E0100

ORDERING INFORMATION

Part Number	Description	Version	Lengths	Packaging
AXCV 22233E0 X 00	IP67 CAT6 shielded patch cord	Standard RJ45 plug / IP67 screw	1/3/5/6/7/8/9/10	Unit
AXCW 22233E0 X 00	IP67 CAT6 shielded patch cord	IP67 screw / IP67 screw	1/3/5/6/7/8/9/10	Unit

CAT 6A CABLE - S/FTP – 500 MHz – PUR JACKET
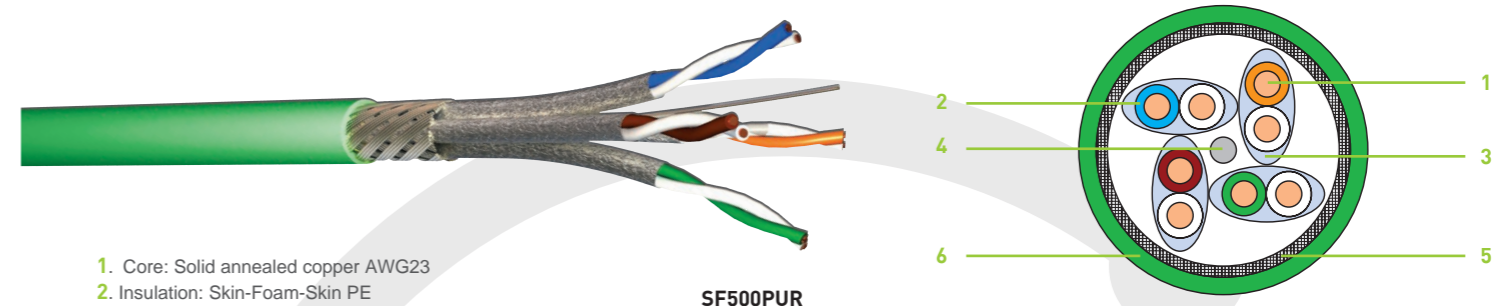
SF500PUR

1. Core: Solid annealed copper AWG23
2. Insulation: Skin-Foam-Skin PE
3. Shielding 1: Individual Al/Pet foil – Coverage 110%
4. Drain wire: Solid tinned copper AWG24
5. Shielding 2: Tinned copper braid – Coverage Min.50%
6. Jacket: Polyurethane – Green RAL 6000

FEATURES AND BENEFITS

- Exceeds CAT6A standard requirements. Mechanically and electrically adapted to harsh environments
- Excellent protection against electro-magnetic interferences thanks to double shielding
- Perfectly adapted to PoE applications, including the future 802.3at standard

NETWORK APPLICATIONS

- ISDN - VoIP
- TOKEN RING 4/16 Mbits - 100 VG-AnyLAN
- TP-PMD/TP-DDI - ATM 155, 622,1200 Mbits
- ETHERNET: 10 Base T, 100 Base Tx, 100 Base T4, 1000 Base T, 10 G Base T
- IEEE 802.3af – PoE (Power Over Ethernet)
- Future 802.3at – PoEP (Power over Ethernet Plus)

CABLING STANDARDS

- CABLE: - IEC 61156-5
          - EN 50288-4-1
- SYSTEM: - AD1.0 & AD2.0 ISO 11801 – CLASS Ea
          - EN 50173-3 – CLASS Ea

TECHNICAL CARACTERISTICS

- Linear resistance (max.): 140 Ω / Km
- Characteristic impedance: (from 1 to 100 MHz) 100 ± 15 Ω
                            (from 100 to 250 MHz) 100 ± 20 Ω
                            (from 250 to 500 MHz) 100 ± 25 Ω
- Mutual capacity (nom.): 45 pF/m
- Coupling attenuation (nom.): 80 dB
- Nominal velocity propagation: 80 %
- Operating temperature: - 20° C / + 70°C
- Bending radius (min.): 8 x Cable diameter

F (MHz)	INSERTION LOSS (dB/100 m)		NEXT (dB/100 m)		ACR-N (dB/100 m)		PS ACR-N (dB/100 m)		ACR-F (dB/100 m)		PSACR-F (dB/100 m)		RETURN LOSS (dB/100 m)	
	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C	Standard	M.M.C
1	2.0	1.8	80.0	100	78.0	98	77.0	97	80.0	105	77.0	102	20.0	27
10	5.7	5.4	80.0	100	74.3	94	77.0	97	74.0	97	71.0	94	25.0	30
16	7.2	6.8	80.0	100	72.8	93	77.0	97	69.9	93	66.9	90	25.0	30
20	8.1	7.7	80.0	98	71.9	90	77.0	95	68.0	91	65.0	88	25.0	30
31.25	10.1	9.6	80.0	98	69.9	88	77.0	95	64.1	87	61.1	84	25.0	30
62.5	14.5	13.7	75.1	98	60.6	84	72.5	95	58.1	81	55.1	78	23.0	30
100	18.5	17.4	72.4	98	53.9	80	69.4	95	54.0	77	51.0	74	20.0	30
200	28.0	25.0	68.0	92	40.0	67	65.0	89	49.0	71	46.0	68	16.0	25
300	33.3	30.9	65.3	89	32.0	58	62.3	86	44.5	67	41.5	64	15.0	24
500	48.9	41.2	60.8	86	11.9	44	57.8	85	38.4	63	35.4	60	15.0	23

ORDERING INFORMATION

| Part Number	Pairs	Core Section	Shielding	Jacket	Outer Diameter	Weight	Packaging
SF500PUR	4	AWG 23	S/FTP	PUR	7.6 mm	67 Kg/Km	500 M - 1000M

IP66 & IP54 WALL MOUNTED CABINETS
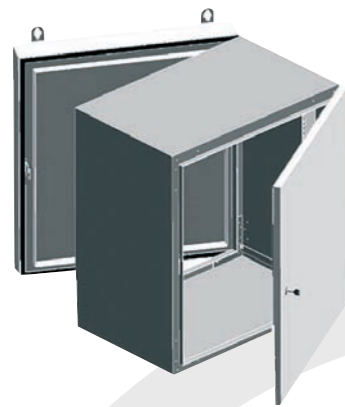
AXA1522001

FEATURES AND BENEFITS

- 19'' one section wall-mounted cabinets
- Stainless steel version is IP 66
- Epoxy painted steel version is IP54
- Adjustable 19'' mounting posts
- Cable access through watertight glands
- Door joint to avoid dust and water penetration

IP66 & IP54 SURFACE-MOUNTED BOXES
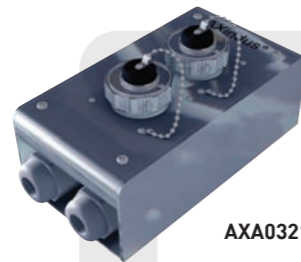
AXA031212   AXA032102

FEATURES AND BENEFITS

- Watertight surface-mounted boxes
- To be equipped with Axindus modular jacks (AXA 33 2110, AXA 36 2110)
- Cable access through watertight glands
- Three versions available: - Stainless steel : IP66
                          - Epoxy painted steel IP66
                          - Epoxy painted steel IP54

ORDERING INFORMATION

Part Number	Description	Version	Number of ports	Packaging
AXA 03 1102	Watertight unloaded surface-mounted box	Stainless steel – IP66	1	Unit
AXA 03 2102	Watertight unloaded surface-mounted box	Stainless steel – IP66	2	Unit
AXA 03 3102	Watertight unloaded surface-mounted box	Stainless steel – IP66	3	Unit
AXA 03 1212	Watertight unloaded surface-mounted box	Epoxy painted steel – IP66	1	Unit
AXA 03 2212	Watertight unloaded surface-mounted box	Epoxy painted steel – IP66	2	Unit
AXA 03 3212	Watertight unloaded surface-mounted box	Epoxy painted steel – IP66	3	Unit
AXA 03 1213	Watertight unloaded surface-mounted box	Epoxy painted steel – IP54	1	Unit
AXA 03 2213	Watertight unloaded surface-mounted box	Epoxy painted steel – IP54	2	Unit

ACCESSORIES
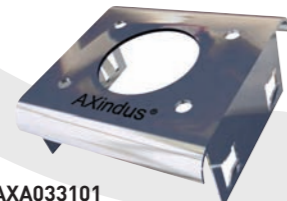
AXA030001   AXA033101   AXA033102   AXA033100

AXA1711000

ORDERING INFORMATION

Part Number	Description	Packaging
AXA 03 1102	Spanner	Unit
AXA 03 3102	DIN adaptor for Axindus modular jacks	Unit
AXA 03 3101	45 x 45 face plate for Axindus modular jack	Unit
AXA 03 3100	80 x 80 mm stainless steel plate to be equipped with Axindus modular jack	Unit
AXA 171 1000	19 '' 1U 12 ports stainless steel panel – To be equipped with Axindus modular jacks	Unit

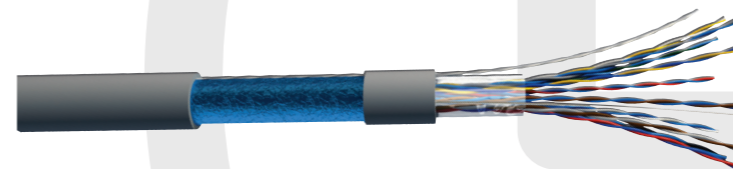## U/UTP VOICE-GRADE BACKBONE CABLES
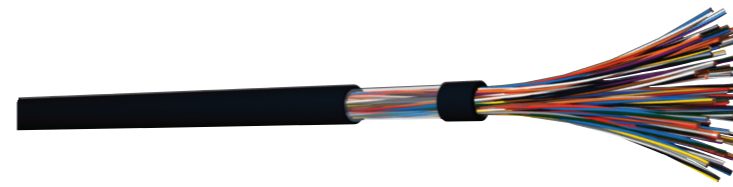
VGTEL 25

FEATURES AND BENEFITS

- 25 pairs, 50 pairs or 100 pairs backbone cables
- Unshielded
- AWG24 cores
- Pairs colour coding: - According to EIA/TIA
                             - According to Belgacom standard for Belgium
- Grey (RAL 7035) PVC outer sheath
- CAT3,CAT5 or CAT5e performance

ORDERING INFORMATION

Part Number	Description	Shielding	Colour code	Diam. (mm)	Weight (kg/km)	Packaging (m)
VGTEL25	25 pairs voice-grade cable	U/UTP	Acc. to EIA/TIA	14.0	230	500
VGTEL50	50 pairs voice-grade cable	U/UTP	Acc. to EIA/TIA	16.50	350	500
VGTEL100	100 pairs voice-grade cable	U/UTP	Acc. to EIA/TIA	23.0	640	500
VGTEL25BE	25 pairs voice-grade cable	U/UTP	Belgacom	14.0	230	500
VGTEL50BE	50 pairs voice-grade cable	U/UTP	Belgacom	16.50	350	500
VGTEL100BE	100 pairs voice-grade cable	U/UTP	Belgacom	23.0	640	500

## F/UTP VOICE-GRADE BACKBONE CABLES (French standard)

SYT112

FEATURES AND BENEFITS

- Voice-grade backbone cables, according to « SYT » French standard
- AWG24 core section (AWG20 versions available on request)
- Pairs colour coding according to SYT standard
- Shielded with general aluminium foil (F/UTP)
- Grey or Ivory PVC jacket (LSZH jackets available on request)
- CAT3 performance

ORDERING INFORMATION

Part Number	Description	Shielding	Colour code	Diam. (mm)	Weight (kg/km)	Packaging (m)
SYT 21 24 x	21 pairs AWG24 voice-grade cable	F/UTP	SYT standard	10.3	168	500 – 1000
SYT 30 24 x	30 pairs AWG24 voice-grade cable	F/UTP	SYT standard	11.8	229	500 – 1000
SYT 42 24 x	42 pairs AWG24 voice-grade cable	F/UTP	SYT standard	13.4	298	500 – 1000
SYT 56 24 x	56 pairs AWG24 voice-grade cable	F/UTP	SYT standard	15.0	366	500 – 1000
SYT 112 24 x	112 pairs AWG24 voice-grade cable	F/UTP	SYT standard	20.6	681	500 – 1000

U/UTP VOICE-GRADE STRANDED CORE CABLE
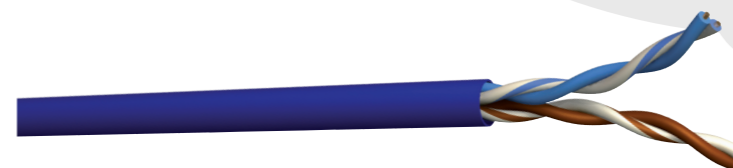
VGBP2B

FEATURES AND BENEFITS

- 2 pairs stranded core cable for patch leads
- Colour coding: Blue/ white-blue , Brown/white-brown
- Unshielded
- Blue (RAL 5002) PVC jacket

ORDERING INFORMATION

Part Number	Description	Shielding	Colour code	Diam. (mm)	Weight (kg/km)	Packaging (m)
VGBP2B	2 pairs AWG26 stranded core voice cable	U/UTP	Blue/white-blue, Brown/white-brown	4.0	25	1000

VOICE GRADE NETWORKS

"110" CROSS CONNECT MODULES

BC110BLOCK25P

BC110CON4P

FEATURES AND BENEFITS

- 25 pairs wiring blocks
- CAT6 performances
- Fixing legs to enable direct wall-mounting
- Integrated label holders
- To be used with 4 pairs connecting modules (BC110CON4P)
- Colour coding according to EIA/TIA 568
- Termination with punch down tool

ORDERING INFORMATION

Part Number	Description	Packaging
BC110BLOCK25P	25 pairs wiring block – With fixing legs	1
BC110CON4P	4 pairs CAT6 wiring module	10

"110" CROSS CONNECT PATCH CORDS

BC110PATCH

ORDERING INFORMATION

Part Number	Description	Available lengths (m)	Packaging
BC110PATCHxx	110 / 110 CAT6 4 pairs patch cords - unshielded	1 / 2 / 3 / 5 / 10	unit
BC110PATCHRJ45xx	110 / RJ45 CAT6 4 pairs patch cords - unshielded	1 / 2 / 3 / 5 / 10	unit

ACCESSORIES
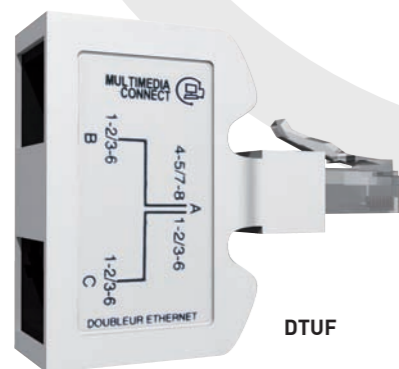
DTUF

DTUM

ORDERING INFORMATION

Part Number	Description	Packaging
Part Number	Description	Packaging
BC110TOOLS	Punch Down tool for 110 blocks	unit
DTUF	VOICE DOUBLER (4-5/7-8) - 2 female / 1 male	unit
DTUM	VOICE DOUBLER (4-5/7-8) - 2 female / 1 female	unit

19'' 50 PORTS VOICE PATCH PANEL

PANISDN50N

FEATURES AND BENEFITS

- 19'' 1U patch panel
- 50 RJ45 ports
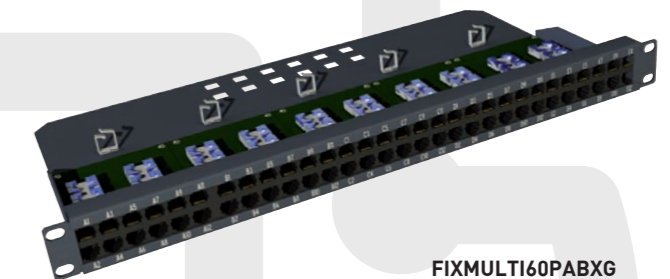- Use of 4-5 / 3-6 pairs
- Punch down tool termination
- Unshielded

ORDERING INFORMATION

Part Number	Description	Packaging
PANISDN50N	50 ports 1U voice patch panel - 4-5/3-6 pairs	1

19'' 60 PORTS PATCH PANELS (4-5/7-8)

MULTI24PABXG

FIXMULTI60PABXG

FEATURES AND BENEFITS

- 19'' 1U drawers or panels
- Up to 60 RJ45 ports
- Use of 4-5 / 7-8 pairs
- Unshielded
- Toolless termination
- The drawer (MULTI60PABXG) is modular and is available in 24 ports – semi-loaded version
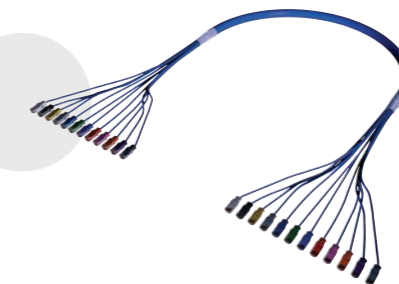
ORDERING INFORMATION

Part Number	Description	Packaging
MULTI60PABXG	60 ports 1U fully loaded voice drawer – 4-5/7-8 pairs	1
MULTI24PABXG	24 ports 1U semi-loaded voice drawer – 4-5/7-8 pairs – to be further equipped with MULTIMODPABX	1
MULTIMODPABX	12 ports module – 4-5/7-8 pairs – to be loaded in MULTI24PABXG	1
FIXMULTI60PABXG	60 ports 1U fully loaded voice panel – 4-5/7-8 pairs	1

U/UTP VOICE-GRADE STRANDED CORE CABLE
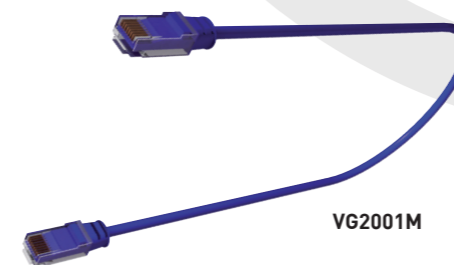
VG2001M

P12VG2001M

ORDERING INFORMATION

Part Number	Description	Available lengths (m)	Packaging
VG200xM	2 pairs (4-5/7-8) RJ45 patch cords – Blue PVC jacket – Unshielded	0.5 / 1 / 2 / 3 / 5	Unit
P12VG2001M	12 x VG2001M – assembled with polyamid braid	1	Unit
P12VG2003M	12 x VG2003M – assembled with polyamid braid	3	Unit
P12VG2005M	12 x VG2005M – assembled with polyamid braid	5	Unit
X = Lenght			

HOW TO CHOOSE THE ADEQUATE FIBER TYPE ?

HOW TO CHOOSE THE ADEQUATE CABLE STRUCTURE ?

Fiber Type	Multimode			Singlemode
Light source	LED or VCSEL source			LASER
	62.5 / 125 μ	50 / 125 μ		9 / 125 μ
Structure				

| Fiber quality	OM1	OM2	OM3	OS1
Bandwidth at 850 nm	200 Mhz/km	500 Mhz/km	1500 Mhz/km 2000 Mhz/km (VCSEL source)	-
Bandwidth at 1300 nm	500 Mhz/km	500 Mhz/km	500 Mhz/km	-
Insertion Loss at 850nm (typical)	3.5dB/km	3.2 dB/km	3.2 dB/km	-
Insertion Loss at 1300nm (typical)	1.2 dB/km	1.0 dB/km	1.0 dB/km	-
Insertion Loss a 1310nm (typical)	-	-	-	0.35 dB/km
Insertion Loss at 1550nm (typical)	-	-	-	0.22 dB/km
Transmission lengths for each application				
10 Base FL & FB	2000m	1514m	2000m	-
Token Ring 4 & 16 Mbits	2000m	1857m	1857m	-
Token Ring 100 Mbits	2000m	2000m	2000m	-
ATM 155 (850nm)	1000m	1000m	1000m	-
ATM 622 (850nm)	300m	300m	300m	-
100 Base SX	2000m	2000m	2000m	-
1000 Base SX	220m	550m	550m	-
1000 Base LX	550m	550m	1000m*	2000m
10G Base SX	32m	86m	300m	
10G Base LW	220m	220m	220m	2000m
10G Base LX4	300m	300m	300m	2000m
Multimedia Connect Advice	• Less performance and more expensive than the 50/125	• The best compromise between price/ quality	• Necessary if 10G will be deployed on the installation	• Necessary for analogue transmission • Long-distance connection • Necessary for 40G/100G

* On optimized fiber

Fiber Type	Characteristics	Applications
Tight Buffered	**TIGHT BUFFERED**	• The 900 μm sheath protects each fiber and enables direct termination • Tight buffered structure is suitable for cables requiring more than 48 fibers
Loose Tube	**LOOSE TUBE**	• Fan-out kits are required to mechanically protect each fiber for the last meter before termination • Loose tube structure is suitable for cables with large number of fibers

Mechanical Protection	Characteristics		Applications
Dielectric armour	Aramid yarns	Strength member	• Indoor applications
	E-Glass yarns	Strength member, Water protection & Rodent protection	• Indoor / Outdoor applications • Direct buried cable
Corrugated Steel	Extremely resistant to crush load (4000 N min.)		• Duct • Direct buried • High crush resistance

Outer sheath	Characteristics	Applications
LSZH	• Does not generate acid and toxic gases in case of combustion • Limited water resistance • Limited mechanical resistance	• For indoor applications • Requires additional protection if used for outdoor applications
PEHD	• Excellent water resistance • Good resistance to compression and abrasion • Good UV resistance • Very low fire resistance	• Adapted to outdoor applications • Not adapted to indoor applications
PUR	• Excellent mechanical resistance • Very flexible • Resistant to oil and chemical agents • Excellent water resistance • Adapted to low temperatures • Expensive	• Use limited to specific applications because of its cost

BIFIBRE SERIES : **INDOOR - FIBER OPTIC CABLES FOR PATCH CORDS**

TIGHT BUFFERED   INDOOR
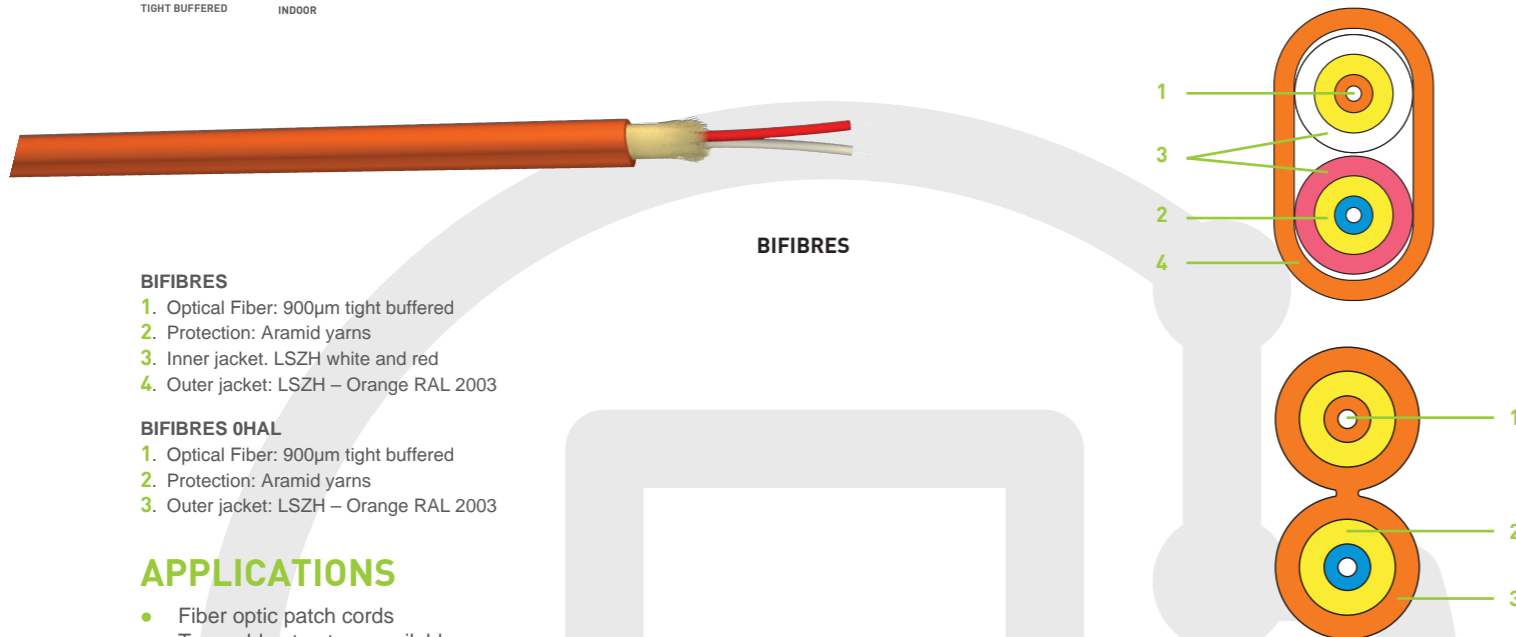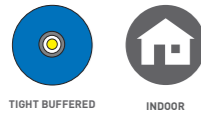
BIFIBRES
1. Optical Fiber: 900µm tight buffered
2. Protection: Aramid yarns
3. Inner jacket. LSZH white and red
4. Outer jacket: LSZH – Orange RAL 2003

BIFIBRES 0HAL
1. Optical Fiber: 900µm tight buffered
2. Protection: Aramid yarns
3. Outer jacket: LSZH – Orange RAL 2003

BIFIBRES

APPLICATIONS

- Fiber optic patch cords
- Two cable structure available:
  - General jacket (BIFIBRES)
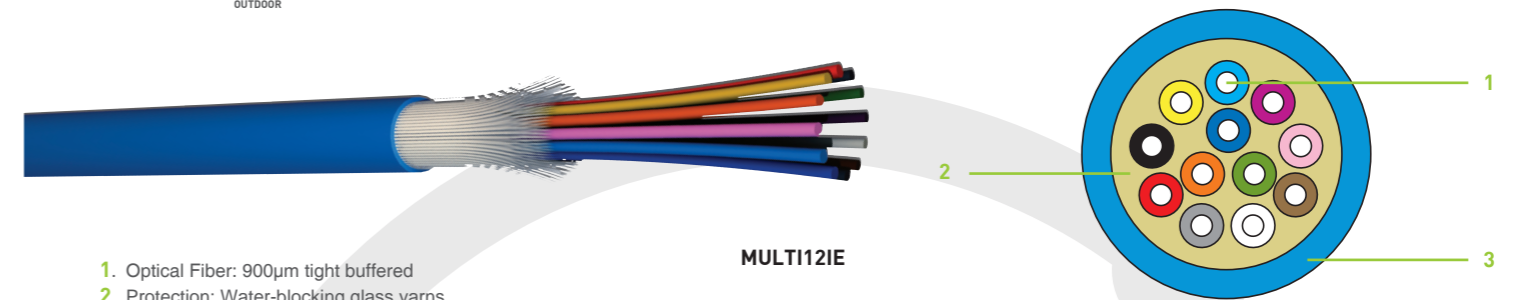 - Twin or Figure-8 (BIFIBRES 0HAL)

TECHNICAL CARACTERISTICS

Parameters	Values	TEST IEC – 60794-1-2	TEST EIA/TIA-455 FOTP No
Maximum pulling load	BIFRIBRES: 500 N - BIFIBRES 0HAL: 400 N	E1	33
Minimum bending radius	28 mm	E11	104
Maximum compressive load	BIFIBRES: 1500 N - BIFIBRE 0HAL 1000 N	E3	41
Storage temperature	- 20˚C / + 70 ˚C	F1	3
Operating temperature	- 10˚C / + 50 ˚C	F1	3

ORDERING INFORMATION

Part Number	Number of fibers	OM1* 62.5/125	OM2* 50/125	OM3* 50/125	OS1* 9/125	Diameter (mm)	Weight (kg/km)	Packaging
BIFIBRES	2	x	x		x	3.5 x 6	20	1000 m
BIFIBRE 0HAL	2	x	x		x	2.8 x 5.6	20	1000 m

* Fiber type available ex-stock

MULTI IE SERIES : **INDOOR/OUTDOOR – TIGHT BUFFERED FIBER OPTIC CABLES**

TIGHT BUFFERED   INDOOR OUTDOOR

1. Optical Fiber: 900µm tight buffered
2. Protection: Water-blocking glass yarns
3. Outer jacket: LSZH
   - 62.5/125 OM1 - Blue RAL 5015
   - 50/125 OM2 - Violet RAL 4005
   - 50/125 OM3 - Turquoise RAL 6027
   - 9/125 OS1 - Yellow RAL 1021

MULTI12IE

APPLICATIONS

- Indoor links or protected outdoor links
- For inter-building links, to be installed in trunkings
- Low rodent protection and medium watertightness
- Tight buffered structure. Up to 24 fibers

TECHNICAL CARACTERISTICS

Parameters	Values	TEST IEC – 60794-1-2	TEST EIA/TIA-455 FOTP No
Maximum pulling load	1 200 N	E1	33
Minimum bending radius	20 x ø	E11	104
Maximum compressive load	2 000 N	E3	41
Storage temperature	- 20˚C / + 70 ˚C	F1	3
Operating temperature	- 10˚C / + 50 ˚C	F1	3

ORDERING INFORMATION

Part Number	Number of fibers	OM1* 62.5/125	OM2* 50/125	OM3* 50/125	OS1* 9/125	Diameter (mm)	Weight (kg/km)	Packaging
MULTI 4 IE	4		x			5.6	36	1000 m
MULTI 6 IE	6		x	x	x	6.4	46	1000 m
MULTI 12 IE	12		x	x	x	7.6	62	1000 m
MULTI 24 IE	24		x	x		15.2	124	1000 m

* Fiber type available ex-stock

INTEX SERIES : **INDOOR/OUTDOOR – SINGLE-TUBE FIBER OPTIC CABLES**
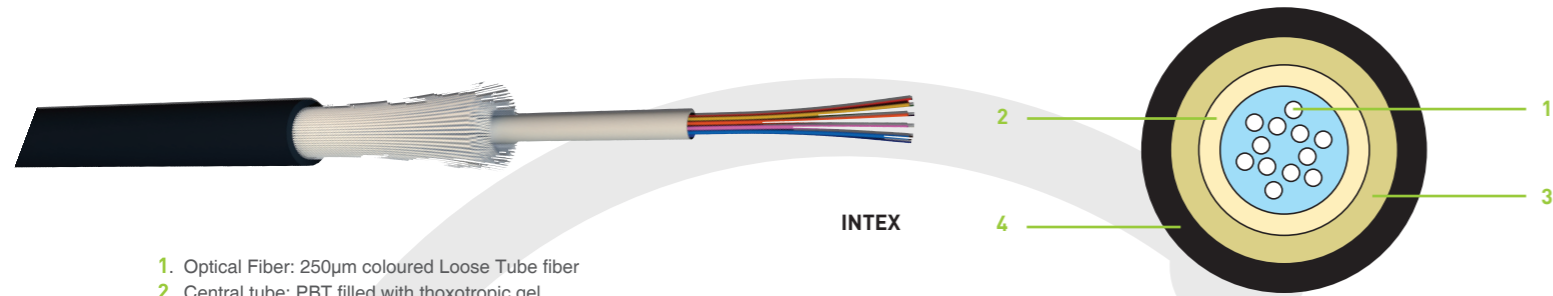
LOOSE TUBE **INDOOR OUTDOOR**

INTEX

1. Optical Fiber: 250µm coloured Loose Tube fiber
2. Central tube: PBT filled with thoxotropic gel
3. Protection: Water-blocking glass yarns
4. Outer jacket: LSZH – black RAL 9005

APPLICATIONS

- Indoor links
- For inter-building links, to be installed in trunkings
- Medium rodent protection and medium watertightness
- Termination requires fan-out kit

TECHNICAL CARACTERISTICS

Parameters	Values	TEST IEC – 60794-1-2	TEST EIA/TIA-455 FOTP No
Maximum pulling load	1 200 N	E1	33
Maximum operating load	900 N	E1	33
Minimum bending radius	140 mm	E11	104
Maximum compressive load	2 000 N	E3	41
Storage temperature	- 40˚C / + 70 ˚C	F1	3
Operating temperature	- 20˚C / + 70 ˚C	F1	3

ORDERING INFORMATION

Part Number	Number of fibers	OM1* 62.5/125	OM2* 50/125	OM3* 50/125	OS1* 9/125	Diameter (mm)	Weight (kg/km)	Packaging
INTEX 6	6		x	x		6.4	46	1000 m
INTEX 12	12		x	x	x	6.4	50	1000 m
INTEX 24	24		x	x		6.7	55	1000 m

* Fiber type available ex-stock

MULTI EX SERIES : **OUTDOOR – TIGHT BUFFERED FIBER OPTIC CABLES**

TIGHT BUFFERED **OUTDOOR**

MULTIEX
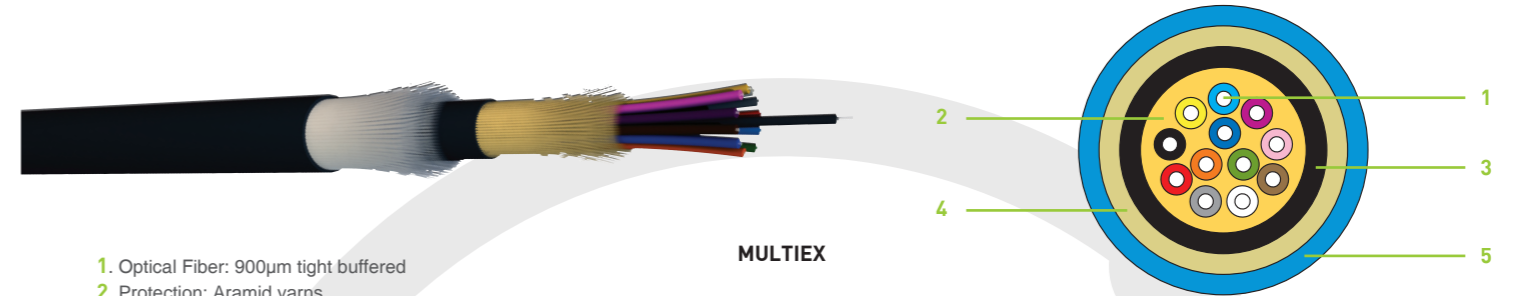
1. Optical Fiber: 900µm tight buffered
2. Protection: Aramid yarns
3. Inner jacket: LSZH – Black RAL 9005
4. Armour: Water-blocking glass yarns
5. Outer jacket: LSZH or PEHD
    - 62.5/125 OM1 - Blue RAL 5015
    - 50/125 OM2 - Violet RAL 4005
    - 50/125 OM3 - Turquoise RAL 6027
    - 9/125 OS1 - Yellow RAL 1021

APPLICATIONS

- Outdoor links
- Good rodent protection and good watertightness
- LSZH inner jacket enable indoor use when PEHD outer-jacket has been removed
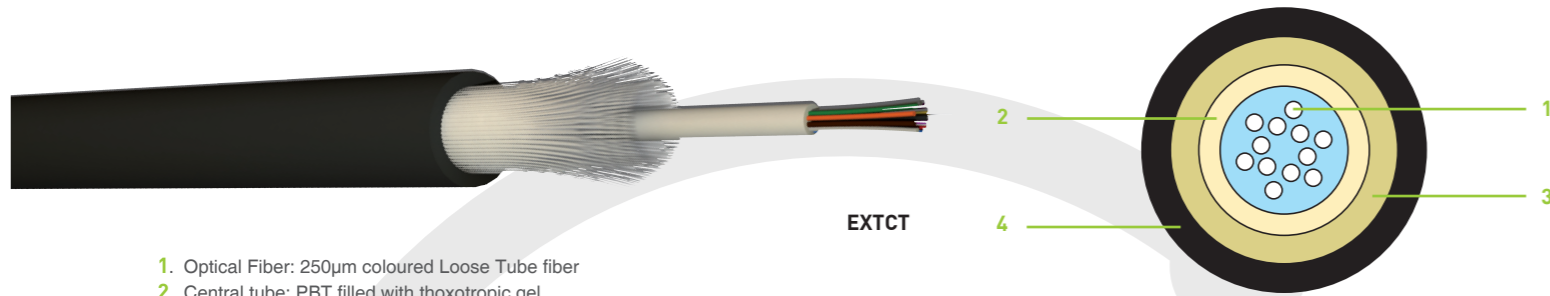- Tight buffered structure. Up to 24 fibers.

TECHNICAL CARACTERISTICS

Parameters	Values	TEST IEC – 60794-1-2	TEST EIA/TIA-455 FOTP No
Maximum pulling load	1 500 N	E1	33
Maximum operating load	900 N	E1	33
Minimum bending radius	20 x ø	E11	104
Maximum compressive load	2 000 N	E3	41
Storage temperature	- 40˚C / + 70 ˚C	F1	3
Operating temperature	- 10˚C / + 70 ˚C	F1	3
Core fluid penetration	1m / 1m / 24H	F5	82

ORDERING INFORMATION

Part Number	Number of fibers	OM1* 62.5/125	OM2* 50/125	OM3* 50/125	OS1* 9/125	Diameter (mm)	Weight (kg/km)	Packaging
MULTI EX 6	6		x	x		8.0	50	1000 m
MULTI EX 12	12		x	x	x	10.0	90	1000 m
MULTI EX 24	24		x		x	15.5	200	1000 m

* Fiber type available ex-stock

EXTCT SERIES : OUTDOOR – SINGLE-TUBE FIBER OPTIC CABLES

LOOSE TUBE   OUTDOOR

EXTCT

1. Optical Fiber: 250µm coloured Loose Tube fiber
2. Central tube: PBT filled with thoxotropic gel
3. Protection: Water-blocking glass yarns
4. Outer jacket: PEHD – black RAL 9005

APPLICATIONS

- Outdoor links only
- Single tube cable structure accepts up to 24 cores
- Good rodent protection and excellent watertightness
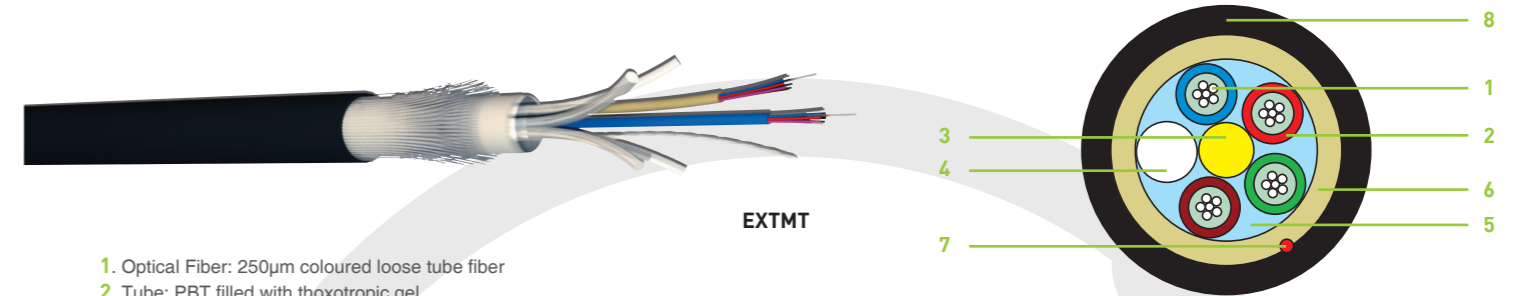- Termination requires fan-out kit

TECHNICAL CARACTERISTICS

Parameters	Values	TEST IEC – 60794-1-2	TEST EIA/TIA-455 FOTP No
Maximum pulling load	2 500 N	E1	33
Maximum operating load	1 500 N	E1	33
Minimum bending radius	20 x ø	E11	104
Maximum compressive load	4 000 N	E3	41
Storage temperature	- 50˚C / + 70 ˚C	F1	3
Operating temperature	- 40˚C / + 70 ˚C	F1	3
Core fluid penetration	1m / 1m / 24H	F5	82

ORDERING INFORMATION

Part Number	Number of fibers	OM1* 62.5/125	OM2* 50/125	OM3* 50/125	OS1* 9/125	Diameter (mm)	Weight (kg/km)	Packaging
EXT CT 4	4		x	x		7.0	60	1000 m
EXT CT 6	6		x	x	x	7.0	60	1000 m
EXT CT 12	12		x	x	x	7.0	60	1000 m
EXT CT 24	24			x	x	7.2	78	1000 m

* Fiber type available ex-stock

EXTMT SERIES : OUTDOOR – MULTI-TUBE FIBER OPTIC CABLES

LOOSE TUBE   OUTDOOR

EXTMT

1. Optical Fiber: 250µm coloured loose tube fiber
2. Tube: PBT filled with thoxotropic gel
3. Filler: PE
4. Central member: Dielectric CSM
5. Foil :Dry swelling material
6. Protection: Water-blocking glass yarns
7. Rip cord: Nylon
8. Outer jacket: PEHD – black RAL 9005

APPLICATIONS

- Outdoor links only
- Multi-tube cable structure accepts up to 144 cores (on request)
- Good rodent protection and excellent watertightness
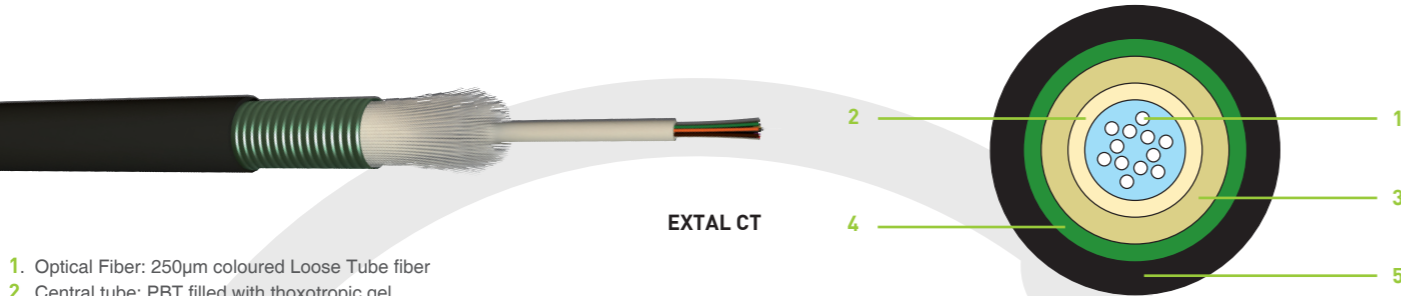- Termination requires fan-out kit

TECHNICAL CARACTERISTICS

Parameters	Values	TEST IEC – 60794-1-2	TEST EIA/TIA-455 FOTP No
Maximum pulling load	2 700 N	E1	33
Maximum operating load	1 700 N	E1	33
Minimum bending radius	20 x ø	E11	104
Installation and long term	20 x ø		
Maximum compressive load	4 000 N	E3	41
Storage temperature	- 50˚C / + 70 ˚C	F1	3
Operating temperature	- 40˚C / + 70 ˚C	F1	3
Core fluid penetration	1m / 1m / 24H	F5	82

ORDERING INFORMATION

Part Number	Number of fibers	OM1* 62.5/125	OM2* 50/125	OM3* 50/125	OS1* 9/125	Diameter (mm)	Weight (kg/km)	Packaging
EXTMT24	24		x		x	10.5	95	1000 m
EXTMT36	36					11	100	1000 m
EXTMT48	48					11	105	1000 m
EXTMT72	72					11	110	1000 m

* Fiber type available ex-stock

EXTAL CT SERIES : **STEEL ARMOURED – SINGLE-TUBE FIBER OPTIC CABLES**

LOOSE TUBE   OUTDOOR

EXTAL CT

1. Optical Fiber: 250µm coloured Loose Tube fiber
2. Central tube: PBT filled with thoxotropic gel
3. Protection: Water-blocking glass yarns
4. Amour: Corrugated steel tape
5. Outer jacket: PEHD – black RAL 9005

APPLICATIONS

- Outdoor links only
- Reduced diameter (10.5 mm)
- Cable structure accepts up to 24 cores
- Can be buried without protection
- Excellent rodent protection and watertightness
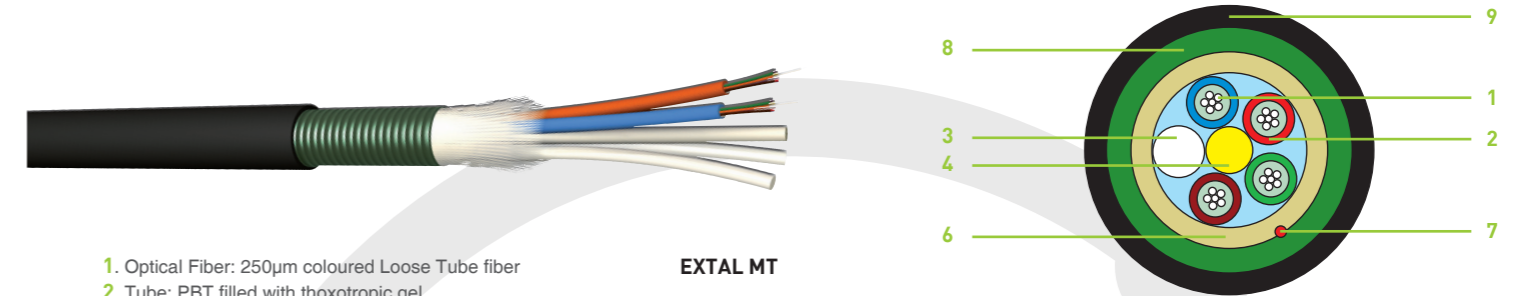- Termination requires fan-out kit

TECHNICAL CARACTERISTICS

Parameters	Values	TEST IEC – 60794-1-2	TEST EIA/TIA-455 FOTP No
Maximum pulling load	2 500 N	E1	33
Maximum operating load	1 500 N	E1	33
Minimum bending radius	20 x ø	E11	104
Maximum compressive load	5 000 N	E3	41
Storage temperature	- 50˚C / + 70 ˚C	F1	3
Operating temperature	- 40˚C / + 70 ˚C	F1	3
Core fluid penetration	1m / 1m / 24H	F5	82

ORDERING INFORMATION

Part Number	Number of fibers	OM1* 62.5/125	OM2* 50/125	OM3* 50/125	OS1* 9/125	Diameter (mm)	Weight (kg/km)	Packaging
EXTALCT6	6		x	x	x	10.5	95	1000 M
EXTALCT12	12		x	x	x	10.5	99	1000 m
EXTALCT24	24			x	x	10.5	107	1000 m

* Fiber type available ex-stock

EXTAL MT SERIES : **STEEL ARMOURED MULTI-TUBE FIBER OPTIC CABLES**

LOOSE TUBE   OUTDOOR

EXTAL MT

1. Optical Fiber: 250µm coloured Loose Tube fiber
2. Tube: PBT filled with thoxotropic gel
3. Filler: PE
4. Central member: Dielectric CSM
5. Foil: Dry swelling material
6. Protection: Water-blocking glass yarns
7. Rip cord: Nylon
8. Armour: Corrugated steel tape
9. Outer jacket: PEHD – black RAL 9005

APPLICATIONS

- Outdoor links only
- Multi-tubes cable structure accepts up to 144 fibers (on request)
- Can be buried without protection
- Excellent rodent protection and watertightness
- Termination requires fan-out kit

TECHNICAL CARACTERISTICS

Parameters	Values	TEST IEC – 60794-1-2	TEST EIA/TIA-455 FOTP No
Maximum pulling load	2 700 N	E1	33
Maximum operating load	1 700 N	E1	33
Minimum bending radius	20 x ø	E11	104
Maximum compressive load	6 000 N	E3	41
Storage temperature	- 50˚C / + 70 ˚C	F1	3
Operating temperature	- 40˚C / + 70 ˚C	F1	3
Core fluid penetration	1m / 1m / 24H	F5	82

ORDERING INFORMATION

Part Number	Number of fibers	OM1* 62.5/125	OM2* 50/125	OM3* 50/125	OS1* 9/125	Diameter (mm)	Weight (kg/km)	Packaging
EXTALMT24	24		x	x	x	12	135	1000 M
EXTALMT36	36					12.5	150	1000 M
EXTALMT48	48					14	165	1000 M
EXTALMT72	72					16	220	1000 M

* Fiber type available ex-stock
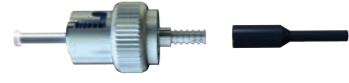
ST CONNECTORS AND ADAPTERS

48MMTST

48MMCST2

FEATURES AND BENEFITS

CONNECTORS
- Metal body
- Optical connector for hot or cold Epoxy termination
- High-resistance ceramic ferule
- Black sleeve for 900µm tight buffered fiber or fan-out

ADAPTERS
- Adapters to be loaded in 49TO1ST12G (12 ports) and 49TO1ST24G (24 ports) fiber drawers
- Ceramic guide for singlemode
- Metal guide for multimode

ORDERING INFORMATION

Part Number	Description	Fiber type	Packaging
48 MMC ST2	ST simplex connector	Multimode	Unit
48 SMC ST2	ST simplex connector	Singlemode	Unit
48 MMT ST	ST / ST simplex adapter	Multimode	Unit

SC CONNECTORS AND ADAPTERS

48MMCSCS

48MMTSCD

FEATURES AND BENEFITS

CONNECTORS
- Available in simplex and duplex versions
- Optical connector for hot or cold Epoxy termination
- High-resistance ceramic ferule
- Black sleeve for 900µm tight buffered fiber or fan-out

ADAPTERS
- Simplex or Duplex adapters
- Shutter flaps can be supplied independently
- Adapters to be loaded in 49TO1SC12G (24 fibers) fiber drawers

ORDERING INFORMATION

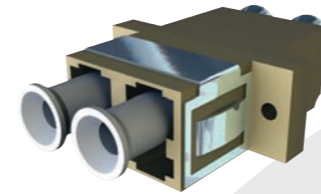| Part Number	Description	Fiber type	Packaging
48 MMC SCS	SC simplex connector	Multimode	Unit
48 MMC SCD	SC duplex connector	Multimode	Unit
48 SMC SCS	SC simplex connector	Singlemode	Unit
48 MMT SCS	SC / SC simplex adaptor	Multimode	Unit
48 MMT SCD	SC / SC duplex adapter	Multimode	Unit
48 SMT SCD	SC / SC duplex adaptor	Singlemode	Unit
48 MMT V SCD	Shutter flaps for SC/SC duplex adaptor		Unit

LC CONNECTORS AND ADAPTERS
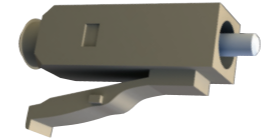
48MMCLCS

48MMTLCD

FEATURES AND BENEFITS

CONNECTORS
- Optical connector for hot or cold Epoxy termination
- High-resistace ceramic ferule
- Small size enabling high-density patching

ADAPTERS
- Duplex adapters
- Shutter flaps can be supplied separately
- Adapters to be loaded in 49TO1LC24G (48 fibers)

ORDERING INFORMATION

| Part Number	Description	Fiber type	Packaging
48 MMC LCS	LC simplex connector	Multimode	Unit
48 SMC LCS	LC simplex connector	Singlemode	Unit
48 MMT LCD	LC / LC duplex adapter	Multimode	Unit
48 SMT LCD	LC / LC duplex adaptor	Singlemode	Unit
48 MMT V LCD	Shutter flaps for LC/LC duplex adaptor		Unit

CONNECTORS AND ADAPTERS TECHNICAL CHARACTERISTICS

CONNECTORS

Parameter	Multimode	Singlemode
Ferule surface	PC = Polished connector ST and SC: 2.5 mm +/- 0.001 mm LC: 1.25 mm +/- 0.001 mm	
Ferule external diameter		
Fiber hole diameter	126 µm +/- 1 µm	125 µm +/- 1 µm
Concentricity	0.004 mm	0.0001 mm
Mechanical properties	TIA / EIA 604-x	
Attenuation (Typical / Maximum)	< 0.3 dB / 0.5 dB	< 0.1 dB / 0.2 dB
Return Loss (Typical / Maximum)	< - 20 dB / < - 30 dB	< - 20 dB / < - 40 dB

ADAPTERS

| Parameter	Multimode	Singlemode
Temperature cycles	-40˚C to + 70˚C - 40 cycles	< 0.2 dB
High temperature	75 ˚C during 96 hours	< 0.2 dB
Warm humidity	60 ˚C at 95% humidity during 96 hours	0.2 dB
Vibration	10 – 55 Hz , 1 mm point to point	0.3 dB
Insertion	1000 cycles – cleaned every 25 cycle	< 0.2 dB

WALL-MOUNTED FIBER BOX
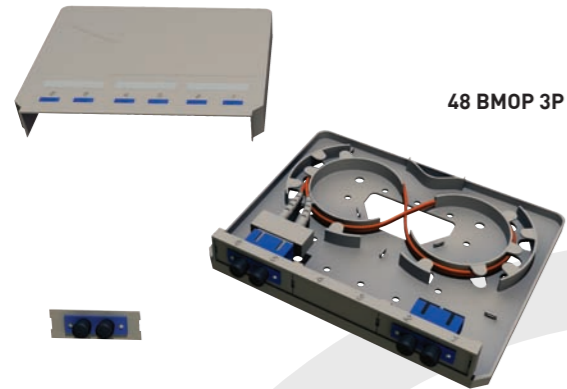
48 BMOP 3P

FEATURES AND BENEFITS

- Modular communication box to be loaded with ST or SC multimode adapters
- Maximum capacity: 6 Fibers
- Integrated coiling device
- High-density white 150x180x33.33 plastic
- Compact: 180x150x16.8mm

ORDERING INFORMATION

Part Number	Description	Packaging
48 BMOP 3P	Unloaded fiber box	Unit
48 BMOP ST	Module with 2 multimode ST simplex adapters	Unit
48 BMOP SC	Module with 1 multimode SC duplex adapter	Unit
48 BMOP OB	Blank module	Unit

# "FIBER TO THE DESK" OUTLET
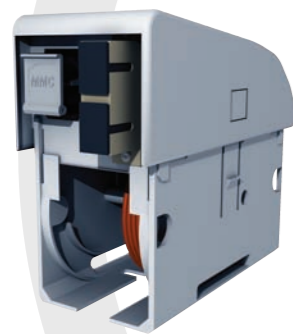
48 FTTD

FEATURES AND BENEFITS

- Modular fiber outlet
- 45 x 90 mm format (French type)
  - Direct integration in 50 mm depth truncking
- Integrated coiling device for up to 4 fibers
- Can be loaded with ST, SC or LC adapters and RJ45 modular jacks

ORDERING INFORMATION

Part Number	Description	Packaging
48 FTTD	Unloaded FTTD box	Unit
48FTTDP STST	Unloaded module for two ST simplex adapters	Unit
48FTTDP SCSC	Unloaded module for two SC duplex adapters	Unit
48FTTDP LCLC	Unloaded module for two LC duplex adapters	Unit
48FTTDP SCRJK	Unloaded module for 1 SC duplex adapter and 1 RJ45 modular jack (BC or MK series)	Unit
48FTTDP LCRJK	Unloaded module for 1 LC duplex adapter and 1 RJ45 modular jack (BC or MK series)	Unit

FIBER OPTIC OUTLET
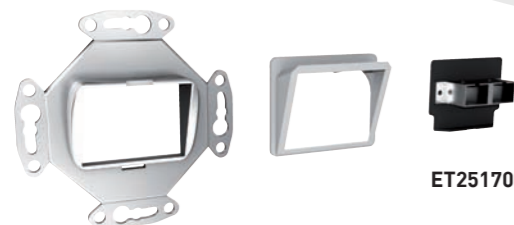
ET25170

FEATURES AND BENEFITS

- Modular system for ST, SC and LC adapters
- 86 x 86 angled outlet (German type)
- Provided with set of plates to be loaded with
  - Two ST simplex adapters
  - One SC duplex adapter
  - Two SC duplex adapters
  - Two LC duplex adapters
- Available in two colours: White RAL9010 or Ivory RAL 1013

ORDERING INFORMATION

Part Number	Description	Packaging
ET25170	Modular Fiber optic outlet – RAL 9010 White	Unit
ET25171	Modular Fiber optic outlet – RAL 1013 Ivory	Unit

70

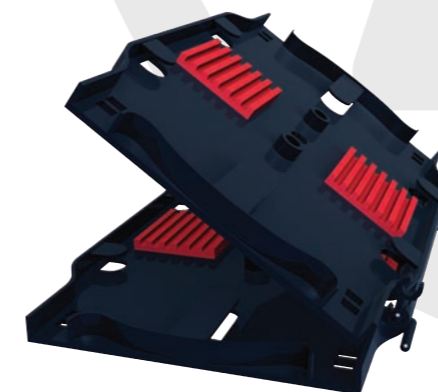# 19" FIBER OPTIC DRAWERS

49 TO1LC12G

49TO1SC12G

49TO1ST24G

FEATURES AND BENEFITS

- 19'', 1U fiber optic drawers
- Dark grey (RAL 7016) metal
- Front locking devise
- Equipped with coiling devise as standard (can be replaced by splice cassettes)
- Screws for adapters are integrated
- Cable tight system
- Adjustable in depth
- Available in ST, SC and LC versions
- Available in pre-loaded versions (50% of available ports)

ORDERING INFORMATION

Part Number	Description	Capacity		Packaging
		Adapters	Number of fibers	
49TO1ST12G	1U unloaded fiber drawer for ST simplex adapters	12 ST simplex	12	Unit
49TO1ST24G	1U unloaded fiber drawer for ST simplex adapters	24 ST simplex	24	Unit
49TO1SC12G	1U unloaded fiber drawer for SC duplex adapters	12 SC duplex	24	Unit
49TO1SC6G	1U fiber drawer - Preloaded with 6 SC duplex adapters	12 SC duplex	24	Unit
49TO1LC24G	1U unloaded fiber drawer for 24 LC duplex adapters	24 LC duplex	48	Unit
49TO1LC12G	1U fiber drawer - Preloaded with 12 LC duplex adapters	24 LC duplex	48	Unit

FIBER SPLICE CASSETTE

48K7BASE6FO

FEATURES AND BENEFITS

- Cascadable cassettes
- Each cassette manages 6 fibers and includes splice holders and coiling devise
- To be used in Multimedia Connect Fiber optic drawers
- Black plastic
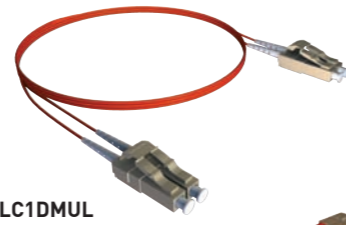- Size: 98 x 160 x 9 mm per cassette

ORDERING INFORMATION

Part Number	Description	Packaging
48K7BASE6FO	Fiber splice cassette for 6 fibers	Unit
48K7MOD6FO	Additional cascadable module for 6 fibers	Unit

71

FIBER OPTIC PATCH CORDS

JST2ST21DMUL

JLCLC1DMUL

JSCSC1DMUL

FEATURES AND BENEFITS

- Exceed ISO 11801 specifications
- Individually tested
- Kevlar reinforced mini break-out cable
- Available with ST, SC and LC connectors (singlemode and multimode)
- Available in various lengths

TECHNICAL CHARACTERISTICS

Parameter	Multimode	Singlemode
Ferule surface	PC = Polished connector	
Ferule external diameter	ST and SC : 2.5 mm +/- 0.001 mm LC: 1.25 mm +/- 0.001 mm	
Fiber hole diameter	126 µm +/- 1 µm	125 µm +/- 1 µm
Concentricity	0.004 mm	0.0001 mm
Mechanical properties	TIA / EIA 604-x	
Attenuation (Typical / Maximum)	< 0.3 dB / 0.5 dB	< 0.1 dB / 0.2 dB
Return Loss (Typical / Maximum)	< - 20 dB / < - 40 dB	< - 20 dB / < - 40 dB

Parameter		Loss variation
Temperature cycles	-40˚C to + 70˚C - 40 cycles	< 0.2 dB
High temperature	75 ˚C during 96 hours	< 0.2 dB
Warm humidity	60 ˚C at 95% humidity during 96 hours	0.2 dB
Vibration	10 – 55 Hz , 1 mm point-to-point	0.3 dB
Insertion	1000 cycles – cleaned every 25 cycles	< 0.2 dB

ORDERING INFORMATION

Part Number	Fiber	Connectors	Standard lengths	Packaging
J ST2 ST2 x DMUL	Multimode 62.5/125 OM1	ST / ST	1m / 2m / 3m	Unit
J ST2 ST2 x DMUL50	Multimode 50/125 OM2	ST ST	2m / 5m	Unit
J ST2 ST2 x DMUL50OM3	Multimode 50/125 OM3	ST / ST	2m	Unit
J SC SC x DMUL	Multimode 62.5/125 OM1	SC / SC	1m / 2m / 3m / 5m	Unit
J SC SC x DMUL50	Multimode 50/125 OM2	SC / SC	2m / 5m	Unit
J SC SC x DMUL50OM3	Multimode 50/125 OM3	SC / SC	2m / 5m	Unit
J SC SC x DMONO	Singlemode 9/125 OS1	SC / SC	1m / 10m	Unit
J LC LC x DMUL50	Multimode 50/125 OM2	LC / LC	2m / 5m	Unit
J LC LC x DMONO	Singlemode 9/125 OS1	LC / LC	2m / 5m	Unit

|				
J ST2 SC x DMUL	Multimode 62.5/125 OM1	ST / SC	1m / 2m / 5m	Unit
J ST2 SC x DMUL50	Multimode 50/125 OM2	ST / SC	2m / 5m	Unit
J ST SC x DMONO	Singlemode 9/125 OS1	ST / SC	2m / 5m / 10m	Unit
J LC SC x DMUL	Multimode 62.5/125 OM1	LC / SC	2m / 3m / 5m	Unit
J LC SC x DMUL50	Multimode 50/125 OM2	LC / SC	2m / 5m	Unit
J LC SC x DMUL50OM3	Multimode 50/125 OM3	LC / SC	2m / 5m	Unit
J LC SC x DMONO	Singlemode 9/125 OS1	LC / SC	2m / 5m	Unit
J LC ST2 x DMUL	Multimode 62.5/125 OM1	LC / ST	2m / 3m / 5m	Unit
J LC ST2 x DMUL50	Multimode 50/125 OM2	LC / ST	2m / 5m	Unit
J LC ST2 x DMONO	Singlemode 9/125 OS1	LC / ST	2m / 5m	Unit

FAN-OUT KITS

48EP06FO

FEATURES AND BENEFITS

- 900 µm protective sleeves for loose tube fibers
- Available in 6 and 12 fibers versions

ORDERING INFORMATION

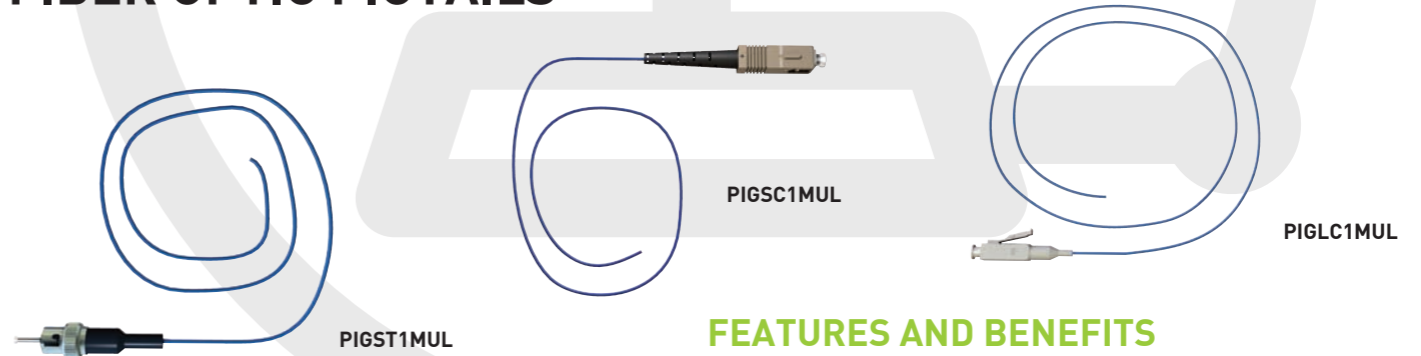| Part Number	Description	Packaging
48EP06FO	6 fibers fan-out kit	Unit
48EP12FO	12 fibers fan-out kit	Unit

FIBER OPTIC SPLICES
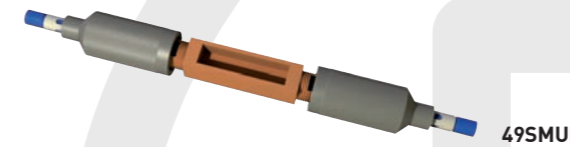
49SMUL

FEATURES AND BENEFITS

- Enable mechanical connection between two fibers
- Available in multimode and single-mode versions
- Can be loaded in Splice Casette for better fiber management
- Loose tube tight buffered fiber accepted
- Typical loss values < 0.5dB

ORDERING INFORMATION

Part Number	Description	Packaging
49 S MUL	Multimode mechanical splice	Unit
49 S MON	Singlemode mechanical splice	Unit

FIBER OPTIC PIGTAILS

PIGSC1MUL

PIGLC1MUL

PIGST1MUL

FEATURES AND BENEFITS

- 1 meter tight buffered fiber links pre-terminated at one end
- To be spliced to fiberoptic fiber
- Each Pigtail is individually tested

ORDERING INFORMATION

Part Number	Description	Fiber type	Connector type	Packaging
PIGST1MUL	ST Multimode Pigtail	62.5/125 OM1	ST Simplex	Unit
PIGST1MUL50	ST Multimode Pigtail	50/125 OM2	ST Simplex	Unit
PIGSC1MUL	SC Multimode Pigtail	62.5/125 OM1	SC Simplex	Unit
PIGSC1MUL50	SC Multimode Pigtail	50/125 OM2	SC Simplex	Unit
PIGSC1MUL50 OM3	SC Multimode Pigtail	50/125 OM3	SC Simplex	Unit
PIGSC1MONO	SC Singlemode Pigtail	9/125 OS1	SC Simplex	Unit
PIGLC1MUL50	LC Multimode Pigtail	50/125 OM2	LC Simplex	Unit
PIGLC1MUL50 OM3	LC Multimode Pigtail	50/125 OM3	LC Simplex	Unit
PIGLC1MONO	LC Singlemode Pigtail	9/125 OS1	LC Simplex	Unit

19'' FLOOR STANDING CABINET : « CLASSIC » & RACK

49BK04288G

49BR040T

FEATURES AND BENEFITS

19" FLOOR STANDING CABINET: "CLASSIC" RANGE

- 19'' floor standig cabinets for standard applications
- Working load : 300 kg
- Colour : - Panels : Light grey (RAL 7035)
            - Posts : Dark grey (RAL 7016)
- Front glass door with key-lock
- Removable front door
- Removable side panels
- Front 19'' mounting posts are adjustable in depth
- Back 19'' mounting posts to be ordered seperately
- Integrated leveling feets

19'' FLOOR STANDING RACK

- 19'' floor standing rack
- 40 U
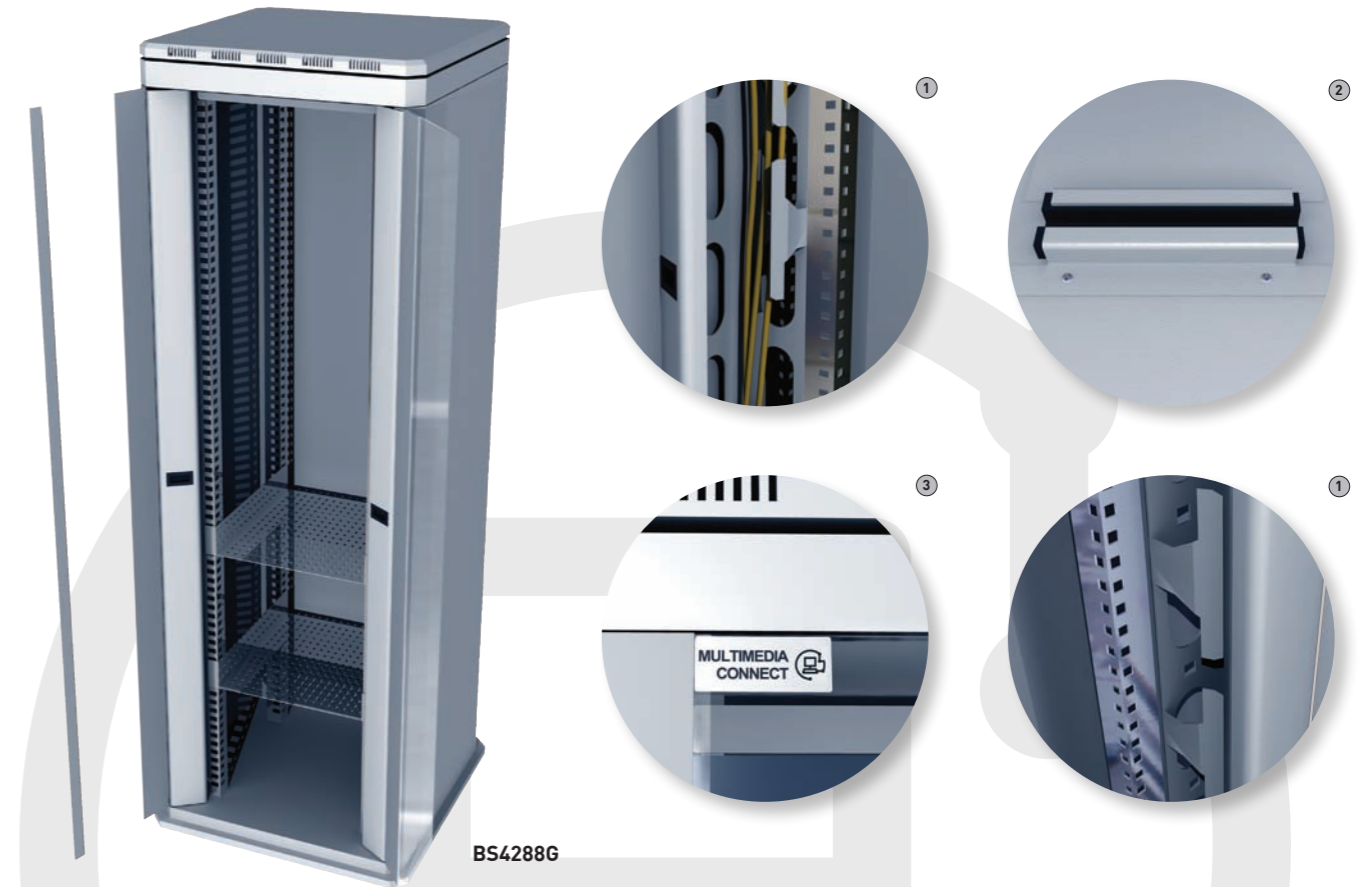- Colour: Light Grey (RAL 7035)

ORDERING INFORMATION

19» FLOOR STANDING CABINET: «CLASSIC» RANGE

Part Number	Description	Height	Size (width x depth in mm)	Packaging
49BK02766G	"CLASSIC" 19'' Floor Standing Cabinet	27 U	600 x 600	Unit
49BK04266G	"CLASSIC" 19'' Floor Standing Cabinet	42 U	600 x 600	Unit
49BK04268G	"CLASSIC" 19'' Floor Standing Cabinet	42 U	600 x 800	Unit
49BK04286G	"CLASSIC" 19'' Floor Standing Cabinet	42 U	800 x 600	Unit
49BK04288G	"CLASSIC" 19'' Floor Standing Cabinet	42 U	800 x 800	Unit
49BK04288GEXT	"CLASSIC" 19'' Floor Standing Cabinet – Without side panels	42 U	800 x 800	Unit
Part Number	Accessories for "CLASSIC" cabinets			Packaging
49JMAR027T	Back 19'' mounting posts – 27U			Unit
49JMAR042T	Back 19'' mounting posts – 42U			Unit
49KITRLT42T	Castor kit for "Classic" cabinet			Unit
49KITJBT	Baying kit for two "Classic" cabinets			Unit
49GCV886T	Set of cable rings to be fixed on mounting posts – Only for 800 mm width "Classic" cabinets			Unit

19'' FLOOR STANDING RACK

Part Number	Description	Height	Size (width x depth in mm)	Packaging
49BK02766G	"CLASSIC" 19'' Floor Standing Cabinet	27 U	600 x 600	Unit

19'' FLOOR STANDING CABINETS : « TECHNIC » RANGE

BS4288G

FEATURES AND BENEFITS

- 19'' floor standig cabinets for professional data applications
- Working load: 600 kg
- Colour: - Panels: Light grey (RAL 7035)
           - Posts: Dark grey (RAL 7016)
- Double front and back doors for 800 mm width versions
- All doors and side panels are key-locked
- Removable doors and side panels
- Vertical cable management with cover (800 mm width versions) (1)

- 5 cable entry points with brush for dust protection (2)
- Roof with horizontal ventilation for better dust protection (3)
- Front and rear 19'' mounting posts are adjustable in depth
- Integrated levelling feets
- Available in versions without side panels
- Available in « skeleton » versions (without dors and side panels)
- Available in flat-pack versions, to be assembled on site.

ORDERING INFORMATION

| Part Number	Description	Height	Size (width x depth in mm)	Packaging
B2666G	"TECHNIC" 19'' Floor Standing Cabinet	26 U	600 x 600	Unit
B3266G	"TECHNIC" 19'' Floor Standing Cabinet	32 U	600 x 600	Unit
BS3288G	"TECHNIC" 19'' Floor Standing Cabinet	32 U	800 x 800	Unit
BS4266G	"TECHNIC" 19'' Floor Standing Cabinet	42 U	600 x 600	Unit
BS4268G	"TECHNIC" 19'' Floor Standing Cabinet	42 U	600 x 800	Unit
BS4286G	"TECHNIC" 19'' Floor Standing Cabinet	42 U	800 x 600	Unit
BS4286OSSG	"TECHNIC" 19'' Floor Standing Cabinet - "Skeleton" structure	42 U	800 x 600	Unit
BS4288G	"TECHNIC" 19'' Floor Standing Cabinet	42 U	800 x 800	Unit
BS4288OSSG	"TECHNIC" 19'' Floor Standing Cabinet - "Skeleton" structure	42 U	800 x 800	Unit
BS4288EXTG	"TECHNIC" 19'' Floor Standing Cabinet - Without side panels	42 U	800 x 800	Unit
BS4788G	"TECHNIC" 19'' Floor Standing Cabinet	47 U	800 x 800	Unit
XB3268	"TECHNIC" 19'' Floor Standing Cabinet – Flat pack	32 U	600 x 800	Unit
XB4266	"TECHNIC" 19'' Floor Standing Cabinet – Flat pack	42 U	600 x 600	Unit
XB4268	"TECHNIC" 19'' Floor Standing Cabinet – Flat pack	42 U	600 x 800	Unit
XB4288	"TECHNIC" 19'' Floor Standing Cabinet – Flat pack	42 U	800 x 800	Unit

19'' FLOOR STANDING CABINETS : « TECHNIC » RANGE

19'' FLOOR STANDING CABINET: FLAT PACK

XBSE 4288G

ORDERING INFORMATION

| Part Number	Accessories for "TECHNIC" cabinets	Packaging
BS4288PAN	2 side panels for BS4288G	Unit
BS4286PAN	2 side panels for BS4286G	Unit
BS4288PARAJ	Perforated steel back double door for BS4288G	Unit
BS4288PARPL	Plain back double door for BS4288G	Unit
BS4288PAVAJ	Perforated steel front double door for BS4288G	Unit
BS4288PAVPL	Plain front double door for BS4288G	Unit
BS4288PAVV	Glass front double door for BS4288G	Unit
BKITRLT	Castor kit for "Technic" Cabinets	Unit
BKITJB	Baying kit for two "Technic" Cabinets	Unit
BS42CCV	Truncking for vertical cable management in 800 mm width "Technic" cabinets	Unit
BEQUERP6	L shape support slide rail enclosure – 600 mm depth	Unit
BEQUERP8	L shape support slide rail enclosure – 800 mm depth	Unit
BSOCLE66	600 X 600 Plinth - Cable entry point equipped with brush. – 100 mm height	Unit
BSOCLE88	800 X 800 Plinth - Cable entry point equipped with brush. – 100 mm height	Unit
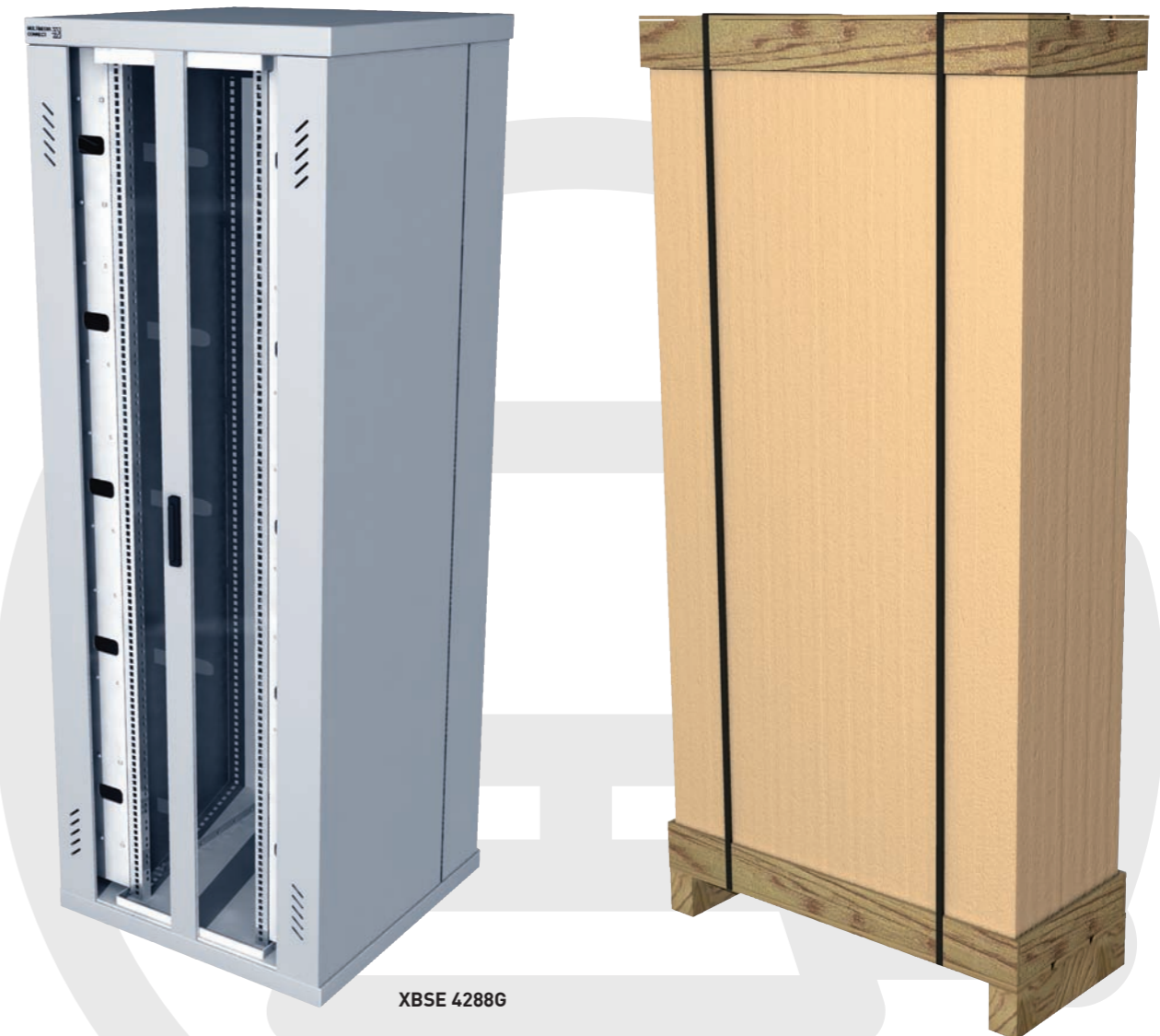
FEATURES AND BENEFITS

- Only available in Flat Pack version
- Especially designed for easy and rapid assembly on site
- Packing in one unique box
- 19'' floor standing cabinets for professional data applications
- Working load: 600 kg
- Colours: - Panels: Light grey (RAL 7035)
       - Posts: Light grey (RAL 7016)

- Double front and back doors
- All doors and side panels are key-locked
- 3-points locking mechanism for front door
- Removable doors and side panels
- Vertical cable management
- Front and rear 19'' mounting posts are adjustable in depth
- Integrated levelling feet

ORDERING INFORMATION

Part Number	Description	Height	Size (width x depth in mm)	Packaging
XBSE4288G	"19'' Floor Standing Cabinet – Flat Pack	42 U	800 x 800	Unit

# 19'' FLOOR STANDING CABINETS: "SERVER" RANGE

BSERV810

① ②
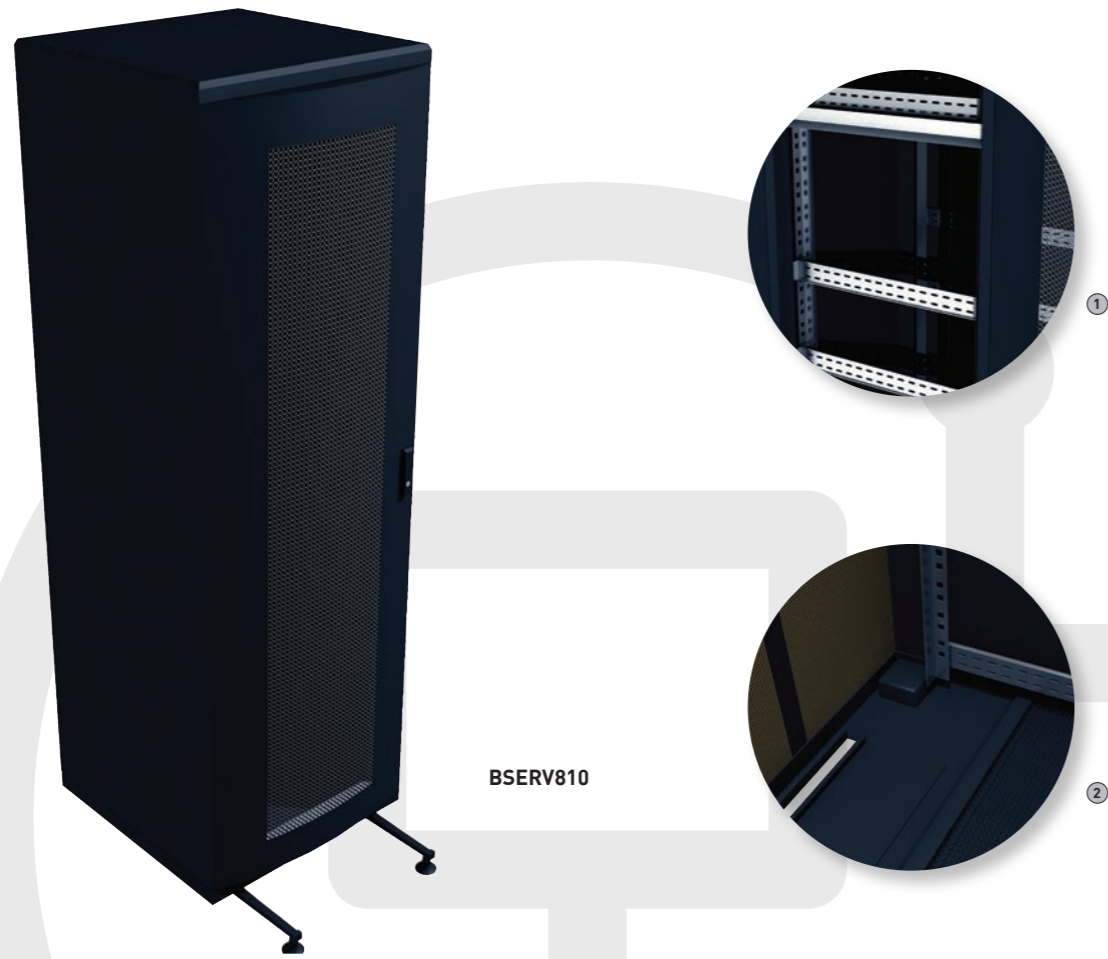
FEATURES AND BENEFITS

- 19'' floor standing cabinet for professional data applications
- Can be loaded with heavy active equipment requiring 1000 mm depth (1)
- Working load: 800 kg
- Depth: 1000 mm
- Perforated steel vented front door with 3-point docking mechanism
- Perforated steel vented back double door
- All doors and side panels are key-locked
- Removable doors and side panels

- Cable entry points with brush for dust protection (2)
- Front and rear 19'' mounting posts are adjustable in depth
- 6 integrated levelling feet
- Integrated castors
- Available in versions without side panels
- Available in « skeleton » versions (without doors and side panels)
- Available in flat pack versions, to be assembled on site.

ORDERING INFORMATION

Part Number	Description	Height	Size (width x depth in mm)	Packaging
BSERV610	"SERVER" 19'' Floor standing cabinet	42 U	600 x 1000	Unit
BSERV610OSS	"SERVER" 19'' Floor standing cabinet – "Skeleton" structure	42 U	600 x 1000	Unit
BSERV810	"SERVER" 19'' Floor standing cabinet	42 U	800 x 1000	Unit
BSERV810EXT	"SERVER" 19'' Floor standing cabinet – Without side panels	42 U	800 x 1000	Unit
BSERV810OSS	"SERVER" 19'' Floor standing cabinet – "Skeleton" structure	42 U	800 x 1000	Unit
XBSERV810	"SERVER" 19'' Floor standing cabinet – Flat pack	42 U	800 x 1000	Unit
Part Number	**Accessories for "DATA CENTRE" frame**			**Packaging**
BSERV810PAN	2 side panels for "SERVER" cabinets			Unit
BSERV810PARAJ	Perforated steel vented back door for BSERV810			Unit
BSERV810PAVAJ	Perforated steel vented front door for BSERV810			Unit
BSERVEQUER	L-shaped support slide rail enclosure – 1000 mm depth			Unit
BSERVKITJB	Baying kit for two "SERVER" cabinets			Unit

"DATA CENTER" FRAMES
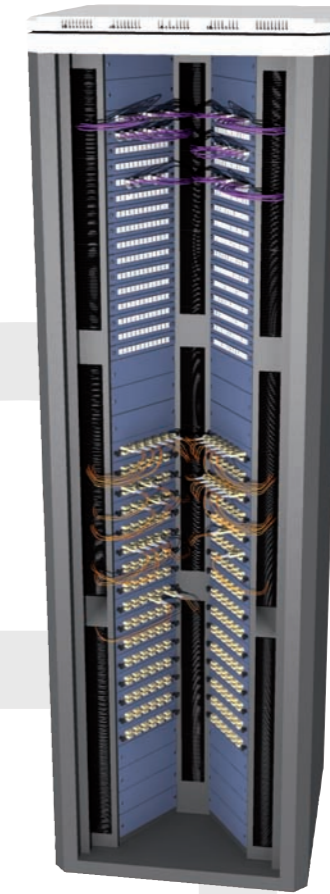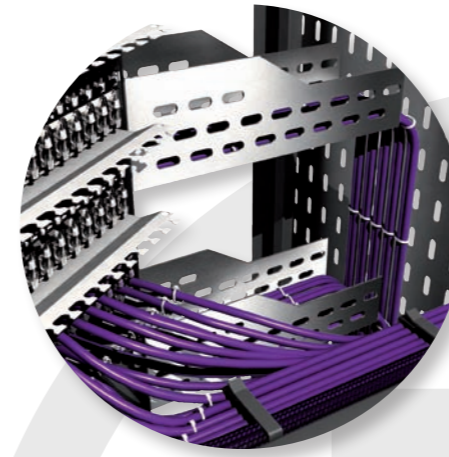
BS42880SSGDC33   **BS42880SSGDC23**

FEATURES AND BENEFITS

- To be used for high density / data center applications
- Unique V-shaped structure to be loaded with 10'' panels
- Patch cord management is organized through vertical sections equipped with brushes for dust protection
- Maximum capacity (42 U): - 1000 RJ45 modular jacks
    - 2000 LC fibre optic connections
- Two versions available: - V-shaped structure on 42 U
    - V-shaped structure on 28 U and standard 19'' structure on 14 U
- Cabinet provided without doors and without side panels as standard

- 5 cable entries equipped with brushes for dust protection
- Roof with horizontal ventilation for better dust protection
- 4 integrated levelling feet
- Provided with grounding kit
- Working load: 600 kg
- IP20 according to EN60529
- Accessories: - Compatible with "TECHNIC" range accessories
    - Use 10'' panels and accessories for V-shaped section
    - Use 19'' panels and accessories for 19'' section

ORDERING INFORMATION

Part Number	Description	Height	Size (width x depth in mm)	Packaging
BS4286OSSGDC33	Data Centre Frame – 42 U V-shaped/10''	42 U	800 x 600	Unit
BS4286OSSGDC23	Data Centre Frame – 28 U V-shaped/10'' and 14 U 19''	42 U	800 x 600	Unit
BS4288OSSGDC33	Data Centre Frame – 42 U V-shaped/10''	42 U	800 x 800	Unit
BS4288OSSGDC23	Data Centre Frame – 28 U V-shaped/10'' and 14 U 19''	42 U	800 x 800	Unit
Part Number	**Accessories for "DATA CENTER" frames**			**Packaging**
BS88DCMCC	Horizontal cable management system – central position			Unit
BS88DCMCL	Horizontal cable management system – lateral position			Unit
BS4288PAN	2 side panels for BS4288G			Unit
BS4286PAN	2 side panels for BS4286G			Unit
BS4288PARAJ	Perforated steel back double door for BS4288G			Unit
BS4288PARPL	Plain back double door for BS4288G			Unit
BS4288PAVAJ	Perforated steel front double door for BS4288G			Unit
BS4288PAVPL	Plain front double door for BS4288G			Unit
BS4288PAVV	Glass front double door for BS4288G			Unit
BKITRLT	Castor kit for "Technic" Cabinets			Unit
BKITJB	Baying kit for two "Technic" Cabinets			Unit
BS42CCV	Truncking for vertical cable management in 800 mm width "Technic" cabinets			Unit
BSOCLE88	800 X 800 Plinth - Cable entry point equipped with brush – 100 mm height			Unit

19'' WALL-MOUNTED CABINETS – 400 MM DEPTH

49K07P400

FEATURES AND BENEFITS

- One section
- 400 mm depth
- Working Load: 20kg to 30kg
- Grey (RAL 7035)
- Removable front door
- 19'' mounting posts are adjustable in depth (4 positions)
- Removable bottom panel (to facilitate wall fixing)
- Perforated side panels for ventilation
- IP20 according to EN60529

ORDERING INFORMATION

Part Number	Description	Capacity	Height (mm)	Width x Depth (mm)	Packaging
49K 07 P400	One section wall-mounted cabinet	7 U	386	600 x 420	Unit
49K 10 P400	One section wall-mounted cabinet	10 U	520	600 x 420	Unit
49K 13 P400	One section wall-mounted cabinet	13 U	665	600 x 420	Unit
49K 16 P400	One section wall-mounted cabinet	16 U	787	600 x 420	Unit

19'' WALL-MOUNTED CABINETS – 500 MM DEPTH

49K07P5003P

FEATURES AND BENEFITS

- Two sections
- 500 mm depth
- Working Load: 20kg to 25kg
- Grey (RAL 7035)
- Removable front door
- 19'' mounting posts are adjustable in depth (4 positions)
- Removable bottom panel (to facilitate wall fixing)
- Perforated side panels for ventilation
- IP20 according to EN60529

ORDERING INFORMATION

Part Number	Description	Capacity	Height (mm)	Width x Depth (mm)	Packaging
49K 07 P5003P	Two sections wall-mounted cabinet	7 U	386	600 x 520	Unit
49K 10 P5003P	Two sections wall-mounted cabinet	10 U	520	600 x 520	Unit
49K 13 P5003P	Two sections wall-mounted cabinet	13 U	665	600 x 520	Unit
49K 16 P5003P	Two sections wall-mounted cabinet	16 U	787	600 x 520	Unit

19'' WALL-MOUNTED CABINETS – 600 MM DEPTH

49K10P600

FEATURES AND BENEFITS

- One section
- 600 mm depth
- Working Load: 25kg
- Grey (RAL 7035)
- Removable front door and side panels
- 19'' mounting posts are adjustable in depth (4 positions)
- Fixed rear 19'' mounting posts (5 U height)
- Vertical patch cords management
- Perforated side panels for ventilation
- IP20 according to EN60529

ORDERING INFORMATION

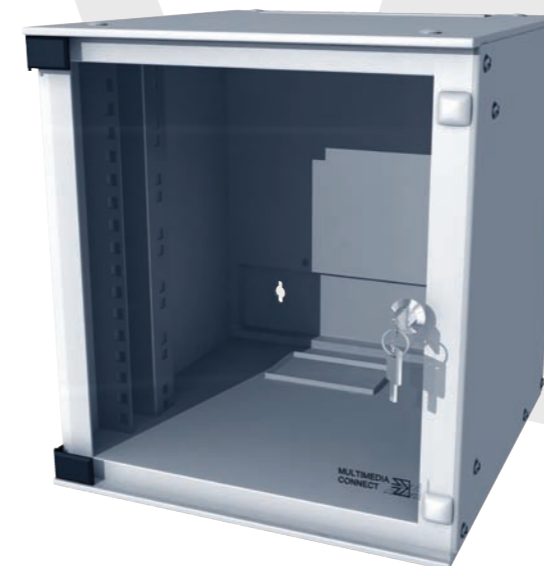| Part Number	Description	Capacity	Height (mm)	Width x Depth (mm)	Packaging
49K 10 P600	One section wall-mounted cabinet	10 U	520	600 x 620	Unit
49K 13 P600	One section wall-mounted cabinet	13 U	787	600 x 620	Unit
49K 16 P600	One section wall-mounted cabinet	16 U	1054	600 x 620	Unit

19'' WALL-MOUNTED FRAME

49CM07U

FEATURES AND BENEFITS

- To be fixed directly on the wall
- 350 mm depth
- Grey (RAL 7035)
- Conductive 19'' mounting posts to ensure direct grounding of shielded patch panels

ORDERING INFORMATION

Part Number	Description	Capacity	Height (mm)	Size (width x depth in mm)	Packaging
49CM07U	Wall-mounted frame	7 U	338	515X350	Unit
49CM10U	Wall-mounted frame	10 U	483	515X350	Unit
49CM16U	Wall-mounted frame	16 U	773	515X350	Unit

10'' SOHO WALL-MOUNTED CABINET

DC10COF6U

FEATURES AND BENEFITS
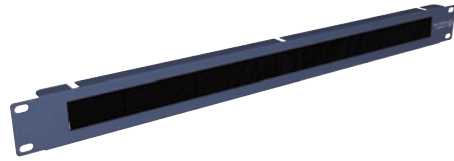
- Small Offices or Residential applications
- To be equipped with 10'' panels and accessories
- 350 mm depth
- Grey (RAL 7035)
- Securit glass with lock
- Flat pack

ORDERING INFORMATION

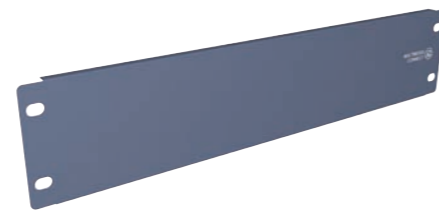| Part Number	Description	Capacity	Height (mm)	Size (width x depth in mm)	Packaging
DC10COF6U	10'' SOHO wall-mounted cabinet	6 U	315	300x300	Unit

19'' PANELS

MMCPFB1UG   MMCPF1U4CROG   MMCOB2UG

ORDERING INFORMATION

Part Number	Classic	Technic	Server	Wall Mount. 400 mm	Wall Mount. 500 mm	Wall Mount. 600 mm	Description	Packaging
MMCPFB1UG	x	x	x	x	x	x	19'' cable management panel with brush - 1 U	Unit
MMCPF1U4CROG	x	x	x	x	x	x	19'' 4 rings cable management panel – 1 U	Unit
MMCOB1UG	x	x	x	x	x	x	19'' blank panel 1 U	Unit
MMCOB2UG	x	x	x	x	x	x	19'' blank panel 2 U	Unit
MMCOB3UG	x	x	x	x	x	x	19'' blank panel 3 U	Unit
MMCOB5UG	x	x	x	x	x	x	19'' blank panel 5 U	Unit

19" SHELVES

BF1U450AD   49PM1U250G   BPG1U350

BP61UCLAVIER   BT2U400AD

ORDERING INFORMATION

Part Number	Classic	Technic	Server	Wall Mount. 400 mm	Wall Mount. 500 mm	Wall Mount. 600 mm	Description	Depth (mm)	Packaging
BPF1U450AD	x	x		x	x		Fixed 19'' adjustable shelf – 1U	450	Unit
BPF2U550AD	x	x			x		Fixed 19'' adjustable shelf – 2U	550	Unit
BSERVPF720G			x				Fixed 19'' adjustable shelf – 1U	720	Unit
49PM1U250G	x	x	x	x	x	x	19 '' modem shelf – 1U	250	Unit
49PM2U250G	x	x	x	x	x	x	19 '' modem shelf – 2U	250	Unit
49PM2U400G	x	x	x	x	x	x	19 '' modem shelf – 2U	400	Unit
BPG1U350	x	x		x	x		19'' telescopic shelf – 1U	350	Unit
BPG1U550	x	x			x		19'' telescopic shelf – 1U	550	Unit
BSERVPG720G			x				19'' telescopic shelf – 1U	720	Unit
49PG1UCLAVIERG	x	x	x	x	x	x	19'' telescopic shelf for computer keyboard – 1U	460	Unit
BT2U400AD	x	x	x		x	x	19'' lockable document drawer – 2U	400	Unit

FANS & LAMPS

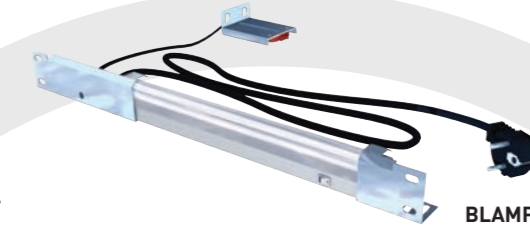49BLC4VT   BSERV8P6V   49B1U2V

BTHERMOST   BLAMPI

ORDERING INFORMATION

Part Number	Classic	Technic	Server	Wall Mount. 400 mm	Wall Mount. 500 mm	Wall Mount. 600 mm	Description	Packaging
49K1V				x	x	x	1 fan module for wall-mounted cabinets	Unit
49BLC2VT	x						2 fans module for roof installation	Unit
49BLC4VT	x						4 fans module for roof installation	Unit
B2V		x					2 fans module for roof installation	Unit
B4V		x					4 fans module for roof installation	Unit
BSERV4VT			x				4 fans module for roof installation + thermostat	Unit
BSERV6P6V			x				6 fans module for vertical installation – for BERV610	Unit
BSERV8P6V			x				6 fans module for vertical installation – for BERV810	Unit
49B1U2V	x	x	x	x	x	x	19" 1U 2 fans module– depth 483x150X44 mm	Unit
49B1U4V	x	x	x	x	x	x	19" 1U 4 fans module– depth 483x300x44 mm	Unit
BTHERMOST	x	x	x	x	x	x	Thermostat for fans	Unit
BLAMP	x	x	x	x	x	x	19'' Lighting unit	Unit
BLAMPI	x	x	x	x	x	x	19'' Lighting unit – Automatic switch	Unit

19" SOCKET STRIPS

49BM8IPM

ORDERING INFORMATION

Part Number	Description	Packaging
49BM9PM	19'' 9 sockets power unit – aluminium case - removable fixing brackets – French standard	Unit
49BM8IPM	19'' 8 sockets power unit – with switch – aluminium case - removable fixing brackets – French standard	Unit
49BM6DD	19'' 6 sockets power unit – with differential switch – alu. case - removable fixing brackets – French standard	Unit
49BP7	19'' 7 sockets power unit – plastic case – French standard	Unit
49BP6	19'' 6 sockets power unit – with switch – plastic case - French standard	Unit

10" MODULAR PANELS

DC10T1U   DC10T1U12LC   DC10T1U8SC   DC10T1UTEL

ORDERING INFORMATION

Part Number	Description	Packaging
DC10T1U	10'' unloaded drawer to be equipped with fiber optic or telephone 10'' modules	Unit
DC10T1U12LC	10'' module loaded with 12 LC duplex fiber optic adapters – to be used with DC10T1U or DC10FA1U	Unit
DC10T1U8SC	10'' module loaded with 8 SC duplex fiber optic adapters – to be used with DC10T1U or DC10FA1U	Unit
DC10T1UTELE	10'' module loaded with two telephone distribution units (MULTIMODPABXG) – 24 RJ45 ports (4-5 / 7-8 pairs) to be used with DC10T1U	Unit

10" PANELS & ACCESSORIES

DCPAN1UK   DC 10GC1U

ORDERING INFORMATION

Part Number	Description	Packaging
DC10PAN1UK	10'' unloaded patch panel for 12 RJ45 modular jacks (MK and BC series) – 1 U	Unit
DC10PAN2UK	10'' unloaded patch panel for 24 RJ45 modular jacks (MK and BC series) – 2 U	Unit
DC10GC1U	10'' cable management panels with 3 rings	Unit
DC10OB1U	10'' 1U blank panel	Unit
DC10OB2U	10'' 2U blank panel	Unit
DC10OB3U	10'' 3U blank panel	Unit
DC104PC	10'' 4 sockets power unit – French standard	Unit

ACCESSORIES

BMASSE19   FIXCABLEB   49BV50T

ORDERING INFORMATION

Part Number	Description	Packaging
BMASSE19	Grounding Kit for 19'' cabinets	Unit
FIXCABLEB	Self-adhesive ribbon for cable ties (blue)	Unit
49BV50T	Cage nuts and screws	50

COPPER CONDUCTOR TYPE
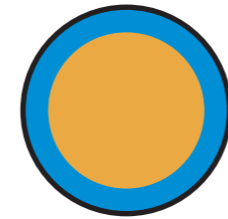
SOLID CONDUCTOR
BENEFITS: Transmission performances
DISAVANTAGES: Limited flexibility
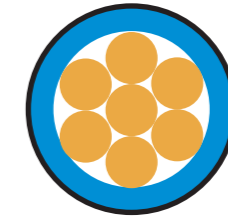
STRANDED CONDUCTOR
BENEFITS: Mechanical resistance
DISAVANTAGES: high Insertion Loss

AWG (AMERICAN WIRE GAUGE TABLE)

DEFINE THE CONDUCTOR DIAMETER INSIDE THE CABLE

AWG American Wire Gauge standard	Diameter SOLID		Diameter Equivalent STRANDED	surface	Resistance (Solid -copper)
AWG	mm	inch	mm	mm2	ohm/km
30	0.254	0.0100	7x0.102	0.0507	338.6
29	0.287	0.0113		0.0647	268.5
28	0.320	0.0126	7x0.127 – 19 x 0.079	0.0804	212.9
27	0.361	0.0142	7x 0.142	0.102	168.9
26	0.404	0.0159	7x0.160 - 19x0.10	0.128	133.9
25	0.455	0.0179		0.162	106.2
24	0.515	0.0201	7x0.203 -19 x0.127	0.205	84.22
23	0,575	0.0226		0.259	66.79
22	0.643	0.0253	7x0.254 – 19x0.160	0.324	52.96
21	0.724	0.0285		0.412	42.00
20	0.813	0.0320	7x 320 - 19x0.203	0.519	33.31

COPPER CONDUCTOR TYPE
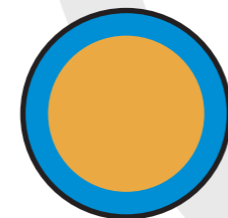
HIGH DENSITY PE
Characteristics:
Good Dielectric performances
High Mechanical behavior

Skin1 = PeHd
Foam= Pe Foam
Skin 2 = PeHd
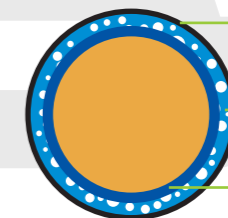
SKIN FOAM SKIN PE
Characteristics:
Excellent Dielectric performances
Low Mechanical resistance

INSULATION COLOUR CODING

4-PAIR CABLES OR MULTIPLE 4-PAIR CABLES

Pair	Wire	Solid PE		Skin-Foam-Skin PE	
1	1	white/blue		White	
	2	blue		Blue	
2	3	white/orange		White	
	4	orange		Orange	
3	5	white/green		White	
	6	green		Green	
4	7	white/brown		White	
	8	brown		Brown	

CABLE ACRONYMS

XX / XTP

Single Element ⟶ TP : Twisted Pair

Shielding of the Element ⟶ U : Unshielded
⟶ F : Foil

Overall Shielding ⟶ U : Unshielded
⟶ F : Foil
⟶ S : Braid
⟶ SF : Braid & Foil
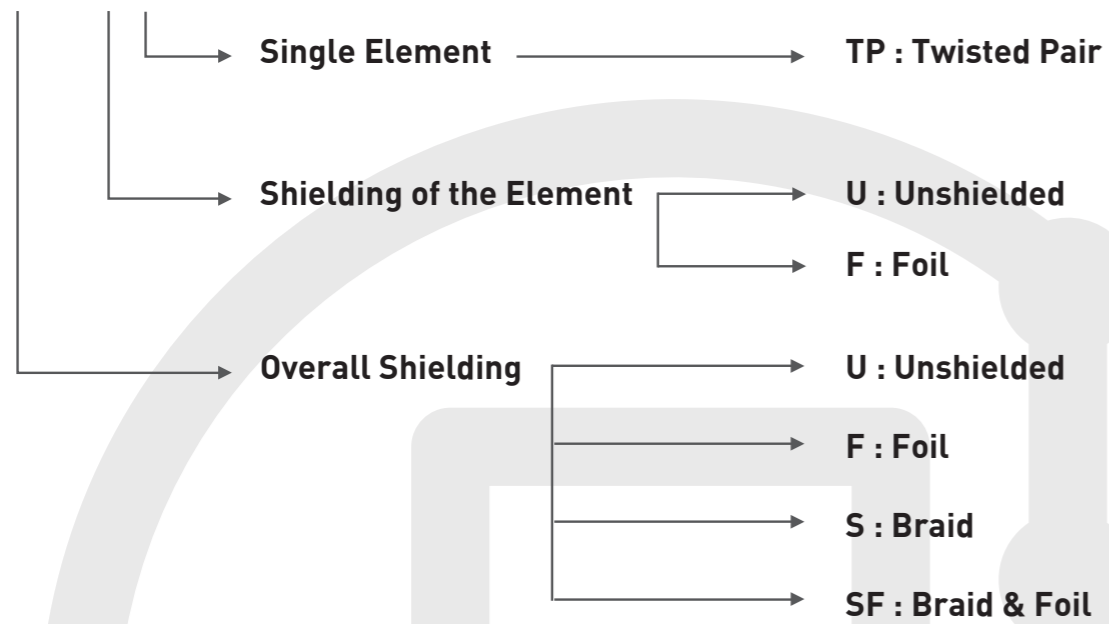
Type of Cable	Construction	Example
U/UTP or UTP Unshielded Twisted Pair		
F/UTP or FTP Foiled Twisted Pair		
SF/UTP or SFTP Shielded and Foiled Twisted Pair		
U/FTP or STP Shielded and Individually Foiled Twisted Pair		
F/FTP or FSTP Foiled and Individually Foiled Twisted Pair		
S/FTP or SSTP Shielded and Individually Foiled Twisted Pair		

CABLE JACKET MATERIAL

	PE	LSZH	PVC	PUR
MECHANICAL BEHAVIOUR				
FLEXIBILITY	Average	Average	Good	Excellent
TENSILE STRENGTH	Average	Average	Average	Excellent
COMPRESSION & IMPACT RESISTANCE	Average	Average	Good	Excellent
ABRASION RESISTANCE	Average	Poor	Good	Excellent
TEARING RESISTANCE	Average	Average	Good	Excellent
THERMAL BEHAVIOUR				
EXPANSION & SHRINKAGE	Average	Average	Average	Average
AGING DUE TO COLD TEMPERATURE & TEMPERATURE VARIATION	Average	Average	Good	Average
FRAGILITY AT LOW TEMPERATURE	Average	Average	Good	Excellent
CHEMICAL PROPERTIES				
RESISTANCE TO OIL & HYDROCARBONS	Average	Average	Good	Excellent
RESISTANCE TO ACID	Good	Good	Good	Good
OZON RESISTANCE	Excellent	Excellent	Excellent	Excellent
UV RESISTANCE	Good	Good	Good	Excellent
WATER RESISTANCE	Excellent	Average	Average	Good

PIN ALLOCATION

RJ45 PLUGS

T568B   T568A

RJ45 JACKS

T568B   T568A
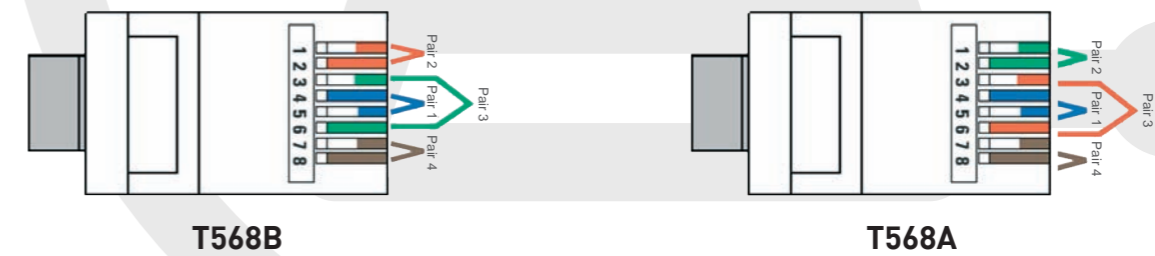
NORMATIVE OVERVIEW

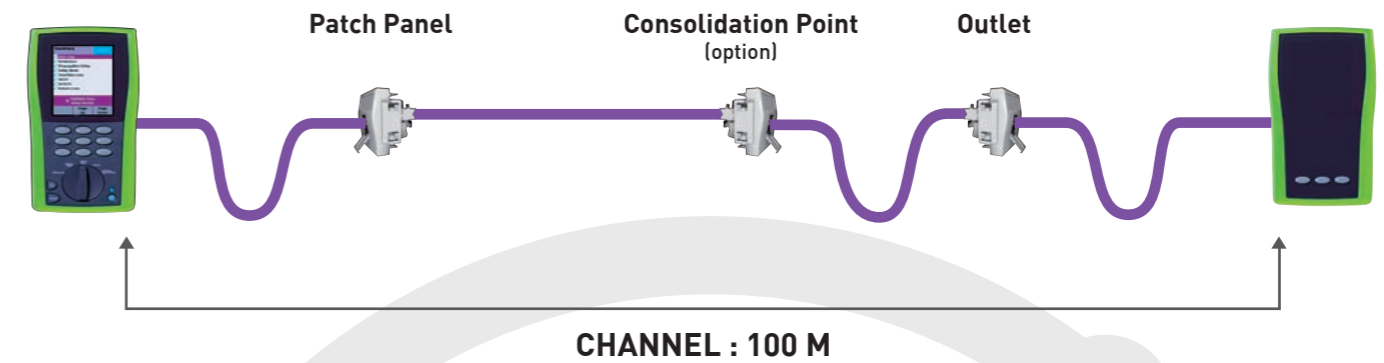| COMPONENTS	CAT5e	CAT6	CAT6A	CAT7	CAT7A
BANDWITH	100 Mhz	250 Mhz	500 Mhz	600 Mhz	1000 Mhz
ISO Standard	ISO 1801Ed2.0 (2002)	ISO 11801Ed2.0 (2002)	AD1.0 ISO 11801 (CH - 2008) AD2.0 ISO 11801 (PL - 2009)	ISO 11801 Ed2.0 (2002)	AD1.0 ISO 11801 (CH - 2008) AD2.0 ISO 11801 (PL - 2009)
EN Standard	EN50173-1 (2008)	EN50173-1 (2008)	EN50173-1 (2008)	EN50173-1 (2008)	EN50173-1 (2008)
CHANNEL (100m) & PERMANENT LINK (90m)	CLASS D	CLASS E	CLASS Ea	CLASS F	CLASS Fa
EIA/TIA Standard	EIA/TIA 568-B.2 (2001)	EIA/TIA 568-B.2-1 (2002)	EIA/TIA 568-B.2-10 (2008)	-	-
CHANNEL (100m) & PERMANENT LINK (90m)	CAT5e	CAT6	CAT6A	-	-

ACTIVE PINS PER APPLICATION

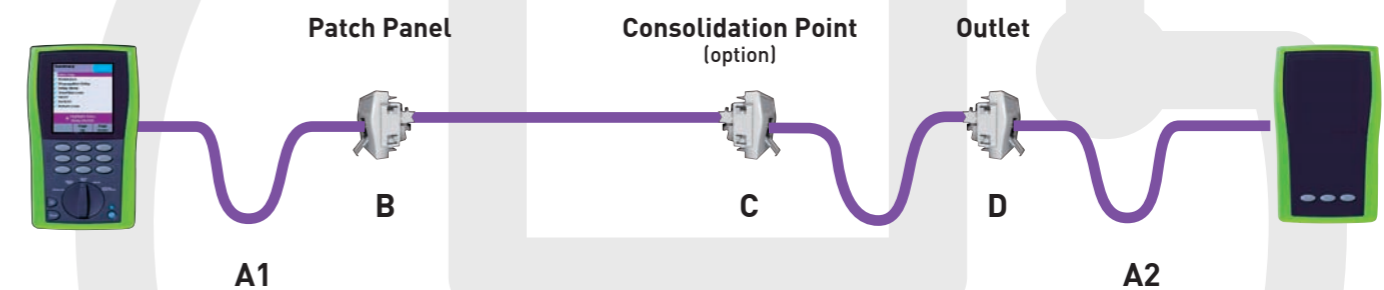| Application	Pins 1 & 2	Pins 3 & 6	Pins 4 & 5	Pins 7 & 8
Analog & Digital Phone	-	-	CAT3	-
PBX	-	CAT3	CAT3	-
Ethernet 10Base-T	CAT5	CAT5	-	-
Token Ring 100 Mbits/s	-	CAT5	CAT5	-
ATM 155	CAT5	-	-	CAT5
100Base-Tx	CAT5	CAT5	-	-
1000Base-T	CAT5e	CAT5e	CAT5e	CAT5e
ATM 1200	CAT6	CAT6	CAT6	CAT6
10GBase-T	CAT6-10G CAT6 A	CAT6-10G CAT6 A	CAT6-10G CAT6 A	CAT6-10G CAT6 A
Terrestrial TV	-	-	-	CAT6A with 900 MHz cable

MAXIMUM LENGTH OF LINKS

INTERCONNECT - PERMANENT LINK

Patch Panel   Consolidation Point (option)   Outlet

PERMANENT LINK : 90 M

INTERCONNECT – CHANNEL

Patch Panel   Consolidation Point (option)   Outlet
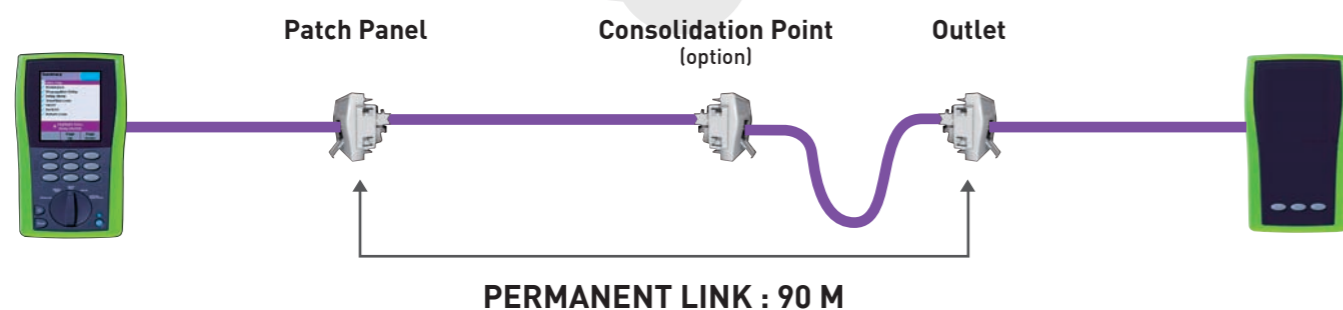
CHANNEL : 100 M

LENGTH OF CONSOLIDATION LINKS

Patch Panel   Consolidation Point (option)   Outlet

B   C   D

A1   A2

LINKS	MIN. LENGHT	MAX. LENGHT
B – C	15 m	85 m
C – D	5 m	See table below
B – D (without C)	15 m	90 m
A1	1 m	5 m
A2	1 m	5 m
A1 + A2	2 m	10 m
A1 + A2 + BC + CD	17 m	100 m

LINK B – C	LINK C – D (Solid Conductor)	LINK C – D (Stranded Conductor)
15 m	75 m	47 m
25 m	65 m	41 m
35 m	55 m	34 m
45 m	45 m	27 m
55 m	35 m	21 m
65m	25 m	14 m
75m	15 m	7 m
85 m	5 m	3 m

TEST PARAMETERS PER STANDARD

PARAMETER	EIA / TIA			ISO / IEC				
	CAT5e	CAT6	CAT6A	CLASS D	CLASS E	CLASS Ea	CLASS F	CLASS Fa
Wiremap	x	x	x	x	x	x	x	x
Length	x	x	x	x	x	x	x	x
Insertion Loss	x	x	x	x	x	x	x	x
Near End CrossTalk (NEXT)	x	x	x	x	x	x	x	x
Attenuation to CrossTalk Ratio Near End (ACR-N)				x	x	x	x	x
PowerSum NEXT	x	x	x	x	x	x	x	x
PowerSum ACR-N				x	x	x	x	x
Return Loss	x	x	x	x	x	x	x	x
Attenuation to CrossTalk Ratio Far End (ACR-F)	x	x	x	x	x	x	x	x
PowerSum ACR-F	x	x	x	x	x	x	x	x
Propagation Delay	x	x	x	x	x	x	x	x
SKEW	x	x	x	x	x	x	x	x
DC Loop Resistance				x	x	x	x	x
Alien Crosstalk (ANEXT, PSA-ACRF..)			x			x		x

MULTIMODE FIBER BANDWIDTH

FIBER	CORE (µm)	WAVELENGHT (nm)	Overfilled Launch (MHz*km)	Restricted Launch (MHz*km)
OM1	62.5	850	200	-
		1300	500	-
OM2	50	850	500	-
		1300	500	-
OM3	50	850	1500	2000
		1300	500	-

PARAMETER DEFINITION

PARAMETER	DEFINITION
Wiremap	Verification of the colour coding
Length	Length of the measured link
Insertion Loss	Signal loss proportional to the frequency and the length of the cable
Near End CrossTalk (NEXT)	Measurement of the disturbing signal pair-to-pair. Signal source and measurement at the same end.
Attenuation to CrossTalk Ratio Near End (ACR-N)	Margin between NEXT and insertion loss of the disturbed pair
PowerSum NEXT	Calculation of the combination of 3 pairs disturbing signal to another pair. Signal source and measurement at the same end.
PowerSum ACR-N	Margin between PSNEXT and insertion Loss
Return Loss	Reflection losses. Power of the signal echo due to the impedance mismatch along the cable
Far End Crosstalk (FEXT)	Measurement of the disturbing signal pair-to-pair. Signal source and measurement at the opposite end.
Attenuation to CrossTalk Ratio Far End (ACR-F)	Margin between FEXT and insertion loss of the disturbed pair
PowerSum FEXT	Calculation of the combination of 3 pairs disturbing signal to another pair. Signal source and measurement at the opposite end.
PowerSum ACR-F	Margin between PSFEXT and insertion loss of the disturbed pair
Propagation Delay	Propagation time of the signal on each pair
SKEW	Maximum variation between the propagation delay of the pairs
DC Loop Resistance	Resistance in ohms in each loop of pairs
Alien Crosstalk (ANEXT, PSA-ACRF..)	Exogenous Crosstalk characterizes the electromagnetic coupling between pairs resulting from the environment of direct wiring. Independent disturbance source = proximity of the communication cables . ALIEN CROSSTALK is impossible to predict.

SUPPORTED APPLICATIONS USING OPTICAL FIBER CABLING

Network Application	Max. Channel Insertion Loss (dB			Channel Length Supported by Application					
	Multimode		Single Mode	OM2 – 50µm		OM3- 50µm		OS1	
	850 nm	1300 nm	1310 nm	850 nm	1300 nm	850 nm	1300 nm	1310 nm	1550 nm
10Base FL,FP & FB	12.5	-	-	1514 m	-	1514m	-	-	-
Token Ring 4 & 16 Mb	13.0	-	-	1857m	-	1857m	-	-	-
ATM 155	7.20	10.00	10.00	1000m	-	1000m	-	2000m	-
ATM 622	4.0	6.00	7.0	300m	2000m	300m	2000m	2000m	-
100Base-FX	-	11.0	-	-	2000m	-	2000m	-	-
1000Base-LX	-	2.35	4.56	-	550m	-	1000m	2000m	-
1000Base-SX	2.60	-	-	500m	-	-	1000m	-	-
10GBase-LX4	-	2.00	6.20	-	300m	-	300m	-	-
10GBase-ER/EW	-	-	-	-	-	-	-	-	2000 m
10GBase-SR/SW	1.80 (0M2) 2.60 (OM3)	-	-	86m	-	300m	-	-	-
10GBase-LR/LW	-	-	6.20	-	550m	-	550m	2000m	-
40GBase-LR4	-	-	-	-	-	-	-	2000m	-
100GBase-LR4	-	-	6.3	-	-	-	-	2000m	-
100GBase-ER4	-	-	18.0	-	-	-	-	2000m	-