



Office Networks

AMP CO Plus
& **AMP-TWIST-7_AS**

**High-Performance
Multiservice/Multimedia
Office Cabling**



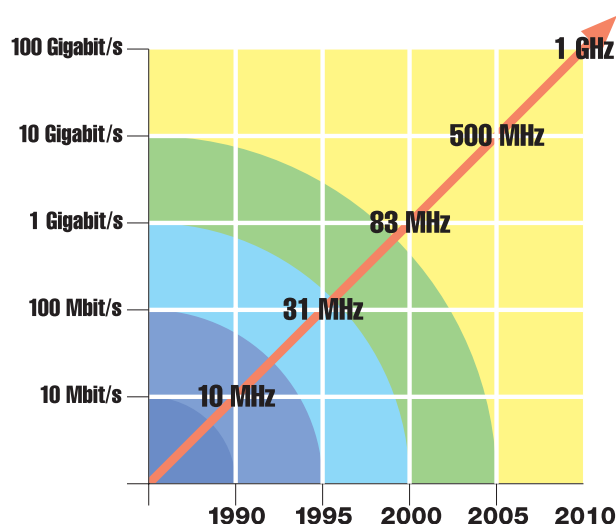
 **Tyco Electronics**
Our commitment. Your advantage.

The History of Network Technologies

The only way is up

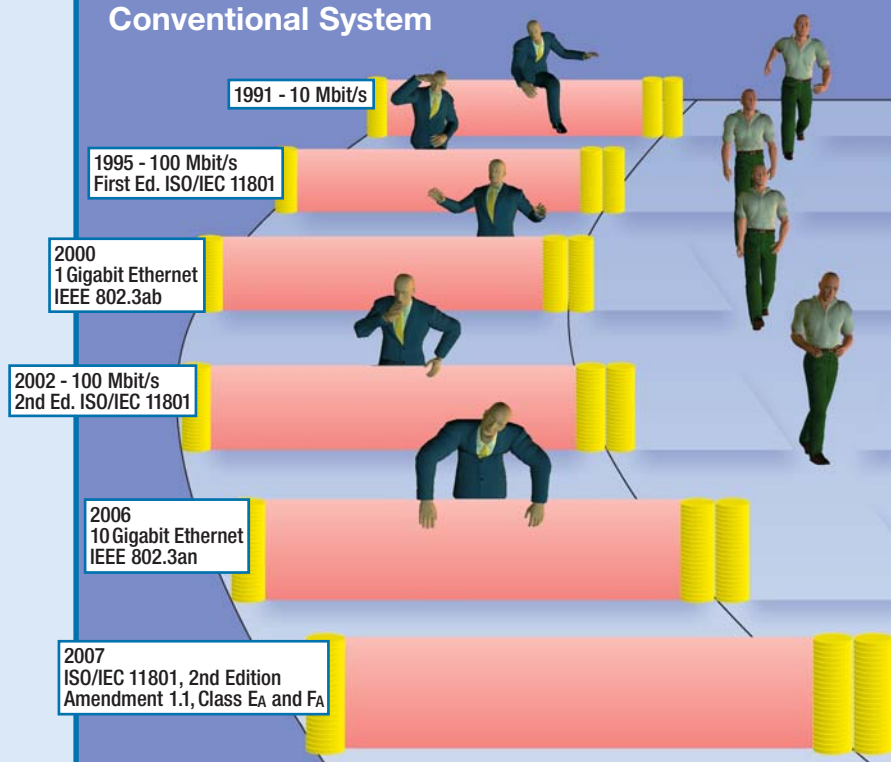
The last 20 years showed a constant and rapid evolution in networking data rate and systems bandwidth. This means especially for UTP owners always having to recable with each technology change and therefore make a further investment. Shielded systems in general and especially AMP CO with its extremely versatile concept is able to expand the lifetime easily up to 15 years with comfortable safety margins.

Evolution of Datarate and Bandwidth



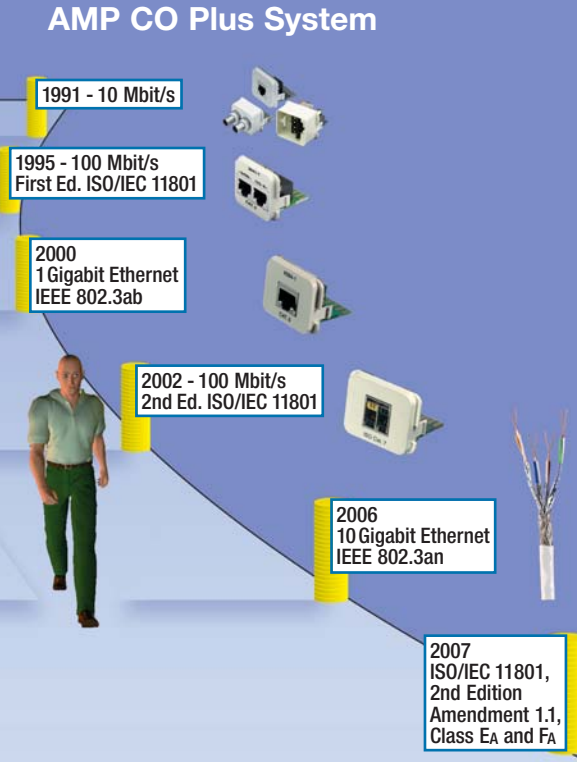
- Bandwidth is the key for future proof solution
- Constant change of technologies and demand
- EMC requirements can only be fulfilled by shielded systems
- 15–20 years proven lifetime

Conventional System



Always stopped by new technology

AMP CO Plus System

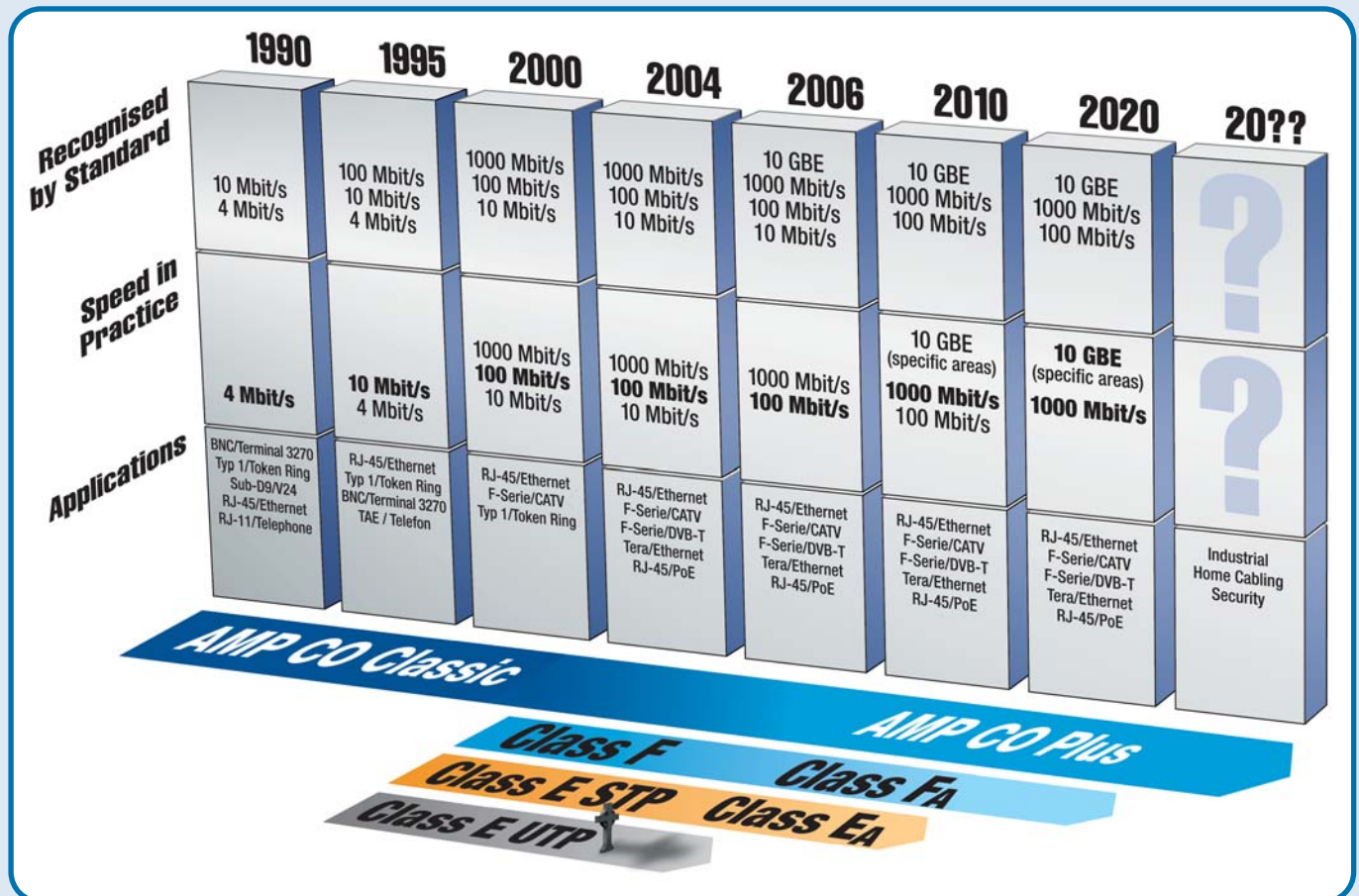


Or ahead of the game

Break Down Barriers with STP Technology

Lifetime of Cabling Systems

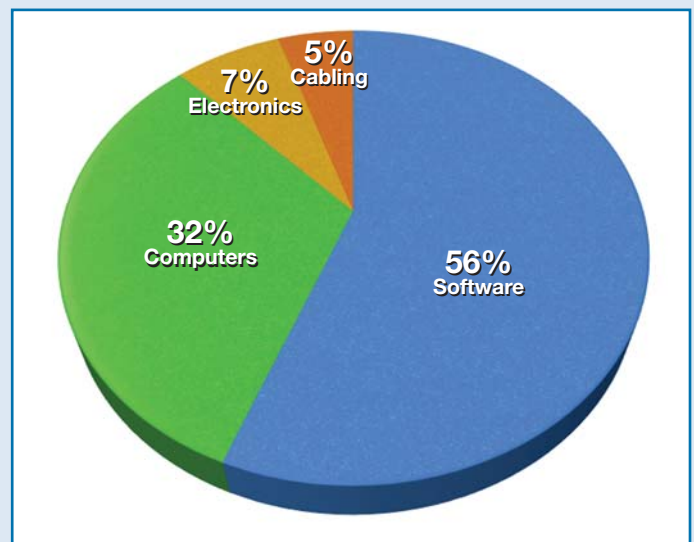
Trends and technologies come and go and the only certainty is that they will keep on changing. Our solutions will help to manage change, growing with each specific demand in your organization. Nobody knows what tomorrow's requirement will be, but with universal and upgradeable solutions you are able to adapt and update your cabling system.



High-Performance and versatility saves your money:

- Lifetime up to 20 years
- For 2–3 technology cycles
- Integrated EMC protection
- Up to 30% lower cost than UTP systems over lifetime

Cabling is in most cases a small part of the total initial investment, but has the longest lifetime. Carefully consideration and a degree of flexibility avoid the need for expensive new investment or reconstruction.



AMP CO Plus is an extremely modern and flexible cabling solution on the market.

AMP CO Plus has served numerous applications for many clients in diverse business environments for more than 10 years.

The AMP CO Plus difference is the construction, applying two distinct components: the inner cable terminating connector and the application insert. AMP CO Plus allows a high degree of flexibility and future-proofing through flexible configuration choice.



Characteristics

Technical

- Classes D, E_A and F_A in one system
- Different interface inserts available
- Able to match different impedances

Services

- | | |
|------------|----------------|
| ● Ethernet | ● V24 |
| ● DSL | ● PoE |
| ● ATM | ● VoIP |
| ● CATV | ● Analog Voice |

Efficiency

- Allows efficient use of all 4 pairs
- 100% use of the installed cables
- Future-proofing through changeable inserts
- Selective mounting saves money
- Reduction of cable duct systems

Compatibility

- Fits many faceplate series and floorbox environments
- Usage of standard patch cords





Characteristics

Technical

- Class F_A system (1 GHz)
- 1,5 GHz connector performance
- Coupling attenuation up to 90 dB

Services

- Ethernet
- DSL
- Telephone
- VoIP
- PoE and PoE Plus

Efficiency

- Allows efficient use of all 4 pairs
- 100% use of the installed cables
- Reduction of certification cost

Compatibility

- Fits to all SL-style faceplates
- To all RJ-45 style interfaces

The AMP NETCONNECT AMP-TWIST-7_AS SL connector is the technical evolution of AMP NETCONNECT's very successful AMP-TWIST technology.

This technology combines easy installation with the high density SlimLine (SL) style.

The AMP-TWIST-7_AS SL connector has been designed to offer premium performance well above the future upcoming Cat. 7_A frequency limit of 1000 MHz.

Excellent shielding/screening performance together with optimized quadrant design allows a connector performance tested up to 1500 MHz on all pairs.



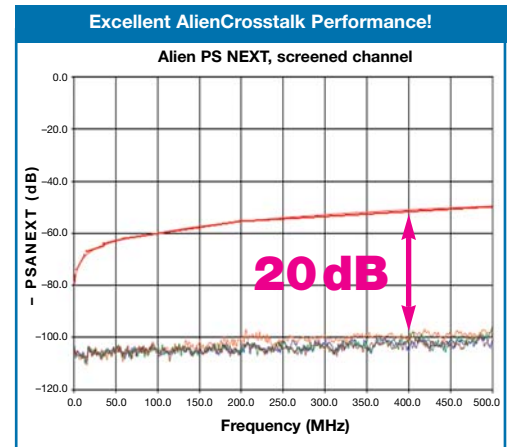
10 Gigabit Ethernet over Copper

New High-Speed Application

10 Gigabit Ethernet is the upcoming high-speed service recently ratified by IEEE as IEEE 802.3an. The cabling system requirement is extremely high, with a bandwidth of 500 MHz and an excellent immunity against EMI.

As EMC is a key parameter for any electrical device, with 10 Gigabit Ethernet over copper it's an enormous challenge for cabling systems and has a tremendous impact.

The technical challenge is ANEXT – the cross talk between cables and components and Background Noise – any EMI in our environment today.



Superior
shielded
technology –
visible
performance
benefits

Comparison of 10G Critical Parameters

	UTP	STP
EMC Mitigation mechanism	Twist Rate	Twist Rate + EM Screen
Coupling attenuation (EMC factor)	40 dB	90 dB (Cat. 7)
Separation from power cables (EN 50174-2)	50 mm up to 200 mm	No separation up to 35 m, 5 mm up 50 mm
ANEXT testing	Mandatory	Not necessary
ANEXT margins	Fail / 0 dB	25 dB
Background noise	Fail	10 dB

Superior
shielded
technology –
recognized
by IEEE

10GBASE-T Cabling Types & Distances

Table 55-12

Cabling	Supported Link Distances	Cabling References
Class E/Cat. 6 unscreened	55 m	ISO/IEC TR-24750 or TIA/EIA TSB-155
Class E/Cat. 6 screened	100 m	ISO/IEC TR-24750 or TIA/EIA TSB-155
Class F	100 m	ISO/IEC TR-24750
New Class E/Cat. 6A	100 m	ISO/IEC 11801 Ed.2.1 or TIA/EIA-568-B.2-10

Standard: IEEE 802.3an



EA

Certified Performance

3rd party lab testing and certification of our solutions have been carried out by Delta and also, for Class FA, by GHMT.

Furthermore the system fulfils the IEEE 802.3an background noise requirements as well as EN 55022 and EN 55024 standards.

FA



Versatile Advantages

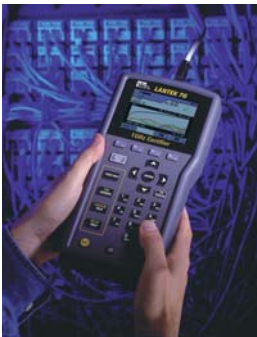
Cost efficiency

Thanks to the system's versatility and flexibility, there are many advantages, resulting in economic savings.



Labour cost

The decreased number of installed cables reduces the cost for installation and certification.



Certification Cost

The shielded system can be effectively certified **without** any ANEXT testing.



Pair utilisation

The usage of 1-, 2-, 3- or even 4 port inserts allows 100% utilisation of the installed cables.



15 (above) and 30 (below)
PIMF cables in one cable duct

Cable ducts and firebreaks

The reduction in installed cables allows for smaller and fewer ducts and compartments.



Integration in designer faceplate series

The data cable architecture is a critical part of IT infrastructure, demanding that the data outlet fits the chosen designer faceplate series and country specific environments. AMP CO Plus and AMP-TWIST-7AS is compatible with most European installation environments such as the Swiss EDIZIOdue, French Mosaic, German DIN style or US single and double gang styles.

Winner in All Cases: Versatility

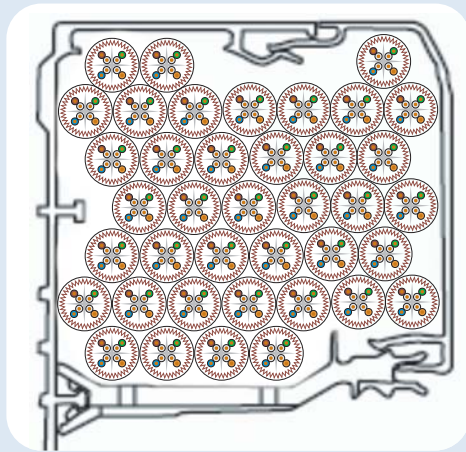
Inefficiency of Conventional Cabling Systems

Design Option “Maximum Cable Consumption”: 8 = 8!

Scenario:

**Office environment
with 3 users**

Example: 3 users
with a PC and
telephone each and
a shared fax and
network printer.

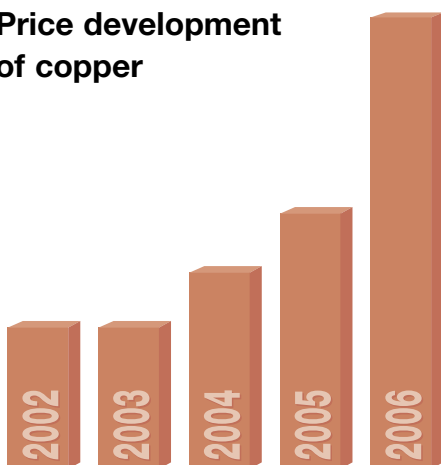


Conventional systems often generate a high fill-rate, while providing only a cable utilization of 50 %.

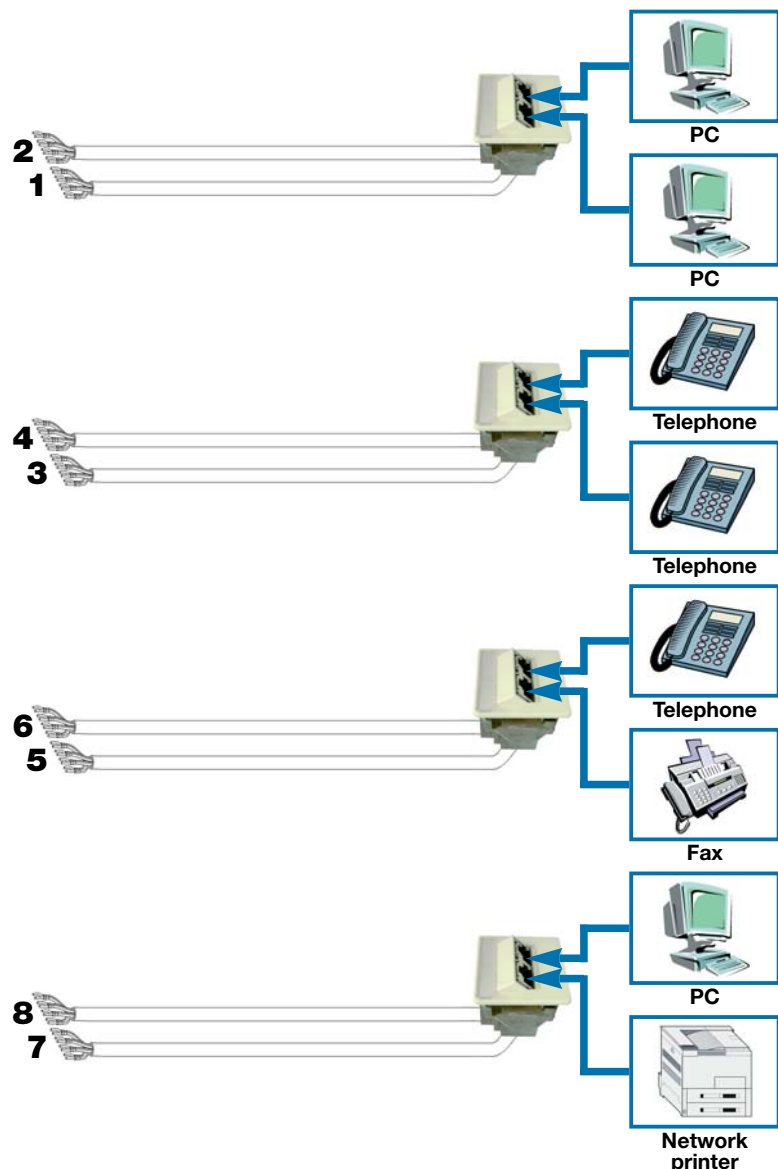
This has some consequences:

- Fully loaded cable trays
- Expensive fire prevention
- Extensive testing
- High fireload

**Price development
of copper**



Conventional cabling: 8 PiMF cables necessary



Cost Saving with Sheath Sharing

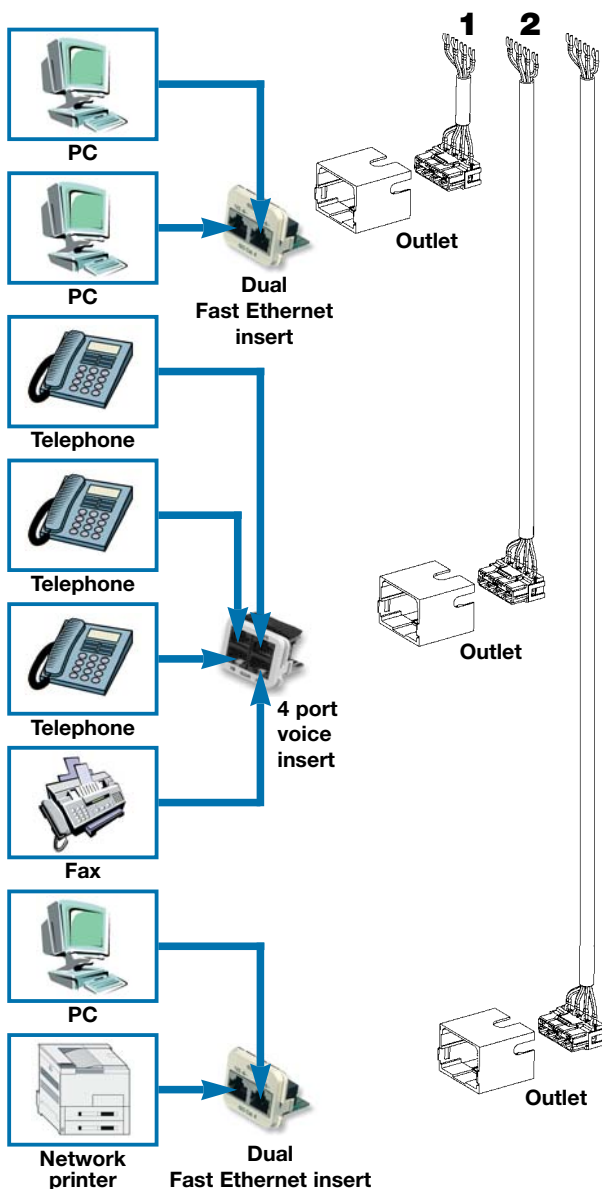
Design Option “Maximum Cable Utilization”: 8 = 3!

Scenario:
Office environment
with 3 users

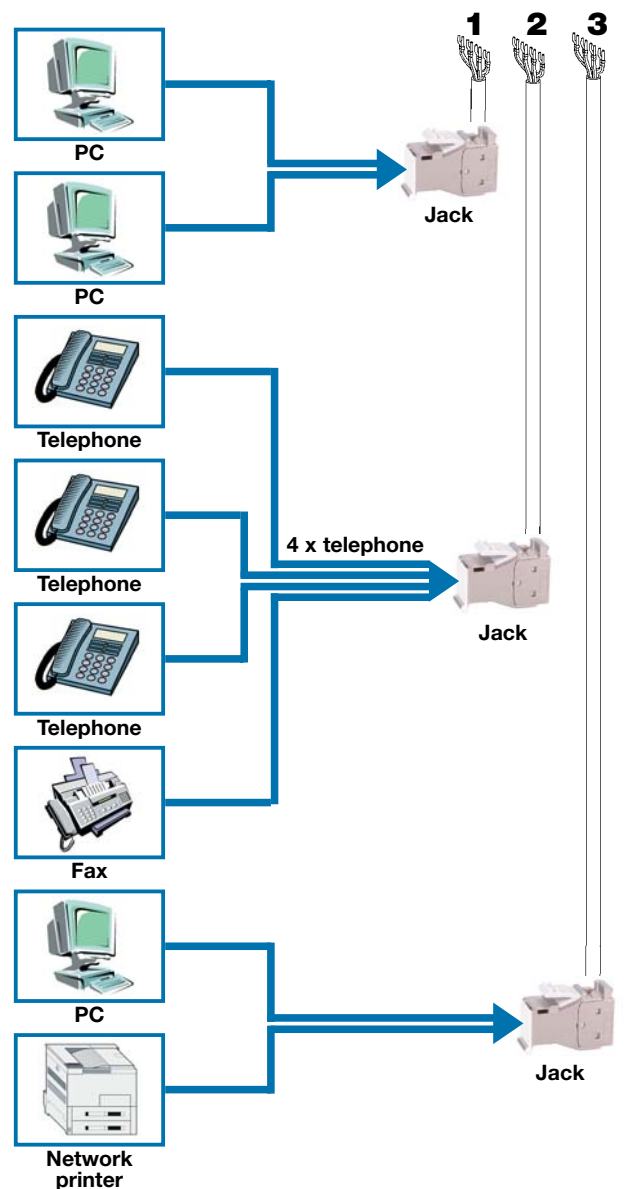
Example: 3 users
with a PC and
telephone each and
a shared fax and
network printer.



AMP CO Plus: 3 PiMF cables necessary

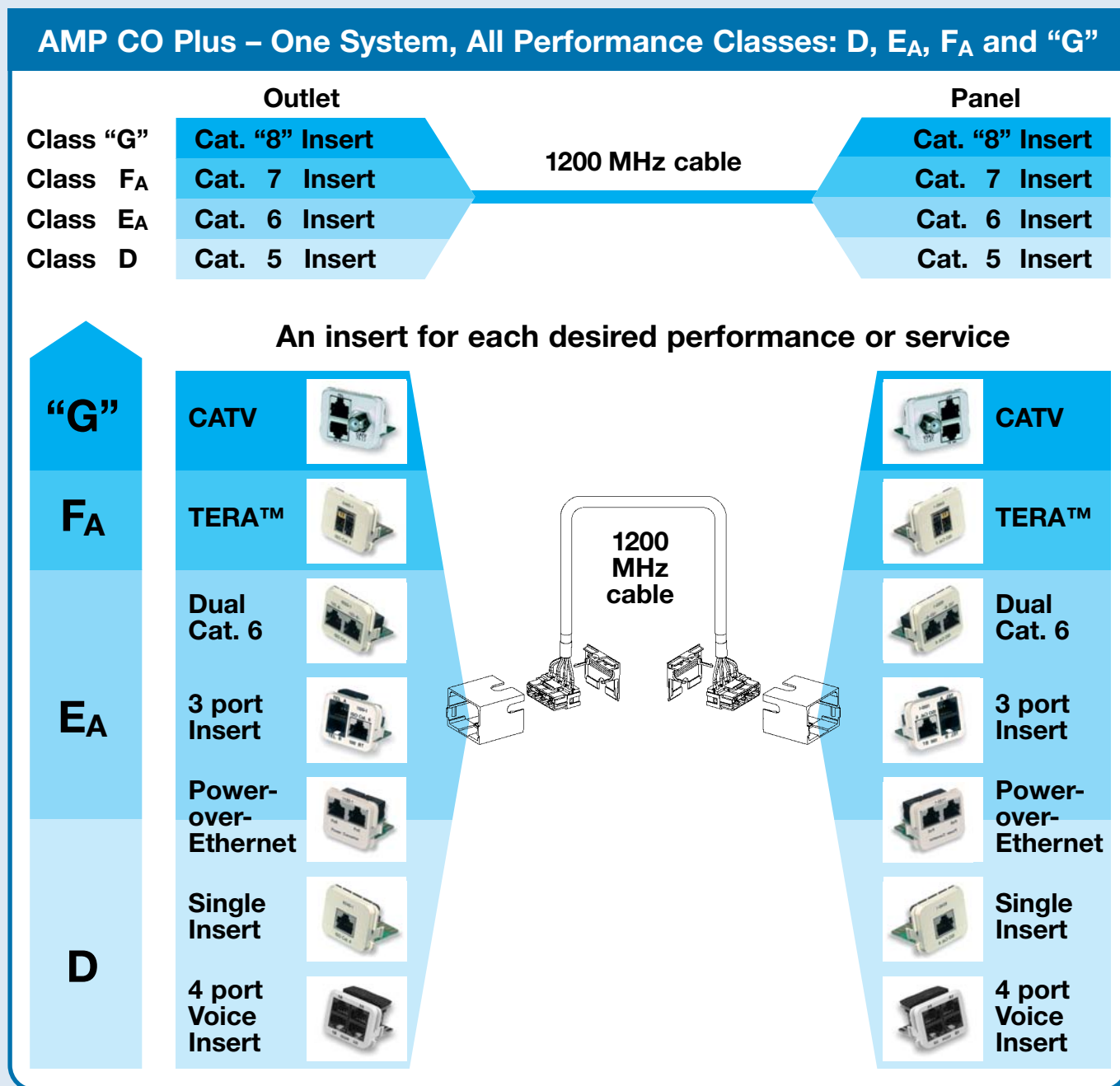


AMP-TWIST-7A SL: 3 PiMF cables necessary



Future Proofing through Flexibility

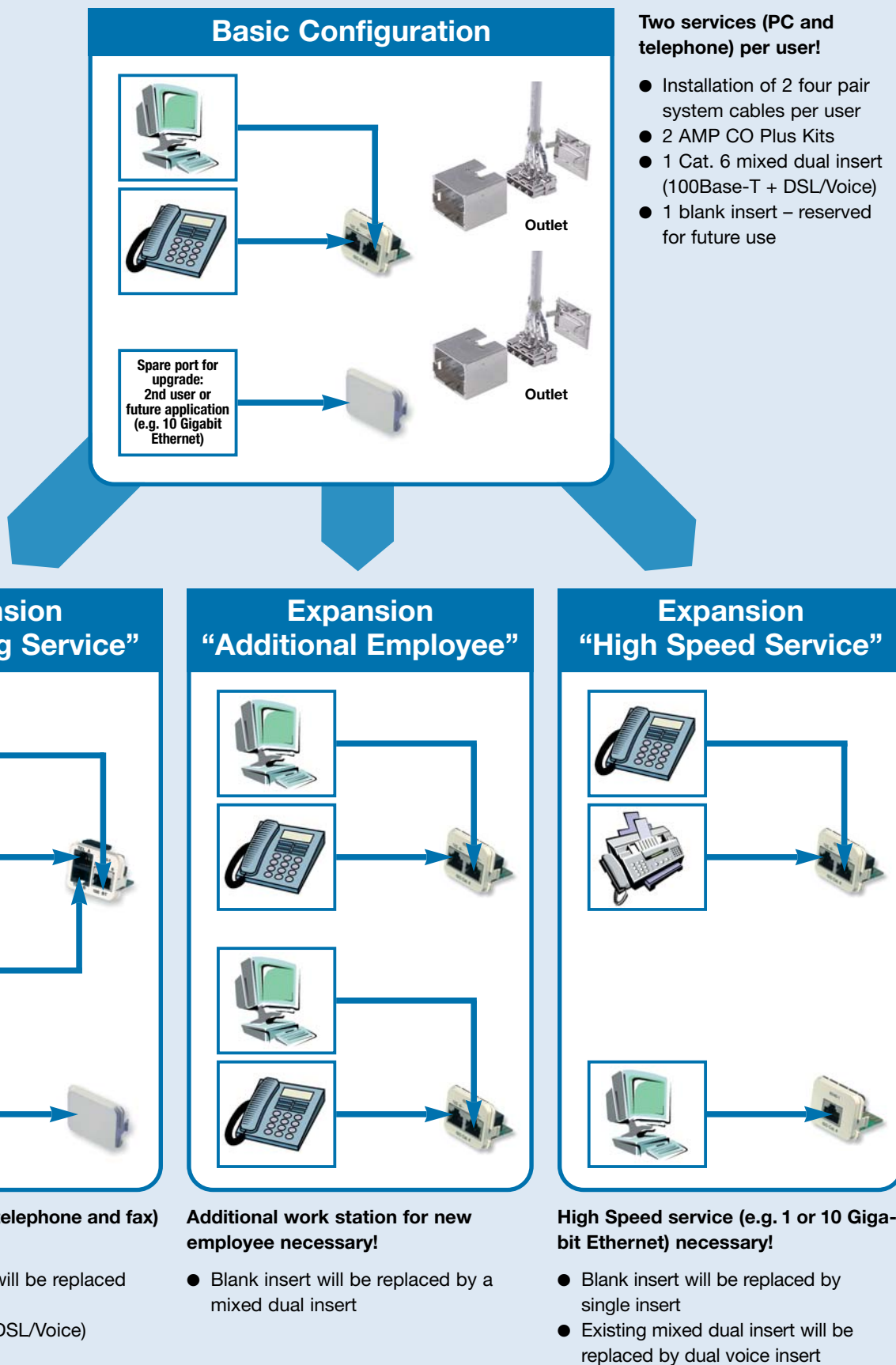
AMP CO Plus is the only system on the market which delivers and supports all of today's link classes, with the added flexibility of deploying a 600 MHz or a 1200 MHz PiMF cable.



High Speed 10 Gigabit Ethernet over Twisted Pair and Fiber Optic Cabling

The XG 10 GB/S APPROVED logo marks all products of the XG family. No matter whether copper or fiber – AMP NETCONNECT offers a complete end-to-end system for all cabling media.

Design Option “Expansion Proof”: Ready for Tomorrow!



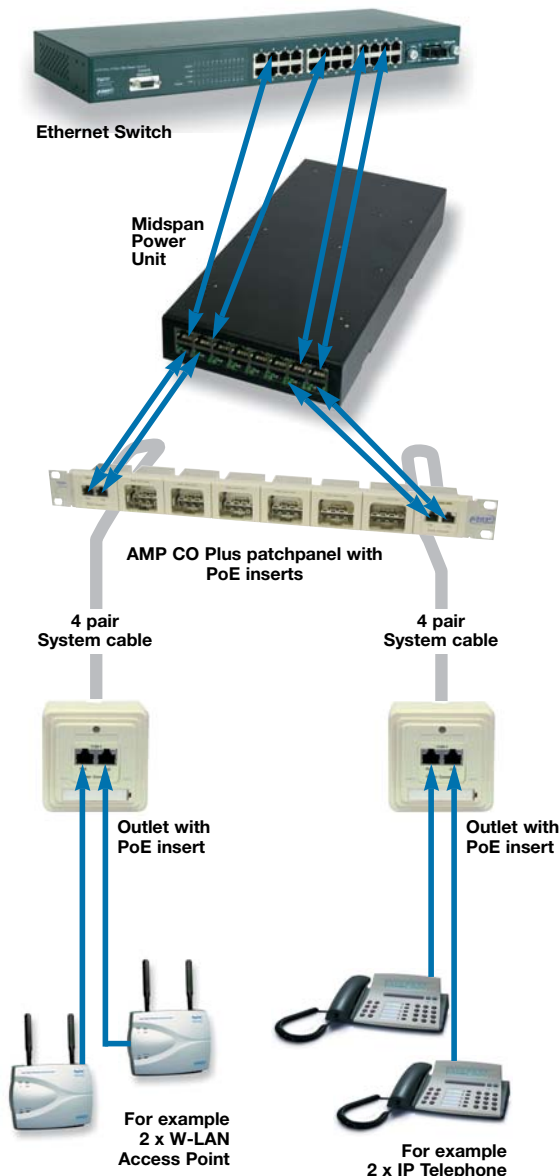
Power-over-Ethernet with Power Multiplexing

Power-over-Ethernet is defined by IEEE 802.3af and supports a maximum output power of 15,4 Watt. AMP CO Plus supports this through PoE inserts with Power Multiplexing, allowing the use of two PoE devices over one cable, which is very cost efficient. These can be any PoE devices such as an IP telephone, W-LAN access point, IP camera etc. The power will be provided either by a switch with integrated PoE functionality or by an external power supplying device.

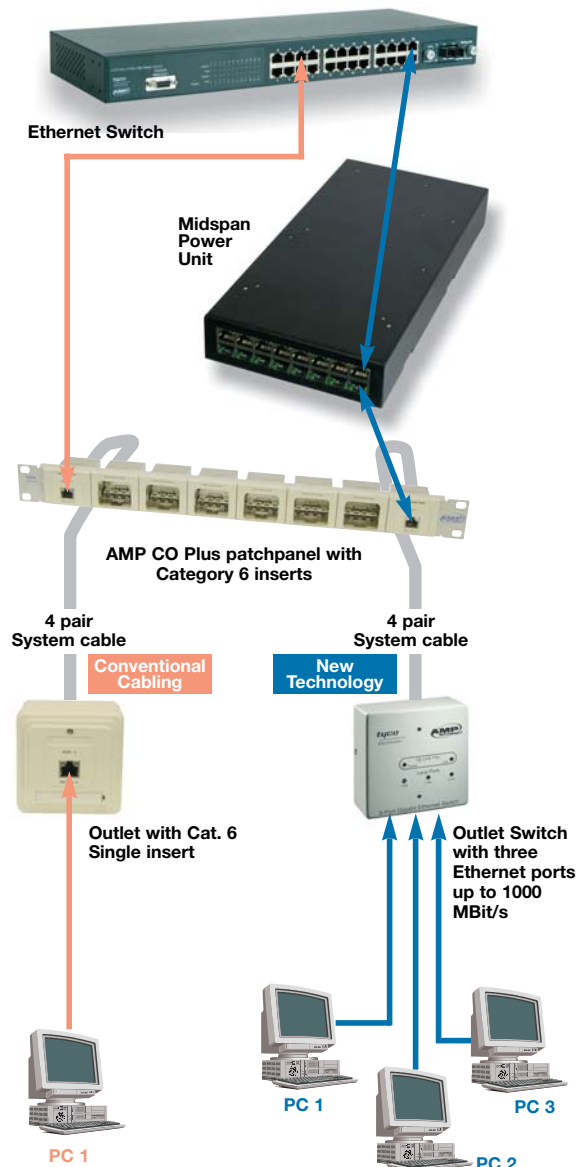
Active Inserts

AMP NETCONNECT provides worldwide active inserts for a cabling system. Instead of a passive insert, which supports only one 1 or 10 Gigabit Ethernet port, the user can implement a 3-port switch insert. The switch is a PoE device, which is IEEE 802.3af compliant and supports 10, 100 or even 1000 MBit/s. The outlet switch obtains power from an external PoE Midspan unit.

Configuration with PoE inserts



Active port expansion



High Density and High Performance?

In some particular cases space may be a limiting factor, especially in cases of under floor installations. Based on many years of experience in designing excellent shielded systems, Tyco Electronics is able to combine High-Performance with High-Density, two features which are from now on no longer mutually incompatible. The AMP-TWIST-7_{AS} system is a 1,5 GHz performing solution offering a 3 times higher bandwidth than the current draft of Class E_A / Cat.6_A

- Ideal for under floor installation
- 9–36 ports in 1 floorbox
- Allows 1–4 pair services in different combinations
- Less cables = less space
- Low fill rate of cable trays

Up to 36 connections in narrow installation environments



Hi-D Connect Cable Management System

The Hi-D Connect Cable Management System has been designed to overcome cable organisation and maintenance issues through innovative design. With this solution the port density of a standard 800 x 800 cabinet can be increased to 720 ports per cabinet face.

This density is achieved by patented bend control designs that automatically ensure minimum bend radii of the installed patch cords. The easy accessible cable retentions provide maximum user flexibility.

The Hi-D Connect Cable Management System supports design and installation simplicity as well as integration into a wide range of cabinet environments.

Features

- Integrated bend control
- Reduced maintenance time
- Angled high-density modular patchpanels
- Ready for Infrastructure Management
- Higher availability = cost saving



System Warranty

We make sure that your AMP NETCONNECT System will keep performing to current industry Standards. If ever it does not meet those Standards within 25 years of the date of Installation, we'll provide reasonable parts and labour to replace or repair the AMP NETCONNECT product*.

- 25 years coverage on system performance
- 25 years coverage on components
- 25 years coverage on applications
- Based on industry Standards
- Includes parts and labour
- Tyco Electronics provides coverage directly to the end user – if something is wrong, Tyco Electronics will put it right



* Some conditions may apply. For more information contact your local AMP NETCONNECT sales office (see backpage of this brochure for Phone and Fax).

Flexible and Cost Efficient Office Cabling

The high performance cabling system...

...incorporates classes D, E and F within the same link

- Update at any time
- Longer lifetime than conventional cabling system

...enables users to individually equip their infrastructure

- 1–4 port solution
- Less cables
- Saves money

... reduces the amount of cables needed

- Less testing
- Smaller cable trays
- 50% less fireload

...accommodates RJ-45 and other connector interfaces

- RJ-45
- Coax
- TERA™
- RJ11

... is certified for 10 Gigabit Ethernet

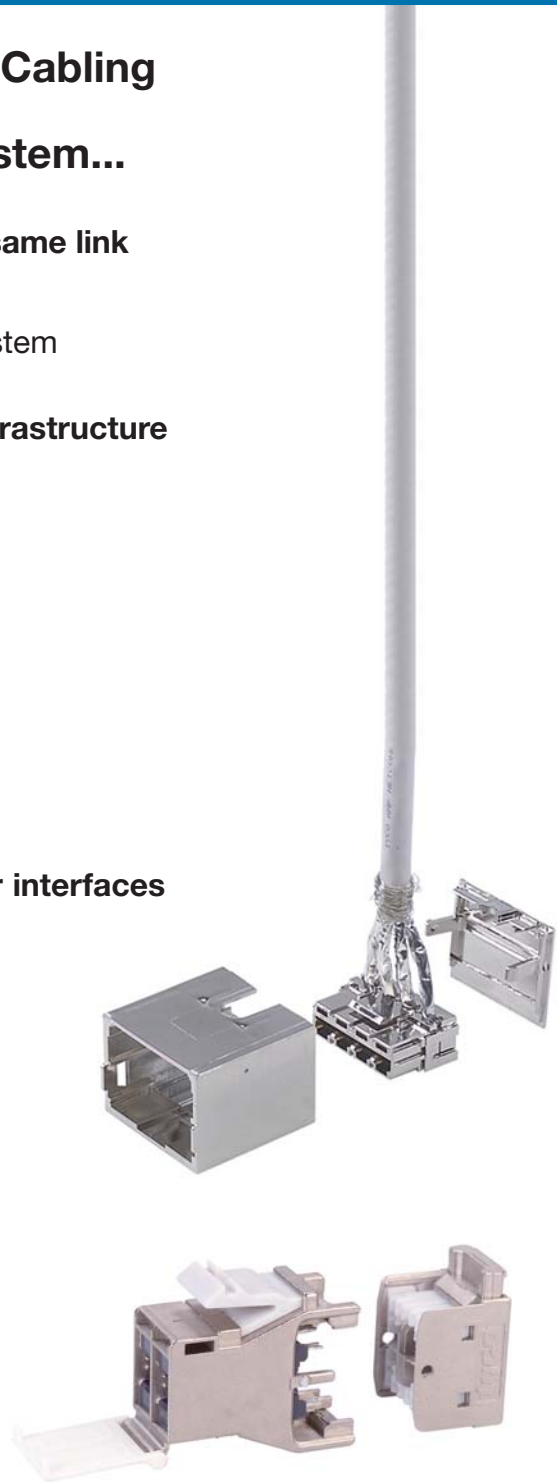
- 3rd party certificates
- Ready by design
- Available since 4 years

...supports

- VoIP
- Ethernet
- CATV
- Power MUX
- DSL
- ATM
- V24

...suitable for most global installation environments

- DIN-Style
- Mosaic
- British-Style
- US-Style



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