

# Structured cabling system

***KELINE***

Catalog 2022/23

[www.atlas-it.hr](http://www.atlas-it.hr)





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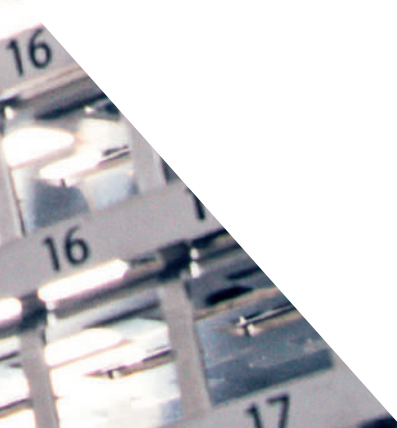
T. 00385 1 2100 720  
T. 00385 1 2100 721





# Structured cabling system

**Catalog 2022/23**



# About us

**The Keline structured cabling system** is the result of the work of experts in the field of research, testing and production of components for high-speed digital signal transmission. Keline doesn't represent only a product but also technical expertise in the form of development, quality control, professional training and comprehensive technical support.



The Keline system is distributed in **38 countries** in Europe, America and Asia where it registers **1144 installations** with **502,554 ports** for which a **25-year system warranty** is provided.



## Innovation

Keline brings efficient and innovative solutions customized to specific needs of its users. It has developed and certified several products as the first in the world, thus contributing to the expansion of affordable and advanced solutions.



## Quality control

Independent accredited testing laboratories FORCE Technology, 3P and GHMT perform regular audits of production equipment, quality control and compliance with international standards of key components of the Keline system.



## Certified partners

The Keline partner program provides the end user with fast product availability, their professional installation, as well as a long-term system warranty.



## 25-year system warranty

For all structured cabling networks delivered and installed by certified Keline partners, after a successful audit of the obtained test protocols, the manufacturer provides a 25-year system warranty.



# Contents

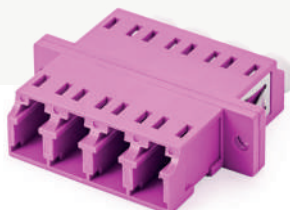


## 1 Copper cabling

- 008 Legend
- 009 Knowledge base
- 010 Cat. 6<sub>A</sub> interoperable components
- 024 Cat. 6A / Class E<sub>A</sub> system
- 030 Cat. 6 shielded components
- 036 Cat. 6 unshielded components
- 042 Cat. 5E shielded components
- 050 Cat. 5E unshielded components
- 056 Cat. 3 components
- 060 Outlets
- 066 Compatibility with other brands' mounting hardware
- 068 Other components and accessories
- 074 Tools

## 2 Optical cabling

- 080 Legend
- 081 Knowledge base
- 082 Optical cables
- 090 Pigtailed
- 092 Patch cords
- 098 Adapters
- 100 Patch panels, distribution boxes, additional material
- 106 Tools



## 3 MPO / MTP® solutions

- 110 Knowledge base
- 114 MTP - MTP cables
- 117 MTP - LC cables
- 120 MTP patch panels and accessories
- 122 MTP modules



## 4 Cabinets

- 126 Knowledge base
- 127 19" wall-mounted cabinets
- 131 Residential distribution cabinet
- 134 19" free-standing cabinets
- 142 19" server cabinets
- 145 19" cabinets for industrial / outdoor areas with IP55 protection
- 146 19" open frames
- 147 Accessories for 19" cabinets
- 156 Power distribution units PDU
- 160 10" wall-mounted cabinets and accessories

## 5 Cabling certifiers

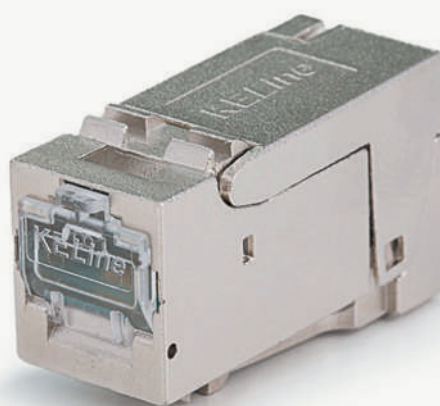
- 164 Knowledge base
- 165 TREND Networks®
- 166 FLUKE®

# Copper cabling 1



# Contents


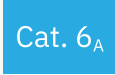
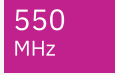
008	Legend
009	Knowledge base
010	Cat. 6 <sub>A</sub> interoperable components
024	Cat. 6A / Class E <sub>A</sub> system
030	Cat. 6 shielded components
036	Cat. 6 unshielded components
042	Cat. 5E shielded components
050	Cat. 5E unshielded components
056	Cat. 3 components
060	Outlets
066	Compatibility with other brands' mounting hardware
068	Other components and accessories
074	Tools








# Legend

## Performance categories of copper cabling



 <p>10 Gigabit</p> <p>maximum transmission speed</p>	 <p>Cat. 6<sub>A</sub></p> <p>cabling category</p>	 <p>550 MHz</p> <p>bandwidth</p>
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## Cable sheath properties




 <p>LSOH</p> <p>sheath material</p>	 <p>OUTDOOR</p> <p>cable suitable for outdoor environment</p>	 <p>D<sub>ca</sub></p> <p>reaction to fire</p>
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## Other properties

## Construction features

 <p>HD HIGH DENSITY</p> <p>high-density solution provides higher density of ports in the interconnection field than standard solutions 1U</p>	 <p>PoE type 4</p> <p>PoE Type 4 category that allows power supply up to 100 W</p>
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## Certification

 <p>EC VERIFIED</p> <p>product is certified on a component level by FORCE Technology international independent laboratories</p>	 <p>GHMT</p> <p>product is certified on a component level by GHMT international independent laboratories</p>	 <p>3P THIRD PARTY TESTING</p> <p>product is certified on a component level by 3P international independent laboratories</p>
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# Knowledge base

International standards have defined seven cable categories: Cat. 5E, Cat. 6, Cat. 6<sub>A</sub>, Cat. 7, Cat. 7<sub>A</sub>, Cat. 8.1, Cat. 8.2. The required transmission speed is the determinative factor for selecting cable category. Individual categories support different transmission protocols, therefore, the maximum transmission speed is determined by the fastest protocol supported by cabling. The diagram below provides an overview of limit transmission speeds of standardized protocols and an overview of cabling categories supported by given protocols.

Cabling category is determined by various technical parameters that define transmission properties of cabling. The bandwidth alone is not a sufficient criterion for determining cabling quality.

## Relation between transmission properties and performance categories of cables

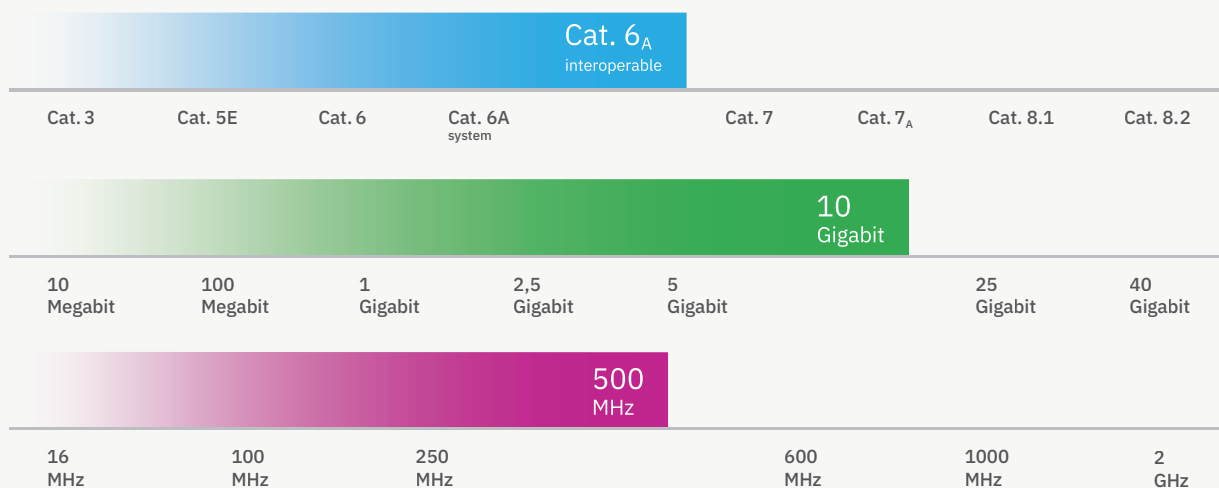


# Cat. 6<sub>A</sub> interoperable components

These components enable to use products from different manufacturers and brands (provided these are also interoperable), users and suppliers do not depend on a single purchase source.

These components offer a future-proof solution which currently represents a technical peak that will dominate horizontal cabling for the next few years ahead.

This solution meets the expectations and needs of users with the highest demands on the quality of data transmission.



- cabling category Cat. 6<sub>A</sub>
- maximum transmission speed of 10 Gigabit/s  
guaranteed functionality of all standardized protocols including 10GBASE-T
- bandwidth of 500 MHz

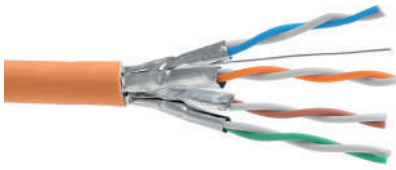
## Cabling built up of these components guarantees:

- immunity to electromagnetic interference and Alien Crosstalk
- performance category Cat. 6<sub>A</sub> and Class E<sub>A</sub> for all standardized topologies (2-, 3- and 4-connector channel, 2- and 3-connector permanent link)
- possibility to combine products of different manufacturers and brands
- option to utilise Cat. 7 and Cat. 7<sub>A</sub> interoperable cables
- safety margins of all parameters affecting transmission quality throughout the frequency range



10  
GigabitCat. 6<sub>A</sub>  
interoperable550  
MHz

LSOH

B2<sub>ca</sub>

## STP cable 4x2xAWG23, Category 6<sub>A</sub>, 550 MHz, LSOH, Euroclass B2<sub>ca</sub> - s1a, d1, a1

P/N: KE550HS23-B2ca

500 m on a reel

- each pair individually shielded with AL/PET foil, halogen-free sheath
- enables transmission of all high-speed protocols including 10GBASE-T
- tested in a bandwidth up to 550 MHz

Min. bending radius	installation	58 mm
	operation	29 mm
Max. tensile load		100 N (10 kg)
Temperature range	installation	0°C to +50°C
	operation	-20°C to +60°C
Outer cable diameter		7,2 mm
Copper conductor diameter		AWG 23
NVP		78 %
Reaction to fire		B2 <sub>ca</sub> - s1a, d1, a1
Fire safety		flame retardant, low smoke, zero halogen, non-corrosive

10  
GigabitCat. 6<sub>A</sub>  
interoperable550  
MHz

LSOH

D<sub>ca</sub>

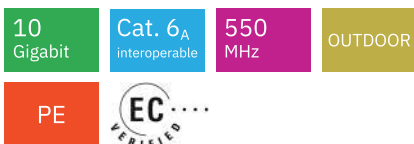
## STP cable 4x2xAWG23, Category 6<sub>A</sub>, 550 MHz, LSOH, Euroclass D<sub>ca</sub> - s2, d2, a1

P/N: KE550HS23/1E-Dca

500 m on a reel

- each pair individually shielded with AL/PET foil, halogen-free sheath
- enables transmission of all high-speed protocols including 10GBASE-T
- tested in a bandwidth up to 550 MHz

Min. bending radius	installation	56 mm
	operation	28 mm
Max. tensile load		100 N (10 kg)
Temperature range	installation	0°C to +50°C
	operation	-20°C to +60°C
Outer cable diameter		6,9 mm
Copper conductor diameter		AWG 23
NVP		78 %
Reaction to fire		D <sub>ca</sub> - s2, d2, a1
Fire safety		flame retardant, low smoke, zero halogen, non-corrosive



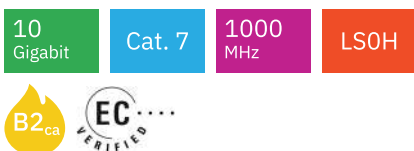
## Outdoor / direct burial STP cable 4x2xAWG23, Category 6<sub>A</sub>, 550 MHz, PE

P/N: KE550HS23OUT

500 m on a reel

- double sheath with total thickness of 1,7 mm
- extremely resistant to mechanical damage and environmental influences
- resistant to moisture, water and UV radiation
- cable core is identical with the construction of KE550HS23/1E-Dca on p. 011
- enables transmission of all high-speed protocols including 10GBASE-T
- tested in a bandwidth up to 550 MHz

Min. bending radius	installation	70 mm
	operation	35 mm
Max. tensile load		100 N (10 kg)
Temperature range	installation	0°C to +50°C
	operation	-20°C to +70°C
Outer cable diameter		8,7 mm
Outer PE sheath thickness		0,9 mm
Inner sheath thickness		0,8 mm
Copper conductor diameter		AWG 23
NVP		78 %



## S/FTP cable 4x2xAWG23, Category 7, 1000 MHz, LSOH, Euroclass B2<sub>ca</sub> - s1a, d1, a1

P/N: KE1000HS23-B2ca

500 m on a reel

- each pair individually shielded with AL/PET foil, overall copper braid, halogen-free sheath
- enables transmission of non-standard protocols used in hospitals, residential areas (home networking) and so on
- enables transmission of all high-speed protocols including 10GBASE-T
- tested in a bandwidth up to 1000 MHz
- suitable for places with higher level of electromagnetic interference

Min. bending radius	installation	61 mm
	operation	31 mm
Max. tensile load		100 N (10 kg)
Temperature range	installation	0°C to +50°C
	operation	-20°C to +60°C
Outer cable diameter		7,6 mm
Copper conductor diameter		AWG 23
NVP		78 %
Reaction to fire		B2 <sub>ca</sub> - s1a, d1, a1
Fire safety		flame retardant, low smoke, zero halogen, non-corrosive

10 Gigabit Cat. 7 1000 MHz LSOH



## S/FTP cable 4x2xAWG23, Category 7, 1000 MHz, LSOH, Euroclass D<sub>ca</sub> - s2, d2, a1

P/N: KE1000HS23-Dca

500 m on a reel

- each pair individually shielded with AL/PET foil, overall copper braid, halogen-free sheath
- enables transmission of non-standard protocols used in hospitals, residential areas (home networking) and so on
- enables transmission of all high-speed protocols including 10GBASE-T
- tested in a bandwidth up to 1000 MHz
- suitable for places with higher level of electromagnetic interference

Min. bending radius	installation	56 mm
	operation	28 mm
Max. tensile load		100 N (10 kg)
Temperature range	installation	0°C to +50°C
	operation	-20°C to +60°C
Outer cable diameter		7 mm
Copper conductor diameter		AWG 23
NVP		78 %
Reaction to fire		D <sub>ca</sub> - s2, d2, a1
Fire safety		flame retardant, low smoke, zero halogen, non-corrosive

10 Gigabit Cat. 7A 1200 MHz LSOH



## S/FTP cable 4x2xAWG23, Category 7<sub>A</sub>, 1200 MHz, LSOH, Euroclass D<sub>ca</sub> - s2, d2, a1

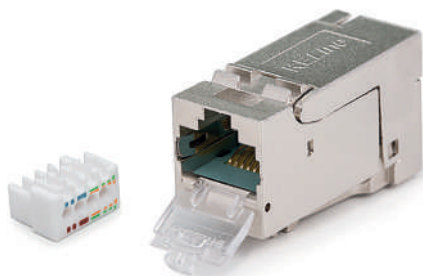
P/N: KE1200HS23-Dca

500 m on a reel

- each pair individually shielded with AL/PET foil, overall copper braid, halogen-free sheath
- enables transmission of non-standard protocols used in hospitals, residential areas (home networking) and so on
- enables transmission of all high-speed protocols including 10GBASE-T
- tested in a bandwidth up to 1200 MHz
- suitable for places with higher level of electromagnetic interference

Min. bending radius	installation	61 mm
	operation	31 mm
Max. tensile load		100 N (10 kg)
Temperature range	installation	0°C to +50°C
	operation	-20°C to +60°C
Outer cable diameter		7,6 mm
Copper conductor diameter		AWG 23
NVP		78 %
Reaction to fire		D <sub>ca</sub> - s2, d2, a1
Fire safety		flame retardant, low smoke, zero halogen, non-corrosive



10  
GigabitCat. 6<sub>A</sub>  
interoperable500  
MHz**HD**  
HIGH DENSITYPoE  
type 4

## Keystone Jack HD, Category 6<sub>A</sub>, RJ45/s

P/N: KEJ-C6A-S-HD

- enables to install 24 modules into 0,5U and achieve a high density of up to 48 ports on 1U
- low profile design reduces the required installation depth to 5 mm
- tool-free, fast and easy installation
- PoE Type 4 (100 W) tested in GHMT laboratories
- enables transmission of all high-speed protocols including 10GBASE-T
- guarantees a bandwidth of 500 MHz
- perfectly shielded against Alien Crosstalk and electromagnetic interference
- dust-proof shutter
- nickel plated housing
- suitable for a wide range of outlets, duct and channel systems
- applicable on cables with solid wires (guarantee of anti-corrosive and gas-tight joint)
- applicable on cables with stranded wires by using a special plastic insert (guarantee of anti-corrosive and gas-tight joint)

**Note** see compatible outlets on p. 060

<b>Suitable for installing on cables</b>	with solid wires from 0,51 to 0,64 mm (from AWG 24 to AWG 22)
	with stranded wires by using a special plastic insert from AWG 27/7 to AWG 26/7
<b>Required installation depth</b>	for sockets with angled faceplates 10 - 35 mm
	for sockets with straight faceplates 35 mm
<b>Contact pin material</b>	phosphor-bronze alloy coated with 50 μ of gold
<b>Insertion / extraction cycles</b>	min. 750

10  
GigabitCat. 6<sub>A</sub>  
interoperable500  
MHz**HD**  
HIGH DENSITY

## Patch panel HD, Category 6<sub>A</sub>, 24xRJ45/s, silver, KEJ-C6A-S-HD keystone included, 0,5U

P/N: KEP-C6A-S-HD-05

- 24 keystone jacks KEJ-C6A-S-HD (on p. 014) included
- enables to install up to 48 ports on 1U
- designed for 19" cabinets
- integrated cable management
- cable ties for gripping (24 pcs)
- set of M6 screws and captive nuts (2 pcs)
- two grounding pegs (on left and right sides)
- labeling strip is included in the package

<b>Height</b>	0,5U (22 mm)
<b>Width</b>	19" (482,6 mm)
<b>Depth (including cable management)</b>	100 mm
<b>Material</b>	stainless steel
<b>Color</b>	silver
<b>Surface</b>	glossy



10  
Gigabit

Cat. 6<sub>A</sub>  
interoperable

500  
MHz

## Patch panel, Category 6<sub>A</sub>, 24xRJ45/s, black, KEJ-C6A-S-HD keystones included

P/N: KEP-C6A-S-HD

- 24 keystone jacks KEJ-C6A-S-HD (on p. 014) included
- designed for 19" cabinets
- integrated cable management
- cable ties for gripping (24 pcs)
- set of M6 screws and captive nuts (4 pcs)
- grounding screw and washer (1 pc)



Height	1U (44,5 mm)	
Width	19" (482,6 mm)	
Depth (including cable management)	152 mm	
Material	front face	steel
	cable management	nickel-plated steel, corrosion-resistant
Color	black RAL 9005	
Surface	structured, matt	



10  
Gigabit

Cat. 6<sub>A</sub>  
interoperable

500  
MHz

## Patch panel, Category 6<sub>A</sub>, 24xRJ45/s, silver, KEJ-C6A-S-HD keystones included

P/N: KEP-C6A-S-HD-NP

- 24 keystone jacks KEJ-C6A-S-HD (on p. 014) included
- designed for 19" cabinets
- integrated cable management
- cable ties for gripping (24 pcs)
- set of M6 screws and captive nuts (4 pcs)
- grounding screw and washer (1 pc)



Height	1U (44,5 mm)	
Width	19" (482,6 mm)	
Depth (including cable management)	152 mm	
Material	front face	nickel-plated steel, corrosion-resistant
	cable management	nickel-plated steel, corrosion-resistant
Color	silver	
Surface	glossy	



10 Gigabit  
Cat. 6<sub>A</sub> interoperable  
500 MHz  
PoE type 4



## Keystone Jack HD 90, Category 6<sub>A</sub>, RJ45/s

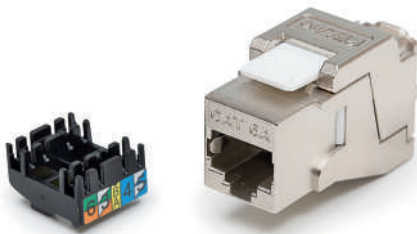
P/N: KEJ-C6A-S-HD 90

- construction with vertical cable entry reduces the required installation depth to 5 mm more compared to KEJ-C6A-S-HD
- tool-free, fast and easy installation
- PoE Type 4 (100W) tested in GHMT laboratories
- enables transmission of all high-speed protocols including 10GBASE-T
- guarantees a bandwidth of 500 MHz
- perfectly shielded against Alien Crosstalk and electromagnetic interference
- dust-proof shutter
- nickel plated housing
- suitable for a wide range of outlets, duct and channel systems
- applicable on cables with solid wires (guarantee of anti-corrosive and gas-tight joint)
- applicable on cables with stranded wires by using a special plastic insert (guarantee of anti-corrosive and gas-tight joint)

**Note** see compatible outlets on p. 060

<b>Suitable for installing on cables</b>	with solid wires from 0,51 to 0,64 mm (from AWG 24 to AWG 22)
	with stranded wires by using a special plastic insert from AWG 27/7 to AWG 26/7
<b>Required installation depth</b>	for sockets with angled faceplates 10 - 30 mm
	for sockets with straight faceplates 30 mm
<b>Contact pin material</b>	phosphor-bronze alloy coated with 50 μ of gold
<b>Insertion / extraction cycles</b>	min. 750

10 Gigabit  
Cat. 6<sub>A</sub> interoperable  
500 MHz  
PoE type 4



## Keystone Jack, Category 6<sub>A</sub>, RJ45/s

P/N: KEJ-C6A-S-10G

- tool-free, fast and easy installation
- PoE Type 4 (100 W) certified in FORCE Technology laboratories
- enables transmission of all high-speed protocols including 10GBASE-T
- guarantees a bandwidth of 500 MHz
- perfectly shielded against Alien Crosstalk and electromagnetic interference
- suitable for a wide range of outlets, duct and channel systems
- applicable on cables with solid wires (guarantee of anti-corrosive and gas-tight joint)

**Note** see compatible outlets on p. 060

<b>Suitable for installing on cables</b>	with solid wires from 0,51 to 0,64 mm (from AWG 24 to AWG 22)
	with stranded wires from AWG 26/7 to AWG 24/7
<b>Required installation depth</b>	for sockets with angled faceplates 15 - 40 mm
	for sockets with straight faceplates 40 mm
<b>Contact pin material</b>	phosphor-bronze alloy coated with 50 μ of gold
<b>Insertion / extraction cycles</b>	min. 750

10  
Gigabit

Cat. 6<sub>A</sub>  
interoperable

500  
MHz

## Patch panel, Category 6<sub>A</sub>, 24xRJ45/s, black, KEJ-C6A-S-10G keystones included

P/N: KEP-C6A-S-10G

- 24 keystone jacks KEJ-C6A-S-10G (on p. 016) included
- designed for 19" cabinets
- integrated cable management
- cable ties for gripping (24 pcs)
- set of M6 screws and captive nuts (4 pcs)
- grounding screw and washer (1 pc)



Height	1U (44,5 mm)	
Width	19" (482,6 mm)	
Depth (including cable management)	152 mm	
Material	front face	steel
	cable management	nickel-plated steel, corrosion-resistant
Color	black RAL 9005	
Surface	structured, matt	



10  
Gigabit

Cat. 6<sub>A</sub>  
interoperable

500  
MHz

## Patch panel, Category 6<sub>A</sub>, 24xRJ45/s, silver, KEJ-C6A-S-10G keystones included

P/N: KEP-C6A-S-10G-NP

- 24 keystone jacks KEJ-C6A-S-10G (on p. 016) included
- designed for 19" cabinets
- integrated cable management
- cable ties for gripping (24 pcs)
- set of M6 screws and captive nuts (4 pcs)
- grounding screw and washer (1 pc)



Height	1U (44,5 mm)	
Width	19" (482,6 mm)	
Depth (including cable management)	152 mm	
Material	front face	nickel-plated steel, corrosion-resistant
	cable management	nickel-plated steel, corrosion-resistant
Color	silver	
Surface	glossy	





10 Gigabit    Cat. 6<sub>A</sub> interoperable    500 MHz    LSOH



## Patch cable STP, Category 6<sub>A</sub>, LSOH

P/N: KEL-C6A-P-005	0,5 m	P/N: KEL-C6A-P-070	7 m
P/N: KEL-C6A-P-010	1 m	P/N: KEL-C6A-P-010	10 m
P/N: KEL-C6A-P-015	1,5 m	P/N: KEL-C6A-P-120	12 m
P/N: KEL-C6A-P-020	2 m	P/N: KEL-C6A-P-150	15 m
P/N: KEL-C6A-P-030	3 m	P/N: KEL-C6A-P-200	20 m
P/N: KEL-C6A-P-050	5 m		

- individually shielded pairs with stranded wires, halogen-free sheath
- connector RJ45 with patented multi-layered arrangement of contacts
- connector RJ45 complies with IEC 60603-7-x standard by its dimensions and transmission features
- enables transmission of all high-speed protocols including 10GBASE-T
- guarantees a bandwidth of 500 MHz
- perfectly shielded against Alien Crosstalk and electromagnetic interference

Temperature range	-25°C to +60°C
Min. bending radius	25 mm
Outer cable diameter	5,8 mm
Copper conductor diameter	AWG 27/7
Contact pin material	phosphor-bronze alloy coated with 50 μ of gold
Insertion / extraction cycles	min. 750

**Note** non-standard cable length must be specified in the order  
xx - patch cable color:

gray  
without marking

P/N: KEL-C6A-P-xxx



black  
-BK

P/N: KEL-C6A-P-xxx-BK



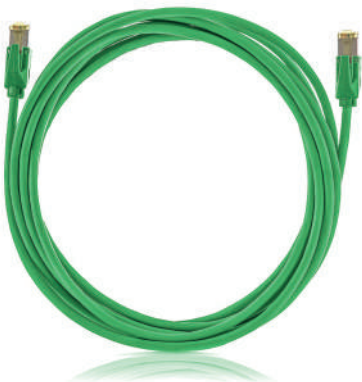
blue  
-BL

P/N: KEL-C6A-P-xxx-BL



green  
-GN

P/N: KEL-C6A-P-xxx-GN



yellow  
-YE

P/N: KEL-C6A-P-xxx-YE



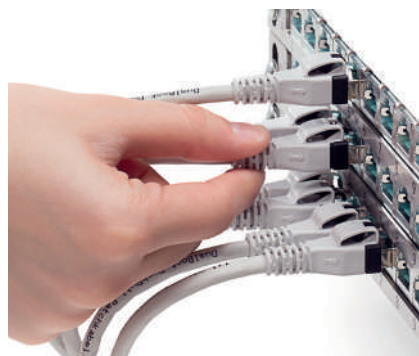
red  
-RD

P/N: KEL-C6A-P-xxx-RD



10  
GigabitCat. 6<sub>A</sub>  
interoperable500  
MHz

LSOH

**HD**  
HIGH DENSITY

## HD patch cable STP, Category 6<sub>A</sub>, LSOH, gray

P/N: KEL-C6A-P-005HD	0,5 m	P/N: KEL-C6A-P-050HD	5 m
P/N: KEL-C6A-P-010HD	1 m	P/N: KEL-C6A-P-070HD	7 m
P/N: KEL-C6A-P-015HD	1,5 m	P/N: KEL-C6A-P-100HD	10 m
P/N: KEL-C6A-P-020HD	2 m	P/N: KEL-C6A-P-150HD	15 m
P/N: KEL-C6A-P-030HD	3 m	P/N: KEL-C6A-P-200HD	20 m

- “Push & Pull” boots secure easy connection and disconnection
- suitable to use even in high-density patch fields
- individually shielded pairs with stranded wires, halogen-free sheath
- connector RJ45 complies with IEC 60603-7-x standard by its dimensions and transmission features
- enables transmission of all high-speed protocols including 10GBASE-T
- guarantees a bandwidth of 500 MHz
- perfectly shielded against Alien Crosstalk and electromagnetic interference

Temperature range	-25°C to +60°C	
Min. bending radius	25 mm	
Outer cable diameter	5,8 mm	
Copper conductor diameter	AWG 26/7	
Contact pin material	phosphor-bronze alloy coated with 50 μ of gold	
Insertion / extraction cycles	min. 750	
Color	cable	gray RAL 7035
	boots	gray RAL 7035

10  
GigabitCat. 6<sub>A</sub>  
interoperable500  
MHz

PUR



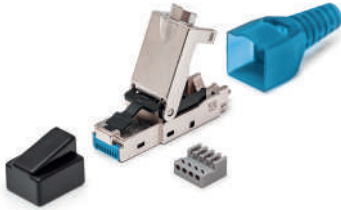
## Patch cable STP, Category 6<sub>A</sub>, PUR, gray

P/N: KEL-C6A-P-005SF	0,5 m	P/N: KEL-C6A-P-070SF	7 m
P/N: KEL-C6A-P-010SF	1 m	P/N: KEL-C6A-P-100SF	10 m
P/N: KEL-C6A-P-015SF	1,5 m	P/N: KEL-C6A-P-120SF	12 m
P/N: KEL-C6A-P-020SF	2 m	P/N: KEL-C6A-P-150SF	15 m
P/N: KEL-C6A-P-030SF	3 m	P/N: KEL-C6A-P-200SF	20 m
P/N: KEL-C6A-P-050SF	5 m		

- boots adjustable up to 90 degrees in four directions
- extremely flexible cable
- resistance to water, chemicals (petroleum products, ozone ...)
- high mechanical strength and abrasion resistance
- paired shielded S/FTP cable with stranded cores and PUR sheath
- connector RJ45 complies with IEC 60603-7-x standard by its dimensions and transmission features
- enables transmission of all high-speed protocols including 10GBASE-T
- guarantees a bandwidth of 500 MHz
- perfectly shielded against Alien Crosstalk and electromagnetic interference

Temperature range	-25°C to +60°C	
Outer cable diameter	6,1 mm	
Copper conductor diameter	AWG 26/7	
Contact pin material	phosphor-bronze alloy coated with 50 μ of gold	
Insertion / extraction cycles	min. 750	
Color	cable	gray
	boots	black

10 Gigabit	Cat. 6 <sub>A</sub> system	500 MHz
---------------	-------------------------------	------------



## Toolless field terminated RJ45/s connector for Cat. 7<sub>A</sub>, Cat. 7, Cat. 6<sub>A</sub>, Cat. 6 cables

P/N: KE-FT45-C6AS

- direct termination on Cat. 7<sub>A</sub>, Cat. 7, Cat. 6<sub>A</sub>, Cat. 6 cables
- tool-free, fast and easy installation
- connection of IP cameras and wireless devices without the need of using outlets and patch cords
- enables transmission of all high-speed protocols including 10GBASE-T within the system Cat. 6A
- guarantees a bandwidth of 500 MHz within the system Cat. 6A
- perfectly shielded against Alien Crosstalk and electromagnetic interference

Suitable for installing on cables	with solid wires from AWG 26 to AWG 22
	with stranded wires from AWG 27 to AWG 22
	with outer diameter from 6 mm to 9 mm
Contact pin material	phosphor-bronze alloy coated with 50 μ of gold
Required installation depth	55 mm

10 Gigabit	Cat. 6 <sub>A</sub> system	500 MHz
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## Field terminated, toolless RJ45/s connector for Cat. 7<sub>A</sub>, Cat. 7, Cat. 6<sub>A</sub> cables

P/N: KE-FFT45-C6AS

- direct termination on Cat. 7<sub>A</sub>, Cat. 7, Cat. 6<sub>A</sub> cables
- tool-free, fast and easy installation
- connection of IP cameras and wireless devices without the need of using outlets and patch cords
- enables transmission of all high-speed protocols including 10GBASE-T within the system Cat. 6A
- guarantees a bandwidth of 500 MHz within the system Cat. 6A
- perfectly shielded against Alien Crosstalk and electromagnetic interference

Suitable for installing on cables	with solid wires from AWG 23 to AWG 22
	with outer diameter from 6 mm to 9 mm
Contact pin material	phosphor-bronze alloy coated with 50 μ of gold
Required installation depth	50 mm

10  
Gigabit

Cat. 6A  
system

500  
MHz

## Connector RJ45/s for Cat. 7<sub>A</sub>, Cat. 7, Cat. 6<sub>A</sub>, Cat. 6 cables

P/N: KE-RJ45-SC6A



p. 074



- direct termination on Cat. 7<sub>A</sub>, Cat. 7, Cat. 6<sub>A</sub>, Cat. 6 shielded cables
- special crimping pliers are required for mounting KE-CT-SC6A on p. 074
- ideal for IP camera and wireless devices even where the tool-free connector KE-FT45-C6AS cannot be used for limited space
- supplied with boots for this connector
- enables transmission of all high-speed protocols including 10GBASE-T within the system Cat. 6A
- guarantees a bandwidth of 500 MHz within the system Cat. 6A
- perfectly shielded against Alien Crosstalk and electromagnetic interference

### Suitable for installing on cables

with solid wires from AWG 23 to AWG 22

with outer diameter from 5 mm to 8 mm

### Contact pin material

copper alloy coated with 50 μ of gold

### Insertion / extraction cycles

min. 750

### Required installation depth

23 mm

10  
Gigabit

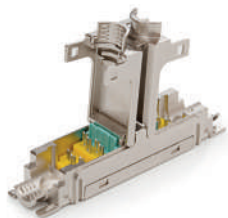
Cat. 6A  
interoperable

500  
MHz



## Connection module HD, Category 6<sub>A</sub>

P/N: KE-EXT-HD



- designed for reconnecting damaged cables or in case of need to extend the link
- low profile design
- tool-free, fast and easy installation
- enables transmission of all high-speed protocols including 10GBASE-T
- guarantees a bandwidth of 500 MHz
- perfectly shielded against Alien Crosstalk and electromagnetic interference
- applicable on cables with solid wires (guarantee of anti-corrosive and gas-tight joint)

### Suitable for installing on cables

with solid wires from AWG 24 to AWG 22

with outer diameter from 5 mm to 9,5 mm

### Contact pin material

phosphor-bronze alloy coated

### Dimensions

65,6 x 15,6 x 13,5 mm





## Trunk cable /jack-jack/ STP 6x4x2xAWG23, Category 6<sub>A</sub>, 500 MHz, LSOH

P/N: KE-TC6AHD-050	5 m	P/N: KE-TC6AHD-250	25 m
P/N: KE-TC6AHD-100	10 m	P/N: KE-TC6AHD-300	30 m
P/N: KE-TC6AHD-150	15 m	P/N: KE-TC6AHD-350	35 m
P/N: KE-TC6AHD-200	20 m	P/N: KE-TC6AHD-400	40 m

- allows to easily and quickly implement any necessary changes in a data center without a need to outsource other installation capacity
- simplifies and streamlines a management of cable routes
- enables transmission of all high-speed protocols including 10GBASE-T
- guarantees a bandwidth of 500 MHz

Min. bending radius	installation	200 mm
	operation	100 mm
Max. tensile load		100 N (10 kg)
Temperature range	installation	0°C to +50°C
	operation	-20°C to +60°C
Cable core		STP 6x4x2xAWG 23
Outer cable diameter		25 mm
Copper conductor diameter		AWG 23



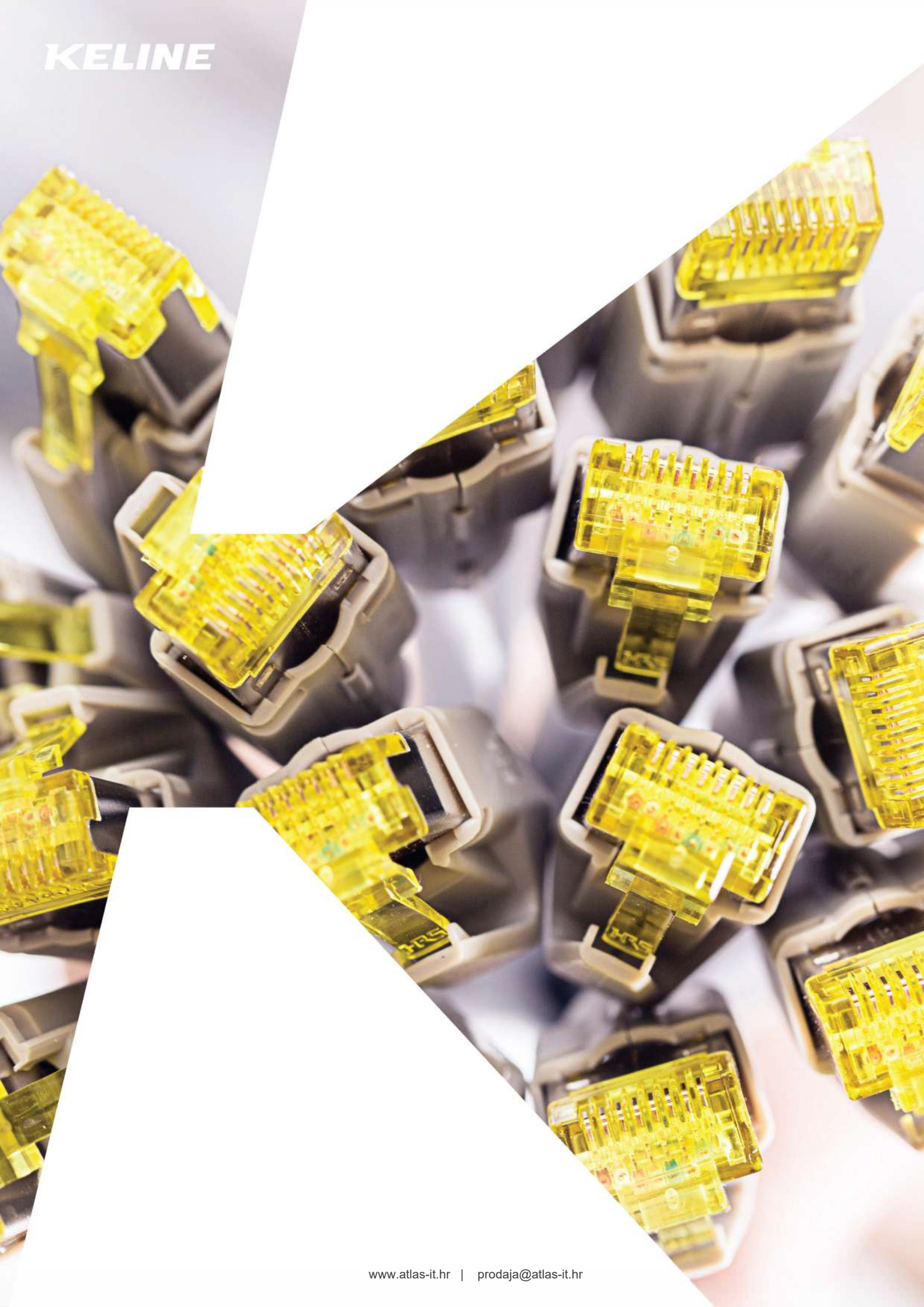
## Trunk cable /jack-plug/STP 6x4x2xAWG27, Category 6<sub>A</sub>, 500 MHz, LSOH

P/N: KE-CC6AHD-050	5 m	P/N: KE-CC6AHD-250	25 m
P/N: KE-CC6AHD-100	10 m	P/N: KE-CC6AHD-300	30 m
P/N: KE-CC6AHD-150	15 m	P/N: KE-CC6AHD-350	35 m
P/N: KE-CC6AHD-200	20 m	P/N: KE-CC6AHD-400	40 m

- designed for cross-connect links in a data center
- allows to easily and quickly implement any necessary changes in a data center without a need to outsource other installation capacity
- simplifies and streamlines a management of cable routes
- enables transmission of all high-speed protocols including 10GBASE-T
- guarantees a bandwidth of 500 MHz

Min. bending radius	installation	150 mm
	operation	90 mm
Max. tensile load		100 N (10 kg)
Temperature range during operation		-25°C to +60°C
Cable core		STP 6x4x2xAWG 27/7
Outer cable diameter		15,5 mm
Copper conductor diameter		AWG 27/7

**KELINE**



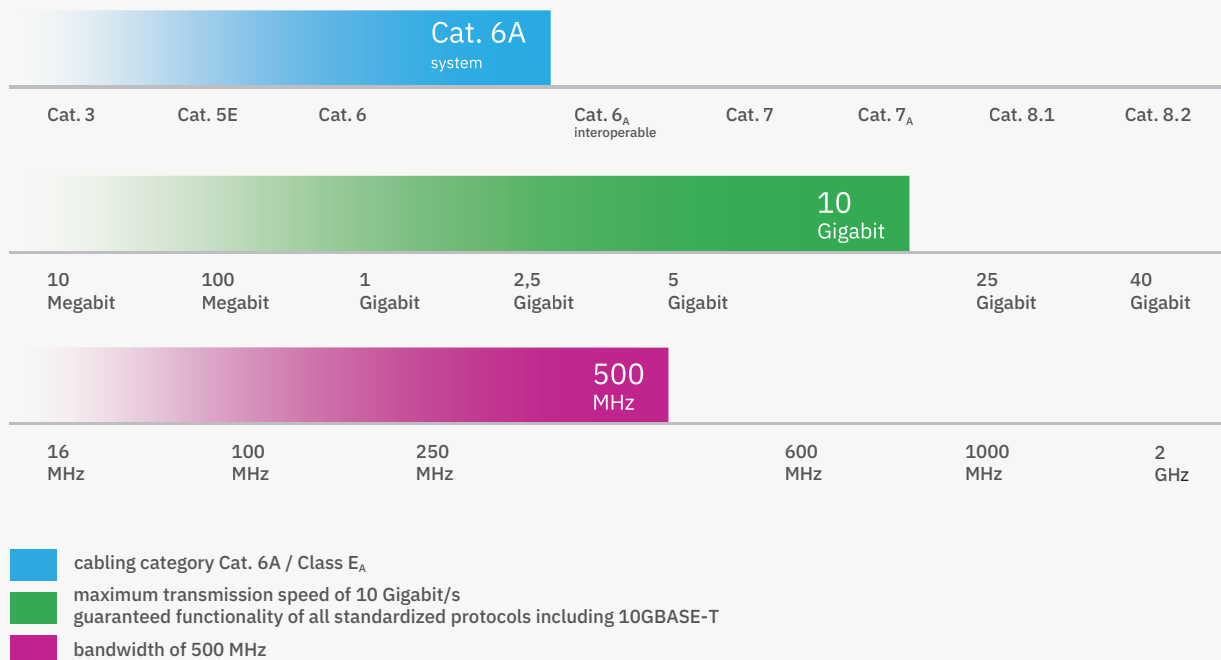
# Cat. 6A / Class E<sub>A</sub> system

This system is disadvantaged from a long-term perspective, as only components from a certain manufacturer are suitable for this solution.

From 2006 to 2010, Cat. 6A / Class E<sub>A</sub> systems played a major role, as they were the only way to implement cabling with performance of 10 Gigabit/s.

This solution has been surpassed by the advantages of Cat. 6<sub>A</sub> interoperable components.

The Cat. 6A / Class E<sub>A</sub> system meets the expectations and needs of users with the highest demands on the quantity of transferred data.



## Cat. 6A / Class E<sub>A</sub> system cabling ensures:

- immunity to electromagnetic interference and Alien Crosstalk
- performance category Cat. 6A and Class E<sub>A</sub> for channel topology mentioned in the certificate only (one of the following: 2 -, 3 - or 4 - connector channel)
- performance category Cat. 6A and Class E<sub>A</sub> for channel with components mentioned in the certificate

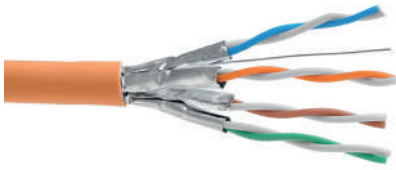
10  
Gigabit

Cat. 6<sub>A</sub>  
interoperable

550  
MHz

LSOH

B<sub>2ca</sub>



## STP cable 4x2xAWG23, Category 6<sub>A</sub>, 550 MHz, LSOH, Euroclass B<sub>2ca</sub> - s1a, d1, a1

P/N: KE550HS23-B2ca

500 m on a reel

- each pair individually shielded with AL/PET foil, halogen-free sheath
- enables transmission of all high-speed protocols including 10GBASE-T
- tested in a bandwidth up to 550 MHz

Min. bending radius	installation	58 mm
	operation	29 mm
Max. tensile load		100 N (10 kg)
Temperature range	installation	0°C to +50°C
	operation	-20°C to +60°C
Outer cable diameter		7,2 mm
Copper conductor diameter		AWG 23
NVP		78 %
Reaction to fire		B <sub>2ca</sub> - s1a, d1, a1
Fire safety		flame retardant, low smoke, zero halogen, non-corrosive

10  
Gigabit

Cat. 6<sub>A</sub>  
interoperable

550  
MHz

LSOH

D<sub>ca</sub>



## STP cable 4x2xAWG23, Category 6<sub>A</sub>, 550 MHz, LSOH, Euroclass D<sub>ca</sub> - s2, d2, a1

P/N: KE550HS23/1E-Dca

500 m on a reel

- each pair individually shielded with AL/PET foil, halogen-free sheath
- enables transmission of all high-speed protocols including 10GBASE-T
- tested in a bandwidth up to 550 MHz

Min. bending radius	installation	56 mm
	operation	28 mm
Max. tensile load		100 N (10 kg)
Temperature range	installation	0°C to +50°C
	operation	-20°C to +60°C
Outer cable diameter		6,9 mm
Copper conductor diameter		AWG 23
NVP		78 %
Reaction to fire		D <sub>ca</sub> - s2, d2, a1
Fire safety		flame retardant, low smoke, zero halogen, non-corrosive



10  
GigabitCat. 6A  
systém500  
MHz

## Keystone Jack, Category 6A, RJ45/s

P/N: KEJ-CEA-S-10G

- tool-free, fast and easy installation
- enables transmission of all high-speed protocols including 10GBASE-T within the system
- guarantees a bandwidth of 500 MHz within the system
- perfectly shielded against Alien Crosstalk and electromagnetic interference
- suitable for a wide range of outlets, duct and channel systems

**Note** see compatible outlets on p. 060



Suitable for installing on cables	with solid wires from 0,51 to 0,64 mm (from AWG 24 to AWG 22)
Required installation depth	for sockets with angled faceplates 15 - 40 mm
	for sockets with straight faceplates 40 mm
Contact pin material	phosphor-bronze alloy coated with 6 μ of gold
Insertion / extraction cycles	min. 750

10  
GigabitCat. 6A  
systém500  
MHz

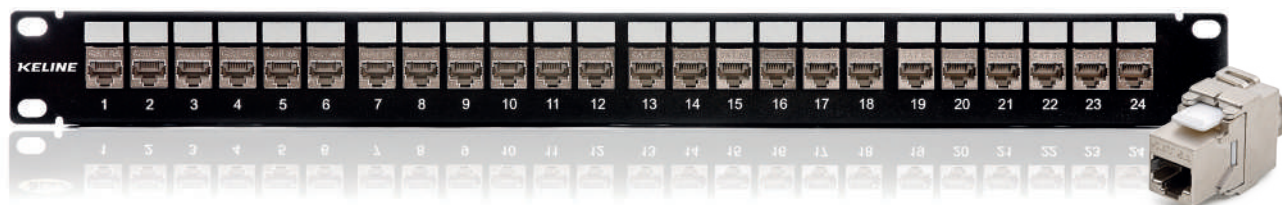
## Patch panel, Category 6A, 24xRJ45/s, black, keystones included

P/N: KEP-CEA-S-10G



- 24 keystone jacks KEJ-CEA-S-10G (on p. 026) included
- designed for 19" cabinets
- integrated cable management
- cable ties for gripping (24 pcs)
- set of M6 screws and captive nuts (4 pcs)
- grounding screw and washer (1 pc)

Height	1U (44,5 mm)	
Width	19" (482,6 mm)	
Depth (including cable management)	152 mm	
Material	front face	steel
	cable management	nickel-plated steel, corrosion-resistant
Color	black RAL 9005	
Surface	structured, matt	



10  
Gigabit

Cat. 6<sub>A</sub>  
interoperable

500  
MHz

LSOH



## Patch cable STP, Category 6<sub>A</sub>, LSOH



P/N: KEL-C6A-P-005	0,5 m	P/N: KEL-C6A-P-070	7 m
P/N: KEL-C6A-P-010	1 m	P/N: KEL-C6A-P-010	10 m
P/N: KEL-C6A-P-015	1,5 m	P/N: KEL-C6A-P-120	12 m
P/N: KEL-C6A-P-020	2 m	P/N: KEL-C6A-P-150	15 m
P/N: KEL-C6A-P-030	3 m	P/N: KEL-C6A-P-200	20 m
P/N: KEL-C6A-P-050	5 m		

- individually shielded pairs with stranded wires, halogen-free sheath
- connector RJ45 with patented multi-layered arrangement of contacts
- connector RJ45 complies with IEC 60603-7-x standard by its dimensions and transmission features
- enables transmission of all high-speed protocols including 10GBASE-T
- guarantees a bandwidth of 500 MHz
- perfectly shielded against Alien Crosstalk and electromagnetic interference

Temperature range	-25°C to +60°C
Min. bending radius	25 mm
Outer cable diameter	5,8 mm
Copper conductor diameter	AWG 27/7
Contact pin material	phosphor-bronze alloy coated with 50 μ of gold
Insertion / extraction cycles	min. 750

**Note** non-standard cable length must be specified in the order  
xx - patch cable color:

gray  
without marking

P/N: KEL-C6A-P-xxx



black  
-BK

P/N: KEL-C6A-P-xxx-BK



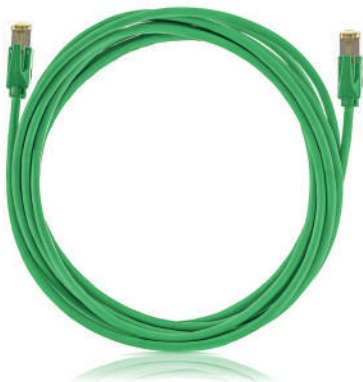
blue  
-BL

P/N: KEL-C6A-P-xxx-BL



green  
-GN

P/N: KEL-C6A-P-xxx-GN



yellow  
-YE

P/N: KEL-C6A-P-xxx-YE



red  
-RD

P/N: KEL-C6A-P-xxx-RD

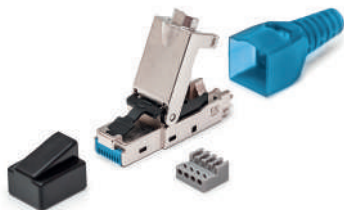


10  
GigabitCat. 6A  
system500  
MHz

## Toolless field terminated RJ45/s connector for Cat. 7<sub>A</sub>, Cat. 7, Cat. 6<sub>A</sub>, Cat. 6 cables

P/N: KE-FT45-C6AS

- direct termination on Cat. 7<sub>A</sub>, Cat. 7, Cat. 6<sub>A</sub>, Cat. 6 cables
- tool-free, fast and easy installation
- connection of IP cameras and wireless devices without the need of using outlets and patch cords
- enables transmission of all high-speed protocols including 10GBASE-T within the system Cat. 6A
- guarantees a bandwidth of 500 MHz within the system Cat. 6A
- perfectly shielded against Alien Crosstalk and electromagnetic interference



Suitable for installing on cables	with solid wires from AWG 26 to AWG 22
	with stranded wires from AWG 27 to AWG 22
	with outer diameter from 6 mm to 9 mm
Contact pin material	phosphor-bronze alloy coated with 50 μ of gold
Required installation depth	55 mm

10  
GigabitCat. 6A  
system500  
MHz

## Field terminated, toolless RJ45/s connector for Cat. 7<sub>A</sub>, Cat. 7, Cat. 6<sub>A</sub> cables

P/N: KE-FFT45-C6AS

- direct termination on Cat. 7<sub>A</sub>, Cat. 7, Cat. 6<sub>A</sub> cables
- tool-free, fast and easy installation
- connection of IP cameras and wireless devices without the need of using outlets and patch cords
- enables transmission of all high-speed protocols including 10GBASE-T within the system Cat. 6A
- guarantees a bandwidth of 500 MHz within the system Cat. 6A
- perfectly shielded against Alien Crosstalk and electromagnetic interference



Suitable for installing on cables	with solid wires from AWG 23 to AWG 22
	with outer diameter from 6 mm to 9 mm
Contact pin material	phosphor-bronze alloy coated with 50 μ of gold
Required installation depth	50 mm

10  
Gigabit

Cat. 6A  
system

500  
MHz

## Connector RJ45/s for Cat. 7<sub>A</sub>, Cat. 7, Cat. 6<sub>A</sub>, Cat. 6 cables

P/N: KE-RJ45-SC6A



p. 074



- direct termination on Cat. 7<sub>A</sub>, Cat. 7, Cat. 6<sub>A</sub>, Cat. 6 shielded cables
- special crimping pliers are required for mounting KE-CT-SC6A on p. 074
- ideal for IP camera and wireless devices even where the tool-less connector KE-FT45-C6AS cannot be used for limited space
- supplied with boots for this connector
- enables transmission of all high-speed protocols including 10GBASE-T within the system Cat. 6A
- guarantees a bandwidth of 500 MHz within the system Cat. 6A
- perfectly shielded against Alien Crosstalk and electromagnetic interference

Suitable for installing on cables	with solid wires from AWG 23 to AWG 22
	with outer diameter from 5 mm to 8 mm
Contact pin material	copper alloy coated with 50 μ of gold
Insertion / extraction cycles	min. 750
Required installation depth	23 mm

10  
Gigabit

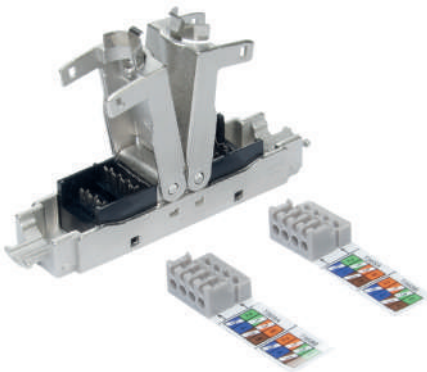
Cat. 6A  
system

500  
MHz



## Connection module Category 6A, HD, toolless

P/N: KE-EXT-EA



- designed for reconnecting damaged cables or, in case of necessity, to extend the link
- low profile design
- tool-free, fast and easy installation
- enables transmission of all high-speed protocols including 10GBASE-T
- guarantees a bandwidth of 500 MHz
- perfectly shielded against Alien Crosstalk and electromagnetic interference
- applicable on cables with solid wires (guarantee of anti-corrosive and gas-tight joint)

Suitable for installing on cables	with solid wires from AWG 24 to AWG 22
	with outer diameter from 5 mm to 9,5 mm
Contact pin material	phosphor-bronze alloy coated
Dimensions	61 x 14 x 13 mm

600  
MHz

## Connection module LSA

P/N: KE-AD-C61S



p. 075



- designed for reconnecting damaged Cat. 7<sub>A</sub>, Cat. 7, Cat. 6<sub>A</sub>, Cat. 6, Cat. 5E cables or, in case of a need, to extend the link
- LSA terminals ensure connection of cables
- guarantees a bandwidth of 600 MHz
- performance category depends on a specific topology and network configuration
- LSA Krone® tool is required for mounting on p. 075

Suitable for installing on cables	with solid wires from 0,40 mm to 0,64 mm (from AWG 26 to AWG 22)
	with outer diameter from 4,5 mm to 7,9 mm
Dimensions	83,7 x 37 x 23 mm



# Cat. 6 components shielded

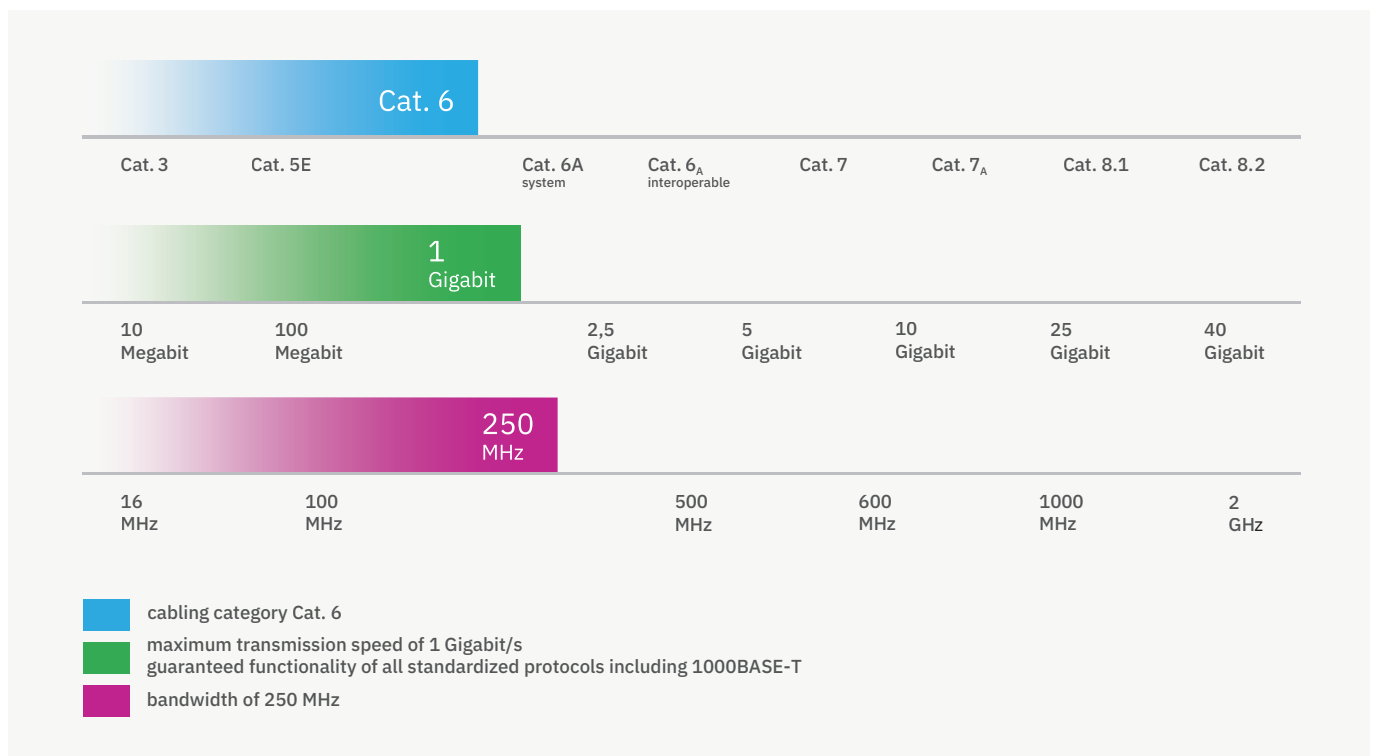
Cat. 6 has lost its importance when 10GBASE-T was introduced in 2006.

There is no protocol which would effectively utilize Cat. 6.

A bandwidth of 250 MHz is insufficient for 10GBASE-T and, in case of 1000BASE-T, only 32 % is used, which means 170 MHz of wasted bandwidth!

Due to Alien Crosstalk issues, Cat. 6 cabling is not able to provide reliable transmission of 2,5GBASE-T and 5GBASE-T protocols.

Cat. 6 enables the same maximum transmission speed as Cat. 5E.



10  
Gigabit

Cat. 6<sub>A</sub>  
interoperable

550  
MHz

LSOH

D<sub>ca</sub>



## STP cable 4x2xAWG23, Category 6<sub>A</sub>, 550 MHz, LSOH, Euroclass D<sub>ca</sub> - s2, d2, a1

P/N: KE550HS23/1E-Dca

500 m on a reel

- each pair individually shielded with AL/PET foil, halogen-free sheath
- enables transmission of all high-speed protocols including 10GBASE-T
- tested in bandwidth up to 550 MHz



Min. bending radius	installation	56 mm
	operation	28 mm
Max. tensile load		100 N (10 kg)
Temperature range	installation	0°C to +50°C
	operation	-20°C to +60°C
Outer cable diameter		6,9 mm
Copper conductor diameter		AWG 23
NVP		78 %
Reaction to fire		D <sub>ca</sub> - s2, d2, a1
Fire safety		flame retardant, low smoke, zero halogen, non-corrosive

1  
Gigabit

Cat. 6

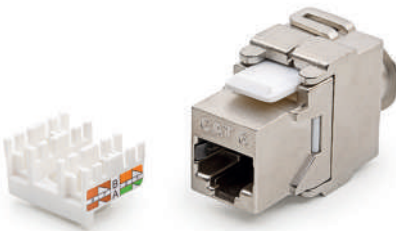
250  
MHz

## Keystone Jack, Category 6, RJ45/s

P/N: KEJ-C6-S-TL

- tool-free, fast and easy installation
- enables transmission of all high-speed protocols including 1000BASE-T
- guarantees a bandwidth of 250 MHz
- perfectly shielded against Alien Crosstalk and electromagnetic interference
- suitable for a wide range of outlets, duct and channel systems

**Note** see compatible outlets on p. 060



Suitable for installing on cables	with solid wires from 0,51 to 0,64 mm (from AWG 24 to AWG 22)
Required installation depth	for sockets with angled faceplates 15 - 40 mm
	for sockets with straight faceplates 40 mm
Contact pin material	phosphor-bronze alloy coated with 6 μ of gold
Insertion / extraction cycles	min. 750

1  
Gigabit

Cat. 6

250  
MHz

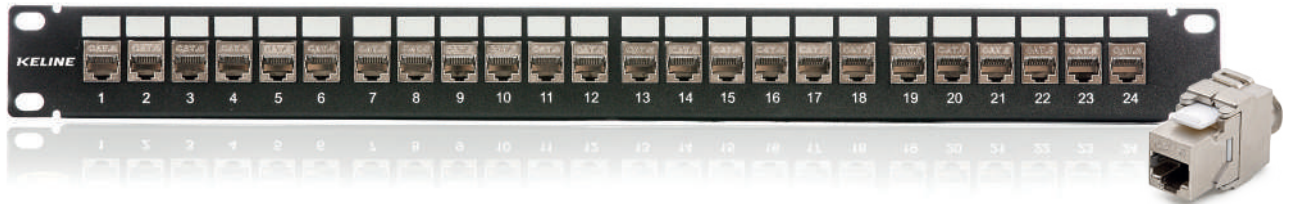
## Patch panel, Category 6, 24xRJ45/s, black, keystone included

P/N: KEP-C6-S-TL

- 24 keystone jacks KEJ-C6-S-TL (on p. 031) included
- designed for 19" cabinets
- integrated cable management
- cable ties for gripping (24 pcs)
- set of M6 screws and captive nuts (4 pcs)
- grounding screw and washer (1 pc)



Height	1U (44,5 mm)	
Width	19" (482,6 mm)	
Depth (including cable management)	152 mm	
Material	front face	steel
	cable management	nickel-plated steel, corrosion-resistant
Color	black RAL 9005	
Surface	structured, matt	

1  
Gigabit

Cat. 6

250  
MHz
**HD**  
HIGH DENSITY

## Patch panel KOMPAKT HD, Category 6, 24xRJ45/s, 0,5U

P/N: 606068

- reaches a density of up to 48 ports in 1U
- 110/LSA termination blocks
- fast and easy installation using 110 or Krone® insertion tool on p. 075
- enables transmission of all high-speed protocols including 1000BASE-T
- guarantees a bandwidth of 250 MHz
- cable ties for gripping (24 pcs)
- perfectly shielded against electromagnetic interference
- designed for 19" cabinets
- integrated cable management



p. 075



Height	0,5U	
Width	19" (482,6 mm)	
Depth (including cable management)	114 mm	
Material	steel	
Color	black RAL 9005	
Surface	structured, matt	
Suitable for cables	with solid wires from 0,51 to 0,64 mm (from AWG 24 to AWG 22)	



1  
Gigabit

Cat. 6

250  
MHz

LSOH

## Patch cable STP, Category 6, LSOH

P/N: PC-C6-S-005	0,5 m	P/N: PC-C6-S-050	5 m
P/N: PC-C6-S-010	1 m	P/N: PC-C6-S-075	7,5 m
P/N: PC-C6-S-015	1,5 m	P/N: PC-C6-S-100	10 m
P/N: PC-C6-S-020	2 m	P/N: PC-C6-S-150	15 m
P/N: PC-C6-S-030	3 m	P/N: PC-C6-S-200	20 m

- individually shielded pairs with stranded wires, halogen-free sheath
- connector RJ45 complies with IEC 60603-7-x standard by its dimensions and transmission features
- enables transmission of all high-speed protocols up to 1000BASE-T
- guarantees a bandwidth of 250 MHz
- shielded against electromagnetic interference

Min. bending radius	25 mm
Temperature range	-25°C to +60°C
Outer cable diameter	6,2 mm
Copper conductor diameter	AWG 27/7
Contact pin material	phosphor-bronze alloy coated with 50 μ of gold
Insertion / extraction cycles	min. 750

non-standard cable length must be specified in the order  
xx - patch cable color:

<b>Note</b> gray	-without marking	green	-GN
black	-BK	yellow	-YE
blue	-BL	red	-RD



10  
Gigabit

Cat. 6A  
system

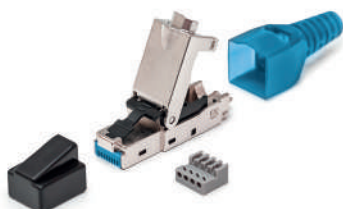
500  
MHz

## Toolless field termination RJ45/s connector for Cat. 7<sub>A</sub>, Cat. 7, Cat. 6<sub>A</sub>, Cat. 6 cables

P/N: KE-FT45-C6AS

- direct termination on Cat. 7<sub>A</sub>, Cat. 7, Cat. 6<sub>A</sub>, Cat. 6 cables
- tool-free, fast and easy installation
- connection of IP cameras and wireless devices without the need of using outlets and patch cords
- enables transmission of all high-speed protocols including 10GBASE-T within the system Cat. 6A
- guarantees a bandwidth of 500 MHz within the system Cat. 6A
- perfectly shielded against Alien Crosstalk and electromagnetic interference

Suitable for installing on cables	with solid wires from AWG 26 to AWG 22
	with stranded wires from AWG 27 to AWG 22
	with outer diameter from 6 mm to 9 mm
Contact pin material	phosphor-bronze alloy coated with 50 μ of gold
Required installation depth	55 mm





10 Gigabit  
Cat. 6A system  
500 MHz



p. 074



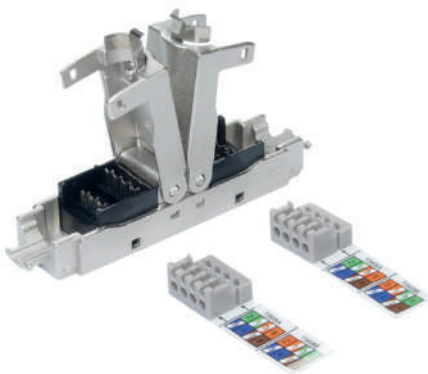
## Connector RJ45/s for Cat. 7<sub>A</sub>, Cat. 7, Cat. 6<sub>A</sub>, Cat. 6 cables

P/N: KE-RJ45-SC6A

- direct termination on Cat. 7<sub>A</sub>, Cat. 7, Cat. 6<sub>A</sub>, Cat. 6 shielded cables
- special crimping pliers are required for mounting KE-CT-SC6A on p. 074
- ideal for IP camera and wireless devices even where the tool-less connector KE-FT45-C6AS cannot be used for limited space
- supplied with boots for this connector
- enables transmission of all high-speed protocols including 10GBASE-T within the system Cat. 6A
- guarantees a bandwidth of 500 MHz within the system Cat. 6A
- perfectly shielded against Alien Crosstalk and electromagnetic interference

Suitable for installing on cables	with solid wires from AWG 23 to AWG 22
	with outer diameter from 5 mm to 8 mm
Contact pin material	copper alloy coated with 50 μ of gold
Insertion / extraction cycles	min. 750
Required installation depth	23 mm

10 Gigabit  
Cat. 6A system  
500 MHz  
**HD**  
HIGH DENSITY



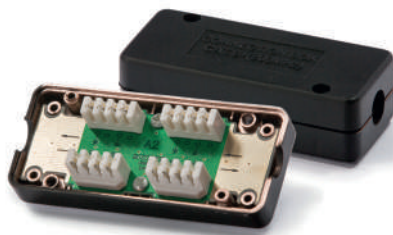
## Connection module Category 6A, HD, toolless

P/N: KE-EXT-EA

- designed for reconnecting damaged cables or, in case of a need to extend the link
- low profile design
- tool-free, fast and easy installation
- enables transmission of all high-speed protocols including 10GBASE-T
- guarantees a bandwidth of 500 MHz
- perfectly shielded against Alien Crosstalk and electromagnetic interference
- applicable on cables with solid wires (guarantee of anti-corrosive and gas-tight joint)

Suitable for installing on cables	with solid wires from AWG 24 to AWG 22
	with outer diameter from 5 mm to 9,5 mm
Contact pin material	phosphor-bronze alloy coated
Dimensions	61 x 14 x 13 mm

600 MHz



p. 075

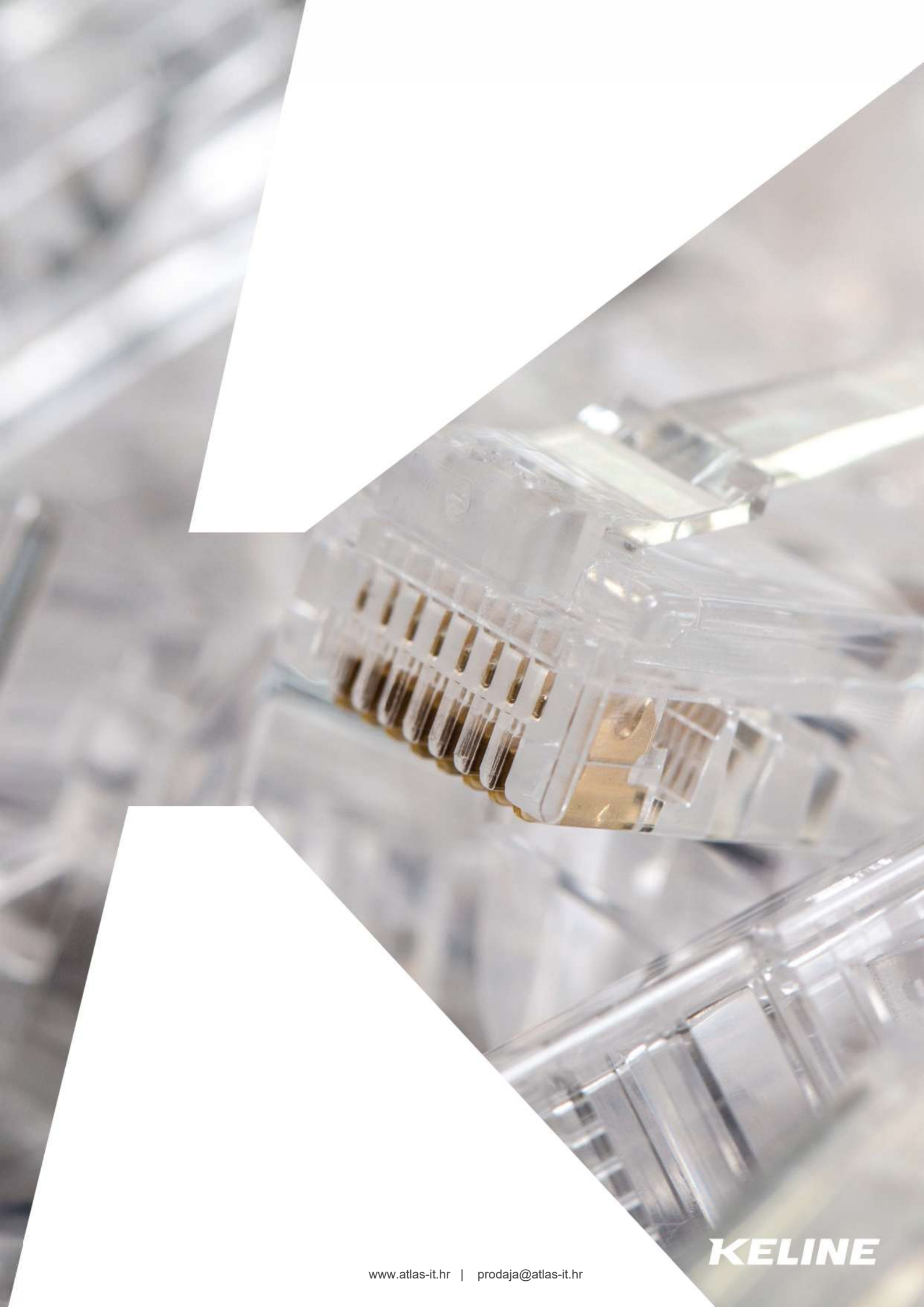


## Connection module LSA

P/N: KE-AD-C61S

- designed for reconnecting damaged Cat. 7<sub>A</sub>, Cat. 7, Cat. 6<sub>A</sub>, Cat. 6, Cat. 5E cables or, in case of necessity, to extend the link
- LSA terminals ensure connection of cables
- guarantees a bandwidth of 600 MHz
- performance category depends on a specific topology and network configuration
- LSA Krone® tool is required for mounting on p. 075

Suitable for installing on cables	with solid wires from 0,40 mm to 0,64 mm (from AWG 26 to AWG 22)
	with outer diameter from 4,5 mm to 7,9 mm
Dimensions	83,7 x 37 x 23 mm



# Cat. 6 unshielded components

Cat. 6 lost its significance when 10GBASE-T was introduced in 2006.

There is no protocol which would effectively utilize Cat. 6.

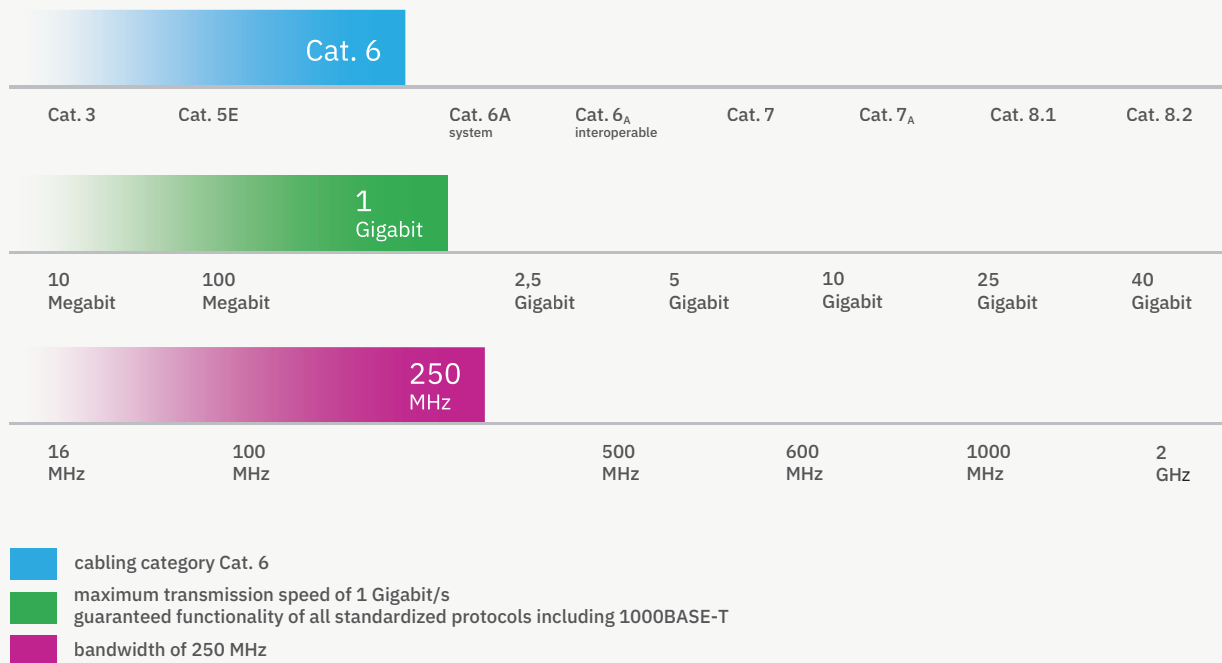
A bandwidth of 250 MHz is insufficient for 10GBASE-T and, in case of 1000BASE-T, only 32 % is used, which means 170 MHz of wasted bandwidth!

Due to Alien Crosstalk issues, Cat. 6 cabling is not able to provide reliable transmission of 2,5GBASE-T and 5GBASE-T protocols.

Cat. 6 enables the same maximum transmission speed as Cat. 5E.

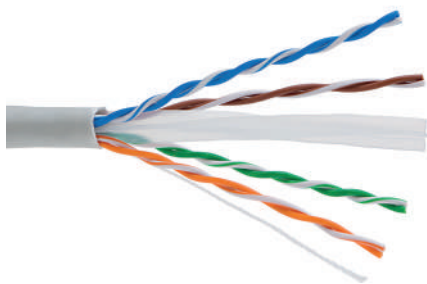
Unshielded components are not resistant to electromagnetic interference.

Unshielded cables must be installed with a distance of up to 5x greater from power cables than shielded cables.



1 Gigabit Cat. 6 400 MHz LSOH

D<sub>ca</sub>



## UTP (U/UTP) cable 4x2x0,54, Category 6, 400 MHz, LSOH, Euroclass D<sub>ca</sub> - s2, d2, a1

P/N: KE400U23LSOH-Dca-RLX

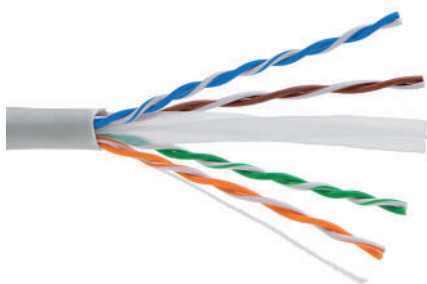
305 m in a box

- unshielded cable with pairs separated by a cross filler, halogen-free sheath
- enables transmission of all high-speed protocols including 1000BASE-T
- tested in a bandwidth up to 400 MHz
- not shielded against electromagnetic interference

Min. bending radius	installation	48 mm
	operation	24 mm
Max. tensile load		100 N (10 kg)
Temperature range	installation	0°C to +50°C
	operation	-20°C to +60°C
Outer cable diameter		6 mm
Copper conductor diameter		0,54 mm
NVP		69 %
Reaction to fire		D <sub>ca</sub> - s2, d2, a1
Fire safety		flame retardant, low smoke, zero halogen, non-corrosive

1 Gigabit Cat. 6 400 MHz LSOH

D<sub>ca</sub>



## UTP (U/UTP) cable 4x2x0,54, Category 6, 400 MHz, LSOH, Euroclass D<sub>ca</sub> - s2, d2, a1

P/N: KE400U23LSOH-Dca

500 m on a reel

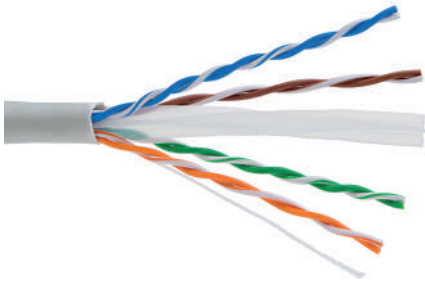
- unshielded cable with pairs separated by a cross filler, halogen-free sheath
- enables transmission of all high-speed protocols including 1000BASE-T
- tested in a bandwidth up to 400 MHz
- not shielded against electromagnetic interference

Min. bending radius	installation	48 mm
	operation	24 mm
Max. tensile load		100 N (10 kg)
Temperature range	installation	0°C to +50°C
	operation	-20°C to +60°C
Outer cable diameter		6 mm
Copper conductor diameter		0,54 mm
NVP		69 %
Reaction to fire		D <sub>ca</sub> - s2, d2, a1
Fire safety		flame retardant, low smoke, zero halogen, non-corrosive



1 Gigabit  
Cat. 6  
400 MHz

E<sub>ca</sub>



## UTP (U/UTP) cable 4x2x0,54, Category 6, 400 MHz, Euroclass E<sub>ca</sub>

P/N: KE400U23-Eca

305 m in a box

- unshielded cable with pairs separated by a cross filler, PVC sheath
- enables transmission of all high-speed protocols including 1000BASE-T
- tested in a bandwidth up to 400 MHz
- not shielded against electromagnetic interference

Min. bending radius	installation	48 mm
	operation	24 mm
Max. tensile load		100 N (10 kg)
Temperature range	installation	0°C to +50°C
	operation	-20°C to +60°C
Outer cable diameter		6 mm
Copper conductor diameter		0,54 mm
NVP		69 %
Reaction to fire		E <sub>ca</sub>
Fire safety		flame retardant

1 Gigabit  
Cat. 6  
250 MHz



## Keystone Jack, Category 6, RJ45/u

P/N: KEJ-C6-U-TL

- tool-free, fast and easy installation
- enables transmission of all high-speed protocols including 1000BASE-T
- guarantees a bandwidth of 250 MHz
- not shielded against electromagnetic interference
- suitable for a wide range of outlets, duct and channel systems

**Note** see compatible outlets on p. 060

Suitable for installing on cables	with solid wires from 0,51 to 0,64 mm (from AWG 24 to AWG 22)
Required installation depth	for sockets with angled faceplates 15 - 35 mm
	for sockets with straight faceplates 35 mm
Contact pin material	phosphor-bronze alloy coated with 6 μ of gold
Insertion / extraction cycles	min. 750

1  
Gigabit

Cat. 6

250  
MHz

## Patch panel, Category 6, 24xRJ45/u, black, keystone included

P/N: KEP-C6-U-TL

- 24 keystone jacks KEJ-C6-U-TL (on p. 038) included
- designed for 19" cabinets
- integrated cable management
- not shielded against electromagnetic interference
- cable ties for gripping (24 pcs)
- set of M6 screws and captive nuts (4 pcs)
- grounding screw and washer (1 pc)



Height	1U (44,5 mm)	
Width	19" (482,6 mm)	
Depth (including cable management)	152 mm	
Material	front face	steel
	cable management	nickel-plated steel, corrosion-resistant
Color	black RAL 9005	
Surface	structured, matt	



1  
Gigabit

Cat. 6

250  
MHz

## Patch panel KOMPAKT, Category 6, 24xRJ45/u

P/N: 606059

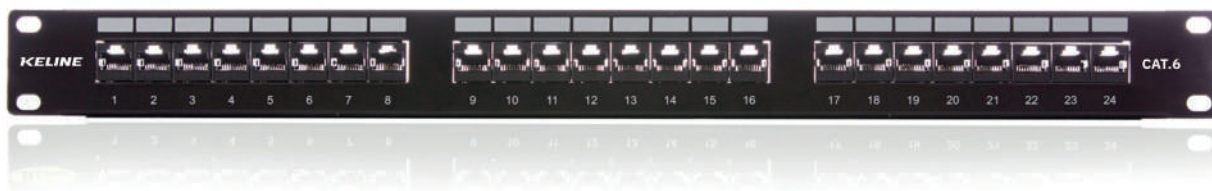
- 110/LSA termination blocks
- fast and easy installation using 110 or Krone® insertion tool on p. 075
- enables transmission of all high-speed protocols including 1000BASE-T
- guarantees a bandwidth of 250 MHz
- not shielded against electromagnetic interference
- designed for 19" cabinets
- integrated cable management



p. 075



Height	1U (44,5 mm)	
Width	19" (482,6 mm)	
Depth (including cable management)	115 mm	
Material	steel	
Color	black RAL 9005	
Surface	structured, matt	
Suitable for cables	with solid wires from 0,51 to 0,64 mm (from AWG 24 to AWG 22)	



1 Gigabit Cat. 6 250 MHz



## Patch cable UTP, Category 6

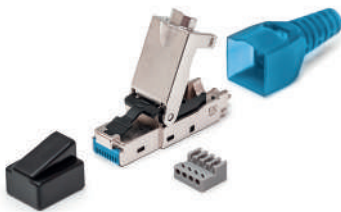
P/N: KEN-C6-U-005	0,5 m	P/N: KEN-C6-U-050	5 m
P/N: KEN-C6-U-010	1 m	P/N: KEN-C6-U-070	7 m
P/N: KEN-C6-U-015	1,5 m	P/N: KEN-C6-U-100	10 m
P/N: KEN-C6-U-020	2 m	P/N: KEN-C6-U-150	15 m
P/N: KEN-C6-U-030	3 m	P/N: KEN-C6-U-200	20 m

**Note** non-standard cable length must be specified in the order

- unshielded cable with stranded wires, PVC sheath
- connector RJ45 complies with IEC 60603-7-x standard by its dimensions and transmission feature
- enables transmission of all high-speed protocols up to 1000BASE-T
- guarantees a bandwidth of 250 MHz
- not shielded against electromagnetic interference

Min. bending radius	25 mm	
Temperature range	-25°C to +60°C	
Outer cable diameter	5,9 mm	
Copper conductor diameter	AWG 24/7	
Contact pin material	phosphor-bronze alloy coated with 50 μ of gold	
Insertion / extraction cycles	min. 750	
Color	cable	gray RAL 7035
	boots	gray RAL 7035

10 Gigabit Cat. 6A system 500 MHz



## Toolless field termination RJ45/s connector for Cat. 7<sub>A</sub>, Cat. 7, Cat. 6<sub>A</sub>, Cat. 6 cables

P/N: KE-FT45-C6AS

- direct termination on Cat. 7<sub>A</sub>, Cat. 7, Cat. 6<sub>A</sub>, Cat. 6 cables
- tool-free, fast and easy installation
- connection of IP cameras and wireless devices without the need of using outlets and patch cords
- enables transmission of all high-speed protocols including 10GBASE-T within the system Cat. 6A
- guarantees a bandwidth of 500 MHz within the system Cat. 6A
- perfectly shielded against Alien Crosstalk and electromagnetic interference

Suitable for installing on cables	with solid wires from AWG 26 to AWG 22
	with stranded wires from AWG 27 to AWG 22
	with outer diameter from 6 mm to 9 mm
Contact pin material	phosphor-bronze alloy coated with 50 μ of gold
Required installation depth	55 mm

10  
Gigabit

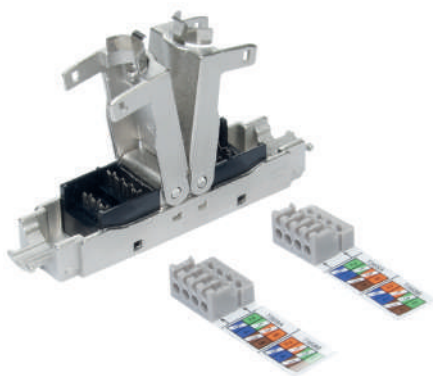
Cat. 6A  
system

500  
MHz

**HD**  
HIGH DENSITY

## Connection module Category 6A, HD, toolless

P/N: KE-EXT-EA



- designed for reconnecting damaged cables or, in case of necessity, to extend the link
- low profile design
- tool-free, fast and easy installation
- enables transmission of all high-speed protocols including 10GBASE-T
- guarantees a bandwidth of 500 MHz
- perfectly shielded against Alien Crosstalk and electromagnetic interference
- applicable on cables with solid wires (guarantee of anti-corrosive and gas-tight joint)

Suitable for installing on cables

with solid wires from AWG 24 to AWG 22  
with outer diameter from 5 mm to 9,5 mm

Contact pin material

phosphor-bronze alloy coated

Dimensions

61 x 14 x 13 mm

600  
MHz



p. 075



## Connection module LSA

P/N: KE-AD-C61S

- designed for reconnecting damaged Cat. 7<sub>A</sub>, Cat. 7, Cat. 6<sub>A</sub>, Cat. 6, Cat. 5E cables or, in case of necessity, to extend the link
- LSA terminals ensure connection of cables
- guarantees a bandwidth of 600 MHz
- performance category depends on a specific topology and network configuration
- LSA Krone® tool is required for mounting on p. 075

Suitable for installing on cables

with solid wires from 0,40 mm to 0,64 mm  
(from AWG 26 to AWG 22)

with outer diameter from 4,5 mm to 7,9 mm

Dimensions

83,7 x 37 x 23 mm



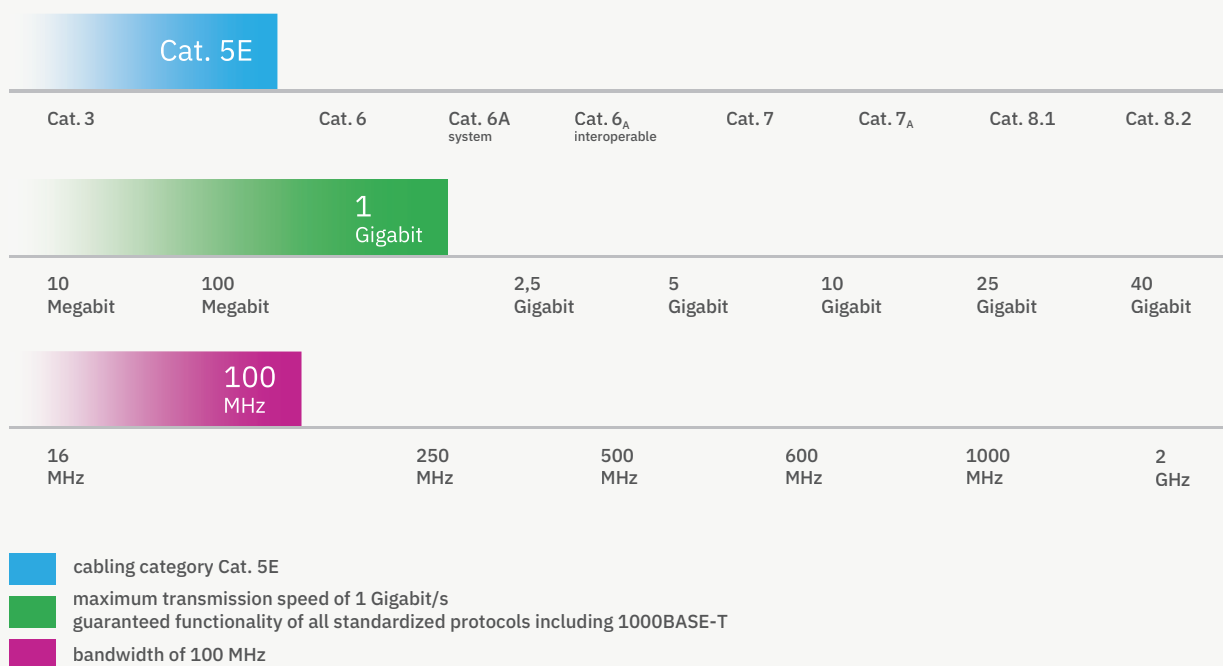
# Cat. 5E shielded components

These components have been installed for more than 20 years and since 2002 represent the standardized minimum.

Components meet the bandwidth requirements of 1000BASE-T with a safety margin greater than 20%.

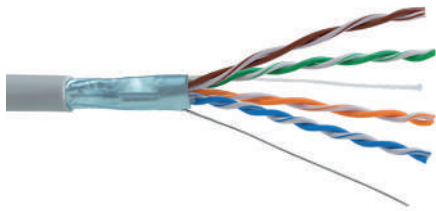
Cat. 5E components are an appropriate solution for companies with lower demands on the volume of transferred data.

Shielded components guarantee resistance to electromagnetic interference.



1 Gigabit Cat. 5E 300 MHz LSOH

D<sub>ca</sub>



## FTP (F/UTP) cable 4x2xAWG24, Category 5E, 300 MHz, LSOH, Euroclass D<sub>ca</sub> - s2, d1, a1

P/N: KE300S24LSOH-Dca-RLX

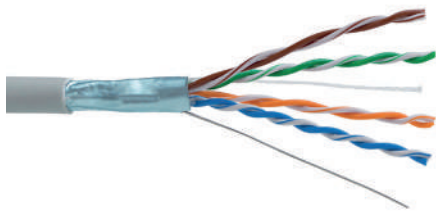
305 m in a box

- cable shielded with AL/PET foil, halogen-free sheath
- enables transmission of all high-speed protocols including 1000BASE-T
- tested in a bandwidth up to 300 MHz
- enables RJ45 connectors to be mounted directly to a cable

Min. bending radius	installation	49 mm
	operation	25 mm
Max. tensile load		110 N (11 kg)
Temperature range	installation	0°C to +60°C
	operation	-20°C to +60°C
Outer cable diameter		6,1 mm
Copper conductor diameter		AWG 24
NVP		69 %
Reaction to fire		D <sub>ca</sub> - s2, d1, a1
Fire safety		flame retardant, low smoke, zero halogen, non-corrosive

1 Gigabit Cat. 5E 300 MHz LSOH

D<sub>ca</sub>



## FTP (F/UTP) cable 4x2xAWG24, Category 5E, 300 MHz, LSOH, Euroclass D<sub>ca</sub> - s2, d1, a1

P/N: KE300S24LSOH-Dca

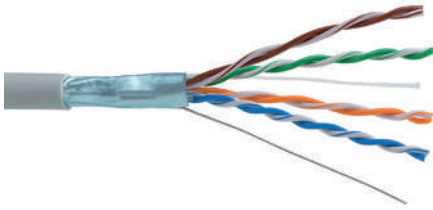
500 m on a reel

- cable shielded with AL/PET foil, halogen-free sheath
- enables transmission of all high-speed protocols including 1000BASE-T
- tested in a bandwidth up to 300 MHz
- enables RJ45 connectors to be mounted directly to a cable

Min. bending radius	installation	49 mm
	operation	25 mm
Max. tensile load		110 N (11 kg)
Temperature range	installation	0°C to +60°C
	operation	-20°C to +60°C
Outer cable diameter		6,1 mm
Copper conductor diameter		AWG 24
NVP		69 %
Reaction to fire		D <sub>ca</sub> - s2, d1, a1
Fire safety		flame retardant, low smoke, zero halogen, non-corrosive

1 Gigabit Cat. 5E 300 MHz

E<sub>ca</sub>



## FTP (F/UTP) cable 4x2xAWG24, Category 5E, 300 MHz, Euroclass E<sub>ca</sub>

P/N: KE300S24-Eca-RLX

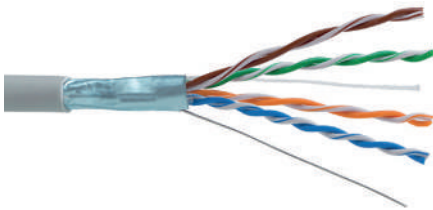
305 m in a box

- cable shielded with AL/PET foil, PVC sheath
- enables transmission of all high-speed protocols including 1000BASE-T
- tested in a bandwidth up to 300 MHz
- enables RJ45 connectors to be mounted directly to a cable

Min. bending radius	installation	47 mm
	operation	24 mm
Max. tensile load		80 N (8 kg)
Temperature range	installation	0°C to +50°C
	operation	-20°C to +60°C
Outer cable diameter		5,8 mm
Copper conductor diameter		AWG 24
NVP		69 %
Reaction to fire		E <sub>ca</sub>
Fire safety		flame retardant

1 Gigabit Cat. 5E 300 MHz

E<sub>ca</sub>



## FTP (F/UTP) cable 4x2xAWG24, Category 5E, 300 MHz, Euroclass E<sub>ca</sub>

P/N: KE300S24-Eca

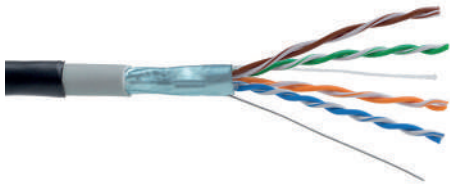
500 m on a reel

- cable shielded with AL/PET foil, PVC sheath
- enables transmission of all high-speed protocols including 1000BASE-T
- tested in a bandwidth up to 300 MHz
- enables RJ45 connectors to be mounted directly to a cable

Min. bending radius	installation	47 mm
	operation	24 mm
Max. tensile load		80 N (8 kg)
Temperature range	installation	0°C to +50°C
	operation	-20°C to +60°C
Outer cable diameter		5,8 mm
Copper conductor diameter		AWG 24
NVP		69 %
Reaction to fire		E <sub>ca</sub>
Fire safety		flame retardant

1 Gigabit Cat. 5E 300 MHz OUTDOOR

PE



## Outdoor / direct-burial FTP (F/UTP) cable, 4x2xAWG24, Category 5E, 300 MHz, PE

P/N: KE300S24OUT

500 m on a reel

- double sheath with total thickness of 1,65 mm
- extremely resistant to mechanical damage and environmental influences
- resistant to moisture, water and UV radiation
- cable core is identical to a construction of KE300S24-Eca on p. 044
- enables RJ45 connectors to be mounted directly to a cable
- enables transmission of all high-speed protocols including 1000BASE-T
- tested in a bandwidth up to 300 MHz

Min. bending radius	installation	64 mm
	operation	32 mm
Max. tensile load		82 N (8,2 kg)
Temperature range	installation	0°C to +50°C
	operation	-20°C to +75°C
Outer cable diameter		8,0 mm
Copper conductor diameter		AWG 24
Outer PE sheath thickness		1,25 mm
Inner sheath thickness		0,4 mm
NVP		ca. 69 %

1 Gigabit Cat. 5E 125 MHz LSOH



## Patch cable for flexible links FTP (F/UTP), 4x2xAWG26, Category 5E, 125 MHz, LSOH

P/N: KE300S26-RLX

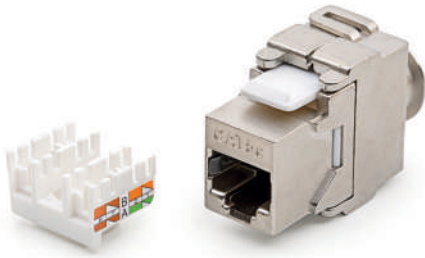
305 m in a box

- cable shielded with AL/PET foil, LSOH sheath
- enables transmission of all high-speed protocols including 1000BASE-T
- guarantees a bandwidth of 125 MHz
- enables RJ45 connectors to be mounted directly to a cable

Min. bending radius	installation	44 mm
	operation	22 mm
Max. tensile load		55 N (5,5 kg)
Temperature range	installation	0°C to +50°C
	operation	-20°C to +60°C
Outer cable diameter		5,5 mm
Copper conductor diameter		0,48 (AWG 26)
NVP		67 %



1 Gigabit  
Cat. 5E  
100 MHz



## Keystone Jack, Category 5E, RJ45/s

P/N: KEJ-C5E-S-TL

- tool-free, fast and easy installation
- enables transmission of all high-speed protocols including 1000BASE-T
- guarantees a bandwidth of 100 MHz
- perfectly shielded against electromagnetic interference
- suitable for a wide range of outlets, duct and channel systems

**Note** see compatible outlets on p. 060

Suitable for installing on cables	with solid wires from 0,51 to 0,64 mm (from AWG 24 to AWG 22)
Required installation depth	for sockets with angled faceplates 15 - 40 mm
	for sockets with straight faceplates 40 mm
Contact pin material	phosphor-bronze alloy coated with 6 μ of gold
Insertion / extraction cycles	min. 750

1 Gigabit  
Cat. 5E  
100 MHz

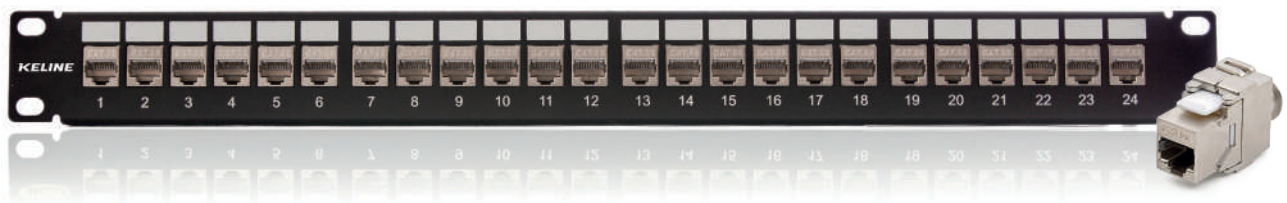


## Patch panel, Category 5E, 24xRJ45/s, black, keystone included

P/N: KEP-C5E-S-TL

- 24 keystone jacks KEJ-C5E-S-TL (on p. 046) included
- designed for 19" cabinets
- integrated cable management
- cable ties for gripping (24 pcs)
- set of M6 screws and captive nuts (4 pcs)
- grounding screw and washer (1 pc)

Height	1U (44,5 mm)	
Width	19" (482,6 mm)	
Depth (including cable management)	152 mm	
Material	front face	steel
	cable management	nickel-plated steel, corrosion-resistant
Color	black RAL 9005	
Surface	structured, matt	



1  
Gigabit

Cat. 5E

100  
MHz

## Patch panel KOMPAKT, Category 5E, 24xRJ45/s

P/N:606029

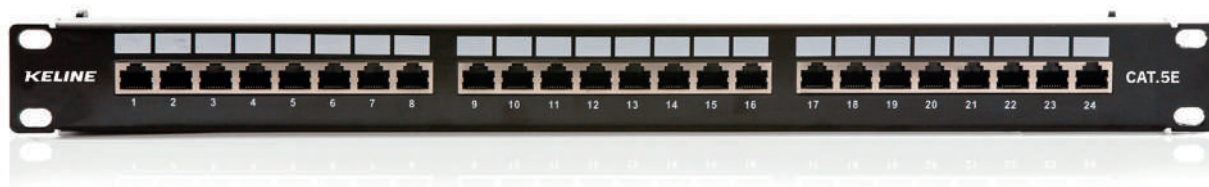
- 110/LSA termination blocks
- fast and easy installation using 110 or Krone® insertion tool on p. 075
- enables transmission of all high-speed protocols including 1000BASE-T
- guarantees a bandwidth of 100 MHz
- cable ties for gripping (24 pcs)
- perfectly shielded against electromagnetic interference
- designed for 19" cabinets
- integrated cable management



p. 075



Height	1U (44,5 mm)
Width	19" (482,6 mm)
Depth (including cable management)	129 mm
Material	steel
Color	black RAL 9005
Surface	structured, matt
Suitable for cables	with solid wires from 0,51 mm to 0,64 mm (from AWG 24 to AWG 22)



1  
Gigabit

Cat. 5E

100  
MHz

**HD**  
HIGH DENSITY

## Patch panel KOMPAKT HD, Category 5E, 24xRJ45/s, 0,5U

P/N:606058

- reaches a density up to 48 ports in 1U
- 110/LSA termination blocks
- fast and easy installation using 110 or Krone® insertion tool on p. 075
- enables transmission of all high-speed protocols including 1000BASE-T
- guarantees a bandwidth of 100 MHz
- cable ties for gripping (24 pcs)
- perfectly shielded against electromagnetic interference
- designed for 19" cabinets
- integrated cable management



p. 075



Height	0,5U (22 mm)
Width	19" (482,6 mm)
Depth (including cable management)	114 mm
Material	steel
Color	black RAL 9005
Surface	matt
Suitable for cables	with solid wires from 0,51 mm to 0,64 mm (from AWG 24 to AWG 22)



1 Gigabit Cat. 5E 100 MHz LSOH



## Patch cable FTP, Category 5E, LSOH

P/N: KEL-C5E-F-005	0,5 m	P/N: KEL-C5E-F-070	7 m
P/N: KEL-C5E-F-010	1 m	P/N: KEL-C5E-F-100	10 m
P/N: KEL-C5E-F-015	1,5 m	P/N: KEL-C5E-F-120	12 m
P/N: KEL-C5E-F-020	2 m	P/N: KEL-C5E-F-150	15 m
P/N: KEL-C5E-F-030	3 m	P/N: KEL-C5E-F-200	20 m
P/N: KEL-C5E-F-050	5 m		

- cable shielded with AL/PET foil, stranded wires, halogen-free sheath
- connector RJ45 complies with IEC 60603-7-x standard by its dimensions and transmission feature
- enables transmission of all high-speed protocols up to 1000BASE-T
- guarantees a bandwidth of 100 MHz
- shielded against electromagnetic interference

Temperature range	-25°C to +60°C
Min. bending radius	25 mm
Outer cable diameter	5,4 mm
Copper conductor diameter	AWG 26/7
Contact pin material	phosphor-bronze alloy coated with 50 µ of gold
Insertion / extraction cycles	min. 750

non-standard cable length must be specified in the order

xx - patch cable color:

<b>Note</b> gray	-without marking	green	-GN
black	-BK	yellow	-YE
blue	-BL	red	-RD



1 Gigabit Cat. 5E 100 MHz



## Patch cable S-FTP, Category 5E

P/N: KEN-C5E-T-005	0,5 m	P/N: KEN-C5E-T-070	7 m
P/N: KEN-C5E-T-010	1 m	P/N: KEN-C5E-T-100	10 m
P/N: KEN-C5E-T-015	1,5 m	P/N: KEN-C5E-T-120	12 m
P/N: KEN-C5E-T-020	2 m	P/N: KEN-C5E-T-150	15 m
P/N: KEN-C5E-T-030	3 m	P/N: KEN-C5E-T-200	20 m
P/N: KEN-C5E-T-050	5 m		

- cable shielded with AL/PET foil and overall copper braid, stranded wires, PVC sheath
- connector RJ45 complies with IEC 60603-7-x standard by its dimensions and transmission feature
- enables transmission of all high-speed protocols up to 1000BASE-T
- guarantees a bandwidth of 100 MHz
- shielded against electromagnetic interference

Temperature range	-25°C to +60°C	
Min. bending radius	23 mm	
Outer cable diameter	5,8 mm	
Copper conductor diameter	AWG 26/7	
Contact pin material	phosphor-bronze alloy coated with 50 µ of gold	
Insertion / extraction cycles	min. 750	
Color	cable	gray RAL 7035
	boots	gray RAL 7035

600  
MHz



p. 075



## Connection module LSA

P/N: KE-AD-C61S

- designed for reconnecting damaged Cat. 7<sub>A</sub>, Cat. 7, Cat. 6<sub>A</sub>, Cat. 6, Cat. 5E cables or, in case of necessity, to extend the link
- LSA terminals ensure connection of cables
- guarantees a bandwidth of 600 MHz
- performance category depends on a specific topology and network configuration
- LSA Krone® tool is required for mounting on p. 075

Suitable for installing on cables	with solid wires from 0,40 mm to 0,64 mm (from AWG 26 to AWG 22)
	with outer diameter from 4,5 mm to 7,9 mm
Dimensions	83,7 x 37 x 23 mm

1  
Gigabit

Cat. 5E

100  
MHz



p. 074



## Connector RJ45/s, Category 5E, 8p8c, 50 μ Au

P/N: 58G6912U

- suitable for cables with stranded as well as solid wires
- shielded against electromagnetic interference
- by dimensions and transmission features meets IEC 60603-7-x standard
- crimping pliers are required for mounting on p. 074

Suitable for cables	with solid wires from 0,41 mm to 0,51 mm (from AWG 26 to AWG 24)
	with stranded wires from AWG 26 to AWG 24
	with outer diameter from 4,5 mm to 8 mm
Contact pin material	copper alloy coated with 50 μ of gold
Insertion / extraction cycles	min. 200

# Cat. 5E unshielded components

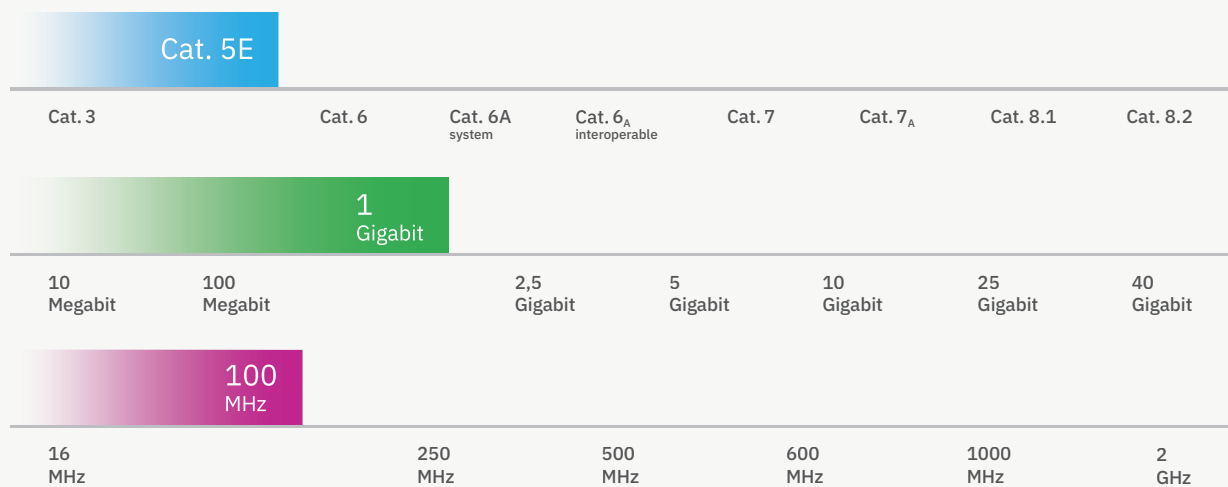
These components have been installed for more than 20 years and since 2002 represent the standardized minimum.

Components meet the bandwidth requirements of 1000BASE-T with a safety margin greater than 20 %.

Cat. 5E unshielded components are an appropriate solution for companies with lower demands on the amount of transferred data.

These components are not resistant against electromagnetic interference.

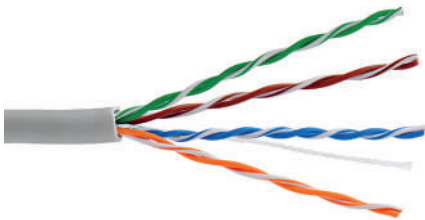
Unshielded cables must be installed a distance up to 5x greater from power cables than shielded cables.



- cabling category Cat. 5E
- maximum transmission speed of 1 Gigabit/s  
guaranteed functionality of all standardized protocols including 1000BASE-T
- bandwidth of 100 MHz



1 Gigabit Cat. 5E 300 MHz LSOH



## UTP (U/UTP) cable 4x2xAWG24, Category 5E, 300 MHz, LSOH, Euroclass D<sub>ca</sub> - s1, d1, a1

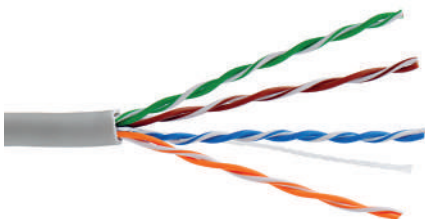
P/N: KE300U24LSOH-Dca-RLX

305 m in a box

- unshielded cable with halogen-free sheath
- enables transmission of all high-speed protocols including 1000BASE-T
- tested in bandwidth up to 300 MHz
- enables RJ45 connectors to be mounted directly to the cable

Min. bending radius	installation	43 mm
	operation	22 mm
Max. tensile load		110 N (11 kg)
Temperature range	installation	0°C to +50°C
	operation	-20°C to +60°C
Outer cable diameter		5,3 mm
Copper conductor diameter		AWG 24
NVP		69 %
Reaction to fire		D <sub>ca</sub> - s1, d1, a1
Fire safety		flame retardant, low smoke, zero halogen, non-corrosive

1 Gigabit Cat. 5E 300 MHz



## UTP (U/UTP) cable 4x2xAWG24, Category 5E, 300 MHz, Euroclass E<sub>ca</sub>

P/N: 799053-Eca-RLX

305 m in a box

- unshielded cable with PVC sheath
- enables transmission of all high-speed protocols including 1000BASE-T
- tested in bandwidth up to 300 MHz
- enables RJ45 connectors to be mounted directly to the cable

Min. bending radius	installation	40 mm
	operation	20 mm
Max. tensile load		100 N (10 kg)
Temperature range	installation	0°C to +50°C
	operation	-20°C to +60°C
Outer cable diameter		5,0 mm
Copper conductor diameter		AWG 24
NVP		69 %
Reaction to fire		E <sub>ca</sub>
Fire safety		flame retardant

1 Gigabit  
Cat. 5E  
125 MHz



## Patch cable for flexible links UTP (U/UTP), 4x2xAWG26, Category 5E, 125 MHz

P/N: KE300U26-RLX

305 m in a box

- unshielded cable with PVC sheath
- enables transmission of all high-speed protocols up to 1000BASE-T
- guarantees a bandwidth of 125 MHz
- enables RJ45 connectors to be mounted directly to the cable

Min. bending radius	installation	36 mm
	operation	18 mm
Max. tensile load		55 N (5 kg)
Temperature range	installation	0°C to +50°C
	operation	-20°C to +60°C
Outer cable diameter		4,5 mm
Copper conductor diameter		(0,48 mm) AWG 26/7
NVP		67 %

1 Gigabit  
Cat. 5E  
100 MHz



## Keystone Jack, Category 5E, RJ45/u

P/N: KEJ-C5E-U-TL

- tool-free, fast and easy installation
- enables transmission of all high-speed protocols including 1000BASE-T
- guarantees a bandwidth of 100 MHz
- not shielded against electromagnetic interference suitable for a wide range of outlets, duct and channel systems

**Note** see compatible outlets on p. 060

Suitable for installing on cables	with solid wires from 0,51 to 0,64 mm (from AWG 24 to AWG 22)
Required installation depth	for sockets with angled faceplates 15 - 35 mm
	for sockets with straight faceplates 35 mm
Contact pin material	phosphor-bronze alloy coated with 6 μ of gold
Insertion / extraction cycles	min. 750

1 Gigabit  
Cat. 5E  
100 MHz



p. 075



## Keystone Jack, Category 5E, RJ45/u

P/N: KEJ-C5E-U-BK

- 110/LSA termination blocks
- fast and easy installation using 110 or Krone® insertion tool on p. 075
- enables transmission of all high-speed protocols including 1000BASE-T
- guarantees a bandwidth of 100 MHz
- not shielded against electromagnetic interference
- not compatible with patch panel KEP-EMPTY-S on p. 069

**Note** see compatible outlets on p. 060

Suitable for installing on cables	with solid wires from AWG 26 to AWG 22
Required installation depth	for sockets with angled faceplates 15 - 30 mm
	for sockets with straight faceplates 30 mm
Contact pin material	phosphor-bronze alloy coated with 6 μ of gold
Insertion / extraction cycles	min. 750

1  
Gigabit

Cat. 5E

100  
MHz

## Patch panel, Category 5E, 24xRJ45/u, black, keystones included

P/N: KEP-C5E-U-TL



- 24 keystone jacks KEJ-C5E-U-TL (on p. 052) included
- designed for 19" cabinets
- integrated cable management
- not shielded against electromagnetic interference
- cable ties for gripping (24 pcs)
- set of M6 screws and captive nuts (4 pcs)
- grounding screw and washer (1 pc)

Height	1U (44,5 mm)	
Width	19" (482,6 mm)	
Depth (including cable management)	152 mm	
Material	front face	steel
	cable management	nickel-plated steel, corrosion-resistant
Color	black RAL 9005	
Surface	structured, matt	



1  
Gigabit

Cat. 5E

100  
MHz

## Patch panel KOMPAKT, Category 5E, 24xRJ45/u

P/N:606030



- 110/LSA termination blocks
- fast and easy installation using 110 or Krone® insertion tool on p. 075
- enables transmission of all high-speed protocols including 1000BASE-T
- guarantees a bandwidth of 100 MHz
- cable ties for gripping (24 pcs)
- not shielded against electromagnetic interference
- designed for 19" cabinets
- integrated cable management

Height	1U (44,5 mm)	
Width	19" (482,6 mm)	
Depth (including cable management)	99,3 mm	
Material	steel	
Color	black RAL 9005	
Surface	structured, matt	
Suitable for cables	with solid wires from 0,51 mm to 0,64 mm (from AWG 24 to AWG 22)	

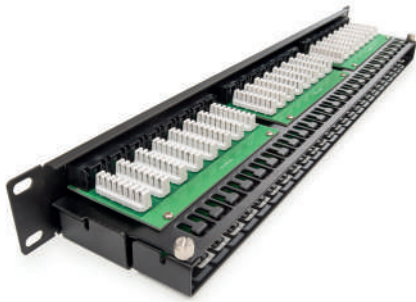
p. 075





## Patch panel KOMPAKT HD, Category 5E, 48xRJ45/u, 1U

P/N:606038



- reaches a density up to 48 ports in 1U
- 110/LSA termination blocks
- fast and easy installation using 110 or Krone® insertion tool on p. 075
- enables transmission of all high-speed protocols including 1000BASE-T
- guarantees a bandwidth of 100 MHz
- cable ties for gripping (24 pcs)
- not shielded against electromagnetic interference
- designed for 19" cabinets
- integrated cable management

p. 075



Height	1U (44,5 mm)
Width	19" (482,6 mm)
Depth (including cable management)	89 mm
Material	steel
Color	black RAL 9005
Surface	structured, matt
Suitable for cables	with solid wires from 0,51 mm to 0,64 mm (from AWG 24 to AWG 22)



## Patch cable UTP, Category 5E

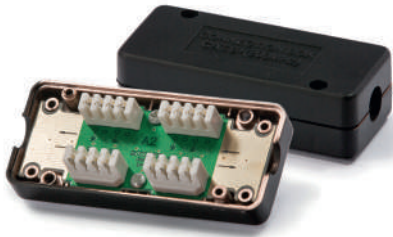
P/N: KEN-C5E-U-005	0,5 m	P/N: KEN-C5E-U-050	5 m
P/N: KEN-C5E-U-010	1 m	P/N: KEN-C5E-U-070	7 m
P/N: KEN-C5E-U-015	1,5 m	P/N: KEN-C5E-U-100	10 m
P/N: KEN-C5E-U-020	2 m	P/N: KEN-C5E-U-150	15 m
P/N: KEN-C5E-U-030	3 m	P/N: KEN-C5E-U-200	20 m

- unshielded cable with PVC sheath
- connector RJ45 complies with IEC 60603-7-x standard by its dimensions
- enables transmission of all high-speed protocols up to 1000BASE-T
- guarantees a bandwidth of 100 MHz
- not shielded against electromagnetic interference

Temperature range	-25°C to +60°C	
Min. bending radius	22 mm	
Outer cable diameter	5,5 mm	
Copper conductor diameter	AWG 24/7	
Contact pin material	phosphor-bronze alloy coated with 50 μ of gold	
Insertion / extraction cycles	min. 750	
Color	cable	gray RAL 7035
	boots	gray RAL 7035



600  
MHz



p. 075



## Connection module LSA

P/N: KE-AD-C61S

- designed for reconnecting damaged Cat. 7<sub>A</sub>, Cat. 7, Cat. 6<sub>A</sub>, Cat. 6, Cat. 5E cables or, in case of necessity, to extend the link
- LSA terminals ensure connection of cables
- guarantees a bandwidth of 600 MHz
- performance category depends on a specific topology and network configuration
- LSA Krone® tool is required for mounting on p. 075

Suitable for installing on cables	with solid wires from 0,40 mm to 0,64 mm (from AWG 26 to AWG 22)
	with outer diameter from 4,5 mm to 7,9 mm
Dimensions	83,7 x 37 x 23 mm

1  
Gigabit

Cat. 5E

100  
MHz



p. 074



## Connector RJ45/u, Category 5E, 8p8c, 50 μ Au

P/N: MP-RJ45-8P8CU

- suitable for cables with stranded as well as solid wires
- not shielded against electromagnetic interference
- by dimensions and transmission features meets IEC 60603-7-x standard
- crimping pliers are required for mounting on p. 074

Suitable for cables	with solid wires from 0,41 mm to 0,51 mm (from AWG 26 to AWG 24)
	with stranded wires from AWG 26 to AWG 24
	with outer diameter from 4,5 mm to 8 mm
Contact pin material	copper alloy coated with 50 μ of gold
Insertion / extraction cycles	min. 200



# Cat. 3 components

These components provide access to all analog and digital voice protocols of structured cabling.

Cat. 3	Cat. 5E	Cat. 6	Cat. 6A system	Cat. 6 <sub>A</sub> interoperable	Cat. 7	Cat. 7 <sub>A</sub>	Cat. 8.1	Cat. 8.2
10 Megabit	100 Megabit	1 Gigabit	2,5 Gigabit	5 Gigabit	10 Gigabit	25 Gigabit	40 Gigabit	
16 MHz	100 MHz	250 MHz	500 MHz	600 MHz	1000 MHz	2 GHz		

■ cabling category Cat. 3  
■ maximum transmission speed of 10 Megabit/s  
■ bandwidth of 16 MHz



## Multipair telephone cable, 50x2x0,5, Euroclass F<sub>ca</sub>

P/N: SYKFY50



- cable shielded with AL/PET foil, PVC sheath
- suitable for indoor backbone voice network
- enables transmission of all analog and digital voice protocols excluding IP telephony

Min. bending radius	installation	170 mm
	operation	70 mm
Temperature range	installation	-5°C to +50°C
	operation	-30°C to +70°C
Outer cable diameter		17 mm
Copper conductor diameter		0,5 mm
Color identification		EN 60446
Reaction to fire		F <sub>ca</sub>
Fire safety		flame retardant



## Multipair telephone cable, 25x2x0,5, Euroclass F<sub>ca</sub>

P/N: SYKFY25



- cable shielded with AL/PET foil, PVC sheath
- suitable for indoor backbone voice network
- enables transmission of all analog and digital voice protocols excluding IP telephony

Min. bending radius	installation	110 mm
	operation	45 mm
Temperature range	installation	-5°C to +50°C
	operation	-30°C to +70°C
Outer cable diameter		11 mm
Copper conductor diameter		0,5 mm
Color identification		EN 60446
Reaction to fire		F <sub>ca</sub>
Fire safety		flame retardant

Cat. 3

16  
MHz

## Patch panel, Category 3, 50xRJ45/u

P/N: 509020

- LSA termination block
- fast and easy installation using Krone® insertion tool on p. 075
- connects voice services from backbone networks into the structured cabling
- enables transmission of all analog and digital voice protocols excluding IP telephony
- guarantees a bandwidth of 16 MHz
- cable ties for gripping (25 pcs)
- designed for 19" cabinets
- integrated cable management



p. 075



Height	1U (44,5 mm)
Width	19" (482,6 mm)
Depth (including cable management)	125 mm
Material	steel
Color	black RAL 9005
Surface	structured, matt
Suitable for cables	with solid wires from 0,41 to 0,64 mm (from AWG 26 to AWG 22)



Cat. 3

16  
MHz

## Patch panel, Category 3, 25xRJ45/u

P/N: T-3259

- LSA termination block
- fast and easy installation using Krone® insertion tool on p. 075
- connects voice services from backbone networks into the structured cabling
- enables transmission of all analog and digital voice protocols excluding IP telephony
- guarantees a bandwidth of 16 MHz
- cable ties for gripping (25 pcs)
- designed for 19" cabinets
- integrated cable management



p. 075



Height	1U (44,5 mm)
Width	19" (482,6 mm)
Depth (including cable management)	133 mm
Material	steel
Color	black RAL 9005
Surface	structured, matt
Suitable for cables	with solid wires from 0,41 to 0,64 mm (from AWG 26 to AWG 22)





**KELINE**

# Outlets



## Modulo45 outlet, floor / duct-mounted

P/N: 601120

P/N: 601125



antibacterial

compatible with keystone jacks P/N: KEJ-C6A-S-HD, KEJ-C6A-S-HD 90,

**Note** KEJ-C6A-S-10G, KEJ-CEA-S-10G, KEJ-C6-S-TL, KEJ-C6-U-TL, KEJ-C5E-S-TL, KEJ-C5E-U-TL

- designed for two keystone jacks RJ45
- angled entry for patch cables
- each port protected with a dust-proof shutter

Dimensions	frame	-
	central module	45 x 45 mm
Color	white RAL 9003	
Surface	shiny	
Required installation depth	25 mm	

## Modulo45 outlet, flush-mounted

P/N: 601120-UP

compatible with keystone jacks P/N: KEJ-C6A-S-HD, KEJ-C6A-S-HD 90,

**Note** KEJ-C6A-S-10G, KEJ-CEA-S-10G, KEJ-C6-S-TL, KEJ-C6-U-TL, KEJ-C5E-S-TL, KEJ-C5E-U-TL

- designed for two keystone jacks RJ45
- angled entry for patch cables
- each port protected with a dust-proof shutter



Dimensions	frame	81 x 81 mm
	central module	45 x 45 mm
Color	white RAL 9003	
Surface	shiny	
Required installation depth	30 mm	



## Modulo45 outlet, wall-mounted



P/N: 601120-AP

compatible with keystone jacks P/N: KEJ-C6A-S-HD, KEJ-C6A-S-HD 90,

**Note** KEJ-C6A-S-10G, KEJ-CEA-S-10G, KEJ-C6-S-TL, KEJ-C6-U-TL, KEJ-C5E-S-TL, KEJ-C5E-U-TL

- designed for two keystone jacks RJ45
- angled entry for patch cables
- each port protected with a dust-proof shutter

Dimensions	frame	81 x 81 mm
	central module	45 x 45 mm
Surface mounting box		81 x 81 x 40 mm
Color		white RAL 9003
Surface		shiny

## Modulo50 outlet, flush-mounted



P/N: 601140-UP

P/N: 601145-UP  antibacterial

**Note** compatible with all keystone jacks

- designed for two keystone jacks RJ45
- angled entry for patch cables
- each port protected with a dust-proof shutter

Dimensions	frame	80 x 80 mm
	central module	50 x 50 mm
Color		white RAL 9010
Surface		shiny
Required installation depth		40 mm

## Modulo50 outlet, wall-mounted



P/N: 601140-AP

**Note** compatible with all keystone jacks

- designed for two keystone jacks RJ45
- angled entry for patch cables
- each port protected with a dust-proof shutter

Dimensions	frame	80 x 80 mm
	central module	50 x 50 mm
Surface mounting box		80 x 80 x 40 mm
Color		white RAL 9010
Surface		shiny

## Modulo50 outlet, 3 ports, flush-mounted

P/N: 601143-UP



compatible with keystone jacks P/N: KEJ-C6A-S-HD, KEJ-C6A-S-HD 90,

**Note** KEJ-C6A-S-10G, KEJ-CEA-S-10G, KEJ-C6-S-TL, KEJ-C6-U-TL, KEJ-C5E-S-TL, KEJ-C5E-U-TL

- designed for three keystone jacks RJ45
- angled entry for patch cables
- each port protected with a dust-proof shutter

Dimensions	frame	80 x 80 mm
	central module	50 x 50 mm
Color	white RAL 9010	
Surface	shiny	
Required installation depth	30 - 40 mm	

## Modulo50 outlet, 3 ports, wall-mounted

P/N: 601143-AP



compatible with keystone jacks P/N: KEJ-C6A-S-HD, KEJ-C6A-S-HD 90,

**Note** KEJ-C6A-S-10G, KEJ-CEA-S-10G, KEJ-C6-S-TL, KEJ-C6-U-TL, KEJ-C5E-S-TL, KEJ-C5E-U-TL

- designed for three keystone jacks RJ45
- angled entry for patch cables
- each port protected with a dust-proof shutter

Dimensions	frame	80 x 80 mm
	central module	50 x 50 mm
Surface mounting box	80 x 80 x 40 mm	
Color	white RAL 9010	
Surface	shiny	

## Legrand® Mosaic™ compatible outlet module

P/N: 601122



compatible with keystone jacks P/N: KEJ-C6A-S-HD, KEJ-C6A-S-HD 90,

**Note** KEJ-C6A-S-10G, KEJ-CEA-S-10G, KEJ-C6-S-TL, KEJ-C6-U-TL, KEJ-C5E-S-TL, KEJ-C5E-U-TL

- designed for two keystone jacks RJ45
- angled entry for patch cables
- each port protected with a dust-proof shutter
- fully compliant with Legrand® Mosaic™ single and dual frames  
e.g.: P/N: 078802 + 080251, 078814 + 080252, 078816 + 080253, 078818 + 080253

Dimensions	frame	45 x 45 mm
Color	white RAL 9010	
Surface	shiny	
Required installation depth	30 mm	



## Legrand® Valena™ compatible outlet module, wall-mounted

P/N: 601150



**Note** compatible with keystone jacks P/N: KEJ-C6A-S-10G, KEJ-CEA-S-10G, KEJ-C6-S-TL, KEJ-C6-U-TL, KEJ-C5E-S-TL, KEJ-C5E-U-TL

- designed for two keystone jacks RJ45
- angled entry for patch cables
- each port protected with a dust-proof shutter
- fully compliant with Legrand® Valena™ single and dual frames  
e.g.: P/N: 774451, 774452, 774461, 774462, 770491, 770492
- single or double Legrand® frame shall be ordered separately

Dimensions of central module	58 x 52 mm
Color	white RAL 9003
Surface	shiny
Required installation depth	40 mm

## Legrand® Valena™ Life compatible outlet module

P/N: 601152



compatible with keystone jacks P/N: KEJ-C6A-S-HD, KEJ-C6A-S-HD 90,

**Note** KEJ-C6A-S-10G, KEJ-CEA-S-10G, KEJ-C6-S-TL, KEJ-C6-U-TL, KEJ-C5E-S-TL, KEJ-C5E-U-TL

- designed for two keystone jacks RJ45
- angled entry for patch cables
- each port protected with a dust-proof shutter
- fully compliant with Legrand® Valena™ Life frames  
e.g.: P/N: 754001, 754002, 754003, 754004, 754005, 754011, 754012, 754013
- Legrand® frame shall be ordered separately

Dimensions of central module	45 x 45 mm
Color	white RAL 9003
Surface	shiny
Required installation depth	35 mm

## Legrand® Niloe™ compatible outlet module

P/N: 601155



compatible with keystone jacks P/N: KEJ-C6A-S-HD, KEJ-C6A-S-HD 90,

**Note** KEJ-C6A-S-10G, KEJ-CEA-S-10G, KEJ-C6-S-TL, KEJ-C6-U-TL, KEJ-C5E-S-TL, KEJ-C5E-U-TL

- designed for two keystone jacks RJ45
- angled entry for patch cables
- each port protected with a dust-proof shutter
- fully compliant with Legrand® Niloe™ frames  
e.g.: P/N: 665001, 665002, 665003, 665004, 665005
- Legrand® frame shall be ordered separately

Dimensions of central module	45 x 45 mm
Color	white RAL 9003
Surface	shiny
Required installation depth	35 mm



## Legrand® Celian™ compatible outlet module

P/N: 601157

**Note** compatible with keystone jacks P/N: KEJ-C6A-S-10G, KEJ-CEA-S-10G, KEJ-C6-S-TL, KEJ-C6-U-TL, KEJ-C5E-S-TL, KEJ-C5E-U-TL

- designed for two keystone jacks RJ45
- angled entry for patch cables
- fully compliant with Legrand® Celian™ frames  
e.g.: P/N 066631, 066632, 066633, 066634, 066634, 066630
- Legrand® frame shall be ordered separately

Dimensions of central module	45 x 45 mm
Color	white RAL 9003
Surface	shiny
Required installation depth	35 mm



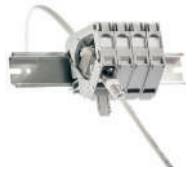
## DIN rail keystone holder

P/N: HN-DIN1

**Note** compatible with keystone jacks P/N: KEJ-C6A-S-HD, KEJ-C6A-S-10G, KEJ-CEA-S-10G, KEJ-C6-S-TL, KEJ-C6-U-TL, KEJ-C5E-S-TL, KEJ-C5E-U-TL

- designed for one keystone jack RJ45
- designed for DIN rails in residential and industrial power distribution (home networking and industrial Ethernet)
- port protected with a dust-proof shutter

Dimensions	height	35 mm
	depth	7,5 mm
Color	gray RAL 9075	
Surface	matt	



## Surface box, 1 port, wall-mounted

P/N: KE-SMB01-W

**Note** compatible with keystone jacks P/N: KEJ-C6A-S-HD, KEJ-C6A-S-10G, KEJ-CEA-S-10G, KEJ-C6-S-TL, KEJ-C6-U-TL, KEJ-C5E-S-TL, KEJ-C5E-U-TL, KEJ-C5E-U-BK

- designed for one keystone jack RJ45
- straight entry for patch cables



Dimensions (h x w x d)	64 x 46 x 30 mm
Material	plastic
Color	white
Surface	matt

## Surface box, 2 ports, wall-mounted

P/N: KE-SMB02-W



**Note** compatible with keystone jacks P/N: KEJ-C6A-S-HD, KEJ-C6A-S-10G, KEJ-CEA-S-10G, KEJ-C6-S-TL, KEJ-C6-U-TL, KEJ-C5E-S-TL, KEJ-C5E-U-TL, KEJ-C5E-U-BK

- designed for two keystone jacks RJ45
- straight entry for patch cables

Dimensions (h x w x d)	64 x 68 x 30 mm
Material	plastic
Color	white
Surface	matt

## Surface box, 6 ports, wall-mounted

P/N: KE-SMB06-W



**Note** compatible with keystone jacks P/N: KEJ-C6A-S-HD, KEJ-C6A-S-10G, KEJ-CEA-S-10G, KEJ-C6-S-TL, KEJ-C6-U-TL, KEJ-C5E-S-TL, KEJ-C5E-U-TL, KEJ-C5E-U-BK

- designed for six keystone jacks RJ45
- can be used as consolidation point or mini patch panel
- straight entry for patch cables

Dimensions (h x w x d)	83 x 168 x 30 mm
Material	plastic
Color	white
Surface	matt

## Compact box, 8 ports, black

P/N: KE-KB08-B



**Note** compatible with keystone jacks P/N: KEJ-C6A-S-HD, KEJ-C6A-S-10G, KEJ-CEA-S-10G, KEJ-C6-S-TL, KEJ-C6-U-TL, KEJ-C5E-S-TL, KEJ-C5E-U-TL

- designed for eight keystone jacks RJ45
- can be used as consolidation point or mini patch panel
- integrated cable management
- cable can be led from the bottom or the back part of the compact box

Dimensions (h x w x d)	44 x 165 x 110 mm
Material	steel / PVC
Color	black
Surface	matt



# Compatibility with other brands' mounting hardware

ABB Tango



ABB Time



ABB Impuls



ABB Alpha Exclusive



ABB Decento



ABB Element



ABB Swing



ABB Future Linear



ABB Basic 55



ABB NEO



ABB Reflex SI



ABB Reflex SI angled



Legrand® Valena™



Legrand® Mosaic™



Legrand® Valena™ Life



Legrand Prodx



Niko Pure



Niko Intense



Niko Original



Gira E2



Schneider Unica



Schneider Sedna



Schneider Anya



Manufacturer	Type	KEJ-C6A-S-HD	KEJ-C6A-S-10G	KEJ-C6A-S-HD 90	KEJ-CEA-S-10G	KEJ-C6-S-TL	KEJ-C6-U-TL	KEJ-C5E-S-TL	KEJ-C5E-U-TL
ABB	Swing, Swing L	✓	✓	✓	✓	✓	✓	✓	✓
	Levit	✓	✓	✓	✓	✓	✓	✓	✓
	Tango	✓	✓	✓	✓	✓	✓	✓	✓
	Neo, Neo Tech	✓	✓	✓	✓	✓	✓	✓	✓
	Element, Time, Time Arbo	✓	✓	✓	✓	✓	✓	✓	✓
	Decento	✓	✓	✓	✓	✓	✓	✓	✓
	Future linear, Solo, Solo carat	✓	✓	✓	✓	✓	✓	✓	✓
	Alpha Exclusive	✓	✓	✓	✓	✓	✓	✓	✓
	Impuls	✓	✓	✓	✓	✓	✓	✓	✓
	Basic 55	✓	✓	✓	✓	✓	✓	✓	✓
	Reflex SI	✓	✓	✓	✓	✓	✓	✓	✓
	Reflex SI angled	✘	✘	✘	✘	✘	✘	✘	✘
Legrand	Mosaic	✓	✓	✓	✓	✓	✓	✓	✓
	Valena	✘	✓	✘	✓	✓	✓	✓	✓
	Valena Life	✓	✓	✓	✓	✓	✓	✓	✓
	Niloe	✓	✓	✓	✓	✓	✓	✓	✓
	Celian	✘	✓	✘	✓	✓	✓	✓	✓
	Prodax	✘	✓	✘	✓	✓	✓	✓	✓
	DLP ducts	✓	✓	✓	✓	✓	✓	✓	✓
	floor boxes	✓	✓	✓	✓	✓	✓	✓	✓
NIKO	Original	✓	✓	✓	✓	✓	✓	✓	✓
	Intense	✓	✓	✓	✓	✓	✓	✓	✓
	Pure	✓	✓	✓	✓	✓	✓	✓	✓
OBO Bettermann	Rapid 45 / GEK-K 53100 / GEK-K 53160	✓	✓	✓	✓	✓	✓	✓	✓
	floor boxes	✓	✓	✓	✓	✓	✓	✓	✓
GIRA	Standard 55	✓	✓	✘	✓	✓	✓	✓	✓
	E2	✓	✓	✘	✓	✓	✓	✓	✓
	Event	✓	✓	✘	✓	✓	✓	✓	✓
	Esprit	✓	✓	✘	✓	✓	✓	✓	✓
	ClassiX	✓	✓	✘	✓	✓	✓	✓	✓
	E22	✓	✓	✘	✓	✓	✓	✓	✓
Schneider Electric	Altira	✓	✓	✘	✓	✓	✓	✓	✓
	Anya	✘	✓	✘	✓	✓	✓	✓	✓
	Asfora	✓	✓	✘	✓	✓	✓	✓	✓
	Merten	✘	✘	✘	✘	✘	✘	✘	✘
	Sedna	✘	✘	✘	✘	✘	✘	✘	✘
	Unica	✓	✓	✘	✓	✓	✓	✓	✓
Niedax	floor boxes	✘	✘	✘	✘	✘	✘	✘	✘

# Other components and accessories



## Cable reel uncoiler

P/N: OKC

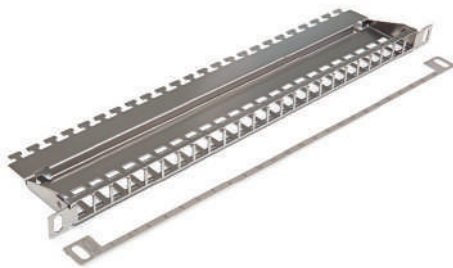
- useful for unwinding of optical or metallic cables on coils
- rubber legs ensure stability when uncoiling the cable
- very easy to use and setup
- light construction
- saves time during installation

Material	aluminum profile with ball bearings
Load capacity	250 kg
Weight	3,6 kg
Dimensions	58 x 51 x 9 cm



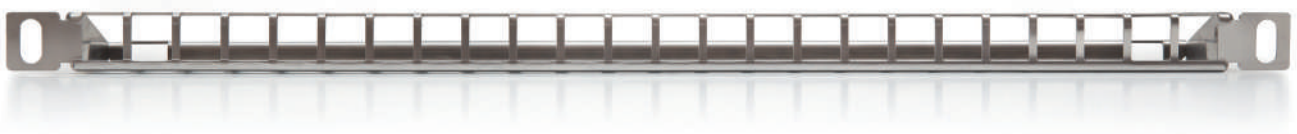
## Patch panel HD for 24xRJ45, silver, empty

P/N: KEP-EMPTY-HD



- enables to install 24 modules into 0,5U and achieve a high density up to 48 ports on 1U
- designed for 19" cabinets
- integrated cable management
- cable ties for gripping (24 pcs)
- set of M6 screws and captive nuts (2 pcs)
- two grounding pegs (on left and right sides)
- labeling strip is included in the package

Height	0,5U (22 mm)
Width	19" (482,6 mm)
Depth (including cable management)	100 mm
Material	stainless steel
Color	silver
Surface	glossy



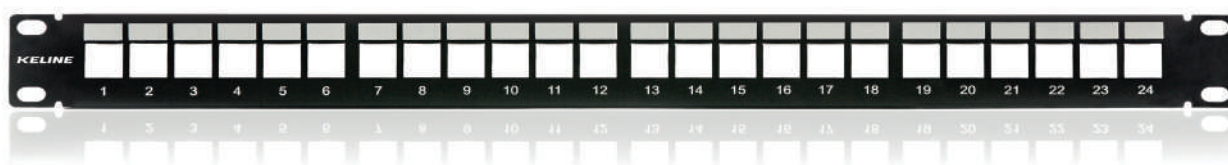
## Patch panel for 24xRJ45, black, empty

P/N: KEP-EMPTY-S



- designed for 19" cabinets
- integrated cable management
- cable ties for gripping (24 pcs)
- set of M6 screws and captive nuts (2 pcs)
- grounding screw and washer (1 pc)

Height	1U (44,5 mm)	
Width	19" (482,6 mm)	
Depth (including cable management)	152 mm	
Material	front face	steel
	cable management	nickel-plated steel, corrosion-resistant
Color	black RAL 9005	
Surface	structured, matt	



## Patch panel 10" for 8xRJ45, empty

P/N: RAB-PP-X01-C4



- integrated cable management
- suitable for keystone jacks KEJ-C6A-S-10G, KEJ-CEA-S-10G, KEJ-C6-S-TL, KEJ-C6-U-TL, KEJ-C5E-S-TL, KEJ-C5E-U-TL
- set of M6 screws and captive nuts (4 pcs)

Height	1U (44,5 mm)	
Width	10" (254 mm)	
Depth (including cable management)	66 mm	
Material	steel	
Color	black RAL 9005	
Surface	matt	



## Adapter for OBO Ackermann floor boxes for 9xRJ45, empty

P/N: KE-9FB

- can be installed on OBO Ackermann UT universal supports
- compatible with all keystone jacks Keline

Height	213 mm	
Width	75 mm	
Material	steel	
Color	black RAL 9005	
Surface	matt	





## Adapter for OBO Ackermann floor boxes for 6xRJ45, empty

P/N: KE-6FB

- can be installed on OBO Ackermann UT universal supports
- compatible with all keystone jacks Keline

Height	173 mm
Width	75 mm
Material	steel
Color	black RAL 9005
Surface	matt

10  
Gigabit

Cat. 6<sub>A</sub>  
interoperable

500  
MHz

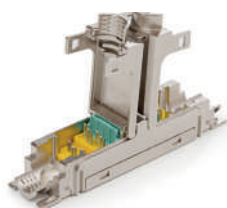
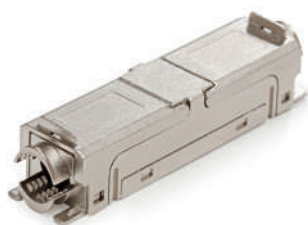


## Connection module HD, Category 6<sub>A</sub>

P/N: KE-EXT-HD

- designed for reconnecting damaged cables or in case of necessity to extend the link
- low profile design
- tool-free, fast and easy installation
- enables transmission of all high-speed protocols including 10GBASE-T
- guarantees a bandwidth of 500 MHz
- perfectly shielded against Alien Crosstalk and electromagnetic interference
- applicable on cables with solid wires (guarantee of anti-corrosive and gas-tight joint)

Suitable for installing on cables	with solid wires from AWG 24 to AWG 22
	with outer diameter from 5 mm to 9,5 mm
Contact pin material	phosphor-bronze alloy coated
Dimensions	65,6 x 15,6 x 13,5 mm



10  
Gigabit

Cat. 6<sub>A</sub>  
system

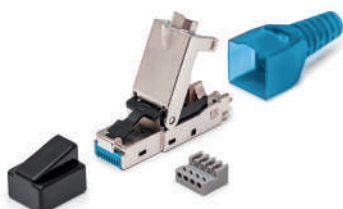
500  
MHz

## Toolless field terminated RJ45/s connector for Cat. 7<sub>A</sub>, Cat. 7, Cat. 6<sub>A</sub>, Cat. 6 cables

P/N: KE-FT45-C6AS

- direct termination on Cat. 7<sub>A</sub>, Cat. 7, Cat. 6<sub>A</sub>, Cat. 6 cables
- tool-free, fast and easy installation
- connection of IP cameras and wireless devices without the need of using outlets and patch cords
- enables transmission of all high-speed protocols including 10GBASE-T within the system Cat. 6A
- guarantees a bandwidth of 500 MHz within the system Cat. 6A
- perfectly shielded against Alien Crosstalk and electromagnetic interference

Suitable for installing on cables	with solid wires from AWG 26 to AWG 22
	with stranded wires from AWG 27 to AWG 22
	with outer diameter from 6 mm to 9 mm
Contact pin material	phosphor-bronze alloy coated with 50 μ of gold
Required installation depth	55 mm





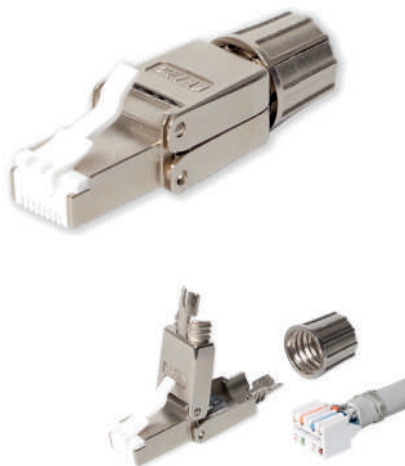
10  
Gigabit

Cat. 6A  
system

500  
MHz

## Field terminated, toolless RJ45/s connector for Cat. 7<sub>A</sub>, Cat. 7, Cat. 6<sub>A</sub> cables

P/N: KE-FFT45-C6AS



- direct termination on Cat. 7<sub>A</sub>, Cat. 7, Cat. 6<sub>A</sub> cables
- tool-free, fast and easy installation
- connection of IP cameras and wireless devices without the need of using outlets and patch cords
- enables transmission of all high-speed protocols including 10GBASE-T within the system Cat. 6A
- guarantees a bandwidth of 500 MHz within the system Cat. 6A
- perfectly shielded against Alien Crosstalk and electromagnetic interference

Suitable for installing on cables	with solid wires from AWG 23 to AWG 22
	with outer diameter from 6 mm to 9 mm
Contact pin material	phosphor-bronze alloy coated with 50 μ of gold
Required installation depth	50 mm

10  
Gigabit

Cat. 6A  
system

500  
MHz

## Connector RJ45/s for Cat. 7<sub>A</sub>, Cat. 7, Cat. 6<sub>A</sub>, Cat. 6 cables

P/N: KE-RJ45-SC6A



p. 074



- direct termination on Cat. 7<sub>A</sub>, Cat. 7, Cat. 6<sub>A</sub>, Cat. 6 shielded cables
- special crimping pliers are required for mounting KE-CT-SC6A on p. 074
- ideal for IP camera and wireless devices even where tool-less connector KE-FT45-C6AS cannot be used for limited space
- supplied with boots for this connector
- enables transmission of all high-speed protocols including 10GBASE-T within the system Cat. 6A
- guarantees a bandwidth of 500 MHz within the system Cat. 6A
- perfectly shielded against Alien Crosstalk and electromagnetic interference

Suitable for installing on cables	with solid wires from AWG 23 to AWG 22
	with outer diameter from 5 mm to 8 mm
Contact pin material	copper alloy coated with 50 μ of gold
Insertion / extraction cycles	min. 750
Required installation depth	23 mm

10  
Gigabit

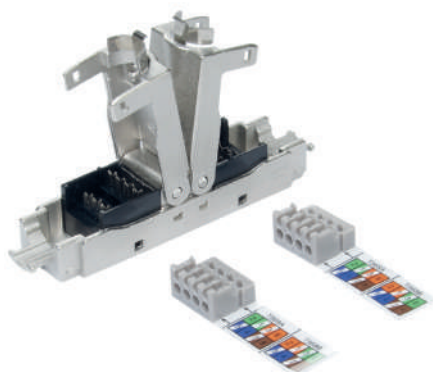
Cat. 6A  
system

500  
MHz



## Connection module Category 6A, HD, toolless

P/N: KE-EXT-EA



- designed for reconnecting damaged cables or, in case of necessity, to extend the link
- low profile design
- tool-free, fast and easy installation
- enables transmission of all high-speed protocols including 10GBASE-T
- guarantees a bandwidth of 500 MHz
- perfectly shielded against Alien Crosstalk and electromagnetic interference
- applicable on cables with solid wires (guarantee of anti-corrosive and gas-tight joint)

Suitable for installing on cables	with solid wires from AWG 24 to AWG 22
	with outer diameter from 5 mm to 9,5 mm
Contact pin material	phosphor-bronze alloy coated
Dimensions	61 x 14 x 13 mm

600  
MHz

p. 075



## Connection module LSA

P/N: KE-AD-C61S

- designed for reconnecting damaged Cat. 7<sub>A</sub>, Cat. 7, Cat. 6<sub>A</sub>, Cat. 6, Cat. 5E cables or, in case of necessity, to extend the link
- LSA terminals ensure connection of cables
- guarantees a bandwidth of 600 MHz
- performance category depends on a specific topology and network configuration
- LSA Krone® tool is required for mounting on p. 075

Suitable for installing on cables	with solid wires from 0,40 mm to 0,64 mm (from AWG 26 to AWG 22)
	with outer diameter from 4,5 mm to 7,9 mm
Dimensions	83,7 × 37 × 23 mm

1  
Gigabit

Cat. 5E

100  
MHz

p. 074



## Connector RJ45/s, Category 5E, 8p8c, 50 μ Au

P/N: 58G6912U

- suitable for cables with stranded as well as solid wires
- shielded against electromagnetic interference
- by dimensions and transmission features meets IEC 60603-7-x standard
- crimping pliers are required for mounting on p. 074

Suitable for cables	with solid wires from 0,41 mm to 0,51 mm (from AWG 26 to AWG 24)
	with stranded wires from AWG 26 to AWG 24
	with outer diameter from 4,5 mm to 8 mm
Contact pin material	copper alloy coated with 50 μ of gold
Insertion / extraction cycles	min. 200

1  
Gigabit

Cat. 5E

100  
MHz

p. 074



## Connector RJ45/u, Category 5E, 8p8c, 50 μ Au

P/N: MP-RJ45-8P8CU

- suitable for cables with stranded as well as solid wires
- not shielded against electromagnetic interference
- by dimensions and transmission features meets IEC 60603-7-x standard
- crimping pliers are required for mounting on p. 074

Suitable for cables	with solid wires from 0,41 mm to 0,51 mm (from AWG 26 to AWG 24)
	with stranded wires from AWG 26 to AWG 24
	with outer diameter from 4,5 mm to 8 mm
Contact pin material	copper alloy coated with 50 μ of gold
Insertion / extraction cycles	min. 200



## Keystone blind cover for patch panels and outlets

P/N: 511119

- designed to cover empty ports of patch panels or outlets

Color

white RAL 9003

10  
Gigabit

Cat. 6A  
system



## Keystone coupler RJ45/s-RJ45/s, Cat. 6A

P/N: KE-AD-C6AS

- for installation to keystone openings of patch panels and outlets

1  
Gigabit

Cat. 5E



## Keystone coupler RJ45/s-RJ45/s, Cat. 5E

P/N: KE-AD-C5ES

- for installation to keystone openings of patch panels and outlets



## Keystone adapter with F/F koax 75 ohm

P/N: KE-AD-FF

- for installation to keystone openings of patch panels and outlets



## Keystone adapter HDMI (A-A)

P/N: KE-AD-HDMI

- for installation to keystone openings of patch panels and outlets



## Strain relief boots for connector RJ45

P/N: MP-SR-G4

- protects the connection between the cable and connector when bending at the point of the greatest stress
- usage of different colors simplifies the orientation in the connection field

Color

gray RAL 7035

**Note** other than the standard color must be specified in the order

[www.atlas-it.hr](http://www.atlas-it.hr) | [prodaja@atlas-it.hr](mailto:prodaja@atlas-it.hr)

# Tools



## Crimping tool for connector KE-RJ45-SC6A

P/N: KE-CT-SC6A

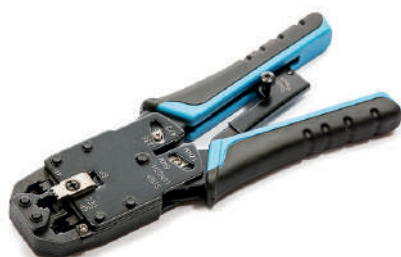
- used for crimping KE-RJ45-SC6A on connectors p. 021, 029, 034, 071



## Professional crimping tool TREND Networks® for connectors RJ11, RJ45

P/N: 30-696

- for crimping connectors RJ11 and RJ45
- build-in knife for aligning wires



## Crimping tool for connectors RJ11, RJ14, RJ45

P/N: HT-2008AR

- for crimping connectors RJ11, RJ14 or RJ45 on p. 049, 055, 072
- build-in knife for aligning wires and removing outer sheath



## Crimping tool for connector RJ45

P/N: HT-210C

- for crimping connectors RJ45 on p. 049, 055, 072
- build-in knife for aligning wires and removing outer sheath



## Insertion tool LSA Krone®

P/N: 64172055-01

- designed for inserting LSA blocks in patch panels and outlets
- build-in scissors included
- build-in hook for tracking and removing wires



## Insertion tool 110 IDC

P/N: HT-914B

- designed for inserting 110 IDC blocks in patch panels and outlets



## Parallel pliers for keystone jack KEJ-C6A-S-HD and KEJ-C6A-S-HD 90

P/N: KE-ZWZ

- facilitates easy installation of HD keystones KEJ-C6A-S-HD and KEJ-C6A-S-HD 90
- mainly during installation of high number of connection points



## Professional parallel pliers KNIPEX®

P/N: KE-8603180

- facilitates easy installation of KEJ-C6A-S-HD and KEJ-C6A-S-HD 90
- mainly during installation of high number of connection points



## Cutting pliers

P/N: HT-1091

- designed for reduction and elimination of excess wires when terminating

Suitable for cables

to Cu 1 mm (AWG 18)





## Professional cutting pliers KNIPEX®

P/N: KE-7861125

- designed for reduction and elimination of excess wires when terminating

Suitable for cables

max. Cu Ø 1,6 mm Fe Ø 1,2 mm



## Stripper

P/N: HT-S501A

- designed for removal of sheath
- suitable for all types of shielded and unshielded data cables

Suitable for cables

Ø 3,5 - 9 mm



## Professional cable stripper

P/N: CZABIBL1

- for stripping of sheath and shielding foil of data cables

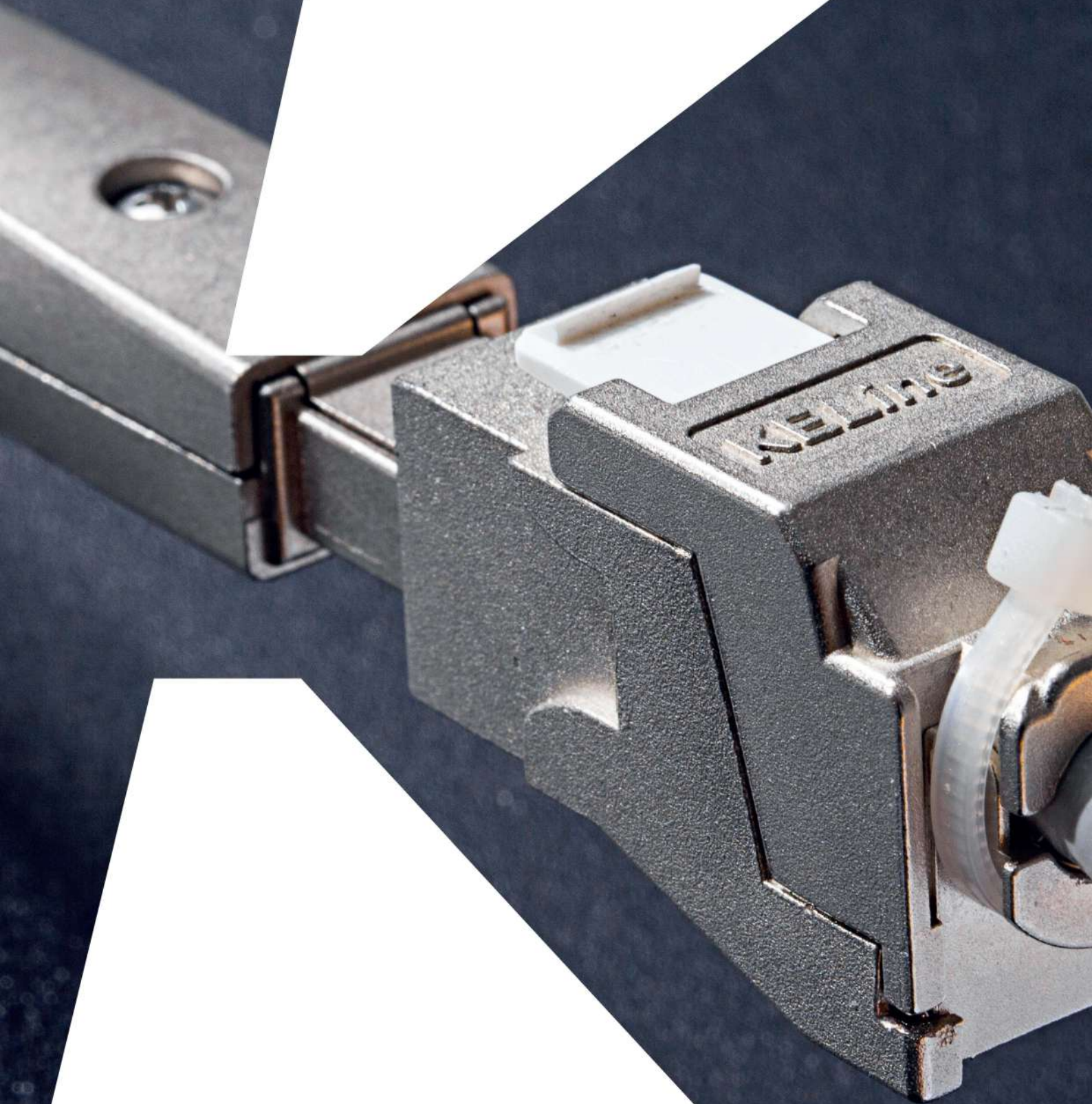


## Link tester for structured cabling and patch cables

P/N: LANTEST

- verifies links (e.g. outlet-patch panel) and correctness of wiring
- enables patch cable testing

**KELINE**



# Optical cabling 2



# Contents

080	Legend
081	Knowledge base
082	Optical cables
090	Pigtails
092	Patch cords
098	Adapters
100	Patch panels, distribution boxes, additional material
106	Tools



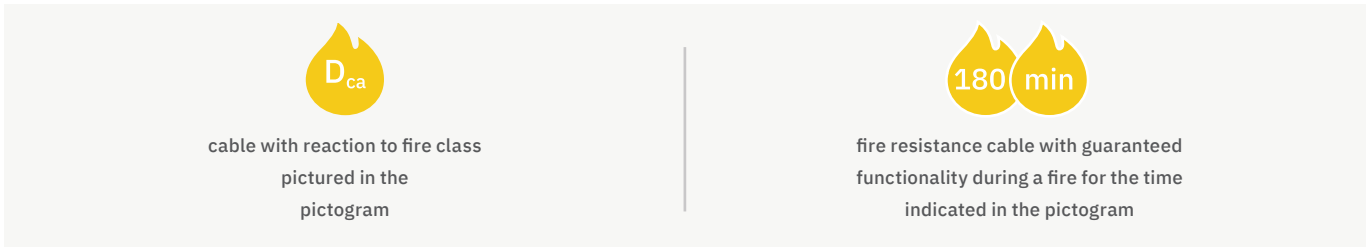


# Legend

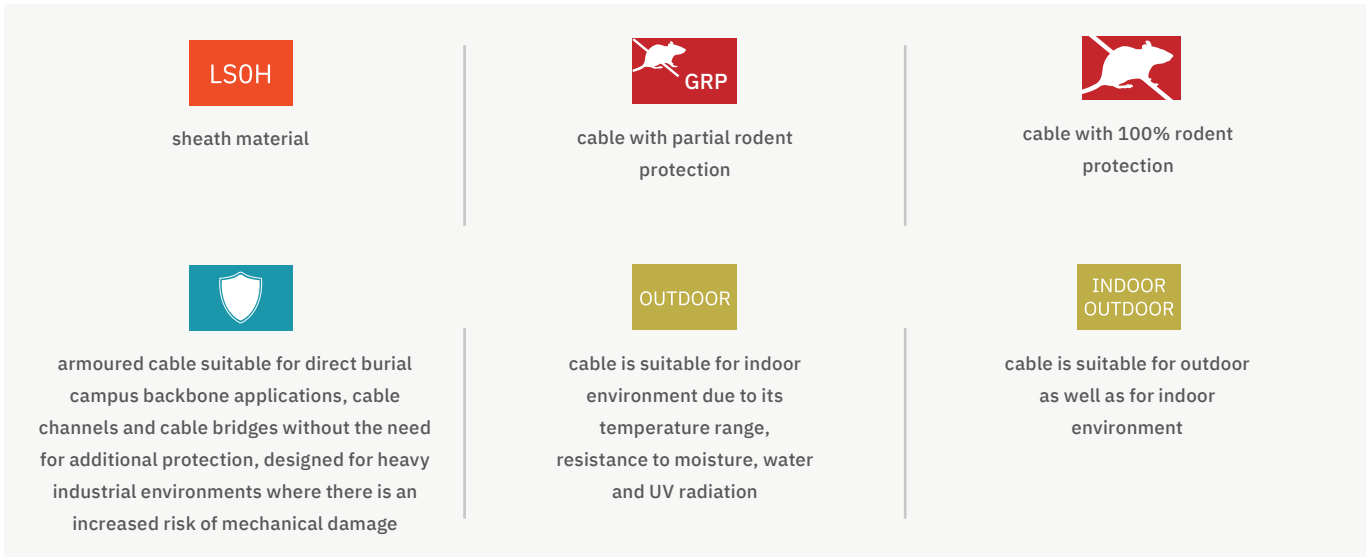
## Performance category for fiber optical cabling



## Reaction to fire and flame resistance



## Construction features





# Knowledge base

## Initial division of optical fibers vs. current categorization according to international standards

50/125 multimode	OM1 multimode	OM2 multimode	OM3 multimode	OM4 multimode	OM5 multimode
62,5/125 multimode	OM1 multimode	OM2 multimode			
9/125 singlemode	OS1 singlemode	OS1a singlemode	OS2 singlemode		

cabling categories defined by standards  
 the initial categorization of fibers based on core/cladding diameter

High-speed protocols for optical cabling have triggered the development of new types of optical fibers and their new categorization. The initial categorization of fibers was based on glass core/cladding diameter: **50/125 μm, 62,5/125 μm or 9/125 μm.**

Nowadays, fibers have different transmission characteristics in spite of the same glass geometry. The international standard has therefore introduced a new classification based on fibers' performance level.

## The selection of performance category for fiber optical cabling

	OM1 multimode	OM2 multimode	OM3 multimode	OM4 multimode	OM5 multimode	OS2 singlemode
1 Gigabit	275m max	550m max	550m max	550m max	550m max	5km max
10 Gigabit		82m max	300m max	400m max	400m max	10km max
40 Gigabit			100 MHz	150m max	150m max*	10km max
100 Gigabit			100 MHz	150m max	150m max*	10km max

maximum transmission speed defined by protocol  
 cabling categories defined by standards  
 maximum achievable channel lengths  
 \* transmission over two fibers within (SWDM) technology

Performance level is determined by the maximum transmission speed. Protocols ensuring these transmission speeds are supported in each category over different channel lengths.

**When choosing optical cabling, it is necessary to keep in mind the requested transmission speed and the maximum channel length (the longest segment of cabling).**

Diagram illustrating standardized transmission protocols (excluding proprietary applications) used in structured cabling aims to simplify the selection of a suitable optical fibre.

# Optical cables

LSOH	INDOOR	GRP	B2 <sub>ca</sub>
OM3 multimode	OS2 singlemode		



## Indoor cable CLT, Euroclass B2<sub>ca</sub> - s1, d1, a1

P/N: CLTIxxyyy-B2ca

- fully dielectric construction, halogen-free
- tensile elements made of water blocking glass yarns
- primary protection of 250 µm
- CLT - central dry loose tube
- suitable for indoor environment
- resistant to moisture and water
- partial rodent protection (glass rodent protection - GRP)
- ideal for horizontal campus duct installations using blowing and pulling technique

Temperature range	installation	-5°C to +50°C
	operation	-20°C to +60°C
Reaction to fire	B2 <sub>ca</sub> - s1, d1, a1	

### 12 fibers

OM3 P/N: CLTI120M3-B2ca

OM3 multimode 50/125 µm

OS2 P/N: CLTI120S2-B2ca

OS2 singlemode 9/125 µm (ITU-T G.652.D)

Note: Possible to deliver cables with different number and type of fibers.

### 24 fibers

OS2 P/N: CLTI240S2-B2ca

OS2 singlemode 9/125 µm (ITU-T G.652.D)

## Mechanical properties

Number of fibers		12	24
Min. bending radius	installation	108 mm	108 mm
	operation	81 mm	81 mm
Max. tensile strength	installation	1 000 N	1 000 N
	operation	-	-
Nominal cable diameter		5,4 mm	5,4 mm
Cable weight netto		32 kg/km	32 kg/km



# Universal cable CLT, Euroclass D<sub>ca</sub> - s2, d1, a1

P/N: CLTDxxyyy-Dca

- fully dielectric construction, halogen-free LSFROH sheath
- tensile elements made of water blocking glass yarns
- primary protection of 250 µm
- central loose tube filled with water blocking gel
- suitable for outdoor as well as for indoor environment
- resistant to moisture, water and UV radiation
- partial rodent protection (glass rodent protection - GRP)
- ideal for horizontal campus duct installations using blowing and pulling technique



Temperature range	installation	-5°C to +50°C
	operation	-30°C to +70°C
Reaction to fire	D <sub>ca</sub> - s2, d1, a1	

## 4 fibers

**OM3** P/N: CLTD04OM3-Dca  
OM3 multimode 50/125 µm

**OM4** P/N: CLTD04OM4-Dca  
OM4 multimode 50/125 µm

**OS2** P/N: CLTD04OS2-Dca  
OS2 singlemode 9/125 µm  
(ITU-T G.652.D)

## 8 fibers

**OM3** P/N: CLTD08OM3-Dca  
OM3 multimode 50/125 µm

**OM4** P/N: CLTD08OM4-Dca  
OM4 multimode 50/125 µm

**OS2** P/N: CLTD08OS2-Dca  
OS2 singlemode 9/125 µm  
(ITU-T G.652.D)

## 12 fibers

**OM3** P/N: CLTD12OM3-Dca  
OM3 multimode 50/125 µm

**OM4** P/N: CLTD12OM4-Dca  
OM4 multimode 50/125 µm

**OS2** P/N: CLTD12OS2-Dca  
OS2 singlemode 9/125 µm  
(ITU-T G.652.D)

## 24 fibers

**OM3** P/N: CLTD24OM3-Dca  
OM3 multimode 50/125 µm

**OM4** P/N: CLTD24OM4-Dca  
OM4 multimode 50/125 µm

**OS2** P/N: CLTD24OS2-Dca  
OS2 singlemode 9/125 µm  
(ITU-T G.652.D)

**Note:** Possible to deliver cables with different number and type of fibers.

## Mechanical properties

Number of fibers		4	8	12	24
Min. bending radius	installation	104 mm	104 mm	104 mm	116 mm
	operation	52 mm	52 mm	52 mm	58 mm
Max. tensile strength	installation	1 000 N	1 000 N	1 000 N	1 000 N
	operation	300 N	300 N	300 N	300 N
Nominal cable diameter		5,2 mm	5,2 mm	5,2 mm	5,8 mm
Cable weight netto		33 kg/km	33 kg/km	33 kg/km	41 kg/km



## Universal CLT cable, Euroclass E<sub>ca</sub>

P/N: CLTDxxyy-Eca

- fully dielectric construction, halogen-free and fire retardant sheath
- tensile elements made of water blocking glass yarns
- primary protection of 250 µm
- central loose tube filled with water blocking gel
- suitable for outdoor as well as for indoor environment
- resistant to moisture, water and UV radiation
- partial rodent protection (glass rodent protection - GRP)
- ideal for horizontal campus duct installations using blowing and pulling technique



Temperature range	installation	-30°C to +40°C
	operation	-40°C to +70°C
Reaction to fire	E <sub>ca</sub>	

### 4 fibers

**OM1** P/N: CLTD04OM1-Eca

OM1 multimode 62,5/125 µm

**OM2** P/N: CLTD04OM2-Eca

OM2 multimode 50/125 µm

**OM3** P/N: CLTD04OM3-Eca

OM3 multimode 50/125 µm

**OM4** P/N: CLTD04OM4-Eca

OM4 multimode 50/125 µm

**OM5** P/N: CLTD04OM5-Eca

OM5 multimode 50/125 µm

**OS2** P/N: CLTD04OS2-Eca

OS2 singlemode 9/125 µm  
(ITU-T G.652.D)

### 8 fibers

**OM1** P/N: CLTD08OM1-Eca

OM1 multimode 62,5/125 µm

**OM2** P/N: CLTD08OM2-Eca

OM2 multimode 50/125 µm

**OM3** P/N: CLTD08OM3-Eca

OM3 multimode 50/125 µm

**OM4** P/N: CLTD08OM4-Eca

OM4 multimode 50/125 µm

**OM5** P/N: CLTD08OM5-Eca

OM5 multimode 50/125 µm

**OS2** P/N: CLTD08OS2-Eca

OS2 singlemode 9/125 µm  
(ITU-T G.652.D)

### 12 fibers

**OM1** P/N: CLTD12OM1-Eca

OM1 multimode 62,5/125 µm

**OM2** P/N: CLTD12OM2-Eca

OM2 multimode 50/125 µm

**OM3** P/N: CLTD12OM3-Eca

OM3 multimode 50/125 µm

**OM4** P/N: CLTD12OM4-Eca

OM4 multimode 50/125 µm

**OM5** P/N: CLTD12OM5-Eca

OM5 multimode 50/125 µm

**OS2** P/N: CLTD12OS2-Eca

OS2 singlemode 9/125 µm  
(ITU-T G.652.D)

### 24 fibers

**OM1** P/N: CLTD24OM1-Eca

OM1 multimode 62,5/125 µm

**OM2** P/N: CLTD24OM2-Eca

OM2 multimode 50/125 µm

**OM3** P/N: CLTD24OM3-Eca

OM3 multimode 50/125 µm

**OM4** P/N: CLTD24OM4-Eca

OM4 multimode 50/125 µm

**OM5** P/N: CLTD24OM5-Eca

OM5 multimode 50/125 µm

**OS2** P/N: CLTD24OS2-Eca

OS2 singlemode 9/125 µm  
(ITU-T G.652.D)

## Mechanical properties

Number of fibers		4	8	12	24
Min. bending radius	installation	116 mm	116 mm	116 mm	116 mm
	operation	58 mm	58 mm	58 mm	58 mm
Max. tensile strength	installation	2 000 N	2 000 N	2 000 N	2 000 N
	operation	750 N	750 N	750 N	750 N
Nominal cable diameter		5,8 mm	5,8 mm	5,8 mm	5,8 mm
Cable weight netto		40 kg/km	40 kg/km	40 kg/km	40 kg/km



# Armoured fire-resistant universal central loose tube cable, 180 min. at 750°C, Euroclass B2<sub>ca</sub> - s1, d1, a1

P/N: CLTFRxyyyy-PANC-B2ca



- fire-resistant (180 min. at 750°C) according to the standard IEC 60331-25
- corrugated steel tape armor
- fully dielectric construction, halogen-free and fire retardant sheath
- central loose tube filled with water blocking gel
- tensile elements made of glass yarns
- primary protection of 250 µm
- suitable for direct burial campus backbone applications, cable channels and cable bridges without the need of additional protection
- resistant to mechanical damage, moisture, water, UV radiation, corrosive liquids, also resistant to welding spark
- the highest protection level against rodents

Temperature range	installation	-5°C to +50°C
	operation	-30°C to +70°C
Reaction to fire	B2 <sub>ca</sub> - s1, d1, a1	

## 12 fibers

**OM3** P/N: CLTFR12OM3-PANC-B2ca

OM3 multimode 50/125 µm

**OS2** P/N: CLTFR12OS2-PANC-B2ca

OS2 singlemode 9/125 µm (ITU-T G.652.D)

**Note:** Possible to deliver cables with different number and type of fibers.

## 24 fibers

**OM3** P/N: CLTFR24OM3-PANC-B2ca

OM3 multimode 50/125 µm

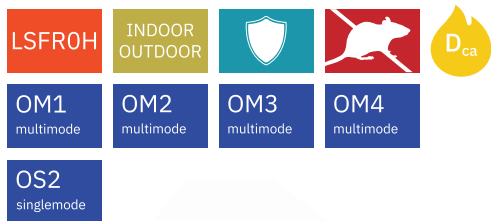
**OS2** P/N: CLTFR24OS2-PANC-B2ca

OS2 singlemode 9/125 µm (ITU-T G.652.D)

## Mechanical properties

Number of fibers	12		24	
	Min. bending radius	installation	220 mm	installation
operation		110 mm	operation	110 mm
Max. tensile strength	installation	3 000 N	installation	3 000 N
	operation	1 000 N	operation	1 000 N
Nominal cable diameter	11 mm		11 mm	
Cable weight netto	150 kg/km		150 kg/km	





## Universal armoured central loose tube cable, Euroclass D<sub>ca</sub> - s2, d2, a1

P/N: CLTDxyyyy-PANC-Dca

- suitable for direct burial campus backbone applications, cable channels and cable bridges without the need of additional protection
- halogen-free LSFROH sheath
- corrugated steel tape armor
- central loose tube filled with water blocking gel
- tensile elements made of glass yarns
- primary protection of 250 µm
- resistant to mechanical damage, moisture, water, UV radiation, corrosive liquids, also resistant to welding spark
- the highest protection level against rodents

Temperature range	installation	-5°C to +50°C
	operation	-30°C to +70°C
Reaction to fire	D <sub>ca</sub> - s2, d2, a1	

### 12 fibers

OM1 P/N: CLTD12OM1-PANC-Dca

OM1 multimode 62,5/125 µm

OM2 P/N: CLTD12OM2-PANC-Dca

OM2 multimode 50/125 µm

OM3 P/N: CLTD12OM3-PANC-Dca

OM3 multimode 50/125 µm

OM4 P/N: CLTD12OM4-PANC-Dca

OM4 multimode 50/125 µm

OS2 P/N: CLTD12OS2-PANC-Dca

OS2 singlemode 9/125 µm  
(ITU-T G.652.D)

**Note:** Possible to deliver cables with different number and type of fibers.

### 24 fibers

OM1 P/N: CLTD24OM1-PANC-Dca

OM1 multimode 62,5/125 µm

OM2 P/N: CLTD24OM2-PANC-Dca

OM2 multimode 50/125 µm

OM3 P/N: CLTD24OM3-PANC-Dca

OM3 multimode 50/125 µm

OM4 P/N: CLTD24OM4-PANC-Dca

OM4 multimode 50/125 µm

OS2 P/N: CLTD24OS2-PANC-Dca

OS2 singlemode 9/125 µm  
(ITU-T G.652.D)

### Mechanical properties

Number of fibers		12	24
Min. bending radius	installation	154 mm	154 mm
	operation	77 mm	77 mm
Max. tensile strength	installation	1 500 N	1 500 N
	operation	500 N	500 N
Nominal cable diameter		7,7 mm	7,7 mm
Cable weight netto		84 kg/km	84 kg/km



# Universal armoured central loose tube cable, Euroclass E<sub>ca</sub>

P/N: CLTDxxyyy-PANC-Eca

- suitable for direct burial campus backbone applications, cable channels and cable bridges without the need of additional protection
- halogen-free sheath
- corrugated steel tape armor
- central loose tube filled with water blocking gel
- tensile elements made of glass yarns
- primary protection of 250 µm
- resistant to mechanical damage, moisture, water, UV radiation, corrosive liquids, also resistant to welding spark
- the highest protection level against rodents



Temperature range	installation	-40°C to +70°C
	operation	-40°C to +70°C
Reaction to fire	E <sub>ca</sub>	

## 12 fibers

**OM1** P/N: CLTD12OM1-PANC-Eca

OM1 multimode 62,5/125 µm

**OM2** P/N: CLTD12OM2-PANC-Eca

OM2 multimode 50/125 µm

**OM3** P/N: CLTD12OM3-PANC-Eca

OM3 multimode 50/125 µm

**OM4** P/N: CLTD12OM4-PANC-Eca

OM4 multimode 50/125 µm

**OM5** P/N: CLTD12OM5-PANC-Eca

OM5 multimode 50/125 µm

**OS2** P/N: CLTD12OS2-PANC-Eca

OS2 singlemode 9/125 µm  
(ITU-T G.652.D)

**Note:** Possible to deliver cables with different number and type of fibers.

## 24 fibers

**OM1** P/N: CLTD24OM1-PANC-Eca

OM1 multimode 62,5/125 µm

**OM2** P/N: CLTD24OM2-PANC-Eca

OM2 multimode 50/125 µm

**OM3** P/N: CLTD24OM3-PANC-Eca

OM3 multimode 50/125 µm

**OM4** P/N: CLTD24OM4-PANC-Eca

OM4 multimode 50/125 µm

**OM5** P/N: CLTD24OM5-PANC-Eca

OM5 multimode 50/125 µm

**OS2** P/N: CLTD24OS2-PANC-Eca

OS2 singlemode 9/125 µm  
(ITU-T G.652.D)

## Mechanical properties

Number of fibers		12	24
Min. bending radius	installation	170 mm	170 mm
	operation	85 mm	85 mm
Max. tensile strength	installation	3 000 N	3 000 N
	operation	1 000 N	1 000 N
Nominal cable diameter		8,5 mm	8,5 mm
Cable weight netto		75 kg/km	75 kg/km

<b>LSFR0H</b>	<b>INDOOR OUTDOOR</b>	<b>GRP</b>	<b>D<sub>ca</sub></b>
<b>OM1</b> multimode	<b>OM2</b> multimode	<b>OM3</b> multimode	<b>OM4</b> multimode
<b>OS2</b> singlemode	<b>180 min.</b>		



# Fire-resistant universal central loose tube cable, 180 min. at 750°C, Euroclass D<sub>ca</sub>

P/N: CLTFRxyyy

- fire-resistant (180 min. at 750°C) according to the standards IEC 60331-11:01, IEC 60331-25:01
- fully dielectric construction, halogen-free and fire retardant sheath
- tensile elements made of water blocking glass yarns
- primary protection of 250 µm
- central loose tube filled with water blocking gel
- suitable for outdoor as well as for indoor environment
- resistant to moisture, water and UV radiation
- partial rodent protection (glass rodent protection - GRP)
- ideal for horizontal campus duct installations using blowing and pulling technique

Temperature range	installation	-5°C to +50°C
	operation	-30°C to +70°C
Reaction to fire	at 4, 8, 12 fibers	D <sub>ca</sub> - s1, d1, a1
	at 24 fibers	D <sub>ca</sub> - s2, d1, a1

## 4 fibers

- OM1** P/N: CLTFR04OM1  
OM1 multimode 62,5/125 µm
- OM2** P/N: CLTFR04OM2  
OM2 multimode 50/125 µm
- OM3** P/N: CLTFR04OM3  
OM3 multimode 50/125 µm
- OM4** P/N: CLTFR04OM4  
OM4 multimode 50/125 µm
- OS2** P/N: CLTFR04OS2  
OS2 singlemode 9/125 µm (ITU-T G.652.D)

## 8 fibers

- OM1** P/N: CLTFR08OM1  
OM1 multimode 62,5/125 µm
- OM2** P/N: CLTFR08OM2  
OM2 multimode 50/125 µm
- OM3** P/N: CLTFR08OM3  
OM3 multimode 50/125 µm
- OM4** P/N: CLTFR08OM4  
OM4 multimode 50/125 µm
- OS2** P/N: CLTFR08OS2  
OS2 singlemode 9/125 µm (ITU-T G.652.D)

## 12 fibers

- OM1** P/N: CLTFR12OM1  
OM1 multimode 62,5/125 µm
- OM2** P/N: CLTFR12OM2  
OM2 multimode 50/125 µm
- OM3** P/N: CLTFR12OM3  
OM3 multimode 50/125 µm
- OM4** P/N: CLTFR12OM4  
OM4 multimode 50/125 µm
- OS2** P/N: CLTFR12OS2  
OS2 singlemode 9/125 µm (ITU-T G.652.D)

## 24 fibers

- OM1** P/N: CLTFR24OM1  
OM1 multimode 62,5/125 µm
- OM2** P/N: CLTFR24OM2  
OM2 multimode 50/125 µm
- OM3** P/N: CLTFR24OM3  
OM3 multimode 50/125 µm
- OM4** P/N: CLTFR24OM4  
OM4 multimode 50/125 µm
- OS2** P/N: CLTFR24OS2  
OS2 singlemode 9/125 µm (ITU-T G.652.D)

## Mechanical properties

Number of fibers		4	8	12	24
Min. bending radius	installation	140 mm	140 mm	140 mm	156 mm
	operation	70 mm	70 mm	70 mm	78 mm
Max. tensile strength	installation	2 000 N	2 000 N	2 000 N	2 000 N
	operation	-	-	-	-
Nominal cable diameter		7 mm	7 mm	7 mm	7,8 mm
Cable weight netto		58 kg/km	58 kg/km	58 kg/km	68 kg/km



PANG - KEL

Optical Fibre Cable 1

Optical Fibre Cable 1

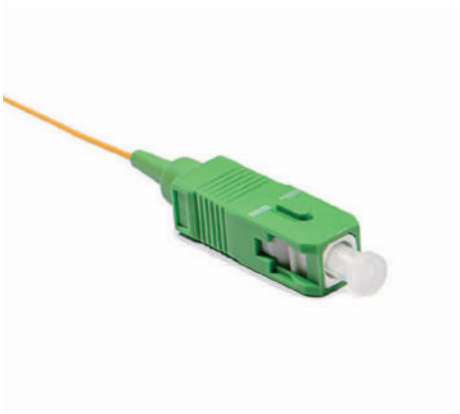
**KELINE**

[www.atlas-it.hr](http://www.atlas-it.hr) | [prodaja@atlas-it.hr](mailto:prodaja@atlas-it.hr)

# Pigtails

**Note** halogen-free secondary EASYSTRIP protection of 900 µm

OS2  
singlemode



## Pigtail SC/APC

OS2 P/N: PIG09-SCA-020

OS2 singlemode 9/125 µm  
(ITU-T G.652.D)

Connector SC/APC	singlemode OS2
Polishing	APC
Return loss	≥ 65 dB
Insertion loss	0,15 dB (typical)
Length	2 m
Ferrule material	ceramic (zirconia)
Ferrule diameter	2,5 mm

OS2  
singlemode



## Pigtail LC/APC

OS2 P/N: PIG09-LCA-020

OS2 singlemode 9/125 µm  
(ITU-T G.652.D)

Connector LC/APC	singlemode OS2
Polishing	APC
Return loss	≥ 65 dB
Insertion loss	0,15 dB (typical)
Length	2 m
Ferrule material	ceramic (zirconia)
Ferrule diameter	1,25 mm

OS2  
singlemode



## Pigtail LSH/APC

OS2 P/N: PIG09-LSHAPC-020

OS2 singlemode 9/125 µm  
(ITU-T G.652.D)

Connector LSH/APC	singlemode OS2
Polishing	APC
Return loss	≥ 65 dB
Insertion loss	0,15 dB (typical)
Length	2 m
Ferrule material	ceramic (zirconia)
Ferrule diameter	2,5 mm



OM1  
multimode

OM2  
multimode

OM3  
multimode

OS2  
singlemode

## Pigtail ST

OM1 P/N: PIG06-ST-020

OM1 multimode 62,5/125 µm

OM3 P/N: PIGOM3-ST-020

OM3 multimode 50/125 µm

OM2 P/N: PIG05-ST-020

OM2 multimode 50/125 µm

OS2 P/N: PIG09-ST-020

OS2 singlemode 9/125 µm  
(ITU-T G.652.D)



Connector ST	multimode OM1, OM2, OM3	singlemode OS2
Polishing	PC	PC
Return loss	≥ 20 dB	≥ 55 dB
Insertion loss	≤ 0,3 dB	0,15 dB (typical)
Length	2 m	2 m
Ferrule material	ceramic (zirconia)	ceramic (zirconia)
Ferrule diameter	2,5 mm	2,5 mm

OM1  
multimode

OM2  
multimode

OM3  
multimode

OM4  
multimode

OM5  
multimode

OS2  
singlemode

## Pigtail SC

OM1 P/N: PIG06-SC-020

OM1 multimode 62,5/125 µm

OM3 P/N: PIGOM3-SC-020

OM3 multimode 50/125 µm

OM5 P/N: PIGOM5-SC-020

OM5 multimode 50/125 µm

OM2 P/N: PIG05-SC-020

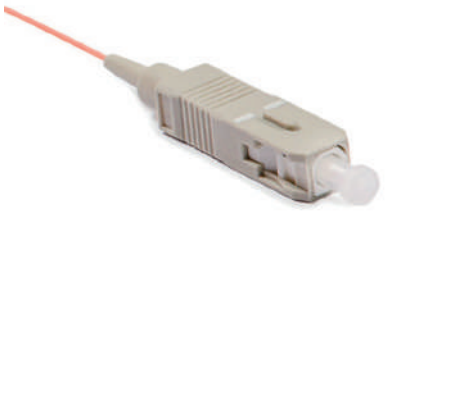
OM2 multimode 50/125 µm

OM4 P/N: PIGOM4-SC-020

OM4 multimode 50/125 µm

OS2 P/N: PIG09-SC-020

OS2 singlemode 9/125 µm  
(ITU-T G.652.D)



Connector SC	multimode OM1, OM2, OM3, OM4, OM5	singlemode OS2
Polishing	PC	PC
Return loss	≥ 20 dB	≥ 55 dB
Insertion loss	≤ 0,3 dB	0,15 dB (typical)
Length	2 m	2 m
Ferrule material	ceramic (zirconia)	ceramic (zirconia)
Ferrule diameter	2,5 mm	2,5 mm

OM1  
multimode

OM2  
multimode

OM3  
multimode

OM4  
multimode

OM5  
multimode

OS2  
singlemode

## Pigtail LC

OM1 P/N: PIG06-LC-020

OM1 multimode 62,5/125 µm

OM3 P/N: PIGOM3-LC-020

OM3 multimode 50/125 µm

OM5 P/N: PIGOM5-LC-020

OM5 multimode 50/125 µm

OM2 P/N: PIG05-LC-020

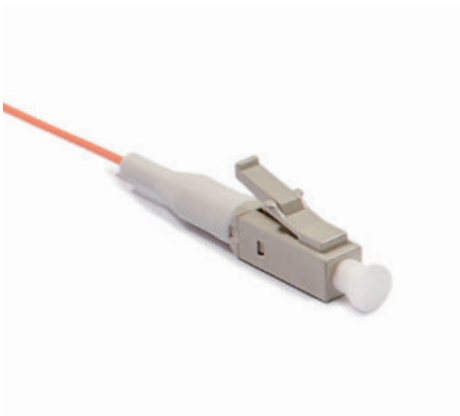
OM2 multimode 50/125 µm

OM4 P/N: PIGOM4-LC-020

OM4 multimode 50/125 µm

OS2 P/N: PIG09-LC-020

OS2 singlemode 9/125 µm  
(ITU-T G.652.D)



Connector LC	multimode OM1, OM2, OM3, OM4, OM5	singlemode OS2
Polishing	PC	PC
Return loss	≥ 20 dB	≥ 55 dB
Insertion loss	≤ 0,3 dB	0,15 dB (typical)
Length	2 m	2 m
Ferrule material	ceramic (zirconia)	ceramic (zirconia)
Ferrule diameter	1,25 mm	1,25 mm

# Patch cords

xxx - patch cable's length in dm

**Note** standard lengths - 1 m, 2 m, 3 m, 5 m, 7 m, 10 m, 15 m, 20 m  
non-standard patch cord length must be specified in the order

LS0H	OM1 multimode	OM2 multimode	OM3 multimode
OM4 multimode	OS2 singlemode		



## Patch cord Duplex ST-ST

**OM1** P/N: P06D-STST-xxx

OM1 multimode 62,5/125 µm

**OM2** P/N: P05D-STST-xxx

OM2 multimode 50/125 µm

**OM3** P/N: POM3D-STST-xxx

OM3 multimode 50/125 µm

**OM4** P/N: POM4D-STST-xxx

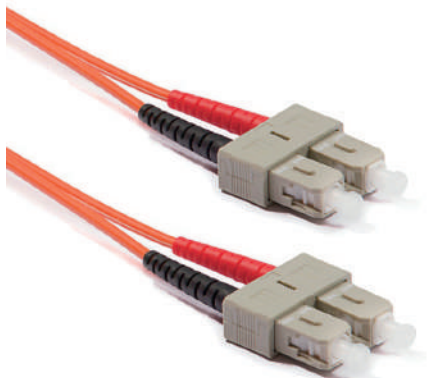
OM4 multimode 50/125 µm

**OS2** P/N: P09D-STST-xxx

OS2 singlemode 9/125 µm  
(ITU-T G.652.D)

Connector ST	multimode OM1, OM2, OM3, OM4	singlemode OS2
Polishing	PC	PC
Return loss	≥ 20 dB	≥ 55 dB
Insertion loss	≤ 0,3 dB	0,15 dB (typical)
Ferrule material	ceramic (zirconia)	ceramic (zirconia)
Ferrule diameter	2,5 mm	2,5 mm
Insertion / extraction cycles	min. 1000	min. 1000

LS0H	OM1 multimode	OM2 multimode	OM3 multimode
OM4 multimode	OM5 multimode	OS2 singlemode	



## Patch cord Duplex SC-SC

**OM1** P/N: P06D-SCSC-xxx

OM1 multimode 62,5/125 µm

**OM2** P/N: P05D-SCSC-xxx

OM2 multimode 50/125 µm

**OM3** P/N: POM3D-SCSC-xxx

OM3 multimode 50/125 µm

**OM4** P/N: POM4D-SCSC-xxx

OM4 multimode 50/125 µm

**OM5** P/N: POM5D-SCSC-xxx

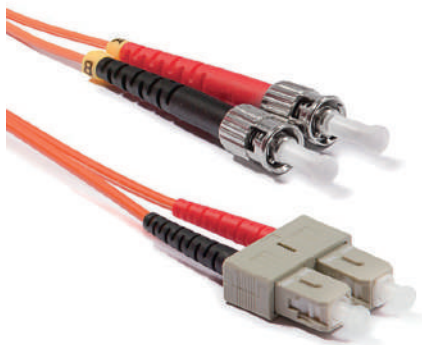
OM5 multimode 50/125 µm

**OS2** P/N: P09D-SCSC-xxx

OS2 singlemode 9/125 µm  
(ITU-T G.652.D)

Connector SC	multimode OM1, OM2, OM3, OM4, OM5	singlemode OS2
Polishing	PC	PC
Return loss	≥ 20 dB	≥ 55 dB
Insertion loss	≤ 0,3 dB	0,15 dB (typical)
Ferrule material	ceramic (zirconia)	ceramic (zirconia)
Ferrule diameter	2,5 mm	2,5 mm
Insertion / extraction cycles	min. 1000	min. 1000

LS0H	OM1 multimode	OM2 multimode	OM3 multimode
OM4 multimode	OS2 singlemode		



## Patch cord Duplex ST-SC

**OM1** P/N: P06D-STSC-xxx

OM1 multimode 62,5/125 µm

**OM2** P/N: P05D-STSC-xxx

OM2 multimode 50/125 µm

**OM3** P/N: POM3D-STSC-xxx

OM3 multimode 50/125 µm

**OM4** P/N: POM4D-STSC-xxx

OM4 multimode 50/125 µm

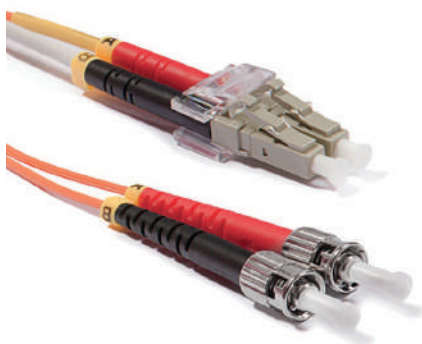
**OS2** P/N: P09D-STSC-xxx

OS2 singlemode 9/125 µm  
(ITU-T G.652.D)

Connector ST	multimode OM1, OM2, OM3, OM4	singlemode OS2
Polishing	PC	PC
Return loss	≥ 20 dB	≥ 55 dB
Insertion loss	≤ 0,3 dB	0,15 dB (typical)
Ferrule material	ceramic (zirconia)	ceramic (zirconia)
Ferrule diameter	2,5 mm	2,5 mm
Insertion / extraction cycles	min. 1000	min. 1000

Connector SC	multimode OM1, OM2, OM3, OM4	singlemode OS2
Polishing	PC	PC
Return loss	≥ 20 dB	≥ 55 dB
Insertion loss	≤ 0,3 dB	0,15 dB (typical)
Ferrule material	ceramic (zirconia)	ceramic (zirconia)
Ferrule diameter	2,5 mm	2,5 mm
Insertion / extraction cycles	min. 1000	min. 1000

LS0H	OM1 multimode	OM2 multimode	OM3 multimode
OM4 multimode	OS2 singlemode		



## Patch cord Duplex LC-ST

**OM1** P/N: P06D-LCST-xxx

OM1 multimode 62,5/125 µm

**OM2** P/N: P05D-LCST-xxx

OM2 multimode 50/125 µm

**OM3** P/N: POM3D-LCST-xxx

OM3 multimode 50/125 µm

**OM4** P/N: POM4D-LCST-xxx

OM4 multimode 50/125 µm

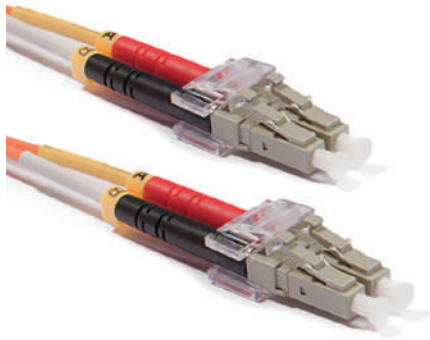
**OS2** P/N: P09D-LCST-xxx

OS2 singlemode 9/125 µm  
(ITU-T G.652.D)

Connector LC	multimode OM1, OM2, OM3, OM4	singlemode OS2
Polishing	PC	PC
Return loss	≥ 20 dB	≥ 55 dB
Insertion loss	≤ 0,3 dB	0,15 dB (typical)
Ferrule material	ceramic (zirconia)	ceramic (zirconia)
Ferrule diameter	1,25 mm	1,25 mm
Insertion / extraction cycles	min. 1000	min. 1000

Connector ST	multimode OM1, OM2, OM3, OM4	singlemode OS2
Polishing	PC	PC
Return loss	≥ 20 dB	≥ 55 dB
Insertion loss	≤ 0,3 dB	0,15 dB (typical)
Ferrule material	ceramic (zirconia)	ceramic (zirconia)
Ferrule diameter	2,5 mm	2,5 mm
Insertion / extraction cycles	min. 1000	min. 1000

<b>LS0H</b>	<b>OM1</b> multimode	<b>OM2</b> multimode	<b>OM3</b> multimode
<b>OM4</b> multimode	<b>OM5</b> multimode	<b>OS2</b> singlemode	



## Patch cord Duplex LC-LC

**OM1** P/N: P06D-LCLC-xxx

OM1 multimode 62,5/125 µm

**OM2** P/N: P05D-LCLC-xxx

OM2 multimode 50/125 µm

**OM3** P/N: POM3D-LCLC-xxx

OM3 multimode 50/125 µm

**OM4** P/N: POM4D-LCLC-xxx

OM4 multimode 50/125 µm

**OM5** P/N: POM5D-LCLC-xxx

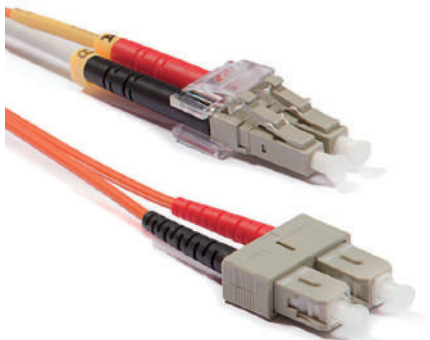
OM5 multimode 50/125 µm

**OS2** P/N: P09D-LCLC-xxx

OS2 singlemode 9/125 µm  
(ITU-T G.652.D)

Connector LC	multimode OM1, OM2, OM3, OM4, OM5	singlemode OS2
Polishing	PC	PC
Return loss	≥ 20 dB	≥ 55 dB
Insertion loss	≤ 0,3 dB	0,15 dB (typical)
Ferrule material	ceramic (zirconia)	ceramic (zirconia)
Ferrule diameter	1,25 mm	1,25 mm
Insertion / extraction cycles	min. 1000	min. 1000

<b>LS0H</b>	<b>OM1</b> multimode	<b>OM2</b> multimode	<b>OM3</b> multimode
<b>OM4</b> multimode	<b>OM5</b> multimode	<b>OS2</b> singlemode	



## Patch cord Duplex LC-SC

**OM1** P/N: P06D-LCSC-xxx

OM1 multimode 62,5/125 µm

**OM2** P/N: P05D-LCSC-xxx

OM2 multimode 50/125 µm

**OM3** P/N: POM3D-LCSC-xxx

OM3 multimode 50/125 µm

**OM4** P/N: POM4D-LCSC-xxx

OM4 multimode 50/125 µm

**OM5** P/N: POM5D-LCSC-xxx

OM5 multimode 50/125 µm

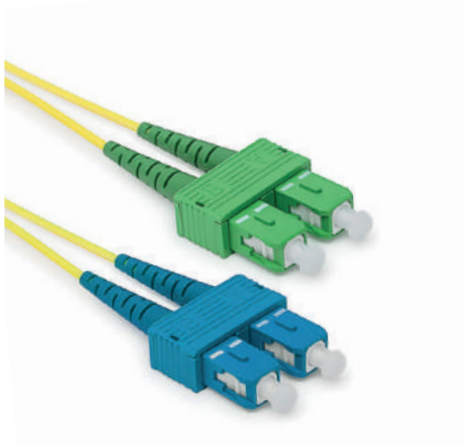
**OS2** P/N: P09D-LCSC-xxx

OS2 singlemode 9/125 µm  
(ITU-T G.652.D)

Connector LC	multimode OM1, OM2, OM3, OM4, OM5	singlemode OS2
Polishing	PC	PC
Return loss	≥ 20 dB	≥ 55 dB
Insertion loss	≤ 0,3 dB	0,15 dB (typical)
Ferrule material	ceramic (zirconia)	ceramic (zirconia)
Ferrule diameter	1,25 mm	1,25 mm
Insertion / extraction cycles	min. 1000	min. 1000

Connector SC	multimode OM1, OM2, OM3, OM4, OM5	singlemode OS2
Polishing	PC	PC
Return loss	≥ 20 dB	≥ 55 dB
Insertion loss	≤ 0,3 dB	0,15 dB (typical)
Ferrule material	ceramic (zirconia)	ceramic (zirconia)
Ferrule diameter	2,5 mm	2,5 mm
Insertion / extraction cycles	min. 1000	min. 1000

LS0H

OS2  
singlemode

## Patch cord Duplex SC/APC-SC

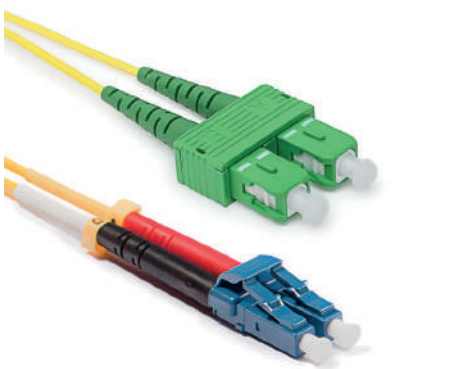
OS2 | P/N: P09D-SCASC-xxx

OS2 singlemode 9/125 μm  
(ITU-T G.652.D)

Connector SC/APC	singlemode OS2
Polishing	APC
Return loss	≥ 65 dB
Insertion loss	0,15 dB (typical)
Ferrule material	ceramic (zirconia)
Ferrule diameter	2,5 mm
Insertion / extraction cycles	min. 1000

Connector SC	singlemode OS2
Polishing	PC
Return loss	≥ 55 dB
Insertion loss	0,15 dB (typical)
Ferrule material	ceramic (zirconia)
Ferrule diameter	2,5 mm
Insertion / extraction cycles	min. 1000

LS0H

OS2  
singlemode

## Patch cord Duplex SC/APC-LC

OS2 | P/N: P09D-SCALC-xxx

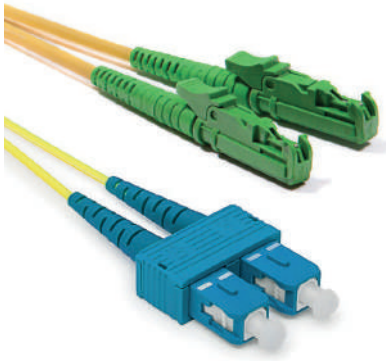
OS2 singlemode 9/125 μm  
(ITU-T G.652.D)

Connector SC/APC	singlemode OS2
Polishing	APC
Return loss	≥ 65 dB
Insertion loss	0,15 dB (typical)
Ferrule material	ceramic (zirconia)
Ferrule diameter	2,5 mm
Insertion / extraction cycles	min. 1000

Connector LC	singlemode OS2
Polishing	PC
Return loss	≥ 55 dB
Insertion loss	0,15 dB (typical)
Ferrule material	ceramic (zirconia)
Ferrule diameter	1,25 mm
Insertion / extraction cycles	min. 1000



LS0H

OS2  
singlemode

## Patch cord Duplex LSH/APC-SC

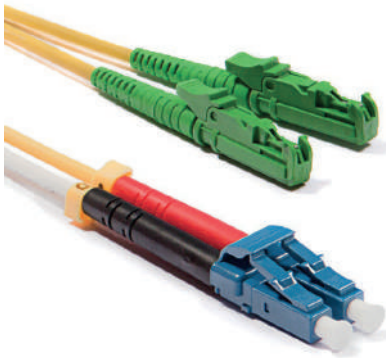
OS2 P/N: P09D-LSHASC-xxx

OS2 singlemode 9/125 μm  
(ITU-T G.652.D)

Connector LSH	singlemode OS2
Polishing	APC
Return loss	≥ 65 dB
Insertion loss	0,15 dB (typical)
Ferrule material	ceramic (zirconia)
Ferrule diameter	2,5 mm
Insertion / extraction cycles	min. 1000

Connector SC	singlemode OS2
Polishing	PC
Return loss	≥ 55 dB
Insertion loss	0,15 dB (typical)
Ferrule material	ceramic (zirconia)
Ferrule diameter	2,5 mm
Insertion / extraction cycles	min. 1000

LS0H

OS2  
singlemode

## Patch cord Duplex LSH/APC-LC

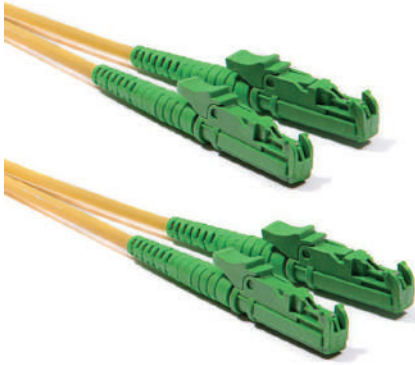
OS2 P/N: P09D-LSHALC-xxx

OS2 singlemode 9/125 μm  
(ITU-T G.652.D)

Connector LSH	singlemode OS2
Polishing	APC
Return loss	≥ 65 dB
Insertion loss	0,15 dB (typical)
Ferrule material	ceramic (zirconia)
Ferrule diameter	2,5 mm
Insertion / extraction cycles	min. 1000

Connector LC	singlemode OS2
Polishing	PC
Return loss	≥ 55 dB
Insertion loss	typical
Ferrule material	ceramic (zirconia)
Ferrule diameter	1,25 mm
Insertion / extraction cycles	min. 1000

LS0H

OS2  
singlemode

## Patch cord Duplex LSH/APC-LSH/APC

OS2 | P/N: P09D-LSHALSHA-xxx

OS2 singlemode 9/125  $\mu\text{m}$   
(ITU-T G.652.D)

Connector LSH	singlemode OS2
Polishing	APC
Return loss	$\geq 65$ dB
Insertion loss	0,15 dB (typical)
Ferrule material	ceramic (zirconia)
Ferrule diameter	2,5 mm
Insertion / extraction cycles	min. 1000

# Adapters

## LC-LC Duplex

P/N: KE-LC-MM **OM1** **OM2**

Alignment sleeve	ceramic (zirconia)
Insertion loss	< 0,2 dB



## LC-LC Duplex

P/N: KE-LC-MM-AQ **OM3**

Alignment sleeve	ceramic (zirconia)
Insertion loss	< 0,2 dB



## LC-LC Duplex

P/N: KE-LC-MM-EV **OM4**

Alignment sleeve	ceramic (zirconia)
Insertion loss	< 0,2 dB



## LC-LC Duplex

P/N: KE-LC-MM-LG **OM5**

Alignment sleeve	ceramic (zirconia)
Insertion loss	< 0,2 dB



## LC-LC Duplex

P/N: KE-LC-SM **OS2**

Alignment sleeve	ceramic (zirconia)
Insertion loss	< 0,2 dB



## LC/APC-LC/APC Duplex

P/N: KE-LCA-SM **OS2**

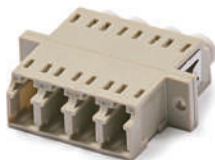
Alignment sleeve	ceramic (zirconia)
Insertion loss	< 0,2 dB



## LC-LC Quad

P/N: KE-LCD-MM **OM1** **OM2**

Alignment sleeve	ceramic (zirconia)
Insertion loss	< 0,2 dB



## LC-LC Quad

P/N: KE-LCD-MM-AQ **OM3**

Alignment sleeve	ceramic (zirconia)
Insertion loss	< 0,2 dB



## LC-LC Quad

P/N: KE-LCD-MM-EV **OM4**

Alignment sleeve	ceramic (zirconia)
Insertion loss	< 0,2 dB



## LC-LC Quad

P/N: KE-LCD-MM-LG **OM5**

Alignment sleeve	ceramic (zirconia)
Insertion loss	< 0,2 dB



## LC-LC Quad

P/N: KE-LCD-SM **OS2**

Alignment sleeve	ceramic (zirconia)
Insertion loss	< 0,2 dB



## LSH/APC-LSH/APC Simplex

P/N: KE-LSHA-SM **OS2**

Alignment sleeve	ceramic (zirconia)
Insertion loss	< 0,2 dB



## SC-SC Simplex

P/N: KE-SC-MM OM1 OM2

Alignment sleeve	phosphor bronze
Insertion loss	< 0,2 dB



## SC-SC Simplex

P/N: KE-SC-MM-AQ OM3

Alignment sleeve	ceramic (zirconia)
Insertion loss	< 0,2 dB



## SC-SC Simplex

P/N: KE-SC-MM-EV OM4

Alignment sleeve	ceramic (zirconia)
Insertion loss	< 0,2 dB



## SC-SC Simplex

P/N: KE-SC-MM-LG OM5

Alignment sleeve	ceramic (zirconia)
Insertion loss	< 0,2 dB



## SC-SC Simplex

P/N: KE-SC-SM OS2

Alignment sleeve	ceramic (zirconia)
Insertion loss	< 0,2 dB



## SC/APC-SC/APC Simplex

P/N: KE-SCA-SM OS2

Alignment sleeve	ceramic (zirconia)
Insertion loss	< 0,2 dB



## SC-SC Duplex

P/N: KE-SCD-MM OM1 OM2

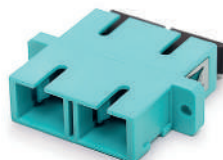
Alignment sleeve	ceramic (zirconia)
Insertion loss	< 0,2 dB



## SC-SC Duplex

P/N: KE-SCD-MM-AQ OM3

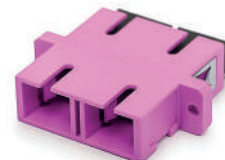
Alignment sleeve	ceramic (zirconia)
Insertion loss	< 0,2 dB



## SC-SC Duplex

P/N: KE-SCD-MM- OM4

Alignment sleeve	ceramic (zirconia)
Insertion loss	< 0,2 dB



## SC-SC Duplex

P/N: KE-SCD-MM-LG OM5

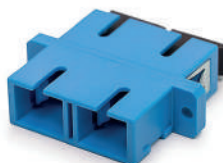
Alignment sleeve	ceramic (zirconia)
Insertion loss	< 0,2 dB



## SC-SC Duplex

P/N: KE-SCD-SM OS2

Alignment sleeve	ceramic (zirconia)
Insertion loss	< 0,2 dB



## SC/APC-SC/APC Duplex

P/N: KE-SCAD-SM OS2

Alignment sleeve	ceramic (zirconia)
Insertion loss	< 0,2 dB



## ST-ST Simplex

P/N: KE-ST-MM OM1 OM2

Alignment sleeve	phosphor bronze
Insertion loss	< 0,2 dB



## ST-ST Simplex

P/N: KE-ST-SM OS2

Alignment sleeve	ceramic (zirconia)
Insertion loss	< 0,2 dB



# Patch panels, distribution boxes, additional material

## 2. Optical cabling



### Sliding patch panel for 24 x SC-SC, LC-LC Duplex or LSH-LSH adapters, removable front panel

P/N: RAB-FO-X47-SL

- suitable for SC-SC, LC-LC Duplex or LSH-LSH adapters
- removable front panel
- designed for 19" cabinets
- 4 cable inputs
- set of M6 screws and captive nuts (4 pcs)
- blanking inserts (24 pcs)
- cable clamps PG13,5 (4 pcs)
- guides for fiber reserve (2 pcs)
- screws for fiber optic adapters (48 pcs)

Height	1U (44,5 mm)
Width	19" (482,6 mm)
Depth (including cable management)	240 mm
Material	steel
Color	black RAL 9005
Surface	structured, matt





## Sliding patch panel for 24 x SC-SC Duplex or LC-LC Quad adapters, removable front panel

P/N: RAB-FO-X48-SL



- suitable for SC-SC Duplex or LC-LC Quad adapters
- removable front panel
- designed for 19" cabinets
- 4 cable inputs
- set of M6 screws and captive nuts (4 pcs)
- blanking inserts (24 pcs)
- cable clamps PG13,5 (4 pcs)
- guides for fiber reserve (2 pcs)
- screws for fiber optic adapters (48 pcs)

Height	1U (44,5 mm)
Width	19" (482,6 mm)
Depth (including cable management)	240 mm
Material	steel
Color	black RAL 9005
Surface	structured, matt



## Sliding patch panel for 24 x ST-ST or FC-FC adapters, removable front panel

P/N: RAB-FO-X15-SL



- suitable for ST-ST or FC-FC adapters
- removable front panel
- designed for 19" cabinets
- 4 cable inputs
- set of M6 screws and captive nuts (4 pcs)
- blanking inserts (24 pcs)
- cable clamps PG13,5 (4 pcs)
- guides for fiber reserve (2 pcs)

Height	1U (44,5 mm)
Width	19" (482,6 mm)
Depth (including cable management)	240 mm
Material	steel
Color	black RAL 9005
Surface	structured, matt





## Wall-mounted distribution box IP54, empty

P/N: RAC-FO-A07-X1

- divided into two sections with separate locks:
  - optical welds section ready for splice cassette
  - cable management section
- 4 cable input
- holders for 24 x SC-SC, LC-LC Duplex or LSH-LSH adapters (1 pc)
- holders for 24 x ST-ST or FC-FC adapters (1 pc)
- holders for 16 x SC-SC Duplex or LC-LC Quad adapters (1 pc)
- cable clamp PG11 (2 pcs)

Height		245 mm
	overall	345 mm
Width	optical welds section	190 mm
	cable management section	155 mm
Depth		75 mm
Material		steel
Color		gray RAL 7035
Surface		structured, shiny

## Distribution box for ST-ST or FC-FC adapters, empty

P/N: RA-FO-04

P/N: RA-FO-08

for 4 adapters

for 8 adapters



- suitable for wall mounting
- cable clamp PG11 (2 pcs)

Height	155 mm
Width	155 mm
Depth	40 mm
Material	steel
Color	black RAL 9005
Surface	structured, matt

## Distribution box for SC-SC, LC-LC Duplex or LSH-LSH adapters, empty

P/N: RA-FO-04SC

P/N: RA-FO-08SC

for 4 adapters

for 8 adapters



- suitable for wall mounting
- cable clamp PG11 (2 pcs)

Height	155 mm
Width	155 mm
Depth	40 mm
Material	steel
Color	black RAL 9005
Surface	structured, matt



## Optical outlet FTTH, empty

P/N: KE-FTTHB-04

- suitable for 4 x SC-SC or 4 x LC-LC Duplex adapters
- designed for wall mounting
- mounted splice cassette for 4/8 splice protection

Height	80 mm
Width	100 mm
Depth	30 mm
Material	ABS plastic
Color	white RAL 9003
Surface	shiny

## Distribution box for DIN rail for 6 x SC-SC Duplex adapters, empty

P/N: HN-DIN6

for 6 adapters



- suitable for 6 x SC-SC Duplex adapters
- designed for DIN rails in residential and industrial electric distribution (home networking and industrial Ethernet)
- cable clamp PG11 (2 pcs)
- blind (2 pcs)
- including splice holders

Height	130 mm
Width	35 mm
Depth	125 mm
Material	steel
Color	gray
Surface	structured, matt

## Distribution box for DIN rail for 8 x SC-SC, LC-LC Duplex or LSH-LSH adapters, empty

P/N: HN-DIN8-SC

for 8 adapters



- suitable for 8 x SC-SC, LC-LC Duplex or LSH-LSH adapters
- designed for DIN rails in residential and industrial electric distribution (home networking and industrial Ethernet)
- cable clamp PG11 (2 pcs)
- blind (2 pcs)
- including splice holders

Height	130 mm
Width	35 mm
Depth	125 mm
Material	steel
Color	gray
Surface	structured, matt



## Fiber optic enclosure

P/N: PC-ES-2024

- suitable for campus networks
- capacity up to 240 splices
- can be mounted on wall or pole
- sealing secured by silicone plugging ring
- cable inputs sealed by shrinking tubes
- 6 separate cable inputs and one oval cable input (uninterrupted cable)
- 1 cassette for 24 splices included (possibility of adding another 9 pieces)

Dimensions	height	460 mm
	diameter	225 mm
Operating temperature	-40°C to +65°C	
Operating pressure	70 to 106 kPa	
Capacity	max. 240 fibers	
Number of cassettes	max. 10	
Cable diameter	6 mm to 17,5 mm	
Isolation resistance	> 2 x 10 <sup>4</sup> MΩ	
Voltage-resistance strength	15 kV DC / 1 min	



## Splice cassette for 24 splices

P/N: PC-7212

- designed for fiber optic enclosure PC-ES-2024



## Splice cassette, empty

P/N: RAB-FO-X04

P/N: RAB-FO-X10

with 2x RAB-FO-X12 empty (for splice holder RAB-FO-X12 or RAB-FO-X14)



## Splice holder for splice cassette

P/N: RAB-FO-X12

- suitable for cassette RAB-FO-X10
- for 12 splice protection F1102 or F11002-40



## Splice holder for crimp splice cassette

P/N: RAB-FO-X14

- suitable for cassette RAB-FO-X10
- for 12 crimp splice protection FCSP-1



## Splice holder

P/N: OPT-145

for 12/24 splice  
protection

P/N: OPT-189

for 2/4 splice  
protection



## Splice protection shrinkable by heat

P/N: F11002

length 60 mm

P/N: F11002-40

length 40 mm



## Crimp splice protection

P/N: FCSP-1



## Keystone adapter for optical SC and LC Duplex adapters

P/N: KEJ-SC-W

- suitable for keystone outlets and patch panels
- designed for optical adapters SC simplex and LC duplex



# Tools



## Cleaner pen for SC, ST, FC and LSH connectors

P/N: KE-FO-FC250

- tool for cleaning the end-face of 2,5 mm ferrule (SC, ST, FC and LSH)
- one-click single action cleaning system
- suitable for cleaning plugs and connectors inside adapters
- extendable tip reaches recessed adapters of patch panel
- dry cleaning with antistatic tape
- over 800 cleanings per unit
- effective against a variety of contaminants



## Cleaner pen for LC and MU connectors

P/N: KE-FO-FC125

- tool for cleaning the end-face of 1,25 mm ferrule (LC and MU)
- one-click single action cleaning system
- suitable for cleaning plugs and connectors inside adapters
- extendable tip reaches recessed adapters of patch panel
- dry cleaning with antistatic tape
- over 800 cleanings per unit
- effective against a variety of contaminants



## Cleaning box for fiber optic connectors

P/N: KE-FO-RC

- tool for cleaning the end-face of fiber optic connectors
- suitable for LC, SC, ST, FC, MU, DIN connectors
- dry cleaning with antistatic tape
- over 500 cleanings per unit
- effective against a variety of contaminants



## Fiber optic visual fault locator

P/N: KE-VFL

- tool designed for searching optical cable errors
- laser performance - output power 10 mW (max. 18 mW)
- wavelength 650 nm
- suitable for connectors with diameter ferrule 2,5 mm and 1,25 mm

OM1  
multimode

OM2  
multimode

OM3  
multimode

OM4  
multimode

OS2  
singlemode

## Launch lead

P/N: FLC-xxx-yyy-zzz

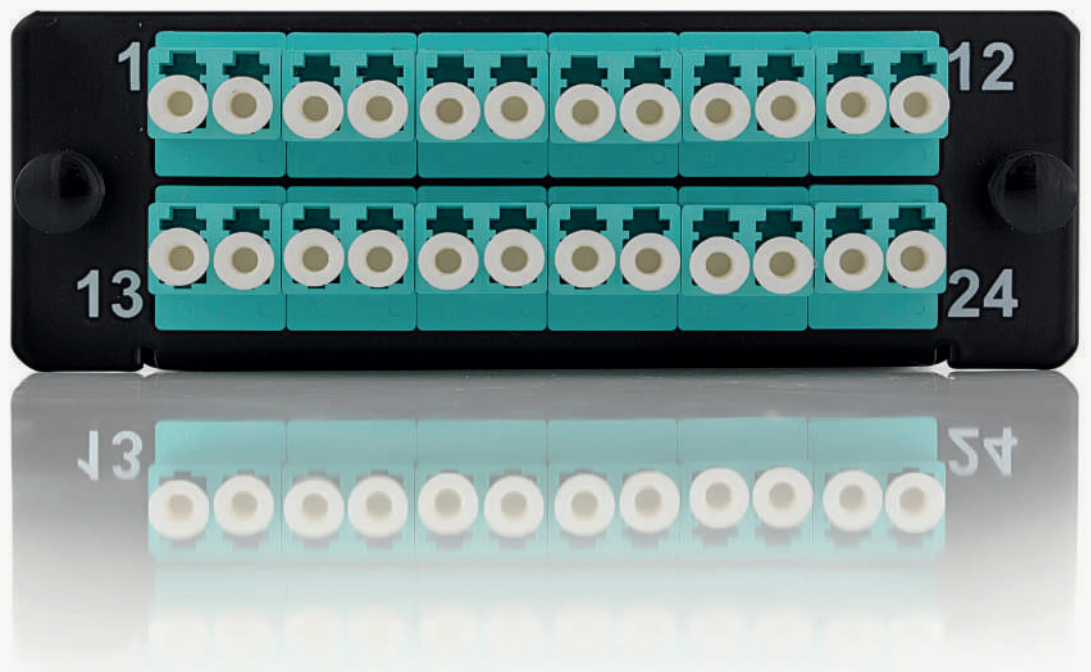
- 3 mm armoured external preconnectorized cables
- it can be held in the palm of one hand: four times smaller than the standard launch boxes
- patented blocking system for a 100% fiber protection
- the external connectorized cable length can be easily adjusted by the user
- other cable lengths or connector type upon request



Dimensions	height	90 mm
	diameter	110 mm
Weight		0,4 kg
Operating temperature		-33°C to +90°C
Insertion Loss		< 0,25dB
Return Loss	UPC	< 50dB
	APC	< 60dB
Fiber Length		up to 1000 m
Material		ABS and Aluminum

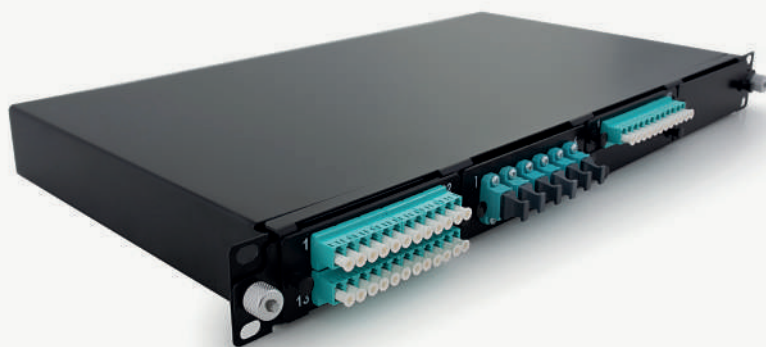
**Note** xxx - performance categories  
yyy - fibre length: 300 m, 500 m, 1000 m  
zzz - for adapters: SC/APC - SC/APC, SC/APC - FC, SC/APC - SC, FC - FC, SC - FC, SC - SC

# MPO/MTP® solutions 3



# Contents

110	Knowledge base
114	MTP - MTP cables
117	MTP - LC cables
120	MTP patch panels and accessories
122	MTP modules



# Knowledge base

The MPO/MTP solution provides a high level of flexibility due to the concentration of a large number of fibers in one connector.

High density of Plug and Play ports, up to 96 fibers per 1U.

The solution is standardized for high-speed protocols reaching transmission speeds of 40 Gigabit/s and 100 Gigabit/s.

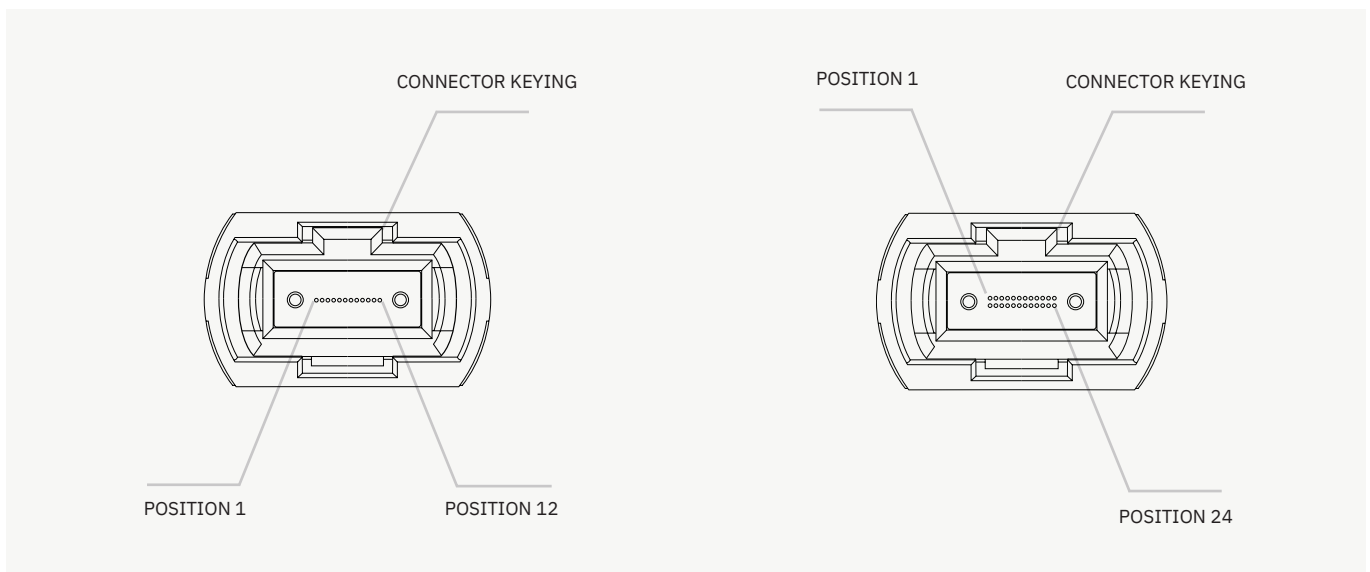
Small diameter of cables lowers the operating costs of cooling the data centers, increasing the efficiency of air flow, thus helping to improve cooling of active devices.

High-speed protocols use various types of polarities (see the diagrams below). When ordering, it is necessary to define the polarity of individual interconnectors in accordance to the overall solution.

There are various types of MPO/MTP connectors. According to the number of fibers, there are 12 and 24 fibers (shown in the diagram below), and according to the type of connector, there are MTP(F) and MTP(M).

12-fiber MTP connector

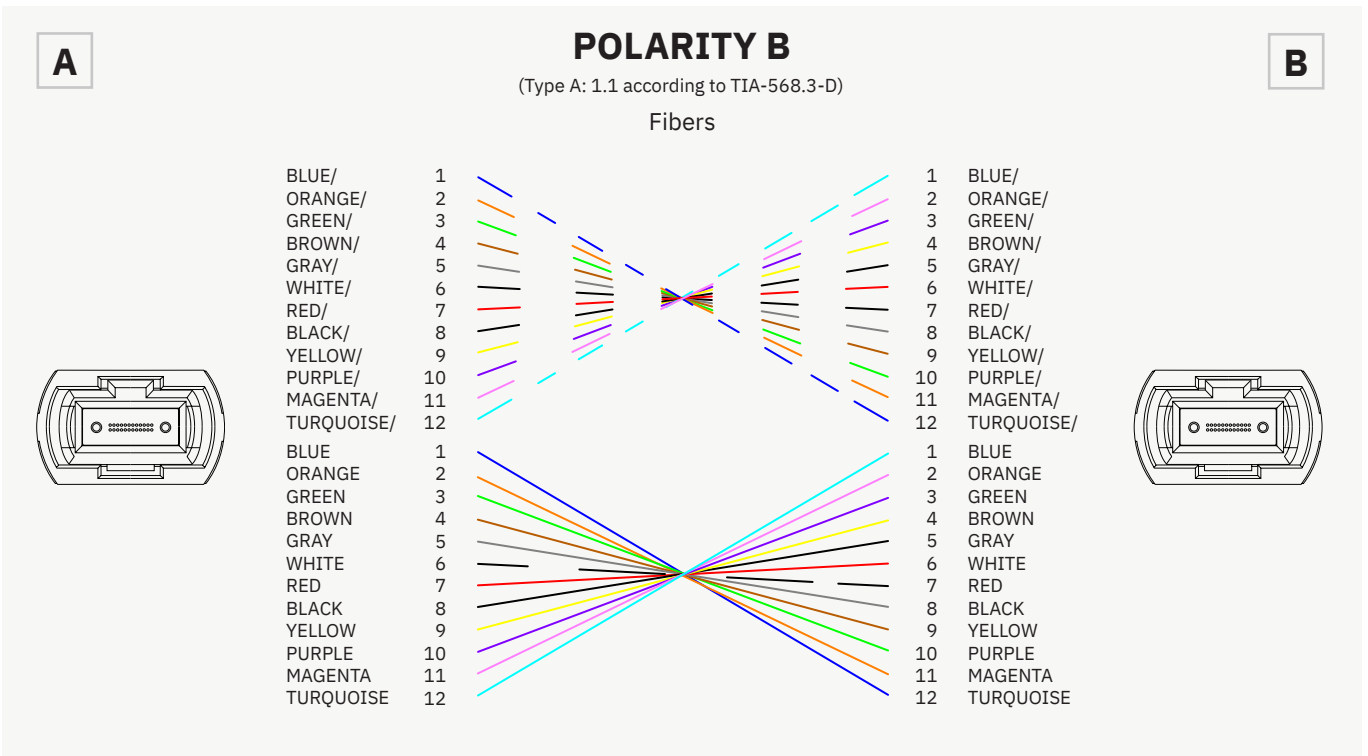
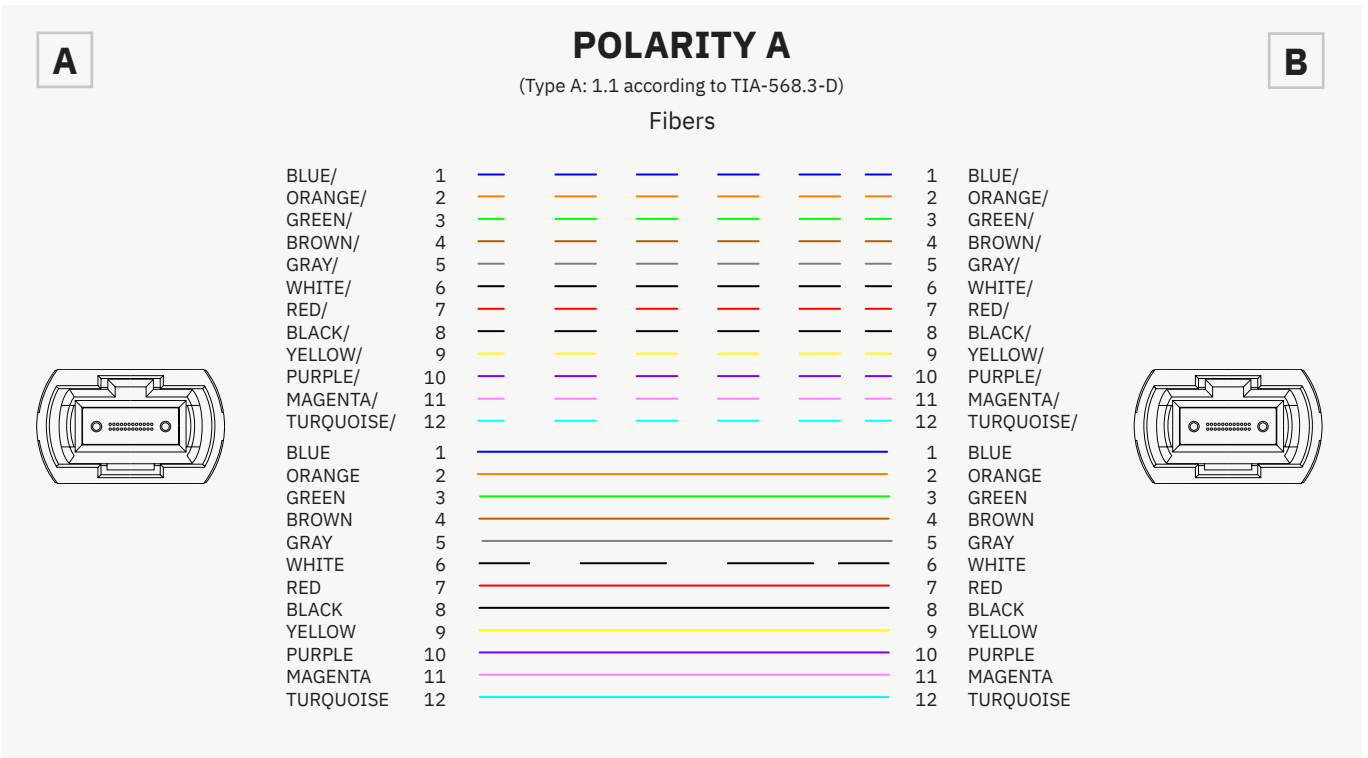
24-fiber MTP connector







Polarity of 24-fiber MTP interconnections





# MTP - MTP cables

**Note** xxx - patch cable's length in dm  
yyy - performance categories, polarity  
zzz - types of connectors

LSOH

OM3  
multimodeOM4  
multimodeOS2  
singlemode

## Patch cable 1x12 MTP – 1x12 MTP

P/N: PC12yyy-zzzz-xxx

- thin, flexible, round cable
- saves space and optimizes airflow in data racks and data centers
- available types of connectors: MTP(F) - MTP(F), MTP(F) - MTP(M), MTP(M) - MTP(M)
- polarity: A, B, C

### Mechanical properties

Temperature range	indoor controlled environment -10°C to +60°C
Sheath material	LSOH
Cable construction	round cable
Outer diameter	3,0 mm
Fiber count	12
Fiber type	SM OS2 or MMF OM3/OM4

LSOH

OM3  
multimodeOM4  
multimodeOS2  
singlemode

## Patch cable 1x24 MTP – 1x24 MTP

P/N: PC24yyy-zzzz-xxx

- thin, flexible, round cable
- saves space and optimizes airflow in data racks and data centers
- available types of connectors: MTP(F) - MTP(F), MTP(F) - MTP(M), MTP(M) - MTP(M)
- polarity: A, B, C, X

### Mechanical properties

Temperature range	indoor controlled environment -10°C to +60°C
Sheath material	LSOH
Cable construction	round cable
Outer diameter	3,8 mm
Fiber count	24
Fiber type	SM OS2 or MMF OM3/OM4

LSOH

OM3  
multimodeOM4  
multimodeOS2  
singlemode

## Trunk cable Xx12 MTP – Xx12 MTP

P/N: TC012yyy-zzzz-xxx



- double-sheath round trunk cable
- more resistant to mechanical damage
- available types of connectors: MTP(F) - MTP(F), MTP(F) - MTP(M), MTP(M) - MTP(M)
- polarity: A, B, C

### Mechanical properties

Temperature range	indoor controlled environment -10°C to +60°C
Sheath material	LSOH
Cable construction	round double-sheath cable – ruggedized
Fiber type	SM OS2 or MMF OM3/OM4

### 12 fibers

OM3 P/N: TC012M3y-zzzz-xxx

1x12 MTP – 1x12 MTP OM3

OM4 P/N: TC012M4y-zzzz-xxx

1x12 MTP – 1x12 MTP OM4

OS2 P/N: TC012S2y-zzzz-xxx

1x12 MTP – 1x12 MTP OS2

### 24 fibers

OM3 P/N: TC024M3y-zzzz-xxx

2x12 MTP – 2x12 MTP OM3

OM4 P/N: TC024M4y-zzzz-xxx

2x12 MTP – 2x12 MTP OM4

OS2 P/N: TC024S2y-zzzz-xxx

2x12 MTP – 2x12 MTP OS2

### 48 fibers

OM3 P/N: TC048M3y-zzzz-xxx

4x12 MTP – 4x12 MTP OM3

OM4 P/N: TC048M4y-zzzz-xxx

4x12 MTP – 4x12 MTP OM4

OS2 P/N: TC048S2y-zzzz-xxx

4x12 MTP – 4x12 MTP OS2

### 72 fibers

OM3 P/N: TC072M3y-zzzz-xxx

6x12 MTP – 6x12 MTP OM3

OM4 P/N: TC072M4y-zzzz-xxx

6x12 MTP – 6x12 MTP OM4

OS2 P/N: TC072S2y-zzzz-xxx

6x12 MTP – 6x12 MTP OS2

### 96 fibers

OM3 P/N: TC096M3y-zzzz-xxx

8x12 MTP – 8x12 MTP OM3

OM4 P/N: TC096M4y-zzzz-xxx

8x12 MTP – 8x12 MTP OM4

OS2 P/N: TC096S2y-zzzz-xxx

8x12 MTP – 8x12 MTP OS2

### 144 fibers

OM3 P/N: TC0144M3y-zzzz-xxx

12x12 MTP – 12x12 MTP OM3

OM4 P/N: TC0144M4y-zzzz-xxx

12x12 MTP – 12x12 MTP OM4

OS2 P/N: TC0144S2y-zzzz-xxx

12x12 MTP – 12x12 MTP OS2

### Cable properties

Fiber count	12	24	48	72	96	144
Outer cable diameter	4,5 mm	5,4 mm	5,7 mm	6,3 mm	7,5 mm	8,9 mm



## Trunk cable Xx24 MTP – Xx24 MTP

P/N: TC024yyy-zzzz-xxx

- double-sheath round trunk cable
- more resistant to mechanical damage
- available types of connectors: MTP(F) - MTP(F), MTP(F) - MTP(M), MTP(M) - MTP(M)
- polarity: A, B, C, X

### Mechanical properties

Temperature range	indoor controlled environment -10°C to +60°C
Sheath material	LSOH
Cable construction	round double-sheath cable – ruggedized
Fiber type	SM OS2 or MMF OM3/OM4

### 24 fibers

**OM3** P/N: TC024M3y-zzzz-xxx  
1x24 MTP – 1x24 MTP OM3

**OM4** P/N: TC024M4y-zzzz-xxx  
1x24 MTP – 1x24 MTP OM4

**OS2** P/N: TC024S2y-zzzz-xxx  
1x24 MTP – 1x24 MTP OS2

### 48 fibers

**OM3** P/N: TC048M3y-zzzz-xxx  
2x24 MTP – 2x24 MTP OM3

**OM4** P/N: TC048M4y-zzzz-xxx  
2x24 MTP – 2x24 MTP OM4

**OS2** P/N: TC048S2y-zzzz-xxx  
2x24 MTP – 2x24 MTP OS2

### 72 fibers

**OM3** P/N: TC072M3y-zzzz-xxx  
3x24 MTP – 3x24 MTP OM3

**OM4** P/N: TC072M4y-zzzz-xxx  
3x24 MTP – 3x24 MTP OM4

**OS2** P/N: TC072S2y-zzzz-xxx  
3x24 MTP – 3x24 MTP OS2

### 96 fibers

**OM3** P/N: TC096M3y-zzzz-xxx  
4x24 MTP – 4x24 MTP OM3

**OM4** P/N: TC096M4y-zzzz-xxx  
4x24 MTP – 4x24 MTP OM4

**OS2** P/N: TC096S2y-zzzz-xxx  
4x24 MTP – 4x24 MTP OS2

### 144 fibers

**OM3** P/N: TC0144M3y-zzzz-xxx  
6x24 MTP – 6x24 MTP OM3

**OM4** P/N: TC0144M4y-zzzz-xxx  
6x24 MTP – 6x24 MTP OM4

**OS2** P/N: TC0144S2y-zzzz-xxx  
6x24 MTP – 6x24 MTP OS2

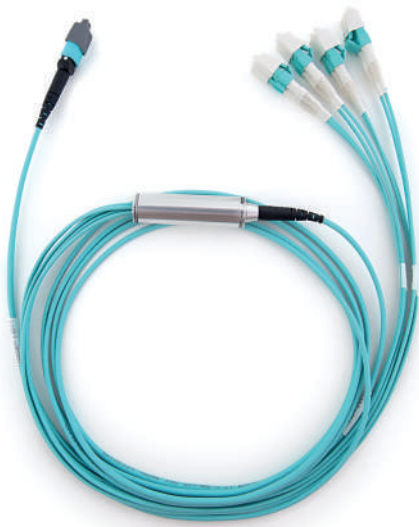
### Cable properties

Fiber count	24	48	72	96	144
Outer cable diameter	5,4 mm	5,7 mm	6,3 mm	7,5 mm	8,9 mm

# MTP - LC cables

xxx - patch cable's length in dm  
**Note** yyy - performance categories  
zzz - types of connectors

LSOH OM3 multimode OM4 multimode OS2 singlemode



## 12-fiber trunk cable 1x12 MTP – 6xLC duplex

P/N: TC12yy-zzzz-xxx

- thin round trunk cable
- more resistant to mechanical damage
- aluminum fanout ensures the possibility of fixation in optical patch panels
- straight connection
- available types of connectors: MTP(F) - LC/APC, MTP(F) - LC/PC, MTP(M) - LC/APC, MTP(M) - LC/PC

### Mechanical properties

Temperature range	indoor controlled environment -10°C to +60°C
Sheath material	LSOH
Cable construction	round sheath cable
Outer diameter	3,0 mm
Fiber count	12
Fiber type	SM OS2 or MMF OM3/OM4

LSOH OM3 multimode OM4 multimode OS2 singlemode



## 12-fiber trunk cable 1x12 MTP – 12xLC simplex

P/N: TC12yy-zzzz-xxx

- thin round trunk cable
- more resistant to mechanical damage
- aluminum fanout ensures the possibility of fixation in optical patch panels
- available types of connectors: MTP(F) - LC/APC, MTP(F) - LC/PC, MTP(M) - LC/APC, MTP(M) - LC/PC

### Mechanical properties

Temperature range	indoor controlled environment -10°C to +60°C
Sheath material	LSOH
Cable construction	round sheath cable
Outer diameter	3,0 mm
Fiber count	12
Fiber type	SM OS2 or MMF OM3/OM4



LSOH

OM3  
multimodeOM4  
multimodeOS2  
singlemode

## 24-fiber trunk cable 1x24 MTP – 12xLC duplex

P/N: TC24yy-zzzzz-xxx

- thin round trunk cable
- more resistant to mechanical damage
- aluminum fanout ensures the possibility of fixation in optical patch panels
- straight connection
- available types of connectors: MTP(F) - LC/APC, MTP(F) - LC/PC, MTP(M) - LC/APC, MTP(M) - LC/PC

### Mechanical properties

Temperature range	indoor controlled environment -10°C to +60°C
Sheath material	LSOH
Cable construction	round sheath cable
Outer diameter	3,8 mm
Fiber count	24
Fiber type	SM OS2 or MMF OM3/OM4

LSOH

OM3  
multimodeOM4  
multimodeOS2  
singlemode

## 24-fiber trunk cable 1x24 MTP – 24xLC simplex

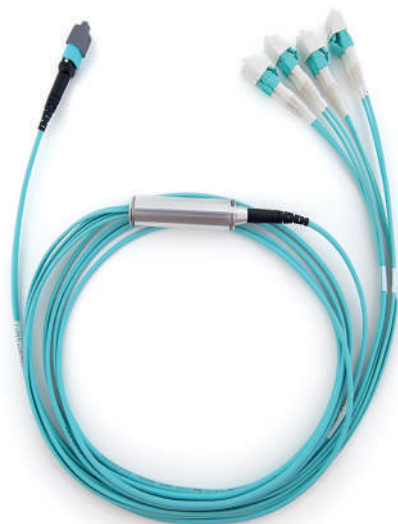
P/N: TC24yy-zzzzz-xxx

- thin round trunk cable
- more resistant to mechanical damage
- aluminum fanout ensures the possibility of fixation in optical patch panels
- available types of connectors: MTP(F) - LC/APC, MTP(F) - LC/PC, MTP(M) - LC/APC, MTP(M) - LC/PC

### Mechanical properties

Temperature range	indoor controlled environment -10°C to +60°C
Sheath material	LSOH
Cable construction	round sheath cable
Outer diameter	3,8 mm
Fiber count	24
Fiber type	SM OS2 or MMF OM3/OM4

LSOH

OM3  
multimodeOM4  
multimodeOS2  
singlemode

## Cable MTP QSFP – LC duplex uniboot

P/N: TC08yy-MfLCD-xxx

- used for connecting 40Gbit to 10Gbit (MTP QSFP – LC duplex SFP)
- connector type: MTP(F) - LC/PC

### Mechanical properties

Temperature range	indoor controlled environment -10°C to +60°C
Sheath material	LSOH
Cable construction	round sheath cable
Outer diameter	3,0 mm
Fiber count	12
Fiber type	SM OS2 or MMF OM3/OM4

LSOH

OM3  
multimodeOM4  
multimode

## Cable MTP CXP/CFP – 10xLC duplex uniboot

P/N: TC20yy-M2fLCD-xxx

- used for connecting 100Gbit to 10Gbit (MTP CXP/CFP – LC duplex SFP)
- connector type: MTP(F) - LC/PC

### Mechanical properties

Temperature range	indoor controlled environment -10°C to +60°C
Sheath material	LSOH
Cable construction	round sheath cable
Outer diameter	3,8 mm
Fiber count	20
Fiber type	MM (OM3/OM4)

LSOH

OM3  
multimodeOM4  
multimode

## Cable MTP CXP – MTP QSFP

P/N: TC24yy-M2fMf-xxx

- used for connecting 100Gbit to 40Gbit (1x24 MTP CXP – 3x8 MTP QSFP)
- connector type: MTP(F) - MTP(F)

### Mechanical properties

Temperature range	indoor controlled environment -10°C to +60°C
Sheath material	LSOH
Cable construction	round sheath cable
Outer diameter	3,8 mm
Fiber count	24
Fiber type	MM (OM3/OM4)

# MTP patch panels and accessories

## Adapter plate 6xMTP

P/N: FPyy-6MTP

- for direct connection of trunk cables with MTP patch cables



### Mechanical properties

Temperature range	-10°C to +60°C
Height	38 mm
Width	108,2 mm
Material	painted steel
Color	black RAL 9005
Color of adapters	blue (OS2/UPC), green (OS2/APC), turquoise (OM3), magenta (OM4)
Capacity	6xMTP adapter

## Sealing plate, standard size

P/N: FPB-BLK

- sealing plate for the patch panel PP1HU-04C-BLK



### Mechanical properties

Temperature range	-10°C to +60°C
Height	38 mm
Width	108,2 mm
Material	painted steel
Color	black RAL 9005

## Sealing plate, half size

P/N: FPBHD-BLK

- half size sealing plate for the patch panel PP1HU-04C-BLK



### Mechanical properties

Temperature range	-10°C to +60°C
Height	19 mm
Width	108,2 mm
Material	painted steel
Color	black RAL 9005

## Patch panel 4-modules

P/N: PP1HU-04C-BLK

- Plug & Play patch panel with capacity of 4 standard size modules or 8 half size modules
- suitable for MPT modules and MTP adapter plates
- designed for 19" racks
- maximal capacity up to 96 optical link



### Mechanical properties

Temperature range	-10°C to +60°C
Height	1U (44,5 mm)
Width	19" (482,6 mm)
Depth	251 mm
Material	painted steel
Color	black RAL 9005
Capacity	4 modules or 8 half size module



# MTP modules

**Note** yy - performance categories  
zzz - types of connectors

OM3  
multimode

OM4  
multimode

OS2  
singlemode

## Module 1x12 MTP – 6xLC duplex

P/N: CM12yy-zzzzzz

- Plug & Play standard size module
- designed for the patch panel PP1HU-04C-BLK
- available types of connectors: MTP(F) - LC/APC, MTP(F) - LC/PC, MTP(M) - LC/APC, MTP(M) - LC/PC



### Mechanical properties

Temperature range	-10°C to +60°C
Height	38 mm
Width	116 mm
Depth	108,2 mm
Material	painted steel
Color	black RAL 9005
Color of adapters	blue (OS2/UPC), green (OS2/APC), turquoise (OM3), magenta (OM4)
Capacity	12 fibers
Optical performance	IL < 0,6 dB per channel

OM3  
multimode

OM4  
multimode

OS2  
singlemode

## Module 1x12 MTP – 6xLC duplex, half size

P/N: CMHD12yy-zzzzzz

- Plug & Play half size module
- designed for patch panel PP1HU-04C-BLK
- available types of connectors: MTP(F) - LC/APC, MTP(F) - LC/PC, MTP(M) - LC/APC, MTP(M) - LC/PC



### Mechanical properties

Temperature range	-10°C to +60°C
Height	19 mm
Width	116 mm
Depth	108,2 mm
Material	painted steel
Color	black RAL 9005
Color of adapters	blue (OS2/UPC), green (OS2/APC), turquoise (OM3), magenta (OM4)
Capacity	12 fibers
Optical performance	IL < 0,6 dB per channel

OM3  
multimode

OM4  
multimode

OS2  
singlemode

## Module 2x12 MTP – 12xLC duplex

P/N: CM24yy-zzzzzzz

- Plug & Play standard size module
- designed for patch panel PP1HU-04C-BLK
- available types of connectors: MTP(F) - LC/APC, MTP(F) - LC/PC, MTP(M) - LC/APC, MTP(M) - LC/PC



### Mechanical properties

Temperature range	-10°C to +60°C
Height	38 mm
Width	116 mm
Depth	108,2 mm
Material	painted steel
Color	black RAL 9005
Color of adapters	blue (OS2/UPC), green (OS2/APC), turquoise (OM3), magenta (OM4)
Capacity	24 fibers
Optical performance	IL < 0,6 dB per channel

OM3  
multimode

OM4  
multimode

OS2  
singlemode

## Module 1x24 MTP – 12xLC duplex

P/N: CM24yy-zzzzzzz

- Plug & Play standard size module
- designed for patch panel PP1HU-04C-BLK
- available types of connectors: MTP(F) - LC/APC, MTP(F) - LC/PC, MTP(M) - LC/APC, MTP(M) - LC/PC



### Mechanical properties

Temperature range	-10°C to +60°C
Height	38 mm
Width	116 mm
Depth	108,2 mm
Material	painted steel
Color	black RAL 9005
Color of adapters	blue (OS2/UPC), green (OS2/APC), turquoise (OM3), magenta (OM4)
Capacity	24 fibers
Optical performance	IL < 0,75 dB per channel



# Cabinets

# 4



# Contents

126	Knowledge base
127	19" wall-mounted cabinets
131	Residential distribution cabinet
134	19" free-standing cabinets
142	19" server cabinets
145	Cabinets for industrial / outdoor areas with IP55 protection
146	19" open frames
147	Accessories for 19" cabinets
156	Power distribution units PDU
160	10" wall-mounted cabinets and accessories



# Knowledge base

Cabinets are manufactured on **fully automated manufacturing lines** with **up-to-date technology** for sheet metal processing. Mass produced standardized types are supplied fully assembled and are defined by a single ordering code. This concept simplifies the complicated process of order specification, eliminates errors and minimizes logistic costs.

There is a possibility of delivering standard types of cabinets with different variants of **front** and **rear door** according to customer's requirements:



single door



double wing door  
(server and stand-alone cabinets)



hardened smoked  
glass door



solid steel door



perforated door  
(air permeability 80%)

All products are certified **by international laboratories TÜV SÜD** according to ČSN EN 62208 ed. 2: 2012.

# 19" wall-mounted cabinets

## One-sectioned, 19" wall-mounted cabinet RBA

P/N: RBA-xx-AS4-CAY-A1

P/N: RBA-xx-AS5-CAY-A1

P/N: RBA-xx-AS6-CAY-A1



- welded construction with IP30 protection
- hardened smoked glass door (standard)
- solid steel or perforated door (air permeability 80%) available upon request
- front vertical rails freely adjustable in any depth of the cabinet
- rear vertical fixed rails
- frame of the cabinet and all removable parts are connected with earthing cables
- cable openings covered with breakout-type blanking panels located at the top, bottom and rear part of the cabinet
- protective blanking panel with a brush to seal the cabinet opening against dust penetration (1 pc)
- set of M6 screws and captive nuts (8 pcs)

**Front door**  
RBA-xx-xxx-xAY-A1

A - hardened smoked glass door (standard)  
C - solid steel door  
L - perforated door

**Color**  
RBA-xx-xxx-xAY-A1

C - gray RAL 7035 (standard)  
B - black RAL 9005

**Surface**

structured, matt

395 mm      600 mm



### Parameters AS4

Width 600 mm, Depth 395 mm

		Height (mm)	Weight (kg)	Capacity (kg)
4U	P/N: RBA-04-AS4-CAY-A1	280	11,7	60
6U	P/N: RBA-06-AS4-CAY-A1	370	13,6	60
9U	P/N: RBA-09-AS4-CAY-A1	500	16,1	80
12U	P/N: RBA-12-AS4-CAY-A1	635	19,1	80
15U	P/N: RBA-15-AS4-CAY-A1	770	21,8	100
18U	P/N: RBA-18-AS4-CAY-A1	900	24,7	100

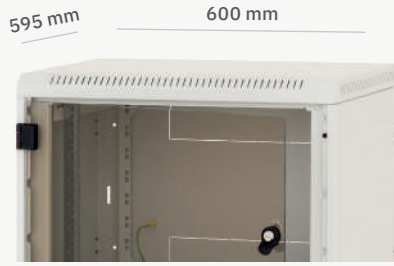
495 mm      600 mm



### Parameters AS5

Width 600 mm, Depth 495 mm

		Height (mm)	Weight (kg)	Capacity (kg)
4U	P/N: RBA-04-AS5-CAY-A1	280	13,5	60
6U	P/N: RBA-06-AS5-CAY-A1	370	15,6	60
9U	P/N: RBA-09-AS5-CAY-A1	500	18,4	80
12U	P/N: RBA-12-AS5-CAY-A1	635	21,7	80
15U	P/N: RBA-15-AS5-CAY-A1	770	24,6	100
18U	P/N: RBA-18-AS5-CAY-A1	900	27,7	100



### Parameters AS6

Width 600 mm, Depth 595 mm

		Height (mm)	Weight (kg)	Capacity (kg)
4U	P/N: RBA-04-AS6-CAY-A1	280	15,5	60
6U	P/N: RBA-06-AS6-CAY-A1	370	17,7	60
9U	P/N: RBA-09-AS6-CAY-A1	500	20,8	80
12U	P/N: RBA-12-AS6-CAY-A1	635	24,0	80
15U	P/N: RBA-15-AS6-CAY-A1	770	27,2	100
18U	P/N: RBA-18-AS6-CAY-A1	900	30,3	100

# One-sectioned, 19" wall-mounted cabinet RUA

P/N: RUA-xx-AS4-CAY-A1

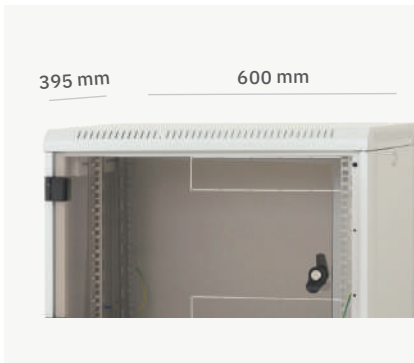
P/N: RUA-xx-AS5-CAY-A1

P/N: RUA-xx-AS6-CAY-A1



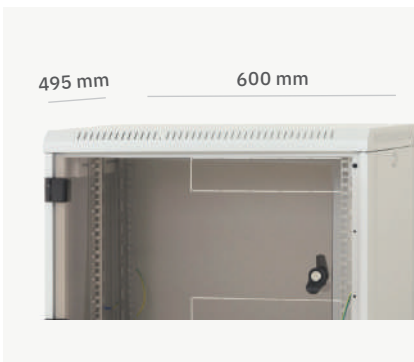
- welded construction with IP30 protection
- removable and lockable side panels enable an easy access to the installed devices
- hardened smoked glass door (standard)
- solid steel or perforated door (air permeability 80%) available upon request
- front and rear vertical rails freely adjustable in any depth of the cabinet
- frame of the cabinet and all removable parts are connected with earthing cables
- cable openings covered with breakout-type blanking panels located at the top, bottom and rear part of the cabinet
- protective blanking panel with a brush to seal the cabinet opening against dust penetration (1 pc)
- set of M6 screws and captive nuts (8 pcs)
- 6 breakout-type blanking panels (3 in the top, 3 in the bottom) for the installation of fan units RAX-CH-X07-X9 and RAC-CH-X26-X1

<b>Front door</b> RUA-xx-xxx-xAY-A1	A - hardened smoked glass door (standard) C - solid steel door L - perforated door
<b>Color</b> RUA-xx-xxx-xAY-A1	C - gray RAL 7035 (standard) B - black RAL 9005
<b>Surface</b>	structured, matt



## Parameters AS4

Width 600 mm, Depth 395 mm		Height (mm)	Weight (kg)	Capacity (kg)
6U	P/N: RUA-06-AS4-CAY-A1	370	14,2	45
9U	P/N: RUA-09-AS4-CAY-A1	500	17,3	45 (used with reinforcement set 90)
12U	P/N: RUA-12-AS4-CAY-A1	635	20,3	
15U	P/N: RUA-15-AS4-CAY-A1	770	22,0	
18U	P/N: RUA-18-AS4-CAY-A1	900	26,6	



## Parameters AS5

Width 600 mm, Depth 495 mm		Height (mm)	Weight (kg)	Capacity (kg)
6U	P/N: RUA-06-AS5-CAY-A1	370	16,1	45
9U	P/N: RUA-09-AS5-CAY-A1	500	19,5	45 (used with reinforcement set 90)
12U	P/N: RUA-12-AS5-CAY-A1	635	21,7	
15U	P/N: RUA-15-AS5-CAY-A1	770	26,0	
18U	P/N: RUA-18-AS5-CAY-A1	900	29,1	



## Parameters AS6

Width 600 mm, Depth 595 mm		Height (mm)	Weight (kg)	Capacity (kg)
6U	P/N: RUA-06-AS6-CAY-A1	370	18,9	45
9U	P/N: RUA-09-AS6-CAY-A1	500	21,3	45 (used with reinforcement set 90)
12U	P/N: RUA-12-AS6-CAY-A1	635	26,0	
15U	P/N: RUA-15-AS6-CAY-A1	770	28,5	
18U	P/N: RUA-18-AS6-CAY-A1	900	31,0	



## Two-sectioned, 19" wall-mounted cabinet RBA

P/N: RBA-xx-AD5-CAY-A1

P/N: RBA-xx-AD6-CAY-A1



- welded construction with IP30 protection
- rear section opening enables an easy access to the installed devices from the backside
- hardened smoked glass door (standard)
- solid steel or perforated door (air permeability 80%) available upon request
- front vertical rails are continuously adjustable
- rear vertical fixed rails
- frame of the cabinet and all removable parts are connected with earthing cables
- cable openings covered with breakout-type blanking panels located at the top, bottom and rear part of the cabinet
- protective blanking panel with a brush to seal the cabinet opening against dust penetration (1 pc)
- set of M6 screws and captive nuts (8 pcs)

<b>Front door</b> RBA-xx-xxx-xAY-A1	A - hardened smoked glass door (standard) C - solid steel door L - perforated door
<b>Color</b> RBA-xx-xxx-xAY-A1	C - gray RAL 7035 (standard) B - black RAL 9005
<b>Surface</b>	structured, matt

515 mm 600 mm



### Parameters AD5

Width 600 mm, Depth 515 mm

		Height (mm)	Weight (kg)	Capacity (kg)
4U	P/N: RBA-04-AD5-CAY-A1	280	15,1	20
6U	P/N: RBA-06-AD5-CAY-A1	370	16,9	20
9U	P/N: RBA-09-AD5-CAY-A1	500	20,1	25
12U	P/N: RBA-12-AD5-CAY-A1	635	23,5	25
15U	P/N: RBA-15-AD5-CAY-A1	770	27,0	30
18U	P/N: RBA-18-AD5-CAY-A1	900	30,1	30

615 mm 600 mm



### Parameters AD6

Width 600 mm, Depth 615 mm

		Height (mm)	Weight (kg)	Capacity (kg)
4U	P/N: RBA-04-AD6-CAY-A1	280	17,0	20
6U	P/N: RBA-06-AD6-CAY-A1	370	18,9	20
9U	P/N: RBA-09-AD6-CAY-A1	500	22,4	25
12U	P/N: RBA-12-AD6-CAY-A1	635	25,9	25
15U	P/N: RBA-15-AD6-CAY-A1	770	29,3	30
18U	P/N: RBA-18-AD6-CAY-A1	900	33,2	30

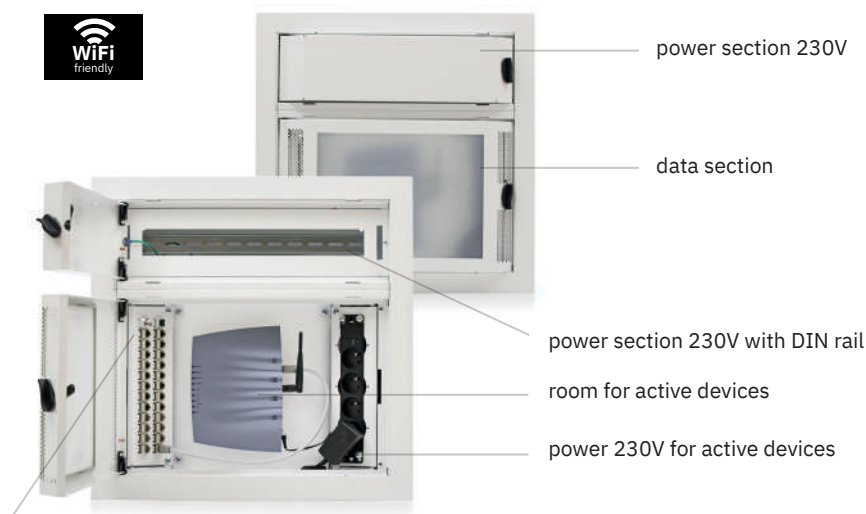
# Residential distribution cabinet

## Residential distribution cabinet



- allows the input and distribution of power, data and multimedia for example internet, telephone, cable and satellite TV, LAN, audio and video distribution
- allows the placement of active devices, including Wi-Fi
- contains a power and data sections in three different sizes
- sections can be combined in various ways respectively use on their own
- can be installed as a wall-mounted or flush-mounted cabinet
- data section contains a built-in switchboard where can be installed a combination of RJ45 keystone, F-connector, fiber optic SC, ST, connector ...
- cabinet doors for data section are made of HDPE plastic and allow for smooth dissemination of Wi-Fi signal
- all other structural elements are made of metal
- doors are hinged and are easily removable
- cable entries covered with blanking panels are on the back and the all sides of the cabinet
- all detachable parts are connected with earthing cables

Material	metal thickness of 1 mm
Protection	IP20
Color	white RAL 9003
Surface	smooth, gloss
Capacity for data section (kg)	20
Capacity for power section (kg)	20



switch board for data and multimedia applications  
(RJ45, F-connector, fibre optics SC, ST ...)

### Note

- equipment illustrated in the picture serves as an example only, residential distribution cabinets are delivered empty
- when installed as flush-mounted:
  1. a hole that is 15-20 mm larger than the size of the cabinet must be prepared in each direction
  2. it is appropriate to use peripheral frame cover (see on p. 133)



## Data section

P/N: RNA-0x-A51-YXX-X1

P/N: RNA-0x-A51-YXX-X2

**Front door**  
RNA-0x-A51-YXX-Xx

1 - convex door (more space for equipment)

2 - flat door (flush with the wall)

	Dimensions h x w x d (mm)	Max. amount of data ports	Max. amount of power sockets for active devices	Weight (kg)	Capacity (kg)
P/N: RNA-01-A51-YXX-X1	166 x 500 x 110	2 x 04	1 x 230V	4,4	20
P/N: RNA-02-A51-YXX-X1	333 x 500 x 110	2 x 13	4 x 230V	6,4	20
P/N: RNA-03-A51-YXX-X1	500 x 500 x 110	2 x 22	4+1 x 230V	6,7	20

	Dimensions h x w x d (mm)	Max. amount of data ports	Max. amount of power sockets for active devices	Weight (kg)	Capacity (kg)
P/N: RNA-01-A51-YXX-X2	166 x 500 x 110	2 x 04	1 x 230V	4,4	20
P/N: RNA-02-A51-YXX-X2	333 x 500 x 110	2 x 13	4 x 230V	6,4	20
P/N: RNA-03-A51-YXX-X2	500 x 500 x 110	2 x 22	4+1 x 230V	6,7	20



## Power section

P/N: SNA-0x-A51-YXX-X1

P/N: SNA-0x-A51-YXX-X2

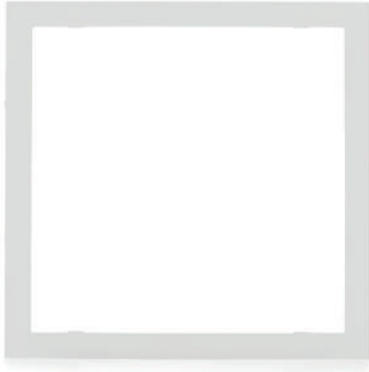
**Front door**  
SNA-0x-A51-YXX-Xx

1 - convex door (more space for equipment)

2 - flat door (flush with the wall)

	Dimensions h x w x d (mm)	Max. amount of slots on DIN rail	Weight (kg)	Capacity (kg)
P/N: SNA-01-C51-YXX-X1	166 x 500 x 110	1 x 22	4,4	20
P/N: SNA-02-C51-YXX-X1	333 x 500 x 110	2 x 22	6,4	20
P/N: SNA-03-C51-YXX-X1	500 x 500 x 110	3 x 22	6,7	20

	Dimensions h x w x d (mm)	Max. amount of slots on DIN rail	Weight (kg)	Capacity (kg)
P/N: SNA-01-C51-YXX-X2	166 x 500 x 110	1 x 22	4,4	20
P/N: SNA-02-C51-YXX-X2	333 x 500 x 110	2 x 22	6,4	20
P/N: SNA-03-C51-YXX-X2	500 x 500 x 110	3 x 22	6,7	20



## Frame cover for flush-mounting

P/N: RAY-NF-X0x-X1

	Inner dimensions h x w (mm)	Width of frame bar (mm)
P/N: RAY-NF-X01-X1	166 x 500	40,5
P/N: RAY-NF-X02-X1	333 x 500	40,5
P/N: RAY-NF-X03-X1	500 x 500	40,5
P/N: RAY-NF-X04-X1	666 x 500	40,5
P/N: RAY-NF-X05-X1	833 x 500	40,5
P/N: RAY-NF-X06-X1	1000 x 500	40,5



## Set for connecting sections

P/N: RAX-NJ-X01-X1

# 19" free-standing cabinets



## 19" free-standing compact cabinet RMA

P/N: RMA-xx-A66-CAY-A1

P/N: RMA-xx-A68-CAY-A1

P/N: RMA-xx-A69-CAY-A1

P/N: RMA-xx-A61-CAY-A1

P/N: RMA-xx-A60-CAY-A1

P/N: RMA-xx-A62-CAY-A1

P/N: RMA-xx-A86-CAY-A1

P/N: RMA-xx-A88-CAY-A1

P/N: RMA-xx-A89-CAY-A1

P/N: RMA-xx-A81-CAY-A1

P/N: RMA-xx-A80-CAY-A1

P/N: RMA-xx-A82-CAY-A1

- welded construction with IP20 protection
- hardened smoked glass door (standard)
- solid steel or perforated door (air permeability 80%) available as single or double-wing upon request
- removable and lockable side panels and rear cover enable an easy access to the installed devices
- possibility of replacing rear cover with door (the same variants as the front door)
- front vertical rails are continuously adjustable
- frame of the cabinet and all removable parts are connected with earthing cables
- cable openings covered with breakout-type blanking panels located at the top, bottom and rear part of the cabinet
- breakout-type blanking panels for fan units are located in the top and bottom of the cabinet
- nivelation feet (standard)
- castors RAX-MS-X81-X1 and base with filter RAB-PO-XXX-XN, RAC-PO-XXX-XN available upon request
- sliding vertical rails installation in a span of 19", 21" or 23" (only in case of cabinets with width of 800 mm)
- protective blanking panel with a brush to seal the cabinet opening against dust penetration (1 pc)
- set of M6 screws and captive nuts (16 pcs)

### Front door

RMA-xx-xxx-xAY-Ax

A - hardened smoked glass door (standard)

C - solid steel door

L - perforated door

E - double wing, hardened smoked glass door

F - double wing, solid steel door

G - double wing, perforated door

### Color

RMA-xx-xxx-xAY-Ax

C - gray RAL 7035 (standard)

B - black RAL 9005

### Surface

structured, matt

### Parameters A66



Width 600 mm, Depth 600 mm

		Height (mm)	Weight (kg)	Capacity (kg)
15U	P/N: RMA-15-A66-CAY-A1	770	33,0	400
18U	P/N: RMA-18-A66-CAY-A1	900	38,0	400
22U	P/N: RMA-22-A66-CAY-A1	1080	42,0	400
27U	P/N: RMA-27-A66-CAY-A1	1300	49,0	400
32U	P/N: RMA-32-A66-CAY-A1	1525	55,0	400
37U	P/N: RMA-37-A66-CAY-A1	1750	63,0	400
42U	P/N: RMA-42-A66-CAY-A1	1970	70,0	400
45U	P/N: RMA-45-A66-CAY-A1	2105	72,0	400
47U	P/N: RMA-47-A66-CAY-A1	2194	76,0	400

### Parameters A68



Width 600 mm, Depth 800 mm

		Height (mm)	Weight (kg)	Capacity (kg)
15U	P/N: RMA-15-A68-CAY-A1	770	39,0	400
18U	P/N: RMA-18-A68-CAY-A1	900	44,0	400
22U	P/N: RMA-22-A68-CAY-A1	1080	49,0	400
27U	P/N: RMA-27-A68-CAY-A1	1300	57,0	400
32U	P/N: RMA-32-A68-CAY-A1	1525	64,0	400
37U	P/N: RMA-37-A68-CAY-A1	1750	72,0	400
42U	P/N: RMA-42-A68-CAY-A1	1970	79,0	400
45U	P/N: RMA-45-A68-CAY-A1	2105	85,0	400
47U	P/N: RMA-47-A68-CAY-A1	2194	88,0	400

### Parameters A69



Width 600 mm, Depth 900 mm

		Height (mm)	Weight (kg)	Capacity (kg)
15U	P/N: RMA-15-A69-CAY-A1	770	42,0	400
18U	P/N: RMA-18-A69-CAY-A1	900	48,0	400
22U	P/N: RMA-22-A69-CAY-A1	1080	54,0	400
27U	P/N: RMA-27-A69-CAY-A1	1300	62,0	400
32U	P/N: RMA-32-A69-CAY-A1	1525	71,0	400
37U	P/N: RMA-37-A69-CAY-A1	1750	79,0	400
42U	P/N: RMA-42-A69-CAY-A1	1970	86,0	400
45U	P/N: RMA-45-A69-CAY-A1	2105	91,0	400
47U	P/N: RMA-47-A69-CAY-A1	2194	94,0	400

### Parameters A61



Width 600 mm, Depth 1000 mm

		Height (mm)	Weight (kg)	Capacity (kg)
15U	P/N: RMA-15-A61-CAY-A1	770	46,0	400
18U	P/N: RMA-18-A61-CAY-A1	900	50,0	400
22U	P/N: RMA-22-A61-CAY-A1	1080	58,0	400
27U	P/N: RMA-27-A61-CAY-A1	1300	65,0	400
32U	P/N: RMA-32-A61-CAY-A1	1525	75,0	400
37U	P/N: RMA-37-A61-CAY-A1	1750	83,0	400
42U	P/N: RMA-42-A61-CAY-A1	1970	91,0	400
45U	P/N: RMA-45-A61-CAY-A1	2105	96,0	400
47U	P/N: RMA-47-A61-CAY-A1	2194	99,0	400





### Parameters A60

Width 600 mm, Depth 1100 mm

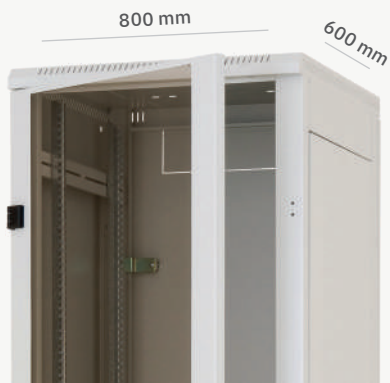
		Height (mm)	Weight (kg)	Capacity (kg)
15U	P/N: RMA-15-A60-CAY-A1	770	50,0	400
18U	P/N: RMA-18-A60-CAY-A1	900	54,0	400
22U	P/N: RMA-22-A60-CAY-A1	1080	61,0	400
27U	P/N: RMA-27-A60-CAY-A1	1300	67,0	400
32U	P/N: RMA-32-A60-CAY-A1	1525	76,0	400
37U	P/N: RMA-37-A60-CAY-A1	1750	85,0	400
42U	P/N: RMA-42-A60-CAY-A1	1970	94,0	400
45U	P/N: RMA-45-A60-CAY-A1	2105	98,0	400
47U	P/N: RMA-47-A60-CAY-A1	2194	101,0	400



### Parameters A62

Width 600 mm, Depth 1200 mm

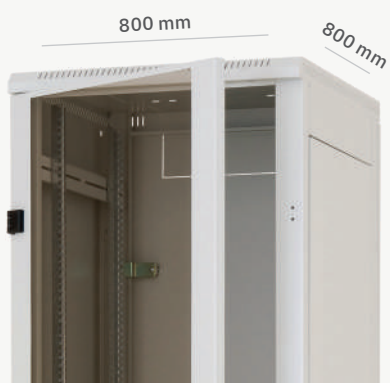
		Height (mm)	Weight (kg)	Capacity (kg)
15U	P/N: RMA-15-A62-CAY-A1	770	54,0	400
18U	P/N: RMA-18-A62-CAY-A1	900	59,0	400
22U	P/N: RMA-22-A62-CAY-A1	1080	65,0	400
27U	P/N: RMA-27-A62-CAY-A1	1300	69,0	400
32U	P/N: RMA-32-A62-CAY-A1	1525	78,0	400
37U	P/N: RMA-37-A62-CAY-A1	1750	89,0	400
42U	P/N: RMA-42-A62-CAY-A1	1970	98,0	400
45U	P/N: RMA-45-A62-CAY-A1	2105	102,0	400
47U	P/N: RMA-47-A62-CAY-A1	2194	105,0	400



### Parameters A86

Width 800 mm, Depth 600 mm

		Height (mm)	Weight (kg)	Capacity (kg)
15U	P/N: RMA-15-A86-CAY-A1	770	35,0	400
18U	P/N: RMA-18-A86-CAY-A1	900	42,0	400
22U	P/N: RMA-22-A86-CAY-A1	1080	47,0	400
27U	P/N: RMA-27-A86-CAY-A1	1300	54,0	400
32U	P/N: RMA-32-A86-CAY-A1	1525	62,0	400
37U	P/N: RMA-37-A86-CAY-A1	1750	78,0	400
42U	P/N: RMA-42-A86-CAY-A1	1970	85,0	400
45U	P/N: RMA-45-A86-CAY-A1	2105	89,0	400
47U	P/N: RMA-47-A86-CAY-A1	2194	91,0	400



### Parameters A88

Width 800 mm, Depth 800 mm

		Height (mm)	Weight (kg)	Capacity (kg)
15U	P/N: RMA-15-A88-CAY-A1	770	49,0	400
18U	P/N: RMA-18-A88-CAY-A1	900	55,0	400
22U	P/N: RMA-22-A88-CAY-A1	1080	61,0	400
27U	P/N: RMA-27-A88-CAY-A1	1300	72,0	400
32U	P/N: RMA-32-A88-CAY-A1	1525	80,0	400
37U	P/N: RMA-37-A88-CAY-A1	1750	88,0	400
42U	P/N: RMA-42-A88-CAY-A1	1970	96,0	400
45U	P/N: RMA-45-A88-CAY-A1	2105	101,0	400
47U	P/N: RMA-47-A88-CAY-A1	2194	106,0	400
48U	P/N: RMA-48-A88-CAY-A1	2239	109,0	400

**Parameters A89****Width 800 mm, Depth 900 mm**

		<b>Height (mm)</b>	<b>Weight (kg)</b>	<b>Capacity (kg)</b>
15U	P/N: RMA-15-A89-CAY-A1	770	55,0	400
18U	P/N: RMA-18-A89-CAY-A1	900	60,0	400
22U	P/N: RMA-22-A89-CAY-A1	1080	67,0	400
27U	P/N: RMA-27-A89-CAY-A1	1300	79,0	400
32U	P/N: RMA-32-A89-CAY-A1	1525	88,0	400
37U	P/N: RMA-37-A89-CAY-A1	1750	95,0	400
42U	P/N: RMA-42-A89-CAY-A1	1970	103,0	400
45U	P/N: RMA-45-A89-CAY-A1	2105	111,0	400
47U	P/N: RMA-47-A89-CAY-A1	2194	118,0	400

**Parameters A81****Width 800 mm, Depth 1000 mm**

		<b>Height (mm)</b>	<b>Weight (kg)</b>	<b>Capacity (kg)</b>
15U	P/N: RMA-15-A81-CAY-A1	770	59,0	400
18U	P/N: RMA-18-A81-CAY-A1	900	64,0	400
22U	P/N: RMA-22-A81-CAY-A1	1080	73,0	400
27U	P/N: RMA-27-A81-CAY-A1	1300	81,0	400
32U	P/N: RMA-32-A81-CAY-A1	1525	91,0	400
37U	P/N: RMA-37-A81-CAY-A1	1750	101,0	400
42U	P/N: RMA-42-A81-CAY-A1	1970	110,0	400
45U	P/N: RMA-45-A81-CAY-A1	2105	117,0	400
47U	P/N: RMA-47-A81-CAY-A1	2194	120,0	400

**Parameters A80****Width 800 mm, Depth 1100 mm**

		<b>Height (mm)</b>	<b>Weight (kg)</b>	<b>Capacity (kg)</b>
15U	P/N: RMA-15-A80-CAY-A1	770	64,0	400
18U	P/N: RMA-18-A80-CAY-A1	900	69,0	400
22U	P/N: RMA-22-A80-CAY-A1	1080	76,0	400
27U	P/N: RMA-27-A80-CAY-A1	1300	84,0	400
32U	P/N: RMA-32-A80-CAY-A1	1525	94,0	400
37U	P/N: RMA-37-A80-CAY-A1	1750	104,0	400
42U	P/N: RMA-42-A80-CAY-A1	1970	114,0	400
45U	P/N: RMA-45-A80-CAY-A1	2105	120,0	400
47U	P/N: RMA-47-A80-CAY-A1	2194	124,0	400

**Parameters A82****Width 800 mm, Depth 1200 mm**

		<b>Height (mm)</b>	<b>Weight (kg)</b>	<b>Capacity (kg)</b>
15U	P/N: RMA-15-A82-CAY-A1	770	68,0	400
18U	P/N: RMA-18-A82-CAY-A1	900	73,0	400
22U	P/N: RMA-22-A82-CAY-A1	1080	80,0	400
27U	P/N: RMA-27-A82-CAY-A1	1300	88,0	400
32U	P/N: RMA-32-A82-CAY-A1	1525	97,0	400
37U	P/N: RMA-37-A82-CAY-A1	1750	107,0	400
42U	P/N: RMA-42-A82-CAY-A1	1970	118,0	400
45U	P/N: RMA-45-A82-CAY-A1	2105	124,0	400
47U	P/N: RMA-47-A82-CAY-A1	2194	127,0	400



## 19" free-standing demountable cabinet RZA

P/N: RZA-xx-A66-CAY-A1

P/N: RZA-xx-A68-CAY-A1

P/N: RZA-xx-A69-CAY-A1

P/N: RZA-xx-A61-CAY-A1

P/N: RZA-xx-A60-CAY-A1

P/N: RZA-xx-A62-CAY-A1

P/N: RZA-xx-A86-CAY-A1

P/N: RZA-xx-A88-CAY-A1

P/N: RZA-xx-A89-CAY-A1

P/N: RZA-xx-A81-CAY-A1

P/N: RZA-xx-A80-CAY-A1

P/N: RZA-xx-A82-CAY-A1

- screwed construction with IP20 protection
- partial or complete dismantling enables installation to difficult to reach places
- hardened smoked glass door (standard)
- solid steel or perforated door (air permeability 80%) available as single or double-wing request
- removable and lockable side panels and rear cover enable an easy access to the installed devices
- possibility of replacing rear cover with door (the same variants as the front door)
- front vertical rails are continuously adjustable
- middle vertical rails 900 mm from depth
- frame of the cabinet and all removable parts are connected with earthing cables
- cable openings covered with breakout-type blanking panels located at the top, bottom and rear part of the cabinet
- breakout-type blanking panels for fan units are located in the top and bottom of the cabinet
- nivelation feet (standard)
- castors RAX-MS-X81-X1 and base with filter RAB-PO-XXX-XN, RAC-PO-XXX-XN available upon request
- sliding vertical rails installation in a span of 19", 21" or 23"
- protective blanking panel with a brush to seal the cabinet opening against dust penetration (1 pc)
- set of M6 screws and captive nuts (16 pcs)

### Front door

RZA-xx-xxx-xAY-Ax

A - hardened smoked glass door (standard)

C - solid steel door

L - perforated door

E - double wing, hardened smoked glass door

F - double wing, solid steel door

G - double wing, perforated door

### Color

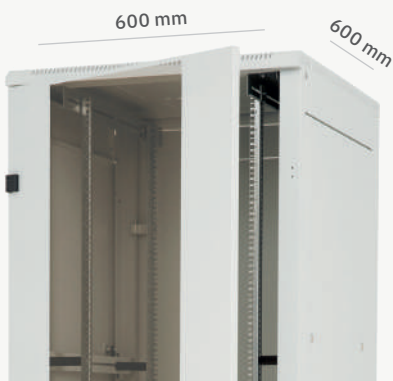
RZA-xx-xxx-xAY-Ax

C - gray RAL 7035 (standard)

B - black RAL 9005

### Surface

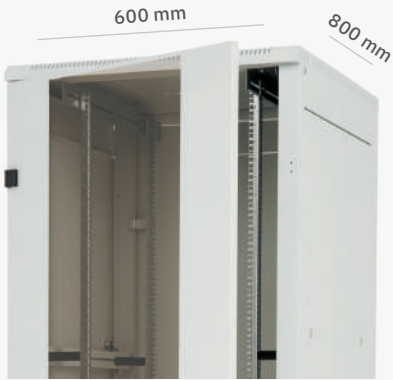
structured, matt



### Parameters A66

Width 600 mm, Depth 600 mm

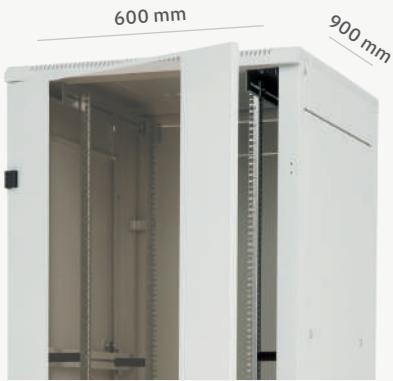
		Height (mm)	Weight (kg)	Capacity (kg)
15U	P/N: RZA-15-A66-CAY-A1	770	35,7	300
18U	P/N: RZA-18-A66-CAY-A1	900	39,5	300
22U	P/N: RZA-22-A66-CAY-A1	1080	44,6	300
27U	P/N: RZA-27-A66-CAY-A1	1300	52,8	400
32U	P/N: RZA-32-A66-CAY-A1	1525	59,6	400
37U	P/N: RZA-37-A66-CAY-A1	1750	66,5	400
42U	P/N: RZA-42-A66-CAY-A1	1970	73,2	400
45U	P/N: RZA-45-A66-CAY-A1	2105	77,3	400
47U	P/N: RZA-47-A66-CAY-A1	2194	79,9	400



### Parameters A68

Width 600 mm, Depth 800 mm

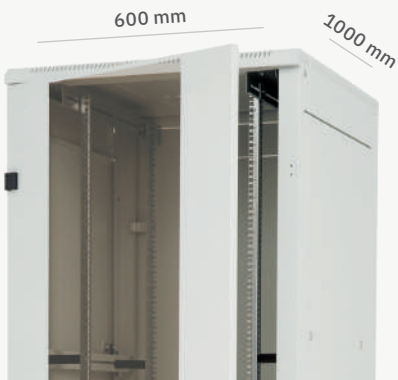
		Height (mm)	Weight (kg)	Capacity (kg)
15U	P/N: RZA-15-A68-CAY-A1	770	41,5	300
18U	P/N: RZA-18-A68-CAY-A1	900	45,7	300
22U	P/N: RZA-22-A68-CAY-A1	1080	51,5	300
27U	P/N: RZA-27-A68-CAY-A1	1300	60,4	400
32U	P/N: RZA-32-A68-CAY-A1	1525	67,9	400
37U	P/N: RZA-37-A68-CAY-A1	1750	75,6	400
42U	P/N: RZA-42-A68-CAY-A1	1970	83,0	400
45U	P/N: RZA-45-A68-CAY-A1	2105	87,5	400
47U	P/N: RZA-47-A68-CAY-A1	2194	90,5	400



### Parameters A69

Width 600 mm, Depth 900 mm

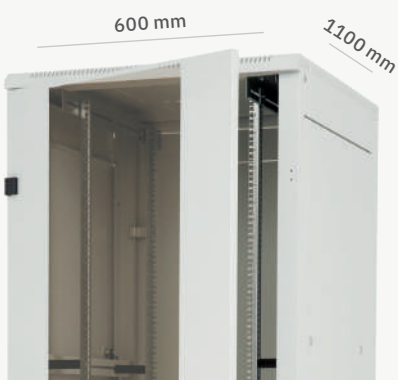
		Height (mm)	Weight (kg)	Capacity (kg)
15U	P/N: RMA-15-A69-CAY-A1	770	45,4	300
18U	P/N: RMA-18-A69-CAY-A1	900	50,1	300
22U	P/N: RMA-22-A69-CAY-A1	1080	56,4	300
27U	P/N: RMA-27-A69-CAY-A1	1300	67,0	400
32U	P/N: RMA-32-A69-CAY-A1	1525	75,5	400
37U	P/N: RMA-37-A69-CAY-A1	1750	84,0	400
42U	P/N: RMA-42-A69-CAY-A1	1970	92,3	400
45U	P/N: RMA-45-A69-CAY-A1	2105	97,4	400
47U	P/N: RMA-47-A69-CAY-A1	2194	100,9	400



### Parameters A61

Width 600 mm, Depth 1000 mm

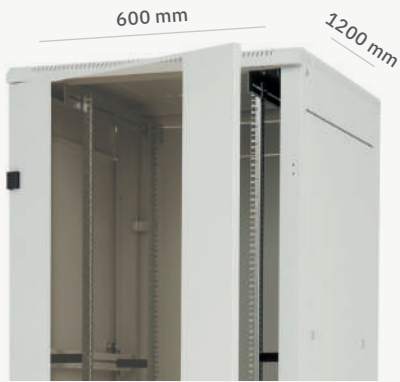
		Height (mm)	Weight (kg)	Capacity (kg)
15U	P/N: RZA-15-A61-CAY-A1	770	48,3	300
18U	P/N: RZA-18-A61-CAY-A1	900	53,2	300
22U	P/N: RZA-22-A61-CAY-A1	1080	59,8	300
27U	P/N: RZA-27-A61-CAY-A1	1300	70,8	400
32U	P/N: RZA-32-A61-CAY-A1	1525	79,6	400
37U	P/N: RZA-37-A61-CAY-A1	1750	88,5	400
42U	P/N: RZA-42-A61-CAY-A1	1970	97,1	400
45U	P/N: RZA-45-A61-CAY-A1	2105	102,5	400
47U	P/N: RZA-47-A61-CAY-A1	2194	106,0	400



### Parameters A60

Width 600 mm, Depth 1100 mm

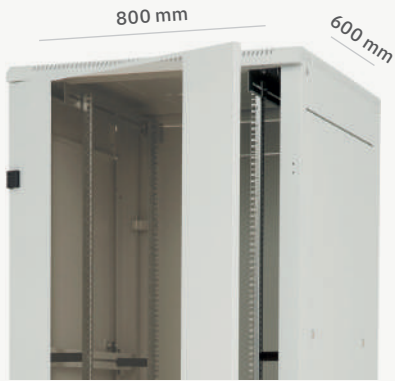
		Height (mm)	Weight (kg)	Capacity (kg)
15U	P/N: RZA-15-A60-CAY-A1	770	49,5	300
18U	P/N: RZA-18-A60-CAY-A1	900	54,9	300
22U	P/N: RZA-22-A60-CAY-A1	1080	61,9	300
27U	P/N: RZA-27-A60-CAY-A1	1300	70,9	400
32U	P/N: RZA-32-A60-CAY-A1	1525	79,9	400
37U	P/N: RZA-37-A60-CAY-A1	1750	89,0	400
42U	P/N: RZA-42-A60-CAY-A1	1970	97,8	400
45U	P/N: RZA-45-A60-CAY-A1	2105	103,3	400
47U	P/N: RZA-47-A60-CAY-A1	2194	106,5	400



### Parameters A62

Width 600 mm, Depth 1200 mm

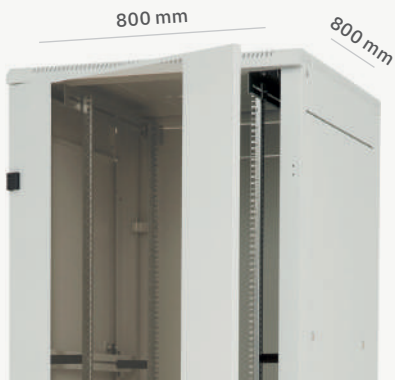
		Height (mm)	Weight (kg)	Capacity (kg)
15U	P/N: RZA-15-A62-CAY-A1	770	52,4	300
18U	P/N: RZA-18-A62-CAY-A1	900	57,8	300
22U	P/N: RZA-22-A62-CAY-A1	1080	65,3	300
27U	P/N: RZA-27-A62-CAY-A1	1300	74,6	400
32U	P/N: RZA-32-A62-CAY-A1	1525	84,0	400
37U	P/N: RZA-37-A62-CAY-A1	1750	91,5	400
42U	P/N: RZA-42-A62-CAY-A1	1970	98,0	400
45U	P/N: RZA-45-A62-CAY-A1	2105	102,7	400
47U	P/N: RZA-47-A62-CAY-A1	2194	111,7	400



### Parameters A86

Width 800 mm, Depth 600 mm

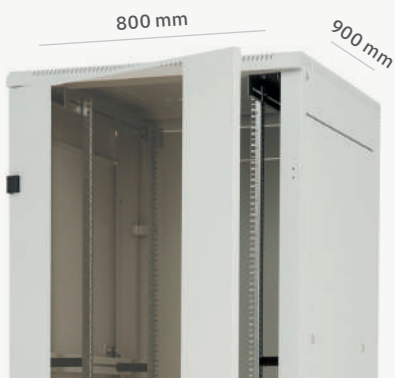
		Height (mm)	Weight (kg)	Capacity (kg)
15U	P/N: RZA-15-A86-CAY-A1	770	43,2	300
18U	P/N: RZA-18-A86-CAY-A1	900	47,4	300
22U	P/N: RZA-22-A86-CAY-A1	1080	53,1	300
27U	P/N: RZA-27-A86-CAY-A1	1300	62,1	400
32U	P/N: RZA-32-A86-CAY-A1	1525	69,6	400
37U	P/N: RZA-37-A86-CAY-A1	1750	77,2	400
42U	P/N: RZA-42-A86-CAY-A1	1970	84,7	400
45U	P/N: RZA-45-A86-CAY-A1	2105	89,2	400
47U	P/N: RZA-47-A86-CAY-A1	2194	92,2	400



### Parameters A88

Width 800 mm, Depth 800 mm

		Height (mm)	Weight (kg)	Capacity (kg)
15U	P/N: RZA-15-A88-CAY-A1	770	50,0	300
18U	P/N: RZA-18-A88-CAY-A1	900	54,7	300
22U	P/N: RZA-22-A88-CAY-A1	1080	61,1	300
27U	P/N: RZA-27-A88-CAY-A1	1300	70,7	400
32U	P/N: RZA-32-A88-CAY-A1	1525	79,0	400
37U	P/N: RZA-37-A88-CAY-A1	1750	87,4	400
42U	P/N: RZA-42-A88-CAY-A1	1970	95,6	400
45U	P/N: RZA-45-A88-CAY-A1	2105	100,6	400
47U	P/N: RZA-47-A88-CAY-A1	2194	103,8	400



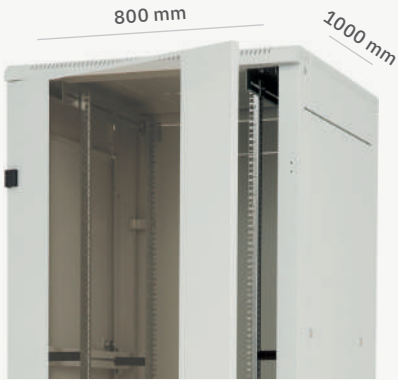
### Parameters A89

Width 800 mm, Depth 900 mm

		Height (mm)	Weight (kg)	Capacity (kg)
15U	P/N: RZA-15-A89-CAY-A1	770	54,5	300
18U	P/N: RZA-18-A89-CAY-A1	900	59,6	300
22U	P/N: RZA-22-A89-CAY-A1	1080	66,5	300
27U	P/N: RZA-27-A89-CAY-A1	1300	77,9	400
32U	P/N: RZA-32-A89-CAY-A1	1525	87,1	400
37U	P/N: RZA-37-A89-CAY-A1	1750	96,4	400
42U	P/N: RZA-42-A89-CAY-A1	1970	105,4	400
45U	P/N: RZA-45-A89-CAY-A1	2105	111,0	400
47U	P/N: RZA-47-A89-CAY-A1	2194	114,8	400



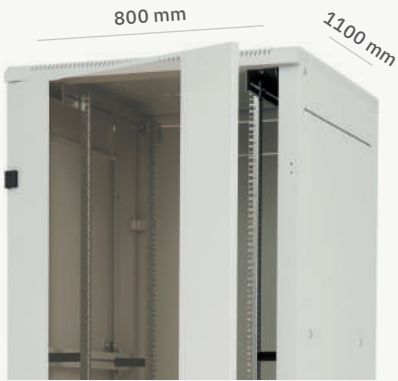
### Parameters A81



Width 800 mm, Depth 1000 mm

		Height (mm)	Weight (kg)	Capacity (kg)
15U	P/N: RZA-15-A81-CAY-A1	770	57,9	300
18U	P/N: RZA-18-A81-CAY-A1	900	63,3	300
22U	P/N: RZA-22-A81-CAY-A1	1080	70,5	300
27U	P/N: RZA-27-A81-CAY-A1	1300	82,2	400
32U	P/N: RZA-32-A81-CAY-A1	1525	91,8	400
37U	P/N: RZA-37-A81-CAY-A1	1750	101,4	400
42U	P/N: RZA-42-A81-CAY-A1	1970	110,8	400
45U	P/N: RZA-45-A81-CAY-A1	2105	116,6	400
47U	P/N: RZA-47-A81-CAY-A1	2194	120,5	400

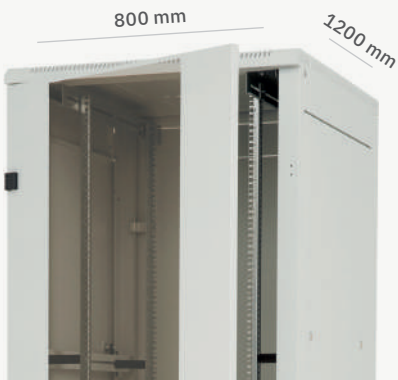
### Parameters A80



Width 800 mm, Depth 1100 mm

		Height (mm)	Weight (kg)	Capacity (kg)
15U	P/N: RZA-15-A80-CAY-A1	770	65,9	300
18U	P/N: RZA-18-A80-CAY-A1	900	71,6	300
22U	P/N: RZA-22-A80-CAY-A1	1080	79,4	300
27U	P/N: RZA-27-A80-CAY-A1	1300	87,9	400
32U	P/N: RZA-32-A80-CAY-A1	1525	97,7	400
37U	P/N: RZA-37-A80-CAY-A1	1750	107,5	400
42U	P/N: RZA-42-A80-CAY-A1	1970	116,9	400
45U	P/N: RZA-45-A80-CAY-A1	2105	123,0	400
47U	P/N: RZA-47-A80-CAY-A1	2194	126,6	400

### Parameters A82



Width 600 mm, Depth 1200 mm

		Height (mm)	Weight (kg)	Capacity (kg)
15U	P/N: RZA-15-A82-CAY-A1	770	69,5	300
18U	P/N: RZA-18-A82-CAY-A1	900	75,1	300
22U	P/N: RZA-22-A82-CAY-A1	1080	83,4	300
27U	P/N: RZA-27-A82-CAY-A1	1300	92,3	400
32U	P/N: RZA-32-A82-CAY-A1	1525	102,4	400
37U	P/N: RZA-37-A82-CAY-A1	1750	110,7	400
42U	P/N: RZA-42-A82-CAY-A1	1970	122,4	400
45U	P/N: RZA-45-A82-CAY-A1	2105	128,7	400
47U	P/N: RZA-47-A82-CAY-A1	2194	132,4	400



# 19" server cabinets



## 19" server demountable cabinet RZA

P/N: RZA-42-xxx-BAY-A1-OZA

- screwed construction with IP20 protection
- partial or complete dismantling enables installation in places that are difficult to reach
- removable and lockable side panels and rear cover enable an easy access to the installed devices
- front, central and rear vertical rails are continuously adjustable
- frame of the cabinet and all removable parts are connected with earthing cables
- cable openings covered with breakout-type blanking panels located at the top, bottom and rear part of the cabinet
- breakout-type blanking panels for fan units are located in the top and bottom of the cabinet
- nivelation feet (standard)
- castors RAX-MS-X81-X1 and base with filter RAB-PO-X81-XN available upon request
- stabilizing footing RAB-SS-X04-X1 available upon request (applies to cabinets with base only)
- the system enables sliding vertical rails installation in a span of 19", 21" or 23"
- protective blanking panel with a brush to seal the cabinet opening against dust penetration (1 pc)
- set of M6 screws and captive nuts (16 pcs)

Color black RAL 9005

Surface structured, matt

**Note** server cabinets can be also supplied with L-profile type of vertical fixing rails for HP servers



### Parameters L81

Width 800 mm, Depth 1000 mm

	Height (mm)	Weight (kg)	Capacity (kg)
42U P/N: RZA-42-L81-BAY-A1-OZA	1970	105,8	400

- perforated single door with air permeability of 80%



### Parameters A81

Width 800 mm, Depth 1000 mm

	Height (mm)	Weight (kg)	Capacity (kg)
42U P/N: RZA-42-A81-BAY-A1-OZA	1970	110,8	400

- single door, hardened smoked glass



## 19" server compact cabinet RMA

P/N: RMA-42-L69-BAY-A1-OZA

P/N: RMA-42-A69-BAY-A1-OZA

P/N: RMA-27-A81-BAY-A1-OZA

P/N: RMA-45-A81-BAY-A1-OZA

- welded construction with IP20 protection
- removable and lockable side panels and perforated rear cover (air permeability of 80%) enable an easy access to the installed devices
- front vertical rails are continuously adjustable
- frame of the cabinet and all removable parts are connected with earthing cables
- cable openings covered with breakout-type blanking panels located at the top, bottom and rear part of the cabinet
- breakout-type blanking panels for fan units are located in the top and bottom of the cabinet
- nivelation feet (standard)
- castors RAX-MS-X81-X1 and base with filter RAB-PO-X69-XN available upon request
- stabilizing footing RAB-SS-X04-X1 available upon request (applies to cabinets with base only)
- sliding vertical rails installation in a span of 19", 21" or 23" (only in case of cabinets with width of 800 mm)
- protective blanking panel with a brush to seal the cabinet opening against dust penetration (1 pc)
- set of M6 screws and captive nuts (16 pcs)

Color	black RAL 9005
Surface	structured, matt

**Note** server cabinets can be also supplied with L-profile type of vertical fixing rails for HP servers



### Parameters L69

Width 600 mm, Depth 900 mm	Height (mm)	Weight (kg)	Capacity (kg)
42U P/N: RMA-42-L69-BAY-A1-OZA	1970	85,8	400

- perforated single door with air permeability of 80%



### Parameters A69

Width 600 mm, Depth 900 mm	Height (mm)	Weight (kg)	Capacity (kg)
42U P/N: RMA-42-A69-BAY-A1-OZA	1970	90,8	400

- single door, hardened smoked glass



### Parameters A81

Width 800 mm, Depth 1000 mm	Height (mm)	Weight (kg)	Capacity (kg)
27U P/N: RMA-27-A81-BAY-A1-OZA	1300	81,2	400
42U P/N: RMA-42-A81-BAY-A1-OZA	2105	115,6	400

- single door, hardened smoked glass

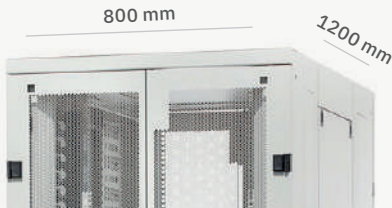
## Universal HD cabinet for data centers

P/N: UDC-47-812



- doors and side panels easily removable without using any tools
- secure locking with cylinder lock with a unique key for access control
- Perforated front and rear doors with air permeability of 80% for optimal airflow in the concept of cold / hot aisle
- deep, continuously-draggable 19" frames for mounting devices to allow full adaptability to the size of installed devices and also to space requirements for connecting cables
- unique to-the-side draggable 19" frames for mounting devices to allow selection of the optimum cable management concept and location of equipment according to the use of rack
- high capacity vertical and horizontal cable management to guarantee compliance with the bending radius of cable mountable on the front and rear side of the cabinet
- flip-top vertical cable management effectively increasing the air flow and also playing a considerable aesthetic function
- vertical cable grids on both sides of the enclosure, that can be mounted in the front and in the back according to the purpose of the usage
- horizontal mounting chassis with the possibility of mounting brackets for cable reserves
- cable entries from top and bottom of enclosure through openings with adjustable size and minimizing unwanted air flow
- pretreatment for joining and bilateral cross-wiring of adjacent distributors, extension of installation or changes within the distributors without necessity of their disconnection
- 100% perfect elaboration of the edges for safe installation and protection of cables against mechanical damage
- deliverable in a folded or disassembled state with a short assembly time in 20 minutes

Color	black RAL 9005 or gray RAL 7025
Surface	structured, matt



### Parameters 47U

Width 800 mm, Depth 1200 mm

47U P/N: UDC-47-812

Height (mm)

2194

Weight (kg)

130

Capacity (kg)

1300

### 19" server cabinet RTA

Server cabinet with loading capacity of 1200/1500 kg (possibility of increased load capacity by installing RAX-VR-Txx-X2 strenghtening kit), IP20 protection.

### Free standing 19" cabinet RIE

Cabinet with loading capacity of 400 kg, IP54 protection, designed for dusty or humid environments.

### Free standing 19" cabinet RPE

Cabinet with IP54 protection, for industrial environment, intended for installation of computers or control components of technological units.

### Free standing 19" cabinet RPA

Cabinet with IP54 protection, for industrial environment, intended for installation of computers or control components of technological units.



# Cabinets for industrial / outdoor areas with IP55 protection

## 19" cabinet for industrial / outdoor areas with IP55 protection



P/N: RIO-xx-Cyy

- designed for industrial and protected outdoor areas
- dust and water resistant
- can be used as wall mounted or free-standing cabinet (in case of ordering with the base)
- welded steel construction
- reinforced steel front door with 3-point bar-locking and half-cylinder lock
- double roof, inner roof prepared for mounting of double fan unit with thermostat (fan unit has to be ordered separately)
- vertical rails are continuously adjustable (back rails can be ordered as well)
- bottom cable entrance through PG clamps 1xPG48, 2xPG21 + 3 blind holes of Ø 20 mm
- all removable parts are connected with earthing cables

Protection	IP55
Color	gray RAL 7035
Surface	structured, matt



### Parameters C45

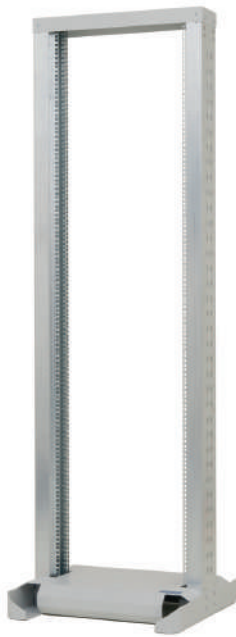
Width 600 mm, Depth 450 mm	Height (mm)	Weight (kg)	Capacity (kg)
7U P/N: RIO-07-C45	410	26	100
9U P/N: RIO-09-C45	500	29	100
12U P/N: RIO-12-C45	630	32	100
16U P/N: RIO-16-C45	810	38	100
20U P/N: RIO-20-C45	1000	42	100



### Parameters C60

Width 600 mm, Depth 600 mm	Height (mm)	Weight (kg)	Capacity (kg)
7U P/N: RIO-07-C60	410	33	100
9U P/N: RIO-09-C60	500	36	100
12U P/N: RIO-12-C60	630	41	100
16U P/N: RIO-16-C60	810	46	100
20U P/N: RIO-20-C60	1000	52	100

# 19" open frames



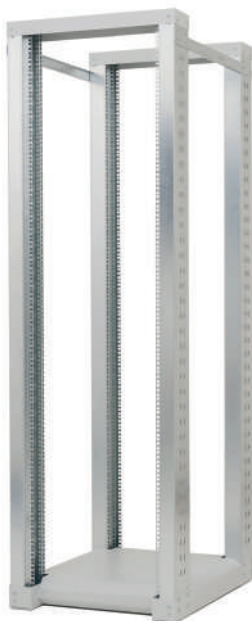
## 19" single section frame RSX

P/N: RSX-xx-XS6-CXX-A1

- demountable steel construction
- nivelation feet (standard)
- castors RAX-MS-X81-X1 available upon request
- stabilization kit included in the package

Base dimensions (mm)	600 x 600
Color	gray RAL 7035
Surface	structured, matt

		Height (mm)	Weight (kg)	Capacity (kg)
<b>27U</b>	P/N: RSX-27-XS6-CXX-A1	1365	27,5	150
<b>32U</b>	P/N: RSX-32-XS6-CXX-A1	1587	29,6	150
<b>37U</b>	P/N: RSX-37-XS6-CXX-A1	1809	31,7	150
<b>42U</b>	P/N: RSX-42-XS6-CXX-A1	2031	33,7	150
<b>45U</b>	P/N: RSX-45-XS6-CXX-A1	2165	35,0	150



## 19" double section frame RSX

P/N: RSX-xx-XD8-CXX-A1

- demountable steel construction
- nivelation feet (standard)
- castors RAX-MS-X81-X1 available upon request
- stabilization kit included in the package

Base dimensions (mm)	600 x 600
Color	gray RAL 7035
Surface	structured, matt

		Height (mm)	Weight (kg)	Capacity (kg)
<b>27U</b>	P/N: RSX-27-XD8-CXX-A1	1365	46,9	400
<b>32U</b>	P/N: RSX-32-XD8-CXX-A1	1587	51,0	400
<b>37U</b>	P/N: RSX-37-XD8-CXX-A1	1809	55,1	400
<b>42U</b>	P/N: RSX-42-XD8-CXX-A1	2031	59,2	400
<b>45U</b>	P/N: RSX-45-XD8-CXX-A1	2165	61,7	400

# Accessories for 19" cabinets

## 19" shelf

P/N: RAB-UP-xxx-A4



- freely adjustable in any depth
- stabilizers for gripping rear vertical rails (applies to shelves with depth of 350 mm and higher)
- efficient cooling of active equipment thanks to perforation
- set of M6 screws and captive nuts (4 pcs)

Height	2/3U (32,2 mm)
Color	black RAL 9005
Surface	structured, matt

	Depth (mm)	Capacity (kg)
P/N: RAB-UP-150-A4	150	15
P/N: RAB-UP-250-A4	250	20
P/N: RAB-UP-350-A4	350	50
P/N: RAB-UP-450-A4	450	80
P/N: RAB-UP-550-A4	550	80
P/N: RAB-UP-650-A4	650	80
P/N: RAB-UP-750-A4	750	80
P/N: RAB-UP-850-A4	850	80
P/N: RAB-UP-950-A4	950	80

## 19" sliding lockable shelf 2U for keyboard and mouse

P/N: RAB-UP-X29-A1



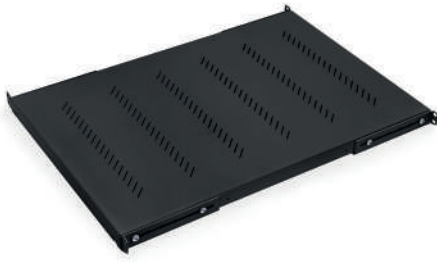
Height	2U (89 mm)
Color	black RAL 9005
Surface	structured, matt

	Depth (mm)	Capacity (kg)
P/N: RAB-UP-X29-A1	360	30



## 19" heavy duty shelf

P/N: RAB-UP-xxx-H4



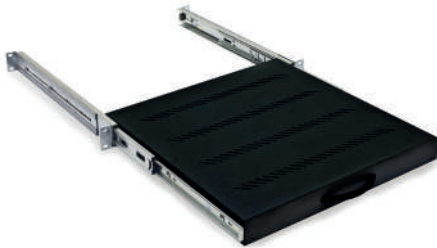
- freely adjustable in any depth
- stabilizers for gripping rear vertical rails
- efficient cooling of active equipment thanks to perforation
- set of M6 screws and captive nuts (8 pcs)

Height	2/3U (32,2 mm)
Color	black RAL 9005
Surface	structured, matt

	Depth (mm)	Capacity (kg)
P/N: RAB-UP-450-H4	450	80
P/N: RAB-UP-550-H4	550	80
P/N: RAB-UP-650-H4	650	80
P/N: RAB-UP-750-H4	750	80
P/N: RAB-UP-850-H4	850	80
P/N: RAB-UP-950-H4	950	80

## 19" sliding shelf

P/N: RAB-UP-xxx-A1



- freely adjustable in any depth
- stabilizers for gripping the rear vertical rails
- telescopic mechanism enables to slide out the device upfront
- efficient cooling of active equipment thanks to perforation
- set of M6 screws and captive nuts (8 pcs)

Height	1U (44,5 mm)
Color	black RAL 9005
Surface	structured, matt

	Depth (mm)	Capacity (kg)
P/N: RAB-UP-X30-A1	350	30
P/N: RAB-UP-X31-A1	450	30
P/N: RAB-UP-X20-A1	550	45
P/N: RAB-UP-X19-A1	650	45

## Fan unit with thermostat for top cover and floor

P/N: RAC-CH-Xxx-X3



- designed for top cover of free standing cabinets
- designed for free standing cabinets with base and bottom fixing frame RAX-CH-XXX-X1

<b>Color</b>	C - gray RAL 7035 B - black RAL 9005
<b>Surface</b>	structured, matt

	Number of ventilators	Input (W)
P/N: RAC-CH-X03-X3	2	46
P/N: RAC-CH-X04-X3	4	92
P/N: RAC-CH-X05-X3	6	138

## 19" fan unit with thermostat

P/N: RAB-CH-Xxx-A1



- designed for vertical rails of all cabinet types such as wall-mounted, free standing cabinets and server racks
- set of M6 screws and captive nuts (4 pcs)

<b>Width</b>	19" (482,6 mm)
<b>Height</b>	2U (89 mm)
<b>Color</b>	black RAL 9005
<b>Surface</b>	structured, matt

	Number of ventilators	Input (W)
P/N: RAB-CH-X01-A1	2	46
P/N: RAB-CH-X02-A1	4	92

## Fan unit with thermostat

P/N: RAC-CH-X26-X1



- designed for top cover and bottom of wall-mounted cabinets RUA

<b>Color</b>	gray RAL 7035
<b>Surface</b>	structured, matt

	Number of ventilators	Input (W)
P/N: RAC-CH-X26-X1	3	69



## Ventilator

P/N: RAX-CH-X07-X9

- designed for top cover and bottom of cabinets RUA

Color	black RAL 9005
Surface	structured, matt

	Number of ventilators	Input (W)
P/N: RAC-CH-X07-X9	1	23

## Cable management rings

P/N: RAX-Dx-Xxx-X3

- provides vertical cable management in the cabinet



	Width (mm)	Depth (mm)
P/N: RAX-D1-X88-X3	80	80



	Width (mm)	Depth (mm)
P/N: RAX-D1-X48-X3	40	80



	Width (mm)	Depth (mm)
P/N: RAX-D2-X88-X3	80	80



	Width (mm)	Depth (mm)
P/N: RAX-D2-X48-X3	40	80



	Width (mm)	Depth (mm)
P/N: RAX-D3-X88-X3	80	80



	Width (mm)	Depth (mm)
P/N: RAX-D3-X48-X3	40	80



## Base

P/N: RAC-PO-Xxx-XN

- designed for all types of free standing cabinets and server racks
- dust filter included

<b>Color</b> RAX-PO-Xxx-XN	C - gray RAL 7035 B - black RAL 9005
<b>Surface</b>	structured, matt

	<b>Width (mm)</b>	<b>Depth (mm)</b>	<b>Load capacity (kg)</b>
P/N: RAC-PO-X66-XN	600	600	400
P/N: RAC-PO-X68-XN	600	800	400
P/N: RAC-PO-X69-XN	600	900	400
P/N: RAC-PO-X61-XN	600	1000	400
P/N: RAC-PO-X60-XN	600	1100	400
P/N: RAC-PO-X62-XN	600	1200	400
P/N: RAC-PO-X86-XN	800	600	400
P/N: RAC-PO-X88-XN	800	800	400
P/N: RAC-PO-X89-XN	800	900	400
P/N: RAC-PO-X81-XN	800	1000	400
P/N: RAC-PO-X80-XN	800	1100	400
P/N: RAC-PO-X82-XN	800	1200	400



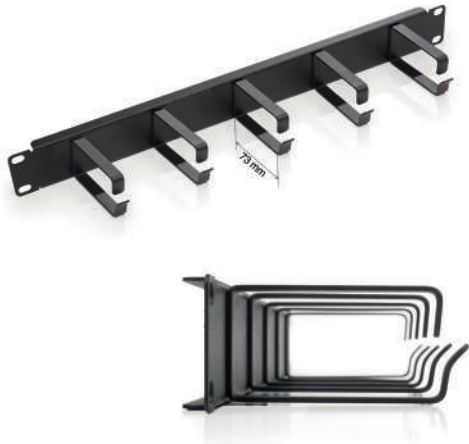
## Heavy duty base

P/N: RAC-PO-Xxx-XD

- designed for all types of free standing cabinets and server racks
- dust filter included

<b>Color</b> RAX-PO-Xxx-XN	C - gray RAL 7035 B - black RAL 9005
<b>Surface</b>	structured, matt

	<b>Width (mm)</b>	<b>Depth (mm)</b>	<b>Load capacity (kg)</b>
P/N: RAC-PO-X66-XD	600	600	1500
P/N: RAC-PO-X68-XD	600	800	1500
P/N: RAC-PO-X69-XD	600	900	1500
P/N: RAC-PO-X61-XD	600	1000	1500
P/N: RAC-PO-X60-XD	600	1100	1500
P/N: RAC-PO-X62-XD	600	1200	1500
P/N: RAC-PO-X88-XD	800	800	1500
P/N: RAC-PO-X89-XD	800	900	1500
P/N: RAC-PO-X81-XD	800	1000	1500
P/N: RAC-PO-X80-XD	800	1100	1500
P/N: RAC-PO-X82-XD	800	1200	1500



## 19" cable management panel with ring depth of 73 mm, metallic

P/N: RAB-VP-X21-A2

- provides horizontal cable management with double amount of patch cables in comparison with a standard cable management RAB-VP-X01-A2
- suitable when using a HD patch panels with a density of 48 ports in 1U
- set of M6 screws and captive nuts (4 pcs)

Panel height	1U (44,5 mm)
Panel width	19" (482,6 mm)
Ring height (mm)	42
Ring depth (mm)	73
Color	black RAL 9005
Surface	structured, matt

## 19" cable management panel with ring depth of 37 mm, metallic

P/N: RAB-VP-X01-A2

- provides horizontal cable management in the cabinet
- set of M6 screws and captive nuts (4 pcs)



Panel height	1U (44,5 mm)
Panel width	19" (482,6 mm)
Ring height (mm)	42
Ring depth (mm)	37
Color	black RAL 9005
Surface	structured, matt

## 19" cable management panel, plastic

P/N: RAB-VP-X02-A1

- provides horizontal cable management in the cabinet
- set of M6 screws and captive nuts (4 pcs)



Panel height	1U (44,5 mm)	
Panel width	19" (482,6 mm)	
Ring height (mm)	42	
Ring depth (mm)	60	
Color	cable duct	gray RAL 7038
	base	black RAL 9005
Surface	structured, matt	



## Set of castors

P/N: RAX-MS-X81-X1

- designed for all types of free standing cabinets and server racks
- 2 castors with a brake, 2 castors without a brake
- installation set of screws

Capacity (kg)	800
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## Stabilizers

P/N: RAB-SS-X01-X1



- stabilizing footing prevents cabinets from tilting
- designed for all types of free standing cabinets and server racks with base
- installation set of screws

Capacity (kg)	400
Color	black RAL 9005
Surface	structured, matt

## LED-diode lighting unit

P/N: RAX-OJ-X07-X1



- external adapter 12V / 230V
- efficient gripping in any part of a cabinet thanks to a magnet

Width (mm)	482,6
Height (mm)	23,4
Depth (mm)	24,5
Input	4 W
Cable length (m)	3

## 19" cover for lighting unit, black

P/N: RAB-OP-X07-A1



- 19" cover/holder for LED-diode lightning unit RAX-OJ-X07-X1

Color	black RAL 9005
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## 19" cover for lighting unit, gray

P/N: RAC-OP-X07-A1



- 19" cover/holder for LED-diode lightning unit RAX-OJ-X07-X1

Color	gray RAL 7035
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## Installation kit

P/N: RAX-MS-X19-X1

- components for fixing a device into vertical rails
- 4 screws, 4 captive nuts and 4 plastic washers

## 19" blanking panel

P/N: RAB-ZP-Xxx-A1



- covers cable openings in cabinets, which ensures effective cooling
- set of M6 screws and captive nuts (4 pcs)

Color	black RAL 9005
Surface	structured, matt

	Height (mm)	Width (mm)
P/N: RAB-ZP-X01-A1	1U (44,5 mm)	19" (482,6 mm)
P/N: RAB-ZP-X02-A1	2U (88,5 mm)	19" (482,6 mm)

## 19" cable entry panel

P/N: RAB-ZP-X03-A1

P/N: RAB-ZP-X03-A2

with brush strips



- provides horizontal cable management in the cabinet
- set of M6 screws and captive nuts (4 pcs)

Color	black RAL 9005
Surface	structured, matt

	Height (mm)	Width (mm)
P/N: RAB-ZP-X03-A1	1U (44,5 mm)	19" (482,6 mm)
P/N: RAB-ZP-X03-A2	1U (44,5 mm)	19" (482,6 mm)

## 19" rail 3U for circuit breakers

P/N: RAB-JL-X01-A1

P/N: RAB-JL-X02-A1

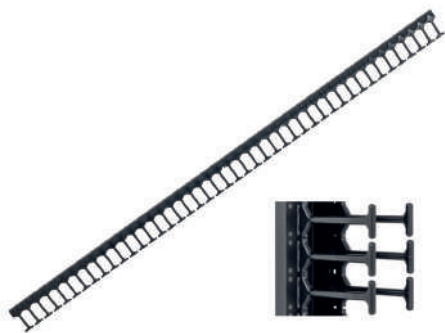
for 23 modules  
without cover

for 22 modules  
with cover



Color	B - black RAL 9005 C - gray RAL 7035
Surface	structured, matt

	Height (mm)	Width (mm)
P/N: RAB-JL-X01-A1	3U (133,5 mm)	19" (482,6 mm)
P/N: RAB-JL-X02-A1	3U (133,5 mm)	19" (482,6 mm)



## Vertical cable management for cabinets with width 800 mm

P/N: RAB-VP-Hxx-X1

- usable for cabinets with width 800 mm
- vertical cable management from 10U up to 47U
- cover for vertical cable management RAB-VP-OXX-X1 (optional)

Color black RAL 9005

Material plastic

	Height (U)	Width (mm)	Depth (mm)
P/N: RAB-VP-H10-X1	10	74	75
P/N: RAB-VP-H15-X1	15	74	75
P/N: RAB-VP-H18-X1	18	74	75
P/N: RAB-VP-H22-X1	22	74	75
P/N: RAB-VP-H27-X1	27	74	75
P/N: RAB-VP-H32-X1	32	74	75
P/N: RAB-VP-H37-X1	37	74	75
P/N: RAB-VP-H42-X1	42	74	75
P/N: RAB-VP-H45-X1	45	74	75
P/N: RAB-VP-H47-X1	47	74	75

## Removable cover for vertical cable management

P/N: RAB-VP-Oxx-X1

- swing, removable cover for vertical cable management RAB-VP-HXX-X

Color black RAL 9005

Material metal



	Height (U)	Depth (mm)
P/N: RAB-VP-O10-X1	10	74
P/N: RAB-VP-O15-X1	15	74
P/N: RAB-VP-O18-X1	18	74
P/N: RAB-VP-O22-X1	22	74
P/N: RAB-VP-O27-X1	27	74
P/N: RAB-VP-O32-X1	32	74
P/N: RAB-VP-O37-X1	37	74
P/N: RAB-VP-O42-X1	42	74
P/N: RAB-VP-O45-X1	45	74
P/N: RAB-VP-O47-X1	47	74

# Power distribution units PDU



## 19" PDU, 7 x 230V, French

P/N: 620050

- french style sockets
- universal german and french style cable plug (DIN 49441)
- lighted power switch protected against accidental disconnection of devices
- LED for surge protection indication
- set of M6 screws and captive nuts (4 pcs)

Rating voltage	250V
Nominal load current	$\Sigma$ IN 16A
Dimensions h x w x d (mm)	45 (1U) x 485 (19") x 45
Cable length (m)	2,5



## 19" PDU, 9 x 230V, French

P/N: 620090

- french style sockets
- universal german and french style cable plug
- lighted power switch protected against accidental disconnection of devices
- set of M6 screws and captive nuts (4 pcs)

Rating voltage	250V
Nominal load current	$\Sigma$ IN 16A
Dimensions h x w x d (mm)	45 (1U) x 485 (19") x 45
Cable length (m)	2,5



## 19" PDU, 9 x 230V, French

P/N: 620090I

- french style sockets
- IEC 320 C14 cable plug
- LED for power indications
- set of M6 screws and captive nuts (4 pcs)

Rating voltage	250V
Nominal load current	$\Sigma$ IN 10A
Dimensions h x w x d (mm)	45 (1U) x 485 (19") x 45
Cable length (m)	2,5

## 19" PDU, 8 x 230V, French

P/N: ACARS8FAR3

- french style sockets
- universal german and french style cable plug
- over voltage protection with filter
- lighted power switch
- set of M6 screws and captive nuts (4 pcs)

Rating voltage	250V
Nominal load current	$\Sigma$ IN 10A
Dimensions h x w x d (mm)	55 (1,5U) x 482,6 (19") x 54
Cable length (m)	3



## 19" PDU, 5 x 230V, French

P/N: ACARF5FAR3

- french style sockets
- universal german and french style cable plug
- over voltage protection with filter
- lighted power switch
- set of M6 screws and captive nuts (4 pcs)

Rating voltage	230V
Nominal load current	$\Sigma$ IN 10A
Dimensions h x w x d (mm)	57 (1,5U) x 482,6 (19") x 55
Cable length (m)	3



## 19" PDU, 8 x IEC320 C13

P/N: 620I08

- IEC320 C13 sockets
- universal german and french style cable plug
- lighted power switch protected against accidental disconnection of devices
- set of M6 screws and captive nuts (4 pcs)

Rating voltage	250V
Nominal load current	$\Sigma$ IN 10A
Dimensions h x w x d (mm)	45 (1U) x 485 (19") x 45
Cable length (m)	2,5



## 19" PDU, 9 x IEC320 C13

P/N: 620I09I

- IEC320 C13 sockets
- IEC 320 C14 cable plug
- LED for power indications
- set of M6 screws and captive nuts (4 pcs)

Rating voltage	250V
Nominal load current	$\Sigma$ IN 10A
Dimensions h x w x d (mm)	45 (1U) x 485 (19") x 45
Cable length (m)	2,5





## 19" PDU, 6 x 230V, Schuko

P/N: 620P06

- german style sockets (DIN 49440)
- universal german and french style cable plug
- over voltage protection with filter
- lighted power switch protected against accidental disconnection of devices
- LEDs for earthing, surge protection and power indications
- set of M6 screws and captive nuts (4 pcs)

Rating voltage	250V
Nominal load current	$\Sigma$ IN 16A
Dimensions h x w x d (mm)	45 (1U) x 485 (19") x 45
Cable length (m)	2,5



## 19" PDU, 9 x 230V, Schuko

P/N: 620S09

- german style sockets (DIN 49440)
- universal german and french style cable plug
- LED for power indications
- set of M6 screws and captive nuts (4 pcs)

Rating voltage	250V
Nominal load current	$\Sigma$ IN 16A
Dimensions h x w x d (mm)	45 (1U) x 485 (19") x 45
Cable length (m)	2,5



## 19" PDU, 9 x 230V, Schuko

P/N: 620S10

- german style sockets (DIN 49440)
- universal german and french style cable plug
- lighted power switch protected against accidental disconnection of devices
- set of M6 screws and captive nuts (4 pcs)

Rating voltage	250V
Nominal load current	$\Sigma$ IN 16A
Dimensions h x w x d (mm)	45 (1U) x 485 (19") x 45
Cable length (m)	2,5



**KELINE**





# 10" wall-mounted cabinets and accessories

## 10" wall-mounted cabinets RBA

P/N: RBA-xx-AS3-CAY-C1



- welded construction with IP30 protection
- hardened smoked glass door (standard)
- solid steel door available upon request
- front vertical rails are continuously adjustable
- frame of the cabinet and all removable parts are connected with earthing cables
- cable openings covered with breakout-type blanking panels located at the top, bottom and rear part of the cabinet
- set of M6 screws and captive nuts (8 pcs)

<b>Front door</b> RBA-xx-xxx-xAY-C1	A - hardened smoked glass door (standard) C - solid steel door L - perforated door
<b>Color</b> RBA-xx-xxx-xAY-C1	C - gray RAL 7035 (standard) B - black RAL 9005
<b>Surface</b>	structured, matt

260 mm      310 mm



### Parameters AS3

Depth 260 mm, Width 310 mm		Height (mm)	Weight (kg)	Capacity (kg)
4U	P/N: RBA-04-AS3-CAY-C1	248	5,4	20
6U	P/N: RBA-06-AS3-CAY-C1	337	6,9	20
9U	P/N: RBA-09-AS3-CAY-C1	470	8,2	20

## 10" shelf

P/N: RAB-UP-X01-C1

- efficient cooling of active equipment thanks to perforation
- set of M6 screws and captive nuts (4 pcs)



<b>Height</b>	1U (44,5 mm)
<b>Width</b>	10" (254 mm)
<b>Depth (mm)</b>	140
<b>Material</b>	steel
<b>Color</b>	black RAL 9005
<b>Surface</b>	structured, matt

## 10" cable management panel

P/N: RAB-VP-X02-C1



- provides horizontal cable management in the cabinet
- set of M6 screws and captive nuts (4 pcs)

Panel height	1U (44,5 mm)
Panel width	10" (254 mm)
Ring height (mm)	42
Ring width (mm)	37
Color	black RAL 9005
Surface	structured, matt

## 10" fibre optic box, empty

P/N: RAB-FO-X01-C1

P/N: RAB-FO-X01-C2

for 8 x ST-ST  
or FC-FC adapters

for 8 x SC-SC, LC-LC Duplex or  
E2000-E2000 adapters



- set of M6 screws and captive nuts (4 pcs)

Height	1U (44,5 mm)
Width	10" (254 mm)
Depth (mm)	140
Material	steel
Color	black RAL 9005
Surface	structured, matt

## 10" distribution panel, 4 x 230V

P/N: RAB-PD-X90-C1



- LED power indicator
- set of M6 screws and captive nuts (4 pcs)

Rating voltage	250V
Nominal load current	Σ IN 10 A
Dimensions h x w x d (mm)	44,4 x 256 x 44,4
Cable length (m)	2

## 10" patch panel for 8 x RJ45, empty

P/N: RAB-PP-X01-C4



- integrated cable management
- suitable for keystone jacks such as KEJ-C6A-S-10G, KEJ-CEA-S-10G, KEJ-C6-S-TL, KEJ-C6-U-TL, KEJ-C5E-S-TL, KEJ-C5E-U-TL
- set of M6 screws and captive nuts (4 pcs)

Height	1U (44,5 mm)
Width	10" (254 mm)
Depth (mm)	66
Material	steel
Color	black RAL 9005
Surface	structured, matt

# Cabling certifiers

# 5



# Contents

164 Knowledge base

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165 TREND Networks®

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166 FLUKE®



# Knowledge base

## Strategic partnership

**TREND Networks®** and **FLUKE®** cabling certifiers are typically delivered with firmware containing a Keline installation cable database. By selecting a cable model number, the cabling certifier automatically **adjusts its parameters (NVP)** and **displays them in measurement protocols**. This **reduces the possibility of errors** and **simplifies the processing of certification protocols**.

**These devices certify installed cabling**, verify the quality of installations and indicate errors caused by non-professional installation. The certifier does not replace certification of already installed components - this must be carried by an additional testing.

## Certificates

**LanTEK, DSX 5000** and **DSX 8000** are certified **by international independent laboratories** ETL according to IEC 61935-1 (2nd edition).

# TREND Networks®



## LanTEK® IV-S

- improved functionality due to the use of the dual-core processor, more RAM
- increased memory capacity of the results (from 2500 to 5000)
- 5" 480x854 IPS color wide screen ultra bright display
- permanent link adapters VisiLINQ (included in the package)
- channel measuring adapters (included in the package)
- troubleshooting features (TDX, TDRL)
- TCL, ELTCTL
- WiFi module to connect smartphones or tablets
- optical cabling certification with optional accessories FiberTEK IV
- new test data software to create professional reports in PDF
- battery life of 6-8 hours of continuous testing without interruption
- TREND AnyWARE mobile application allows to download measurement results from LanTEK® IV and then view and share reports (PDF, CSV)



## LanTEK® IV-S - 500 MHz Cable Certifier

P/N: R163008

Frequency range	1-500 MHz
Accuracy	Level IIIe (IEC 61935-1)
Category / transmission classes	Cat. 5E / Class D, Cat. 6 / Class E, Cat. 6 <sub>A</sub> / Class E <sub>A</sub>



## LanTEK® IV-S - 3000 MHz Cable Certifier

P/N: R163009

Frequency range	1-3000 MHz
Accuracy	Level VI (IEC 61935-1)
Category / transmission classes	Cat. 5E / Class D, Cat. 6 / Class E, Cat. 6 <sub>A</sub> / Class E <sub>A</sub> , Cat. 7 / Class F, Cat. 7 <sub>A</sub> / Class F <sub>A</sub> , Cat. 8.1 / Class I, Cat. 8.2 / Class II





## FLUKE Versiv

- high speed test time of Cat. 6<sub>A</sub> in 10 second
- graphically displays the source of failures including crosstalk and distance to shield faults
- internal memory capacity up to 12,000 tests results including full graphics
- 5.7" capacitive touchscreen
- lithium-ion battery with capacity of 8 hours
- first certifying tester able to measure TCL and ELTCTL
- HDTDx analyzer with Dedicated Diagnostics
- measuring continuity of shielding and resistance imbalance
- Versiv Main & Remote a DSX Copper (2) moduls included in the package



## Fluke 1 GHz DSX-5000 CableAnalyzer

P/N: DSX-5000

Frequency range	1-1000 MHz
Accuracy	Level V (IEC 61935-1)
Category / transmission classes	Cat. 5E / Class D, Cat. 6 / Class E, Cat. 6 <sub>A</sub> / Class E <sub>A</sub> , Cat. 7 / Class F, Cat. 7 <sub>A</sub> / Class F <sub>A</sub>



## Fluke 2 GHz DSX-8000 CableAnalyzer

P/N: DSX-8000

Frequency range	1-2000 MHz
Accuracy	Level 2G (ANSI/TIA-1152-A)
Category / transmission classes	Cat. 5E / Class D, Cat. 6 / Class E, Cat. 6 <sub>A</sub> / Class E <sub>A</sub> , Cat. 7 / Class F, Cat. 7 <sub>A</sub> / Class F <sub>A</sub> , Cat. 8.1 / Class I, Cat. 8.2 / Class II

**KELINE**



# Fire safety:

## Requirements for the use of cables in construction works

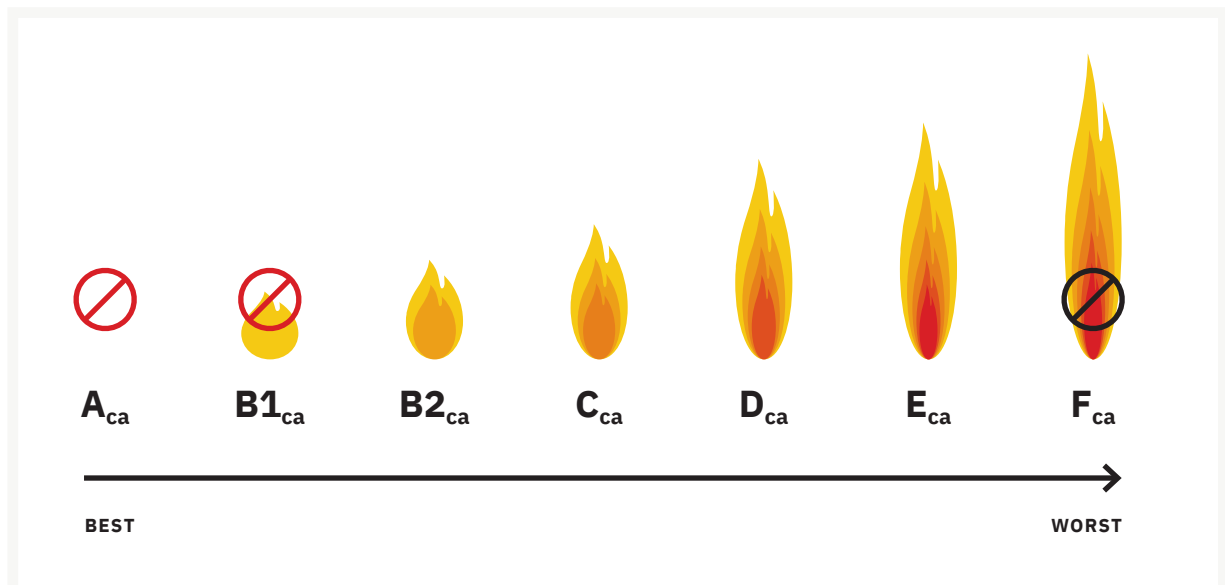
Since the 1st of July 2017, EN 50575: 2015 became a binding harmonized standard. This document introduced a clear classification of fire characteristics of cables and their unified identification

within the European Union. All copper and optical cables for structured cabling are building materials which are subject to reaction to fire requirements in construction works.










### Reaction to fire (Euroclass)

For each cable supplied to the EU market, the reaction to fire class must be determined according to the testing carried out by laboratories accredited by the European Commission. For cables with Euroclasses B2<sub>ca</sub> and C<sub>ca</sub>, both type test and certificate of constant performance (AVCP) in the System 1+ are required. The Euroclasses A<sub>ca</sub> and B1<sub>ca</sub> are technically unattainable for cables used in structured cabling. Testing for cables with Euroclass F<sub>ca</sub> is not required. According to the EN 50174-1 standard, the use of cables with the Euroclass F<sub>ca</sub> is forbidden for information technology cabling in buildings.

#### Heat release and flame spread



Additional classifications for B2<sub>ca</sub>, C<sub>ca</sub> and D<sub>ca</sub>

Smoke production	Flaming droplets/ particles	Acidity
s1 	d0 	a1 
s2 	d1 	a2 
s3 	d2 	a3 

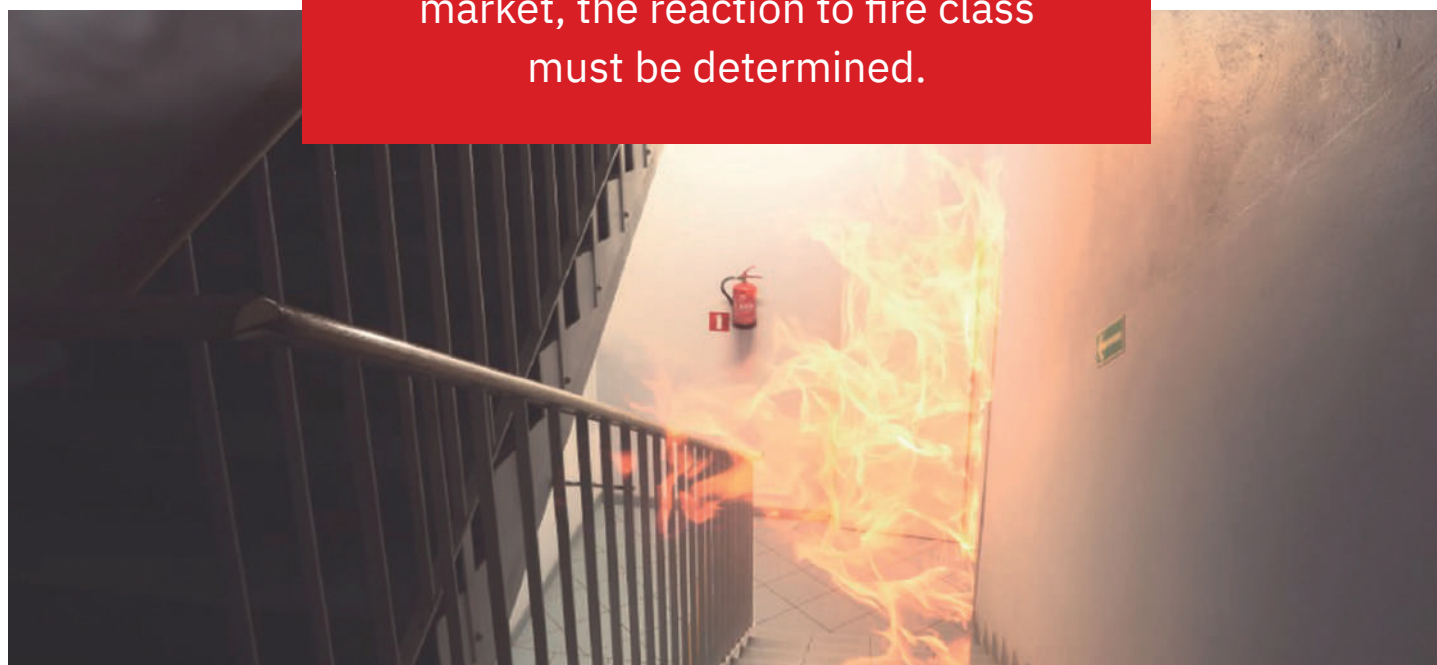
## Cable identification

The standard has established mandatory cable identification on packaging (reel / box), more precisely the marking on a cable. The packaging label must contain CE marking, reaction to fire class, and other prescribed information. Existing PVC, LSOH, LSFROH or similar markings cannot be used for classification of fire class characteristics of cables. They are considered as an additional information only.

## Declaration of performance

The Declaration of Performance is an official document confirming the reaction to fire class. It is used by a builder during the final inspection of a construction to prove that the requirements for fire safety in a construction are met. Declarations of performance for all Keline cables are available on [www.keline.com](http://www.keline.com) or upon request.

For each cable supplied to the EU market, the reaction to fire class must be determined.





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We reserve the right to change certain product parameters and characteristics without prior notice. Up-to-date information on certain parameters of the products can be obtained from companies certified as “Keline installer” and “Keline planner”.



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