FIBRAIN DATA
Premise Networking

ELMAT
DOSTAWCA TELEINFORMATYKI

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Fibrain DATA 2012/13

FIBRAIN.COM

version 1.3

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Structural Cabling System Fibrain Data

Fibrain Data

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Introduction - FIBRAIN DATA Structural Cabling System

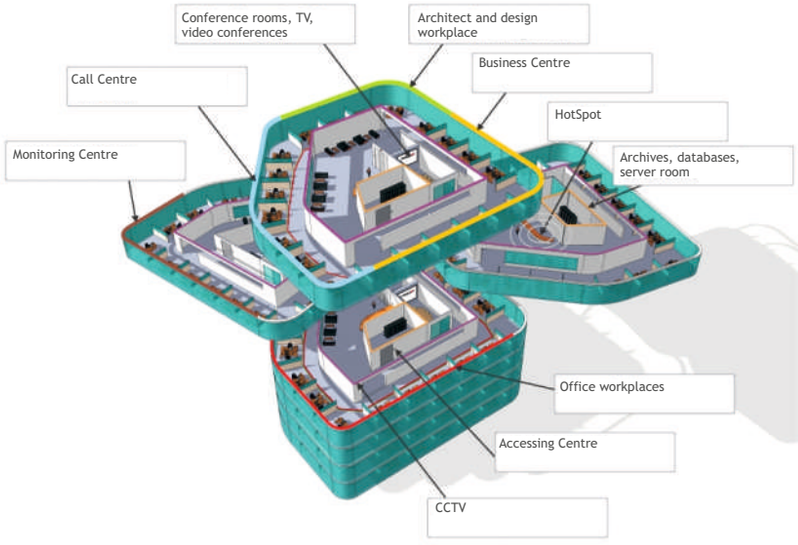
Structural cabling became part of our life, it is present in every place of our being. Requirements on quality and its durability cause its constant development. Omnipresence of services convergence, coming into existence of more sophisticated systems creates new activity fields.
Anticipation of norms, fulfillment of users requirements, durability for at least 25 years these are main goals of FIBRAIN DATA system. Thanks to thriving R&D department and well equipped laboratory we are able to provide the best parameters.

Company

Company's mission is partnership in co-operation with local and abroad companies within sale and distribution of the most modern IT Technologies. Our goal is to create reliable brand.
FIBRAIN employees specialists of high class of structural cabling filed that ensures nice and easy realization of your investment.
Our technical advisers offer you helping hand with all problems related to components choice and their installation. We are producer of systems based on different transmission means. We produce either fiber optic solutions and based on copper that are tailored for given case.

Knowledge

Experienced employees of R&D department, Structural Cabling Department and Design Department forming team of young people who act with passion, answer every question. Thanks to base of one of the most modern research laboratories in Europe we are able to test system operation in different conditions.
Appropriate choice of materials used for production of individual components ensure the best system's transmission parameters and its operation during at least 25 years also assuming errors ratio zero level of errors.



System

Main idea of FIBRAIN DATA is creation of solution tailored to customer's needs in the best possible way.
Dedicated meetings with installation technicians often result in improvements in our components and thanks to full control on product the improvements are implemented almost automatically (we are not conditioned by foreign capital though we can prepare products tailored to present needs of our region). We managed to create system corresponding to needs of wide circle of customers, the system of the XXI century.
Reach solutions portfolio allows to adjust to individual configuration of IT network at the same time providing margin for future applications. Our own requirements on this system resulted in exceeding conditions given by norms ISO/IEC 11801:2002, EIA/TIA-568-B.2.1, EN 50173:2002.

Fibrain Data
Introduction

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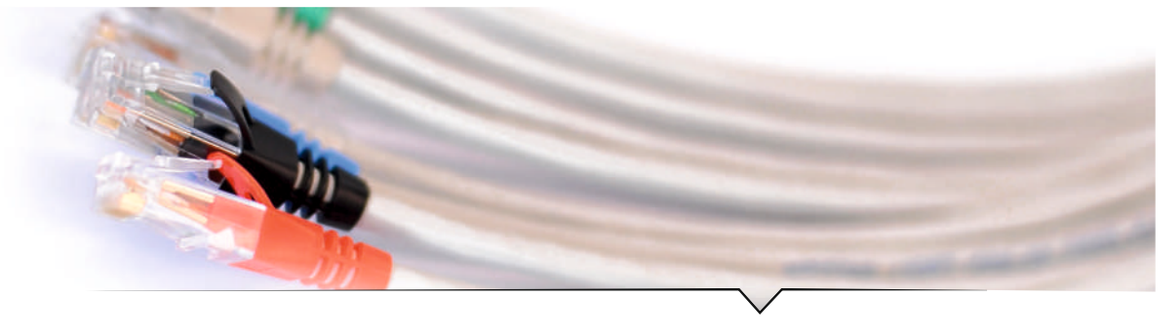

Solutions
Our solutions are divided into specific systems, which ensure compliance with the various categories set by the committees for standardization.

Express - Complete D-class system, includes all components category 5e which are required when structural cabling systems are installed. System is available in 2 options: UTP, FTP. In both categories are based on cables with increased frequency up to 200 MHz. Additionally system includes multi-pairs cables category 5e, which fully satisfies requirements of norms: ISO/IEC 11801.

Quick - Complete E-class system, contains all components category 6 which are required when structural cabling system is installed. Through the wide offer of installation cables (U/UTP, F/UTP, U/FTP, F/FTP), as well as increased frequency up to 500 MHz, we are able to meet requirements of broad group of professional consumers.

Rapid - Complete EA-class system, contains complete range of category 6A components. Solutions fully provide 10Gbps transmission in complete 100m of transmission channel. System is based on shielded version of transmission channel.

Ultra - Solutions prepared for a future applications, ensuring category 7 and 7A assumptions. Based on high quality of tele-informatic cables as F/FTP.

Voice - System prepared to be used in digital and analogue telephone signal transmission. Complements full tele-informatic solution.

Fiber - Broad group of components used for information transfer between specific distribution points. Wide offer of components allow to create 100% structural cabling system, which uses fiber optic cable as a medium of transmission.

Supplement of the above is division of EBOX electrical components, complete customers requirements for electrical /logical solutions. For the end user points we use French standard 45x45 mm. Full offer of adapters allows to join in one endpoint cooper, fiber optic and multimedia solutions together with dedicated power supply.

Compatibility
All our products have been examined by an external, independent laboratory as a components and also as a transmission channel and permanent link. For an additional protection all are measured on the daily basis in FIBRAIN internal laboratory and also reviewed by the installers when implementing. Components are also examined by de-embedded method.

Fibrain Academy
A rapidly growing training center, with convenient location of company branches, allows to increase the knowledge of Designers and Installers just next to their residence. On the lectures dedicated for a small group of interested people theoretical and practical knowledge is provided. We put a strong pressure also on the individual meetings at business locations of our partners. We are not limited to the area. Team of our trainers is open for a discussion, knowledge exchange. Schooling is always adjusted to the partner need and preference.

Certified Installer
Authorized Program of the Certified Installers of FIBRAIN DATA is directed to business bodies which are focused on project design, installation with implementation of structural cabling system. Program conducted by our Product Managers allows to provide wide knowledge which is necessary to understand and install structural cabling system. During the training, knowledge about norms, standards, international practical instructions also installation methods and available components in the market is introduced. Training also includes practical part, which shows installation of individual components. Training aim is to teach how to implement structural cabling system. That is covered by 25 years Warranty for system operation and application.

Certified Integrator

Authorizing Program for the Certified Integrators of Fibrain Data is directed to companies with high installation experience of our products. Proficiency in installation is confirmed by long term experience and also implementation of Certified Fibrain Data Systems, covered by our 25 years Warranty.

Certified Designer

Meetings in design offices allow us to get a knowledge about latest investors requirements. Designers can gather the knowledge about latest norms, editions and conditions which are placed nowadays ahead of modern structural cabling systems.

Warranty Program for Certified Fibrain Data Installers

Due to high requirements of professional environment we are able to ensure 25 years warranty for products operation. Each tele-informatic system which consist of Fibrain components, implemented by Certified Installer, can be covered by Warranty Program.

Product Warranty

All components of Certified Fibrain Data System will be free from defects on materials and workmanship.

System Warranty

Transmission Channel of the Certified Fibrain DATA structural cabling system fulfills the parameters according to category for which it is dedicated and designed. Warranty do not cover products which are incorrect used, storage, installed.

Application Warranty

Fibrain DATA Certified structural cabling system is free from defects, which makes enables signal transmission based on specific protocols and network applications. That concerns application and protocols which are set by the committees for standardization IEEE,ANSI, TIA/EIA, ATM Forum and transmission requirements based on standards TIA/EIA 568-B.2 and/or TIA/EIA 568-A,TIA/EIA568-A-5, ISO-IEC 11801 2nd edition, ISO/IEC 11801, EN 50173.

Fibrain Data certification procedure

Certified Installator after project accomplishment is required to submit all necessary documents, especially as-built documentation, measurements of complete network done on authorised device with valid calibration term. As a next step Fibrain examines measuring results of the network and submitted documents. In case of any doubts, Certified Installer is required to correct any deficiencies and complete documentation. After completion of the whole procedure Fibrain issues warranty documents, which must be transferred by Certified Installator direct to the project Investor.

Marketing materials

As an addition to individual meetings, Fibrain prepared marketing materials, directed for a dedicated group of professionals. Properly prepared catalogue, editions, technical brochures as well as guides for installers and designers are in use. Data sheets include all necessary technical information needed for project implementation.

Sales network

Convenient locations of sales branches together with warehouse area next to each branch, as well as broad distributors network ensures permanent access to products. Another advantage is possibility of transport direct to the location or a building site. Thanks to maintained store level, complementation of orders is immediate.

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Category 5e cabling

Express 5e

FIBRAIN DATA cabling Express series fully conforms to requirement of category 5e (class D) according to the norm ISO/IEC 11801 2nd edition: 2002.
Moreover all components of transmission channel conforms to ROHS Directive 2002/95/WE.

Category 5e (class D) in the beginning was corrected by norm TIA/EIA-568-B provides capacity of copper cabling system up to frequency off 100 MHz. Thanks to restrictive requirements regarding corsstalk provides implementation of Gigabit Ethernet (1000Mb/s) transmission.

FIBRAIN DATA system components, channel and permanent link were positively verified regarding conformity to cabling norms by Institute of Communication.

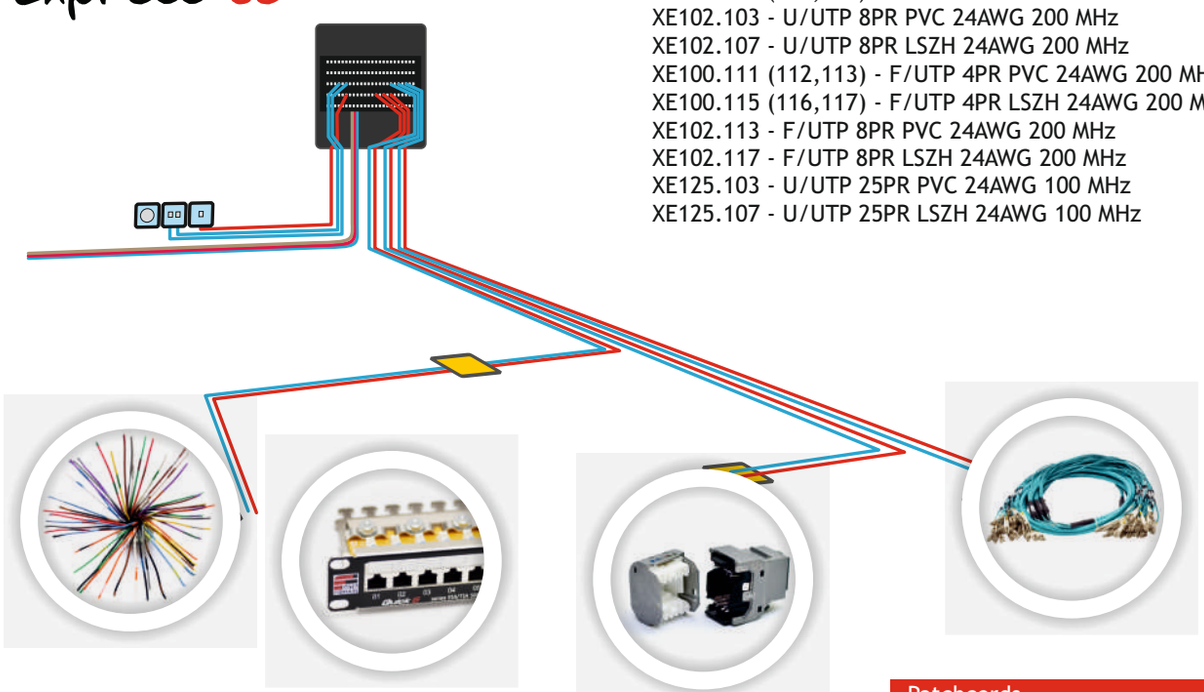
Application:
- 10BASE-T (IEEE 802.3)
- 4/16 Mbps Token Ring (IEEE 802.5)
- 100BASE-VG-AnyLAN
- 100 Mbps TP-PMD (ANSI X3T9.5)
- 100BASE-T (IEEE 802.3)
- 55/155 Mbps ATM
- 1000BASE-T (Gigabit Ethernet)

Components

Permanent Link

Channel

Express 5e



Installation cables

XE100.101 (102,103) - U/UTP 4PR PVC 24AWG 200 MHz
XE100.105 (106,107) - U/UTP 4PR LSZH 24AWG 200 MHz
XE102.103 - U/UTP 8PR PVC 24AWG 200 MHz
XE102.107 - U/UTP 8PR LSZH 24AWG 200 MHz
XE100.111 (112,113) - F/UTP 4PR PVC 24AWG 200 MHz
XE100.115 (116,117) - F/UTP 4PR LSZH 24AWG 200 MHz
XE102.113 - F/UTP 8PR PVC 24AWG 200 MHz
XE102.117 - F/UTP 8PR LSZH 24AWG 200 MHz
XE125.103 - U/UTP 25PR PVC 24AWG 100 MHz
XE125.107 - U/UTP 25PR LSZH 24AWG 100 MHz

Patchpanels

XE100.200 - 1U 24xRJ45 UTP
XE100.205 - 0,5U 24xRJ45 UTP
XE100.250 - 1U 24xRJ45 FTP
XE100.255 - 0,5U 24xRJ45 FTP

Keystones

XE100.400 - RJ45 UTP
XE100.450 - RJ45 FTP

Patchcords

XE20K.0XX - U/UTP sealed
XE20K.1XX - U/UTP crimped
XE21K.0XX - F/UTP sealed
XE21K.1XX - F/UTP crimped
XE22K.0XX - SF/UTP sealed
XE22K.1XX - SF/UTP crimped

Category 5e cabling
U/UTP PVC sheath

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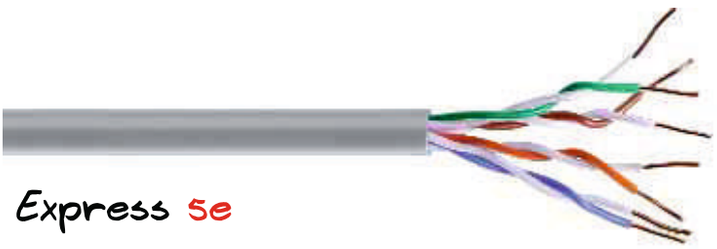
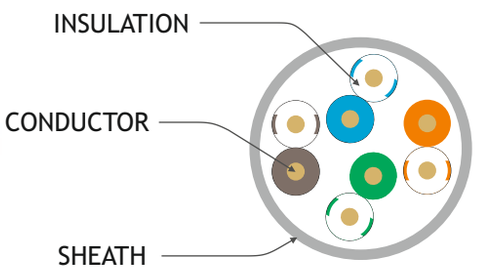




Cable 200 MHz PVC sheath
U/UTP cat. 5e+

FIBRAIN DATA cabling Express series is fully complied to requirements of category 5e (class D) according to the norm ISO/IEC 11801 2nd edition: 2002. Moreover all channels components are complied to directive ROHS 2002/95/WE.

Electrical and construction parameters:		
Parameter		
Resistance (max) Ohm/100 m(328 ft) @ 20 °C		8,90
Mutual capacitance (max) nF/100 m(328 ft) @ 1 kHz		5,60
Nominal velocity of propagation NVP (% speed of light)		68
Impendence characteristic (Ohm)		(min-max)
values at:	772 kHz	87-117
	1,0-200 MHz	85-115
Return loss (RL) dB (min)		
values at:	1,0 - 10 MHz	20+5 log(f)
	10 - 20 MHz	25
	20 - 100 MHz	25-7 log(f/20)
Propagation delay (max) (ns @ 10 MHz)		540
Delay skew (max) (ns/100 m)		45
Diameter (mm)		5,2
Weight (kg/km)		32
Minimal bending radius (mm)		21
Installation temperature (°C)		-20/+50
Operation temperature (°C)		-10/+60
Calorific value (MJ/m)		0,324

Application:
- 10BASE-T (IEEE 802.3)
- 4/16 Mbps Token Ring (IEEE 802.5)
- 100BASE-VG-AnyLAN
- 100 Mbps TP-PMD (ANSI X3T9.5)
- 100BASE-T (IEEE 802.3)
- 55/155 Mbps ATM
- 1000BASE-T (Gigabit Ethernet)

Norms:
- IEC 60332-1
- UNE 50265-2-1
- ANSI/TIA/EIA 568-B.2 (Cat. 5e)
- ISO/IEC 11801
- IEC 61156-5
- EN 50173, EN 50288

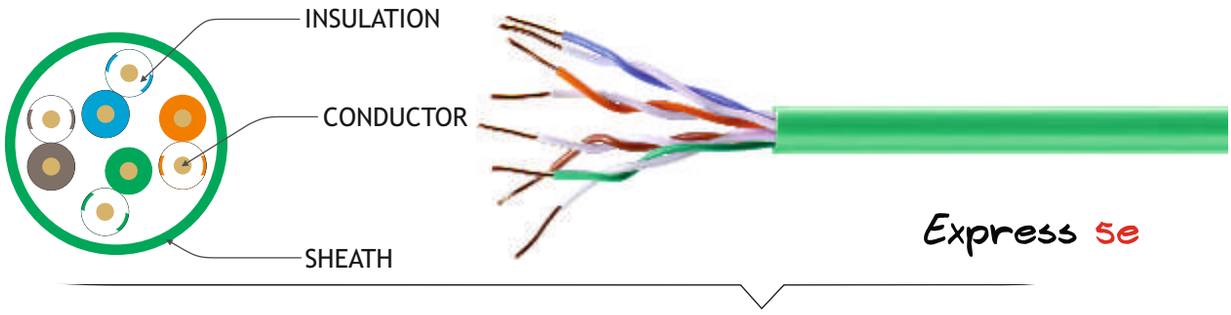
Cable marking:
Every cable meter is marked as follow:
- **Brand:** FIBRAIN DATA
- **Cable type:** U/UTP 4PR 24AWG CAT.5E 200 MHz
- **Jacket type:** PVC
- **Norms:** IEC 61156-5 ISO/IEC 11801 EN 50173
- **Production year:** XXXX
- **Identification:** XXXXX
- **Length mark in meters**

Construction:
- Conductor - 24 AWG (0,51 mm)
- Insulation - polyolefin
- Pair number - 4 pairs twisted
- Outer jacket - PVC grey color

Frequency MHz:	Attenuation Max dB/100 m:	NEXT dB/100 m(min):	PS-NEXT dB/100 m(min):	ACR-F dB/100 m(min):	PS-ACR-F dB/100 m(min):
0,772	1,8	72,0	69,0	68,2	65,2
1	2,1	70,3	67,3	66,0	53,0
4	4,0	61,3	58,3	54,0	51,0
10	6,2	55,3	52,3	46,0	43,0
16	7,9	52,2	49,2	41,9	38,9
25	10,0	49,3	46,3	38,0	35,0
31,25	11,2	47,9	44,9	36,1	33,1
62,5	16,2	43,4	40,4	30,1	27,1
100	20,9	40,3	37,3	26,0	23,0
155	26,7	37,4	34,4	22,2	19,2
200	30,8	35,8	32,8	20,0	17,0

XE100.101	FIBRAIN DATA Express U/UTP Kat.5e+ 200 MHz box 305 m, sheath type PVC grey color
XE100.102	drum 500 m.
XE100.103	drum 1000 m.

Category 5e cabling
U/UTP LSZH sheath



Cable 200 MHz LSZH sheath
U/UTP cat. 5e+

FIBRAIN DATA cabling Express series is fully complied to requirements of category 5e (class D) according to the norm ISO/IEC 11801 2nd edition: 2002. Moreover all channel's components are complied to Directive ROHS 2002/95/WE

Electrical and construction parameters		
Parameter		
Resistance (max) Ohm/100 m(328 ft) @ 20 °C		8,90
Mutual capacitance (max) nF/100 m(328 ft) @ 1 kHz		5,60
Nominal velocity of propagation NVP (% speed of light)		68
Impendence characteristic (Ohm)		(min-max)
values at:	772 kHz	87-117
	1,0-200 MHz	85-115
Return loss (RL) dB (min)		
values at:	1,0 - 10 MHz	20+5 log(f)
	10 - 20 MHz	25
	20 - 100 MHz	25-7 log(f/20)
Propagation delay (max) (ns @ 10 MHz)		540
Delay skew (max) (ns/100 m)		45
Diameter (mm)		5,2
Weight (kg/km)		32
Minimal bending radius (mm)		21
Installation temperature (°C)		-20/+50
Operation temperature (°C)		-10/+60
Calorific value (MJ/m)		0,324

Application:
- 10BASE-T (IEEE 802.3)
- 4/16 Mbps Token Ring (IEEE 802.5)
- 100BASE-VG-AnyLAN
- 100 Mbps TP-PMD (ANSI X3T9.5)
- 100BASE-T (IEEE 802.3)
- 55/155 Mbps ATM
- 1000BASE-T (Gigabit Ethernet)

Norms:
- LSZH: UNE-EN 50268, UNE-EN 50267-2-1
- IEC 60332-1,UNE 50266-2-4
- ANSI/TIA/EIA 568-B.2 (Cat. 5e)
- ISO/IEC 11801
- IEC 61156-5
- EN 50173, EN 50288

Cable marking:
Every cable meter is marked as follow:
- **Brand:** FIBRAIN DATA
- **Cable type:** U/UTP 4PR 24AWG CAT.5E 200 MHz
- **Jacket type:** LSZH
- **Norms:** IEC 60332-1 ISO/IEC 11801 EN 50173
- **Production year:** XXXX
- **Identification:** XXXXXX
- **Length mark in meters**

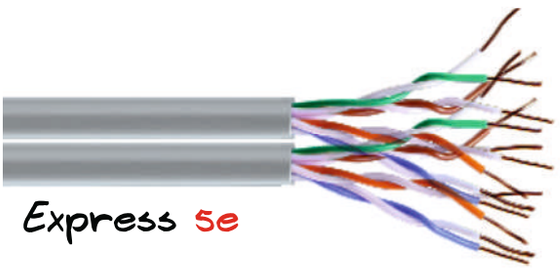
Construction:
- Condutor - 24 AWG (0,51 mm)
- Insulation- polyolefin
- Pair number- 4 pairs twisted
- Outer jacket - LSZH green color according to IEC 60332-1

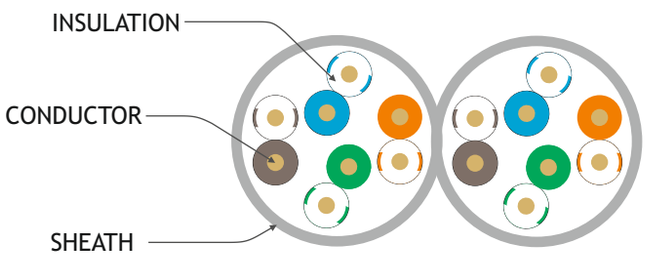
Frequency MHz:	Attenuation Max dB/100 m:	NEXT dB/100 m(min):	PS-NEXT dB/100 m(min):	ACR-F dB/100 m(min):	PS-ACR-F dB/100 m(min):
0,772	1,8	72,0	69,0	68,2	65,2
1	2,1	70,3	67,3	66,0	53,0
4	4,0	61,3	58,3	54,0	51,0
8	5,6	56,8	53,8	47,9	44,9
10	6,2	55,3	52,3	46,0	43,0
16	7,9	52,2	49,2	41,9	38,9
31,25	11,2	47,9	44,9	36,1	33,1
62,5	16,2	43,4	40,4	30,1	27,1
100	20,9	40,3	37,3	26,0	23,0
155	26,7	37,4	34,4	22,2	19,2
200	30,8	35,8	32,8	20,0	17,0

XE100.105 FIBRAIN DATA Express U/UTP Kat.5e+ 200 MHz box 305 m, sheath type LSZH green color

XE100.106 drum 500 m.
XE100.107 drum 1000 m.

Category 5e cabling
U/UTP DUPLEX PVC sheath





Cable 200 MHz DUPLEX PVC sheath
U/UTP cat. 5e+

FIBRAIN DATA cabling Express series is fully complied to requirements of category 5e (class D) according to the norm ISO/IEC 11801 2nd edition: 2002. Moreover all channel's components are complied to Directive ROHS 2002/95/WE.

Electrical and construction parameters:		
Parameter		
Resistance (max) Ohm/100 m(328 ft) @ 20 °C		8,90
Mutual capacitance (max) nF/100 m(328 ft) @ 1 kHz		5,60
Nominal velocity of propagation NVP (% speed of light)		68
Impendence characteristic (Ohm)		(min-max)
values at:	772 kHz	87-117
	1,0-200 MHz	85-115
Return loss (RL) dB (min)		
values at:	1,0 - 10 MHz	20+5 log(f)
	10 - 20 MHz	25
	20 - 100 MHz	25-7 log(f/20)
Propagation delay (max) (ns @ 10 MHz)		540
Delay skew (max) (ns/100 m)		45
Diameter (mm)		5,2x11
Weight (kg/km)		63
Minimal bending radius (mm)		21
Installation temperature (°C)		-20/+50
Operation temperature (°C)		-10/+60
Calorific value (MJ/m)		0,996

Construction:
- Conductor - 24 AWG (0,51 mm)
- Insulation- polyolefin
- Pair number - 2 x 4 pairs twisted
- Outer jacket - PVC color grey

Applications:
- 10BASE-T (IEEE 802.3)
- 4/16 Mbps Token Ring (IEEE 802.5)
- 100BASE-VG-AnyLAN
- 100 Mbps TP-PMD (ANSI X3T9.5)
- 100BASE-T (IEEE 802.3)
- 55/155 Mbps ATM
- 1000BASE-T (Gigabit Ethernet)

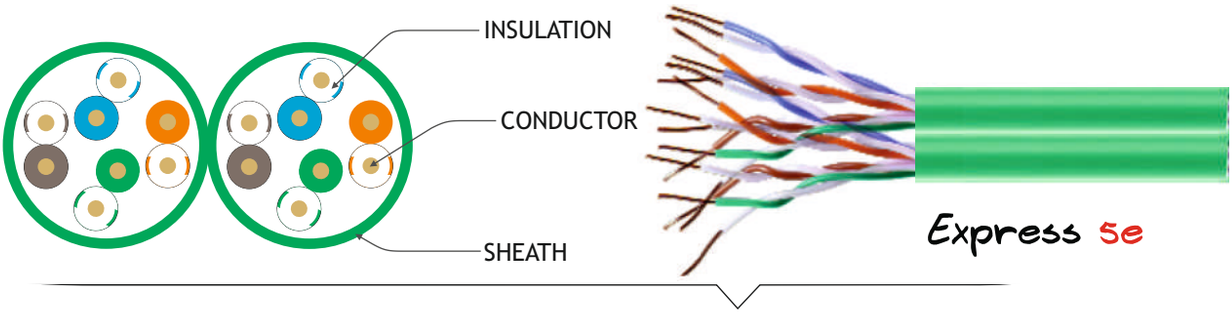
Norms:
- IEC 60332-1
- UNE 50265-2-1
- ANSI/TIA/EIA 568-B.2 (Cat. 5e)
- ISO/IEC 11801
- IEC 61156-5
- EN 50173, EN 50288

Cable marking:
Every cable meter is marked as follow:
- **Brand:** FIBRAIN DATA
- **Cable type:** 2xU/UTP 8PR 24AWG CAT.5E 200 MHz
- **Jacket type:** PVC
- **Norms:** IEC 61156-5 ISO/IEC 11801 EN 50173
- **Production year:** XXXX
- **Identification:** XXXXXX
- **Length mark in meters**

Frequency MHz:	Attenuation Max dB/100 m:	NEXT dB/100 m(min):	PS-NEXT dB/100 m(min):	ACR-F dB/100 m(min):	PS-ACR-F dB/100 m(min):
0,772	1,8	72,0	69,0	68,2	65,2
1	2,1	70,3	67,3	66,0	53,0
4	4,0	61,3	58,3	54,0	51,0
10	6,2	55,3	52,3	46,0	43,0
16	7,9	52,2	49,2	41,9	38,9
25	10,0	49,3	46,3	38,0	35,0
31,25	11,2	47,9	44,9	36,1	33,1
62,5	16,2	43,4	40,4	30,1	27,1
100	20,9	40,3	37,3	26,0	23,0
155	26,7	37,4	34,4	22,2	19,2
200	30,8	35,8	32,8	20,0	17,0

XE102.103 FIBRAIN DATA Express 2xU/UTP Kat.5e+ 200 MHz drum 1000 m, sheath type PVC color grey

Category 5e cabling
U/UTP DUPLEX LSZH sheath



Cable 200 MHz DUPLEX sheath LSZH
U/UTP cat. 5e+

FIBRAIN DATA cabling Express series is fully complied to requirements of category 5e (class D) according to the norm ISO/IEC 11801 2nd edition: 2002. Moreover all channel's components are complied to Directive ROHS 2002/95/WE.

Electrical and construction parameters:		
Parameter		
Resistance(max) Ohm/100 m(328 ft) @ 20 °C		8,90
Mutual capacitance (max) nF/100 m(328 ft) @ 1 kHz		5,60
Nominal velocity of propagation NVP (% speed of light)		68
Impendence characteristic (Ohm)		(min-max)
Values at:	772 kHz	87-117
	1,0-200 MHz	85-115
Return loss (RL) dB		
Values at:	1,0 - 10 MHz	20+5 log(f)
	10 - 20 MHz	25
	20 - 100 MHz	25-7 log(f/20)
Propagation delay (max) (ns @ 10 MHz)		540
Delay skew (max) (ns/100m)		45
Diameter (mm)		5,2x11
Weight (kg/km)		63
Minimal bending radius (mm)		21
Installation temperature (°C)		-20/+50
Operation temperature (°C)		-10/+60
Calorific value (MJ/m)		0,996

Applications:
- 10BASE-T (IEEE 802.3)
- 4/16 Mbps Token Ring (IEEE 802.5)
- 100BASE-VG-AnyLAN
- 100 Mbps TP-PMD (ANSI X3T9.5)
- 100BASE-T (IEEE 802.3)
- 55/155 Mbps ATM
- 1000BASE-T (Gigabit Ethernet)

Norms:
- LSZH: UNE-EN 50268, UNE-EN 50267-2-1 IEC 60332-1,UNE 50266-2-4
- ANSI/TIA/EIA 568-B.2 (Cat. 5e)
- ISO/IEC 11801
- IEC 61156-5
- EN 50173, EN 50288

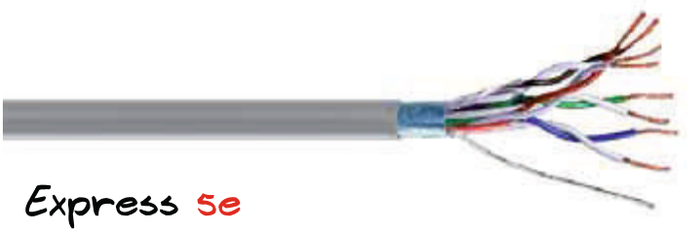
Cable marking:
Every cable meter is marked as follow:
- **Brand:** FIBRAIN DATA
- **Cable type:** 2xU/UTP 8PR 24 AWG CAT. 5E 200 MHz
- **Jacket type:** LSZH
- **Norms:** IEC 60332-1 ISO/IEC 11801 EN 50173
- **Production year:** XXXX
- **ID number:** XXXXXX
- **Length mark meters**

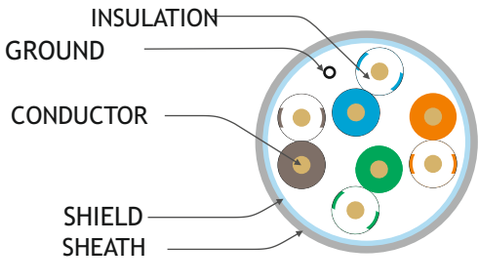
Construction:
- Conductor - 24AWG (0,51mm)
- Insulation - polyolefin
- Pair number - 2x4 pairs twisted
- Jacket- LSZH green colour according to IEC60332-1

Frequency MHz:	Attenuation Max dB/100 m:	NEXT dB/100 m(min):	PS-NEXT dB/100 m(min):	ACR-F dB/100 m(min):	PS-ACR-F dB/100 m(min):
0,772	1,8	72,0	69,0	68,2	65,2
1	2,1	70,3	67,3	66,0	53,0
4	4,0	61,3	58,3	54,0	51,0
8	5,6	56,8	53,8	47,9	44,9
10	6,2	55,3	52,3	46,0	43,0
16	7,9	52,2	49,2	41,9	38,9
31,25	11,2	47,9	44,9	36,1	33,1
62,5	16,2	43,4	40,4	30,1	27,1
100	20,9	40,3	37,3	26,0	23,0
155	26,7	37,4	34,4	22,2	19,2
200	30,8	35,8	32,8	20,0	17,0

XE102.107 FIBRAIN DATA Express 2xU/UTP Cat.5e+ 200 MHz reel of 1000 m, green LSZH sheath

Category 5e cabling
F/UTP PVC sheath





Cable 200 MHz PVC sheath
F/UTP cat. 5e+

FIBRAIN DATA cabling Express series is fully complied to requirements of category 5e (class D) according to the norm ISO/IEC 11801 2nd edition: 2002. Moreover all channel's components are complied to Directive ROHS 2002/95/WE.

Electrical and construction parameters:		
Parameter		
Resistance(max) Ohm/100 m(328 ft) @ 20 °C		8,90
Mutual capacitance (max) nF/100 m(328 ft) @ 1 kHz		5,20
Nominal velocity of propagation NVP (% speed of light)		68
Impendence characteristic (Ohm)		(min-max)
Values at:	772 kHz	87-117
	1,0-200 Mhz	85-115
Return loss (RL) dB (min)		
Values at:	1,0 - 10 MHz	20+5 log(f)
	10 - 20 MHz	25
	20 - 100 MHz	25-7 log(f/20)
Propagation delay (max) (ns @ 10 MHz)		540
Delay skew (max) (ns/100 m)		45
Diameter (mm)		5,5
Weight (kg/km)		36
Minimal bending radius (mm)		22
Installation temperature (°C)		-10/+50
Operation temperature (°C)		0/+50

Construction:
- Conductor - 24AWG (0,51mm)
- Insulation - polyolefin
- Pair number - 4 pairs twisted
- Shield - aluminum foil/polyester around pairs
- Grounding - galvanized copper wire ϕ 0,4 mm
- Sheath - grey PVC

Applications:
- 10BASE-T (IEEE 802.3)
- 4/16 Mbps Token Ring (IEEE 802.5)
- 100BASE-VG-AnyLAN
- 100 Mbps TP-PMD (ANSI X3T9.5)
- 100BASE-T (IEEE 802.3)
- 55/155 Mbps ATM
- 1000BASE-T (Gigabit Ethernet)

Norms:
- IEC 60332-1
- UNE 50265-2-1
- ANSI/TIA/EIA 568-B.2 (Cat. 5e)
- ISO/IEC 11801
- IEC 61156-5
- EN 50173, EN 50288

Cable marking:
Every cable meter is marked as follow:
- **Brand:** FIBRAIN DATA
- **Cable type:** F/UTP 4PR 24 AWG CAT. 5E 200 MHz
- **Sheath type:** PVC
- **Norms:** IEC 61156-5 ISO/IEC 11801 EN 50173
- **Production year:** XXXX
- **ID number:** XXXXXX
- **Length mark in meters**

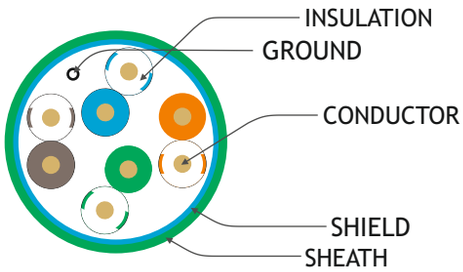
Frequency MHz:	Attenuation Max dB/100 m:	NEXT dB/100 m(min):	PS-NEXT dB/100 m(min):	ACR-F dB/100 m(min):	PS-ACR-F dB/100 m(min):
0,772	1,8	72,0	69,0	68,2	65,2
1	2,1	70,3	67,3	66,0	53,0
4	4,0	61,3	58,3	54,0	51,0
10	6,2	55,3	52,3	46,0	43,0
16	7,9	52,2	49,2	41,9	38,9
25	10,0	49,3	46,3	38,0	35,0
31,25	11,2	47,9	44,9	36,1	33,1
62,5	16,2	43,4	40,4	30,1	27,1
100	20,9	40,3	37,3	26,0	23,0
155	26,7	37,4	34,4	22,2	19,2
200	30,8	35,8	32,8	20,0	17,0

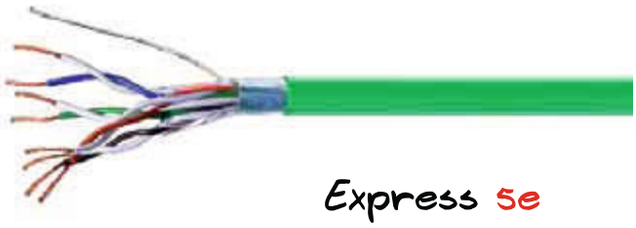
XE100.111 FIBRAIN DATA Express F/UTP Cat.5e+ 200 MHz carton 305 m, grey PVC sheath

XE 100.112 reel of 500 m.

XE 100.113 reel of 1000 m.

Category 5e cabling
F/UTP LSZH sheath





Cable 200 MHz LSZH sheath
F/UTP cat. 5e+

FIBRAIN DATA cabling Express series is fully complied to requirements of category 5e (class D) according to the norm ISO/IEC 11801 2nd edition: 2002. Moreover all channel's components are complied to Directive ROHS 2002/95/WE.

Electrical and construction parameters:		
Parameter		
Resistance(max) Ohm/100 m(328 ft) @ 20 °C		8,90
Mutual capacitance (max) nF/100 m(328 ft) @ 1 kHz		5,20
Nominal velocity of propagation NVP (% speed of light)		68
Impendence characteristic (Ohm)		(min-max)
Values at:	772 kHz	87-117
	1,0-200 MHz	85-115
Return loss (RL) dB (min)		
Values at:	1.0 - 10 MHz	20+5 log(f)
	10 - 20 MHz	25
	20 - 100 MHz	25-7 log(f/20)
Propagation delay (max) (ns @ 10 MHz)		510
Delay skew (max) (ns/100 m)		45
Diameter (mm)		5,2
Weight (kg/km)		35,3
Minimal bending radius (mm)		22
Installation temperature (°C)		-10/+50
Operation temperature (°C)		0/+50

Applications:
- 10BASE-T (IEEE 802.3)
- 4/16 Mbps Token Ring (IEEE 802.5)
- 100BASE-VG-AnyLAN
- 100 Mbps TP-PMD (ANSI X3T9.5)
- 100BASE-T (IEEE 802.3)
- 55/155 Mbps ATM
- 1000BASE-T (Gigabit Ethernet)

Norms:
- LSZH: UNE-EN 50268, UNE-EN 50268-1, IEC 60332-1,UNE 50266-2-4
- ANSI/TIA/EIA 568-B.2 (Cat. 5e)
- ISO/IEC 11801
- IEC 61156-5
- EN 50173, EN 50288

Cable marking:
Every cable meter is marked as follow:
- **Brand:** FIBRAIN DATA
- **Cable type:** F/UTP 4PR 24 AWG CAT. 5E 200 MHz
- **Sheath type:** LSZH
- **Norms:** IEC 60332-1 ISO/IEC 11801 EN 50173
- **Production year:** XXXX
- **Identifier:** XXXXXX
- **Length mark in meters**

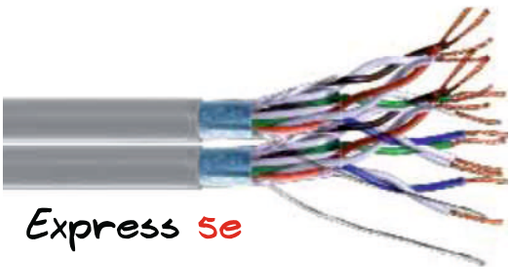
Construction:
- Conductor - 24AWG (0,51mm)
- Insulation - polyolefin
- Pair number - 4 pairs twisted together
- Shield - aluminum foil/polyester around pairs
- Grounding - galvanized copper wire ϕ 0,4 mm
- Sheath - green LSZH complied to IEC 60332-1

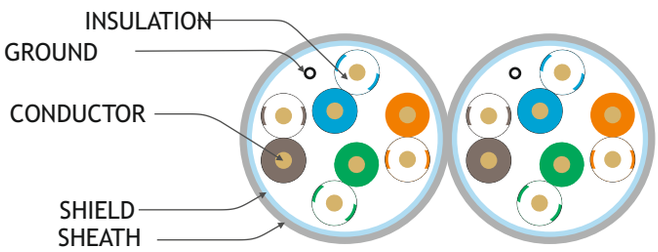
Frequency MHz:	Attenuation Max dB/100 m:	NEXT dB/100 m(min):	PS-NEXT dB/100 m(min):	ACR-F dB/100 m(min):	PS-ACR-F dB/100 m(min):
0,772	1,8	72,0	69,0	68,2	65,2
1	2,1	70,3	67,3	66,0	53,0
4	4,0	61,3	58,3	54,0	51,0
8	5,6	56,8	53,8	47,9	44,9
10	6,2	55,3	52,3	46,0	43,0
16	7,9	52,2	49,2	41,9	38,9
31,25	11,2	47,9	44,9	36,1	33,1
62,5	16,2	43,4	40,4	30,1	27,1
100	20,9	40,3	37,3	26,0	23,0
155	26,7	37,4	34,4	22,2	19,2
200	30,8	35,8	32,8	20,0	17,0

XE100.115 FIBRAIN DATA Express F/UTP Cat.5e+ 200 MHz carton 305 m, green LSZH sheath

XE100.116 reel of 500 m.
XE100.117 reel of 1000 m.

Category 5e cabling
F/UTP DUPLEX PVC sheath





Cable 200 MHz DUPLEX PVC sheath
F/UTP cat. 5e+

FIBRAIN DATA cabling Express series is fully complied to requirements of category 5e (class D) according to the norm ISO/IEC 11801 2nd edition: 2002. Moreover all channel's components are complied to Directive ROHS 2002/95/WE.

Electrical and construction parameters:		
Parameter		
Resistance(max) Ohm/100 m(328 ft) @ 20°C		8,90
Mutual capacitance (max) nF/100 m(328 ft) @ 1 kHz		5,20
Nominal velocity of propagation NVP (% speed of light)		68
Impendence characteristic (Ohm)		(min-max)
Values at:	772 kHz	87-117
	1,0-200 MHz	85-115
Return loss (RL) dB (min)		
Values at:	1,0 - 10 MHz	20+5 log(f)
	10 - 20 MHz	25
	20 - 100 MHz	25-7 log(f/20)
Propagation delay (max) (ns @ 10 MHz)		518
Delay skew (max) (ns/100 m)		45
Diameter (mm)		6,1x12,8
Weight (kg/km)		87
Minimal bending radius (mm)		96,2
Installation temperature (°C)		-10/+50
Operation temperature (°C)		0/+50

Construction:
- Conductor - 24AWG (0,51mm)
- Insulation - polyolefin
- Pair number - 2x4 pairs twisted together
- Shield - aluminum foil/polyester around all pairs
- Grounding - galvanized copper wire ϕ 0,4 mm
- Sheath - grey PVC

Applications:
- 10BASE-T (IEEE 802.3)
- 4/16 Mbps Token Ring (IEEE 802.5)
- 100BASE-VG-AnyLAN
- 100 Mbps TP-PMD (ANSI X3T9.5)
- 100BASE-T (IEEE 802.3)
- 55/155 Mbps ATM
- 1000BASE-T (Gigabit Ethernet)

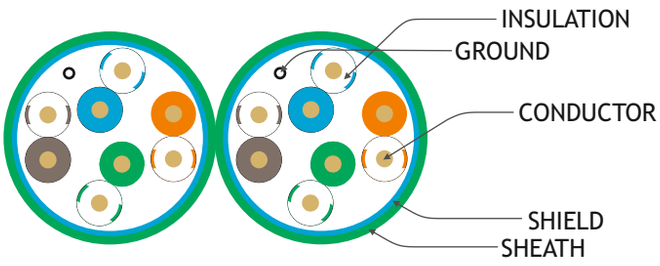
Norms:
- IEC 60332-1
- UNE 50265-2-1
- ANSI/TIA/EIA 568-B.2 (Cat. 5e)
- ISO/IEC 11801
- IEC 61156-5
- EN 50173, EN 50288

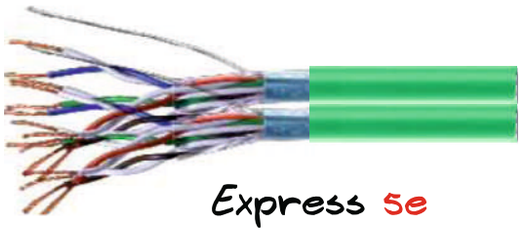
Cable marking:
Every cable meter is marked as follow:
- **Brand:** FIBRAIN DATA
- **Cable type:** 2xF/UTP 8PR 24 AWG CAT. 5E 200 MHz
- **Sheath type:** PVC
- **Norms:** IEC 61156-5 ISO/IEC 11801 EN 50173
- **Production year:** XXXX
- **Identifier:** XXXXXX
- **Length mark in meters**

Frequency MHz:	Attenuation Max dB/100 m:	NEXT dB/100 m(min):	PS-NEXT dB/100 m(min):	ACR-F dB/100 m(min):	PS-ACR-F dB/100 m(min):
0,772	1,8	72,0	69,0	68,2	65,2
1	2,1	70,3	67,3	66,0	53,0
4	4,0	61,3	58,3	54,0	51,0
10	6,2	55,3	52,3	46,0	43,0
16	7,9	52,2	49,2	41,9	38,9
25	10,0	49,3	46,3	38,0	35,0
31,25	11,2	47,9	44,9	36,1	33,1
62,5	16,2	43,4	40,4	30,1	27,1
100	20,9	40,3	37,3	26,0	23,0
155	26,7	37,4	34,4	22,2	19,2
200	30,8	35,8	32,8	20,0	17,0

XE102.113 FIBRAIN DATA Express 2xF/UTP Cat.5e+ 200 MHz reel of 1000 m, grey PVC sheath

Category 5e cabling
F/UTP DUPLEX LSZH sheath





Cable 200 MHz DUPLEX LSZH sheath
F/UTP cat. 5e+

FIBRAIN DATA cabling Express series is fully complied to requirements of category 5e (class D) according to the norm ISO/IEC 11801 2nd edition: 2002. Moreover all channel's components are complied to Directive ROHS 2002/95/WE.

Electrical and construction parameters:		
Parameter		
Resistance(max) Ohm/10 0m(328 ft) @ 20°C		8,90
Mutual capacitance (max) nF/100 m(328 ft) @ 1 kHz		5,20
Nominal velocity of propagation NVP (% speed of light)		68
Impendence characteristic (Ohm)		(min-max)
Values at:	772 kHz	87-117
	1,0-200 MHz	85-115
Return loss (RL) dB (min)		
Values at:	1,0 - 10 MHz	20+5 log(f)
	10 - 20 MHz	25
	20 - 100 MHz	25-7 log(f/20)
Propagation delay (max) (ns @ 10 MHz)		518
Delay skew (max) (ns/100 m)		45
Diameter (mm)		6,1x12,8
Weight (kg/km)		87
Minimal bending radius (mm)		96,2
Installation temperature (°C)		-10/+50
Operation temperature (°C)		0/+50

Construction:
- Conductor - 24AWG (0,51mm)
- Insulation - polyolefin
- Number of wires - 2x4 pairs twisted
- Shield - aluminum foil/polyester around pairs
- Grounding - galvanized copper wire ϕ 0,4 mm
- Jacket - green LSZH complied to IEC 60332-1

Applications:
- 10BASE-T (IEEE 802.3)
- 4/16 Mbps Token Ring (IEEE 802.5)
- 100BASE-VG-AnyLAN
- 100 Mbps TP-PMD (ANSI X3T9.5)
- 100BASE-T (IEEE 802.3)
- 55/155 Mbps ATM
- 1000BASE-T (Gigabit Ethernet)

Norms:
- LSZH: UNE-EN 50268, UNE-EN 50268-1, IEC 60332-1,UNE 50266-2-4
- ANSI/TIA/EIA 568-B.2 (Cat. 5e)
- ISO/IEC 11801
- IEC 61156-5
- EN 50173, EN 50288

Cable marking:
Every cable meter is marked as follow:
- **Brand:** FIBRAIN DATA
- **Cable type:** 2xF/UTP 8PR 24 AWG CAT. 5E 200 MHz
- **Sheath type:** LSZH
- **Norms:** IEC 60332-1 ISO/IEC 11801 EN 50173
- **Production year:** XXXX
- **Identifier:** XXXXXX
- **Length mark in meters**

Frequency MHz:	Attenuation Max dB/100 m:	NEXT dB/100 m(min):	PS-NEXT dB/100 m(min):	ACR-F dB/100 m(min):	PS-ACR-F dB/100 m(min):
0,772	1,8	72,0	69,0	68,2	65,2
1	2,1	70,3	67,3	66,0	53,0
4	4,0	61,3	58,3	54,0	51,0
8	5,6	56,8	53,8	47,9	44,9
10	6,2	55,3	52,3	46,0	43,0
16	7,9	52,2	49,2	41,9	38,9
31,25	11,2	47,9	44,9	36,1	33,1
62,5	16,2	43,4	40,4	30,1	27,1
100	20,9	40,3	37,3	26,0	23,0
155	26,7	37,4	34,4	22,2	19,2
200	30,8	35,8	32,8	20,0	17,0

XE102.117 FIBRAIN DATA Express 2xF/UTP Kat.5e+ 200 MHz reel of 1000 m, green LSZH sheath

Category 5e cabling
U/UTP MULTI PVC sheath

Express 5e

Cable 100 MHz 25 PAIRS PVC sheath
U/UTP cat. 5e+

FIBRAIN DATA cabling Express series is fully complied to requirements of category 5e (class D) according to the norm ISO/IEC 11801 2nd edition: 2002. Moreover all channel's components are complied to Directive ROHS 2002/95/WE.

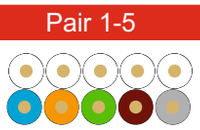
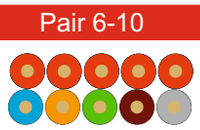
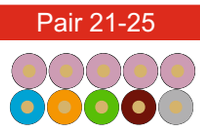
Electrical and construction parameters:		
Parameter		
Resistance(max) Ohm/100 m(328 ft) @ 20°C		8,90
Mutual capacitance (max) nF/100 m(328 ft) @ 1 kHz		5,20
Nominal velocity of propagation NVP (% speed of light)		68
Impendence characteristic (Ohm)		(min-max)
Values at:	772 kHz	87-117
	1,0-100 MHz	85-115
Return loss (RL) dB (min)		
Values at:	1.0 - 10 MHz	20+5 log(f)
	10 - 20 MHz	25
	20 - 100 MHz	25-7 log(f/20)
Propagation delay (max) (ns @ 10MHz)		518
Delay skew (max) (ns/100 m)		45
Diameter (mm)		12
Weight (kg/km)		213,7
Minimal bending radius(mm)		52
Installation temperature (°C)		-20/+50
Operation temperature (°C)		-10/+60

Applications:
- 10BASE-T (IEEE 802.3)
- 4/16 Mbps Token Ring (IEEE 802.5)
- 100BASE-VG-AnyLAN
- 100 Mbps TP-PMD (ANSI X3T9.5)
- 100BASE-T (IEEE 802.3)
- 55/155 Mbps ATM
- 1000BASE-T (Gigabit Ethernet)

Norms:
- IEC 60332-1
- UNE 50265-2-1
- ANSI/TIA/EIA 568-B.2 (Cat. 5e)
- ISO/IEC 11801
- IEC 61156-5
- EN 50173, EN 50288

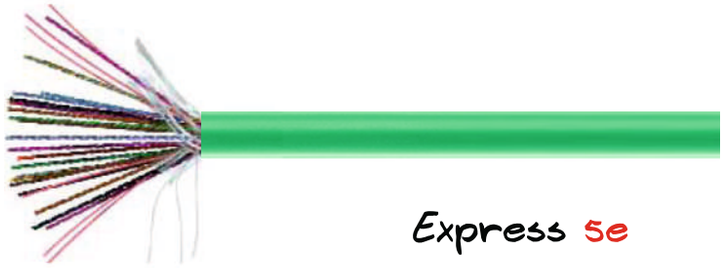
Cable marking:
Every cable meter is marked as follow:
- **Brand:** FIBRAIN DATA
- Cable type: U/UTP 25PR MULTI 24 AWG CAT. 5E 100 MHz
- **Sheath type:** PVC
- **Norms:** IEC 61156-5 ISO/IEC 11801 EN 50173
- **Production year:** XXXX
- **Identifier:** XXXXXX
- **Length mark in meters**

Construction:
- Conductor - 24AWG (0,51mm)
- Insulation - polyolefin
- Pair number - 25 pairs twisted
- Sheath - grey PVC

Pair 1-5	Pair 6-10	Pair 11-15	Pair 16-20	Pair 21-25
				

Frequency MHz:	Attenuation Max dB/100 m:	NEXT	PS-NEXT	ACR-F	PS-ACR-F	Return Loss
		dB/100 m(min):				
1	2,0	65,3	62,3	61,0	58,0	20,0
4	4,1	56,3	53,3	49,0	46,0	23,0
8	5,8	51,3	48,3	42,0	39,9	24,5
10	6,5	50,3	47,3	41,0	38,0	25,0
16	8,2	47,3	44,3	36,9	33,9	25,0
20	9,3	45,3	42,3	34,9	31,9	25,0
25	10,4	44,3	41,3	33,0	30,0	24,3
31,25	11,7	42,9	39,9	31,0	28,0	23,6
62,5	17,0	38,4	35,4	25,1	22,1	21,5
100	22,0	35,3	32,3	21,0	18,0	20,1

XE125.103 FIBRAIN DATA Express 25xU/UTP Cat.5e+ 100 MHz reel of 1000 m, grey PVC sheath



Cable 100 MHz 25 PAIRS LSZH sheath
U/UTP cat. 5e+

FIBRAIN DATA cabling Express series is fully complied to requirements of category 5e (class D) according to the norm ISO/IEC 11801 2nd edition: 2002. Moreover all channel's components are complied to Directive ROHS 2002/95/WE.

Electrical and construction parameters:		
Parameter		
Resistance(max) Ohm/100 m(328 ft) @ 20 °C		8,90
Pojemność (max)Mutual capacitance (max)		5,20
Nominal velocity of propagation NVP (% speed of light)		68
Impendence characteristic (Ohm)		(min-max)
Values at:	772 kHz	87-117
	1,0-100 MHz	85-115
Return loss (RL) dB (min)		
Values at:	1.0 - 10 MHz	20+5 log(f)
	10 - 20 MHz	25
	20 - 100 MHz	25-7 log(f/20)
Propagation delay (max) (ns @ 10 MHz)		518
Delay skew (max) (ns/100 m)		45
Diameter (mm)		12
Weight (kg/km)		213,7
Minimal bending radius (mm)		52
Installation temperature (°C)		-10/+50
Operation temperature (°C)		0/+50

Applications:
- 10BASE-T (IEEE 802.3)
- 4/16 Mbps Token Ring (IEEE 802.5)
- 100BASE-VG-AnyLAN
- 100 Mbps TP-PMD (ANSI X3T9.5)
- 100BASE-T (IEEE 802.3)
- 55/155 Mbps ATM
- 1000BASE-T (Gigabit Ethernet)

Norms:
- LSZH: UNE-EN 50268, UNE-EN 50268-1, IEC 60332-1,UNE 50266-2-4
- ANSI/TIA/EIA 568-B.2 (Cat. 5e)
- ISO/IEC 11801
- IEC 61156-5
- EN 50173, EN 50288

Cable marking:
Every cable meter is marked as follow:
- **Brand:** FIBRAIN DATA
- **Cable type:** F/UTP 4PR OUTDOOR 24 AWG CAT. 5E 125 MHz
- **Sheath type:** PE PVC
- **Norms:** IEC 61156-5 ISO/IEC 11801 EN 50173
- **Production year:** XXXX
- **Identifier:** XXXXXX
- **Length mark in meters**

Construction:
- Conductor - 24AWG (0,51mm)
- Insulation - polyolefin
- Pair number - 25 pairs twisted
- Sheath - green LSZH

Pair 1-5	Pair 6-10	Pair 11-15	Pair 16-20	Para 21-25

Frequency Mhz:	Attenuation Max dB/100 m:	NEXT	PS-NEXT	ACR-F	PS-ACR-F	Return Loss
		dB/100 m(min):				
1	2,0	65,3	62,3	61,0	58,0	20,0
4	4,1	56,3	53,3	49,0	46,0	23,0
8	5,8	51,3	48,3	42,0	39,9	24,5
10	6,5	50,3	47,3	41,0	38,0	25,0
16	8,2	47,3	44,3	36,9	33,9	25,0
20	9,3	45,3	42,3	34,9	31,9	25,0
25	10,4	44,3	41,3	33,0	30,0	24,3
31,25	11,7	42,9	39,9	31,0	28,0	23,6
62,5	17,0	38,4	35,4	25,1	22,1	21,5
100	22,0	35,3	32,3	21,0	18,0	20,1

XE125.107 FIBRAIN DATA Express 25xU/UTP Cat.5e+ 100 MHz reel of 1000 m, green LSZH sheath

Patchpanel cat. 5e
UTP 24 ports

Patchpanel 0,5U Express 5e XE100.205
UTP 24 ports

Express 5e

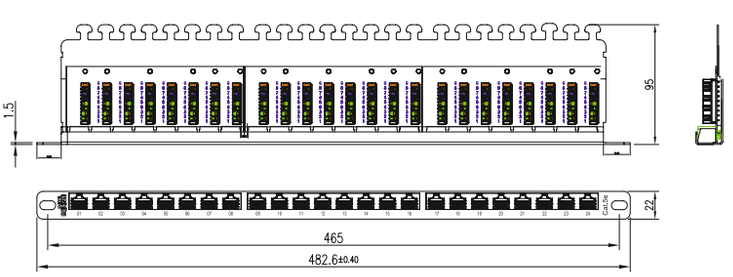
FIBRAIN DATA cabling Express series is fully complied to requirements of category 5e (class D) according to the norms:
ANSI/TIA/EIA 568-B.2-1 (cat.5e), ISO/IEC 11801 2002, EN 50173:2002, EN 50173-1:2004, IEC 61156-5 edition 2002, IEC 60603-7-5.

Moreover all channel's components are complied to Directive ROHS 2002/95/WE

Components Express series are characterized by high quality of transmission and mechanical parameters and very often exceeding requirements of obeying norms. Such connections support majority of contemporary applications including Ethernet 1000 BASE – T.

FIBRAIN DATA non-shielded patchpanels Express series are complied to requirements of category 5e (class D). Such connections support majority of contemporary applications. They are equipped with angle connectors IDC-LSA providing ease and fast installation.

Additionally are designed with L shaped shelf facilitate introduction changes, development and reconfiguration in easy way. Simple access to IDC connectors provides easy maintenance and change of connections. Additionally every port and panel has its own number. Standard 19".



Features:
- 0,5 U, 19"
- Depth 95 mm
- 8 pins IDC connectors
- Made of metal sheet powder painted of black colour.
- Easy installation of lead in cables (installation shelf).
- Readable ports and panels numbering

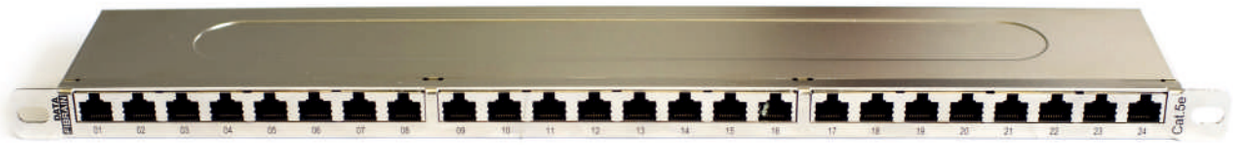
Electrical parameters:

Max current value:	1,5 A
Insulation resistance:	500 MOhms min
Pin resistance:	20 MOhms max
DC resistance:	0,1 Ohms max

Mechanical parameters:
- **Frame:** metal sheet thickness 1,5 mm
- **Socket non-**shielded RJ45 cat.5e
- **Casing** - thermoplastic UL 94V-0 of black colour
- **pin material** - phosphor-bronze
- **pin** diameter 0,48 mm covered with 50 µm and 100 µm nickel layers
- **Socket durability** 750 connection cycles according to the EN 60603-7
- **IDC connector** angle joint connector IDC LSA
- **Conductor diameter:** 0,4-0,65 mm (AWG 26-22)
- **IDC durability:** >200 connection cycles
- **Joint material phosphor-**bronze
- **Joint layer:** 1,27 µm silver and 2,5 µm nickel
- **Scheme** T568A and T 568B

XE 100.205

Example: XE 100.205 FIBRAIN DATA patchpanel Express 5e UTP 24 ports



Express 5e

Patchpanel 0,5U Express 5e XE 100.255

FTP/ STP 24 ports

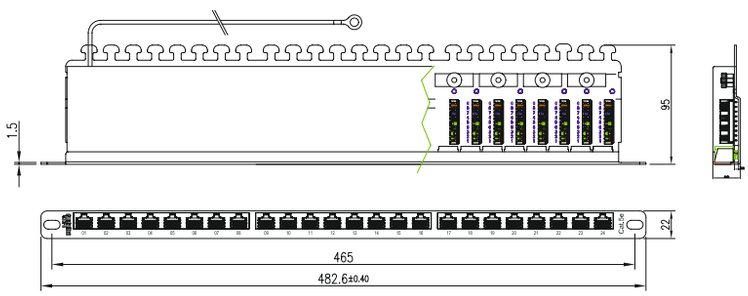
FIBRAIN DATA cabling Express series is fully complied to requirements of category 5e (class D) according to the norms:
ANSI/TIA/EIA 568-B.2-1 (cat.5e), ISO/IEC 11801 2002, EN 50173:2002, EN 50173-1:2004, IEC 61156-5 edition 2002, IEC 60603-7-5.

Moreover all channel's components are complied to Directive ROHS 2002/95/WE

Components Express series are characterized by high quality of transmission and mechanical parameters and very often exceeding requirements of obeying norms. Such connections support majority of contemporary applications including Ethernet 1000 BASE - T.

FIBRAIN DATA shielded patchpanels Express series are complied to requirements of category 5e (class D). Such connections support majority of contemporary applications. They are equipped with special 9 pin angle connectors IDC-LSA providing ease and fast installation. Such kind of connector provides high transmission parameters and resistance to interference.

Patchpanles are designed with L shaped shelf facilitate introduction changes, development and reconfiguration in easy way . Simple access to IDC connectors provides easy maintenance and change of connections. Additinally every port and panel has its own number. Standard 19".



·Features:

·0,5 U, 19"
·Depth 95 mm
· 9 pin vertical IDC connectors
· Shielded cover with connected to grounding point
·Easy installation of lead in cables (installation shelf)
· Readable ports and panels numbering

Electrical parameters:

·**Max current value:**	1,5 A
·**Insulation resistance:**	500 MOhms min
·**Pin resistance:**	20 MOhms max
·**DC resistance:**	0,1 Ohms max

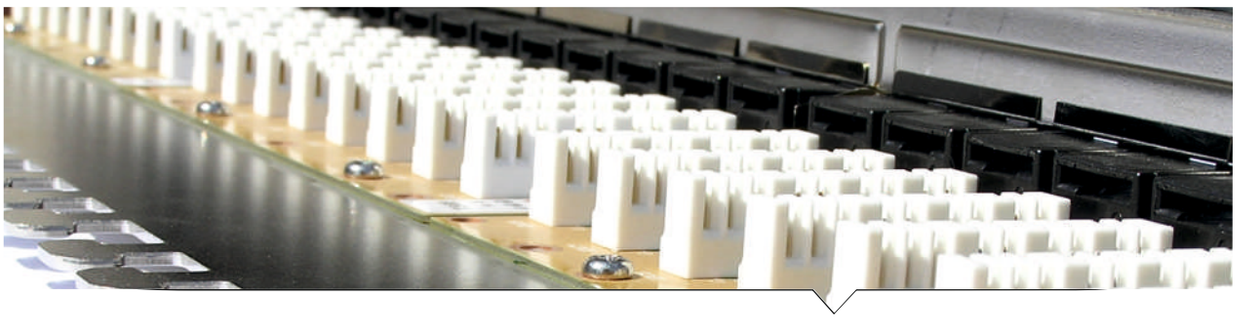
Mechanical parameters:

· **Frame:** metal sheet thickness 1,5 mm
· **Shield:** shielded cover made of galvanized metal sheet thickness 1,0 mm
· **Socket** shielded RJ45 cat.5e
· **Casing** - thermoplastic UL 94V-0 of black colour
· **Pin material** - phosphor-bronze
· **Pin:** diameter 0,48 mm covered with 50 µm and 100 µm nickel layers
· **Socket durability** 750 connection cycles according to the EN 60603-7
· **IDC connector** angle joint connector IDC LSA
·**Wire diameter:** 0,4-0,65 mm (AWG 26-22)
·**IDC durability:** >200 connection cycles
· **Joint material phosphor**-bronze
· **Joint** layer 1,27 µm silver and 2,5 µm nickel
· **Scheme** T568A and T 568B

XE 100.255

Example: XE 100.255 patchpanel FIBRAIN DATA Experecc series 5e STP 24 ports

Patchpanel cat. 5e
UTP 24 ports



Patchpanel 1U Express 5e XE100.200
UTP 24 ports patchpanel

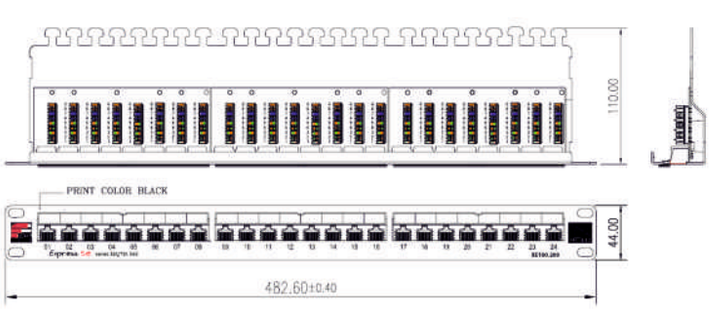
Express 5e

FIBRAIN DATA cabling Express series is fully complied to requirements of category 5e (class D) according to the norms:
ANSI/TIA/EIA 568-B.2-1 (cat.5e), ISO/IEC 11801 2002, EN 50173:2002, EN 50173-1:2004, IEC 61156-5 edition 2002, IEC 60603-7-5.

Moreover all channel's components are complied to Directive ROHS 2002/95/WE
Components Express series are characterized by high quality of transmission and mechanical parameters and very often exceeding requirements of obeying norms. Such connections support majority of contemporary applications including Ethernet 1000 BASE – T.

FIBRAIN DATA non-shielded patchpanels Express series are complied to requirements of category 5e (class D). Such connections support majority of contemporary applications. They are equipped with angle connectors IDC-LSA providing ease and fast installation.

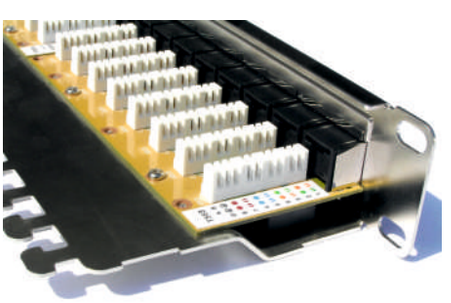
Additionally are designed with L shaped shelf facilitate introduction changes, development and reconfiguration in easy way . Simple access to IDC connectors provides easy maintenance and change of connections. Furthermore, each port and patchpanel has their own numbering. Each set contains descriptive labels and cable bands. Standard height 19 ".



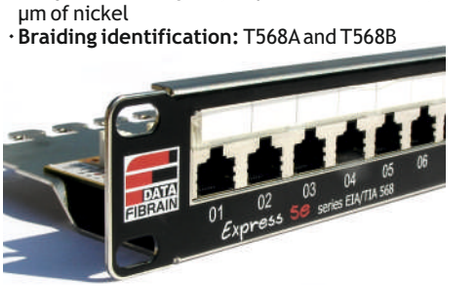
Characteristics:
- High: 1U, 19"
- Depth: 110 mm
- 8 pins IDC connectors
- Made of powder printed sheet, black colour RAL 9005
- Easy cable assembling, cable shelf
- Description field with replaceable, pre-printed descriptive labels
- Clear port and panels numbering

Electrical parameters:

Max current value:	1,5 A
Insulation resistance:	500 MOhms min
Pin resistance:	20 MOhms max
DC resistance:	0,1 Ohms max



Mechanical parameters:
- **Frame:** steel plate 1,5 mm
- **Jack:** unshielded RJ45 cat.6
- **Housing:** thermoplastic material UL 94V-0, black colour
- **Contacts material:** bronze phosphoric
- **Contacts:** OD: 0,48 mm, covered with 50 µm of gold and 100 µm of nickel
- **Contacts durability:** >750 connection cycles according to norm: EN 60603-7
- **IDC connectors:** slotted angled connectors IDC LSA
- **Wire diameter:** 0,4- 0,65 mm (AWG 26-22)
- **IDC durability:** >200 connection cycles
- **Coupler material:** bronze phosphoric
- **Coupler covering:** 1,27 µm of silver and 2,5 µm of nickel
- **Braiding identification:** T568A and T568B



XE 100.200

Example: XE 100.200 FIBRAIN DATA patchpanel Express Series 5e UTP 24 ports

Patchpanel cat. 5e
FTP/STP 24 ports

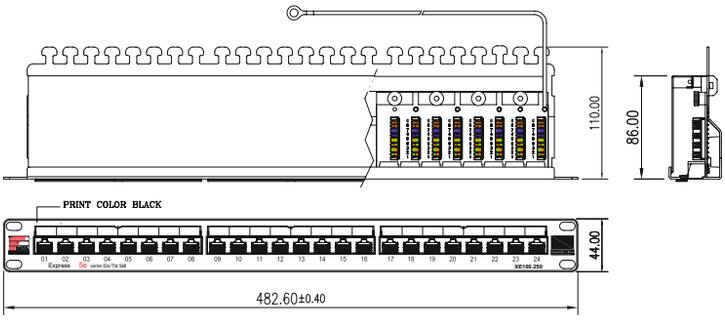
Patchpanel 1U Express 5e XE 100.250
FTP/ STP 24 ports patchpanel

FIBRAIN DATA cabling Express series is fully complied to requirements of category 5e (class D) according to the norms: ANSI/TIA/EIA 568-B.2-1 (cat.5e), ISO/IEC 11801 2002, EN 50173:2002, EN 50173-1:2004, IEC 61156-5 edition 2002, IEC 60603-7-5.

Moreover all channel's components are complied to Directive ROHS 2002/95/WE
Components Express series are characterized by high quality of transmission and mechanical parameters and very often exceeding requirements of obeying norms. Such connections support majority of contemporary applications including Ethernet 1000 BASE – T.

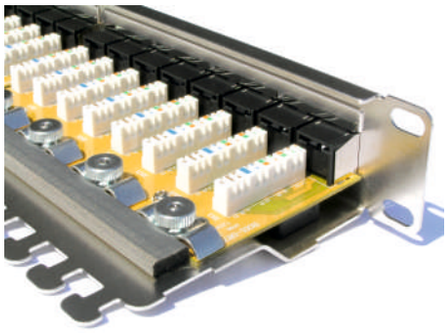
FIBRAIN DATA shielded patchpanels Express series are complied to requirements of category 5e (class D). Such connections support majority of contemporary applications. They are equipped with special 9 pin angle connectors IDC-LSA providing ease and fast installation. Such kind of connector provides high transmission parameters and resistance to interference.

Patchpanles are designed with L shaped shelf facilitate introduction in easy way . Simple access to IDC connectors provides easy maintenance and change of connections. Furthermore, each port and patchpanel has their own numbering. Each set contains descriptive labels and cable bands. Standard height 19 ".



Characteristics:
- High: 1U, 19"
- Depth: 110 mm
- 8 pins IDC connectors
- Made of powder printed sheet, black colour RAL 9005.
- Description field with replaceable, pre-printed descriptive labels
- Clear port and panels numbering

Electrical parameters:
- **Max current value:** 1,5 A
- **Insulation resistance:** 500 MOhms min
- **Pin resistance:** 20 MOhms max
- **DC resistance:** 0,1 Ohms max



Mechanical parameters:
- **Frame:** steel plate 1,5 mm
- **Jack:** unshielded RJ45 cat.6
- **Housing:** thermoplastic material UL 94V-0, black colour
- **Contacts material:** bronze phosphoric
- **Contacts: OD:** 0,48 mm, covered with 50 µm of gold and 100 µm of nickel
- **Contacts durability:** >750 connection cycles according to norm: EN 60603-7
- **IDC connectors:** slotted angled connectors IDC LSA
- **Wire diameter:** 0,4- 0,65 mm (AWG 26-22)
- **IDC durability:** >200 connection cycles
- **Coupler material:** bronze phosphoric
- **Coupler covering:** 1,27 µm of silver and 2,5 µm of nickel
- **Braiding identification:** T568A and T568B

XE 100.250

Example: XE 100.250 patchpanel FIBRAIN DATA Express series 5e STP 24 ports

Cross module cat. 5e (keystone)
UTP

Express 5e

Cross module XE100.400 (keystone)
Category 5e UTP

FIBRAIN DATA cabling Express series is fully complied to requirements of category 5e 100 MHz (class D) according to the norms: ANSI/TIA/EIA 568-B.2-1 (cat.5e), ISO/IEC 11801 2002, EN 50173:2002, EN 50173-1:2004, IEC 60603-7-4.

PMoreover all channel's components are complied to Directive ROHS 2002/95/WE
Components Express series are characterized by high quality of transmission and mechanical parameters and very often exceeding requirements of valid norms. They fully support 125 MHz transmission.

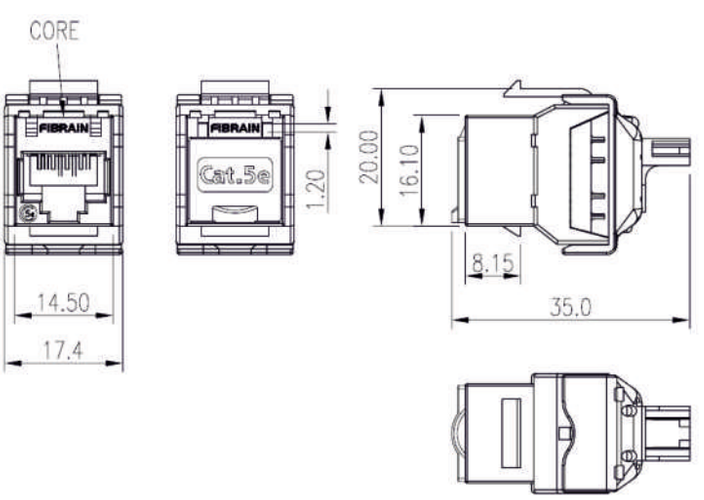
Non-shielded sockets (keystones) FIBRAIN DATA Express series are fully complied to requirements of category 5e (class D) and provide 125 MHz transmission. One used tool-less way of cable termination. Special casing significantly influence on gained parameters. Limits up to minimum division of cable during termination and speed up time of division performance. Specially adjusted casing shape totally protects cable's conductors against tearing out. Double color indicating system provides conductors configuration within sequence 568A or 568B. Thanks to appropriate selection of materials and tap shape module socket is totally resistant against unfastening of connectors RJ-11 and RJ-12. RJ-45 port is equipped with individual anti-dust shutter. Keystone me be used with straight and angle adapters.

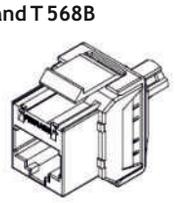
Features:
- Tool-less
- Casing decreasing cables conductors division
- Made of flame non-spreading materials UL94V-0
- Anti-dust shutter
- Sequence identification 568A and 568B

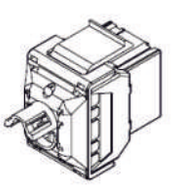
Electric parameters:

·Max current:	1,5 A
·Insulation resistance:	500 MOhm min
·Pin resistance:	20 MOhm max
·DC resistance:	0,1 Ohm max
·Comply to norms:	IEC 60603-7 Class D
·Comply to norms:	TIA568-B Cat.5e

Mechanical parameters:
- **Socket:** non-shielded RJ 45 cat.5e
- **·Casing:** UL 94V-0
- **Pin material phosphor-**bronze
- **Pin:** diameter 0,46mm covered with 50 µm and 100 µm nickel layers
- **Socket durability 750 connection cycles according to the EN 60603-7**
- **IDC connector toll-less IDC**
- **·Conductor diameter:** 0,4-0,65 mm (AWG 26-22)
- **·IDC durability 200 connection cycles**
- **Joint material phosphor-bronze**
- **Joint layer:** 1,27 µm of silver and 2,5 µm of nickel
- **Division Scheme Identification T568A**
- **and T 568B**



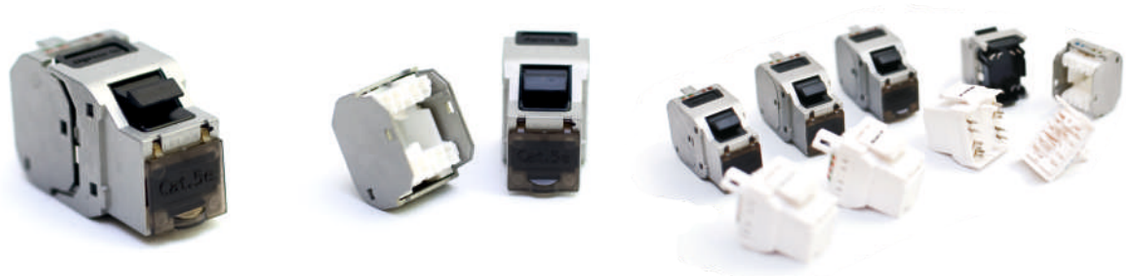




XE100.400

Example: XE100.400 FIBRAIN DATA keystone Cat.5e UTP

Cross module cat. 5e (keystone)
FTP



Cross module cat.5e (keystone)
FTP

Express 5e

FIBRAIN DATA cabling Express series is fully complied to requirements of category 5e (class D) according to the norms:
ANSI/TIA/EIA 568-B.2-1 (cat.5e), ISO/IEC 11801 2002, EN 50173:2002, EN 50173-1:2004, IEC 60603-7-4.

Moreover all channel's components are complied to Directive ROHS 2002/95/WE
Components Express series are characterized by high quality of transmission and mechanical parameters and very often exceeding requirements of obeying norms. They fully support 125 MHz transmission.

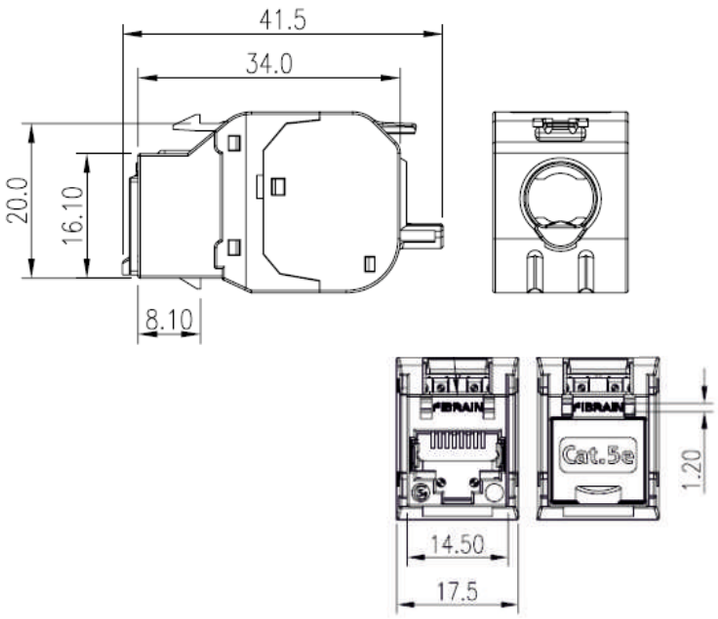
Shielded sockets (keystones) FIBRAIN DATA Express series are fully complied to requirements of category 5e (class D) and provide 125 MHz transmission. One used tool-less way of cable termination. Special casing significantly influence on gained parameters. Limits up to minimum division of cable during termination and speed up time of division performance. Specially adjusted casing shape totally protects cable's conductors against tearing out. Double color indicating system provides conductors configuration within sequence 568A or 568B. Thanks to appropriate selection of materials and tap shape module socket is totally resistant against unfastening of connectors RJ-11 and RJ-12. RJ-45 port is equipped with individual anti-dust shutter. Keystone me be used with straight and angle adapters.

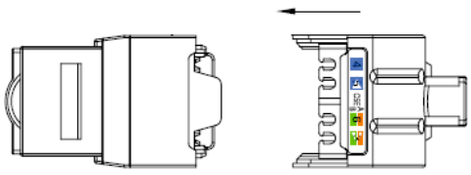
Features:
- Tool-less
- Casing decreasing cables conductors division
- Made of flame non-spreading materials UL94V-0
- Anti-dust shutter
- Sequence identification 568A and 568B

Electric parameters:

Max current:	1,5 A
Insulation resistance:	500 MOhm min
Pin resistance:	20 MOhm max
DC resistance:	0,1 Ohm max
Comply to norms:	IEC 60603-7 Class D
Comply to norms:	TIA568-B Cat.5e

Mechanical parameters:
- **Socket:** shielded RJ 45 cat.5e
- **Casing:** UL 94V-0
- **Pin material** phosphor-bronze
- **Pin:** diameter 0,46mm covered with 50 µm and 100 µm nickel layers
- **Socket durability 750 connection cycles according to the EN 60603-7**
- **IDC connector toll-less IDC**
- **Conductor diameter:** 0,4-0,65 mm (AWG 26-22)
- **IDC durability 200 connection cycles**
- **Joint material phosphor-bronze**
- **Joint layer:** 1,27 µm of silver and 2,5 µm of nickel
- **Division Scheme Identification T568A**
- **and T 568B**





XE100.450

Example: XE100.450 FIBRAIN DATA keystone Cat.5e FTP

Patchcord cat. 5e
UTP

Express 5e

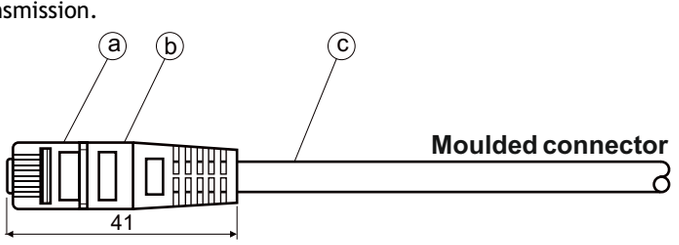
Patchcord cat. 5e
Category 5e UTP

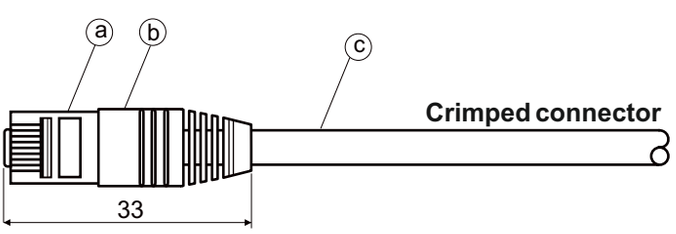
FIBRAIN DATA cabling Express series is fully complied to requirements of category 5e (class D) according to the norms:
ANSI/TIA/EIA 568-B.2-1 (cat.5e), ISO/IEC 11801 2nd edition: 2002, EN 50173:2002, EN 50173-1:2004, IEC 60603-7-4.

Moreover all channel's components are complied to Directive ROHS 2002/95/WE
Components Express series are characterized by high quality of transmission and mechanical parameters very often exceeding requirements of obeying norms. They fully provide 125 MHz transmission.

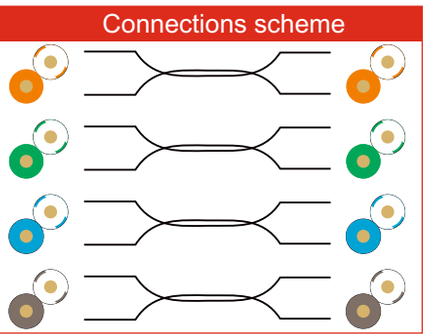
Applications:
- 10BASE-T (IEEE 802.3)
- 4/16 Mbps Token Ring (IEEE 802.5)
- 100BASE-VG-AnyLAN
- 100 Mbps TP-PMD (ANSI X3T9.5)
- 100BASE-T (IEEE 802.3)
- 55/155 Mbps ATM
- 1000BASE-T (Gigabit Ethernet)

Norms:
- IEC 60332-1
- UNE 50265-2-1
- ANSI/TIA/EIA 568-B.2 (Cat. 5e)
- ISO/IEC 11801
- IEC 61156-5
- EN 50173, EN 50288





Connections scheme



Construction parameters:			
Parametr			
Connector type (a)			
	for :	mould	Rj45, not shielded , 1:1 acc. TIA/EIA 568B
		crimped	Rj45, not shielded , Steward SS39100-007 1:1 acc. TIA EIA 568B
Cover type (b)			
	for :	mould	PVC 75A, length in-printed in cover
		crimped	PVC 75A, length in-printed in cover
Cable type (c)			
	for :	mould	U/UTP AWG 24 PVC
		crimped	U/UTP AWG 26/27 LSOHH

Reference: XE

2	0	0 .	0	00
Component kind: 2 - patchcord	**Shield type:** 0 - U/UTP	**Colour:** 0 - grey 1 - blue 2 - green 3 - red 4 - yellow	**Connector kind:** 0 - mould 1 - crimped	**Length:** 00 - 0,5 meter 01 - 1 meter 02 - 2 meters 03 - 3 meters 05 - 5 meters 07 - 7 meters 10 - 10 meters 15 - 15 meters 20 - 20 meters 25 - 25 meters 30 - 30 meters

Patchcord cat. 5e
FTP

Patchcord
Category 5e FTP

Express 5e

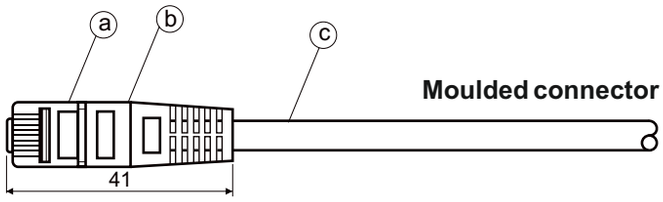
FIBRAIN DATA cabling Express series is fully complied to requirements of category 5e (class D) according to the norms:
ANSI/TIA/EIA 568-B.2-1 (cat.5e), ISO/IEC 11801 2nd edition: 2002, EN 50173:2002, EN 50173-1:2004, IEC 60603-7-4.

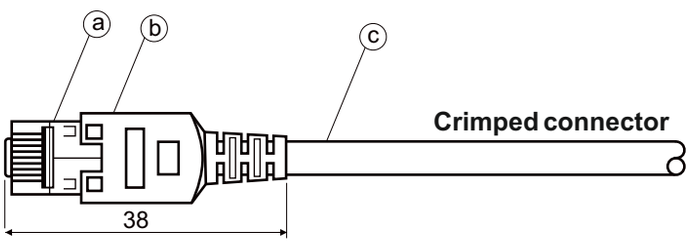
Moreover all channel's components are complied to Directive ROHS 2002/95/WE

Commpnetns Express series are characterized by high quality of transmission and mechanical parameters very often exceeding requirements of obeying norms. They fully provide 125 MHz transmission.

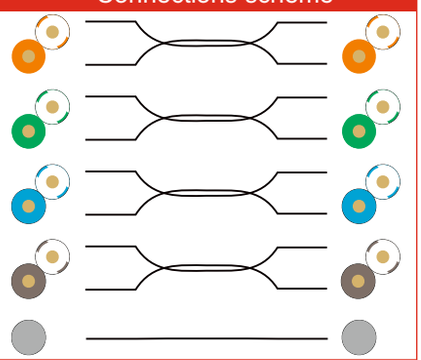
Aplications:
- 10BASE-T (IEEE 802.3)
- 4/16 Mbps Token Ring (IEEE 802.5)
- 100BASE-VG-AnyLAN
- 100 Mbps TP-PMD (ANSI X3T9.5)
- 100BASE-T (IEEE 802.3)
- 55/155 Mbps ATM
- 1000BASE-T (Gigabit Ethernet)

Norms:
- IEC 60332-1
- UNE 50265-2-1
- ANSI/TIA/EIA 568-B.2 (Cat. 5e)
- ISO/IEC 11801
- IEC 61156-5
- EN 50173, EN 50288





Connections scheme



Construction parameters:

Parametr			
Connector type (a)			
	for:	moulded	Rj45, shielded, 1:1 acc. TIA/EIA 568B
		crimped	Rj45, shielded, Hirose LSZH TM11, 1:1 acc. TIA EIA 568B
Cover type (b)			
	for:	moulded	PVC 75A, length in-printed in cover
		crimped	PVC 75A, length in-printed in cover
Cable type (c)			
	for:	moulded	F/UTP or SF/UTP AWG 24 PVC
		crimped	U/UTP or SF/UTP AWG 26/27 LSOH

Reference: XE

2	1	0	.	0	00
Component kind: 2 - patchcord	**Shield type:** 1 - F/UTP 2 - SF/UTP	**Colour:** 0 - grey 1 - blue 2 - green 3 - red 4 - yellow		**Connector kind:** 0 - mould 1 - crimped	**Length:** 00 - 0,5 meter 01 - 1 meter 02 - 2 meters 03 - 3 meters 05 - 5 meters 07 - 7 meters 10 - 10 meters 15 - 15 meters 20 - 20 meters 25 - 25 meters 30 - 30 meters

01

Category 6 cabling

Quick 6

FIBRAIN DATA cabling QUICK series fully conforms to requirement of category 6 (class E) according to the standard ISO/IEC 11801 2nd edition: 2002. Moreover all components of transmission channel conform to ROHS Directive 2002/95/WE.

Category 6 (class E) in the beginning was corrected by norm TIA/EIA-568-B provides capacity of copper cabling system up to frequency up to 250 MHz. Nowadays it is the most often used type of cabling that allows for full implementation of application of 1000Base-T.

FIBRAIN DATA system components, channel and permanent link were positively verified regarding conformity to cabling norms by Institute of Communication.

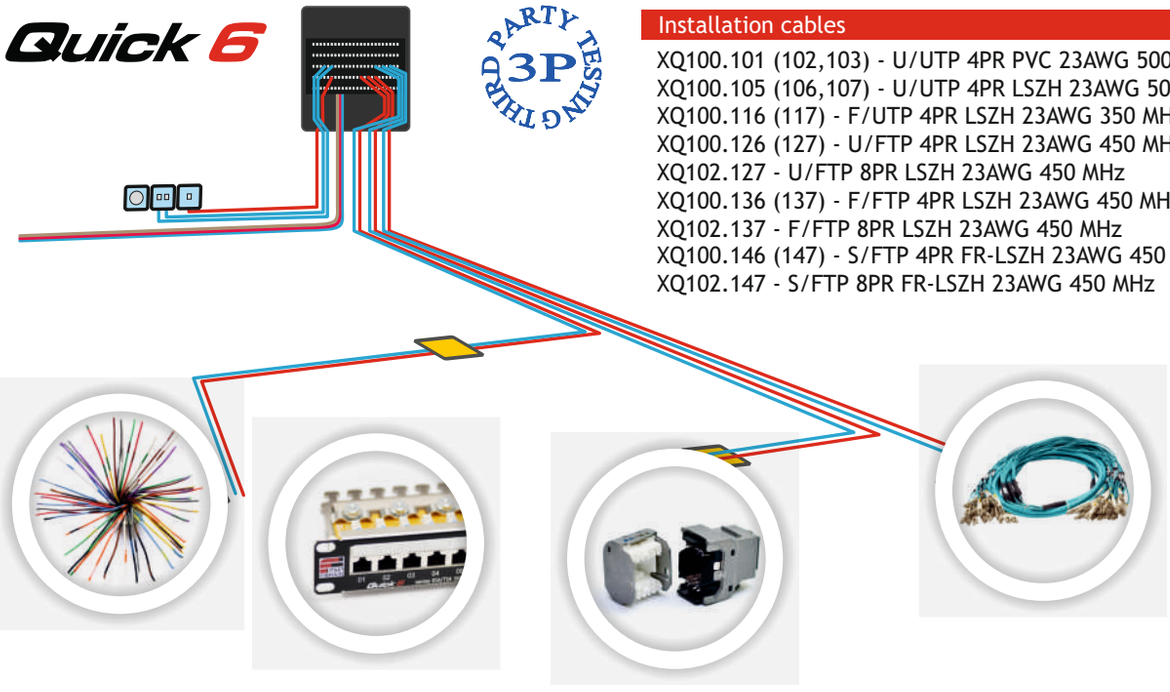
Komponenty zostały także przebadane przez 3P Third Party Testing z wykorzystaniem metody **„De-embedded”** badania przesłuchów NEXT oraz najnowszej metody **„Re-embedded”**.

Application:
- Half and full duplex transmission
- Analog and digital transmission of video signal
- 16 Mbps Token Ring
- 100 Mbps TP-PMOD
- 100 BASE-T (IEEE 802.3)
- 1000 BASE-T (Gigabit Ethernet)
- 155/622 Mbps ATM
- 1.2 Gbps ATM

Components

Permanent Link

Channel



Installation cables

XQ100.101 (102,103) - U/UTP 4PR PVC 23AWG 500 MHz
XQ100.105 (106,107) - U/UTP 4PR LSZH 23AWG 500 MHz
XQ100.116 (117) - F/UTP 4PR LSZH 23AWG 350 MHz
XQ100.126 (127) - U/FTP 4PR LSZH 23AWG 450 MHz
XQ102.127 - U/FTP 8PR LSZH 23AWG 450 MHz
XQ100.136 (137) - F/FTP 4PR LSZH 23AWG 450 MHz
XQ102.137 - F/FTP 8PR LSZH 23AWG 450 MHz
XQ100.146 (147) - S/FTP 4PR FR-LSZH 23AWG 450 MHz
XQ102.147 - S/FTP 8PR FR-LSZH 23AWG 450 MHz

Cross panels

XQ100.200 - 1U 24xRJ45 UTP
XQ100.205 - 0,5U 24xRJ45 UTP
XQ100.250 - 1U 24xRJ45 FTP
XQ100.255 - 0,5U 24xRJ45 FTP

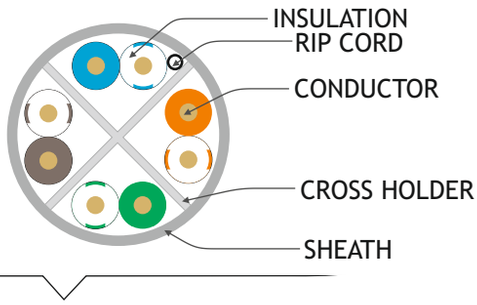
Keystones

XQ100.400 - RJ45 UTP
XQ100.450 - RJ45 FTP

Patchcords

XQ20K.0XX - U/UTP moulded
XQ20K.1XX - U/UTP crimped
XQ22K.0XX - S/FTP moulded
XQ22K.1XX - S/FTP crimped

Category 6 cabling
U/UTP PVC coating



Cable 500 MHz PVC sheath
U/UTP Category 6

FIBRAIN DATA Structural Cabling Quick Series, fully satisfies the requirements of cat. 6 (class E) in accordance with standard ISO/IEC 11801 2nd edition: 2002. Also all components of the transmission line complete ROHS 2002/95/WE Directive.

Electrical and constructional parameters:		
Parametr		
Resistance (max) Ohm/100m (328 ft) @ 20 °C		8,90
Capacity (max) nF/100m (328ft) @ 1 kHz		5,20
Nominal velocity of propagation NVP (% speed of light)		68
Impedance (Ohm)		(min-max)
Value for:	1,0 - 10 MHz	85-115
	100 - 350 MHz	78-122
	350 - 500 MHz	68-132
Coefficient of delay (max) (ns @ 10 MHz)		518
Delay skew (max) (ns/100 m)		45
Diameter (mm)		6,2
Weigh(kg/km)		42
Minimal bending radius (mm)		25
Temperature of installation (°C)		-20/+50
Temperature of operation (°C)		-10/+60

Application:
- Supports full and half duplex application
- Digital and analogue video transmission
- 16 Mbps Token Ring
- 100 Mbps TP-PMOD
- 100 BASE-T (IEEE 802.3)
- 1000 BASE-T (Gigabit Ethernet)
- 155/622 Mbps ATM
- 1.2 Gbps ATM

Norms:
- IEC 60332-1, UNE-EN 50265-2-1
- ANSI/TIA/EIA 568-B.2-1 (Cat.6)
- ISO/IEC 11801: 2002,
- EN 50173: 2002

Cable marking:
Below information is printed on each meter of the cable:
- **Supplier:** FIBRAIN DATA
- **Cable Type:** U/UTP 4PR23AWG CAT.6 500 MHz
- **Jacket type:** PVC
- **Norms:** IEC 60332-1 ISO/IEC 11801 AND EN 50173 AND ANSI/TIA/EIA 568-B-2.1
- **Year of production:** XXXX
- **ID number:** XXXX
- **Length marking in meters**

Construction:
- Conductor - 23 AWG (0,574 mm)
- Insulation: polyolefine
- Number of wires: 4 pairs twisted together
- Grey jacket - PVC material

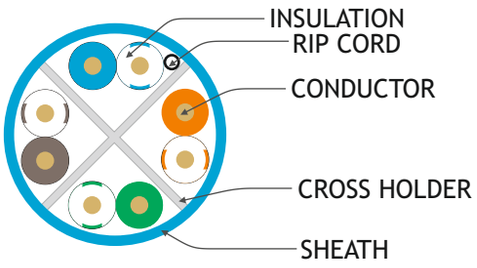
Frequency MHz:	Attenuation Max dB/100m:	NEXT	PS-NEXT	ACR-F	PS-ACR-F	Return Loss
		dB/100 m(min):				
1	1,8	76,7	73,7	73,0	73,0	---
10	6,5	69,2	66,2	61,0	58,0	34,4
16	8,2	67,6	64,6	56,9	53,9	33,8
31,25	9,9	65,4	62,4	51,1	48,1	33,3
62,5	14,1	61,9	58,9	45,1	42,1	33,0
100	18,0	58,9	55,9	41,0	38,0	32,1
155	22,7	56,0	53,0	37,2	34,2	31,5
250	29,2	52,9	49,9	33,0	30,0	30,4
350	35,1	50,7	47,7	30,1	27,1	---
500	43,0	48,4	45,4	27,0	24,0	---

XQ 100.101 FIBRAIN DATA Quick U/UTP Cat. 6 500 MHz drum 305 m jacket PVC grey colour

XQ 100.102 drum 500 m.

XQ 100.103 drum 1000 m.

Category 6 cabling
U/UTP LSZH coating



Cable 500 MHz LSZH sheath
U/UTP Category 6

FIBRAIN DATA Structural Cabling Quick Series, fully satisfies the requirements of cat 6 (class E) in accordance with standard ISO/IEC 11801 2nd edition: 2002. Also all components of the transmission line complete ROHS 2002/95/WE Directive.

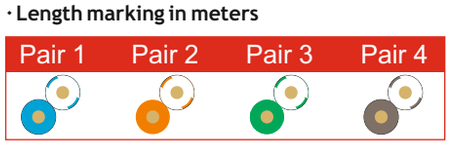
Electrical and constructional parameters:		
Parameter:		
Resistance (max) Ohm/100m (328 ft) @ 20°C		8,90
Capacity (max) nF/100m (328ft) @ 1 kHz		5,60
Nominal velocity of propagation NVP (% speed of light)		68
Impedance (Ohm)		(min-max)
Value for:	1,0 - 100 MHz	85-115
	100 - 350 MHz	78-122
	350 - 500 MHz	68-132
Coefficient of delay (max) (ns @ 10 MHz)		518
Delay skew (max) (ns/100 m)		35
Diameter (mm)		6,1
Weigh(kg/km)		42
Minimal bending radius (mm)		24,5
Temperature of installation (°C)		-20/+50
Temperature of operation (°C)		-10/+60
Calorific value (MJ/m)		0.446

Application:
- Supports full and half duplex application
- Digital and analogue video transmission
- 16 Mbps Token Ring
- 100 Mbps TP-PMOD
- 100 BASE-T (IEEE 802.3)
- 1000 BASE-T (Gigabit Ethernet)
- 155/622 Mbps ATM
- 1.2 Gbps ATM

Norms:
- IEC 60332-1, PN-EN 50265-2-1
- LSZH: PN-EN 50268-1
- PN-EN 50267-2-1, PN-EN 50266-2-4
- ANSI/TIA/EIA 568-B.2-1 (Cat.6)
- ISO/IEC 11801 : 2002, EN 50173 : 2002

Construction:
- Conductor - 23 AWG (0,574 mm)
- Insulation: polyolefine
- Number of wires: 4 pairs twisted together
- Blue jacket - LSZH material according to norm IEC 60332-1

Cable marking:
Below information is printed on each meter of the cable:
- **Supplier:** FIBRAIN DATA
- **Cable Type:** U/UTP 4PR23AWG CAT.6 500 MHz
- **Jacket type:** LSZH
- **Norms:** IEC 60332-1 ISO/IEC 11801 AND EN 50173 AND ANSI/TIA/EIA 568-B-2.1
- **Year of production:** XXXX
- **ID number:** XXXX
- **Length marking in meters**

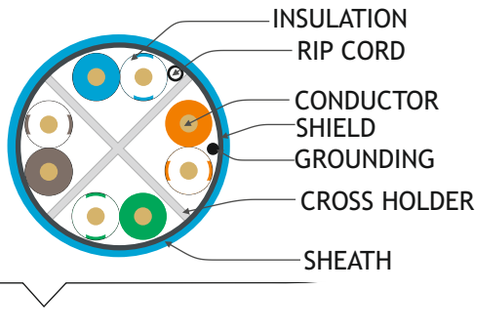


Frequency Mhz:	Attenuation Max dB/100 m:	NEXT	PS-NEXT	ACR-F	PS-ACR-F	Return Loss
		dB/100 m(min):				
1	1,8	76,7	73,7	73,0	73,0	---
10	6,5	69,2	66,2	61,0	58,0	34,4
16	8,2	67,6	64,6	56,9	53,9	33,8
31,25	9,9	65,4	62,4	51,1	48,1	33,3
62,5	14,1	61,9	58,9	45,1	42,1	33,0
100	18,0	58,9	55,9	41,0	38,0	32,1
155	22,7	56,0	53,0	37,2	34,2	31,5
250	29,2	52,9	49,9	33,0	30,0	30,4
350	35,1	50,7	47,7	30,1	27,1	---
500	43,0	48,4	45,4	27,0	24,0	---

XQ 100.105 FIBRAIN DATA Quick U/UTP Cat. 6 500 MHz drum 305 m jacket LSZH blue colour

XQ 100.106 drum 500 m.
XQ 100.107 drum 1000 m.

Category 6 cabling
F/UTP LSZH coating



Cable 350 MHz LSZH sheath
F/UTP Category 6

FIBRAIN DATA Structural Cabling Quick Series, fully satisfies the requirements of cat. 6 (class E) in accordance with standard ISO/IEC 11801 2nd edition: 2002. Also all components of the transmission line complete ROHS 2002/95/WE Directive.

Electrical and constructional parameters:		
Parameter:		
Resistance (max) Ohm/100m (328 ft) @ 20 °C		8,90
Capacity (max) nF/100m (328ft) @ 1 kHz		5,60
Nominal velocity of propagation NVP (% speed of light)		70
Impedance (Ohm)		(min-max)
Value for:	1,0 - 100 MHz	85-115
	100 - 350 MHz	78-122
	350 - 500 MHz	68-132
Coefficient of delay (max) (ns @ 10 MHz)		518
Delay skew (max) (ns/100 m)		35
Diameter (mm)		7,1
Weigh(kg/km)		51,3
Minimal bending radius (mm)		28,3
Temperature of installation (°C)		-10/+50
Temperature of operation (°C)		0/+50

Application:
- Supports full and half duplex application
- Digital and analogue video transmission
- 16 Mbps Token Ring
- 100 Mbps TP-PMOD
- 100 BASE -T (IEEE 802.3)
- 1000 BASE-T (Gigabit Ethernet)
- 155/622 Mbps ATM
- 1.2 Gbps ATM

Norms:
- IEC 60332-1, PN-EN 50265-2-1
- LSZH: UNE-EN 50268-1
- UNE-EN 50267-2-1, UNE-EN 50266-2-4
- ANSI/TIA/EIA 568-B.2-1 (Cat.6)
- ISO/IEC 11801: 2002, EN 50173: 2002

Cable marking:
Below information is printed on each meter of the cable:
- **Supplier**: FIBRAIN DATA
- **Cable Type**: F/UTP 4PR 23AWG CAT.6 350 MHz
- **Jacket type**: LSZH
- **Norms**: IEC 61156-5 ISO/IEC 11801 EN 50173
- **Year of production**: XXXX
- **ID number**: XXXX
- **Length marking in meters**

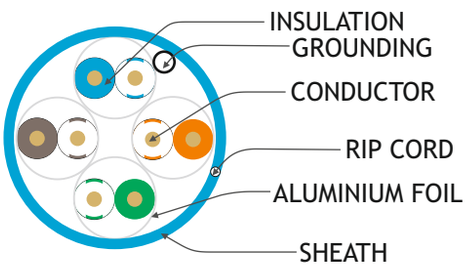
Construction:
- Conductor - 23 AWG (0,574 mm)
- Insulation: polyolefine
- Number of wires: 4 pairs twisted together
- Blue jacket - LSZH material according to norm IEC 60332-1
- Shield: aluminum foil/ polyester around all pairs
- Grounding: cooper, galvanized drainage wire ϕ 0,4 mm

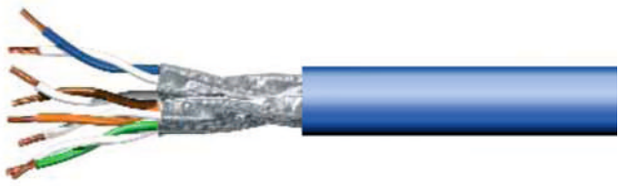
Frequency MHz:	Attenuation Max dB/100 m:	NEXT	PS-NEXT	ACR-F	PS-ACR-F	Return Loss
		dB/100 m(min):				
1	2,1	75,3	72,3	68,0	65,0	20,0
10	6,0	60,3	57,3	48,0	45,0	25,0
16	7,6	57,2	54,2	43,9	40,9	25,0
31,25	10,7	52,9	49,9	38,1	35,1	23,6
62,5	15,5	48,4	45,4	32,1	29,1	21,5
100	19,9	45,3	42,3	28,0	25,0	20,1
155	25,3	42,4	39,4	24,2	21,2	18,8
200	29,1	40,8	37,8	22,0	19,0	18,0
250	33,0	39,3	36,3	20,0	17,0	17,3

XQ 100.116 FIBRAIN DATA Quick F/UTP Cat. 6 350 MHz drum 500 m jacket LSZH blue colour

XQ 100.117 drum 1000 m.

Category 6 cabling
U/FTP LSZH coating





Quick 6

Cable 450 MHz LSZH sheath
U/FTP Category 6

FIBRAIN DATA Structural Cabling Quick Series, fully satisfies the requirements of cat. 6 (class E) in accordance with standard ISO/IEC 11801 2nd edition: 2002. Also all components of the transmission line complete ROHS 2002/95/WE Directive.

Electrical and constructional parameters:		
Parameter:		
Impedance 10 to 250 MHz (Ohm)		100±5
Nominal velocity of propagation NVP (% speed of light)		74
Attenuation:		
Value for:	-30 - 100 MHz	>55 dB
	100 - 1000 MHz	55-20 log(f/100)
Reflection loss (RL) dB (min)		
Value for:	1,0 - 10 MHz	20+5 log(f)
	10 - 20 MHz	25
	20 - 100 MHz	25-7 log(f/20)
Propagation Delay (max) (ns/100m)		470
Delay skew (max) (ns/100 m)		<25
Dielectric strength during 1 minute (V c.c.)		1000
Insulation strength (MOhm/km)		>5000
Nominal/maximum operating voltage (V)		125/200
Maximum operating current (A)		0,25
DC resistance in C.C (Ohm/k)		164

Construction:
- Conductor - 23 AWG (0,574 mm)
- Insulation: polyolefine
- Number of wires: 4 pairs twisted together
- Blue jacket - LSZH material according to norm IEC 60332-1
- Shield: aluminum foil/ polyester around all pairs
- Grounding: cooper, galvanize drainaged wire ϕ 0,4 mm

Application:
- Supports full and half duplex application
- Digital and analogue video transmission
- 16 Mbps Token Ring
- 100 Mbps TP-PMOD
- 100 BASE -T (IEEE 802.3)
- 1000 BASE-T (Gigabit Ethernet)
- 155/622 Mbps ATM
- 1.2 Gbps ATM

Norms:
- IEC 60332-1, UNE-EN 50265-2-1
- LSZH: UNE-EN 50268-1
- UNE-EN 50267-2-1, UNE-EN 50266-2-4
- ANSI/TIA/EIA 568-B.2-1 (Cat.6)
- ISO/IEC 11801: 2002, EN 50173: 2002

Cable marking:
Below information is printed on each meter of the cable:
- **Supplier:** FIBRAIN DATA
- **Cable Type:** U/FTP 4PR 23AWG CAT.6 450 MHz
- **Jacket type:** LSZH
- **Norms:** IEC 61156-5 ISO/IEC 11801 EN 50173
- **Year of production:** XXXX
- **ID number:** XXXX
- **Length marking in meters**

Frequency MHz:	Attenuation Max dB/100 m:	NEXT	PS-NEXT	ACR-F	PS-ACR-F	Return Loss
		dB/100 m(min):				
1	2,0	75,3	72,3	68,0	65,0	20,0
10	5,9	60,3	57,3	48,0	45,0	25,0
16	7,4	57,3	54,2	43,9	40,9	25,0
31,25	10,4	52,9	49,9	38,1	35,1	23,6
62,5	14,8	48,4	45,4	32,1	29,1	21,5
100	19,0	45,3	42,3	28,0	25,0	20,1
155	24,0	42,4	39,4	24,2	21,2	18,8
250	31,0	39,3	36,3	20,0	17,0	17,3
300	34,2	38,1	35,1	18,5	15,5	16,8
450	46,2	35,5	32,5	14,9	11,9	15,5

XQ 100.126 FIBRAIN DATA Quick U/FTP Cat. 6 450 MHz drum 500 m jacket LSZH blue colour

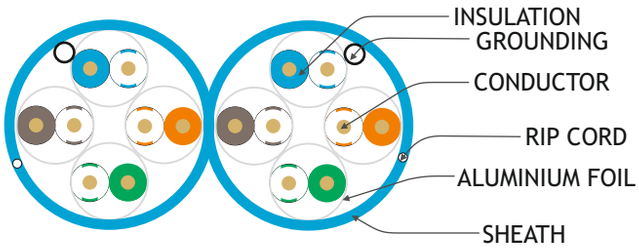
XQ 100.127 drum 1000 m.

Category 6 cabling

U/FTP DUPLEX LSZH coating

01

Quick 6



Cable 450 MHz DUPLEX LSZH sheath

U/FTP Category 6

FIBRAIN DATA Structural Cabling Quick Series, fully satisfies the requirements of cat. 6 (class E) in accordance with standard ISO/IEC 11801 2nd edition: 2002. Also all components of the transmission line complete ROHS 2002/95/WE Directive.

Electrical and constructional parameters:		
Parameter:		
Impedance 10 to 450 MHz (Ohm)		100±5
Nominal velocity of propagation NVP (% speed of light)		74
Attenuation:		
Value for:	-30 - 100 MHz	>55 dB
	100 - 1000 MHz	55-20log(f/100)
Reflection loss (RL) dB (min)		
Value for:	1,0 - 10 MHz	20+5 log(f)
	10 - 20 MHz	25
	20 - 100 MHz	25-7 log(f/20)
Propagation Delay (max) (ns/100 m)		470
Delay skew (max) (ns/100 m)		<25
Dielectric strength during 1 minute (V c.c.)		1000
Insulation strength (MOhm/km)		>5000
Nominal/maximum operating voltage (V)		125/200
Maximum operating current (A)		0,25
DC resistance in C.C (Ohm/k)		164

Construction:

- Conductor - 23 AWG (0,574 mm)
- Insulation: polyolefine
- Number of wires: 2x 4 pairs twisted together
- Blue jacket - LSZH material according to norm IEC 60332-1
- Shield: aluminum foil/ polyester around each pair
- Grounding: cooper, galvanized wire drainage ϕ 0,4 mm

Application:

- Supports full and half duplex application
- Digital and analogue video transmission
- 16 Mbps Token Ring
- 100 Mbps TP-PMOD
- 100 BASE-T (IEEE 802.3)
- 1000 BASE-T (Gigabit Ethernet)
- 155/622 Mbps ATM
- 1.2 Gbps ATM

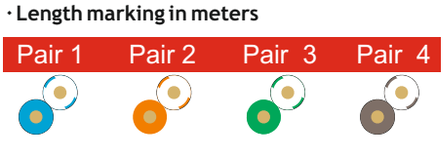
Norms:

- IEC 60332-1, UNE-EN 50265-2-1
- LSZH: UNE-EN 50268-1
- UNE-EN 50267-2-1, UNE-EN 50266-2-4
- ANSI/TIA/EIA 568-B.2-1 (Cat.6)
- ISO/IEC 11801 : 2002, EN 50173 : 2002

Cable marking:

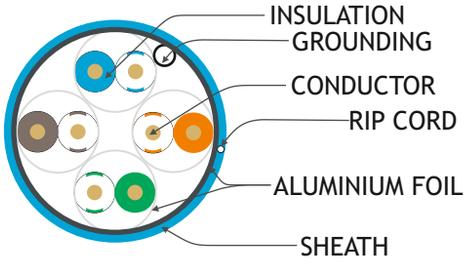
Below information is printed on each meter of the cable:

- **Supplier:** FIBRAIN DATA
- **Cable Type:** 2x U/FTP 8PR 23AWG CAT.6 450 MHz
- **Jacket type:** LSZH
- **Norms:** IEC 61156-5 ISO/IEC 11801 EN 50173
- **Year of production:** XXXX
- **ID number:** XXXX
- **Length marking in meters**



Frequency MHz:	Attenuation Max dB/100 m:	NEXT	PS-NEXT	ACR-F	PS-ACR-F	Return Loss
		dB/100m(min):				
1	2,1	75,3	72,3	68,0	65,0	20,0
10	6,0	60,3	57,3	48,0	45,0	25,0
16	7,6	57,2	54,2	43,9	40,9	25,0
31,25	10,7	52,9	49,9	38,1	35,1	23,6
62,5	15,5	48,4	45,4	32,1	29,1	21,5
100	19,9	45,3	42,3	28,0	25,0	20,1
155	25,3	42,4	39,4	24,2	21,2	18,8
250	33,0	39,3	36,3	20,0	17,0	17,3
300	36,6	38,1	35,1	18,5	15,5	16,8
450	46,2	35,5	32,5	14,9	11,9	15,5

XQ 102.127 FIBRAIN DATA Quick 2x U/FTP Cat. 6 450 MHz **drum 1000 m jacket LSZH blue colour**



Cable 450 MHz LSZH sheath
F/FTP Category 6

FIBRAIN DATA Structural Cabling Quick Series, fully satisfies the requirements of cat. 6 (class E) in accordance with standard ISO/IEC 11801 2nd edition: 2002. Also all components of the transmission line complete ROHS 2002/95/WE Directive.

Electrical and constructional parameters:		
Parameter:		
Impedance 10 to 450 MHz (Ω)		100±5
Nominal velocity of propagation NVP (% speed of light)		74
Attenuation:		
Value for:	-30 - 100 MHz	>80 dB
	100 - 1000 MHz	80-20log(f/100)
Reflection loss (RL) dB (min)		
Value for:	1.0 - 10 MHz	20+5 log(f)
	10 - 20 MHz	25
	20 - 100 MHz	25-7 log(f/20)
Propagation Delay (max) (ns/100 m)		470
Delay skew (max) (ns/100 m)		<25
Dielectric strength during 1 minute (V c.c.)		1000
Insulation strength (MOhm/km)		>5000
Nominal/maximum operating voltage (V)		125/200
Maximum operating current (A)		0,25
DC resistance in C.C (Ohm/k)		164

Construction:
- Conductor - 23 AWG (0,574 mm)
- Insulation: polyolefine
- Number of wires: 4 pairs twisted together
- Blue jacket LSZH according to IEC 60322-1
- Shield: aluminum foil/ polyester around each pair
- Shield: aluminum foil/ polyester around all pairs
- Grounding: cooper, galvanized drainag wire e ϕ 0,4 mm

Application:
- Supports full and half duplex application
- Digital and analogue video transmission
- 16 Mbps Token Ring
- 100 Mbps TP-PMOD
- 100 BASE-T (IEEE 802.3)
- 1000 BASE-T (Gigabit Ethernet)
- 155/622 Mbps ATM
- 1.2 Gbps ATM

Norms:
- IEC 60332-1, UNE-EN 50265-2-1
- LSZH: UNE-EN 50268-1
- UNE-EN 50267-2-1, UNE-EN 50266-2-4
- ANSI/TIA/EIA 568-B.2-1 (Cat.6)
- ISO/IEC 11801 : 2002, EN 50173 : 2002

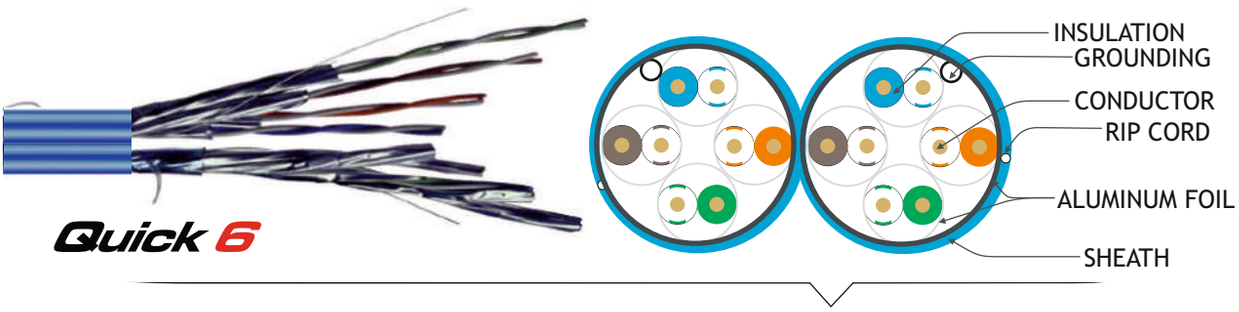
Cable marking:
Below information is printed on each meter of the cable:
- **Supplier:** FIBRAIN DATA
- **Cable Type:** F/FTP4PR23AWG CAT.6 450 MHz
- **Jacket type:** LSZH
- **Norms:** IEC 61156—5 ISO/IEC 11801 EN 50173
- **Year of production:** XXXX
- **ID number:** XXXX
- **Length marking in meters**

Frequency MHz:	Attenuation Max dB/100 m:	NEXT	PS-NEXT	ACR-F	PS-ACR-F	Return Loss
		dB/100 m(min):				
1	2,0	75,3	72,3	68,0	65,0	20,0
10	5,9	60,3	57,3	48,0	45,0	25,0
16	7,4	57,2	54,2	43,9	40,9	25,0
31,25	10,4	52,9	49,9	38,1	35,1	23,6
62,5	14,8	48,4	45,4	32,1	29,1	21,5
100	19,0	45,3	42,3	28,0	25,0	20,1
155	24,0	42,4	39,4	24,2	21,2	18,8
250	31,0	39,3	36,3	20,0	17,0	17,3
300	34,2	38,1	35,1	18,5	15,5	16,8
450	46,2	35,5	32,5	14,9	11,0	15,5

XQ 100.136 FIBRAIN DATA Quick F/FTP Cat. 6 450 MHz drum 500 m jacket LSZH blue colour

XQ 100.137 drum 1000 m.

Category 6 cabling
F/FTP DUPLEX LSZH coating



Cable 450 MHz DUPLEX LSZH sheath
F/FTP Category 6

FIBRAIN DATA Structural Cabling Quick System, fully satisfies the requirements of cat. 6 (class E) in accordance with standard ISO/IEC 11801 2nd edition: 2002. Also all components of the transmission line complete ROHS 2002/95/WE Directive.

Electrical and constructional parameters:		
Parameter:		
Impedance 10 to 450 MHz (Ω)		100±5
Nominal velocity of propagation NVP (% speed of light)		74
Attenuation:		
Value for:	-30 - 100 MHz	>80 dB
	100 - 1000 MHz	80-20log(f/100)
Reflection loss (RL) dB (min)		
Value for:	1.0 - 10 MHz	20+5 log(f)
	10 - 20 MHz	25
	20 - 100 MHz	25-7 log(f/20)
Propagation Delay (max) (ns/100 m)		470
Delay skew (max) (ns/100 m)		<25
Dielectric strength during 1 minute (V c.c.)		1000
Insulation strength (MOhm/km)		>5000
Nominal/maximum operating voltage (V)		125/200
Maximum operating current (A)		0,25
DC resistance in C.C (Ohm/k)		164

Construction:
- Conductor - 23 AWG (0,574 mm)
- Insulation: polyolefine
- Number of wires: 2x4 pairs twisted together
- Blue jacket LSZH according to IEC 60322-1
- Shield: aluminum foil/ polyester around each pair
- Shield: aluminum foil/ polyester around all pairs
- Grounding: cooper, galvanized drainage wire ϕ 0,4 mm

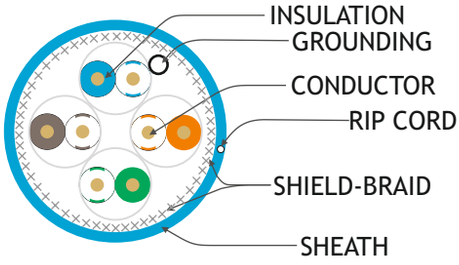
Application:
- Supports full and half duplex application
- Digital and analogue video transmission
- 16 Mbps Token Ring
- 100 Mbps TP-PMOD
- 100 BASE-T (IEEE 802.3)
- 1000 BASE-T (Gigabit Ethernet)
- 155/622 Mbps ATM
- 1.2 Gbps ATM

Norms:
- IEC 60332-1, UNE-EN 50265-2-1
- LSZH: UNE-EN 50268-1
- UNE-EN 50267-2-1, UNE-EN 50266-2-4
- ANSI/TIA/EIA 568-B.2-1 (Cat.6)
- ISO/IEC 11801 : 2002, EN 50173 : 2002

Cable marking:
Below information is printed on each meter of the cable:
- **Supplier**: FIBRAIN DATA
- **Cable Type**: 2xF/FTP 8PR23AWG CAT.6 450 MHz
- **Jacket type**: LSZH
- **Norms**: IEC 61156—5 ISO/IEC 11801 EN 50173
- **Year of production**: XXXX
- **ID number**: XXXX
- **Length marking in meters**

Frequency MHz:	Attenuation Max dB/100 m:	NEXT	PS-NEXT	ACR-F	PS-ACR-F	Return Loss
		dB/100 m(min):				
1	2,0	75,3	72,3	68,0	65,0	20,0
10	5,9	60,3	57,3	48,0	45,0	25,0
16	7,4	57,2	54,2	43,9	40,9	25,0
31,25	10,4	52,9	49,9	38,1	35,1	23,6
62,5	14,8	48,4	45,4	32,1	29,1	21,5
100	19,0	45,3	42,3	28,0	25,0	20,1
155	24,0	42,4	39,4	24,2	21,2	18,8
250	31,0	39,3	36,3	20,0	17,0	17,3
300	34,2	38,1	35,1	18,5	15,5	16,8
500	50,1	34,8	32,8	14,0	11,0	15,2

XQ 102.137 FIBRAIN DATA Quick 2x F/FTP Cat.6 450 MHz drum 1000 m jacket LSZH blue colour



Cable 450 MHz FR-LSZH sheath
S/FTP Category 6

FIBRAIN DATA Structural Cabling Quick System, fully satisfies the requirements of cat. 6 (class E) in accordance with standard ISO/IEC 11801 2nd edition: 2002. Also all components of the transmission line complete ROHS 2002/95/WE Directive.

Electrical and constructional parameters:		
Parameter:		
Impedance 10 to 450 MHz (Ω)		100±5
Nominal velocity of propagation NVP (% speed of light)		78
Attenuation:		
Value for:	-30 - 100 MHz	>80 dB
	100 - 1000 MHz	80-20log(f/100)
Reflection loss (RL) dB (min)		
Value for:	1.0 - 10 MHz	20+5 log(f)
	10 - 20 MHz	25
	20 - 100 MHz	25-7 log(f/20)
Propagation Delay (max) (ns/100 m)		470
Delay skew (max) (ns/100 m)		25
Dielectric strength during 1 minute (V c.c.)		700
Insulation strength (MOhm/km)		>5000
Nominal/maximum operating voltage (V)		125/200
Maximum operating current (A)		0,25
DC resistance in C.C (Ohm/k)		164

Construction:
- Conductor - 23 AWG (0,574 mm)
- Insulation: polyolefine
- Number of wires: 4 pairs twisted together
- Blue jacket FR-LSZH according to IEC 60322-1
- Shield: aluminum foil/ polyester around each pair
- Shield: shield-braid around all pairs
- Grounding: cooper, galvanized drainage wire ϕ 0,4 mm

Application:
- Supports full and half duplex application
- Digital and analogue video transmission
- 16 Mbps Token Ring
- 100 Mbps TP-PMOD
- 100 BASE-T (IEEE 802.3)
- 1000 BASE-T (Gigabit Ethernet)
- 155/622 Mbps ATM
- 1.2 Gbps ATM

Norms:
- IEC 60332-1, UNE-EN 50265-2-1
- LSZH: UNE-EN 50268-1
- UNE-EN 50267-2-1, UNE-EN 50266-2-4
- ANSI/TIA/EIA 568-B.2-1 (Cat.6)
- ISO/IEC 11801 : 2002, EN 50173 : 2002

Cable marking:
Below information is printed on each meter of the cable:
- **Supplier:** FIBRAIN DATA
- **Cable Type:** S/FTP 4PR 23AWG CAT.6 450 MHz
- **Jacket type:** FR-LSZH
- **Norms:** IEC 61156—5 ISO/IEC 11801 EN 50173
- **Year of production:** XXXX
- **ID number:** XXXX
- **Length marking in meters**

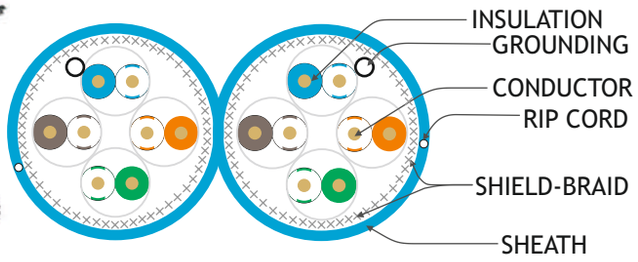
Frequency MHz:	Attenuation Max dB/100 m:		NEXT		PS-NEXT		ACR-F		PS-ACR-F		Return Loss	
			Typical Value | Cat. 6									
1	2,0	2,8	90,0	72,3	93,0	75,3	93,0	68,0	90,0	65,0	22,0	20,0
4	3,7	3,8	85,0	63,3	88,0	66,3	93,0	56,0	90,0	53,0	25,0	23,0
10	5,7	6,0	85,0	57,3	88,0	60,4	83,0	48,0	80,0	45,0	28,0	25,0
20	8,1	8,5	85,0	52,8	88,0	55,8	83,0	42,0	80,0	39,0	28,0	25,0
30	10,0	10,5	85,0	50,1	88,0	53,1	73,0	38,5	70,0	35,5	27,0	23,8
100	19,0	19,9	80,0	42,3	83,0	45,3	66,0	28,0	63,0	25,0	24,0	21,1
150	23,6	24,9	80,0	39,7	83,0	42,7	63,0	24,5	60,0	21,5	22,0	18,8
200	27,7	29,1	80,0	37,8	83,0	40,8	61,0	22,0	58,0	19,0	21,0	18,0
250	31,4	33,0	77,0	36,3	80,0	39,3	58,0	20,0	55,0	17,0	20,0	17,3
300	34,8	N/A	77,0	N/A	80,0	N/A	55,0	N/A	52,0	N/A	19,0	17,3
400	41,0	N/A	38,1	N/A	75,0	N/A	52,0	N/A	49,0	N/A	19,0	17,3
500	46,7	N/A	35,5	N/A	75,0	N/A	50,0	N/A	47,0	N/A	19,0	17,3

XQ100.146 FIBRAIN DATA Quick S/FTP Cat.6 450 MHz 500 m drum FR-LSZH jacket blue colour

XQ100.147 drum 1000 m.

Category 6 cabling
S/FTP DUPLEX FR-LSZH coating

01



Cable 450 MHz DUPLEX FR-LSZH sheath
S/FTP Category 6

FIBRAIN DATA Structural Cabling Quick System, fully satisfies the requirements of cat. 6 (class E) in accordance with standard ISO/IEC 11801 2nd edition: 2002. Also all components of the transmission line complete ROHS 2002/95/WE Directive.

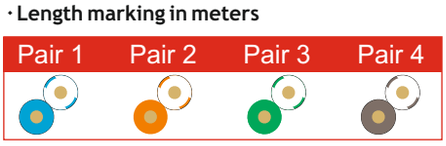
Electrical and constructional parameters:		
Parameter:		
Impedance 10 to 450 MHz (Ω)		100±5
Nominal velocity of propagation NVP (% speed of light)		78
Attenuation:		
Value for:	-30 - 100 MHz	>80 dB
	100 - 1000 MHz	80-20log(f/100)
Reflection loss (RL) dB (min)		
Value for:	1.0 - 10 MHz	20+5 log(f)
	10 - 20 MHz	25
	20 - 100 MHz	25-7 log(f/20)
Propagation Delay (max) (ns/100 m)		470
Delay skew (max) (ns/100 m)		25
Dielectric strength during 1 minute (V c.c.)		700
Insulation strength (MOhm/km)		>5000
Nominal/maximum operating voltage (V)		125/200
Maximum operating current (A)		0,25
DC resistance in C.C (Ohm/k)		164

Construction:
- Conductor - 23 AWG (0,574 mm)
- Insulation: polyolefine
- Number of wires: 2x4 pairs twisted together
- Blue jacket FR-LSZH according to IEC 60322-1
- Shield: aluminum foil/ polyester around each pair
- Shield: shield-braid around all pairs
- Grounding: cooper, galvanized drainage wire ф 0,4 mm

Application:
- Supports full and half duplex application
- Digital and analogue video transmission
- 16 Mbps Token Ring
- 100 Mbps TP-PMOD
- 100 BASE-T (IEEE 802.3)
- 1000 BASE-T (Gigabit Ethernet)
- 155/622 Mbps ATM
- 1.2 Gbps ATM

Norms:
- IEC 60332-1, UNE-EN 50265-2-1
- LSZH: UNE-EN 50268-1
- UNE-EN 50267-2-1, UNE-EN 50266-2-4
- ANSI/TIA/EIA 568-B.2-1 (Cat.6)
- ISO/IEC 11801 : 2002, EN 50173 : 2002

Cable marking:
Below information is printed on each meter of the cable:
- **Supplier**: FIBRAIN DATA
- **Cable Type**: 2xS/FTP 8PR 23AWG CAT.6 450 MHz
- **Jacket type**: FR-LSZH
- **Norms**: IEC 61156—5 ISO/IEC 11801 EN 50173
- **Year of production**: XXXX
- **ID number**: XXXX
- **Length marking in meters**



Częstotliwość MHz:	Tłumienie Max dB/100 m:		NEXT		PS-NEXT		ACR-F		PS-ACR-F		Return Loss	
	Typical Value | Cat. 6											
1	2,0	2,8	90,0	72,3	93,0	75,3	93,0	68,0	90,0	65,0	22,0	20,0
4	3,7	3,8	85,0	63,3	88,0	66,3	93,0	56,0	90,0	53,0	25,0	23,0
10	5,7	6,0	85,0	57,3	88,0	60,4	83,0	48,0	80,0	45,0	28,0	25,0
20	8,1	8,5	85,0	52,8	88,0	55,8	83,0	42,0	80,0	39,0	28,0	25,0
30	10,0	10,5	85,0	50,1	88,0	53,1	73,0	38,5	70,0	35,5	27,0	23,8
100	19,0	19,9	80,0	42,3	83,0	45,3	66,0	28,0	63,0	25,0	24,0	21,1
150	23,6	24,9	80,0	39,7	83,0	42,7	63,0	24,5	60,0	21,5	22,0	18,8
200	27,7	29,1	80,0	37,8	83,0	40,8	61,0	22,0	58,0	19,0	21,0	18,0
250	31,4	33,0	77,0	36,3	80,0	39,3	58,0	20,0	55,0	17,0	20,0	17,3
300	34,8	N/A	77,0	N/A	80,0	N/A	55,0	N/A	52,0	N/A	19,0	17,3
400	41,0	N/A	38,1	N/A	75,0	N/A	52,0	N/A	49,0	N/A	19,0	17,3
500	46,7	N/A	35,5	N/A	75,0	N/A	50,0	N/A	47,0	N/A	19,0	17,3

XQ102.147 FIBRAIN DATA Quick 2xS/FTP Cat.6 450 MHz 1000 m drum FR-LSZH jacket blue colour

XQ102.147 bęben 1000 m.

Patchpanel 0,5U Quick 6 XQ 100.205

UTP 24 ports patchpanel

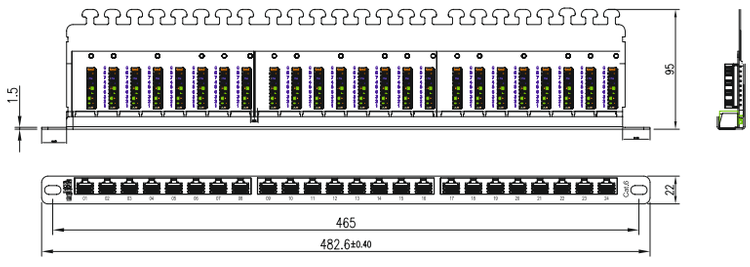
FIBRAIN DATA Structural Cabling Quick Series, fully satisfies the requirements of cat. 6 250MHz (class E) in accordance with standards ANSI/TIA/EIA 568-B.2 (cat.6), ISO/IEC 11801: 2002, EN 50173: 2002, EN 50173-1: 2004, IEC 60603-7-5.

Also all components of the transmission line complete ROHS 2002/95/WE Directive.

Components of Quick series are characterized by high quality of transmission and mechanical parameters. They often exceed requirements of valid standards. Fully provide 250 MHz (Class E) transmission.

FIBRAIN DATA Unshielded patchpanels Quick series fully comply with requirements of cat. 6 (Class E) and perform transmission of 250 MHz. They are equipped with angled connectors IDC-LSA which ensure ease and rapidity of assembly. Additionally has shelf in L-shape design which allows to make easy changes, extension, reconfiguration. Easy access to IDC connectors allows maintenance and changes in connections.

What is more, each port as well as patchpanel has their own numbering. Standard 19 ".



Characteristics:

- Height: 0,5U, 19"
- Depth: 95 mm
- 8 pins IDC connectors
- Made of powder printed sheet, black colour RAL 9005
- Easy cable assembling, cable shelf
- Clear port and panels numbering

Electric parameters:

- **Insulation resistance:** 500 MOhms min
- **Contacts resistance:** 10 MOhms max
- **DC resistance:** 0,1 Ohms max
- **According to norm:** IEC 60603-7 Class E
- **According to norm:** TIA 568-B Cat.6

Mechanical parameters:

- **Frame:** steel plate 1,5 mm
- **Jack:** unshielded RJ45 cat.6
- **Housing:** thermoplastic material UL 94V-0, black colour
- **Contacts material:** bronze phosphoric
- **Contacts: OD:** 0,48 mm, covered with 50 µm of gold and 100 µm of nickel
- **Contacts durability:** >750 connection cycles according to norm: EN 60603-7
- **IDC connectors:** slotted angled connectors IDC LSA
- **Wire diameter:** 0,4- 0,65 mm (AWG 26-22)
- **IDC durability:** >200 connection cycles
- **Coupler material:** bronze phosphoric
- **Coupler covering:** 1,27 µm silver and 2,5 µm nickel
- **Braiding identification:** T568A and T568B

XQ100.205

Example: XQ100.205 patchpanel Fibrain DATA Quick series act 6 UTP 24 ports

Cat. 6 Patchpanel
FTP/STP 24 ports

Patchpanel 0,5U Quick 6 XQ 100.255
FTP/STP 24 ports patchpanels

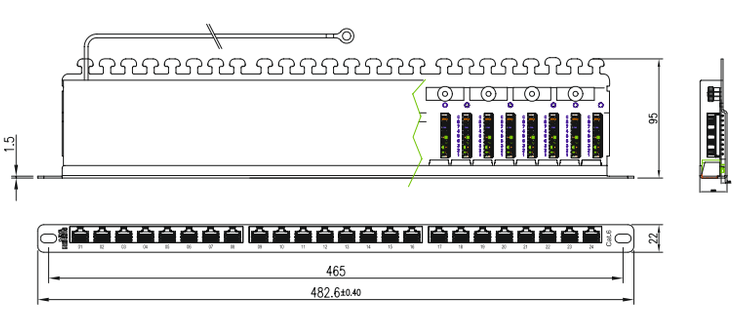
FIBRAIN DATA Structural Cabling Quick Series, fully satisfies the requirements of cat. 6 250MHz (class E) in accordance with standards ANSI/TIA/EIA 568-B.2 (cat.6), ISO/IEC 11801: 2002, EN 50173: 2002, EN 50173-1: 2004, IEC 60603-7-5.

Also all components of the transmission line complete ROHS 2002/95/WE Directive.

Components of Quick version are characterized by high quality of transmission and mechanical parameters. They often exceed requirements of valid standards. Fully provide 250 MHz (Class E) transmission.

FIBRAIN DATA Shielded patchpanels Quick series fully comply with requirements of cat. 6 (Class E) and perform transmission of 250 MHz. Are equipped with specific 9 pins angled connectors IDC-LSA which ensure ease and rapidity of assembly and additionally connection with grounding. Such an assembly provides very high transmission performance as well as resistance to interference. Patchpanels are also design in L-shape having a shelf which allows to make easy changes, extension and reconfiguration. Easy access to IDC connectors allows maintenance and changes in connections.

Furthermore each port and panel, is numbered. Standard height 19".



XQ100.255

Example: XQ100.255 patchpanel Fibrain DATA Quick series 6 STP 24 ports

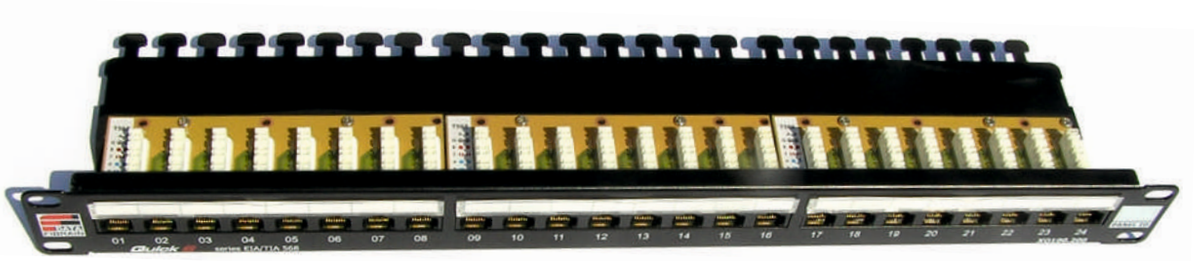
Characteristics:
- Height: 0,5U, 19"
- Depth: 95 mm
- 9 pins IDC connectors
- Shielded cover connected with grounding spot
- Easy cable assembling, cable shelf
- Clear port and panels numbering

Electric parameters:

Insulation resistance:	500 MOhms min
Contacts resistance:	10 MOhms max
DC resistance:	0.1 Ohms max
According to norm:	IEC 60603-7 Class E
According to norm:	TIA568-B Cat.6
Shield impedance:	100 MHz 2000 MOhms max

Mechanical parameters:
- **Frame:** steel plate 1,5 mm
- **Screen:** shielded cover made from galvanized steel 1,0 mm
- **Jack:** shielded RJ45 cat.6
- **Housing:** thermoplastic material UL 94V-0, black colour
- **Contacts material:** bronze phosphoric
- **Contacts:** OD: 0,48 mm, covered with 50 µm of gold and 100 µm of nickel
- **Contacts durability:** >750 connection cycles according to norm: EN 60603-7
- **IDC connectors:** slotted angled connectors IDC LSA
- **Wire diameter:** 0,4- 0,65 mm (AWG 26-22)
- **IDC durability:** >200 connection cycles
- **Coupler material:** bronze phosphoric
- **Coupler covering:** 1,27 µm silver and 2,5 µm nickel
- **Braiding identification:** T568A and T568B

Cat. 6 Patchpanel
UTP 24 ports



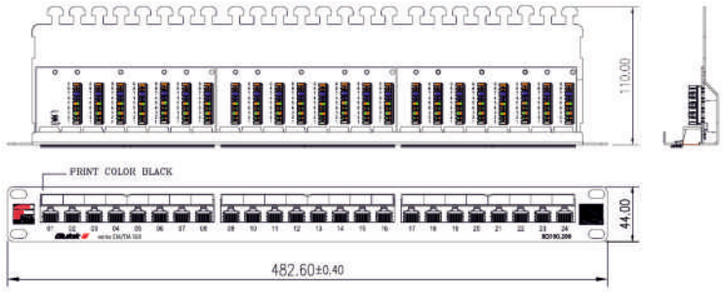
Patchpanel 1U Quick 6 XQ 100.200
UTP 24 ports patchpanel

Quick 6

FIBRAIN DATA Structural Cabling Quick Series, fully satisfies the requirements of cat. 6 250 MHz (class E) in accordance with standards ANSI/TIA/EIA 568-B.2 (cat.6), ISO/IEC 11801: 2002, EN 50173: 2002, EN 50173-1: 2004, IEC 60603-7-5.

Also all components of the transmission line complete ROHS 2002/95/WE Directive.
Components of Quick series are characterized by high quality of transmission and mechanical parameters. They often exceed requirements of valid standards. Fully provide 250 MHz (Class E) transmission.
FIBRAIN DATA Unshielded patchpanels Quick series fully comply with requirements of cat. 6 (Class E) and perform transmission of 250 MHz. Are equipped with angled connectors IDC-LSA which ensure ease and rapidity of assembly. Additionally design in L shape having a shelf which allows to make easy changes, extension, reconfiguration. Easy access to connectors allows maintenance and changes in connections. Crossing field has a place for marking labels, which enable aesthetic and multiple connection description.

Furthermore, each port and patchpanel has their own numbering. Each set contains descriptive labels and cable bands. Standard height 19".



Characteristics:
- Height: 1U, 19"
- Depth: 110 mm
- 8 pins IDC connectors
- Made of powder printed sheet, black colour RAL 9005
- Easy cable assembling, cable shelf
- Description field with replaceable, pre-printed descriptive labels
- Clear port and panels numbering

Electric parameters:

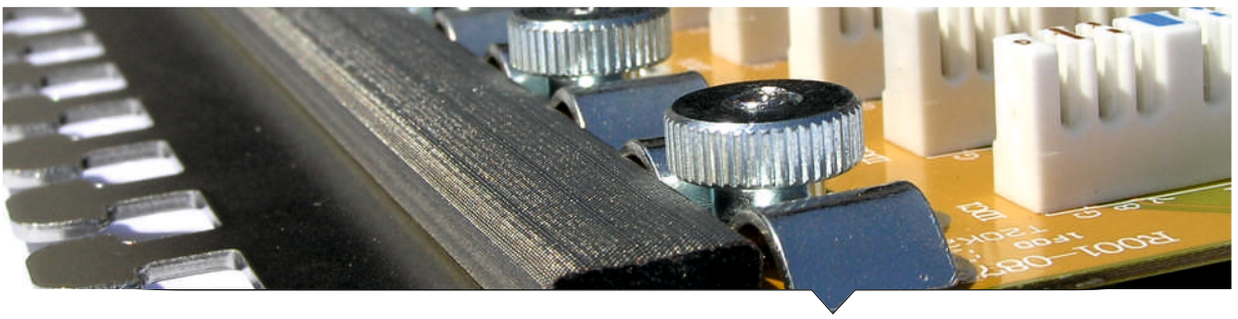
Insulation resistance:	500 MOhms min
Contacts resistance:	10 MOhms max
DC resistance:	0,1 Ohms max
According to norm:	IEC 60603-7 Class E
According to norm:	TIA568-B Cat.6

Mechanical parameters:
- **Frame:** steel plate 1,5 mm
- **Jack:** unshielded RJ45 cat.6
- **Housing:** thermoplastic material UL 94V-0, black colour
- **Contacts material:** bronze phosphoric
- **Contacts:** OD: 0,48 mm, covered with 50 µm of gold and 100 µm of nickel
- **Contacts durability:** >750 connection cycles according to norm: EN 60603-7
- **IDC connectors:** slotted angled connectors IDC LSA
- **Wire diameter:** 0,4- 0,65 mm (AWG 26-22)
- **IDC durability:** >200 connection cycles
- **Coupler material:** bronze phosphoric
- **Coupler covering:** 1,27 µm silver and 2,5 µm nickel
- **Braiding identification:** T568A and T568B

XQ100.200

Example: XQ100.200 patchpanel Fibrain DATA Quick series UTP 24 ports

Cat. 6 Patchpanel
FTP/STP 24 ports



Patchpanel 1U Quick 6 XQ 100.250
FTP/STP 24 ports patchpanels

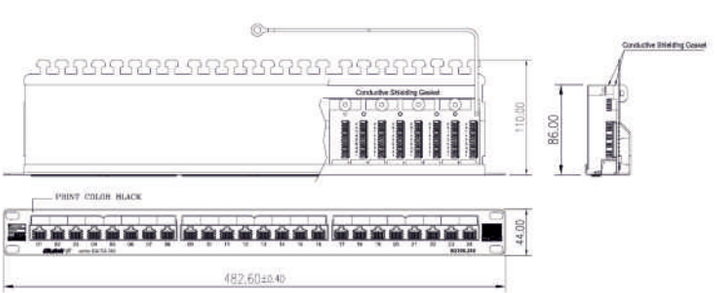
FIBRAIN DATA Structural Cabling Quick Series, fully satisfies the requirements of cat. 6 250 MHz (class E) in accordance with standards ANSI/TIA/EIA 568-B.2 (cat.6), ISO/IEC 11801: 2002, EN 50173: 2002, EN 50173-1: 2004, IEC 60603-7-5.

Also all components of the transmission line complete ROHS 2002/95/WE Directive.

Components of Quick version are characterized by high quality of transmission and mechanical parameters. They often exceed requirements of valid standards. Fully provide 250 MHz (Class E) transmission.

FIBRAIN DATA Shielded patchpanels Quick series fully comply with requirements of cat. 6 (Class E) and perform transmission of 250 MHz. Are equipped with specific 9 pins angled connectors IDC-LSA which ensure ease and rapidity of assembly and additionally connection with grounding. Such an assembly provides very high transmission performance as well as resistance to interference. Patchpanels are also design in L shape having a shelf which allows to make easy changes, extension and reconfiguration. Easy access to IDC connectors allows maintenance and changes in connections. Crossing field has a place for marking labels, which enable aesthetic and multiple connection description.

Furthermore each port and panel, is numbered. Standard height 19". The set consists of pre-printed descriptive labels as well as cable clamps.



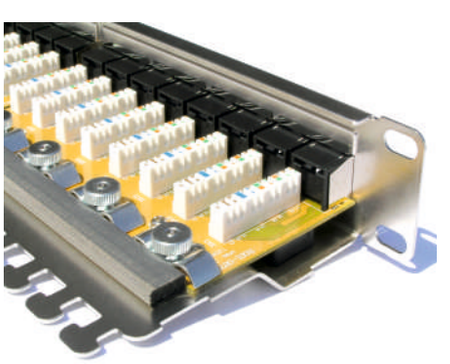
XQ100.250

Example: XQ100.250 patchpanel Fibrain DATA Quick series 6 STP 24 ports

Characteristics:
- High: 1U, 19"
- Depth: 110 mm
- 9 pins IDC connectors
- Shielded cover connected with grounding spot
- Made of powder printed sheet, black colour RAL 9005
- Easy cable assembling, cable shelf
- Description field with replaceable, pre-printed descriptive labels
- Clear port and panels numbering

Electric parameters:

Insulation resistance:	500 MOhms min
Contacts resistance:	10 MOhms max
DC resistance:	0,1 Ohms max
According to norm:	IEC 60603-7 Class E
According to norm:	TIA568-B Cat.6
Shield impedance:	100 MHz 2000 MOhms max



Mechanical parameters:
- **Frame:** steel plate 1,5 mm
- **Screen:** shielded cover made from galvanized steel 1,5 mm
- **Jack:** shielded RJ45 cat.6
- **Housing:** thermoplastic material UL 94V-0, black colour
- **Contacts material:** bronze phosphoric
- **Contacts:** OD: 0,48 mm, covered with 50 µm of gold and 100 µm of nickel
- **Contacts durability:** >750 connection cycles according to norm: EN 60603-7
- **IDC connectors:** slotted angled connectors IDC LSA
- **Wire diameter:** 0,4- 0,65 mm (AWG 26-22)
- **IDC durability:** >200 connection cycles
- **Coupler material:** bronze phosphoric
- **Coupler covering:** 1,27 µm silver and 2,5 µm nickel
- **Braiding identification:** T568A and T568B

Keystone XQ 100.400
Category 6 UTP

Quick 6

FIBRAIN DATA Structural Cabling Quick Series, fully satisfies the requirements of cat. 6 250MHz (class E) in accordance with standards ANSI/TIA/EIA 568-B.2 (cat.6), ISO/IEC 11801: 2002, EN 50173: 2002, EN 50173-1: 2004, IEC 60603-7-4.

Also all components of the transmission line complete ROHS 2002/95/WE Directive.

Components of Quick series are characterized by high quality of transmission and mechanical parameters. They often exceed requirements of valid standards. Fully provide 250 MHz (Class E) transmission.

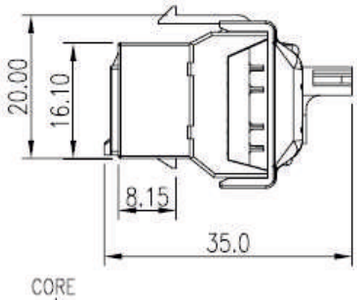
FIBRAIN DATA Unshielded keystones Quick series, fully comply with requirements of cat. 6 (Class E) and perform transmission of 250 MHz. Tool-less cable termination method has been used. Specific design affects performance parameters. Minimizes wires unbraiding while termination and significantly accelerates mounting time. Special designed housing shape fully protects cable wires against un-authorised pulling out. Double colouring system enables wires configuration in sequences 568A and 568B. Through appropriate selection of material and contacts' shape keystone modules are characterized by fully resistance to connection RJ-11 and RJ-12 plugs. RJ-45 port is equipped with individual, automatic anti-dust cover. Keystones can be used in straight and angled adaptors.

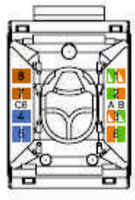
Characteristics:
- Tool-less mounting
- Housing which minimizes wires un-braiding
- Non-flammable materials UL-94V-0
- Anti-dust cover
- Sequences identification: 568A and 568B

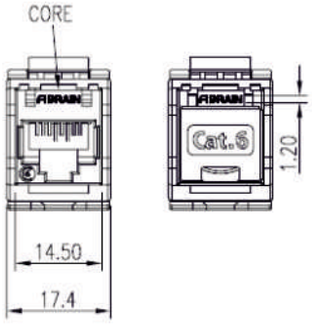
Electric parameters:

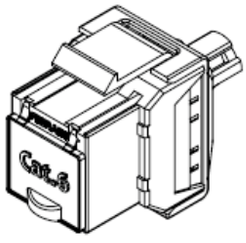
Maximum current value:	1,5 A
Insulation resistance:	500 MOhm min
Contacts resistance:	20 MOhm max
DC resistance:	0,1 Ohm max
According to norm:	IEC 60603-7 Class E
According to norm:	TIA568-B Cat.6

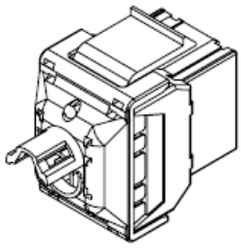
Mechanical parameters:
- **Jack:** shielded RJ45 cat.6
- **Frame:** UL 94V-0
- **Contacts material:** bronze phosphoric
- **Contacts:** OD: 0,46 mm, covered with 50 µm of gold and 100 µm of nickel
- **Contacts durability:** >750 connection cycles according to norm: EN 60603-7
- **IDC connectors:** tool-less IDC
- **Wire diameter:** 0,4- 0,65 mm (AWG 26-22)
- **IDC durability:** >200 connection cycles
- **Coupler material:** bronze phosphoric
- **Coupler covering:** 1,27 µm silver and 2,5 µm nickel
- **Braiding identification:** T568A and T568B







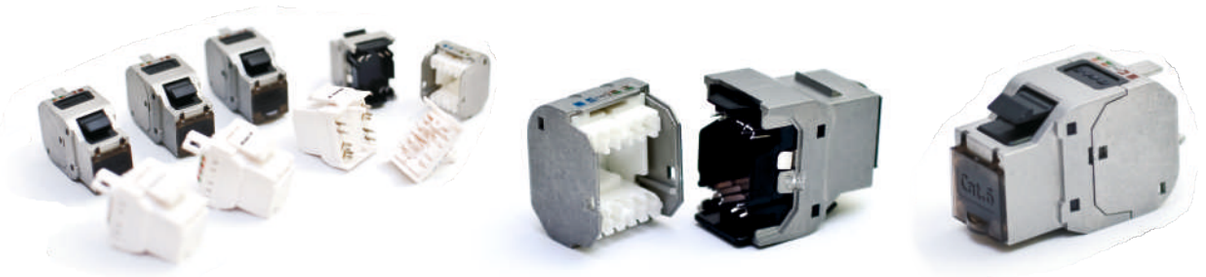




XQ100.400

Example: XQ100.400 keystone Fibrain DATA Cat 6 UTP

Cat. 6 Keystone
FTP



Keystone XQ 100.450
Category 6 FTP

Quick 6

FIBRAIN DATA Structural Cabling Quick Series, fully satisfies the requirements of cat. 6 250MHz (class E) in accordance with standards ANSI/TIA/EIA 568-B.2-1 (cat.6), ISO/IEC 11801: 2002, EN 50173: 2002, EN 50173-1: 2004, IEC 60603-7-4.

Also all components of the transmission line complete ROHS 2002/95/WE Directive.

Components of Quick series are characterized by high quality of transmission and mechanical parameters. They often exceed requirements of valid standards. Components fully provide 250 MHz (Class E) transmission.

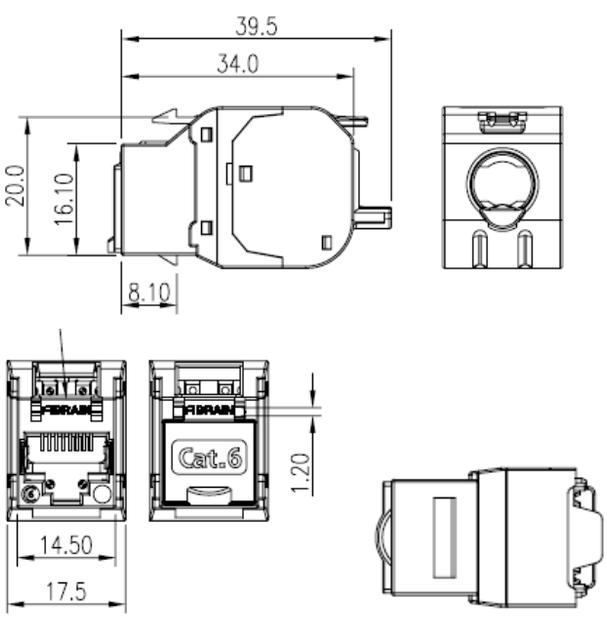
FIBRAIN DATA Screened keystones Quick series, fully comply with requirements of cat. 6 (Class E) and perform transmission of 250 MHz. Tool-less cable termination method has been used. Specific design affects performance parameters. Minimizes wires unbraiding while termination and significantly accelerates mounting time. Special designed housing shape fully protects cable wires against un-authorised pulling out. Double colouring system enables wires configuration in sequences 568A and 568B. Through appropriate selection of material and contacts' shape, keystone modules are characterized by fully resistance to connection RJ-11 and RJ-12 plugs. RJ-45 port is equipped with individual, automatic anti-dust cover. Keystones can be used in straight and angled adaptors.

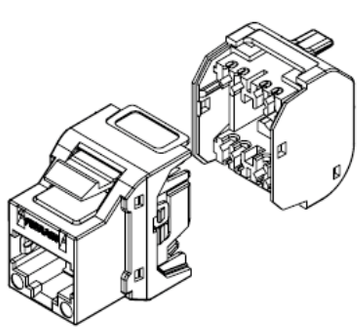
Characteristics:
- Tool-less mounting
- Housing which minimizes wires un-braiding
- Non-flammable materials UL-94V-0
- Anti-dust cover
- Sequences identification: 568A and 568B

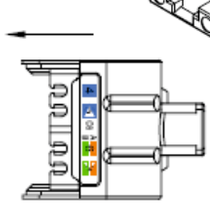
Electric Parameters:

Maximum current value:	1,5 A
Insulation resistance:	500 MOhm min
Contacts resistance:	10 MOhm max
DC resistance:	0,1 Ohm max
According to norm:	IEC 60603-7 Class E
According to norm:	TIA568-B Cat.6

Mechanical Parameters:
- **Jack:** shielded RJ45 cat.6
- **Frame:** UL 94V-0
- **Contacts material:** bronze phosphoric
- **Contacts:** OD: 0,46 mm, covered with 50 µm of gold and 100 µm of nickel
- **Contacts durability:** >750 connection cycles according to norm: EN 60603-7
- **IDC connectors:** tool-less IDC
- **Wire diameter:** 0,4- 0,65 mm (AWG 26-22)
- **IDC durability:** >200 connection cycles
- **Coupler material:** bronze phosphoric
- **Coupler covering:** 1,27 µm silver, 2,5 µm nickel
- **Braiding identification:** T568A and T568B







XQ100.450

Example: XQ100.450 keystone Fibrain DATA Cat 6 FTP

Patchcord
Category 6 UTP

Quick 6

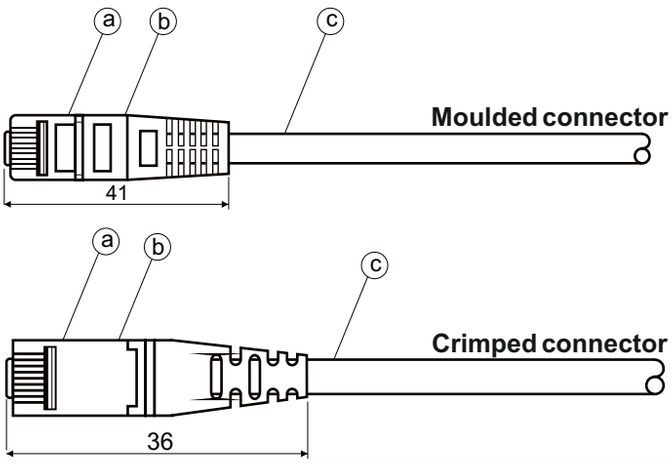
FIBRAIN DATA Structural Cabling Quick Series, fully satisfies the requirements of cat. 6 250 MHz (class E) in accordance with standard ANSI/TIA/EIA 568-B.2-1 (cat.6), ISO/IEC 11801: 2002, EN 50173: 2002, EN 50173-1: 2004, IEC 60603-7-4.

Also all components of the transmission line complete ROHS 2002/95/WE Directive.

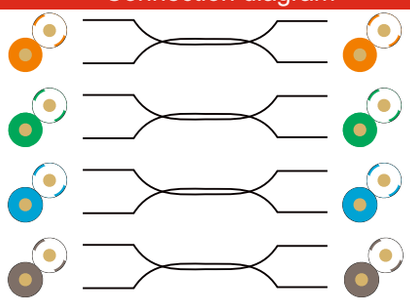
Components of Quick series are characterized by high quality of transmission and mechanical parameters. They often exceed requirements of valid standards. Components fully provide 250 MHz (Class E) transmission.

Application:
- Supports full and half duplex application
- Digital and analogue video transmission
- 100 Mbps TP-PMOD
- 100 BASE-T (IEEE 802.3)
- 1000 BASE-T (Gigabit Ethernet)
- 155/622 Mbps ATM
- 1.2 Gbps ATM

Norms:
- IEC 60332-1, PN-EN 50265-2-1
- LSZH: PN-EN 50268-1
- PN-EN 50267-2-1, PN-EN 50266-2-4
- ANSI/TIA/EIA 568-B.2-1 (Cat.6)
- ISO/IEC 11801 : 2002, EN 50173 : 2002



Connection diagram



Parametry Constructional parameters:

Parameter:			
Connector type (a)			
	for:	moulded	Rj45, unshielded, 1:1 acc. TIA/EIA 568B
		crimped	Rj45, unshielded, Steward SS39100-007 1:1 acc. TIA EIA 568B
Cover type (b)			
	for:	moulded	PVC 75A, length printed on cover
		crimped	PVC 75A, length printed on cover
Cable type (c)			
	for:	moulded	U/UTP AWG 24 PVC
		crimped	U/UTP AWG 26/27 LSZH

Reference: XQ **2** **0** **0** . **0** **00**

Product type:
2 - patchcord

Shield type:
0 - U/UTP

Colour:
0 - grey
1 - blue
2 - green
3 - red
4 - yellow

Termination type:
0 - mould
1 - crimped

Length:
00 - 0,5 meter
01 - 1 meter
02 - 2 meters
03 - 3 meters
05 - 5 meters
07 - 7 meters
10 - 10 meters
15 - 15 meters
20 - 20 meters
25 - 25 meters
30 - 30 meters

Patchcord
FTP

Patchcord
Category 6 FTP

Quick 6

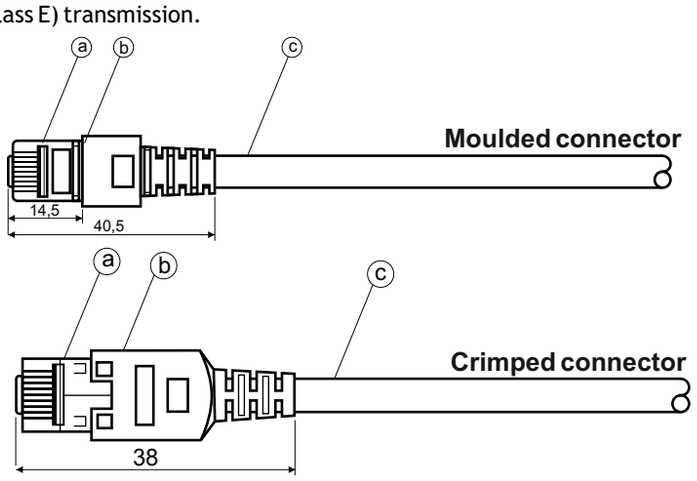
FIBRAIN DATA Structural Cabling Quick Series, fully satisfies the requirements of cat. 6 250 MHz (class E) in accordance with standards: ANSI/TIA/EIA 568-B.2-1 (cat.6), ISO/IEC 11801: 2002, EN 50173: 2002, EN 50173-1: 2004, IEC 60603-7-4.

Also all components of the transmission line complete ROHS 2002/95/WE Directive.

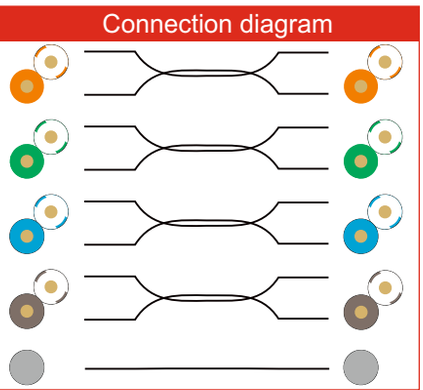
Components of Quick series are characterized by high quality of transmission and mechanical parameters. They often exceed requirements of valid standards. Components fully provide 250 MHz (Class E) transmission.

Application:
- Supports full and half duplex application
- Digital and analogue video transmission
- 100 Mbps TP-PMOD
- 100 BASE-T (IEEE 802.3)
- 1000 BASE-T (Gigabit Ethernet)
- 155/622 Mbps ATM
- 1.2 Gbps ATM

Norms:
- IEC 60332-1, PN-EN 50265-2-1
- LSZH: PN-EN 50268-1
- PN-EN 50267-2-1, PN-EN 50266-2-4
- ANSI/TIA/EIA 568-B.2-1 (Cat.6)
- ISO/IEC 11801 : 2002, EN 50173 : 2002



Connection diagram



Constructional parameters:

Parameter:			
Connector type (a)			
	for:	moulded	Rj45, shielded, 1:1 acc. TIA/EIA 568B
		crimped	Rj45, shielded, Hirose LSOH TM11, 1:1 acc. TIA EIA 568B
Cover type (b)			
	for:	moulded	PVC 75A, length printed on cover
		crimped	PVC 75A, length printed on cover
Cable type (c)			
	for:	moulded	S/FTP AWG 27/7 LSZH
		crimped	S/FTP AWG 27/7 LSZH

Reference: XQ

2	0	0 .	0	00
Product type: 2 - patchcord	**Shield type:** 2 - S/FTP	**Colour:** 0 - grey 1 - blue 2 - green 3 - red 4 - yellow	**Termination type:** 0 - moulded 1 - crimped	**Length:** 00 - 0,5 meter 01 - 1 meter 02 - 2 meters 03 - 3 meters 05 - 5 meters 07 - 7 meters 10 - 10 meters 15 - 15 meters 20 - 20 meters 25 - 25 meters 30 - 30 meters

01

Category 6A cabling

Category 6A cabling

Category review

Rapid 6a

FIBRAIN DATA Structural Cabling Rapid Series fully satisfies the requirements of cat. 6A (class EA) in accordance with standards ISO/IEC 11801 2nd Ed. Am. 1, ANSI/TIA/EIA 568-B-2.1 as well as EN 50173-1: 2002 Am.1. Moreover all components of the transmission line complete ROHS 2002/95/WE Directive.

Recently introduced category provides a bandwidth of 500 MHz frequency. Full transmission track enable 10GBase-T implementation and also multimedia solution. This category is still under development (ANSI/TIA/EIA continues to develop guidelines relating with components). Systems are usually based on shielded solutions.

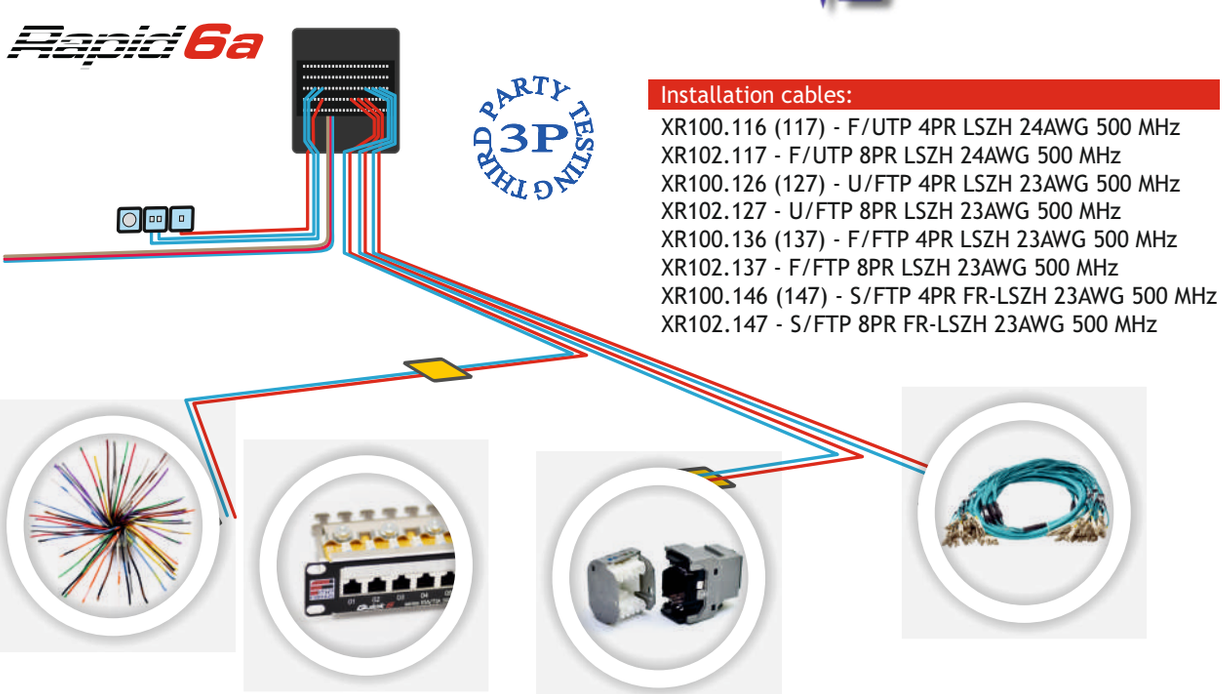
Application:

- Supports full and half duplex application
- Digital and analogue video transmission
- 100 Mbps TP-PMOD
- 100 BASE-T (IEEE 802.3)
- 1000 BASE-T (Gigabit Ethernet)
- 155/622 Mbps ATM
- 1,2 Gbps ATM
- 10G BASE-T(10 Gigabit Ethernet)

Komponenty

Permanent Link

Channel



Installation cables:

XR100.116 (117) - F/UTP 4PR LSZH 24AWG 500 MHz
XR102.117 - F/UTP 8PR LSZH 24AWG 500 MHz
XR100.126 (127) - U/FTP 4PR LSZH 23AWG 500 MHz
XR102.127 - U/FTP 8PR LSZH 23AWG 500 MHz
XR100.136 (137) - F/FTP 4PR LSZH 23AWG 500 MHz
XR102.137 - F/FTP 8PR LSZH 23AWG 500 MHz
XR100.146 (147) - S/FTP 4PR FR-LSZH 23AWG 500 MHz
XR102.147 - S/FTP 8PR FR-LSZH 23AWG 500 MHz

Patchpanels- un-equipped

XR100.216 - 1U 16xRJ45 (keystone)
XR100.224 - 1U 24xRJ45 (keystone)
XR100.232 - 1U 32xRJ45 (keystone)
XR100.248 - 1U 48xRJ45 (keystone)
XR100.250 - 1U 24xRJ45 FTP
XR100.255 - 0,5U 24xRJ45 FTP
XR101.224 - 1U 24xRJ45 Premium (keystone)

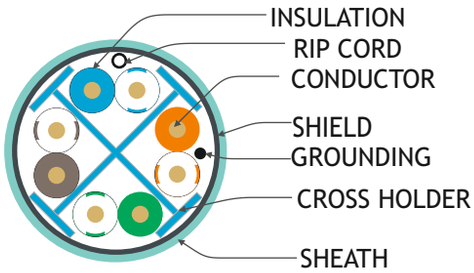
Keystones

XR100.450 - RJ45 FTP

Patchcords

XR22K.1XX - S/FTP zaciskane

Category 6A cabling
F/UTP LSZH coating



Rapid 6a

Cable 500 MHz LSZH sheath
F/UTP Category 6A

Structural Cabling FIBRAIN DATA Rapid Series, fully satisfies the requirements of cat. 6A (class EA) in accordance with standards ISO/IEC 11801 2nd Ed. Am. 1, ANSI/TIA/EIA 568-B-2.1 as well as EN 50173-1: 2002 Am.1. Moreover all components of the transmission line complete ROHS 2002/95/WE Directive.

Electrical and constructional parameters:		
Parameter:		
Impedance 10 to 500 MHz (Ohm)		100±5
Nominal velocity of propagation NVP (% speed of light)		72
Attenuation:		
Value for:	-30 - 100 MHz	>55 dB
	100 - 1000 MHz	55-20log(f/100)
Delay skew (max) (ns/100 m)		<25
Dielectric strength during 1 minute (V c.c.)		1500
Insulation strength (MOhm/km)		>5000
Nominal/maximum operating voltage (V)		125/200
Maximum operating current (A)		0,25
DC resistance in C.C (Ohm/k)		164
Diameter (mm)		7,1
Weight (kg/km)		52
Flame resistance		NFC 32070 C2
Temperature while installation (°C)		-5/+50
Temperature while operation (°C)		-20/+60

Construction:
- Conductor – 24 AWG (0,51 mm)
- Insulation: polyolefine
- Number of wires: 4 pairs twisted together
- Turquoise jacket LSZH according to IEC 60322-1
- Shield: aluminum foil/polyester around all pairs
- Grounding: cooper, galvanized drainage wire ϕ 0,4 mm

Application:
- Supports full and half duplex application
- Digital and analogue video transmission
- 100 Mbps TP-PMOD
- 100 BASE-T (IEEE 802.3)
- 1000 BASE-T (Gigabit Ethernet)
- 155/622 Mbps ATM
- 1.2 Gbps ATM
- 10G BASE-T(10 Gigabit Ethernet)

Norms:
- IEC 60332-1, UNE-EN 50265-2-1
- LSZH: UNE-EN 50268-1
- UNE-EN 50267-2-1, UNE-EN 50266-2-4
- ANSI/TIA/EIA 568-B-2.1 (Cat. 6A)
- ISO/IEC 11801 : 2002, EN 50173 : 2002

Cable marking:
Below information is printed on each meter of the cable:
- **Supplier:** FIBRAIN DATA
- **Cable Type:** F/UTP 4PR24AWG CAT.6A 500 MHz
- **Jacket type:** LSZH
- **Norms:** IEC 61156—5 ISO/IEC 11801 EN 50173
- **Year of production:** XXXX
- **ID number:** XXXX
- **Length marking in meters**

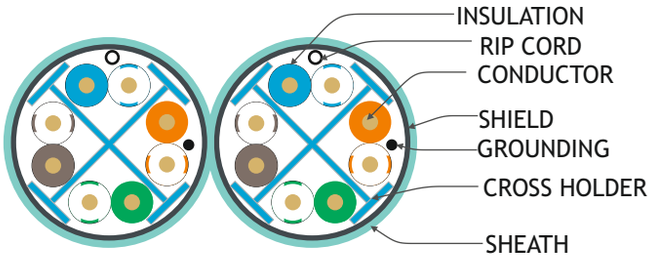
Frequency MHz:	Attenuation Max dB/100 m:	NEXT	PS-NEXT	ACR-F	PS-ACR-F	Return Loss
		dB/100 m(min):				
1	2	75,3	72,3	68,0	65,0	20,0
10	5,9	60,3	57,3	48,0	45,0	25,0
16	7,4	57,3	54,2	43,9	40,9	25,0
31,25	10,4	52,9	49,9	38,1	35,1	23,6
62,5	14,8	48,4	45,4	32,1	29,1	21,5
100	19,0	45,3	42,3	28,0	25,0	20,1
155	24,0	42,4	39,4	24,2	21,2	18,8
250	31,0	39,3	36,3	20,0	17,0	17,3
300	34,2	38,1	35,1	18,5	15,5	16,8
500	50,1	34,8	32,8	14,0	11,0	15,2

XR 100.116 FIBRAIN DATA Rapid F/UTP Cat. 6A 500 MHz drum 500 m jacket LSZH turquoise colour

XQ 100.117 drum 1000 m.

Category 6A cabling
F/UTP DUPLEX LSZH coating

Rapid 6a



Cable 500 MHz DUPLEX LSZH sheath
F/UTP Category 6A

Structural Cabling FIBRAIN DATA Rapid Series, fully satisfies the requirements of cat. 6A (class EA) in accordance with standards ISO/IEC 11801 2nd Ed. Am. 1, ANSI/TIA/EIA 568-B-2.1 as well as EN 50173-1: 2002 Am.1. Moreover all components of the transmission line complete ROHS 2002/95/WE Directive.

Electrical and constructional parameters:		
Parameter:		
Impedance od 10 to 500 MHz (Ohm)		100±5
Nominal velocity of propagation NVP (% speed of light)		72
Attenuation:		
Value for:	-30 - 100 MHz	>55 dB
	100 - 1000 MHz	55-20log(f/100)
Delay skew (max) (ns/100 m)		<25
Dielectric strength during 1 minute (V c.c.)		1500
Insulation strength (MOhm/km)		>5000
Nominal/maximum operating voltage (V)		125/200
Maximum operating current (A)		0,25
DC resistance in C.C (Ohm/k)		164
Diameter (mm)		7,1x15,1
Weight (kg/km)		100
Flame resistance		NFC 32070 C2
Temperature while installation (°C)		-5/+50
Temperature while operation (°C)		-20/+60

Construction:
- Conductor – 24 AWG (0,51 mm)
- Insulation: polyolefine
- Number of wires: 4 pairs twisted together
- Turquoise jacket LSZH according to IEC 60322-1
- Shield: aluminum foil/polyester around all pairs
- Grounding: cooper, galvanized wire drainage ϕ 0,4 mm

Application
- Supports full and half duplex application
- Digital and analogue video transmission
- 100 Mbps TP-PMOD
- 100 BASE-T (IEEE 802.3)
- 1000 BASE-T (Gigabit Ethernet)
- 155/622 Mbps ATM
- 1.2 Gbps ATM
- 10G BASE-T(10 Gigabit Ethernet)

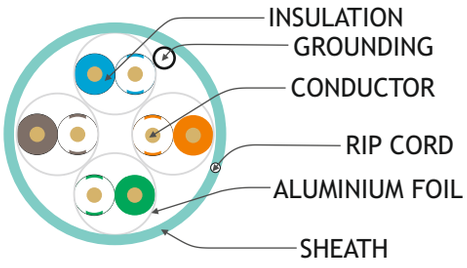
Norms:
- IEC 60332-1, UNE-EN 50265-2-1
- LSZH: UNE-EN 50268-1
- UNE-EN 50267-2-1, UNE-EN 50266-2-4
- ANSI/TIA/EIA 568-B-2.1 (Cat. 6A)
- ISO/IEC 11801 : 2002, EN 50173 : 2002

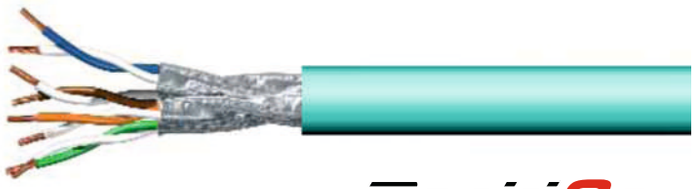
Cable marking:
Below information is printed on each meter of the cable:
- **Supplier:** FIBRAIN DATA
- **Cable Type:** 2xF/UTP 8PR24AWG CAT.6A 500 MHz
- **Jacket type:** LSZH
- **Norms:** IEC 61156—5 ISO/IEC 11801 EN 50173
- **Year of production:** XXXX
- **ID number:** XXXX
- **Length marking in meters**

Frequency Mhz:	Attenuation Max dB/100 m:	NEXT	PS-NEXT	ACR-F	PS-ACR-F	Return Loss
		dB/100 m(min):				
1	2	75,3	72,3	68,0	65,0	20,0
10	5,9	60,3	57,3	48,0	45,0	25,0
16	7,4	57,3	54,2	43,9	40,9	25,0
31,25	10,4	52,9	49,9	38,1	35,1	23,6
62,5	14,8	48,4	45,4	32,1	29,1	21,5
100	19,0	45,3	42,3	28,0	25,0	20,1
155	24,0	42,4	39,4	24,2	21,2	18,8
250	31,0	39,3	36,3	20,0	17,0	17,3
300	34,2	38,1	35,1	18,5	15,5	16,8
500	50,1	34,8	32,8	14,0	11,0	15,2

XR 102.117 FIBRAIN DATA Rapid 2xF/UTP Cat. 6A 500 MHz drum 1000 m jacket LSZH turquoise colour

Category 6A cabling
U/FTP LSZH coating





Rapid 6a

Cable 500 MHz LSZH sheath
U/FTP Category 6A

Structural Cabling FIBRAIN DATA Rapid Series, fully satisfies the requirements of cat. 6A (class EA) in accordance with standards ISO/IEC 11801 2nd Ed. Am. 1, ANSI/TIA/EIA 568-B-2.1 as well as EN 50173-1: 2002 Am.1. Moreover all components of the transmission line complete ROHS 2002/95/WE Directive.

Electrical and constructional parameters:		
Parameter:		
Impedance 10 to 500 MHz (Ohm)		100±5
Nominal velocity of propagation NVP (% speed of light)		74
Attenuation:		
Value for:	-30 - 100 MHz	>55 dB
	100 - 1000 MHz	55-20log(f/100)
Delay skew (max) (ns/100 m)		<25
Dielectric strength during 1 minute (V c.c.)		1000
Insulation strength (MOhm/km)		>5000
Nominal/maximum operating voltage (V)		125/200
Maximum operating current (A)		0,25
DC resistance in C.C (Ohm/k)		164
Diameter (mm)		7,9
Weight (kg/km)		60
Flame resistance		NFC 32070 C2
Temperature while installation (°C)		-10/+50
Temperature while operation (°C)		0/+50

Construction:
- Conductor – 23 AWG (0,574 mm)
- Insulation: polyolefine
- Number of wires: 4 pairs twisted together
- Turquoise jacket LSZH according to IEC 60322-1
- Shield: aluminum foil/polyester around all pairs
- Grounding: cooper, galvanized wire drainage ϕ 0,4 mm

Application:
- Supports full and half duplex application
- Digital and analogue video transmission
- 100 Mbps TP-PMOD
- 100 BASE-T (IEEE 802.3)
- 1000 BASE-T (Gigabit Ethernet)
- 155/622 Mbps ATM
- 1.2 Gbps ATM
- 10G BASE-T(10 Gigabit Ethernet)

Norms:
- IEC 60332-1, UNE-EN 50265-2-1
- LSZH: UNE-EN 50268-1
- UNE-EN 50267-2-1, UNE-EN 50266-2-4
- ANSI/TIA/EIA 568-B-2.1 (Cat. 6A)
- ISO/IEC 11801 : 2002, EN 50173 : 2002

Cable marking:
Below information is printed on each meter of the cable:
- **Supplier:** FIBRAIN DATA
- **Cable Type:** U/FTP 4PR 23AWG CAT.6A 500 MHz
- **Jacket type:** LSZH
- **Norms:** IEC 61156—5 ISO/IEC 11801 EN 50173
- **Year of production:** XXXX
- **ID number:** XXXX
- **Length marking in meters**

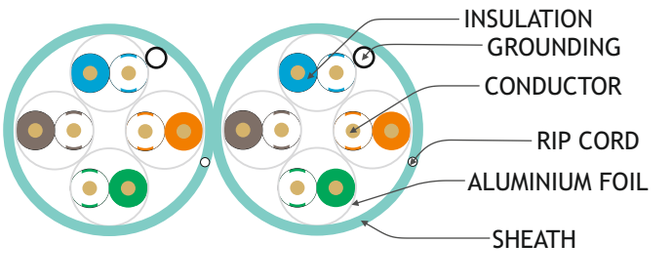
Frequency Mhz:	Attenuation Max dB/100 m:	NEXT	PS-NEXT	ACR-F	PS-ACR-F	Return Loss
		dB/100 m(min):				
1	2	75,3	72,3	68,0	65,0	20,0
10	5,9	60,3	57,3	48,0	45,0	25,0
16	7,4	57,3	54,2	43,9	40,9	25,0
31,25	10,4	52,9	49,9	38,1	35,1	23,6
62,5	14,8	48,4	45,4	32,1	29,1	21,5
100	19,0	45,3	42,3	28,0	25,0	20,1
155	24,0	42,4	39,4	24,2	21,2	18,8
250	31,0	39,3	36,3	20,0	17,0	17,3
300	34,2	38,1	35,1	18,5	15,5	16,8
500	50,1	34,8	32,8	14,0	11,0	15,2

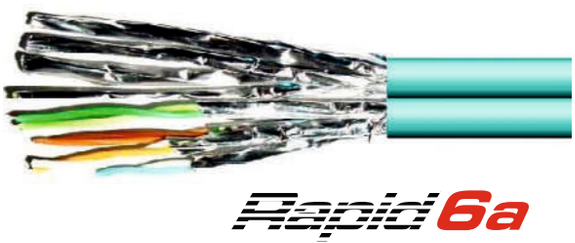
XR 100.126 FIBRAIN DATA Rapid U/FTP Cat. 6A 500 MHz drum 500 m jacket LSZH turquoise colour

XR 100.127 drum 1000 m.

Category 6A cabling
U/FTP DUPLEX LSZH system

01





Cable 500 MHz DUPLEX LSZH sheath
U/FTP Category 6A

Structural Cabling FIBRAIN DATA Rapid Series, fully satisfies the requirements of cat. 6A (class EA) in accordance with sandards ISO/IEC 11801 2nd Ed. Am. 1, ANSI/TIA/EIA 568-B-2.1 as well as EN 50173-1: 2002 Am.1. Moreover all components of the transmission line complete ROHS 2002/95/WE Directive.

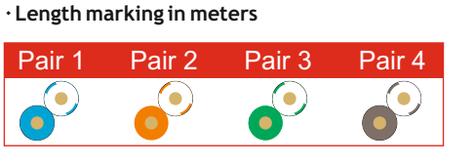
Electrical and constructional parameters:		
Parameter:		
Impedance 10 to 500 MHz (Ohm)		100±5
Nominal velocity of propagation NVP (% speed of light)		74
Attenuation:		
Value for:	-30 - 100 MHz	>55 dB
	100 - 1000 MHz	55-20log(f/100)
Delay skew (max) (ns/100 m)		<25
Dielectric strength during 1 minute (V c.c.)		1000
Insulation strength (MOhm.km)		>5000
Nominal/maximum operating voltage (V)		125/200
Maximum operating current (A)		0,25
DC resistance in C.C (Ohm/k)		164
Diameter (mm)		7,9x15,9
Weight (kg/km)		110
Flame resistance		NFC 32070 C2
Temperature while installation (°C)		-10/+50
Temperature while operation (°C)		0/+50

Construction:
- Conductor – 23 AWG (0,574 mm)
- Insulation: polyolefine
- Number of wires: 2x 4 pairs twisted together
- Turquoise jacket LSZH according to IEC 60322-1
- Shield: aluminum foil/polyester around each pair
- Grounding: cooper, galvanized wire drainage ϕ 0,4 mm

Application:
- Supports full and half duplex application
- Digital and analogue video transmission
- 100 Mbps TP-PMOD
- 100 BASE-T (IEEE 802.3)
- 1000 BASE-T (Gigabit Ethernet)
- 155/622 Mbps ATM
- 1.2 Gbps ATM
- 10G BASE-T(10 Gigabit Ethernet)

Norms:
- IEC 60332-1, UNE-EN 50265-2-1
- LSZH: UNE-EN 50268-1
- UNE-EN 50267-2-1, UNE-EN 50266-2-4
- ANSI/TIA/EIA 568-B-2.1 (Cat. 6A)
- ISO/IEC 11801 : 2002, EN 50173 : 2002

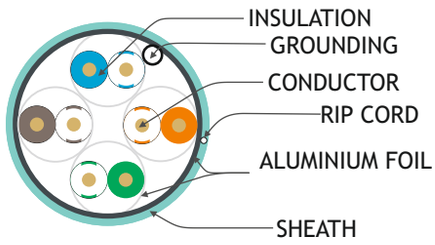
Cable marking:
Below information is printed on each meter of the cable:
- **Supplier:** FIBRAIN DATA
- **Cable Type:** 2x U/FTP 8PR23AWG CAT.6A 500 MHz
- **Jacket type:** LSZH
- **Norms:** IEC 61156—5 ISO/IEC 11801 EN 50173
- **Year of production:** XXXX
- **ID number:** XXXX
- **Length marking in meters**



Frequency Mhz:	Attenuation Max dB/100 m:	NEXT	PS-NEXT	ACR-F	PS-ACR-F	Return Loss
		dB/100 m(min):				
1	2	75,3	72,3	68,0	65,0	20,0
10	5,9	60,3	57,3	48,0	45,0	25,0
16	7,4	57,3	54,2	43,9	40,9	25,0
31,25	10,4	52,9	49,9	38,1	35,1	23,6
62,5	14,8	48,4	45,4	32,1	29,1	21,5
100	19,0	45,3	42,3	28,0	25,0	20,1
155	24,0	42,4	39,4	24,2	21,2	18,8
250	31,0	39,3	36,3	20,0	17,0	17,3
300	34,2	38,1	35,1	18,5	15,5	16,8
500	50,1	34,8	32,8	14,0	11,0	15,2

XR 102.127 FIBRAIN DATA Rapid 2x U/FTP Cat. 6A 500 MHz drum 1000 m jacket LSZH turquoise colour

Rapid 6a



Cable 500 MHz LSZH sheath
F/FTP Category 6A

Structural Cabling FIBRAIN DATA Rapid Series, fully satisfies the requirements of cat. 6A (class EA) in accordance with standards ISO/IEC 11801 2nd Ed. Am. 1, ANSI/TIA/EIA 568-B-2.1 as well as EN 50173-1: 2002 Am.1. Moreover all components of the transmission line complete ROHS 2002/95/WE Directive.

Electrical and constructional parameters:		
Parameter:		
Impedance 10 to 500 MHz (Ohm)		100±5
Nominal velocity of propagation NVP (% speed of light)		74
Attenuation:		
Value for:	-30 - 100 MHz	>80 dB
	100 - 1000 MHz	80-20log(f/100)
Delay skew (max) (ns/100 m)		<25
Dielectric strength during 1 minute (V c.c.)		1000
Insulation strength (MOhm/km)		>5000
Nominal/maximum operating voltage (V)		125/200
Maximum operating current (A)		0,25
DC resistance in C.C (Ohm/k)		164
Diameter (mm)		7,9
Weight (kg/km)		60
Flame resistance		NFC 32070 C2
Temperature while installation (°C)		-10/+50
Temperature while operation (°C)		0/+50

Construction:
- Conductor – 23 AWG (0,574 mm)
- Insulation: polyolefine
- Number of wires: 4 pairs twisted together
- Turquoise jacket LSZH according to IEC 60322-1
- Shield: aluminum foil/polyester around each pair
- Shield: aluminum foil/polyester around all pairs

Application:
- Supports full and half duplex application
- Digital and analogue video transmission
- 100 Mbps TP-PMOD
- 100 BASE-T (IEEE 802.3)
- 1000 BASE-T (Gigabit Ethernet)
- 155/622 Mbps ATM
- 1.2 Gbps ATM
- 10G BASE-T(10 Gigabit Ethernet)

Norms:
- IEC 60332-1, UNE-EN 50265-2-1
- LSZH: UNE-EN 50268-1,
- UNE-EN 50267-2-1, UNE-EN 50266-2-4
- ANSI/TIA/EIA 568-B-2.1 (Cat. 6A)
- ISO/IEC 11801 : 2002, EN 50173 : 2002

Cable marking:
Below information is printed on each meter of the cable:
- **Supplier:** FIBRAIN DATA
- **Cable Type**: F/FTP 4PR23AWG CAT.6A 500 MHz
- **Jacket type**: LSZH
- **Norms**: IEC 61156–5 ISO/IEC 11801 EN 50173
- **Year of production:** XXXX
- **ID number**: XXXX
- **Length marking in meters**

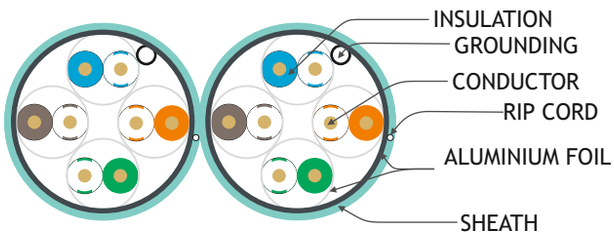
Frequency MHz:	Attenuation Max dB/100 m:	NEXT	PS-NEXT	ACR-F	PS-ACR-F	Return Loss
		dB/100 m(min):				
1	2	75,3	72,3	68,0	65,0	20,0
10	5,9	60,3	57,3	48,0	45,0	25,0
16	7,4	57,3	54,2	43,9	40,9	25,0
31,25	10,4	52,9	49,9	38,1	35,1	23,6
62,5	14,8	48,4	45,4	32,1	29,1	21,5
100	19,0	45,3	42,3	28,0	25,0	20,1
155	24,0	42,4	39,4	24,2	21,2	18,8
250	31,0	39,3	36,3	20,0	17,0	17,3
300	34,2	38,1	35,1	18,5	15,5	16,8
500	50,1	34,8	32,8	14,0	11,0	15,2

XR 100.136 FIBRAIN DATA Rapid F/FTP Cat. 6A 500 MHz drum 500 m jacket LSZH turquoise colour

XR 100.137 drum 1000 m.

Category 6A cabling
F/FTP DUPLEX LSZH coating

01



Cable 500 MHz DUPLEX LSZH sheath
F/FTP Category 6A

Structural Cabling FIBRAIN DATA Rapid Series, fully satisfies the requirements of cat. 6A (class EA) in accordance with standards ISO/IEC 11801 2nd Ed. Am. 1, ANSI/TIA/EIA 568-B-2.1 as well as EN 50173-1: 2002 Am.1. Moreover all components of the transmission line complete ROHS 2002/95/WE Directive.

Electrical and constructional parameters:		
Parameter:		
Impedance 10 to 500 MHz (Ohm)		100±5
Nominal velocity of propagation NVP (% speed of light)		74
Attenuation:		
Value for:	-30 - 100 MHz	>80 dB
	100 - 1000 MHz	80-20log(f/100)
Delay skew (max) (ns/100 m)		<25
Dielectric strength during 1 minute (V c.c.)		1000
Insulation strength (MOhm/km)		>5000
Nominal/maximum operating voltage (V)		125/200
Maximum operating current (A)		0.25
DC resistance in C.C (Ohm/k)		164
Diameter (mm)		7,9x15,9
Weight (kg/km)		115
Flame resistance		NFC 32070 C2
Temperature while installation (°C)		-10/+50
Temperature while operation (°C)		0/+50

Construction:
- Conductor – 23 AWG (0,574 mm)
- Insulation: polyolefine
- Number of wires: 2x 4 pairs twisted together
- Turquoise jacket LSZH according to IEC 60322-1
- Shield: aluminum foil/polyester around each pair
- Shield: aluminum foil/polyester around all pairs
- Grounding: cooper, galvanized wire drainage ϕ 0,4 mm

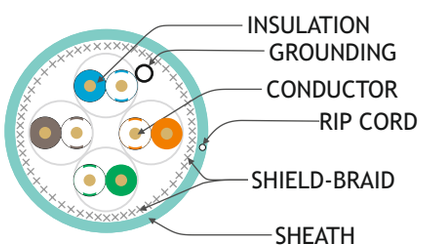
Application:
- Supports full and half duplex application
- Digital and analogue video transmission
- 100 Mbps TP-PMOD
- 100 BASE-T (IEEE 802.3)
- 1000 BASE-T (Gigabit Ethernet)
- 155/622 Mbps ATM
- 1.2 Gbps ATM
- 10G BASE-T(10 Gigabit Ethernet)

Norms:
- IEC 60332-1, UNE-EN 50265-2-1
- LSZH: UNE-EN 50268-1
- UNE-EN 50267-2-1, UNE-EN 50266-2-4
- ANSI/TIA/EIA 568-B-2.1 (Cat. 6A)
- ISO/IEC 11801 : 2002, EN 50173 : 2002

Cable marking:
Below information is printed on each meter of the cable:
- **Supplier**: FIBRAIN DATA
- **Cable Type:** 2x F/FTP 8PR23AWG CAT.6A 500 MHz
- **Jacket type**: LSZH
- **Norms:** IEC 61156—5 ISO/IEC 11801 EN 50173
- **Year of production:** XXXX
- **ID number**: XXXX
- **Length marking in meters**

Frequency Mhz:	Attenuation Max dB/100 m:	NEXT	PS-NEXT	ACR-F	PS-ACR-F	Return Loss
		dB/100 m(min):				
1	2	75,3	72,3	68,0	65,0	20,0
10	5,9	60,3	57,3	48,0	45,0	25,0
16	7,4	57,3	54,2	43,9	40,9	25,0
31,25	10,4	52,9	49,9	38,1	35,1	23,6
62,5	14,8	48,4	45,4	32,1	29,1	21,5
100	19,0	45,3	42,3	28,0	25,0	20,1
155	24,0	42,4	39,4	24,2	21,2	18,8
250	31,0	39,3	36,3	20,0	17,0	17,3
300	34,2	38,1	35,1	18,5	15,5	16,8
500	50,1	34,8	32,8	14,0	11,0	15,2

XR 102.137 FIBRAIN DATA Rapid 2x F/FTP Cat. 6A 500 MHz drum 1000 m jacket LSZH turquoise colour



Rapid 6a

Cabel 500 MHz FR-LSZH sheath

S/FTP Category 6_A

Structural Cabling FIBRAIN DATA Rapid Series, fully satisfies the requirements of cat. 6A (class EA) in accordance with standards ISO/IEC 11801 2nd Ed. Am. 1, ANSI/TIA/EIA 568-B-2.1 as well as EN 50173-1: 2002 Am.1. Moreover all components of the transmission line complete ROHS 2002/95/WE Directive.

Electrical and constructional parameters:		
Parameter:		
Impedance 10 to 500 MHz (Ohm)		100±5
Nominal velocity of propagation NVP (% speed of light)		78
Attenuation:		
Value for:	-30 - 100 MHz	>80 dB
	100 - 1000 MHz	80-20log(f/100)
Delay skew (max) (ns/100 m)		25
Dielectric strength during 1 minute (V c.c.)		700
Insulation strength (MOhm/km)		>5000
Nominal/maximum operating voltage (V)		125/200
Maximum operating current (A)		0.25
DC resistance in C.C (Ohm/k)		164
Diameter (mm)		7,5
Weight (kg/km)		61
Flame resistance		IEC 60332-1, UL 1581, UL CMX
Temperature while operation (°C)		-40/+60

Construction:

- Conductor – 23 AWG (0,574 mm)
- Insulation: polyolefine
- Number of wires: 4 pairs twisted together
- Turquoise jacket FR-LSZH according to IEC 60322-1
- Shield: aluminum foil/polyester around each pair
- Shield: shield-braid around all pairs
- Grounding: cooper, galvanized wire drainage ϕ 0,4 mm

Application:

- Supports full and half duplex application
- Digital and analogue video transmission
- 100 Mbps TP-PMOD
- 100 BASE-T (IEEE 802.3)
- 1000 BASE-T (Gigabit Ethernet)
- 155/622 Mbps ATM
- 1.2 Gbps ATM
- 10G BASE-T(10 Gigabit Ethernet)

Norms:

- IEC 60332-1, UNE-EN 50265-2-1
- LSZH: UNE-EN 50268-1
- UNE-EN 50267-2-1, UNE-EN 50266-2-4
- ANSI/TIA/EIA 568-B-2.1 (Cat. 6A)
- ISO/IEC 11801 : 2002, EN 50173 : 2002

Cable marking:

Below information is printed on each meter of the cable:

- **Supplier:** FIBRAIN DATA
- **Cable Type:** S/FTP 4PR 23AWG CAT.6_A 500 MHz
- **Jacket type:** LSZH
- **Norms:** IEC 61156—5 ISO/IEC 11801 EN 50173
- **Year of production:** XXXX
- **ID number:** XXXX
- **Length marking in meters**

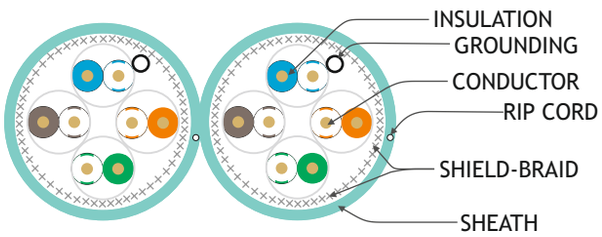
Frequency MHz:	Attenuation Max		NEXT		PS-NEXT		ACR-F		PS-ACR-F		Return Loss	
	Typical Value | Cat. 6A											
1	2,0	2,0	98,0	75,3	95,0	72,3	88,0	68,0	85,0	65,0	22,0	20,0
4	3,7	3,8	98,0	66,3	95,0	63,3	76,0	56,0	73,0	53,0	25,0	23,0
10	5,6	5,9	98,0	60,3	95,0	57,3	68,0	48,0	65,0	45,0	28,0	25,0
20	7,9	8,4	93,0	55,8	90,0	52,8	62,0	42,0	59,0	39,0	28,0	25,0
30	9,7	10,3	88,0	53,1	85,0	45,4	58,4	38,4	55,4	35,4	27,0	23,8
100	18,0	19,1	83,0	45,3	80,0	42,3	48,0	28,0	45,0	25,0	24,0	21,1
150	22,4	23,6	81,0	42,7	78,0	39,7	44,5	24,5	41,5	21,5	22,0	18,8
200	26,0	27,6	81,0	40,8	78,0	37,8	52,0	22,0	49,0	19,0	21,0	18,0
250	29,4	31,0	78,0	39,3	35,1	36,3	40,0	20,0	37,0	17,0	20,0	17,3
300	32,5	34,3	78,0	38,1	32,8	35,1	38,5	18,5	35,5	15,5	19,0	17,3
400	38,0	40,0	73,0	36,3	32,8	33,3	36,0	16,0	33,0	13,0	19,0	17,3
500	43,0	45,2	73,0	34,8	32,8	31,8	34,0	14,0	31,0	11,0	19,0	17,3
600	47,6	N/A	73,0	N/A	32,8	N/A	33,0	N/A	30,0	N/A	19,0	N/A
700	52,0	N/A	73,0	N/A	32,8	N/A	32,0	N/A	29,0	N/A	19,0	N/A

XR100.146 FIBRAIN DATA Rapid S/FTP Cat.6_A 500 MHz 500 m drum FR-LSZH sheath turquoise colour

XR100.147 drum 1000 m.

Category 6A cabling
S/FTP DUPLEX FR-LSZH coating

01



Cable 500 MHz DUPLEX FR-LSZH sheath
S/FTP Category 6_A

Structural Cabling FIBRAIN DATA Rapid Series, fully satisfies the requirements of cat. 6A (class EA) in accordance with standards ISO/IEC 11801 2nd Ed. Am. 1, ANSI/TIA/EIA 568-B-2.1 as well as EN 50173-1: 2002 Am.1. Moreover all components of the transmission line complete ROHS 2002/95/WE Directive.

Electrical and constructional parameters:		
Parameter:		
Impedance 10 to 500 MHz (Ohm)		100±5
Nominal velocity of propagation NVP (% speed of light)		78
Attenuation:		
Value for:	-30 - 100 MHz	>80 dB
	100 - 1000 MHz	80-20log(f/100)
Delay skew (max) (ns/100 m)		25
Dielectric strength during 1 minute (V c.c.)		700
Insulation strength (MOhm/km)		>5000
Nominal/maximum operating voltage (V)		125/200
Maximum operating current (A)		0.25
DC resistance in C.C (Ohm/k)		164
Diameter (mm)		7,5x15,9
Weight (kg/km)		116
Flame resistance		IEC 60332-1, UL 1581, UL CMX
Temperature while operation (°C)		-40/+60

Construction:
- Conductor - 23 AWG (0,574 mm)
- Insulation: polyolefine
- Number of wires: 2x4 pairs twisted together
- Turquoise jacket FR-LSZH according to IEC 60322-1
- Shield: aluminum foil/polyester around each pair
- Shield: shield-braid around all pairs
- Grounding: cooper, galvanized wire drainage ϕ 0,4 mm

Application:
- Supports full and half duplex application
- Digital and analogue video transmission
- 100 Mbps TP-PMOD
- 100 BASE-T (IEEE 802.3)
- 1000 BASE-T (Gigabit Ethernet)
- 155/622 Mbps ATM
- 1.2 Gbps ATM
- 10G BASE-T(10 Gigabit Ethernet)

Norms:
- IEC 60332-1, UNE-EN 50265-2-1
- LSZH: UNE-EN 50268-1
- UNE-EN 50267-2-1, UNE-EN 50266-2-4
- ANSI/TIA/EIA 568-B-2.1 (Cat. 6A)
- ISO/IEC 11801 : 2002, EN 50173 : 2002

Cable marking:
Below information is printed on each meter of the cable:
- **Supplier:** FIBRAIN DATA
- **Cable Type:** 2xS/FTP 8PR 23AWG CAT.6_A 500 MHz
- **Jacket type:** LSZH
- **Norms:** IEC 61156—5 ISO/IEC 11801 EN 50173
- **Year of production:** XXXX
- **ID number:** XXXX
- **Length marking in meters**

Frequency	Attenuation Max		NEXT		PS-NEXT		ACR-F		PS-ACR-F		Return Loss	
MHz:	dB/100m		Typical Value | Cat. 6A									
1	2,0	2,0	98,0	75,3	95,0	72,3	88,0	68,0	85,0	65,0	22,0	20,0
4	3,7	3,8	98,0	66,3	95,0	63,3	76,0	56,0	73,0	53,0	25,0	23,0
10	5,6	5,9	98,0	60,3	95,0	57,3	68,0	48,0	65,0	45,0	28,0	25,0
20	7,9	8,4	93,0	55,8	90,0	52,8	62,0	42,0	59,0	39,0	28,0	25,0
30	9,7	10,3	88,0	53,1	85,0	45,4	58,4	38,4	55,4	35,4	27,0	23,8
100	18,0	19,1	83,0	45,3	80,0	42,3	48,0	28,0	45,0	25,0	24,0	21,1
150	22,4	23,6	81,0	42,7	78,0	39,7	44,5	24,5	41,5	21,5	22,0	18,8
200	26,0	27,6	81,0	40,8	78,0	37,8	52,0	22,0	49,0	19,0	21,0	18,0
250	29,4	31,0	78,0	39,3	35,1	36,3	40,0	20,0	37,0	17,0	20,0	17,3
300	32,5	34,3	78,0	38,1	32,8	35,1	38,5	18,5	35,5	15,5	19,0	17,3
400	38,0	40,0	73,0	36,3	32,8	33,3	36,0	16,0	33,0	13,0	19,0	17,3
500	43,0	45,2	73,0	34,8	32,8	31,8	34,0	14,0	31,0	11,0	19,0	17,3
600	47,6	N/A	73,0	N/A	32,8	N/A	33,0	N/A	30,0	N/A	19,0	N/A
700	52,0	N/A	73,0	N/A	32,8	N/A	32,0	N/A	29,0	N/A	19,0	N/A

XR102.147 FIBRAIN DATA Rapid S/FTP Cat.6_A 500 MHz 1000 m drum FR-LSZH jacket turquoise colour

Cat. 6A Patchpanel
FTP/STP 24 ports

Rapid 6a

Patchpanel 0,5U Rapid 6A XR 100.255
FTP/STP 24 ports patchpanels

FIBRAIN DATA Structural Cabling Rapid Series, fully satisfies the requirements of cat. 6A (class EA) in accordance with standard ISO/IEC 11801 2nd Ed. Am. 1, ANSI/TIA/EIA 568-B-2.1 as well as EN 50173-1: 2002 Am.1. Moreover all components of the transmission line complete ROHS 2002/95/WE Directive.

Components in Rapid series are characterized by high quality of transmission and mechanical parameters, often exceeding requirements of valid standards. Components fully provide 500 MHz transmission.

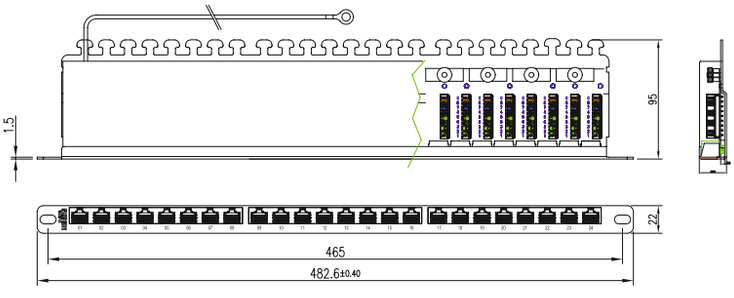
Characteristics:
- Height: 0,5U, 19"
- Depth: 95 mm
- 9 pins IDC connectors
- Shielded cover connected with grounding spot
- Easy cable assembling, cable shelf
- Clear port and panels numbering

Electric parameters:

Insulation resistance:	500 MOhms min
Contacts resistance:	10 MOhms max
DC resistance:	0.1 Ohms max
According to norm:	IEC 60603-7 Class EA
According to norm:	TIA568-B Cat.6A
Shield impedance:	100 MHz 2000 MOhms max

FIBRAIN DATA Shielded patchpanels Rapid series fully comply with requirements of cat. 6A (Class EA) and perform transmission of 500 MHz. Are equipped with specific 9 pins angled connectors IDC-LSA which ensure ease and rapidity of assembly and additionally connection with grounding. Such an assembly provides very high transmission performance as well as resistance to interference. Patchpanels are also design in L-shape having a shelf which allows to make easy changes, extension and reconfiguration. Easy access to IDC connectors allows maintenance and changes in connections.

Furthermore each port and panel, is numbered. Standard height 19".

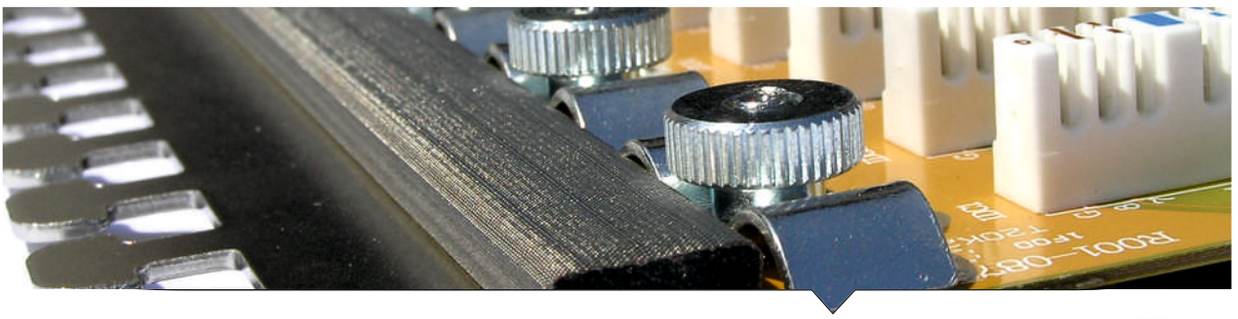


Mechanical parameters:
- **Frame:** steel plate 1,5 mm
- **Screen:** shielded cover made from galvanized steel 1,0 mm
- **Jack:** shielded RJ45 cat.6
- **Housing:** thermoplastic material UL 94V-0, black colour
- **Contacts material:** bronze phosphoric
- **Contacts:** OD: 0,48 mm, covered with 50 µm of gold and 100 µm of nickel
- **Contacts durability:** >750 connection cycles according to norm: EN 60603-7
- **IDC connectors:** slotted angled connectors IDC LSA
- **Wire diameter:** 0,4- 0,65 mm (AWG 26-22)
- **IDC durability:** >200 connection cycles
- **Coupler material:** bronze phosphoric
- **Coupler covering:** 1,27 µm silver and 2,5 µm nickel
- **Braiding identification:** T568A and T568B

XQ100.255

Example: XR100.255 patchpanel Fibrain DATA Rapid series 6A STP 24 ports

Cat. 6A Patchpanel
FTP/STP 24 ports



Patchpanel 1U Rapid 6A XR 100.250
FTP/STP 24 ports patchpanels

FIBRAIN DATA Structural Cabling Rapid Series, fully satisfies the requirements of cat. 6A (class EA) in accordance with standard ISO/IEC 11801 2nd Ed. Am. 1, ANSI/TIA/EIA 568-B-2.1 as well as EN 50173-1: 2002 Am.1. Moreover all components of the transmission line complete ROHS 2002/95/WE Directive.

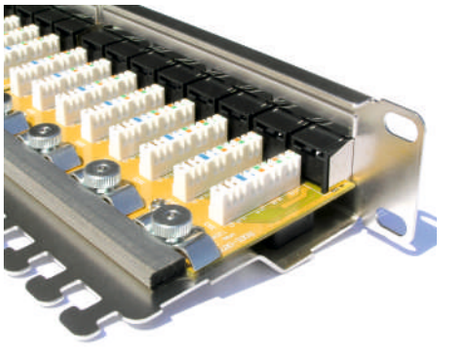
Components in Rapid series are characterized by high quality of transmission and mechanical parameters, often exceeding requirements of valid standards. Components fully provide 500 MHz transmission.

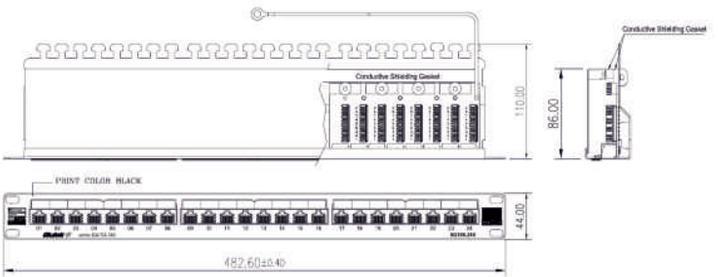
FIBRAIN DATA Shielded patchpanels Rapid series fully comply with requirements of cat. 6A (Class EA) and perform transmission of 500 MHz. Are equipped with specific 9 pins angled connectors IDC-LSA which ensure ease and rapidity of assembly and additionally connection with grounding. Such an assembly provides very high transmission performance as well as resistance to interference. Patchpanels are also design in L shape having a shelf which allows to make easy changes, extension and reconfiguration. Easy access to IDC connectors allows maintenance and changes in connections. Crossing field has a place for marking labels, which enable aesthetic and multiple connection description.

Furthermore each port and panel, is numbered. Standard height 19". The set consists of pre-printed descriptive labels as well as cable clamps.

Characteristics:
- High: 1U, 19"
- Depth: 110 mm
- 9 pins IDC connectors
- Shielded cover connected with grounding spot
- Made of powder printed sheet, black colour RAL 9005
- Easy cable assembling, cable shelf
- Description field with replaceable, pre-printed descriptive labels
- Clear port and panels numbering

Electric parameters:
- **Insulation resistance:** 500 MOhms min
- **Contacts resistance:** 10 MOhms max
- **DC resistance:** 0,1 Ohms max
- **According to norm:** IEC 60603-7 Class EA
- **According to norm:** TIA568-B Cat.6A
- **Shield impedance:** 100 MHz 2000 MOhms max

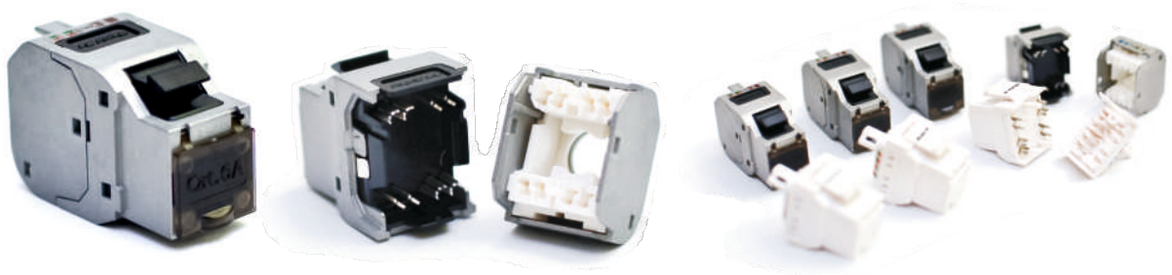




Mechanical parameters:
- **Frame:** steel plate 1,5 mm
- **Screen:** shielded cover made from galvanized steel 1,5 mm
- **Jack:** shielded RJ45 cat.6
- **Housing:** thermoplastic material UL 94V-0, black colour
- **Contacts material:** bronze phosphoric
- **Contacts:** OD: 0,48 mm, covered with 50 µm of gold and 100 µm of nickel
- **Contacts durability:** >750 connection cycles according to norm: EN 60603-7
- **IDC connectors:** slotted angled connectors IDC LSA
- **Wire diameter:** 0,4- 0,65 mm (AWG 26-22)
- **IDC durability:** >200 connection cycles
- **Coupler material:** bronze phosphoric
- **Coupler covering:** 1,27 µm silver and 2,5 µm nickel
- **Braiding identification:** T568A and T568B

XR100.250

Example: XR100.250 patchpanel Fibrain DATA Rapid series 6A STP 24 ports



Rapid 6a

Keystone XR 100.450
Category 6A FTP

FIBRAIN DATA Structural Cabling Rapid Series, fully satisfies the requirements of cat. 6A (class EA) in accordance with standard ISO/IEC 11801 2nd Ed. Am. 1, ANSI/TIA/EIA 568-B-2.1 as well as EN 50173-1: 2002 Am.1. Moreover all components of the transmission line complete ROHS 2002/95/WE Directive.

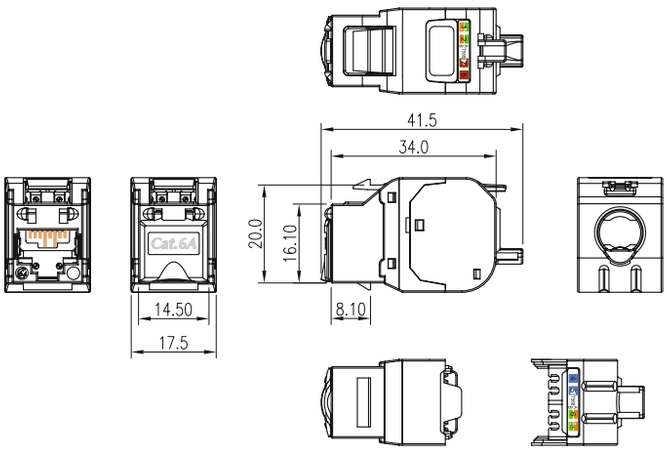
Components in Rapid series are characterized by high quality of transmission and mechanical parameters, often exceeding requirements of valid standards. Components fully provide 500 MHz transmission.

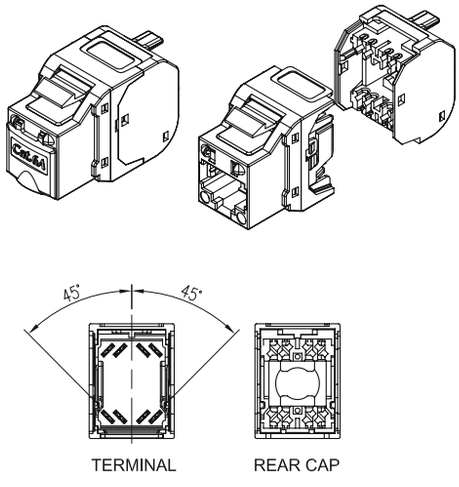
FIBRAIN DATA Shielded keystones Express series, fully comply with requirements of cat. 6A (Class EA) and perform transmission of 500 MHz. Tool-less cable termination method has been used. Specific design affects performance parameters. Minimizes wires unbraiding while termination and significantly accelerates mounting time. Special designed housing shape, fully protects cable wires against un-authorised pulling out. Double colouring system enables wires configuration in sequences 568A and 568B. Through appropriate selection of material and contacts shape, keystone modules are characterized by fully resistance to connection RJ-11 and RJ-12 plugs. RJ-45 port is equipped with individual, automatic anti-dust cover. Keystones can be used in straight and angled adaptors.

Characteristics:
- Tool-less mounting
- Housing which minimizes wires un-braiding
- Non-flammable materials UL-94V-0
- Anti-dust cover
- Sequences identification: 568A and 568B

Electric Parameters:
- **Maximum current value:** 1,5 A
- **Insulation resistance:** 500 MOhm min
- **Contacts resistance:** 20 MOhm maxDC resistance: 0,1 ohm max
- **According to norm:** ISO/IEC 11801 2nd Ed. Am. 1
- **According to norm:** ANSI/TIA/EIA 568-B-2.1

Mechanical Parameters:
- **Jack:** shielded RJ45 cat.6
- **Frame:** UL 94V-0
- **Contacts material:** bronze phosphoric
- **Contacts: OD:** 0,46 mm, covered with 50 µm of gold and 100 µm of nickel
- **Contacts durability:** >750 connection cycles
- **According to norm:** EN 60603-7
- **IDC connectors:** tool-less IDC
- **Wire diameter:** 0,4- 0,65mm (AWG 26-22)
- **IDC durability:** >200 connection cycles
- **Coupler material:** bronze phosphoric
- **Coupler covering:** 1,27 µm of silver and 2,5 µm of nickel
- **Braiding identification:** T568A and T568B





XR100.450

Example: XR100.450 keystone Fibrain DATA Cat 6A FTP

Patchcord
FTP

Patchcord
Category 6A FTP

Rapid 6a

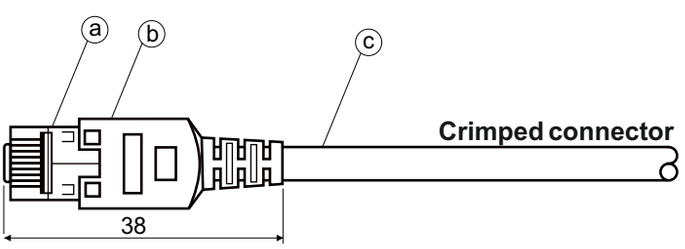
FIBRAIN DATA Structural Cabling Rapid Series, fully satisfies the requirements of cat. 6A (class EA) in accordance with standards ISO/IEC 11801 2nd Ed. Am. 1, ANSI/TIA/EIA 568-B-2.1 as well as EN 50173-1: 2002 Am.1.

Moreover all components of the transmission line complete ROHS 2002/95/WE Directive.

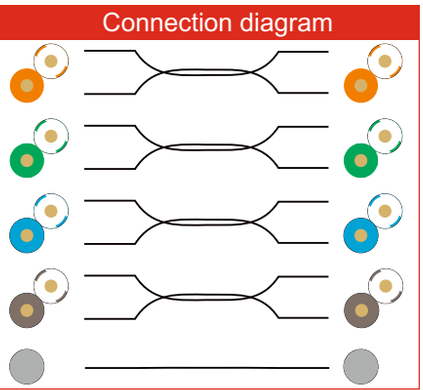
Components in Rapid series are characterized by high quality of transmission and mechanical parameters, often exceeding requirements of valid standards. Components fully provide 500 MHz transmission (Class EA).

Application:
- Supports full and half duplex application
- Digital and analogue video transmission
- 100 Mbps TP-PMOD
- 100 BASE-T (IEEE 802.3)
- 1000 BASE-T (Gigabit Ethernet)
- 155/622 Mbps ATM
- 1.2 Gbps ATM
- 10G BASE-T(10 Gigabit Ethernet)

Norms:
- IEC 60332-1, UNE-EN 50265-2-1
- LSZH: UNE-EN 50268-1
- UNE-EN 50267-2-1, UNE-EN 50266-2-4
- ANSI/TIA/EIA 568-B-2.1 (Cat. 6A)
- ISO/IEC 11801 : 2002, EN 50173 : 2002



Connection diagram



Constructional parameters:		
Parameter:		
Connector type (a)		
	crimped	Rj45, shielded, Hirose LSZH TM31, 1:1 acc. TIA EIA 568B
Cover type (b)		
	crimped	PVC 75A, length printed on cover
Cable type (c)		
	crimped	S/FTP AWG 27/7 LSZH

Reference: XR

2	2	0	.	1	00
Product type: 2 - patchcord	**Shield type:** 2 - S/FTP	**Colour:** 0 - grey 1 - blue 2 - green 3 - red 4 - yellow		**Termination type:** 1 - crimped	**Length:** 00 - 0,5 meter 01 - 1 meter 02 - 2 meters 03 - 3 meters 05 - 5 meters 07 - 7 meters 10 - 10 meters 15 - 15 meters 20 - 20 meters 25 - 25 meters 30 - 30 meters

01

Category 7, 7A, 8 cabling

Category 7, 7A cabling
Review

01

ULTRA 7
ULTRA 7A
FUTURE 8

FIBRAIN DATA Structural Cabling Ultra Series fully satisfies the requirements of cat. 7 (class F) in accordance with standard ISO/IEC 11801 2nd Ed. as well as EN 50173-1:2002, while category 7A (class FA) in accordance with norm ISO/IEC 11801 2nd Ed. Am. 2 and EN 50173-1:2002 Am. 2. Moreover all components of the transmission line complete ROHS 2002/95/WE Directive.

Structural Cabling Category 7 system uses transmission on 600 MHz level. That is why standard terminations RJ45 cannot be applied. All solutions of category 7 are based on shielded cable.

Category 7A has been implemented by ISO/IEC as class FA. Provides a bandwidth of 1000 MHz frequency. Authors' intention is to serve 40GbE protocol and 100GbE protocol in near future.

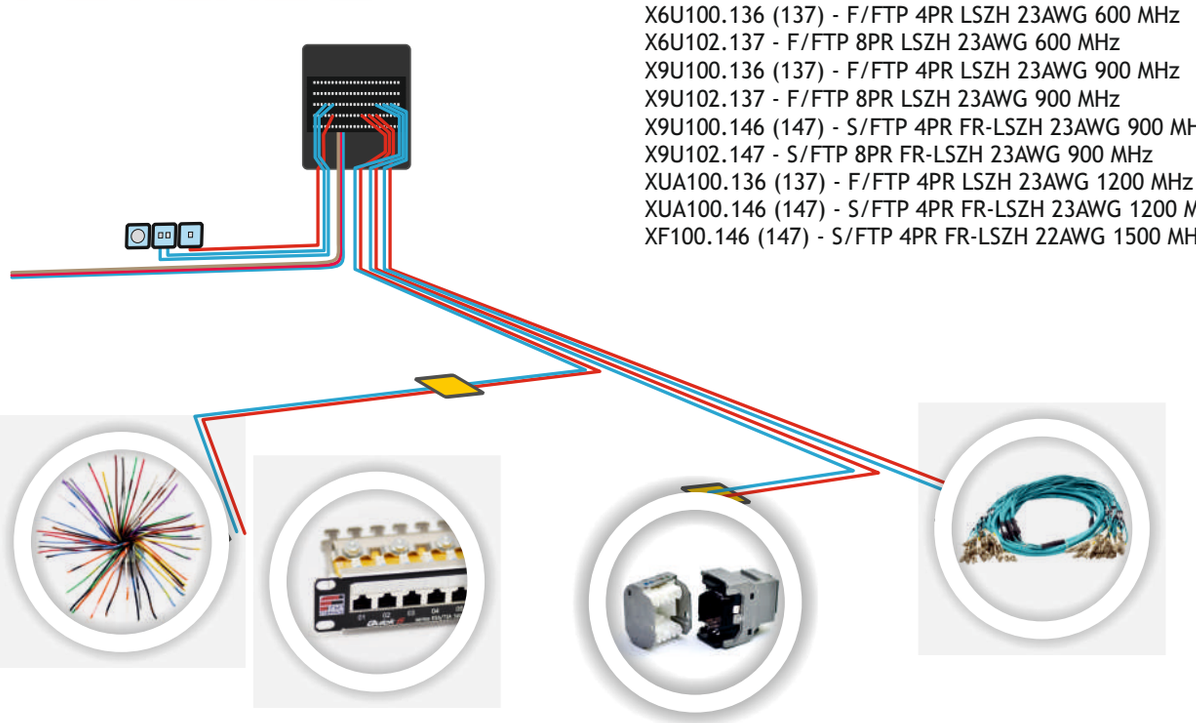
Category 8 will be implemented soon. Cable requirements are included in IEC 61156-7 norm for 1200 MHz frequency.

Application:
- Supports full and half duplex application
- Digital and analogue video transmission
- 100 BASE-T (IEEE 802.3)
- 1000 BASE-T (Gigabit Ethernet)
- 155/622 Mbps ATM
- 1.2 Gbps ATM
- 10G BASE-T(10 Gigabit Ethernet)
- Broadband CATV

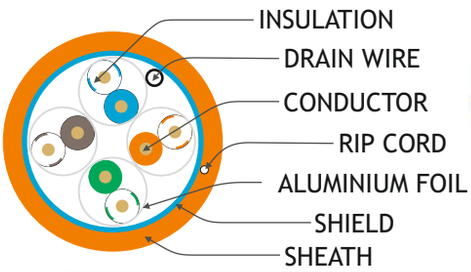
ULTRA 7
ULTRA 7A
FUTURE 8

Installation cables:

X6U100.136 (137) - F/FTP 4PR LSZH 23AWG 600 MHz
X6U102.137 - F/FTP 8PR LSZH 23AWG 600 MHz
X9U100.136 (137) - F/FTP 4PR LSZH 23AWG 900 MHz
X9U102.137 - F/FTP 8PR LSZH 23AWG 900 MHz
X9U100.146 (147) - S/FTP 4PR FR-LSZH 23AWG 900 MHz
X9U102.147 - S/FTP 8PR FR-LSZH 23AWG 900 MHz
XUA100.136 (137) - F/FTP 4PR LSZH 23AWG 1200 MHz
XUA100.146 (147) - S/FTP 4PR FR-LSZH 23AWG 1200 MHz
XF100.146 (147) - S/FTP 4PR FR-LSZH 22AWG 1500 MHz



Category 7, 7A cabling
F/FTP LSZH coating



Cable 600 MHz LSZH sheath
F/FTP Category 7

Structural Cabling FIBRAIN DATA Ultra Series, fully satisfies the requirements of ca.t 7 (class F) in accordance with standard ISO/IEC 11801 2nd Ed. as well as EN 50173-1:2002. Moreover all components of the transmission line complete ROHS 2002/95/WE Directive.

Electrical and constructional parameters:		
Parameter:		
Impedance 10 to 600 MHz (Ohm)		100±5
Nominal velocity of propagation NVP (% speed of light)		74
Attenuation:		
Value for:	-30 - 100 MHz	>80 dB
	100 - 1000 MHz	80-20log(f/100)
Delay skew (max) (ns/100 m)		<40
Dielectric strength during 1 minute (V c.c.)		1000
Insulation strength (MOhm/km)		>5000
Nominal/maximum operating voltage (V)		125/200
Maximum operating current (A)		0,25
DC resistance in C.C (Ohm/k)		164
Diameter (mm)		7,5
Weight (kg/km)		60
Flame resistance		NFC 32070 C2
Temperature while installation (°C)		-10/+50
Temperature while operation (°C)		0/+50

Construction:
- **Conductor** – 23 AWG (0,574 mm)
- **Insulation:** polyolefine
- **Number of wires:** 4 pairs twisted together
- Orange jacket LSZH according to IEC 60322-1
- **Shield:** aluminum foil/polyester around each pair
- **Shield:** aluminum foil/polyester around all pairs
- **Grounding:** cooper, galvanized drainage wire ϕ 0,4 mm

Application:
- Supports full and half duplex application
- Digital and analogue video transmission
- 100 BASE-T (IEEE 802.3)
- 1000 BASE-T (Gigabit Ethernet)
- 155/622 Mbps ATM
- 1.2 Gbps ATM
- 10G BASE-T(10 Gigabit Ethernet)
- Broadband CATV

Norms:
- IEC 60332-1, UNE-EN 50265-2-1
- LSZH: UNE-EN 50268-1
- UNE-EN 50267-2-1, UNE-EN 50266-2-4
- ISO/IEC 11801 : 2002, EN 50173 : 2002

Cable marking:
Below information is printed on each meter of the cable:
- **Supplier:** FIBRAIN DATA
- **Cable Type:** F/FTP 4PR 23AWG CAT.7 600 MHz
- **Jacket type:** LSZH
- **Norms:** IEC 61156—5 ISO/IEC 11801 EN 50173
- **Year of production:** XXXX
- **ID number:** XXXX
- **Length marking in meters**

Frequency Mhz:	Attenuation Max dB/100 m:	NEXT	PS-NEXT	ACR-F	PS-ACR-F	Return Loss
		dB/100 m(min):				
1	2,0	78,0	75,0	78,0	75,0	20,0
10	5,9	78,0	75,0	74,0	71,0	25,0
16	7,4	78,0	75,0	69,9	66,9	25,0
31,25	10,4	78,0	75,0	64,1	61,1	23,6
62,5	14,9	75,5	72,5	58,1	55,1	21,5
100	19,0	72,4	69,4	54,0	51,0	20,1
155	24,0	69,5	66,5	50,2	47,2	18,8
200	27,5	67,9	64,9	48,0	45,0	18,0
300	34,2	65,2	62,2	44,5	41,5	17,3
600	50,1	60,1	57,7	38,4	35,4	17,3

X6U 100.136 FIBRAIN DATA Ultra F/FTP Cat. 7 600 MHz drum 500 m LSZH jacket orange colour

X6U 100.137 drum 1000 m.

Category 7, 7A cabling
F/FTP DUPLEX LSZH coating

Cable 600 MHz DUPLEX LSZH sheath
F/FTP Category 7

Structural Cabling FIBRAIN DATA Ultra Series, fully satisfies the requirements of cat. 7 (class F) in accordance with standard ISO/IEC 11801 2nd Ed. as well as EN 50173-1:2002. Moreover all components of the transmission line complete ROHS 2002/95/WE Directive.

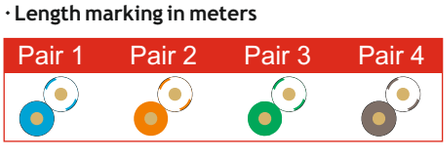
Electrical and constructional parameters:		
Parameter:		
Impedance 10 to 600 MHz (Ohm)		100±5
Nominal velocity of propagation NVP (% speed of light)		74
Attenuation:		
Value for:	-30 - 100 MHz	>80 dB
	100 - 1000 MHz	80-20log(f/100)
Delay skew (max) (ns/100 m)		<40
Dielectric strength during 1 minute (V c.c.)		1000
Insulation strength (MOhm/km)		>5000
Nominal/maximum operating voltage (V)		125/200
Maximum operating current (A)		0,25
DC resistance in C.C (Ohm/k)		164
Diameter (mm)		7,5x16
Weight (kg/km)		130
Flame resistance		NFC 32070 C2
Temperature while installation (°C)		-10/+50
Temperature while operation (°C)		0/+50

Construction:
- **Conductor** - 23 AWG (0,574 mm)
- **Insulation:** polyolefine
- **Number of wires:** 8 pairs twisted together
- Orange jacket LSZH according to IEC 60322-1
- **Shield:** aluminum foil/polyester around each pair
- **Shield:** aluminum foil/polyester around all pairs
- **Grounding:** cooper, galvanized drainage wire ϕ 0,4 mm

Application:
- Supports full and half duplex application
- Digital and analogue video transmission
- 100 BASE-T (IEEE 802.3)
- 1000 BASE-T (Gigabit Ethernet)
- 155/622 Mbps ATM
- 1.2 Gbps ATM
- 10G BASE-T(10 Gigabit Ethernet)
- Broadband CATV

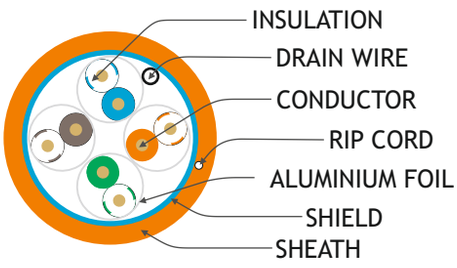
Norms:
- IEC 60332-1, UNE-EN 50265-2-1
- LSZH: UNE-EN 50268-1
- UNE-EN 50267-2-1, UNE-EN 50266-2-4
- ISO/IEC 11801 : 2002, EN 50173 : 2002

Cable marking:
Below information is printed on each meter of the cable:
- **Supplier:** FIBRAIN DATA
- **Cable Type:** 2xF/FTP 8PR 23AWG CAT.7 600 MHz
- **Jacket type**: LSZH
- **Norms**: IEC 61156—5 ISO/IEC 11801 EN 50173
- **Year of production**: XXXX
- **ID number:** XXXX
- **Length marking in meters**



Frequency MHz:	Attenuation Max dB/100 m:	NEXT	PS-NEXT	ACR-F	PS-ACR-F	Return Loss
		dB/100 m(min):				
1	2,0	78,0	75,0	78,0	75,0	20,0
10	5,9	78,0	75,0	74,0	71,0	25,0
16	7,4	78,0	75,0	69,9	66,9	25,0
31,25	10,4	78,0	75,0	64,1	61,1	23,6
62,5	14,9	75,5	72,5	58,1	55,1	21,5
100	19,0	72,4	69,4	54,0	51,0	20,1
155	24,0	69,5	66,5	50,2	47,2	18,8
200	27,5	67,9	64,9	48,0	45,0	18,0
300	34,2	65,2	62,2	44,5	41,5	17,3
600	50,1	60,1	57,7	38,4	35,4	17,3

X6U 102.137 FIBRAIN DATA Ultra 2xF/FTP Cat. 7 600 MHz drum 1000 m LSZH jacket orange colour



ULTRA 7 900MHZ

Cable 900 MHz LSZH sheath
F/FTP Category 7

Structural Cabling FIBRAIN DATA Ultra Series, fully satisfies the requirements of cat. 7 (class F) in accordance with standard ISO/IEC 11801 2nd Ed. as well as EN 50173-1:2002. Moreover all components of the transmission line complete ROHS 2002/95/WE Directive. Characterized cables are with upgraded parameter up to 900 Mhz.

Electrical and constructional parameters:		
Parameter:		
Impedance 10 to 900 MHz (Ohm)		100±5
Nominal velocity of propagation NVP (% speed of light)		72
Attenuation:		
Value for:	-30 - 100 MHz	>80 dB
	100 - 1000 MHz	80-20log(f/100)
Delay skew (max) (ns/100 m)		<25
Dielectric strength during 1 minute (V c.c.)		1000
Insulation strength (MOhm/km)		>5000
Nominal/maximum operating voltage (V)		125/200
Maximum operating current (A)		0,25
DC resistance in C.C (Ohm/k)		164
Diameter (mm)		7,5
Weight (kg/km)		60
Flame resistance		NFC 32070 C2
Temperature while installation (°C)		-10/+50
Temperature while operation (°C)		0/+50

Application:
- Supports full and half duplex application
- Digital and analogue video transmission
- 100 BASE-T (IEEE 802.3)
- 1000 BASE-T (Gigabit Ethernet)
- 155/622 Mbps ATM
- 1.2 Gbps ATM
- 10G BASE-T(10 Gigabit Ethernet)
- Broadband CATV

Norms:
- IEC 60332-1, UNE-EN 50265-2-1
- LSZH: UNE-EN 50268-1
- UNE-EN 50267-2-1, UNE-EN 50266-2-4
- ISO/IEC 11801 : 2002, EN 50173 : 2002

Cable marking:
Below information is printed on each meter of the cable:
- **Supplier:** FIBRAIN DATA
- **Cable Type:** F/FTP 4PR 23AWG CAT.7 900 MHz
- **Jacket type:** LSZH
- **Norms:** IEC 61156—5 ISO/IEC 11801 EN 50173
- **Year of production:** XXXX
- **ID number:** XXXX
- **Length marking in meters**

Construction:
- Conductor - 23 AWG (0,574 mm)
- Insulation: polyolefine
- Number of wires: 4 pairs twisted together
- Orange jacket LSZH according to IEC 60322-1
- Shield: aluminum foil/polyester around each pair
- Shield: aluminum foil/polyester around all pairs
- Grounding: cooper, galvanized drainage wire ϕ 0,4 mm

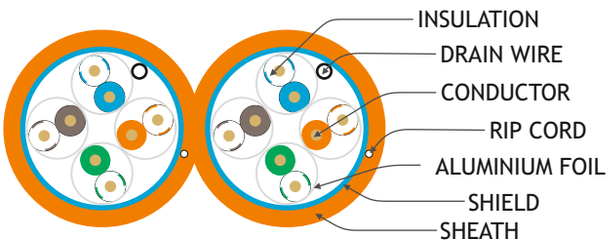
Frequency Mhz:	Attenuation Max dB/100m:	NEXT	PS-NEXT	ACR-F	PS-ACR-F	Return Loss
		dB/100m(min):				
1	2,0	78,0	75,0	78,0	75,0	23,0
10	5,9	78,0	75,0	74,0	71,0	25,0
16	7,4	78,0	75,0	69,9	66,9	25,0
31,25	10,4	78,0	75,0	64,1	61,1	23,6
62,5	14,8	75,5	72,5	58,1	55,1	21,5
100	18,8	72,4	69,4	54,0	51,0	20,1
155	23,5	69,5	66,5	50,2	47,2	18,8
250	31,0	66,5	63,5	46,0	43,0	17,3
600	49,3	60,7	57,7	38,4	35,4	17,3
900	59,0	50,0	47,0	30,0	27,0	17,3

X9U 100.136 FIBRAIN DATA Ultra F/FTP Cat. 7 900 MHz drum 500 m LSZH jacket orange colour

X9U 100.137 drum 1000 m.

Category 7, 7A cabling
F/FTP DUPLEX LSZH coating

01



Cable 900 MHz DUPLEX LSZH sheath
F/FTP Category 7

Structural Cabling FIBRAIN DATA Ultra Series, fully satisfies the requirements of cat. 7 (class F) in accordance with standard ISO/IEC 11801 2nd Ed. as well as EN 50173-1:2002. Moreover all components of the transmission line complete ROHS 2002/95/WE Directive. Specified cables are with upgraded characteristic up to 900 Mhz.

Electrical and constructional parameters:		
Parameter:		
Impedance 10 to 900 MHz (Ohm)		100±5
Nominal velocity of propagation NVP (% speed of light)		72
Attenuation:		
Value for:	-30 - 100 MHz	>80 dB
	100 - 1000 MHz	80-20log(f/100)
Delay skew (max) (ns/100 m)		<25
Dielectric strength during 1 minute (V c.c.)		1000
Insulation strength (MOhm/km)		>5000
Nominal/maximum operating voltage (V)		125/200
Maximum operating current (A)		0,25
DC resistance in C.C (Ohm/k)		164
Diameter (mm)		7,5x16
Weight (kg/km)		130
Flame resistance		NFC 32070 C2
Temperature while installation (°C)		-10/+50
Temperature while operation (°C)		0/+50

Application:
- Supports full and half duplex application
- Digital and analogue video transmission
- 100 BASE-T (IEEE 802.3)
- 1000 BASE-T (Gigabit Ethernet)
- 155/622 Mbps ATM
- 1.2 Gbps ATM
- 10G BASE-T(10 Gigabit Ethernet)
- Broadband CATV

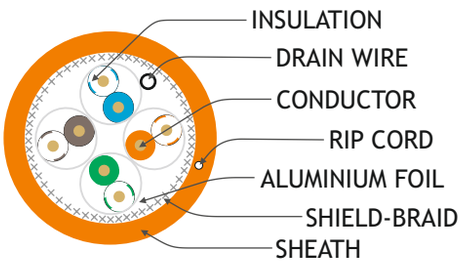
Norms:
- IEC 60332-1, UNE-EN 50265-2-1
- LSZH: UNE-EN 50268-1
- UNE-EN 50267-2-1, UNE-EN 50266-2-4
- ISO/IEC 11801 : 2002, EN 50173 : 2002

Construction:
- **Conductor** - 23 AWG (0,574 mm)
- **Insulation:** polyolefine
- **Number of wires:** 8 pairs twisted together
- Orange jacket LSZH according to IEC 60322-1
- **Shield:** aluminum foil/polyester around each pair
- **Shield:** aluminum foil/polyester around all pairs
- **Grounding:** cooper, galvanized drainage wire ϕ 0,4 mm

Cable marking:
Below information is printed on each meter of the cable:
- **Supplier:** FIBRAIN DATA
- **Cable Type:** 2x F/FTP 8PR 23AWG CAT.7 900 MHz
- **Jacket type:** LSZH
- **Norms:** IEC 61156—5 ISO/IEC 11801 EN 50173
- **Year of production:** XXXX
- **ID number:** XXXX
- **Length marking in meters**

Frequency MHz:	Attenuation Max dB/100 m:	NEXT	PS-NEXT	ACR-F	PS-ACR-F	Return Loss
		dB/100 m(min):				
1	2,0	78,0	75,0	78,0	75,0	23,0
10	5,9	78,0	75,0	74,0	71,0	25,0
16	7,4	78,0	75,0	69,9	66,9	25,0
31,25	10,4	78,0	75,0	64,1	61,1	23,6
62,5	14,8	75,5	72,5	58,1	55,1	21,5
100	18,8	72,4	69,4	54,0	51,0	20,1
155	23,5	69,5	66,5	50,2	47,2	18,8
250	31,0	66,5	63,5	46,0	43,0	17,3
600	49,3	60,7	57,7	38,4	35,4	17,3
900	59,0	50,0	47,0	30,0	27,0	17,3

X9U 102.137 FIBRAIN DATA Ultra 2x F/FTP Cat. 7 900 MHz drum 1000 m LSZH jacket orange colour



ULTRA 7 900MHZ

Cable 900 MHz FR-LSZH sheath
S/FTP Category 7

Structural Cabling FIBRAIN DATA Ultra Series, fully satisfies the requirements of cat. 7 (class F) in accordance with standard ISO/IEC 11801 2nd Ed. as well as EN 50173-1:2002. Moreover all components of the transmission line complete ROHS 2002/95/WE Directive. Characterized cables are with upgraded parameter up to 900 Mhz.

Electrical and constructional parameters:		
Parameter:		
Impedance 10 to 900 MHz (Ohm)		100±5
Nominal velocity of propagation NVP (% speed of light)		78
Attenuation:		
Value for:	-30 - 100 MHz	>80 dB
	100 - 1000 MHz	80-20log(f/100)
Delay skew (max) (ns/100 m)		25
Dielectric strength during 1 minute (V c.c.)		700
Insulation strength (MOhm/km)		>5000
Nominal/maximum operating voltage (V)		125/200
Maximum operating current (A)		0,25
DC resistance in C.C (Ohm/k)		164
Diameter (mm)		7,1
Weight (kg/km)		60
Flame resistance		NFC 32070 C2
Temperature while operation (°C)		-40/+65

Construction:
- Conductor - 23 AWG (0,574 mm)
- Insulation: polyolefine
- Number of wires: 4 pairs twisted together
- Orange jacket LSZH according to IEC 60322-1
- Shield: aluminum foil/polyester around each pair
- Shield: shield-braid around all pairs
- Grounding: cooper, galvanized drainage wire ϕ 0,4 mm

Application:
- Supports full and half duplex application
- Digital and analogue video transmission
- 100 BASE-T (IEEE 802.3)
- 1000 BASE-T (Gigabit Ethernet)
- 155/622 Mbps ATM
- 1,2 Gbps ATM
- 10G BASE-T(10 Gigabit Ethernet)
- Broadband CATV

Norms:
- IEC 60332-1, UNE-EN 50265-2-1
- LSZH: UNE-EN 50268-1
- UNE-EN 50267-2-1, UNE-EN 50266-2-4
- ISO/IEC 11801 : 2002, EN 50173 : 2002

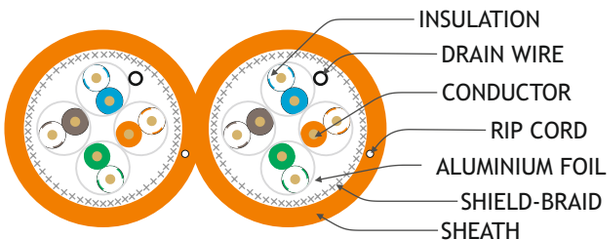
Cable marking:
Below information is printed on each meter of the cable:
- **Supplier:** FIBRAIN DATA
- **Cable type:** S/FTP 4PR 23AWG CAT.7 900 MHz
- **Jacket type:** FR-LSZH
- **Norms:** IEC 61156-5 ISO/IEC 11801 EN 50173
- **Year of production:** XXXX
- **ID number:** XXXXXX
- **Length marking in meters**

Frequency	Attenuation Max		NEXT		PS-NEXT		ACR-F		PS-ACR-F		Return Loss	
MHz:	dB/100m		Typical Value | Cat. 7									
1	2,0	2,0	108,0	78,0	105,0	75,0	98,0	78,0	95,0	75,0	22,0	20,0
4	3,6	3,7	101,0	78,0	98,0	75,0	93,0	78,0	90,0	75,0	25,0	23,0
10	5,6	5,8	98,0	78,0	95,0	75,0	89,0	74,0	86,0	71,0	28,0	25,0
20	7,9	8,3	93,0	78,0	90,0	75,0	83,0	68,0	80,0	65,0	28,0	25,0
30	9,7	10,2	88,0	78,0	85,0	75,0	79,0	64,5	76,0	61,5	27,0	23,8
100	18,0	19,0	83,0	72,4	80,0	69,4	69,0	54,0	66,0	51,0	24,0	21,1
150	22,4	23,6	81,0	69,7	78,0	66,7	66,0	50,5	63,0	47,5	22,0	18,8
200	26,0	27,5	81,0	68,0	78,0	65,0	63,0	48,0	60,0	45,0	21,0	18,0
250	29,4	31,0	78,0	66,4	75,0	63,4	61,0	46,0	58,0	43,0	20,0	17,3
300	32,5	34,2	78,0	65,2	75,0	62,2	55,0	44,5	52,0	41,5	19,0	17,3
400	38,0	40,0	73,0	63,4	70,0	60,4	52,0	41,9	49,0	38,9	19,0	17,3
500	43,0	45,2	73,0	61,9	70,0	58,9	50,0	40,0	47,0	37,0	19,0	17,3
600	47,6	50,1	73,0	60,7	70,0	57,7	48,0	38,4	45,0	35,4	19,0	17,3

X9U100.146 FIBRAIN DATA Ultra S/FTP Cat.7 900 MHz 500 m drum FR-LSZH jacket orange

X9U100.147 drum 1000 m.

Category 7, 7A, 8 cabling
S/FTP DUPLEX FR-LSZH coating



Cable 900 MHz DUPLEX FR-LSZH sheath
S/FTP Category 7

Structural Cabling FIBRAIN DATA Ultra Series, fully satisfies the requirements of cat. 7 (class F) in accordance with standard ISO/IEC 11801 2nd Ed. as well as EN 50173-1:2002. Moreover all components of the transmission line complete ROHS 2002/95/WE Directive. Characterized cables are with upgraded parameter up to 900 Mhz.

Electrical and constructional parameters:		
Parameter:		
Impedance 10 to 900 MHz (Ohm)		100±5
Nominal velocity of propagation NVP (% speed of light)		78
Attenuation:		
Value for:	-30 - 100 MHz	>80 dB
	100 - 1000 MHz	80-20log(f/100)
Delay skew (max) (ns/100 m)		25
Dielectric strength during 1 minute (V c.c.)		700
Insulation strength (MOhm/km)		>5000
Nominal/maximum operating voltage (V)		125/200
Maximum operating current (A)		0,25
DC resistance in C.C (Ohm/k)		164
Diameter (mm)		7,1x16
Weight (kg/km)		115
Flame resistance		NFC 32070 C2
Temperature while operation (°C)		-40/+65

Construction:
- Conductor - 23 AWG (0,574 mm)
- Insulation: polyolefine
- Number of wires: 2x4 pairs twisted together
- Orange jacket LSZH according to IEC 60322-1
- Shield: aluminum foil/polyester around each pair
- Shield: shield-braid around all pairs
- Grounding: cooper, galvanized drainage wire ϕ 0,4 mm

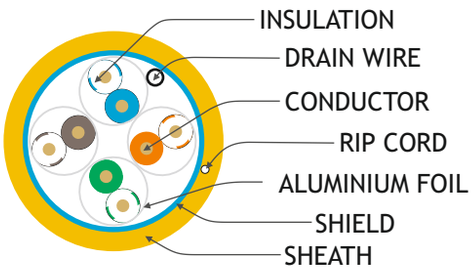
Application:
- Supports full and half duplex application
- Digital and analogue video transmission
- 100 BASE-T (IEEE 802.3)
- 1000 BASE-T (Gigabit Ethernet)
- 155/622 Mbps ATM
- 1,2 Gbps ATM
- 10G BASE-T(10 Gigabit Ethernet)
- Broadband CATV

Norms:
- IEC 60332-1, UNE-EN 50265-2-1
- LSZH: UNE-EN 50268-1
- UNE-EN 50267-2-1, UNE-EN 50266-2-4
- ISO/IEC 11801 : 2002, EN 50173 : 2002

Cable marking:
Below information is printed on each meter of the cable:
- **Supplier:** FIBRAIN DATA
- **Cable type:** 2xS/FTP 8PR 23AWG CAT.7 900 MHz
- **Jacket type:** FR-LSZH
- **Norms:** IEC 61156-5 ISO/IEC 11801 EN 50173
- **Year of production:** XXXX
- **ID number:** XXXXXX
- **Length marking in meters**

Frequency	Attenuation Max		NEXT		PS-NEXT		ACR-F		PS-ACR-F		Return Loss	
MHz:	dB/100m		Typical Value | Cat. 7									
1	2,0	2,0	108,0	78,0	105,0	75,0	98,0	78,0	95,0	75,0	22,0	20,0
4	3,6	3,7	101,0	78,0	98,0	75,0	93,0	78,0	90,0	75,0	25,0	23,0
10	5,6	5,8	98,0	78,0	95,0	75,0	89,0	74,0	86,0	71,0	28,0	25,0
20	7,9	8,3	93,0	78,0	90,0	75,0	83,0	68,0	80,0	65,0	28,0	25,0
30	9,7	10,2	88,0	78,0	85,0	75,0	79,0	64,5	76,0	61,5	27,0	23,8
100	18,0	19,0	83,0	72,4	80,0	69,4	69,0	54,0	66,0	51,0	24,0	21,1
150	22,4	23,6	81,0	69,7	78,0	66,7	66,0	50,5	63,0	47,5	22,0	18,8
200	26,0	27,5	81,0	68,0	78,0	65,0	63,0	48,0	60,0	45,0	21,0	18,0
250	29,4	31,0	78,0	66,4	75,0	63,4	61,0	46,0	58,0	43,0	20,0	17,3
300	32,5	34,2	78,0	65,2	75,0	62,2	55,0	44,5	52,0	41,5	19,0	17,3
400	38,0	40,0	73,0	63,4	70,0	60,4	52,0	41,9	49,0	38,9	19,0	17,3
500	43,0	45,2	73,0	61,9	70,0	58,9	50,0	40,0	47,0	37,0	19,0	17,3
600	47,6	50,1	73,0	60,7	70,0	57,7	48,0	38,4	45,0	35,4	19,0	17,3

X9U102.147 FIBRAIN DATA Ultra 2xS/FTP Cat.7 900 MHz 1000 m drum FR-LSZH jacket orange



ULTRA 7A 1000MHZ

Cable 1000 MHz LSZH sheath
F/FTP Category 7A

Structural Cabling FIBRAIN DATA Ultra A Series, fully satisfies the requirements of cat. 7A (class FA) in accordance with standard ISO/IEC 11801 2nd Ed. Am.2 as well as EN 50173-1:2002 Am.2. Moreover all components of the transmission line complete ROHS 2002/95/WE Directive.

Electrical and constructional parameters:		
Parameter:		
Impedance 10 to 1000 MHz (Ohm)		100±5
Nominal velocity of propagation NVP (% speed of light)		75
Attenuation:		
Value for:	-30 - 100 MHz	>80 dB
	100 - 1000 MHz	80-20log(f/100)
Delay skew (max) (ns/100 m)		<40
Dielectric strength during 1 minute (V c.c.)		1000
Insulation strength (MOhm/km)		>5000
Nominal/maximum operating voltage (V)		45/200
Maximum operating current (A)		0,25
DC resistance in C.C (Ohm/k)		164
Diameter (mm)		7,6
Weight (kg/km)		55
Flame resistance		NFC 32070 C2
Temperature while installation (°C)		-10/+50
Temperature while operation (°C)		0/+50

Application:
- Supports full and half duplex application
- Digital and analogue video transmission
- 100 BASE-T (IEEE 802.3)
- 1000 BASE-T (Gigabit Ethernet)
- 155/622 Mbps ATM
- 1.2 Gbps ATM
- 10G BASE-T (10 Gigabit Ethernet)
- Broadband CATV
- 40 and 100 Gigabit Ethernet

Norms:
- IEC 60332-1, UNE-EN 50265-2-1
- LSZH: UNE-EN 50268-1
- UNE-EN 50267-2-1, UNE-EN 50266-2-4
- ISO/IEC 11801 : 2002, EN 50173 : 2002

Cable marking:
Below information is printed on each meter of the cable:
- **Supplier:** FIBRAIN DATA
- **Cable Type:** F/FTP 4PR 23AWG CAT.7A 1000MHz
- **Jacket type:** LSZH
- **Norms:** IEC 61156—5 ISO/IEC 11801 EN 50173
- **Year of production:** XXXX
- **ID number:** XXXX
- **Length marking in meters**

Construction:
- Conductor – 23 AWG (0,574 mm)
- Insulation: polyolefine
- Number of wires: 4 pairs twisted together
- Orange jacket LSZH according to IEC 60322-1
- Shield: aluminum foil/polyester around each pair
- Shield: aluminum foil/polyester around all pairs
- Grounding: cooper, galvanized drainage wire ϕ 0,4 mm

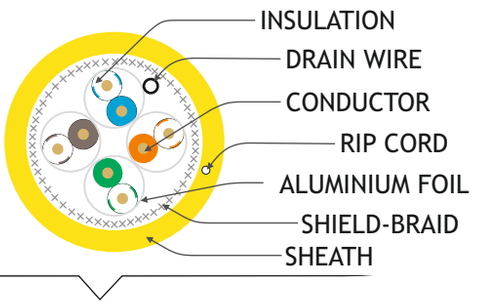
Frequency Mhz:	Attenuation - dB/100 m		Return Loss - dB		NEXT - dB	
	Nominal	Maxi	Nominal	Maxi	Nominal	Maxi
1	2,0	2,0	20,0	---	90,0	75,0
16	7,2	7,2	20,0	---	85,0	75,0
62,5	14,3	14,5	20,0	17,5	76,0	72,1
100	18,3	18,5	20,0	16,5	73,0	69,0
200	26,5	26,8	20,0	15,0	68,0	64,5
250	29,9	30,2	20,0	14,5	67,0	63,0
300	33,0	33,3	19,5	14,1	66,0	61,8
600	48,4	48,9	16,3	12,6	61,0	57,3
900	60,9	61,5	14,5	11,7	59,0	54,7
1000	64,7	65,3	12,0	11,5	58,0	54,0

XUA 100.136 FIBRAIN DATA UltraA F/FTP Cat. 7A 1000 MHz drum 500 m LSZH jacket yellow colour

XUA 100.137 drum 1000 m.

Category 7, 7A, 8 cabling
S/FTP FR-LSZH sheath

ULTRA 7A 1200MHZ



Cable 1000 MHz FR-LSZH sheath
S/FTP Category 7A

Structural Cabling FIBRAIN DATA Ultra A Series, fully satisfies the requirements of cat. 7A (class FA) in accordance with standard ISO/IEC 11801 2nd Ed. Am.2 as well as EN 50173-1:2002 Am.2. Moreover all components of the transmission line complete ROHS 2002/95/WE Directive.

Electrical and constructional parameters:		
Parameter:		
Impedance 10 to 1000 MHz (Ohm)		100±5
Nominal velocity of propagation NVP (% speed of light)		78
Attenuation:		
Value for:	-30 - 100 MHz	>80 dB
	100 - 1000 MHz	80-20log(f/100)
Delay skew (max) (ns/100 m)		20
Dielectric strength during 1 minute (V c.c.)		700
Insulation strength (MOhm/km)		>5000
Nominal/maximum operating voltage (V)		45/200
Maximum operating current (A)		0,25
DC resistance in C.C (Ohm/k)		164
Diameter (mm)		8,1
Weight (kg/km)		66
Flame resistance		NFC 32070 C2
Temperature while operation (°C)		-40/+70

Construction:
- Conductor – 23 AWG (0,574 mm)
- Insulation: polyolefine
- Number of wires: 4 pairs twisted together
- Orange jacket LSZH according to IEC 60322-1
- Shield: aluminum foil/polyester around each pair
- Shield: shield-braid around all pairs
- Grounding: cooper, galvanized drainage wire ϕ 0,4 mm

Application:
- Supports full and half duplex application
- Digital and analogue video transmission
- 100 BASE-T (IEEE 802.3)
- 1000 BASE-T (Gigabit Ethernet)
- 155/622 Mbps ATM
- 1.2 Gbps ATM
- 10G BASE-T (10 Gigabit Ethernet)
- Broadband CATV
- 40 and 100 Gigabit Ethernet

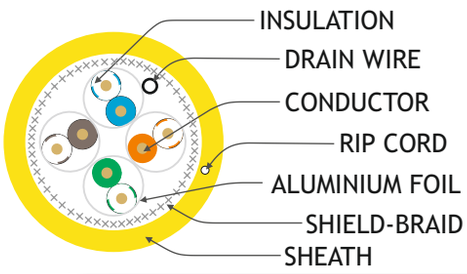
Norms:
- IEC 60332-1, UNE-EN 50265-2-1
- LSZH: UNE-EN 50268-1
- UNE-EN 50267-2-1, UNE-EN 50266-2-4
- ISO/IEC 11801 : 2002, EN 50173 : 2002

Cable marking:
Below information is printed on each meter of the cable:
- **Supplier:** FIBRAIN DATA
- **Cable Type:** S/FTP 4PR 23AWG CAT.7A 1000MHz
- **Jacket type:** FR-LSZH
- **Norms:** IEC 61156—5 ISO/IEC 11801 EN 50173
- **Year of production:** XXXX
- **ID number:** XXXX
- **Length marking in meters**

Frequency	Attenuation Max		NEXT		PS-NEXT		ACR-F		PS-ACR-F		Return Loss	
MHz:	dB/100m		Typical Value | Cat. 7A									
1	1,8	2,0	103,0	78,0	100,0	75,0	110,0	78,0	108,0	75,0	31,0	20,0
4	3,2	3,8	103,0	78,0	100,0	75,0	108,0	78,0	105,0	75,0	31,0	23,0
10	4,9	5,8	103,0	78,0	100,0	75,0	103,0	74,0	100,0	71,0	31,0	25,0
20	7,0	8,2	103,0	78,0	100,0	75,0	93,0	68,0	90,0	65,0	31,0	25,0
30	8,6	10,1	103,0	78,0	100,0	75,0	93,0	64,5	90,0	61,5	31,0	23,8
100	15,7	18,5	103,0	78,0	100,0	75,0	88,0	54,0	85,0	51,0	31,0	21,1
150	19,4	22,8	103,0	78,0	100,0	75,0	87,0	50,5	84,0	47,5	26,0	18,8
200	22,5	26,5	98,0	76,8	95,0	73,8	83,0	48,0	80,0	45,0	26,0	18,0
250	25,3	29,7	96,0	75,4	93,0	72,4	81,0	46,0	78,0	43,0	25,0	17,3
300	27,8	32,7	95,0	74,2	92,0	71,2	78,0	44,5	75,0	41,5	25,0	17,3
400	32,3	38,0	95,0	72,3	91,0	69,3	73,0	41,9	70,0	38,9	23,0	17,3
500	36,3	42,7	93,0	70,9	90,0	67,9	72,0	40,0	69,0	37,0	23,0	17,3
600	40,0	47,1	92,0	69,7	89,0	66,7	71,0	38,4	68,0	35,4	23,0	17,3
1000	52,7	62,0	88,0	66,4	85,0	63,4	70,0	34,0	67,0	31,0	21,0	17,3

XUA100.146 FIBRAIN DATA UltraA S/FTP Cat.7A 1200 MHz 500 m drum FR-LSZH jacket yellow colour

XUA100.147 drum 1000 m.



FUTURE 8 1500MHZ

Cable 1500 MHz FR-LSZH sheath
S/FTP Category 7A

Structural Cabling FIBRAIN DATA Ultra A Series, fully satisfies the requirements of cat. 7A (class FA) in accordance with standard ISO/IEC 11801 2nd Ed. Am.2 as well as EN 50173-1:2002 Am.2. Moreover all components of the transmission line complete ROHS 2002/95/WE Directive.

Electrical and constructional parameters:		
Parameter:		
Impedance 10 to 1000 MHz (Ohm)		100±5
Nominal velocity of propagation NVP (% speed of light)		79-80
Attenuation:		
Value for:	-30 - 100 MHz	>80 dB
	100 - 1000 MHz	80-20log(f/100)
Delay skew (max) (ns/100 m)		<40
Dielectric strength during 1 minute (V c.c.)		700
Insulation strength (MOhm/km)		>5000
Nominal/maximum operating voltage (V)		45/200
Maximum operating current (A)		0,25
DC resistance in C.C (Ohm/k)		164
Diameter (mm)		8,4
Weight (kg/km)		64
Flame resistance		NFC 32070 C2
Temperature while operation (°C)		-40/+65

Construction:
- Conductor – 23 AWG (0,574 mm)
- Insulation: polyolefine
- Number of wires: 4 pairs twisted together
- Orange jacket LSZH according to IEC 60322-1
- Shield: aluminum foil/polyester around each pair
- Shield: shield-braid around all pairs
- Grounding: cooper, galvanized drainage wire ϕ 0,4 mm

Application:
- Supports full and half duplex application
- Digital and analogue video transmission
- 100 BASE-T (IEEE 802.3)
- 1000 BASE-T (Gigabit Ethernet)
- 155/622 Mbps ATM
- 1.2 Gbps ATM
- 10G BASE-T (10 Gigabit Ethernet)
- Broadband CATV
- 40 and 100 Gigabit Ethernet

Norms:
- IEC 60332-1, UNE-EN 50265-2-1
- LSZH: UNE-EN 50268-1
- UNE-EN 50267-2-1, UNE-EN 50266-2-4
- ISO/IEC 11801 : 2002, EN 50173 : 2002

Cable marking:
Below information is printed on each meter of the cable:
- **Supplier:** FIBRAIN DATA
- **Cable Type:** S/FTP 4PR 23AWG CAT.7A 1500MHz
- **Jacket type:** FR-LSZH
- **Norms:** IEC 61156—5 ISO/IEC 11801 EN 50173
- **Year of production:** XXXX
- **ID number:** XXXX
- **Length marking in meters**

Frequency MHz:	Attenuation Max dB/100m	NEXT	PS-NEXT	Coupling Att.	Return Loss
1	1,9	90,0	87,0	NS	27,0
4	3,4	90,0	87,0	NS	27,0
10	5,4	90,0	87,0	NS	27,0
16	6,8	90,0	87,0	NS	27,0
30	9,3	90,0	87,0	90,0	27,0
54,1	12,7	90,0	87,0	90,0	27,0
62,5	13,7	89,1	86,1	90,0	27,0
100	17,5	86,0	83,0	90,0	27,0
200	25,3	81,5	78,5	84,0	23,0
300	31,5	78,8	75,8	80,5	23,0
600	46,3	74,3	71,3	74,4	20,0
900	58,4	71,7	68,7	70,9	18,2
1000	62,0	71,0	68,0	70,0	17,8
1200	69,0	69,8	66,8	68,4	17,0
1500	71,0	75,0	72,0	67,3	19,0

XF100.146 FIBRAIN DATA FUTURE 8 S/FTP Cat.8 1500 MHz 500 m drum FR-LSZH jacket yellow colour

XF100.147 drum 1000 m.

Unloaded Patchpanel

Patchpanel 1U and 2U

Patchpanel unloaded

Standard

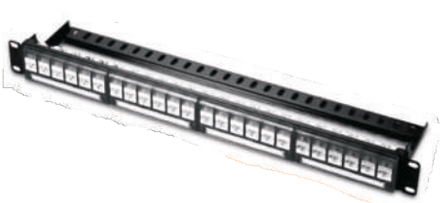
XR100.216- 19'' 1U 16x keystones

XR100.224- 19'' 1U 24x keystones

XR100.232- 19'' 1U 32x keystones

XR100.248- 19'' 1U 48x keystones

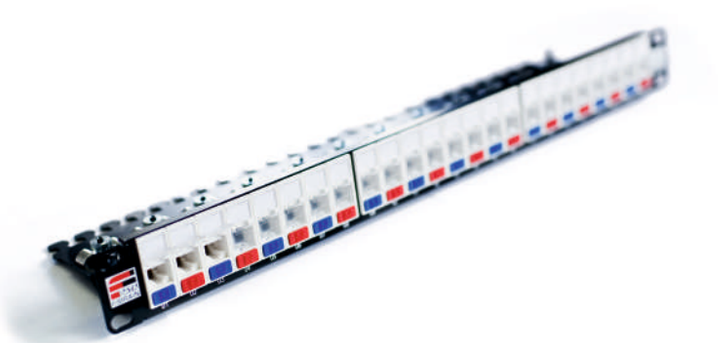
- Universal, modular panel 19" for keystones accommodation
- Integrated cable shelf allowing cable binding with clamps
- Possibility of loading up to 48 keystones, unshielded or shielded modules
- Metal construction ensures galvanic connection with the screen of modules
- Grounding conduit

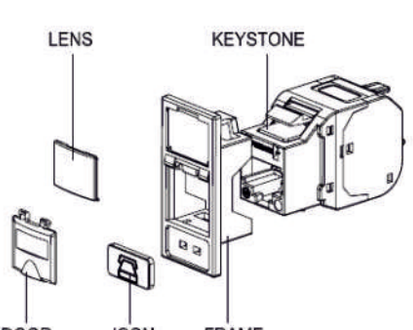


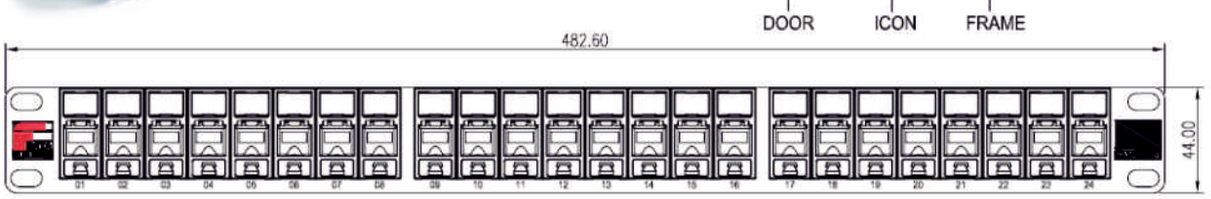
Premium

XR101.224-19'' 1U 24 x keystone module - PREMIUM version

- Each port is equipped with anti-dust cover, descriptive label as well as identification icon
- Universal, modular panel 19" for keystones accommodation
- Integrated cable shelf allowing cable binding with clamps
- Metal construction ensures galvanic connection with the screen of modules
- Grounding conduit.

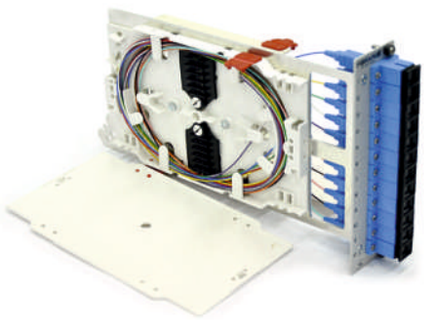






01

Modular patchpanel 3U Telecom

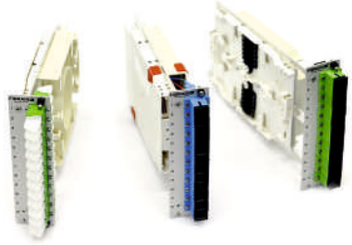


Application:
- Telecom data centers,
- FTTH networks,
- Undergrounds,
- Structural cabling system.

Fibrain 3U modular patchpanel up to 144 splices enables termination up to 144 fibers of Fiber Optic cables in signal distribution points as well as in data centers. Well-considered construction allows easy, time economical installation and cable mounting. Full solution additionally offers patchcord or tube reserve shelves, patchcord managements as well as cable tube separators.

Technical data: Patchpanel 3U Chassis		
Ref no:		PS-19-3-0
High:		3U
Dimensions (Width, High, Depth):		436x133,35x160
Material:	**- housing:**	**aluminum**
	-rails:	**plastic ABS**

Characteristic:
- Application up to 144 fibers in 3U,
- Light and strong aluminum construction
- Modules pre-prepared for installation
- Easy and transparent management of tubes in FO cable



Components:
Patchpanel 3U Chassis
Ref no: PS-19-3-0

3U Chassis, 12 slots, equipped with rails for module conducting. Made of aluminum material which provides low weight as well as easy assembling in frame, cabinet also in street cabinet, in standard 19" height.

Components:
Single and double 3U slots/ modules
Ref no: PS-01-xxx-xx-xx-x-x, PS-02-xxx-xx-xx-x-x

Slots are equipped with splice cassettes ready for 12 and 24 fusion splice protectors 45/60 mm or ANT metal crimp splice protectors. Modules are pre-prepared for installation, equipped with adapters, pigtails conducted into the splice cassettes. 12 coloured pigtails enable easier identification and also shorten installation time.

Ordering instructions:	
Main frame- 3U Chassis Patchpanel:	
-top & bottom opened	PS-19-3-0
-build up	PS-19-3-1
Single slot blink	PS-00
Patchcord organizer 1U	PS-ORG-1
Storage shelf 1U:	
-Patchcords	PS-19-1-PAT
-Tubes	PS-19-1-TUB

PS -	01 -	SM2 -	SCA -	12 -	12 -	1 -	1
	Width: 01- Single 02- Double	**Fiber type:** SM2 -G.652D 09/125 M50 -50/125 OM2 M62 -62,5/125 OM1 OM3 -50/125 OM3 OM4 -50/125 OM4 S7A -G.657A S7B -G.657B BR - lack	**Adapter type:** RJ45 F ST SC SCA FC FCA etc.	**Pigtail number:** 00-24	**Colour:** Y - yellow G - green AQ - aqua OR - orange R - red 12 - 12 colours	**Cassette:** 0 - lack 1 - Ready for 12 splice protectors 45/60 mm 2 - Ready for 12 Metal Crimp splice protectors ANT 3 - Ready for 24 Metal Crimp splice protectors ANT	**Pigtail storage cassette:** 0 - lack 1 - added

01

Category 3 cabling

01

Voice

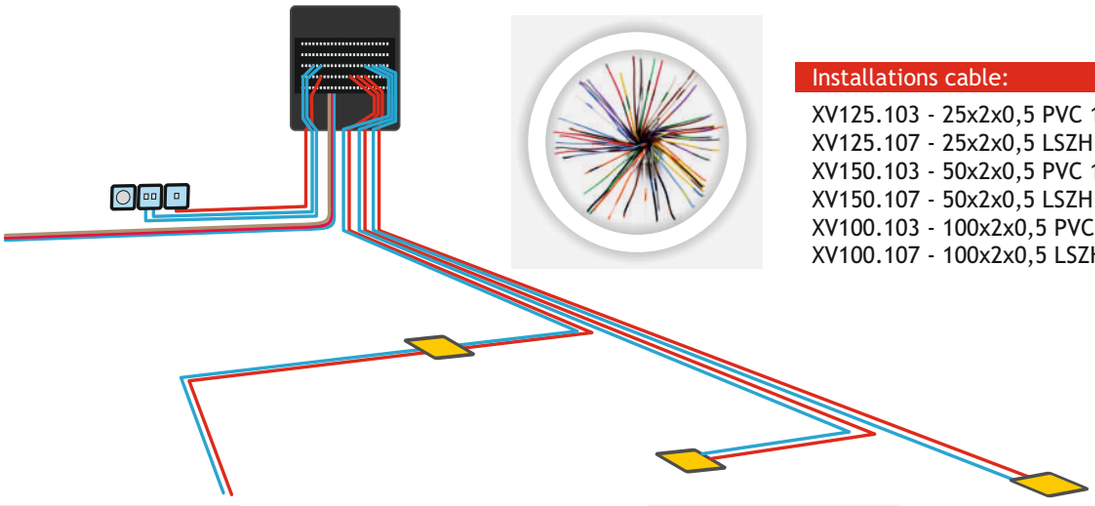
FIBRAIN DATA Structural Cabling Voice System, fully satisfies the requirements of cat. 3 (class C) in accordance with standards ISO/IEC 11801, EN 50173 and ANSI/TIA/EIA 568-B.2. This series is dedicated for structured cabling installations, for digital and analog telephone signals transmissions. VOICE products offers good transmission parameters need for voice applications, easy connectorization of cables and convenience of use.

Also all components of the transmission line complete ROHS 2002/95/WE Directive.

Application:

- PBX
- So Point-to-Point
- Token Ring 4 Mbit/s
- ATM LAN 51,84 Mbit/s
- ATM LAN 155,52 Mbit/s
- Digital and analog telephone signals transmissions

Voice



Installations cable:

XV125.103 - 25x2x0,5 PVC 16 MHz
XV125.107 - 25x2x0,5 LSZH 16 MHz
XV150.103 - 50x2x0,5 PVC 16 MHz
XV150.107 - 50x2x0,5 LSZH 16 MHz
XV100.103 - 100x2x0,5 PVC 16 MHz
XV100.107 - 100x2x0,5 LSZH 16 MHz

Patch panels

XV100.200 - 1U 25xRJ45
XV100.210 - 1U 50xRJ45

Distribution box

PC8200 - 30 pairs inside
PC8201 - 50 pairs inside
PC8202 - 100 pairs inside
PC8210 -100 pairs inside, metals
PC8250 - 30 pairs outside
PC8251 - 50 pairs outside
PC8252 - 100 pairs outside

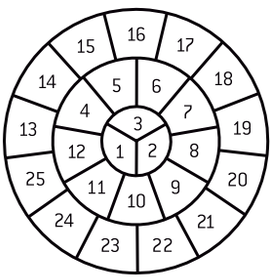
LSA modules

Pc8001 (8002) -LSA connections module 2/10
Pc8003 -LSA disconnection module 2/10
Pc8004 -LSA connection module with color code 2/10
PC8005 - LSA earth module 2/38
PC8012 - LSA connection module for profile rods 2/10
PC8013 - LSA disconnection module for profile rods 2/10
PC8015 - LSA earth module for profile rods 2/34

Category 3 cabling
U/UTP 25 pairs

01

Voice



25 pairs cable sheath PVC or LSZH
U/UTP cat 3

FIBRAIN DATA Structural Cabling Voice System, fully satisfies the requirements of cat. 3 (class C) in accordance with standards ISO/IEC 11801, EN 50173 and ANSI/TIA/EIA 568-B.2. This series is dedicated for structured cabling installations, for digital and analog telephone signals transmissions. VOICE products offers good transmission parameters need for voice applications, easy connectorization of cables and convenience of use.
Also all components of the transmission line complete ROHS 2002/95/WE Directive.

Electrical and constructional parameters:		
Parameter:		
Maximum conductor resistance (d.c.) At 20°C (0,4 mm) @ Ohm/km		93,8
Minimum dielectric strength (d.c.) Between conductors @ V		1000
Min. Insulation resistance MOhm/km		10000
Impedance characteristics (Ohm)		(min-max)
value for:	772 kHz	87-117
	1,0 - 16 MHz	85-115
Return loss (RL) dB (min)		
value for:	772 kHz	12
	1,0 - 16 MHz	12-log(f/10)
Construction		25x2x0,5
Diameter (mm)		10,4
Weight (kg/km)		162
Drum size		08

Construction:
- **Conductor (wire) -** 24 AWG (0,51 mm)
- **Insulation:** polyolefin
- **Number of wires:** 25 pairs twisted together
- **Jacket type:** XV125.103 - grey jacket PVC
- **Jacket type:** XV125.107 - green jacket LSZH

Cable marking:
Below information is printed on each meter of the cable:
- **Supplier:** FIBRAIN DATA
- **Cable Type:** U/UTP 25PR 24AWG CAT.3 16 MHz
- **Jacket type:** PVC or LSZH
- **Norms:** IEC 61156—5 ISO/IEC 11801 EN 50173
- **Year of production:** XXXX
- **ID number:** XXXX
- **Length marking in meters**

Frequency Mhz:	Attenuation Max dB/100 m:	NEXT dB/100 m(min):
0,772	1,8	72,0
1	2,1	70,3
4	4,0	61,3
10	6,2	55,3
16	7,9	52,2
25	10,0	49,3

Application:
- PBX
- So Point-to-Point
- Token Ring 4 Mbit/s
- ATM LAN 51,84 Mbit/s
- ATM LAN 155,52 Mbit/s
- Digital and analog telephone signals transmissions

Norms:
- IEC 60332-1
- LSZH: UNE-EN 50268, UNE-EN 50267-2-1
- UNE 50265-2-1
- ANSI/TIA/EIA 568-B.2 (Cat. 3)
- ISO/IEC 11801
- EN 50173, EN 50288

Pairs 1-5

Pairs 6-10

Pairs 11-15

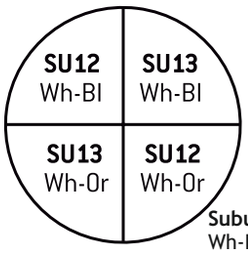
Pairs 16-20

Pairs 21-25

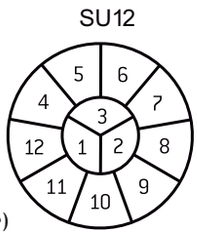
XV125.103 FIBRAIN DATA Voice 25x2x0.5 U/UTP Cat. 3 16 MHz drum 1000 m jacket PVC

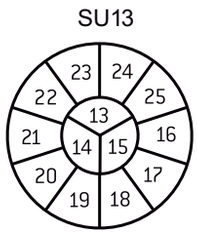
XV125.107 jacket LSZH.

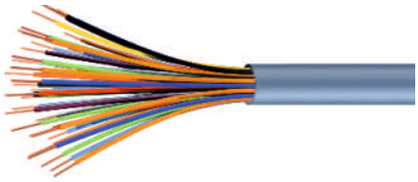
Category 3 cabling
U/UTP 50 pairs



Subunit colour:
Wh-Bl (White-Blue)
Wh-Or (White-Orange)







Voice

50 pairs cable sheath PVC or LSZH
U/UTP cat 3

FIBRAIN DATA Structural Cabling Voice System, fully satisfies the requirements of cat. 3 (class C) in accordance with standards ISO/IEC 11801, EN 50173 and ANSI/TIA/EIA 568-B.2. This series is dedicated for structured cabling installations, for digital and analog telephone signals transmissions. VOICE products offers good transmission parameters need for voice applications, easy connectorization of cables and convenience of use.

Electrical and constructional parameters:

Parameter:		
Maximum conductor resistance (d.c.) At 20°C (0,4 mm) @ Ohm/km		93,8
Minimum dielectric strength (d.c.) Between conductors @ V		1000
Min. Insulation resistance MOhm/km		10000
Impedance characteristics (Ohm)		(min-max)
value for:	772 kHz	87-117
	1,0 - 16 MHz	85-115
Return loss (RL) dB (min)		
value for:	772 kHz	12
	1,0 - 16 MHz	12-log(f/10)
Construction		50x2x0,5
Diameter (mm)		13,8
Weight (kg/km)		293
Drum size		10

Construction:
- **Conductor (wire)** - 24 AWG (0,51 mm)
- **Insulation:** polyolefin
- **Number of wires:** 50 pairs twisted together
- **Jacket type:** - XV150.103 - grey jacket PVC
- **Jacket type:** - XV150.107 - green jacket LSZH

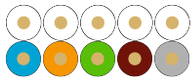
Cable marking:
Below information is printed on each meter of the cable:
- **Supplier:** FIBRAIN DATA
- **Cable Type:** U/UTP 50PR 24AWG CAT.3 16 MHz
- **Jacket type:** PVC or LSZH
- **Norms:** IEC 61156—5 ISO/IEC 11801 EN 50173
- **Year of production:** XXXX
- **ID number:** XXXX
- **Length marking in meters**

Frequency MHz:	Attenuation Max dB/100 m:	NEXT dB/100 m(min):
0,772	1,8	72,0
1	2,1	70,3
4	4,0	61,3
10	6,2	55,3
16	7,9	52,2
25	10,0	49,3

Application:
- PBX
- So Point-to-Point
- Token Ring 4 Mbit/s
- ATM LAN 51,84 Mbit/s
- ATM LAN 155,52 Mbit/s
- Digital and analog telephone signals transmissions

Norms:
- IEC 60332-1
- LSZH: UNE-EN 50268, UNE-EN 50267-2-1
- UNE 50265-2-1
- ANSI/TIA/EIA 568-B.2 (Cat. 3)
- ISO/IEC 11801
- EN 50173, EN 50288

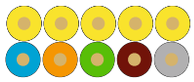
Pairs 1-5



Pairs 6-10

Pairs 11-15

Pairs 16-20

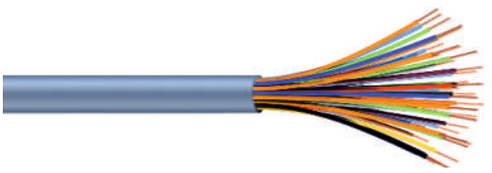


Pairs 21-25

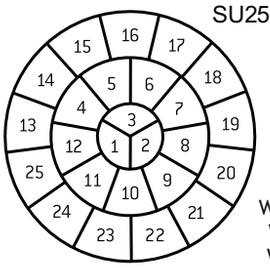
XV150.103 FIBRAIN DATA Voice 50x2x0.5 U/UTP Cat. 3 16 MHz drum 1000 m jacket PVC

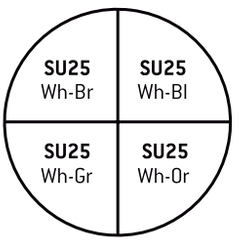
XV150.107 jacket LSZH.

Category 3 cabling
U/UTP 100 pairs



Voice





Subunit colour:
Wh-Bl (White-Blue)
Wh-Or (White-Orange)
Wh-Gr (White-Green)
WH-Br (White-Brown)

Voice

100 pairs cable sheath PVC or LSZH
U/UTP cat 3

FIBRAIN DATA Structural Cabling Voice System, fully satisfies the requirements of cat. 3 (class C) in accordance with standards ISO/IEC 11801, EN 50173 and ANSI/TIA/EIA 568-B.2. This series is dedicated for structured cabling installations, for digital and analog telephone signals transmissions. VOICE products offers good transmission parameters need for voice applications, easy connectorization of cables and convenience of use.
Also all components of the transmission line complete ROHS 2002/95/WE Directive.

Electrical and constructional parameters:		
Parameter:		
Maximum conductor resistance (d.c.) At 20°C (0,4 mm) @ Ohm/km		93,8
Minimum dielectric strength (d.c.) Between conductors @ V		1000
Min. Insulation resistance MOhm/km		10000
Impedance characteristics (Ohm)		(min-max)
value for:	772 kHz	87-117
	1,0 - 16 MHz	85-115
Return loss (RL) dB (min)		
value for:	772 kHz	12
	1,0 - 16 MHz	12-log(f/10)
Construction		100x2x0,5
Diameter (mm)		18,8
Weight (kg/km)		551
Drum size		12

Construction:
- Conductor (wire) - 24 AWG (0,51 mm)
- Insulation: polyolefin
- Number of wires: 100 pairs twisted together
- Jacket type: XV100.103 - grey jacket PVC
- Jacket type: XV100.108 - green jacket LSZH

Cable marking:
Below information is printed on each meter of the cable:
- **Supplier**: FIBRAIN DATA
- **Cable Type**: U/UTP 100PR 24AWG CAT.3 16MHz
- **Jacket type**: PVC or LSZH
- **Norms**: IEC 61156—5 ISO/IEC 11801 EN 50173
- **Year of production**: XXXX
- **ID number**: XXXX
- **Length marking in meters**

Frequency Mhz:	Attenuation Max dB/100 m:	NEXT dB/100 m(min):
0,772	1,8	72,0
1	2,1	70,3
4	4,0	61,3
10	6,2	55,3
16	7,9	52,2
25	10,0	49,3

Application:
- PBX
- So Point-to-Point
- Token Ring 4 Mbit/s
- ATM LAN 51,84 Mbit/s
- ATM LAN 155,52 Mbit/s
- Digital and analog telephone signals transmissions

Norms:
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- LSZH: UNE-EN 50268, UNE-EN 50267-2-1
- UNE 50265-2-1
- ANSI/TIA/EIA 568-B.2 (Cat. 3)
- ISO/IEC 11801
- EN 50173, EN 50288

Pairs 1-5

Pairs 6-10

Pairs 11-15

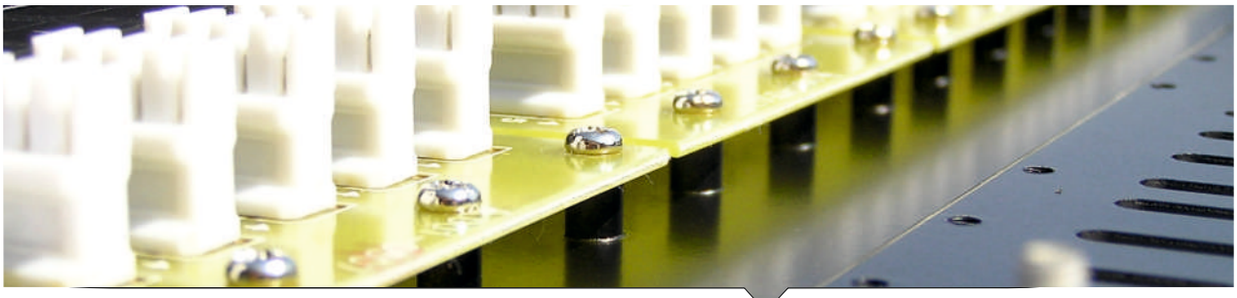
Pairs 16-20

Pairs 21-25

XV100.103 FIBRAIN DATA Voice 100x2x0.5 U/UTP Cat. 3 16 MHz drum 1000 m jacket PVC

XV100.107 jacket LSZH.

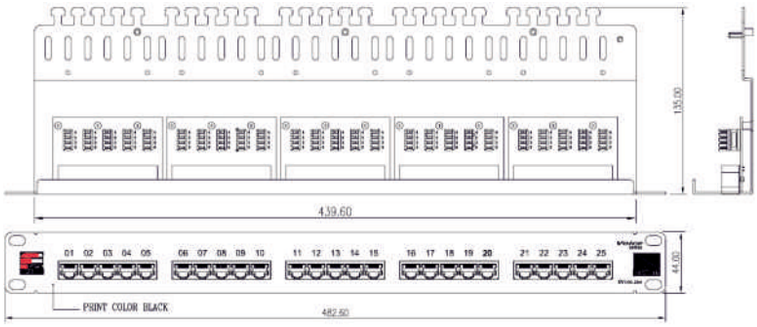
Voice Patchpanel
25 ports



Patchpanel Voice XV100.200
25 ports

FIBRAIN DATA Structural Cabling Voice System, fully satisfies the requirements of cat 3 (class C) in accordance with standards ISO/IEC 11801, EN 50173 and ANSI/TIA/EIA 568-B.2. This series is dedicated for structured cabling installations, for digital and analog telephone signals transmissions. VOICE products offers good transmission parameters need for voice applications, easy connectorization of cables and convenience of use.
Also all components of the transmission line complete ROHS 2002/95/WE Directive.

Additional asset is certainty of connection using standard RJ45-RJ45 cables. Patch panels Voice series fully meet demands cat. 3 and provide digital and analog telephone signals transmissions. Contain 4 pins (2 pairs) IDC-LSA and offers fast and easy installation. Main body designed in L-type shelf. Quick and simple access to IDC for better restoration and eventual link reconnection. Panel front was equipped in description fields with pre-printed identification.



Voice

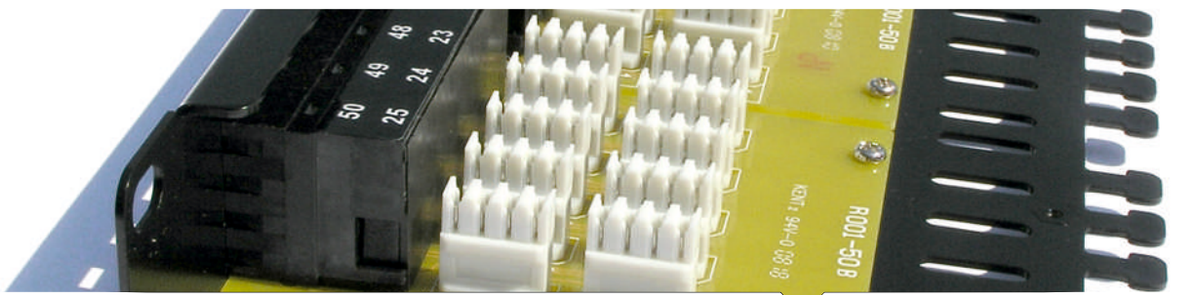
Features:
- 1U high, 19" for 25 and 50 ports
- ISDN 4-poles (3/6, 4/5)
- L-type shelf construction
- Quick and simple access to IDC
- Description fields with pre-printed identification

Mechanical parameters:
- **Body:** steel plate 1,5 mm
- **Jack:** unshielded RJ45 cat.3
- **Housing:** high impact, frame retardant plastic UL94V-0
- **Contacts:** 0,35 mm phosphor bronze over gold and nickel
- **Contacts durability:** >750 connection cycles EN 60603-7
- **IDC :** IDC-LSA accept 22-26AWG solid wire
- **IDC durability:** >200 connection cycles
- **IDC contacts:** phosphor bronze over 60% Sn and 40% Pb
- **Identification:** T568A and T568B

XV100.200

Example: XV100.200 patch panel Fibrain Data Voice series 25 ports

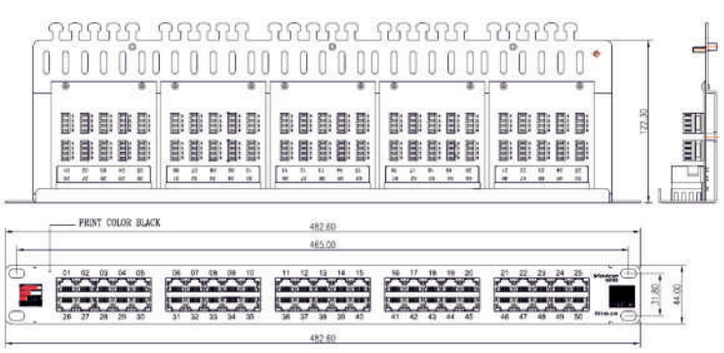
Voice Patchpanel
50 ports



Patchpanel Voice XV100.210
50 Ports

FIBRAIN DATA Structural Cabling Voice System, fully satisfies the requirements of cat 3 (class C) in accordance with standards ISO/IEC 11801, EN 50173 and ANSI/TIA/EIA 568-B.2. This series is dedicated for structured cabling installations, for digital and analog telephone signals transmissions. VOICE products offers good transmission parameters need for voice applications, easy connectorization of cables and convenience of use.
Also all components of the transmission line complete ROHS 2002/95/WE Directive.

Additional asset is certainty of connection using standard RJ45-RJ45 cables. Patch panels Voice series fully meet demands cat. 3 and provide digital and analog telephone signals transmissions. Contain 4 pins (2 pairs) IDC-LSA and offers fast and easy installation. Main body designed in L-type shelf. Quick and simple access to IDC for better restoration and eventual link reconnection. Panel front was equipped in description fields with pre-printed identification.

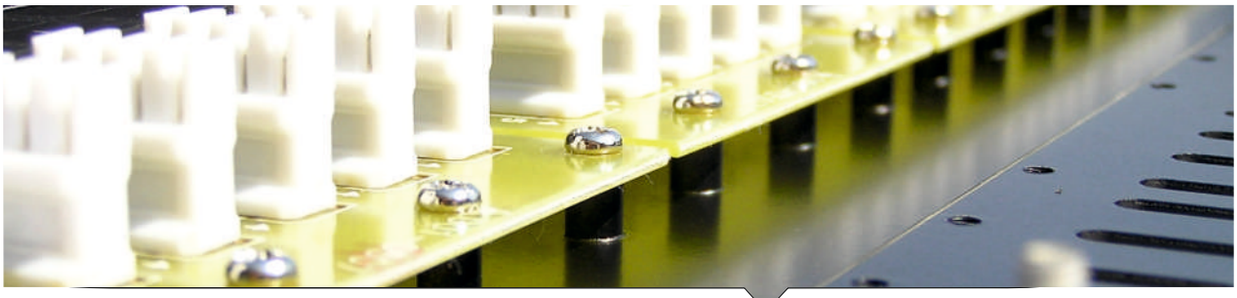


Features:
- 1U high, 19” for 25 and 50 ports
- ISDN 4-poles (3/6, 4/5)
- L-type shelf construction
- Quick and simple access to IDC
- Description fields with pre-printed identification

Mechanical parameters:
- **Body:** steel plate 1,5 mm,
- **Jack:** unshielded RJ45 cat.3
- **Housing:** High impact, frame retardant plastic UL94V-0
- **Contacts:** 0,35 mm phosphor bronze over gold and nickel
- **Contacts durability:** >750 connection cycles EN 60603-7
- **IDC :** IDC-LSA accept 22-26AWG solid wire
- **IDC durability:** >200 connection cycles
- **DC contacts:** phosphor bronze over 60% Sn and 40% Pb
- **Identification:** T568A and T568B

XV100.210

Example: XV100.210 patch panel Fibrain Data Voice series 50 ports



Voice

LSA accessories

LSA connections module 2/10

PC8001 - Beige-grey 2/10

PC8002 - White-grey 2/10

- for 10 pairs,
- for back-mount frame
- printing: jumper side 1...0,
- without color code.

LSA disconnection module 2/10

PC8003 - Grey 2/10

- for 10 pairs,
- for back-mount frame,
- printing: jumper side 1...0,
- without color code.

LSA connection module with color code 2/10

PC8004 - White-grey 2/10

- for 10 pairs,
- for back-mount frame
- printing: jumper side 1...0,
- with color code.

LSA earth module 2/38

PC8005 - Red 2/38

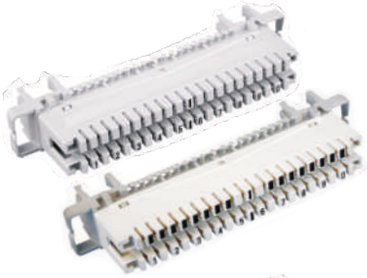
- for back-mount frame,
- for connecting drain wires to the earth contact,
- 38-pole,
- large jumper guides.

LSA module for profile rods 2/10

PC8012 - Connections - white-grey 2/10

PC8013 - Disconnections - grey 2/10

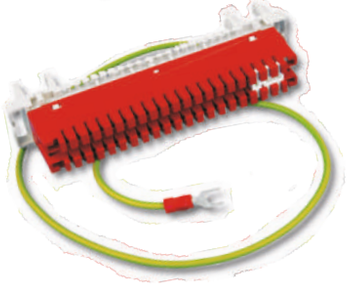
- for 10 pairs,
- for profile rods and back-mount frame,
- printing: jumper side 1...0,
- without color code.

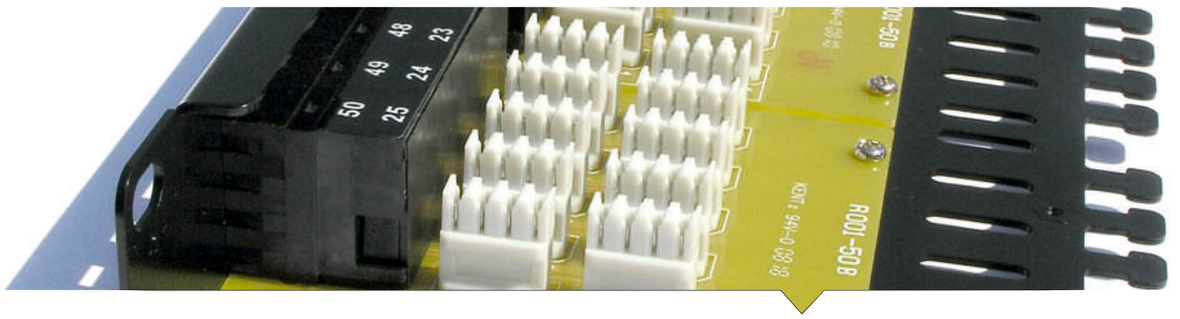


LSA earth module for profile rods 2/34

PC8015 - red 2/34

- for profile rods and back-mount frame,
- for connecting drain wires to the earth contact,
- 34-pole,
- large jumper guides.





Voice

LSA accessories

Label holder 2/10

PC8161 - Attachable

PC8162 - Hinged

• for clicking onto LSA modules 2/10 and onto overvoltage protection magazines 2/10 instead of cover with blank paper labels and transparent covers.

Module label holder 2/10

PC8160 - mounted on back-mount frame

PC8170 - mounted onto profile rods

• for clicking onto profile rods, or back-mount frame
• with blank paper label,
• height - 21mm.

Plug number set

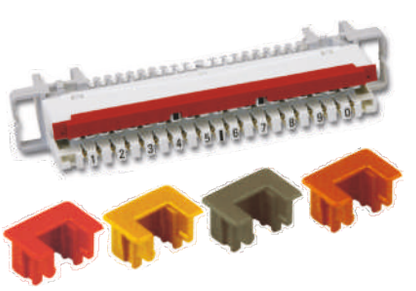
PC8165 - plug number set 1...0

PC8166 - plug number set 10...100

• for marking LSA modules of series 2.

Cover and marking cap

Color	Marking cap 2/1	Cover bar 2/10
Red	PC8061-R	PC8062-R
White	PC8061-W	PC8062-W
Grey	PC8061-G	PC8062-G
Yellow	PC8061-Y	PC8062-Y
Green	PC8061-Gr	PC8062-Gr
Blue	PC8061-Bl	PC8062-Bl
Brown	PC8061-Br	PC8062-Br
Black	PC8061-B	PC8062-B

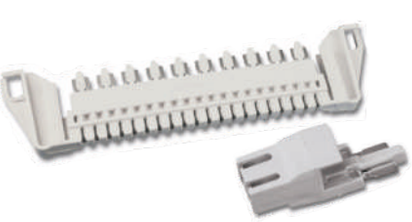


Changeover adapter

PC8181 - changeover adapter 2/1

PC8182 - changeover adapter 2/10

PC8183 - changeover adapter 2/10 with printing: 1...0

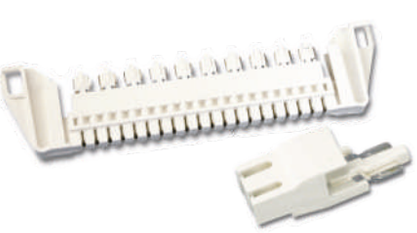


• for interruption-free switching of 1/10 pairs in LSA connection and disconnection modules of series 2.

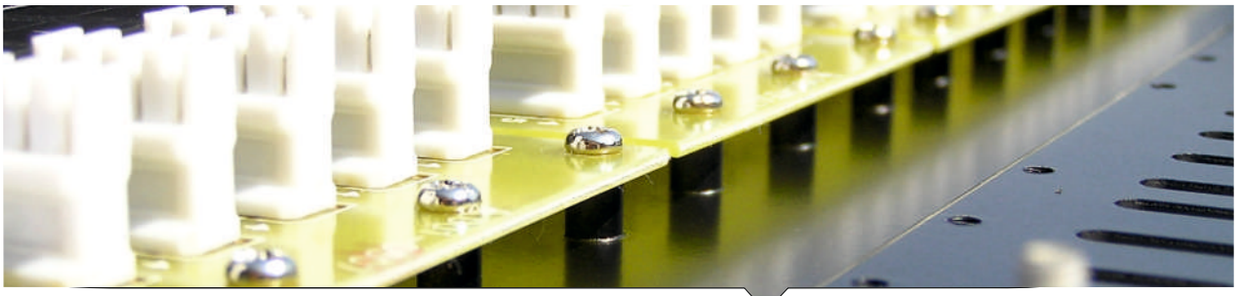
Disconnection adapter

PC8185 - disconnection adapter 2/1

PC8186 - disconnection adapter 2/10



• disconnects in disconnection modules of series 2 one pair and taps the wires from one side.



Voice

LSA accessories

Disconnection plug 2/1

PC8191-X -disconnection plug 2/1

- for opening of one pair in LSA disconnection modules of series 2,
- in various colors.

Dummy plug 2/1

PC8195-X -dummy plug 2/1

PC8196-X - dummy plug 2/1 with extraction hook

- for marking one pair as well as prevent unwanted access to LSA connection modules and disconnenction in case of disconnection modules of series 2,
- with extraction hook or with label area in various colors.

Disconnection plug 2/10

PC8192 - disconnection plug 2/10, grey

- for opening all pairs in LSA disconnection modules 2/10.

Wire connector

PC8021 - to connect 2 wires

PC8022 - to connect 2 or 3 wires

- diameter - 0,4-0,9mm,
- colors: yellow or red,
- waterproof.

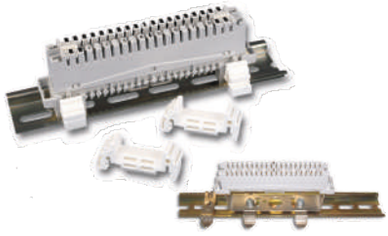
Adapter profile/DIN rain

PC8050 - adapter profile

PC8051 - DIN rail adapter

PC8052 - DIN rail adapter 2/10

- for mounting LSA modules for 12mm profile rod on DIN rails TS35 according to DIN EN 60715,
- version with M5 thread,
- version for profile rods.



Profile earth contact clip

PC8291 - profile earth contact clip

- provides the conductive connection between overvoltage protection components and the profile rods,
- per LSA modules are 2 earth contact clips required.

Overvoltage/overcurrent protection 2/1 G PTC

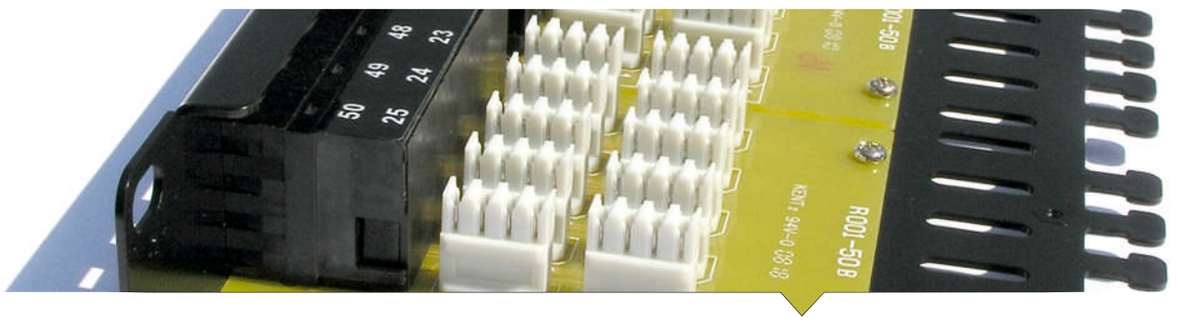
PC8292 - Overvoltage/overcurrent protection 2/1

- 1 pair coarse and fine protection with fail-safe,
- pluggable onto LSA disconnection and switching modules of series 2.

Earth bar 2/10

PC8295 - Earth bar 2/1

- provide earth connection between 1-pair protection plugs or earth plugs and the distribution frame.



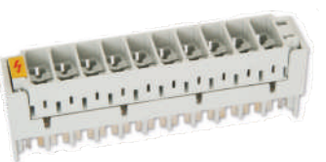
Voice

LSA accessories

LSA GDT magazine 2/10

PC8150 - grounding magazine 3P

- LSA GDT magazine 2/10,
- overvoltage protection magazine for connection and disconnection modules 2/10.



Overvoltage arrester 8x10, 3-pole

PC8151 - Overvoltage arrester 8x10

- with pins and upper fail-safe.

Magazine cover 2/10

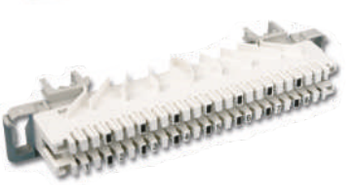
PC8152 - Magazine cover 2/10

- for overvoltage protection magazines 2/10 of type H.

LSA disconnection module 2/8x abs

PC8081 - LSA disconnection module 2/8

- without color code,
- for profile rods,
- for connecting and jumpering shielded pairs.



Cable support

PC8082 - Cable support 2/8 abs

- for one cable with 8 pairs,
- max. cable diameter: 12mm.

Wire guide 2/8 abs

PC8083 - Wire guide 2/8 abs, right

- gor insertion of 4x2 jumper wires,
- snaps in LSA disconnection module 2/8 ab.

Hinged label holder 2/8 abs

Pc8084 - Hinged label holder 2/8

- with blank paper labels and transparent covers.

Profile rod bracket U

PC8111 - Profile rod bracket U - depth: 58 mm

PC8112 - Profile rod bracket U - depth: 86 mm

- for 12 mm rods,
- for assembling of profile rods bays for LSA modules 2/10.

Profile LSA rod

PC8113.xxxx - Profile rod

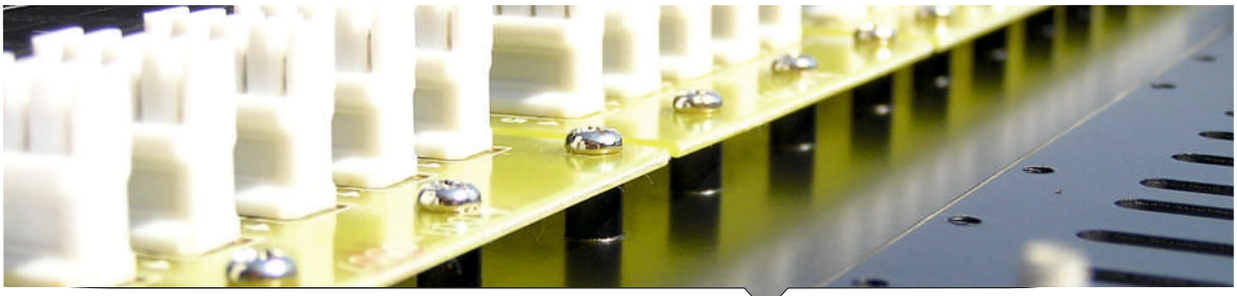
- stainless steel,
- diameter: 12 mm.

Profile spacer

PC8115 - Profile spacer 2,5 mm for pitch of 25 mm

PC8116 - Profile spacer 5,0 mm for pitch of 27,5mm

- for even spacing of LSA modules for profile rods.



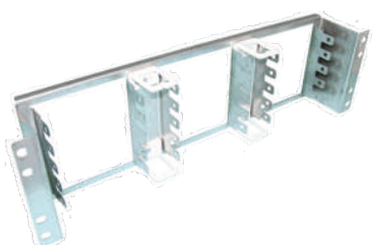
Voice

LSA accessories

Subrack 10” or 19”

PC8100 - Subrack 10”, 1RU for 2x2 LSA-modules 2/10, horizontal mounting
PC8101 - Subrack 19”, 2RU for 20 LSA-modules 2/10, vertically mounting
PC8102 - Subrack 19”, 2RU for 9 LSA-modules 2/10, horizontal mounting
PC8103 - Subrack 19”, 3RU for 15 LSA-modules 2/10, horizontal mounting
Pc8104 - Subrack 19”, 4RU for 18 LSA-modules 2/10, horizontal mounting
PC8105 -Subrack 19”, 1RU for 6 LSA-modules 2/10, horizontal mounting

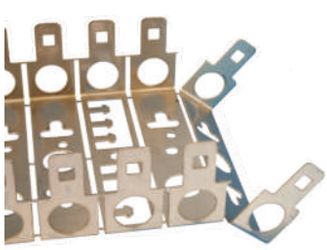
- rear strain relief of the cables,
- with back-mount frame.



Backmount frame flexible

Pc8420 - Backmount frame 2/10, depth 22 mmm
PC8421 - Backmount frame 2/10, depth 30 mm

- stainless steel,
- for installation of LSA modules 2/10 for back-mount frames,
- can be cut through by wire cutter.



Indoor distribution box

Pc8200 - Indoor distribution box - 30 pairs
PC8201 - Indoor distribution box - 50 pairs
PC8202 - Indoor distribution box - 100 pairs
PC8210 - Indoor distribution box - 100 pairs, metal construction

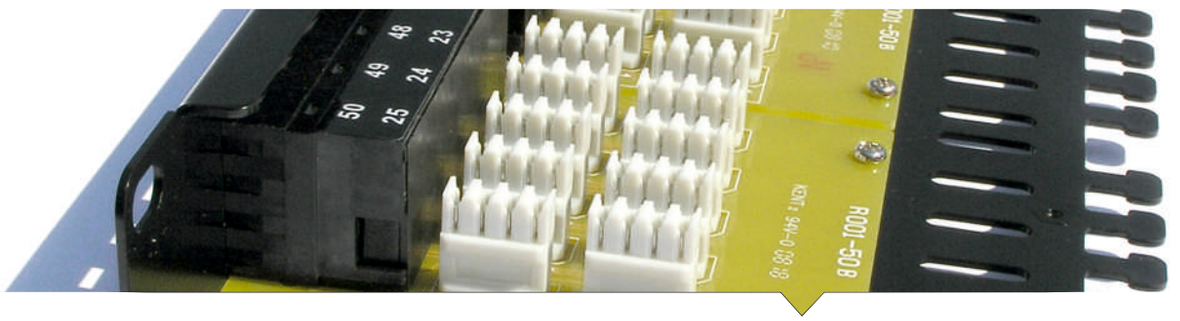
- with back-mount frame for LSA modules 2/10,
- with lock,
- possibility to mounting attachment frame, to enlarge the depth of box for overvoltage protection.

Outdoor distribution box

PC8250 - Outdoor distribution box - 30 pairs
PC8251 - Outdoor distribution box - 50 pairs
PC8252 - Outdoor distribution box - 100 pairs

- with back-mount frame for LSA modules 2/10,
- with lock,
- protection class: Ip54.

01



Voice

LSA accessories

Cord 2/4, 4-pole

PC8340.X - Cord 2/4, 4-pole

- for LSA disconnection and switching modules,
- equipped with LSA plug 2/4, one side opened for own configuration,
- X- various length.

Connection cord 2/4, 4-pole

PC8341.X - Connection cord 2/4, LSA-LSA

- equipped with 2 LSA plugs 2/4,
- color mark for allocation of the pins,
- for LSA disconnection and switching modules,
- x- various length.

Test cord 2/4, 4-pole

PC8342.X - Equipped with LSA plug 2/4 and 4 sockets (4 mm)

PC8343.X - Equipped with LSA plug 2/4 and 4 banana plugs

- cuts the line off, Color mark for allocation of the pins,
- for LSA disconnection and switching modules,
- x-various length.

Cord 2/2, 2-pole

PC8320.X - Cord 2/2, 2-pole

- for LSA disconnection and switching modules,
- equipped with LSA plug 2/2, one side opened for own configuration,
- x-various length.

Connection cord 2/2, 2-pole

PC8321.X - Connection cord 2/2, LSA-LSA

- equipped with 2 LSA plugs 2/2,
- color mark for allocation of the pins,
- for LSA disconnection and switching modules,
- x-various length.

Test cord 2/2, 2-pole

PC8322.X - Equipped with LSA plug 2/2 and 2 sockets (4 mm)

PC8323.X - Equipped with LSA plug 2/2 and 2 banana plugs

- cuts the line off,Color mark for allocation of the pins,
- for LSA disconnection and switching modules,
- x-various length.

Connection cord LSA – Rj45

PC8346.X - LSA 2/4(I)a - Rj45

PC8326.X - LSA 2/2 (II)a - Rj45

- Equipped with LSA plug 2/4 or 2/2 and RJ45,
- X- various length.

Cable LSA - LSA

PC8345.X - LSA 2/4(I)a - LSA 2/4(I)a

PC8325.X - LSA 2/2(II)a - LSA 2/2(II)a

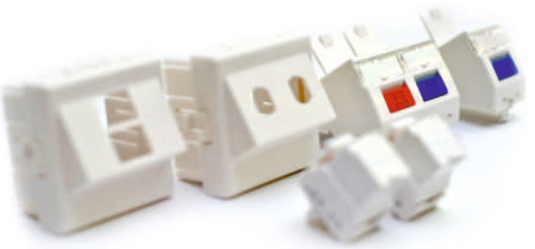
- equipped with LSA plug 2/4 or 2/2,
- x- various length.

01

Cabinets, Racks and Accessories

Cabinets, Racks and Accessories

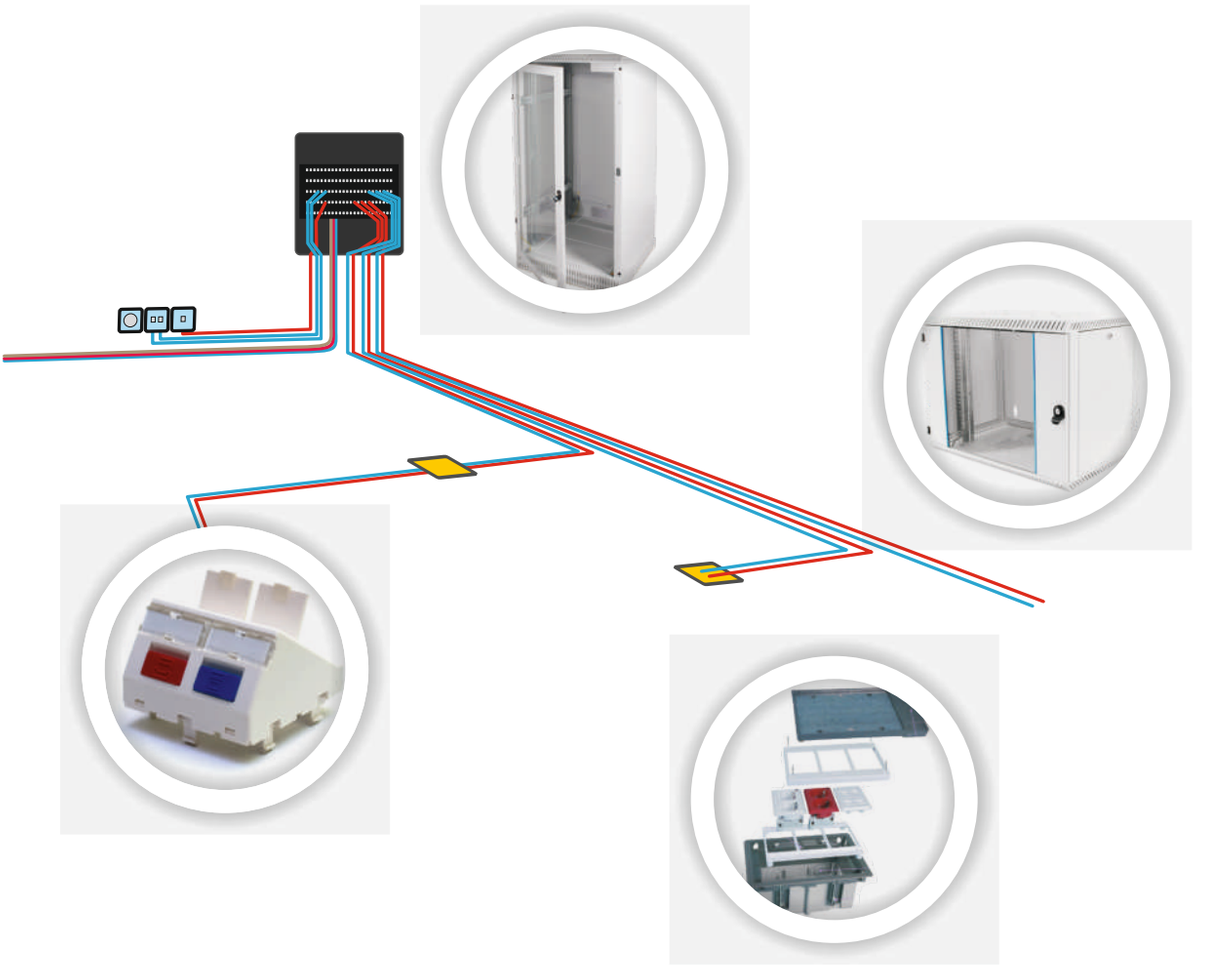
Additional Equipment standard 45x45

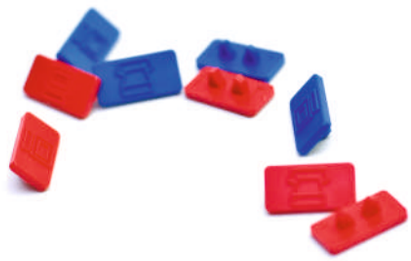


Additional equipment

Structural Cabling System Fibrain Data, is also a full assortment of products, that are used on distribution and logical point. The featured cabinets are used for holding active and passive network equipment in 10”, 19” and 21” standard indoor applications. The simple construction and very high standard of product finish make the product highly functional. The wide rande of cabinets and accessories allow custom configuration. The indoor cabinets offered are IP20 and can be upgraded to IP 41 according to PN/E 08106/ EN 60529

EBOX - the electro installation product, complete solution of flush box and surface box system. Is enable to use the same design of electrical sockets, telephone outlets, computer network outlets and also fiber optical outlets.

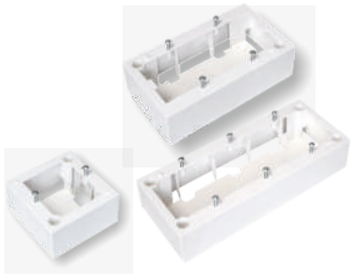




Boxes

Plastic boxes in 45x45 mm standard

Type	Height (mm)	Width (mm)	Depth (mm)	Index
2 modules	81	81	40	PC5002
4 modules	81	148	40	PC5004
6 modules	81	203	40	PC5006



- enable to use electrical and data transfer outlets in the same design,
- allow to use 2x 230 V sockets or 6 data transfer sockets,
- surface mounted,
- delivered with 2x metal screw,
- has special holes in back side for cables.

Flush mounted boxes in 45x45 mm standard

Type	Height (mm)	Width (mm)	Depth (mm)	Index
2 modules	65	68	40	PC5012
4 modules	65	124	40	PC5014
6 modules	65	184	40	PC5016

- enable to use electrical and data transfer outlets in the same design,
- allow to use 3x240 V sockets or 6x data transfer sockets,
- surface mounted,
- delivered with 2x metal screw,
- has special holes in back side for cables.

Frames and supports to boxes in 45x45 mm standard

PC5102 - frame with support - 2 modules 45x45mm

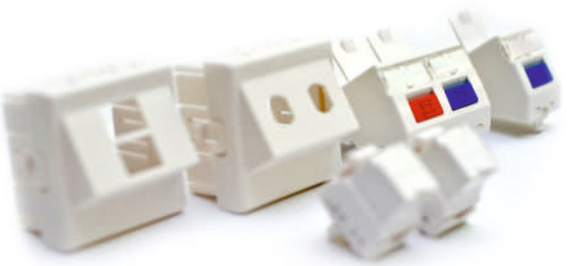
PC5104 - frame with support - 4 modules 90x45mm

PC5106 - frame with support - 6 modules 135x45mm

- enable to use electrical and data transfer outlets in the same design,
- allow to use 3x240 V sockets or 6x data transfer sockets,
- flush mounted of surface mounted,
- fast assembly modules - “on click”.

Cabinets, Racks and Accessories

Additional Equipment standard 45x45

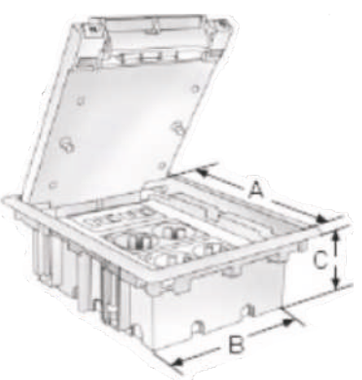


Floor boxes

Modules boxes

Type	A (mm)	B (mm)	C (mm)	Index
4 modules	112	167	93-128	PC5049
8 modules	152	167	93-128	PC5050
12 modules	207	167	93-128	PC5051
16 modules	263	167	93-128	PC5052
24 modules	300	167	93-128	PC5053

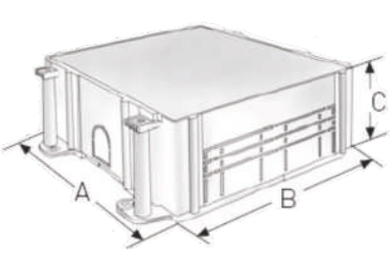
- color: cardcage - RAL 7011, cover – RAL 7021,
- construction: thermoplastic, fire retardant, halogen free,
- height adjustable – 93-128 mm,
- delivery: cardcage, frame, cover,
- has special holes in back side for cables,
- cover with wicket and lock.



Mount for concrete floor

Type	A (mm)	B (mm)	C (mm)	Index
4 modules	172	220	76-110	PC5049.1
8 modules	172	220	76-110	PC5050.1
12 modules	227	220	76-110	PC5051.1
16 modules	280	220	76-110	PC5052.1
24 modules	313	259	76-110	PC5053.1

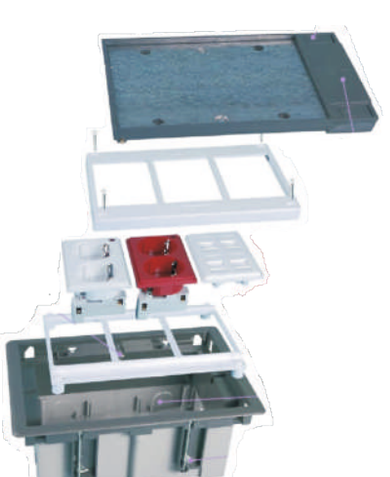
- construction: thermoplastic, fire retardant, halogen free,
- height adjustable – 76-110 mm,
- enable mounting on overflow floor.



Additional fixtures

- PC5060 - Ebox adapter for floor boxes - 2xRJ45 2 modules
- PC5061 - Ebox adapter for floor boxes - 4xRJ45 2 modules
- PC5062 - Ebox adapter for floor boxes - 2xST simplex 2 modules
- PC5063 - Ebox adapter changer - to standards 50x50 mm 2 modules
- PC5064 - Ebox adapter for floor boxes - 2xSC simplex 50x50 mm
- PC5065 - Ebox electrical sockets 2x230 V DATA red 2 modules
- PC5066 - Ebox electrical sockets 2x230 V white 2 modules
- PC5067 - Ebox 2x2 modules 45x45 mm frame for floor boxes

- enable to use others adapters on 45x45 or 50x50 standards,
- allow to create complete subscriber point.



Additional Equipment standard 45x45

Adapters in 45x45mm standard

Adapters to keystone jacks modules – flat

PC5201 - Ebox adapter 22,5x45mm for RJ45 Keystone Jack Modules

PC5202.1 - Ebox adapter 45x45mm for RJ45 Keystone Jack Modules

PC5202.2 - Ebox adapter 45x45mm for 2xRJ45 Keystone Jack Modules

- enable to use electrical and data transfer outlets in the same design,
- mounted on frame with support,
- dust flaps,
- large description field,
- assembly “on click”.

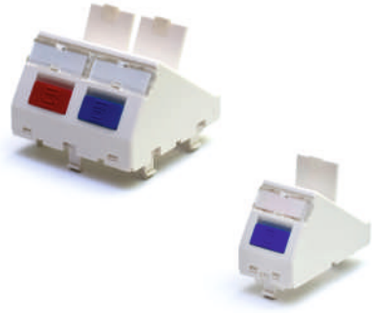
Adapters to keystone jacks modules – angular

PC5203 - Ebox adapter 22,5x45 mm for RJ45 Keystone Jack Modules

PC5204.1 - Ebox adapter 45x45 mm for RJ45 Keystone Jack Modules

PC5204.2 - Ebox adapter 45x45 mm for 2xRJ45 Keystone Jack Modules

- enable to use electrical and data transfer outlets in the same design,
- mounted on frame with support,
- dust flaps,
- large description field, with identification icon,
- assembly “on click”.



Adapters to other modules – flat

PC5205 - Ebox adapter 22,5x45 mm for 1xSC duplex

PC5206 - Ebox adapter 45x45 mm for 2xST simplex

PC5207 - Ebox adapter 45x45 mm for 2xSC simplex, LC duplex, E2000/APC

- enable to use electrical and data transfer outlets (fiber connector) in the same design.

Blind adapter 45x45 mm standard

PC5221 - Ebox blind adapter 22,5x45 mm

PC5222 - Ebox blind adapter 45x45 mm

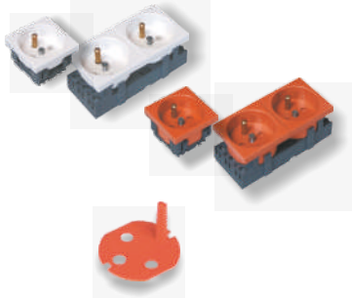
- enable to blind not used fields,
- mounted on frame with support,
- assembly “on click”.

Electrical sockets in 45x45 mm standard

Type	2P+Z	2x(2P+Z)	3x(2P+Z)
Electrical socket with blockade	PC5231	PC5233	PC5235
Electrical socket without blockade	PC5230	PC5232	PC5234

- enable to use electrical and data transfer point in the same design,
- assembly “on click,
- 240V 50Hz /16A, two holes with earthing pin.

PC5220 - EBOX key blocking



Osprzęt elektroinstalacyjny

Osprzęt dodatkowy w standardzie 50x50mm

Osprzęt dodatkowy

Puszki natynkowe

Typ	Wys. (mm)	Szer. (mm)	Gł. (mm) - 27	Gł. (mm) - 32	Gł. (mm) 37
2 modułowe	86	86	XB-50BBA-01	XB-50BBB-02	XB-50BBC-02
4 modułowe	86	146	XB-50BBA-02	XB-50BBB-04	XB-50BBC-04

- umożliwiają budowę gniazd logicznych i elektrycznych,
- montaż od jednego do czterech gniazd logicznych lub od jednego do dwóch gniazd elektrycznych,
- przeznaczone do montażu w połączeniu z ramkami wyposażonymi w suporty,
- dostarczane wraz w wkrętami do przymocowania ramki i suportu,
- posiadają dodatkowe wycięcia umożliwiające wprowadzenie kabla.

Ramki montażowe z supportami

XB-50FPB-0002 - ramka z supportem - 2 modułowa 50x50 mm - wykończenie kątowe
XB-50FPB-0004 - ramka z supportem - 4 modułowa 90x50 mm - wykończenie kątowe
XB-50FPF-0002 - ramka z supportem - 2 modułowa 50x50 mm - wykończenie płaskie
XB-50FPF-0004 - ramka z supportem - 4 modułowa 90x50 mm - wykończenie płaskie

- umożliwiają budowę gniazd logicznych i elektrycznych,
- montaż od jednego do czterech gniazd logicznych, lub od jednego do dwóch gniazd elektrycznych,
- służą jako elementy mocująco-maskujące.

Ramki montażowe z adapterem keystone

XB-50FPF-0102 - ramka z supportem - 2 modułowa 50x50 mm - pod 1 moduł keystone
XB-50FPF-0202 - ramka z supportem - 2 modułowa 50x50 mm - pod 2 moduły keystone

- umożliwiają budowę gniazd logicznych,
- wyposażone w duże pole opisowe, oraz ikony identyfikacyjne,
- konstrukcja adaptera pozwala na montaż modułów Keystone RJ45 większości producentów dostępnych na rynku.

Adaptery pod moduły keystone

XB-50KA45I-01 - adapter 25x50 mm pod moduł keystone - kątowy
XB-50ST45I-01 - adapter 25x50 mm pod złącze ST SX - kątowy
XB-50SC45I-01 - adapter 25x50 mm pod złącze SC SX - kątowy
XB-50KA00L-01- adapter 25x50 mm pod moduł keystone - płaski
XB-50BL000-01 - zaślepka do gniazd 25x50 mm

- umożliwiają budowę gniazd logicznych,
- przeznaczone do montażu w połączeniu z ramkami wyposażonymi w suporty,
- montaż przy pomocy zatrzasków.

Osprzęt dodatkowy

Moduły natynkowe - wersja BOX

XB-00BXIL-01 - Moduł natynkowy - 1x keystone - wersja BOX

- umożliwia budowę gniazd logicznych w dowolnym miejscu
- wyposażony w:
  - otwory montażowe „keystone”,
  - duże pole opisowe, ikony identyfikacyjne,
  - przesłonę przeciwkurzową,
- przystosowany pod montaż modułów krosowniczych Fibrain DATA w wersji UTP i FTP/STP.

XB-00BXIL-02 - Moduł natynkowy - 2x keystone - wersja BOX

- umożliwia budowę gniazd logicznych w dowolnym miejscu
- wyposażony w:
  - otwory montażowe „keystone”,
  - duże pole opisowe, ikony identyfikacyjne,
  - przesłonę przeciwkurzową,
- przystosowany pod montaż modułów krosowniczych Fibrain DATA w wersji UTP i FTP/STP.

Ramki montażowe z adapterem keystone - Legrand Valena™

PC5302.2 - Adapter pod 2 moduły keystone - płaski

- umożliwiają budowę gniazd logicznych,
- wyposażony w 2 otwory montażowe „keystone” oraz pole opisowe,
- występuje możliwość zaślepienia otworów montażowych,
- umożliwia montaż modułów krosowniczych FibrainDATA w wersji UTP i FTP/STP w osprzęcie elektroinstalacyjnym Legrand Valena™.

Cabinets, Racks and Accessories

Floor Standing Cabinets SRS 19”

Floor Standing Cabinets SRS – Standard

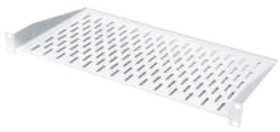
Features:

- sheet steel housing with welded frame, completely pre-assembled, self ventilated,
- surface finish: powder painted in RAL 7035 - light grey (other colors on request),
- protection IP20 in accordance with PN 92/E-08106/EN 60529/IEC 529. (does not apply to brush cable entries),
- indoor use,
- cabinets can be arranged in line using line-up bolts after removing side walls (Part No. ZLS),
- cabinet frame fully welded - 1,5 mm thick sheet steel on 4 x leveling feet M10,
- front door: window made of safety glass (optionally: full steel, full glass, punched perforated plate), opening angle 180 degrees. Left or right door opening options,
- cabinet rear panel - 1 mm. thick sheet steel, removable with two single point locks (Optionally: full steel or perforated, left or right side mounted door),
- cabinet side panels - 1 mm thick sheet steel, removable with two single point locks,
- two pairs of the profile rails (AL-Zn coated) each arranged at the front and rear on the inside. Each profile with unit labeling,
- possibility to increase maximum weight of equipment mounted in the cabinet SRS by using cabinet max load strengthen kit,
- cables let in entry optionally either from roof or base, either, through top or bottom of the rear side of cabinet, pre-punched opening. (Dimensions: 450 x 90 mm),
- in the roof and base of cabinet 2 x 4U blind plates (pre - punched opening) for fan units (possible configurations 1 or 2 x 2 fan units, 1 x 4 fan units 1 x 6 fan units),
- wide range of supplementary accessories: plinths, shelves, fan units, light units, power distribution units, blanking covers, cable management, accessories etc,
- optional 19" swing frame 90° opening.

Type	Dimensions (mm)			Weight (kg)	Load capacity (kg)	Index
	Width	Depth	Height			
15U	600	600	780	44	300	SRS-15-6/6-S01-G
	600	800		51		SRS-15-6/8-S01-G
	800	800		60		SRS-15-8/8-S01-G
	800	900		64		SRS-15-8/9-S01-G
18U	600	600	915	48	300	SRS-18-6/6-S01-G
	600	800		56		SRS-18-6/8-S01-G
	800	800		64		SRS-18-8/8-S01-G
22U	600	600	1095	53	300	SRS-22-6/6-S01-G
	600	800		62		SRS-22-6/8-S01-G
	800	800		71		SRS-22-8/8-S01-G
	800	900		76		SRS-22-8/9-S01-G
24U	600	600	1210	82	300	SRS-24-6/6-S01-G
	600	800		82		SRS-24-6/8-S01-G
	800	800		82		SRS-24-8/8-S01-G
	800	1000		82		SRS-24-8/10-S01-G
27U	600	600	1315	60	300	SRS-27-6/6-S01-G
	600	800		69		SRS-27-6/8-S01-G
	800	800		80		SRS-27-8/8-S01-G
32U	600	600	1535	73	400	SRS-32-6/6-S01-G
	600	800		87		SRS-32-6/8-S01-G
	600	900		88		SRS-32-6/9-S01-G
	800	800		102		SRS-32-8/8-S01-G
	800	900		108		SRS-32-8/9-S01-G
42U	600	600	1980	88	400	SRS-42-6/6-S01-G
	600	800		105		SRS-42-6/8-S01-G
	800	600		103		SRS-42-8/6-S01-G
	600	900		110		SRS-42-6/9-S01-G
	800	800		121		SRS-42-8/8-S01-G
45U	600	600	2120	92	400	SRS-45-6/6-S01-G
	600	800		109		SRS-45-6/8-S01-G
	800	800		127		SRS-45-8/8-S01-G

Accesories supplied:

- 1 x brush terminal,
- 1 x set of captive nuts (16 pcs.),
- 2 x keys for sides and rear panels,
- 2 x keys for front door,
- 4 x leveling feet M10,
- 1,5 m of special cable entry cover for cables protection (after re-moving cable entry).



Floor Standing Cabinets SRS – ECO

Features:

- sheet steel housing with welded frame, completely pre-assembled, self ventilated,
- surface finish: powder painted in RAL 7035 - light grey (other colors on request),
- protection IP20 in accordance with PN 92/E-08106 / EN 60529 / IEC 529. (does not apply to brush cable entries),

- indoor use,
- cabinets can be arranged in line using line-up bolts (Part No. ZLS) after removing side walls,
- cabinet frame fully welded - 1,5 mm. thick sheet steel on 4 x leveling feet M10,
- front door made of full safety transparent glass (thickness - 5 mm), opening angle 180 degrees, with two single point locks. Left or right opening options,
- cabinet rear panel - 1 mm thick sheet steel, removable with two single point locks (Optionally: full steel or perforated, left or right side mounted door),
- cabinet side panels - 1 mm. thick sheet steel, removable with two single point locks,
- two pairs of rails (AL-Zn coated) each arranged at the front and rear on the inside,
- new profile fixing system efficiently increases maximum load capacity of the cabinets and facilitates cable management,
- mounting rails with 25 mm hole spacing arranged horizontally at the top and the bottom of the cabinet, for fixing and depth adjustment of the mounting rails,
- minimum distance from the front door and front profile rails - 95 mm,
- each profile with unit labeling,
- internal cabinet sections fully earthed (grounding cords length: 30 cm 6 mm^2) to the cabinet bottom,
- cables let in entry optionally either from roof or base, either through top or bottom of the rear side of cabinet, pre-punched opening. (Dimensions: 450 x 90 mm).

Accessories supplied:

- 1 x brush terminal,
- 1 x set of captive nuts (16 pcs.),
- 2 x keys for sides and rear panels,
- 2 x keys for front door,
- 4 x leveling feet M10,
- 1,5m of cable entry cover for cables protection (after removing cable entry).

Typ	Dimensions (mm)			Weight (kg)	Load capacity (kg)	Index
	Width	Depth	Height			
42U	600	600	780	87,8	300	SRS-15-6/6-ECO-G
	600	800		104,3		SRS-15-6/8-ECO-G
	800	800		121,4		SRS-15-8/8-ECO-G

Cabinets, Racks and Accessories

Floor Standing Server Cabinets - SSRS 19”

Floor Standing Server Cabinets SSRS

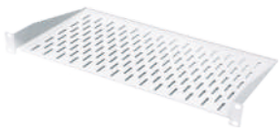
Features:

- sheet steel housing with welded frame, completely pre-assembled,
- possibility of controlling ventilating air flow by application of proper type of fans, door, side and rear panels,
- protection IP20 in accordance with PN 92/E-08106 / EN 60 529 / IEC 529. (does not apply to brush cable entries),
- cabinets can be arranged in array using line-up bolts (Article No.ZLS-B),
- cabinet frame fully welded - 1,5 mm thick sheet steel on 4 x leveling feet M10,
- front door: with window made of safety glass (optionally: full steel, full glass, punched perforated plate), opening angle 180 degrees, with three point turning handle with latch, lockable. Left or right opening options,
- cabinet rear panel - 1 mm thick sheet steel, removable with two single point locks
- cabinet side panels - 1 mm thick sheet steel, removable with two single point locks.
- two pairs of mounting rails (AL-Zn coated) each arranged at the front and rear on the inside. Each profile with unit labeling. new profile fixing system efficiently increase maximum load capacity of the cabinets and facilitates cables management.
- profile rails with 25 mm. hole spacing arranged horizontally at the top and the bottom of the cabinet, for fixing and depth adjustment of the profile rails.
- available with front swing frame 19" mounting profiles.
- cables let in entry optionally either from roof or base, either through top or bottom of the rear side of cabinet, pre-punched opening.
- in the roof and base of cabinet 2 x 4U blind plates (pre-punched opening) for fan units (possible configurations 1 or 2 x 2 fan units, 1 x 4 fan units, 1 x 6 fan units).
- possibility to increase maximum weight of equipment mounted in the cabinet by using cabinet max load strengthing kit.
- wide range of supplementary accessories : plinths, shelves, fan units, light units, power distribution units, blanking covers,

Version	Type	Dimensions (mm)			Weight (kg)	Load capacity (kg)	Index
		Width	Depth	Height			
BOX							
	42U	600	1000	1980	116,1	600	SSRS-42-6/10-BOX-G
		800	1000		139,0		SSRS-42-8/10-BOX-G
	45U	800	1000	2120	143,9		SSRS-45-8/10-BOX-G
ICE							
	42U	800	1000	1980	139,0	600	SSRS-42-8/10-ICE-G
STANDARD II							
	42U	600	1000	1980	139,0	600	SSRS-42-6/10-S02-G
		800	1000		159,0		SSRS-42-8/10-S02-G
		800	1200		139,0		SSRS-42-8/12-S02-G
STANDARD III							
	42U	600	1000	1980	139,0	600	SSRS-42-6/10-S03-G
		800	1200		159,0		SSRS-42-8/12-S03-G
TOP II							
	42U	600	1000	1980	116,1	600	SSRS-42-6/10-T02-G
		800	1000		139,0		SSRS-42-8/10-T02-G
		800	1200		159,0		SSRS-42-8/12-T02-G
TOP III							
	42U	600	1000	1980	116,1	600	SSRS-42-6/10-T03-G
		800	1000		139,0		SSRS-42-8/10-T03-G
		800	1200		159,0		SSRS-42-6/12-T03-G
WEST							
	42U	800	1000	1980	139,0	600	SSRS-42-8/10-W01-G
WEST-B							
	42U	800	1000	1980	139,0	600	SSRS-42-8/10-W01-B
WEST II							
	42U	800	1000	1980	139,0	600	SSRS-42-8/10-W02-G
WEST II-B							
	42U	800	1000	1980	139,0	600	SSRS-42-8/10-W02-B
WEST III							
	42U	800	1000	1980	139,0	600	SSRS-42-8/10-W03-G
WEST III-B							
	42U	800	1000	1980	139,0	600	SSRS-42-8/10-W03-B

Cabinets, Racks and Accessories

Floor Standing Server Cabinets - SSRS 19”



Floor Standing Server Cabinets SSRS

• **BOX** - Metal front door with window made of safety glass with three point lock, rear - full meta panel or door with two single point locks, standard color powder painted in RAL **7035 - light grey.**
• **ICE-** Full safety glass front door with two single point locks, rear - full metal panel or door with two single point locks, standard color powder painted in RAL 7035 - light grey.

• **STANDARD II -** perforated front door and perforated rear panel, RAL 7035 grey, new perforation 80%
• **STANDARD III - Per**forated front and back door (same height),
• **RAL 7035 grey, new perforation 80%**
• **TOP II -** Perforated front door and perforated rear panel, RAL 7021 black, new perforation 80%.
• **TOP III -** Perforated front and back door (same height), RAL 7021 black, new perforation 80%.

• **WEST -** Perforated front and back double door (same height), RAL 7035 grey, new perforation 80%.
• **WEST-B -** Perforated front and back double door (same height), RAL 7021 black, new perforation 80%.
• **WEST II -** Perforated, double front door; perforated short rear panel, RAL 7035 black, new perforation 80%.
• **WEST II-B -** Perforated front and back double door (same height), RAL 7021 black, new perforation 80%.
• **WEST III -** Double front door metal/glass; sheet steel rear panel, RAL 7035 grey.
• **WEST III-B -** Double front door metal/glass; sheet steel rear panel, RAL 7021 black.

Accessories supplied:
·1 x brush terminal,
·1 x set of captive nuts (16 pcs.),
·2 x keys for sides and rear panels,
·2 x keys for front door,
·4 x leveling feet M10,
·1,5m of cable entry cover for cables protection (after removing cable entry).

Cabinets, Racks and Accessories

Floor Standing Cabinets SSJ 19”

Floor Standing Cabinets SSJ

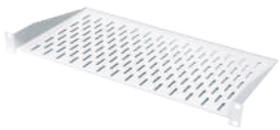
Features:

- sheet steel housing ,completely pre-assembled, self ventilated,
- surface finish: powder painted in RAL 7035 - light grey (other colors on request),
- protection IP20 in accordance with PN 92/E-08106/EN 60529/IEC 529. (does not apply to brush cable entries),
- iIntegrated plinth (100 mm height) with one cable entry on the back side (250 x 70 mm),
- iIn the roof and base of cabinet 2 x 4 U blind plates (pre-punched opening) for fan units (possible configurations 1 or 2 x 2 fan units, 1 x 4 fan units, 1 x 6 fan units),
- five cables let in entry optionally either from roof or base, either through top or bottom of the rear side of cabinet and one in the plinth, pre-punched opening,
- front door: with window made of safety glass (optionally: full steel), opening angle 180 degrees, with single point lock. Door stop possible on the right and left side,
- cabinet rear panel - 1,5 mm thick sheet steel, removable, fixed by six screws from outside,
- cabinet side panels - 1,5 mm thick sheet steel, not removable,
- one set of mounting rails (AlZn coated) each arranged at the front on the inside,
- new profiles fixing system efficiently increases maximum load capacity of the cabinets and facilitate of cables management. Profile rails with 25 mm hole spacing arranged horizontally of the top and the bottom of the cabinet, for fixing and depth adjustment of the profile rails,

- maximum spacing between front and rear profile rails:
  cabinet depth 600 mm - max 472 mm,
  cabinet depth 800 mm - max 672 mm,
- iInternal cabinet sections fully earthed (grounding cords length; 30cm, 6mm^2) to the cabinet bottom,
- wide range of supplementary accessories: plinths, shelves, fan units, light units, power distribution units, blanking covers, cable management accessories etc,
- delivery in secure transport carton and stretch packaging on disposable pallet.

Type	Dimensions (mm)			Weight (kg)	Load capacity (kg)	Index
	Width	Depth	Height			
24U	600	600	1210	44,0	150	SSJ-24-6/6-G
	600	800		51,1		SSJ-24-6/8-G
	800	800		59,8		SSJ-24-8/8-G

Accessories supplied:
- 1 x brush terminal,
- 1 x set of captive nuts (16 pcs.),
- 2 x keys for front door,
- 4 x leveling feet M10.



19” Mounting Frames

Features:

- surface finish: powder painted in RAL 7035 - light grey and (frame profiles), and RAL 7021 - black (base),
- designed for accommodating 19” components,
- for indoor use,
- easy assembly,
- accessible from all sides,
- extremely sturdy torsion ally stiff frames,
- two versions: simplex (one pair of profiles), duplex (two pair of profiles),
- open frame material - sheet steel on 4 x leveling feet M10,
- ideal for exhibition purposes, presentation in the IT sector or in full air-conditioned rooms,
- two cables let in entry on the front and rear of the frame base (Dimensions:250 x 70 mm),
- wide range of supplementary accessories: shelves, fan units, light units, power distribution units, blanking covers, cable management
- accessories etc,
- the frame profiles (front and rear) are depth adjustable to:
  -mounting dept I - 370 mm,
  - mounting dept II - 470 mm,
  - mounting dept III - 580 mm,
- delivery in two boxes, in secure transport carton.

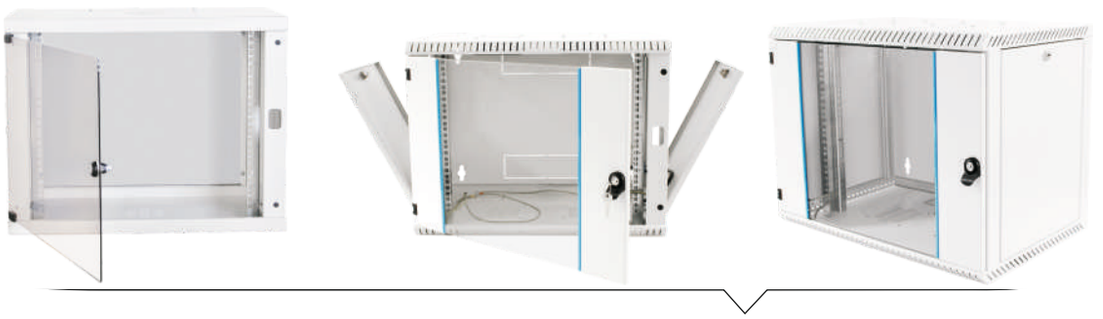
Accessories supplied:

·brush terminal (1pcs.),
·screws M6 x 12 (simplex/duplex) (8/16pcs.),
·blanking plate (1pcs.),
·screws M2,9 x 9,5 (4pcs.),
·screws M8 x 25 (simplex/duplex) (4/8pcs.).

Type		Dimensions (mm)			Weight (kg)	Load capacity (kg)	Index
		Width	Depth	Height			
32U	Simplex	550	710	1540	29,3	150	RM-32-1
	Duplex	550	710	1540	43,5	290	RM-32-2
42U	Simplex	550	710	1985	32,8	150	RM-42-1
	Duplex	550	710	1985	50,5	290	RM-42-2

Cabinets, Racks and Accessories

Wall Mount Cabinets Single Section



Wall Mount Cabinets Single Section

Type	Dimensions (mm)			Weight (kg)	Index
	Width	Depth	Height		
4U	600	400	240	15,7	SWJ-04-400-TOP
6U	600	400	330	19,1	SWJ-06-400-TOP
9U	600	400	464	22,1	SWJ-09-400-TOP
12U	600	400	597	25,9	SWJ-12-400-TOP
15U	600	400	730	29,7	SWJ-15-400-TOP
18U	600	400	860	33,5	SWJ-18-400-TOP
21U	600	400	997	37,4	SWJ-21-400-TOP
4U	600	500	240	16,1	SWJ-04-500-TOP
6U	600	500	330	19,5	SWJ-06-500-TOP
9U	600	500	465	22,5	SWJ-09-500-TOP
12U	600	500	600	26,3	SWJ-12-500-TOP
15U	600	500	730	30,1	SWJ-15-500-TOP
18U	600	500	865	33,9	SWJ-18-500-TOP
21U	600	500	997	37,8	SWJ-21-500-TOP
9U	600	600	465	22,9	SWJ-09-600-TOP
12U	600	600	600	26,7	SWJ-12-600-TOP
15U	600	600	730	30,5	SWJ-15-600-TOP
18U	600	600	864	34,3	SWJ-18-600-TOP
21U	600	600	997	38,2	SWJ-21-600-TOP

ECO version. Features:

- sheet steel housing with welded frame, completely pre-assembled, self ventilated,
- surface finish: powder painted in RAL 7035 - light grey (Application of other colors on request),
- protection IP20 in accordance with PN 92/E-08106 EN 60529 IEC 529. (doesn't apply to brush cable entries),
- for indoor use,
- pre-assembled for mounting of fans in base plate and top,
- cabinet delivered without back panel. Optionally rear blanking panel screw down by four screws from inside,
- front door: fully made of safety glass, opening angle 180 degrees, lockable with latch. Door stop possible on the right and left side,
- profile rails positioned on the inside front ,width 482,6 mm (19”), depth adjustable. Horizontal profile rails with 25 mm. hole spacing for fixing and depth adjustment of the 19” profile rails. distance from the front door and front profile rails - 31,5 mm,
- cabinet can be equipped with additional rear adjustable 19” mounting profiles,
- maximum spacing between front and rear profile rails: Cabinet depth 400mm - max 335 mm,
- wide range of supplementary accessories: shelves, fan units, light units, power distribution units, blanking covers, cable management accessories etc.

TOP version. Features:

- sheet steel housing with welded frame, completely pre-assembled, self ventilated,
- surface finish: powder painted in RAL 7035 - light grey (Application of other colors on request),
- protection IP20 in accordance with PN 92/E-08106 / EN 60 529 / IEC 529. (doesn't apply to brush cable entries),
- pre-assembled for mounting of fans in base plate and top (Ventilation Module 1 x Fan for wall mounting cabinets - 24011100),
- cables let in entry optionally either from roof or base, or through top or bottom of the rear side of cabinet, pre-punched opening,
- front door: with window made of safety glass (optionally: full steel), opening angle 180 degrees, lockable with latch. Door stop possible on the right and left side,
- removable and lockable side walls,
- front door and side walls earthed on the inside,
- profile rails positioned on the inside front , width 482,6 mm (19”), depth adjustable. Horizontal profile rails with 25 mm. hole spacing for fixing and depth adjustment of the 19” profile rails,
- minimum distance from the front door and front profile rails - 31,5 mm,
- cabinet can be equipped with additional rear adjustable 19” mounting profiles,
- maximum spacing between front and rear profile rails:
  cabinet depth 400 mm - max 335 mm,
  cabinet depth 500 mm - max 435 mm,
  cabinet depth 600 mm - max 535 mm,
- wide range of supplementary accessories: shelves, fan units, light units, power distribution units, blanking covers, cable management accessories etc,
- delivery in secure transport carton.

Type	Dimensions (mm)			Weight (kg)	Index
	Width	Depth	Height		
4U	600	400	240	13,2	SWJ-04-400-ECO
6U	600	400	330	16,1	SWJ-06-400-ECO
9U	600	400	465	18,4	SWJ-09-400-ECO
12U	600	400	600	21,4	SWJ-12-400-ECO
15U	600	400	730	24,6	SWJ-15-400-ECO

Wall Mount Cabinets Two Section

Type	Dimensions (mm)			Weight (kg)	Load capacity (kg)	Index
	Width	Depth	Height			
4U	600	500	240	15,7	30	SWD-04-500-TOP
6U	600	500	330	19,1	40	SWD-06-500-TOP
9U	600	500	465	22,1		SWD-09-500-TOP
12U	600	500	600	25,9		SWD-12-500-TOP
15U	600	500	730	29,7	50	SWD-15-500-TOP
18U	600	500	860	33,5		SWD-18-500-TOP
21U	600	500	997	37,4		SWD-21-500-TOP
4U	600	600	240	16,1	30	SWD-04-600-TOP
6U	600	600	330	19,5	40	SWD-06-600-TOP
9U	600	600	465	22,5		SWD-09-600-TOP
12U	600	600	600	26,3		SWD-12-600-TOP
15U	600	600	730	30,1	50	SWD-15-600-TOP
18U	600	600	860	33,9		SWD-18-600-TOP
21U	600	600	997	37,8		SWD-21-600-TOP

ECO version. Features:

- sheet steel housing with welded frame, completely pre-assembled, self ventilated,
- surface finish: powder painted in RAL 7035 - light grey (Application of other colors on request),
- protection Ip20 in accordance with PN 92/E-08106 EN 60 529 IEC 529,
- consist of two basic parts:
  - 19" part with safety glass door,
  - wall mounted part with four cable entries,
- pre-assembled for mounting of fans in base plate and top,
- cables let in entry optionally either from roof or base, or through top or bottom of the rear side of cabinet, pre-punched opening,
- front door: fully made of safety glass, opening angle 180 degrees, lockable with latch. Door stop possible on the right and left side,
- profile rails positioned on the inside front, width 482,6 mm (19"), depth adjustable. Horizontal profile rails with 25 mm hole spacing for fixing and depth adjustment of the 19" profile rails,
- minimum distance from the front door and front profile rails - 31,5 mm. Cabinet can be equipped with additional rear adjustable 19" mounting profiles,
- maximum spacing between front and rear profile rails:
  - cabinet depth 500 mm - max 435 mm,
- swivel frame (back part of the cabinet) earthed on the inside,
- possibility to open the back wall-mounted section only after opening the front door,
- wide range of supplementary accessories : shelves, fan units, light units, power distribution units, blanking covers, cable management accessories etc.

TOP version
Features:

- sheet steel housing with welded frame, completely pre- assembled, self ventilated,
- surface finish: powder painted in RAL 7035 - light grey (Application of other colors on request),
- protection IP20 in accordance with PN 92/E-08106 EN 60 529 IEC 529,
- consist of two basic parts:
  - -19" part with window made of safety glass door,
  - -Wall mounted part with four cable entry,
- pre-assembled for mounting of fans in base plate and top,
- cables let in entry optionally either from roof or base, or through top or bottom of the rear side of cabinet, pre-punched opening,
- front door: with window made of safety glass (optionally: full steel), opening angle 180 degrees, lockable with latch. Door stop possible on the right and left side. Front door and swivel frame (back part of the cabinet) earthed on the inside,
- profile rails positioned on the inside front , width 482,6 mm (19"), depth adjustable. Horizontal profile rails with 25 mm. hole spacing for fixing and depth adjustment of the 19" profile rails. Minimum distance from the front door and front profile rails - 31,5 mm. Cabinet can be equipped with additional rear adjustable 19" mounting profiles,
- maximum spacing between front and rear profile rail:
  - Cabinet depth 500 mm - max 435 mm,
  - Cabinet depth 600 mm - max 535 mm,
- possibility to open the back wall-mounted section only after opening the front door,
- wide range of supplementary accessories : shelves, fan units, light units, power distribution units, blanking covers, cable management accessories etc.

Type	Dimensions (mm)			Weight (kg)	Index
	Width	Depth	Height		
4U	600	500	240	13,2	SWD-04-500-ECO
6U	600	500	330	16,1	SWD-06-500-ECO
9U	600	500	465	18,4	SWD-09-500-ECO
12U	600	500	600	21,4	SWD-12-500-ECO
15U	600	500	730	24,6	SWD-15-500-ECO

Cabinets, Racks and Accessories

19” Cabinets Accessories

Cabinet fans

Type	Width (mm)	Depth (mm)	Height (mm)	Weight (kg)	Capacity (m3/h)	Index RAL 7035	Index RAL 7021
2 - fans	482	176	45,5	3,5	324-390	WTD-2T-G	WTD-2T-B
4 - fans	482	352	45,5	6,6	648-780	WTD-4T-G	WTD-4T-B
6 - fans	482	352	45,5	7,7	972-1170	WTD-6T-G	WTD-6T-B
19” profiles mount							
2 - fans	482	176	45,5	3,5	324-390	WTR-2T-G	WTR-2T-B
4 - fans	482	352	45,5	6,6	648-780	WTR-4T-G	WTR-4T-B
6 - fans	482	352	45,5	7,7	972-1170	WTR-6T-G	WTR-6T-B

Features:
- suitable for mounting in all network and server racks,
- control via connected thermostat, thermostat holder,
- main connection by means of connecting cable to non-heating appliance socket,
- material: steel sheet.

Lighting unit 19”/1U

Weight (kg)	Index RAL 7035	Index RAL 7021
1,4	POH-G	POH-B

Cable management panel 19”

Type	Weight (kg)	Index RAL 7035	Index RAL 7021
1U	0,21	ORP-VO-1U-G	
1U with brush	0,33	ORP-VS-1U-G	ORP-VS-1U-B

Brush terminal

Type	Length (mm)	Weight (kg)	Index
For SRS	450	0,98	SZC-70/250
For SWD/SWJ	250	0,82	SZC-90/450

Heavy duty castors set

Length (mm)	Load capacity (kg)	Index
600	600	KKJ-60
800		KKJ-80

- mounting under the base plate of the network cabinets,
- max. load - 600 kg,
- with brake.

Double castor set for cabinets

Weight (kg)	Load capacity (kg)	Index
1,32	300	KKJ-22

- two standard castors and two with brakes,
- easy assembly by M10 thread.

Shelf 2U/19”

Type	Depth (mm)	Load capacity (kg)	IndexRAL 7035	Index RAL 7021
2U	400	40	PSR-40-2U-G	PSR-40-2U-B

- material: steel sheet,
- can be used in all network and server cabinets and open frames from a depth of 500 mm, depth adjustable at spacing of 25 mm.

Shelf 1U fixed on two 19” mounting profiles

Type	Depth (mm)	Load capacity (kg)	Index RAL 7035	Index RAL 7021
1U	250	10	PSM-25-1U-G	PSM-25-1U-B
2U	300	30	PSM-30-2U-G	PSM-30-2U-B

- material: steel sheet,
- two mounting ears on the front.

Depth adjustable shelves 1U fixed on four 19” mounting profiles

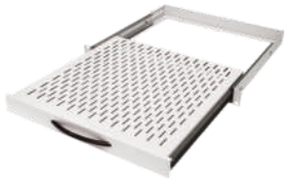
Type	Depth (mm)	Load capacity (kg)	Mounting range (mm)	Index RAL 7035	Index RAL 7021
1U	350	80	150-500	PSM-35-1U-G	PSM-35-1U-B
1U	450	80	250-600	PSM-45-1U-G	PSM-45-1U-B
1U	550	80	350-700	PSM-55-1U-G	PSM-55-1U-B
1U	650	80	450-800	PSM-65-1U-G	PSM-65-1U-B
1U	750	80	550-900	PSM-75-1U-G	PSM-75-1U-B

- material: steel sheet,
- four mounting ears,
- can be used in all network and server cabinets and open frames.

Pullout 1U shelves (adjustable) fixed on four 19” mounting profiles

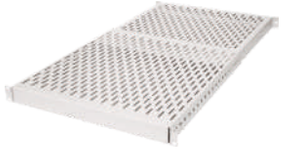
Type	Depth (mm)	Load capacity (kg)	Mounting range (mm)	Line feed (mm)	Index RAL 7035	Index RAL 7021
1U	300	45	295-350	175	PRM-30-1U-G	PRM-30-1U-B
1U	450	45	445-500	345	PRM-45-1U-G	PRM-45-1U-B
1U	650	45	645-700	545	PRM-65-1U-G	PRM-65-1U-B

- material: steel sheet,
- four mounting ears,
- fixing to rear mounting profiles necessary,
- can be use in all network and server cabinets and open frames.



Heavy-duty depth adjustable shelves 1U/19”

Type	Depth range (mm)	Load capacity (kg)	Index RAL 7035	Index RAL 7021
1U	350-600	150	PSZ-60-1U-G	
1U	500-900	150	PSZ-90-1U-G	PSZ-90-1U-B



- material: steel sheet,
- four mounting ears,
- depth adjustable at spacing of 25 mm.

Cabinets, Racks and Accessories

19” Cabinet Accessories

Lockable keyboard drawer 2U/19”

Type	Depth (mm)	Load capacity (kg)	Line feed (mm)	Index RAL 7035	Index RAL 7021
2U	350	7	185	PRK-35-2U-G	PRK-35-2U-B

- material: steel sheet,
- pullout on telescopic rails,
- can be used in all network and server cabinets and open frames,
- width of working space - 412 mm.

Perforated blinding plate

Type	Width (mm)	Depth (mm)	Weight (kg)	Index
4U	482	176	2,4	PWP-4U-G
8U	482	352	6,5	PWP-8U-G

- material: steel sheet,
- for increasing the ventilating area of the cabinet,
- can be used in all standing network and server cabinets.

Filtrate panel

Type	Width (mm)	Depth (mm)	Weight (kg)	Index
4U	482	176	2,4	PWF-4U-G
8U	482	352	6,5	PWF-8U-G

- for air filtrate,
- for increasing the ventilating area of the cabinet,
- material steel sheet.

Blanking panels 19”

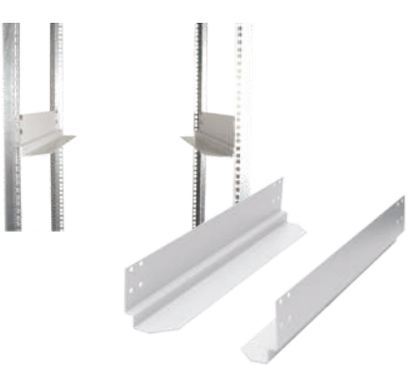
Type	Weight (kg)	Index RAL 7035	Index RAL 7021
1U	0,25	PWM-1U-G	PWM-1U-B
2U	0,5	PWM-2U-G	PWM-2U-B
3U	0,6	PWM-3U-G	PWM-3U-B
6U	1,0	PWM-6U-G	PWM-6U-B

- for covering exposed front surfaces,
- high stability through tilting.

Sliding rails for heavy-duty equipment

Type	Depth (mm)	Weight(kg)	Index
600	340	1,7	UB2U-600
800	540	2,6	UB2U-800
900	640	3,1	UB2U-900
1000	740	3,6	UB2U-1000

- fixing to the front and rear 19” profiles,
- can be used for mounting heavy duty equipment,
- material: steel sheet.



Cable routing panels 19”

Type	Number of holders	Weight (kg)	Material	Index RAL 7035	Index RAL 7021
1U	4	0,45	Steel	ORG-VM-1U-G	ORG-VM-2U-B
2U	5	0,45	Steel	ORG-VM-2U-G	ORG-VM-2U-B
1U	5	0,32	Plastic	ORG-VP-1U-G	ORG-VM-2U-B

- material: steel sheet with metal or plastic holders,
- for orderly and clear cable routing in the 19” level.

Cable routing bracket

Eye size (mm)	Load capacity (kg)	Index
40x40	0,05	WK1-HM-44-C
40x80	0,06	WK1-HM-48-C
80x80	0,06	WK1-HM-88-C

- for orderly and clear cable routing,
- mounting on the 19” profile rails,
- material: galvanized steel.

Cable routing panels

Type	Width (mm)	Depth (mm)	Height (mm)	Weight (kg)	Index RAL 7035	Index RAL 7021
1U	482	45	43	0,63	RKP-VM-1U-G	RKP-VM-1U-B
2U	482	77,6	88	1,43	RKP-VM-2U-G	RKP-VM-2U-B

- made from sheet steel with metal holders,
- allows for simple and clear organization of cables,
- for orderly and clear cable routing in the 19” level.

Cable tidy rails

Type	Width (mm)	Depth (mm)	Height (mm)	Weight (kg)	Index
Back handle cable 19”	482	60	60	0,38	UKx-19T-G
Lateral handle cable 600 mm	500	18	60	0,45	UKB-060-G
Lateral handle cable 800 mm	700	18	60	0,65	UKB-080-G
Lateral handle cable 900 mm	800	18	60	0,75	UKB-090-G
Lateral handle cable 1000 mm	900	18	60	0,85	UKB-100-G

- organized laying and strain relief of cables via cable ties,
- cable tidy rail for side mounting on the 19” profile rails or for installation on the rear transverse to the profile frame,
- material: galvanized sheet steel.

Line-up bolts

Weight (kg)	Index
0,38	ZLS-B

- for connecting and lining up network cabinets and server cabinets,
- material: galvanized steel, M6 thread.

Cabinets, Racks and Accessories

19” Cabinet Accessories

Plinth for server cabinets with integrated tilt protection

Width (mm)	Depth (mm)	Height (mm)	Weight (kg)	Load capacity (kg)	Index RAL 7035	Index RAL 7021
600	1000	100	23	600	CKP-6/10-G	CKP-6/10-B
800	1000		25,5		CKP-8/10-G	CKP-8/10-B

- easy assembly,
- can be used in combination with leveling feet,
- cable entries on both sides and rear,
- tilt protection integrated in base frame,
- material: steel sheet.

Plinth for network cabinets

Width (mm)	Depth (mm)	Height (mm)	Weight (kg)	Load capacity (kg)	Index RAL 7035	Index RAL 7021
600	600	100	4,7	400	CKS-6/06-G	CKS-6/06-B
600	800		5,9		CKS-6/08-G	CKS-6/08-B
600	900		6,5		CKS-6/09-G	CKS-6/09-B
800	600		5,3		CKS-8/06-G	CKS-8/06-B
800	800		6,5		CKS-8/08-G	CKS-8/08-B
800	900		7,1		CKS-8/09-G	CKS-8/09-B
800	1000		7,7		CKS-8/10-G	CKS-8/10-B
800	1200		9,2		CKS-8/12-G	CKS-8/12-B

- quick and easy to assemble with M6 x 8 mm bolts (supplied),
- fixing to the network cabinet with supplied screws,
- perforated front plate and three cable entries from both sides and rear,
- the base height can be increased to 200 mm by screwing two bases together.

Voltage distribution panel

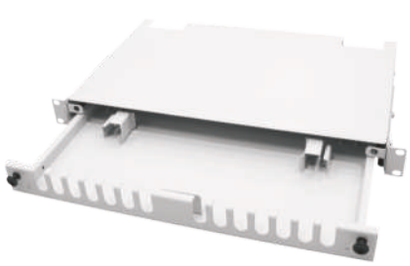
Height (mm)	Width (mm)	Depth (mm)	Index RAL 7035	Index RAL 7035
133 (3U)	466 (19")	60	PDN-3U-G	PDN-3U-B

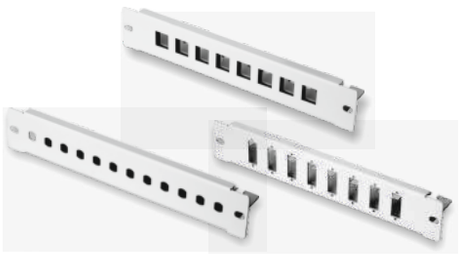
- universal 19” or 21” enclosure for modular devices,
- 1,5 mm thick sheet powder painted,
- din rail included,
- housing with 402.5 x 45.5 mm opening,
- maximum quantity of built in modules S type (width of module 17,5 mm): 18 pcs.

Drawer for cable reserve

Dimensions (mm)			Index
Width	Height	Depth	
483 (19")	1U	250	SZ-19-1U
483 (19")	2U	250	SZ-19-2U

- ideal for organizing, managing and storing cable reserve (pigtails and patchcords),
- front and rear cable entries,
- material: Sheet steel 1,5 mm,
- finish RAL 7035.





Mini-rack 10” “INTERN”

Type	Width (mm)	Depth (mm)	Height (mm)	Weight (kg)	Load capacity (kg)	Index
6U	305	250	324	6	20	SWM-06-300-INT-G

- self-ventilated sheet steel housing,
- full metal front door with two single point locks,
- door opening angle 90 degrees,
- cable entry optionally from above or below (6 x slot for PG),
- paint finish: RAL 7035 (light grey),
- delivery in transport packaging.

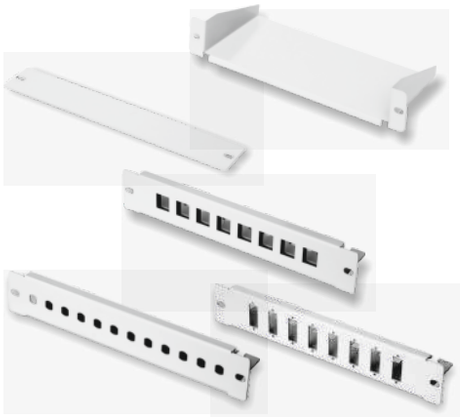
Mini-rack 10” “OFFICE”

Type	Width (mm)	Depth (mm)	Height(mm)	Weight (kg)	Load capacity (kg)	Index
4U	300	300	240	3,9	20	SWM-04-300-OFI-G
6U	300	300	330	4,8		SWM-06-300-OFI-G
9U	300	300	465	6,1		SWM-09-300-OFI-G

- self-ventilated sheet steel housing,
- front door with window made of safety glass,
- lockable door, lock with latch,
- door opening angle 180 degrees,
- front profile rails fixed,
- cable entry optionally from above or below (openings 120 mm x 35 mm),
- paint finish: RAL 7035 (light grey),
- delivery in transport packaging.

Additional equipment for 10” Mini-racks

Type	Parameters	Application	Index
Patch-Panel 10" 8xRJ45	Height 1U RAL 7035	For module clamping type Keystone	PP1-RJ-08-G
Patch-Panel 10" 8xSC Duplex	Height 1U RAL 7035	For module clamping type SC-Duplex	PP1-SC-08-G1
Patch-Panel 10" 12xST	Height 1U RAL 7035	For socket clamping type type ST	PP1-ST-08-G
Shelf 10”	Height 1U RAL 7035 Depth 110 mm		PS1-15-1U-G
Blank masking panel 10”	Height 1U RAL 7035		PW1-1U-G



Cabinets, Racks and Accessories

Power Distribution Unit PDU

Power Distribution Unit

Plug	Socket qty. and type	Controls	Fit 1U	Index
DIN 49441*1	5 x NF C61-314*2	Lighted master switch	Nie	PNN-5GBW
DIN 49441*1	8 x NF C61-314*2	LED indicator	Tak	PNN-8GBL
DIN 49441*1	9 x NF C61-314*2	LED indicator	Tak	PNN-9GBL
DIN 49441*1	9 x DIN 49440*3	LED indicator	Tak	PNN-9GSL
DIN 49441*1	8 x NF C61-314*2	Lighted master switch	Tak	PNN-8GBW
DIN 49441*1	8 x NF C61-314*2	Surge protection	Tak	PNN-8GBO
IEC 320 C14	8 x DIN 49440*3	Lighted master switch	Tak	PNN-8GSWU
IEC 320 C20	9 x NF C61-314*2	LED indicator	Tak	PNN-9GBLU
DIN 49441*1	12 x NF C61-314*2	LED indicator	Nie	PNN-12GBL

1 - Universal (SCHUCKO + ground pin) plug
2 - Socket with Ground Pin (French and Polish standard)
3 - SCHUCKO (Germany) socket

Features:

- all PDU are modularized and multi-functional power distribution unist designed exclusively for cabinets,
- product series is made up of many standards of power socket modules, controlled function module, protecting function module, surge protector module, etc,
- case is made from white or oxidized to black Aluminum alloy,
- can be install horizontally (fits 1U space in 19” systems) or vertically in cabinets,
- can be install on the floor, walls or under the desk,
- standard cable length is 2,5 m,
- all PDU products are manufactured using environmentally materials and components, in accordance with the regulations of European Union RoHS directive, and we also passed test of CE sign.

Earthing set complete

Type	Index
8 connection points M6	LUP-08
10 connection points M6	LUP-10²
15 connection points M6	LUP-15

- for mounting in all network, server and wall-mounting cabinets,
- construction: copper earthing bar with 8/10/15 connection points.

Osprzęt elektroinstalacyjny

Osprzęt dodatkowy w standardzie 50x50mm

Narzędzia instalatorskie

Striper kabli miedzianych

XT100.CAB - Striper kabli teleinformatycznych PREMIUM

XT101.CAB - Striper kabli teleinformatycznych ECO

- pozwala na ściągnięcie izolacji z kabli teleinformatycznych,
- dostosowane pod różne średnice zewnętrzne,
- wyposażone w obcinaczki.

Narzędzie uderzeniowe do złączy IDC

XT100.IDC - Nóż krosowniczy pod złącza typu LSA/110

- narzędzia terminują i odcinają nadmiar kabla,
- możliwość wyłączenia modułu obcinającego,
- wyposażony w hak do wyciągania żył.

XT101.IDC - Nóż krosowniczy pod złącza typu 110

- narzędzia terminują i odcinają nadmiar kabla,
- regulowana siła nacisku L=10kG, H=15kG.

Zaciskarka do złącz RJ11/RJ12/RJ45

XT100.RJ - Zaciskarka złączy modularnych RJ11/RJ12/RJ45/DEC

XT101.RJ - Zaciskarka złączy modularnych RJ11/RJ12/RJ45

- wyposażone w obcinaczki i ściągacz izolacji,
- uniwersalne pasujące pod złącza RJ11/RJ12/RJ45,
- metalowa budowa.

Zautomatyzowane narzędzie do modułów keystone

XT101.KEY - Narzędzie dociskowe do modułów keystone Fibrain Data ECO

- automatyczne terminowanie wszystkich żył kabla instalacyjnego w module krosowniczym,
- współpraca z modułami keystone dostępnymi w systemie Fibrain Data.

XT100.KEY - Narzędzie zaciskowe do modułów keystone Fibrian Data PREMIUM

- przełożeniu siły docisku bezpośrednio na moduł keystone,
- automatyczne terminowanie wszystkich żył kabla instalacyjnego w module krosowniczym,
- współpraca z wszystkimi modułami keystone dostępnymi w systemie Fibrain Data.

Notatki

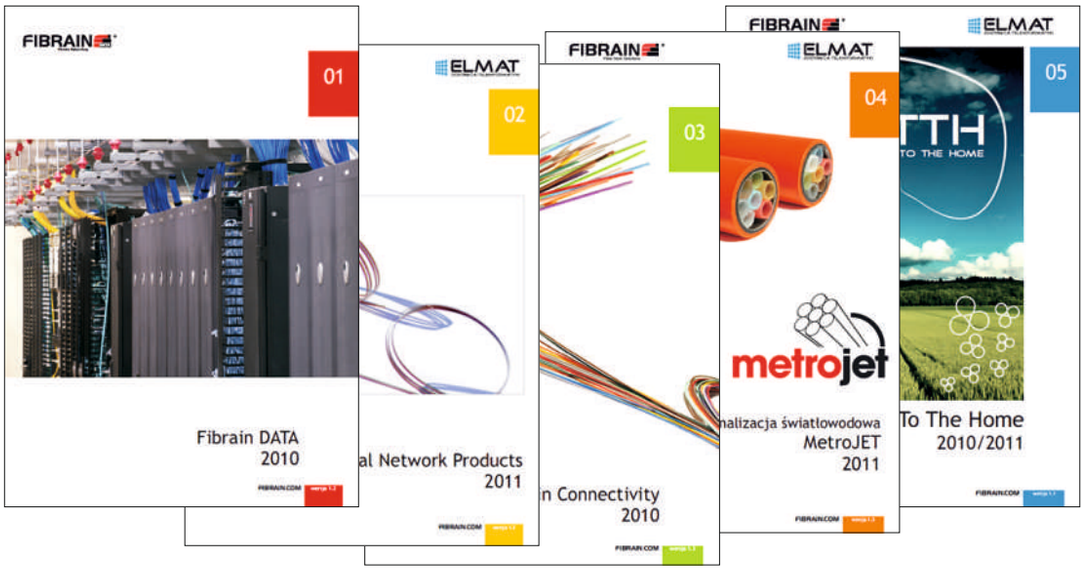
Notatki

Pozostała oferta

Grupa Elmat jest jednym z najnowocześniejszych polskich producentów osprzętu dla współczesnej telekomunikacji. Oferta produktowa jest nieustannie poszerzana o kolejne autorskie produkty, oferowane w ramach kompleksowych rozwiązań telekomunikacyjnych sygnowanych własną marką lub produkty znanych koncernów europejskich.

W ciągu ostatnich lat firma umocniła swoją pozycję na rynku dystrybucji nowych technologii telekomunikacyjnych, w szczególności światłowodowych, wyznaczających często nowe kierunki w branży (wprowadzając na rynek produkty z zakresu mikrokanalizacji światłowodowej i rozwiązania dla sieci FTTx).

Zachęcamy do zapoznania się z pozostałą ofertą Grupy Elmat, poprzez pozostałe katalogi wybranych rozwiązań:



2. **PON** - rozwiązania z dziedziny pasywnych sieci optycznych. Rozwiązania głownie dedykowane są dla sieci FTTH. Produkty bazujące dla takich technologii jak CWDM (Coarse Wavelenght Division Multiplexing), DWDM (Dense Wavelenght Division Multiplexing), WDM-PON dla sieci FTTx, Cylkulatory optyczne, tłumiki i izolatory.

3. **Connectivity** - rozwiązania z dziedziny telekomunikacji optycznej. Technologia światłowodowa w dzisiejszych czasach jest już dostępna oraz użytkowana praktycznie w każdej gałęzi przemysłu, telekomunikacji, transporcie, systemach bezpieczeństwa oraz bardzo wielu innych segmentach rynku.

4. **MetroJet** - nowoczesny system mikrokanalizacji światłowodowej, w którym zastosowano specjalne mikrokable, elementy mikrokanalizacji oraz specjalną nowoczesną metodę strumieniową instalacji kabla w rurach.

5. **FTTH** - jako dostawca rozwiązań zdajemy sobie sprawę, iż implementacja sieci FTTH w dzisiejszych czasach napotyka na duże zróżnicowanie obszarów projektowych, wymagających stosowania nie jednej, a kilku kompatybilnych ze sobą technologii. W skład naszej oferty wchodzą rozwiązania praktycznie dla każdego obszaru topologii.

6. **Logiwire** - zintegrowany system okablowania tradycyjnego mieszkania. Istotnym problemem występującym w budownictwie jest brak integracji poszczególnych typów okablowania występującego w mieszkaniu abonenta. System Logiwire ma za zadanie integracje w jednej skrzynce wnękowej systemów takich jak: CATV, PHONE, COPPER DATA, FO, SECURITY i innych.

FIBRAIN
Fiber Optic Solutions

ELMAT
DOSTAWCA TELEINFORMATYKI

Fibrain DATA 2012/2013

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