FIBRAIN®

FibrainDATA
Structured Cabling

FibrainDATA - striving

High class components of structured

RELIABILITY GUARANTEE
Three-level warranty system:
product, system, application

YEARS
25
WARRANTY

Express 5e
FUTURE 8
OM1-OM4
OS1/OS2

COMPLETE SOLUTIONS
Comprehensive portfolio
of **FO & Copper structured
cabling solutions**

MANUFACTURING IN POLAND
Manufacturing centers are located
in Rzeszów, Rogoźnica, Jasionka, Zaczernie

for perfection

cabling systems create complex solutions

TRAINING SCHEME

Two-level training scheme
to Certified Installers & Designers

VERIFIED IN PROJECTS

More than **500 buildings** certified in Poland
and **400 foreign installations**

REQUIREMENTS FULFILLMENT

System verified in the independent 3P Third
Part Test laboratory and in National Institute
of Telecommunications

3P THIRD PARTY TESTING

FIBRAINDATA structured cabling

Structured cabling solutions are well-known and fully certified solutions to meet specific requirements. Designed with assistance from network planners and installers, FIBRAINDATA guarantees ease of installation and the highest performance. Exceeding Standards, fulfilling highest requirements and ensuring warranty system for at least 25 years - these are the main goals, which we have in mind when designing FIBRAINDATA system. Undoubtedly, our dynamically developing R&D department and well-equipped laboratory are involved in a wide range of activities to achieve our aims and provide the best parameters.

Company

The principal aim of FIBRAIN company and a common target of all employees is a constant development of the company's profile and services, which meet ever-increasing market needs and customer's requirements. Therefore, one of the main priority is the ongoing expansion and advancement of the manufacturing capabilities. Thanks to highly experienced specialists from various departments, including H&R, company's development is smooth and consistent. Naturally, state-of-the-art technologies and equipment provide the possibilities to perform challenging tasks and customize company's products to meet or even exceed our customers' needs. Therefore, professional service and individual attitude to customers as well as constant upgrading the company's offer and products are one of the crucial priorities.

Knowledge

Experienced employees in R&D, Structured Cabling Department and other Department form a team of experts who are ready to take up any challenge. Having one of the best-equipped laboratories in Europe, we are able to test our systems operation in different conditions. The appropriate choice of materials used for production of individual components ensure the best system's transmission parameters and its operation during for at least 25 years.
Our professional job attitude as well as commitment and highly qualified workers enable us to achieve the highest goals and ambitions, amongst others, being a world known leader in the telecommunications industry.

System

The main aim of FIBRAINDATA is to create a solution, adjusted to the customer's needs in the best possible way. In order to improve products, FIBRAIN company organizes meetings with experienced technicians, which result in constant implementation of the new improvements in our components. As we have full control of the product, any modifications are implemented almost automatically. Therefore, as a consequence of being an independent company, we can design products and solutions which fulfill the requirements in our region. Therefore, we have managed to create a system corresponding to the needs of wide range of customers- the system of the XXI century. Wide and comprehensive portfolio of solutions allows us to adjust to individual configuration of IT network and gives us a competitive advantage in the market. Our own high requirements, resulted in not only fulfilling but exceeding the ISO/IEC 11801:2011, EIA/TIA-568-D.2.1, EN 50173:2013 Standards.

FIBRAIN

Solutions

> Our well-known and fully certified solutions
> are divided into specific systems which comply
> with the highest requirements and standards

Copper Solutions

Express 5e

Express - Complete D-class system, includes all the components of 5e category which are required when structured cabling system is installed. The system is available in 2 options: UTP and FTP. In both solutions are based on cables with increased frequency up to 200 MHz. Additionally, system includes multi-pair cables of 5e category, which entirely comply with ISO/IEC 11801 norm.

Quick 6

Quick - Complete E-class system includes all components of 6 category which are required when structured cabling system is installed. Comprehensive portfolio of installation cables (U/UTP, F/UTP, U/FTP, S/FTP), as well as increased frequency up to 500 MHz, allow us to fulfill the requirements of even the most demanding customers.

Rapid 6a

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

ULTRA 77A

Ultra - Solutions are adjusted to future applications, ensuring assumptions of 7 and 7A categories. It is also based on high quality of telecommunication cables as F/FTP, S/FTP.

Voice

Voice - A system is prepared to be used in digital and analog telephone signal transmission. It perfectly complements telecommunication solution.

Fiber Optic Solutions

Fiber optic solutions - Full comprehensive solution being a part of FIBRAINData cabling system. Offer of FIBRAIN consists of either MM and SM cabling which are segregated according to efficiency. Full scope categories OM1- OM4 for MM and OS1/OS2 for SM. Whole portfolio in full range is based on Bend Insensitive Mulitimode Fibers (BIMF) and Bend Insensitive Singlemode Fibers (BISF) what make the installation easier keeping the highest transmission parameters on adequate level. FIBRAINDATA offers complete scope of FO connectors, starting from legacy ST, FC ending on the most modern LC and MPO/MTP. FIBRAINData cabling system is ready for the most demanding applications including 40G and 100G in full range of length according to ISO11801 & IEEE

■ Compliance

All of our products have been examined by an external, independent laboratory as a component and also as a transmission channel and a permanent link. For an additional protection, all of them are measured on a daily basis in FIBRAIN internal laboratory and also reviewed by the installers after the implementation process. Moreover, each component is examined with the use of the re-embedded method.

■ FIBRAIN Academy

Responding to the market demand and to help our customers absorb new knowledge and technologies we offer a series of training courses under the common brand name FIBRAIN Academy. We welcome inquiries for customized training modules. As seasoned practitioners we can draw on years of experience and hundreds of projects completed so our courses of always practice-oriented. Therefore, meetings are always tailored to the partner's needs and preferences. Our trainers are open for a discussion and precious knowledge exchange.

■ Certified Installer

Authorized Program of the Certified Installers of FIBRAINDATA is aimed for companies which are focused on project, installation with implementation of structured cabling system. Training Program of Certified Installers conducted by our Product Managers provides essential knowledge, which is necessary to understand and install structured cabling system.

During the training, knowledge in the field of Standards, mounting standards and available components of the system is exchanged. Furthermore, trainings include practical part, which demonstrates installation of individual components. Training's aim is to teach how to install properly structured cabling system, which is covered by 25-year warranty for an operation and application of the system.

■ Certified Designer

Meetings in design offices allow us to obtain knowledge about the latest investors' requirements and needs. Designers can gather knowledge about the newest Standards, editions and conditions which concern modern structured cabling systems.

■ Warranty Program

As our systems meet the highest Standards and requirements, they can work properly for at least 25 years. Each telecommunication system which is designed with the use of FIBRAIN components and installed by Certified Installer can possess warranty program.

■ FIBRAINDATA certification procedure

After implementing the installation, Certified Installer is required to submit all the necessary documents, especially as-built documentation, measurement of complete network with the use of authorized device possessing valid calibration term. As a next step, FIBRAIN examines the network and verifies submitted documents. In case of any inaccuracies or mistakes, Certified Installer is required to correct them or complete the documentation. Afterwards, FIBRAIN issues warranty documents, which must be transferred by Certified Installer to the project investor.

■ Product warranty

All of the components of Certified FIBRAINDATA System are of the highest quality and free from any material and manufacturing defects.
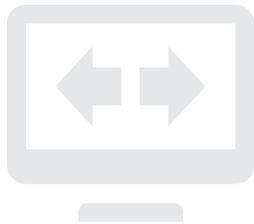
■ System warranty

Transmission Channel of the Certified FIBRAINDATA structured cabling system fulfills the parameters according to the given category. The warranty does not cover products which are used, stored or installed improperly.

■ Application warranty

FIBRAIN,DATA Certified structured cabling system is free from defects, which does not enable signal transmission based on specific protocols and network applications. This concerns applications and protocols which are established by the committees for standardization IEEE, ANSI, TIA/EIA, ATM Forum and confirmed for transmission requirements based on 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 Standards and standards.

■ Information materials

Apart from individual meetings, our company has prepared wide range of marketing materials, such as catalogues, publications, technical brochures as well as guides, which have been prepared for a particular group of professionals. Data sheets include all the necessary technical information required for project implementation.

COPPER INSTALLATION CABLES

25-year warranty system guarantees the highest quality

5e

SMALL DIAMETER

PVC LSZH — TWO JACKET TYPES: PVC AND LSZH

U/UTP F/UTP — TWO CONSTRUCTION TYPES : U/UTP AND F/UTP

200 MHz — INSTALLATION CABLES- DATA TRANSMISSION FREQUENCIES UP TO 200 MHZ

6

CROSSTALKS REDUCTION IN U/UTP AND F/UTP CONSTRUCTION

U/UTP U/FTP F/UTP F/FTP S/FTP — FULL PORTFOLIO OF CABLE CONSTRUCTION

cat. 6 X MHz — MORE THAN STANDARD 250 MHZ

FR-LSZH — S/FTP CABLE ALSO IN FLAME RETARDANT OPTION

COPPER INSTALLATION CABLES

and stable connection

6A

SEPARATOR WITH ANTY-ALIEN CROSSTALK TECHNOLOGY

SUPPORT FOR WHOLE APPLICATIONS INCLUDING 10GBASE-T AT FULL 100M CHANNEL

LSZH FR-LSZH
CONDUCTORS IN TWO JACKET TYPES: LSZH OR FR-LSZH

77A

900 1200 2000 MHz
TRANSMISSION CHARACTERISTIC 7-> 900 MHZ 7A->1200 MHZ 8-> 2000 MHZ

F/FTP S/FTP
FULL SHIELDED SOLUTION FOR THE HIGHEST PROTECTION AGAINST CROSSTALK

Voice
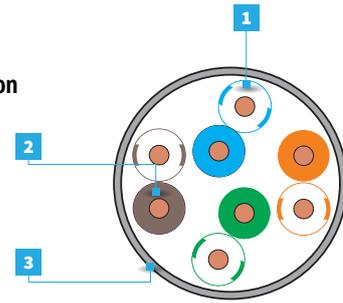
25 PAIRS
ADDITIONAL CONSTRUCTION: 25 PAIRS IN 1 JACKET

U/UTP Cat.5e 200 MHz

Express 5e

Copper cabling

Cable construction

1. Insulation
2. Conductor
3. Jacket

Small diameter **200 MHz** **305/500/1000 packing**

FIBRAINDATA Express U/UTP Cat.5e 200 MHz		
305 m box	XE100.101	XE100.105
500 m drum	XE100.102	XE100.106
1000 m drum	XE100.103	XE100.107
	JACKET - GREY PVC	JACKET - GREEN LSZH

MECHANICAL CHARACTERISTICS	
Min. bending radius in operation [mm]	20
Min. bending radius during installation [mm]	40
Max. pulling tension [N]	80
Nominal weight [kg/km]	29.5
Nom. outer diameter [mm]	5.0
Nom. wire diameter [AWG]	24
ELECTRICAL CHARACTERISTICS @ 20°C	
Max. DC Resistance [Ω/km]	93.8
Nom. Mutual Capacity @1kHz [nF/km]	56
NVP [%]	68
Mean input Impedance [Ω]	100 ± 5 @ 100MHz
Propagation delay @10MHz [ns]	max. 518
Delay Skew [ns/100m]	max. 40
Segregation class	b
Max.operating voltage [V DC]	80
Max. DC intensity per conductor [A/mm²]	3.3
ENVIRONMENTAL CHARACTERISTICS	
Jacket material	PVC
Flammability	Acc. to IEC 60332-1-2
Calorific value [MJ/m]	0.377

Applications

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

Standards

→ ISO/IEC 11801
→ EN 50173
→ TIA 568 C.2
→ IEC 61156-5
→ EN 50288-3-1
→ IEC 60332-1-2

Construction

→ Conductor (wire) - 24 AWG (0.51 mm)
→ Insulation - polyolefin
→ Pair number - 4 twisted pairs
→ Jacket - grey PVC
→ Jacket - green LSZH

TEMPERATURE CHARACTERISTICS	
Storage Temperature [°C]	-20 to +70
Operating Temperature [°C]	-20 to +70
During installation [°C]	-5º to +50

Frequency [MHz]	Max. attenuation [dB/100 m]	NEXT	PS-NEXT	ACR-F	PS-ACR-F	ACR	PS-ACR	Return loss [dB]
		[dB/100 m] min						
1	2.0	65.3	62.3	63.8	60.8	63.3	60.3	20.0
4	4.1	56.3	53.3	51.8	48.8	52.2	49.2	23.0
8	5.8	51.8	48.8	45.7	42.7	46.0	43.0	24.5
10	6.5	50.3	47.3	43.8	40.8	43.8	40.8	25.0
16	8.2	47.2	44.2	39.7	36.7	39.0	36.0	25.0
25	10.4	44.3	41.3	35.8	32.8	33.9	30.9	24.3
31.25	11.7	42.9	39.9	33.9	30.9	31.2	28.2	23.6
62.5	17.0	38.4	35.4	27.9	24.9	21.4	18.4	21.5
100	22.0	35.3	32.3	23.8	20.8	13.3	10.3	20.1
125*	24.9	33.8	30.8	21.9	18.9	9.0	6.0	19.4
155*	28.1	32.4	29.4	20.0	17.0	4.4	1.4	18.8
200*	32.4	30.8	27.8	17.8	14.8	---	---	18.0

*for information only

FIBRAIN

FIBRAINDATA STRUCTURED CABLING

F/UTP Cat.5e 200 MHz

Express 5e

Cable construction

1. Insulation
2. Drain wire
3. Conductor
4. Aluminium foil
5. Jacket

Small diameter

200 MHz

305/500/1000 packing

	FIBRAINDATA Express F/UTP Cat.5e 200 MHz	
305 m box	XE100.111	XE100.115
500 m drum	XE100.112	XE100.116
1000 m drum	XE100.113	XE100.117
	JACKET - GREY PVC	JACKET - GREEN LSZH

MECHANICAL CHARACTERISTICS	
Min. bending radius in operation [mm]	25
Min. bending radius during installation [mm]	45
Max. pulling tension [N]	80
Nominal weight [kg/km]	36
Nom. outer diameter [mm]	5.6
Nom. wire diameter [AWG]	24
ELECTRICAL CHARACTERISTICS @ 20°C	
Max. DC Resistance [Ω/km]	95
Nom. Mutual Capacity @1kHz [nF/km]	56
NVP [%]	68
Mean input Impedance [Ω]	100 ± 5 @ 100MHz
Propagation delay @10MHz [ns]	max. 518
Delay Skew [ns/100m]	max. 40
Segregation class	c
Max.operating voltage [V DC]	80
Max. DC intensity per conductor [A/mm²]	3.3
ENVIRONMENTAL CHARACTERISTICS	
Jacket material	PVC
Flammability	Acc. to IEC 60332-1-2
Calorific value [MJ/m]	0.464

Frequency [MHz]	Max. attenua-tion [dB/100 m]	NEXT	PS-NEXT	ACR-F	PS-ACR-F	ACR	PS-ACR	Return loss [dB]
		[dB/100 m] min						
1	2.1	65.3	62.3	64.0	61.0	63.2	60.3	20.0
4	4.0	56.3	53.3	52.0	49.0	52.3	49.3	23.0
8	5.6	51.8	48.8	45.9	42.9	46.1	43.1	24.5
10	6.3	50.3	47.3	44.0	41.0	44.0	41.0	25.0
16	8.0	47.2	44.2	39.9	36.9	39.2	36.2	25.0
25	10.1	44.3	41.3	36.0	33.0	34.2	31.2	24.3
31.25	11.4	42.9	39.9	34.1	31.1	31.5	28.5	23.6
62.5	16.5	38.4	35.4	28.1	25.1	21.9	18.9	21.5
100	21.3	35.3	32.3	24.0	21.0	14.0	11.0	20.1
125*	24.1	33.8	30.8	22.1	19.1	9.7	6.7	19.4
155*	27.2	32.4	29.4	20.2	17.2	5.2	2.2	18.8
200*	31.4	30.8	27.8	18.0	15.0	---	---	18.0

❖ **Applications**

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

Standards

→ ISO/IEC 11801
→ EN 50173
→ IEC 61156-5
→ EN 50288-3-1
→ IEC 60332-1-2

Construction

→ Conductor (wire) - 24 AWG 0.51 mm)
→ Insulation - polyolefin
→ Pair number- 4 twisted pairs
→ Shield - aluminium foil/polyester around all pairs
→ Grounding - galvanized copper wire , Φ0.4 mm
→ Jacket - grey PVC
→ Jacket - green LSZH

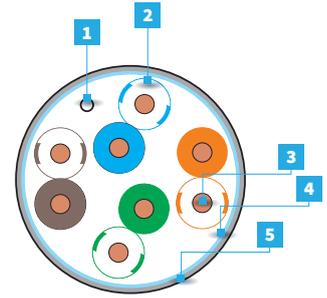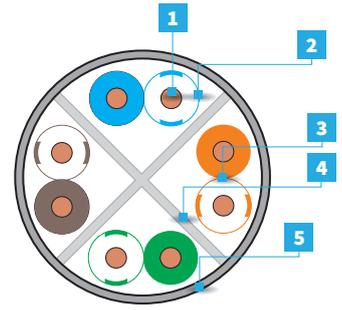| TEMPERATURE CHARACTERISTICS	
Storage Temperature [°C]	-20 to +70
Operating Temperature [°C]	-20 to +70
During installation [°C]	-5° to +50

*for information only

FIBRAINDATA STRUCTURED CABLING

U/UTP Cat.6 500 MHz

Quick 6

Copper cabling

Cable construction

1. Conductor
2. Insulation
3. Twisted wires
4. Cross web
5. Jacket

Small diameter　　**500 MHz**　　**305/500/1000 packing**

FIBRAINDATA Quick U/UTP Cat.6 500 MHz		
305 m box	XQ100.101	XQ100.105
500 m drum	XQ100.102	XQ100.106
1000 m drum	XQ100.103	XQ100.107
	JACKET - PVC GREY	JACKET - LSZH BLUE

MECHANICAL CHARACTERISTICS	
Min. bending radius in operation [mm]	20
Min. bending radius during installation [mm]	45
Max. pulling tension [N]	95
Nominal weight [kg/km]	36.3
Nom. outer diameter [mm]	5.4
Nom. wire diameter [AWG]	24
ELECTRICAL CHARACTERISTICS @ 20°C	
Max. DC Resistance [Ω/km]	93.8
Nom. Mutual Capacity @1kHz [nF/km]	56
NVP [%]	68
Mean input Impedance [Ω]	100 ± 5 @ 100MHz
Propagation delay @10MHz [ns]	max. 518
Delay Skew [ns/100m]	max. 40
Segregation class	b
Max.operating voltage [V DC]	80
Max. DC intensity per conductor [A/mm²]	3.3
ENVIRONMENTAL CHARACTERISTICS	
Jacket material	PVC
Flammability	Acc. to IEC 60332-1-2
Calorific value [MJ/m]	0.52

Applications

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

Standards

→ ISO/IEC 11801
→ EN 50173
→ TIA 568 C.2
→ IEC 61156-5
→ EN 50288-3-1
→ IEC 60332-1-2

Construction

→ Conductor (wire) - 24 AWG (0.51 mm)
→ Insulation - polyolefin
→ Pair number - 4 twisted pairs
→ Jacket - grey PVC
→ Jacket - green LSZH

Frequency [MHz]	Max. attenuation [dB/100 m]	NEXT	PS-NEXT	ACR-F	PS-ACR-F	ACR	PS-ACR	Return loss [dB]
		[dB/100 m] min						
1	2.0	75.3	72.3	68.0	65.0	73.2	70.2	20.0
4	3.8	66.3	63.3	58.0	55.0	62.5	59.5	23.0
8	5.2	61.8	58.8	51.9	48.9	56.5	53.5	24.5
10	5.9	60.3	57.3	50.0	47.0	54.4	51.4	25.0
16	7.4	57.2	54.2	45.9	42.9	49.9	46.9	25.0
25	9.2	54.3	51.3	42.0	39.0	45.0	42.0	24.3
31.25	10.3	52.9	49.9	40.1	37.1	42.6	39.6	23.6
62.5	14.5	48.4	45.4	34.1	31.1	33.8	30.8	21.5
100	18.4	45.3	42.3	30.0	27.0	26.9	23.9	20.1
155	22.9	42.4	39.4	26.2	23.2	19.5	16.5	18.8
200	26.1	40.8	37.8	24.0	21.0	14.7	11.7	18.0
250	29.2	39.3	36.3	22.0	19.0	10.1	7.1	17.3
300*	32.0	38.1	35.1	20.5	17.5	6.1	3.1	17.3
350*	34.7	37.1	34.1	19.1	16.1	2.5	1.0	17.3
500*	48.9	34.8	31.8	16.0	13.0	0.0	---	15.0

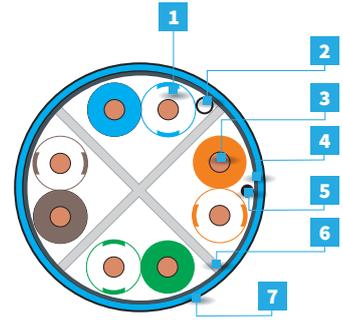| TEMPERATURE CHARACTERISTICS	
Storage Temperature [°C]	-20 to +70
Operating Temperature [°C]	-20 to +70
During installation [°C]	-5° to +50

*for information only

FIBRAIN

FIBRAINDATA STRUCTURED CABLING

F/UTP Cat.6 350 MHz

Quick 6

350 MHz

500/1000 packing

Cable construction

1. Insulation
2. Conductor
3. Aluminium foil
4. Drain wire
5. Cross web
6. Jacket

FIBRAINDATA Quick F/UTP Cat.6 Jacket LSZH 350 MHz	
500 m drum	XQ100.116
1000 m drum	XQ100.117
	JACKET - LSZH BLUE

MECHANICAL CHARACTERISTICS	
Min. bending radius in operation [mm]	25
Min. bending radius during installation [mm]	45
Max. pulling tension [N]	80
Nominal weight [kg/km]	45.0
Nom. outer diameter [mm]	6.9
Nom. wire diameter [AWG]	23

ELECTRICAL CHARACTERISTICS @ 20°C	
Max. DC Resistance [Ω/km]	95.0
Nom. Mutual Capacity @1kHz [nF/km]	56
NVP [%]	70
Mean input Impedance [Ω]	100 ± 5 @ 100MHz
Propagation delay @10MHz [ns]	max. 518
Delay Skew [ns/100m]	max. 40
Segregation class	c
Max.operating voltage [V DC]	80
Max. DC intensity per conductor [A/mm²]	3.3

ENVIRONMENTAL CHARACTERISTICS	
Jacket material	LSZH
Flammability	Acc. to IEC 60332-1-2; IEC 60754-1/2; IEC 61034-1/2
Calorific value [MJ/m]	0.868

Frequency [MHz]	Max. attenuation [dB/100 m]	NEXT	PS-NEXT	ACR-F	PS-ACR-F	ACR	PS-ACR	Return loss [dB]
		[dB/100 m] min						
1*	2.1	75.3	72.3	68.0	65.0	73.2	70.2	20.0
4	3.8	66.3	63.3	58.0	55.0	62.5	59.5	23.0
8	5.2	61.8	58.8	51.9	48.9	56.5	53.5	24.5
10	5.9	60.3	57.3	50.0	47.0	54.4	51.4	25.0
16	7.4	57.2	54.2	45.9	42.9	49.9	46.9	25.0
25	9.2	54.3	51.3	42.0	39.0	45.0	42.0	24.3
31.25	10.3	52.9	49.9	40.1	37.1	42.6	39.6	23.6
62.5	14.5	48.4	45.4	34.1	31.1	33.8	30.8	21.5
100	18.4	45.3	42.3	30.0	27.0	26.9	23.9	20.1
155	22.9	42.4	39.4	26.2	23.2	19.5	16.5	18.8
200	26.1	40.8	37.8	24.0	21.0	14.7	11.7	18.0
250	29.2	39.3	36.3	22.0	19.0	10.1	7.1	17.3
300*	32.0	38.1	35.1	20.5	17.5	6.1	3.1	17.3
350*	34.7	37.1	34.1	19.1	16.1	2.5	1.0	17.3

*for information

❖ Applications

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

⌖ Standards

→ ISO/IEC 11801
→ EN 50173
→ IEC 61156-5
→ EN 50288-2-1
→ IEC 60332-1-2
→ IEC 60754-1/2
→ IEC 61034-1/2

⚙ Construction

→ Conductor (wire) - 23 AWG (0.574 mm)
→ Insulation: polyolefin
→ Pair number: 4 twisted pairs
→ Jacket: blue LSZH in accordance with IEC 60322-1
→ Shield - aluminium foil/polyester around all pairs
→ Grounding: galvanized copper wire Φ0.4 mm

TEMPERATURE CHARACTERISTICS	
Storage Temperature [°C]	-20 to +70
Operating Temperature [°C]	-20 to +70
During installation [°C]	-5° to +50

U/FTP Cat.6 450 MHz

Quick 6

Copper cabling

Cable construction

1. Insulation
2. Drain wire
3. Conductor
4. Aluminium foil
5. Jacket

450 MHz

500/1000 packing

FIBRAINDATA Quick U/FTP Cat.6 Jacket LSZH 450 MHz	
500 m drum	XQ100.126
1000 m drum	XQ100.127
JACKET - LSZH BLUE	

MECHANICAL CHARACTERISTICS	
Min. bending radius in operation [mm]	30
Min. bending radius during installation [mm]	60
Max. pulling tension [N]	95
Nominal weight [kg/km]	51.0
Nom. outer diameter [mm]	7.4
Nom. wire diameter [AWG]	23

ELECTRICAL CHARACTERISTICS @ 20°C	
Max. DC Resistance [Ω/km]	95.0
Nom. Mutual Capacity @1kHz [nF/km]	56
NVP [%]	74
Mean input Impedance [Ω]	100 ± 5 @ 100MHz
Propagation delay @10MHz [ns]	max. 518
Delay Skew [ns/100m]	max. 40
Segregation class	c
Max.operating voltage [V DC]	80
Max. DC intensity per conductor [A/mm²]	3.3

ENVIRONMENTAL CHARACTERISTICS	
Jacket material	LSZH
Flammability	Acc. to IEC 60332-1-2, IEC 60754-1/2; IEC 61034-1/2
Calorific value [MJ/m]	0.687

Frequency [MHz]	Max. attenuation [dB/100 m]	NEXT	PS-NEXT	ACR-F	PS-ACR-F	ACR	PS-ACR	Return loss [dB]
		[dB/100 m] min						
1	2.0	75.3	72.3	68.0	65.0	73.2	70.2	20.0
4	3.8	66.3	63.3	58.0	55.0	62.5	59.5	23.0
8	5.2	61.8	58.8	51.9	48.9	56.5	53.5	24.5
10	5.9	60.3	57.3	50.0	47.0	54.4	51.4	25.0
16	7.4	57.2	54.2	45.9	42.9	49.9	46.9	25.0
25	9.2	54.3	51.3	42.0	39.0	45.0	42.0	24.3
31.25	10.3	52.9	49.9	40.1	37.1	42.6	39.6	23.6
62.5	14.5	48.4	45.4	34.1	31.1	33.8	30.8	21.5
100	18.4	45.3	42.3	30.0	27.0	26.9	23.9	20.1
155	22.9	42.4	39.4	26.2	23.2	19.5	16.5	18.8
200	26.1	40.8	37.8	24.0	21.0	14.7	11.7	18.0
250	29.2	39.3	36.3	22.0	19.0	10.1	7.1	17.3
300*	32.0	38.1	35.1	20.5	17.5	6.1	3.1	17.3
350*	34.7	37.1	34.1	19.1	16.1	2.5	1.0	17.3
450*	39.5	35.5	32.5	16.9	13.9	1.0	---	16.0

Applications

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

Standards

→ ISO/IEC 11801
→ EN 50173
→ IEC 61156-5
→ EN 50288-3-1
→ IEC 60332-1-2
→ IEC 60754-1/2
→ IEC 61034-1/2

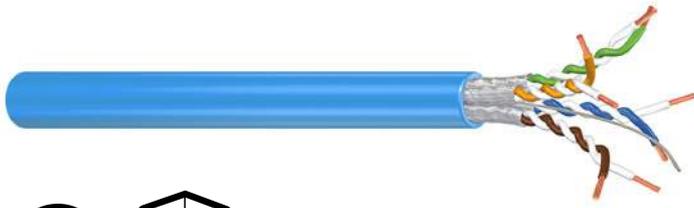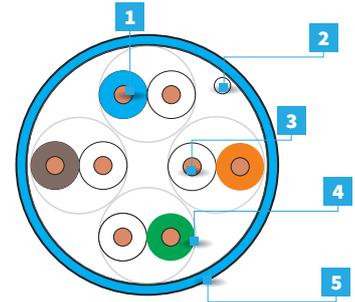**Construction**

→ Conductor (wire) - 23 AWG (0.574 mm)
→ Insulation: polyolefin
→ Pair number: 4 twisted pairs
→ Jacket: blue LSZH in accordance with IEC 60322-1
→ Shield: aluminium/polyester foil around each pair
→ Grounding: galvanized copper wire Φ0.4 mm

TEMPERATURE CHARACTERISTICS	
Storage Temperature [°C]	-20 to +70
Operating Temperature [°C]	-20 to +70
During installation [°C]	-5° to +50

*for information only

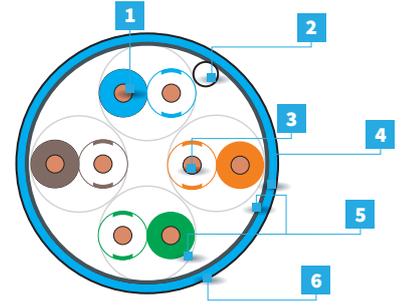FIBRAIN

FIBRAINDATA STRUCTURED CABLING

F/FTP Cat.6 450 MHz

Quick 6

Cable construction

1. Insulation
2. Drain wire
3. Conductor
4. Aluminium foil
5. Jacket

450 MHz

500/1000 packing

	FIBRAINDATA Quick F/FTP Cat.6 Jacket LSZH 450 MHz
500 m drum	XQ100.136
1000 m drum	XQ100.137
	JACKET - LSZH BLUE

MECHANICAL CHARACTERISTICS	
Min. bending radius in operation [mm]	30
Min. bending radius during installation [mm]	60
Max. pulling tension [N]	95
Nominal weight [kg/km]	53.4
Nom. outer diameter [mm]	7.5
Nom. wire diameter [AWG]	23
ELECTRICAL CHARACTERISTICS @ 20°C	
Max. DC Resistance [Ω/km]	95.0
Nom. Mutual Capacity @1kHz [nF/km]	56
NVP [%]	74
Mean input Impedance [Ω]	100 ± 5 @ 100MHz
Propagation delay @10MHz [ns]	max. 518
Delay Skew [ns/100m]	max. 40
Segregation class	c
Max.operating voltage [V DC]	80
Max. DC intensity per conductor [A/mm²]	3.3
ENVIRONMENTAL CHARACTERISTICS	
Jacket material	LSZH
Flammability	Acc. to IEC 60332-1-2, IEC 60754-1/2; IEC 61034-1/2
Calorific value [MJ/m]	0.696

❖ **Applications**

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

🔍 **Standards**

→ ISO/IEC 11801
→ EN 50173
→ IEC 61156-5
→ EN 50288-3-1
→ IEC 60332-1-2
→ IEC 60754-1/2
→ IEC 61034-1/2

⚙ **Construction**

→ Conductor (wire) - 23 AWG (0.574 mm)
→ Insulation: polyolefin
→ Pair number: 4 twisted pairs
→ Jacket: blue LSZH in accordance with IEC 60322-1
→ Shield: aluminium/polyester foil around each pair
→ Shield: aluminium/polyester foil around all pairs
→ Grounding: galvanized copper wire Φ0.4 mm

Frequency [MHz]	Max. attenuation [dB/100 m]	NEXT	PS-NEXT	ACR-F	PS-ACR-F	ACR	PS-ACR	Return loss [dB]
		[dB/100 m] min						
1	2.1	75.3	72.3	68.0	65.0	73.2	70.2	20.0
4	3.8	66.3	63.3	58.0	55.0	62.5	59.5	23.0
8	5.2	61.8	58.8	51.9	48.9	56.5	53.5	24.5
10	5.9	60.3	57.3	50.0	47.0	54.4	51.4	25.0
16	7.4	57.2	54.2	45.9	42.9	49.9	46.9	25.0
25	9.2	54.3	51.3	42.0	39.0	45.0	42.0	24.3
31.25	10.3	52.9	49.9	40.1	37.1	42.6	39.6	23.6
62.5	14.5	48.4	45.4	34.1	31.1	33.8	30.8	21.5
100	18.4	45.3	42.3	30.0	27.0	26.9	23.9	20.1
155	22.9	42.4	39.4	26.2	23.2	19.5	16.5	18.8
200	26.1	40.8	37.8	24.0	21.0	14.7	11.7	18.0
250	29.2	39.3	36.3	22.0	19.0	10.1	7.1	17.3
300*	32.0	38.1	35.1	20.5	17.5	6.1	3.1	17.3
350*	34.7	37.1	34.1	19.1	16.1	2.5	1.0	17.3
450*	39.5	35.5	32.5	16.9	13.9	1.0	---	16.0

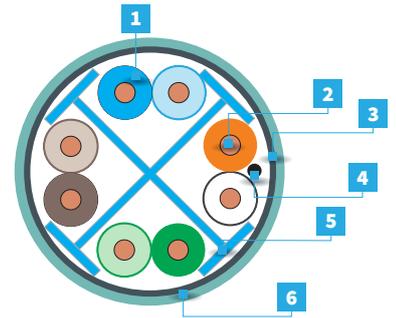| TEMPERATURE CHARACTERISTICS	
Storage Temperature [°C]	-20 to +70
Operating Temperature [°C]	-20 to +70
During installation [°C]	-5° to +50

*for information only

FIBRAINDATA STRUCTURED CABLING

F/UTP Cat.6$_A$ 500 MHz

Rapid 6a

500 MHz

500/1000 packing

Copper cabling

Cable construction

1. Insulation
2. Conductor
3. Shield
4. Drain wire
5. Cross web
6. Jacket

	FIBRAINDATA Rapid F/UTP Cat.6$_A$ Jacket LSZH 500 MHz
500 m drum	XR100.116
1000 m drum	XR100.117
	JACKET - LSZH AQUA

MECHANICAL CHARACTERISTICS	
Min. bending radius in operation [mm]	35
Min. bending radius during installation [mm]	65
Max. pulling tension [N]	90
Nominal weight [kg/km]	52.6
Nom. outer diameter [mm]	7.6
Nom. wire diameter [AWG]	23

ELECTRICAL CHARACTERISTICS @ 20°C	
Max. DC Resistance [Ω/km]	95.0
Nom. Mutual Capacity @1kHz [nF/km]	56
NVP [%]	72
Mean input Impedance [Ω]	100 ± 5 @ 100MHz
Propagation delay @10MHz [ns]	max. 518
Delay Skew [ns/100m]	max. 40
Segregation class	c
Max.operating voltage [V DC]	80
Max. DC intensity per conductor [A/mm²]	3.3

ENVIRONMENTAL CHARACTERISTICS	
Jacket material	LSZH
Flammability	Acc. to IEC 60332-1-2; IEC 60754-1/2; IEC 61034-1/2
Calorific value [MJ/m]	0.717

Frequency [MHz]	Max. attenuation [dB/100 m]	NEXT	PS-NEXT	ACR-F	PS-ACR-F	ACR	PS-ACR	Return loss [dB]
		[dB/100 m] min						
1*	2.1	75.3	72.3	68.0	65.0	73.2	70.2	20.0
4	3.8	66.3	63.3	56.0	53.0	62.5	59.5	23.0
8	5.3	61.8	58.8	69.9	46.9	56.4	53.4	24.5
10	5.9	60.3	57.3	48.0	45.0	54.4	51.4	25.0
16	7.5	57.2	54.2	43.9	40.9	49.8	46.8	25.0
25	9.4	54.3	51.3	40.0	37.0	45.0	42.0	24.3
31.25	10.5	52.9	49.9	38.1	35.1	42.4	39.4	23.6
62.5	15.0	48.4	45.4	32.1	29.1	33.4	30.4	21.5
100	19.0	45.3	42.3	28.0	25.0	26.2	23.2	20.1
155	24.1	42.4	39.4	24.2	21.2	18.4	15.4	18.8
200	27.6	40.8	37.8	22.0	19.0	13.2	10.2	18.0
250	31.1	39.3	36.3	20.0	17.0	8.3	5.3	17.3
300	34.3	38.1	35.1	18.5	15.5	3.9	0.9	17.3
350	37.2	37.1	34.1	17.1	14.1	---	---	17.3
400	40.1	36.3	33.3	16.0	---	---	---	17.3
500	45.3	34.8	31.8	14.0	---	---	---	17.3

*for information only

❖ Applications

→ 10BASE-T (IEEE 802.3)
→ 100BASE-T (IEEE 802.3)
→ 1000BASE-T (Gigabit Ethernet)
→ 10GBASE-T (10Gigabit Ethernet)
→ 100 Mbps TP-PMD (ANSI X3T9.5)
→ 4/16 Mbps TOKEN RING (IEEE 802.5) 55/155 Mbps ATM

⌕ Standards

→ ISO/IEC 11801
→ EN 50173
→ IEC 61156-5
→ EN 50288-2-1
→ IEC 60332-1-2
→ IEC 60754-1/2
→ IEC 61034-1/2

⚙ Construction

→ Conductor (wire) - 23 AWG (0.574 mm)
→ Insulation: polyolefin
→ Pair number: 4 twisted pairs
→ Jacket: LSZH aqua in accordance with IEC 60322-1
→ Shield: Aluminium foil/polyester around all pairs
→ Grounding: galvanized copper wire Φ0.4 mm

TEMPERATURE CHARACTERISTICS [°C]	
Storage	-20° to +70°
Operating	-20° to +70°
During installation	-5° to +50°

FIBRAIN

FIBRAINDATA STRUCTURED CABLING

U/FTP Cat.6$_A$ 500 MHz

Rapid 6a

500 MHz

500/1000 packing

Cable construction

1. Insulation
2. Drain wire
3. Conductor
4. Aluminium foil
5. Jacket
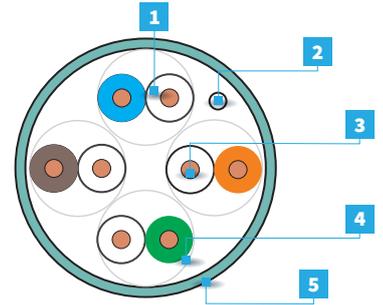
FIBRAINDATA Rapid U/FTP Cat.6$_A$ Jacket LSZH 500 MHz	
500 m reel	XR100.126
1000 m reel	XR100.127
	JACKET - LSZH AQUA

MECHANICAL CHARACTERISTICS	
Min. bending radius in operation [mm]	30
Min. bending radius during installation [mm]	60
Max. pulling tension [N]	95
Nominal weight [kg/km]	51.0
Nom. outer diameter [mm]	7.4
Nom. wire diameter [AWG]	23

ELECTRICAL CHARACTERISTICS @ 20°C	
Max. DC Resistance [Ω/km]	95.0
Nom. Mutual Capacity @1kHz [nF/km]	56
NVP [%]	74
Mean input Impedance [Ω]	100 ± 5 @ 100MHz
Propagation delay @10MHz [ns]	max. 518
Delay Skew [ns/100m]	max. 40
Segregation class	c
Max.operating voltage [V DC]	80
Max. DC intensity per conductor [A/mm²]	3.3

ENVIRONMENTAL CHARACTERISTICS	
Jacket material	LSZH
Flammability	Acc. to IEC 60332-1-2; IEC 60754-1/2; IEC 61034-1/2
Calorific value [MJ/m]	0.687

Frequency [MHz]	Max. attenuation [dB/100 m]	NEXT	PS-NEXT	ACR-F	PS-ACR-F	ACR	PS-ACR	Return loss [dB]
		[dB/100 m] min						
1	2.0	75.3	72.3	68.0	65.0	73.2	70.2	20.0
4	3.8	66.3	63.3	58.0	55.0	62.5	59.5	23.0
8	5.2	61.8	58.8	51.9	48.9	56.5	53.5	24.5
10	5.9	60.3	57.3	50.0	47.0	54.4	51.4	25.0
16	7.4	57.2	54.2	45.9	42.9	49.9	46.9	25.0
25	9.2	54.3	51.3	42.0	39.0	45.0	42.0	24.3
31.25	10.3	52.9	49.9	40.1	37.1	42.6	39.6	23.6
62.5	14.5	48.4	45.4	34.1	31.1	33.8	30.8	21.5
100	18.4	45.3	42.3	30.0	27.0	26.9	23.9	20.1
155	22.9	42.4	39.4	26.2	23.2	19.5	16.5	18.8
200	26.1	40.8	37.8	24.0	21.0	14.7	11.7	18.0
250	29.2	39.3	36.3	22.0	19.0	10.1	7.1	17.3
300*	32.0	38.1	35.1	20.5	17.5	6.1	3.1	17.3
350*	34.7	37.1	34.1	19.1	16.1	2.5	1.0	17.3
450*	39.5	35.5	32.5	16.9	13.9	1.0	---	16.0

*for information only

❖ Applications

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

Standards

→ ISO/IEC 11801
→ EN 50173
→ IEC 61156-5
→ EN 50288-3-1
→ IEC 60332-1-2
→ IEC 60754-1/2
→ IEC 61034-1/2

Construction

→ Conductor (wire) - 23 AWG (0.574 mm)
→ Insulation: polyolefin
→ Pair number: 4 twisted pairs
→ Jacket: LSZH aqua in accordance with IEC 60322-1
→ Shield: aluminium/polyester foil around each pair
→ Grounding: galvanized copper wire Φ0.4 mm

TEMPERATURE CHARACTERISTICS	
Storage Temperature [ºC]	-20 to +70
Operating Temperature [ºC]	-20 to +70
During installation [ºC]	-5º to +50

FIBRAINDATA STRUCTURED CABLING

S/FTP Cat.6$_A$ 500 MHz

Rapid6a

500 MHz

1000 packing

Cable construction

1. Insulation
2. Drain wire
3. Conductor
4. Aluminium foil
5. Braid
6. Jacket

1000 m drum	XR100F147
	JACKET – FR-LSZH AQUA (RAL 6027)

MECHANICAL CHARACTERISTICS	
Min. bending radius in operation [mm]	30
Min. bending radius during installation [mm]	60
Max. pulling tension [N]	110
Nominal weight [kg/km]	60
Nom. outer diameter [mm]	7.6
Nom. wire diameter [AWG]	23
ELECTRICAL CHARACTERISTICS @ 20°C	
Max. DC Resistance [Ω/km]	95
Nom. Mutual Capacity @1kHz [nF/km]	45
NVP [%]	80
Mean input Impedance [Ω]	100 ± 5 @ 100MHz
Segregation class	d
Coupling attenuation [dB]	Min.80
ENVIRONMENTAL CHARACTERISTICS	
Jacket material	LSFRZH
Flammability	Acc. to IEC 60332-3-24, IEC 60754-1/2; IEC 61034-1/2
Calorific value [MJ/m]	0.62

Frequency [MHz]	Max. attenuation [dB/100 m]	NEXT	PS-NEXT	ACR-F	PS-ACR-F	Return loss [dB]
		[dB/100 m] min				
4	3.6	100	100	91.2	88.2	28.0
16	7.2	100	100	89.4	86.4	30.0
20	8.0	100	100	89.0	86.0	30.0
31.25	10.0	100	100	88.0	85.0	28.6
62.5	14.2	100	97.5	85.9	82.9	26.5
100	18.1	97.4	94.4	84.0	81.0	25.1
155	22.7	94.5	91.5	81.7	78.7	23.8
200	25.8	92.9	89.9	80.1	77.1	23.0
240	29	91.7	88.7	78.5	75.8	22.4
250	31.9	91.4	88.4	75.7	75.5	22.3
350	34.6	89.2	86.2	75.7	72.7	22.3
500	41.8	86.9	83.9	72.1	69.1	22.3

*for information only

Applications

→ 10BASE-T (IEEE 802.3)
→ 100BASE-T (IEEE 802.3)
→ 1000BASE-T (Gigabit Ethernet)
→ 10GBASE-T (10Gigabit Ethernet)
→ Power Over Ethernet

Standards

→ LSZH: PN-EN 61034, PN-EN 50267-2-1
→ PN-EN 60332-1, PN-EN 60332-3-24
→ ANSI/TIA/EIA 568-C.2 (Cat.6A)
→ ISO/IEC 11801:2011
→ PN-EN 50173:2011

Construction

→ Conductor (wire) - 23 AWG (0.574 mm)
→ Insulation: polyolefin
→ Pair number: 4 twisted pairs
→ Jacket: LSZH aqua in accordance with IEC 60322-1
→ Jacket: FR-LSZH aqua
→ Shield: aluminium/polyester foil around each pair
→ Shield: Braid around all pairs
→ Grounding: galvanized copper wire Φ0.4 mm

TEMPERATURE CHARACTERISTICS [°C]	
Storage	-20° to +70°
Operating	-20° to +70°
During installation	0° to +50°

FIBRAIN

S/FTP Cat.7 900 MHz

ULTRA 7

900 MHz

1000 packing

Cable construction

1. Insulation
2. Drain wire
3. Conductor
4. Aluminium foil
5. Braid
6. Jacket
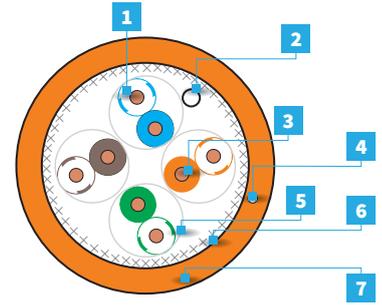
1000 m drum	X9U100F147
	JACKET - FR-LSZH ORANGE

MECHANICAL CHARACTERISTICS	
Min. bending radius in operation [mm]	30
Min. bending radius during installation [mm]	60
Max. pulling tension [N]	120
Nominal weight [kg/km]	61
Nom. outer diameter [mm]	7.6
Nom. wire diameter [AWG]	23

ELECTRICAL CHARACTERISTICS @ 20°C	
Max. DC Resistance [Ω/km]	95
Nom. Mutual Capacity @1kHz [nF/km]	45
NVP [%]	80
Mean input Impedance [Ω]	100 ± 5 @ 100MHz
Segregation class	d
Coupling attenuation [dB]	Min.80

ENVIRONMENTAL CHARACTERISTICS	
Jacket material	FR-LSZH
Flammability	Acc. to IEC 60332-3-24, IEC 60754-1/2; IEC 61034-1/2
Calorific value [MJ/m]	0.62

Frequency [MHz]	Max. attenuation [dB/100 m]	NEXT	PS-NEXT	ACR-F	PS-ACR-F	Return loss [dB]
		[dB/100 m] min				
4	3.6	100	100	100	98.2	33.0
100	18.1	97.4	94.4	94.0	91.0	30.1
155	22.7	94.5	91.5	91.7	88.7	28.8
200	25.8	92.9	89.9	90.1	87.1	28.0
240	28.4	91.7	88.7	88.5	85.8	27.4
250	29.0	91.4	88.4	85.7	85.5	27.3
350	34.6	89.2	86.2	85.7	82.7	26.3
500	41.8	86.9	83.9	82.1	79.1	25.3
550	43.9	86.3	83.3	81.0	78.0	25.3
580	45.2	85.9	82.9	80.4	77.4	25.3
590	45.6	85.8	82.8	80.2	77.2	25.3
600	46.0	85.7	82.7	80.0	77.0	25.3

*for information only

❖ Applications

→ 10BASE-T (IEEE 802.3)
→ 100BASE-T (IEEE 802.3)
→ 1000BASE-T (Gigabit Ethernet)
→ 10GBASE-T (10Gigabit Ethernet)
→ Power Over Ethernet

Standards

→ ISO/IEC 11801
→ EN 50173
→ IEC 61156-5
→ EN 50288-3-1
→ IEC 60332-3-24
→ IEC 60754-1/2
→ IEC 61034-1/2

Construction

→ Conductor (wire) - 23 AWG (0.574mm)
→ Insulation: polyolefin
→ Pair number: 4 twisted pairs
→ Jacket: LSZH orange in accordance with IEC 60322-1
→ Jacket: FR-LSZH orange
→ Shield: aluminium/polyester foil around each pair
→ Shield: Braid around all pairs
→ Grounding: galvanized copper wire Φ 0.4 mm

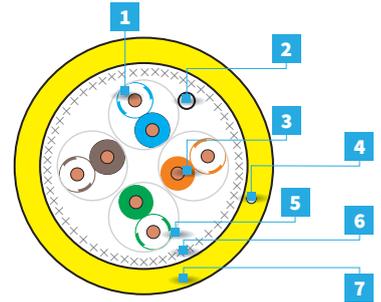| TEMPERATURE CHARACTERISTICS	
Storage Temperature [°C]	-20 to +70
Operating Temperature [°C]	-20 to +70
During installation [°C]	0° to +50

S/FTP Cat.7$_A$ 1200 MHz

ULTRA 7A

Copper cabling

1200 MHz

1000 packing

Cable construction

1. Insulation
2. Drain wire
3. Conductor
4. Aluminium foil
5. Braid
6. Jacket

1000 m drum	XUA100F146
	JACKET - FR-LSZH YELLOW

MECHANICAL CHARACTERISTICS	
Min. bending radius in operation [mm]	32
Min. bending radius during installation [mm]	64
Max. pulling tension [N]	142
Nominal weight [kg/km]	68
Nom. outer diameter [mm]	7.9
Nom. wire diameter [AWG]	23
ELECTRICAL CHARACTERISTICS @ 20°C	
Max. DC Resistance [Ω/km]	95.0
Nom. Mutual Capacity @1kHz [nF/km]	45
NVP [%]	82
Mean input Impedance [Ω]	100 ± 5 @ 100MHz
Segregation class	d
Coupling attenuation [dB]	min. 85

ENVIRONMENTAL CHARACTERISTICS	
Jacket material	LSFRZH
Flammability	Acc. to IEC 60332-3-24, IEC 60754-1/2; IEC 61034-1/2
Calorific value [MJ/m]	0.76

| Frequency [MHz]	Max. attenuation [dB/100 m]	NEXT	PS-NEXT	ACR-F	PS-ACR-F	RL
		[dB/100 m] min				
4	3.5	105.0	105.0	90.0	87.2	28.0
100	16.9	100.4	97.4	79.1	76.1	25.1
250	27.1	94.4	91.4	66.4	67.7	22.3
500	39.0	89.9	86.9	60.9	57.9	22.3
590	42.5	88.8	85.8	58.0	55.3	22.3
600	42.9	88.7	85.7	57.7	54.7	22.3
700	46.5	87.4	84.4	54.7	51.7	21.6
800	49.9	86.2	83.2	51.8	48.8	21.1
900	53.2	85.2	82.2	49.1	46.1	20.5
1000	56.3	84.3	81.3	46.6	43.6	20.1

❖ Applications

→ 10BASE-T (IEEE 802.3)
→ 100BASE-T (IEEE 802.3)
→ 1000BASE-T (Gigabit Ethernet)
→ 10GBASE-T (10Gigabit Ethernet)
→ Power Over Ethernet

Standards

→ ISO/IEC 11801
→ EN 50173
→ IEC 61156-5
→ EN 50288-3-1
→ IEC 60332-3-24
→ IEC 60754-1/2
→ IEC 61034-1/2

Construction

→ Conductor (wire) - 23 AWG (0.574 mm)
→ Insulation: polyolefin
→ Pair number: 4 twisted pairs
→ Jacket: LSZH yellow in accordance with IEC 60322-1
→ Jacket: FR-LSZH yellow
→ Shield: aluminium/polyester foil around each pair
→ Shield: Braid around all pairs
→ Grounding: galvanized copper wire Φ 0.4 mm

FIBRAIN

U/UTP Cat.3 25 pairs 25 MHz

Voice

25 MHz

1000 packing
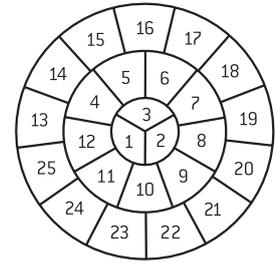
25 pairs Jacket PVC or LSZH U/UTP cable Cat.3 25 MHz		
1000 m drum	XV125.103	XV125.107
	JACKET - PVC GREY	JACKET - LSZH GREEN

ELECTRICAL AND CONSTRUCTION PARAMETERS

Resistance (max) ohm/100 m(328 ft) @ 20 °C		8.90
Minimum dielectric strength between conductors (min) [V]		1000
Insulation strength (min) [MOhm*km]		20000
Impendence characteristic [Ohm]		(min-max)
values at	772 kHz	87-117
	1.0 - 16 MHz	85-115
Return loss (RL) dB (min)		
values at	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

Frequency [MHz]	Max. attenuation [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

❖ Applications

→ PBX
→ Point-to-Point
→ Token Ring4 Mbit/s
→ ATM LAN 51.84 Mbit/s
→ ATM LAN 155.52 Mbit/s
→ Analog and digital transmission of phone signals

⟡ Standards

→ LSZH: PN-EN 61034, PN-EN 50267-2-1
→ PN-EN 60332-1
→ ANSI/TIA/EIA 568-C.2 (Cat.3)
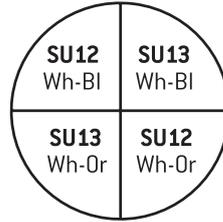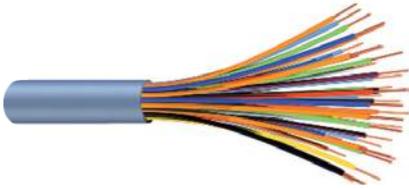→ ISO/IEC 11801
→ EN 50173, EN 50288

⟳ Construction

→ Conductor (wire) - 24 AWG (0.51 mm)
→ Insulation - polyolefin
→ Pair number -25 twisted pairs
→ Jacket - XV125.103 - PVC - grey
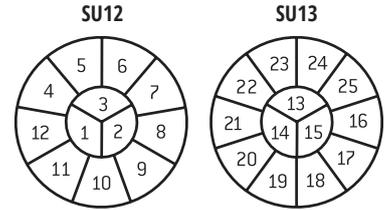→ Jacket - XV125.107 - LSZH - green

U/UTP Cat.3 50 pairs 25 MHz

Voice

	SU12 Wh-Bl	SU13 Wh-Bl
	SU13 Wh-Or	SU12 Wh-Or

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

25 MHz

1000 packing

50 pairs Jacket PVC or LSZH U/UTP Cat.3 cable 25 MHz	
XV150.103	XV150.107
JACKET - PVC GREY	JACKET - LSZH GREEN

1000 m drum

ELECTRICAL AND CONSTRUCTION PARAMETERS

Resistance (max) ohm/100 m(328 ft) @ 20 °C		8.90
Minimum dielectric strength between conductors (min) [V]		1000
Insulation strength (min) [MOhm*km]		20000
Impendence characteristic [Ohm]		(min-max)
values at	772 kHz	87-117
	1.0 - 16 MHz	85-115
Return loss (RL) dB (min)		
values at	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

Frequency [MHz]	Max. attenuation [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

❖ Applications

→ PBX
→ Point-to-Point
→ Token Ring4 Mbit/s
→ ATM LAN 51.84 Mbit/s
→ ATM LAN 155.52 Mbit/s
→ Analog and digital transmission of phone signals

⌖ Standards

→ LSZH: PN-EN 61034, PN-EN 50267-2-1
→ PN-EN 60332-1
→ ANSI/TIA/EIA 568-C.2 (Cat.3)
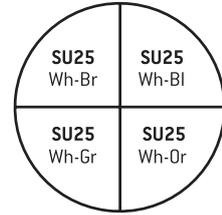→ ISO/IEC 11801
→ EN 50173, EN 50288

⚙ Construction

→ Conductor (wire) - 24 AWG (0.51 mm)
→ Insulation - polyolefin
→ Pair number -50 twisted pairs
→ Jacket - XV150.103 - PVC - grey
→ Jacket - XV150.107 - LSZH - green

FIBRAIN

U/UTP Cat.3 100 pairs 25 MHz

Voice

Multi-pair Installation Cables

SU25
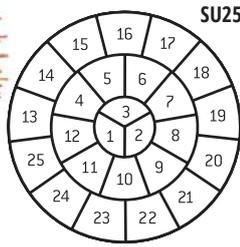
Subunit kolor:
Wh-Bl (White-Blue)
Wh-Or (White-Orange)
Wh-Gr (White-Green)
WH-Br (White-Brown)

SU25 Wh-Br	SU25 Wh-Bl
SU25 Wh-Gr	SU25 Wh-Or

25 MHz

1000 packing

100 pairs Jacket PVC or LSZH U/UTP Cat.3 cable 25 MHz	
1000 m drum	
XV100.103	XV100.107
JACKET - PVC GREY	**JACKET - LSZH GREEN**

ELECTRICAL AND CONSTRUCTION PARAMETERS

Resistance (max) ohm/100 m(328 ft) @ 20 °C		89.5
Minimum dielectric strength between conductors (min) [V]		1000
Insulation strength (min) [MOhm*km]		20000
Impendence characteristic [Ohm]		(min-max)
values at	772 kHz	87-117
	1.0 - 16 MHz	85-115
Return loss (RL) dB (min)		
values at	1.0 - 10 MHz	12
	10 - 20 MHz	12-log(f/10)
Construction		100x2x0.5
Diameter [mm]		19.1
Weight [kg/km]		560
Drum size		12

Frequency [MHz]	Max. attenuation [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

❖ Applications
→ PBX
→ Point-to-Point
→ Token Ring4 Mbit/s
→ ATM LAN 51.84 Mbit/s
→ ATM LAN 155.52 Mbit/s
→ Analog and digital transmission of phone signals

Standards
→ LSZH: PN-EN 61034, PN-EN 50267-2-1
→ PN-EN 60332-1
→ ANSI/TIA/EIA 568-C.2 (Cat.3)
→ ISO/IEC 11801
→ EN 50173, EN 50288

Construction
→ Conductor (wire) - 24 AWG (0.51 mm)
→ Insulation - polyolefin
→ Pair number -100 twisted pairs
→ Jacket - XV100.103 - PVC - grey
→ Jacket - XV100.107 - LSZH - green
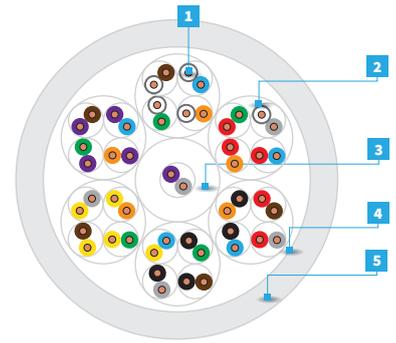
U/UTP Cat.5e 25 pairs 100 MHz
Express 5e

Copper cabling

Cable construction

1. Conductor
2. Insulation
3. Cable core
4. Braid
5. Jacket

100 MHz

1000 packing

1000 m drum	FIBRAINDATA Express 25xU/UTP Cat.5e+ 100 MHz	
	XE125.103	XE125.107
	JACKET - PVC GREY	JACKET - LSZH GREEN

ELECTRICAL AND CONSTRUCTION PARAMETERS

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]		40
Diameter [mm]		13.5
Weight [kg/km]		205
Minimal bending radius [mm]		55
Installation temperature [°C]		-20/+70
Operating temperature [°C]		-20/+70

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

Frequency [MHz]	Max. attenuation [dB/100 m]	NEXT	PS-NEXT	ACR-F	PS-ACR-F	Return loss [dB]
		[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

Applications

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

Standards

→ PN-EN 60332-1
→ ANSI/TIA/EIA 568-C.2 (Cat.5e)
→ ISO/IEC 11801:2011
→ IEC 61156-5
→ PN-EN 50173, PN-EN 50288

Construction

→ Conductor (wire) - 24 AWG (0.51 mm)
→ Insulation - polyolefin
→ Pair number - 25 twisted pairs
→ Jacket - grey PVC
→ Jacket - green LSZH

FIBRAIN

FIBRAINDATA CONNECTORS

Safety systems and the highest protection

UNIVERSAL TOOL
Construction ensures termination of all conductors

3P THIRD PARTY TESTING

RE-EMBEDDED PASS
Modules from cat. 6 and higher are verified with the use of Re-Embedded method - confirmed with 3P Third Part Test certificate

RJ45 CONNECTOR PROTECTION
Wire separator protecting the module against degradation

SMALL DIMENSIONS
Modules with small dimensions guarantee high density of packaging

CONNECTORS

against potential risks

NON-SHIELDED MODULES

PAIR SEPARATION
Transmission pair separation system inside keystone module

ANGULAR IDC CONNECTION
In each element we take care of dynamic parameters - angular connection reducing RL and NEXT

FIBRAIN PACKING
Modules are packed separately in Easy Open and clearly marked bags

SHIELDED MODULES

FARADAY CAGE
One solid body ensures protection against outside disruptions

PAIR SEPARATION ON IDC CONNECTIONS
Angular IDC connections placed at different angle compared to nearby pairs

FIELD TERMINABLE PLUG

SCREENED CAT. 6$_A$ PLUG

SUPPORT FOR UP TO 10GBASE-T APPLICATION

IP20 PROTECTION LEVEL

Keystone module Cat.5e UTP

Express 5e
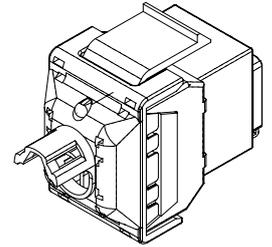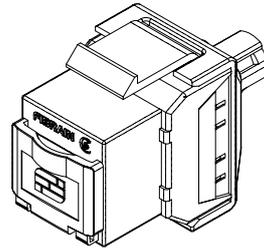
Keystone FIBRAINDATA Cat.5e UTP with green anti-dust cover

XE100.400
WITH GREEN ANTI-DUST COVER

Colorful cover **<1 min installation time**

ELECTRICAL AND MECHANICAL PARAMETERS

Compliance with the norm	ISO 11801 ed.2.2. EN 50173. TIA 568-C.2. IEC 60603-7-3
Operating temperature	-10 ºC to 60 ºC
Storage temperature	-40 ºC to 70 ºC
Connector class	Cat.5/Cat.6
Shielding	none
Housing material	UL-94-V0
Max. amperage [A]	1.5
Min. insulation resistance [MOhm]	500
Max DC resistance [Ohm]	0.1
Contact material	Phosphor-bronze (CuSN)
Contacts	Min 0.75 µm gold layer, min. 1.3 µm nickel layer
IDC connector material	Phosphor-bronze (CuSN)
IDC covering	Min 1.27 µm silver layer, min. 2.5 µm nickel layer
Conductor diameter range (wire)	0.4 mm (AWG26) – 0.65 mm (AWG22)
Conductor diameter range (rope)	AWG26/7 – AWG22/7
Min. connection cycles qty	750
Min. module re-termination	20
Mounting	keystone

Features
→ Tool-less
→ Housing minimizes wires unbraiding
→ Flame-retardant materials UL94V-0
→ Anti-dust cover
→ Sequence identification 568A and 568B

Standards
→ "Keystone" standard ensures assembly compatibility
→ Structured cabling standards ISO/IEC 11801:2011, EN 0173:2011, TIA/EIA568 - C.2
→ Verification in accordance with the new standards by independent laboratory centres
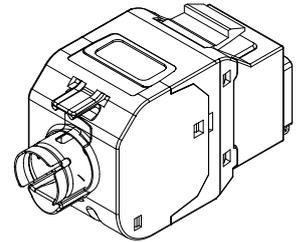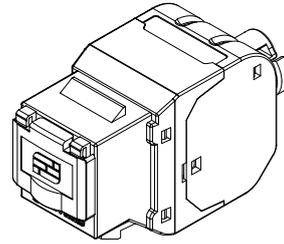
Accessories
→ **XB-DC-W-01** 25 pcs white anti-dust covers
→ **XB-DC-Y-01** 25 pcs yellow anti-dust covers
→ **XB-DC-R-01** 25 pcs red anti-dust covers
→ **XB-DC-BK-01** 25 pcs black anti-dust covers
→ **XT100.KEY** Automatic clamping tool

Keystone module Cat.5e FTP/STP

Express 5e

Keystone FIBRAINDATA Cat.5e FTP/STP with green anti-dust cover
XE100.450
WITH GREEN ANTI-DUST COVER

Colorful cover

<1 min installation time

ELECTRICAL AND MECHANICAL PARAMETERS	
Compliance with the norm	ISO 11801 ed.2.2. EN 50173. TIA 568-C.2. IEC 60603-7-3
Operating temperature	-10 ºC to 60 ºC
Storage temperature	-40 ºC to 70 ºC
Connector class	Cat.5/Cat.6
Shielding	yes
Housing material	UL-94-V0
Max. amperage [A]	1.5
Min. insulation resistance [MOhm]	500
Max DC resistance [Ohm]	0.1
Contact material	Phosphor-bronze (CuSN)
Contacts	Min 0.75 µm gold layer, min. 1.3 µm nickel layer
IDC connector material	Phosphor-bronze (CuSN)
IDC covering	Min 1.27 µm silver layer, min. 2.5 µm nickel layer
Conductor diameter range (wire)	0.4 mm (AWG26) – 0.65 mm (AWG22)
Conductor diameter range (rope)	AWG26/7 – AWG22/7
Min. connection cycles qty	750
Min. module re-termination	20
Mounting	keystone

Features
→ Tool-less
→ Housing minimizes wires unbraiding
→ Flame-retardant materials UL94V-0
→ Anti-dust cover
→ Sequence identification 568A and 568B

Standards
→ "Keystone" standard ensures assembly compatibility
→ Structured cabling standards ISO/IEC 11801:2011, EN 0173:2011, TIA/EIA568 - C.2
→ Verification in accordance with the new standards by independent laboratory centres
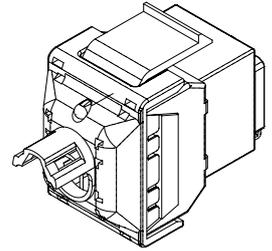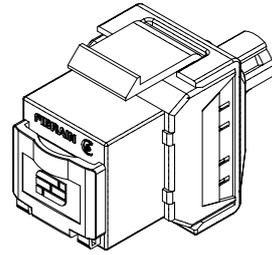
Accessories
→ **XB-DC-W-01** 25 pcs white anti-dust covers
→ **XB-DC-Y-01** 25 pcs yellow anti-dust covers
→ **XB-DC-R-01** 25 pcs red anti-dust covers
→ **XB-DC-BK-01** 25 pcs black anti-dust covers
→ **XT100.KEY** Automatic clamping tool

Keystone module Cat.6 UTP

Quick 6

Keystone FIBRAINDATA Cat.6 UTP with blue anti-dust cover
XQ100.400
WITH BLUE ANTI-DUST COVER

Third Party Testing   **Colorful cover**   **<1 min installation time**

ELECTRICAL AND MECHANICAL PARAMETERS	
Compliance with the norm	ISO 11801 ed.2.2. EN 50173. TIA 568-C.2. IEC 60603-7-3
Operating temperature	-10 ºC to 60 ºC
Storage temperature	-40 ºC to 70 ºC
Connector class	Cat.5/Cat.6
Shielding	none
Housing material	UL-94-V0
Max. amperage [A]	1.5
Min. insulation resistance [MOhm]	500
Max DC resistance [Ohm]	0.1
Contact material	Phosphor-bronze (CuSN)
Contacts	Min 0.75 μm gold layer, min. 1.3 μm nickel layer
IDC connector material	Phosphor-bronze (CuSN)
IDC covering	Min 1.27 μm silver layer, min. 2.5 μm nickel layer
Conductor diameter range (wire)	0.4 mm (AWG26) – 0.65 mm (AWG22)
Conductor diameter range (rope)	AWG26/7 – AWG22/7
Min. connection cycles qty	750
Min. module re-termination	20
Mounting	keystone

Features
→ Tool-less
→ Housing minimizes wires unbraiding
→ Flame-retardant materials UL94V-0
→ Anti-dust cover
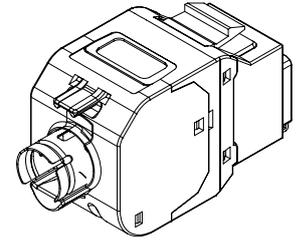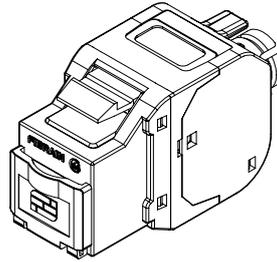→ Sequence identification 568A and 568B

Standards
→ "Keystone" standard ensures assembly compatibility
→ Structured cabling standards ISO/IEC 11801:2011, EN 0173:2011, TIA/EIA568 - C.2
→ Verification in accordance with the new standards by independent laboratory centres

Accessories
→ **XB-DC-W-01** 25 pcs white anti-dust covers
→ **XB-DC-Y-01** 25 pcs yellow anti-dust covers
→ **XB-DC-R-01** 25 pcs red anti-dust covers
→ **XB-DC-BK-01** 25 pcs black anti-dust covers
→ **XT100.KEY** Automatic clamping tool

FIBRAIN

Keystone module Cat.6 FTP/STP

Quick 6

Keystone FIBRAINDATA Cat.6 FTP/STP with blue anti-dust cover
XQ100.450
WITH BLUE ANTI-DUST COVER

Third Party Testing **Colorful cover** **<1 min installation time**

ELECTRICAL AND MECHANICAL PARAMETERS

Compliance with the norm	ISO 11801 ed.2.2. EN 50173. TIA 568-C.2. IEC 60603-7-3
Operating temperature	-10 ºC to 60 ºC
Storage temperature	-40 ºC to 70 ºC
Connector class	Cat.5/Cat.6
Shielding	yes
Housing material	UL-94-V0
Max. amperage [A]	1.5
Min. insulation resistance [MOhm]	500
Max DC resistance [Ohm]	0.1
Contact material	Phosphor-bronze (CuSN)
Contacts	Min 0.75 µm gold layer, min. 1.3 µm nickel layer
IDC connector material	Phosphor-bronze (CuSN)
IDC covering	Min 1.27 µm silver layer, min. 2.5 µm nickel layer
Conductor diameter range (wire)	0.4 mm (AWG26) – 0.65 mm (AWG22)
Conductor diameter range (rope)	AWG26/7 – AWG22/7
Min. connection cycles qty	750
Min. module re-termination	20
Mounting	keystone

Features
→ Tool-less
→ Housing minimizes wires unbraiding
→ Flame-retardant materials UL94V-0
→ Anti-dust cover
→ Sequence identification 568A and 568B

Standards
→ "Keystone" standard ensures assembly compatibility
→ Structured cabling standards ISO/IEC 11801:2011, EN 0173:2011, TIA/EIA568 - C.2
→ Verification in accordance with the new standards by independent laboratory centres
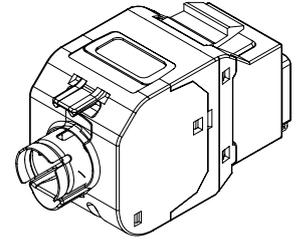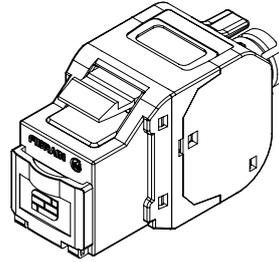
Accessories
→ **XB-DC-W-01** 25 pcs white anti-dust covers
→ **XB-DC-Y-01** 25 pcs yellow anti-dust covers
→ **XB-DC-R-01** 25 pcs red anti-dust covers
→ **XB-DC-BK-01** 25 pcs black anti-dust covers
→ **XT100.KEY** Automatic clamping tool

Keystone module Cat.6$_A$ FTP/STP

Copper cabling

Rapid6a

Keystone FIBRAINDATA Cat.6$_A$ FTP/STP with aqua anti-dust cover
XR100.450
WITH AQUA ANTI-DUST COVER

3P THIRD PARTY TESTING

Third Party Testing

Colorful cover

<1 min installation time

ELECTRICAL AND MECHANICAL PARAMETERS	
Compliance with the norm	ISO 11801 ed.2.2. EN 50173. TIA 568-C.2. IEC 60603-7-3
Operating temperature	-10 ºC to 60 ºC
Storage temperature	-40 ºC to 70 ºC
Connector class	Cat.5/Cat.6/Cat.6$_A$
Shielding	yes
Housing material	UL-94-V0
Max. amperage [A]	1.5
Min. insulation resistance [MOhm]	500
Max DC resistance [Ohm]	0.1
Contact material	Phosphor-bronze (CuSN)
Contacts	Min 0.75 µm gold layer, min. 1.3 µm nickel layer
IDC connector material	Phosphor-bronze (CuSN)
IDC covering	Min 1.27 µm silver layer, min. 2.5 µm nickel layer
Conductor diameter range (wire)	0.4 mm (AWG26) – 0.65 mm (AWG22)
Conductor diameter range (rope)	AWG26/7 – AWG22/7
Min. connection cycles qty	750
Min. module re-termination	20
Mounting	keystone

Features
→ Tool-less
→ Housing minimizes wires unbraiding
→ Flame-retardant materials UL94V-0
→ Anti-dust cover
→ Sequence identification 568A and 568B

Standards
→ "Keystone" standard ensures assembly compatibility
→ Structured cabling standards ISO/IEC 11801:2011, EN 0173:2011, TIA/EIA568 - C.2
→ Verification in accordance with the new standards by independent laboratory centres

Accessories
→ **XB-DC-W-01** 25 pcs white anti-dust covers
→ **XB-DC-Y-01** 25 pcs yellow anti-dust covers
→ **XB-DC-R-01** 25 pcs red anti-dust covers
→ **XB-DC-BK-01** 25 pcs black anti-dust covers
→ **XT100.KEY** Automatic clamping tool

Field Plug Cat.6$_A$ FTP/STP

Rapid 6a

IP20

2x

10 Gbps

IP20 resistance

Two types of wire manager

10Gbps bandwidth

Features
→ Industry compatible design
→ 360° shielding for better EMI/EMC
→ Integrated strain relief
→ Field and easy install
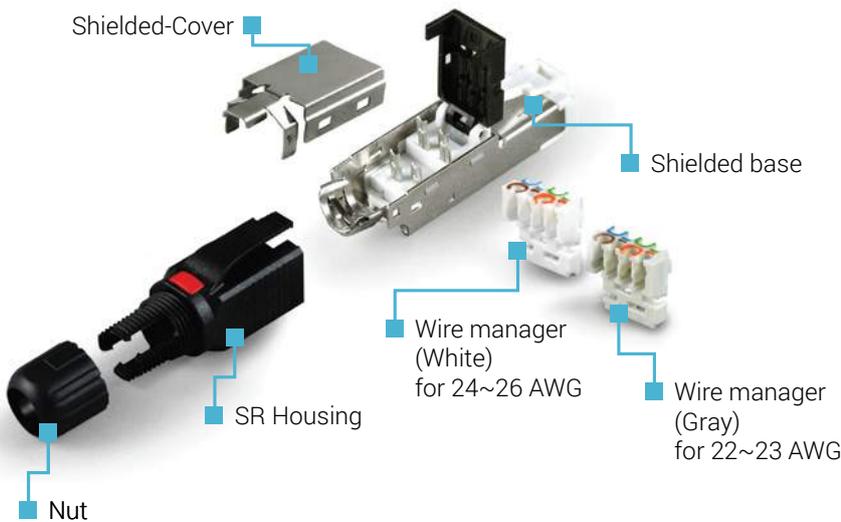→ Compatible with EN 50173 / ISO IEC 118

Norms
→ Qualified Screened Class EA/Cat.6A
→ Permanent Link & Channel ANSI/TIA-568-C.2
→ IEC 60603-7-51
→ ISO/IEC 11801 2.2 Edition
→ CENELEC EN 50173-1:201

Field Plug FIBRAINDATA Cat.6$_A$ FTP/STP
XR100.350
FOR 22-23 AND 24-26 AWG

ELECTRICAL AND MECHANICAL PARAMETERS	
Maximum current value [A]	1.5
Insulation strength [MOhm] min	500
Contacts resistance [MOhm] max	20
DC Resistance [Ohm] max	0.1
Compliance with the norm	IEC 11801 2nd Ed. Am. 1
Compliance with the norm	ANSI/TIA/EIA 568-C-2.1
Jacket	Shielded RJ45 Cat.6A
Housing	UL94V-0
Sequence identification	T568A and T568B

Field plug Cat.6$_A$ FTP/STP
Manufacturing technology

Shielded-Cover

Shielded base

Wire manager (White) for 24~26 AWG

Wire manager (Gray) for 22~23 AWG

SR Housing

Nut

PATCH PANELS

Trust first-class components, trust Fibrain quality

CABLE SHELF ARRANGEMENT
To facilitate arrangement panels are always equipped with cable shelf

1U 0.5U

PORTS PACKAGING
Panels are available in 1U and 0.5 U option ensuring termination up to 24 ports

WELL - EQUIPPED
A set of cable ties, M6 screws, installation guide together with a panel

3P THIRD PARTY TESTING

RE-EMBEDDED PASS
Panels from cat. 6 and higher are verified with the use of Re-Embedded method confirmed with 3P Third Party Test Certificate

PATCH PANELS

UTP — UNSHIELDED PANELS

FTP — SHIELDED PANELS

FO/CU — FULLY SCALABLE AND MODULAR SOLUTION FO/CU

ANGULAR IDC CONNECTION
In each element we take care of dynamic parameters-angular connection reduces RL and NEXT

FARADAY CAGE
In a complete panel there is a shielded cover with a shielded grounding point

9-PIN IDC CONNECTOR
Panels have 3 independent contact points with shield due to extra pin on IDC connection

PANEL WITH NOBLE METALS
IDC Couplers covered with 1.27 µm silver layer
Contacts covered with 50 µm gold layer

47 **Ag** silver

79 **Au** gold 196.97
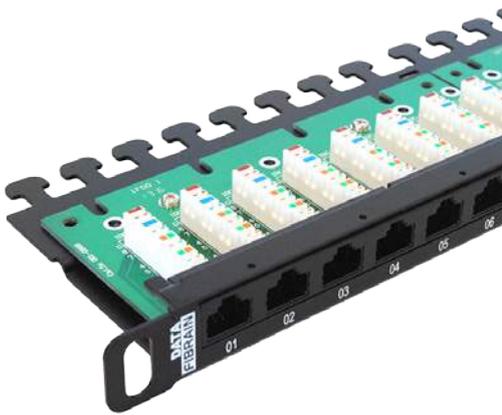
Patch panel Cat.5e UTP 24 ports

Express 5e

Patch panel 1U Express 5e XE100.200
UTP 24 ports

Standards
→ 19" standard - facilitates mounting
→ Structured cabling comply with ISO/IEC 11801:2011, EN 50173:2011, TIA/EIA 568-C.2 standards
→ Verification in accordance with the new standards by independent laboratory centres

Features
→ 1U, 19"
→ Depth: 110 mm
→ 8-pin IDC connectors
→ Material: powder-coated sheet, black
→ Facilitated cable arrangement (cable shelf)
→ Exchangeable description field
→ Clear numbering of ports and panels

Patch panel 0.5U Express 5e XE100.205
UTP 24 ports

Standards
→ 19" standard - facilitates mounting
→ Structured cabling comply with ISO/IEC 11801:2011, EN 50173:2011, TIA/EIA 568-C.2 standards
→ Verification in accordance with the new standards by independent laboratory centres

Features
→ 0.5U, 19"
→ Depth: 95 mm
→ 8-pin IDC connectors
→ Material: powder-coated sheet, black
→ Facilitated cable arrangement (cable shelf)
→ Clear numbering of ports and panels

ELECTRICAL AND MECHANICAL PARAMETERS	
Maximum current value [A]	1.5
Insulation strength [MOhm] min	500
Contacts resistance [MOhm] max	20
DC Resistance [Ohm] max	0.1
Compliance with the norm	IEC 60603-7 Class D
Compliance with the norm	TIA568-B Cat.5e
Frame	1.5 mm steel sheet
Jacket	Non-shielded RJ45 Cat.5e
Housing	UL94V-0 black thermoplastic
Contact material	phosphor-bronze
Contacts	0.46mm diameter covered with 0.75 µm gold and 1.3 µm nickel layer
Jack durability	>750 connection cycles in accordance with EN60603-7
IDC connector	IDC LSA
Wire diameter	0.4-0.65 mm (AWG26-22)
IDC durability	>200 connection cycles
Coupler material	phosphor-bronze
Coupler coating	1.27 µm silver and 2.5 µm nickel layer
Sequence identification	T568A and T568B

FIBRAIN

Patch panel Cat.5e FTP/STP 24 ports

Express 5e

Patch panel 1U Express 5e XE100.250
FTP/STP 24 ports

Standards
→ 19" standard - facilitates mounting
→ Structured cabling comply with ISO/IEC 11801:2011, EN 50173:2011, TIA/EIA 568-C.2 standards
→ Verification in accordance with the new standards by independent laboratory centres

Features
→ 1U, 19"
→ Depth: 110 mm
→ 9-pin IDC connectors
→ Shielded cover connected to grounding point
→ Material: powder-coated sheet, black
→ Facilitated cable arrangement (cable shelf)
→ Exchangeable description field
→ Clear numbering of ports and panels

Patch panel 0.5U Express 5e XE100.255
FTP/STP 24 ports

Standards
→ 19" standard - facilitates mounting
→ Structured cabling comply with ISO/IEC 11801:2011, EN 50173:2011, TIA/EIA 568-C.2 standards
→ Verification in accordance with the new standards by independent laboratory centres

Features
→ 0.5U, 19"
→ Depth: 95 mm
→ 9-pin IDC connectors
→ Shielded cover connected to grounding point
→ Facilitated cable arrangement (cable shelf)
→ Clear numbering of ports and panels

ELECTRICAL AND MECHANICAL PARAMETERS	
Maximum current value [A]	1.5
Insulation strength [MOhm] min	500
Contacts resistance [MOhm] max	20
DC Resistance [Ohm] max	0.1
Compliance with the norm	IEC 60603-7 Class D
Compliance with the norm	TIA568-B Cat.5e
Frame	1.5 mm steel sheet
Shield	Shielded cover made of 1.0 mm galvanized steel
Jacket	Shielded RJ45 Cat.5e
Housing	UL94V-0 black thermoplastic
Contact material	phosphor-bronze
Contacts	0.48mm diameter covered with 0.75 µm gold and 1.3 µm nickel layer
Jack durability	>750 connection cycles in accordance with EN60603-7
IDC connector	IDC LSA
Wire diameter	0.4-0.65 mm (AWG26-22)
IDC durability	>200 connection cycles
Coupler material	phosphor-bronze
Coupler coating	1.27 µm silver and 2.5 µm nickel layer
Sequence identification	T568A and T568B

Patch panel Cat.6 UTP 24 ports

Quick 6

Patch panel 1U Quick 6 XQ100.200
UTP 24 ports

Standards

→ 19" standard - facilitates mounting

→ Structured cabling comply with ISO/IEC 11801:2011, EN 50173:2011, TIA/EIA 568-C.2 certified by independent laboratory centres

→ Verification in accordance with the new standards by independent laboratory centres

Features

→ 1U, 19"

→ Depth: 110 mm

→ 8-pin IDC connectors

→ Material: powder-coated sheet, black RAL9005

→ Facilitated cable arrangement (cable shelf)

→ Exchangeable description field

→ Clear numbering of ports and panels

Patch panel 0.5U Quick 6 XQ100.205
UTP 24 ports

Standards

→ 19" standard - facilitates mounting

→ Structured cabling comply with ISO/IEC 11801:2011, EN 50173:2011, TIA/EIA 568-C.2 certified by independent laboratory centres

→ Verification in accordance with the new standards by independent laboratory centres

Features

→ 0.5U, 19"

→ Depth: 95 mm

→ 8-pin IDC connectors

→ Material: powder-coated sheet, black RAL9005

→ Facilitated cable arrangement (cable shelf)

→ Clear numbering of ports and panels

ELECTRICAL AND MECHANICAL PARAMETERS	
Insulation strength [MOhm] min	500
Contacts resistance [MOhm] max	20
DC Resistance [Ohm] max	0.1
Compliance with the norm	IEC 60603-7 Class E
Compliance with the norm	TIA568-B Cat.6
Frame	1.5 mm steel sheet
Jacket	Non-shielded RJ45 Cat.6
Housing	UL94V-0 black thermoplastic
Contact material	phosphor-bronze
Contacts	0.46mm diameter covered with 0.75 µm gold and 1.3 µm nickel layer
Jack durability	>750 connection cycles in accordance with EN60603-7
IDC connector	IDC LSA
Wire diameter	0.4-0.65 mm (AWG26-22)
IDC durability	>200 connection cycles
Coupler material	phosphor-bronze
Coupler coating	1.27 µm silver and 2.5 µm nickel layer
Sequence identification	T568A and T568B

FIBRAIN

Patch panel Cat.6 FTP/STP 24 ports

Quick 6

Patch panel 1U Quick 6 XQ100.250
FTP/STP 24 ports

Standards

→ 19" standard - facilitates mounting

→ Structured cabling comply with ISO/IEC 11801:2011, EN 50173:2011, TIA/EIA 568-C.2 certified by independent laboratory centres

→ Verification in accordance with the new standards by independent laboratory centres

Features

→ 1U, 19"

→ Depth: 110 mm

→ 9-pin IDC connectors

→ Shielded cover connected to grounding point

→ Material: powder-coated sheet, black

→ Facilitated cable arrangement (cable shelf)

→ Exchangeable description field

→ Clear numbering of ports and panels

Patch panel 0.5U Quick 6 XQ100.255
FTP/STP 24 ports

Standards

→ 19" standard - facilitates mounting

→ Structured cabling comply with ISO/IEC 11801:2011, EN 50173:2011, TIA/EIA 568-C.2 certified by independent laboratory centres

→ Verification in accordance with the new standards by independent laboratory centres

Features

→ 0.5U, 19"

→ Depth: 95 mm

→ 9-pin IDC connectors

→ Shielded cover connected to grounding point

→ Facilitated cable arrangement (cable shelf)

→ Clear numbering of ports and panels

ELECTRICAL AND MECHANICAL PARAMETERS	
Maximum current value [A]	1.5
Insulation strength [MOhm] min	500
Contacts resistance [MOhm] max	20
DC Resistance [Ohm] max	0.1
Compliance with the norm	IEC 60603-7 Class E
Compliance with the norm	TIA568-B Cat.6
Frame	1.5 mm steel sheet
Shield	Shielded cover made of 1.0 mm galvanized steel
Jacket	Shielded RJ45 Cat.6
Housing	UL94V-0 black thermoplastic
Contact material	phosphor-bronze
Contacts	0.48mm diameter covered with 0.75 μm gold and 1.3 μm nickel layer
Jack durability	>750 connection cycles in accordance with EN60603-7
IDC connector	IDC LSA
Wire diameter	0.4-0.65 mm (AWG26-22)
IDC durability	>200 connection cycles
Coupler material	phosphor-bronze
Coupler coating	1.27 μm silver and 2.5 μm nickel layer
Sequence identification	T568A and T568B

Patch panel Cat.6$_A$ FTP/STP 24 ports

Copper cabling

Rapid 6a

Patch panel 1U Rapid 6$_A$ XR100.250
FTP/STP 24 ports

Standards
→ 19" standard - facilitates mounting
→ Structured cabling comply with ISO/IEC 11801:2011, EN 50173:2011, TIA/EIA 568-C.2 certified by independent laboratory centres
→ Verification in accordance with the new standards by independent laboratory centres

Features
→ 1U, 19"
→ Depth: 110 mm
→ 9-pin IDC connectors
→ Material: powder-coated sheet, black
→ Facilitated cable arrangement (cable shelf)
→ Exchangeable description field
→ Clear numbering of ports and panels

Patch panel 0.5U Rapid 6$_A$ XR100.255
FTP/STP 24 ports

Standards
→ 19" standard - facilitates mounting
→ Structured cabling comply with ISO/IEC 11801:2011, EN 50173:2011, TIA/EIA 568-C.2 certified by independent laboratory centres
→ Verification in accordance with the new standards by independent laboratory centres

Features
→ 0.5U, 19"
→ Depth: 95 mm
→ 9-pin IDC connectors
→ Shielded cover connected to grounding point
→ Facilitated cable arrangement (cable shelf)
→ Clear numbering of ports and panels

ELECTRICAL AND MECHANICAL PARAMETERS	
Maximum current value [A]	1.5
Insulation strength [MOhm] min	500
Contacts resistance [MOhm] max	20
DC Resistance [Ohm] max	0.1
Compliance with the norm	IEC 60603-7 Class EA
Compliance with the norm	TIA568-B Cat.6A
Frame	1.5 mm steel sheet
Shield	Shielded cover made of 1.0 mm galvanized steel
Jacket	Shielded RJ45 Cat.6A
Housing	UL94V-0 black thermoplastic
Contact material	phosphor-bronze
Contacts	0.48mm diameter covered with 0.75 µm gold and 1.3 µm nickel layer
Jack durability	>750 connection cycles in accordance with EN60603-7
IDC connector	IDC LSA
Wire diameter	0.4-0.65 mm (AWG26-22)
IDC durability	>200 connection cycles
Coupler material	phosphor-bronze
Coupler coating	1.27 µm silver and 2.5 µm nickel layer
Sequence identification	T568A and T568B

FIBRAIN

Patch Panel 1U24xRJ45u/s, empty

Patch panels

☰ Description

→ SD patch panel is the most flexible platform for serve either copper or FO connection. It can be equipped up to 24 RJ45 ports of Cat5-Cat6A or up to 96 fibers terminated with wide range of connectors LC/E2000/SC. Patch panel has 8 empty slots which can be equipped with copper holder (6x RJ45) or fully equipped FO cassettes spliced or for pre-terminated connectors including MPO/MTP connectors.

❖ Applications

→ Nodal points of fiber optic networks

→ Distribution points of fiber optic networks

→ Server rooms

TECHNICAL SPECIFICATIONS	
Case material	Galvanised steel
Colour	Grey RAL 7035 (XB101.224)
	Black RAL 9005 (XB101.224.1)
Temperature range	-40°C to +70°C
Height	1U
Width	19" (
Scope of supply	Frame, empty
Weight [kg]	2.1

■ Ordering information

Code	Description
XB101.224	Patch Panel 1U24xRJ45u/s, empty, 1U, grey RAL 7035
XB101.224.1	Patch Panel 1U24xRJ45u/s, empty, 1U, black RAL 9005

↥↧ Features

→ 1U, 19"

→ For all keystone modules (shielded/unshielded)

→ Facilitated cable arrangement (cable shelf)

→ Up to 24xRJ45/u/s

→ Staggered port arrangement to avoid Alien-Crosstalk

→ Exchangeable description field

→ Coloured anti-dust covers

→ Solid metal body for galvanised connection with modules shield (in case of using shielded modules)

SD modular patch panel, empty

Fiber Optic Patch Panels

TECHNICAL SPECIFICATIONS

Case material	Powder paint coated steel
Colour	Front: chrome-plated steel
	Closure: Black RAL 9005
Temperature range	-40°C to +70°C
Max. copper holders	4
Max. FO cassettes	8
Scope of supply	Frame, empty
Weight [kg]	2.1

Ordering information

Code	Description
XB100.2SD	SD modular patch panel, empty

Description

→ SD patch panel is the most flexible platform for serve either copper or FO connection. It can be equipped up to 24 RJ45 ports of Cat5-Cat6A or up to 96 fibers terminated with wide range of connectors LC/E2000/SC. Patch panel has 8 empty slots which can be equipped with copper holder (6x RJ45) or fully equipped FO cassettes spliced or for pre-terminated connectors including MPO/MTP connectors.
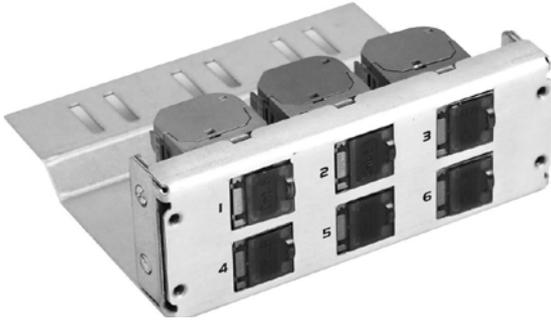
Applications

→ Nodal points of fiber optic networks
→ Distribution points of fiber optic networks
→ Server rooms

Features

→ Modular configuration system:
  → Possibility for FO/Cu assembling,
  → Different cable entry adapters for different cables fixed in the rear
  → Patch cables manager from front (optional)
→ Capacity: up to 8 FO/Cu modules
→ Max ports density:
  → 24 port/1U for copper
  → 96 FO fibers (for LCd)
→ Full range of connectors:
  → RJ45 – Cat.5u/s, Cat.6u/s. Cat.6Au/s
  → LCd, LCq, E2000, SC, SCd. – MM/SM

FIBRAIN®

SD 6x RJ45 module, unequipped

Description

→ SD patch panel is the most flexible platform for serve either copper or FO connection. It can be equipped up to 24 RJ45 ports of Cat5-Cat6A or up to 96 fibers terminated with wide range of connectors LC/E2000/SC. Patch panel has 8 empty slots which can be equipped with copper holder (6x RJ45) or fully equipped FO cassettes spliced or for pre-terminated connectors including MPO/MTP connectors.

Applications

→ Nodal points of fiber optic networks
→ Distribution points of fiber optic networks
→ Server rooms

TECHNICAL SPECIFICATIONS	
Case material	Stainless steel
Colour	Front: chrome-plated steel
	Closure: Black RAL 9005
Temperature range	-40°C to +70°C
Protection level	IP20 (according to PN-EN 60529)
Weight [kg]	0.12

Features

→ Modular configuration system:
  → One-port modularity
  → Full range of connectors: RJ45 – Cat.5u/s, Cat.6u/s. Cat.6Au/s
  → Mounting: keystone
  → Port numbering
→ Specifically designed place to cable mounting
→ Capacity: up to 6x RJ45
→ Capacity in SD panel: up to 4 modules
→ Filip cover with a labelling sticker

Ordering information

Code	Description
XB100.2SD.MCU	SD module, unequipped

SD patch panel accessories

Blind cover 0.5U

Blind cover for front of SD patch panel

DIMENSIONS	
Length [mm]	220
Width [mm]	129
Height [mm]	35

ORDERING INFORMATION	
XB100.2SD.PPZ	Blind cover 0.5U

Blind cover 1U

Blind cover for rear of SD patch panel

DIMENSIONS	
Length [mm]	220
Width [mm]	129
Height [mm]	35

ORDERING INFORMATION	
XB100.2SD.PTZ	Blind cover 1U

Cable gland holder for SD patch panel

Cable gland holder for SD Patch panel. Holder can be installed to rear side of panel. It enables to fix 2 cable glands of Φ xx

DIMENSIONS	
Length [mm]	220
Width [mm]	129
Height [mm]	35

ORDERING INFORMATION	
XB100.2SD.PTD	Cable gland holder

Cable holder for SD panel

Cable holder enables fixation of cables/tubes which enter SD patch panel. Occupies one rear slot.

DIMENSIONS	
Length [mm]	220
Width [mm]	129
Height [mm]	35

ORDERING INFORMATION	
XB100.2SD.PTT	Blind cover 1U

Cable holder for SD panel, double

Cable holder intended for fixation of multitube cables. Enables easy installation and distribution tubes within the space of SD patch panel

DIMENSIONS	
Length [mm]	220
Width [mm]	129
Height [mm]	35

ORDERING INFORMATION	
XB100.2SD.PTT	Blind cover 1U

19" cable organizer

To arrange cables in SD patch panel. Equipped with a flip cover with a sticker that facilitates markings

DIMENSIONS	
Depth [mm]	69.5
Width [mm]	482
Height [mm]	44 (1U)

ORDERING INFORMATION	
XB100.2SD.ORG	19" cable organizer

FIBRAIN®

Voice panels

Patch panels

ELECTRICAL AND MECHANICAL PARAMETERS

Frame	1.5 mm steel sheet
Jacket	Non-shielded RJ45 Cat.3
Housing	UL94V-0 black thermoplastic
Contact material	phosphor-bronze
Contacts	0.35 mm diameter covered with 0.75 µm gold and 1.3 µm nickel layer
Jack durability	>750 connection cycles in accordance with EN60603-7
IDC connector	IDC LSA
Wire diameter	0.4-0.65 mm (AWG26-22)
IDC durability	>200 connection cycles
Coupler material	phosphor-bronze
Coupler coating	Brass Sn 60% Pb 40%
Sequence identification	T568A and T568B

Ordering information

Code	Description
XV100.200	Patch Panel FIBRAINDATA voice series 25 ports
XV100.210	Patch Panel FIBRAINDATA voice series 50 ports

▤ Description

→ FIBRAINDATA 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-C.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.

❖ Applications

→ PBX

→ Point-to-Point

→ Token Ring4 Mbit/s

→ ATM LAN 51.84 Mbit/s

→ ATM LAN 155.52 Mbit/s

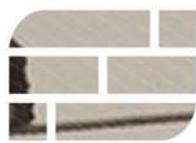→ Analog and digital transmission of phone signals

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
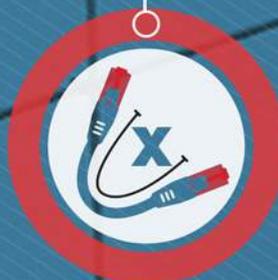
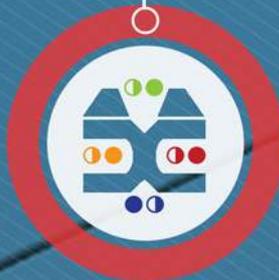→ Description fields with pre-printed identification

PATCH CORDS

Our solutions ensure stable and secure transmission

PATCH CORD CABLE LENGTH

Various cable lengths and solutions are available

PAIR SEPARATION

Connectors equipped with X pair separators ensure pair twisting to RJ45 clamp

BENDING RADIUS PROTECTION

Patch cord cables equipped with a bending radius- limiting system

CABLE COLOUR

Patch cord cables are available in 9 colours

PATCH CORDS

UTP
UNSHIELDED PATCH CORD

5 BOOT COLOURS
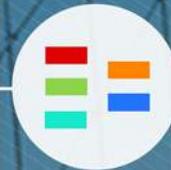Patch cord cable identification by cable colour or boot colour

450MHZ U/UTP CAT.6
Patch cord cables manufactured with the use of U/UTP 450MHz LSZH cat. 6

450 MHz

FTP
SHIELDED PATCH CORD

5 CABLE IDENTIFICATION STEPS
Additional colour coding elements: icons, cable, connector, boot and strain relief

900MHZ S/FTP CAT. 7
Patch cord cables manufactured with the use of S/FTP 900MHz FR-LSZH cat. 7

900 MHz

MADE IN POLAND
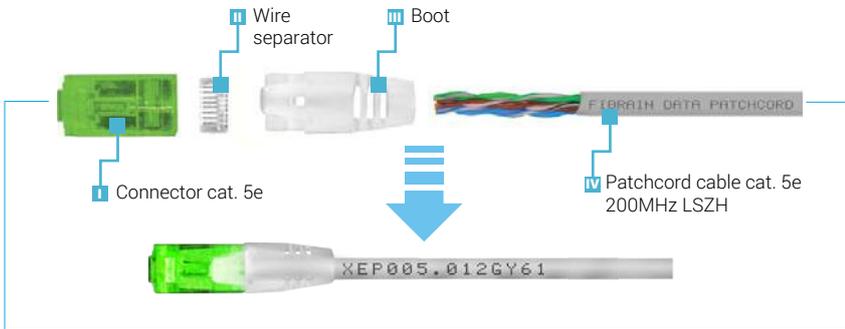Patch cord cable manufacturing in Advanced Technology &Manufacturing Center in Zaczernie

Patch cords Cat.5e

Patch cord Cat.5e unshielded
Manufacturing technology

- Wire separator
- Boot
- I Connector cat. 5e
- IV Patchcord cable cat. 5e 200MHz LSZH

XEP005.012GY61

⚠ UTP Distinctive features

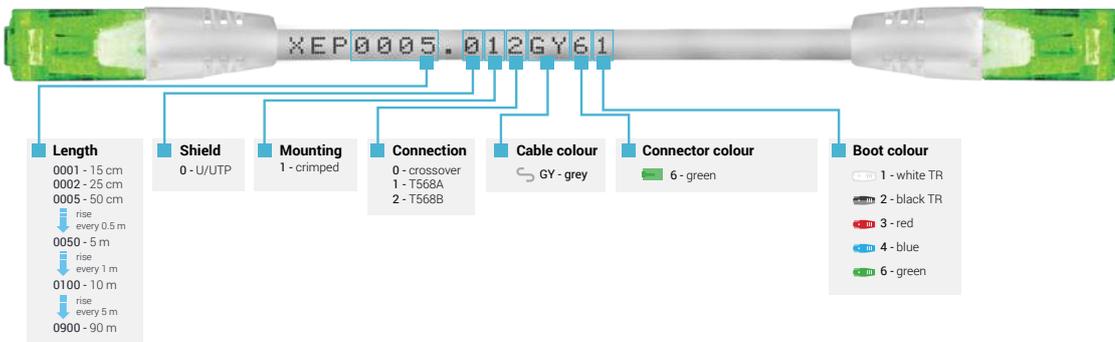**Bending radius reduction system**

Cable frequency – 200MHz

❖ Applications

→ Connection to a user's point
→ Connection to a consolidation point
→ Supplied in Data Center and consolidation points
→ Complete transmission channel

Ordering syntax

XEP0005.012GY61

Length	Shield	Mounting	Connection	Cable colour	Connector colour	Boot colour
0001 - 15 cm	0 - U/UTP	1 - crimped	0 - crossover	GY - grey	6 - green	1 - white TR
0002 - 25 cm			1 - T568A			2 - black TR
0005 - 50 cm			2 - T568B			3 - red
rise every 0.5 m						4 - blue
0050 - 5 m						6 - green
rise every 1 m						
0100 - 10 m						
rise every 5 m						
0900 - 90 m						

Patch cord Cat.5e shielded
Manufacturing technology

- Wire separator
- Boot
- I Connector cat. 5e
- IV Patchcord cat. 5e 200MHz LSZH

FIBRAIN DATA PATCHCORD

⚠ FTP/STP Distinctive features

Bending radius reduction system

Cable frequency – 200MHz

❖ Applications

→ Connection to a user's point
→ Connection to a consolidation point
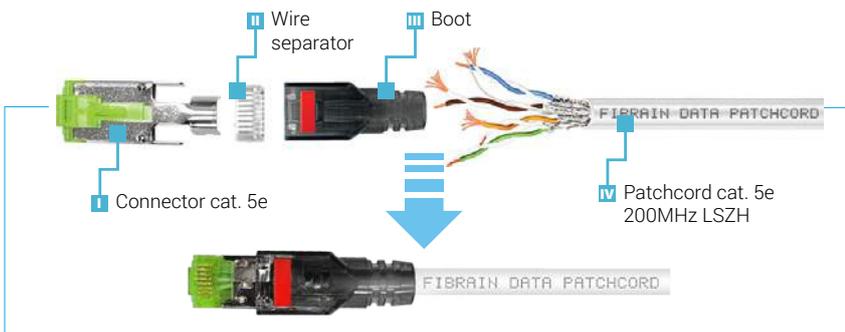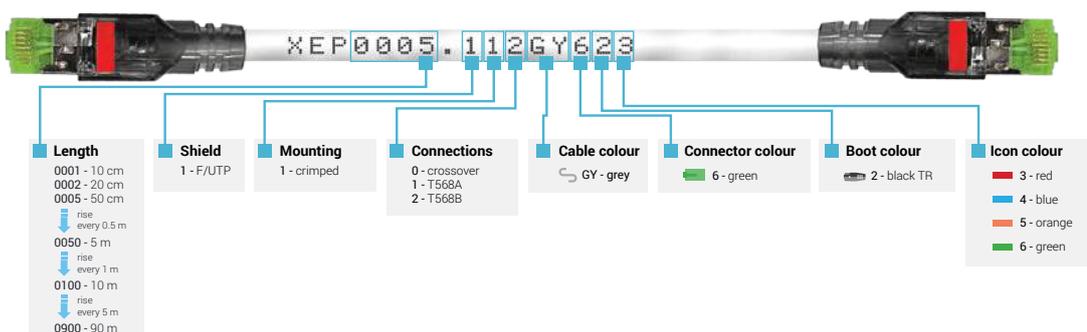→ Supplied in Data Center and consolidation points
→ Complete transmission channel

Ordering syntax

XEP0005.112GY623

Length	Shield	Mounting	Connections	Cable colour	Connector colour	Boot colour	Icon colour
0001 - 10 cm	1 - F/UTP	1 - crimped	0 - crossover	GY - grey	6 - green	2 - black TR	3 - red
0002 - 20 cm			1 - T568A				4 - blue
0005 - 50 cm			2 - T568B				5 - orange
rise every 0.5 m							6 - green
0050 - 5 m							
rise every 1 m							
0100 - 10 m							
rise every 5 m							
0900 - 90 m							

FIBRAIN

Patch cords Cat.5e

Standard manufacturing

Unshielded

Cable colour	Length	
	0.5 m	XEP0050.012GY61
	1 m	XEP0100.012GY61
	2 m	XEP0200.012GY61
	3 m	XEP0300.012GY61
	5 m	XEP0500.012GY61
grey	10 m	XEP1000.012GY61

Shielded

Cable colour	Length	
	0.5 m	XEP0050.112GY623
	1 m	XEP0100.112GY623
	2 m	XEP0200.112GY623
	3 m	XEP0300.112GY623
	5 m	XEP0500.112GY623
grey	10 m	XEP1000.112GY623

Features

→ Possibility of performing specifically de-signed solution to manage the infrastruc-ture on a physical structure

→ Made by FIBRAIN with the use of patented components which comply with all neces-sary mechanical Standards in ANSI/ICESA S - 102-732-2009

→ Twisted cable pairs ensure full compat-ibility with dynamic parameters for the dedicated line and transmission channel in accordance with ISO/IEC 11801:2011, EN501732011

→ Durable elements ensure number of cycles in accordance with IEC 60603-7-x, TIA/EIA 568-0.2

→ Clear marking elements of structured cabling system in order to use solid system,
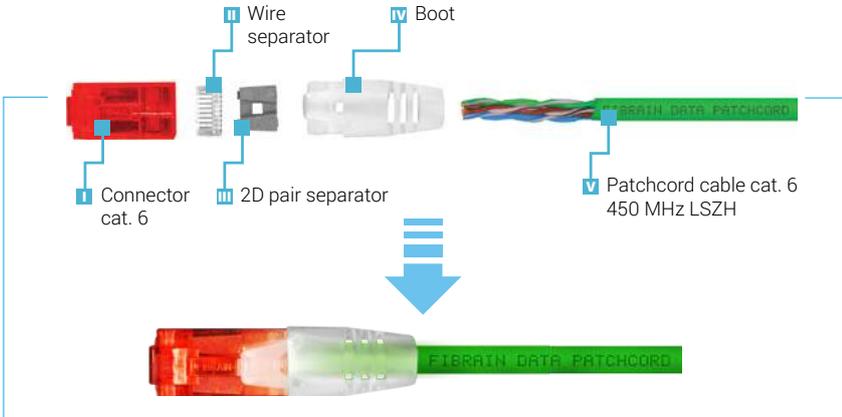
→ Wire separator

Patch cords Cat.6

Copper cabling

Patch cord Cat.6 unshielded
Manufacturing technology

II Wire separator
IV Boot
I Connector cat. 6
III 2D pair separator
V Patchcord cable cat. 6 450 MHz LSZH

FIBRAIN DATA PATCHCORD

Bending radius reduction system

Cable frequency > Cat.6+

10Gbps bandwidth

2D Cross technology

❖ **Applications**
→ Connection to a user's point
→ Connection to a consolidation's point
→ Supplied in Data Center and consolidation points
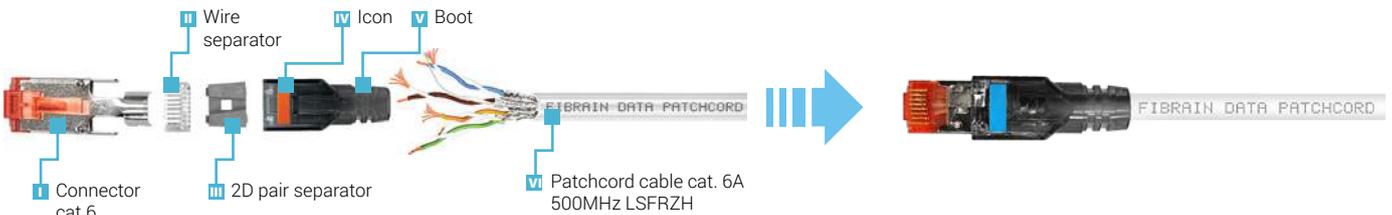→ Complete transmission channel

Ordering syntax

XQP0050.212GR31

Length	Shield	Mounting	Connections	Cable colour	Connector colour	Boot colour
0010 - 10 cm	0 - U/UTP	1 - crimped	0 - crossover	Y - yellow	3 - red	1 - white TR
0020 - 20 cm			1 - T568A	GR - green		2 - black TR
0050 - 50 cm			2 - T568B	GY - grey		3 - red
rise every 0.5 m				BL - blue		4 - blue
0500 - 5 m				BK - black		6 - green
rise every 1 m				R - red		
1000 - 10 m				W - white		
rise every 5 m						
9000 - 90 m						

Patch cord Cat.6 shielded
Manufacturing technology

II Wire separator
IV Icon
V Boot
I Connector cat.6
III 2D pair separator
VI Patchcord cable cat. 6A 500MHz LSFRZH

FIBRAIN DATA PATCHCORD

FIBRAIN DATA PATCHCORD

Ordering syntax

XQP0050.212W314

Length	Shield	Mounting	Connections	Cable colour	Connector colour	Boot colour	Icon colour
0010 - 10 cm	2 - S/FTP	1 - crimped	0 - crossover	GY - grey	3 - red	2 - black TR	3 - red
0020 - 20 cm			1 - T568A	W - white			4 - blue
0050 - 50 cm			2 - T568B				5 - orange
rise every 0.5 m							6 - green
0500 - 5 m							
rise every 1 m							
1000 - 10 m							
rise every 5 m							
9000 - 90 m							

FIBRAIN

Patch cords Cat.6

Standard manufacturing

Unshielded

Cable colour	Length	
green	0.5 m	XQP0050.012GR31
	1 m	XQP0100.012GR31
	2 m	XQP0200.012GR31
	3 m	XQP0300.012GR31
	5 m	XQP0500.012GR31
	10 m	XQP1000.012GR31

Shielded

Cable colour	Length	
white	0.5 m	XQP0050.212W324
	1 m	XQP0100.212W324
	2 m	XQP0200.212W324
	3 m	XQP0300.212W324
	5 m	XQP0500.212W324
	10 m	XQP1000.212W324

Features

→ Possibility of performing specifically designed solution to manage the infrastructure on a physical structure

→ Made by FIBRAIN with the use of patented components which comply with all necessary mechanical Standards in ANSI/ICESA S - 102-732-2009

→ Twisted cable pairs ensure full compatibility with dynamic parameters for the dedicated line and transmission channel in accordance with ISO/IEC 11801:2011, EN501732011

→ Durable elements ensure a number of cycles in accordance with IEC 60603-7-x, TIA/EIA 568-0.2

→ Clear marking elements of structured cabling system in order to use a solid system,

→ 2D pair separator

→ Wire separator

NEXT Margin [dB]

MOLDED　TYPICAL　FIBRAIN
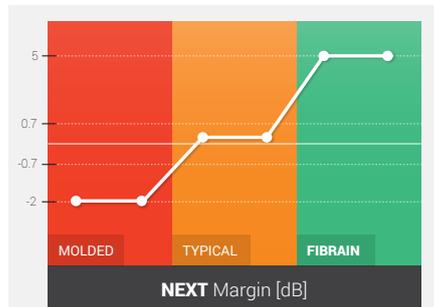
Advanced system of connector's termination with pair separation system from a place of outer jacket- improved dynamic parameters
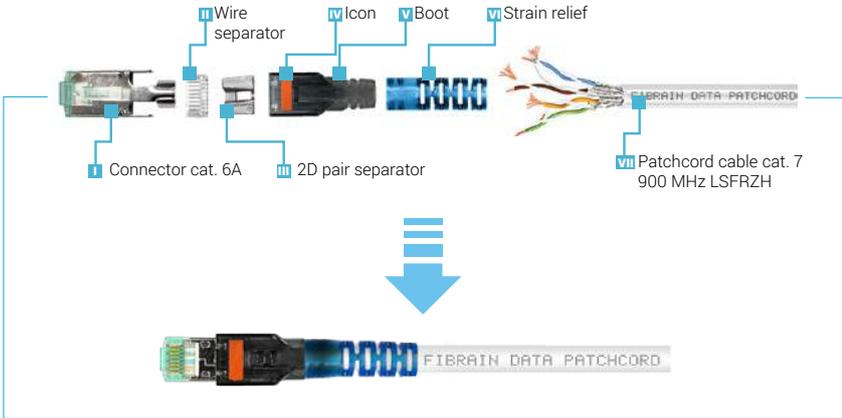
Patch cords Cat.6$_A$ shielded

FIBRAINDATA Patch cord Cat.6A shielded
Patch cord cable 900 MHz Cat.7

Patch cord Cat.6A shielded
Manufacturing technology

- II Wire separator
- IV Icon
- V Boot
- VI Strain relief
- I Connector cat. 6A
- III 2D pair separator
- VII Patchcord cable cat. 7 900 MHz LSFRZH

FIBRAIN DATA PATCHCORD

⚠ FTP/STP Distinctive features

- **5** — 5 cable identification steps
- **Bending radius reduction system**
- **10 Gbps** — 10Gbps bandwidth
- **2D Cross technology**

❖ Applications
→ Connection to a user's point
→ Connection to a consolidation point
→ Supplied in Data Center and consolidation points
→ Complete transmission channel

Ordering syntax

XRP0050.412Y7264

Length	Shield	Mounting	Connections	Cable colour	Connector colour	Boot colour	Icon colour	Strain relief colour
0010 - 10 cm	4 - S/FTP	1 - crimped	0 - crossover	Y - yellow	7 - aqua	2 - black TR	3 - red	1 - white TR
0020 - 20 cm			1 - T568A	GR - green			4 - blue	2 - black TR
0050 - 50 cm			2 - T568B	GY - grey			5 - orange	3 - red TR
rise every 0.5 m				BL - blue			6 - green	4 - blue TR
0500 - 5 m				BK - black				6 - green TR
rise every 1 m				R - red				
1000 - 10 m				W - white				
rise every 5 m				AQ - aqua				
9000 - 90 m				V - violet				

★ Standard manufacturing

Shielded

Cable colour	Length	
	0.5 m	XRP0050.412GR7262
	1 m	XRP0100.412GR7262
	2 m	XRP0200.412GR7262
	3 m	XRP0300.412GR7262
	5 m	XRP0500.412GR7262
green	10 m	XRP1000.412GR7262

ELECTRO & INSTALLATION
solutions meeting ever-increasing market requirements

45 x 45 — FRENCH STYLE STANDARD

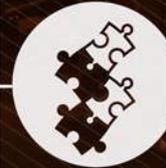**50 x 50** — BRITISH STYLE STANDARD
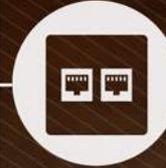
FLUSH & WALL MOUNT BOXES

3 TYPES OF DEPTH

1-6 MODULES IN A SINGLE FRAME

1-4 MODULES IN A SINGLE FRAME

ANGLED AND FLAT DESIGN

COPPER AND FO FACEPLATES

MODULAR DESIGN

MODULAR DESIGN

TERMINATION OUTLETS ACCESSORIES

and standards

US
STANDARD

SPECIAL

1-6 PORTS
FOR KEYSTONE

SPECIAL ADAPTER COMPLIES
TO VALENA LEGRAND

IDENTIFICATION ICON

DIN RAIL

2 LABELLING FIELDS

SURFACE OUTLETS

Flush mount boxes

2-module
GIP-2

4-module
GIP-4

6-module
GIP-6

Wall mount boxes

2-module
OBU-2

4-module
OBU-4

6-module
OBU-6

Mounting supports

SUP-2 45x45 mm 2-module mounting support

SUP-4 90x45 mm 4-module mounting support

SUP-6 135x45 mm 6-module mounting support

Mounting frame

RAM-2 frame designed for 45x45mm 2-support module

RAM-4 frame designed for 90x45mm 4-support module

RAM-6 frame designed for 135x45mm 6-support module

FIBRAIN

French style system 45x45

Flat faceplates

XB-45KA00S-01	XB-45KA00D-01	XB-45KA00D-02

Flat faceplates

XB-45KA45S-01	XB-45KA45D-01	XB-45KA45D-02
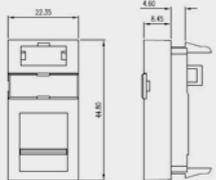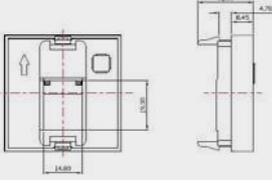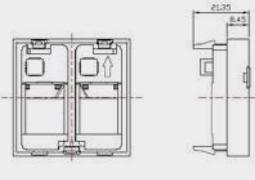
Angle construction
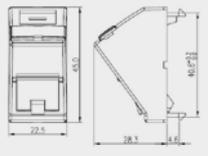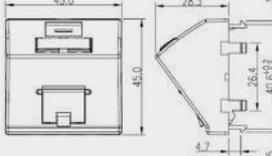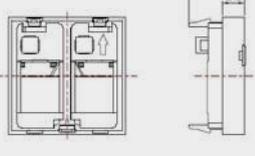
45 mm dimension

Coloured identifying icons

Features

→ 45x45 mm mounting

→ Flat construction

→ Description field and identification icons

→ Anti-dust protection

→ Termination 1 or 2 modules in keystone standard

→ Termination any FIBRAINDATA keystone module

→ Packing - easy-open bags with clear marking

→ Each adapter has set of identification icons in 2 colours and description field

Packing

Flat adapters

→ **XB-45KA00S-01** multipack 5x adapter, individual purchase available

→ **XB-45KA00D-01** 1x adapter

→ **XB-45KA00D-02** 1x adapter

Angled adapters

→ **XB-45KA45S-01** 1x adapter

→ **XB-45KA45D-01** 1x adapter

→ **XB-45KA45D-02** 1x adapter

French style system 45x45

Blind cover

XB-450000S-01 blind adapter - 22.5 x 45 mm

XB-450000D-02 blind adapter - 45 x 45 mm

Features
→ Designed to cover unused areas when constructing logic points
→ To be mounted with frames equipped with supports
→ Mounted with a clip

Electrical socket

Features
→ Facilitate building integrated electro-logic point
→ 240 V 50 Hz / 16 A with a grounding screw
→ Mounted with a clip

Type	Single	Double	Triple
2P+Z electrical red socket with blocking mechanism	XB-45PU00S-01-K	XB-45PU00D-02-K	XB-45PU00T-03-K
2P+Z white electrical socket	XB-45PU00S-01	XB-45PU00D-02	XB-45PU00T-03
XB-45PUKEY Unlock key			

Complete Data and Electrical Termination outlet

FIBRAIN

British style system 50x50

Wall mount boxes

XB-50BBA-02
2-module 86 x 86 x 27 mm

XB-50BBB-02
2-module 86 x 86 x 32 mm

XB-50BBC-02
2-module 86 x 86 x 37 mm

XB-50BBA-04
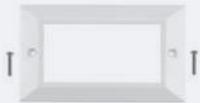4-module 86 x 146 x 27 mm

XB-50BBB-04
4-module 86 x 146 x 32 mm

XB-50BBC-04
4-module 86 x 146 x 37 mm

Mounting frames

Angular option

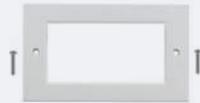**XB-50FPB-0002**
Frame with support 2-module 50 x 50 mm

XB-50FPB-0004
4-module 100 x 50 mm

Flat option

XB-50FPF-0002
Frame with support 2-module 50 x 50 mm

XB-50FPF-0004
4-module 100 x 50 mm

Faceplates 25x50

XB-50KA45I-01
25 x 50 mm angular adapter designed for keystone module

XB-50SC45I-01
25 x 50 mm adapter designed for SC- SX connection

XB-50BL000-01
25 x 50 mm blind adapter

XB-50ST45I-01
25 x 50 mm angular adapter designed for ST SX connection

XB-50KA00L-01
25 x 50 mm flat adapter designed for keystone module

Faceplates 86x86

XB-50FPF-0102
frame with support for 1 keystone module

XB-50FPF-0202
for 2 keystone modules

Complete Data Termination outlet

American Faceplate

XB-USFPF-A01
for 1 keystone module

XB-USFPF-A02
for 2 keystone module

XB-USFPF-A04
for 4 keystone module

XB-USFPF-A06
for 6 keystone module

Wall mount boxes

XB-USBB
Wall mount box for US style faceplates for 1/2/4/6 keystone connection modules
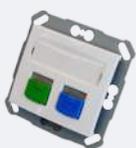
Surface mount boxes

Wall mount module

XB-00BXIL-01
Wall-mount 1x keystone

XB-00BXIL-02
Wall-mount 2x keystone

FIBRAINDATA STRUCTURED CABLING
Special designed adapters

Termination outlets

Special designed adapters

Adapter designed
for Legrand Valena frame

Din-Rail adapter

XB-LVKA00S-02
Adapter designed for Legrand Valena frame 2x keystone

XB-DNKA45-A1
Din – Rail adapter designed for 1 keystone module with grounding

FIBRAIN

CABINETS

Suitable protection of teleinformatics infrastructure

SSRS STANDING CABINETS

STANDARD HEIGHT
45U

DEPTH
1000/1200 mm

PERFORATED CONSTRUCTION

LOAD CAPACITY
1360 kg

SRS STANDING CABINETS

MOUNTING HEIGHT
21-45U

DEPTH
600/800/1000 mm

BLACK CABINETS
RAL 9005

GLASS FRONT DOOR

LOAD CAPACITY
max. 1000 kg

CABINETS

SWJ
WALL MOUNT SINGLE SECTION SWJ CABINETS

MOUNTING HEIGHT
6-18U

DEPTH
400/600 mm

ONE SOLID CONSTRUCTION

LOAD CAPACITY
max. 100 kg

SWD
WALL MOUNT TWO SECTION SWD CABINETS

MOUNTING HEIGHT
6-18U

DEPTH
500 mm

TWO PART SOLID CONSTRUCTION

LOAD CAPACITY
max. 30 kg

VERTICAL CABLE ORGANIZER

HORIZONTAL CABLE ORGANIZER

CABLE ORGANIZERS

SRS Floor Standing Network Cabinets

Cabinets

21U	SRS-21-6/6-S04-B			
	Width	Depth	Height	Load cap.[kg]
	600	600	1095	300

24U	SRS-24-6/6-S04-B			
	Width	Depth	Height	Load cap.[kg]
	600	600	1210	600

24U	SRS-24-6/8-S04-B			
	Width	Depth	Height	Load cap. [kg]
	600	800	1210	600

27U	SRS-27-6/6-S04-B			
	Width	Depth	Height	Load cap. [kg]
	600	600	1315	600

27U	SRS-27-6/8-S04-B			
	Width	Depth	Height	Load cap. [kg]
	600	800	1315	600

32U	SRS-32-6/6-S04-B			
	Width	Depth	Height	Load cap. [kg]
	600	600	1535	600

32U	SRS-32-6/8-S04-B			
	Width	Depth	Height	Load cap. [kg]
	600	800	1535	600

32U	SRS-32-8/8-S04-B			
	Width	Depth	Height	Load cap. [kg]
	800	800	1535	600

42U	SRS-42-6/6-S04-B			
	Width	Depth	Height	Load cap. [kg]
	600	600	1980	600

42U	SRS-42-6/8-S04-B			
	Width	Depth	Height	Load cap. [kg]
	600	800	1980	600

42U	SRS-42-8/8-S04-B			
	Width	Depth	Height	Load cap. [kg]
	800	800	1980	600

42U	SRS-42-6/10-S04-B			
	Width	Depth	Height	Load cap. [kg]
	600	1000	1980	600

42U	SRS-42-8/10-S04-B			
	Width	Depth	Height	Load cap. [kg]
	800	1000	1980	600

45U	SRS-45-8/10-S04-B			
	Width	Depth	Height	Load cap. [kg]
	800	1000	2120	600

45U	SRS-45-8/10-S04-B			
	Width	Depth	Height	Load cap. [kg]
	800	1000	2120	600

Features
→ Individual configuration:
  → nultiple door, panel, roof options for maximum flexibility,
  → possibility to join cabinets in a row
  → levelling feet, castor or plinth options
  → individual configuration using simple coding.
→ Wide range of supplementary accessories: shelves, drawers, fan units, power strips, blanking plates etc.
→ Flexibility in manufacturing tailor-made cabinets
→ Material:
  → frame, side panels, solid steel door, roof, mounting profiles,
  → C-profiles - sheet steel
→ Protection degree: IP 20 in accordance with EN 60529 (does not apply to brush cable entries)
→ Surface finishing: Frame, roof, panels, doors, plinth - powder paint, black (RAL 9005). All other color options on request. Mounting profiles, C-profiles - Al-Zn coated

Assembly set
→ frame,
→ safety glass front door,
→ two side panels,
→ steel rear door shortened with 3 U module panel with brush strip, lockable,
→ standard roof, raised, with perforated sides,
→ 2 pairs of 19" mounting profiles,
→ earthing bar and cables,
→ cabinet placed on levelling feet.

Delivery
Cabinets are delivered as fully assembled items in a secure portable carton on a wooden pallet

MAXIMUM WEIGHT OF EQUIPMENT MOUNTED IN CABINET	
Levelling feet	1000 kg
Castors - type 150	150 kg
Castors - type 300	500 kg
Plinth	1000 kg*

FIBRAIN

SSRS Floor standing server cabinets

42U	SSRS-42-6/10-S04-B			
	Width	Depth	Height	Load cap.[kg]
	600	1000	1980	1000

42U	SSRS-42-8/10-S04-B			
	Width	Depth	Height	Load cap.[kg]
	800	1000	1980	1000

42U	SSRS-42-8/12-S04-B			
	Width	Depth	Height	Load cap.[kg]
	800	1200	1980	1000

45U	SSRS-45-6/10-S04-B			
	Width	Depth	Height	Load cap.[kg]
	600	1000	1980	1000

45U	SSRS-45-8/10-S04-B			
	Width	Depth	Height	Load cap.[kg]
	800	1000	1980	1000

45U	SSRS-45-8/12-S04-B			
	Width	Depth	Height	Load cap.[kg]
	800	1200	1980	1000

Features
→ Expanded configuration system:
  → multiple door, panel, roof options for maximum flexibility,
  → possibility to join cabinets in a row,
  → possibility of optional cable entry,
  → easy coding system enables quick configuration of the cabinet.
→ Possibility of controlling ventilating air flow by application of proper type of doors, side panels and fan units.
→ Wide range of supplementary accessories: shelves, drawers, fan units, power strips, blanking plates etc.
→ Non-standard cabinets are available on individual customer's request.
→ Material:
  → Frame, side panels, doors, roof, mounting profiles, C-profiles - sheet steel
  → Outriggers - zamak casting
→ Protection degree: IP 20 in accordance with EN 60529 (does not apply to brush cable entries).
→ Surface finishing: Frame, roof, panels, doors - powder paint, light grey (RAL 7035) or black (RAL 9005). All other color options on request. Mounting profiles, C-profiles - Al-Zn coated.

Assembly set
→ cabinet frame,
→ perforated front and rear steel door (perforation type C), with three-point rod-latch lock with swing handle,
→ two side panels made of unperforated steel sheets,
→ standard roof (with 1 or 3 cable openings covered with knock-out blanking plates):
→ 600 mm cabinets – 1 opening,
→ 800 mm cabinets – 3 openings,;
→ • three pairs of mounting profiles, spaced at 19",
→ • earthing strip and cables,
→ • levelling feet.

Delivery
Cabinets are delivered as fully assembled items in a secure portable carton on a wooden pallet

MAXIMUM WEIGHT OF EQUIPMENT MOUNTED IN CABINET	
Levelling feet	1360 kg*
Castors - type 300	500 kg
Plinth	1360 kg*

*Declared carrying capacity is valid if maintaining the maximum distance between mounting profiles within the cabinet.
If the cabinet is set on feet, for ensuring carrying capacity you must also tighten jam nuts to the bottom plate.

SWJ-06-400-S04-B		
6U Width	Depth	Height
600	400	365

SWJ-10-400-S04-B		
10U Width	Depth	Height
600	400	543

SWJ-12-400-S04-B		
12U Width	Depth	Height
600	400	632

SWJ-15-400-S04-B		
15U Width	Depth	Height
600	400	765

SWJ-18-400-S04-B		
18U Width	Depth	Height
600	400	899

SWJ-06-600-S04-B		
6U Width	Depth	Height
600	600	365

SWJ-10-600-S04-B		
10U Width	Depth	Height
600	600	543

SWJ-12-600-S04-B		
12U Width	Depth	Height
600	600	632

SWJ-15-600-S04-B		
15U Width	Depth	Height
600	600	765

SWJ-18-600-S04-B		
18U Width	Depth	Height
600	600	899

Features

→ Designed for indoor applications

→ Available in 2 depths (400 and 600 mm) and 6 usable heights (from 6 to 21 U)

→ The cabinet is made of bolted framework (composed of 3 frames), top plate, bottom plate, side panels, rear panel and front door

→ Cabinet is equipped with two adjustable 19" mounting profiles

→ Top and bottom plates have cable openings covered with knock-out blanking plates, and 3 venting holes for each plate

→ Door, side panels and mounting profiles can be installed without tools

→ The entire weight of the devices installed inside the cabinet is transferred onto its framework. Top and bottom plates, side panels and cabinet door can be removed or installed also with a fully equipped cabinet that is mounted to the wall

→ Side panels can be removed after opening the door

→ With easy replacement of doors, side panels, top and bottom plates for a different color scheme, the cabinet design can be changed multiple times

→ Material: sheet steel, safety glass

→ Protection degree: IP 20 in accordance with EN 60529

→ Protection degree of cabinet in basic version:

   → frame, doors, panels – powder paint, light grey (RAL 7035)

   → mounting profiles – Al-Zn coated

→ Maximum load capacity: The maximum weight of equipment mounted in cabinet is 100 kg

Assembly set

→ 1x brush strip

→ 1x set of M6 rack bolts(16 pcs)

→ 2x keys for side and back wall

→ 2x keys for front door

→ 4x set of M10 leveling feet

→ 1.5 m of special edge sheath protecting cabling (after a breaking cable grommet)

Delivery

Cabinets are delivered as fully assembled items in a secure portable carton on a wooden pallet

SWD Wall mount two section cabinets

6U	SWD-06-500-S04-B		
	Width	Depth	Height
	600	500	330
10U	SWD-10-500-S04-B		
	Width	Depth	Height
	600	500	464
12U	SWD-12-500-S04-B		
	Width	Depth	Height
	600	500	600
15U	SWD-15-500-S04-B		
	Width	Depth	Height
	600	500	730
18U	SWD-18-500-S04-B		
	Width	Depth	Height
	600	500	865

Features

→ Standard RAL 9005 colour (black - structure)
→ IP20 protection
→ Indoor use
→ Wide range of additional accessories (pedestals, sockets, shelves, fan units, light units, light units, power distribution units, elements for installing and placing the cables)
→ 2x holes in the top part and the bottom to install ventilation panel
→ Zinc sheet pair of vertical 19" mounting profiles, mounted on horizontal profile rails with 25 mm hole spacing
→ Maximum spacing between mounting profiles:
  → cabinet depth: 400 mm - 335 mm,
  → cabinet depth: 50 0mm - 435 mm,
  → cabinet depth: 600 mm - 535 mm,
→ Material: 1,25 mm thick steel sheet,
→ Removable and lockable with single point lock side walls
→ Front door with hardened glass (thickness: 3,15 mm) with single point lock, mounted on the hinges, opening angle 180° (optionally steel door)
→ Left or right door opening options,
→ 2x holes in the top part and bottom to insert cables (250 x 70 mm)
→ Load capacity: 50 kg

Assembly set

→ 1x brush strip
→ 1x set of M6 rack bolts(16 pcs)
→ 2x keys for side and back wall
→ 2x keys for front door
→ 4x set of M10 leveling feet
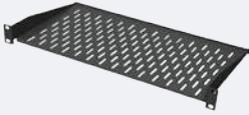→ 1.5 m of special edge sheath protecting cabling (after a breaking cable grommet)

Delivery

Cabinets are delivered as fully assembled items in a secure portable carton on a wooden pallet

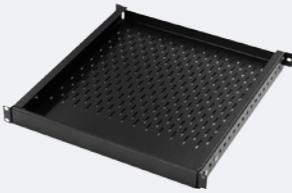# Cabinet accessories

1U/ 19" shelf
RAL 9005

PSM-25-1U-S04-B		
Width [mm]	Depth [mm]	Load cap.[kg]
446	250	10

Features
- → Material: steel sheet
- → Mounted at the front
- → Colour: RAL 9005 black

1U/ 19" fixed shelf – mounted in 4 points
RAL 9005

PSM-35-1U-S04-B			
Height [mm]	Width [mm]	Depth [mm]	Load cap.[kg]
22	483	350	100
PSM-45-1U-S04-B			
Height [mm]	Width [mm]	Depth [mm]	Load cap.[kg]
22	483	450	100
PSM-55-1U-S04-B			
Height [mm]	Width [mm]	Depth [mm]	Load cap.[kg]
22	483	550	100
PSM-65-1U-S04-B			
Height [mm]	Width [mm]	Depth [mm]	Load cap.[kg]
22	483	650	100

Features
- → Material: steel sheet
- → Mounted at the front and back in 4 points
- → Colour: RAL 9005 black
- → Adjustable back handles in a given mounting range

1U/19" Depth adjustable shelf
RAL 9005
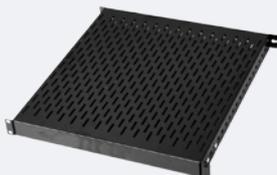
PSZ-60-1U-B	
Depth [mm]	Load cap.[kg]
350-600	150
PSZ-90-1U-B	
Depth [mm]	Load cap.[kg]
500-900	150

Features
- → Steel sheet
- → Mounted at the front or back
- → Adjustable in depth every 25 mm
- → Colour: RAL 9005 black

FIBRAIN

Cabinet accessories

Fan panels

	WTD-2T-S04-B 2-fan	WTD-4T-S04-B 4-fan
Dimensions (W x D x H) [mm]	119 x 119 x 38	119 x 119 x 38
Ambient temperature [°C]	from -10 to +70	from -10 to +70
Protection degree	IP 20	IP 20
Capacity [m³/h]	330	660

Features

→ Designed to be mounted in 19" cabinets

→ Equipped with power protector

→ Iluminated switch and thermostat with temperature control

→ Material: steel sheet
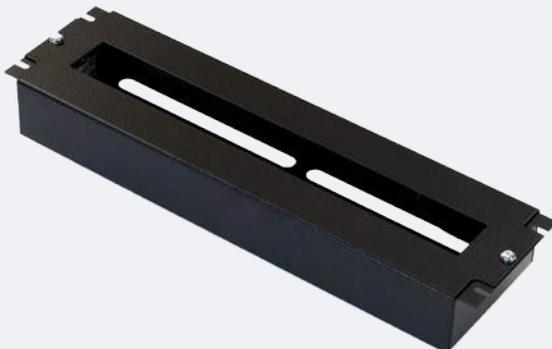
Fan panels designed for wall mount cabinets

WTA-1W 1-fan module

Features

→ Designed to be mounted in the top or bottom part of 19" wall mount cabinets

→ Equipped with power supply cable, grounding cable and screws to mount fans

→ Power supply: AC 230 V, 50 Hz

Distribution unit

3U	PDN-3U-B		
	Height [mm]	Width [mm]	Depth [mm]
	133	446	60

Features

→ 19" housing for modular devices

→ 1.5 mm thick sheet powder painted

→ Equipped with din rail with 402.5 x 45.5 mm opening

→ Maximum quantity: 18 built-in modules S type (width: 17.5 mm)

→ Material: 1.5 mm steel sheet

Cabinet accessories

Base designed for 19" server cabinet with integrated tilt protection

CKP-6/10-S04-B				
Width [mm]	Depth [mm]	Height [mm]	Weight [kg]	Load cap.[kg]
600	1000	100	23	100
CKP-8/10-S04-B				
Width [mm]	Depth [mm]	Height [mm]	Weight [kg]	Load cap.[kg]
800	1000	100	25.5	100
CKP-8/12-S04-B				
Width [mm]	Depth [mm]	Height [mm]	Weight [kg]	Load cap.[kg]
800	1200	100	25.5	100

Features
→ Designed to be mounted with 19" cabinets
→ Material: steel sheet
→ Equipped with integrated tilt protection
→ Can be used in combination with leveling feet

Leveled base for 19" standing cabinet

Code	Height [mm]	Width [mm]	Depth [kg]	Load cap.[kg]
CKR-6/6-S04-B		600	600	
CKR-6/8-S04-B		600	800	
CKR-8/6-S04-B		800	600	
CKR-8/8-S04-B	100	800	800	100
CKR-6/10-S04-B		600	1000	
CKR-8/10-S04-B		800	1000	
CKR-8/12-S04-B		800	1200	

Features
→ Designed to be mounted with SRS and SSRS 19" cabinets
→ Leveling feet
→ The set consists of the given elments that are ordered separately:
  → 100 mm base
  → 4 corners with leveling feet
  → 4 shackles (plain, perforated or with brush panel)

Base designed for 19" standing cabinet

Code	Height [mm]	Width [mm]	Depth [kg]	Load cap.[kg]
CKS-6/6-S04-B		600	600	
CKS-6/8-S04-B		600	800	
CKS-8/6-S04-B		800	600	
CKS-8/8-S04-B	100	800	800	100
CKS-6/10-S04-B		600	1000	
CKS-8/10-S04-B		800	1000	
CKS-8/12-S04-B		800	1200	

Features
→ Designed to be mounted with SRS 19" cabinets
→ Can be used in combination with leveling feet or wheels
→ Perforated front plate
→ Base height can be increased to 200 mm by screwing two bases together

Cable arrangement

19" Horizontal cable organizer
with easily-opened plastic handles

ORG-VP-1U-B-V2

Clip

4-6 holders

Horizontal organizer

Features
→ 19" mounitng
→ Powder painted steel
→ Equipped with 4 easily opened-handles
→ Possibility of installing 2 extra handles
→ Clear manufacturer marking
→ Possibility of using together with vertical organizers
→ Guarantee optimum cable arrangement

19" Vertical cable organizer
with easily-opened plastic handles

ORG-HP-1U-B-V2

Clip

4 holder positions

Vertical organizer

Features
→ 1U mounitng
→ Powder painted steel
→ Equipped with 1 easily opened-handle
→ Possibility of using holder in 4 positions
→ Clear manufacturer marking
→ Guarantee optimum cable arrangement

Velcro tape
16x200 10 pcs

FIBRAIN velcro tapes	
ORG-CT-16200-BK black	**ORG-CT-16200-W** white

Features
→ Material: velour
→ Guarantee optimum cable arrangement
→ Pack of 10 pcs
→ Width: 16 mm- protected against excessive tightening
→ Resistant to multiple opening and closing
→ Colours facilitate cable identification

Power distribution units

PDU-5BL			
Qty and type of sockets	Plug	Extra elements	Max. electrical load
5 x Jacket with pin	UNISCHUKO	LED switch	16 A (3680 W)

PDU-8BL			
Qty and type of sockets	Plug	Extra elements	Max. electrical load
8 x Jacket with pin	UNISCHUKO	LED switch	16 A (3680 W)

PDU-9AB			
Qty and type of sockets	Plug	Extra elements	Max. electrical load
9 x Jacket with pin	IEC320C14	-	16 A (3680 W)

PDU-9BB			
Qty and type of sockets	Plug	Extra elements	Max. electrical load
9 x Jacket with pin	UNISCHUKO	-	16 A (3680 W)

PDU-9SB			
Qty and type of sockets	Plug	Extra elements	Max. electrical load
9 x Jacket z SCHUKO	UNISCHUKO	-	16 A (3680 W)

Features

→ Anodized aluminium housing
→ Dimensions: 431x44x44 mm (Width x Height x Depth) (without mounting supports)
→ Panels adjusted to 1U 19" mounting
→ Panels can be mounted vertically
→ Equipped with M6 rack bolts
→ Socket with pin have protection against accidental placement of other items
→ HO5W-F.3G 1.5 mm supply cable, width: 3 m
→ IP20 protection
→ In accordance with CE Standards
→ Tailor-made construction

Ordering options

Sockets qnt	
Qnt	Mounting
5-9	in 19" housing
A - 10 sck.	
B - 11 sck.	Vertical mounting
C - 12 sck.	
	-

Connector/socket type		
Number	Connector	Socket
B	UNISCHUKO	with pin
S	UNISCHUKO	Schuko
C	UNISCHUKO	C13
D	UNISCHUKO	C19
A	C14	with pin
E	C14	Schuko
F	C14	C13
G	C14	C19

Distribution unit type	
Number	Equipment
B	No extra equipment
L	LED switcher
P	Surge protection
F	Interference eliminator
A	Surge protection + Int.el.
C	LED switcher + Surge protection + Int.el.
D	LED switcher + Surge protection
E	LED switcher + Int.el.

PDU-8AL

Optional accessories

→ Two-positional LED illuminated switcher
→ Extra set of handles to facilitate vertical mounting on an outer part of housing
→ Tailored made sockets options
→ Adjusted length of a supply cable and a connector
→ Ammeter - power meter

Surge protection

→ Reaction time <25 ns
→ Absorption of surge energy: 303 J (impulse 10/1000 ns)
→ Nominal impulse of power: 7 kA
→ Maximum power impulse 10 kA(udar 8/20 ns)

Interference eliminator

Max. electrical load					
f [MHz]	0.15	1	4.7	10	30
symmetrical mode					
A [dB]	29	42	30	47	43
assymetrical mode					
A [dB]	25	62	64	43	22

FIBRAIN

LOGIWIRE

LOGIWIRE

Tailor-made teleinformatic mini-unit inside

EASY TO INSTALL
WM and FM versions

MODULAR CONSTRUCTION
Tailor made residential cabling solution

MODULAR DIMENSIONS
available in 4 variants

STANDARD AND PREMIUM LINE
Solution for all demands

your apartment

ANALOGUE/DIGITAL VOICE MODULE
Tailor made residential cabling solution

DATA MODULE
DATA cable termination on modules in accordance with 5e or 6 cat.

FO MEDIA
COPPER COAX

SIGNAL INTEGRATION
Mulitmedia box facilitates **one-solid cabling topology**

PASS

COMPLIANCE
Full compliance with necessary norms and regulations

LogiWire Distribution Box flush mount option

Description

→ FIBRAIN LogiWIRE system is a demarcation point between external and internal telecommunication installations. It is dedicated for residential and small office areas. Distribution boxes are the key element of whole LogiWIRE system.

Features

→ Flush mounted version
→ Frame and door made of plastic (white)
→ Effective WiFi transmission
→ Perforated mounting plate for easy installation
→ Dedicated areas for different types of inserts
→ Right or left hand door

Assembly set

→ Plastic frame
→ Door made of plastic (white or transparent)
→ FO termination outlet VFTO-E1
→ 2x FO S.C/APC Simplex adapter
→ Adapter for 2x keystone connection module, 2x F2F
→ 2x keystone, unshielded Cat5 connection modules
→ Power supply socket 1x230V

Technical specification

Dimensions [mm]			
Width	Heigth	Depth	Option
370	270	115	Flush mounted

Ordering information

Code	Description
FLW-ECO-FM-W	LogiWire Distribution Box, flush mounted, ECO line

Additional accessories

Code	Description
FLW-APKF-M3	Adapter for 2x keystone connection module, 2x F2F
FLW-PU-M1	Power supply socket 1x230V
VFTO-E1-BL-0	FO termination outlet VFTO-E1

1. **FLW-APKF-M3** Adapter for 2x keystone connection module, 2x F2F
2. **FLW-PU-M1** Power supply socket 1x230V
3. **VFTO-E1-BL-0** FO termination outlet VFTO-E1

FIBRAIN
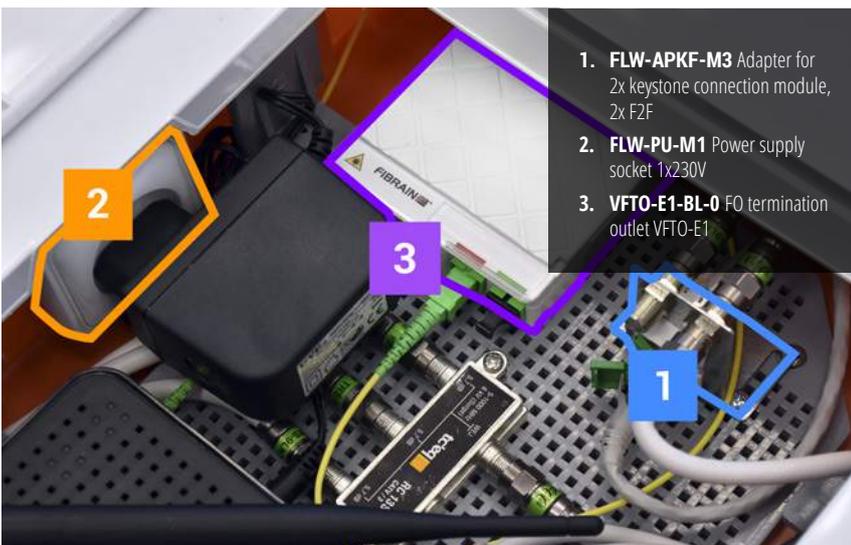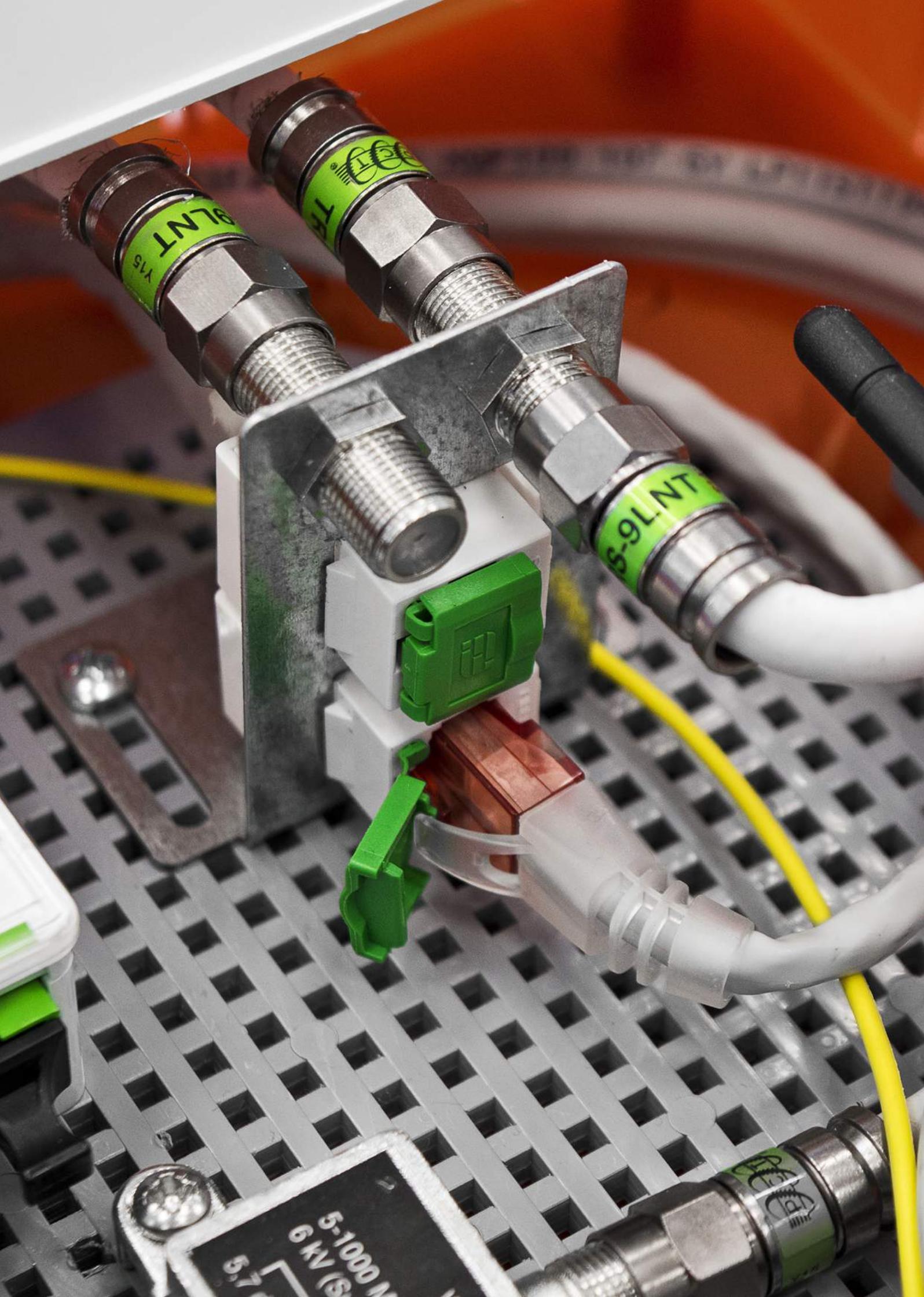
Mounting boxes - wall mount option

MINI Wall mount box
FLW-10N-WM

Dimensions [mm]			
Length	Height	Depth	Rim
370	270	115	-
Cable entries [mm]			
Left/right	Up/down		Back
-	-		4x Φ50 pass

Features

→ Media and devices integration
(TEL, Audio, TV, ALARM, INTERCOM, CCTV, DATA)

→ Material: powder-coatedsteel sheet

→ Simple mounting (a lot of cable entries)

→ Equipped with a lock

→ Boxes in other dimensions available

→ Left or right mounting

→ Horizontal or vertical module mounting

→ Compliance with TIA 570-B standard

MIDI Wall mount box
FLW-14N-WM

Dimensions [mm]			
Length	Height	Depth	Rim
370	370	115	-
Cable entries [mm]			
Left/right	Up/down		Back
-	-		4x Φ50 pass

MAXI Wall mount box
FLW-28N-WM

Dimensions [mm]			
Length	Height	Depth	Rim
370	720	115	-
Cable entries [mm]			
Left/right	Up/down		Back
-	-		8x Φ50 pass

MAXI-LONG Wall mount box
FLW-48N-WM

Dimensions [mm]			
Length	Height	Depth	Rim
370	1220	115	-
Cable entries [mm]			
Left/right	Up/down		Back
-	-		14x Φ50 pass

FIBRAIN

Mounting boxes - flush mount option

Flush mount box MINI
FLW-10N-EH

Dimensions [mm]			
Length	Height	Depth	Rim
370	270	100	434x324
Cable entries [mm]			
Left/right	Up/down		Back
1x Φ50 knockout	4x Φ50 knockout		4x Φ50 pass

Flush mount box MIDI
FLW-14N-EH

Dimensions [mm]			
Length	Height	Depth	Rim
370	370	100	434x424
Cable entries [mm]			
Left/right	Up/down		Back
1x Φ50 knockout	4x Φ50 knockout		4x Φ50 pass

Flush mount box MAXI
FLW-28N-EH

Dimensions [mm]			
Length	Height	Depth	Rim
370	720	100	434x774
Cable entries [mm]			
Left/right	Up/down		Back
2x Φ50 knockout	4x Φ50 knockout		8x Φ50 pass

Flush mount box MAXI-LONG
FLW-48N-EH

Dimensions [mm]			
Length	Height	Depth	Rim
370	1220	100	434x1274
Cable entries [mm]			
Left/right	Up/down		Back
3x Φ50 knockout	4x Φ50 knockout		14x Φ50 pass

Mounting modules - data

8xRJ45 UTP Cat.5e module
FLW-DM5-U8
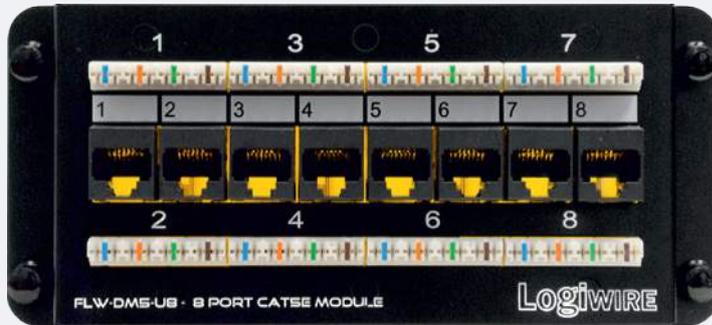
Features
→ 8-pin IDC connector,8 ports RJ45 Cat.5e
→ Powder painted RAL 9005
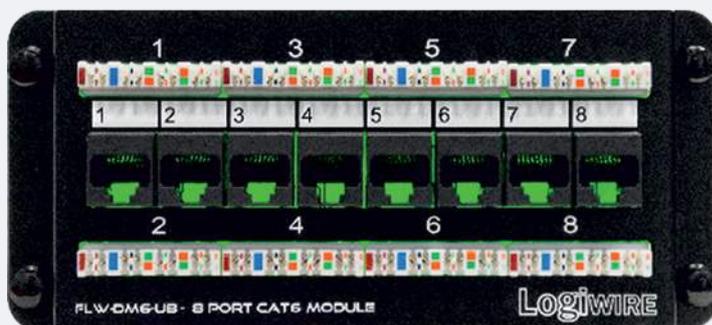→ Cable form scheme: T568A/B

Parameters
→ RJ45 Cat.5e socket
→ Socket durability> 750 connection cycles
→ Contacts of 0.46 mm diameter covered with gold layer
→ IDC connectors accept 22-26 AWG wire
→ Cable form scheme: T568A and T568B

Standards
→ Permanent Link/Channel in accordance with TIA/EIA 568B-2.1
→ ISO/IEC 11801
→ CENELEC EN 50173
→ IEC 60603-7

8xRJ45 UTP Cat.6 module
FLW-DM6-U8

Features
→ 8-pin IDC connector
→ 8 ports RJ45 Cat.6
→ Powder painted RAL 9005
→ Cable form scheme: T568A/B

Parameters
→ RJ45 Cat.6 socket
→ Socket durability> 750 connection cycles
→ Contacts of 0.46 mm diameter covered with gold layer
→ IDC connectors accept 22-26 AWG wire
→ Cable form scheme: T568A and T568B

Standards
→ Permanent Link/Channel in accordance with TIA/EIA 568B-2.1
→ ISO/IEC 11801
→ CENELEC EN 50173
→ IEC 60603-7

FIBRAIN

Mounting modules - voice

RJ45, 8pins IDC, 8x8pins IDC module
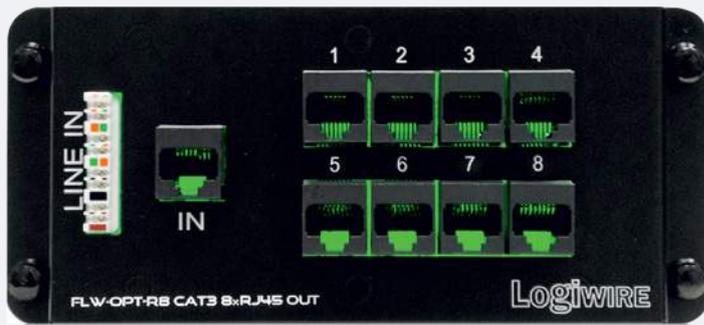FLW-OPT-I8

Features
→ 8-pin IDC connector, RJ-45 input
→ 8x8pins IDC output
→ Powder painted RAL 9005
→ Cable form scheme: T568A/B
→ Up to 4 telephone lines support on port

Parameters
→ IDC/RJ45 socket
→ Socket durability> 750 connection cycles
→ IDC connectors accept 22-26 AWG wire
→ Cable form scheme: T568A and T568B

RJ45, 8pins IDC, 8xRJ45 module
FLW-OPT-R8

Features
→ 8-pin IDC connector, RJ-45 input
→ 8x8pins IDC output
→ Powder painted RAL 9005
→ Cable form scheme: T568A/B
→ Up to 4 telephone lines support on port

Parameters
→ IDC/RJ45 socket
→ Socket durability> 750 connection cycles
→ IDC connectors accept 22-26 AWG wire
→ Cable form scheme: T568A and T568B

Mounting modules - accessories

Mounting module
FLW-BMP-M1
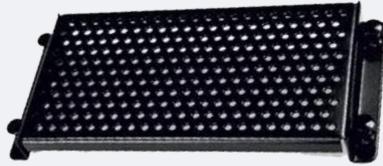
Features

→ Enables installation any teleinformatic component

→ Facilitates development of LogiWire solutions

→ Equipped with installation sieve (openings: 2.8 mm)

Support panel
FLW-ABP-M1

Features

→ Enables installation of extra panels and adapters

→ Facilitates development of LogiWire solutions for "keystone" modules, F-connector

→ Adapted to mount 2 panels of adapters

Adapters

6x keystone panel

FLW-APK-M6

4x keystone panel

FLW-APK-M4

6x F-connector panel

FLW-APFF-M4

Features

→ Facilitates mounting "keystone" adapters

→ Design to construct indirect connection for transmission media

→ 4 or 6 openings to mount "keystone" adapters

→ 6 openings to mount FtoF

Masking panels with holes
FLW-BMP-T2

Features

→ Cover extra cables inside mounitng box

→ Protect cables against damage

→ Height of cable entry: 30 mm

→ 2 cable entries

→ Mounting openings for masking frames

Power distribution units
PDU-2BB

Features

→ 2x socket with pin

→ Cable terminated with power unit

→ Max. electrical load 16 A

FIBRAIN

1 GPON Modules

It is a passive fiber optic network in which signal is sent to particular users with the use of single-mode optical fiber separated by splitters.

2 Phone modules

Phone panel multiplies the entering signals.
There is a possibility of termination 4 entering lines out of 8 RJ45ports or IDC connection.

3 DATA Modules

DATA modules (cat. 5e, 6) are used for termination installation cables inside the buildings. They function as a patch panel in a minimized form, which is designed for housing market.

4 Fiber optic modules

By using termination elements from Fibrain fiber optic systems- the system is ready for implementation complete solution from the transmitting station.

5 Connecting elements

Specially selected short sections of patch panel cables enable proper arrangement of cables.
2 levels of termination facilitates separating cables.
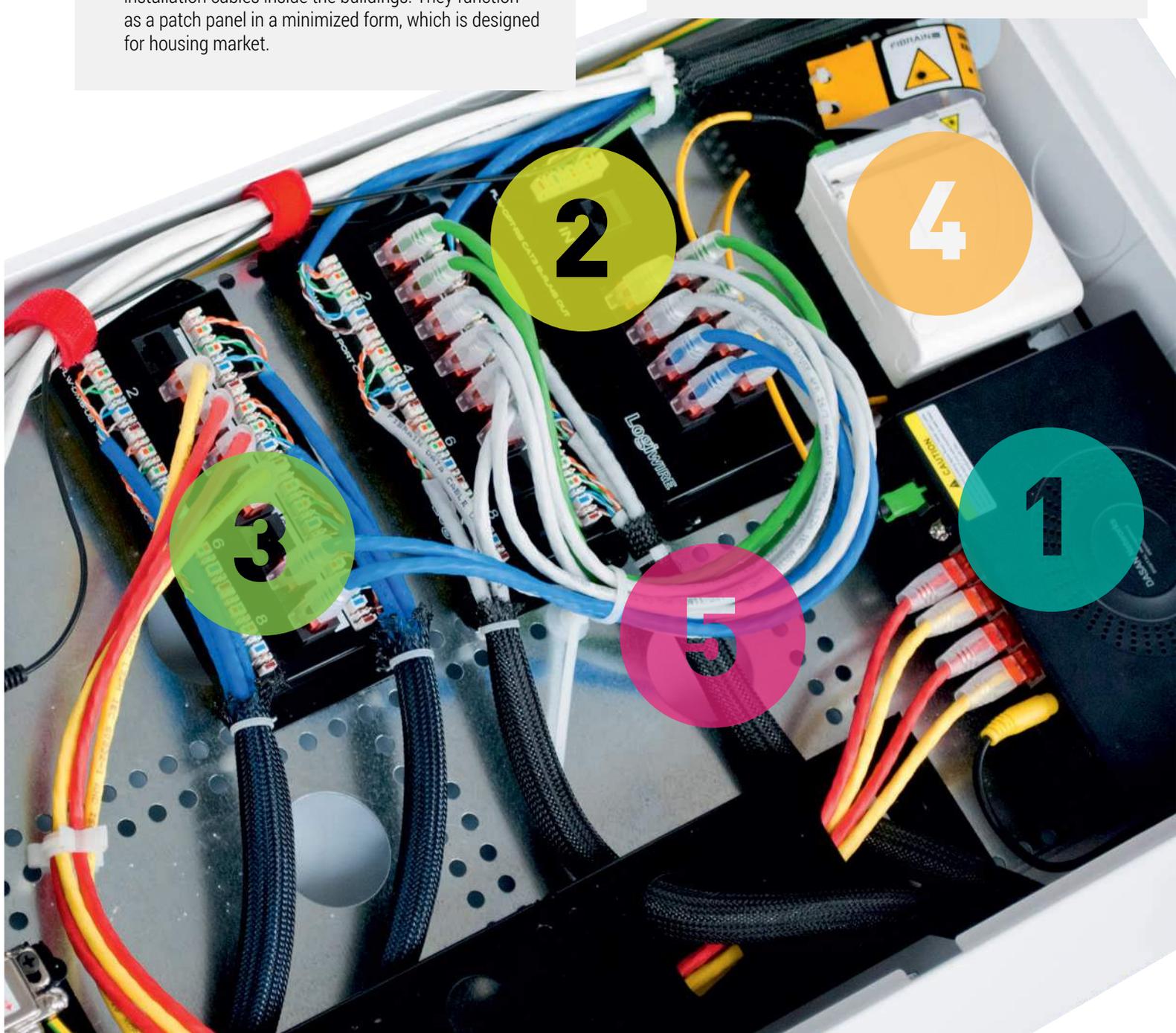
INSTALLATION CABLES

Fiber optics installation cables for todays

MM FIBERS
OM1-OM4 categories

SM FIBERS
OS1/OS2 categories

**INDOOR
AND OUTDOOR
APPLICATIONS**
Variety of external
jackets LSOH/HDPE

INSTALLATION CABLES

and future application

READY FOR HARSH ENVIRONMENT
Rodent and mechanical protection

EASY TO TERMINATE
Special construction friendly for the installers

TRUE COLORS

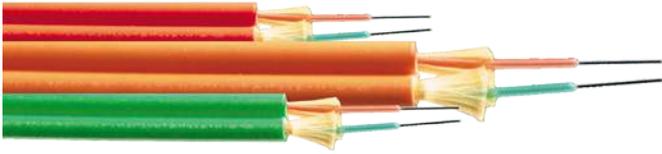**TRUE COLORS**
Color coding for fibers, tubes and jackets

BENDSAFE
Perfect cables for space restricted areas

Duplex ZIP cables

DATACOM

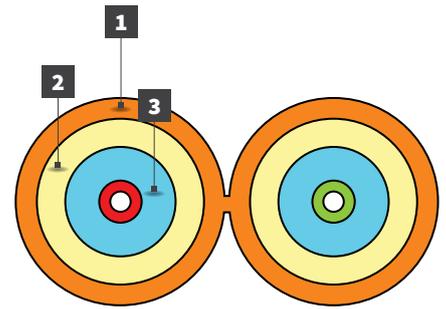**LSOH** **Bendsafe** **Easy to terminate** **Easy-strip** **Semi-tight**

TRUE COLORS

Cable structure
1. LSOH outer jacket
2. Aramid yarns
3. Central tight buffer Tube 600/900 μm with colored fibers 250 μm
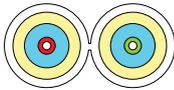
CONSTRUCTION				
Version	Fiber qty	Dimensions nominal ± 5% [mm]	Max. installation tension (ε=0.5 %) [N]	Crush [N/10 cm]
2F	2	1.6 x 3.3	200	500
2F	2	1.8 x 3.7	300	500
2F	2	2.0 x 4.1	400	500
2F	2	2.8 x 5.7	600	1000

STANDARD JACKET COLOURS

SM G.652D
Yellow RAL 1021

SM G.657
A1 / A2 / A3
White RAL 9010
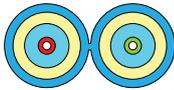
MM 62,5/125 OM1
Blue RAL 5015
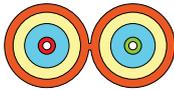
MM 50/125 OM2
Orange RAL 2003
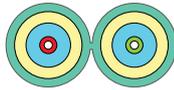
MM 50/125 OM3
Aqua RAL 6027
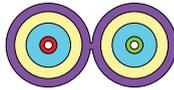
MM 50/125 OM4
Violet RAL 4003

❖ **Applications**
→ Distribution systems cable
→ Patchcords and pigtails
→ Terminals connection

▤ **Construction**
→ LSOH with low coefficient of friction
→ Aramid yarns
→ 250 μm coloured fibers

TEMPERATURE CHARACTERISTICS	
Storage Temperature [ºC]	-40 to +70
Operating Temperature [ºC]	-10 to +70
During installation [ºC]	-5 to +55

SM low-radius bending resistance

[mm]

30 — G.652

G.657A1
10 — G.657A2/B2
7.5 G.657B3
5 G.657B3 Plus
2.5

FIBRAIN

LDC cables

DATACOM

Cable structure

1. Outer jacket LS0H UV stabilized
2. Tight tubes 900 µm (LS0H) with colored fibers 250 µm
3. Aramid yarns

LS0H **Bendsafe** **Easy to terminate** **Easy-strip** **Semi-tight** **Datacenter**

TRUE COLORS

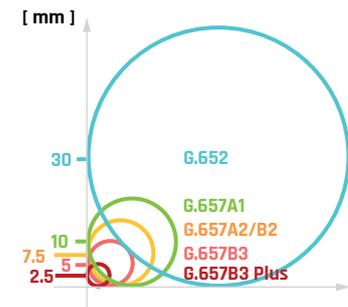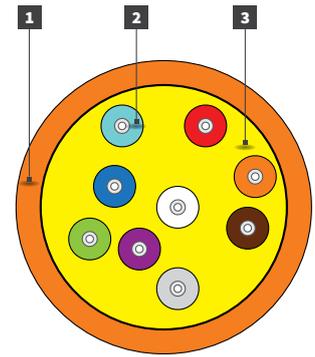| CONSTRUCTION						
Version	Tight buffers [pcs]	Ø ± 5% [mm]	Nominal weight LS0H ± 5% [kg/km]	Max. tensile load [N]		Crush [N/10 cm]
				installation	operation	
2F	2	4.5	21	500	125	500
4F	4	5.0	26	500	125	500
6F	6	5.5	30	500	125	500
8F	8	5.5	35	500	125	500
10F	10	6.5	40	700	175	500
12F	12	6.5	45	700	175	500
16F	16	7.0	50	700	175	500
24F	24	8.0	65	1000	250	500

STANDARD JACKET COLOURS D-DATACOM (ACCORDING TO DIN VDE 0888 & IEC 60304) - Fibers & Buffers											
1-12	1	2	3	4	5	6	7	8	9	10	11	12
Fiber	■	■	■	■	■	■	■	■	■	■	■	■
Buffer	■	■	■	■	■	■	■	■	■	■	■	■
Colour 250/600/900 µm	red	green	blue	yellow	white	grey	brown	violet	aqua	black	orange	pink
13-24	13	14	15	16	17	18	19	20	21	22	23	24
Fiber	■	■	■	■	■	■	■	■	■	■	■	■
Code	■▮	■▮	■▮	■▮	■▮	■▮	■▮	■▮	■▮	■	■▮	■▮
Colour 250 µm	red	green	blue	yellow	white	grey	brown	violet	aqua	natural	orange	pink
Colour* 600/900 µm	red	green	blue	yellow	white	grey	brown	violet	brown	dark green	orange	pink

*Buffer with black mark to identify fibers 13-24

Applications

→ Indoor/outdoor installations
→ Distribution networks in multifamily buildings
→ FTTD Connections
→ Distribution systems
→ Fully dielectric
→ LAN and FTTX network
→ ODF connection
→ Datacenter distribution

Construction

→ Compact design
→ Lightweight
→ Flexible
→ Easy to strip
→ Fully dielectric
→ Reduced diameter
→ Direct connectorization

TEMPERATURE CHARACTERISTICS	
Storage Temperature [°C]	-40 to +70
Operating Temperature [°C]	-10 to +70
During installation [°C]	-5 to +55

LBR cables

DATACOM

Fiber Optic Solutions

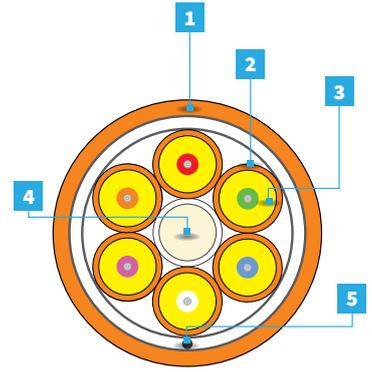### Cable structure
1. Outer jacket LSOH UV stabilized
2. Subcables 1.8 mm with tight tubes 900 µm (LSOH) with 250 µm colored fibers
3. Aramid yarns
4. Central FRP strength member
5. Ripcord

LSOH **Bendsafe** **Easy to terminate** **Easy-strip** **Semi-tight** **Datacenter** TRUE COLORS

CONSTRUCTION				
Version	Fiber qty	Dimensions nominal ± 5% [mm]	Max. installation tension (ε=0.5 %) [N]	Crush [N/10 cm]
2F	2	1.6 x 3.3	200	500
2F	2	1.8 x 3.7	300	500
2F	2	2.0 x 4.1	400	500
2F	2	2.8 x 5.7	600	1000

STANDARD JACKET COLOURS
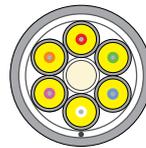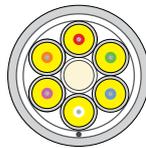
PE Black RAL9005 **LSOH Grey RAL7022** **LSOH Light Grey RAL7037**

OUTER JACKET COLOUR OPTIONS
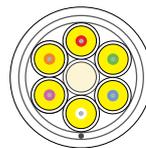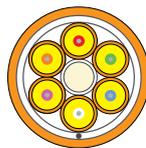
SM G.652D RAL 1021 **SM G657A1, A2, A3 RAL 9010** **MM 50/125 OM2 RAL 2003** **MM 50/125 OM3 RAL6027** **MM 50/125 OM4 RAL4003**
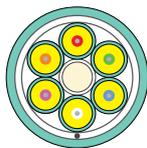
❖ Applications
→ Indoor/outdoor installations
→ Distribution networks in multifamily buildings
→ FTTD Connections
→ Distribution systems
→ Fully dielectric
→ LAN and FTTX network
→ ODF connection
→ Datacenter distribution

Construction
→ Simplex sub cable up to 24 fibers
→ Fully dielectric cable
→ Aramid yarns as tensile elements
→ UV Resistant and LSOH flame retardant outer jacket

TEMPERATURE CHARACTERISTICS	
Storage Temperature [ºC]	-40 to +70
Operating Temperature [ºC]	-20 to +70
During installation [ºC]	-5 to +55

DC-PRIM cables

DATACOM

Fiber Optic Installation Cables

Cable structure
1. LS0H outer jacket
2. Aramid yarns
3. 250 µm optical fibers
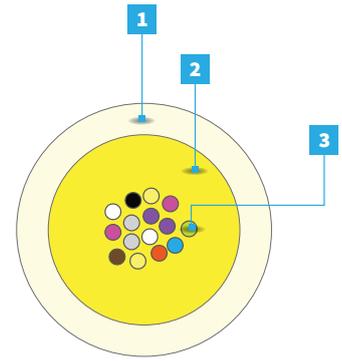
LS0H **Bendsafe** **Easy to terminate** **Datacenter** TRUE COLORS

CONSTRUCTION		
No. of fibers	12	24
Outer diameter [mm] (±5%)	3.0	3.5
Max tensile load (ε=0.5%) [N]	350	350
Weight [kg/km] (±10%)	8	9
Crush [N/10 cm]	350	
Min. bend radius [mm]	45 (depends on fiber type)	60 (depends on fiber type)

❖ Applications
→ Optical cable with aramid yarns reinforcement
→ Customer connection, fully dielectric cable
→ MTP/MPO termination cable
→ LAN and FTTX networks
→ Distribution network
→ Inside house OLT connection
→ Data Center connections cable

OUTER JACKET COLOUR OPTIONS							
Ivory RAL 1015	Yellow RAL 1021	White RAL 9010	Blue RAL 5015	Orange RAL 2003	Green RAL 6018	Aqua RAL 6027	Violet RAL 4003
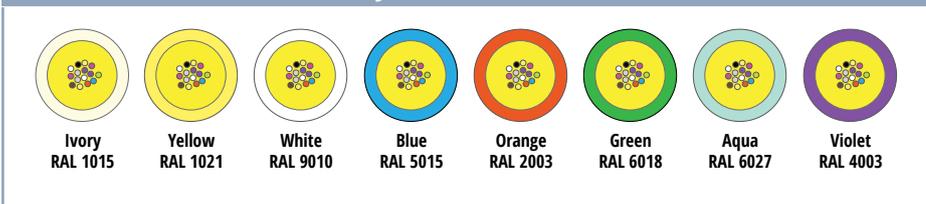
🗐 Construction
→ Aramid strength element
→ 250 µm optical fibers (12-24)
→ LS0H outer jacket

TEMPERATURE CHARACTERISTICS	
Storage Temperature [°C]	-40 to +70
Operating Temperature [°C]	-10 to +70
During installation [°C]	-5 to +55

AVAILABLE FIBER COLOURS D-DATACOM (ACCORDING TO DIN VDE 0888 & IEC 60304)											
1-12	1	2	3	4	5	6	7	8	9	10	11	12
Fiber	🟥	🟩	🟦	🟨	⬜	⬛	🟫	🟪	🟦	⬛	🟧	🟪
Colour	red	green	blue	yellow	white	grey	brown	violet	aqua	black	orange	pink
13-24	13	14	15	16	17	18	19	20	21	22	23	24
Fiber	🟥	🟩	🟦	🟨	⬜	⬛	🟫	🟪	🟦	⬜	🟧	🟪
Code	🟥▮	🟩▮	🟦▮	🟨▮	⬜▮	⬛▮	🟫▮	🟪▮	🟦▮	🟩	🟧▮	🟪▮
Colour*	red	green	blue	yellow	white	grey	brown	violet	brown	dark green	orange	pink

*Fiber with black mark to identify fibers 13-24

EXO-GU cables

DATACOM

Fiber Optic Solutions

Cable structure

1. LSOH outer jacket
2. Central loose tube (PBT) with colored fibers in filling compound
3. Optical fibers
4. Fiberglass yarns
5. Ripcord

Datacom | **Compact design** | **LSOH** | **Basic Rodent Protection**

CONSTRUCTION							
Version	Fiber qty	Fibers per tube	Ø ± 5% [mm]	Nominal weight LSOH ± 5% [kg/km]	Max. tensile load [N]		Crush [N/10 cm]
					installation	operation	
1T x 2F	2	2	5.8	34	1200 (ε=0,33%) 1500 (ε=0,5%)	400	1500
1T x 4F	4	4	5.8	34			
1T x 6F	6	6	5.8	35			
1T x 8F	8	8	5.8	35			
1T x 12F	12	12	5.8	35			
1T x 16F	16	16	5.8	35			
1T x 18F	18	18	5.8	36			
1T x 24F	24	24	5.8	36			

❖ **Applications**

→ Fully dielectric cable
→ Basic rodent protection
→ LAN and FTTX networks
→ Distribution network
→ ODF connections

Construction

→ Central Loose tube (PBT) with filling compound
→ Optical fibers
→ Fiberglass as water absorbent and strain relief element
→ LSOH outer jacket

TEMPERATURE CHARACTERISTICS	
Storage Temperature [°C]	-20 to +70
Operating Temperature [°C]	-20 to +70
During installation [°C]	-5 to +55

AVAILABLE FIBER COLOURS D-DATACOM (ACCORDING TO DIN VDE 0888 & IEC 60304) - Fibers											
1-12	1	2	3	4	5	6	7	8	9	10	11	12
Code	🟥	🟩	🟦	🟨	⬜	⬛	🟫	🟪	🟦	⬛	🟧	🟪
Colour	red	green	blue	yellow	white	grey	brown	violet	aqua	black	orange	pink
13-24	13	14	15	16	17	18	19	20	21	22	23	24
Code	🟥▮	🟩▮	🟦▮	🟨▮	⬜▮	⬛▮	🟫▮	🟪▮	🟦▮	🟩	🟧▮	🟪▮
Colour	red	green	blue	yellow	white	grey	brown	violet	aqua	dark green	orange	pink

*In 24-fiber tube construction colours will be repeated to facillitate identification, fibers 13-24 will have rings every 25 cm;

Jacket colours

Standard
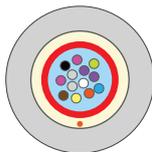
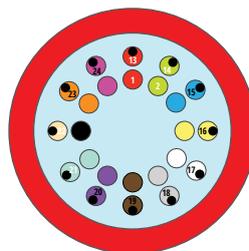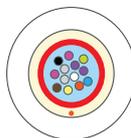**PE Black RAL 9005** | **LSOH Grey RAL 7022** | **LSOH Light Grey RAL 7037**

Fiber identification

Optional

SM G.652D RAL 1021 | **SM G657 A1, A2, A3 RAL 9010** | **MM 50/1025 OM2 RAL 2003** | **MM 50/1025 OM3 RAL 6027** | **MM 50/1025 OM4 RAL 4003**

FIBRAIN

BDC-MSA cables
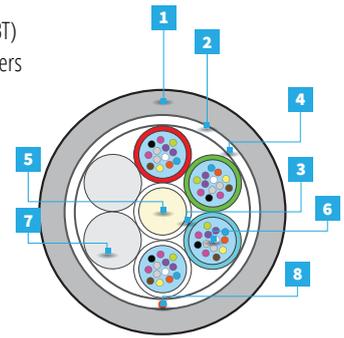
DATACOM

Fiber Optic Installation Cables

Cable structure

1. LS0H outer jacket
2. Water-blocking fiberglass yarns
3. Water blocking yarns
4. PET tape
5. Central strength member (FRP)
6. Loose tubes (PBT) with colored fibers in filling gel
7. Fillers
8. Ripcord

Datacom   ETR   Compact design   LS0H   Basic Rodent Protection   Datacenter

CONSTRUCTION										
Version	Fibers	Fibers per tube	Total ele-ments	Active tubes	Ø ± 5% [mm]	Nominal weight PE ±5% [kg/km]	Nominal weight LS0H ±5% [kg/km]	Max. tensile load [N] installation	Max. tensile load [N] operation	Crush [N/10 cm]
1T x 12F	12	12	6	1	8.2	50	65	1500	550	
2T x 6F	12	6	6	2	8.2	50	65	1550	780	
2T x 12F	24	12	6	2	8.2	51	65	1500	550	
4T x 6F	24	6	6	4	8.2	51	66	1550	780	
3T x 12F	36	12	6	3	8.2	52	67	1500	550	
6T x 6F	36	6	6	6	8.2	53	68	1550	780	1500
4T x 12F	48	12	6	4	8.2	53	68	1500	550	
5T x 12F	60	12	6	5	8.2	54	69	1500	550	
6T x 12F	72	12	6	6	8.2	54	69	1500	550	
8T x 12F	96	12	8	8	9.3	71	86	1620	750	
12T x 12F	144	12	12	12	11.5	104	126	1620	850	

❖ Applications

→ Fully dielectric cable
→ Basic rodent protection
→ LAN and FTTX networks
→ Distribution network
→ ODF connections

🗐 Construction

→ FRP strength and anti-buckling element
→ Optical fibers
→ Loose tube with filling compound (PBT Ø 1.8 mm)
→ Dry yarns to prevent moisture into the cable
→ Fiberglass as water absorbent and strain relief element
→ UV stabilized LS0H jacket

TEMPERATURE CHARACTERISTICS	
Storage Temperature [ºC]	-40 to +70
Operating Temperature [ºC]	-20 to +70
During installation [ºC]	-5 to +55

AVAILABLE FIBER COLOURS D-DATACOM (ACCORDING TO DIN VDE 0888 & IEC 60304) - Fibers												
1-12	1	2	3	4	5	6	7	8	9	10	11	12
Code												
Colour	red	green	blue	yellow	white	grey	brown	violet	aqua	black	orange	pink

D-DATACOM (ACCORDING TO DIN VDE 0888 & IEC 60304) - Tubes												
Tube	1	2	3	4	5	6	7	8	9	10	11	12
Code												
Colour	red	green	blue	yellow	white	grey	brown	violet	aqua	black	orange	pink

*In case of lower fiber count some tubes can be replaced by fillers.

EAC-RAs cables

FTTH
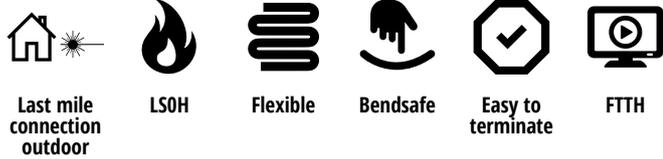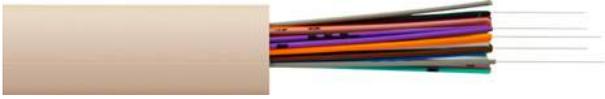
Cable structure
1. LS0H outer jacket
2. Dielectric strength members
3. 900 μm semi tight buffer (LS0H) with colored 250 μm optical fiber

Last mile connection outdoor	LS0H	Flexible	Bendsafe	Easy to terminate	FTTH

CONSTRUCTION

Version	Fibers	Buffers	Ø ± 5% [mm]	Nominal weight ±5% [kg/km]	Max. tensile load [N] installation	Crush [N/10 cm]
8F	8	8	8.7	68	400	1000
12F	12	12	8.7	72	400	
16F	16	16	12.0	98	600	
24F	24	24	12.0	106	600	

AVAILABLE COLOURS
F-FTTH (ACCORDING TO DIN VDE 0888 & IEC 60304)

1-12	1	2	3	4	5	6	7	8	9	10	11	12
Fiber												
Buffer												
Colour 250 μm	red	blue	green	yellow	violet	white	orange	grey	brown	black	aqua	pink
Colour 600/900 μm	red	blue	green	yellow	violet	white	orange	grey	brown	black	aqua	pink

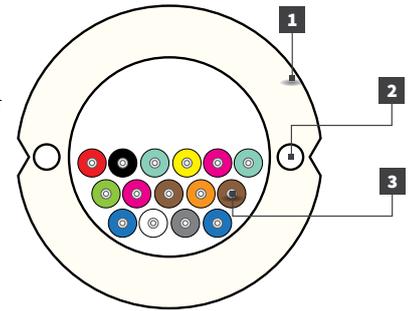| 13-24	13	14	15	16	17	18	19	20	21	22	23	24
Fiber												
Code												
Colour 250 μm	red	blue	green	yellow	violet	white	orange	grey	brown	black	aqua	pink
Colour* 600/900 μm	red	blue	green	yellow	violet	white	orange	grey	brown	dark green	aqua	pink

*Buffer with black mark to identifiy fibers 13-24

❖ Applications
→ Distribution cable
→ For laying in risers
→ FTTH feeder
→ Easy access and installation

▤ Construction
→ FRP strength members inside cable jacket
→ Optical fibers in bundles
→ 2-24 elements in cable
→ LS0H UV resistant outer jacket (ivory by default, various colours available)

TEMPERATURE CHARACTERISTICS

Storage Temperature [°C]	-40 to +70
Operating Temperature [°C]	-20 to +70
During installation [°C]	-5 to +55

DAC-BURRY cables

FTTH

Direct buried   **FTTH**   **Last mile connection outdoor**   **Hi-crush**   **Compact design**
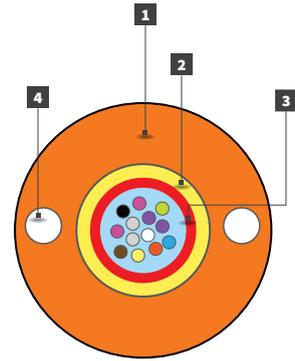
Cable structure

1. PP/HDPE outer jacket
2. Aramid yarns
3. Central loose tube (PBT) with 250 µm colored fibers in filling gel
4. Dielectric strength members in the jacket

CONSTRUCTION							
Version	Fibers	Fibers per tube	Ø ± 5% [mm]	Nominal weight PE ± 5% [kg/km]	Max. tensile load [N]		Crush [N/10 cm]
					installation	operation	
1T x 2F	2	2	6.2	32	650	250	3500
1T x 4F	4	4	6.2	32			
1Tx 6F	6	6	6.2	32			
1T x 8F	8	8	6.2	32			
1T x 12F	12	12	6.2	32			

AVAILABLE COLOURS T-TELECOM (ACCORDING TO IEC 60304) - FIBERS IN TUBE												
1-12	1	2	3	4	5	6	7	8	9	10	11	12
Code	🟥	🟩	🟦	⬜	🟪	🟧	⬛	🟨	🟫	🟪	⬛	🟦
Colour	red	green	blue	white	violet	orange	grey	yellow	brown	pink	black	aqua

❖ Applications

→ Optical access cable with aramid yarns reinforcement
→ Direct buried design
→ Fully dielectric cable
→ Last mile connection
→ High crush resistance (3,5kN)
→ Installation into existing ducts or direct buried

▤ Construction

→ Central Loose tube (PBT) with filling compound
→ Up to 12 optical fibers (250 µm)
→ Aramid yarns as strain relief and water absorbent
→ Embedded FRP strength members
→ Highly resistant outer jacket made of hard polyolefin material, UV resistant

TEMPERATURE CHARACTERISTICS	
Storage Temperature [°C]	-40 to +70
Operating Temperature [°C]	-40 to +70
During installation [°C]	-15 to +55

CONNECTION HARDWARE

Full range of connection varieties complying
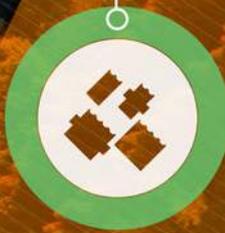
VARIETY OF FO ADAPTERS

ONE-PIECE TECHNOLOGY

MM AND SM

STANDARD
PREMIUM
PREMIUM SUPER

DIFFERENT QUALITY LEVELS

Fulfill all expectations

HARDWARE

to the customer expectations

**THE HIGHEST
PERFORMANCE
AND DURABILITY**

**FLANGE &
FLANGELESS
DESIGN**

TRUE COLORS
For efficient color
coding

**SIMPLEX
& DUPLEX**

SAFETY FEATURES
Laser protection flaps

**FIELD TERMINABLE
CONNECTORS**

SC adapters

SC fiber optic adapters are divided into three distinct series: Standard One-Piece, Premium One-Piece and Premium Super One-Piece, which can be characterized by various optical and mechanical parameters. SC fiber optic adapters are constructed in the "one-piece design" technology.

The external housing is one solid body, thus the adapters are more durable than the typical ultrasonic welded type ones. SC fiber optic adapters are available in various options and colours. Optical and mechanical parameters as well as types of adapters are presented in the tables below.

Technical specifications

Parameter	Standard One-Piece	Premium One-Piece	Premium Super One-Piece
Insertion Loss (IL)	max 0.30 dB typ. 0.15 dB	max 0.20 dB typ. 0.10 dB	max 0.20 dB typ. 0.08 dB
Repeatability ΔIL/mating cycle	± 0.10 dB	± 0.08 dB	± 0. 08 dB
Durability	500 matings/<0.20 dB typical change	1000 matings/<0.15 dB typical change	1000 matings/<0.15 dB typical change
Strength of coupling mechanism	40N	80N	80N
Operating temperature	-40 up to +85°C		
Alignment sleeve	ceramic	ceramic/metal	ceramic/metal
Mounting	metal wings	metal wings 2D	plastic wings 4D
External shutter	-	✔	-
Internal shutter	-	✔	✔
GR326 TG100 requirements	-	◗	✔
Anti-fungus plastic	-	-	✔
Colours	■■■■■	■■■	■■■■

Types of adapters in each series

Parameter	Standard One-Piece	Premium One-Piece	Premium Super One-Piece
SIMPLEX	✔	✔	✔
DUPLEX	✔	✔	✔
FLANGE	✔	✔	✔
NO FLANGE	✔	✔	✔
METAL MOUNTING CLIP	✔	✔	-
PLASTIC MOUNTING CLIP	-	-	✔
EXTERNAL SHUTTER	-	✔	-
INTERNAL SHUTTER	-	✔	✔

FIBRAIN

SC adapters

■ Standard One-Piece Class

The standard series of SC adapter family is available in a simplex and duplex configuration with a metal mounting clip and an optional flange. The main characteristic of FIBRAIN Standard One-Piece adapters is a ceramic sleeve for a singlemode and multimode application. Adapters are available in 5 colours. Adapters can be fitted with a transparent or semi-transparent dust cup.
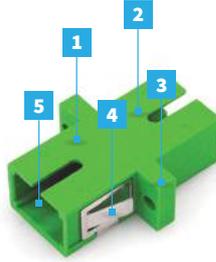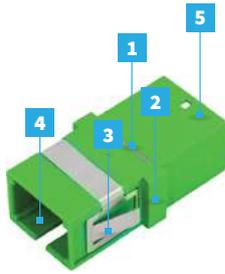
Adapter construction

1. "One-Piece Design" technology
2. Housing available in 5 colours
3. Flange or flangeless configuration
4. Metal mounting clip
5. Ceramic alignment sleeve for SM and MM application

Features

→ Innovative technology "One-Piece Design" – increased side loading performance
→ Equipped with a metal mounting clip
→ Possibility to choose a transparent or semi-transparent dust cover
→ High quality and durability
→ Wide range of colours - 5 colours available

■ Premium One-Piece Class

Series of SC fiber optic adapters with improved optical and mechanical performance. The external housing has been reinforced with a metal element, thus adapters exceed the IEC requirements of the strength of coupling mechanism. Adapters are available in a simplex and duplex configuration with an optional flange in 3 colours. The design has proved increased side loading performance over conventional adapters. The Premium One-Piece series can offer adapters with an external or internal shutter.

Adapter construction

1. Metal reinforcing element
2. Flange or flangeless configuration
3. Metal mounting clip
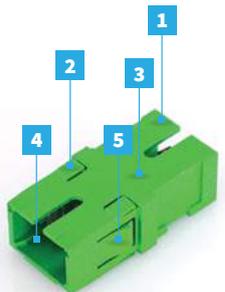4. Optional shutter (outer or inner)
5. One-Piece solid body

Features

→ Innovative technology "One-Piece Design" – increased side loading performance over conventional adapters
→ Available in a simplex or duplex version, in flange or no flange configuration
→ External body is strengthened by metal elements – the adapters exceed the IEC 61300-2-6 requirements for strength of coupling mechanism

■ Premium Super One-Piece Class

Series of SC adapter family with the highest optical and mechanical parameters. The 'super one-piece design' of housing includes integrated non metallic panel clips and 4 anti-rattle wings, which significantly reduce movement when snapped into a panel. Adapters are available in a simplex and duplex configuration, in both flange and no flange version.

The Premium Super One-Piece series is constructed from anti-fungus material with the UL94-V0 flammability index.

Adapters are available in 4 colours. There is also version with an inner shutter.

Adapter construction

1. Anti-fungus plastic
2. Special wings for accurate fixation
3. Super One-Piece solid body
4. Optional shutter (inner)
5. Integrated non metallic panel clip

Features

→ Innovative technology "Super One-Piece design" provides more durable construction and increased side loading performance
→ 4 anti-rattle wings significantly reduce movement when snapped into a panel
→ Built-in panel mounting plate
→ Constructed from anti-fungus plastic with the UL94-VO flammability index
→ Typical value of Insertion Loss ILTYP.≤ 0.08 dB

ORDERING SYNTAX							
Class	Connector type	No. of fibers	Shutter type	Mounting	Sleeve	Body colour	Dust cover colour
A101 (Standard One-Piece)	SC (PC) SCA (APC)	SX (Simplex) DX (Duplex	N/A	1 (flange) 2 (flangeless)	1 (ceramic)	1 (green SM APC) 2 (Blue SM PC) 5 (Beige MM OM1/2) 6 (Aqua MM OM3) 7 (Violet MM OM4)	3 (Black) T (transparent) S (Semi-transparent)
A120 (Premium One-Piece)			N/A		1 (ceramic) 2 (metal)	1 (green SM APC) 2 (Blue SM PC) 5 (Beige MM OM1/2)	3 (Black)
AS20 (Premium One-Piece with shutters)			1 (Internal) 2 (External)				
A123 (Premium Super One-Piece)			N/A			1 (green SM APC) 2 (Blue SM PC) 5 (Beige MM OM1/2) 6 (Aqua MM OM3)	
AS23 (Premium Super One-Piece with shutters)			1 (Internal) 2 (External)				

■ Example

A123-SCA-SX-1113 FIBRAIN SC APC SM adapter, SX, Premium Super One-Piece, with flange, ceramic sleeve, green housing, black dust cover

LC adapters

SC fiber optic adapters are divided into three distinct series: Standard One-Piece, Premium One-Piece and Premium Super One-Piece, which can be characterized by various optical and mechanical parameters. SC fiber optic adapters are constructed in the "one-piece design" technology.

The external housing is one solid body, thus the adapters are more durable than the typical ultrasonic welded type ones. SC fiber optic adapters are available in various options and colours. Optical and mechanical parameters as well as types of adapters are presented in the tables below.

Technical specifications

Parameter	Standard *One-Piece*	Premium *One-Piece*	Premium *Super One-Piece*
Insertion Loss (IL)	max 0.30dB typ. 0.15dB	max 0.20 dB typ. 0.10 dB	max 0.20 dB typ. 0.08 dB
Repeatability ΔIL/mating cycle	± 0.10 dB	± 0.08 dB	± 0.08 dB
Durability	500 matings/<0.20 dB typical change	1000 matings/<0.15 dB typical change	1000 matings/<0.15 dB typical change
Strength of coupling mechanism	40N	80N	80N
Operating temperature	-40 up to +85°C		
Alignment sleeve	ceramic	ceramic/metal	ceramic/metal
Mounting	metal wings	plastic wings 2D	plastic wings 4D
External shutter	-	✔	-
Internal shutter	-	✔	✔
GR326 TG100 requirements	-	◐	✔
Anti-fungus plastic	-	-	✔
Colours	■■■■■	■■■	■■■■■

Types of adapters in each series

Parameter	Standard *One-Piece*	Premium *One-Piece*	Premium *Super One-Piece*
DUPLEX	✔	✔	✔
QUAD	✔	✔	-
FLANGE	✔	✔	✔
NO FLANGE	✔	✔	✔
METAL MOUNTING CLIP	✔	-	-
PLASTIC MOUNTING CLIP	-	✔	✔
EXTERNAL SHUTTER	-	✔	-
INTERNAL SHUTTER	-	✔	✔

FIBRAIN

LC adapters

Standard One-Piece Class

The basic series of LC adapters in a duplex and quad configuration with an optional flange. A ceramic alignment sleeve, which is used in single-mode and multimode adapters, is a characteristic feature of Standard One–Piece series. Adapters are available in 5 colours with metal mounting clips. Adapters are constructed as one solid body, which provides a more durable design over the typical ultrasonic welded type ones.
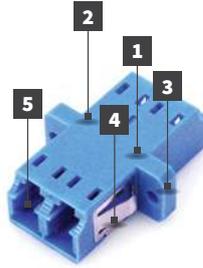
Adapter construction

1. "One-Piece Design" technology
2. Housing available in 5 colours
3. Optional flange
4. Metal mounting clip
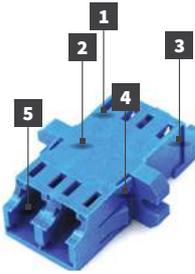**5.** Ceramic alignment sleeve for SM and MM aplication

Features
→ One-Piece Design
→ Flange or flangeless configuration
→ High quality and durability
→ Colour coding according to the standards

Premium One-Piece Class

Series of LC fiber optic adapters equipped with external or internal shutters, which guarantee protection for the eyes. The adapters are available in a duplex or quad design, with flange or no flange configuration. The Premium One-Piece series has an integrated, non-metallic clips. Therefore, the adapters are available in 3 colours. Characteristic features of the series are excellent optical and mechanical parameters as well as high quality.

Adapter construction

1. "Super One-Piece Design" technology
2. Anti-fungus material with the UL94-V0 flammability index
3. Housing available in 5 colours
4. Special wings for accurate fixation
**5.** Optional shutter (inner)

Features
→ One-Piece Design,
→ Available in a duplex and quad version
→ flange or flangeless configuration
→ Special wings for accurate fixation
→ Internal or external shutter for eye safety
→ The highest quality and durability
→ Excellent optical and mechanical parameters
→ Colour coding according to the standards

Premium Super One-Piece Class

LC Premium Super One-Piece adapters with the highest optical and mechanical parameters. The "super one-piece design" includes integrated non-metallic clips and 4 anti-rattle wings, which significantly reduce movement when snapped into a panel.

Adapters are available in 5 colours in a duplex design, with an optional flange. Therefore, the adapters are constructed from anti-fungus plastic with the UL94-V0 flammability index. The version is available with an inner shutter.
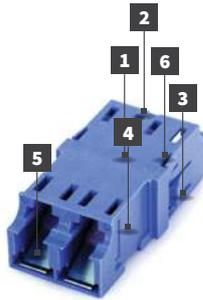
Adapter construction

1. "Super One-Piece Design" technology
2. Anti-fungus plastic with the UL94-V0 flammability index
3. Integrated, non-metal clips
4. Housing available in 5 colours
5. Inner metal shutter
6. Special wings for accurate fixation

Features
→ One-piece design
→ Special wings for accurate fixation
→ flange or flangeless configuration
→ Excellent optical and mechanical parameters
→ The highest quality and durability
→ Constructed from anti-fungus plastic with the
→ UL94-V0 flammability index
→ Equipped with an inner metal shutter for eyes protection

ORDERING SYNTAX							
Class	Connector type	No. of fibers	Shutter type	Mounting	Sleeve	Body colour	Dust cover colour
A001 (standard One-Piece)	LC (PC) LCA (APC)	DX (Duplex) 4x (Quad)	N/A	1 (flange) 2 (flangeless)	1 (ceramic)	1 (green SM APC) 2 (Blue SM PC) 5 (Beige MM OM1/2) 6 (Aqua MM OM3) 7 (Violet MM OM4)	**3** (Black) **T** (transparent) **S** (Semi-transparent)
AS01 (Premium One-Piece)			N/A		1 (ceramic) 2 (metal)	1 (green SM APC) 2 (Blue SM PC) 5 (Beige MM OM1/2)	3 (Black)
AS02 (Premium One-Piece with ext. shutters)			1 (Internal) 2 (External)				
A031 (Premium Super One-Piece)		DX (Duplex)	N/A			1 (green SM APC) 2 (Blue SM PC) 5 (Beige MM OM1/2) 6 (Aqua MM OM3)	
AS31 (Premium Super One-Piece with shutters)			1 (Internal) 2 (External)				

Example

AS01-LC-DX-11128 FIBRAIN LC PC SM adapter, DX, Premium One-Piece, internal shutter, with flange, ceramic sleeve, blue housing, white dust cover.

E2000™ adapters

Fiber Optic Solutions

Fiber optic adapters are designed to combine E2000TM connectors with a push&pull mechanism, which provides fast and stable connection, and prevents accidental disconnects. The E-2000™ adapter features injection-molded PBT housing, rated to the UL94-V0 flammability index. Spring-loaded laser protection shutters protect against dust and scratching as well as guarantee protection for the eyes.

A high quality ceramic alignment sleeve ensures high performance over 1000 mating cycles. Adapters are equipped with a semi-transparent plastic dust cover, providing optical testing with test lasers without removing the cover. The adapters comply with PN/IEC 61754 and DIN/EN 186270 standards.

TRUE COLORS

QUALITY AND DURABILITY

Features
→ Equipped with integral self-closing metal laser protection internal shutter, which guarantees protection for the eyes and against dust,
→ Excellent optical parameters,
→ Mounting with the use of M2 screws or quick mounting by integrated clip (possibility of flangeless adapters),
→ Constructed from highly resistant and durable PBT material with UL94-V0 flammability index,
→ High quality ceramic alignment sleeve ensures high performance over 1000 mating cycles.

Available colours

Insertion loss

ELECTRICAL AND MECHANICAL PARAMETERS		
Parameter	**E2000™ SM**	**E2000™ MM**
Insertion Loss IL$_{MAX}$	0.20 dB	0.30 dB
Insertion Loss IL$_{TYP}$	0.10 dB	0.15 dB
Alignment sleeve	aceramic	ceramic
Durability	1000 matings	
Operating temperature	-40 up to +85°C	
Strength of coupling mechanism	70N	
Inner shutter	✓	✓

Durability

Strength of coupling mechanism

Types of E2000TM adapters

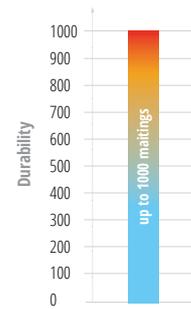| Code	Adapter type
R504511	E2000 SM PC, blue housing, flange, ceramic sleeve
R504541	E2000 SM APC, green housing, flange, ceramic sleeve
R504562	E2000 SM APC, green housing, no flange, ceramic sleeve
R508019	E2000 MM PC, black housing, flange, ceramic sleeve

FIBRAIN
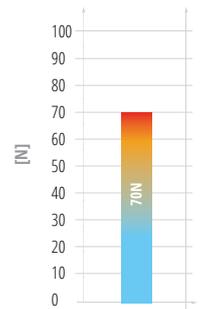
FC&ST adapters

■ FC adapters

FC connection elements are specifically designed for telecommunication elements, where stable connection is necessary and performed with the use of a thread mechanism. The FC connector is screwed in, which eliminates the possibility of an accidental disconnect.

Therefore, the FC FIBRAIN optic fiber adapters have excellent optical and mechanical parameters as they are constructed from high quality materials. The FC adapters are designed for single- and multimode application with high quality of alignment sleeve.

ORDERING SYNTAX

Series	Adapter type	Type	Mounting	Sleeve	Housing Colour	Dust cover Colour
A151-Standard	FC	SX	3 d-hole	1 ceramic	0 - metal	1 green
A161-Premium	FCA			2 metal		3 black
						4 red

■ Example

A151-FCA-SX-3101 FIBRAIN FC APC SM adapter, SX, Standard Series, d-hole mounting, ceramic sleeve, metal housing, green dust cover.

■ ST adapters

ST FIBRAIN optic adapters are the elements of the fiber optic system, which are used to connect ST connectors using a bayonet mechanism. The ST adapters are characterized by the high quality of the external non-metal housing and alignment sleeve.

Adapters are available for singlmode and multimode applications.
Adapters are precision-made items with excellent optical and mechanical parameters.

ORDERING SYNTAX

Series	Adapter type	Type	Mounting	Sleeve	Housing Colour	Dust cover Colour
A181-Standard	ST	SX	3 d-hole	1 ceramic	0 - metal	3 black
A191-Premium				2 metal		4 red

■ Example

A181-ST-SX-3103 FIBRAIN ST PC SM adapter, SX, Standard Series, d-hole mounting, ceramic sleeve, metal housing, black dust cover.

ELECTRICAL AND MECHANICAL PARAMETERS

Parameter	Standard	Premium
Insertion Loss IL_{MAX}	0.30 dB	0.20 dB
Insertion Loss IL_{TYP}	0.15 dB	0.10 dB
Repeatability ΔIL/mating cycle	± 0.10 dB	± 0.08 dB
Durability	500 matings/ <0.20 dB typical change	1000 matings/ <0.15 dB typical change
Aligment sleeve	ceramic/metal	
Operating temperature	-40 up to +85°C	
Mounting	d-hole	

⟨↑↓⟩ Features

→ Excellent optical and mechanical parameters

→ High quality

→ Thread or bayonet mount mechanism providing constant and stable connection

→ High quality ceramic sleeve for singlemode and phosphor-metal sleeve for multimode applications

→ Constructed from material resistant to corrosion

Insertion loss
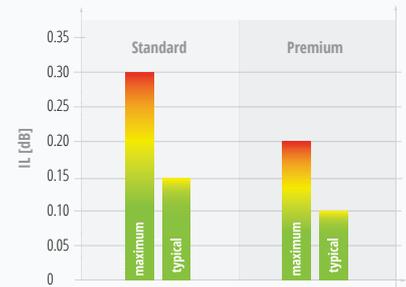
Durability

MTP® adapters

Fiber Optic Connection Hardware
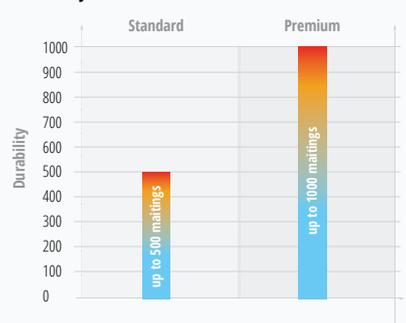
Main features

■ Adapters provide quick connection of MTP®/MPO connectors – connection integrity is provided by adapter latches which are locked into place on the connectors by a spring loaded sliding mechanism

■ One-piece design of adapter body – increased side loading performance

■ Available in black, aqua, beige, violet magenta and green

■ Flange or flangeless configuration

■ Opposed key orientation - TIA 604-5D (on request aligned key orientation in gray housing Colour)

■ Standard MTP footprint type (on request MTP adapters in SC footprint type available)

TRUE COLORS

HIGH DENSITY APPLICATION

❖ **Applications**
→ Data Center Systems
→ Array trunk cabling
→ Dense interconnect for data centerand telecommunication system
→ Chassis-to-chassis connections
→ Structured cabling per TIA-568-C

Available colours

SM APC   MM OM1   MM OM2   MM OM3   MM OM4

Features
→ Low insertion loss
→ Meets IEC Standard 61754-7
→ Meets TIA/EIA 604-5 Type MPO
→ Push-pull mechanism provides quick connections

Ordering information

Code	Adapter type
AD-MTP-SM-GR-F	FIBRAIN MTP SM adapter, flange, green housing, opposed key
AD-MTP-OM1-BG-F	FIBRAIN MTP OM1 adapter, flange, beige housing, opposed key
AD-MTP-OM2-BK-F	FIBRAIN MTP OM2 adapter, flange, black housing, opposed key
AD-MTP-OM3-AQ-F	FIBRAIN MTP OM3 adapter, flange, aqua housing, opposed key
AD-MTP-OM4-V-F	FIBRAIN MTP OM4 adapter, flange, violet housing, opposed key

FIBRAIN®

Field terminable connectors

Fiber Optic Installation Cables

FIBRAIN Rapid Connectors are specifically designed to terminate optical fibers in installation place. The Rapid Connector is a pre-polished, pre-assembled connector compatibile with the standard LC&SC connectors. Total assembly time together with fiber preparation do not exceeds 120 seconds, and requires no extra tools. The ferrules are factory polished, thus no extra polishing materials are necessary. Also the clamp system in the V-grooves, where immersion gel is placed, eliminates the necessity to use other adhesives or epoxy gel and improves the transmission parameters. High quality index matching gel, whose refractive index is close to refractive index of the core of optical fiber, significantly improves Return Loss.

The FIBRAIN Rapid Connector series includes the connectors which can be used to terminate single-mode and multimode optical fibers in 250 µm and 900 µm coating. Moreover, the series is equipped with a special connector construction specifically designed for VC-DCY Drop cables, which are used in FTTH systems. The connectors are mounted on an external cable sheath, not only on a fiber in 250 µm covering, which guarantees higher protection of a connection and eliminate possibility of breaking the fiber.

Excellent transmission parameters, easy assembly in installation place and time saving, are only some benefits of the new series of FIBRAIN Rapid Connector.

❖ **Applications**
→ LAN networks
→ WAN networks
→ FTTH networks
→ Telecommunication networks
→ CATV networks
→ Intra-building

Features
→ Termination time does not exceed 120 s
→ Easy and fast assembly
→ Excellent transmission parameters
→ High quality materials
→ A ferrule polished in a Premium Class has excellent ferrule end face geometry parameters
→ A termination is performed with a use of standard equipment
→ Durability and resistance of the matching gel for even 25 years
→ Exceeds TIA/EIA-568-B.3 standards

ORDERING SYNTAX

Series	Connector type		Fiber type		Cable type	
RC01	1	SC PC	1	SM 9/125 µm	1	250/900 µm
	2	SC APC	2	MM 50/125 µm OM2	2	Drop cable VC-DCY
	3	LC PC	3	MM 62.5/125 µm OM1		
			4	MM 50/125 µm OM3		

◾ Example
RC01-212 FIBRAIN Rapid Connector SC APC for VC-DCY Drop cables.

◾ Additional accessories
RC01- J Assembly Adapter Provides proper stripping length during Rapid Connector's assembly on VC-DCY Drop cables

◾ Available colours
According to fiber type (multimode/single mode –grey&black/ blue&green)

TECHNICAL SPECIFICATIONS

Parameter	Connectors		
	SM PC	**SM APC**	**MM PC**
Insertion Loss IL$_{TYP}$	0.20 dB	0.30 dB	0.10 dB
Return Loss RL	55 dB	60 dB	35 dB
Durability	< 0.10 dB / 500 matings		
Operating temperature	-40 to +75°C		
Connector type	SC, SCA, LC		

PRECONECTORIZED

Perfect Plug&Play solutions for fiber optic networks

RELIABLE SOLUTION

DIFFERENT
INDOOR/OUTDOOR
CONSTRUCTIONS FOR
DIFFERENT APPLICATIONS

PLUG&PLAY SOLUTION FOR
TIME SAVING INSTALLATIONS

CABLES

THE HIGHEST PERFORMANCE
OF FACTORY TERMINATED PLUGS

100% TESTS
IN QUALITY CONTROL
PROCEDURES

FULL RANGE
OF THE CONNECTORS
INCLUDING MPO/MTP

Gold Grade Patch Cords

■ Patch cord connectors range

SC	SCA	LC
FC	FCA	E2
E2A	DIN	

📄 Description

→ FIBRAIN optical components are specifically designed and based on connectors, which comply with IEC/ PN-EN 61754 and IEC/PN–EN 61755 requirements. Gold grade patch cords are available in singlemode and multi-mode option with various type of connectors, cables and optical fibers. Fully automated preparation and polishing process ensure the highest quality and reliability. Therefore, detailed selection of the manufacturing components ensures the highest quality of the product. Gold grade patch cords are available with 3 different designs of boots, which protect the bend radius of the optical fibers. Apart from standard boots, there are mini and flexi-angle available. The boot in the mini option limits the total length of a connector and boot, whereas the flexi-angle boot is designed to bend in a 0-90° angle range. Available options of the boots are given in the table below. There is no possibility to mix various types of boots on a patchcord- as from the both sides a patchcord is terminated with the same type of boots.

■ Ordering syntax

ORDERING SYNTAX								
Series	Connector		Boot type	Length [m]	Cable	Fiber	Cable diameter	Colour
	A	B						
G-Gold	SC	SC	S-Standard	xxx.x	SX patchcord simplex	A SMF G.652D	16 1.6 mm	OR 🟧
	SCA	SCA	M-Mini		DX patchcord duplex	B SMF G655	18 1.8 mm	Y 🟨
	LC	LC	F-Flex-angled			C SMF G656	28 2.8 mm	
	LCA	LCA				D SMF G657A1		
	FC	FC				E SMF G657A2		
	FCA	FCA				F SMF G657B2		
	E2	E2				G SMF G657B3		
	E2A	E2A				H MMF OM1		
	DIN	DIN				I MMF OM2		
						J MMF OM2+		
						K MMF OM3		
						L MMF OM4		

■ Example

G-SCA-SCA-S-002.0-SX-A-18-Y FIBRAIN Gold Grade Patchcord, with SC APC connectors at both side, simplex, 2m length, G.652D, 1.8 mm cable diameter, yellow coat

❖ Applications

→ Telecommunication networks
→ Local area network (LAN)
→ FTTx, FTTD, FTTB, FTTH networks
→ CATV solutions
→ CWDM networks

⊞ Features

→ Comply with IEC, TIA/EIA requirements
→ High quality and repeatability of the transmission parameters
→ Connectors are constructed from high quality plastic, resistant to corrosion and high temperatures with UL94-V0 flammability index or the high quality metal resistant to corrosion
→ Wide range of available fibers and connectors

TECHNICAL SPECIFICATIONS			
Parameter	Connectors		
	SM PC	SM APC	MM PC
Insertion Loss IL_{MAX} **against MASTER** Acc. IEC 61300-3-4	≤ 0.17 dB	≤ 0.20 dB	≤ 0.20 dB
Insertion Loss IL_{TYP} **against MASTER** Acc. IEC 61300-3-4	≤ 0.15 dB	≤ 0.16 dB	≤ 0.12 dB
Return Loss Acc. IEC 61300-3-6	≥ 55 dB	≥ 65 dB	≥ 35 dB

FIBRAIN

Titanium Grade Patch Cords

Patch cord connectors range

SC	SCA	LC
FC	FCA	E2
E2A		

Ordering syntax

<table>
<tr><th colspan="11">ORDERING SYNTAX</th></tr>
<tr><th rowspan="2">Series</th><th colspan="2">Connector</th><th rowspan="2">Boot type</th><th rowspan="2">Length [m]</th><th rowspan="2">Cable</th><th rowspan="2">Fiber</th><th rowspan="2">Cable diameter</th><th colspan="2" rowspan="2">Colour</th></tr>
<tr><th>A</th><th>B</th></tr>
<tr><td>T-Titanium</td><td>SC</td><td>SC</td><td>S-standard</td><td>xxx.x</td><td>SX patchcord simplex</td><td>A SMF G.652D</td><td>16 1.6 mm</td><td>OR</td><td>■</td></tr>
<tr><td></td><td>SCA</td><td>SCA</td><td>M-Mini</td><td></td><td>DX patchcord duplex</td><td>B SMF G655</td><td>18 1.8 mm</td><td>Y</td><td>■</td></tr>
<tr><td></td><td>LC</td><td>LC</td><td>F-Flex-angled</td><td></td><td></td><td>C SMF G656</td><td>28 2.8 mm</td><td></td><td></td></tr>
<tr><td></td><td>LCA</td><td>LCA</td><td></td><td></td><td></td><td>D SMF G657A1</td><td></td><td></td><td></td></tr>
<tr><td></td><td>FC</td><td>FC</td><td></td><td></td><td></td><td>E SMF G657A2</td><td></td><td></td><td></td></tr>
<tr><td></td><td>FCA</td><td>FCA</td><td></td><td></td><td></td><td>F SMF G657B2</td><td></td><td></td><td></td></tr>
<tr><td></td><td>E2</td><td>E2</td><td></td><td></td><td></td><td>G SMF G657B3</td><td></td><td></td><td></td></tr>
<tr><td></td><td>E2A</td><td>E2A</td><td></td><td></td><td></td><td>H MMF OM1</td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td>I MMF OM2</td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td>J MMF OM2+</td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td>K MMF OM3</td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td>L MMF OM4</td><td></td><td></td><td></td></tr>
</table>

Example

T-SCA-SCA-S-002.0-SX-D-28-Y FIBRAIN Titanium Grade Patchcord, with SC APC connectors at both side, simplex, 2m length, G.657A1, 2.8 mm cable diameter, yellow coat

Description

→ FIBRAIN Titanium series of patchcords and pigtails is intended for the most demanding customers. High optical parameters, premium quality and precise selection of the components are the characteristic features of the Titanium Grade. FIBRAIN optical components are specifically designed and based on connectors, which comply with IEC/ PN-EN 61754 and IEC/PN –EN 61755 requirements. Patchcords and pigtails of Titanium Grade are available in singlemode option with various type of connectors, cables and optical fibers. Fully automated preparation and polishing process ensure the highest quality and reliability. Therefore, detailed selection of the manufacturing components ensures the highest quality of the final component.

Applications

→ Telecommunication networks
→ Local area network (LAN)
→ FTTx, FTTD, FTTB, FTTH networks
→ CATV solutions
→ CWDM networks
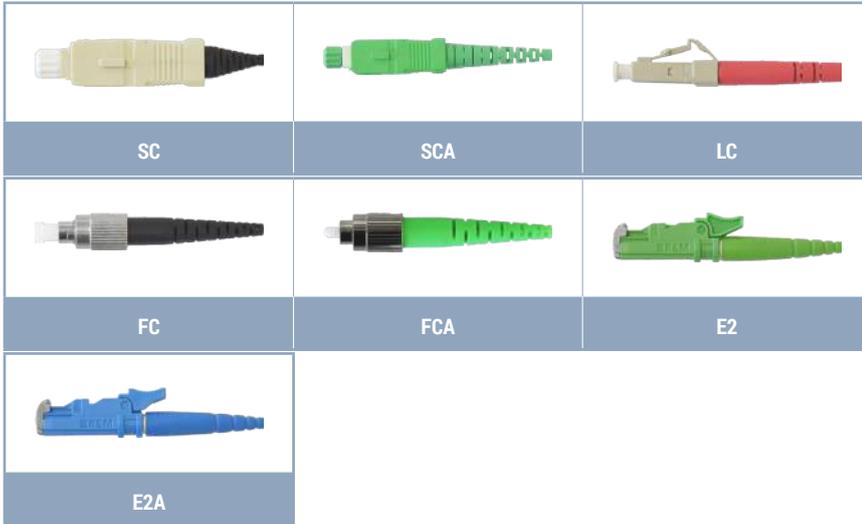→ Low voltage networks
→ Measuring devices

Features

→ Comply with IEC, TIA/EIA requirements
→ High quality and repeatability of the transmission parameters
→ Connectors are constructed from high quality plastic, resistant to corrosion and high temperatures with flammability index UL94-V0 or the high quality metal resistant to corrosion
→ High quality ceramic ferrules
→ Low attenuation and high reflectance
→ Wide range of available connectors and optical fibers

TECHNICAL SPECIFICATIONS		
Parameter	**Connectors**	
	SM PC	SM APC
Insertion Loss IL_{MAX} **against MASTER Acc. IEC 61300-3-4**	≤ 0.12 dB	≤ 0.20 dB
Insertion Loss IL_{TYP} **against MASTER Acc. IEC 61300-3-4**	≤ 0.10 dB	≤ 0.16 dB
Return Loss Acc. IEC 61300-3-6	≥ 55 dB	≥ 65 dB

Gold Grade Pigtails

■ Pigtail connectors range

SC	SCA	LC
FC	FCA	E2
E2A	DIN	

▤ Description

→ FIBRAIN optical components are specifically designed and based on connectors, which comply with IEC/ PN-EN 61754 and IEC/PN–EN 61755 requirements. Gold grade patch cords are available in singlemode and multi-mode option with various type of connectors, cables and optical fibers. Fully automated preparation and polishing process ensure the highest quality and reliability. Therefore, detailed selection of the manufacturing components ensures the highest quality of the product. Gold grade patch cords are available with 3 different designs of boots, which protect the bend radius of the optical fibers. Apart from standard boots, there are mini and flexi-angle available. The boot in the mini option limits the total length of a connector and boot, whereas the flexi-angle boot is designed to bend in a 0-90° angle range. Available options of the boots are given in the table below. There is no possibility to mix various types of boots on a patchcord- as from the both sides a patchcord is terminated with the same type of boots.

■ Ordering syntax

ORDERING SYNTAX

Series	Connector A	Connector B	Boot type	Length [m]	Cable	Fiber	Cable diameter	Colour	
G-Gold	SC	XX	S-Standard	xxx.x	P9 pigtail 900 µm	A SMF G.652D	09 0.9 mm	GR	
	SCA		M-Mini		PS pigtail simplex cable	B SMF G655		GY	
	LC		F-Flex-angled		PD pigtail duplex cable	C SMF G656		BL	
	LCA					D SMF G657A1		BK	
	FC					E SMF G657A2		V	
	FCA					F SMF G657B2		R	
	E2					G SMF G657B3		W	
	E2A					H MMF OM1		AQ	
	DIN					I MMF OM2		BR	
						J MMF OM2+		P	
						K MMF OM3			
						L MMF OM4			

❖ Applications
→ Telecommunication networks
→ Local area network (LAN)
→ FTTx, FTTD, FTTB, FTTH networks
→ CATV solutions
→ CWDM networks

▥ Features
→ Comply with IEC, TIA/EIA requirements
→ High quality and repeatability of the transmission parameters
→ Connectors are constructed from high quality plastic, resistant to corrosion and high temperatures with UL94-V0 flammability index or the high quality metal resistant to corrosion
→ Wide range of available fibers and connectors

■ Example

G-SCA-XX-M-001.0-P9-A-09-GR FIBRAIN Gold Grade pigtail, with SC APC connector, Mini boot, 2 m length, G.652D, simplex, 0.9 mm cable diameter, green coat

TECHNICAL SPECIFICATIONS

Parameter	Connectors SM PC	SM APC	MM PC
Insertion Loss IL$_{MAX}$ against MASTER Acc. IEC 61300-3-4	≤ 0.17 dB	≤ 0.20 dB	≤ 0.20 dB
Insertion Loss IL$_{TYP}$ against MASTER Acc. IEC 61300-3-4	≤ 0.15 dB	≤ 0.16 dB	≤ 0.12 dB
Return Loss Acc. IEC 61300-3-6	≥ 55 dB	≥ 65 dB	≥ 35 dB

FIBRAIN

Titanium Grade Pigtails

Patch cord connectors range
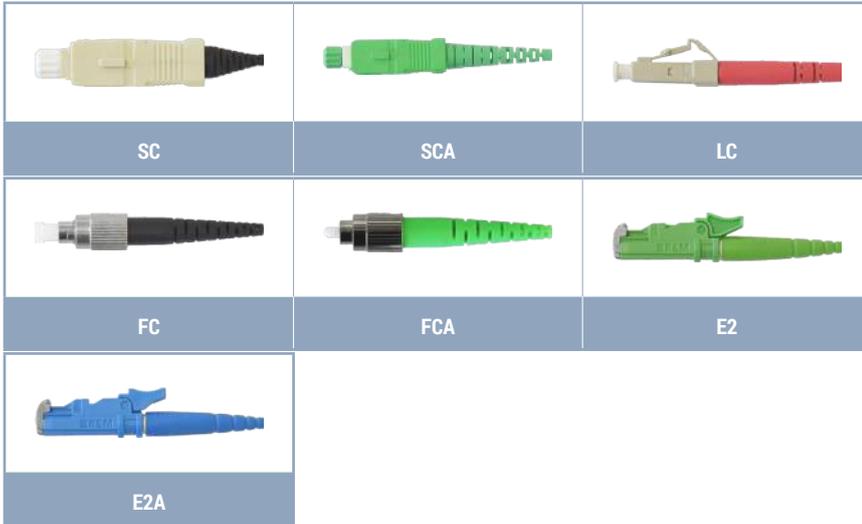
SC	SCA	LC
FC	FCA	E2
E2A		

Ordering syntax

<div>

ORDERING SYNTAX

Series	Connector		Boot type	Length [m]	Cable	Fiber	Cable diameter	Colour	
	A	B							
T-Titanium	SC	XX	S-standard	xxx.x	P9 pigtail 900 µm	A SMF G.652D	09 0.9 mm	GR	
	SCA		M-Mini		PS pigtail simplex cable	B SMF G655		GY	
	LC		F-Flex-angled		PD pigtail duplex cable	C SMF G656		BL	
	LCA					D SMF G657A1		BK	
	FC					E SMF G657A2		V	
	FCA					F SMF G657B2		R	
	E2					G SMF G657B3		W	
	E2A					H MMF OM1		AQ	
						I MMF OM2		BR	
						J MMF OM2+		P	
						K MMF OM3			
						L MMF OM4			

</div>

Example

T-SCA-SCA-S-001.0-M-A-09-GR FIBRAIN Titanium Grade Pigtail, with SC APC connector, Mini boot, 2 m length, G.652D, 0.9 mm cable diameter, green coat

Description

→ FIBRAIN optical components are specifically designed and based on connectors, which comply with IEC/ PN-EN 61754 and IEC/PN –EN 61755 requirements. Gold grade patch cords are available in singlemode and multi-mode option with various type of connectors, cables and optical fibers. Fully automated preparation and polishing process ensure the highest quality and reliability. Therefore, detailed selection of the manufacturing components ensures the highest quality of the product. Gold grade patch cords are available with 3 different designs of boots, which protect the bend radius of the optical fibers. Apart from standard boots, there are mini and flexi-angle available.

Applications

→ Telecommunication networks
→ Local area network (LAN)
→ FTTx, FTTD, FTTB, FTTH networks
→ CATV solutions
→ CWDM networks
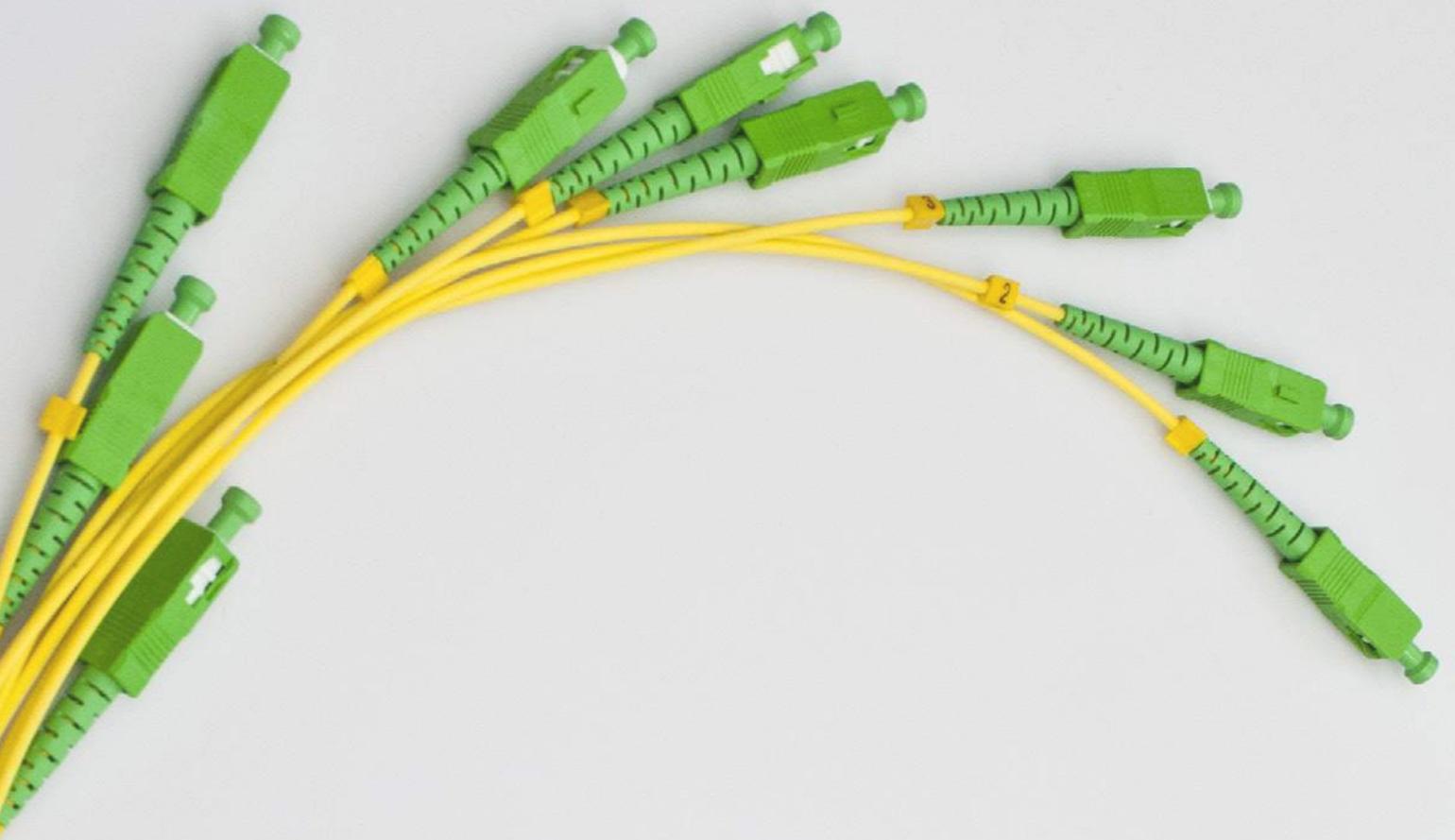→ Low voltage networks
→ Measuring devices

Features

→ Comply with IEC, TIA/EIA requirements
→ High quality and repeatability of the transmission parameters
→ Connectors are constructed from high quality plastic, resistant to corrosion and high temperatures with flammability index UL94-V0 or the high quality metal resistant to corrosion
→ High quality ceramic ferrules
→ Low attenuation and high reflectance
→ Wide range of available connectors and optical fibers

TECHNICAL SPECIFICATIONS		
Parameter	Connectors	
	SM PC	SM APC
Insertion Loss IL$_{MAX}$ against MASTER Acc. IEC 61300-3-4	≤ 0.12 dB	≤ 0.20 dB
Insertion Loss IL$_{TYP}$ against MASTER Acc. IEC 61300-3-4	≤ 0.10 dB	≤ 0.16 dB
Return Loss Acc. IEC 61300-3-6	≥ 55 dB	≥ 65 dB

Pigtail set

PIGTAIL SET

📄 Description

→ The set of 12 fiber optic pigtails polished in the Gold grade. This set is available in two versions: 12 pigtails in yellow protection tube 0.9 mm or a set of 12 pigtails with multicolor 0.9 mm protection tubes. The set of pigtails facilitates the assembly and identification of fiber optic splices, which saves installation time and lower the costs substantially. The tubes are available in the following colors: red, green, blue, yellow, white, grey, brown, purple, orange, black, pink, aqua.

■ Pigtail Set with a standard 900 μm colorful protection tube

Available colours of tubes											
red	green	blue	yellow	white	grey	brown	violet	orange	black	pink	aqua

❖ Applications

→ Telecommunication networks
→ Local area network (LAN)
→ FTTx, FTTD, FTTB, FTTH networks
→ CATV solutions
→ CWDM networks
→ Low voltage networks
→ Measuring devices

ORDERING SYNTAX								
Series	Connector		Boot type	Length [m]	Cable	Fiber	Cable diameter	Colour
	A	B						
G-SET12	SC	XX	S-Standard	xxx.x	P9 pigtail 900 μm	A SMF G.652D	09 0.9 mm	12 multi-color
	SCA					I MMF OM2		Y ▨
	LC					K MMF OM3		
	LCA					L MMF OM4		
	FC							
	FCA							
	E2							
	E2A							
	ST							

⊞ Features

→ Comply with IEC, TIA/EIA requirements,
→ High quality and repeatability of the transmission parameters,
→ Connectors are constructed from high quality plastic, resistant to corrosion and high temperatures with flammability index UL94-V0 or the high quality metal resistant to corrosion,
→ High quality ceramic ferrules,
→ Low attenuation and high reflectance,
→ Wide range of available connectors and optical fibers.

■ Example

G-SET12-SCA-XX-S-002.0-P9-A-09-12 FIBRAIN Pigtail Gold, SET 12 pieces, SC APC connector, G.652D, 2m length, 0.9 mm tube in 12 colors

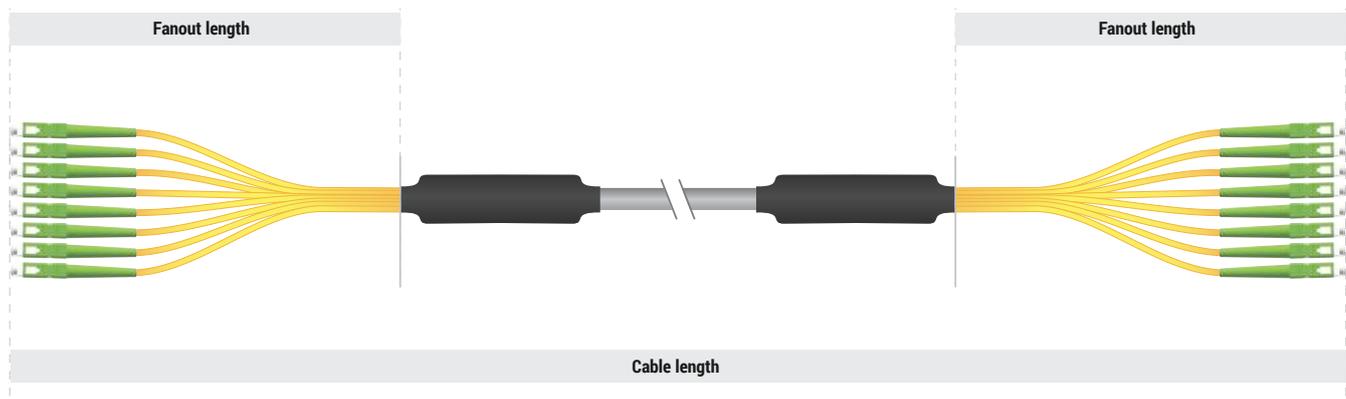| TECHNICAL SPECIFICATIONS			
Parameter	Connectors		
	SM PC	SM APC	MM PC
Insertion Loss IL$_{MAX}$ against MASTER Acc. IEC 61300-3-4	≤ 0.35 dB	≤ 0.35 dB	≤ 0.35 dB
Insertion Loss IL$_{TYP}$ against MASTER Acc. IEC 61300-3-4	≤ 0.28 dB	≤ 0.28 dB	≤ 0.25 dB
Return Loss Acc. IEC 61300-3-6	≥ 50 dB	≥ 60 dB	≥ 90 dB

TCF Easylink 1 multipatchcords

Description

→ Easylink 1 pre-connectorized multi-fiber cables are specifically designed to serve as general-purpose products. The solution provides termination of loose tube cables as well as other cable types. The fibers are inserted into 0.9mm tube or fanouts, strengthened by Kevlar fibers, with 1.8 mm or 2.8 mm (depending on a cable type). Therefore, the furcation point is protected by a heatshrink sleeve. Then, fibers are terminated with connectors in accordance with customer's needs and requirements.

→ In addition, from an economic point of view TCF cables provide cost-effective solutions, thus are popular in the structured cabling systems, where they are used as links between distribution points. It is a Plug and Play solution, which facilitates fast and easy installation, with no extra equipment, as in traditional installation with splices.

Mechanical and environmental characteristics

Parameter	Standard	
Max. tensile load	IEC 61753-2-1	80N-fanout 1.8 mm/2.8 mm 7N- 900 µm tube
Crush performance	EN 187101, IEC 60794-1-2-E3, no attenuation increase	100N
Installation temperature range	EN 187101, IEC 60794-1-2-F1, no attenuation increase	-10... +50 [°C]
Operation*	EN 187101, IEC 60794-1-2-F1, no attenuation increase	-30... +70 [°C]
Transport & Storage		-30... +70 [°C]
Max. Insertion Loss (per connector)	IEC 61300-3-4	≤ 0.3dB
Return Loss (RL)	IEC 61300-3-6	RL≥65 dB(APC); RL≥50 dB(SM UPC); RL≥30 dB(MM PC)

*Temperature range varies from the cable type.

Features

→ Furcation point is protected by plastic tube and a heatshrink sleeve

→ High quality

→ Easy and fast installation

→ Plug & Play solution

→ Common in structured cable systems

→ Wide range of fiber optic connectors

Technical specification

Parameter					
Max. outer diameter of cable divider [mm]	Ø 15	Ø 18	Ø 22*	Ø 24*	Ø 27*
Length of cable divider [mm]	55	65	65	70	80
Number of fibers in 0.9mm tubes	4-48	49-96**			
Number of fibers in 1.8 mm fanouts	4-16	17-32	33-48	49-60	61-96**
Number of fibers in 2.8mm fanouts	4-10	11-18	19-26	27-32	33-48**
Connector type	SC/SCA/E2/E2A/LC/LCA/FC/FCA/ST				

*Ø 22 - Ø 27 adapted to 1.8 - 2.8mm fanouts
** There is a possibility of performing pre-connectorized cables with more fibers after consulting with our sales department.

Fanout length		Fanout length

Cable length

FIBRAIN

TCF Easylink 1 multipatchcords

▮ Ordering syntax

TCF-AABBB-CCDDD-EEF-XXXX.X-GYYYH-IZZZJ

AA – Connectors qty (Side A)	4-96
BBB – Type of connector (Side A)	SC-SC/PC
	SCA
	E2
	E2A
	LC
	LCA
	FC
	FCA
	ST

Connectors qty (Side B)	4-96
BBB – Type of connector (Side B)	SC-SC/PC
	SCA
	E2
	E2A
	LC
	LCA
	FC
	FCA
	ST

EE – Cable type	01	EXO-C0 PE
	02	EXO-C0 LSZH
	03	EXO-CI PE
	04	EXO-CI LSZH
	05	BDC-C0 PE
	06	BDC-C0 LSZH
	07	BDC-CI PE
	08	BDC-CI LSZH
	24	BURRY DAC
	28	AERO DF 03
	35	FTTA DAC

F – Fibre type	A	SMF G.652D
	B	SMF G655
	C	SMF G656
	D	SMF G657A1
	E	SMF G657A2
	F	SMF G657B2
	G	SMF G657B3
	H	MMF OM1
	I	MMF OM2
	J	MMF OM2+
	K	MMF OM3
	L	MMF OM4

XXXX.X Cable length		xxxx.x
G – Stepping (Side A)	0 –	equal length
	1 –	single cascade
	2 –	double cascade
YYY – Fan-out length (Side A) [cm]		yyy
H – Fan-out diameter (Side A)	0 –	0.9 mm
	1 –	1.8 mm
	2 –	2.8 mm
I – Stepping (Side A)	0 –	equal length
	1 –	single cascade
	2 –	double cascade
ZZZ – Fan-out length (Side B) [cm]		zzz
J – Fan-out diameter (Side B)	0 –	0.9 mm
	1 –	1.8 mm
	2 –	2.8 mm

Maximal outputs length in a standard configuration: 200 cm, minimal: 10 cm; for other outputs length please contact with our sales department.

AVAILABLE CASCADES	
Singe cascade	Each furcation leg is shorter by 3 cm than a previous one
Double cascade	Pair of furcation legs is shorter by 3 cm than a previous one

▮ Example

TCF-12SCA-12SCA-01A-0100.0-01201-11200

PTF pre-connectorized cable (EXO CO PE), SM G.652D fibers, 100 m total length, pre-connectorized with 12xSC/APC connectors on both sides, Side A : equal length of all fan-out cables, fan-out length 120cm, diameter of each fan-out cable 1.8 mm, Side B: single cascade of fan-out, fan-out length 120 cm (of the longest cable), diameter of each fan-out cable 0.9 mm.

To order a non-standard option, please contact with our Sales Department.

PTF Easylink 2 multipatchcords

Description

→ Easylink 2 pre-connectorized multi-fiber cables are specifically designed to serve as general-purpose products. The solution provides termination of loose tube cables as well as other cable types. The fibers are inserted into 0.9mm tube or furcation, strengthened by Kevlar fibers, with 1.6mm or 2.8mm (depending on a cable type). Therefore, the furcation point is protected by a metal sleeve with a boot protecting from moving and bending. Then, fibers are terminated with connectors in accordance with customer's needs and requirements. Moreover, output legs are placed inside a reusable protection tube, which is fixed to a bushing and may be used as a pulling grip.

→ In addition, from an economic point of view PTF-Easylink2 cables provide cost-effective solutions, thus they are popular in the structured cabling systems, where they are used as links between distribution points. It is a Plug and Play solution, which facilitates fast and easy installation, with no extra equipment, as in traditional installation with splices.

Mechanical and environmental characteristics

Parameter	Standard	
Max. tensile load	IEC 61753-2-1	100N
Crush performance	EN 187101, IEC 60794-1-2-E3, no attenuation increase	1000N
Installation temperature range	EN 187101, IEC 60794-1-2-F1, no attenuation increase	-10... +50 [°C]
Operation*	EN 187101, IEC 60794-1-2-F1, no attenuation increase	-30... +70 [°C]
Transport & Storage		-30... +70 [°C]
Max. Insertion Loss (per connector)	IEC 61300-3-4	≤ 0.3dB
Return Loss (RL)	IEC 61300-3-6	RL≥65 dB(APC); RL≥50 dB(SM UPC); RL≥30 dB(MM PC)

*Temperature range varies from the cable type.

Features

→ Furcation point is protected by plastic tube and a heatshrink sleeve,

→ High quality,

→ Easy and fast installation,

→ Plug & Play solution,

→ Common in structured cable systems,

→ Wide range of fiber optic connectors.

Technical specification

Parameter		
Max. outer diameter of furcation point [mm]	Ø 18	Ø 21
Length of furcation point	90	100
Number of fibers in fanouts	1-12	1-24
Connector type	SC/SCA/E2/E2A/LC/LCA/FC/FCA/ST	

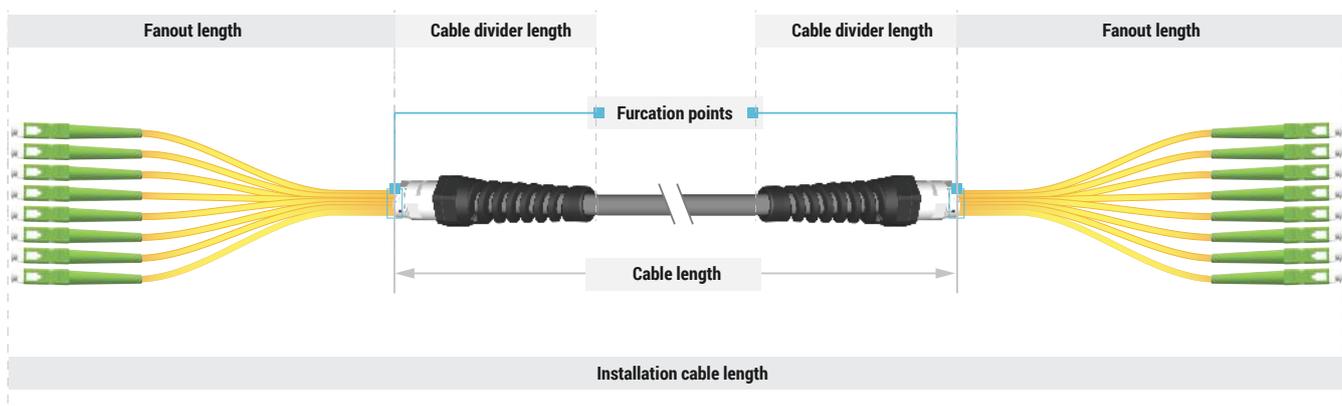*Ø 22 - Ø 27 adapted to 1.8 - 2.8mm fanouts
** There is a possibility of performing pre-connectorized cables with more fibers after consulting with our sales department.

FIBRAIN

PTF Easylink 2 multipatchcords

■ Ordering syntax

PTF-AABBB-CCDDD-EEF-XXXX.X-GYYYH-IZZZJ

AA – Connectors qty (Side A)	4-96
BBB – Type of connector (Side A)	SC-SC/PC
	SCA
	E2
	E2A
	LC
	LCA
	FC
	FCA
	ST
Connectors qty (Side B)	4-96
BBB – Type of connector (Side B)	SC-SC/PC
	SCA
	E2
	E2A
	LC
	LCA
	FC
	FCA
	ST
EE – Cable type	01	EXO-C0 PE
	02	EXO-C0 LSZH
	03	EXO-CI PE
	04	EXO-CI LSZH
	05	BDC-C0 PE
	06	BDC-C0 LSZH
	07	BDC-CI PE
	08	BDC-CI LSZH
	24	BURRY DAC
	28	AERO DF 03
	35	FTTA DAC
F – Fibre type	A	SMF G.652D
	B	SMF G655
	C	SMF G656
	D	SMF G657A1
	E	SMF G657A2
	F	SMF G657B2
	G	SMF G657B3
	H	MMF OM1
	I	MMF OM2
	J	MMF OM2+
	K	MMF OM3
	L	MMF OM4

XXXX.X Cable length		xxxx.x
G – Stepping (Side A)	0 –	equal length
	1 –	single cascade
	2 –	double cascade
YYY – Fan-out length (Side A) [cm]		yyy
H – Fan-out diameter (Side A)	0 –	0.9 mm
	1 –	1.8 mm
	2 –	2.8 mm
I – Stepping (Side A)	0 –	equal length
	1 –	single cascade
	2 –	double cascade
ZZZ – Fan-out length (Side B) [cm]		zzz
J – Fan-out diameter (Side B)	0 –	0.9 mm
	1 –	1.8 mm
	2 –	2.8 mm

Maximal outputs length in a standard configuration: 200 cm, minimal: 10 cm; for other outputs length please contact with our sales department.

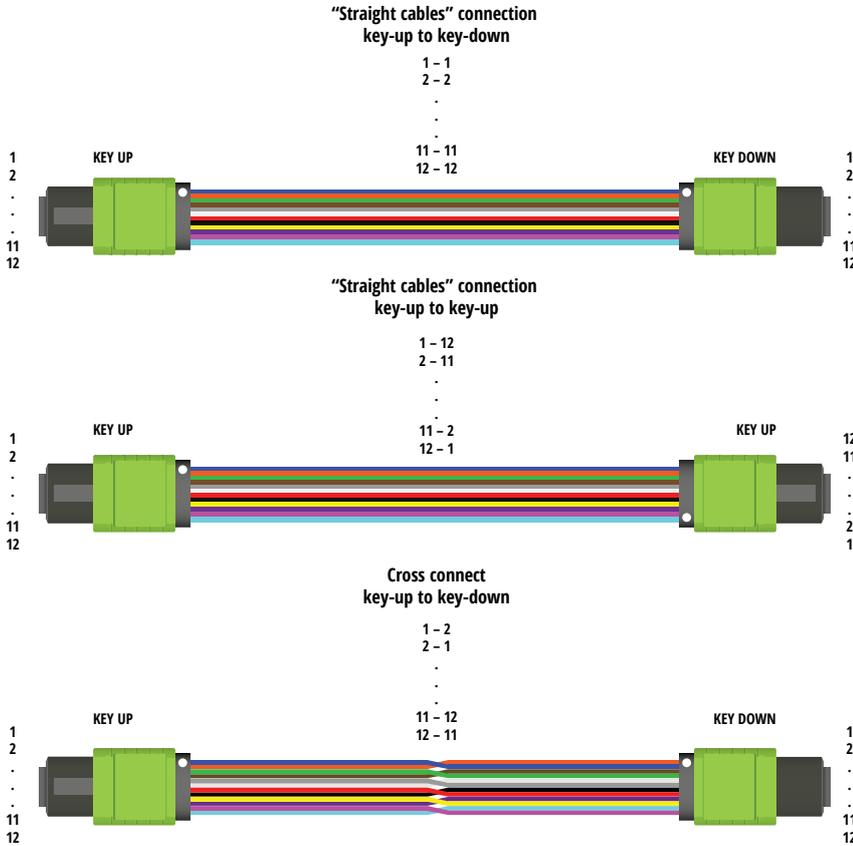| AVAILABLE CASCADES	
Singe cascade	Each furcation leg is shorter by 3 cm than a previous one
Double cascade	Pair of furcation legs is shorter by 3 cm than a previous one

■ Example

PTF-12SCA-12SCA-01A-0100.0-01201-11200

PTF pre-connectorized cable (EXO CO PE), SM G.652D fibers, 100 m total length, pre-connectorized with 12xSC/APC connectors on both sides, Side A : equal length of all fan-out cables, fan-out lenght 120cm, diameter of each fan-out cable 1.8 mm, Side B: single cascade of fan-out, fan-out length 120 cm (of the longest cable), diameter of each fan-out cable 0.9 mm.

To order a non-standard option, please contact with our Sales Department.

MTP® trunk/connecting cables

Patch Cords & Pigtails

Fiber identification and polarization classification:

"Straight cables" connection key-up to key-down

1 – 1
2 – 2
.
.
.
11 – 11
12 – 12

KEY UP   KEY DOWN

1
2
.
.
11
12

1
2
.
.
11
12

"Straight cables" connection key-up to key-up

1 – 12
2 – 11
.
.
.
11 – 2
12 – 1

KEY UP   KEY UP

1
2
.
.
11
12

12
11
.
.
2
1

Cross connect key-up to key-down

1 – 2
2 – 1
.
.
.
11 – 12
12 – 11

KEY UP   KEY DOWN

1
2
.
.
11
12

1
2
.
.
11
12

Description

→ Fiber optic patchcords terminated with MTP® connectors are specifically designed for Data Center system. MTP® connectors, using the MT ferrule, can increase the density of 4 to 72x compared to traditional, single-fiber optic connectors. MTP® patchcords and pigtails are specifically designed to be used in both single- and multimode transmission. Modern and repeatable production process, detailed quality control, interferometric as well as IL & RL parameters control measurement make FIBRAIN patchcords and pigtails reliable elements of tracks and fiber optic networks. Connecting elements terminated with MTP® connectors are popular and willingly used solution for Data Center cabling, backbone networks and local broadcast of bandwidth 40/100 Gb /s bandwidth.

Applications

→ Telecommunication networks,
→ Data Center SYSTEMS,
→ FTTx, FTTD, FTTB, FTTH networks

Features

→ In accordance with IEC 61754-7, TIA/EIA 568-C,
→ High quality and repeatability of transmission parameters,
→ Connectors made of high quality plastics,
→ MTP connectors compatible with MPO connectors,
→ Good value for money, the best price-quality,
→ High quality MT ferrule provides placing a lot of optical fibers in one connector.

Ordering information

Class	Fiber qty	Connector		Boot type	Cable diameter	Length [m]	Cable type	Fiber type	Polariza-tion
		A	B						
G-Gold	12-12	MTPA.F – MTP female APC	MTPA.F – MTP female APC	S - standard	R30 – round 3.0 mm	001.0	1 – DC PRIM	A – G652D	A
		MTPA.M – MTP male APC	MTPA.M – MTP male APC					D – G657A1	B
		MTP.F – MTP female	MTP.F – MTP female					E – G657A2	C
		MTP.M – MTP male	MTP.M – MTP male					H – OM1	
								I – OM2	
								K – OM3	
								L – OM4	

TECHNICAL SPECIFICATIONS		
Parameter	**MTP APC SM**	**MM PC**
Insertion Loss IL_{MAX} **against MASTER Acc. IEC 61300-3-4**	≤ 0.40 dB	≤ 0.40 dB
Insertion Loss IL_{TYP} **against MASTER Acc. IEC 61300-3-4**	≤ 0.20 dB	≤ 0.20 dB
Return Loss Acc. IEC 61300-3-6	≥ 65 dB	≥ 35 dB

FIBRAIN

MTP® fanouts direct split

▣ Description

→ FIBRAIN MTP® Fanouts of Direct Split type connect MTP® multi-fiber connectors with standard, single-fiber optic connectors. This solution is specifically designed to be used in singlemode and multimode transmission. Therefore, in our product portfolio, there is a wide range of fiber optic connectors. The side terminated with MTP® connectors includes male or female connectors- depending on customer's needs.

❖ Applications

→ Telecommunication networks,
→ Data Center SYSTEMS,
→ FTTx, FTTD, FTTB, FTTH networks

↥↧ Features

→ In accordance with IEC, TIA/EIA standards ,
→ High quality and repeatability of transmission parameters,
→ Connectors made of high quality plastics,
→ Good value for money, the best price-quality ratio,
→ High quality MT ferrule, provides placing a lot optical fibers in one connector.

■ Technical specification

Multi-fiber MTP connectors

Parameter	MTP APC SM	MM PC
Max. Insertion Loss IL_{MAX} Acc. IEC 61300-3-4	≤ 0.40 dB	≤ 0.40 dB
Typical Insertion Loss IL_{TYP} Acc. IEC 61300-3-4	≤ 0.20 dB	≤ 0.20 dB
Return Loss RL Acc. IEC 61300-3-6	≥ 65 dB	≥ 35 dB

Single-fiber standard optical connectors

Parameter (connectors)	SM PC	SM APC	MM
Max. Insertion Loss IL_{MAX} Acc. IEC 61300-3-4	≤ 0.17 dB	≤ 0.20 dB	≤ 0.20 dB
Typical Insertion Loss IL_{TYP} Acc. IEC 61300-3-4	≤ 0.15 dB	≤ 0.16 dB	≤ 0.12 dB
Return Loss RL Acc. IEC 61300-3-6	≥ 55 dB	≥ 65 dB	≥ 35 dB

■ Fiber identification – fiber color (outer transparent tube)

1-12	1	2	3	4	5	6	7	8	9	10	11	12
Code	■	■	■	■	■	□	■	■	■	■	■	■
Color	blue	orange	green	brown	grey	white	red	black	yellow	violet	pink	aqua

■ Ordering information

Class	Fiber qty	Connector		Boot type	Cable diameter	Length [m]	Cable type	Fiber
		A	B					
G-Gold	12-12	MTPA.F – MTP female APC	SC	S - standard	09 - 900µm	001.0	DS – Direct Split	A – G652D
		MTPA.M – MTP male APC	SCA					D – G657A1
		MTP.F – MTP female	LC					E – G657A2
		MTP.M – MTP male	LCA					H – OM1
			FC					I – OM2
			FCA					K – OM3
			E2					L – OM4
			E2A					

FIBER OPTIC PATCH PANELS

Platform for fiber optic and copper solutions

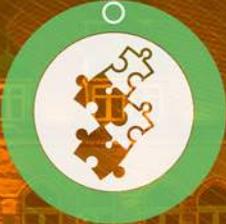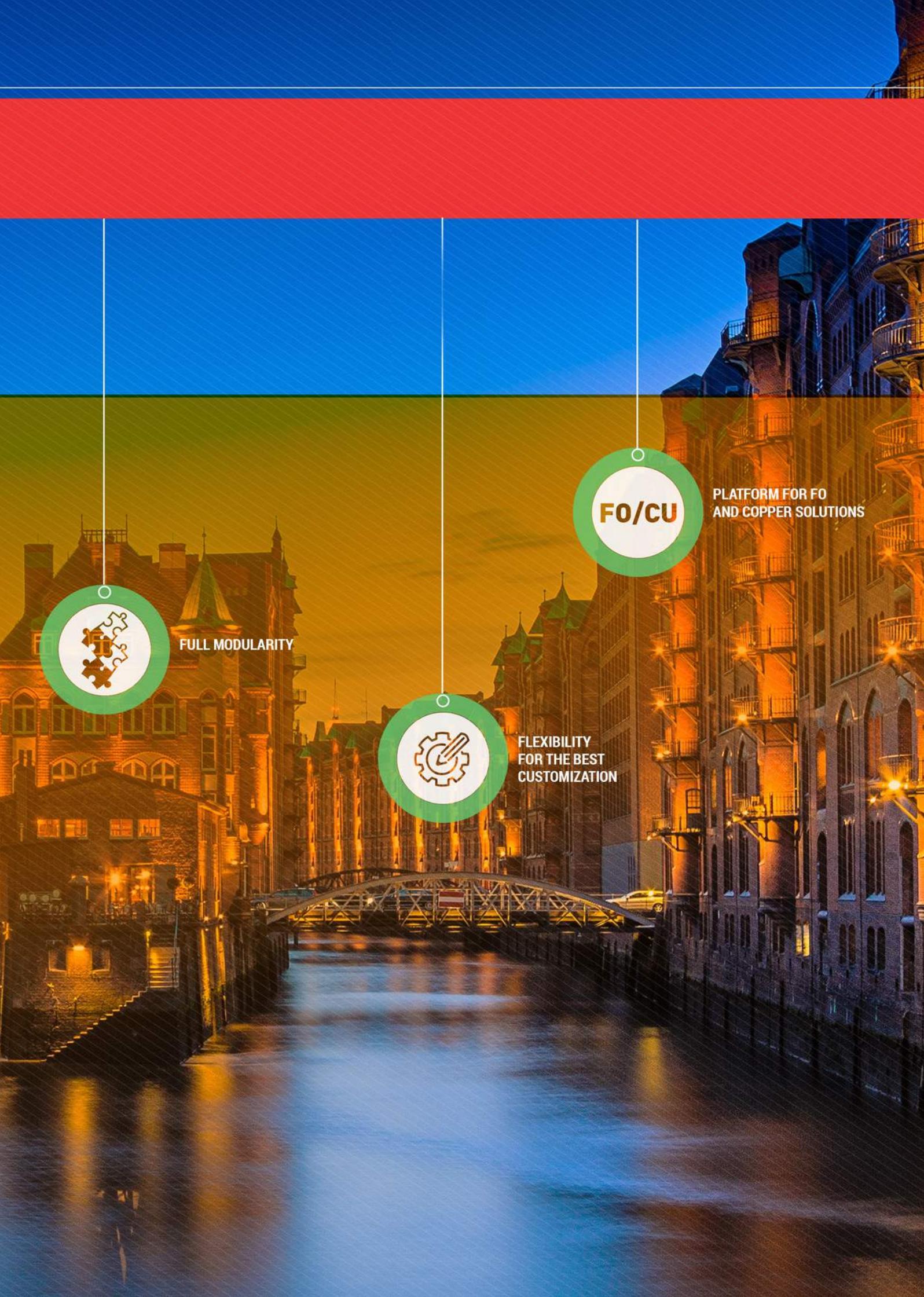**SOLID & RELIABLE CONSTRUCTION**

HIGH DENSITY APPLICATION

HIGHEST DENSITY UP TO 96 FIBERS PER 1U

1U 3U

1U-3U VERSIONS

FULL MODULARITY

FLEXIBILITY FOR THE BEST CUSTOMIZATION

FO/CU

PLATFORM FOR FO AND COPPER SOLUTIONS

PST-A1 Equipped Patch Panel

Fiber Optic Patch Panels

TECHNICAL SPECIFICATIONS		
	PST-A1-01	**PST-A1-02**
Height	1U (44 mm)	2U (88 mm)
Width	19" (483 mm)	19" (483 mm)
Depth [mm]	258	258
Max. cassette capacity	3	6
Casing material	Powder painted steel	Powder painted steel

Description

→ FIBRAIN telescopic fiber optic patch panel PST-A1 are specifically designed and tailored to meet our customers' needs. Main distribution areas where these panels can be applied are patching shelves and splicing shelves. Removable front panels facilitate installation of all standards of adapters, including hybrid combinations. Patch panels are made of grey RAL7035 powder-coated metal steel and are available in 1U and 2U options. Telescopic patch panels are available in black RAL7005 too. Panels on telescopic rails provide a full opening to mount cables easily. Cable entries are adjusted to mount PG13.5 - PG16 cable glands and preterminated multifiber cales (FIBRAIN multipatchcords solution). The interior design with handles facilitate proper management of fibers. Therefore, adjustable side handles provide the possibility to move the panel inside the cabinets. Our product portfolio offer includes a large variety of front plates, thus almost each standard of adapters can be easily mounted.

Applications

→ Fiber optics interchange points
→ Distribution networks
→ Serwer room

Features

→ Available in 1U and 2U
→ Full opening on telescopic rails
→ Cable entries in a back part of a panel
→ Internal perforation to manage tubes or fibers
→ Faceplates for mounting adapters without screws
→ Optional front shelf to facilitate the management of patchcords
→ Adjustable side handles
→ Front plates can be optionally locked with a key
→ High capacity
→ Holder for the strength element of cable

FIBRAIN

PST-A1 Equipped Patch Panel

Fiber Optic Patch Panels

◼ Ordering syntax

PST-A1-AABBC-DDEFG-HHIJJKLL-MN-OOOP-RS

AA – Height		
	01 – 1U	grey RAL7035
	02 – 2U	grey RAL7035
	B1 – 1U	black RAL 9005
	B2 – 2U	black RAL 9005

BB – Front plate type			
	01 – FB2030	12x ST,FC	
	02 – FB2031	12x SC SX, LC DX, E2000 SX	
	03 – FB2031B	12x SC SX, LC DX, E2000 SX, black	
	04 – FB2032	12x SC DX, LC 4X	
	05 – FB2032B	12x SC DX, LC 4X, black	Panels 1U
	06 – FB2033	24x ST, FC	
	07 – FB2034	24x SC SX,LC DX, E2000 SX	
	08 – FB2034B	24x SC SX,LC DX, E2000 SX, black	
	09 – FB2035	24x SC DX, LC 4X	
	10 – FB2035B	24x SC DX, LC 4X, black	
	11 – FB2043	48x ST, FC	
	12 – FB2044	48x SC SX, LC DX, E2000 SX	
	13 – FB2045	48x SC DX, LC 4X	Panels 2U
	14 – FB2046	72x SC SX, LC DX, E2000 SX	
	15 – FB2046B	72x SC SX, LC DX, E2000 SX, black	
	16 – FB2047	72x ST, FC	

C – Lock		
	K –	plate with lock
	0 –	plate without lock

DD – Adapters qty	6,12,24,36,48,72

E – Adapter class	
	0 – none
	1 – Standard One-Piece (or standard E2000, FC, ST)
	2 – Premium Super One-Piece
	3 – Premium One-Piece with internal shutter
	4 – Premium Super One-Piece with internal shutter
	5 – Premium (@FC, ST)

F – Adapter type	
	0 – none
	1 – SC
	2 – SCA
	3 – E2000
	4 – E2000 APC
	5 – LC
	6 – LCA
	7 – FC
	8 – FCA
	9 – ST

G – Transmission	
	1 – SM
	2 – MM (beige @SC/LC, black @E2000)
	3 – MM OM3 (aqua @SC/LC)
	4 – MM OM4 (violet @SC/LC)

HH – Pigtails qty	6,12,24,36,48,72,96

I – Fiber type		
	A –	G.652D
	B –	G.655
	C –	G.656
	D –	G.657A1
	E –	G.657A2
	F –	G.657B2
	G –	G.657B3
	H –	MM OM1
	I –	MM OM2
	K –	MM OM3
	L –	MM OM4

JJ – Connector type		
	01 –	SC
	02 –	SCA
	03 –	LC
	04 –	LCA
	05 –	FC
	06 –	FCA
	07 –	E2
	08 –	E2A
	09 –	ST

K – Pigtail grade		
	S –	Silver
	G –	Gold
	T –	Titanium

LL – Color identification		
	01 –	for pigtails with yellow 0.9 mm buffer
	02 –	for pigtails with orange 0.9 mm buffer
	03 –	T TELECOM (acc. to IEC60304)
	04 –	T1 TELECOM (acc. to 60304/tab. 3 & ZN-11/TPSA-005-02)
	05 –	T2 TELECOM (acc. to EIA 598A)
	06 –	D DATACOM (acc. to DIN VDE 0888 & IEC 60304)
	07 –	D1 DATACOM (acc. to IEC 60304, TIA/EIA 598-A, TIA/EIA 598-C)

M – Splice trays number	1-6	
N – Splice trays type	1 –	SCM-A-12H
	2 –	SCM-A-24H

OOO – Sleeve qty	6,12,24,36,48,72	
P – Sleeve type	1 –	45 mm

R – Cable gland qty	1-4	
S – Cable gland type	1 –	PG13.5
	2 –	PG16

◼ Example

PST-A1-01020-12121-12D02G01-11-0121-11
FIBRAIN telescopic fiber optic patch panel, 1U, equipped with front plate FB2031 (12x SC SX), Standard SM One-Piece SC APC adapters, 12 SM pigtails Gold Grade SC APC, 2 m long, yellow jacket, one 12F splice tray with 12F splice magazine, front plate without the lock mechanism, equipped with PG13,5 cable gland, grey color of body

To order a non-standard option, please contact with our Sales Department.

PST-C1 Telescopic Fiber Optic Patch Panel

TECHNICAL SPECIFICATIONS

Height	1U (44 mm)
Width	19" (483 mm)
Depth [mm]	256
Max. cassette capacity	2
Casing material	Powder painted steel
Front flap	Anodized aluminium

🗎 Description

→ FIBRAIN telescopic patch panel offers excellent flexibility during mounting and installation. Mainly used for distribution – patching or splicing shelves. Constructed of high quality material ensuring very easy installation and maintenance.

→ Removable front panels facilitates installation of all kinds of adapters, including the creation of hybrid combinations.

→ Patch panels are made of powder-coated steel as standard in black and available in 1U option. The movable front flap is made of anodized aluminium which protects pigtails against accidental damage. Panels mounted on telescopic rails provide a full extension for easy cable mounting. Cable entry adjusted to mount PG16 cable glands and terminated FIBRAIN multipatchcords solution. The interior design with handles with handles facilitate the proper management of fiber. Therefore, adjustable side handles provide the possibility to move the panel inside the cabinets.

❖ Applications

→ Fiber optics interchange points
→ Distribution networks
→ Serwer room

⇅ Features

→ 1U
→ Full extension on telescopic rails
→ Cable entry shifted back in a patch panel
→ Handles to manage tubes or fibers
→ Removable faceplates for mounting adapters without screws
→ Front shelf for patchcords management
→ Adjustable side handles
→ High capacity
→ Moveable front flap, which is a patch cord protection from accidental damage

PST-C1 Telescopic Fiber Optic Patch Panel

■ Ordering syntax

PST-C1-AA-BCC-DDEFG-HHIJJKK-LM-NNO-PR

AA – Height	01 – 1U	
B – Panels qty	1 –	1x12 ports front panel
	2 –	2x12 ports front panel
CC – Panel type	01 –	SC SX/LC DX
	02 –	FC/ST
DD – Adapters	6,12,24,36,48,72	
E – Adapter class	1 –	Standard One-Piece (or standard E2000, FC, ST)
	2 –	Premium Super One-Piece
	3 –	Premium One-Piece with internal shutter
	4 –	Premium Super One-Piece with internal shutter
	5 –	Premium (@FC, ST)
F – Adapter type	1 –	SC
	2 –	SCA
	3 –	E2000
	4 –	E2000 APC
	5 –	LC
	6 –	LCA
	7 –	FC
	8 –	FCA
	9 –	ST
G – Transmission	1 –	SM
	2 –	MM (beige @SC/LC, black @E2000)
	3 –	MM OM3 (aqua @SC/LC)
	4 –	MM OM4 (violet @SC/LC)

HH – Pigtails qty	6,12,24,36,48	
I – Fiber type	A –	G.652D
	B –	G.655
	C –	G.656
	D –	G.657A1
	E –	G.657A2
	F –	G.657B2
	G –	G.657B3
	H –	MM OM1
	I –	MM OM2
	K –	MM OM3
	L –	MM OM4
JJ – Connector type	01 –	SC
	02 –	SCA
	03 –	LC
	04 –	LCA
	05 –	FC
	06 –	FCA
	07 –	E2
	08 –	E2A
	09 –	ST
KK – Color identification	01 –	for pigtails with yellow 0.9 mm buffer
	02 –	for pigtails with orange 0.9 mm buffer
	03 –	T TELECOM (acc. to IEC60304)
	04 –	T1 TELECOM (acc. to 60304/tab. 3 & ZN-11/TPSA-005-02)
	05 –	T2 TELECOM (acc. to EIA 598A)
	06 –	D DATACOM (acc. to DIN VDE 0888 & IEC 60304)
	07 –	D1 DATACOM (acc. to IEC 60304, TIA/EIA 598-A, TIA/EIA 598-C
L – Splice trays number	1-6	
M – Splice trays type	1 –	SCM-A-12H
	2 –	SCM-A-24H
NN – Heat shrink protection qty	6,12,24,36,48,72	
O – Heat shrink protection type	1 –	45 mm
P – Cable gland qty	1-4	
R – Cable gland type	1 –	PG13.5
	2 –	PG16

■ Example

PST-C1-01-101-12221-12A0201-11-112-12

FIBRAIN fiber optic patch panel, 1U, equipped with 1 front plate for 12x SC SX, Premium Super One-Piece SC APC adapters, 12 pigtails with SC APC connectors in Gold Grade with 2 m length in yellow buffer, G.652D fiber, 1xsplice tray with 12F splice magazine, equipped with 12 heat shrink protections (45mm), 1 PG16 cable gland.

To order a non-standard option, please contact with our Sales Department.
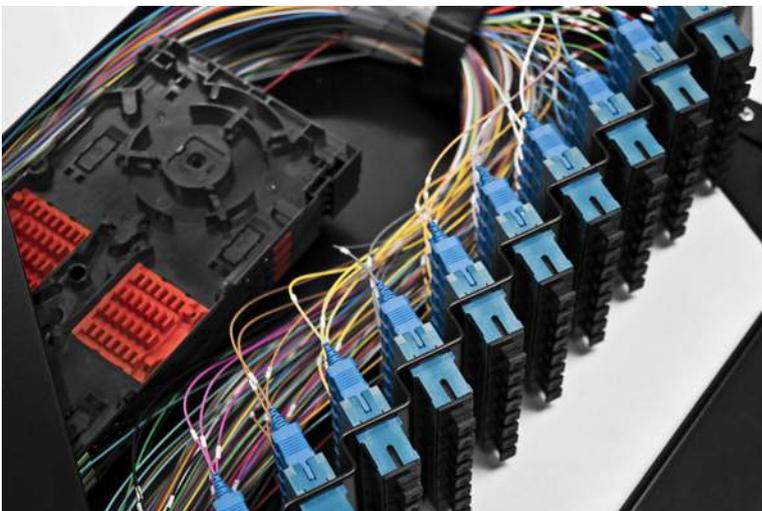
PSR-A0 Pivot Swivel Panel

Description

→ Rotational patch panel PSR-A0 type, in 1U or 2U version, is basic mounting block for fiber management system , in patch panel holder. Available in version routing on the left or right side, so it offers well accessibility to trays and patching cords on both sides. It minimizes and protect patch cords cables movement inside patch panels.

→ Patch panel PSR-A0 offers trays patch cords in SC simplex standard for 48 fields in 1U version or 96 fields in 2U, available installation into 2 or 4 splice trays for 24 solders . Tray patch cords allow mount connector for 25 degree angle from the diagonal plane.

Applications

→ Fiber optics interchanges points
→ Distribution network
→ Server room

TECHNICAL SPECIFICATIONS		
	PSR-A0-01	**PSR-A0-02**
Height	1U	2U
Maximal fiber qty	48	96
Maximal splice qty	48	96
Maximal splice cassette qty	2	4
Maximal line cable diameter [mm]	12	
Depth [mm]	315	
Operating temperature	-20°C – +50°C	
Casing material	Powder painted steel	

Features

→ Metal casing- anticorrosive protected
→ Cable bushing in back parts of line cables
→ Cable bushing in the front parts of patchcords
→ Patch panel installation on a back or front rack profile
→ Capacity up to
→ 48 fibers in 1U
→ 96 fibers in 2U
→ Cable bushing in patch panel are equipped in brush guards
→ Panel available rotating to left or right side of patch panel (depends on version)
→ Offers separated canal for patch cord cables
→ Possibilities termination line and local cables on aside or back of patch panel
→ Hinged flap of patch panel, protects patch cords against damages

Ordering information

Code	Description
PSR-A0-01-R-00-00000-0000000-000	FIBRAIN 1U rotational patch panel, right side A0 version, non-equipped; grey (RAL7035)
PSR-A0-02-R-00-00000-0000000-000	FIBRAIN 2U rotational patch panel, right side A0 version, non-equipped; grey (RAL7035)
PSR-A0-B1-R-00-00000-0000000-000	FIBRAIN 1U rotational patch panel, right side A0 version, non-equipped; black (RAL 9005)
PSR-A0-B2-R-00-00000-0000000-000	FIBRAIN fiber optic patch panel, 1U, equipped with 1 front plate for 12x SC SX, Premium Super

FIBRAIN

PSR-A0 Pivot Swivel Panel

■ Ordering syntax

PSR-A0-XX-A-BC-DDEFG-HHIJKLL-MMO

XX – Height variant	01	1U (grey RAL 7035)
	02	2U (grey RAL 7035)
	B1	1U (black RAL 9005)
	B2	2U (black RAL 9005)

A – Shelf opening direction	R	right
	L	left

B – Cassette qty	0-4	

C – Cassette type	1	SCM-A-24H

DD – Adapters qty:	**1-48** (1U)	Unused ports are blinded
	1-96 (2U)	

E – Adapter class:	1	Standard One-Piece
	2	Premium One-Piece with internal shutter
	3	Premium Super One-Piece
	4	Premium Super One-Piece with internal shutter

F – Adapter type:	1	SC
	2	SCA
	3	E2
	4	E2A

G – Transmission	1	SM
	2	MM (beige @SC, black @E2000)
	3	MM OM3 (aqua @SC)
	4	MM OM4 (violet @SC)

HH – Pigtails qty	0-96	

I – Fiber type	A	G.652D
	B	G.655
	C	G.656
	D	G.657A1
	E	G.657A2
	F	G.657B2
	G	G.657B3
	H	MM OM1
	I	MM OM2
	K	MM OM3
	L	MM OM4

J – Connector type	1	SC
	2	SCA
	3	E2
	4	E2A

K – Pigtails grade	S	Silver
	G	Gold
	T	Titanium

LL – Color identification	01	for pigtails with yellow 0.9 mm buffer
	02	for pigtails with orange 0.9 mm buffer
	03	T TELECOM (acc. to IEC60304)
	04	T1 TELECOM (acc. to 60304/tab. 3 & ZN-11/TPSA-005-02)
	05	T2 TELECOM (acc. to EIA 598A)
	06	D DATACOM (acc. to DIN VDE 0888 & IEC 60304)
	07	D1 DATACOM (acc. to IEC 60304, TIA/EIA 598-A, TIA/EIA 598-C)

MM – Heat shrink protections qty	0-96	

O – Heat shrink protections type	1	45 mm

■ Example

PSR-A0-02-R-41-96311-96A1G01-961

FIBRAIN rotational patch panel with side access, right, equipped with 4 splice cassettes for 24 splice protectors, 96 Gold grade pitails terminated with SC PC connectors, 2m length on G.652D fiber, 96 Premium Super One-Piece SC PC adapters and 96 splice protectors 45 mm.

To order a non-standard option, please contact with our Sales Department.

PS-19-1-3PS Modular Fiber Optic Patch Panel, 1U, chassis

Fiber Optic Patch Panels

🗐 Description

→ FIBRAIN 1U patch panels accommodate up to 36/72 fibers within space of 1U. Smart design allows easy and time saving installation and operation. Chassis is equipped with 3 slots enabling installation of 3 FO cassettes up to 12/24 fibers each. Special openings at the rear part of the chassis allows for FO cable fixation by strain relief

→ Wide range of FO cassettes equipped with various kind of MM and SM adapters, pigtails or preterminated MTP/MPO solution (Direct Split)

❖ Applications

→ Telecommunication server rooms
→ FTTH networks
→ Metro networks
→ Structural cabling systems
→ Data Center systems

PS-19-3-3PS CHASSIS	
Height	3U (133.35 mm)
Width [mm]	19″ (484.6 mm)
Depth [mm]	255
Frame material	aluminium
PS-01-XX MODULE	
Length [mm]	220
Width [mm]	129
Depth [mm]	35
PS-M1-XX MODULE	
Length [mm]	220
Width [mm]	129
Depth [mm]	35

┼┼┼ Features

→ Capacity up to 36/72 fibers in 1U
→ Lightweight and strong aluminium construction
→ Modules ready to be mounted
→ Facilitated mounting of fiber optic cable's tube
→ Clear management of fiber optic
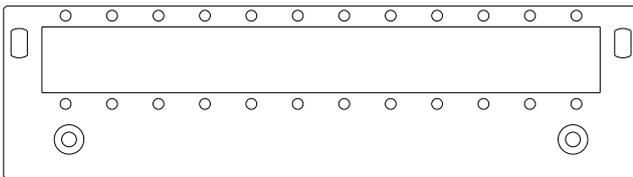
◼ Ordering information

Code	Description
PS-19-1-3PS	1U Patch panel chassis with 3 slots for FO cassettes PS-01, PS-M1 types

◼ Accessories

See page 140

FIBRAIN®

PS-19-3-0.PRO Modular Fiber Optic Patch Panel, 3U, chassis

Fiber Optic Patch Panels
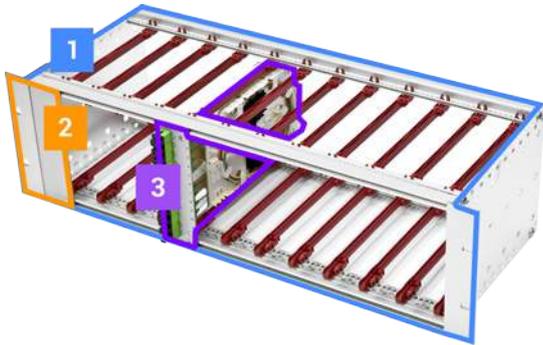
1. **Chassis (frame)**
2. **Blind faceplate for unused ports**
3. **Matching cassettes for 3U patch panel**

📄 Description

→ FIBRAIN 3U modular patch panels are solution facilitating termination up to 144/288 fibers in signal distribution points as well in server rooms. Smart design allows easy and time-saving way of installation and mounting of fiber optic cables. Main elements of this solution is frame of modular patch panel (chassis) and equipped 3U modular patch panel. Complete solution also offers patchcords management shelf, tubes and patchcords reserve shelf as well as fiber optic cables tubes separators.

→ Additionally 3U modular patch panels can be provide with single modules equipped with MTP®/MPO Direct Split, which is perfect solution for Data Center apllication. Direct split allows to connect MTP multi-fiber connectors with standard, single-fiber optic connectors.

PS-19-3-0.PRO CHASSIS	
Height	3U (133.35 mm)
Width [mm]	436 (19")
Depth [mm]	160
Frame material	aluminium
Sliders material	ABS
PS-01-XX MODULE	
Length [mm]	220
Width [mm]	129
Depth [mm]	35
PS-M1-XX MODULE	
Length [mm]	220
Width [mm]	129
Depth [mm]	35

❖ Applications

→ Telecommunication server rooms
→ FTTH networks
→ Metro networks
→ Structural cabling systems
→ Data Center systems

Features

→ Capacity up to 144/288 fibers in 3U
→ Lightweight and strong aluminium construction
→ Modules ready to be mounted
→ Facilitated mounting of fiber optic cable's tube
→ Clear management of fiber optic

■ Ordering information

Product	Reference number
Chassis – patch panel frame	PS-19-3-0.PRO
Matching cassettes	PS-01-xx & PS-M1-xx
Blind faceplate for unused ports	PS-00-P
Patchcords reserve shelf	PS-19-1-PAT (grey RAL 7035) PS-19-1-PAT-B (black RAL 9005
Tubes reserve shelf	PS-19-1-TUB
Patchcords management shelf	PS-ORG-1-PP
Fiber optic cables tube separator	RT-01-xx, see page 140

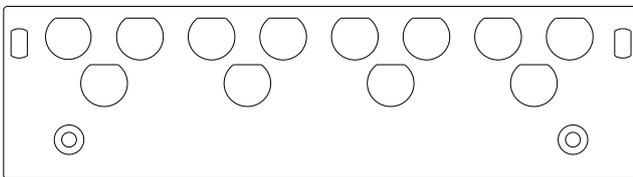# PS-01 FO cassettes for modular patch panels 1U/3U, splice

DIMENSIONS	
Length [mm]	220
Width [mm]	129
Height [mm]	35

📄 Description

→ FIBRAIN PS-01 FO cassettes fits to FIBRAIN 1U/3U platforms (PS-19-1 & PS-19-e patch panels). They enables termination of max. 12/24 fibers. Cassette is equipped with a splice tray, splice magazines and heat shrink protections to store pigtails and protect fiber optic connections. It is factory equipped with adapters and pigtails of wide range of connectors type including SC/E2000/LC/FC/ST.

❖ Applications
→ Nodal points of fiber optic networks
→ Distribution points of fiber optic networks
→ Server rooms

Features
→ Capacity up to 12/24 splices
→ Modules ready to be mounted
→ Fiber optic splice cassette made of ABS
→ Facilitated identification and work due to 12 colours of pigtails
→ Possibility to install fusion and mechanical splices in a fiber optic cassette
→ Wide range of fiber optic adapters available

■ Front plates variants

12xSC SX / E2000™ SX 6x LC DX (+6 blind covers)

12xFC SX / ST SX

6 x LC 4X (LC quad)

3 x LC 4X (LC quad)

■ Ordering information

Code	Description
PS-19-1-3PS	1U Patch panel chassis with 3 slots for FO cassettes PS-01, PS-M1 types

PS-01 FO cassettes for modular patch panels 1U/3U, splice

■ Ordering syntax

PS-01-A-B-CCDEEF-GGHII-JJK

A – Fiber type	A	SMF 652D
	B	SMF 655
	D	SMF 657A1
	E	SMF 657A2
	F	SMF 657A3
	G	SMF 657B3
	H	MM OM1
	I	MM OM2
	K	MM OM3
	L	MM OM4
B – Cassette type	1	SCM-A-12H
	2	**FB7401PP** (in case of use FB7401PP module size: 211x129x35.2 (Length x Width x Depth))
	3	SCM-A-24H
CC – Adapters qty		**3-12** (single)
D – Adapter class	1	Standard One-Piece (@E2000, FC, ST)
	1T	Standard One-Piece with transparent cap (only for SC APC)
	2	Premium One-Piece with internal shutter
	3	Premium Super-One Piece with internal shutter
EE – Adapter type	01	SC SX
	02	SCA SX
	03	E2 SX
	04	E2A SX
	05	LC 4X
	06	LCA 4X
	07	FC SX
	08	FCA SX
	09	ST SX

F – Transmission	1	SM
	2	MM (beige @SC/LC, black @E2000)
	3	MM OM3 (aqua @SC/LC)
	4	MM OM4 (violet @SC/LC)
GG – Pigtails qty		**12-24**
H – Pigtail grade	S	Silver
	G	Gold
	T	Titanium
II – Color identification	01	for pigtails with yellow 0.9 mm buffer
	02	for pigtails with orange 0.9 mm buffer
	03	T TELECOM (acc. to IEC60304)
	04	T1 TELECOM (acc. to 60304/tab. 3 & ZN-11/TPSA-005-02)
	05	T2 TELECOM (acc. to EIA 598A)
	06	D DATACOM (acc. to DIN VDE 0888 & IEC 60304)
	07	D1 DATACOM (acc. to IEC 60304, TIA/EIA 598-A, TIA/EIA 598-C
JJ – Splice protector qty		**12-24**
K – Sleeve type		**1-45 mm**

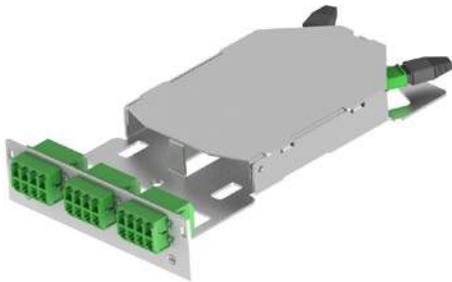## ■ Example

PS-01-A-1-121021-12G01-121   FIBRAIN 3U patch panel module with pigtail reserve cassette, single, equipped with 12 SC APC Standard One-Piece adapters, 12 SC APC Gold Grade pigtails length: 2 m, 1 splice cassette for up to 12 sleeves and 12 splice protectors 45 mm

To order a non-standard option, please contact with our Sales Department.

PS-M1 FO cassettes for modular patch panels 1U/3U, MPO/MTP

Fiber Optic Patch Panels

DIMENSIONS	
Length [mm]	220
Width [mm]	129
Height [mm]	35

▤ Description

→ FIBRAIN PS-01 FO cassettes fits to FIBRAIN 1U/3U platforms (PS-19-1 & PS-19-e patch panels). They enables termination of max. 12/24 fibers. Cassette is equipped with a splice tray, splice magazines and heat shrink protections to store pigtails and protect fiber optic connections. It is factory equipped with adapters and pigtails of wide range of connectors type including SC/E2000/LC/FC/ST.

❖ Applications

→ Nodal points of fiber optic networks
→ Distribution points of fiber optic networks
→ Server rooms

⊞ Features

→ Capacity up to 12/24 splices
→ Plug & Play solution
→ Fiber optic splice cassette made of ABS
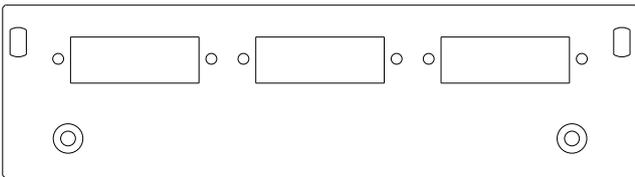→ Wide range of fiber optic adapters available
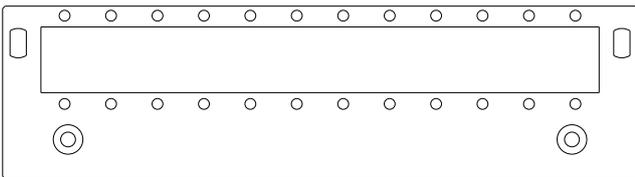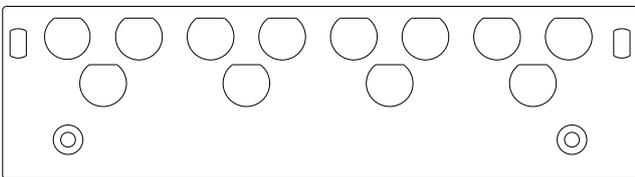
■ Front plates variants

12xSC SX / E2000™ SX 6x LC DX (+6 blind covers)

12xFC SX / ST SX

6 x LC 4X (LC quad)

3 x LC 4X (LC quad)

FIBRAIN®

PS-M1 FO cassettes for modular patch panels 1U/3U, MPO/MTP

Fiber Optic Patch Panels
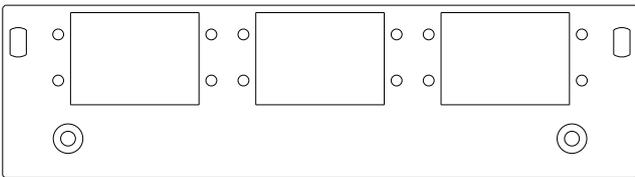
■ Ordering syntax

PS-M1-A-B-CDEFGG-IIJKKL-MN

A – Fiber type		
	A	SMF 652D
	B	SMF 655
	D	SMF 657A1
	E	SMF 657A2
	F	SMF 657A3
	G	SMF 657B3
	H	MM OM1
	I	MM OM2
	K	MM OM3
	L	MM OM4
B – Front panel type	1	12x SC SX/12x E2000 SX/6x LC DX (+ 6 blind covers between LC DX adapters)
	2	12x ST/FC
	3	6x LC 4X (6x LC QUAD)
	4	3x LC 4X (3x LC QUAD)
C – Direct Split qty	1	1 x DS in the module
	2	2 x DS in the module
D – Direct Split type	1	1x12
	2	1x24
E – Connectors Grade	G	Gold MTP®/MPO & Gold for single-fiber connectors
	T	Titanium MTP®/MPO & Titanium for single-fiber connectors
F – Connector type MTP®/MPO	1	MTP female APC
	2	MTP male APC
	3	MTP female MM
	4	MTP male MM

GG – Single-fiber connectors type		
	01	SC
	02	SC APC
	03	LC
	04	LC APC
	05	FC
	06	FC APC
	07	E2000
	08	E2000 APC
II – Adapters qty (front)	**3-12**	
J – Adapter class (front)	1	Standard One-Piece (@E2000, FC, ST too)
	1T	Standard One-Piece with transparent cap (only for SC APC)
	2	Premium One-Piece with internal shutter
	3	Premium Super One-Piece with internal shutter
KK – Adapter type (front)	01	SC SX
	02	SCA SX
	03	E2 SX
	04	E2A SX
	05	LC 4X
	06	LCA 4X
	07	FC SX
	08	FCA SX
	09	ST SX
L – Transmission	1	SM
	2	MM (beige @SC/LC, black @E2000)
	3	MM OM3 (aqua @SC/LC)
	4	MM OM4 (violet @SC/LC)
M – MTP®/MPO adapters qty	**1-2**	
N – MTP®/MPO adapters type	1	Type A
	2	Type B

■ Example

PS-M1-A-5-11G104-031051-11   FIBRAIN 3U patch panel module equipped with Direct Split, terminated with female MTP® connector and LC APC connectors on G.652D fiber type, 3 LC APC Standard One-Piece adapters and 1 MTP® Type A adapter

To order a non-standard option, please contact with our Sales Department.

SD modular patch panel, empty

Fiber Optic Patch Panels

Description

→ SD patch panel is the most flexible platform for serve either copper or FO connection. It can be equipped up to 24 RJ45 ports of Cat5-Cat6A or up to 96 fibers terminated with wide range of connectors LC/E2000/SC. Patch panel has 8 empty slots which can be equipped with copper holder (6x RJ45) or fully equipped FO cassettes spliced or for pre-terminated connectors including MPO/MTP connectors.

Applications

→ Nodal points of fiber optic networks
→ Distribution points of fiber optic networks
→ Server rooms

TECHNICAL SPECIFICATIONS	
Case material	Powder paint coated steel
Colour	Front: chrome-plated steel
	Closure: Black RAL 9005
Temperature range	-40°C to +70°C
Max. copper holders	4
Max. FO cassettes	8
Scope of supply	Frame, empty
Weight [kg]	2.1

Features

→ Modular configuration system:
  → Possibility for FO/Cu assembling,
  → Different cable entry adapters for different cables fixed in the rear
  → Patch cables manager from front (optional)
→ Capacity: up to 8 FO/Cu modules
→ Max ports density:
  → 24 port/1U for copper
  → 96 FO fibers (for LCd)
→ Full range of connectors:
  → RJ45 – Cat.5u/s, Cat.6u/s. Cat.6Au/s
  → LCd, LCq, E2000, SC, SCd. – MM/SM

■ Ordering information

Code	Description
XB100.2SD	SD modular patch panel, empty

■ Accessories

See page 140

FIBRAIN

FO cassettes for SD patch panel

Fiber Optic Patch Panels

Description

→ SD cassettes are compact format FO cassettes which fit to modular SD platform panel of FIBRAIN. SD cassettes are available in wide range of variants. It exists in MM or SM versions, spliced or pre-terminated. Front can be equipped with variety of adapters (LCd, SC, E2000). SD cassettes also can be ordered for MPO/MTP connections.

Applications

→ Nodal points of fiber optic networks
→ Distribution points of fiber optic networks
→ Server rooms

TECHNICAL SPECIFICATIONS	
Case material	Powder paint coated steel
Colour	Front: chrome-plated steel
	Closure: Black RAL 9005
Temperature range	-40°C to +70°C
Max. copper holders	4
Max. FO cassettes	8
Scope of supply	Frame, empty
Weight [kg]	2.1

Features

→ Fully assembled
→ Wide range of front (LC/SD/E2000) and rear adapters (
→ Singlemode or multimode versions
→ Color coding acc. to ISO 11801
→ Spliced or pre-terminated solution
→ Up to 8 cassettes in 1U
→ Secure cable/pigtail guides for internal connections

■ Ordering information

Code	Description
XB100.2SD	SD modular patch panel, empty

FO cassettes for SD patch panel

■ Ordering syntax

XB100.2SD.MF0-A-BCDE-FFGHII-J

A – Cassette front plate assembling	1	12x SC SX/LC DX
	2	6x SC SX/LC DX
	3	6x SC DX/LC 4X
	4	3x SC DX/LC 4X
B – Cassette rear side type	1	Empty (cassette equipped only with front adapters)
	2	Splice (cassette equipped with pigtails and front adapters)
	3	1x MPO/MTP 12F male (factory fully pre-connectorized solution)
	4	1x MPO/MTP 12F female (factory fully pre-connectorized solution)
	5	1x MPO/MTP 24F male (factory fully pre-connectorized solution)
	6	1x MPO/MTP 24F female (factory fully pre-connectorized solution)
	7	2x MPO/MTP 12F male (factory fully pre-connectorized solution)
	8	2x MPO/MTP 12F female (factory fully pre-connectorized solution)
C – Front adapter class	1	Standard One-Piece
	2	Premium Super One-Piece
	3	Premium One-Piece with internal shutter
	4	Premium Super One-Piece with internal shutter
D – Front adapter type	1	PC
	2	APC
E – Transmission	1	SM
	2	MM OM1
	3	MM OM2
	4	MM OM3
	5	MM OM4

FF – Pigtails qty		6, 12, 24
G – Fiber type	A	G.652D
	B	G.655
	C	G.656
	D	G.657A1
	E	G.657A2
	F	G.657B2
	G	G.657B3
	H	MM OM1
	I	MM OM2
	J	MM OM3
	K	MM OM4
H – Pigtail grade	S	G.652D
	G	G.655
	T	G.656
II – Colour identification	01	G.652D
	02	G.655
	03	G.656
	04	G.657A1
	05	G.657A2
	06	G.657B2
	07	G.657B2
J – Splice heat shrink protection type	1	45 mm

■ Example

XB100.2SD.MF0-A-BCDE-FFGHII-J

FIBRAIN rotational patch panel with side access, right, equipped with 4 splice cassettes for 24 splice protectors, 96 Gold grade pitails terminated with SC PC connectors, 2m length on G.652D fiber, 96 Premium Super One-Piece SC PC adapters and 96 splice protectors 45 mm.

To order a non-standard option, please contact with our Sales Department.

SD patch panel accessories

■ Blind cover 0.5U

Blind cover for front of SD patch panel

DIMENSIONS	
Length [mm]	220
Width [mm]	129
Height [mm]	35

ORDERING INFORMATION	
XB100.2SD.PPZ	Blind cover 0.5U

■ Blind cover 1U

Blind cover for rear of SD patch panel

DIMENSIONS	
Length [mm]	220
Width [mm]	129
Height [mm]	35

ORDERING INFORMATION	
XB100.2SD.PTZ	Blind cover 1U

■ Cable gland holder for SD patch panel

Cable gland holder for SD Patch panel. Holder can be installed to rear side of panel. It enables to fix 2 cable glands of Φ xx

DIMENSIONS	
Length [mm]	220
Width [mm]	129
Height [mm]	35

ORDERING INFORMATION	
XB100.2SD.PTD	Cable gland holder

■ Cable holder for SD panel

Cable holder enables fixation of cables/tubes which enter SD patch panel. Occupies one rear slot.

DIMENSIONS	
Length [mm]	220
Width [mm]	129
Height [mm]	35

ORDERING INFORMATION	
XB100.2SD.PTT	Blind cover 1U

■ Cable holder for SD panel, double

Cable holder intended for fixation of multitube cables. Enables easy installation and distribution tubes within the space of SD patch panel

DIMENSIONS	
Length [mm]	220
Width [mm]	129
Height [mm]	35

ORDERING INFORMATION	
XB100.2SD.PTT	Blind cover 1U

■ 19" cable organizer

To arrange cables in SD patch panel. Equipped with a flip cover with a sticker that facilitates markings

DIMENSIONS	
Depth [mm]	69.5
Width [mm]	482
Height [mm]	44 (1U)

ORDERING INFORMATION	
XB100.2SD.ORG	19" cable organizer

19" patch panel accessories

■ Tubes reserve shelf

TECHNICAL SPECIFICATION	
Height [mm]	44 mm (1U)
Width [mm]	483 (19")
Depth [mm]	258
Casing material	Powder painted steel

ORDERING INFORMATION	
PS-19-1-TUB	FIBRAIN tubes reserve shelf

Description

→ FIBRAIN tubes reserve shelf offers simple and useful way of gathering and storage of fiber optic cable's tube. The shelf is equipped with telescopic rails, which provide a full opening to mount cables easily. Shelf's interior is equipped with a series of ribbing and perforation to provide easier management of fiber optic cable's tube.

❖ Applications

→ FTTH systems
→ Last mile distribution points
→ Last mile connection points

Features & benefits

→ Full opening on telescopic rails
→ Easy access to fiber optic cable's tube gathered
→ Faster installation at construction side
→ Shelf's interior facilitating installation and management

■ Patchcords reserve shelf

TECHNICAL SPECIFICATION	
Height [mm]	44 mm (1U)
Width [mm]	483 (19")
Depth [mm]	258
Casing material	Powder painted steel

ORDERING INFORMATION	
PS-19-1-PAT	FIBRAIN tubes reserve shelf

Description

→ FIBRAIN tubes reserve shelf offers simple and useful way of gathering and storage of fiber optic cable's tube. The shelf is equipped with telescopic rails, which provide a full opening to mount cables easily. Shelf's interior is equipped with a series of ribbing and perforation to provide easier management of fiber optic cable's tube.

❖ Applications

→ FTTH systems
→ Last mile distribution points
→ Last mile connection points

Features & benefits

→ Full opening on telescopic rails
→ Easy access to fiber optic cable's tube gathered
→ Faster installation at construction side
→ Shelf's interior facilitating installation and management

FIBRAIN®

19" patch panel accessories

■ Horizontal fiber cable organizer

TECHNICAL SPECIFICATION	
Height [mm]	44 mm (1U)
Width [mm]	483 (19")
Depth [mm]	65
Casing material	Anodized aluminium + ABS

ORDERING INFORMATION	
PS-ORG-1-PP	FIBRAIN horizontal fiber optic cable organizer

Description

→ FIBRAIN horizontal fiber optic cable organizer is a key elements which facilitate patchcords' management, which are placed between fiber optic equipment in distribution cabinets. This organizer ensures clean and transparent room. Therefore, the organizer is made from anodized aluminium and easily detachable handles made from ABS.

Applications

→ Key points in fiber optic networks
→ Distribution points of fiber optic networks
→ Server rooms

Features & benefits

→ Height 1U
→ Width 19"
→ Light and made of anodized aluminium housing
→ Easy patchcord's organization
→ Detachable handles facilitating cables placement

■ Patchcord management for PST-A1 telescopic patch panel

TECHNICAL SPECIFICATION	
Height [mm]	35
Width [mm]	423 (19")
Depth [mm]	77
Casing material	Powder coated steel

ORDERING INFORMATION	
FB2030G.V2P	FIBRAIN patchcord management for PST-A1 telescopic patch panel

Description

→ FIBRAIN patchcord management for PST-A1 telescopic patch panel offers simple and useful way of gathering and storage patchcords overlength. FB2030G.V2P is mounted on front plates of PST-A1 patch panel (there is no need to add extra 1U height). Front plate with possibility to mount patchcors using velcro tape.

Applications

→ FTTH systems
→ Last mile distribution points
→ Last mile connection points

Features & benefits

→ Possibility of mounting on front plates of PST patch panel
→ Easy access to patchcords gathered
→ Faster installation at construction side
→ Front plate facilitating installation and management

19" patch panel accessories

19" Horizontal cable organizer
with easily-opened plastic handles

TECHNICAL SPECIFICATION	
Height [mm]	44 mm (1U)
Width [mm]	483 (19")
Depth [mm]	69
Casing material	Powder painted steel

ORDERING INFORMATION	
ORG-VP-1U-B-V2	FIBRAIN horizontal cable organizer 19" with red front covers

Clip

4-6 holders

Horizontal organizer

Features
→ 19" mounitng
→ Powder painted steel
→ Equipped with 4 easily opened-handles
→ Possibility of installing 2 extra handles
→ Clear manufacturer marking
→ Possibility of using together with vertical organizers
→ Guarantee optimum cable arrangement

19" Vertical cable organizer
with easily-opened plastic handles

TECHNICAL SPECIFICATION	
Height [mm]	44 mm (1U)
Width [mm]	483 (19")
Depth [mm]	69
Casing material	Powder painted steel

ORDERING INFORMATION	
ORG-HP-1U-B-V2	FIBRAIN vertical cable organizer 19" with red front cover

Clip

4 holder positions

Vertical organizer

Features
→ 1U mounitng
→ Powder painted steel
→ Equipped with 1 easily opened-handle
→ Possibility of using holder in 4 positions
→ Clear manufacturer marking
→ Guarantee optimum cable arrangement

Velcro tape
16x200 10 pcs

FIBRAIN velcro tapes	
ORG-CT-16200-BK black	ORG-CT-16200-W white

Features
→ Material: velour
→ Guarantee optimum cable arrangement
→ Pack of 10 pcs
→ Width: 16 mm - protected against excessive tightening
→ Resistant to multiple opening and closing
→ Colours facilitate cable identification

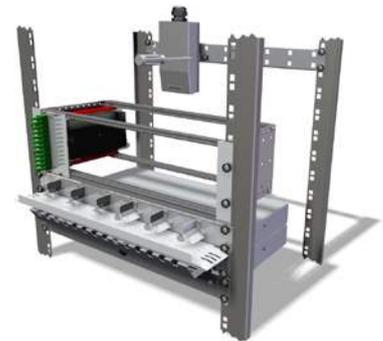**FIBRAIN**

Cable tube divider RT-01-xx

🗒 Description

→ FIBRAIN cable tube divider is specifically designed to provide branchings of fiber optic cables and guarantee cables' tube protection, which run from RT-01-xx cable tube divider mounted on a Distribution Frame or a Tube Overlength Drawer in signal distribution points, as well in server rooms.

→ Therefore, well-thought-out design provides easy and cost-effective method of mounting and cable installation.

❖ Applications

→ Nodal points of fiber optic networks
→ Distribution points of fiber optic networks
→ Server rooms and cable manufacturing centers

⊞ Features

→ Metal housing, protected against corrosion
→ Capacity up to 288 fibers
→ Prepared for installation
→ Simple and clear management of fiber optic tubes

TECHNICAL SPECIFICATIONS			
	RT-01-0310	RT-01-1205	RT-01-2405
Max. number of protective pipes	3	12	24
Max. diameter of protective pipe [mm]	10	5	5
Max. diameter of fiber optic cable [mm]	14	14	18
Max. number of cable tube divider installed on Distribution Frame	8	8	4
Dimensions of a cable tube divider (w)x(h)x(l) [mm]	68 (with mounting) x 46 x 123 (no cable gland)	68 (with mounting) x 46 x 123 (no cable gland)	122 (with mounting) x 53 x 162.5 (no cable gland)
Operating temperature	-20°C – +50°C	-20°C – +50°C	-20°C – +50°C
Type of housing material	Powder painted steel	Powder painted steel	Powder painted steel

◼ Additional accessories

DISTRIBUTION FRAME		
Distribution Frame for mounting cable tube divider	RT-L8-01-19	

PROTECTIVITE PIPES	
Protectivite pipe 10 mm	OR3F-MYDSN-10-10
Protectivite pipe 5 mm	OFPT-5.0-3.1-PP-WHT

A view of cable tube divider installed on distribution frame

◼ Ordering information

Code	Description
RT-01-0310	FIBRAIN cable tube divider equipped for mounting 3 protective pipes 10 mm
RT-01-1205	FIBRAIN cable tube divider equipped for mounting 12 protective pipes 5 mm
RT-01-2405	FIBRAIN cable tube divider equipped for mounting 24 protective pipes 5 mm

Heat-shrink splice protection sleeves

TECHNICAL SPECIFICATIONS		
	RT-01-1205	RT-01-2405
Length of splice protector after shrink L [mm]	60	45
Length of wire reinforcement L_d [mm]	57	41
Diameter of splice protector after shrink D [mm]	2	2
Diameter of wire reinforcement D_d [mm]	0.75	0.75
Diameter of the through hole before shrink d [mm]	1.2	1.2

■ Ordering information

Code	Description
FB7441	Heat-shrink splice protection sleeves 60 mm
FB7442	Heat-shrink splice protection sleeves 45 mm

■ Also available

Code	Description
FB7445	ANT crimp splice prtector

🗎 Description

→ FIBRAIN FB7442 heat-shrink splice protection sleeves provide high protection during splicing process. They can be characterized by small inner diameter (diameter after shrink D=2.0mm), optimal length and fast installation. Therefore, the heat-shrink sleeve is strengthened with a steel pin of 0.75 mm diameter and the same coefficient of heat expansion as optical fiber. It prevents from longitudinal stresses, which cause an increase of insertion and reflection loss. FIBRAIN heat-shrink sleeves do not cause any loss of optical power as they protect against mechanical damages, pollution and weather conditions. Therefore, the outer material guarantees sustainability and resistance to stretching and puncture.

❖ Applications

→ Telecommunications systems
→ FTTH networks
→ Access and structured cable networks
→ FTTx networks
→ PON networks
→ CATV networks

↕↕ Features

→ Small outer diameter
→ Strengthened by a pin of Dd = 0.75 mm diameter
→ In accordance with UL224, MIL-I-23053, GR-1380-CORE, ZN-96 TPSA-006 norms
→ Transparent sleeve
→ Max. shrink time: 40 s
→ In accordance with RoHS Directive

FIBRAIN

FIBER OPTIC
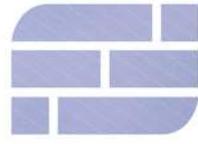
TERMINATION

TERMINATION OUTLETS
Wide range of FO termination outlets

EASY TO INSTALL
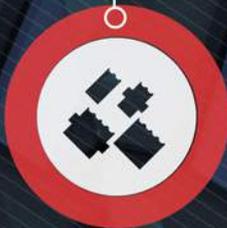
FULL CUSTOMIZATION

LARGE & VISIBLE LABEL FIELDS

SPLICE AND BREAKOUT VERSIONS

OUTLETS

for breakout and splice applications

WIDE RANGE OF SUPPORTED ADAPTER TYPES

GUARANTEED BENDING RADIUS

SM/MM VERSIONS

VFTO-E1 Customer Outlet

📄 Description

→ VFTO-E1 customer outlet is specifically designed for FTTH networks as a termination point of an optical duct for max. 4 optical fibers in various home and business networks. The outlet facilitates placing and connecting cables with 2 x SC or 4 x LC pigtails with the use of splices in a cassette. Connectors can be of PC and APC standard with inner and outer shutters. In case of mounting adapters, flangeless adapters should be used.

❖ Applications

→ Distribution network
→ FTTH networks with EAC cables
→ Last mile connections
→ Termination of FTTH networks

Features

→ Compact and innovative design
→ Indoor applications
→ Wide range of fiber optic adapters
→ Description field for adapters on a top part of an outlet with a transparent flip cover
→ Available in a customer option (*lower labour costs)
→ Possibility to personalize the outlet(logo)
→ Possibility to mount on a DIN rail
→ Adapter facilitates the mounting on a wall

TECHNICAL SPECIFICATIONS	
Material:	ABS UL94-V0
Dimensions (w)x(h)x(d) [mm]:	85x85x28
Temperature:	-20ºC – +50ºC
Protection level:	indoor applications IP40/IK05
Mounting:	indoor, wall, rail (DIN standard) standard)
Cassette capacity:	4 fusion, 2 mechanical or 4 ANT splices
Fiber type:	15 mm bending radius, compatible with A1, A2, A3, B2, B3 standards
Length of extra fiber:	900 µm – 100 cm fiber in an outlet 250 µm – 200 cm fiber in an outlet
Entry ports:	1 entry port in each part of the outlet (1 port on a side) entries from outer part of an outlet (mounting on a flush mount box) all entry ports are defined by removing a blind adapter max. diameter of cables: 4mm

■ Ordering information

Code	Description
VFTO-E1-BL-0	FIBRAIN customer outlet in VFTO-E1 option, no logo, not equipped, no mounting adapter on a DIN rail

LOGO		SUPPORT FOR VFTO-E1 OUTLET	
Code	**Description**	**Code**	**Description**
BL	no logo	**0**	none
FB	FIBRAIN logo	**1**	VFTO-E1-SUP-1
XX	Operator's logo (details concerning printing and number of colours need to be determined individually)	**2**	VFTO-E1-DIN-1

FIBRAIN®

25x50 angular faceplates

British style system
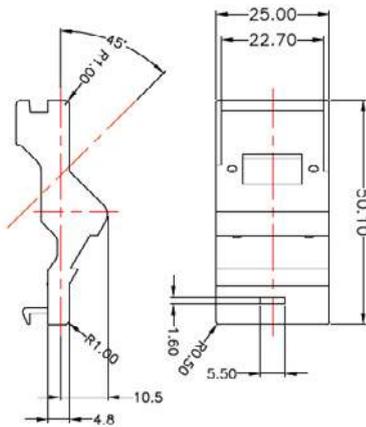
XB-50SC45I-01   XB-50ST45I-01

Description
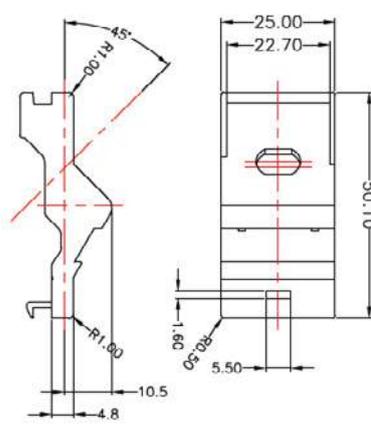→ 25 x 50 mm angular faceplate for SC and ST fiber optic adapters instalation.

Applications
→ Distribution network
→ FTTH networks with EAC cables
→ Last mile connections
→ Termination of FTTH networks

Features
→ Compatibility with XB-50FPB-0002/4 and XB-50FPF-0002/4 frames
→ Labelling field
→ Description field and identification icons
→ Material: white ABS UL 94V-0

Technical specifications

XB-50SC45I-01   XB-50ST45I-01

Ordering information

Code	Description
XB-50SC45I-01	FIBRAIN 25 x 50 mm angular adapter, 1 SC, interchangeable labelling field
XB-50ST45I-01	FIBRAIN 25 x 50 mm angular adapter, 1 ST, interchangeable labelling field

FIBER OPTIC TEST

Necessary fiber optic accessories to be used by

**FO CLEANERS FOR WIDE
RANGE OF CONNECTORS**

**HIGH PERFORMANCE
ACCESSORIES FOR PROPER
TESTING OF FO LINKS**

ACCESSORIES

every Installer

REFERENCE TEST CORDS
FOR MM AND SM

REFERENCE PATCH CORDS
FOR ACCURATE TESTING

Reference master patchcords

Fiber Optic Test Accessories

TECHNICAL SPECIFICATIONS

Parameter	SM PC Connectors	SM APC Connectors
Insertion Loss MAX Acc. IEC 61300-3-34	≤ 0.10 dB	≤ 0.10 dB
Insertion Loss 97% Acc. IEC 61300-3-34	≤ 0.07 dB	≤ 0.07 dB
Insertion Loss MEAN Acc. IEC 61300-3-34	≤ 0.05 dB	≤ 0.05 dB
Return Loss Acc. IEC 61300-3-6	≥ 55 dB	≥ 65 dB

MASTER CONNECTOR END FACE GEOMETRY

Parameter	SM PC Connectors	SM APC Connectors
Concentricity	≤ 0.30 µm	≤ 0.30 µm
Bore anglet	≤ 0.20 degree	≤ 0.20 degree
Apex Offset (AO)	≤ 30 µm	≤ 30 µm
Radius of Curvature (ROC)	10 ≤ ROC ≤ 20 mm @ SC / 7 ≤ ROC ≤ 25 mm @ LC	7 ≤ ROC ≤ 12 mm
Fiber Height (FH)	-30.0 ≤ FH ≤ +30.0 nm	-30.0 ≤ FH ≤ +30.0 nm
Angle (AN)	-	7.7 ≤ AN ≤8.3 degree

Applications

→ Measurements concerning telecommunication networks
→ Testing optical devices
→ Measuring equipment
→ CWDM networks
→ Local area network (LAN)
→ FTTx, FTTD, FTTB, FTTH networks
→ CATV solutions

Features

→ Comply with IEC, TIA/EIA requirements,
→ High quality and repeatability of the transmission parameters,
→ High quality ceramic ferrules with tightly controlled concentricity and bore angle,
→ Very low IL value, ILTYP ≤ 0.05 dB,
→ Connectors are constructed from high quality plastic, resistant to corrosion and high temperatures with UL94-V0 flammability index.

Ordering information

ORDERING SYNTAX

Series	Connector A Class	Connector A Type	Connector B Class	Connector B Type	Length [m]	Cable	Fiber	Diameter	Color
MP	M Master	SC	M Master*	SC	001.0	SX patchcord simplex	A SMF G.652D	18 1.8mm	Y
		SCA	G Gold	SCA			D G657A1		
		LC		LC					
		LCA		LCA					
		FC		FC					
		FCA		FCA					
				E2					
				E2A					
				ST					
				MU					
				DIN					

Example

MP-MSCA-MSCA-002.0-SX-A-18-Y FIBRAIN Master Class Patchcord, with SC APC Master class Connectors at both side, simplex, 2m length, G.652D, cable diameter 1.8mm, yellow coat.

FIBRAIN

OSC – OTDR Starter Cube Launch Fiber

TECHNICAL SPECIFICATIONS	
Parameter	ABS UL94-V0
Dimensions (w)x(h)	85x85x28
ILMAX @ 1310 nm (SM fiber)	-20ºC – +50ºC
ILMAX @ 1550 nm (SM fiber)	indoor applications IP40/IK05
ILMAX @ 850 nm (MM fiber)	indoor, wall, rail (DIN standard) standard)
ILMAX @ 1300 nm (MM fiber)	-20ºC – +50ºC
SM Connector Insertion Loss (IEC 61300-3-4)	indoor applications IP40/IK05
MM Connector Insertion Loss (IEC 61300-3-4)	-20ºC – +50ºC
Return Loss (IEC 61300-3-6)	indoor applications IP40/IK05
Operating temperature	4 fusion, 2 mechanical or 4 ANT splices

Standard fiber lengths

MM Fibers	SM Fibers
100 m	100 m
300 m	300 m
	500 m
	1000 m

Ordering information

ORDERING SYNTAX				
Series	Fiber type	Fanout	Connector type		Length [m]
			Input	Output	
S-Silver	A G.652D	1 - 1.8mm harsh	1 - E2	1 - E2	0100
	B SMF G655		2 - E2A	2 - E2A	
	D SMFG657A1		3 - FC	3 - FC	
	E SMF G657A2		4 - FCA	4 - FCA	
	H MMF OM1		5 - LC	5 - LC	
	MMF OM2		6 - LCA	6 - LCA	
	K MMF OM3		7 - SC	7 - SC	
	L MMF OM4		8 - SCA	8 - SCA	
			9 - ST	9 - ST	

*Standard colours of external tube for 1.6-2.8mm cables, other colours can be ordered by a customer on request. Colours in the table concern 0.9mm tube.

Example

OSC-A-88-0500 FIBRAIN OSC launch fiber, G.652D fiber, 1.8 mm reinforced harsh tube , SC APC connectors, length 500m

Description

→ FIBRAIN OSC - OTDR Starter Cube - facilitate reflectometric tests with the use of OTDR (Optical Time Domain Reflectometer). The launch fiber eliminates dead zone in reflectometer and guarantees secure measurement. FIBRAIN OSC OTDR Starter Cube has several advantages that make measurements fast and easy to perform. The housing is equipped with a magnet – OSC can be easily mounted on a rack and with shoulder strap – OSC can be easy to transport or moving. Launch fiber is terminated with master class connectors, available in a wide range of connector types. Compact housing can store up to 1000 m of fiber, available in SM or MM type.

Applications

→ SM and MM network's measurement
→ Simulation of loss, length, delayed time and system's reflectanse

Features

→ Compact housing and small weight
→ Connector polishing type colour code for clear identification
→ Fiber colour code for easy identification
→ Input and output fanout made of reinforced harsh tube with crush resistance 1000N
→ Magnet mounting allows for mounting OSC to the rack
→ Master class connector for accurate and reliable measurement
→ Shoulder strap for easy measurement and transport
→ Anti-vibes protection

Cleaner cassette
FIBRAIN PRO-Cleaner

Description

→ The main advantage of cleaner cassette FIBRAIN PRO- Cleaners is their universal character of applications- as they can be used for different types of fiber optic connectors, regardless of the diameter of the ferrule. Reel-type cleaners are equipped with a tape with a sliding mechanism, so worn out tape has no contact with connectors that we are going to clean. Therefore, the fillers inside the reel-type cleaners can be easily replaced, which also reduces costs.

Applications

→ Installation works in fiber optic networks
→ Maintenance works in fiber optic networks
→ Measuring works in fiber optic networks

Features

→ Remove impurities from endface of fiber optic ferrules
→ Clean various types of connectors
→ Sliding mechanism protects from contact with worn out tape
→ Option of replaceable fillers
→ High efficiency
→ Do not scratch surfaces

TECHNICAL SPECIFICATIONS				
Reel-type cleaner	Connector	No. of cleanings	Dimensions	Photo
PC-02-UNV-500	SC/FC/ST/ E2000/LC/MU	500+	130x85x33 mm	
PC-02-UNV-500.R	SC/FC/ST/ E2000/LC/MU	500+	Ø47x20 mm	
PC-02-UNV-700	SC/FC/ST/ E2000/LC/MU	700+	125x56x28 mm	
PC-02-UNV-700.R	SC/FC/ST/ E2000/LC/MU	700+	114x53x25	

Ordering information

Code	Description
PC-02-UNV-500	FIBRAIN cleaner cassette PRO-Cleaner for fiber optic connectors, universal character of applications, 500+ cleanings
PC-02-UNV-500.R	FIBRAIN filler for cleaner cassette PC-02-UNV-500 PRO-Cleaner for fiber optic connectors, 500+ cleanings
PC-02-UNV-700	FIBRAIN cleaner cassette PRO-Cleaner for fiber optic connectors, universal character of applications, 700+ cleanings
PC-02-UNV-700.R	FIBRAIN filler for cleaner cassette PC-02-UNV-700 PRO-Cleaner for fiber optic adapters, 700+ cleanings

FIBRAIN®

One-click FIBRAIN PRO-Cleaner

Fiber Optic Test Accessories

TECHNICAL SPECIFICATIONS

One-click cleaner	Connector	No. of cleanings	Dimensions	Photo
PC-01-150-800	LC/MU	800+	200x25x25 mm	
PC-01-250-800	SC/FC/ST/ E2000	800+	200x25x25 mm	
PC-01-150M-800	LC/MU	800+	110x30x18 mm	
PC-01-250M-800	SC/FC/ST/ E2000	800+	110x30x18 mm	
PC-01-MPO-500	MPO/MTP®	500+	225x66x15 mm	
PC-01-150M-800	LC/MU	800+	110x30x18 mm	

📄 Description

→ FIBRAIN one-click PRO-Cleaners ensure a very simple, fast and effective way to remove dust and other impurities from the ferrule endface. The series includes cleaning tools adapted to all types of fiber optic connectors - with 2.5 mm ferrules (SC / FC / ST / E2000 with SJ PC or APC), 1.25 mm (LC / MU with SJ PC or APC) and multi-fiber MPO / MTP® connectors. Automatic "one-click" connectors ensure cleaning without the need of unplugging adapters from patch panels. They are available in various options and sizes.

❖ Applications

→ Installation works in fiber optic networks
→ Maintenance works in fiber optic networks
→ Measuring works in fiber optic networks

Features

→ Remove impurities from endface of fiber optic ferrules
→ Available for connectors with ferrule of 2.5 mm, 1.25 mm and MPO/MTP®
→ Provide cleaning of connectors that are plugged in patch panels, without the need of unplugging
→ The cap for direct cleaning of connectors, which are not plugged in the adapter
→ Available mini options that enable cleaning in hard to reach places
→ High efficiency
→ Do not scratch surfaces

■ Ordering information

Code	Description
PC-01-150-800	FIBRAIN one-click PRO-Cleaner for fiber optic connectors 1.25 mm (LC/MU), 800+ cleanings
PC-01-150M-800	FIBRAIN one-click PRO-Cleaner for fiber optic connectors 1.25 mm, mini housing, 800+ cleanings
PC-01-250-800	FIBRAIN one-click PRO-Cleaner for fiber optic connectors 2.5 mm, 800+ cleanings
PC-01-250M-800	FIBRAIN one-click PRO-Cleaner for fiber optic connectors 2.5 mm, mini housing, 800+ cleanings
PC-01-MPO-500	FIBRAIN one-click PRO-Cleaner for fiber optic connectors MPO/MTP®, 500+ cleanings
PC-01-MPO-700	FIBRAIN one-click PRO-Cleaner for fiber optic connectors MPO/MTP®, 700+ cleanings

Adapters cleaning sticks FIBRAIN PRO-Cleaner

Fiber Optic Test Accessories
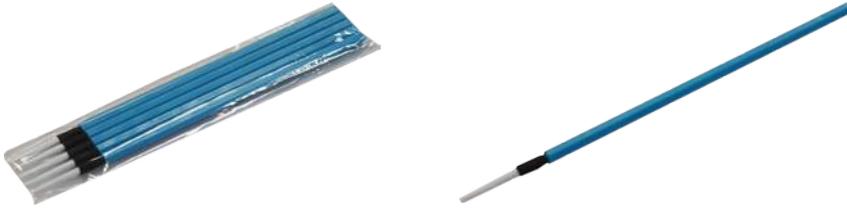
📄 Description

→ FIBRAIN dust-free sticks for cleaning fiber optic adapters and in difficult to reach spots. Available in two sizes: for adapters with centering sleeve of 1.25 mm (LC / MU) and of 2.5 mm (SC / FC / ST / E2000). Maintaning clean centering sleeves determines proper optical parameters of the connection.
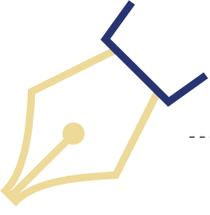
❖ Applications

→ Installation works in fiber optic networks
→ Maintenance works in fiber optic networks
→ Measuring works in fiber optic networks

Features

→ Removes impurities from fiber optic adapters
→ Available in two sizes: 1.25 mm and 2.5 mm
→ Proper optical connection parameters due to removing dust from fiber optic adapters
→ High efficiency
→ Do not scratch surfaces

■ Ordering information

Code	Description
PC-03-125-S5	1.25 mm FIBRAIN PRO-Cleaner adapter cleaning sticks, set of 5 pcs
PC-03-250-S5	2.50 mm FIBRAIN PRO-Cleaner adapter cleaning sticks, set of 5 pcs

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