teletronik®

PASSIVE OPTICAL NETWORK COMPONENTS FOR GPON & FTTX APPLICATIONS

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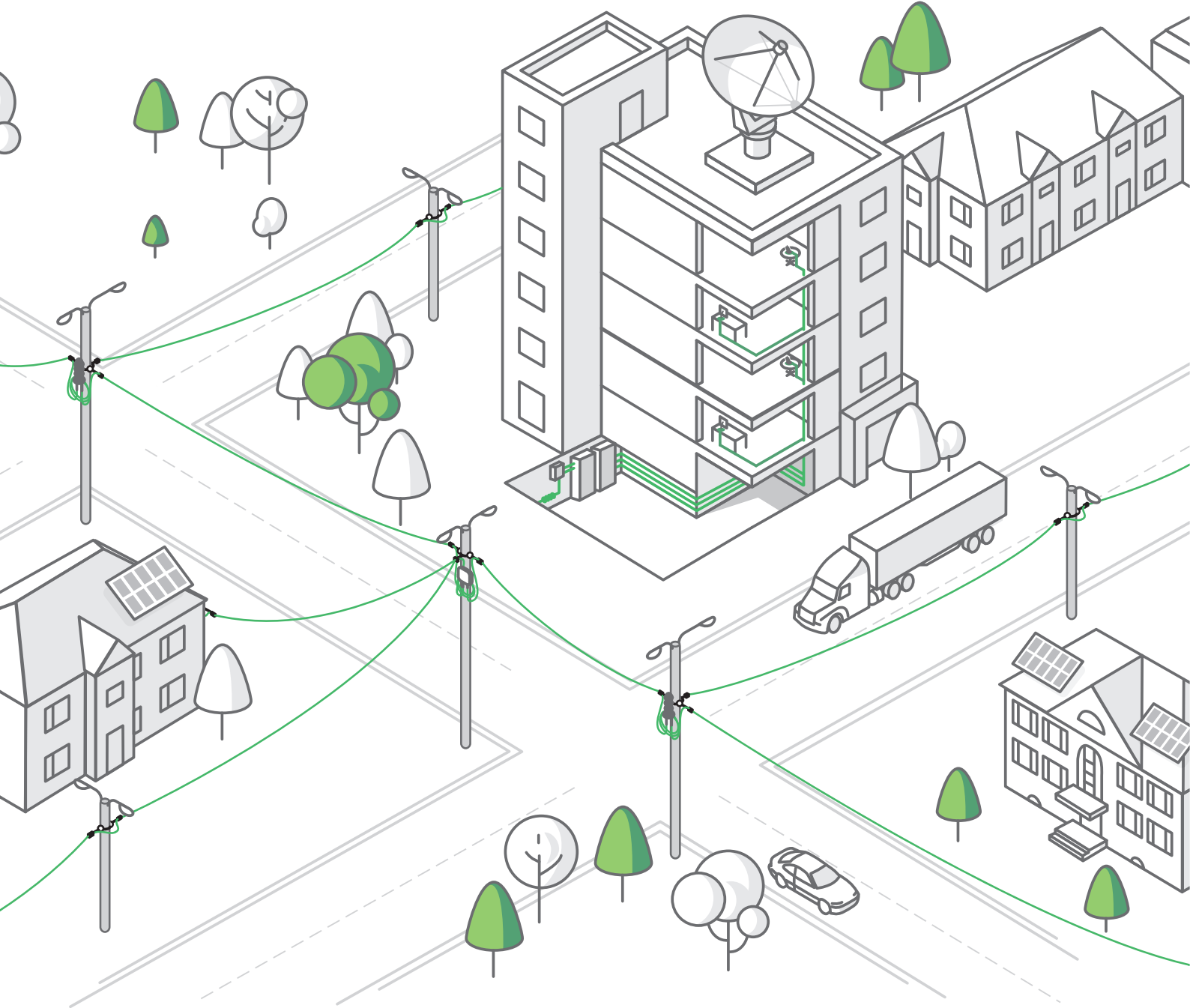


teletronik®

Teletronik develops wide range of reliable fiber optical cables, terminal boxes, splice closures, clamps, preformed wire guy-grips and pole's hardware for passive optical networks (PON), used in over-head and underground fiber optic distribution routes.

Our products oplied in internet network construction, by FTTx technology as a part of GPON, in industrial buildings, street houses, railway and road transportation and data centers.

FIBER OPTICAL FLAT-TYPE CABLES FOR FTTX

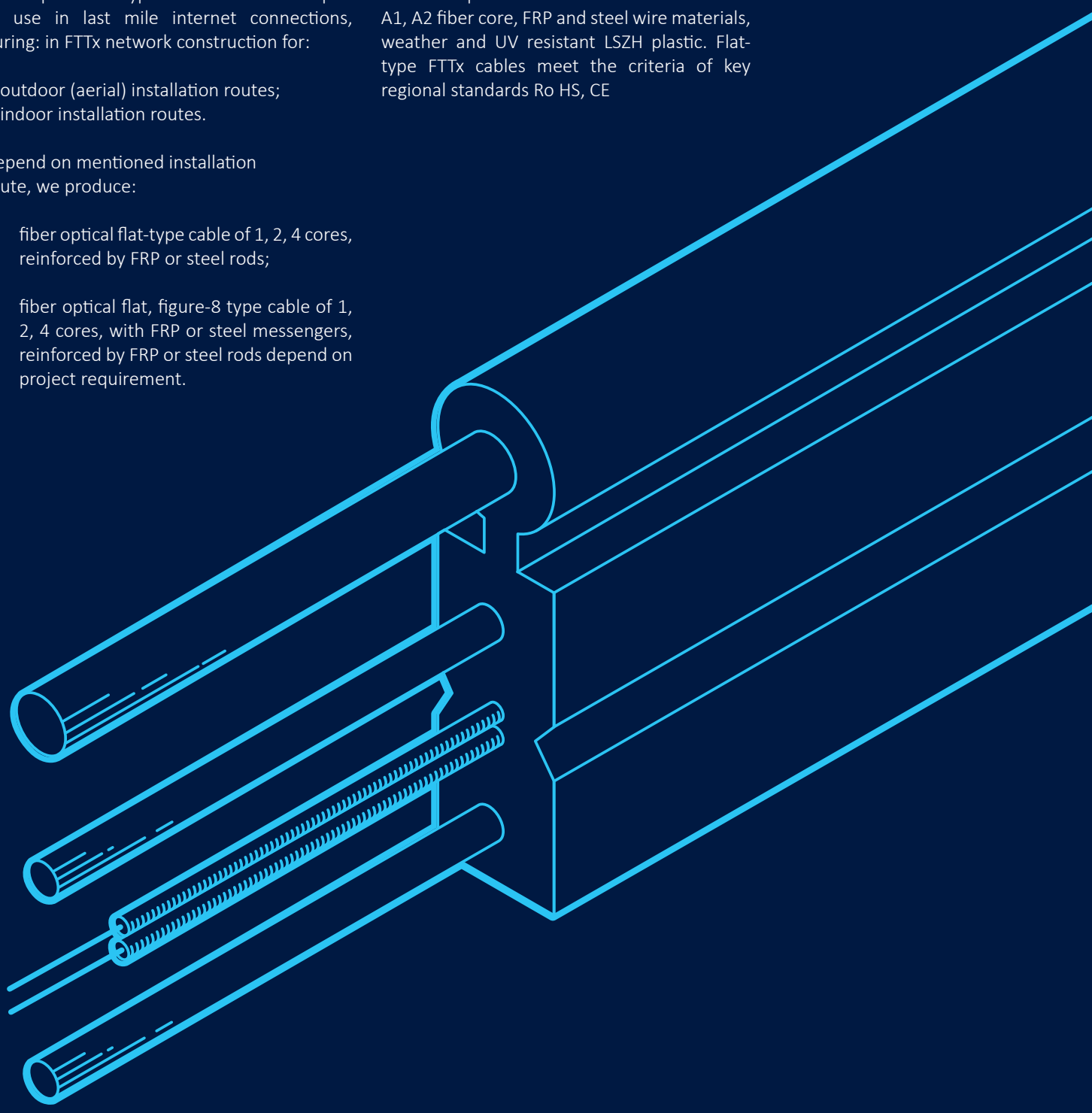
Fiber optical flat-type cables were developed to use in last mile internet connections, during: in FTTx network construction for:

- outdoor (aerial) installation routes;
- indoor installation routes.

Depend on mentioned installation route, we produce:

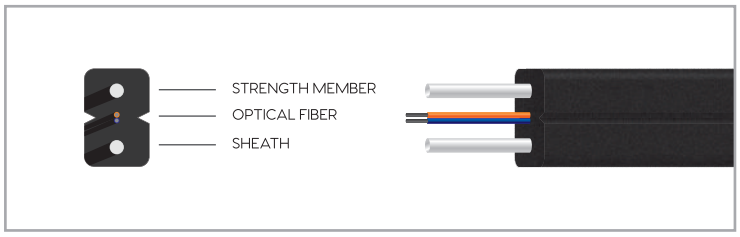
- fiber optical flat-type cable of 1, 2, 4 cores, reinforced by FRP or steel rods;
- fiber optical flat, figure-8 type cable of 1, 2, 4 cores, with FRP or steel messengers, reinforced by FRP or steel rods depend on project requirement.

Our fiber optical FTTx cables are made of G657 A1, A2 fiber core, FRP and steel wire materials, weather and UV resistant LSZH plastic. Flat-type FTTx cables meet the criteria of key regional standards Ro HS, CE



FLAT-TYPE CABLES 1, 2, 4 CORES

REINFORCED BY FRP ROD



Product code	**Fiber optical flat-type cables 1, 2, 4 cores, reinforced by FRP rod**
Cable type	TTFOC-F-LSZH(B)+2FRP-1 x G657A1-2 x 3-0.08 TTFOC-F-LSZH(B)+2FRP-2 x G657A1-2 x 3-0.08 TTFOC-F-LSZH(B)+2FRP-4 x G657A1-2 x 3-0 08
Cable specification	3.0 × 2.0
Fiber color	Natural, blue, yellow, green
Fiber types	9/125 (G.652.D, G.657A1, G.657A2)
Sheath color	Black (white color upon request)
Sheath material	LSZH
Cable dimension, mm	3.0 (±0.2) × 2.0 (±0.2)
Strength member	FRP rod, d=0.4 mm
Cable weight, kg/km	Approx. 9.3
Min. bending radius, mm	7.5 (static) 15 (dynamic)
Attenuation, dB/km	≤ 0.4 at 1310 nm, ≤ 0.3 at 1550 nm
Short term tensile, N	80
Crush resistance, N/100 mm	1000
Operation temperature, °C	-60~+70

FLAT-TYPE CABLES 1,2,4, CORES,

REINFORCED BY FRP ROD

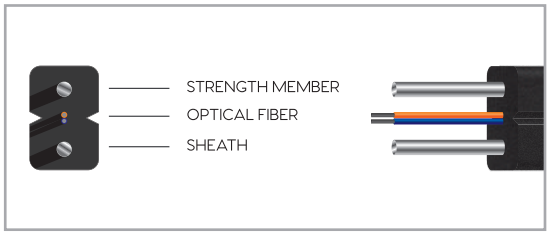
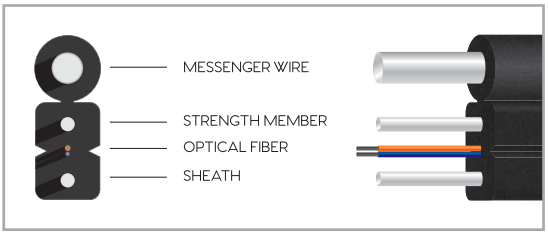


FIGURE-I TYPE CABLES 1, 2, 4 CORES,

WITH FRP MESSENGER, REINFORCED BY FRP RODS



Product code	Fiber optic flat-type cables 1, 2, 4 cores, reinforced by steel rods	Fiber optic flat, fig-8 type cables 1, 2, 4 cores, with FRP messenger, reinforced by FRP rods
Cable type	TTFOC-F-LSZH(B)+2 x SR-1x657A1-2 x 3-0.2 TTFOC-F-LSZH(B)+2 x SR-2x657A1-2 x 3-0.2 TTFOC-F-LSZH(B)+2 x SR-4x657A1-2 x 3-0.2	TTFOC-F+8(FRP)-LSZH(B)+2 x FRP-1x657A1-2 x 5-0.3 TTFOC-F+8(FRP)-LSZH(B)+2 x FRP-2x657A1-2 x 5-0.3 TTFOC-F+8(FRP)-LSZH(B)+2 x FRP-4x657A1-2 x 5-0.3
Cable specification	3.0 × 2.0	5.2 × 2.0
Fiber color	Natural, blue, yellow, green	Natural, blue, yellow, green
Fiber types	9/125 (G.652.D, G.657A1, G.657A2)	9/125 (G.652.D, G.657A1, G.657A2)
Sheath color	Black	Black
Sheath material	LSZH	LSZH
Cable dimension, mm	3.0 (±0.2) × 2.0 (±0.2)	5.2 (±0.2) × 2.0 (±0.2)
Messenger wire	–	FRP rod, d=1 mm
Strength member	Steel rod, d=0.4 mm	FRP rod, d=0.4 mm
Cable weight, kg/km	Approx. 10.9	Approx. 13.5
Min. bending radius, mm	7.5 (static), 15 (dynamic)	120
Min. bending radius (rip off the messenger wire), mm	–	10 (static), 25 (dynamic)
Attenuation, dB/km	≤ 0.4 at 1310 nm, ≤ 0.3 at 1550 nm	≤ 0.4 at 1310 nm, ≤ 0.3 at 1550 nm
Short term tensile, N	200	300
Crush resistance, N/100 mm	2200	1000
Operation temperature, °C	-60~+70	-60~+70

FIGURE-I TYPE CABLES 1, 2, 4 CORES,

WITH STEEL MESSENGER,
REINFORCED BY FRP RODS

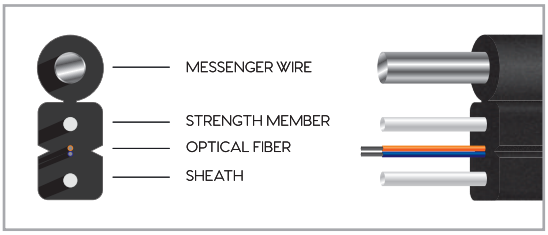
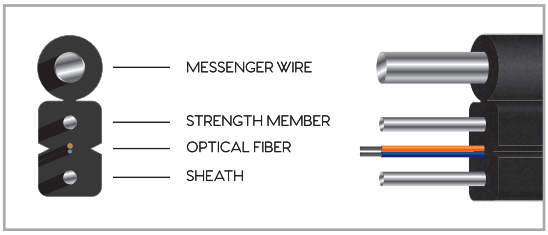


FIGURE-I TYPE CABLES 1, 2, 4 CORES,

WITH STEEL MESSENGER,
REINFORCED BY STEEL RODS



Product code	**Fiber optic flat, fig-8 type cables 1, 2, 4 cores, with steel messenger, reinforced by FRP rods**	**Fiber optic flat, fig-8 type cables 1, 2, 4 cores, with steel messenger, reinforced by steel rods**
Cable type	TTFOC-F+8(SW)-LSZH(B)+2 x FRP-1x657A1-2 x 5-0.6 TTFOC-F+8(SW)-LSZH(B)+2 x FRP-2x657A1-2 x 5-0.6 TTFOC-F+8(SW)-LSZH(B)+2 x FRP-4x657A1-2 x 5-0.6	TTFOC-F+8(SW)-LSZH(B)+2 x SR-1x657A1-2 x 5-0.6 TTFOC-F+8(SW)-LSZH(B)+2 x SR-2x657A1-2 x 5-0.6 TTFOC-F+8(SW)-LSZH(B)+2 x SR-4x657A1-2 x 5-0.6
Cable specification	5.2 × 2.0	5.2 × 2.0
Fiber color	Natural, blue, yellow, green	Natural, blue, yellow, green
Fiber types	9/125 (G.652.D, G.657A1, G.657A2))	9/125 (G.652.D, G.657A1, G.657A2))
Sheath color	Black	Black
Sheath material	LSZH	LSZH
Cable dimension, mm	5.2 (±0.2) × 2.0 (±0.2)	5.2 (±0.2) × 2.0 (±0.2)
Messenger wire	Steel wire, d=1 mm	Steel wire, d=1 mm
Strength member	FRP rod, d=0.4 mm	Steel rod, d=0.4 mm
Cable weight, kg/km	Approx. 17.5	Approx. 19.5
Min. bending radius, mm	120	120
Min. bending radius (rip off the messenger wire), mm	10 (static), 25 (dynamic)	10 (static), 25 (dynamic)
Attenuation, dB/km	≤ 0.4 at 1310 nm, ≤ 0.3 at 1550 nm	≤ 0.4 at 1310 nm, ≤ 0.3 at 1550 nm
Short term tensile, N	600	600
Crush resistance, N/100 mm	2200	2200
Operation temperature, °C	-60~+70	-60~+70

FIBER OPTICAL SPLICE CLOSURES

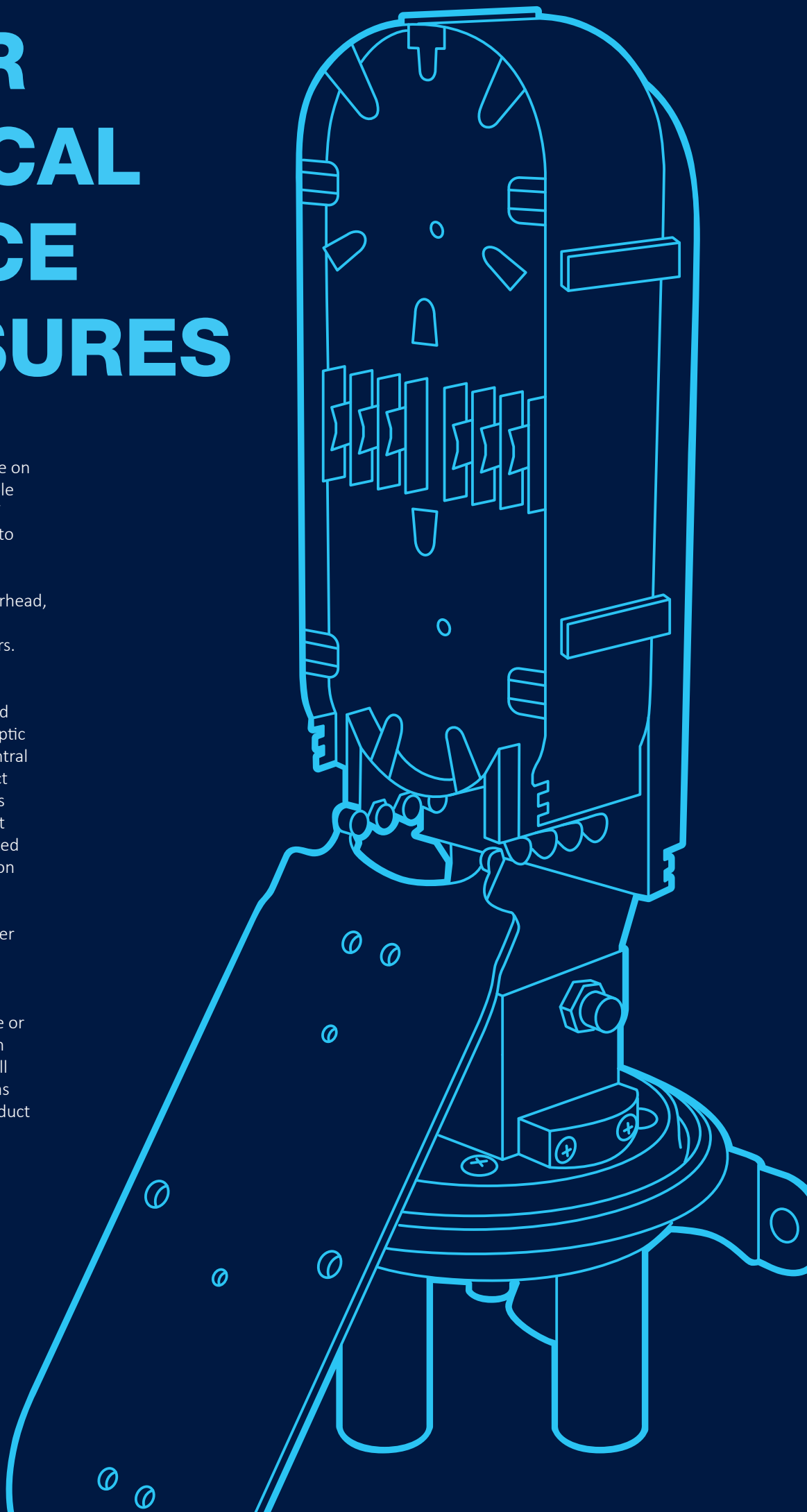
Fiber optical splice closures (FOSC) were developed to use on central loop and last mile cable routes during construction of fiber optical network. Useful to joint the fiber cores by fusion splicer and heat shrink steel tubes. Commonly apllied overhead, on the polesor in sewage, ducts and undustrial collectors.

FOSC provides more reliable protection and long life period of usage compared to fiber optic termination boxes for the central loop feeding cable, to connect it with smaller capacity cables in FTTx technology of internet construction. This implemented by heat shrink joints protection and air exhaust.

Our FOSC are made of weather and UV resistant first grade plastic material.

FOSC installed by bolts or one or two stainless steel bands with appropriate type of buckle. All the related products as well as tools you may find in our product range.

FOSC meet the criteria of key regional standards RoHS, CE.



TTFOSC-0 (24)

Product information

Fiber optical splice closure TTFOSC-0 (24) is dome type closure, designed to splice and branch fiber optical cables on overhead and unground routes.

Has 2 round inputs and 1 oval input, maximum capacity is 24 fibers. Splice tray capacity is 12 fibers, where fibers are stored in 2 layers. The sealing is realized with heat shrink tubes. Addional bracket allows installation eithers on concrete pole and on wooden walls.

TTFOSC-2D (96)

Product information

Fiber optical splice closure TTFOSC-2D (96) is dome type closure, designed to splice and branch fiber optical cables on overhead and unground routes.

Has 3 round inputs and 1 oval input, maximum capacity is 96 fibers. Splice tray capacity is 24 fibers, where fibers are stored in 2 layers. The sealing is realized with heat shrink tubes. Addional bracket allows installation eithers on concrete pole and on wooden walls.

TTFOSC-3 (96)

Product information

Fiber optical splice closure TTFOSC-3 (96) is dome type closure, designed to splice and branch fiber optical cables on overhead and unground routes.

Has 3 round inputs and 1 oval input, maximum capacity is 96 fibers. Splice tray capacity is 12 fibers. In addition, fiber cores can be managed to 96, by 2 layers store in splice tray. The sealing is realized with heat shrink tubes. Addional bracket allows installation eithers on concrete pole and on wooden walls.

Technical specification:

Product code	**TTFOSC-0 (24)**	**TTFOSC-2D (96)**	**TTFOSC-3 (96)**
Fiber's capacity	6/12/24	12/24/96	24/96
Inputs and cable diametres	2 × Ø 14 mm, 1 × Ø 20 mm	3 × Ø 16 mm, 1 × 16 – 40 mm	3 × Ø 16 mm, 1 × 25 – 40 mm
Dimensions, mm	330 × 145 × 115	300 × 180 × 130	435 × 190 × 160
Application	Central loop, last mile connections	Central loop, last mile connections	Central loop connection

FIBER OPTICAL TERMINATION SOCKETS & BOXES

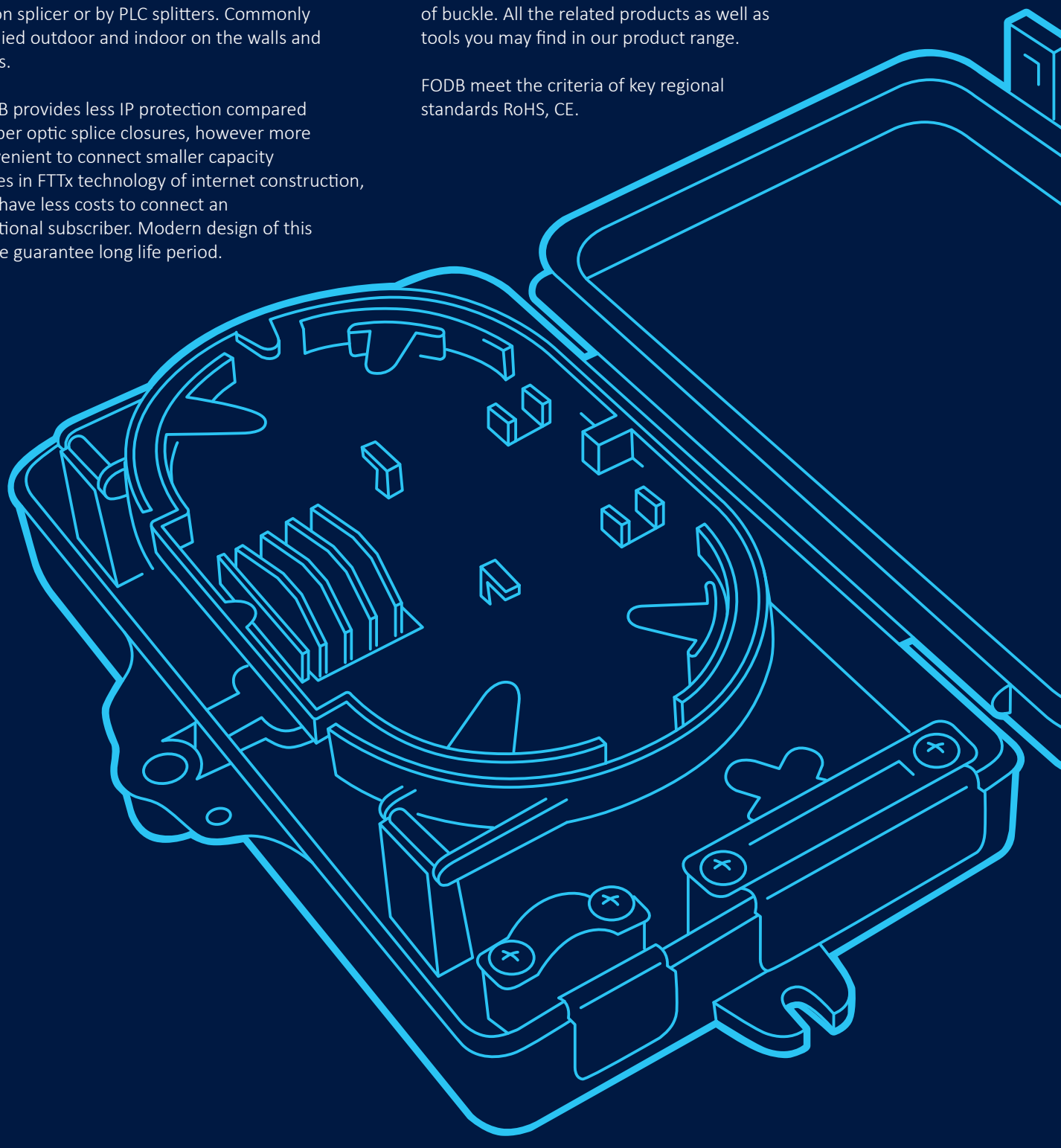
Fiber optic termination boxes and sockets (FOTB, FODB, ODP) were developed to use on central loop and last mile cable routes during construction of fiber optical network. Useful to joint the fiber cores either by fusion splicer or by PLC splitters. Commonly a pl lied outdoor and indoor on the walls and poles.

FODB provides less IP protection compared to fiber optic splice closures, however more convenient to connect smaller capacity cables in FTTx technology of internet construction, and have less costs to connect an additional subscriber. Modern design of this range guarantee long life period.

Our FODB are made of weather and UV resistant first grade plastic material.

FODB installed by bolts or one or two stainless steel bands with appropriate type of buckle. All the related products as well as tools you may find in our product range.

FODB meet the criteria of key regional standards RoHS, CE.



TTODP-02 (1)

Product information

Fiber optical distribution point TTODP-02 is a wall outlet designed to terminate fiber optical cords, patch cords, pigtail cords, with adaptors in FTTH network. Apllied in buildings and houses to connect end user to network. TTODP-02 has two or four ports, which provide the installation of one or two fiber optic adapters, built on the regular SC footprint.

TTODP-02 provides mechanical protection, flexible fiber route management and control, easy installation because of features, imple-mented in design.

TTODP-02M has metal mount for feeding patch cord or optic fiber cable, which facilitates the installation process. Optic fiber cable will be tightly fixed inside of drop wire socket.
TTODP-02 is made of ABS plastic. Indoor wall-mounted type of installation is done by 2 galvanized screws of 25 x 4 size.

The dimensions of TTODP-02 are wide enough for suitable fiber cord bending radius No splice tray required, light and pleasing in appearance, has strength mechanical pro-tection. Provides easy users access or data access based on FTTH networks.

TTODP-04 (4)

Product information

Fiber optical distribution point TTODP-04 is a wall outlet designed to terminate fiber optical cords, patch cords, pigtail cords, with adaptors in FTTH network. Apllied in buildings and houses to connect end user to network. TTODP-04 has four ports, which pro-vide the installation of one or two fiber optic adapters, built on the regular SC footprint.

TTODP-04 provides mechanical protection, flexible fiber route management and control, easy installation because of features, imple-mented in design.

TTODP-04 is made of ABS plastic. Indoor wall-mounted type of installation is done by 4 galvanized screws of 25 x 4 size.

The dimensions of TTODP-04 are wide enough for suitable fiber cord bending radius has splice tray required, light and pleasing in appearance, has strength mechanical pro-tection. Provides easy users access or data access based on FTTH networks.

Technical specification:

Product code	**TTODP-02**	**TTODP-04**
Fiber's capacity	1	4
Inputs and cable diametres	1 × Ø 3 mm, 3 × 2 mm	1 × Ø 3 mm, 3 × 2 mm
Dimensions, mm	86 × 86 × 22	149 × 110 × 33
Adaptors SC	2	4
PLC SC splitters	–	1 – 1 × 4
Application	Last mile connection	Last mile connection

FIBER OPTICAL DISTRIBUTION BOXES

TTFODB-2

TTFODB-4

TTFODB-6

Product information

Fiber optical distribution boxes TTFODB-2, TTFODB-4, TTFODB-6, designed to terminate feeding optical cable and connect last mile cables as fiber optical cords, patch cords, pigtail cords according to capacity of distri-bution box.

TTFODB-2, TTFODB-4, TTFODB-6 are compact and convinient to be used in entrance of terminals, buildings telecommunications closets, where wall space is a superior small, however is wide enough for suitable fiber cord bending radius.

TTFODB-2, TTFODB-4, TTFODB-6 provide the installation of one- six fiber optic drop cords, built on the regular SC fiber optical adaptors or heat splicing. Splice tray allows installation of splice protection sleeves or PLC splitters.

FODBs are made of PC+ABS, PVC, which guarantee wet, dust, proof and outdoor or indoor usage. Wall-mounted type of installa-tion is done by 3 galvanized screws of 18 x 4 size. Boxes contain the fixation bracket for cable wire. No ground device.

Anti-vandal, equipped by lock and key. Light and pleasing in appearance, FODB has strength mechanical protection and easy maintenance. Provides easy users access or data access based on FTTH networks.

Technical specification:

Product code	TTFODB-2	TTFODB-4	TTFODB-6
Fiber's capacity	2	4	6
Inputs and cable diametres	1 × Ø 10 mm, 2 × Ø 3 mm	1 × Ø 10 mm, 4 × Ø 3 mm	1 × Ø 10 mm, 6 × Ø 3 mm
Dimensions, mm	118 × 165 × 32	125 × 185 × 40	125 × 185 × 40
Adaptors SC	2	4	6
PLC SC splitters	1 – 1 × 2	1 – 1 × 4	1 – 1 × 4
Application	Last mile connection	Last mile connection	Last mile connection

TTFODB-8A (12)

Product information

Fiber optical distribution box TTFODB-8A, designed to terminate feeding optical cable and connect last mile cables as fiber optical cords, patch cords, pigtail cords according to capacity of distribution box. TTFODB-8A can be applied in buildings, FTTx closets, poles, walls.

Useful design of splice tray and accessories allows be appropriate for 1 x 8 PLC splitter, SC fiber adapters or 12 splice protection sleeves. All mentioned optical network accessories could be fixed inside the box. Stainless steel ties of fiber box allow fixating feeder cable of different size, without slippage. Plastic hangers of telecommunica-tion box allow fixating the feeding fibers by nylon ties. TTFODB-8A has three or two transit inputs, which is not require to cut or terminate the optical cable before installation. TTFODB-8A is made of PC+ABS, PVC, which guarantee wet, dust, proof and outdoor or indoor usage. Wall-mounted type of installa-tion is done by 4 galvanized screws of 18 x 4 size. TTFODB-8A has 2 mounts for stainless steel band usage. Optical termina-tion boxes contain the fixation brackets for cable wire. No ground device. Anti-vandal, equipped by lock and key.

Light and pleasing in appearance, FODB has strength mechanical protection and easy maintenance. Provides easy users access or data access based on FTTH networks.

TTFODB-12 (12)

Product information

Fiber optical distribution box TTFODB-12, designed to terminate feeding optical cable and connect last mile cables as fiber optical cords, patch cords, pigtail cords according to capacity of distribution box. TTFODB-12 can be applied in buildings, FTTx closets, poles, walls.

Useful design of splice tray and accesso-ries allow be appropriate for 12 SC fiber adapters, or 12 splice protection sleeves. All mentioned optical network accessories could be fixed inside the box. Stainless steel ties of fiber box allow fixating feeder cable of different size, without slippage. Plastic hangers of telecommunication box allow fixating the feeding fibers by nylon ties. TTFODB-12 has two transit inputs, which is not require to cut or terminate the optical cable before installation. TTFODB-12 is made of PC+ABS, PVC, which wet, dust, proof and outdoor or indoor usage. Wall-mounted type of installation is done by 3 galvanized screws of 38 x 4 size. Optical termination boxes contain 2 fixation brackets for cable wire, ground device, 12 splice protection sleeves, 12 nylon ties. An-ti-vandal lock provided for security.

Light and pleasing in appearance, FODB has strength mechanical protection and easy maintenance. Provides easy users access or data access based on FTTH networks.

Technical specification:

Product code	**TTFODB-8A**	**TTFODB-12**
Fiber's capacity	12	12
Inputs and cable diametres	3 or 2 transit Ø 17 mm; 8 × Ø 3 mm; 1 × Ø 17	2 Ø 12 mm; 12 × Ø 3 mm; 1 × Ø 17
Dimensions, mm	210 × 195 × 55	235 × 200 × 62
Adaptors SC	10	12
PLC SC splitters	1 – 1 × 8, 2 – 1 × 4	1 – 1 × 8, 2 – 1 × 4
Application	Last mile connection	Last mile connection

TTFODB-16X (16)

Product information

Fiber optical distribution box FODB-16X, designed to terminate feeding optical cable and connect last mile cables as fiber optical cords, patch cords, pigtail cords according to capacity of distribution box. TTFODB-16X can be applied in buildings, FTTx closets, poles, walls.

Useful design of splice tray and accessories allows be appropriate for 1 x 8 PLC splitters, SC fiber adapters or 16 splice protection sleeves. All mentioned optical network accessories could be fixed inside the box. Stainless steel ties of fiber box allow fixating feeder cable of different size, without slippage. Plastic hangers of telecommunica-tion box allow fixating the feeding fibers by nylon ties. TTFODB-16X is made of PC+ABS, PVC, which guarantee wet, dust, proof and outdoor or indoor usage. Optic distribution boxes contain 2 fixation brackets for cable wire, ground device, 16 splice protection sleeves, 16 nylon ties. Anti-vandal lock provided for security. Wall-mounted type of installation is done by 4 galvanized screws of 18 x 4 size. TTFODB-16X has 2 mounts for stainless steel band usage. Optical termina-tion boxes contain the fixation brackets for cable wire. No ground device. Anti-vandal, equipped by lock and key.

Light and pleasing in appearance, FODB has strength mechanical protection and easy maintenance. Provides easy users access or data access based on FTTH networks.

TTFODB-16C (16)

Product information

Fiber optical distribution box FODB-16(, designed to terminate feeding optical cable and connect last mile cables as fiber optical cords, patch cords, pigtail cords according to capacity of distribution box. TTFODB-16C can be applied in buildings, FTTx closets, poles, walls.

Useful design of splice tray and accessories allow be appropriate for 2 of cassete 1 x 8 splitters, which are available in Teletronik's prod-ucts range. All mentioned optical network accessories could be fixed inside the box. Stainless steel ties of fiber box allow fixating feeder cable of different size, without slippage. Plastic hangers of telecommunica-tion box allow fixating the feeding fibers by nylon ties. TTFODB-16C is made of PC+ABS, PVC, which guarantee wet, dust, proof and outdoor or indoor usage. Optic distribution boxes contain 2 fixation brackets for cable wire, ground device, 16 splice protection sleeves, 16 nylon ties. Anti-vandal lock provided for security. Wall-mounted type of installation is done by 4 galvanized screws of 18 x 4 size. TTFODB-16C has 2 mounts for stainless steel band usage. Optical termination boxes contain the fixation brackets for cable wire. No ground device. Anti-vandal, equipped by lock and key.

Light and pleasing in appearance, FODB has strength mechanical protection and easy maintenance. Provides easy users access or data access based on FTTH networks.

Technical specification:

Product code	TTFODB-16X	TTFODB-16C
Fiber's capacity	16	16
Inputs and cable diametres	2 × Ø 17 mm; 16 × Ø 3 mm	2 × Ø 17 mm; 16 × Ø 3 mm
Dimensions, mm	320 × 260 × 90	300 × 230 × 70
Adaptors SC	16	No
PLC SC splitters	1 – 1 × 16, 2 – 1 × 8	1 – 1 × 16, 2 – 1 × 8
Application	Last mile connection	Last mile connection

TTFODB-24 (24)

Product information

Fiber optical distribution box TTFODB-24, designed to terminate feeding optical cable and connect last mile cables as fiber optical cords, patch cords, pigtail cords according to capacity of distribution box. TTFODB-24 can be applied in buildings, FTTx closets, poles, walls.

TTFODB-24 has 29 ports that provides the installation from 1 to 24 optic drop cords, based on the regular SC fiber adaptors or splice protection sleeves. 2 optic feeders can be used. A main and additional splice tray al-lows installation of splice protection sleeves or PLC splitters.

TTFODB-24 is made of PC+ABS, PVC, which guarantee wet, dust, proof and outdoor or indoor usage. Optic distribution boxes con-tain 2 splice protection sleeves, 8 nylon ties. Anti-vandal lock provided for security.

The dimensions of TTFODB-24 are wide enough for appropriate fiber bending radius. Light and pleasing in appearance, box has strength mechanical protection and easy maintenance. Provides an easy users access or data access based on FTTx.

Technical specification:

Product code	**TTFODB-24**
Fiber's capacity	24
Inputs and cable diametres	2 × Ø 15 mm; 24 × Ø 3 mm; 3 × Ø 10 mm
Dimensions, mm	350 × 280 × 100
Adaptors SC	24
PLC SC splitters	12 – 1 × 2, 6 – 1 × 4, 3 – 1 × 8
Application	Last mile connection

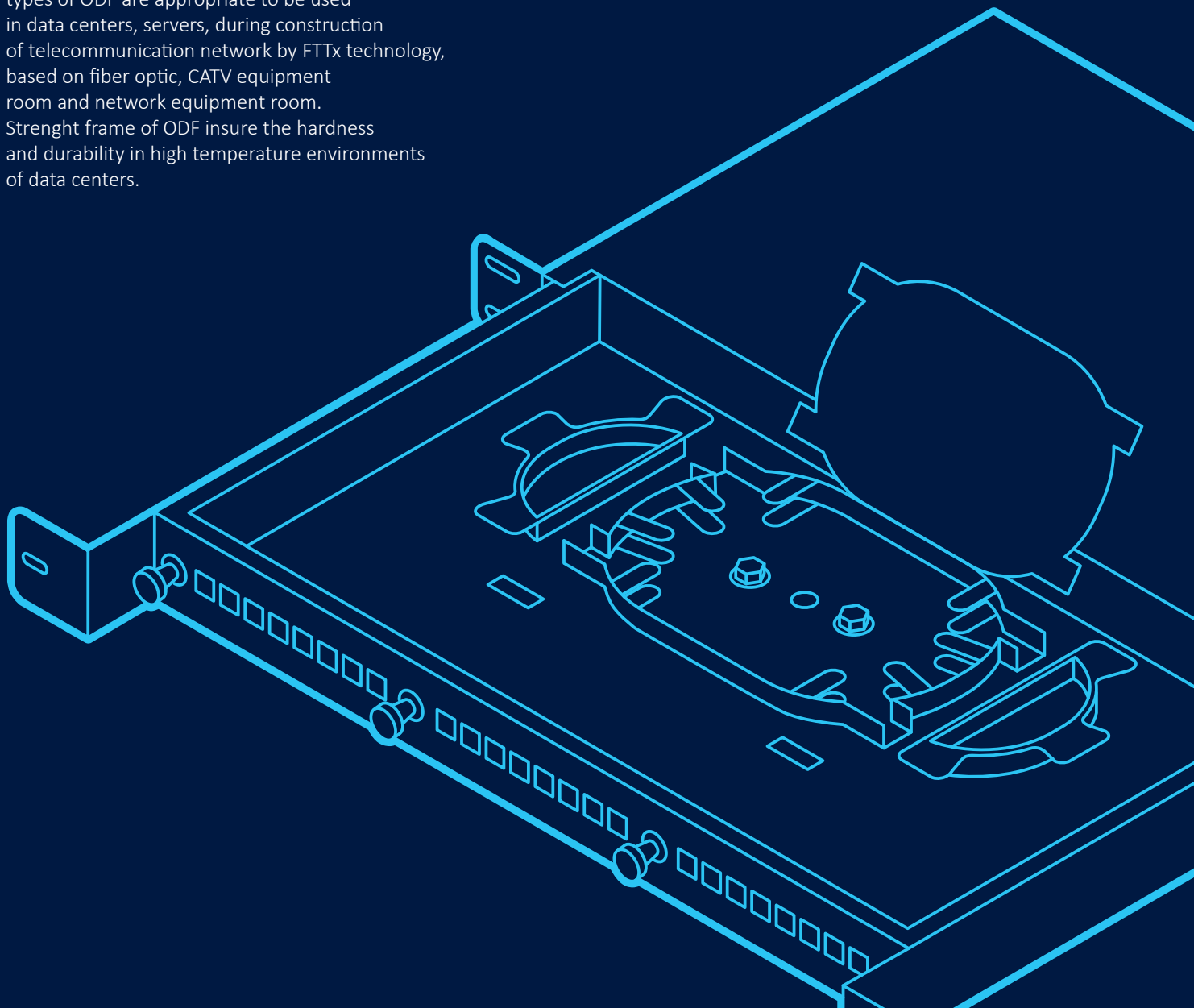
FIBER OPTICAL DISTRIBUTION FRAMES (ODF), FOR 19” RACKS

Fiber optical distribution frames (ODF), also called patch panels were developed to distribute fiber cores and appropriate for splice cores management. ODF divide fiber cores connected by splice fusion or SC/FC adapters and patch cords either by PLC splitters.

ODF used on last mile cable routes during construction of fiber optical network. Standard types of ODF are appropriate to be used in data centers, servers, during construction of telecommunication network by FTTx technology, based on fiber optic, CATV equipment room and network equipment room. Strenght frame of ODF insure the hardness and durability in high temperature environments of data centers.

Teletronik offers standard 19” rack mount fiber optic distribution frame with capacity of 1U, 12, 24, 36, 48 cores fiber optic distribution frames. We have chosen the most convenient and cost efficient fiber optic cable distribution frames for FTTx solution.

ODF meet the criteria of key regional standards RoHS, CE.



TT1U-12-SC

Product information

19” rack mount fiber optic distribution frame, TT1U-12-SC, specified to be installed in 19 inch cabinets of optic fiber telecom networks, in CATV equipment rooms and network equipment room. ODF TT1U-12-SC can accommodate up to 12 of fiber core connec-tions base on regular SC/APC, LC/Duplex, SC/UPC types of patch cords and fiber optic adapters.

ODF is made of steel, painted by special, which guarantee long period of indoor usage and cooling. Cabinet-mounted type of installation is done by 4 galvanized screws. ODF TT1U-12-SC has 12 fiber trays for heat shrinkable tubes, has no changeable adapters faceplate holder.

TT1U-24-SC-S, 1U-24-SC

Product information

Pulldown 19” rack mount fiber optic dis-tribution frame, TT1U-24-SC, specified to be installed in 19 inch cabinets of optic fiber tel-ecom networks, in CATV equipment rooms and network equipment room. ODF 19” rack mount helps to connect optical cables, pro-ceed and appropriate cable management, which provide reliable protection and long life period of usage of FTTX networks.

TT0DF 1U-24-SC can accommodate up to 24 of fiber core connections base on regular SC/APC, LC/Duplex, SC/UPC types of patch cords and fiber optic adapters.

ODF is made of steel, painted by special, which guarantee long period of indoor usage and cooling. Cabinet-mounted type of instal-lation is done by 4 galvanized screws.

ODF has 12 fiber trays for heat shrinkable tubes, has 3 changeable adapters faceplates holder, in order to replicate the SC and FC connectors type if needed. 24 ports of fiber optic patch panels are available in our product range with pre-assembled adapters as well.

TT1U-48-SC-P

Product information

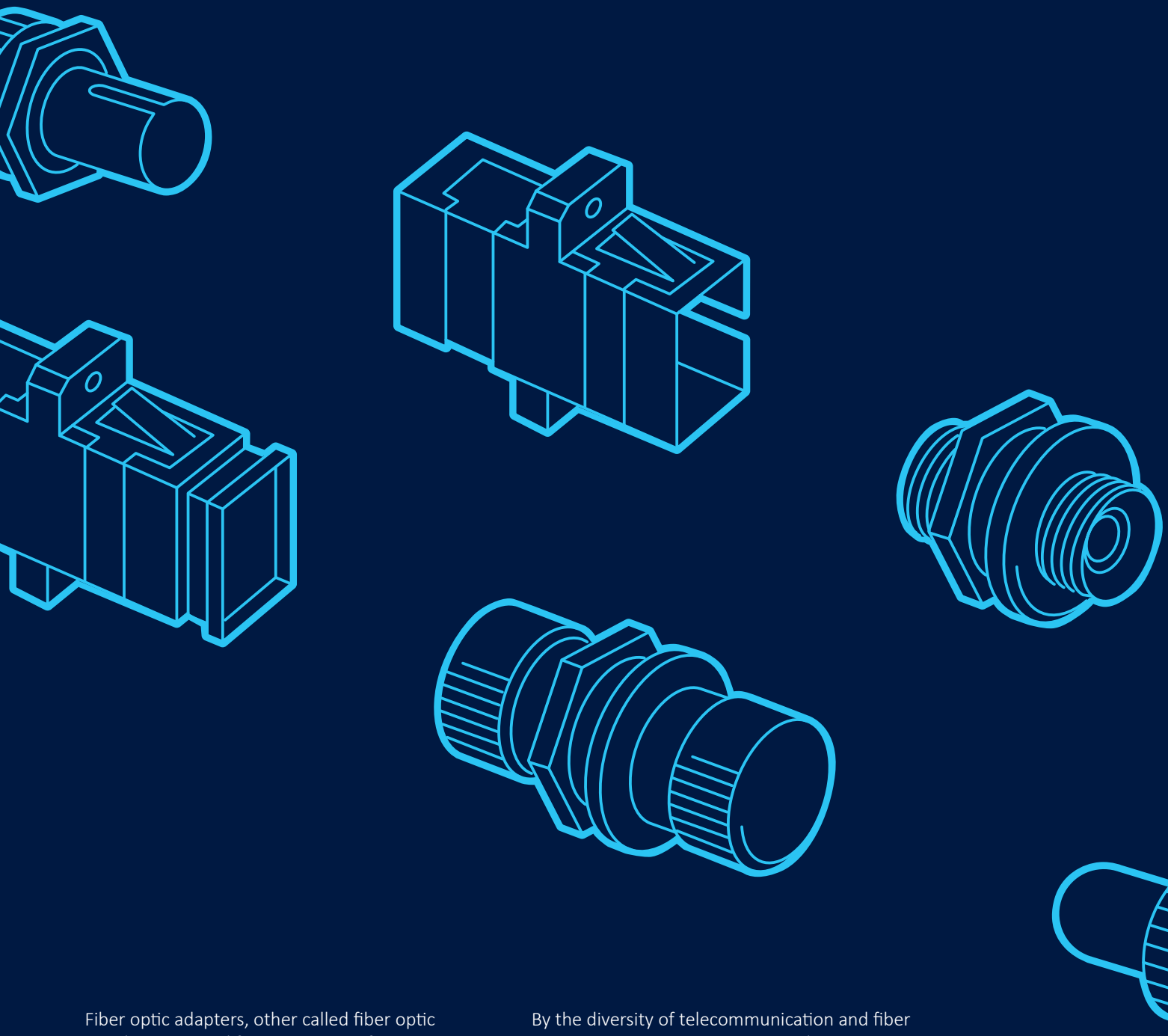
Pulldown 19” rack mount fiber optic distribution frame, TT1U-48-SC-P, specified to be installed in 19 inch cabinets of optic fiber telecom networks, in CATV equipment rooms and network equipment room. ODF can accommodate up to 48 of fiber core connections base on regular SC/APC, LC/ Duplex, SC/ UPC types of patch cords and fiber optic adapters.

ODF is made high strength plastic, cabi-net-mounted type of installation is done by 4 galvanized screws. ODF has 12 fiber trays for heat shrinkable tubes, maximum capaci-ty of 4 trays.

Technical specification:

Product code	TT1U-12-SC	TT1U-24-SC-S	TT1U-24-SC	TT1U-48-SC-P
Splice tray capacity	12 fibers	12 fibers	12 fibers	12 fibers
Inputs and cable diametres	4, diameter 12 – 17 mm	4, diameter 12 – 17 mm	4, diameter 12 – 17 mm	4, diameter 12 – 17 mm
Dimensions, mm	490 × 340 × 45	490 × 340 × 45	490 × 340 × 45	435 × 300 × 44
Adaptors	24 SC, LC	24 SC, LC	24 SC, LC	24 SC, LC
Separate adapter placates	Yes	Yes	No	No
Application	Last mile connection	Last mile connection	Last mile connection	Last mile connection

FIBER OPTIC ADAPTERS



Fiber optic adapters, other called fiber optic couplers, are used for connection of two fiber optic cables, terminated as patch cords or fiber optic pigtails, during constructor of optical fiber distribution line. Fiber optic adapter solution is regularly used and widely applied in optical fiber management system, last mile end user's connection, all connections in data centers and other passive optical network (PON), GPON, XPON projects.

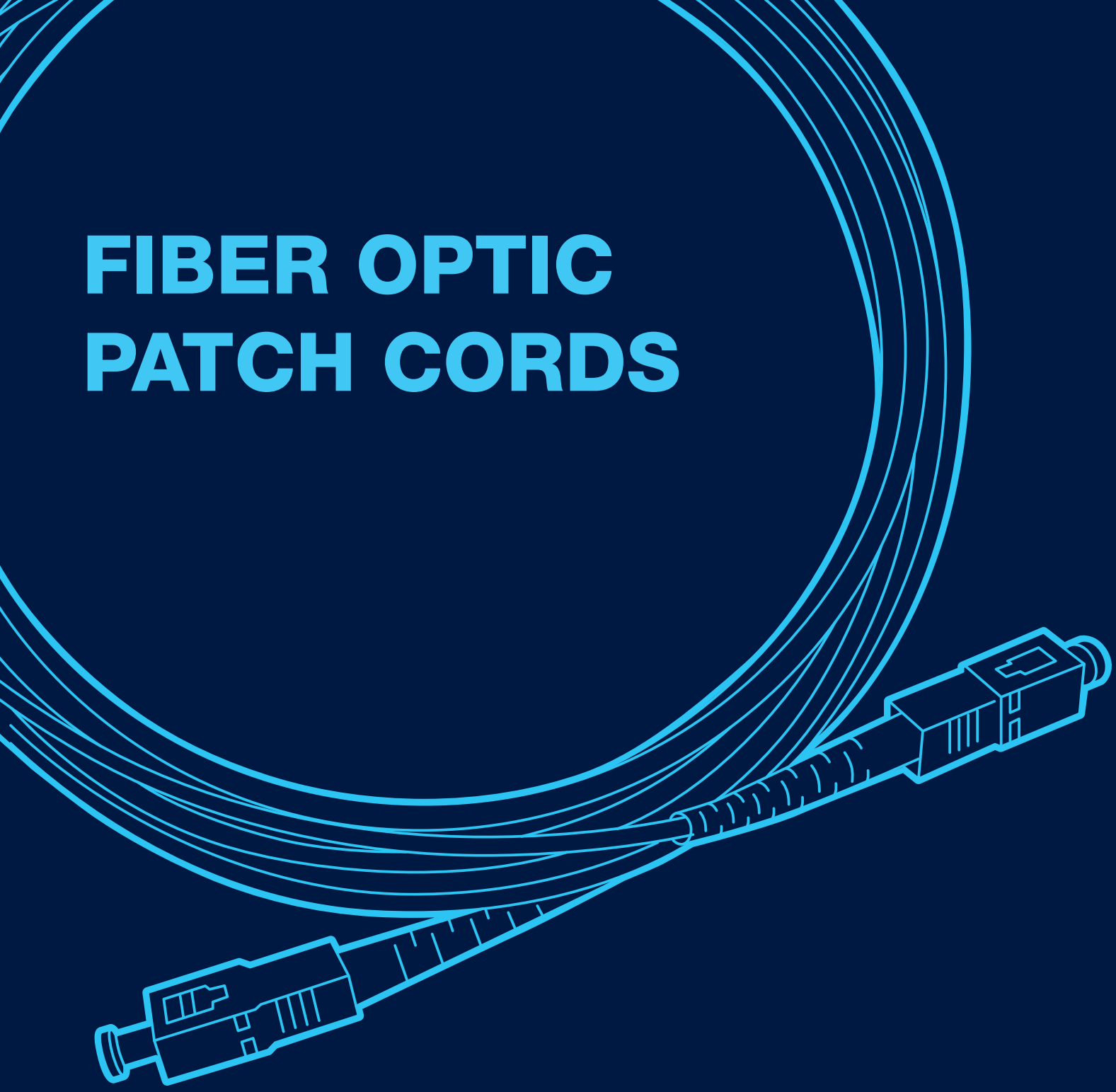
By the diversity of telecommunication and fiber optic connector types, our optic adapters have common varieties such as SC, FC, LC, ST, E2000 types.
Teletronik provides complete product range of fiber optic adapters with competitive price- quality ratio. Low insertion loss and stability in performance are achieved by using appropriate ferrules inserted in plastic parts, with allowable tolerance.

FIBER OPTIC ADAPTERS

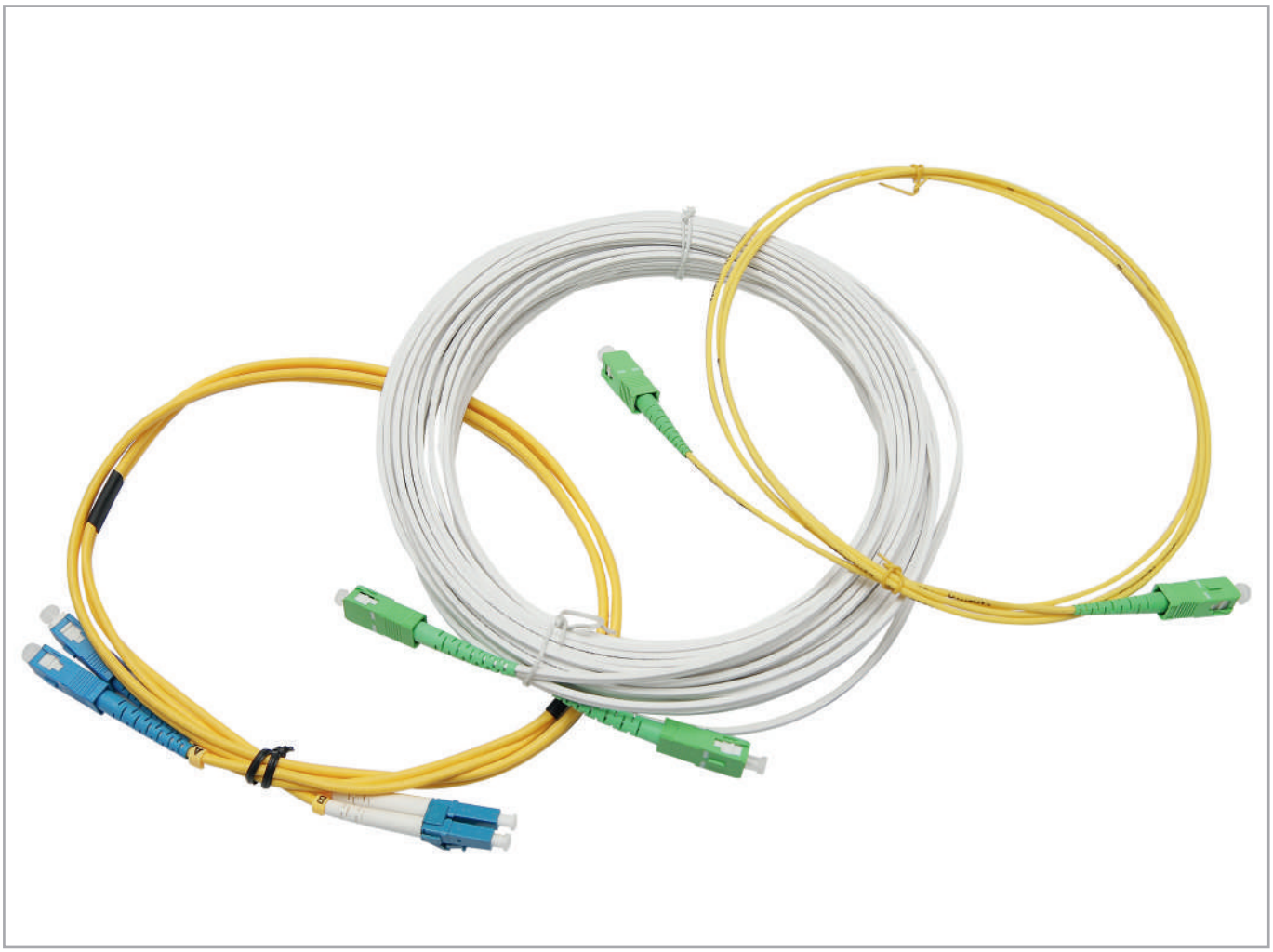
Technical specification:

Product code	SC	FC	LC	ST	E2000
Polish types	UPC, APC	UPC, APC	UPC, APC	UPC, APC	UPC, APC
Fiber counts	Simplex, duplex	Simplex, duplex	Simplex, duplex	Simplex, duplex	Simplex, duplex
Insertion losses (IL), dB	≤ 0.3	≤ 0.3	≤ 0.3	≤ 0.3	≤ 0.3
Working temperature	-40~+85	-40~+85	-40~+85	-40~+85	-40~+85

FIBER OPTIC PATCH CORDS



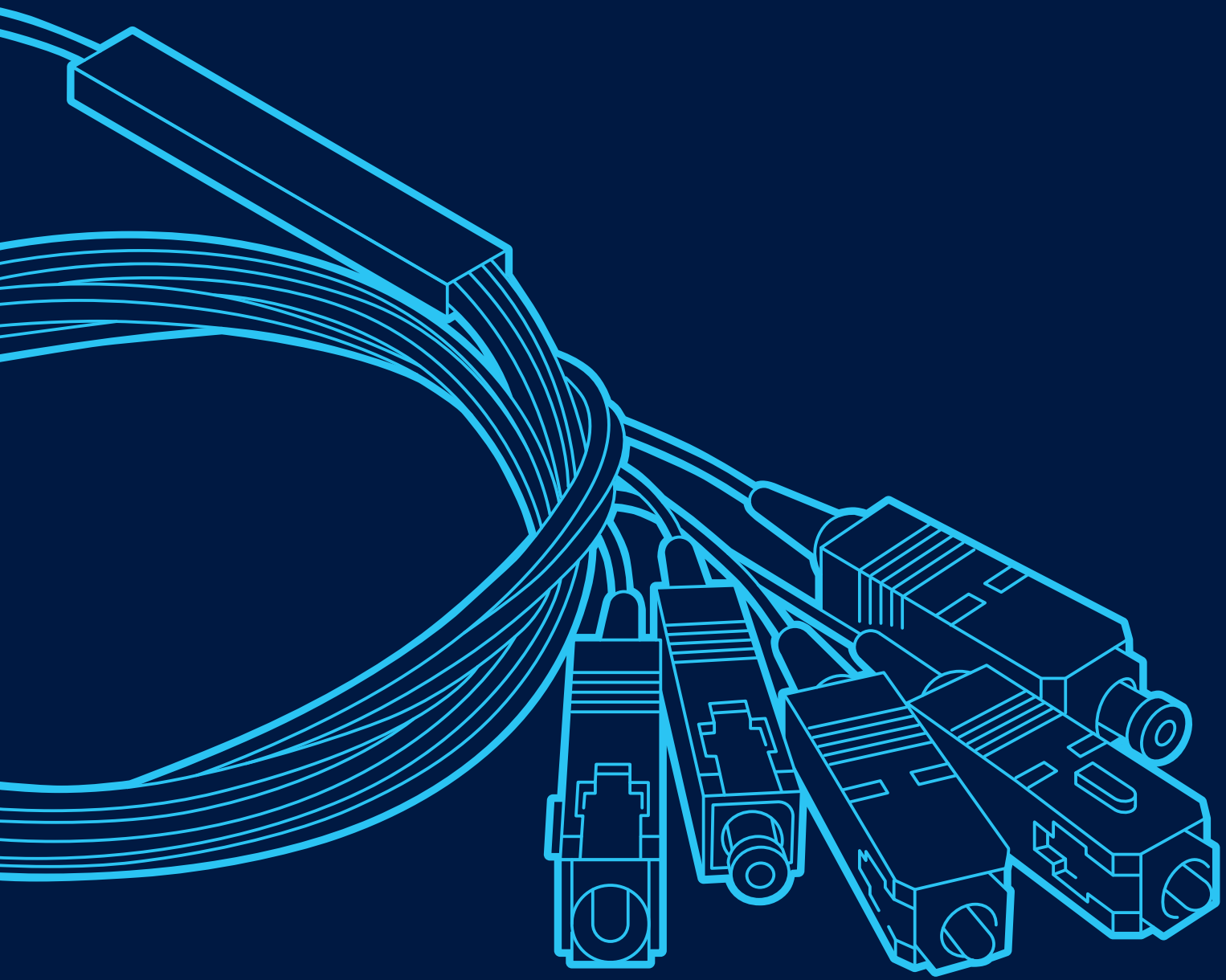
Fiber optic patch cords are fiber optical cables covered with connectors at the ends, that allow it to be connected to an optical telecommunication equipment. Used to connect the optical transmitter, receiver, and PON boxes. Regularly used and widely applied in optical fiber management system, last mile end user's connection, all connections in data centers of GPON, XPON projects.
By the diversity of telecommunication optic patch cords have common varieties such as SC, FC, LC, ST, E2000 types. With different lengths, jacket materials, thichness, glass fiber core types. Simlex or duplex types are available in our product range.



Technical specification:

Product code	SC	FC	LC	ST	E2000
Polish types	UPC, APC	UPC, APC	UPC, APC	UPC, APC	UPC, APC
Fiber cores	G652D, G657A1, G657A2	G652D, G657A1, G657A2	G652D, G657A1, G657A2	G652D, G657A1, G657A2	G652D, G657A1, G657A2
Fiber counts	Simplex, duplex	Simplex, duplex	Simplex, duplex	Simplex, duplex	Simplex, duplex
Fiber modes	Singlemode 9/125, multimode 50/125	Singlemode 9/125, multimode 50/125	Singlemode 9/125, multimode 50/125	Singlemode 9/125, multimode 50/125	Singlemode 9/125, multimode 50/125
Thickness, mm	0.9, 2.0, 3.0	0.9, 2.0, 3.0	0.9, 2.0, 3.0	0.9, 2.0, 3.0	0.9, 2.0, 3.0
Length, M	0.5, 1, 2, 3, 5, 10	0.5, 1, 2, 3, 5, 10	0.5, 1, 2, 3, 5, 10	0.5, 1, 2, 3, 5, 10	0.5, 1, 2, 3, 5, 10
Insertion losses (IL), dB	≤ 0.3	≤ 0.3	≤ 0.3	≤ 0.3	≤ 0.3
Materials	PVC, LSZH	PVC, LSZH	PVC, LSZH	PVC, LSZH	PVC, LSZH
Working temperature	-40~+85	-40~+85	-40~+85	-40~+85	-40~+85

FIBER OPTIC PLC SPLITTERS



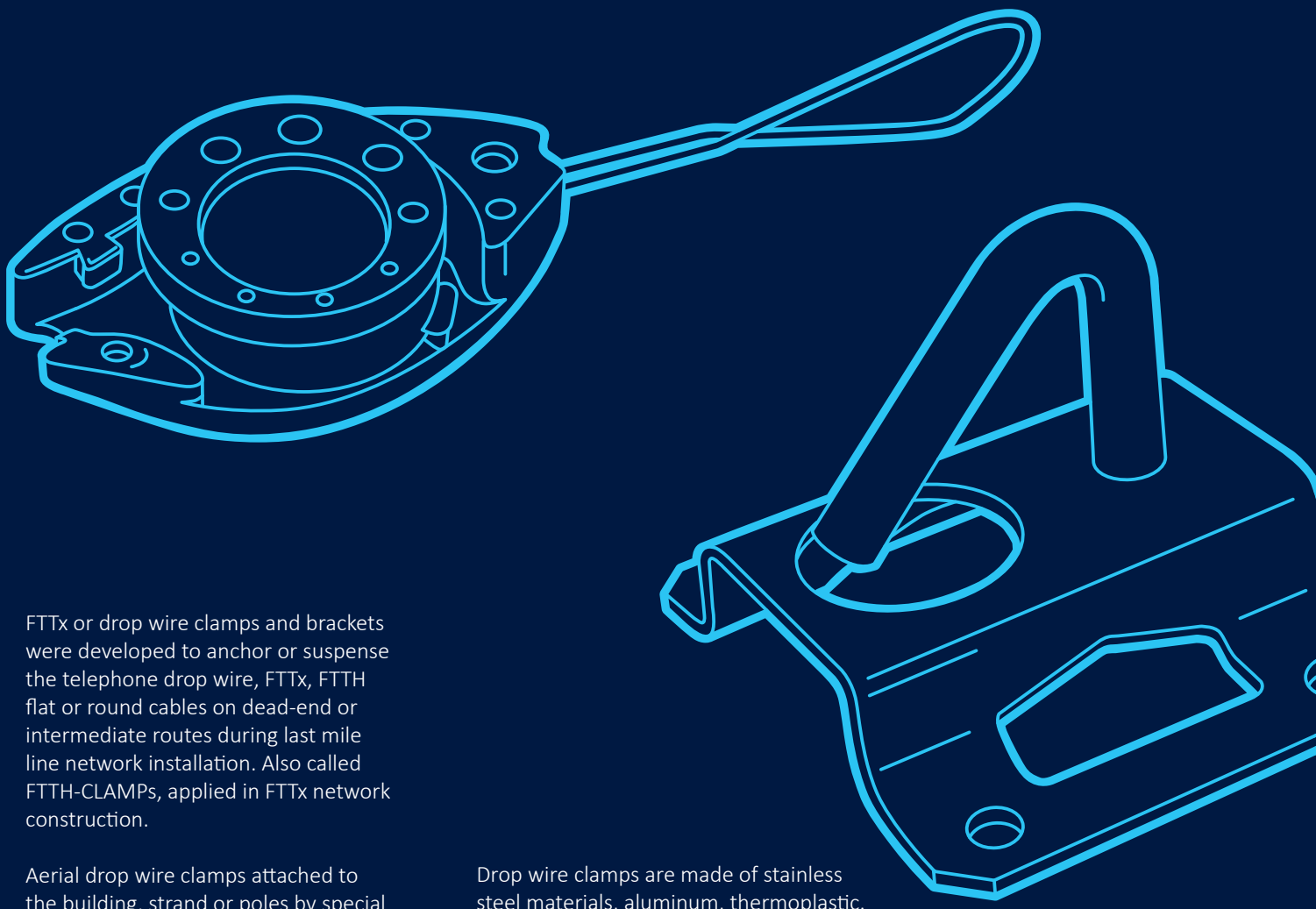
Fiber optic PLC (Planar Lightwave Circuit) splitters are based on a quartz integrated wave guide optical light distribution device. Fiber optical network uses an optical signal coupled to the branches to connect the terminal equipment and to branch the optical signal. PLC splitter connects many input and output terminals in a passive optical network (GPON, FTTX, FTTH).

Fiber optic cable ends capped with connectors of 1 x 2-1 x 32 fibers. With different counts of distribution cords, glass fiber core types, application covers, PLC splitters available in our product range.

Technical specification:

Product code	SC	FC	LC	ST	E2000
Insertion losses (IL), dB	3.8	7.4	10.7	13.8	16.8
Directivity, dB	55	55	55	55	55
Head types	SC/UPC, SC/APC	SC/UPC, SC/APC	SC/UPC, SC/APC	SC/UPC, SC/APC	SC/UPC, SC/APC
Fiber cores	G652D, G657A1, G657A2	G652D, G657A1, G657A2	G652D, G657A1, G657A2	G652D, G657A1, G657A2	G652D, G657A1, G657A2
Operating wavelength (nm)	1260-1650	1260-1650	1260-1650	1260-1650	1260-1650
Thickness, mm	0.9	0.9	0.9	0.9	0.9
Length, M	0.5 – 2	0.5 – 2	0.5 – 2	0.5 – 2	0.5 – 2
Application cover	w/o cover or cassette box	w/o cover or cassette box	w/o cover or cassette box	w/o cover or cassette box	w/o cover or cassette box
Working temperature	-40~+85	-40~+85	-40~+85	-40~+85	-40~+85

FTTX (DROP) CLAMPS & BRACKETS



FTTx or drop wire clamps and brackets were developed to anchor or suspense the telephone drop wire, FTTx, FTTH flat or round cables on dead-end or intermediate routes during last mile line network installation. Also called FTTH-CLAMPs, applied in FTTx network construction.

Aerial drop wire clamps attached to the building, strand or poles by special anchoring bracket, drive hooks, pole brackets, 55 hooks and various drops attachments and different angles.

Special drop wire clamp's design allows to implement the securely „dead end" without risk of cable loss or damage under high tension loads. The special clamping surface of anchoring clamp does not cut the cable jackets.

Drop wire clamps are made of stainless steel materials, aluminum, thermoplastic. That insures a high corrosion resistance and guarantee the long period of usage.

All the cable assemblies passed the tensile tests, operation experience with temperatures ranging test, temperature cycling test, aging test, corrosion resistance test etc.

FTTX CLAMPS FOR FLAT, FIGURE-I TYPE CABLES WITH STEEL OR FRP MESSENGERS

Product information

FTTx cable clamps applied on flat type cables of different sizes. Tension strength achieved by excentral layout of cable in the clamp. Open or closed wire bails provide an easier installation.

Technical specification:

Product code		Wire, mm	MBL, kN	Materials
TT-5-TYPE		Ø 0.4 – 1.5	1	UV resistant plastic, stainless steel
TT-SO-TYPE		Ø 0.4 – 1.5	0.5	UV resistant plastic, stainless steel
TT-SS-TYPE		Ø 0.4 – 1.5	2	UV resistant plastic, stainless steel
TT-DH-01		Ø 2 – 5	1	Galvinized steel, aluminium

BRACKETS FOR FTTX CABLE CLAMPS

Product information

Aerial drop wire clamps attached to the building, strand or poles by special anchoring bracket, drive hooks, pole brackets, SS hooks and various drops attachments.

Brackets can be easily attached to the building, strand or poles with special screws, bolts or stainless steel band with the buckles. Materials, as well as coating can be adjusted according to your needs.

Technical specification:

Product code		MBL, kN	Materials
TT-YK		1.5	Galvinized steel
TT-YK-02		1	Galvinized steel
TT-YK-03		1	Galvinized steel
TT-YK-04		1.5	Galvinized steel
TT-AH		2	Galvinized steel
TT-CA-25		2	Aluminium

FTTX CLAMPS FOR FLAT-TYPE CABLES

Product information

FTTx cable clamps applied on flat cables of different sizes. Tension strength achieved by wedges and conical body of clamp. Open or closed wire bails provide an easier installation.

Technical specification:

Product code		Max cable size (h × w), mm	MBL, kN	Materials
TTODWAC-HY		<4 × <8	1	Stainless steel, UV resistant plastic
TTODWAC-15		<5 × <12	0.7	Stainless steel
TTODWAC-22		<6 × <13	1.2	Stainless steel
TTODWAC-22P		<6 × <13	1	Stainless steel, UV resistant plastic
TTODWAC-225		<6 × <13	0.5	Stainless steel
TTODWAC-26		<6 × <16	2	Stainless steel
TTPA-08-F		2-6 × <10	3	Aluminium, stainless steel, UV resistant plastic

FTTX CLAMPS FOR ROUND & FLAT-TYPE CABLES

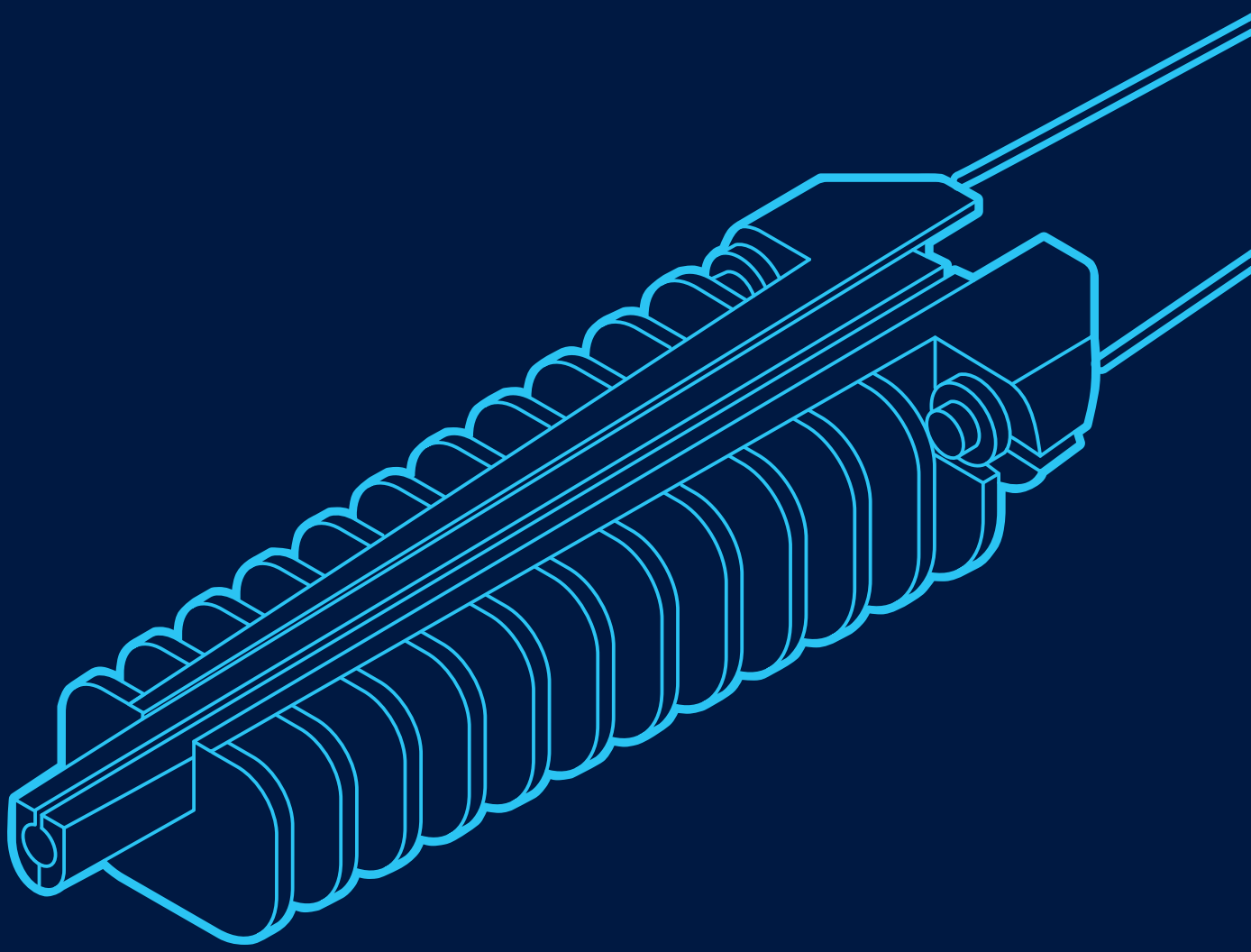
Product information

FTTx cable clamps applied on round and flat type cables of different sizes. Tension strength achieved by excentral layout of cable in the clamp or wedges. Radius of excentrals is enough for the optical signal to work properly, without losses. Open or closed wire bails provide an easier installation.

Technical specification:

Product code		Cable size, mm	MBL, kN	Materials
TTFISH-1		Ø 2 – 3, 2 × 3	0.5	UV resistant plastic, stainless steel
TTFISH-2		Ø 2 – 5, 2 × 3	1	UV resistant plastic
TTACC		Ø 2 – 6	1	UV resistant plastic
TTH15		Ø 2 – 4, 2 × (5 – 8)	0.5	UV resistant plastic, galvinized steel
TTD2		Ø 2 – 5, 2 × (3 – 5)	0.5	UV resistant plastic, galvinized steel
TTD6		Ø 4 – 8	0.5	UV resistant plastic
TTDC-35		Ø 2 – 5, 2 × (3 – 5)	0.1	UV resistant plastic

ADSS CABLE CLAMPS



Anchor and suspension sets for all dielectric self-supporting cables (ADSS) were developed to tension and suspense an aerial round fiber optic cable of different diameters. Clamps applied at central loop routes up to 100 meters and last mile installation routes in FTTx, GPON network construction.

Design allows to implement the securely of cable without risk of cable loss or damage of insulation under sufficient mechanical loads.

Anchor and suspension clamps for ADSS cables are made of aluminium, stainless steel, high strength plastic materials.That insures a high corrosion resistance and guarantee the long period of usage.

All the assemblies passed the tensile tests, operation experience with temperatures test, temperature cycling test, aging test, corrosion resistance test etc.

ANCHOR CLAMPS FOR ADSS CABLES

Product information

ADSS anchor clamps are enough to keep the aerial bundled cables in tight strength position, and appropriate mechanical resistance archived by conical body and wedges, which does not allow the cable to slip from the ADSS cable accessory. The ADSS cable route may be dead-end, double dead-ending or double anchoring.

Technical specification:

Product code		Cable size, mm	MBL, kN	Materials
TTPA-500		Ø 4 – 8	3	UV resistant plastic, stainless steel, aluminium
TTPA-3000		Ø 8 – 12	5	
TTPA-3001		Ø 12 – 16	5	
TTPA-3002		Ø 16 – 20	5	

SUSPENSION CLAMPS FOR ADSS CABLES

Product information

Suspension or support clamps for all dielectric self-supporting cable (ADSS) used for aerial round optical fiber cable. These optical fiber cable accessories can be installed on short spans at intermediate poles. ADSS suspension clamp are very easy in installation of optical fiber line and appropriate mechanical resistance.

Can be archived by tightening nut until needed strength will be reach. Or self-adjusting under cable weight. Neoprene insert or strap does not allow the optical cable to slip from the suspension fitting. The ADSS cable may be different sizes, but fiber optical cable route should be straight with angles up to 25.

Technical specification:

Product code		Cable size, mm	MBL, kN	Materials
TTD8		Ø 8 – 12	1.5	Galvinized steel, UV resistant plastic
TTD12		Ø 13 – 16	1.5	
TTHC 5-8		Ø 5 – 8	4	
TTHC 8-12		Ø 8 – 12	4	
TTHC 10-15		Ø 10 – 15	4	
TTHC 15-20		Ø 15 – 20	4	
TTPS-619		Ø 6–19	3	

BRACKETS & HOOKS

The suspension and tension brackets were designed to anchor or suspense the ADSS, OFNR, figure-8, cable dead-end tension or suspension clamps. In addition, used for fiber optical closures (FOSC) as storage for cable slacks, which appear during the construction of telecommunication network in overhead lines with ADSS, FTTH, drop wire cables.

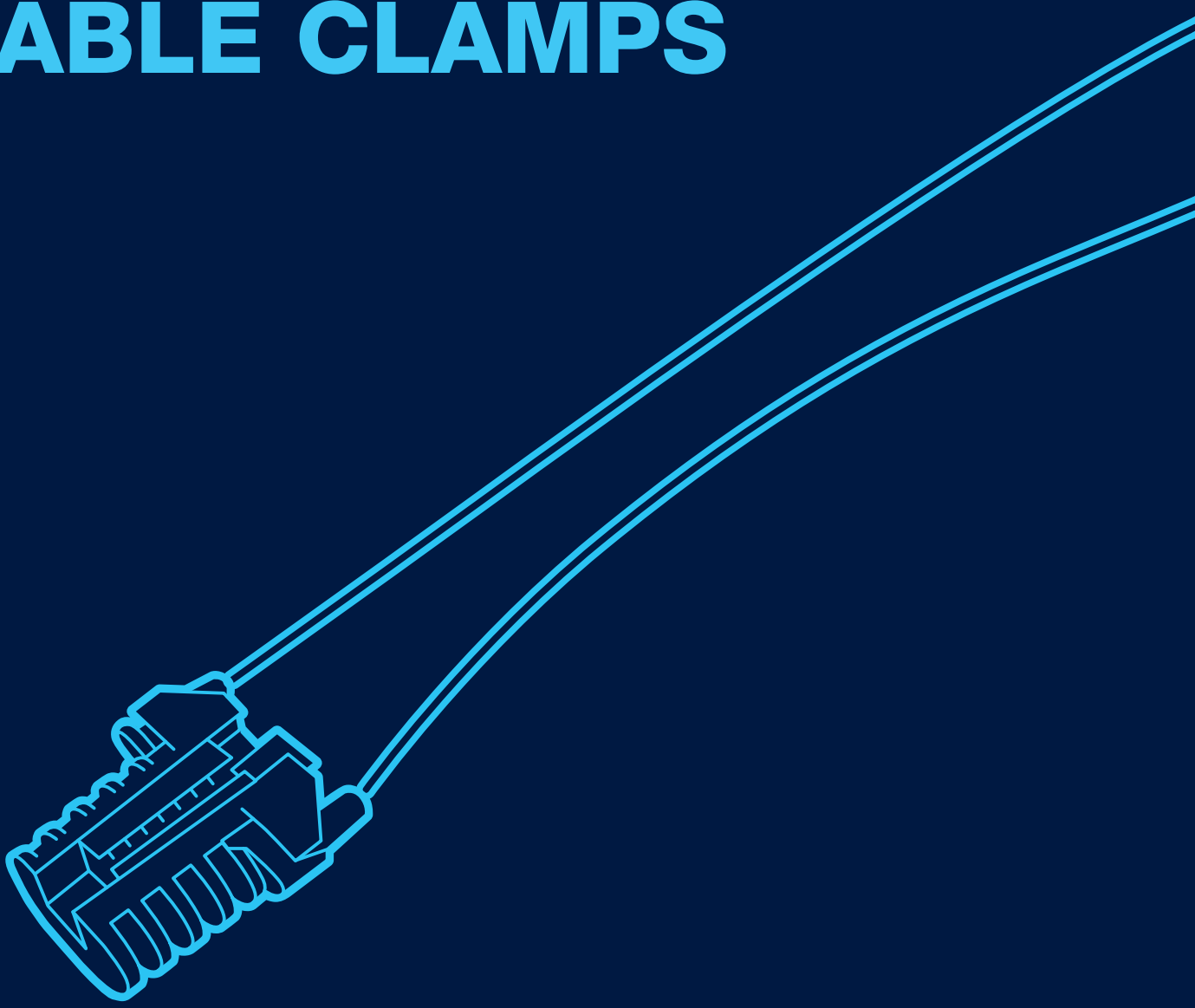
We provide our customers by anchor and suspension assemblies, which have been tested with dead-end-ing of flat and round cables applied on dead-end, double dead-ending routes and different angles.

Brackets can be easily attached to the building, strand or poles with special screws, bolts or stainless steel band with the buckles. Brackets and hooks are made of steel materials, aluminum, stainless steel materials, what guaran-tee high corrosion resistance and long period of usage.

Technical specification:

Product code		MBL, kN	Materials
TTUPB		F1 – 5, F2 – 3,5, F3 – 9, F4 – 2, F5 – 5	Aluminium
TTPS-1500		12	Aluminium
TTConsole32		15	Hot dip galvanized steel
TTYPMK		—	Galvanized steel
TTPS-7		1	Galvanized steel
TTYKP-01		4	Galvanized steel
TTYKP-02		4	Galvanized steel
TTYKN		15	Galvanized steel
TTKR-16		18	Hot dip galvanized steel

FIGURE-8 TYPE CABLE CLAMPS



Anchor and suspension sets for all figure-8 type cables were developed to tension and suspense an aerial round fiber optic cable of different diameters. The central messenger of cable can be made of steel or FRP materials. Clamps applied at central loop routes up to 100 meters and last mile installation routes in FTTx, GPON network construction.

Design allows to implement the secure-ly of cable without risk of cable loss or damage of insulation under sufficient mechanical loads.

Anchor and suspension clamps are made of aluminium, stainless steel, high strength plastic materials.That insures a high corrosion resistance and guarantee the long period of usage.

All the assemblies passed the tensile tests, operation experience with tem-peratures test, temperature cycling test, aging test, corrosion resistance test etc.

SUSPENSION CLAMPS FOR FIGURE-I TYPE CABLES

Product information

Suspension clamps designed to suspense figure-8 fiber optic cable of different diameters, and mes-senger's types, on the short spans. Clamps are universal to be apllied on steel, FRP, kevlar, AAC messen-ger. Fiber optic cable route can be straight or turning, with angles up to 25. Our clamps does not cut the cable jackets and guarantee the long period of usage.

Following optical fiber suspension accessories are made of UV resist-ant plastic, galvanized steel plates and hardware. This allows very easy in installation of optical fiber cable and attached to pole (concrete, wooden, metal) with suspension hook or stainless steel strap.

Technical specification:

Product code		Diameter of wire over the insulation	MBL, kN	Materials
TTSSA-1		Ø 4 – 5 / 5 – 9	8	Galvinized steel, UV resistant plastic
TTCS		Ø 4 – 5 / 5 – 9	8	Galvinized steel, UV resistant plastic
TTZPS-2		Ø 4 – 8	2	Galvinized steel, aluminium

ANCHOR CLAMPS FOR FIGURE-I TYPE CABLES

Product information

Anchor clamps designed to anchor figure-8 fiber optic cable of different diameters and messenger's types. All the clamps are self-adjusting. Needed mechanical strength and clamp of cable achieved by wedges and conical body of clamp. Ussually for FRP, kevlar messenger it is used plastic wedges and body of clamp, whereas for metal messenger we use zink teeth and aluminum body material.

Generally, optical cable with steel messenger require higher mechanical load, and this completely assured by high strength aluminum materials that applied in anchor clamps. Our wedge anchor clamps does not cut the cable jackets and guarantee the long period of usage.

Technical specification:

Product code		Messenger's material	Diameter of wire over the insulation	MBL, kN	Materials
TTPA-37 TTPA-69 TTPA-610		FRP	Ø 3 – 7 Ø 6 – 9 Ø 6 – 10	2.5	Stainless steel, UV resistant plastic, aluminium
TTPA-05		Steel	Ø 3-5	2	Stainless steel, UV resistant plastic, aluminium, zink
TTPA-06 TTPA-07		Steel	Ø 3 – 6 Ø 3 – 7	3 5	Stainless steel, UV resistant plastic, aluminium, zink
TTPA-08		Steel	Ø 3 – 7	2.5	Stainless steel, UV resistant plastic, aluminium, zink
TTPA-07-535 TTPA-07-568		Steel	Ø 3 – 5 Ø 6 – 8	5.5	Stainless steel, UV resistant plastic, aluminium, zink

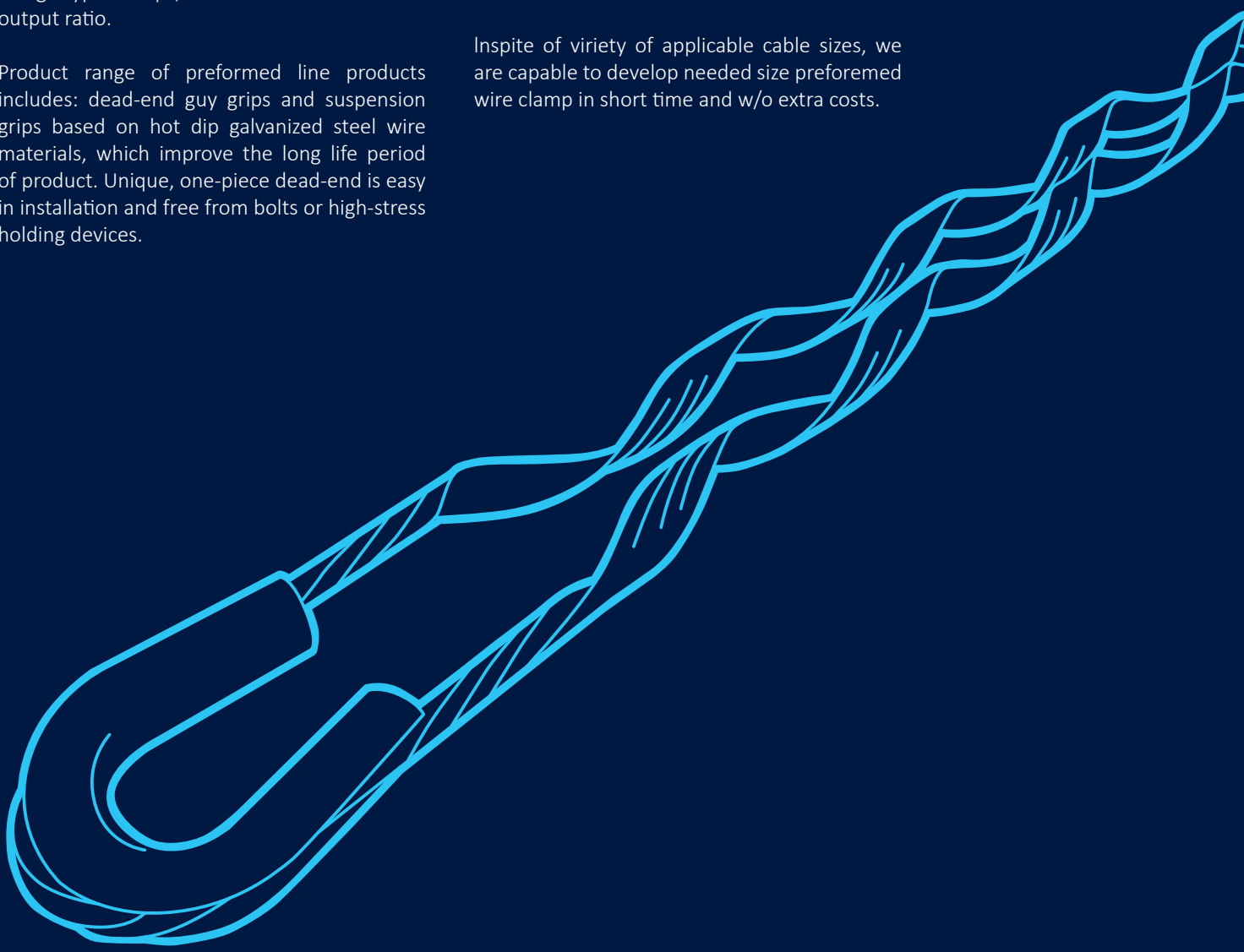
PREFORMED WIRE GRIPS FOR ADSS & FIGURE-I CABLES

Preformed wire grips were developed to use in overhead telecommunication networks to grip ADSS and figure-8 type of fiber optic cables. The solution is more cost efficient than traditional wedge-type clamps, because of low materials-output ratio.

Product range of preformed line products includes: dead-end guy grips and suspension grips based on hot dip galvanized steel wire materials, which improve the long life period of product. Unique, one-piece dead-end is easy in installation and free from bolts or high-stress holding devices.

Preformed wire clamps have been tested with the collaboration of tele-communication companies in order to satisfy the local requirements and national standards of our customers.

Inspite of viriety of applicable cable sizes, we are capable to develop needed size preforemed wire clamp in short time and w/o extra costs.



DEAD END GUY GRIPS, TT-JS

Product information

Performed wire dead-end guy grip, TT-JS were developed to grip the ADSS fiber optical cable while construction of internet network lines on wood poles or concrete towers, as analog of classical wedge tension clamps.

ADSS performed wire guy grip, TT-JS were made of hot dip galvanized steel, ASTM A475 standard of wire rod.

ADSS distribution dead-ends guy grip do not require any tool for installation and can be mounted on fiber optic cable, directly. Over-head ADSS dead-end TT-JS type do not require and protective rods or side splices, it can be installed straight on the fiber cable jacket. However, when the tension strength is high, it should be applied helical ADSS grip with splice protector in order to protect fiber core from damaging during tensioning. Opposite to it, it can be applied ADSS preformed wire grip without protector, when the tension is under 9 KN, with thimble or without it.

The configuration of ADSS performed clamp is calculated in order to minimize the inser-tion losses of light signal. In addition, our company has researched plenty of varieties of helical tension grips and we are able to match our wire formed dead - ends to your ADSS cable size, according to its working load and outer diameter.

SUSPENSION GRIPS, TT-JS-X

Product information

Prefored wire suspension grips TT-JS-X were developed to secure cable intermediate pole on the central loop routes fiber optical cable line.

Wire formed grips are made of galvanized steel materials. Additionally equipped with round-type thimble, that provide superior holding without destruction of wire after years of usage.

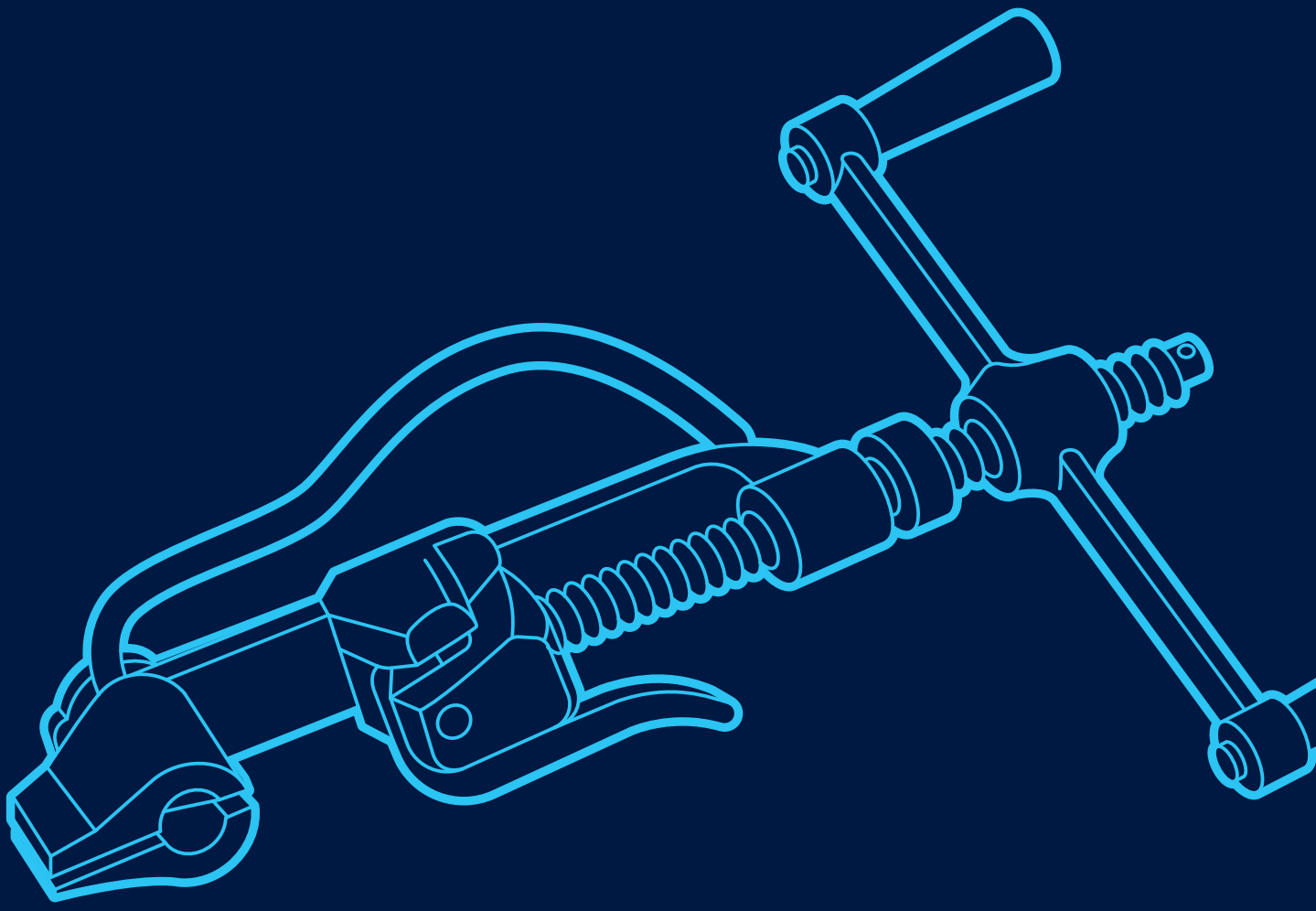
Installation of grip do not require any tool and can be mounted on fiber optic cable, directly. Overhead ADSS grips do not require and protective rods or side splices, it can be installed straight on the fiber cable jacket. However, when the tension strength is high, it should be applied helical ADSS grip with splice protector in order to protect fiber core from damaging during tensioning. Opposite to it, it can be applied ADSS performed wire grip without protector, when the tension is under 9 KN, with thimble or without it.

Teletronik is capable to develop performed wire suspension grips according to your cable specification, and distance between poles.

Technical specification:

Product code	Thimble, may be applied on tension load	Working load of cable (breaking load), kN	ADSS cable size, mm	Color code	Wire configuration	Length, mm	Weight, kg
TT-JS	Without US – 1 (1 – 7 kN) UT – 05 (1 – 7 kN) UT – 1 (5 – 10 kN) UT – 3 (12 – 15 kN)	1 (2) 2 (3.5) 3 (5) 4 (7) 5 (9) 6 (10) 7 (12) 8 (14) 9 (15)	5.0/5.6 5.7/6.5 6.6/7.4 7.5/8.4 8.5/9.4 9.5/10.5 10.6/11.6 11.7/12.8 12.9/14.1 14.2/15.6 15.7/17.3 17.4/19.1 19.2/20.9 21/22.8	red yellow black orange brown white blue green red yellow black orange brown white	Specified in accordance to cable working load		
TT-JS-X	Without UR – 1 (1 – 7 kN) UR – 2 (5 – 10 kN) UR – 3 (12 – 15 kN)						

BANDS, BUCKLES & TOOLS



Stainless steel banding or strapping products and accessories were developed to bundle items together, to attach industrial fittings to the poles. Banding system is a set of fastening materials and special fixing devices made of stainless steel or steel, covered with special materials, gas, oil and mining industries, fixing signs to power line.
Basic package of banding accessories to fixate cable accessories to pole includes:

- stainless steel band;
- stainless steel buckles;
- tools for tightening band.

Stainless steel band accessories meet the criteria of key regional standards such as CENELEC, EN-50483-4,
NFC 33-020, ROSSETI (CIS market).

Due to advantages as extended service life; extremely easy and convenient in use, securely and tightly attaching, strapping accessories can be applied very widely: in fastening solutions, in construction of overhead distribution lines: overhead transmission lines, telecom-munication lines, construction of outdoor passive optic networks, street or traffic signs and video cameras, tubes and other pole hardware, marine and railway transportation.

STAINLESS STEEL BANDS

Product information

Stainless steel band applied with suspension clamps, anchor clamps, and hooks, on dead end and intermediate routes, of main or end use electrical connections.

Stainless steel bands are made of stainless steel of different grades: 201, 202, 304, 316, 409. Teletronik's band have superior elongation value, compared to other manufactors. For easy indetification of steel grade, we prod-ucts the plastic boxes form different colors.

Steel strapping is the strongest way of securing with heavy loads, when fixing items withhold the high tensile strength.

Teletronik's banding products are available in different sizes to assist your strapping needs. Stainless steel bands can guarantee extended service life and attaching under significant mechanical loads.
Installation process:

1. Cut the stainless steel strap with needed length by strap banding tool.
2. Put on it the stainless steel buckle.
3. Fix the strap by moving the strap banding tool wheel (or ratchet), then cut the band.

Technical specification:

Material grade, SUS	201	202	304	316	409
Width	1/4" – 6.4 mm	3/8" – 9.5 mm	1/2" – 12.7 mm	5/8" – 16.0 mm	3/4" – 19.0 mm
Thikness	0.015" – 0.40 mm	0.020" – 0.50 mm	0.025" – 0.64 mm	0.028" – 0.70 mm	0.030" – 0.75 mm
Length for roll, m	30 or 50	30 or 50	30 or 50	30 or 50	30 or 50
Colour of dispenser	Red	Green	Blue	Purple	Yellow

STAINLESS STEEL BUCKLES, T-TYPE

Product information

Stainless steel buckles, other called stain-less steel clips, used to attach pole fittings, anchor clamps, suspension fittings and other fittings or accessories together with stainless steel band, on dead-end and inter-mediate routes, of main or end use electrical connections.

Stainless steel buckles t-type are made of stainless steel of different grades: 201, 202, 304,316.

Stainless steel buckles t-type are reinforced, this can guarantee extended service life and attaching under significant mechanical loads because teeth strictly clamped the band inside.

Stainless steel buckles t-type are made of different sizes depend on band strapping size to assist your strapping needs of securing with heavy loads. Stainless steel buckles has max size for band - 20 mm and appropriate for insertion of three coils of band strapping.

The design of buckles exclude purchase bolts, nuts and washers, hex keys of different sizes.

Technical specification:

Product code	**TTHC-10-T**	**TTHC-13-T**	**TTHC-16-T**	**TTHC-20-T**
Max band width	3/8" – 10 mm	1/2" – 12.7 mm	5/8" – 16.0 mm	3/4" – 20.0 mm
Grades	201, 202, 304, 316	201, 202, 304, 316	201, 202, 304, 316	201, 202, 304, 316

STAINLESS STEEL BUCKLES, L-TYPE

Product information

Stainless steel buckles, other called stain-less steel clips, used to attach pole fittings, anchor clamps, suspension fittings and other fittings or accessories together with stainless steel band on dead-end and inter-mediate routes, of main or end use electrical connections.

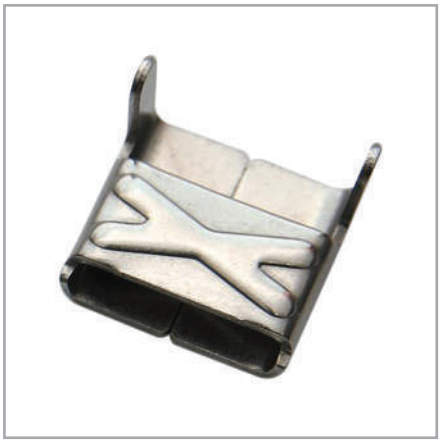
Stainless steel buckles I-type are made of stainless steel of different grades: 201, 202, 304, 316.

Stainless steel buckles I-type are made of different sizes depend on band strap-ping size to assist your strapping needs of securing with heavy loads. Stainless steel buckles have max size for band- 20 mm and appropriate for insertion of three coils of band strapping.

The design of buckles exclude purchase bolts, nuts and washers, hex keys of differ-ent sizes.

Technical specification:

Product code	**TTHC-10-L**	**TTHC-13-L**	**TTHC-16-L**	**TTHC-20-L**
Max band width	3/8" – 10 mm	1/2" – 12.7 mm	5/8" – 16.0 mm	3/4" – 20.0 mm
Grades	201, 202, 304, 316	201, 202, 304, 316	201, 202, 304, 316	201, 202, 304, 316



STAINLESS STEEL BUCKLES, LX AND LC

Product information

Stainless steel buckles, other called stain-less steel clips, used to attach pole fittings, anchor clamps, suspension fittings and other fittings or accessories together with stainless steel band, on dead-end and inter-mediate routes, of main or end use electrical connections.

Stainless steel buckles LC and LX are made of stainless steel of different grades: 201, 202, 304, 316. Stainless steel buckles LC and LX are made as analog to reinforced buckles, to withhold sufficien mechanical loads, compared to sim-ple I-type. Stainless steel buckles have max size for band- 20 mm and appropriate for insertion of three coils of band strapping.

The design of buckles exclude purchase bolts, nuts and washers, hex keys of differ-ent sizes.

Technical specification:

Product code	**TTHC-20-LC**	**TTHC-20-LX**
Max band width	3/4" – 20.0 mm	3/4" – 20.0 mm
Grades	201, 202, 304, 316	201, 202, 304, 316

RATCHET TOOL TTMBT-oo4

Product information

Ratchet type tool TTMBT-004 is developed for tensioning the stainless steel band and mounting the fittings on wooden, concrete or metal poles. The tool is equipped with special blade for easily cutting the stainless steel band.

Ratchet tool TTMBT-004 heavy duty forged steel banding tool. Maximum thickness of mounted steel band is 1.5 mm and 25 mm of width.

Ratchet tool TTMBT-004 is made of galva-nized steel, which is resistant to impacts and wear. Has long durability and extended service life. Ratchet tool TTMBT-004 is an easy way of binding stainless steel banding around different rack/ pole elements. It keeps the tension tight on the strapping bands as they fasten the components together.

The oper-ations of cutting, tension, banding can be done with spin tension handle, spring-load-ed gripper and cutter. To complete the installation there is only one tool needed.

Technical specification:

Product code	TTMBT-004
Max band width	< 25
Grades	< 1.5

WHEEL TOOL TTMBT-003

Product information

Wheel type tool TTMBT-003 is developed for tensioning the stainless steel band and mounting the fittings on wooden, concrete or metal poles. The tool is equipped with special blade for easily cutting the stainless steel band.

Wheel type tool TTMBT-003 is heavy duty forged steel banding tool. Maximum thick-ness of mounted steel band is 1.2 mm and 20 mm of width. Wheel type tool TTMBT-003 is made of gal-vanized steel, which is resistant to impacts and wear. Have long durability and extended service life.

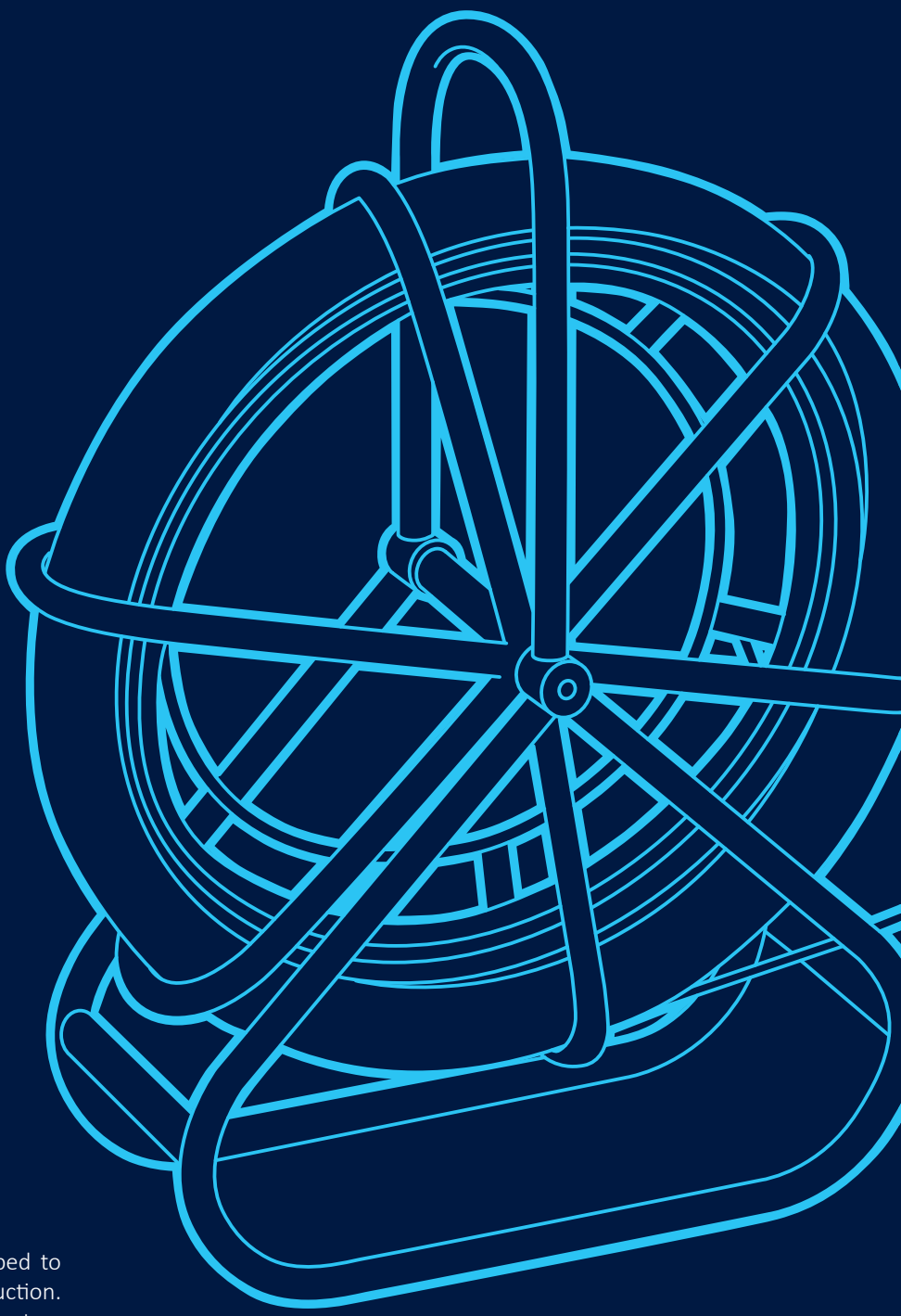
The strapping tool TTMBT-003 has superi-or rust corrosion resistance and trouble proofed design, which strictly clamped the band and buckles.

The cut knife withholds plenty of cutting cycles and guarantee long service period of tool. To complete the installation there is only one tool needed.

Technical specification:

Product code	TTMBT-003
Max band width	< 20
Grades	< 1.2

PULLING TOOLS FOR CABLE LINE



Stringing overhead pulling tools were developed to be used with fiber optic cable in line construction. Such equipment have the access to pull con-ductors by manual or machine force. Pulling force converts to clamping force and easily allows pulling fiber optical cables.

Common installation set includes: FRP duct rodder, overhead stringing block (pulley), come-along, stringing lever hoist, overhead pulling cable grip, swivel shackle, separating wedges.

Simple desing and durability allows with stand sufficient loads without cable slip or its damage.

FIBER GLASS DUCT RODDER, WHEEL TYPE

Product information

Fiberglass duct rodders also called fiber-glass snake rodders were developed for rod-ding operations and underground jobs such as pulling cables through duct and pipes.

Glassfiber reinforced composite core, covered by plastic jacket ensures long life period. Suitable for applying with pulling mechanical or electrical winch, which is easy because of metal frame body on wheels. Wheels allow to carry on distances during the construction works.

High-tensile strength and water resistant provide this solution widely applied in the telecommunication operations. Reliable performance to help increase the efficiency of construction works.

Technical specification:

Product code	TTDR-6/50	TTDR-6/100	TTDR-8/100	TTDR-8/150	TTDR-10/150
FRP, mm	Ø 6	Ø 6	Ø 8	Ø 8	Ø 10
FRP length, M	50	100	100	150	150

STRINGING BLOCKS (PULLEY)

Product information

Overhead stringing block (pulley) is used for pulling of the insulated areal conductor or ropes. Block made of galvanized steel metal part and plastic coated groove. Also pulley can be made of aluminum alloy with synthetic material groove.

Stringing block can be equipped with locking rope, fitted with a hand swiveling hook.

Technical specification:

Product code	TTMT26-50-30	TTMT 56-120-30
MBL, kN	20	21
Material	Nylon	Al
Weight, kg	1.5	2.5

COME-ALONGS

Product information

Stringing overhead come-along, is used for pulling conductors by manual or machine force.

Pulling force converts to clamping force and easily allows pulling cables.

Technical specification:

Product code	TTMC-29/41
MBL, kN	20
Cable size, mm	Ø 4 – 22

LEVER HOISTS

Product information

Stringing lever hoist is used for pulling conductors of a low voltage power to lifting loads by manual force, reverse can be use.

It is made of galvanized steel. This LV ABC mechanical winch can be used for all types of cable adjustments.

Technical specification:

Product code		TTLH-15	TTLH-20
Pulling force, ton	Without block	0.75	1.5
	With block	1.5	3
Cable length, m	Without block	3	3.0
	With block	1.6	1.6

PULLING SOCKS

Product information

Overhead pulling cable grip is used for pull-ing of the insulated conductor, for ropes and cable with neutral messenger.

Overhead pulling cable grip are made of stainless steel or galvanized steel wires.

Technical specification:

Product code	TTS10	TTS12	TTS15
MBL, kN	10	12	15
Cable size, mm	Ø 5 – 10	Ø 10 – 14	Ø 14 - 24
Length, mm	300	600	600

SWIVEL

Product information

Swivel shackle is used with pulling socks to eliminate any twisting of conductor. Also it can be used to replace the old cable between winches.

This overhead swivel is used between two overhead pulling grips to replace an old con-ductor by a new one or between a pulling grip and the wire rope on the winch.

It prevents any twisting of the conductor.

Technical specification:

Product code	MBL, kN	Cable size, mm	Dimensions, mm					
			A	B	C	D	E	F
TTSW-15	15	Ø 12	12	87	33	29	12	113

For in depth information please visit our webpage
Für mehr Information bitte besuchen Sie unsere Webseite

teletronik® AG
Bahnhofstrasse 10.
CH, 6302 Zug
Switzerland
teletronik@teletronik.com
www.teletronik.com