

WALL-MOUNTED FIBER CABLE TERMINATION BOX STRUCTURE (I)

BACKGROUND OF THE INVENTION

1) FIELD OF THE INVENTION

This invention of a wall-mounted fiber cable termination box structure is a fiber wiring device with a fiber splice tray designed inside a covered box for cables completely integrated and protected.

2) DESCRIPTION OF THE PRIOR ART

Network development curtails distances among people, causing written data saved as files which can be accessed by computers and news as well as information at one place rapidly known by persons at another place via networks, and materializing network consumption, audio/video transmission, real-time image, and team speak thus far. To make network speeds accelerated and networks accessible to civilians, many cities around the world with fiber broadband developed currently are stepping into digitized cities.

Optical fiber networks are characteristic of short-distance peer-to-peer connections and require specified fiber cable termination boxes which concentrate, fuse and protect optical fibers and are installed inside residences' distribution panels or buildings' main distribution panels for better protection and reduced volume.

Hence, the inventor after actively researching design of optoelectronics and communications equipment sets forth a wall-mounted fiber cable termination box structure which has a simple mechanism design in a case body to place and protect fused optical fibers and a fiber splice tray and accommodate redundant optical fibers and is installed in a residence's indoor distribution panel, a building's main distribution panel, or on a wall according to any required place or location for promoted convenience and protection of optical fiber networks installed.

SUMMARY OF THE INVENTION

The principal objective of this invention of a wall-mounted fiber cable termination box structure is to supply the case body accommodating and fusing optical fibers.

The secondary objective of this invention of a wall-mounted fiber cable termination box structure is to supply the case body with a splice unit for installation of a fiber splice tray.

The third objective of this invention of a wall-mounted fiber cable termination box structure is to supply the case body with fasteners opposite to a top cover's pivots.

The fourth objective of this invention of a wall-mounted fiber cable termination box structure is to supply the top cover with pivots opposite to the case body's fasteners.

The fifth objective of this invention of a wall-mounted fiber cable termination box structure is to supply the top cover with retainers opposite to the case body's recesses.

The sixth objective of this invention of a wall-mounted fiber cable termination box structure is to supply the case body with hooks to grip fiber cables.

The seventh objective of this invention of a wall-mounted fiber cable termination box structure is to supply the case body with plural interfaces for installation of fiber cables.

With illustration of diagrams, detailed descriptions and technical contents related to this invention are displayed as follows:

DETAILED DESCRIPTIONS OF THE PREFERRED EMBODIMENTS

First, refer to Figure 1 and 2 indicating this invention of a fiber cable termination box 1 for fusion of accommodated plural optical fibers and fiber cables in a fiber splice tray. The fiber cable termination box 1 comprises a top cover 10 and a case body 20 wherein the top cover 10 is a rectangular covered body having trapezoid blocking plates 13 and recesses 130 on both sides, a droplet-shaped lateral bulge 11 on the third side and retainers 14 on the bottom of this same side, and cylindrical pivots 12 on the fourth side, and the blocking plate 13 forms a recess 130 opposite to a concavity 26 of the case body 20 for fiber cables 3 clipped and fixed when a stop plate 240 installed on a concavity 26 of the case body 20 is removed for setup of fiber

cables; the droplet-shaped lateral bulge 11 installed on one side of the top cover 10 has a bore 110 opposite to a bore 210 of a lateral bulge 21 on the case body 20 that corresponding bores 110 and 210 can be penetrated by a lock; the T-shaped retainer 14 is located inside a recess 25 (not shown in both figures but in Figure 4) of the case body 20 for coupling of the top cover 10 and the case body 20 when the top cover 10 shields the case body 20; the pivot 12 on one side of the top cover 10 has a bore 120 (shown in Figure 3 for a perspective view of the top cover's other side) and is cylindrical for coupling a fastener 22 of the case body 20 with the top cover 10 to complete opening or closing revolution action between the top cover 10 and the case body 20;

The rectangular concave case body 20 has a droplet-shaped lateral bulge 21 on one vertical sidewall, C-shaped fasteners 22 on the opposite side's top, plural trapezoid fasteners 23 on its inner peripheral sidewalls as well as bottom, plural interfaces 24 on its periphery, plural cable guide holes 29 on its bottom, a trapezoid concavity 26 on one of both ends, a rectangular protruded splice unit 27 at the center of the case body 20, and plural recesses 25 (not shown in both figures but in Figure 4) on one inner vertical sidewall of the same side of the lateral bulge 21 for accommodation of optical fibers, fiber cables and a fiber splice tray 5 and fusion of optical fibers inside the case body 20;

The droplet-shaped lateral bulge 21 is placed on one side of the case body 20 and has a bore 210 opposite to a bore 110 of a lateral bulge 111 on the top cover 10 that corresponding bores 210 and 110 can be penetrated by a lock; the C-shaped recess fasteners 22 are designed on a vertical sidewall of one side to grip the pivot 12 on the top cover 10; the hollow trapezoid fasteners 23 are placed on inner peripheral sidewalls and the bottom of the case body 20 for cable ties 4 fastening fiber cables 3 wound inside the case body 20 on fasteners 23 (not shown in both figures but in Figure 5); the plural interfaces 24 are notches opened to laterals of the case body 20 and are blocked with stop plates 240 to prevent dust invading and designed on the periphery of the case body 20 for accommodation of fiber cables 3 (not shown in both figures but in Figure 5) when interfaces 24 are not used; the cable guide holes 29 are rectangular openings and connected to a stop plate 290 for fiber cables 3 penetrating when the stop plate 290 is broken as required; the concave recess 25 (not shown in both figures but in Figure 4) with a function of grip is opposite to a retainer 14 of the top cover 10 and is steadily coupled with the top cover 10 during a coupling action; the trapezoid concavity 26 is located on one of both ends, so as to make the blocking plate 13 positioning the concavity 26 and clipping fiber cables 3 when the top cover 10 is closed; the rectangular protruded splice unit 27 located at the center of the case body 20 has plural noses 270 on its rectangular protruded body for a corresponding fiber splice tray 5 and forms a keyhole 271 to screw the fiber splice

tray 5 (not shown in both figures but in Figure 5) with a bolt 50; all components designed on the case body 20 fulfill entry and exit of fiber cables 3, a function of coatings and protection layers on fiber cables 3 peeled to expose optical fibers 6 for fusion and transformation inside the fiber splice tray 5, and promoted integral aesthetics and practicality with a small case body installed inside a power distribution box of a building, a community, or a residence.

Refer to Figure 3 and 4 indicating a lateral view of the top cover and a perspective view of the top cover coupled with the case body. The top cover 10 has a lateral bulge 11 and a bore 110 which are shown on one side and opposite to a lateral bulge 21 (not shown in both figures but in Figure 1) of the case body 20, and forms blocking plates 13 which are shown on two ends and opposite to a concavity 26 (not shown in both figures but in Figure 1) of the case body 20 and plural fasteners 14 and pivots 12 on the bottom that pivots 12 are coupled with C-shaped fasteners 22 on the case body 20 to complete turns of opening or closing the top cover 10 with pivots 12 as central points; the case body's inner edge forms plural recesses 25 which are coupled with T-shaped retainers 14 of the top cover 10 to complete a function of mutually gripping the top cover 10 and the case body 20;

Furthermore, the central bottom of the top cover 10 has plural L-shaped tabs 150 with moderate lengths and scattered along a rectangle for insertion of a sheet 15 which explains optical fiber circuits or instructs configurations.

Refer to Figures 5 and 6 indicating plural interfaces 24 scattered on a periphery of the case body 20 as slots accommodating fiber cables 3. Instructions for installing and fusing fiber cables are shown as follows: First, bores 28 on the case body 20 must be aimed at and fixed on a wall or in a distribution panel with bolts; next, the fiber splice tray 5 is opposite to noses 270 of the splice unit 27 on the center of the case body 20 and fixed at keyholes 271 on the top of the splice unit 27 with plural bolts 50; incoming and outgoing fiber cables 3 are wound inside the case body 20; fiber cables 3 inside the case body 20 are fastened on hooks 23 around the inner periphery with cable ties 4 wherein one end of a fiber cable 3 is fixed at an interface 24 and a coating and protection layer on the other end is peeled to expose optical fiber 6 for fusion of entry and exit of optical fiber 6 wound on the fiber splice tray 5; the top cover 10 is sheltered and fixed on the case body 20 to complete winding, fusion, and accommodation of fiber cables 3 and optical fibers 6 which are regularly integrated in the case body 20 for promoted aesthetics and practicality by decoration of simple lines shown on an entire surface.

BRIEF DESCRIPTIONS OF THE DRAWINGS

Figure 1 is a three-dimensional perspective view showing this invention of a wall-mounted fiber cable termination box structure;

Figure 2 is a three-dimensional exploded view showing this invention of a wall-mounted fiber cable termination box structure;

Figure 3 is a perspective view showing the other side of a top cover of this invention of a wall-mounted fiber cable termination box structure;

Figure 4 is a perspective view showing a top cover coupled with a case body of this invention of a wall-mounted fiber cable termination box structure;

Figure 5 is a perspective view showing a fiber splice tray arranged in a case body of this invention of a wall-mounted fiber cable termination box structure;

Figure 6 is a perspective view showing embodiment of this invention of a wall-mounted fiber cable termination box structure.

NOTATION

Fiber cable termination box 1

Top cover 10

Lateral bulge 11, 21

Bore 110, 120, 210, 28

Pivot 12

Blocking plate 13

Recess 130

Retainer 14

Sheet 15

Tab 150

Case body 20

Fastener 22

Hook 23

Interface 24

Stop plate 240, 290

Recess 25

Concavity 26

Splice unit 27

Nose 270

Keyhole 271

Cable guide hole 29

Fiber cable 3

Cable tie 4

Fiber splice tray 5

Bolt 50

Optical fiber 6

CLAIMS

What is claimed is:

1. A wall-mounted fiber cable termination box structure comprising:

A top cover which is a rectangular cover with plural retainers, plural pivots, plural blocking plates, and a lateral bulge at least;

A case body with a rectangular shell which forms inner space for accommodation, a recess on a lateral sidewall, and a lateral bulge at least;

Plural interfaces on the case body's periphery;

Plural hooks on the case body's inner vertical sidewalls and bottom;

A splice unit at the case body's center;

Plural cable guide holes on the case body's bottom; and

Plural fasteners on the case body's lateral vertical sidewall.

2. The wall-mounted fiber cable termination box structure according to Claim 1 wherein the case body is coupled with the top cover's pivots by plural fasteners and the top cover is used for sheltering the case body.
3. The wall-mounted fiber cable termination box structure according to Claim 1 wherein the case body forms plural bores inside to fix the case body on a plat surface.
4. The wall-mounted fiber cable termination box structure according to Claim 1 wherein the splice unit forms plural noses.

5. The wall-mounted fiber cable termination box structure according to Claim 1 wherein the splice unit forms plural keyholes.
6. The wall-mounted fiber cable termination box structure according to Claim 1 wherein the case body comprises a fiber splice tray at least which is located around the case body's splice unit.
7. The wall-mounted fiber cable termination box structure according to Claim 5 and 6 wherein the fiber splice tray is fastened at keyholes of the splice unit with plural bolts.
8. The wall-mounted fiber cable termination box structure according to Claim 6 wherein the fiber splice tray contains plural fiber cables.
9. The wall-mounted fiber cable termination box structure according to Claim 1 wherein the case body further comprises plural concavities for the top cover coupled and inserted.
10. The wall-mounted fiber cable termination box structure according to Claim 1 wherein the top cover and the case body's lateral bulge form a bore apiece at least.
11. The wall-mounted fiber cable termination box structure according to Claim 1 wherein the interfaces are equipped with a stop plate at least.
12. The wall-mounted fiber cable termination box structure according to Claim 1 wherein the top cover forms plural tabs at least.
13. The wall-mounted fiber cable termination box structure according to Claim 12

wherein the tabs are prepared for a sheet.

14. The wall-mounted fiber cable termination box structure according to Claim 13

wherein the sheet is used for explaining optical fiber circuits or instructing configurations.

15. The wall-mounted fiber cable termination box structure according to Claim 1

wherein the cable guide holes have a stop plate at least.