Section 2: Closures, Cross Connects, and Interconnects

Contents

Fiber Components

Introduction to Closures, Cross Connects, and Interconnects

Wire Closures

Wherever two cables are physically joined in the campus subsystem, or where groups of conductors are spliced or branched off a large cable (referred to as a branch splice) in the riser subsystem, the outer sheath of a cable is removed, exposing the conductors to environmental damage and breakage. The housing used to hold and protect a splice from harmful elements in the environment is called a closure. PDS closures are available for wire cable in aerial, buried, and building applications.

Wire Cross-Connect Hardware

Wire cross-connect hardware is used to terminate and interconnect cables and to route circuits throughout the distribution system.

The basic components of the 110 cross connect are the wiring block and the connecting block. The 110 Wiring Block is a fire-retardant, molded plastic piece on which cable pairs from the distribution system are terminated. The 110C Connecting Block is a 1-piece, fire-retardant, molded plastic housing containing solder-plated clips that terminate 24-gauge conductors without removing the insulation. Connecting blocks come in 3-, 4-, and 5-pair sizes and fasten onto a wiring block. They connect the distribution system cables terminated on a wiring block to F Cross-Connecting Wire or patch cords, both of which are used to interconnect circuits at the cross connect.

There are two basic types of 110 cross connects: the 110(A) connector system, which requires short lengths of jumper wires (see "F Cross-Connecting Wire" in Section 1) to link the cable pairs at two circuit termination points, and the 110(P) patch panel system, which uses patch cords (see "Patch Cords" in Section 1) to connect circuits.

The AT&T 110(A) connector system is adaptable to any building terminal design or layout. It requires that the jumper wire be installed and removed by a trained technician using a special tool (see Section 6). Terminating each conductor involves cutting it down on the cross connect. 110(A) Wiring Blocks secure and organize 25 cable pairs each, and have legs that hold them away from the wall and allow cables to be run vertically in the space between the block and the wall. They come in 100- and 300-pair sizes. The 188B1 Backboard is mounted between wiring blocks to hold and arrange the jumper cables terminated on the blocks. The 88A Retainer attaches to the leg of a wiring block to help hold and arrange cables on the top and bottom of the wiring block column. Designation strips snap in on alternate rows of the 110(A) Wiring Block to identify cable count and label circuits.

The AT&T 110(P) patch panel system provides for easy rearrangement of circuits by simply pushing on and pulling off patch cords, thus making administration of cross connects accessible for nontechnical personnel. 110(P) Terminal Blocks are preassembled vertical arrays of 110(P) Wiring Blocks with additional horizontal jumper troughs for routing patch cords. They come in 100-, 300-, and 900-pair sizes. 110 patch panel backboards are mounted between 110(P) Terminal Blocks to provide a vertical path for running patch cords between them. A 110 patch panel modular frame is available for mounting as many as ten 900-pair terminal blocks while aesthetically dressing cables and cable connections.

To meet the needs of large entrance facilities, the Large Building Entrance Terminal Frame System accommodates up to 7200 incoming pairs.

Code System for 110 Connector System

The options available with 110 Terminal Blocks are designated by a 9-character alphanumeric code.

CODE	110-	L	L	N	N	N	N	L	L	L
POSITION		1	2	3	4	5	6	7	8	9

Position	Meaning	Options
1	Type of wiring blocks	A - 110 wiring blocks with legs P - 110 wiring blocks and horizontal troughs on a backpanel
2	Size of connecting blocks	A - 5-pair B - 4-pair C - 3-pair E - one-third 3-pair, two-thirds 4-pair
3	Production Series	1
4-6	Numbers of pairs terminated	75 100 300 900
7-9	Unwired or with connectorized in/out units	CT - Connectorized Top (Female) CTM - Connectorized Top (Male) FT - Field Termination CB - Connectorized Bottom (Female) CBM - Connectorized Bottom (Male) STM - Stub Top (Male) SBM - Stub Bottom (Male) STF - Stub Top (Female) SBF - Stub Bottom (Female) CTH - Connectorized Top Hybrid (Both Male and Female) CT/FT - Top 1/3 of pairs connectorized; lower 2/3 of pairs field terminated SL - Stub Left SR - Stub Right

Example: A 110-AA1-900CT is a terminal block composed of a 110 wiring block with legs and 5-pair connecting blocks that terminate 900 pairs and has a female connectorized top.

Fiber Closures and Related Equipment

As with wire cable, wherever two fiber cables must be physically joined (rather than terminated at a cross connect or interconnect field), the outer sheaths of the cables must be removed so that the individual bare fibers in the cables can be spliced together. Once the outer sheath is removed from the cables, splices are susceptible to environmental damage and breakage. Therefore, these splices must be carefully protected, using equipment specifically designed for optical fibers.

The UCB1 Lightguide Closure is an aluminum housing that provides protection for splices. Lightguide organizers are installed within the UCB1 Lightguide Closure to organize and protect the splices. Grommet and Grip Kits anchor, seal, and bond the fiber cable at the closure entrance ports. For splicing outside cables or ribbon riser cables, a UC-type grommet kit is needed; a BC-type kit is required for splicing lightguide building cables. If the UCB1 Lightguide Closure is being used in a corrosive environment, it is placed inside an additional housing, the 51D3-LG2 Lightuide Closure, for extra protection.

Optical Cross Connects and Interconnects

Optical cross connects, like wire cross connects, provide a centralized location for circuit administration. They allow you to reroute circuits, add new circuits, and remove old ones, using fiber jumpers (patch cords) that are terminated with connectors on each end. Permanent cables, such as feeder cables and riser cables, are terminated at the interconnect.

Optical interconnects, although sometimes used for circuit administration, are generally used to interconnect fibers from different cables directly, without using fiber jumpers. Interconnects are generally installed when rearrangements are not expected and when the amount of optical power loss is of primary importance. (Interconnects allow for a lower optical power loss than cross connects since the optical signal passes through one connection as compared with two connections in a cross connect.)

Both cross-connect and interconnect modules are built from the same basic components: lightguide interconnection units (LIUs), cabinets that protect and organize the cables; connector panels, which mount connector couplings in the LIU; and couplings, the hardware that receive the connectors. Some additional components (vertical and horizontal troughs for routing fiber jumpers), however, are required for cross-connect modules.

Each LIU can be ordered separately or with a factory-equipped fanout, appropriate connector panels, and couplings. The fanout, which provides a transition from array-connectorized ribbon cable to 12 individually jacketed connectorized fibers, is used when a ribbon from a riser or outside cable is brought directly into an LIU and then spliced to the fanout. The fanout's transition piece and the completed splice are held in place and protected by a 1A1 Holder. Like the LIU, the fanout, connector panels, couplings, and holder can be ordered separately.

If an outside ribbon cable is brought into an LIU, the cable is secured and grounded above the column of LIUs using an 8A1 Clamp. If the cable is being routed to two adjacent columns of LIUs, a 1A1 Adapter is used to guide and protect the fibers from the 8A1 Clamp into the columns. (The clamp and adapter must be ordered separately).

Because cross connects and interconnects are constructed from modular units, new modules can be added as needed, provided there is enough space in the satellite closet or equipment room.

Backboard, 110 Patch Panel System

Applications

The 110 Patch Panel System Backboard provides a vertical path for running patch cords or jumpers between 110 Patch Panel System Terminal Blocks.

Description

The backboard is a metal panel equipped with distributing rings that provide the vertical paths for running patch cords.

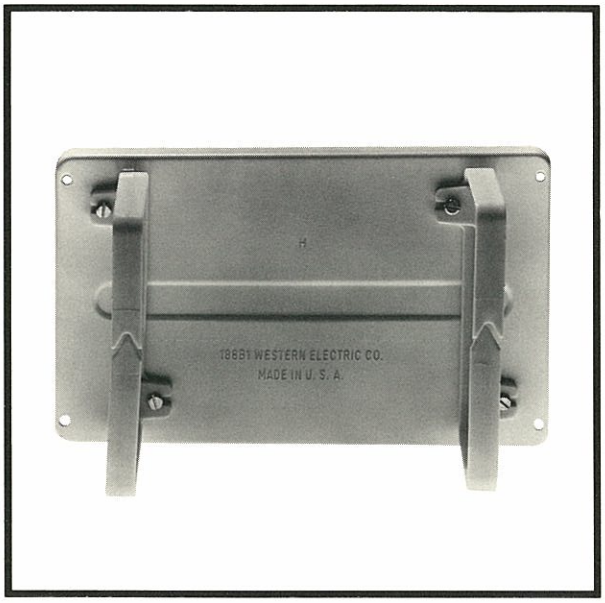
Specifications

Product Code	Length (In.)	Width (In.)	Depth (In.)	Comcode
188C2 (used with 900-pair wiring blocks)	61.75	8.5	8	104 031 794
188D2 (used with 300-pair wiring blocks)	24	8.5	8	104 032 404
188E2 (used with supplementary horizontal wiring runs)	24	8.5	8	104 031 802

Backboard, 188B1

Applications

The 188B1 Backboard is used with 110(A) Wiring Blocks to arrange jumper wires run between blocks. The backboard is placed between fields where it serves as a horizontal trough for the wires and provides space to change the direction of jumpers. One backboard is used for each vertical column of 110(A) Wiring Blocks.



Description

The 188B1 Backboard is made of metal and has two closed, formed, plastic distribution rings.

Specifications

Physical Specifications

Height: 6.5 in.
Width: 10.75 in.
Depth: 0.5 in.

Product Code	Comcode
188B1	102 689 569

Connecting Block, 110C

Applications

The 3-pair (110C-3), 4-pair (110C-4), and 5-pair (110C-5) 110C Connecting Blocks fasten onto the 110 Wiring Block to provide an electrically tight connection between cable conductors terminated on the wiring block and F Cross-Connecting Wire or patch cords. Clips on the connecting blocks terminate 24-gauge PIC or PVC wires without removing the insulation.

Description

The connecting block consists of a 1-piece, fire-retardant, molded plastic housing containing solder-plated quick clips, which cut through the insulation on conductors as they are pushed onto the wiring block. It is double-ended, one end to accept 24-gauge F Cross-Connecting Wire and the other to terminate the cable conductors. The front of the connecting block is color-coded, allowing rapid pair identification and termination.

Specifications

Physical Specifications

Height: 0.25 in.
Width: 0.9 in. (3-pair), 1.2 in. (4-pair), 1.5 in. (5-pair)
Depth: 1 in.

Product Code	Pair Size	Comcode
110C-3	3	103 801 239
110C-4	4	103 801 247
110C-5	5	103 801 254

Designation Strips, 188UT1-50

Applications

The 188UTI-50 Designation Strips are used to provide a means for labeling circuits on a 110 Wiring Block. The strips snap into alternate wiring rows on the wiring block to identify cable count and to conceal and protect cable conductors.

Description

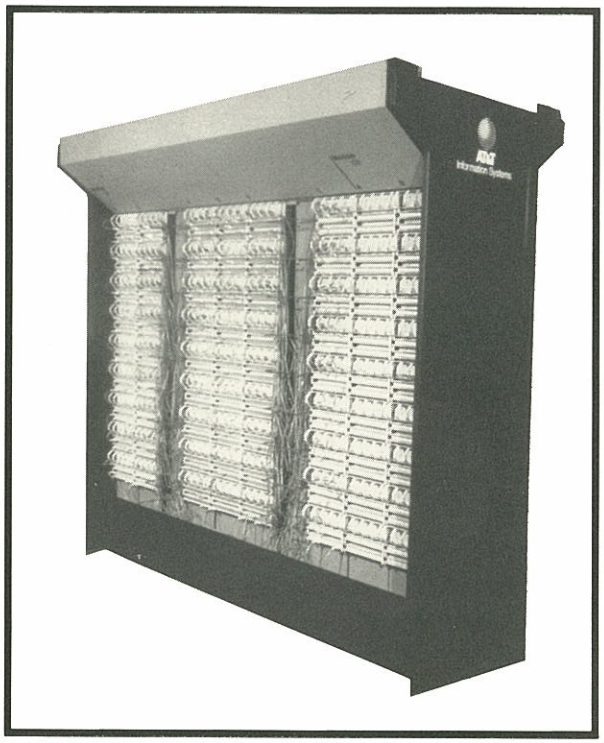
The clear strips accept color-coded, slip-in circuit labels, either preprinted or blank. The strips do not interfere with running, tracing, or removing jumper wires.

Product Code	Comcode
188UTI-50	103 895 504

Frame, 110 Patch Panel System

Applications

The 110 Patch Panel System Frame is used as a structure for mounting 900-pair 110(P) Terminal Blocks and the associated 110(P) backboards.



Description

The 110 frame is a double-sided aluminum frame equipped with mounting brackets, designed for quick assembly, that accommodates a total of five units per side. The units can be a combination of wiring blocks and backboards. The frame accommodates a total of 9000 pairs when all 110(P) Terminal Blocks are mounted.

An overhead cable support structure is available separately. Mounted directly on top of the frame, it provides support for all cables routed to and from the frame. Panels to enclose the frame can also be ordered separately. (See also 1-, 2-, 3-, and 4-Pair Patch Cords for the 110 patch panel system in Section 1.)

Specifications

Physical Specifications

Height: 76.5 in.
Width: 43.5 in.
Depth: 16 in.

Product Code	Description	Comcode
1110A2	Mounting frame	104 032 495
1110C1	Cable support structure	104 175 120
3110A1	End panel (aluminum)	104 186 192
2110A1	Top panel	104 176 276
2110B1	Bottom panel	104 176 284

Large Building Entrance Terminal Frame System

Applications

The Large Building Entrance Terminal Frame System is used to terminate telephone network cables from the central office. Accommodating up to 7200 incoming pairs, it is designed to meet the needs of large entrance facilities where wall space is at a premium.

Description

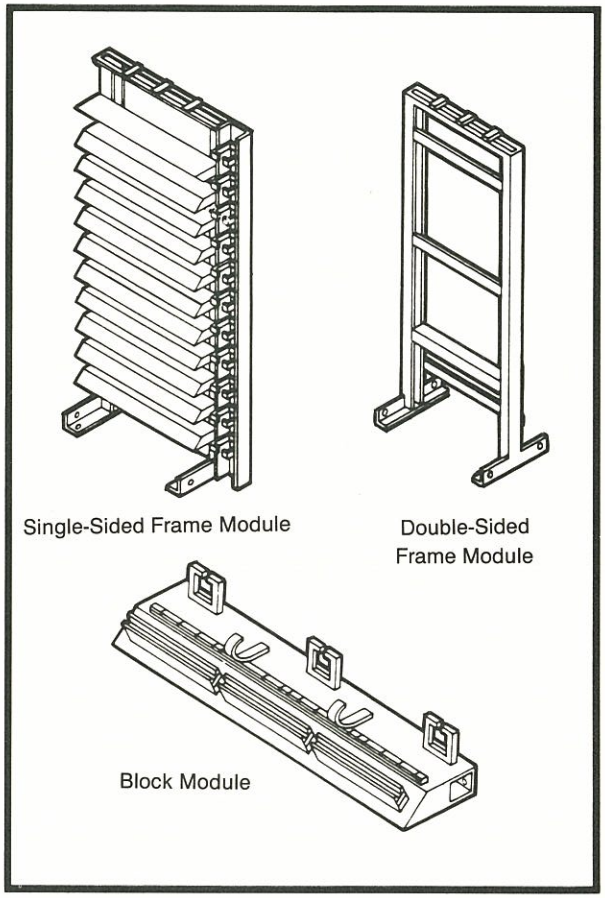
This terminal frame system consists of three main components: the frame module, the block module, and the protectors.

The assembled frame module includes a lightweight, welded steel frame available in four different designs: single-sided (3600-pair), double-sided horizontal or vertical (6600-pair), or double-sided horizontal (7200-pair).

The block module, formed and welded of 13-gauge steel, can be ordered either wired with 110-type connecting blocks or unwired, and either prestubbed or without stubs. It is available either with the stubs exiting the module at the back (horizontal module) or with the stubs exiting at the end (vertical module).

The protectors are 189- (for 110 block use) or 190-type (wall-mount) protector panels (see Section 5).

Both vertical and horizontal jumper troughs are available with the Large Building Entrance Terminal Frame System. Single-sided frame modules use a vertical jumper trough. Two types of horizontal jumper troughs are available: an open pan-type trough is recommended for installations of three frame modules or more equipped with block modules. The trough provides express routing for long jumpers. A ring-type horizontal jumper trough is required on installations where protectors and block modules are mounted on a frame module to provide orderly jumper routing between protector panels and block modules.



Specifications

Frame Module Physical Specifications

Height: 7 ft
Width: 34 in.
Depth: 12 to 24 in.

Block Module Physical Specifications

Height: 2.5 in.
Width: 33.75 in.
Depth: 8 in.

Description	Comcode
Double-sided (unprotected) frame module	103 357 588
189-Type (protected) frame module	842 824 160
190-Type (protected) frame module	843 823 972
Vertical (300-pair) block module*	103 357 513
Horizontal (300-pair) block module*	103 357 521
Inverted horizontal (300-pair) block module*	103 357 539
300-pair block module	843 823 956
Blank block module	103 361 390
Horizontal (ring-type) trough module	103 357 570
Horizontal (ring-type) trough module	843 824 178
Horizontal (express jumper) trough module	843 824 202
Vertical trough module	843 823 964

* These block modules come equipped with a 25-foot stub cable but have no cable connector.

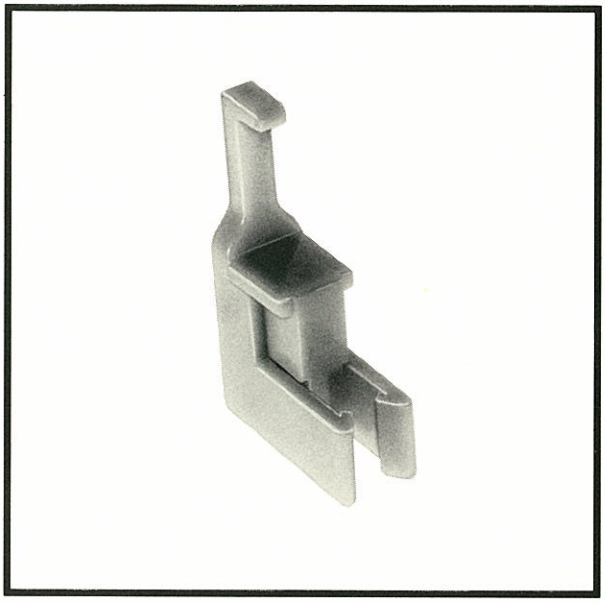
Retainer, 88A

Applications

The 88A Retainer is used to arrange jumper wires on the 110 Wiring Block.

Description

The 88A Retainer is a molded plastic L-shaped part that attaches to the leg of the wiring block, either at the top or the bottom, to form a ring.



Specifications

Physical Specifications

Height: 2 in.
Width: 1 in.
Depth: 0.5 in.

Product Code	Comcode
88A	102 421 476

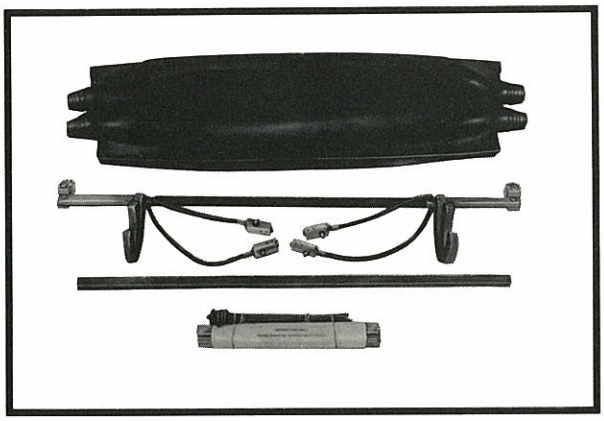
Splice Closure, Aerial, 18-Type

Applications

The 18-Type Aerial Splice Closure is used to enclose branch and in-line splices in PIC cable used in non-pressurized aerial installations.

Description

This flexible plastic enclosure contains all the pieces necessary for a normal installation except bond clamps; it is available in three sizes.



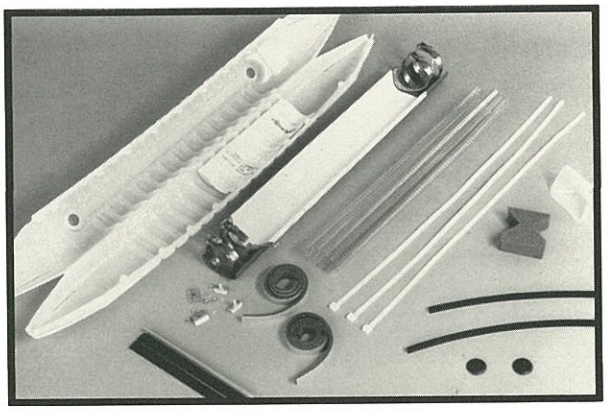
Specifications

Product Code	Size (In.)	Cable Diameter, Maximum (In.)	Splice Diameter (In.)	Comcode
18A1E	29.7 x 4.1 x 7.9	0.5 to 1	3.3	104 373 667
18B1E	33.2 x 6.2 x 10.3	1 to 2.2	5.8	104 373 634
18C1E	31.2 x 7.5 x 12.4	2.2 to 3	7.1	104 373 642

Splice Closure, Buried, 16-Type

Applications

The 16-Type Buried Splice Closure is used to enclose splices ranging from 50 to 900 pairs of waterproof cable.



Description

This closure contains all pieces necessary to finish a splice except the D Encapsulant (see Section 6). The closure has a polypropylene plastic cover with a 1-piece "living" hinge, projecting ends, and no-trim edges.

Specifications

Product Code	Size (In.)	Cable Diameter, Max., Straight (In.)	Cable Diameter, Max., Branch (In.)	Comcode
16AA2	26 x 2.5 x 3.5	1.4	—	103 198 073
16A2	30 x 3.3 x 3.7	1.2	1.7	102 456 977
16BB2	33 x 4.8 x 4.3	2.5	3.7	103 198 081
16B2	42 x 4.8 x 4.3	2.5	3.7	102 456 985
16C2	42 x 4.8 x 5.3	2.5	3.7	102 456 992
16D2	42 x 6.3 x 6.1	3.4	5	102 903 309
16E2	42 x 6.3 x 7.1	3.4	5	102 756 640

Splice Closure, Buried, 2200 Series

Applications

The 2200 Series Buried Splice Closure is used to enclose waterproof cable splices in direct buried or manhole applications. It can be used with cables ranging in size from 25 to 3000 pairs.

Description

A 2200 Series closure includes an outer shell, a splice organizer, and an inner bladder. D Encapsulant to fill the closure must be ordered separately (see Section 6). A special pressure indicator is included with each closure to provide a simple and effective means for checking the quality of the completed closure.

Specifications

Product Code	Length	Inside Diameter (In.)	Sheath Opening (In.)	Cable Diameter, Max. (In.)	Comcode
2200-3/12	33	3	12	1.7	104 171 236
2200-4/12	33	4	12	2.7	104 171 251
2200-4/21	42	4	21	2.7	104 171 244
2200-6/12	33	6	12	3.7	104 171 269
2200-6/21	42	6	21	3.7	104 171 277
2200-8/21	42	7.5	21	5	104 171 285
2200-9/21	42	9	21	6.5	104 171 293
2200-10/21	42	10.25	21	6.5	104 175 500

Splice Closure, 2000 Series

Applications

The 2000 Series Splice Closure is used in buildings, premises vaults, and cable entrance applications, and has passed both vertical and horizontal tests for flammability as specified in PUB 55006. It can also be ordered as a pressurized closure system designed for all applications, including aerial installations and the most stringent requirements of underground pressurized plant.

Description

Each closure consists of two reinforced plastic covers that fit over the cable end plates and are held together by snap-catch fasteners and reusable rubber seals. An alignment bar, sheath retention clamps, and a bonding and grounding system are included.

Specifications

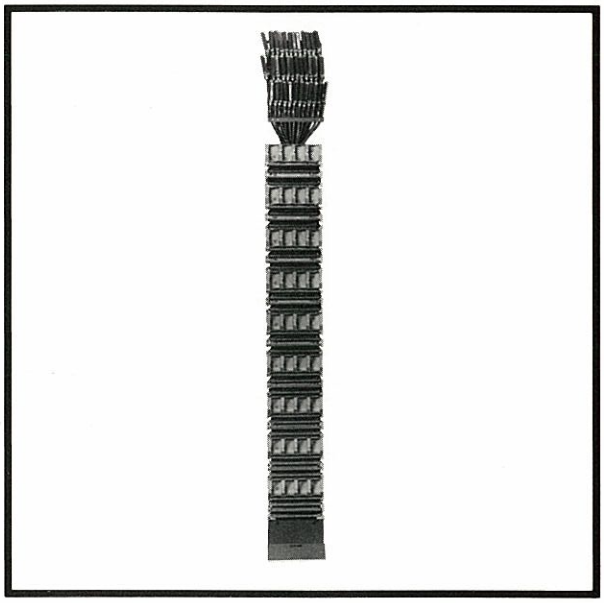
Product Code	Description	Diameter (In.)	Sheath Opening (In.)	Overall Length (In.)	Comcode
2000 FR 5/20	Cover	5.5	20	29.5	104 205 620
2000 FR 5/28	Cover	5.5	28	37.5	104 205 646
2000 FR 7/20	Cover	7	20	29.5	104 205 661
2000 FR 7/28	Cover	7	28	37.5	104 205 687
2000 FR 8/20	Cover	8.5	20	29.5	104 205 703
2000 FR 8/28	Cover	8.5	28	37.5	104 205 729
2000 FR 8/36	Cover	8.5	36	45.5	104 205 745

Product Code	Description	Number of Openings	Standard or Split	Cable Diameter, Maximum (In.)	Comcode
2000 FR5-1E	Endplate	1	—	2.2	104 206 289
2000 FR5-2E	Endplate	2	—	1.6 (2)	104 206 297
2000 FR5-9G	Endplate	9	Standard	1	104 341 078
2000 FR5-9GS	Endplate	9	Split	1	104 341 086
2000 FR7-1E	Endplate	1	—	3	104 206 305
2000 FR7-2E	Endplate	2	—	2.2	104 206 313
2000 FR7-12G	Endplate	12	Standard	1	104 382 601
2000 FR7-12GS	Endplate	12	Split	1	104 382 619
2000 FR8-1E	Endplate	1	—	3	104 206 321
2000 FR8-2E	Endplate	2	—	3.5	104 206 339
2000 FR8-3E	Endplate	3	—	1.6 (2), 2.8 (1)	104 206 347
2000 FR8-18G	Endplate	18	Standard	1	104 208 376
2000 FR8-18GS	Endplate	18	Split	1	104 208 384

Terminal Blocks, 110 Patch Panel System

Applications

The 110 Patch Panel System Terminal Blocks are used to terminate connectorized cable pairs.



Description

The terminal blocks are made up of prewired 100-, 300-, and 900-pair sizes and consist of 110 Wiring Blocks and special horizontal jumper troughs for arranging patch cords. Connecting blocks in 3-, 4-, or 5-pair sizes may be specified to match the pairs per link ratio of the system in use. Transparent designation labeling strips allow you to insert custom-printed circuit labels. Field-terminated terminal blocks, which allow direct termination of building cables, are also available.

Code System for 110 Connector System

The options available with 110 Terminal Blocks are designated by a 9-character alphanumeric code.

CODE	110-	L	L	N	N	N	N	L	L	L
POSITION		1	2	3	4	5	6	7	8	9

Position	Meaning	Options
1	Type of wiring blocks	A - 110 wiring blocks with legs P - 110 wiring blocks and horizontal troughs on a backpanel
2	Size of connecting blocks	A - 5-pair B - 4-pair C - 3-pair E - one-third 3-pair, two-thirds 4-pair
3	Production Series	1
4-6	Numbers of pairs terminated	75 100 300 900
7-9	Unwired or with connectorized in/out units	CT - Connectorized Top (Female) CTM - Connectorized Top (Male) FT - Field Termination CB - Connectorized Bottom (Female) CBM - Connectorized Bottom (Male) STM - Stub Top (Male) SBM - Stub Bottom (Male) STF - Stub Top (Female) SBF - Stub Bottom (Female) CTH - Connectorized Top Hybrid (Both Male and Female) CT/FT - Top 1/3 of pairs connectorized; lower 2/3 of pairs field terminated SL - Stub Left SR - Stub Right

Product Code	Height (In.)	Width (In.)	Depth (In.)	Comcode
110-PA1-900CT	82	8.5	6.25	103 823 894
110-PB1-900CT	82	8.5	6.25	103 804 837
110-PC1-900CT	82	8.5	6.25	103 804 878
110-PE1-900CT	82	8.5	6.25	104 374 343
110-PA1-900CTM	82	8.5	6.25	104 374 228
110-PB1-900CTM	82	8.5	6.25	104 374 285
110-PC1-900CTM	82	8.5	6.25	104 374 335
110-PE1-900CTM	82	8.5	6.25	104 374 350
110-PC1-900CTH	82	8.5	6.25	104 049 101
110-PA1-900FT	59	8.5	6.25	104 374 236
110-PB1-900FT	59	8.5	6.25	103 804 845
110-PC1-900FT	59	8.5	6.25	103 804 886
110-PE1-900FT	59	8.5	6.25	103 823 910
110-PE1-900CT/FT	82	8.5	6.25	104 173 174
110-PA1-900CB	113.5	8.5	6.25	104 374 202
110-PB1-900CB	113.5	8.5	6.25	104 173 158
110-PC1-900CB	113.5	8.5	6.25	104 166 590
110-PA1-900CBM	113.5	8.5	6.25	104 374 210
110-PB1-900CBM	113.5	8.5	6.25	104 374 277
110-PC1-900CBM	113.5	8.5	6.25	104 374 327
110-PA1-300CT	33	8.5	6.25	103 823 886
110-PB1-300CT	33	8.5	6.25	103 804 811
110-PC1-300CT	33	8.5	6.25	103 804 852
110-PE1-300CT	33	8.5	6.25	104 017 066
110-PA1-300CTM	33	8.5	6.25	104 374 194
110-PB1-300CTM	33	8.5	6.25	104 374 269
110-PC1-300CTM	33	8.5	6.25	104 374 319
110-PA1-300CB	27.375	8.5	6.25	104 374 558
110-PB1-300CB	27.375	8.5	6.25	104 374 244
110-PC1-300CB	27.375	8.5	6.25	104 374 293
110-PA1-300CBM	27.375	8.5	6.25	104 374 186
110-PB1-300CBM	27.375	8.5	6.25	104 374 251
110-PC1-300CBM	27.375	8.5	6.25	104 374 301
110-PA1-300FT	24	8.5	6.25	104 374 716
110-PB1-300FT	24	8.5	6.25	104 175 829
110-PC1-300FT	24	8.5	6.25	103 804 860
110-PE1-300FT	24	8.5	6.25	103 823 902
110-PE1-300CT/FT	24	8.5	6.25	104 173 166
110-AC1-300STM/6	10.75	10.75	3.25	104 049 085
110-AC1-300SBM/6	10.75	10.75	3.25	104 374 178
110-AC1-300STF/6	10.75	10.75	3.25	104 049 077
110-AC1-300SBF/6	10.75	10.75	3.25	104 374 160
110-AB1-300FT	10.75	10.75	3.25	104 049 051
110-AC1-300FT	10.75	10.75	3.25	104 049 069
110-AB1-100FT	3.625	10.75	3.25	103 823 845
110-AC1-100FT	3.625	10.75	3.25	103 826 780
110-AE1-75FT	3.625	10.75	3.25	104 049 093
110-BC1-100SR	3.625	8.5	1.4	103 823 878
110-BC1-100SL	3.625	8.5	1.4	103 823 860

Wiring Block, 110

Applications

The 110 Wiring Block is used to terminate cable pairs and permits a neat, organized arrangement of cables behind the block.

Description

The 110 Wiring Block is a fire-retardant molded plastic block with horizontal index strips that secure and organize 25 cable pairs each. The index strips are marked with five tip colors that help the installer locate pairs quickly and they accommodate 24-gauge cable conductors. The blocks can be mounted directly on wall surfaces without backboards. When mounted side by side, the wiring blocks form the required vertical jumper wire paths without the use of any other parts.

Specifications

Physical Specifications

Pair Size: 100, 300
Height: 3.625 in. (100-pair), 10.75 in. (300-pair)
Width: 10.75 in.
Depth: 3.25 in.

Product Code	Description	Comcode
110 AW1-100	100-pair	103 804 894
110 AW1-300	300-pair	103 804 902

Adapter, 1A1

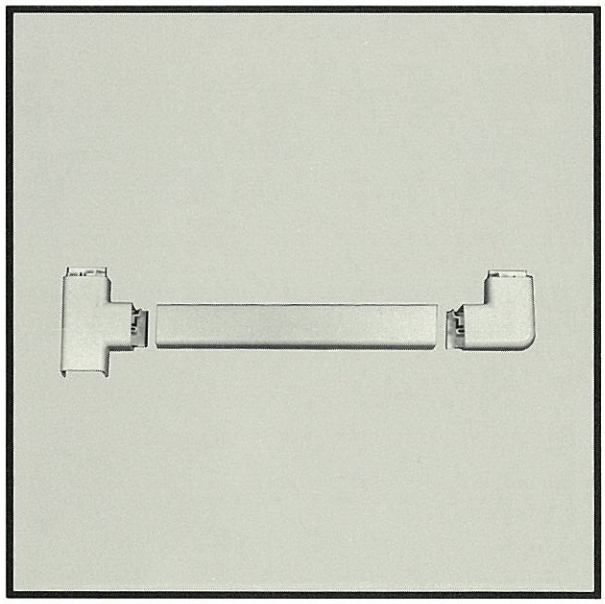
Applications

The 1A1 Adapter is used to guide and protect fibers running from the 8A1 Clamp into two adjacent columns of 100A Lightguide Interconnection Units.

Description

The 1A1 Adapter includes a conduit, a T-section, a 90° bend, two guides, and two mounting screws.

Product Code	Comcode
1A1 Adapter	105 034 482



Bar, 42-Inch

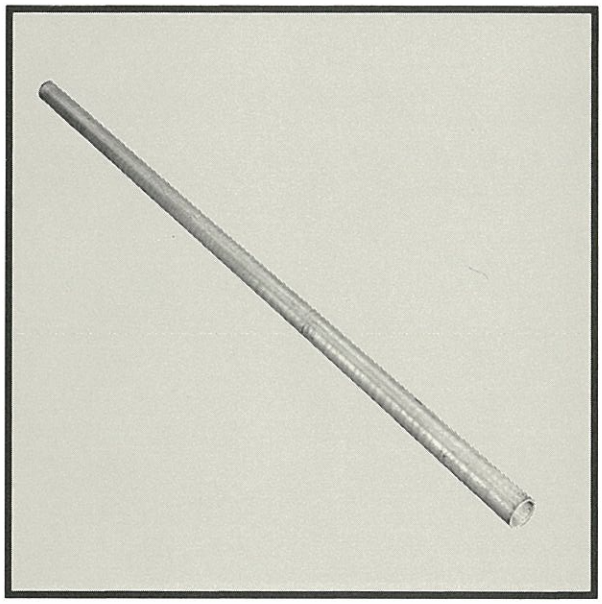
Applications

The 42-Inch Bar is used as a base for aerial and Cable Entrance Facility installations of the UCB1 Lightguide Closure and the 51D3-LG2 Lightguide Closure. It is not used in buried applications.

Description

The bar is 42 inches long and is made of galvanized steel.

Product Code	Comcode
F83AK8548	843 816 323



Bracket, Base Support

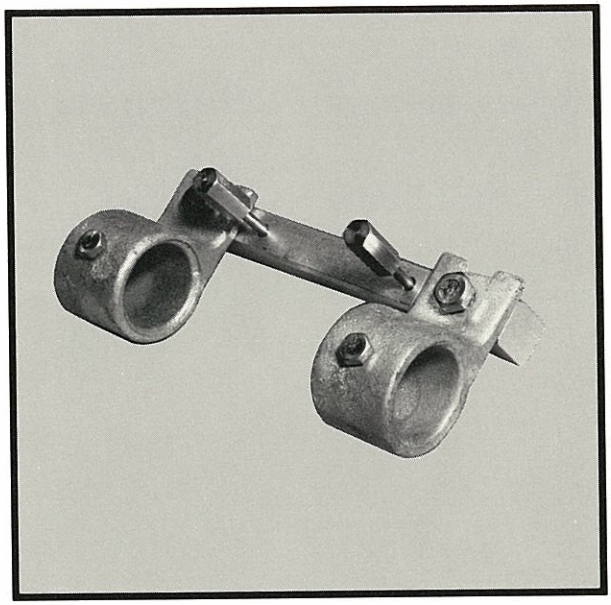
Applications

The Base Support Bracket is used to support a UCB1 Lightguide Closure or a 51D3-LG2 Lightguide Closure when attached to a 42-Inch Bar.

Description

The Base Support Bracket is a metal holder with an opening wide enough to slide the 42-Inch Bar through; a screw is used to secure the bar to the bracket. A tab extends from the top of the bracket and a screw is inserted through it to secure the bracket to the closure.

Product Code	Comcode
F83AK8547	103 894 051



Bracket, Hanger

Applications

The Hanger Bracket is used to attach a UCB1 Lightguide Closure or a 51D3-LG2 Lightguide Closure to the 42-Inch Bar.

Description

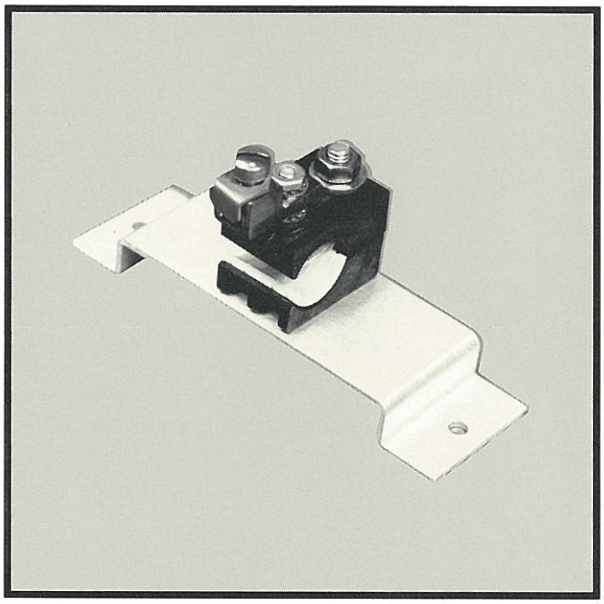
The Hanger Bracket is a stainless steel bracket, 2 inches in diameter. Two brackets are needed for each closure.

Product Code	Comcode
F79AK8524	900 511 338

Clamp, 8A1

Applications

The 8A1 Clamp is used to secure and ground one lightguide cable with or without factory Sheath Termination Hardware. It is installed either above or below a column of 100A Lightguide Interconnection Units (LIUs) for top or bottom entry.



Description

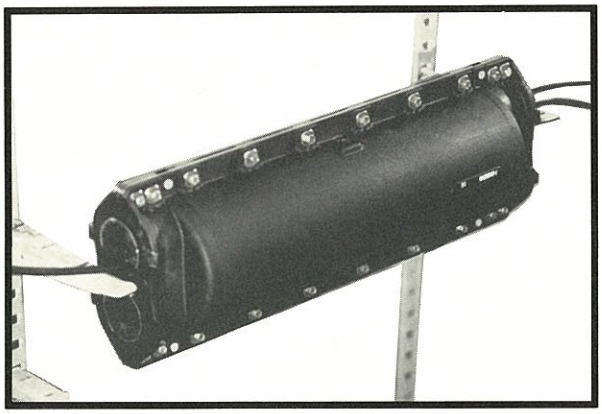
The 8A1 Clamp consists of a preassembled mounting bracket, two plastic half-clamps, a grounding connector, inserts for different cable sizes, a split-lock connector (ground log), and a B Bond Clamp.

Product Code	Comcode
8A1 Clamp	104 206 966

Closure, 51D3-LG2 Lightguide

Applications

The 51D3-LG2 Lightguide Closure is a protective cover used to safeguard the UCB1 Lightguide Closure in buried and corrosive aerial environments. The 51D3-LG2 closure can be buried directly in the ground. (See description in this section for "Closure, UCB1 Lightguide.")



Description

The 51D3-LG2 closure is a fiberglass-reinforced polypropylene enclosure; the complete closure includes an instruction sheet, a liner, a funnel, two blank grommets, two brackets, two cable ties, two foam tapes, B sealant, two stoppers, and a 42-inch long galvanized bar. To complete the protection of the inner closure, the 51D3-LG2 closure should be filled with 10,000 grams of D Encapsulant (see Section 6).

Specifications

Physical Specifications

Length: 28 in.
Inside Diameter: 7 in.

Product Code	Comcode
51D3-LG2	103 921 938

Closure, UCB1 Lightguide

Applications

The UCB1 Lightguide Closure is used to enclose the lightguide organizers containing fiber splices and to protect them from moisture, whether from direct contact with water or from the diffusion of water vapor.(See description in this section for "Closure, 51D3-LG2 Lightguide.")

Description

The UCB1 is a sealed aluminum housing that was developed to meet the needs of all lightguide splicing requirements, regardless of the type of system or cable design. It can be used as a stand-alone product in noncorrosive aerial and building applications.

The UCB1 includes an instruction sheet, a cover, a laser warning label, a closure gasket, a base subassembly, two clamps, two blank plugs, a wooden paddle, 21 hex-head cap screws, B sealant, two washers, two foam blocks, and an external grounding package. Cables entering from either side of the base are anchored, bonded, and sealed outside the splicing cavity of the closure. This cavity can be reentered without disturbing the cable ends or bonding system.

Specifications

Physical Specifications

Length: 22.5 in.
Width: 5.5 in.
Height: 5 in.

Product Code	Comcode
UCB1	103 921 946

Connector Panel, 10A Lightguide

Applications

The 10A Lightguide Connector Panel snaps into the 100A Lightguide Interconnection Unit to support six flex-ferrule ST (C2000A-2) Connector Couplings.

Description

The 10A panel features a staggered coupler mounting arrangement to allow maximum finger space around connectors. The panel is equipped with two fasteners, consisting of a plunger and a grommet, for easy installation into the 100A Lightguide Interconnection Unit.

Specifications

Physical Specifications

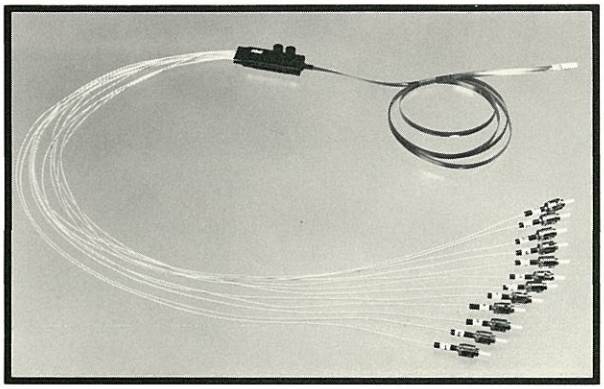
Length: 3.9 in.
Width: 1.5 in.
Depth: 0.25 in.

Product Code	Comcode
10A	104 141 858

Fanout

Applications

The Fanout is used in the 100A Lightguide Interconnection Unit or in the LGX Lightguide Cross-Connect Frame to provide an easy transition from array-connectorized cable to 12 individual fibers at the connector panels.



Description

The Fanout is a pretested ribbon cable that has a 1009C Array Connector on one end and 12 individual connectorized fibers on the other end. Each fiber has a special strengthened buffer for added protection during handling.

Specifications

Fanout Physical Specifications

Length: 72 in. (48 in. of ribbon, 24 in. of separated fibers)

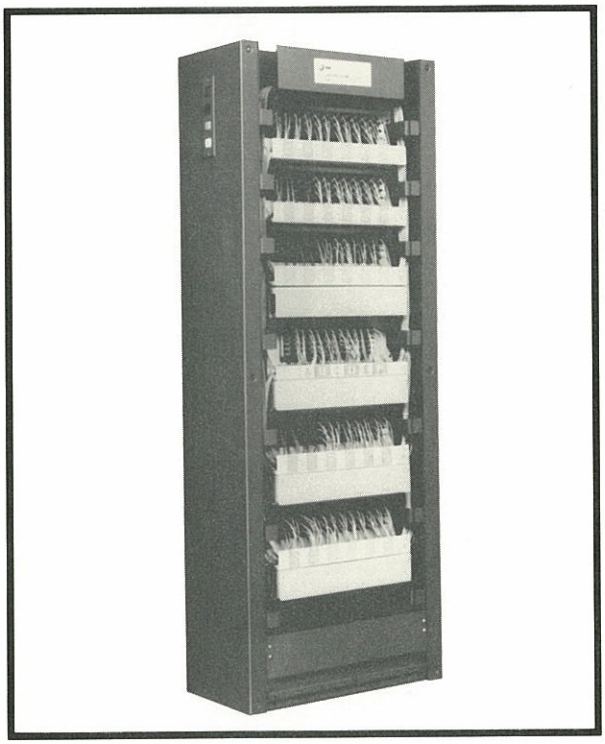
Product Code	Description	Comcode
10B1/48/24	Fanout accepting 62.5/125-μm fibers equipped with ST (P2020A-C-125) Connector Plugs	104 325 089

Frame, LGX Lightguide Cross-Connect

Applications

The LGX Lightguide Cross-Connect Frame is used to provide a termination and cross-connection point for fiber optic circuits. It is also designed for cable termination and grounding, ribbon or individual fiber splicing, and fiber and jumper storage. In addition, splice-only and express-through situations are easily accommodated.

The LGX frame is ideal where a large number of fibers must be terminated and the flexibility of reassigning circuits is desirable.



Description

The LGX cross-connect frame has the capacity for 576 fiber terminations in a single bay, and growth capability of up to 20 bays in a lineup. It is designed with ample jumper routing capacity to allow easy administration of reassignments and to avoid congestion. The complete LGX frame includes the following parts:

- A Network Bay Frame, which is the basis for the LGX frame. It includes the cable duct, mounting hardware for equipment cables, vertical jumper retainers, and horizontal express troughs.
- A 9A1 Clamp, which has all the hardware needed to ground one cable equipped with Sheath Termination Hardware and secure it to the LGX frame.
- A 9A2 Clamp, which has all the hardware needed to ground one cable without Sheath Termination Hardware and secure it to the LGX frame.
- An LST1A-72 LG Terminating Shelf, which can terminate up to 72 fibers. It will accept up to twelve 10A Lightguide Connector Panels, and includes guides for routing fibers and jumpers.
- An LSS1A-72 LG Stranded Shelf, which can splice and terminate up to 72 fibers. It will accept up to twelve 10A Lightguide Connector Panels, and is equipped with three splicing trays and splice holders for splicing. Each tray will hold 26 splices.
- An LSR1A-72 LG Ribbon Shelf, which can splice 12 fiber ribbons and mount six 3-type fanouts. It includes a connector enclosure stand and six connector enclosures.
- An LSR1A-144 LG Ribbon Shelf, which can splice eighteen 12-fiber ribbons and mount twelve 3-type fanouts. It includes a connector enclosure stand and 12 connector enclosures.
- An LSR1B-72 LG Ribbon Shelf, which can splice eighteen 12-fiber ribbons and mount six 10-type fanouts. Connectors are mounted on 10A Lightguide Connector Panels. It includes a connector stand and six connector enclosures.
- An LSR1B-144 LG Ribbon Shelf, which can splice eighteen 12-fiber ribbons and mount twelve 10-type fanouts. Connectors are mounted on 10A Lightguide Connector Panels. It includes a connector stand and 12 connector enclosures.
- An LCJ1A-72 LG Jumper Storage Cabinet, which stores jumper slack on the front of the LGX frame.
- An LCR1A-216 LG Ribbon Cabinet, which provides splicing capability only for up to 18 array splices. It includes a connector enclosure stand and six connector enclosures.
- An LCS1A-72 LG Stranded Cabinet, which provides splicing capability only for up to 78 fiber splices. It includes three splicing trays and splice holders for splicing.

Specifications

LGX Frame Physical Specifications

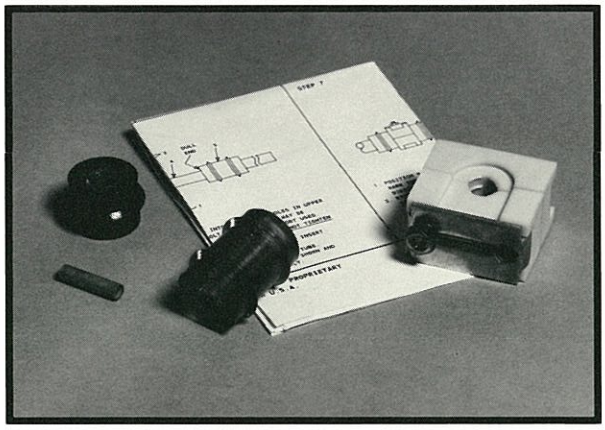
Height: 84 in.
Width: 26 in.
Depth: 15 in.

Product Code	Description	Height (In.)	Comcode
ED6C320-50 G1	LGX frame	84	601 096 878
ED8C501-50 G1	Network bay frame	84	
9A1	Clamp	—	104 370 549
9A2	Clamp	—	104 370 556
LST1A-72	LG terminating shelf	8	105 039 457
LSS1A-72	LG stranded shelf	12	105 039 440
LSR1A-72	LG ribbon shelf	12	105 039 416
LSR1A-144	LG ribbon shelf	20	105 029 408
LSR1B-72	LG ribbon shelf	12	105 039 432
LSR1B-144	LG ribbon shelf	20	105 039 424
LCJ1A-72	LG jumper storage cabinet	4	105 039 374
LCR1A-216	LG ribbon cabinet	4	105 039 382
LCS1A-72	LG stranded cabinet	4	105 039 390

Grommet and Grip Kits, UC-Type

Applications

A UC-Type Grommet and Grip Kit is used to anchor, seal, and bond a lightguide cable sheath to a UCB1 Lightguide Closure.



Description

One kit is required for each outside cable or ribbon riser cable that enters a closure. A single kit consists of a cable seal, two grommets, and a grip assembly. A kit is ordered to correspond to the approximate diameter of the cable with which it is to be used.

Specifications

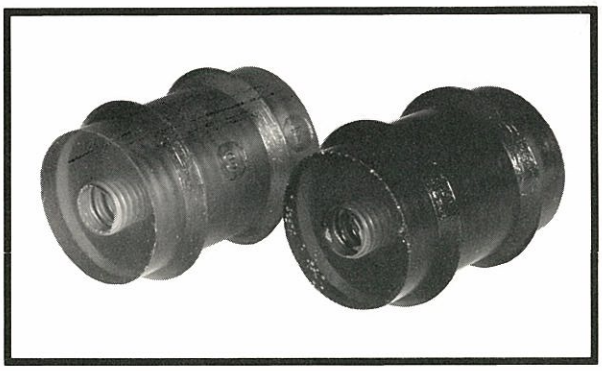
Product Code	Cable Type	Cable Outside Diameter (In.)	Comcode
UC-STH* Grommet & Grip Kit	Lightguide cable (3AEX, 3BAX, 3BFX, 3BHX) or LIGHTPACK cable (3DAX, 3DFX, 3DHX) with factory Sheath Termination Hardware	0.48	103 922 027
UC-41 Grommet & Grip Kit	LIGHTPACK cable with 48 fibers without factory Sheath Termination Hardware Kit	0.41	103 922 035
UC-48* Grommet & Grip Kit	Lightguide cable (3AEX, 3BAX, 3BFX, 3BHX) or LIGHTPACK cable (3DAX, 3DFX, 3DHX) without factory Sheath Termination Hardware	0.48	103 922 043

* The UC-STH and UC-48 kits are *not* interchangeable because the UC-STH factory Sheath Termination Hardware has an outside diameter unique from any other cable design.

Grommet Kits, BC Series

Applications

The BC Series Grommet Kits are used to anchor and seal a Lightguide Building Cable (LGBC) sheath to a UCB1 Lightguide Closure.



Description

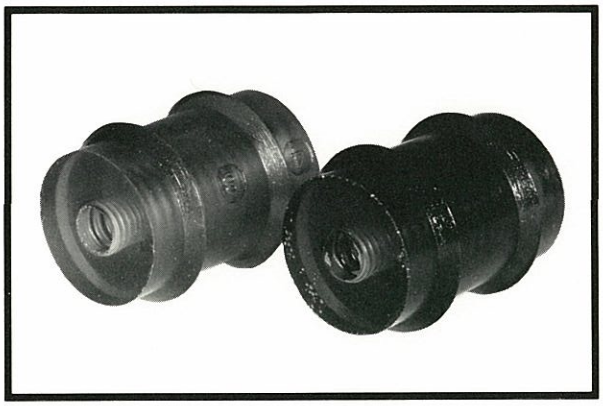
One kit is required for each cable sheath type that enters the closure. Each kit consists of an inboard grommet, an outboard grommet, and two screws.

Product Code	Description	Comcode
BC12-1	Handles 1 LGBC-012A cable	104 316 716
BC12-2	Handles 2 LGBC-012A cables	104 316 708
BC6-3	Handles 3 LGBC-006A cables	104 316 690
BC4-6	Handles 6 LGBC-004A cables	104 316 658

Grommet Kits, UC-Type

Applications

A UC-Type Grommet Kit is used to anchor, seal, and bond a lightguide cable sheath to a 51D3-LG2 Lightguide Closure.



Description

One kit is required for each cable sheath that enters a closure. Each kit consists of a single grommet, and a kit is ordered to correspond to the approximate diameter of the cable with which it is to be used.

Specifications

Product Code	Cable Type	Cable Outside Diameter (In.)	Comcode
UC-41 Grommet Kit	LIGHTPACK cable with 48 fibers with or without factory Sheath Termination Hardware	0.41	104 145 560
UC-48 Grommet Kit	Lightguide cable (3AEX, 3BAX, 3BFX, 3BHX) or LIGHTPACK cable (3DAX, 3DFX, 3DHX) with or without factory Sheath Termination Hardware	0.48	104 145 537

Holder, 1A1

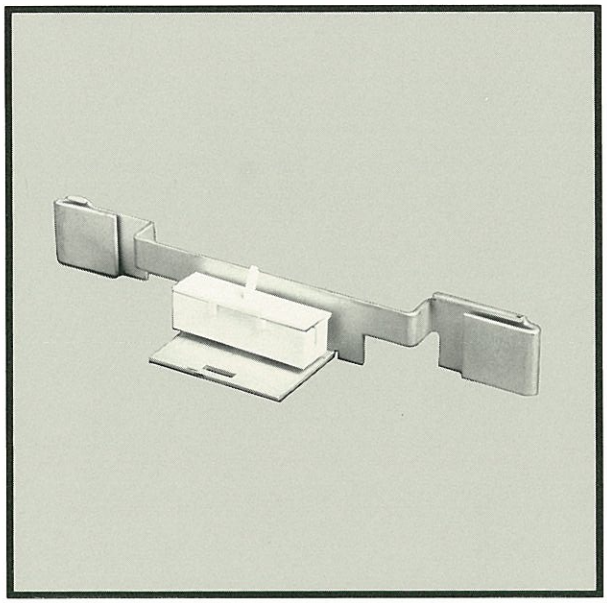
Applications

The 1A1 Holder is used to mount Fanouts inside the 100A Lightguide Interconnection Unit (LIU).

Description

The 1A1 Holder includes one array connector enclosure and a fanout mounting screw.

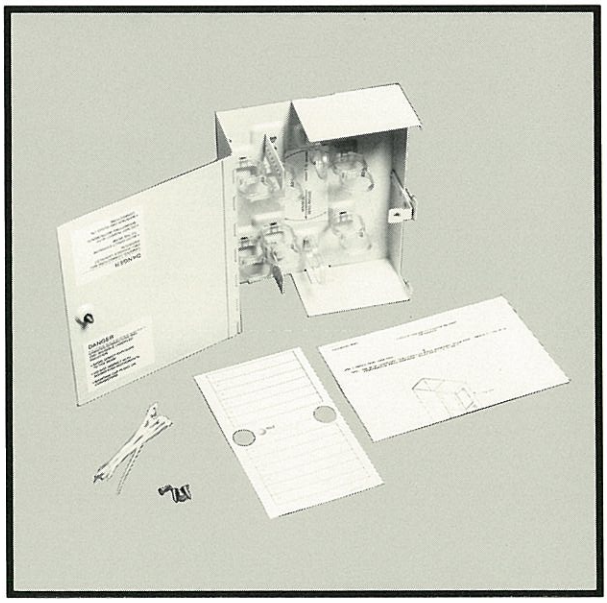
Product Code	Comcode
1A1 Holder	105 034 474



Interconnection Unit, 100A Lightguide

Applications

The 100A Lightguide Interconnection Unit (LIU) is a modular closure used to provide cross-connect and/or interconnect capability for lightguide cables in buildings.



Description

The 100A LIU terminates a maximum of 12 stranded-type fibers. It has two sections, each containing three plastic split rings for routing fibers through the unit, and two rings for routing cables; termination posts at the top and bottom secure the cables entering from overhead or below. The six retainer rings in the slack storage section are arranged in a racetrack configuration; they hold the fibers so they meet the 1.5-inch minimum bend radius. The LIU has two "windows" into which two 10A connector panels are inserted for mounting connectorized fibers (six fibers per panel). The LIU also includes a decal for circuit administration and record-keeping purposes and a set of installation instructions describing procedures for constructing a cross-connect or interconnect module and recommendations for building a cross-connect field.

Specifications

Physical Specifications

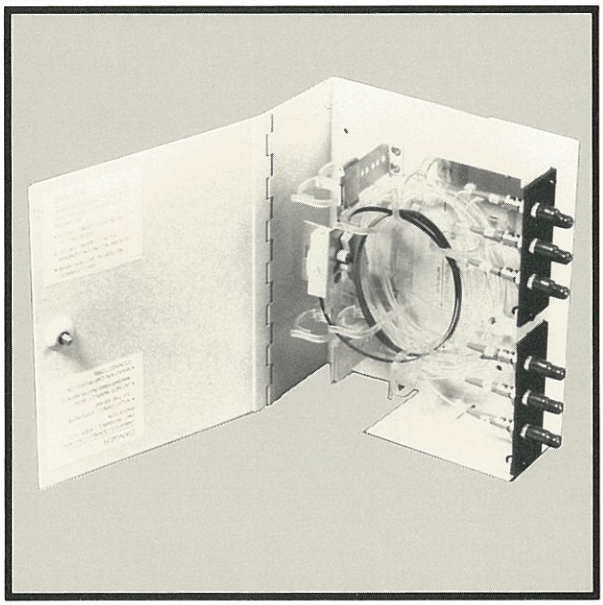
Height: 8.75 in.
Width: 7.5 in.
Depth: 3 in.

Product Code	Comcode
100A LIU	104 141 841

Interconnection Unit, 100A Lightguide, with Factory-Installed Fanout

Applications

The 100A Lightguide Interconnection Unit (LIU) with Factory-Installed Fanout is used to provide an easy transition from array-connectorized ribbon cable to 12 individual fibers at the connector panels.



Description

The 100A LIU with fanout consists of the 100A LIU cabinet equipped with a 1A1 Holder and a pretested ribbon cable that has a 1009C Array Connector on one end and 12 individually jacketed and connectorized fibers on the other end. Each fiber has a special strengthened buffer for added protection during handling. The Fanout may also be ordered with ST (P2020A-C-125) Connector Plugs.

Specifications

Fanout Physical Specifications

Length: 72 in. (48 in. of ribbon, 24 in. of separated fibers)

Product Code	Description	Comcode
110B1 LIU	LIU with fanout accepting 62.5/125-μm fibers equipped with ST (P2020A-C-125) Connector Plugs	104 325 618

Lightguide Organizers, UC-Type

Applications

The UC-Type Lightguide Organizers are used in the UCB1 Lightguide Closure to organize and store various lightguide splices.

Description

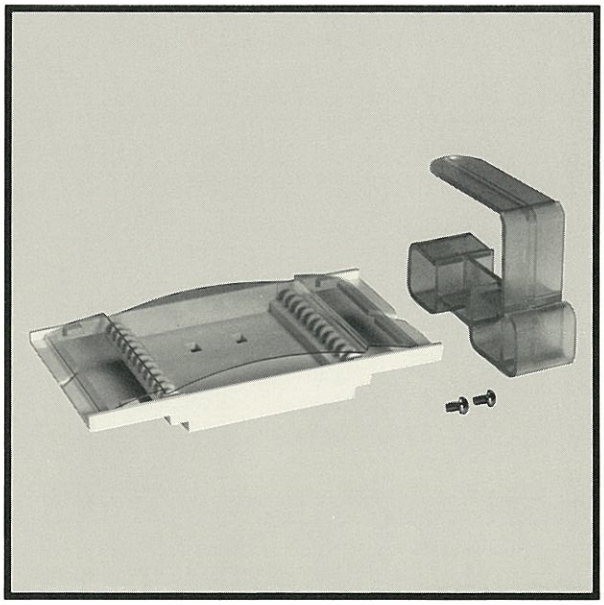
There are three UC-type organizers used in PDS:

- UC-RR, ribbon-to-ribbon cable splice (array or rapid ribbon), which consists of an instruction sheet, a platform, a platform mounting bracket, a sectionalized splice box, a protective cover, and two screws. It stores from 18 to 48 inches of ribbon and up to 12 array or rapid ribbon splices.
- UC-RS/M1, ribbon-to-stranded enhanced rotary splice, which consists of the ribbon organizer hardware (UC-RR), two fiber storage leaves, and mounting hardware for stranded cable splicing.

  The UC-RS/M1 organizer includes an instruction sheet, a platform, a platform mounting bracket, a platform cover, seven screws, two storage leaves and two storage leaf extensions, a storage leaf cover, and eight 17-inch protection tubes.

  Each storage leaf separates and organizes 60 inches of fiber and 18 splices. The total splice capacity is 12 array or rapid ribbon splices plus 36 enhanced rotary splices of individual fibers.
- UC-SS/M1, stranded-to-stranded enhanced rotary splice, which consists of three fiber storage leaves and mounting hardware for splicing.

  The UC-SS/M1 organizer includes an instruction sheet, five screws, three storage leaves, two storage leaf extensions, one storage leaf cover, and twelve 17-inch protection tubes.



Each leaf can accommodate 18 enhanced rotary splices and will hinge together for easy stacking and accessibility for re-entry. The UC-SS/M1 can also be used for ribbon cable(s) when spliced on a fiber-to-fiber basis.

Product Code	Description	Comcode
UC-RR	Ribbon-to-Ribbon	103 921 961
UC-RS/M1	Ribbon and Stranded	105 040 653
UC-SS/M1	Stranded-to-Stranded	105 040 661

Trough, 1A4 Lightguide

Applications

The 1A4 Lightguide Trough is used to arrange fiber patch cords run vertically from one 100A Lightguide Interconnection Unit to another in a multi-unit fiber cross connect.

Description

The 1A4 Lightguide Trough is a vertical aluminum trough that is shipped with two mounting screws.

Specifications

Physical Specifications

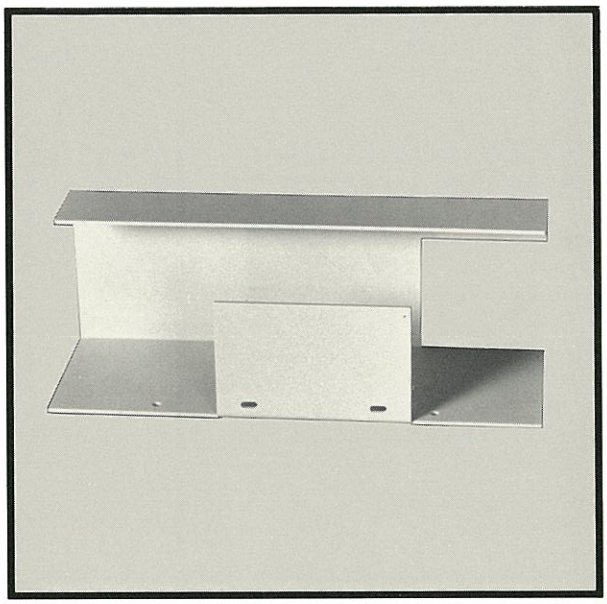
Height: 8.75 in.
Width: 4 in.

Product Code	Comcode
1A4	104 141 866

Trough, 1A6 Lightguide

Applications

The 1A6 Lightguide Trough is used to arrange patch cords run horizontally between 100A Lightguide Interconnection Units or 1A4 Troughs (cross-connect modules).



Description

The 1A6 Lightguide Trough is a horizontal aluminum trough that is shipped with two mounting screws.

Specifications

Physical Specifications

Height: 4 in.
Width: 11.5 in.
Depth: 4 in.

Product Code	Comcode
1A6	104 141 874