Data Centre & Communications Room Fibre Frame Solutions

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Next Generation Frame – Introduction

Frames

ADC KRONE developed its innovative Next Generation Frame (NGF) for high-fibre count applications. At 2,304 terminations in a single frame, its unique, user-friendly design and superior cable management provide enterprise customers with an optimum solution to handle applications with high fibre counts such as data centres. Traditionally offered in white, the NGF now comes in black.

ADC KRONE's Next Generation Frame product line is designed to fit a variety of termination, splice, and storage applications. The frame is designed with an emphasis on superior cable management and ease of use, including features such as ample trough space for cable and jumpers, easy access to connectors, and storage for jumpers. The frame sections are shipped from the factory fully equipped with all cable management hardware including a built-in jumper storage panel.

Fibre Termination Blocks (FTB)

Fibre Termination Blocks (FTBs) are available with SC adaptors in block configurations of 96 and 144 positions, and with LC adaptors in 144 and 192 positions. FTBs utilise sliding adaptor packs to gain easy access to both the front and rear connectors. There is also a block configuration available to accommodate Mini Value-Added Modules (Mini-VAMs) for applications requiring splitters or WDMs (Wave Division Multiplexing). FTBs can be ordered with adaptors only or with factory terminated IFC (Intrafacility Cable) or outside plant cable.

Fibre Combination Blocks (FCB)

Fibre Combination Blocks (FCBs) provide termination and on-frame splicing capabilities, all in one block. They are available with SC adaptors in block configurations of 96 or 144 positions, or with LC adaptors in 144 or 192 positions.

Features and Benefits

Ample Trough Space

Reduces jumper pile-up and congestion
- Reduces maintenance time due to easy removal and tracing of jumpers
- Minimises risk of microbends or damage to fibre

Built-in Jumper Storage Panel

Minimises number of required jumper lengths
Maintains fibre bend radius
Simplifies frame installation
- Saves money by reducing the number of different jumper lengths that have to be kept in inventory
- Minimises risk of microbends or damage to fibre

Enclosed system ensures easy cable access without fibre cross-over points

Sliding Adaptor Packs

Promotes high density
Provides easy access to connectors
- Saves valuable floor space
- Reduces time required for operations and maintenance

Intelligent Cable Routing System

No fibre cross-over points
Multiple vertical troughways
- Reduces maintenance time due to easier removal and tracing of jumpers and minimises fibre "weaving"

Bend Radius Protection at Every Turn

NGF provides complete bend radius at every turn to ensure network performance and reliability

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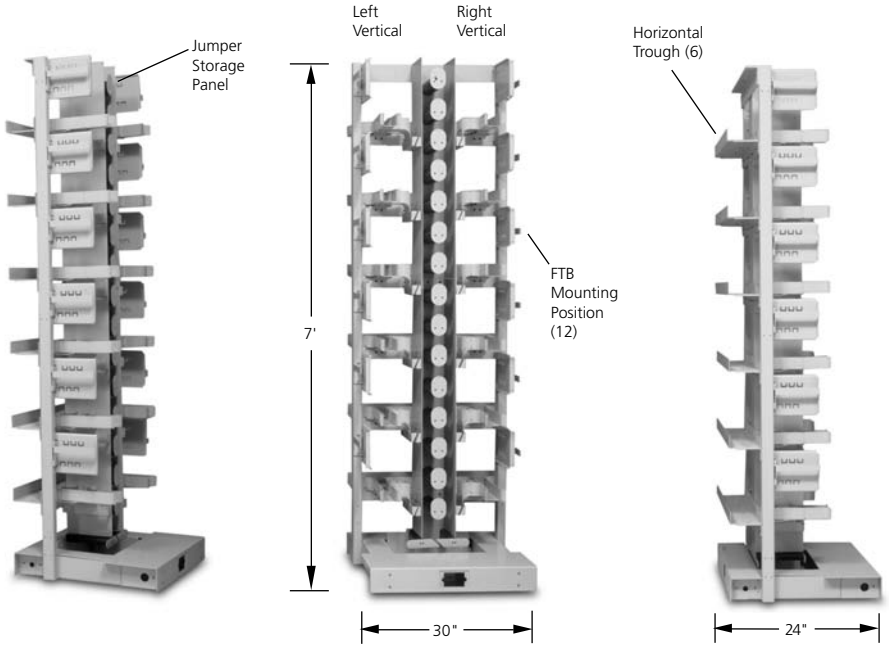
Fibre Main Distributing Frame (FMDF)

The FMDF is the cornerstone of the NGF product line. This innovative frame has six 5-inch horizontal troughs for a total of 30 inches of horizontal trough space. This abundant trough space minimises fibre pile up and congestion leading to easier jumper traceability and removal. The frame has twelve Fibre Termination Block (FTB) mounting positions equally divided between vertical columns on the left and right sides of the frame as shown in the figure below. The frame is available in 30-inch wide version painted textured black. The 30-inch wide frame provides additional vertical trough space for the highest termination density applications. The built-in jumper storage panel will store up to 3.5 metres (12 feet) of jumper slack.



Auxiliary View | Front View | Side View

Ordering Information

Description	Dimensions (HxWxD)	Maximum Termination Capacity	Catalogue Number
30" FMDF frame section Colour: Black	7' x 30" x 24" (2.14m x 76.2cm x 61cm)	1728 (SC)/2304 (LC)	NGFB-MDF7A100-30

Each frame section includes heavy duty floor anchor bolts for concrete floor applications.

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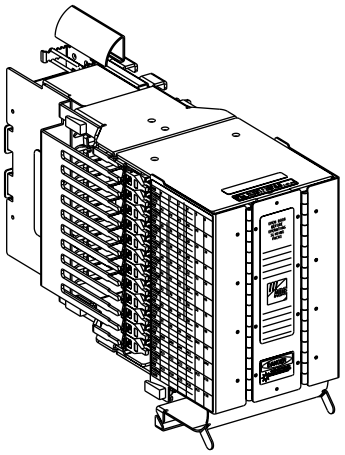
Fibre Termination Blocks (FTB) – Unterminated (Adaptor Only)

FTBs without fibre can be ordered fully loaded with adaptors. Before ordering, determine the block orientation and cable exit direction. Unterminated FTBs may be ordered with a "left" orientation (mounts on the left side of the frame) or a "right" orientation (mounts on the right side of the frame). The cable exit direction will be either "upward" (cables terminated to the rear side of the block exit up toward the top of the frame) or "downward" (cables terminated to the rear side of the block exit down toward the bottom of the frame). All blocks with adaptors only are configured to terminate single or dual jumpers on the rear of the block. If a multifibre breakout style cable (i.e. Outside Plant/Intrafacility Cable) is to be terminated to the rear of the block, a separate clamping kit and replacement rear storage area kit is required (see next page). FTBs can not be ordered with a combination of singlemode and multimode adaptors. If this combination is desired, ADC KRONE recommends purchasing a fully loaded adaptor only termination block, and separate sliding adaptor packs to customise the block on-site.



144 Position Right Upward FTB Shown

Catalogue Number

NGFB-TB

Block Style

1	1	SC
	4	LC

SC Style Blocks

2	C	96
	M	144

OR

LC Style Blocks

M	144
Q	192

Block Orientation

3	L	Left
	R	Right

Cable Exit Direction

4	U	Upward
	D	Downward

Adaptor Type Singlemode

5	7	SC ultra polish
	K	LC ultra polish

OR

Adaptor Type Multimode

9	SC
5	ST®
T	SC aqua, zirconia sleeve[1]
C	LC aqua, zirconia sleeve[1]
P	LC

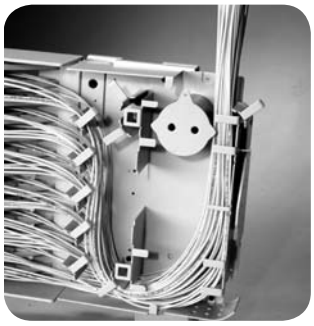
[1]When deploying Laser Optimised Fibre, ADC KRONE automatically includes colour coded high quality adapters with zirconia alignment sleeves with its factory terminated blocks to maximise lifetime performance of the system. ADC KRONE recommends the same practice for customers terminating their fibre in the field.

Configuration Information

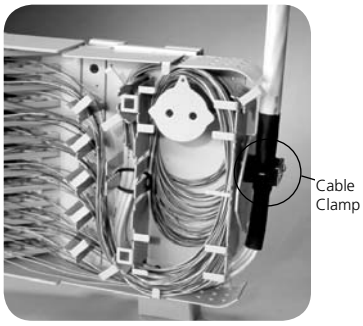
Definition of Variables	
1	**Block Style** General adaptor type required in the FTB
2	**Block Configuration** Maximum number of terminations that the FTB will accommodate when fully loaded
3	**Block Orientation** Vertical column of the frame the FTB is to be mounted on
4	**Cable Exit Direction** Direction the equipment jumpers or Outside Plant cable will exit from the FTB
5	**Adaptor Type** Specific adaptor type required in the FTB

Cable Clamping/Block Conversion Kits

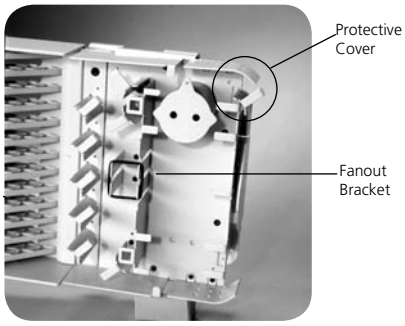
Adaptor-only blocks are configured to accommodate single fibre jumpers or multifibre breakout cables. If loading a preterminated intrafacility (IFC) cable or a preterminated Outside Plant (OSP) cable is desired, additional hardware will be required. Block conversion kits are available to convert adaptor only blocks to blocks that will accept preterminated IFC or OSP style cables. The conversion kits contain the cable management hardware, brackets and cable clamps required to convert the block. The kit required will depend on the block style originally purchased.



72 Position Block Loaded with Jumpers



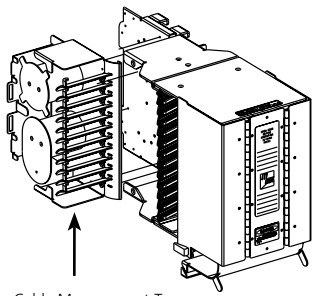
72 Position Block Loaded with Multifibre Breakout Cable



72 Position Block with Clamping Kit

Ordering Information

Description	Catalogue Number
Block style originally purchased	
96 or 144 position **left up** blocks	NGFB-ACCRCMSLU
96 or 144 position **right up** blocks	NGFB-ACCRCMSRU
96 or 144 position **left down** blocks	NGFB-ACCRCMSLD
96 or 144 position **right down** blocks	NGFB-ACCRCMSRD



Rear Cable Management Tray for 144 Block Conversion Kit

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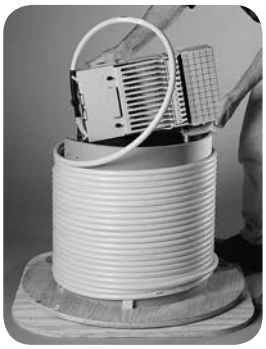
Fibre Termination Blocks (FTB) – Preterminated

Configuration Information

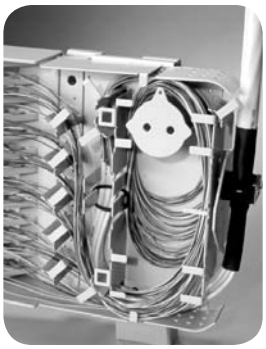
Preterminated FTBs are available with either indoor or outdoor rated cable in ribbon or stranded configurations. All blocks are 100% factory tested to guarantee continuity and reliable connections. Preterminated FTBs make installation quick and easy, reducing labour costs. Before ordering, determine the block orientation and cable exit direction. Preterminated FTBs may be ordered with a "left" orientation (mounts on the left side of the frame) or a "right" orientation (mounts on the right side of the frame). The cable exit direction will be either "upward" (cables terminated to the rear side of the block exit up toward the top of the frame) or "downward" (cables terminated to the rear side of the block exit down toward the bottom of the frame).

Preterminated fibre termination blocks arrive from the factory with either IFC or OSP cables

Fibre cable easily uncoils during installation



Fibre termination block ships inside the drum



IFC cables loaded into FTB

Definition of Variables	
1	**Block Style** General adaptor type required in the FTB
2	**Block Configuration** Maximum number of terminations that the FTB will accommodate when fully loaded
3	**Block Orientation** Vertical column of the frame the FTB is to be mounted on
4	**Cable Exit Direction** Direction the equipment jumpers or OSP cable will exit from the FTB
5	**Adaptor/Connector #1** Specific adaptor/connector type required in the FTB. Refers to the adaptor/connector type at the FTB
6	**Connector #2** Specific connector type required at the cable end opposite the FTB
7	**Cable Type** Type of cable to be terminated to the FTB
8	**Cable Length** Required length of the cable terminated to the FTB

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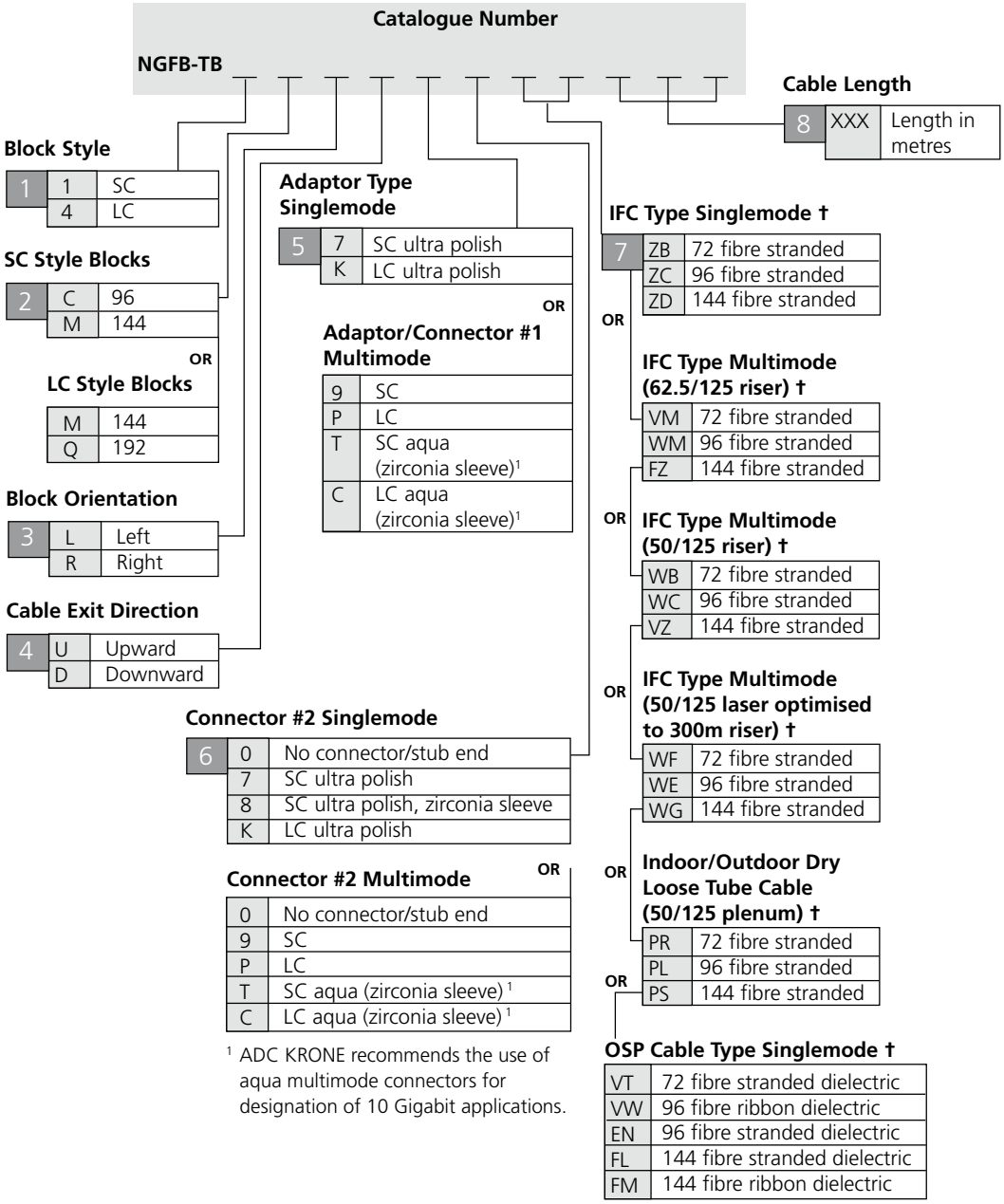
Fibre Termination Blocks (FTB) – Preterminated FTBs



[1] ADC KRONE recommends the use of aqua multimode connectors for designation of 10 Gigabit applications.

† Other cable types are available upon request. Please contact your ADC KRONE representative.

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Next Generation Frame – Fibre Combination Blocks (FCB)

Configuration Information

Fibre Combination Blocks provide a place to terminate pigtails and splice IFC/OSP cables on the frame. The blocks are available with SC adaptors in block configurations of 96 or 144 position or with LC adaptors in configurations of 144 or 192 positions. The block is available with factory wired pigtails for easy installation. Splice trays are shipped with the block if ordered with pigtails; otherwise trays must be ordered separately. The block is shipped with a cable clamp for OSP/IFC. The FCB occupies two mounting positions on a frame section. Before ordering, determine the block orientation. FCBs may be ordered with a "left" orientation (mounts on the left side of the frame) or a "right" orientation (mounts on the right side of the frame).

Ordering information follows on next page.

Definition of Variables	
1	**Block Style** General adaptor type required in the FCB
2	**Block Configuration** Maximum number of terminations that the FCB will accommodate when fully loaded
3	**Block Orientation** Vertical column of the frame the FCB is to be mounted on
4	**Adaptor/Connector Type** Specific adaptor/connector type required in the FCB
5	**Pigtail Type** Type of pigtail required
6	**Number of Pigtail Assemblies** Number of pigtails to be preinstalled in the FCB
7	**Splice Chip** Type of splice chip required for splice trays

Catalogue Number

NGFB-CB **2** _ _ _ _ _ _ _

Block Style

1	1	SC
	4	LC

SC Style Blocks

2	C	96
	M	144 [1]

OR

LC Style Blocks

M	144 [1]	
Q	192 [2]	

Block Orientation

3	L	Left
	R	Right

Adaptor Type Singlemode

4	7	SC ultra polish
	K	LC ultra polish

OR

Adaptor/Connector Type Multimode

9	SC
P	LC
T	SC aqua [3]
C	LC aqua [3]

Pigtail Type

5	0	No pigtails
	1	12 fibre pigtail
	2	12 fibre stranded maxi-strip
	5	12 fibre ribbon
	6	12 fibre pigtail (50/125)
	F	12 fibre pigtail (50/125 laser optimised to 300m)
	J	12 fibre pigtail (50/125 laser optimised to 550m)

Number of Pigtail Assemblies

6	XX	Number of assemblies

Splice Tray

7	0	No splice tray
	2	Heat shrink fusion
	3	Mechanical (Elastomeric)
	6	Nortel Q PAK (24 fibre HS fusion)

[1] 144 termination block requires the use of either:
Mechanical (elastomeric) splice tray when using mass fusion ribbon splicing or
Nortel QPAK splice tray when using single fibre heat shrink fusion splicing.

[2] 192 termination block requires use of ribbon splicing or the Mechanical (elastomeric) splice tray. 192 termination block not available for stranded fibre splicing.

[3] ADC KRONE recommends the use of aqua multimode connectors for designation of 10 Gigabit applications.

Splice Trays For Fibre Combination Block

For use when splice trays are not included with block at time of order.

Catalogue Number

FST - DRS _ _ - _ _

Number of Splices

1	12	12 splices
	24	24 splices

Splice Tray Type

2	00	Empty tray*
	HS	Heat shrink fusion
	MT	Mechanical (Elastomeric)
	NT	Nortel QPAK

*Maximum size of chip allowed in empty tray: 3”H x 2.5”W x 3.6”L

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Next Generation Frame – Sliding Adaptor Packs

Sliding adaptor packs house groups of fibre optic adaptors and are mounted in Fibre Termination Blocks to provide easy access to connectors. Sliding Adaptor Packs are available with SC and LC adaptors. The adaptors come in packs of two, four, six and eight depending on the adaptor type and the desired termination density. See table below for configuration guidelines.

***Sliding Adaptor Pack Configuration Guidelines**

Block Configuration	Adaptor Type	Adaptor Pack Configuration	Adaptor Pack Option
96 Position	SC	2 Pack/6 Pack	F (shown below)
96 Position	SC	4 Pack/4 Pack	J (not shown below)
144 Position (block code 'M')	SC, LC	6 Pack/6 Pack	K (not shown below)
192 Position (block code 'Q')	LC	4 Pack/4 Pack	J (not shown below)

Option F
(E-2000 shown)

Catalogue Number

NGF- SAP ___ 0 ___ 00

Adaptor Type Singlemode

5	7	SC ultra polish
	K	LC ultra polish

OR

Adaptor Type Multimode

9	SC
P	LC (144 and 192 only)
T	Aqua SC (zirconia sleeve) [1]
C	Aqua LC (zirconia sleeve) [1]

Adaptor Pack Option*

F	2 pack/6 pack
J	4 pack/4 pack
K	6 pack/6 pack (all block code "M" blocks)

[1] ADC KRONE recommends the use of aqua multimode connectors for designation of 10 Gigabit applications.

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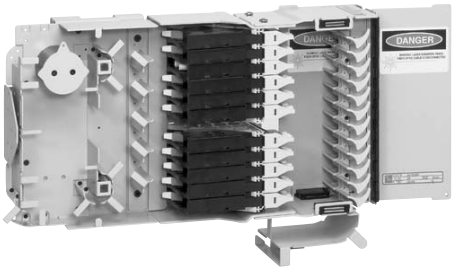
Next Generation Frame – Value-Added Module System

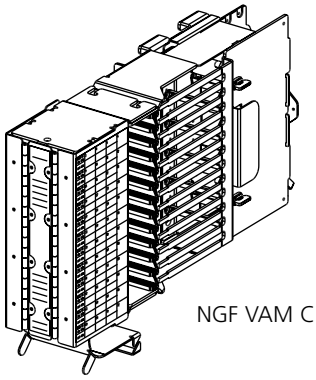
ADC KRONE's Next Generation Frame (NGF) Value-Added Modules are designed to support emerging circuit requirements. This high-density fibre frame solution provides unlimited expansion while optimising fibre cable management. The NGF system uses Mini Value-Added Modules to incorporate optical splitters for circuit monitoring and video distribution. Mini Value-Added Modules (Mini-VAM) can also be configured with wavelength division multiplexing capabilities to increase transmission capacity over existing fibre lines. Various input and output interface options are available.

The NGF VAM chassis is interchangeable with termination, splice, and storage modules. Each chassis accommodates up to twelve Mini-VAM modules.

Features:

- **Enclosed plug-in modules**
  Optical components are protected from physical and environmental damage
- **Flexible platform**
  Modules can be created for new applications quickly and easily to meet customer requirements
- **Monitor and/or test**
  Enables providers to troubleshoot networks without forcing disruption of service
- **Custom configurations**
  Custom splitter configurations available upon request





NGF VAM Chassis

Catalogue Number

NGFB - TB D

Block Style

1	SC/LC

Cable Exit Direction (Rear)

U	Upward
D	Downward

Block Orientation

L	Left
R	Right

Please contact ADC KRONE for VAM ordering information.

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Next Generation Frame – Accessories

Cable Clamp Kits

Cable clamp kits are available for securing Intrafacility Cable (IFC)/Outside Plant (OSP) cable or equipment Fibre optic Terminal (FOT) jumpers on the rear of the FTB. Each FTB has three cable clamp mounting positions.

Ordering Information

Description	Catalogue Number
Cable clamp kit for FOT patch cords (included with fibre termination blocks loaded with adaptors only)	NGF-ACCCLMP04
Cable clamp kit for IFC/OSP cables, dielectric cable without grounding hardware (included with fibre termination blocks with IFC)	NGF-ACCCLMP08

Rack Extenders

Rack extenders are used to extend the height of a 7' (2.14m) rack to the appropriate ceiling height so that it can be secured overhead.

Ordering Information

Description	Catalogue Number
Rack extender	**30" Wide Frames**
12" (30.48cm)	NGFB-ACCEXT12-30
24" (60.96cm)	NGFB-ACCEXT24-30
54" (137.16cm)	NGFB-ACCEXT54-30

Isolation Pad

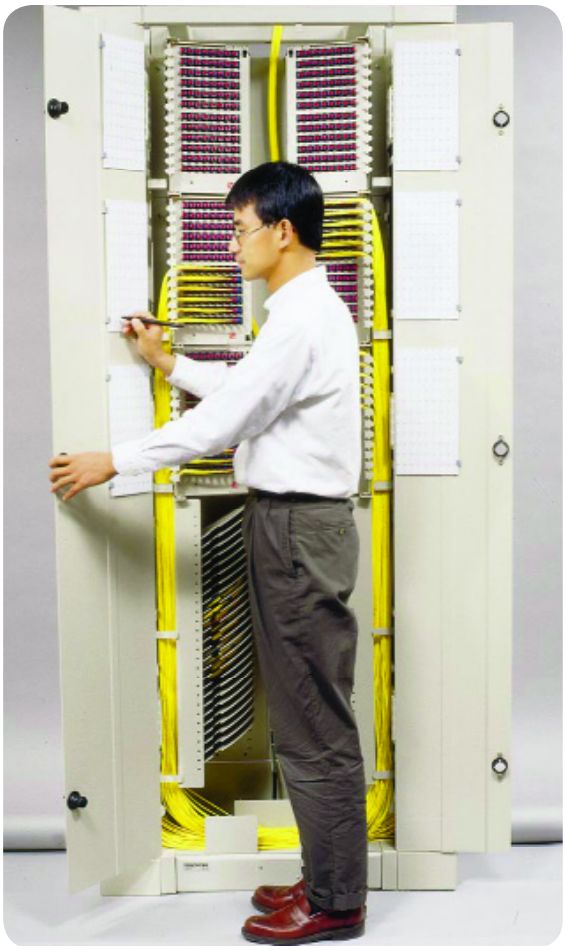
The isolation pads are placed between the base of the rack and the ground. They serve as a template to locate screwing holes to fix the rack and they isolate the rack from the ground.

Ordering Information

Description	Catalogue Number
All 30" wide FMDF and equipment bays	NGF-ACCISOP30X24
All 30" wide Zone 4 FMDF and equipment bays	NGF-ACCISOP30X24Z4
All 30" wide front facing FMDF and equipment bays	NGF-ACCISOP30X19

OMX High Density System

ADC KRONE's OMX600™ optical distribution frame is a high density, modular, front access optical distribution frame. It terminates and splices up to 576 fibres in a compact 600mm x 300mm footprint. Patented angled adaptor/retainers and cable management design protect cables and connectors while ensuring correct bend radius. The modular frame can be configured to include enhanced signal management functions such as splitters, couplers, and wavelength division multiplexers.



High-Density
As the number of installed fibres grows, and the amount of available floor space diminishes, data centre operators and service providers need a frame that handles large amounts of fibre and conserves space.
The OMX 600 can terminate and splice up to 576 fibres in a 600mm x 300mm footprint.

600mm Footprint
The OMX 600 frame is 600mm wide and 300mm deep. Two frames can be mounted back-to-back to fill one 600mm x 600mm floor tile. The frame can also be mounted against a wall.

Modular Design
The OMX 600 is a modular system that allows data centre operators and service providers to utilise one system for various optical distribution frame applications, depending on their needs and the needs of their customers.

Total Front-Access Frame
The OMX 600 can be installed back-to-back or against a wall to save valuable office floor space. Technicians have complete access to all fibre terminations and splices from the front of the frame.

Superior Cable Management
The total front-access OMX 600 fibre frame protects cables and connectors through use of ADC KRONE's patented angled adaptors/retainers and bend radius protecting design.

For further information and configuration support, please contact your local sales representative.