Enclosure and Rack Systems Cable Management

Organize large volumes of cables from networking switches and patch panels in enclosure and rack systems

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Enclosure and Rack Solutions

Today's high-density sever and networking applications demand a rack infrastructure that can mount a mix of different equipment and support high-capacity cable management in an efficient, flexible design.

Racks and Enclosures: The Building Blocks of Every IT Environment

Whether it's a network closet, a server room, or a data center of any size, IT operations rely on racks and enclosures for support, organization, and management the rack mount equipment. Servers, storage, switches, routers, power distribution units, port console servers, KVM switches—today's racks and enclosures are expected to support a greater number and greater variety of applications and devices.

Trends like virtualization, consolidation, convergence, and blade server adoption are forcing different types of equipment to share the same space. Today's high-density devices generate tremendous amounts of heat. Rapidly changing business conditions require the IT environment to adapt and adjust faster than ever. And the imperative of uninterrupted uptime now has the corollary demand of efficiency.

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Contents

NetShelter SX Enclosures - 4

As the number of IT components within each rack enclosure continues to increase, so do the number of power and data cables. Schneider Electric offers a large selection of vertical and horizontal cable managers for enclosures to address today's cable routing demands.

Overhead Cable Management - 15

Routing cables across the tops of enclosures has distinct advantages over running them below the floor.

Open Frame Racks - 17

The NetShelter 2 and 4 Post Open Frame racks offer a quality solution for the economical installation of rack mountable equipment and can be paired with high-density vertical cable managers for maximum cable volume.

Horizontal Cable Management - 24

Cable managers for patching and cross-over applications featuring, smooth radius plastic fingers (cable guides) that protect the cable from kinking and binding.
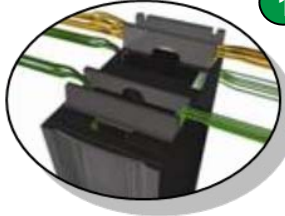
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NetShelter SX Enclosures

Heights – 24U, 42U, 45U, 48U

Widths – 600mm (24"), 750mm (30")

Depths – 1070mm (42"), 1200mm (47.5"), 825mm (32 in)

More Standard Features -> Faster Installation

Cable Access Roof
- Eight cable entry slots
- Toolless mounting of overhead cable trough system
- Snap-in mounting for allow easy roof removal and installation with cables in place

Integrated Baying Brackets
- Pre-Installed on frame front and back
- Spacing options at 24 in or 600 mm
- Bays with other InfraStruxure power and cooling   products

Pre-installed Levelling Feet and Caster
- Easily adjustable levelling from top down
- Casters standard on all enclosures

Toolless, Zero U Accessory Channel
- Toollessly mount Rack PDUs
- Toollessly mount vertical cable organizers
- New cable fastening features

Easily Adjustable Vertical Mounting Rails
- Simple screw and cam engagement
- Captive screws - No loose hardware
- Easy visual alignment for quick adjustment
- 1/4 inch increments through enclosure
- Hole cutouts for 0U installation (AR8469) of Data Distribution Cable (DDC) accessories
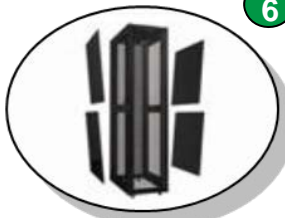
HALF-HEIGHT SIDE PANELS
- Easy and safe handling
- Quick release latch
- Lockable - same key as doors
- Enclosure width the same with or without sides installed

Other standard features include:
- Integrated electrical bonding of sides, doors, roof and rails to frame
- Ventilated front and rear door
- Split-rear ventilated rear doors for better clearance in hot aisle
- Numbered U positions front and back
- Open bottom for unobstructed under floor access
- 3000 lb static load, 2250 lb dynamic (rolling) load
- UL Listed
- EIA/ECA-310-E

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NetShelter SX Rear Vertical Zero U Accessory Channels and Cable Management Accessories

Industry Pioneer of Toolless Accessory Integration

Industry leader by providing vertical 0U accessory channels as part of the standard enclosure to make Rack PDU and Cable Management accessorizing easy and a simple best practice.

2 x Mounting Bays Per Channel
- Accessories designed to occupy one bay
- Place accessories side-by-side in the channel
- For example 2 vertical Rack PDUs per channel

Channel Designed for Accessorizing
- Large rectangle cutouts for cable passthrough to adjacent enclosure
- Medium rectangle for toolless mounting AR8444 fiber spools
- T-shape cutout for hook-and-loop or cable ties
- Square holes for cage nut fasteners or toolless quarter turn fasteners AR8621 or AR7540
- Tear drop cutout for vertical Rack PDUs and Cable Managers

> Toolless mount Rack PDUs, cable organizers, DDC cable

> Additional vertical 0U accessory channels:

      AR7502 – Vertical 0U Accessory Channel, 42U (Qty 2)
      AR7552 – Vertical 0U Accessory Channel, 45U (Qty 2)
      AR7572 – Vertical 0U Accessory Channel, 48U (Qty 2)
      AR7505 – Vertical Cable Organizer, Center Rear Mount
      AR7511 – Narrow Vertical 0U Accessory Channel, 42U

Replace or add more for further accessorizing or cable tie-off points!

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NetShelter SX Rear Vertical Zero U Accessory Channels and Cable Management Accessories
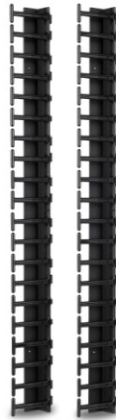
Toolless Vertical Cable Management

Specialized in toolless install cable managers by the use of the zero U accessory channels provided standard in every NetShelter SX Enclosure!

AR8442 – Vertical Cable Organizer, 8 Cable Rings, Zero U

> Mounts toollessly on the vertical 0U accessory channel

AR7721, AR7722, AR7723– Low-profile, Vertical Cable Organizer, Plastic Cable Guides

> Installs toollessly and lower profile than AR8442

> Cable guides align with every u-space

> Dedicated version for each enclosure height 42, 45, 48U

AR8443A – Vertical Fiber Organizer

> Installs toollessly

> Fiber spool only kit available AR8444

AR8444

AR7540 & AR7540100 – Toolless Cable Management Ring

> Low profile vertical cable management

> Mount toollessly on the vertical 0U accessory channel

> Available in 10 and 100 pack

AR7710 – Cable Containment Brackets with Rack PDU Mounting

> Low profile vertical cable management

> Support 60 to 90 Cat 6/Cat 6a data cables

> Mount toollessly on the vertical 0U accessory channel

AR7711 – Zero U Accessory Bracket

> Mount Rack PDUs rear facing orientation

> Support 3rd party accessories in numerous mounting configurations

> Mount 1U or 2U patch panels or other networking accessories

AR8621 – Hook-and-Loop Cable Managers (Qty 10)

> Mount toollessly on the vertical 0U accessory channel

> Secure and bundle cables with hook-and-loop ties
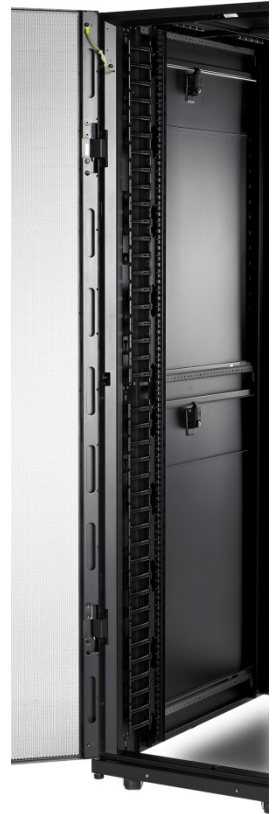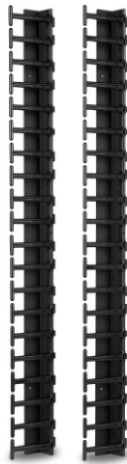
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Rear Zero U Vertical Cable Managers

Vertical Cable Manager, Low Profile (qty 2)

• Cable Capacity: 40 Cat 6a , 50 Cat 6
• Mount toollessly on the rear accessory channel
• Occupies two bays of the accessory channel
• Adjust to one bay for side-by-side Rack PDU installation

  •42U – AR7721
  •45U – AR7722
  •48U – AR7723


AR7540 – Toolless Cable Management Ring (qty 10)
AR7540100 – Toolless Cable Management Ring (qty 100)

•Cable Capacity: 40 Cat 6a, 50 Cat 6
•Low profile vertical cable management
•Mount toollessly on the rear accessory channel
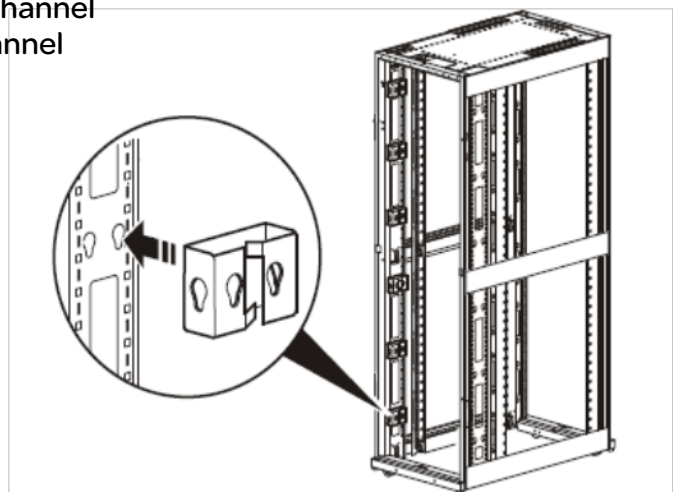•Occupies two bays of the accessory channel

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AR8442 – Vertical Cable Organizer
8 Cable Rings, Zero U (qty 2)

• Cable Capacity: 40 Cat 6, 30 Cat 6a
• Mount toollessly on the rear accessory channel
• Occupies one bay of the accessory channel
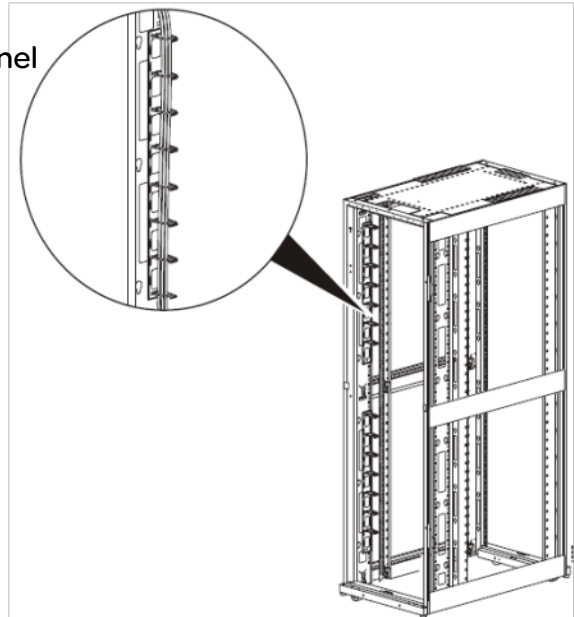
## AR7710 - Cable Containment Brackets with PDU Mounting (qty 6)

•Cable Capacity: 67 Cat 6, 51 Cat 6a
•Low profile vertical cable management
•Mount toollessly on the rear accessory channel
•Occupies two bays of the accessory channel

AR8443A - Vertical Fiber Organizer

• Cable Capacity: 288 Fiber Cables
•Manage fiber within an enclosure and promote proper bend radius of the fiber
•Includes two organizers and four spools
•Mount toollessly to the accessory channel
• Occupies one bay of the accessory channel
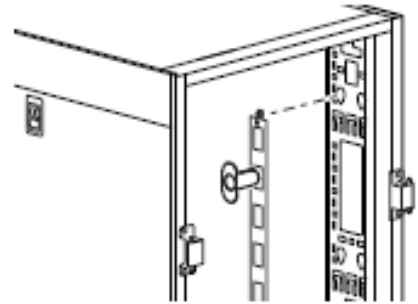
AR8444 - Spools for Vertical Fiber Organizer

•Cable Capacity: 288 Fiber Cables
•Four plastic spools for fiber management
•Toollessly mount to the vertical accesory channel
•Attach with screws to the mounting rails of 750mm wide enclosures (Excludes AR3140, AR3340, AR3347)

Optional toolless mounting in vertical cable organizers
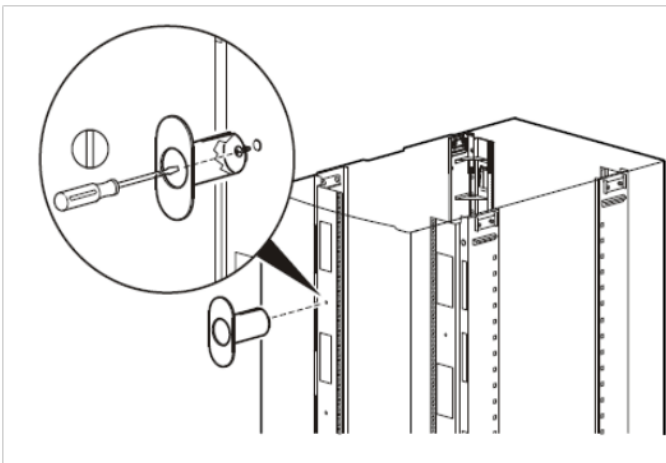
750-mm Wide Enclosures:
AR3x5x

Schneider Electric
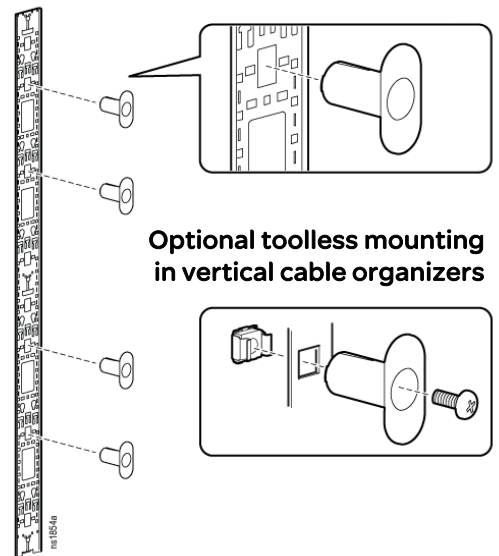
AR7505 – Center, Rear-Mount Vertical Cable Organizer

- Allows cable routing or Rack PDU installation vertically in the rear of the enclosure.
- Consists of three pieces, including a smaller piece that allows for installation in a 48U enclosure.
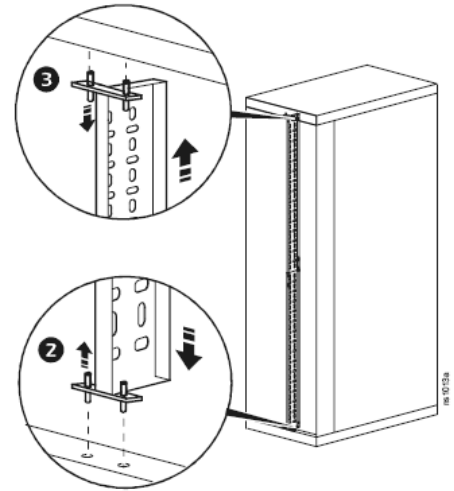
AR7711 – Zero U accessory mounting bracket

- Allows cable routing or Rack PDU installation vertically in the rear of the enclosure.
- Consists of three pieces, including a smaller piece that allows for installation in a 48U enclosure.
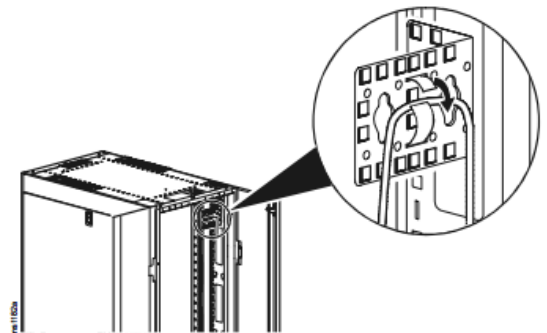
AR8654 – Cable Fall (Radius Drop) for NetShelter Enclosures and Racks and Overhead Cable Ladders (Qty 2)

•Provides a proper bend radius for cabling routed into/out of enclosures or overhead cable management systems.
•Attaches in multiple locations including the enclosure roof holes, open frame rack sides, vertical cable manager openings and rungs of overhead cable ladder systems.
• Secure cabling in place using hook-and-loop fasteners straps (AR8621 not provided).

Installed on rear roof hole of AR3100

Installed on cable ladder (left – top, right – underneath)

Pass-through Enclosure Side Panels

AR7305A - NetShelter SX 42U x 1070mm D Pass -Through Side Panels
AR7313 – 42U x 1200mm D
AR7315 – 45U x 1070mm D
AR7316 – 45U x 1200mm D
AR7314 – 48U x 1200mm D
AR7375 – 48U x 1070mm D

•Allow cable pass through to adjacent racks
•Holes contain brushes to control airflow
•Includes two panels

Installed on AR3340 enclosure

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750-mm Wide (AR3x5x) Enclosures
High Density Vertical Cable Management

Vertical Cable Managers

- •Cable Capacity: 250 Cat6, 190 Cat6a
- •Exclusively for wide enclosures
- •Unique sizes and matching covers for each height enclosure
- •Mount up to 4 per enclosure, front / rear
- • New 6" durable cable guides at 1U increments allow 35% more cabling per u-space than previous version
- • Cable retainers provided standard
- • Cable Managers:
    - •42U – AR7580A
    - •45U – AR7585
    - •48U – AR7588

Hinged Covers

- •Covers conceal all vertical cable routing
- •Covers open left and right
- •Snap hinges provide trouble-free access to cables
- • Covers:
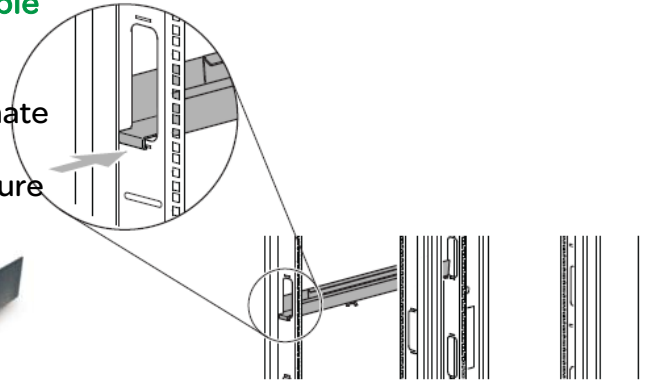   - •42U – AR7581A
    - •45U – AR7586
    - •48U – AR7589

AR7582A – Cable Retainers
- •Qty. 6 cable retainers with snap hinges

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AR8008BLK/AR8016ABLK– Horizontal Cable Organizer Side Channel

•Cable management accessory to help eliminate cable stress and maintain a
neat, organized cable layout within an enclosure or rack.

AR7706– Vertical Mounting Rail Brush strip kit

•Includes six pieces
•750-mm wide enclosures feature openings in the front vertical mounting flanges for cable routing.
•These openings are sealed with factory-installed plastic covers to restrict airflow.
•If covers are removed for cable routing, use the Brush Strip Kit to re-seal the openings.
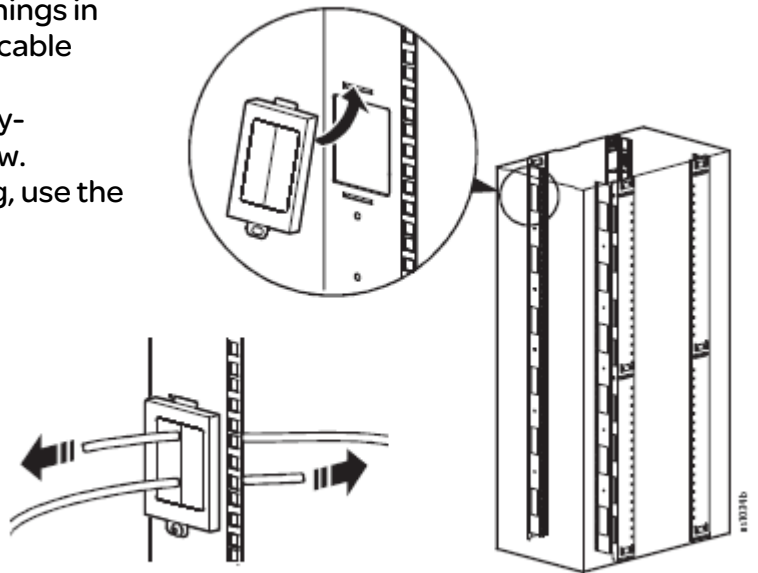
AR7707 – 1U Cable Rings
•Cable Capacity: 170 Cat6, 130 Cat6a
•Includes eight cable rings.
•Fastens cables to the vertical mounting rails of the enclosure.
•For use with 750mm wide enclosures in networking applications.

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750-mm Wide (AR3x4x) Networking Enclosures

Optimized NetShelter SX design for enhanced networking application support.

- Cable Capacity: 460 Cat6, 350 Cat6a
- Networking style mounting rails with pre-installed vertical cable managers at the front of the enclosure
- Smooth plastic fingers (cable guides) provide proper bend radius for cables
- Additional set of vertical cable managers available (AR7717A) for replacement or installation in the back of the enclosure

Networking Enclosure Applications

Superior solution for side airflow Cisco Nexus 7018, Catalyst, and MDS networking switches

- Vertical mounting rails with open rail design for improved side-to-side airflow
- Duct kits for large and small switches

Preinstalled Vertical Cable Management

AR3140 – 42U x 750mm W x 1070mm D
AR3340 – 42U x 750mm W x 1200mm D
AR3347 – 48U x 750mm W x 1200mm D

Cisco Nexus 7018 – AR3340 Enclosure and AR7742 Side Airflow Duct Kit

(2) Cisco Catalyst 6509 – AR3140 Enclosure and AR7715 Side Airflow Duct Kits

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Overhead Cable Management System

Overhead Cable Management System: Organized, Accessible , Manageable

Cable management is more than just an aesthetic concern. Organizing and managing the tremendous amount of cabling in today's constantly changing IT environment impacts overall system reliability, efficiency, and adaptability.

Routing cables across the tops of enclosures has distinct advantages over running them below the floor. These advantages have made overhead cable management a "best practice" for both existing and new data center design:

- Overall cooling efficiency improves because conditioned air is not blocked by cable dams below the plenum.
- Valuable space is opened up within rack enclosures.
- Large high-density bundles lie flat to avoid harsh, damaging bends
- Re-cabling due to moves, adds, and changes is faster and easier—and consequently less expensive.

All the overhead cable management system components are easy to install—no tools required—eliminating the need for fixed and expensive ceiling-mounted cable trays. The same basic set of troughs, partitions, and ladders may be configured many different ways.

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Overhead Cable Management

Overhead Cable Troughs and Partitions

- NetShelter enclosure feature the ability to integrate a system of troughs and partitions for routing power and data cable across the top of the NetShelter enclosures
- Reduces the need for expensive suspended cable tray systems
- Troughs and partitions install toollessly with snap-in tabs

1 **Cable Troughs**
- Supports power distribution cables
- Provides separation from data cables
- Data cables pass-through underneath to front partitioned area

AR8561 - Cable trough, 600mm enclosures
AR8574 – Cover for 600mm Cable Trough
AR8571 - Cable trough, 750mm enclosures
AR8575 – Cover for 750mm Cable Trough
AR8567 – Trough endcap, use at end of row

2 **Pass-Through Data Partition**
- Partitions the top of the enclosure into cable routing areas
- Pass-through hole provides cable access into multiple cable areas

AR8163ABLK - Pass-through data partition, 600mm enclosures
AR8173BLK - Pass-through data partition, 750mm enclosures

3 **Solid Data Partition**
- Partitions the top of the enclosure into cable routing areas
- Solid face provides clean appearance at the front of the enclosure

AR8162ABLK - Solid data partition, 600mm enclosures
AR8172BLK - Solid data partition, 750mm enclosures

4 **Cable Ladders and Accessories**
- Cable ladders and attachment kits for routing power and data cabling overhead from rack to rack

AR8164AKIT – Cable Ladder 6"
(AR8164ABLK 6" ladder with attach kit)
AR8165AKIT – Cable Ladder 12"
(AR8165ABLK 12" ladder with attach kit)

AR8166ABLK – Ladder to Power Troughs
AR8168BLK – Ladder to NetShelter SX Roof
AR8169 – Ladder Clamp Kit
AR8177BLK – Ladder to Data Partitions
AR8186 – Ladder Elevation Bracket
AR8460 – Ladder to 2 Post Rack
AR8461 - Ladder Corner Clamp
AR8462 – Ladder Angle Clamp
AR8463 – Ladder Stacking
AR8465 – Ladder Wall Termination
AR8576 - Ladder Hanger Kit

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Open Frame Racks

NetShelter® 2- and 4 Post Open Frame Racks

The NetShelter 2 and 4 post open frame racks offer a quality solution for the economical installation of rack-mountable equipment, where security at the individual rack level is not required. Open frame racks provide unobstructed airflow and fast, easy access to installed equipment, and can be paired with high density vertical cable managers for maximum cable volume. The 2 Post Rack offers cost conscious customers a simple solution for supporting networking equipment and patching applications. The 4 post offers more strength and features, for supporting servers and networking equipment. Recent improvements to the 4 post racks increase cable management options and flexibility.

AR201 – 2 Post Rack

- Self squaring design
- 45U mounting spaces (84-in tall)
- Black Finish
- 6061-T6 Structural grade aluminum
- Weight Capacity (static load) 750.00 lbs (340.19 kg)

AR203A/AR204A – 4 Post Rack

- Threaded #12-24 holes (AR204A)

- Square holes for cage nuts and server mounts (AR203A)

- New design for easier assembly
- Steel Construction
- 44U mounting spaces (84-in tall)
- Black Finish
- Multiple toolless mounting points for hook and loop fasteners AR8621 or toolless cable management rings AR7540
- Multi-position Rack PDU mounting bracket (AR8652 -6in)
                                              (AR8662 – 10in)
- Reversible stabilization plates
- Grounding inserts
- Weight Capacity (static load) 2000.00 lbs (909 kg)

Open Frame Racks Accessories

AR8652 – 6in Spacer Bracket for 4 Post Open Frame Racks and Rack PDU mounting bracket (qty 2)

•Mounts on sides of four post rack to act as a spacer when using vertical cable managers on the opposite side of the rack
•Mounts on face of vertical rails, perpendicular for single rack applications requiring vertical rack power distribution
•Designed to toolessly mount Rack Power Distribution Units
•Combine 2 kits for 12in spacing between racks

Front

Back

AR8652 mounted on right rear corner of four-post rack with rack PDU

AR8450A – Trough and partition adapter

• Provides multiple mounting locations for overhead trough and partition cable management system

AR8450A shown with AR203A 4 Post rack & AR8561 trough, AR8163ABLK pass through partition, AR8162ABLK solid partition

Top view

Bottom view

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Open Frame Rack
Vertical Cable Management

Performance Vertical Cable Managers

- Fits two and four post open frame racks
- Similar look-and-feel to NetShelter™ enclosures
- 84" H, Single and Double-sided cable channel in 6, 10, 12-in wide options
- Slam to latch full length door opens to left or right
- New, best-in-class, high capacity cable finger design with smooth radius fingers at 1U increments for superior cable protection
- Cable management backplate (single-sided models) for toollessly mounting Rack PDUs and a variety of cable management accessories within the vertical cable manager
- Cable management midspan bracket (double-sided models) for toolless accessory installation and division of interior cable management space for deeper or shallower channel space
- Ships fully assembled

Single-sided
AR8615 – 6"
AR8635 – 10"
AR8665 – 12"

Double-sided
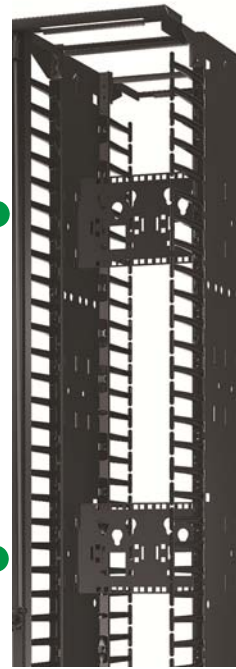AR8625 – 6"
AR8645 – 10"
AR8675 – 12"

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Toolless Mounting Rack Accessories

Cable management backplate (single-sided models) or midspan (double-sided models) bracket allow:

• Toollessly mount, front or rear, multiple vertical Rack PDUs
• 19" patch panels can be installed vertically (double-sided managers only)
• Cable divider (AR8680) installation for creating multiple cable pathways
•Toolless installation of cable management accessories (AR8621/AR8444)

19" EIA Vertical Rack Mount Space

AR8675 – 12" double-sided shown

AR8444– Toolless Fiber Spools
•For organizing fiber cabling
•Various mounting positions throughout channel of vertical cable managers

AR8621 – Toolless Hook and Loop Cable Managers
•Toolless for organizing data cable bundles
•Various mounting positions on back panel of vertical cable managers

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Additional Performance Accessories

AR8680 – Performance, Cable Divider/Organizer (2 per kit)

•For creating multiple cable pathways within 2 and 4 Post Vertical Cable Managers.
•Includes tie-off features for securing cabling using toolless hook-and-loop cable managers (AR8621).

AR8681, AR8682, AR8683 – Performance, Midspan Accessory Bracket for Double-sided Vertical Cable Managers

•Additional midspan accessory brackets for use with 6, 10, and 12" double-sided Performance Vertical Cable Managers.
•Removeable midspan brackets in double-sided managers allow re-arrangement of the interior space for 40-60, 50-50, or 60-40 split
•Includes 2 midspan accessory brackets
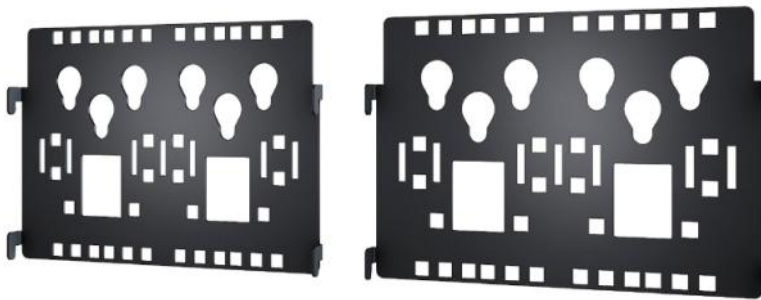
AR8682 – 10" midspan bracket shown

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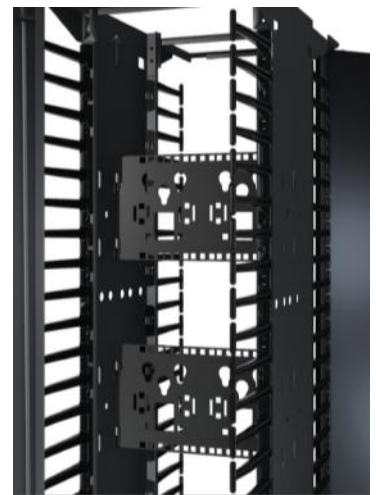
AR8678/AR8679 – End of Row Panel for Performance Vertical Cable Managers

• Panel provides clean professional look to the end of a 2 or 4 post row of racks
• Simple install with fasteners

AR8678 for Single Sided

Application

AR8679 for Double Sided

Application

Application – shown:
•AR203A – 4 Post Open Frame Rack
•2 x AR8615 back-to-back – AR8615 - Vertical Cable Manager, Single-Sided, 6" width
•AR8678 – End of Row Panel for Single-Sided Vertical Cable Manager
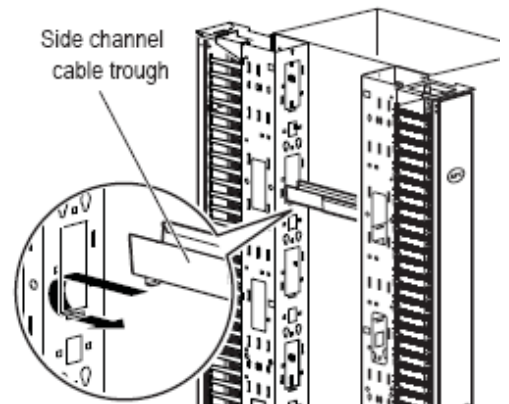•AR8679 – End of Row Panel for double-sided to close gap from front to back

AR8008BLK/AR8016ABLK– Horizontal Cable Organizer Side Channel

•Cable management accessory to help eliminate cable stress and maintain a
neat, organized cable layout within an enclosure or rack.
• Mounts in between vertical cable managers

Side channel cable trough

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Open Frame Rack
Vertical Cable Management

Valueline Vertical Cable Managers

•Fits two and four post open frame racks

•84 in (2133mm) and 96 in (2438 mm) height, Single and Double-sided cable channel in 6, and 12-in wide options
      •96" (2438 mm) Height in Single-side only

•Full length door assembles onsite and snaps in place and door opens to left or right

•New, best-in-class, high capacity cable finger design with smooth radius fingers at 1U increments for superior cable protection

•Cable management backplate for toollessly mounting cable management accessories within the vertical cable manager space

•Ships disassembled for assembly at end user site

	Single-sided	Double-sided
84" Height	**AR8715 – 6"** **AR8765 – 12"**	**AR8725 – 6"** **AR8775 – 12"**
96" Height	**AR8728 – 6"** **AR8768 -12"**	

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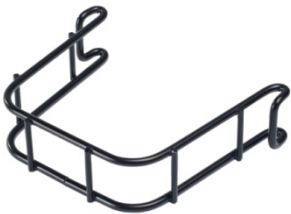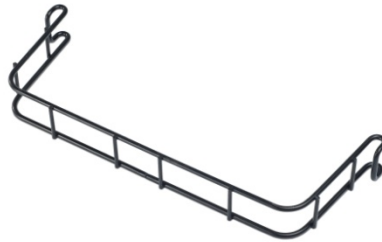
Additional Valueline Accessories

AR8736 & AR8737 Cable Retainer Brackets

•For creating multiple cable pathways within 2 and 4
Post Vertical Cable Managers.
•Includes tie-off features for securing cabling using
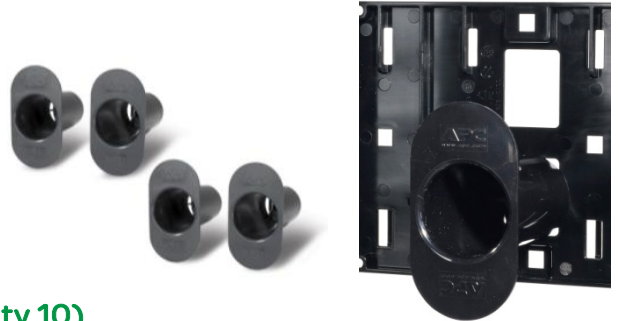toolless hook-and-loop cable managers (AR8621).

AR8736

AR8737

AR8444 - Spools for Vertical Fiber Organizer (qty 4)

•Four plastic spools for fiber management
•Toollessly mount to the accessory backplate front or
rear

AR8621 – Hook-and-loop Cable Managers (qty 10)

• Secure , bundle, and separate cables
• Mount toollessly to the accessory backplate front or
rear
• Hook-and-loop fastener straps used alone

Schneider Electric™
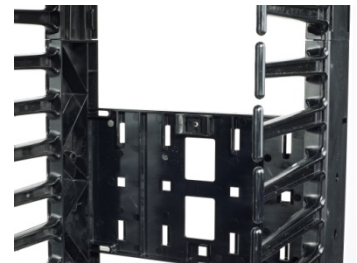
High Density Horizontal Cable Management

High Density Horizontal Cable Managers - 6" deep, plastic finger-style

Includes:
- 6-in, high-capacity cable fingers, slimmest best-in class design
- Covers with snap hinges for trouble-free access to cables
- Hardware to install (2) alike horizontal cable managers back-to-back for double-sided applications (see application image below)

AR8612 – Horizontal Cable Manager, 1U Single Side with Cover
- Cable Capacity: 45 Cat6, 34 Cat6a

AR8606 – Horizontal Cable Manager, 2U Single Side with Cover
- Cable Capacity: 143 Cat6, 109 Cat6a
- Rear cable pass-through holes and square mounting holes for toolless hook-and-loop cable managers (AR8621)

AR8603A – Horizontal Cable Manager, 2U Single Side with Cover
- Cable Capacity: 181 Cat6, 137 Cat6a
- Rear cable pass-through holes with brush strips and slots for AR8008BLK/AR8016ABLK
- Bottom panel provides cable tie-off land square mounting holes for toolless hook-and-loop cable managers (AR8621)

AR8605 – High Density Horizontal Cable Manager, 3U Single Side with Cover
- Cable Capacity: 250 Cat6, 190 Cat6a
- 6-in fingers, rear cable pass-through holes with brush strips and slots for AR8008BLK/AR8016ABLK side channels

Double-sided configuration
- Quantity (2) AR8606 shown installed back-to-back

Horizontal Cable Management

Horizontal Cable Managers - 4" deep, plastic finger-style

AR8602A – Horizontal Cable Manager, 1U Single Side with Cover

- Cable Capacity: 150 Cat5, 115 Cat6a
- Includes covers with snap hinges for trouble-free access to cables.

AR8600A – Horizontal Cable Manager, 2U Single Side with Cover

- Cable Capacity: 96 Cat6, 73 Cat6a
- Includes covers with snap hinges for trouble-free access to cables.
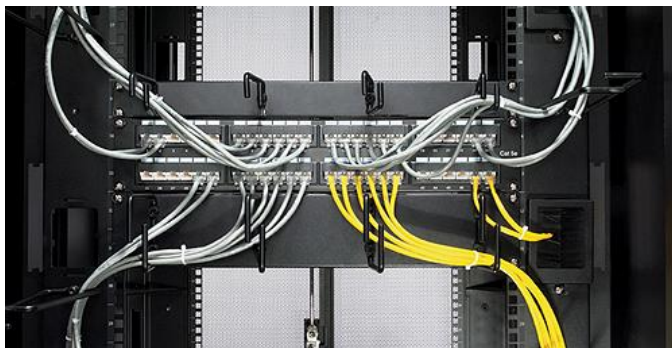

Double-sided configuration
- Quantity (2) AR8600A shown installed back-to-back

Schneider Electric

Horizontal Cable Organizers

Horizontal Cable Organizers – metal ring-style

AR8113A – Cable Management Rings
•Cable Capacity: 39 Cat6, 30 Cat6a
•Includes five large and five small rings.
•Fastens cables to posts, mounting rails, or braces.

•AR8425A and AR8426A – 1U and 2U Horizontal Cable Organizers
•AR8425A Cable Capacity: 39 Cat6, 30 Cat6a
•AR8426A Cable Capacity: 72 Cat6, 55 Cat6a

AR8428 – Horizontal Cable Organizer 2U with pass through holes
•Cable Capacity: 72 Cat6, 55 Cat6a

AR8427A – Horizontal Cable Organizer 2U with cable fingers
•Cable Capacity: 39 Cat6, 30 Cat6a

AR8429 – 1U Horizontal Cable Organizer with Brush Strip

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