

# Knurr Rack Solutions



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## Superior Technology

For more than 75 years, Knurr has been the industry leader in enclosure technology for data centers and other missioncritical infrastructures. Knurr's wealth of experience and design expertise has enabled the development of a wide product range of racks and enclosures.

Knurr offers standard and customised enclosure solutions that suit almost every requirement and environment. Whether it is for 19" electronics, computer rooms, large data centers, telecommunications equipment, electrical, or transport management applications, there is always a Knurr product that can support customers' requirement. Its manufacturing plants, strategically located throughout Europe, USA, South America and the Far East, provide the ideal supply chain. Knurr's headquarters is in Arnstorf, Germany.

Knurr is a product brand of Emerson Network Power, a business of Emerson and a truly global company with an unsurpassed reputation for world-class product, quality and technical innovation. Emerson's sales in 2008 reached more than \$24.8 billion, throughout industrial, commercial and consumer markets and across all five continents.

## Knurr Racks

Your mission-critical networks are carrying an ever increasing amount of voice, data and video. Looming on the horizon is a critical mass of VoIP, high speed access, wireless applications, increasing demand for blade server adoption, and pressure for rapid blade deployment. Data centers and network closets will be required to deliver reliable 24 / 7 operation of critical network communications and operations throughout the entire enterprise. These challenges require an innovation in your data center to fully address these growing needs.

The Knurr F-Series is an innovative enclosure system that integrates your computing hardware, power management technologies and peripherals in your data center. It gives superior design and flexibility, allowing optimal data center performance and easy installation.



- **Excellent Rack Cooling Efficiency**
  - With 75% door perforation rate that enhances heat management
  - Front and rear doors are perforated for cooling efficiency
  - With additional blanking panel to separate cold and hot spots in the rack
- **Enhanced Rack Installation Space Efficiency**
  - Combined integrated steel frame design
  - With rack static load capacity of 1,300 KG
- **Enhanced Rack System Applicability In Data Center**
  - Accessories available for cabling and air flow management
  - Customized features for specific requirements in data center
- **Increased Convenience In Installation And Maintenance**
  - Modular rack design for easy assembly and disassembly
  - Tool-less design of accessories for flexible and quick installation
- **Enables Rack Adaptability And Expansibility**
  - Integral part of the total data center solution of Emerson Network Power
  - Highly adaptable and flexible to integrate power, cooling and monitoring equipment

## Features of Knurr Racks



### 75% Perforation Rate on Doors

- Optimal door perforation allows greater airflow through the cabinet, reducing heat buildup



### Roof with Cable Entry Opening

- Removable plate with cable entry and ready for front /rear/ side cabling



### Low Profile Casters

- Allow rack to roll through standard doorway (2m)



### Tool-Less Blanking Panel

- High efficiency for installation & maintenance



### Tool-less Cable Management

- Flexible cabling in the rack with easy installation

### Special Features For 1200mm Depth Rack

- Suitable for equipment with extended depth
- Enhanced cable management and organization
- Allows dual vertical PDU per side (4 PDU per rack)

## Types and Configuration

### Standard Configuration of Knurr F Series IT Rack



<b>Static Load Capacity</b>	Up to 1,300KG
<b>Door Perforation Rate</b>	75%
<b>Protection Category</b>	IP20
<b>Material and Coating</b>	Steel framework Powder coating for rack surface
<b>Standard Compliance</b>	(19") rack mount equipment EIA-310-D Environmental Compliance: RoHS
<b>Color</b>	RAL 7021, Black
<b>Packing</b>	Carton case + wooden pallet

#### Inclusions:

- 1 single arch mesh front door
- 1 double flat mesh door
- 1 roof top with cable entry plates
- 4 entries for roof top with 600mm width
- 5 entries for roof top with 800mm width
- 2 pairs of split side panels, optional
- 4 x (19") vertical mounting rails
- 4 leveling feet
- 4 casters
- All rack panels are inherently grounded
- 1 42U (or 48U) vertical cable tray
- 1 user manual
- 1 screw/ tool bag
- baying kit, 6 pcs (bundled with rack without side panel)
- open bottom area

### Knurr F Series IT Rack Models

Part Number	U	Height mm	Width mm	Depth mm	Side panel
010250038	42	1997	600	1100	Yes
010250048	42	1997	600	1100	No
010250138	42	1997	800	1100	Yes
010250148	42	1997	800	1100	No
010250238	42	1997	600	1200	Yes
010250248	42	1997	600	1200	No
010250338	42	1997	800	1200	Yes
010250348	42	1997	800	1200	No
010250058	48	2270	600	1100	Yes
010250068	48	2270	600	1100	No
010250158	48	2270	800	1100	Yes
010250168	48	2270	800	1100	No
010250258	48	2270	600	1200	Yes
010250268	48	2270	600	1200	No
010250358	48	2270	800	1200	Yes
010250368	48	2270	800	1200	No

## 19" Installation Shelf



### Fixed Shelf

- The shelves may be used in the rack with two pairs of 19" mounting rails
- 1U, 600mm depth, mounting depth adjustable
- Color: RAL7021, Black
- Material: steel, spray finished
- Inclusions: shelf, assembly parts and user manual

Part Number	Model	Mounting depth range
010251088	Light Duty Fixed Shelf 50kg 600mm Depth	610mm-810mm
010251038	Heavy Duty Fixed Shelf 120kg 600mm Depth	667mm-767mm



### Pull-out Shelf

- The shelves may be used in the rack with two pairs of 19" mounting rails
- 1U, 600mm depth, mounting depth adjustable
- Color: RAL7021, Black
- Material: steel, spray finished
- Inclusions: shelf, assembly parts and user manual

Part Number	Model	Mounting depth range
010251028	Light Duty Pull-out Shelf 50kg 600mm Depth	665mm-750mm
010251048	Heavy Duty Pull-out Shelf 100kg 600mm Depth	672mm-777mm



### Cantilever Shelf

- The shelf may be used in the rack with two pairs of 19" mounting rails
- 2U, 315mm depth
- Color: RAL7021, Black
- Material: steel, spray finished
- Inclusions: shelf, assembly parts and user manual

Part Number	Model
010251078	Cantilever shelf 25kg 315mm Depth



### Chassis Runner

- The chassis runner may be used in the rack with two pairs of 19" mounting rails
- Material: Zinc galvanized steel
- Inclusions: 1 pair of rails, assembly parts and user manual

Part Number	Model	Mounting depth range	Mounting width of hardware
010251068	Chassis Runner 50KG Adjustable depth	607mm-820mm	414mm-436mm

## Cable Management

### Tool-less Cable Ring



#### Tool-less Lobster Claw

- The lobster claw may be used in 19" mounting rails (rack with 800mm width) and vertical cable tray, ready just by "insert" and "twist"
- Dimension: 69mm (w) \* 108mm (h) \* 32mm (d)
- Color: RAL7021, Black
- Material: Plastic PC+GF
- Inclusions: 10 pieces of rings in one package

Part Number	Model
010251218	Cable Management Lobster Claw, Qty 10



#### Tool-less Velcro Strip

- The velcro strip may be used in 19" mounting rails and vertical cable tray, ready just by "insert" and "twist"
- Strip dimension: 200mm(l) \* 20mm(w)
- Color: RAL7021, Black
- Material: Plastic PC+GF
- Inclusions: 10 pieces of velcro strip in one package

Part Number	Model
010251239	Cable Management Velcro Strip Qty, 10



#### Velcro Strip 22.8m Long

- The Velcro strip may be used to tie up the cable in the rack by cutting out into the appropriate length

Part Number	Model
010251399	Velcro strip 22.8m long

## Applications



Lobster claw on vertical mounting rail



Velcro strip kit on vertical mounting rail



Lobster claw and velcro strip kit on vertical cable tray

# Cable Management

## Horizontal Cable Management



### 1U Horizontal Cable Routing Panel With Brush

- The panel may be used in 19" mounting rails
- Color: RAL7021, Black
- Material: steel, spray finished
- Inclusions: panel, assembly parts and user manual

Part Number	Model
010251288	1U Horizontal Cable Routing Panel w/ Brush



### Horizontal Cable Management Panel

- The panel may be used in 19" mounting rails
- Color: RAL7021, Black
- Material: steel, spray finished
- Inclusions: panel with 5 rings, assembly parts and user manual

Part Number	Model	Ring size
010251298	1U Cable Management Panel with 5 large rings	44mm (h) * 61mm(w)
010251308	2U Cable Management Panel with 5 rings	88mm (h) * 61mm(w)
010251318	2U Cable Management Panel with rings and pass thru holes	88mm (h) * 61mm(w) Pass thru hole x 4: 58mm (h) * 58mm(w)

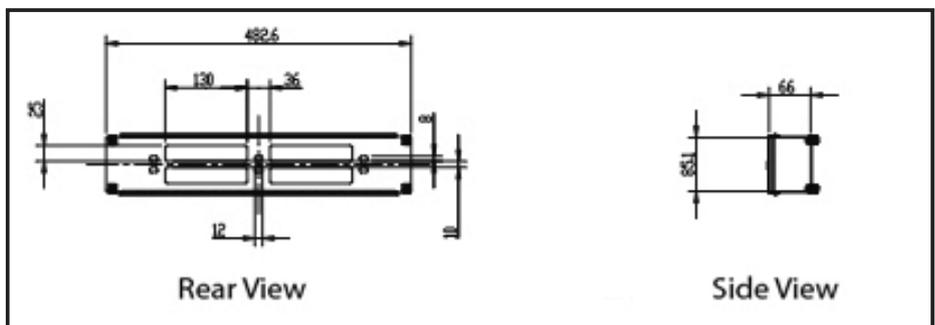


### Horizontal Cable Management Panel With Detachable Cover

- The panel may be used in (19") mounting rails
- Color: RAL7021, Black
- Material: steel, spray finished
- Inclusions: panel, assembly parts and user manual

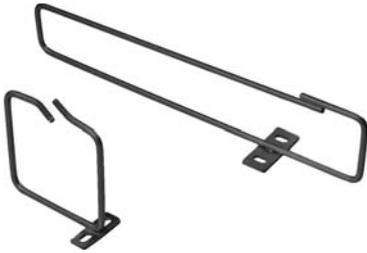
Part Number	Model	Dimension
010251428	2U Cable Management Panel with detachable cover	482.6 mm (l) * 85.1mm (h) * 66mm (w)

The panel has 4 cable entries at rear side for cable routing from front to rear.  
Dimension is as following:



## Cable Management

### Vertical Cable Management



#### Cable Management Ring

- The rings may be used in (19") mounting rails
- Color: RAL7021, Black
- Material: steel, spray finished
- Inclusions: 10 pieces of rings in one package, assembly parts and user manual

Part Number	Model	Ring size
010251338	Cable Management Ring Square, Qty 10	86mm (l) * 86mm(w)
010251348	Cable Management Ring rectangle , Qty 10	299mm(l) * 49mm(w)



#### Vertical Cable Tray (Capable of one Emerson PDU vertical mounting)

- The tray may be used in front or rear side of the rack for cabling and PDU mounting
- Material: steel, spray finished
- Width: 117mm
- Inclusions: 1 cable tray, assembly parts and user manual
- Color: RAL7021, Black

Part Number	Model
010251358	42U Vertial Cable tray w/One PDU mounting space 117mm for F-Series
010251378	48U Vertial Cable tray w/One PDU mounting space 117mm for F-Series



#### Vertical Cable Tray (Capable of two Emerson PDUs vertical mounting)

- The tray may be used in front or rear side of the rack for cabling and PDU mounting
- Color: RAL7021, Black
- Material: steel, spray finished
- Width: 142mm
- Inclusions: 1 cable tray, assembly parts and user manual

Part Number	Model
010251368	42U Vertial Cable tray w/Two PDU mounting space 142mm for F-Series
010251388	48U Vertial Cable tray w/Two PDU mounting space 142mm for F-Series

## Air Flow Management



### Blanking Panel

- The panel may be used to separate the cold / hot air aisle inside the rack
- The panel may be used in (19") mounting rails
- Color: RAL7021, Black
- Material: steel, spray finished
- Inclusions: panels, assembly parts and user manual

Part Number	Model
010251548	Blanking Panel 1U, Qty 5
010251528	Blanking Panel 2U, Qty 5
010251538	Blanking Panel 2U, 3U, 6U, Qty 1 each

### Tool-less Blanking Panel

- The panel may be used to separate the cold / hot air aisle inside the rack, installation just by "insert" and "twist"
- The panel may be used in (19") mounting rails
- Color: RAL7021, Black
- Material: steel, spray finished
- Inclusions: panels, assembly parts and user manual

Part Number	Model
010251558	Blanking Panel Tool-less 1U, Qty 5
010251568	Blanking Panel Tool-less 2U, Qty 5
010251578	Blanking Panel Tool-less 2U, 3U, 6U, Qty 1 each

## Baying Kit

- The baying kit may be used to bay the rack (by removing side panel) in row
- Inclusions: Rack baying kit, 6 pcs, assembly parts and user manual
- Standard rack package (of rack without side panel) includes 6 sets of baying kits
- Extra baying kits require separate order

Part Number	Model
010251409	Rack baying kit, 6 pcs for F-Series

## TFT



- 19" rack mount, occupies only 1U of the rack space
- The 17-inch TFT monitor provides high-quality display, free of flashing
- Equipped with multi-functional 104 keyboard and integrated digital keypad

Part Number	Model
010252018	17" Rack LCD Keyboard Video Mouse

## Specifications

Panel Size	17 inches
Pixel Pitch	0.264
Input Power	100-240VAC, 50/60Hz, 1A
Power Switch	Yes
Power Consumption	35W
External Console Connection	Yes
Trackball Type	PS/2 Touchpad
Display Size	339.4mm x 274.6mm
Video Resolution	1280 x 1024 @75Hz
Display Color	16.7 m
On Screen Display (OSD)	Yes
Dimension (W*H*L mm)	480x42(1U)x580
Package Content	TFT Drawer with mounting brackets Customer KVM cable set Power cord User Manual Quick Start Guide

# Rack PDU



Part Number	Model
010253019	Rack basic PDU: 10A C14, 16 way C13, Black
010253219	Rack basic PDU: 16A C20, 20 way C13 + 4 way C19, Black
010253319	Rack basic PDU: 16A C20, 20 way C13 + 4 way C19, Meter, Black
010253419	Rack basic PDU: 32A Fixed, 20 way C13 + 4 way C19, Black
010253519	Rack basic PDU: 32A Fixed, 20 way C13 + 4 way C19, Meter, Black

**Inclusions:** 1 unit PDU, assembly parts and user manual

**Installation:** tool-less installed or installed by mounting bracket on the vertical cable tray

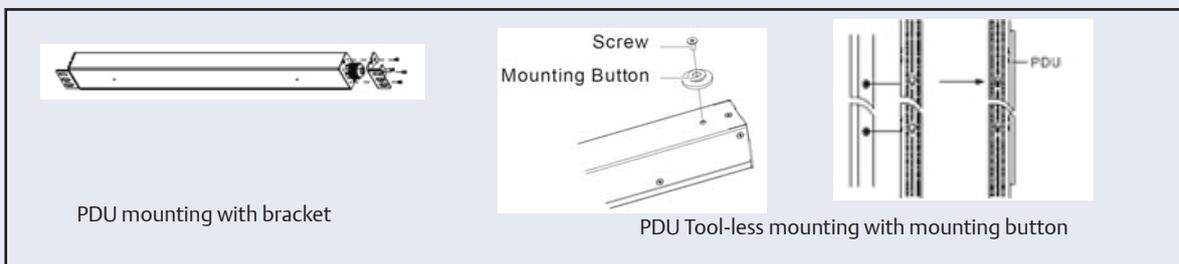
## Specifications

Item	10253019	10253219	10253319	10253419	10253519
Dimension (L*W*H mm)	880/ 820x44.4x62	1321/ 1261x44.4x62	1453/ 1393x44.4x62	1321/ 1261x44.4x62	1453/ 1393x44.4x62
Mounting length mm	856/624	1297/936	1429/936	1297/936	1429/936
Installation	Vertical Mounting				
Color	Black				
Compliance	CE, RoHS				
Input voltage/frequency	250V~ 50 / 60Hz				
Cable Input	3x1.5mm <sup>2</sup> x3M	3x1.5mm <sup>2</sup> x3M	3x1.5mm <sup>2</sup> x3M	3x6mm <sup>2</sup> x3M	3x6mm <sup>2</sup> x3M
Input Plug	10A IEC320 C14	16A IEC320 C20	16A IEC320 C20	Without Plug	Without Plug
Output voltage/frequency	250V~ 50 / 60Hz				
Socket type	16way/IEC320 C13 with anti-fall	20way/IEC320 C13 with anti-fall & 4way IEC320 C19	20way IEC320 C13 with anti-fall & 4way IEC320 C19	20way IEC320 C13 with anti-fall & 4way IEC320 C19	20way IEC320 C13 with anti-fall & 4way IEC320 C19
CR32 AC Ammeter	No.	No	Display 16A at max	No	Display 32A at max
Rating Current	10A	16A	16A	32A	32A
Overloads Protection	10A 250V	2way 8A 250V	2way 8A 250V	2way 16A 250V	2way 16A 250V
	(with indicator)	(with indicator)	(with indicator)	(with indicator)	(with indicator)
Max. Current	10A	16A	16A	32A	32A
Max. Power	2500W	4000W	4000W	8000W	8000W

Note:

Dimension (L\*W\*H mm): a / bx44.4x62, a refers to the PDU length with bracket; b refers the PDU length without bracket

Mounting length mm: a / b, a refers to the length between two mounting holes of two brackets; b refers the length between two mounting buttons (for tool-less mounting)



## KVM Switch



- Manage multiple servers through a set of peripherals (keyboard, monitor, mouse)
- Supports PS/2, USB, SUN interface and serial equipment through multiple platforms
- Switch to servers through easy-to-use menus displayed on the screen
- Support remote access through network & built-in IP interface
- Support split-screen and manage up to 16 servers at the same

Part Number	Model
10252118	KVM Switch Cat5 8 Ports
10252128	KVM Switch Cat5 16 Ports
10252138	KVM Switch Cat5/IP 8 Ports
10252148	KVM Switch Cat5/IP 16 Ports
10252218	KVM Adapter for PS/2 Interface
10252228	KVM Adapter for USB Interface

## Specifications

Item	010252118 / 020252128	010252138 / 020252148 (IP)
number of ports	8/16	8/16
# of local users	1	1
# of remote users	-	1
Daisy-chain	Yes, up to 32 units	Yes, up to 16 units
Max numbers of ports	256 / 512	128 / 256
Cable between KVM server	Cat5	
Max length of cable	40m	
Max resolution (local)	1280x1024@60Hz (40m) 1600x1200@60Hz (30m)	1280x1024@75Hz (40m) 1600x1200@60Hz (30m)
Max resolution (remote)	-	1280x1024@75Hz (40m)
On Screen Display	Yes	
Input Power	100-240VAC, 50/60Hz, 1A	
Power Consumption	15.5W / 15.7W	12W
Keyboard/Mouse/Video	1 x 6-pin mini-DIN F / 1 x 6-pin mini-DIN F / 1 x HDB-15 F	
KVM ports	RJ-45	
Daisy-chain	DB-25	
LAN port	-	RJ-45
PON port	-	DB-9
Dimension (W*H*L mm)	437x44(1U)x161	
Options		
KVM Adapter for PS/2	10252218	
KVM Adapter for USB	10252228	
Package Content	KVM Switch, Firmware upgrade cable, Power Cord, Rack mount kit, Foot pad set (4 pcs), User manual CD, Quick Start Guide	

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