GarrettCom
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Product Bulletin

4K-Series Ethernet 10/100 Switches

Boosting the performance of Ethernet LANs with the flexibility of both twisted-pair and fiber-switched ports

Easy to install and use, the Magnum 4K-Series provides the switching speed and reliability needed to smoothly support multiple workgroups. All ports support full- and half-duplex as well as auto-negotiation on TP ports.

- **High performance** non-blocking operation, plug-and-play installation for switching services, transparent to system software
- Has a **compact 1U package** for installation in rack cabinets, with metal case and auto-ranging internal power supply
- **Easy to install** and use with automatic address learning and choice of “forward” and “reverse” models for convenient mounting of ports, LEDs and power connections

Key Features

- 8-, 16- and 24-port options
- 48VDC, 125VDC and AC
- Dual-source
- NEBS and ESTI Certification
- 23 inch Telco brackets
- Class B EMI and extended temperature range operation
- Additional fiber ports with 100Mb speed and connector types for LC, ST, SC, and MTRJ
- Dynamic 2K-node address table

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Magnum 4K-Series switches offer application flexibility with a series of optional fiber connector types. All applicable fiber port types (100 Mb FX-ST, SC, MTRJ) and fiber cable modes (multi- and single-mode) are configurable using a family of 1-or 2-port modules. The 1 or 2 fiber ports, when present, render the corresponding two copper ports inoperative.

Magnum 4K-Series switches are easy to install and use. Addresses of attached nodes are automatically learned and maintained, adapting the switching services to network changes and expansions to provide plug-and-play operation. “Reverse” models with front-mounted ports and LEDs, or with front-mounted LEDs, rear ports and power connection, are available.

Magnum 4K-Series switches provide high port density in a rack-mountable package; have a rugged metal case and an auto-ranging power supply for operation with standard AC power worldwide. Models with optional DC input power are available. The 4K-Series and all other Magnum products are designed and manufactured in the USA and backed by a three-year warranty.

Applications

These switches are designed for use in organizations with multiple workgroups, remote offices and network traffic centers. In common application, the Magnum 4K-Series would be at the center of a department LAN, which high performance users and servers connected. In addition, groups of 10Mb hubs and switches would form a series of subnets of other users. Local traffic on one subnet or port, either 100 Mb or 10Mb, is switch-isolated from the other subnets for high overall network performance.

Technical Information

Performance			
Type	**4K8 - 8-Port**	**4K16 - 16-Port**	**4K24 - 24-Port**
RJ45 Ports	100 or 10 Mb, full- or half-duplex mode per port, individually determined 10/100 auto-negotiating Internal jumper can select 100-only		
Fiber Ports	Optional 100 Mb Fiber Bonus Port: (multi- or single-mode) based on fiber connector part. FDX or HDX (default is FDX mode – internal jumper can select FDX-only) 10 Mb fiber also available		
All Ports	Processing type: Non-blocking, Store and Forward with IEEE 802.3x full-duplex flow control Latency: 5µs + packet time max (TX - TX, TX - FX, FX - FX) PDV: 50BT		
System aggregate forwarding and filter rates:	1.2M pp (all ports 100 Mb speed)	2.3M pps (all ports 100 Mb speed)	3.6M pps (all ports 100 Mb speed)
Address table	16K nodes, self-learning, with address aging	4K nodes, self-learning, with address aging	2K nodes, self-learning, with address aging
Packet buffers	1MB dynamic	512 KB dynamic	1 MB dynamic
Network Standards			
All Ports	IEEE 802.3u: 100BASE-TX, -FX, IEEE 802.3: 10BASE-T Auto-negotiation on TP, IEEE 802.3u		
All 10 Mb Ports	Obey the rules for configuring 10Mb Ethernet		
All 100 Mb Ports	Use Fast Ethernet rules		
Operating Environment			
Ambient Temperature	25°F to 140°F (-5°C to 60°C), optional extended range		
Storage Temperature	-40°F to 185°F (-40°C to 85°C)		
Ambient Relative Humidity	5% to 95% (non-condensing) For conformal coating (humidity protection) option: request quote		
Altitude	-200 to 13,000 ft (-60 to 4000 m)		
Up-Link, Port #1			
Type	**4K8 - 8-Port**	**4K16 - 16-Port**	**4K24 - 24-Port**
Description	Thumb-operated slide switch, converts Port #1 from a regular (= position) port to a crossover (X position) Up-Link for on/off connection to an upstream or cascaded hub or switch		Uses the first RJ45 port, which has two connectors (only one can be used at a time). Plug into #1 for use as a regular user segment port or into #1X for use as a crossover (X position) up-link port for connection to another switch or hub
Network Cable Connectors			
RJ45 Ports	Shielded, female		
100 Mb	Category 5 UTP/STP		
10 Mb	Cat. 3,4, 5 UTP		
Fiber Ports	Zero, One or Two / unit		
Connector Options	Multi-mode FX-ST, SC, MTRJ; single-mode 20Km SC, and 40Km “long reach” single-mode SC		

Technical Information (continued)

Power Supply			
AC Power Supply (Internal)	AC Power Connector: IEC-type, male recessed, ON/OFF switch Power Input Voltage: 100 - 240V AC (auto ranging) Power Input Frequency: 47 to 63 Hz Power Consumption: 10 Watts typical, 14 Watts max with FPM		
DC Power Supply	-48V DC: Input -36 to -70V DC 24V DC: Input 20 to 40V DC 125V DC: Input 120 to 160V DC Std. Terminal Block: "-, GND, +" Power Consumption: Same as AC		
Dual Power Source (optional)	Magnum 4K may be ordered with optional Dual DC power input for continuity of operation when either one of the DC input sources is interrupted. Available for -48V DC and 125V DC input types		
Mechanical			
Enclosure	Rugged high-strength sheet metal, suitable for stand- alone or 1U rack mounting		
Dimensions	1.75 in H x 17.0 in W x 9.0 in D (4.45 cm H x 43.2 cm W x 22.9 cm D)		
Weight	3.1 lb. (1.4kg)	3.2 lb (1.5kg)	3.3 lb (1.5kg)
Mounting	Rack-mounting brackets: 19" included ETSI and 23" Telco optional		
Cooling Method	Fan cooled, internal, on chip		Fan cooled, internal at 7 cfm
Switches on Chassis, Manual			
Standard AC Models	Power ON/OFF		
Fiber Ports	Full/half duplex		
LED Indicators on Chassis			
Power	Steady ON when power applied		
ERR	Self-test at power-up failed		-
Reverse Model Option	Designed with the LED indicators in front and all wiring and power connections in rear, normally rack-mounted		-
LED Indicators Per Port			
LINK/Act	Steady ON for LINK with no traffic, blinking indicates port is transmitting and receiving		
Speed	ON=100 Mb, OFF=10 Mb		ON=100 Mb, OFF=10 Mb or no link
F/H	Steady ON for Full duplex, OFF for Half duplex		
Fiber Ports	When present, the 1 or 2 fiber ports render the corresponding copper ports inoperative LEDs for fiber ports have the same meaning as for copper ports		
Agency Approvals			
All Models	UL Listed (UL60950), cUL, CE Emissions meet FCC Part 15, Class B		UL Listed (UL1950), cUL, CE Emissions meet FCC Part 15, Class B
Optional	ETSI and NEBS L3 Certified		
Warranty			
Made in USA	Three [3] years		

4K8 - 8-Port Ethernet 10/100 Switch Configuration Guide

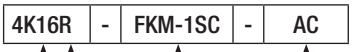
Base Model
4K8 = Fixed 8x 10/100 RJ45 ports

Mounting
R = Reverse Model

Bonus Port Modules
FPM-MSC = 100 Mb multi-mode FX SC connector
FPM-MST = 100 Mb multi-mode FX ST connector
FPM-MTRJ = 100 Mb multi-mode FX MTRJ small form factor connector
FPM-SSC = 100 Mb 20Km single-mode FX SC connector
FPM-SSCL = 100 Mb 40Km "Long Reach" single-mode FX SC connector
K8PM-RJ45 = RJ45 Port 100 Mb fixed speed, full- or half-duplex, up-link push button (not useable in 8000X)
FPM10-MST = 10 Mb multi-mode FL ST connector – half duplex (default) or full-duplex
FPM-BLNK = Blank module with no fiber port, included in 4K switch unit when no fiber port option is selected or configured

Power Supply Options
48VDC = 48V DC power
125VDC = 125V DC power
AC = AC power

4K16 - 16-Port Ethernet 10/100 Switch Configuration Guide



Base Model
4K16 = Fixed 16x 10/100 RJ45 ports

Mounting
R = Reverse Model

Bonus Port Modules
FKM-1SC = 100 Mb multi-mode FX SC connector
FKM-1ST = 100 Mb multi-mode FX ST connector
FKM-1MTRJ = 100 Mb multi-mode FX MTRJ small form factor connector
FKM-1SSC = 100 Mb 20Km single-mode FX SC connector
FKM-1SSCL = 100 Mb 40Km "Long Reach" single-mode FX SC connector
FKM-2SC = 2x 100 Mb multi-mode FX SC connectors
FKM-2ST = 2x 100 Mb multi-mode FX ST connectors
FKM-2MTRJ = 2x 100 Mb multi-mode FX MTRJ small form factor connectors
FKM-2SSC = 2x 100 Mb 20Km single-mode FX SC connectors
FKM-2SSCL = 2x 100 Mb 40Km "long reach" single-mode FX SC connectors
FKM-BLNK = Blank module with no fiber port, included in 4K switch unit when no fiber port option is selected or configured

Power Supply Options
48VDC = 48V DC power
125VDC = 125V DC power
AC = AC power

4K24 - 24-Port Ethernet 10/100 Switch Configuration Guide

4K24FR	-	FKM-1SC	-	AC

Base Model
4K24F = Fixed 22x 10/100 RJ45 ports + 2 user selectable FX ports
4K24C = Fixed 24x 10/100 RJ45 "Copper" ports

Mounting
R = Reverse Model

Bonus Port Modules
FKM-1SC = 100 Mb multi-mode FX SC connector
FKM-1ST = 100 Mb multi-mode FX ST connector
FKM-1MTRJ = 100 Mb multi-mode FX MTRJ small form factor connector
FKM-1SSC = 100 Mb 20Km single-mode FX SC connector
FKM-1SSCL = 100 Mb 40Km "Long Reach" single-mode FX SC connector
FKM-2SC = 2x 100 Mb multi-mode FX SC connectors
FKM-2ST = 2x 100 Mb multi-mode FX ST connectors
FKM-2MTRJ = 2x 100 Mb multi-mode FX MTRJ small form factor connectors
FKM-2SSC = 2x 100 Mb 20Km single-mode FX SC connectors.
FKM-2SSCL = 2x 100 Mb 40Km "long reach" single-mode FX SC connectors
FKM-BLNK = Blank module with no fiber port, included in 4K switch unit when no fiber port option is selected or configured

Power Supply Options
48VDC = 48V DC power
125VDC = 125V DC power
AC = AC power

Belden Competence Center

As the complexity of communication and connectivity solutions has increased, so have the requirements for design, implementation and maintenance of these solutions. For users, acquiring and verifying the latest expert knowledge plays a decisive role in this. As a reliable partner for end-to-end solutions, Belden offers expert consulting, design, technical support, as well as technology and product training courses, from a single source: Belden Competence Center. In addition, we offer you the right qualification for every area of expertise through the world's first certification program for industrial networks. Up-to-date manufacturer's expertise, an international service network and access to external specialists guarantee you the best possible support for products. Irrespective of the technology you use, you can rely on our full support – from implementation to optimization of every aspect of daily operations.

Got questions? Need to talk to an expert? Send us an email:
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