

### Features

- 24 switched ports, of which up to two may be 100Mb fiber
- High performance non-blocking operation, plug-and-play installation for switching services, transparent to system software
- All ports are switching and support full- and half-duplex; auto-negotiation on TP ports
- Has a compact 1U package for installation in rack cabinets, with metal case and auto-ranging internal power supply
- Available options include -48VDC, 24VDC, and 125VDC power, dual-source, NEBS and ETSI certification, "Reverse" rack-mount, ETSI and 23" Telco brackets, Class B EMI, and extended temperature range operation



Magnum™ Model 4K24F and 4K24C Switches boost the performance of large Ethernet LANs, with the flexibility of both twisted-pair and fiber switched ports. Fiber ports may number zero, one or two, and a variety of user-selected fiber connector types may be configured. The Magnum 4K-Series provide the switching speed and the reliability to smoothly support multiple workgroups, each with its own switched 100Mb or 10Mb domain, for increased network performance and with "future-proof" fiber ports optionally built in.

The Magnum 24-port 4K24F Switches offer application flexibility with a series of optional fiber connector types. All applicable fiber port types (100Mb FX-ST, SC, MTRJ) and fiber cable modes (multi-mode and single-mode) are configurable using a family of 1- or 2-port modules. The twenty-two twisted-pair ports are 10/100 auto-negotiating. The 1 or 2 fiber ports, when present, render the corresponding two copper ports inoperative.

In a common application, the 4K24 would be at the center of a departmental LAN, with high performance users and servers connected to most ports. In addition, groups of 10 Mb hubs, or 100Mb hubs and switches would form a series of subnets for other users. Local traffic on one subnet or port, either 100Mb or 10Mb, is switch-isolated from the other subnets for high overall network performance.

Designed for use in organizations with multiple workgroups, remote offices and network traffic centers, the Magnum 4K24 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. LEDs provide status information on each port. Models with front-mounted ports and LEDs, or with front-mounted LEDs, rear ports and power connection, are available.

The Magnum 4K24 Switches are non-blocking on all 24-ports, and include large 1MB packet buffers for advanced performance, even with unbalanced loads. The dynamic 2K-node address table allows the 24-port Magnum 4K24F and 4K24C models to support large networks.

Magnum 4K24 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.



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# Specifications

## PERFORMANCE:

RJ-45 Ports: 100 or 10Mb / second speed, full- or half-duplex mode, per port, individually determined. 10/100 auto-negotiating, FDX/HDX (internal jumper can select 100 only)

Fiber Ports (m.-mode and sgl.-mode): 100Mb speed per port based on the fiber connector part. FDX or HDX, default is FDX mode. (Internal jumper can select FDX-only)

All Ports:

Processing type: Store and Forward with IEEE 802.3x full-duplex flow control, non-blocking

System aggregate forward and filter rate: 3.6M pps, (All ports 100 Mb full speed)

Address table: 2K nodes, self-learning, with address aging

Packet buffers: 1 MB dynamic

Latency: Less than 5µs (not including packet time)(TX -TX, TX – FX, FX – FX)

PDV: 50BT

## NETWORK STANDARDS:

IEEE 802.3u: 100BASE-TX, -FX, IEEE 802.3: 10BASE-T

Auto-negotiation on TP, IEEE 802.3u

All 10Mb ports obey the rules for configuring 10Mb Ethernet

All 100Mb ports use Fast Ethernet rules

## OPERATING ENVIRONMENT:

Ambient: 25° to 140°F (-5° to 60°C), optional extended range

Storage: -40° to 185°F (-40° to 85°C)

Ambient relative humidity: 5% to 95% (non-condensing)

Altitude: -200 to 13000ft (-60 to 4000m)

Conformal coating (humidity protection) option: Request quote

## UP-LINK:

Uses the first RJ-45 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:

RJ-45 shielded female ports

100Mb: 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.

## AC POWER SUPPLY (INTERNAL):

AC Power Connector: IEC-type, male recessed, ON/OFF switch

Power Input Voltage: 100 - 240 VAC (auto ranging)

Power Input Frequency: 47 to 63 Hz

Power Consumption: 16 Watts typical, 20 Watts max.

## DC POWER SUPPLY OPTIONS:

-48VDC: Input -36 to -70VDC

24VDC: Input 20 to 40VDC

125VDC: Input 120 to 160VDC

Std. Terminal Block: "-", GND, "+"

Power Consumption: Same as AC

## DC DUAL POWER SOURCE (OPTIONAL):

The Magnum 4K24 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 -48VDC, 24VDC, and 125VDC.

## MECHANICAL:

Enclosure: Rugged high-strength sheet metal. Suitable for stand- alone or 1U rack mounting.

Rack-mounting brackets: 19" included; ETSI and 23" Telco optional.

Cooling Method: Fan cooled, internal@ 7 cfm.

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: 7.2 lb. (3.3 kg)

## REVERSE MODEL OPTION AVAILABLE:

Reverse models are designed with the LED indicators in the front and all wiring and power connections in the rear, normally rack-mounted.

## SWITCHES ON CHASSIS, MANUAL:

Power ON/OFF, standard on AC models Full/half duplex on fiber ports.

## LED INDICATORS ON CHASSIS:

POWER: Steady on when power applied

## LED INDICATORS PER PORT:

FDX / Col: Steady on for FDX, blinking for HDX collisions.

LINK /ACT: On with Link enabled, blinking for RX port activity

100 / 10: ON = Link at 100Mb/s,

OFF = 10Mb/s or No Link

## LED INDICATORS, FIBER PORTS:

The 1 or 2 fiber ports, when present, render the corresponding copper ports inoperative. LEDs for fiber ports have the same meaning as for copper ports.

## AGENCY APPROVALS:

UL Listed (UL1950), cUL, CE

Emissions meet FCC Part 15, Class B

Optional: ETSI and NEBS L3 Certified

## WARRANTY: Three years

Made in USA

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## Ordering Information

Magnum 4K24F

Ethernet Switch with 22 RJ-45 ports, each auto-sensing for 100Mb / 10Mb FDX / HDX operation. Optional fiber ports may be configured, one or two from the family of modules below, to operate at 100Mb in place of two RJ-45 ports. User-selected fiber port connector types. Each port is switched and provides a full-speed traffic domain with non-blocking performance. Includes internal auto-ranging power supply, cooling fan, and metal brackets for 19" rack-mounting. LEDs and user ports are in the front, power input is in the rear. Units with DC power supply options available.

Magnum 4K24FR

"Reverse" model, same as Model 4K24F except user ports and the power input connectors are in the rear, LEDs are in the front.

Fiber Port Modules (for 4K-Series Switches, Models 4K24F, 4K24FR, and 4K16):

FKM-25C	Fiber module with two 100Mb multi-mode FX SC connectors
FKM-25T	Fiber module with two 100Mb multi-mode FX ST connectors
FKM-2MTRJ	Fiber module with two 100Mb multi-mode FX MTRJ small form factor connectors
FKM-25SC	Fiber module with two 100Mb 20Km single-mode FX SC connectors
FKM-25SCL	Fiber module with two 100Mb 40Km "long reach" single-mode FX SC connectors
FKM-15C	Fiber module with one 100Mb multi-mode FX SC connector
FKM-15T	Fiber module with one 100Mb multi-mode FX ST connector
FKM-1MTRJ	Fiber module with one 100Mb multi-mode FX MTRJ small form factor connector
FKM-15SC	Fiber module with one 100Mb 20Km single-mode FX SC connector
FKM-15SCL	Fiber module with one 100Mb 40Km "long reach" single-mode FX SC connector
FKM-BLNK	Blank module with no fiber ports, included in 4K24F Switch unit when no fiber port option is selected or configured.
Magnum 4K24C	Same as Magnum 4K24F, but with all 24 RJ-45 ports "Copper".
Magnum 4K24CR	"Reverse" model, same as Model 4K24C except user ports and the power input connectors are in the rear, LEDs are in the front.



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