Magnum 6K25e

Configurable Managed Switch

Features

- Provides 4 modular slots for user-selection of 100 Mb, 10 Mb, Gigabit ports and 10/100 copper ports with optional PoE

- Up to 8 Gigabit ports, choice of SFP or GBIC or auto-negotiating copper connectors

- Compact 1U rack-mount package, metal case, regular or "reverse" case

- Options include 24VDC, -48VDC, 125VDC, and 250VDC power, dual source, dual power supplies, or AC

- Feature-rich MNS-6K managed switch software with choice of GUI or CLI

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Magnum™ 6K25e enhanced Managed Switches provide greater configurability in a rack-mount package, with up to 8 gigabit ports and/ or choices of both 100 Mb fiber and copper ports or 10 Mb fiber and copper ports. High-capacity and high-performance Ethernet switching services are delivered in a robust 1U rack-mount package designed for the most demanding Industrial Networking and Carrier Class applications.

The port modules allow user-selection of mixed-media fiber (all connector types, multi- and single-mode) and 10/100 Mb RJ-45 ports, even Power-over-Ethernet (PoE). Standard SFP or GBIC ports can be configured for a variety of Gigabit fiber cabling types and distances, as well as 10/100/1000 copper.

A group of Magnum 6K25e Switches are ideal for the core Ethernet services in Industrial Networks. The advanced software with security and redundancy and ease-of-use serves applications that include other networking products such as WAN routers, small edge switches, and Serial Device Routers. Designed for use in Industrial Plantwide LAN centers with numerous fiber segments requiring Gigabit backbone interconnections among network centers, the Magnum 6K25e is easy to install and operate.

High performance hardware features include non-blocking speed on all ports and 802.1p QoS Traffic Prioritization. Software includes comprehensive security for network access and for data traffic, GarrettCom's IGMP-L2 multicast traffic management, and a choice of redundancy options. Magnum 6K25e's are "plug-and-play" ready for use as backbone switches where a mix of bursty data traffic and priority streaming traffic for video surveillance, VoIP and even attached PoE devices are present.

The Magnum 6K25e Switches are provided with LAN software support including SNMP management control via command line interface, RMON, SNMPc™ and Openview™ for Windows, Secure Web Management GUI, and many security features. See the Managed Networks Software (MNS) datasheet for additional details on the comprehensive set of software packages and options.

Magnum 6K25e Managed Switches have rugged metal cases and Internal AC or DC power supplies, with DC dual source and dual power supply optional. The 6K25e's and all other Magnum products are designed and manufactured in the USA and backed by a three year warranty.

PERFORMANCE:

Gigabit Ports, 1000 Mb: Configurable, selection of standard SFP or GBIC or fixed copper or fiber transceiver modules, up to 8 ports total

Fiber Ports, 100 Mb (multi-mode and single-mode)**:** Configurable in modules, up to 24 ports total, each FDX or HDX. Default is FDX mode.

Fiber Ports, 10 Mb: Configurable, 4 ST ports per slot. Each port may be FDX or HDX, default is HDX mode up to 12 ports total.

RJ-45 Ports: 100 or 10 Mb speed, full- or half-duplex mode, per port, individually determined. 10/100 auto-negotiating and auto-cross, 24 max.

PoE RJ-45 Ports: 100 or 10 Mb speed, full- or half-duplex mode, per port, individually determined. PoE is per IEEE 802.3af. With AC or 125VDC, 4 PoE ports max; with -48VDC, 24PoE ports max

For moreinformation, see garrettcom.com/6k_modules_poe.htm.

All Ports non-blocking

Processing type: Store and Forward with IEEE 802.3x fdx flow control

System aggregate forward and filter rate 11.9Mpps

(24ports @ 100Mb speed, 8 ports @ Gb)

Address table: 4K nodes, self-learning, with address aging

Packet buffers: 240 KB for 10/100 and 120KB for 1000 Mb

Latency: 6µs + packet time max (TX - TX, TX - FX, FX - FX, TX-G, G-G)

NETWORK STANDARDS:

IEEE 802.3z, 802.3ab, 802.1p: 100BASE-TX, -FX, 1000BASE-SX, -LX

IEEE 802.3u Auto-negotiation on TP, IEEE802.3af on PoE

See MNS-6K datasheet for software network standards and features

OPERATING ENVIRONMENT:

IEC 60068 Operating temp. per "Type Test" -40° to 185°F (-40° to 85°C)

UL 60950 "Component Parts" temperature rating: 130°F (55°C)

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

RELAY CONTACT FOR ALARMS (OPTIONAL):

Form C, one NC indicating internal power, one NC software controllable.

NETWORK CABLE CONNECTORS:

1000 Mb ports: all standard SFP, GBIC and fixed types supported

100 Mb Copper: Category 5 UTP/STP;   10 Mb: Cat. 3,4, 5 UTP/STP

100 Mb Fiber ports connector options: multi-mode FX-MTRJ, LC, ST, SC; single-mode LC, 20Km SC, and 40Km "long reach" single-mode SC.

10 Mb Fiber port connector: multi-mode ST

AC POWER SUPPLY (INTERNAL):

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

Power Input, AC: 100 to 240 VAC, 47 to 63 Hz (auto ranging)

Power Consumption: 60 watts typical for a fully-loaded fiber model

30 watts typical for copper-only models

Ordering Information

Magnum 6K25e

Magnum 6K25e Managed Switch, base unit. May be configured with a selection of 10/100/1000 Mb fiber and copper connector types, 26 ports max or 8 gig ports max. A family of 38 port modules is available for essentially unlimited configuration flexibility. Wire-speed filtering and forwarding across all ports. For licensed management software, see applicable datasheets.

Magnum 6K25Re

"Reverse" model, same as Model 6K25e except user ports and the power input connectors are in the rear. Two sets of LEDs (both rear and front) provide duplicate status data for viewing from either side.

Configuration Options: Each Magnum 6K25e and 6K25Re base unit has four port module slots. Three (A, B, C) may be one of the modules below, one (slot D) may only be Gb modules. Select up to 4 modules per base unit. See Configuration Guide for additional details.

6KP8-45MT	"4+4" module for 6Ks, w/four 10/100 RJ-45 and four 100 Mb 2km multi-mode FX MTRJ connectors
6KP8-SLC	SFF Fiber module for 6K Switches, w/eight 100 Mb 15km single-mode FX LC connectors
6KP8-RJ45	TP Module for 6K Switches, w/eight 10/100 Mb auto-negotiating RJ-45 ports
6KP8-MTRJ	SFF Fiber module for 6K Switches, w/eight 100 Mb 2km multi-mode FX MTRJ connectors
6KP8-45SLC	"4+4" module for 6Ks, w/four 10/100 RJ-45 and four 100 Mb 20km single-mode FX LC connectors
6KP6-RJMST	"4+2" module for 6Ks, w/four 10/100 RJ-45 and two 100 Mb 2km multi-mode FX ST connectors
6KP4-F10ST	"2+2" 10 Mb fiber module for 6K Switches, with four 10 Mb 2km FL ST connectors
6KP6-RJSSC	"4+2" module for 6Ks, w/four 10/100 RJ-45 and two 100 Mb 20km single-mode FX SC connectors
6KP6-RJSSCL	"4+2" module for 6Ks, w/four 10/100 RJ-45 and two 100 Mb 40km single-mode FX SC connectors
6KP6-RJ10ST	"4+2" module for 6Ks, w/four 10/100 RJ-45 and two 10 Mb 2km FL ST connectors
6KP4-FXSC	"2+2" 100 Mb Fiber module for 6K Switches, w/four 100 Mb FX SC connectors.
6KP4-F10ST	"2+2"10 Mb fiber module for 6K Switches, w/four 10Mb 2km FL ST connectors

Note: Several other Port Module types are available. See Configuration Guide.

6KP7-1GSFP6RJ	"G+6" module for 6Ks, w/one SFP Gigabit Port and six 10/100 Mb RJ45 ports
6KP7-1G2RJ4MLC	"G+4+2" module for 6Ks, w/one SFP Gigabit Port, four multi-mode LC fiber ports, and two 10/100 RJ-45
6KP7-1G2RJ4SLC	"G+4+2" module for 6Ks, w/one SFP Gigabit Port, four single-mode LC fiber ports, and two 10/100 RJ-45
6KP7-1G2RJ4SLCL	"G+4+2" module for 6Ks, w/one SFP Gb Port, four sgl-mode long-haul LC fiber ports, and two 10/100 RJ-45
6KP2-2GSX	Two-port one-slot Gigabit 6K module for 6K Switches, uses one 6K slot and provides two Gigabit Fiber SXSC (1000BASE-SX multi-mode) ports. Includes front-panel sheet metal cover.
6KE-2GCU	Two-port one-slot Gigabit 6K module for 6K Switches, uses one 6K slot and provides two Gigabit Copper (1000BASE-T) auto-negotiating ports. Includes front-panel sheet metal cover.

DC POWER SUPPLY OPTIONS:

-48VDC: Input -36 to -70VDC (PoE input range: -44 to -57VDC)

24VDC: Input 20 to 40VDC

125VDC, 250VDC, and 110VDC nominal: Input 88 to 300VDC

Std. Terminal Block: "-, GND, +",   **Power Consumption:** Same as AC

DC DUAL POWER SOURCE (OPTIONAL)

Magnum 6K25e models 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, 24V, 125V or 250V.

POWER SUPPLIES FOR PoE (OPTIONAL)

AC, Same as AC internal but with 60 watts output @48VDC for PoE.

125DC, Same as 125DC internal but w/ 60 watts output @48VDC for PoE.

DUAL POWER SUPPLIES (OPTIONAL)

Magnum 6K25e/6K25Re models with 48VDC, 125VDC,110VDC, 250VDC, and AC power input may be ordered w/ Dual Power Supplies, load-sharing with software monitoring, for continuity of operation when either one of the two power supplies or their associated power input is inoperative.

MECHANICAL:

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

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

Cooling Method: Fan cooled, internal @ 25cfm

Dimensions: 1.70inHx17.0inWx9.0inD (4.32cmHx 43.2cmW x 22.9cmD)

Weight: rack-mount 5.0 lbs. (2.2 kg)

LED INDICATORS PER RJ-45 PORT:

LK: On when twisted-pair link is operational.

ACT: Blinking with port activity.

FDX/HDX: ON = full-duplex mode, OFF = half-duplex mode.

100/10 ON = 100Mb speed, OFF = 10Mb

LED INDICATORS, 100 Mb and 10 Mb FIBER PORTS:

LK: Steady on when fiber link is operational.

ACT: On with port activity, FDX/HDX

AGENCY APPROVALS AND STANDARDS COMPLIANCE:

UL Listed (UL60950), cUL, CE, Emissions meet FCC Part 15, Class A

IEC 61850 EMC & Operating Conditions Class C for Power Substations

IEEE 1613 Class 2 Environmental Std for Electric Power Substations

NEBS Level 3 and ETSI Compliant; NEMA TS-2 for traffic control.

EN50155 Compliant; DNV certified

WARRANTY:

Three years   Made in USA

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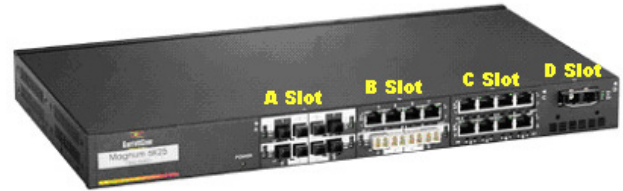
Magnum 6K25e and 6K25Re Configuration Guide

Magnum 6K25e and 6K25Re (Reverse Rack-Mount) Managed Switches. May be configured with a selection of 10/100/1000 6K fiber and copper port connector types, 26 total ports max.
Note: MNS-6K and MNS-6K-SECURE software are licensed for use on 6K Switches.

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Industrial Networking at Its Best™

Step 1. Choose 6K25e or 6K25Re chassis & power input type:

Model #	Base Unit, Description
6K25Re	Reverse mount with AC Power
6K25Re-24VDC	Reverse mount with 24V (18-36) DC power
6K25Re-48VDC	Reverse mount with -48V (36-70) DC power
6K25Re-125VDC	Reverse mount with 125V (88-300) DC power
6K25Re-250VDC	Reverse mount with 250V (88-300) DC power
6K25Re-2AC	Reverse mount w/ 2 internal AC power supplies
6K25Re-2DC125	Reverse mount with 2 internal 125 DC power
6K25Re-2DC250	Reverse mount with 2 internal 250 DC power

Model #	Base Units continued…
6K25e	Front mount with AC Power
6K25e-24VDC	Front mount with 24V (18-36) DC power
6K25e-48VDC	Front mount with -48V (36-70) DC power
6K25e-125VDC	Front mount with 125V (88-300) DC power
6K25e-250VDC	Front mount with 250V (88-300) DC power

Step 2. Choose 1 module for slots A, B & C (some may be blank)
Note: If PoE module is desired, see PoE Configuration Guide:

Module Model #	10/100	10BASE-FL	100BASE-FX(MM)	100BASE-FX(SM)	Gigabit
6KP8-RJ45	8				
6KP8-45-2MT	6		2 (MTRJ)		
6KP8-45-2SLC	6			2 (20km LC)	
6KP6-RJ10ST	4	2 (ST)			
6KP6-RJMST	4		2 (ST)		
6KP6-RJMSC	4		2 (SC)		
6KP6-RJSSC	4			2 (20kmSC)	
6KP6-RJSSCL	4			2 (40kmSC)	
6KP8-45MT	4		4 (MTRJ)		
6KP8-45MLC	4		4 (LC)		
6KP8-45SLC	4			4 (20km LC)	
6KP4-F10ST		4 (ST)			
6KP4-FLSTFX		2 (ST)	2 (ST)		
6KP4-FXST			4 (ST)		
6KP4-FXSC			4 (SC)		
6KP6-MT10ST		2 (ST)	4 (MTRJ)		
6KP8-MTRJ			8 (MTRJ)		
6KP8-MLC			8 (LC)		
6KP8-SLC				8 (20km LC)	
Gigabit Modules using GBICs (see Step 3)					
6KP3-G2SC			2 (SC)		1 GBIC
GBPM-COTX					1 GBIC
GBPM-2OTX					2 GBIC
Gigabit Modules, fixed ports					
6KP2-2GSX					2 SX
6KP2-2GCU					2 CU
6KP3-1CU2FXT			2 (ST)		1 CU
Gigabit Modules, fixed ports—Using Small form factor (SFP) transceivers					
6KP7-1G2RJ4MLC, 6KP7-1G2RJ4SLC, 6KP7-1G2RJ4SLCL w/ 1 SFP Gb port, 2 10/100 RJ45 & 4 m-mode, sgl-mode or "long haul" sgl-mode fiber					
6KP7-1GSFP6RJ	6				1 SFP
6KP5-1CU4RJ	4				1 CU
6KP2-2GSFP					2 SFP
6KP2-1GSFP1CU					1CU, 1SFP
6KP1-1GSFP					1 SFP
6KP1-1GCU					1 CU

Step 3. Slot D: For Gb, choose module from list below:

Module Model #	Gigabit
6KE-2GSFP	2 SFP
6KE-2GCU	2 CU
6KE-2GCUSFP	1CU, 1SFP
6KE-1GSFP	1 SFP
6KE-1GCU	1 CU
GBPM-DOTX	1 GBIC

Step 4 (Opt) Choose GBICs or SFPs for Gig Ports

Model #	Description (Ports for GBPM-COTX / 6KP5-G4RJ/ 6KP3-G2SC)
GBIC-SXSC	One 1000BASE-SX port with m.m. SC fiber
GBIC-LXSC10	One 1000BASE-LX/LH port 1310nm s.m. SC 10Km
GBIC-LXSC25	One 1000BASE-LX/LH port 1310nm s.m. SC 25Km
GBIC-TP	One IEEE 802.3ab TP port, RJ-45 connector
GBIC-ZXSC40	One 1000BASE-ZX port 1550nm s.m. SC 40Km
GBIC-ZXSC70	One 1000BASE-ZX port 1550nm s.m. SC 70Km

Gb SFP fiber optic transceivers	
SFP-GTP	Gb Copper
SFP-SX	Gb SX, 850nm wavelength, 550 meters distance
SFP-ESX	Gb SX, 1310nm wavelength, 2km distance
SFP-LX10	Gb LX, 1310nm wavelength, 10km distance
SFP-LX25	Gb LX, 1310nm wavelength, 25km distance
SFP-ZX40	Gb ZX, 1550nm wavelength, 40km distance
SFP-ZX70	Gb ZX, 1550nm wavelength, 70km distance

Step 5. Choose options & extras:

Model #	Description
6KM-BLNK	Blank cover for 1 unused (A) module slot
DUAL-SRC	Two separate power inputs (24/ 48/125 or 250V)
ALARM-TERMBLK	Alarm contacts, 1 power and 1 software
S-RING-KEY	Software, self-healing ring management
RMB-23W	23" 'Telco' rack-mount kit (1U)
RMB-ETSI	ETSI rack-mount kit (1U)
CONSOLE-CBL	Console attachment cable serial null Modem (aka X-modem) cable with DB9 connectors
CONSOLE-USB	As above, but with a USB connector
CONFORM05-CRM	Conformal coating, 5 mil, for moisture protection
CONFORM08-CRM	Conformal coating, 8 mil, for corrosive environments