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Product Bulletin

6K32T Series 32-Port Managed Switches

- Ideal for heavy-duty industrial applications
- High port density reducing cost and rack space
- Designed for Industrial Ethernet Networks with segments requiring multiple Gigabit backbone interconnections

KeyFeatures

6K32T

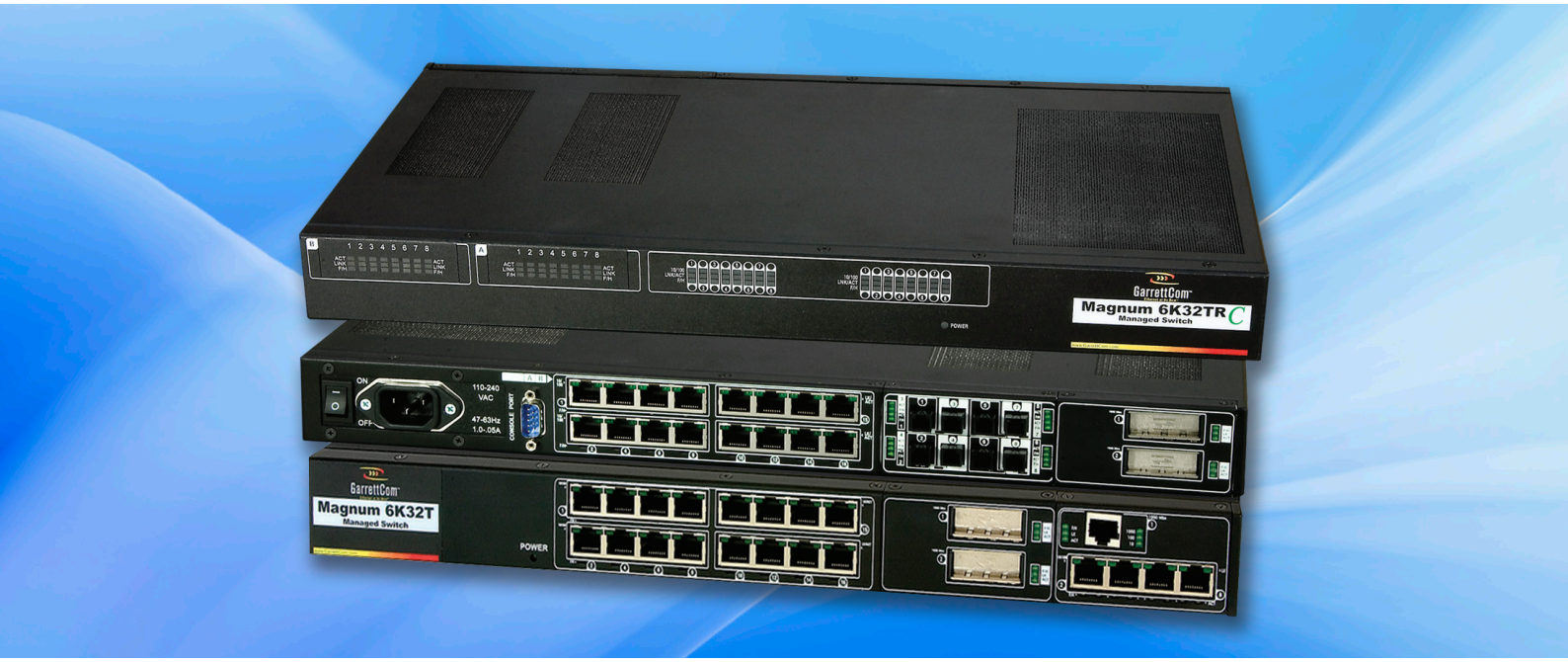
- Provides 16 fixed copper ports and two modular slots for configuration flexibility of up to 4 Gb ports or 32 total ports
- Dense 1U rack-mount package, NEBS compliant member of Magnum 6K family
- "Reverse Rack-mount" with or without convection-cooled unit (not fans)
- Two modular slots for combinations of Gigabit, fiber at 100 Mb and 10 Mb, and more 10/100 copper ports
- Non-blocking wire speed performance on all ports, 802.1p QoS prioritization
- Options include 48VDC, 125VDC, and 250VDC power, dual source, or AC

6K32TR

- Same as 6K32T plus user ports and the power input connectors are in the rear (reverse model type). Two sets of LED's (both rear and front) provide duplicate status data for viewing from either side.

6K32TRC

- Same as 6K32TR plus energy-efficient thermal design enables operation at extended temperatures with high reliability



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Flexible Design

The Magnum 6K32T Series of industrial managed switches provides a total of 32 managed ports of which 16 are fixed 10/100 RJ-45 ports and two optional port module slots may be configured with a selection of 10/100/1000 Mb fiber and copper connector types, eight ports max., each slot. The standard model – 6K32T is front facing unit meaning all connections and indicators are on the front of the model, where the 6K32TR model has the connections and indicators (LEDs) on the rear (reverse) and LEDs on the front.

The 6K32TRC model has the same characteristics as the 6K32TR model except this model is a convection-cooled (no fans) design for heavy duty industrial applications where the presence of dust and dirt may inhibit normal cooling. New static thermal design techniques (patent pending) enable the 6K32TRC model to deliver high reliability even at extended temperatures.

GarrettCom Magnum 6K32T Series

6K32TRC Rack-mount Cooling Techniques

- Internal heat barriers contain heat to areas where it is least detrimental
- Large power supply heat sinks to dissipate the power heat loss
- Aluminum case material used for efficient heat conduction & distribution
- Perforated case areas enable some vertical air flow via convection
- Cooling space above and below the unit in the rack, 1/2U top and bottom
- Multiple heat sinks distribute heat from internal electronic components
- Premium high-efficiency components used to minimize heat generation.

Software

LAN software support including SNMP management, SNMPcTM and OpenviewTM for Windows, Secure Web Management, redundant LANs support, and many network management security and ease-of-use features. The See the Managed Networks Software (MNS-6K) datasheet for additional details on the comprehensive set of software packages and options that are used across the Magnum 6K Switches family of products.

Hardware

High performance hardware non-blocking wire speed on all ports and 802.1p QoS Traffic Prioritization, “plug-and-play” ready for use as backbone switches where a mix of bursty data traffic and priority streaming traffic for VoIP and audio/video applications is present. Fan cooling (6K32T and 6K32TR) provides long operating life and increased system availability, where as the convection cooling (no fans) of the 6K32TCR provides optimal performance in heavy-duty environments.

Applications

Ideal for building a switched network infrastructure when used in applications connected to communications computers, routers, hubs, or other switches. Designed for use in Carrier Ethernet and Industrial networks with segments requiring multiple Gigabit backbone interconnections among network centers, the switches are easy to install and operate. Addresses of attached nodes are automatically learned and maintained, adapting the switching services to network changes and expansions to provide plug-and-play operation.

Power Supplies

Rugged metal cases and auto-ranging power supplies for operation with standard AC power worldwide. Internal DC power supplies are optional.

Warranty

Three years.

Technical Information

Type	6K32T	6K32TR	6K32TRC
Product Description	Magnum 6K32T Managed Switch, base unit. Provides 16 fixed 10/100 RJ-45 ports and two optional ports module slot which may be configured with a selection of 10/100/1000 Mb fiber and copper connector types, eight ports max. each slot. For licensed management software, see applicable MNS-6K datasheet.	"Reverse" model, same as Model 6K32T 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.	"Reverse" model, same as Model 6K32TR except convection cooled (no fans).
Mechanical			
Enclosure	Rugged high-strength sheet metal. Suitable for 1U rackmounting 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. (2.0 kg)		
Network Standards			
Ethernet	IEEE 802.3z, 802.3ab, 802.1p: 100BASE-TX, -FX, 1000BASE-SX, -LX		
Auto-negotiation and Auto-crossover	TP, IEEE 802.3u		
Software	See MNS-6K/MNS-6K-SECURE datasheet for software network standards, network security, redundant LANs management and other software features		
Performance			
Fiber Ports, 100 mB (multi-mode and single-mode)	Configurable in the module, SFF (Small Form Factor) featured for high fiber port density, up to 8 total per module, each FDX or HDX, default is FDX mode		
Fiber Ports, 10 mB	Configurable, up to 4 ST ports max. per module, multimode or single-mode. Each port may be FDX or HDX, default is HDX		
Gigabit Ports, 1000 Mb	Configurable, std. See selection of modules		
RJ-45 Ports	100 or 10 Mb speed, full- or half-duplex mode, per port, individually determined.10/100 auto-negotiating & auto-cross, 32 ports max.		
All Ports Non-Blocking	Processing type: Store and Forward with IEEE 802.3x full-duplex flow control System aggregate forward and filter rate: 8.3Mpps (16 ports @ 100Mb speed FDX and 4 ports @ Gb speed FDX) Address table: 4K nodes, self-learning, with address aging Packet buffers: 480KB + 120KB for 1000 Mb Latency: 6µs + packet time max (TX - TX, TX - FX, FX - FX, TX-G, G-G)		
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	45 watts typical with two fully-loaded fiber modules, 30 watts typical for a copper-only 24-port model		
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 6K32T and 6K32TR 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.			
LED Indicators, 100 Mb and 10 Mb Fiber Ports			
LK	Steady on when fiber link is operational		
ACT	On with port activity, FDX/HDX		
LED Indicators, per RJ-45 Port			
LK	On when twisted-pair link is operational		
ACT	Blinking with port activity. LK and ACT combined on fixed ports.		
FDX/HDX	ON = full-duplex mode, OFF = half-duplex mode. 100/10 ON = 100Mb speed, OFF = 10Mb		
Port-Specification Settings			
Port-specific user settings (such as FDX or HDX, and copper 10/100 speed) can be set using software commands. The RJ-45 copper ports are auto-negotiating and auto-crossover, there are no user controls for auto-crossover.			

Technical Information (continued)

Relay Contacts for Alarms (optional)	
Form C	One NC indicating internal power, one NC software controllable.
Operating Environment	
Operating Temperature	IEC 60068 per "Type Test" -40° to 185°F (-40° to 85°C)
Temperature Rating (components)	UL 60950: 130°F (55°C)
Storage Temperature	-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)	Request quote
Network Cable Connectors	
1000 Mb Ports	Standard RJ45 Copper or SFP supported, see modules description
100 Mb Fiber Ports	multi-mode FX-MTRJ, LC, ST, SC; single-mode LC, 20Km SC, and 40Km "long reach" single-mode SC
10 Mb Fiber Ports	multi-mode and single-mode ST
100 Mb Copper Ports	Category 5 UTP/STP; 10 Mb: Cat. 3,4, 5 UTP/STP
Agency Standards Approval and Compliance	
UL/cUL 60950, EN55022 FCC Part 15	CE, EMC & ENV
IEC61850-3	EMC and Operating Conditions Class C for Power Substations
IEEE 1613 Class 2	Environmental Standard for Electric Power Substations
NEBS L3 and ETSI	Telecommunications
NEMA TS-2	Traffic Control
EN50155	Railways
DNV	Marine
Warranty	
Warranty	Three Years

Magnum 6K32T Configuration Guide

6K32T-125V	-	6KP8-RJ45 I 6KP8-MLC

Mounting (base unit provides fixed 16x 10/100 RJ45 ports)
6K32T = Rack-mount with AC Power
6K32TR = Reverse-mount with AC Power
6K32TRC = Reverse-mount with AC Power Convection cooled

Power Supply Options
48V = 48V (44-57) DC
125V = 125V (88-300) DC
AC/DC = Reverse-mount with AC Pwr (100-240V AC /110-250V DC w/pwr via 3 pin terminal block)

Slot A
6KP8-RJ45 = 8x 10/100Mb RJ45
6KP8-45-2SLC = 6x 10/100Mb RJ45 + 2x 100Mb FX LC SM 20Km
6KP6-RJMST = 4x 10/100Mb RJ45 + 2x 100Mb FX ST MM
6KP6-RJSSC = 4x 10/100Mb RJ45 + 2x 100Mb FX SC SM 20Km
6KP8-45MT = 4x 10/100Mb RJ45 + 4x 100Mb FX MTRJ MM
6KP8-45SLC = 4x 10/100Mb RJ45 + 4x 100Mb FX LC SM 20Km
6KP4-FLSTFX = 2x 10Mb FX ST MM + 2x 100Mb FX ST MM
6KP6-RJSSCL = 4x 10/100Mb RJ45 + 2x 100Mb FX SC SM 40Km
6KP8-MLC = 8x 100Mb FX LC MM
6KP6-MT10ST = 2x 10Mb FX ST MM + 4x 100Mb FX MTRJ MM
6KP8-45-2MT = 6x 10/100Mb RJ45 + 2x 100Mb FX MTRJ MM
6KP6-RJ10ST = 4x 10/100Mb RJ45 + 2x 10Mb FX ST MM
6KP6-RJMSC = 4x 10/100Mb RJ45 + 2x 100Mb FX SC MM
6KP8-SLC = 8x 100Mb FX LC SM 20Km
6KP8-45MLC = 4x 10/100Mb RJ45 + 4x 100Mb FX LC MM
6KP4-F10ST = 4x 10Mb FX ST MM
6KP4-FXST = 4x 100Mb FX ST MM
6KP4-FXSC = 4x 100Mb FX SC MM
6KP8-MTRJ = 8x 100Mb FX MTRJ MM

Or Choose from Gigabit Ports
6KP7-1GSFP6RJ = 1x 1000Mb SFP + 6x 10/100Mb RJ45
6KP7-1G2RJ4MLC = 1x 1000Mb SFP + 2x 10/100Mb RJ45 + 4x 100Mb FX LC MM
6KP7-1G2RJ4SLC = 1x 1000Mb SFP + 2x 10/100Mb RJ45 + 4x 100Mb FX LC SM 20Km
6KP7-1G2RJ4SLCL = 1x 1000Mb SFP + 2x 10/100Mb RJ45 + 4x 100Mb FX LC SM 40Km
6KP5-1CU4RJ = 1x 10/100/1000Mb RJ45 + 4x 10/100Mb RJ45
6KP2-2GSFP = 2x 1000Mb SFP
6KP2-1GSFP1CU = 1x 1000Mb SFP + 1x 10/100/1000Mb RJ45
6KP1-1GSFP = 1x 1000Mb SFP
6KP1-1GCU = 1x 10/100/1000Mb RJ45
6KP2-2GCU = 2x 10/100/1000Mb RJ45
6KP3-1CU2FXT = 1x 10/100/1000Mb RJ45 + 2x 100Mb FX ST MM

Or Choose from Gigabit Ports
6KP7-1GSFP6RJ = 1x 1000Mb SFP + 6x 10/100Mb RJ45
6KP7-1G2RJ4MLC = 1x 1000Mb SFP + 2x 10/100Mb RJ45 + 4x 100Mb FX LC MM
6KP7-1G2RJ4SLC = 1x 1000Mb SFP + 2x 10/100Mb RJ45 + 4x 100Mb FX LC SM 20Km
6KP7-1G2RJ4SLCL = 1x 1000Mb SFP + 2x 10/100Mb RJ45 + 4x 100Mb FX LC SM 40Km
6KP5-1CU4RJ = 1x 10/100/1000Mb RJ45 + 4x 10/100Mb RJ45
6KP2-2GSFP = 2x 1000Mb SFP
6KP2-1GSFP1CU = 1x 1000Mb SFP + 1x 10/100/1000Mb RJ45
6KP1-1GSFP = 1x 1000Mb SFP
6KP1-1GCU = 1x 10/100/1000Mb RJ45
6KP2-2GCU = 2x 10/100/1000Mb RJ45
6KP3-1CU2FXT = 1x 10/100/1000Mb RJ45 + 2x 100Mb FX ST MM

Slot B (Pick from Slot A options)

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6K32T Accessories

Model No.	Description
SFP-SX	Gb SX, 850nm wavelength, 550 meters
SFP-ESX	Gb SX, 1310nm wavelength, 2km
SFP-LX25	Gb LX, 1310nm wavelength, 25km
SFP-ZX40	Gb ZX, 1550nm wavelength, 40km
SFP-ZX70	Gb ZX, 1550nm wavelength, 70km
SFP-GTP	Gb Copper
SFP-LX10	Gb LX, 1310nm wavelength, 10km
CONSOLE-CBL	Console attachment cable serial null Modem (aka X-modem) cable with DB9 connectors
CONSOLE-USB	Console attachment cable serial null Modem (aka X-modem) cable with a USB connector
CONFORM05-CRM	Conformal coating, 5 mil, for moisture protection
CONFORM08-CRM	Conformal coating, 8 mil, for corrosive environments

Model No.	Description
MNS-6K-SECURE-LIC1	Optional, licensed per switch for extra security
S-RING-KEY	Software, optional self-healing redundant ring management
DUAL-SRC	Two separate power inputs (24/48/125V)
6KM-BLNK	Blank cover for 1 unused (A) module slot
ALARM-TERMBLK	Alarm contacts, 1 power and 1 software
RMB-23W	23" 'Telco' rack-mount kit (1U)
RMB-ETSI	ETSI rack-mount kit (1U)

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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