Magnum 10KT

Configurable Managed Switch with Timing

Features

- Next Generation 36 port industrial switch with configurability and reliability
- Dual hot-swappable power supplies in a 1.5U rack-mount package
- Precision timing, full IEEE 1588v2 implementation
- Energy-efficient thermal design for maximum reliability
- Substation-Hardened, IEC 61850-3 compliant

The Magnum™ 10KT Switch provides rack-mount space efficiency and advanced port configurability for heavy duty industrial applications where maximum fiber port count and diversity are required. New advanced thermal design techniques (patent pending) enable the 10KT to deliver high reliability and configurability even at extended operating temperatures. Special rack-mount cooling features include Thermal Fins for extra heat dissipation and internal heat transfer techniques that use the case as a heat sink. Cooler operation of internal electronic components leads to longer life-time and increased reliability.

Next Generation industrial switch features, especially for power utility facilities in the Smart Grid, importantly include high precision IEEE 1588v2 timing synchronization with precision as low as single-digit nanoseconds. The Magnum 10KT provides a new advanced level of 1588v2 timing features and accuracy, using integrated hardware and software. Advanced timing is supported on 100Mb and Gb ports, and is configurable on both fiber and copper port types.

The Magnum 10KT also offers configurable Dual Hot-Swappable power supplies for redundancy and increased reliability. Both high voltage AC/DC and low voltage DC hot-swappable power supplies are configurable in the Magnum 10KT. Different power supply types may be selected for each of the two hot-swappable slots. Software monitors each power supply, and can signal when a power supply module swap is needed. The swap-out can readily be done while the 10KT Switch continues in operation.

The ten port configuration slots in the Magnum 10KT provide the flexibility for network designers to configure up to four fiber or copper Gb ports and up to thirty-two 100 Mb SFF fiber or copper ports. Copper ports can optionally be Power-Sourcing PoE. Modules may be configured for regular port types, IEEE 1588 v2 timing, or combinations.

Magnum 10KT Managed Switches come with field-proven MNS-6K and MNS-6K-SECURE Management Software. MNS-6K features include LAN software support including SNMP management, IPv6, Secure Web Management, IGMP, graphical user interface (GUI), redundant LANs support, and many network management security and ease-of-use features.

Magnum 10KT Managed Switches have rugged metal cases for regular or "Reverse" rack-mounting, and auto-ranging power supplies for operation with standard AC power worldwide, or internal DC power supply choices. Moisture- and corrosion-protecting Conformal Coating is optional. The Magnum 10KTs and all other Magnum products are designed and manufactured in the USA and have a three year warranty.

GarrettCom®

Industrial Networking at Its Best™

Specifications

"Next Generation" Configurable Managed Switch

PERFORMANCE:

Fiber Ports, 100 Mb (multi-mode and sgl-mode)**:** Configurable in modules. Regular ST or SC at 4/module, or SFF (Small Form Factor) for high fiber port density, 8 per module. Each FDX or HDX, default is FDX mode
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: 11.9Mpps
Address table: 8K nodes, self-learning, with address aging
Packet buffers: 512KB for 10 and 100Mb, 128KB for Gb
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
Auto-negotiation and auto-crossover on TP, IEEE 802.3u
IEEE 1588v2 Compliant
IPv6 Compliant

OPERATING ENVIRONMENT:

IEC 60068 Operating temp. per "Type Test" -40° to 185°F (-40° to 85°C)
UL 60950 "Component Parts" temperature rating: 140°F (60°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 CONTACTS FOR ALARMS (OPTIONAL):

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

NETWORK CABLE CONNECTORS:

1000 Mb ports: standard SFPs and GBICs supported, see modules description
100 Mb Fiber ports connector options: multi-mode FX-MTRJ, LC, ST, SC; sgl-mode 20km LC, SC and ST, and 50km "long reach" sgl-mode LC, SC.
100 Mb Copper: Category 5 UTP/STP; 10 Mb: Cat. 3,4, 5 UTP/STP

LED INDICATORS, 100 Mb FIBER PORTS:

L/A: Steady on when fiber link is operational...blinking for data traffic
F/H: ON = full-duplex mode, OFF = half-duplex mode

LED INDICATORS PER RJ-45 PORT:

L/A: Steady on when fiber link is operational...blinking for data traffic
F/H: ON = full-duplex mode, OFF = half-duplex mode

HOT SWAPPABLE POWER SUPPLY OPTIONS

Magnum 10KT may be ordered with hot swappable power supplies. Up to two of the following supplies may be chosen:
High (H) nominal: Input 90 to 250V AC/DC
-48VDC: Input 36 to 60VDC
24VDC: Input 18 to 36VDC
(Std. Terminal Block: "-, GND, +",
Power Consumption: 55 watts when fully loaded with 4 Gb ports, 16 100Mb fiber and 16 10/100 copper.

AC: IEC-type, male recessed
Power Input, AC: 100 to 240 VAC, 47 to 63 Hz (auto ranging)
Power Consumption: 30 watts typical with 32 fully-loaded copper ports
60 watts typical with 32 fully-loaded fiber ports

DC DUAL POWER SOURCE (OPTIONAL)

When non-Hot-Swappable power supplies are ordered, the Magnum 10KT 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 and 24VDC.

MECHANICAL:

Enclosure: Rugged high-strength sheet metal. 1.5U rack-mounting or stand-alone.
Rack-mounting brackets: 19" included; ETSI and 23" Telco optional.
Cooling Method: free convection, special (patent pending) thermal techniques
Dimensions: 2.63in H (with thermal fins) x17.5in W x 12.in D (4.3cm H x 44.5cm W x 30.7cm D)
Weight: rack-mount 14.2 lbs. (6.5 kg)

AGENCY APPROVALS AND STANDARDS COMPLIANCE:

UL/cUL 60950 Approved; CE, Emissions meet FCC Part 15, Class A
IEC61850-3 EMC and Operating Conditions Class C for Power Substations
IEEE 1613 Class 2 Environmental Std for Electric Power Substations
NEMA TS-2 for Traffic Control

WARRANTY:

Three years

Made in USA

Magnum 10KT-HSP-TF	Magnum 10KT Fiber-configurable Convection-cooled Managed Switch, base unit. Provides 10 modular slots for configuration flexibility of up to 4 Gb ports and 32 copper or fiber ports. Includes 2 slots for Hot-Swap Power Supplies; Case with thermal fins.
Magnum 10KTR-HSP-TF	"Reverse" model, same as Model 10KT 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.
Magnum 10KT-H-TF	Front mount with AC/DC power (90-250V); Case with thermal fins
Magnum 10KTR-H-TF	Reverse mount with AC/DC power (90-250V); Case with thermal fins
Magnum 10KT-48VDC-TF	Front mount with -48V DC Power; Case with thermal fins
Magnum 10KTR-48VDC-TF	Reverse mount with -48V DC Power; Case with thermal fins
Magnum 10KT-24VDC-TF	Front mount with 24V DC Power; Case with thermal fins
Magnum 10KTR-24VDC-TF	Reverse mount with 24V DC Power; Case with thermal fins
Magnum 10KT-AC-TF	Front mount with AC Power; Case with thermal fins
Magnum 10KTR-AC-TF	Reverse mount with AC Power; Case with thermal fins

Configuration Options: Magnum 10KT base unit has ten port module slots, each of which may be configured with a module from below, max of 4Gb and 32 100Mb fiber or 10/100 copper (or Power Sourcing PoE) ports:

10K4-RJ45	Module w/four 10/100 RJ-45 ports
10K4T-RJ45	Module w/four 10/100 RJ-45 ports with 1588 timing
10K4P-RJ45	Module w/four 10/100 PoE Power Source RJ-45 ports
10K4-MLC	Module w/four 100Mb multi-mode fiber LC ports
10K4T-MLC	Module w/four 100Mb multi-mode fiber LC ports with 1588 timing
10K4-SLC	Module w/four 100Mb single-mode fiber LC ports (20km)
10K4T-SLC	Module w/four 100Mb single-mode fiber LC ports (20km) with 1588 timing
10K4-SLCL	Module w/four 100Mb "long-haul" single-mode fiber LC ports (40km)
10K4T-SLCL	Module w/four 100Mb "long-haul" single-mode fiber LC ports (40km) with 1588 timing
10K4-MTRJ	Module w/four 100Mb multi-mode fiber MTRJ ports
10K4T-MTRJ	Module w/four 100Mb multi-mode fiber MTRJ ports with 1588 timing
10K2-MST	Module w/two multi-mode ST fiber ports
10K2-MSC	Module w/two multi-mode SC fiber ports
10K2-SSC	Module w/two single-mode SC fiber ports
10K2-SSCL	Module w/two "long-haul" single-mode SC fiber ports
10K2T-2GCU	Module with two-Gigabit RJ-45 ports, 1588 timing
10K2T-2GSFP	Module with two Gigabit SFP slots, 1588 timing
10K2-2GCU	Module with two Gigabit RJ-45 ports
10K2-2GSFP	Module with two Gigabit SFP slots

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