

Magnum 10ETS

Configurable Ethernet Terminal Server

Features

- Configurable Ethernet Terminal Server with up to eight Ethernet ports or 32 serial ports
- Dual hot-swappable power supplies in a 1U rack-mount package
- Configurable IRIG-B Timing Modules available for precision timing to Protection & SCADA devices
- MNS-DX Software Supports Switching or Routing on all Ethernet Ports
- Substation-hardened, IEC 61850-3 compliant, no fans



The Magnum™ 10ETS Terminal Server provides “Next-Generation” configurability, reliability and functionality in a 1U hardened rack-mount package. The 10ETS offers space efficiency and advanced serial and Ethernet ports configurability for heavy duty industrial applications where maximum port count and diversity are required. The 10ETS also offers the flexibility of switching or routing on all of the Ethernet ports. Each 10ETS Managed Terminal Server includes advanced thermal design techniques that result in cooler operation of internal electronic components, leading to longer life-time and increased reliability.

The Magnum 10ETS offers next-generation reliability and redundancy with configurable Dual Hot-Swappable power supplies. Both high voltage AC/DC and low voltage DC hot-swappable power supplies are configurable in the Magnum 10ETS. Software monitors each power supply, and can detect power supply faults and signal when a power supply module swap is needed. The swap-out can readily be done while the 10ETS Switch continues in operation.

Next Generation industrial terminal server features, for mission-critical control devices such as those found in power utility facilities in the Smart Grid, importantly include IRIG-B timing synchronization. Each Magnum 10ETS may be configured with an IRIG-B Timing Card and a selection of IRIG-B port modules to provide time synchronization for Protection, SCADA and other devices.

The ten configuration slots in the Magnum 10ETS provide the flexibility for network designers to configure up to eight 100Mb Ethernet ports in different fiber and copper combinations and up to thirty-two serial ports. Both DB-9 and RJ45 serial connector types are available. Modules may be configured for regular port types, IRIG-B timing, or combinations.

The configurability of Magnum 10ETS extends to MNS-DX software features as well. A licensed software key unlocks additional features for extra security. Extra security features such as IPSec/VPN, firewall, RADIUS, syslog and other security capabilities can be added to MNS-DX via MNS-DX-SECURE, which also provides IP firewall features including address/port inspection/filtering; VPN connectivity over IPsec with strong 3DES and AES encryption and both shared key (PSK) and X.509 certificates. VPNs comply to various IPSec/VPN standards and have proven interoperability with other industry standard VPN devices. Cyber security capabilities cover both electronic perimeter protection for remote sites and management security for the 10ETS. Advanced statistics and event recording are available with downloadable local logs, SNMP MIBs and traps, and syslog remote logging.

Magnum 10ETS Managed Terminal Servers 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 10ETS units and all other Magnum products are designed and manufactured in the USA and have a three year warranty.



SERIAL PROTOCOLS

Async to TCP/IP – including Modbus gateway for connectivity to serial Modbus devices and to other Modbus Ethernet devices; TCP/IP to serial/reverse terminal server, Serial Multipoint & Multimaster Topologies; PPP with authentication

PERFORMANCE:

Serial DB9 ports RS232/RS485 software selectable DB9 interface. Serial data rate from 300 bps to 230.4 kbps. Data length - 1-32 bits

Serial RJ45 ports Same functionality as DB-9 ports (RJ45 pinout conforms to EIA-561 DTE standard)

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

Fiber Ports, 100 Mb (multi-mode and sgl-mode): Configurable in modules. at 2/module, or SFF (Small Form Factor) for high fiber port density, 4 per module. Each FDX or HDX, default is FDX mode

NETWORK STANDARDS

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

IEEE 802.3u: Auto-negotiation on TP

IEEE 802.3x, 802.1p: flow control and prioritization

IEEE 802.1Q: VLANs, maximum 32 VLANs

IEEE 802.1d, 802.1w: Spanning Tree, Rapid Spanning Tree including

RSTP 2004 extensions providing sub-second hop on rings

IEEE 802.1p: DiffServ, traffic prioritization for routed IP flows/ports

SOFTWARE

MNS-DX and MNS-DX-SECURE licensed software

MANAGEMENT & DIAGNOSTICS

Ease of use: Web-based Graphical User Interface (GUI) or CLI access remote SSH or TELNET connection

Powerful built-in protocol analyzer to assist with trouble shooting

Other: Comprehensive statistics, SNMP MIB II and SNMP Traps, Routing Information, DHCP, ARP and other tables.

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

MECHANICAL:

Enclosure: Rugged high-strength sheet metal. 1U rack-mounting

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

Cooling Method: convection

Dimensions: 1.7in H x 17.5in W x 12.in D (4.3cm H x 44.5cm W x 30.7cm D)

Weight: rack-mount 10.6 lbs. (4.8 kg)

HOT SWAPPABLE POWER SUPPLY OPTIONS

Magnum 10ETS may be ordered with hot swappable power supplies.

Up to two of the following supplies in matching pairs may be chosen:

High (H) nominal: Input 90 to 250V AC/DC

-48VDC: Input 36 to 60VDC

24VDC: Input 18 to 36VDC

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

Power Consumption: 20 watts (for fully populated unit)

SINGLE POWER SUPPLY OPTIONS

AC/DC: 90-250V AC/DC; Terminal Block: "-", GND, "+",

-48VDC: Input 36 to 60VDC; Terminal Block: "-", GND, "+",

24VDC: Input 18 to 36VDC; Terminal Block: "-", GND, "+",

AC: IEC-type, male recessed

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

DC DUAL POWER SOURCE (OPTIONAL)

When non-Hot-Swappable power supplies are ordered, the Magnum 10ETS 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.

SERIAL LED INDICATORS PER DB-9 or RJ45 PORT: One LED/port

indicating active connection

ETHERNET LED INDICATORS PER RJ45 or FIBER PORT:

L/A: One LED/port indicating Link (solid green) and Activity (blinks to indicate activity)

RELAY CONTACTS FOR ALARMS (except PoE version):

Two alarm contact: HW & SW alarms are normally open until the unit is powered & software started. Under normal operation they are closed.

Form C HW alarm will be opened with either:

1) any power supply loss, 2) fan failures

Form C SW alarm will be opened when any pre-defined SW event occurs

AGENCY APPROVALS AND STANDARDS COMPLIANCE:

UL/cUL 60950 Approved; CE, Emissions meet FCC Part 15, Class A

IEC61850-3 EMC & 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 10ETS-HSPHH

Magnum 10ETS Configurable Managed Terminal Server, base unit. Provides 10 modular slots for configuration flexibility of up to 8 Ethernet ports, 32 serial ports. Includes 2 "H" (90-250VDC) slots for Hot-Swap Power Supplies. Optional IRIG-B module

Magnum 10ETSR-HSPHH

"Reverse" model, same as Model 10ETS except user ports & the power input connectors are in the rear. Two sets of LEDs (both rear and front) provide duplicate status data for viewing.

Magnum 10ETS-HSPHL

Front mount w/1 "H" AC/DC (90-250V) and 1 "L" 24/48VDC slot

Magnum 10ETSR-HSPHL

Reverse mount w/1 "H" AC/DC (90-250V) and 1 "L" 24/48VDC slot

Magnum 10ETS-HSPLL

Front mount w/2 "L" 24/48VDC slot

Magnum 10ETSR-HSPLL

Reverse mount w/2 "L" 24/48VDC slot

Magnum 10ETS-H

Front mount with AC/DC power (90-250V)

Magnum 10ETSR-H

Reverse mount with AC/DC power (90-250V)

Magnum 10ETS-L

Front mount with 24/48V DC Power

Magnum 10ETSR-L

Reverse mount with 24/48V DC Power

Magnum 10ETS-AC

Front mount with AC Power

Magnum 10ETSR-AC

Reverse mount with AC Power

Magnum 10ETSP-SPLL

Front mount with 2 "L" 24/48VDC power; Supports PoE

Magnum 10ETSP-L

Front mount with 24/48VDC power; Supports PoE

Magnum 10ETSPR-SPLL

Front mount with 2 "L" 24/48VDC power; Supports PoE

Magnum 10ETSPR-L

Reverse mount with 24/48VDC power; Supports PoE

Configuration Options: Magnum 10ETS base unit has ten port module slots, each of which may be configured

with a module from below, maximum configurations of 32 serial and 4 Ethernet, or 8 Ethernet and 28 serial

IRIG-B-ETS

Module w/IRIG-B; coaxial port

10K4-RJ45

Module w/four 10/100 RJ-45 ports

10K4P-RJ45

Module w/four 10/100 RJ-45 PoE ports

10K4-MLC

Module w/four 100Mb multi-mode fiber LC ports

10K4-SLC

Module w/four 100Mb single-mode fiber LC ports (20km)

10K4-SLCL

Module w/four 100Mb "long-haul" single-mode fiber LC ports (40km)

10K4-MTRJ

Module w/four 100Mb multi-mode fiber MTRJ ports

10TS2-RJ45

Module w/two 10/100 RJ45 ports

10TS2-HSFP

Module w/two 100Mb SFP open ports

10K2-MST

Module w/two 100Mb multi-mode ST fiber ports

10K2-MSC

Module w/two 100Mb multi-mode SC fiber ports

10K2-SSC

Module w/two 100Mb single-mode SC fiber ports

10K2-SSCL

Module w/two 100Mb sgl-mode "long-haul" 40km SC fiber

10K2-MTRJ

Module w/two 100Mb multi-mode MTRJ fiber ports

10K2-F10ST

Module w/two 10 Mb multi-mode ST fiber ports

10TS2-DB9

Module w/two female DB-9 serial ports

10ES2-DB9-IRIGB

Module w/two female DB-9 serial ports with IRIG-B

10TS4-RJ45

Module w/four RJ45 serial ports

10TS4-RJ45-IRIGB

Module w/four RJ45 serial ports with IRIG-B



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