GarrettCom®

A **BELDEN** BRAND

Product Selection Guide

THIRD Edition

The Ultimate Product Selection Guide Featuring Managed and Unmanaged Switches, Routers, Serial Devices, Media Converters, and Much More

GarrettCom®

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Belden Extends the Strength of GarrettCom Switches and Routers for a Complete End-to-End Connectivity Solution

You Can Depend On Us to Keep Your Mission-Critical Systems Up and Running.

About Us

GarrettCom Switches Maximize Throughput, Simplify Installation, and Reduce Overall Costs

GarrettCom

GarrettCom, Inc., based in Fremont, California, is a leading provider of industrial networking products for specialty and stressed applications.

GarrettCom specializes in mission-critical, customizable and durable products for extreme conditions. Solutions include premium industrial, transportation, surveillance, and substation-hardened networking products such as managed or unmanaged switches, multi-protocol routers, Ethernet and serial media converters, terminal servers, cellular wireless and serial communications.

GarrettCom also offers software capabilities in the areas of cyber security, physical security and fault-tolerance for high-availability industrial networking solutions. The company has diversified sales channels with a premier customer base, including 75 percent of the top 100 power utilities in North America and top-tier industrial system integrators worldwide.

Belden

St. Louis-based Belden Inc. designs, manufactures, and markets cable, connectivity, and networking products in markets including industrial automation, enterprise, transportation, infrastructure, and consumer electronics. It has approximately 6,800 employees, and provides value for industrial automation, enterprise, education, healthcare, entertainment and broadcast, sound and security, transportation, infrastructure, consumer electronics and other industries.

Between GarrettCom and Hirschmann, Belden is the largest industrial Ethernet provider in the industry. By leveraging the Hirschmann, GarrettCom and the broader Belden portfolio, your entire solution is available from a single trusted source.

Belden has manufacturing capabilities in North America, South America, Europe, and Asia, and a market presence in nearly every region of the world. Belden was founded in 1902, and today is a leader with some of the strongest brands in the signal transmission industry. For more information, visit **www.belden.com**.

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Key Features to the GarrettCom Line of Hardened Ethernet Switches

Environmental

- Choice of Ingress Protection ratings
- Industry specific test compliances
- Fan-cooled or convection cooled
- Conformal coating options
- Extended temperature ratings for outdoors

Configurable

- Copper and fiber ports, all types
- Media speeds at 10, 100 & 1000Mb
- Eight fiber port connector types
- 6 power inputs - AC/DC, 12V to 240V
- Small, medium and large chassis sizes
- Mechanical mounting variations

Reliability

- Designed with industrial grade components
- Hardened with all metal enclosures
- Many software redundancy features to ensure network availability

GarrettCom Products at a Glance

	Wired	Wireless	DIN Rail	Panel	19" Rack	Max Data Rate	Max Port Density	Unmanaged	Managed	Managed/Layer 3	Routing	Serial	110/230 VAC	12 VDC	24VDC	48VDC	125/ 250VDC	Redundant Power Inputs	PoE PSE	PoE+ PSE	Convection Cooling	-40°c/40°F	-25°c/13°F	75°c/167°F	85°c/185°F	UL60950	IEC 61850-3	IEEE1613	NEMA TS-2	NEBS Level 3 / ETSI	EN50155	DNV
12KX	●				●	G	16		●	●			●		●	●	●	●	●		●	●			●	●	●	●	●		●	
10KT	●				●	G	36		●				●		●	●	●	●	●	●	●	●			●	●	●	●	●		●	●
10KG	●				●	G	24		●				●		●	●	●	●	●	●	●	●			●	●	●	●	●		●	●
5RX	●				1.5U	G	11		●	●	●	●			●	●	●				●	●			●	●	●	●	●		●	●
10RX	●				●	G	34		●	●	●	●	●		●	●	●	●			●	●			●	●	●	●	●		●	●
10XTS	●				●	100	36		●		●	●	●		●	●	●	●	●	●	●	●			●	●	●	●	●		●	●
10ETS	●				●	100	36		●			●	●		●	●	●	●	●	●	●	●			●	●	●	●	●		●	●
10C					●	G							●		●	●	●	●			●	●			●	●	●	●	●		●	
6K32F/FC	●				●	G	32		●				●			●	●	●	●		●	●			●	●	●	●	●	●	●	●
6K32T/TRC	●				●	G	32		●				●			●	●	●	●		●	●			●	●	●	●	●	●	●	●
6K25e	●				●	G	26		●				●			●	●	●	●		●	●			●	●	●	●	●	●	●	●
6K16/16V	●		●	●	●	G	16		●				●		●	●	●	●	●		●	●			●	●	●	●	●	●	●	
6KQ/6KQE/6K8	●		●			G	16		●				●	●	●	●	●	●	●		●	●			●	●	●	●	●		●	●
6KL	●		●	●		G	10		●				●	●	●	●	●	●	●	●	●	●			●	●	●	●	●		●	●
6KM	●		●	●		G	10		●				●	●	●	●	●	●	●		●	●			●	●	●	●	●		●	
4K Series	●				●	100	24	●					●			●	●	●				●			●	●						
ES42/ESD42/ IPS42	●		●	●		100	6	●					●	●	●	●					●	●		●		●						
PES42	●		●	●		100	6	●					●	●	●	●			●		●	●		●		●						
CP80	●		●			100	9	●						●	●	●		●			●		●			●						
CSG14/14U	●		●	●		G	3	●					●	●	●	●					●	●		●		●				●		
CS14	●		●	●		100	3	●					●	●	●	●					●	●		●		●				●		
S14/PS14	●		●	●		100	4	●					●	●	●	●		●	●		●	●		●		●						
DX940	●	●		●		G	11		●	●	●	●	●		●	●	●				●	●			●	●						
DX40	●		●	●		100	4		●	●	●	●	●		●	●	●				●	●			●	●						
Links	●		●			100	2				●	●	●		●	●	●				●	●			●	●	●	●				

Best-In-Class

GarrettCom Ethernet switches, routers, serial and media converters provide the best-in-class networking solutions and options to fit customer network requirements.

- Configurability
- Flexibility
- Fiber and legacy I/O
- Redundancy
- Product density options

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Managed Switches

		Description	Max Ethernet Ports	Max Gig Copper Ports	Max 10/100 Copper ports	Max 10 Mbps Fiber ports	Max 100 Mbps Fiber ports	Max 1000Mbps Fiber ports	Max Power Supplies	L2 or L3	Precision Timing	Max PoE ports	Mounting
	**12KX**	The Magnum 12KX Gigabit Managed Switch provides 16 Gigabit ports with built-in SFPs – allowing a choice of fixed 10/100/1000 RJ-45 connectivity or fiber SFPs. The substation-hardened Magnum 12KX has a non-blocking switching fabric to provide wire-speed performance on all ports.	16	16	16	0	16	16	2	Optional L2 or L3	IEEE 1588	4	Rack
	**10KG**	The Magnum 10KG Switch provides the bandwidth and advanced port configurability for data-intensive utility and industrial applications such as the Smart Grid. Advanced thermal design techniques enable high reliability and configurability even at extended operating temperatures and the cooler operation of internal electronic components leads to longer life-time and increased reliability.	32	8	16	16	16	8	2	L2	IEEE 1588	16	Rack
	**10KT**	The Magnum 10KT Switch provides advanced port configurability for heavy duty industrial applications where maximum fiber port count and diversity are required. Designed especially for power utility facilities in the Smart Grid, it includes nanosecond high precision IEEE 1588v2 timing synchronization. The Magnum 10KT also offers configurable Dual Hot-Swappable power supplies for redundancy and increased reliability.	36	4	32	32	32	4	2	L2	IEEE 1588	32	Rack
	**6K32F**	The Magnum 6K32F Family of Fiber Managed Switches provide maximum fiber-port configurability in a rack-mount package, with up to 8 gigabit ports and up to 32 100 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.	32	8	32	16	32	8	2	L2	None	32	Rack
	**6K32T**	The Magnum 6K32T family of managed switches provides a total of 32 managed ports of which 16 are fixed 10/100 RJ-45 ports and two optional module slots which may be configured to support up to 16 more ports in a variety of 10/100/1000 Mb fiber and copper connector types.	32	4	32	8	16	4	1	L2	None	16	Rack
	**6KL**	The Magnum 6KL is an Industrial Ethernet Edge Switch with full-featured MNS-6K software. The base unit also has four 10/100 copper ports. Up to four 100Mb fiber ports (SC, ST, LC, and MTRJ), four 10Mb fiber ST ports, or up to four more 10/100 copper ports (or combinations) may also be configured. Up to 2 Gb ports are optional.	10	2	8	4	4	2	1	L2	None	8	Rack, Panel or DIN
	**6KM**	The Magnum 6KM is a heavy-duty Mobile Ethernet Switch with full-featured MNS-6K software. The base unit also has four 10/100 M12 copper ports. Up to four 100Mb LC-type fiber ports or up to four more 10/100 M12 copper ports may also be configured. Up to 2 Gb ports (either M12 or LC-type fiber) are optional.	10	2	10	0	0	2	1	L2	None	8	Rack, Panel or DIN
	**6KQ** **6KQE**	The Magnum 6KQ and 6KQE are Heavy Duty Field Switches for industrial networking applications.The base unit has four 10/100 copper ports. It may be configured with a variety of 10/100/1000 Mb fiber and copper port connector types from a family of port modules. 16 to 10 ports maximum. Up to 2 Gb ports are optional.	16 8	2 2	12 8	4	12 3	2	1	L2	None	8 4	Panel or DIN

Common Features

- AC Auto-sensing World-use ready Power supply options
- DC Power supplies, from Low V to High V available - In many cases can be mixed and matched with other DC /AC power supplies
- Extended temperature range
- Security software optional add-on
- Different Fiber distances supported
- Different Fiber connectors supported
- MNS-6K software included on all switches
- Many accessories such as rack mounts, front or rear mount options
- Alarm Terminal-Block for software and hardware alarms

Unmanaged Switches

	Description	Max Ethernet Ports	Max Gig Copper Ports	Max 10/100 Copper ports	Max 10 Mbps Fiber ports	Max 100 Mbps Fiber ports	Max 1000Mbps Fiber ports	Power Supplies	Max PoE ports	Mounting	Other Features
4K24 **4K16** **4K8**	Magnum 4K switch series switches boost the performance of large Ethernet LANs, with the flexibility of both twisted-pair and fiber switched ports. Magnum 4K 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.	24 16 8	0	24 16 8	0	2 2 1	0	Dual DC	0	Rack	Different config oiptions
ESD42	Magnum ESD42 Dual-Homing Switches bring redundancy to the network edge. The Magnum ESD42-Series, a versatile family of small Edge Switches, use innovative product casing and dual-homing technology for unmanaged switches which adds reliability by allowing a device to be connected to the network by way of two independent connection points (points of attachment).	6	0	6	2	2	0	1	4	DIN rail, panel or rackmount tray	Dual homing, IEC 61850 and other agency certifications
PES42	The Magnum PES42 family PoE Power-Source Edge Switch combines standard 802.3af Power over Ethernet (PoE) with a small heavy-duty 6-port Ethernet Switch. Using an external -48VDC power source, four of the PES42's Ethernet ports can provide power as well as 10/100 Mb data transmission over the interconnecting Ethernet cables. Data and power for the attached devices can be transmitted over a single Ethernet twisted-pair cable to each, cost-reducing installation and maintenance in an industrial facility. The other PES42 ports may be 100Mb fiber for distance, noise immunity, ground-isolation and high bandwidth.	6	0	6	2	2	0	1	4	DIN rail, panel or rackmount tray	PoE, IEC 61850 and other agency certifications
CSG14U	The Magnum CSG14U Universal Converter Switch can handle any Gigabit fiber type - multi-mode and single-mode - and fiber media distance with a selection of Gb SFP fiber transceivers, up to two of which can be plugged in. The CSG14U can also handle any 100Mb fiber media type and distance in the same way, with a selection of 100Mb SFP fiber transceivers that similarly plug in. For copper media attachment, there is a 10/100/1000 auto-negotiating RJ-45 port. Where Gb Ethernet is in use, the CSG14U converts all media combinations.	3	2	2	0	2	2	1	0	DIN rail, panel or rackmount tray	Flexible fiber via SFP, IEC 61850 and other agency certifications
IPS42	The IPS42 supplies Magnum PES42 PoE Edge Switches with integrated AC power supplies for video surveillance applications, and offers integrated AC/DC, 125 VDC dual source, 48 VDC dual source, 24 VDC dual source, or integrated AC power input for over 1600 individual Magnum Edge Switch configurations. The IPS42 is a chassis that brings big-switch internal power supplies to compact unmanaged industrial edge switches. The AC/DC model allows the user to connect into 125VDC substation power or into worldwide AC power. Dual-source models operate from either of two DC power inputs and provide high availability. The five models of the Magnum IPS42 Internal Power Supply chassis yield a rugged Edge Switch package for mission critical industrial networking applications.	6	0	6	2	2	0	AC or Dual DC	4	Din rail, panel, tray or rack mount	Dual-homing, PoE, IEC 61850 and other agency certifications

Common Features

- DC Power supply options
- AC Auto-sensing World-use ready Power supply options
- DC Power supplies, from Low V to High V available. In many cases can be mixed and matched with other DC /AC power supplies
- Extended temperature range
- Different Fiber distances supported
- Different Fiber connectors supported
- Many accessories such as rack mounts, front or rear mount options
- Alarm Terminal-Block for software and hardware alarms
- Tray mounting

Routers

		Description	Max Ethernet Ports	Max Serial Ports	Max Gig Copper Ports	Max 10/100 Copper Ports	Max 10Mbps Fiber ports	Max 100Mbps Fiber ports	Max 1000Mbps Fiber ports	Max Power Supplies	Additional Software	WAN	Secure SCADA
	**5RX**	The Magnum 5RX is the cost-effective industrial Security Router serving the power transmission and distribution (PT&D) markets as well as substations of the industrial control systems. Magnum 5X offers advanced routing and security capabilities in a single cost-efficient platform, plus the bridging support of legacy serial and WAN protocol with next generation high performance Gigabit Ethernet and TCP/IP technology.	6	4	2	6	0	2	2	1	None required	1 x T1/E1 with PPP, and Frame Relay	Yes
	**10RX**	The Magnum 10RX Configurable Router and Security Appliance offers advanced layer 3 networking protocols, firewall, and secure virtual private networking for heavy duty industrial applications where high performance and security are required.	10	32	10	10	10	10	10	2	None required	16 x T1/E1 with PPP, 8 x channelized T1/E1 and Frame Relay	Yes
	**10XTS**	The Magnum 10XTS Router Terminal Server offers T1/E1 routing as well as advanced serial and Ethernet port configurability for heavy duty industrial applications where maximum port count and diversity are required. The Magnum 10XTS is ideal for large substation installations with large numbers of serial and Ethernet instruments and the need for high-speed WAN access.	8	32	0	8	0	8	0	2	BGP, OSPF, Secure	2 x T1/E1 with FR or PPP	Yes
	**DX940**	The versatile Magnum DX940 Configurable Industrial Router with Cellular combines WAN access, IP routing, Ethernet switching, Serial-to-IP terminal services and advanced security features in a small-footprint industrial package suitable for small and mid-sized remote sites such as electrical substations, renewable power generation facilities and transportation control pedestals.	6	4	2	4	0	4	2	1	BGP, OSPF, Secure	T1/E1 or FR or PPP and Optional Cell Support	Yes
	**DX40**	The Magnum DX40 Serial Device Router supports two serial interfaces and two Ethernet ports, one or both of which may be fiber-or both can be 10/100 copper. It combines features of a serial device server, Ethernet switch, and IP router in a single product.	2	2	0	2	0	2	0	1	BGP, OSPF, Secure	None	Yes

Common Features

- DC Power supply options
- AC Auto-sensing world-use ready Power supply options
- DC Power supplies, from Low V to High V available. In many cases can be mixed and matched with other DC /AC power supplies
- Extended temperature range
- Extended security software optional add-on
- Different Fiber distances supported
- Different Fiber connectors supported
- MNS-DX software included on all routers, DS-software for DS-series
- Many accessories such as rack mounts, front or rear mount options
- Alarm Terminal-Block for software and hardware alarms
- Tray mounting

Serial

	Description	Max Ethernet Ports	Max Serial Ports	Serial Port Type	Max Gig Copper Ports	Max 10/100 Copper Ports	Max 10Mbps Fiber ports	Max 100Mbps Fiber ports	Max 1000Mbps Fiber ports	Max Power Supplies	Precision Timing	WAN	PoE ports	Additional Software	Mounting
 **5RX**	The Magnum 5RX is the cost-effective industrial Security Router serving the power transmission and distribution (PT&D) markets as well as substations of the industrial control systems. Magnum 5X offers advanced routing and security capabilities in a single cost-efficient platform, plus the bridging support of legacy serial and WAN protocol with next generation high performance Gigabit Ethernet and TCP/IP technology.	6	4	Software selectable RS232/ RS422/ RS485 and DB9 and RJ45	2	6	0	2	2	1	Futrue IEEE 1588	1 x T1/E1 with PPP, or DDS	None	None required	Rack
 **10RX**	The Magnum 10RX Configurable Router and Security Appliance offers advanced layer 3 networking protocols, firewall, and secure virtual private networking for heavy duty industrial applications where high performance and security are required..	10	32	Software selectable RS232, RS422, RS485 - DB9 and RJ45	10	10	10	10	10	2	Futrue IEEE 1588	16 x T1/E1 with PPP, 8 x channelized T1/E1 and Frame Relay	None	None required	Rack
 **10ETS**	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.	8	28	Software selectable RS232, RS422, RS485 - DB9 and RJ45	0	8	0	8	0	2	IRIG-B	None	4	BGP, OSPF, Secure	Rack
 **DX940**	The versatile Magnum DX940 Configurable Industrial Router with Cellular combines WAN access, IP routing, Ethernet switching, Serial-to-IP terminal services and advanced security features in a small-footprint industrial package suitable for small and mid-sized remote sites such as electrical substations, renewable power generation facilities and transportation control pedestals.	6	4	Software selectable RS232, RS422, RS485 - DB9	2	4	0	4	2	1	None	T1/E1 or FR or PPP and Optional Cell Support	0	BGP, OSPF, Secure	Rack, Panel or DIN
 **DX40**	The Magnum DX40 Serial Device Router supports two serial interfaces and two Ethernet ports, one or both of which may be fiber- -or both can be 10/100 copper. It combines features of a serial device server, Ethernet switch, and IP router in a single product.	2	2	Software selectable RS232, RS485 - DB9	0	2	0	2	0	1	None	None	0	BGP, OSPF, Secure	Yes

Common Features

- AC Auto-sensing World-use ready Power supply options
- DC Power supplies, from Low V to High V available. In many cases can be mixed and matched with other DC /AC power supplies
- Conformal Coating
- Extended temperature range
- Security software optional add-on
- Different Routing protocols available as software add-on
- Serial ports are RS232 or RS 422, software configurable
- Different Fiber distances supported
- Different Fiber connectors supported
- Management software included
- Many accessories such as rack mounts, front or rear mount options
- Alarm connection for software and hardware alarms

Media Converters

	Description	Max Ethernet Ports	Max Gig Copper Ports	Max 10/100 Copper ports	Max 10 Mbps Fiber ports	Max 100 Mbps Fiber ports	Max 1000Mbps Fiber ports	Power Supplies	Max PoE Ports	Mounting	Other Features
CSG14U 	The Magnum CSG14U Universal Converter can handle any Gigabit fiber type - multi-mode and single-mode - and fiber media distance with a selection of Gb SFP fiber transceivers, up to two of which can be plugged in. The CSG14U can also handle any 100Mb fiber media type and distance in the same way, with a selection of 100Mb SFP fiber transceivers that similarly plug in. For copper media attachment, there is a 10/100/1000 auto-negotiating RJ-45 port. Where Gb Ethernet is in use, the CSG14U converts all media combinations.	3	2	2	0	2	2	Many choices	0	Many choices	Compact size, media flexibility
CSG14 	Combine a Gigabit (Gb) Fiber Media Converter and a two-port 10/100/1000 copper Switch, and you have the Magnum CSG14 Converter Switch™, a high-speed flexible edge-of-the network industrial Ethernet product. The CSG14 family of Gb converter Switches with a Gb fiber built-in offers a full range of Gb fiber port choices. Models available provide a) fixed Gb fiber ports for short distance SX fiber, b) fixed LC-type transceivers for single-mode GB fiber, and c) Gb SFP ports (Small Form-factor Pluggable) for flexible choices of the transceiver distance needed. The compact package is ideal for industrial network edge installations.	3	3	2	0	0	1	Many choices	0	Many choices	Compact size, media flexibility
CS14 	Combine a 100 Mb Fiber Media Converter and a two-port 10/100 copper Switch, and you have the Converter Switch, a flexible edge-of-the-network Ethernet product. Add in fiber port choices for all multi-mode and single-mode fiber connector types plus AC or DC input power selection and multiple application environments, and you have the Magnum CS14 Converter Switch.	3	0	2	0	1	0	Many choices	0	Many choices	Compact size, media flexibility

Industrial Computer

	Description	Features
10C 	Mission critical applications such as substations, water treatment plants, transportation and public-safety as well as many others require constant monitoring, security, management and data collection to ensure that all is well. A substation hardened computer allows the monitoring, surveillance and other critical logic to be embedded into rich applications running on Linux or Windows™ environments. The Magnum 10C allows the deployment of such applications without the worry or concern that environmental extremities will cause reliability issues. The Magnum 10C offers a maintenance free, low-power, high-reliability, fan-free, silent computing platform to support these applications.	Designed for substations, the 10C is resilient to power surges and other extreme environmental issues. I0C also conforms to many Emission and Immunity specifications such as IEC 61850-3 EMC & Operating Conditions Class C for Power Substations; EN55024, EN61000-6-2, EN61000-4-2 (ESD), EN61000-4-3 (RF), EN61000-4-4 (EFT), EN61000-4-5 (SURGE), EN61000-4-6 (CRF), EN61000-4-11 (VDI). Six USB 2.0 ports, optional six serial ports, Operating system agnostic (tested with Windows(TM) XP, 7, 2003 server, 2008 server as well as many flavors of Linux), optional disk bay makes it very versatile.

Software

	Description	Features
MNS-DX 	Magnum™ Managed Network Software for Magnum DX family of routers (MNS-DX) provides the functionality needed by industrial routers. A full range of routing software along with security and redundancy features enable the Magnum DX routers to perform efficiently in harsh industrial environments. MNS-DX includes features needed to connect a variety of different devices and interface types to a routed network.	MNS-DX provides routing protocols such as RIP and different versions of RIP; Ethernet ports can be configured as switched ports or routed ports or combinations; serial ports can be configured as RS232 or RS485 ports; WAN configuration provides the necessary menus to configure a T1/E1 or DDS circuits; RSTP supports RSTP-2004 (802.1w) & STP (802.1d), provides resilient Ethernet networks; VRRP – Virtual Router Redundancy Protocol provides router redundancy for Ethernet LAN devices; VLANs (802.1q) supports tagged based VLANs as access VLANs or trunk ports; VLAN trunk ports allow filtering of unauthorized VLANs; Modbus interoperability over Ethernet or serial ports (RS232 or RS485); Modbus Gateway (MODBUS/TCP) and Modbus-ASCII/RTU interworking, DNP and serial-IP raw mode for serial ports; SNMP supports v1, v2 and v3 for managing the device using Network Management Systems such as HiVision; Trouble shooting is made easy with a built in protocol analyzer. For security conscious environments, features such as VPN, banner capability and more can be added with MNS-DX-SECURE. Added routing protocols such as OSPF and BGP are added with MNS-DX-ADVAR. Please contact GarrettCom for a demo or refer to the web site for a description of functionality.
MNS-6K 	Managed Network Software (MNS) combined with a Magnum 6K or Magnum 10K switch, provides power and efficiency in a managed Ethernet platform. A full range of industry-standard software functions in the MNS-6K software product enable the versatile Magnum 6K and 10K Switches to perform efficiently in a wide range of managed LAN applications, including redundant topologies. The software includes Secure Web Management with SSL, graphical user interface (GUI) as well as a command line interface for expert users. Ease of use features make it easy to use and deploy switches for the industrial environment.	Port Security, controlled access by MAC address; VLANs, Port-based, Tag-based, with GVRP; Rapid Spanning Tree Protocol (RSTP-2004), 802.1w & STP 802.1d; Link Aggregation Control Protocol (LACP) 802.3ad; QoS, multi-level 802.1p, ToS and DiffServ; IGMP Snooping, and multicast pruning; SNMP, rich commands including access control; SNMPv3, for encrypted authentication & access security; RMON with statistics, history, alarms and events and much more provide the rich functionality for MNS-6K. MNS-6K-SECURE provides the added security for security conscious environments. Please contact GarrettCom for a demo or refer to the web site for a description of functionality.
Industrial HiVision 	Network Management software specifically designed for industrial environments. Unlike other network management software which are designed for IT specific environments and IT professionals, Industrial HiVision network management software includes features which users of industrial networks need. Industrial HiVision software is configured with both Hirschmann as well as GarrettCom device information and the software is ready to use after installation. Other devices can be added to Industrial HiVision allowing management of third-party devices as well.	Industrial HiVision can be easily integrated into SCADA applications and includes support for GarrettCom devices. Many devices can be configured simultaneously, minimizing time needed to conform to policies and procedures set for industrial and production environments. Similarly, many devices can be updated simultaneously with new releases, new IP address or other relevant information. Features like auto-topology make it easy to discover and add devices, making it easy to populate the relevant devices on the network. Third party MIB imports allow the definition of other devices not currently in the library of managed devices, providing a holistic view of the network and critical devices on the network. The objects discovered or added can be customized with background images, floor plans. Extensive graphics capabilities allow the different objects to be laid out in a logical manner representing the connection information as well as other relevant information. Tool-tips displays relevant information of the devices as the administrator hovers over the devices, allowing efficiencies to manage the network. A trial is available for serious users.

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For worldwide Industrial Sales and Technical Support, visit: www.belden.com

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GarrettCom, A BELDEN BRAND
Corporate Headquarters
47823 Westinghouse Drive
Fremont, CA 94539, USA
Phone: 510-438-9071
Fax: 510-952-3456
www.belden.com

For sales inquiries, email
inetsalesops@belden.com

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