



Reliable, Scalable, End-to-End Networking Solutions



Your End-to-End Solution.

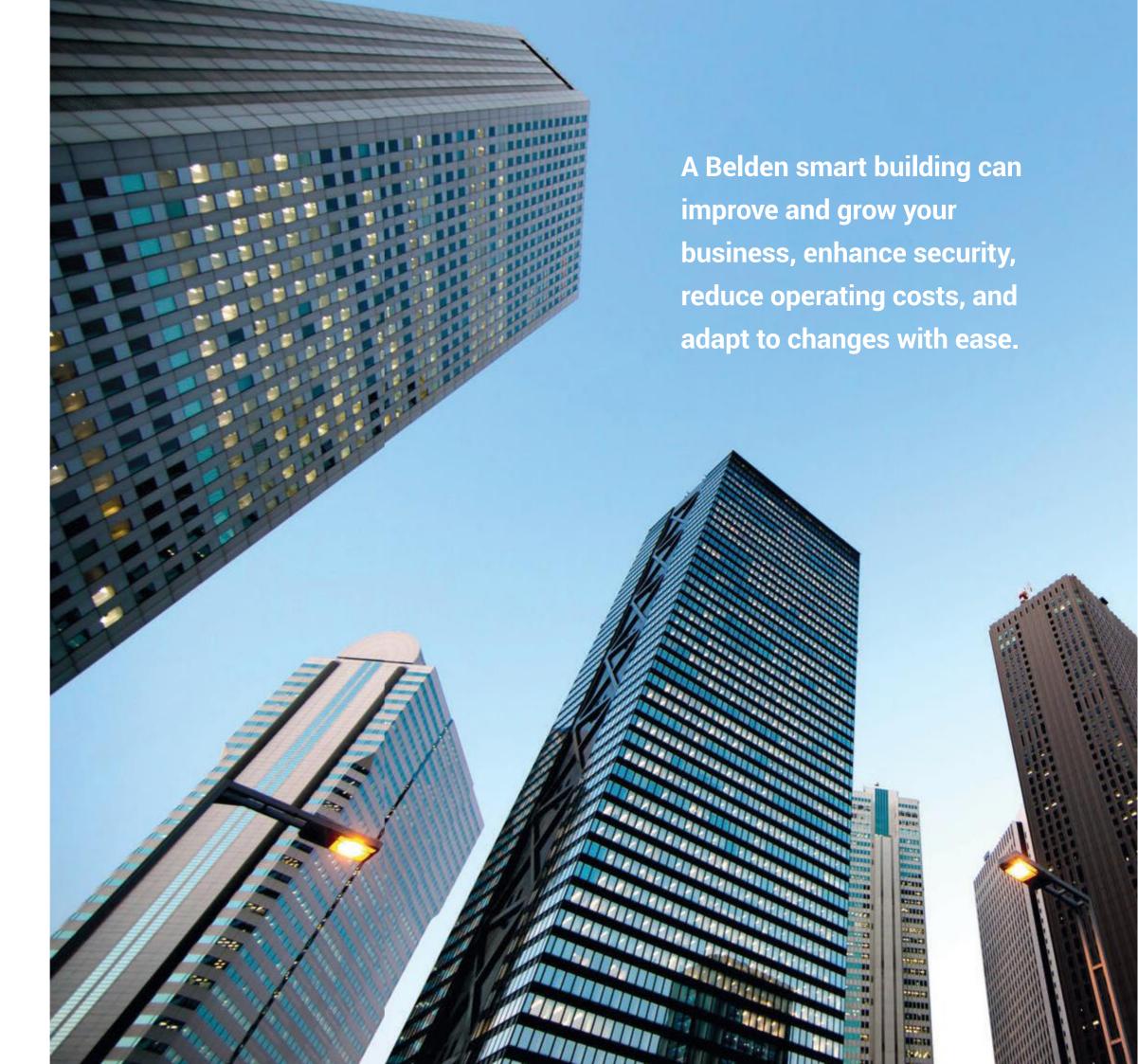
Be certain. Belden.



## **Leading the Way to an Interconnected World**

As the world grows more and more connected by complex networks, the people who design, build and maintain them need a partner with the expertise to span technology platforms, geographies and industries. So they rely on Belden – a global leader in innovative signal transmission solutions for applications in a diverse set of markets.

Belden's portfolio of best-in-class communication technology brands feature solutions that reliably and securely transmit the vast amounts of data, audio and video needed for today's enterprise and industrial applications.







### Making Your Building Smart with Belden

Smart buildings will challenge enterprise networks, calling for more bandwidth, higher flexibility, higher speed, more connection points and higher reliability. Networks will need to support legacy and new systems, a mix of passive and active equipment, a mix of copper and fiber cabling, and ever-increasing numbers of wireless devices.

As a structured cabling systems manufacturer, Belden takes a holistic approach to networks and buildings.

By looking beyond cabling to consider the unique environments and applications impacting our customers' networks, we help building owners, facilities managers and IT professionals come together to create their own smart buildings.



### Why A Belden Smart Building

A Belden smart building provides everything an enterprise needs to run smarter through automation and efficiency. It also adapts to user preferences, creating a more productive work environment. A smart building has technology and infrastructure to support:



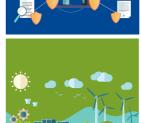
#### Convergence

Belden brings previously disparate, unconnected devices to your networks for direct communication and integration — without any human interaction or intervention — to share information, deliver high-quality AV, safeguard lives and improve building management.



#### Reliability

Get the reassurance of constant uptime, which allows business processes to continue, keeping revenue and productivity as high as possible. Belden's Digital Building Warranty covers many types of applications to make sure your systems work together for as long as possible.



#### **Efficient Powering**

Belden brings you the ability to support local powering and Power over Ethernet (PoE), which delivers up to 100W through Ethernet cable to devices. Our systems support higher-power PoE, bringing power and data connections straight to monitors, cameras and other devices.



#### **Productivity**

Belden systems and technology support many applications and technologies simultaneously, allowing people and devices on the network to complete jobs quickly and efficiently, without delays or bottlenecks.



#### **Analytics**

Belden systems support the sensor technology integrated into the many devices connected to your network. This allows you to quickly track and benchmark data such as traffic patterns, occupancy rates and space utilization in real time.



#### **Environmental Solutions**

Health and workplace well-being improve the environment and occupant satisfaction. Belden's green initiatives allow for buildings that are resource efficient, using less energy and water to reduce greenhouse gas emissions.

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## Leading the Way in End-to-End Signal Transmission Solutions

**Energy Management** 

**Security & Safety** 

**Display Signage** 

**Networking Infrastructure** 

Video-conferencing/

IP Telephony System



Structured Cabling -Fixed & Wireless (LAN)



IP Television System



Car Parking System



Public Address & General Alarm System (PAGA) Background Music System (BGM)



**Building Management** System (BMS)



Cable Television System (CATV)



Digital Signage



Fire Alarm System



Heating, Ventilation and Air-Conditioning System (HVAC)



Access Control System



Power Management System (PMS)











#### Heating, Ventilation and Air-Conditioning System (HVAC)

HVAC System controls the ambient environment including temperature, humidity, air flow, and air filtering in a building.

- Belden offers cabling infrastructure to connect devices HVAC controls in plenum spaces or raised floors
- Belden has the ability to seamlessly integrate sensors, automation and monitoring for total thermal control



#### Power Management System (PMS)

Power Management System refers to the building air conditioning and mechanical ventilation, energy and climate management system to monitor and manage energy demand and climate condition in a building.

- Belden offers cabling infrastructure to connect devices PMS monitors
- · Belden has the ability to seamlessly integrate sensors, automation and monitoring for energy management



#### **Lighting Control System**

Lighting Control System ensures visibility for building occupants, life safety and overall atmosphere in a building.

- · Belden offers cabling infrastructure to provide individual fixture management and control in any type of space
- Belden systems support Power over Ethernet to take DC power straight to LEDs anywhere



#### Fire Alarm System

Fire Alarm System is designed to detect unwanted presence of fire by monitoring environmental changes associated with combustion in a building. In event of an emergency, the system provides visual alerts for the occupants to escape safely.

• Belden offers connectivity that allows fire alarms and mass notification systems to display safety alerts and updates



Energy

Management



Safety

Security &

#### **Access Control System**

Access Control System refers to the selective restriction of access for certain doors and facilities in a building based on the system parameters.

- · Belden offers reliable, easy-to-install cabling for access control and alarm system data transfer and management
- Belden offers cabling infrastructure to support the bandwidth and power requirements of smart security systems





#### **CCTV Surveillance System**

CCTV Surveillance System refers to the video monitoring system used to observe

- Belden offers cabling and connectivity for indoor and outdoor surveillance
- Belden offers integration support for CCTV systems to converge with other build ing devices to automatically identify threats and send alerts





### Video Wall/Digital Signage

Video Wall/Digital Signage is usually in the form of small to large billboards composed of LCDs, LEDs or similar display systems. It is generally connected by a content management system or software that sends the display system the data.

- Belden systems support 100W higher-power PoE devices like digital signage and
- Belden systems support signal extension across large distances for 4K and UHD





#### Cable Television System (CATV) 8

Cable Television System refers to the system that distributes television signals by means of coaxial and fiber cables. In remote and hilly areas, community antennas are constructed to receive broadcast signals and coaxial cables are used to carry cable television to subscribers.



#### **Building Management System (BMS)**

Building Management System refers to computerized measurement, control and management of building services in a building.

- Belden supports accommodations for devices that rely on legacy protocols and newer devices that rely on IP communication
- Belden offers cabling and connectivity to support sensors that connect to and share information with other systems



#### Background Music System (BGM)

Background Music System refers to a music playback system that plays continuous background music, normally via a distributed public address audio system in

- Belden offers connectivity support for zoned and building-wide BGM systems
- Belden offers convergence solutions to allow systems to integrate with other devices for communications purposes



#### Public Address & General Alarm System (PAGA)

PAGA System refers to an electronic sound amplification and distribution system with a microphone, amplifier and loudspeakers, used to allow a person to address to general public in a building for announcement and safety/emergency purposes.

- Belden offers cabling for proper zoning and integration of PA systems with fire and security systems for automated and manual messaging
- · Belden offers cabling infrastructure to support centralized system control and management



#### Car Parking System

Car Parking System offers real-time indication of available parking lots in various zones of the car park through signage display. Individual lot sensors with LED lamp indicators further enhance the lot counting and directional guiding services.

- · Belden offers cabling infrastructure to support centralized system control and management
- Belden offers cabling for proper zoning and management of parking lots



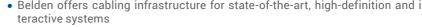
**Networking System** 

#### Video-conferencing/IP Telephony System

Video-conferencing/IP Telephony System refers to the audio and video data transmission via the Internet Network for communication.

- Belden systems support the transmission of uncompressed ultra-HD (4K), audio Ethernet, device control and power
- Belden offers cabling infrastructure for state-of-the-art, high-definition and in-





Structured Cabling - Fixed & Wireless (LAN) Local Area Network is the backbone communication infrastructure for information transmission in a building.

- Belden offers infrastructure to support wired and wireless devices, as well as carry high-speed communication and remote power
- Belden systems support high bandwidth and higher power throughput requirements brought forth by BYOD and IoT



#### IP Television System (IPTV) (15)

IPTV System refers to the system through which TV services are delivered using the Internet Protocol suite over a packet-switched network such as a LAN or the Internet, instead of being delivered through traditional terrestrial, satellite signal and cable television formats.









# BELDEN has the complete product portfolio to fulfill different application requirements in a Smart Building.

Product Group	Part Number	Energy Management				Operation Management					Networking System			Security & Safety			Display Signage
		Façade Lighting Control	Intelligent Lighting Control	HVAC	Power Management System	CATV	Building Management System	PAGA	BGM	Car Parking System	Structured Cabling - Fixed & Wireless (LAN)	IPTV	Video Conferencing &IP-Telephony	Fire Alarm	Access Control	ссти	Video Wall / Digital Signage
Belden Category 6A Systems - Co	opper		•		•		•	•	•	•	•	•	•	•	•	•	
Belden Category 6 Systems - Copper			•		•		•	•	•	•	•	•	•	•			
Belden Category 5e Systems - Copper					•		•	•	•	•	•	•	•	•	•		•
Belden FiberExpress® Systems - Fiber		1			•		•			•	•	•	•	•	•	•	
VNV / EID / DC 405 Cable	984x / 984xZH series	•		4			•		1								
	310x series	•		10			1										
00.000.0.11	9503		•														
	9829	1	•							_							
Instrumentation Cable	MachFlex - LiYCY (TP)			(For Control)													
Control & Signal Cable	MachFlex - LiHCH (TP)			(For Control)													
	8471			(For Control)		1	2										
Audio, Control & Instrumentation Cable	1032A			2 1				(For Speaker & Microphone)	(For Speaker)				4		(For Door Lock)	2	
	1032AS			(For Sensor)				(For Speaker & Microphone)							(For Door Lock)		
	8477				•										(For Card Reader)		
	8719							(For Speaker & Microphone)	(For Speaker)						(For Door Lock)		
	8700	1					F	(For Speaker & Microphone)							(For Door Lock)	1	
	8723			(For Sensor)		-		(i or opeaner a miorognorie)	(r.or opeaner)		1		1		(For Card Reader)		
	8760			(For Control)				(For Speaker & Microphone)	(Enr Speaker)						(For Door Lock)		
	8761			(For Sensor)				(For Speaker & Microphone)							(For Door Lock)		
	8762			(FOI Sellsoi)				(For Speaker & Microphone)							(For Door Lock)		
	8777 / 8777ZH			4	•			(For speaker's Microphone)	(For speaker)						(For Card Reader)		
	i28B4KF01			1				(For Speaker & Microphone)	A (Car Canalyas)						(For Door Lock)		
				1				(For Speaker & Microphone)	(Fur Speaker)				+		(POI DOOF LOCK)		
Microphone & Musical Instrument Cable	8412							(For Microphone)									
Fire Alarm Cable	5020FL													•			
	5120FL													•			
	5220FL													•			
	8719CWZ													•			
	8720CWZ			3					3					•			
	8760CWZ			1					1 1					•			
	9572													•			
	ZMXXCKFYY													•			
Coaxial Cable - CATV	1523A					•											
	1530A					•			i j		1						
Coaxial Cable - CCTV	1694A								1							•	
	1855A								1							•	
	8241B															•	
	9116															•	
HDMI Cable																	•
Lift IP Cable	1303EPU	1														• (For Lift)	
	MACH102	•	•		•		•	(If PAGA goes IP)	1	•	•	•	•	•		•	
	MACH102 Module	•	•	8	•		•	(If PAGA goes IP)	3 3	•	•	•	•	•	•	•	
Networking - Switch	MACH104	•	•		•		•	(If PAGA goes IP)		•	•	•	•	•		•	
Networking - Switch	BN3049- 204C20TTM9MS	•	•				•	• (If PAGA goes IP)		•		•	•	•	•	•	
Networking - Wireless	BAT867-R	- 1		1			ł .		3 0	•	•		4			•	
Harsh Environment Connector - I	Total Contract Contra		•		•		•		1	•							•

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