BELDEN
SENDING ALL THE RIGHT SIGNALS

Be Certain with Belden

Effective Data Communication Solutions for Smart Grid Systems

BELDEN
SENDING ALL THE RIGHT SIGNALS

A B C

OpenRail Family

- Compact Industrial Switches
- Available in customized versions
- Available with conformal coating
- High port diverity

IBDN Cables

- Full range of copper cables
- Full range of fiber cables

Actuator/Sensor Distribution Box

- Space saving design
- Cost saving wiring
- Easy to maintain
- Shock and vibration proof
- IP67 protection class

MICE Family

- Modular switch family
- Extensive range of hot-swappable media modules
- Maximum flexibility by comprehensive selection of media types
- Supports a comprehensive selection of connectors
- MICE PoE media modules available

Connectivity Solutions

- Actuator/sensor connecting and interconnecting cables
- Field attachable connectors
- M8, M12, M23, 7/8"
- Valve connectors A, B and C design
- IP65 – IP69K protection class

Fieldbus Repeaters

- For the most common Fieldbus protocols
- Predictive maintenance
- Protocol specific Fieldbus repeaters available

EAGLE Family

- High-speed VPN, firewall and routing solution
- Transparent and routing mode
- Various media connection options

Fiber*Express*® System

- Fiber*Express*® Manager easy patch cords routing and management in a minimum space
- Fiber*Express*® Bar: a compact, modular and resilient linking panel
- Optimax connectors for fast, secure and reliable field installable fiber terminal

Belden Fiber*Express*® Brilliance

- Easy Field installable in three steps
- The only connector which offers terminations in less than 5 seconds
- No termination tools are required
- Can be re-terminated up to five times
- Connector window enables 100% installation feedback, instantly

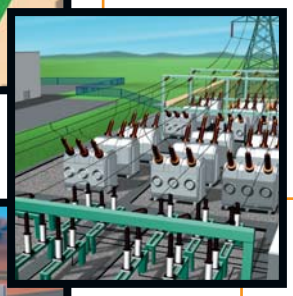
Fieldbus Cables

- RS-485 cables
- Profibus cables
- Cables for different fieldbus systems

Power Generation

A Photovoltaic Power Plants

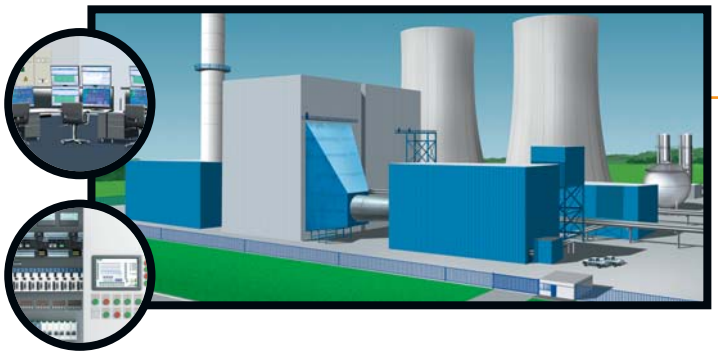
Substation



Solar Thermal Power Plants A

B Wind Power Parks

C Power Plants



Power Transmission and Distribution

Ethernet Cables

- Fiber*Express*® fiber and IBDN copper LAN cable

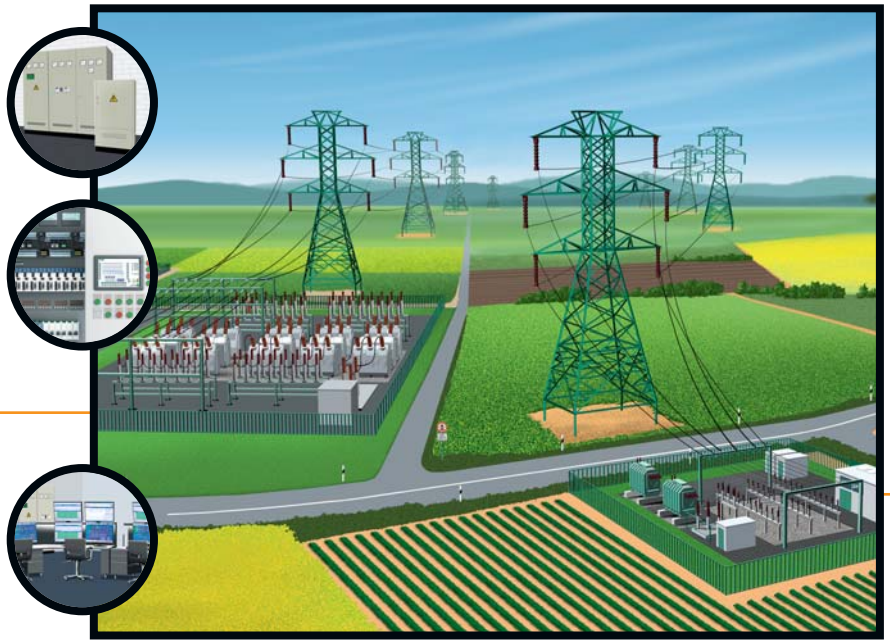
Industrial Ethernet Cables

- IP67, CAT5e
- Black UV resistant cable jacket
- PVC/FRNC or PUR cable jacket available

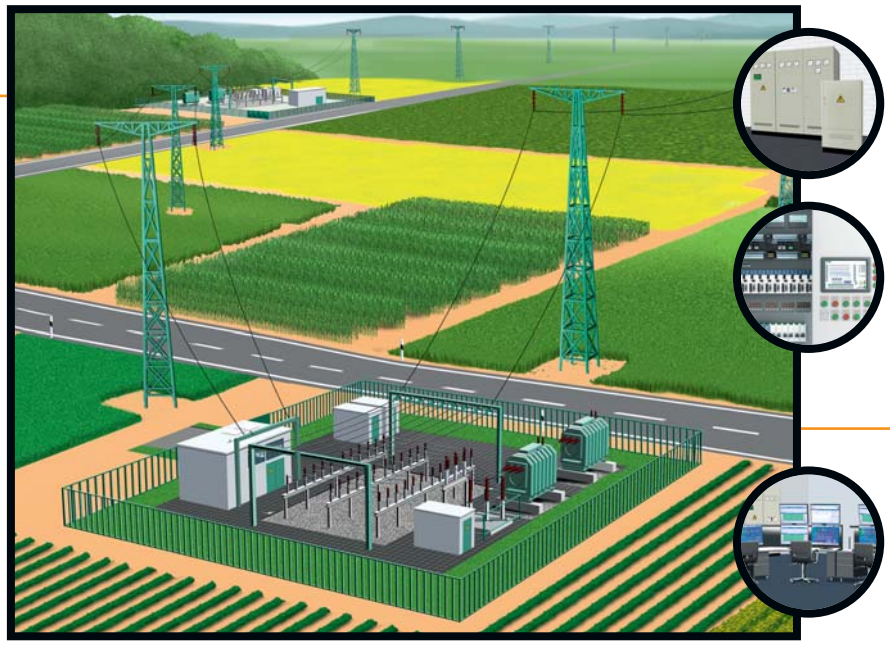
RSR

- Compact ruggedized DIN Rail Switches
- Extremely high EMI resistance
- Withstands tremendous shocks and vibration
- Designed for enhanced requirements in substations

Power Transmission



Power Distribution



MACH1000

- Rack-mount ruggedized switch
- Maximum uptime in extreme environmental conditions
- Designed for enhanced requirements in substations
- Extended temperature range: -40°C up to +85°C

Industrial HiVision

- Topology Discovery
- SNMP Trap support
- Auto Discovery
- Configuration and extended diagnosis are provided via interfaces, including HiVision 6.4, Web browser and TELNET

Power to Buildings and Industries

F Home

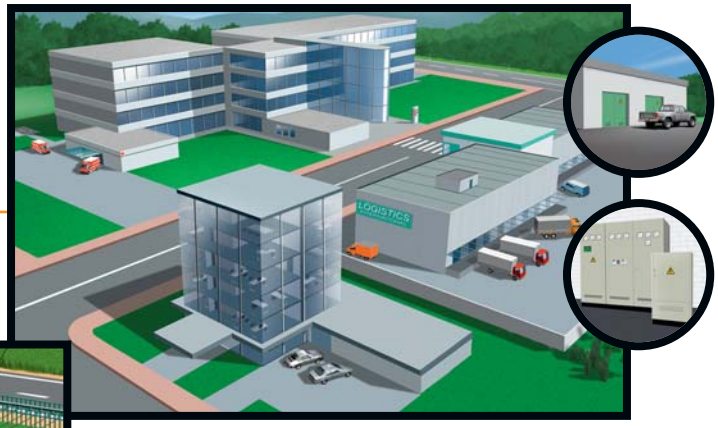
E EAGLE Family

- High-speed VPN, firewall and routing solution
- Transparent and routing mode
- Various media connection options

F SPIDER Family

- Entry-level switches in many varieties
- Fast Ethernet or full gigabit
- Fiber to copper conversion
- Unmanaged
- 2 to 8 (+2) ports plus optional optical fiber ports

G Buildings



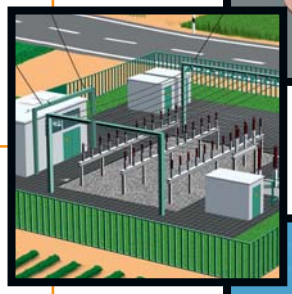
G MACH100

- Modular fanless Industrial Ethernet rack mount switch
- Hot-swappable modules
- Optional redundant power supply

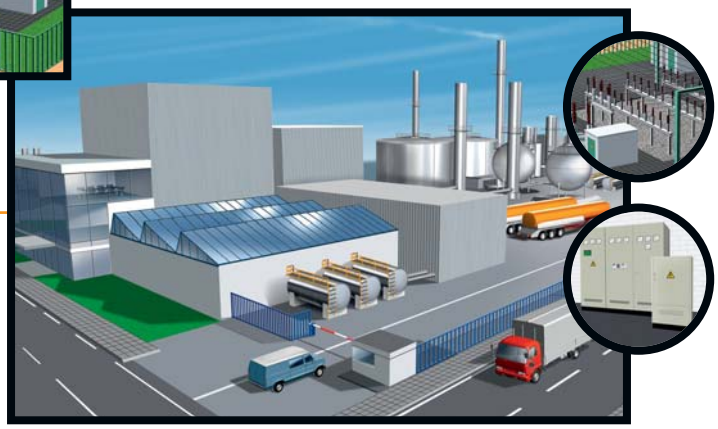
MACH4000

- Gigabit backbone routing switches
- Up to 48 Gigabit Ethernet ports and three 10 Gigabit Ethernet ports
- Highly redundant

E Substation



H Industries



H Ethernet Cables

- Fiber*Express*® fiber and IBDN copper LAN cable

Industrial Ethernet Cables

- IP67, CAT5e
- Black UV resistant cable jacket
- PVC/FRNC or PUR cable jacket available

BAT Family

- Wireless access points and clients
- Bridge functionality
- Redundant WLAN links for reliable data transfer
- IP67 protection class

Proven and Cost-Effective Solutions for Smart Grid Systems

Flexible and Future-Proof for Maximum Efficiency

Belden offers complete, integrated data communication solutions for reliable, efficient operation of modern power generation plants as well as for power transmission and distribution. With a wide portfolio of innovative products from our Belden®, Hirschmann™ and Lumberg Automation™ brands, we offer very cost-effective solutions.

Data communication networks for power generation present a unique set of challenges, e.g. at wind- and solar power locations: multiple fiber ports, extreme temperatures, humidity, vigorous vibrations and electromagnetic interference. A cost effective, reliable, secure and a well managed network infrastructure is decisive to success today and tomorrow. As one of the world's leading suppliers of active and passive data communication solutions for the power generation and power transmission & distribution, Belden meets the toughest customer requirements and standards, even under the most challenging conditions.

Belden provides products who meet applicable industry standards:

- IEC 61850-3
- IEC 61400-25
- IEEE 1613 Class 2 performance (KEMA tested)
- ISO/TS 16949, the ATEX Product Directive
- 94/9/EG and KTA 1401
- UL, cUL and ISO/IEC 24702
- IEEE 1588

Be Certain with Belden

Belden offers a complete active and passive network infrastructure solution for power applications, that complies with the standards in the power industry. Our product portfolio extends from a comprehensive range of cabling and connectors, through ruggedized Ethernet switches, routers and firewalls – all designed to work seamlessly together. We have the right products for your applications.

If you are looking for high speed, seamless data communications, the accurate monitoring and control of power flowing in and out of the power plant and grid and the fulfilment of all security and safety standards, talk to Belden to be certain of a field-proven, leading-edge solution.

BELDEN
SENDING ALL THE RIGHT SIGNALS

www.beldensolutions.com

GLOBAL LOCATIONS

To learn more about Belden visit us at
www.beldensolutions.com

CONTACT FOR BELDEN® BRAND

Edisonstraat 9
5928 PG Venlo
The Netherlands
Phone: +31-77-3878-555
Fax: +31-77-3878-488
www.beldensolutions.com
venlo.salesinfo@belden.com

CONTACT FOR HIRSCHMANN™ BRAND

Stuttgarter Straße 45-51
72654 Neckartenzlingen
Germany
Phone: +49-7127-14-0
Fax: +49-7127-14-1970
www.beldensolutions.com
inet-sales@belden.com

CONTACT FOR LUMBERG AUTOMATION™ BRAND

Im Gewerbepark 2
58579 Schalksmühle
Germany
Phone: +49-2355-5044-000
Fax: +49-2355-5044-333
www.beldensolutions.com
lac-info@belden.com

©Copyright 2010, Belden Inc.

Printed in Germany
DS 280 720-404 11.2010