Critical Facilities Infrastructure Solutions
Data Centers
# ABB Products and Services Guide

## Data Center Infrastructure Management
- Decathlon
- Data Center Services

## Control Systems
- Services

## Insulation Components
- Cast Epoxy
- For Generator

## Medium Voltage Products and Systems
- Service
- Circuit Breakers
- Compact Secondary Substations (CSS)
- Contactors
- Distributed Energy Storage Modules
- E-Houses (Application Modules)
- Fault Current Limitation & Arc Protection
- Fuses and Cutouts
- Instrument Transformers & Sensors
- OEM Switchgear Kits & Parts
- Reclosers & Sectionalizers
- Smart Voltage Components
- Surge Arresters
- Switches & Disconnectors
- Switchgear and Motor Control
- Vacuum Interrupters & Poles

## Motors and Generators
- Service
- Energy Efficiency
- High Voltage Induction Motors
- IEC DC Motors
- IEC Low Voltage AC Motors
- Motors and Generators for Explosive Atmospheres
- Servomotors
- Synchronous Generators
- Synchronous Motors
- SynRM motor and drive package

## Drives, inverters and converters
- Drive Services
- DC Drives
- Drive Options
- Drive PC Tools
- Low voltage AC drives
- Medium Voltage AC Drives
- Solar inverters

## Low Voltage Products and Systems
- Service
- Cable Distribution Cabinets
- Circuit Breakers
- Connection Devices
- Control Products
- Door Entry Systems
- Enclosed Switches
- Enclosures
- Fusegear
- Low Voltage Systems - IEC
- Low Voltage Systems - NEMA
- Modular DIN Rail Products
- Power Quality Products
- Software Tools
- Switches

## Power Electronics
- Control Systems
- Energy Storage & Grid Stabilization
- Excitation Systems & Combined Solutions
- Generation
- Grid interconnection
- High Power Rectifiers
- Power Electronics Service
- Power Quality
- Sensors
- SYCHROTACT® Synchronizing Products
- Traction Converters

## Power Protection & Automation Products
- Protection and Control (Distribution)
- Protection and Control (Transmission)
- Relion
- Substation Automation

## Generators
- Flexible Connection Kit
- HEC 7/8
- HECPS-S
- HECs
- HECS-R
- HVR-63

## Transformers
- Service
- Dry-special
- Dry-type
- Liquid-filled

## Reactors
- Liquid-Filled

## High Voltage Products
- Service
- Capacitors and Filters
- Circuit Breakers
- Gas-Insulated Switchgear
- Instrument Transformers
- Surge Arresters
- Switchgear Modules

## Power Cables and Cable Accessories
- Cable Accessories
- Cable System (36 kV and above)

## Semiconductors
- GTO
- IGBT and Diode Dies
- IGBT and Diode Modules
- IGCT
- Presspack Diodes
- Silicon Surge Voltage Suppressors
- Thyristor

## Transformer Components
- Bushings
- Composites
- Distribution Components
- Insulation Materials
- Oil Treatment
- Power Components
- Tap Changers
ABB is uniquely positioned to support and optimize uptime and cost savings throughout the life of your facility.

Contact us to learn more about how our services and solutions can help you:
- Improve system availability and performance
- Maximize the capacity of power, cooling and space
- Reduce energy costs
- Improve resource forecasting and energy planning
- Accelerate root cause analysis and troubleshooting
- Improve personnel safety

Ask us about
- Data Center Infrastructure Management (DCIM)
- Remote monitoring
- Dynamic IT (facilities and IT automation)
- Redundant systems for critical facilities infrastructure

Contact Us
Consulting, Engineering and Design

- Engineering assistance
- Consulting services for existing data centers
  - PUE studies
  - Energy assessments
  - Harmonic studies
  - Reliability studies
  - Short circuit analysis
  - Operational risk review
- Consulting services for new datacenters
  - Audit and feasibility studies
  - Optimization of CapEx and OpEx
  - Load phased implementation strategy
  - High, Medium and Low voltage electrical design
  - Equipment selection/procurement
  - Design excellence

DCEM (Datacenter Enterprise Management)

- Remote monitoring
- Analysis and optimization services
- DCEM as SaaS
- Site assessments

Lifecycle Services

- Installation and commissioning
  - Training through ABB University
  - Testing
  - Electrical installation
  - Mechanical installation
  - Commissioning services
  - Site and project management
- Maintenance services for existing data centers
  - Annual service contracts
  - Intelligent spares management program (IAP)/ERP integration
  - Inventory Access Program
  - On demand or contract service for on-site staffing
  - Predictive and preventive maintenance programs based on customer’s maintenance strategy
  - Site audits and quality compliance
  - Extended warranty service
  - Asset optimization program
- Monitoring services for existing data centers
  - Continued optimization services
  - Remote monitoring services
  - Service level agreements
  - Condition based monitoring programs
  - Upgrades, expansions and modifications
    - Upgrades and retrofit programs
    - Equipment performance management
    - Modifications
  - Procedural and product training and re-accreditation
  - Extensive procedural libraries based on 20 plus years mission critical services (policies, SOP, EOP, method and risk assessments)
  - Hardware and software support
  - NOC remote support from data center Subject Matter Experts (SME)
  - Strategic partnership contract to take care of data center operations, securing availability and continuity
Availability

The top priority of data center management is availability. However, in many cases, the systems and equipment being used in data center applications were not designed to meet the specific needs of that environment. Many were built for commercial environments and lack the redundancy required for critical, high availability applications. A few examples include:

- Residential “zero crossing” type mini circuit breakers that can easily let through enough energy to trip the main, causing hundreds of servers to go offline
- Instrumentation that is not built for long life in critical applications
- Key transformers that can represent a single point of failure for a data center
- Switchgear that is often inflexible and requires significant maintenance

Efficiency

Data centers already consume an estimated 1.5% of all electric power. Given the tremendous growth that the industry is experiencing, energy efficiency has become a top priority. Efficiency in data centers extends beyond energy use; significant gains can be made in a variety of areas, such as:

- HVAC efficiency – variable speed drives and high efficiency motors can cut HVAC costs by as much as 50%
- Substation efficiency - substation design can reduce energy wasted in the substation by up to 30% as compared to conventional designs
- Personnel efficiencies - instruments can be configured from a central control area, eliminating the need for engineers to physically adjust the device
- Utility rates and billing – with the right monitoring and control capability, data center operators can take advantage of time-of-use rates and demand response programs to lower electricity costs

Contact ABB for data center availability and efficiency services and solutions
Ease of Maintenance and Operations

Given the premium placed on uptime in the data center world, maintenance requirements play an even larger role than in other industries. ABB offers many low-maintenance and maintenance-free products for data center infrastructure, including:

- IEC and ANSI standard switchgear
- High efficiency motors and variable speed drives
- Motor control centers
- DC power solutions
- Advanced process control systems

ABB’s Decathlon control system offers connectivity to CMMS to automate maintenance processes, and provides a platform for any asset management strategy. It also improves ease of operations by offering a single window into your entire data center—electrical, server, asset, building, power and network management—that enables collaboration across departments and geographies.

Flexibility

Data center operators must adjust to a rapidly changing environment. The more flexible the tools and systems they rely on, the more able they are to preserve reliability and manage costs.

Installing additional server racks, for example, requires supporting electrical gear and HVAC equipment that may require a shutdown. ABB has MNS IEC switchgear and MNS motor control centers that enable new feeders and HVAC equipment to be added without powering down.

A new rack of servers could also mean changes to two, three or even more disparate monitoring and control applications. With ABB’s Decathlon control system, you can have a single view to facility status and server allocation, as well as the flexibility to move processing to reduce costs and/or improve quality of service.

Consider ABB Decathlon control system for data center maintenance and operations
Safety

Data centers use as much electricity and have as much associated equipment as many industrial environments, but maintaining power systems is typically not in the comfort zone of most data center staff. This creates a potentially serious safety problem, but there are steps the data center operator can take, from a device and systems standpoint, to minimize risk.

For example, 20% of all arc-flash events occur in motor control centers and switchgear. An additional 18% occur in custom control panels. ABB's offers switchgear and MCCs equipped with a unique multi-function wall that provides isolation and insulation between phases and bucket stabs, nearly eliminating the chances of an arc-flash event.

On the systems side, ABB's Decathlon control system offers a "single pane of glass" to alert operators to all alarms—from the utility to the servers—enabling operators to react to situations more quickly.

While more training for maintenance staff and the use of experienced electrical contractors is important, data center operators can greatly reduce the risk to life and property by investing in the most robust safety systems.

Risk Management

There are hundreds of critical processes in a data center that can fail, both at an equipment level (e.g., substation, chiller, HVAC fan and server in the rack) and a system level (e.g., flawed design, installation or maintenance practices). Having a single, centralized system to monitor and control operations is vital from both an operational and a risk management standpoint. Until now, however, a unified process control system for data center operations has not been available.

ABB's Decathlon control system was designed to meet the high availability requirements of a wide range of process industries and is well suited to data center operations. It allows operators to establish protocols restricting operators to specific actions, and generates audit trail events for all changes made during the operational process.
Contact us

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ABB.HelpDesk@us.abb.com

Web
General Services:
www.abb.us/service

Parts and Repair:
http://online.abb.com

On-line Product Support:
http://SolutionsBank.abb.com

ABB University:
www.abb.us/abbuniversity

Other service links and contacts
Motors and Generators
sales.us@baldor.com

Power Electronics
Daniel Peters: 262 785 3440

Turbocharging
Tel (24/7): 281 930 8383

Metallurgy Products

1 800 HELP 365
(1 800 4357 365)
Outside USA/Canada: +1 440 585 7804

Telephone menu options

1 Robotics:
Paint, Powertrain, Body-in-White,
Flexpicker, Press Automation, Weld.
1 Technical Support or Field Service
2 Parts
4 Training
5 General Inquiries

2 Process Control and
Network Management Systems:
Process Control Systems: Decathlon,
System 800xA, Advant Master/MOD
300, Symphony Harmony/INFI 90,
Symphony DCI/System Six.
Network Management Systems: EMS/
SCADA, DMS, BMS.
Service for Control Systems
1 Field Service
2 Parts
3 Technical Support
4 Training

3 Instrumentation and Process
Analytics:
Service for Measurement Products
1 Field Service
2 Parts
3 Technical Support
4 Training

4 Drives, Motors:
Field Service, Parts, Tech Support,
Training.
Service for drives, inverters and
converters

5 Quality Control Systems (QCS):
Quality Control Systems: Advant/
Master, Accuray, 1180, 1190, ULMA,
Measurex.
1 Field Service
2 Parts
3 Technical Support
4 Training

6 Low Voltage Products and Systems
(≤480V): Circuit & Motor protection,
Electronic Controls, PLCs, Panel
Switches, Capacitors, Relays, Soft
Starters.
Brands Include: Entrelec, SACE.
Service for Low Voltage Products and
Systems

7 Power Products (>600V–800kV):
Medium and High Voltage Products:
Transformers, Relays, Switchgear,
Breakers, Capacitors, Switches.
Brands Include: ASEA, Westinghouse,
BBC, ITE, BerMac.
Service for Medium Voltage Products
and Systems
Service for High Voltage Products
Service for Transformers

8 Substation Automation:
PCM, Combiflex, IED, Protection
Relays, Microscada, RTU Controls.

9 Power Generation and Water
Utilities:
Field Service, Parts, Tech Support,
Training.

0 ABB Help Desk (General Assistance):
1 SupportLine
2 Subscriptions
3 New Products
4 Account Support
0 Speak to Representative