The future of data center electrification
ABB Ability™ building tomorrow’s data centers
ABB Ability™ solutions for Industry 4.0

1712 – Industry 1.0
Thomas Newcome builds the first steam engine

1870 – Industry 2.0
Electricity is used for Industrial Production

1969 – Industry 3.0
Programmable logic

Today – Industry 4.0
Communications between people, services, and things

Do more
Know more
Visibility: assess, inform, measure
Transparency: monitor, control, manage

Do better
Predictability: optimize, predict, simulate

Together
Adaptability: collaborate, advice, re-think

Data collection
Connectivity

ABB Ability™

©ABB
Data centers

- Cooling
- Renewable generation
- Backup generation
- UPS
- IT equipment
- Electrical Distribution
- Control room
- PDU
- E-mobility
- Utility grid connection
ABB Ability™ values for data centers electrification

Data centers of tomorrow

- Safety and asset availability
- Continuous operation
- Flexibility and space saving
- Energy efficiency and sustainability

Global lifecycle service and support
Safety and asset availability

People and equipment protection
Certified switchgear against internal electrical arc fault.
Fast acting and coordinated arc protection systems applicable also on existing switchgear, to increase safety and minimize downtime.

Condition monitoring
Sensors to detect possible failure causes, like temperature monitoring of critical parts and joints. Switchgear condition monitoring to support troubleshooting and drive service activities.

Predictive maintenance
Site and multi-site asset health analysis to predict and notify potential faults, minimizing maintenance, while increasing safety and asset lifetime.
Continuous operation

Power supply management
Load-shedding and peak-shaving to keep up and running critical loads
Automatic transfer system ensuring power supply
Power management, integrating generators and renewables

Power Quality and Stability
Integrated capacitor banks for power factor correction.
Modular and combined Uninterruptible Power Supply solution. Embedding UPS into a digital switchgear reduces cost by 10%, and 30% footprint.
Flexibility and space saving

Digital switchgear
Wiring reduction up to 90% using digital bus communication.
Easy to update during lifecycle.
State-of-the-art and wide-range current and voltage sensors allows 10% reduced footprint and 25% faster commissioning.

Smart grid connection
All-in-one protection for any power distribution application, with fully modular and upgradable software.
Centralized substation protection and control, ready to follow the evolving grid, with extensive application coverage, giving the possibility to save 15% lifecycle costs.
Energy efficiency and sustainability

Energy management
Energy monitoring and reporting to have deep component consumption visibility
Real-time control of energy flows, load management and power quality analysis

Grid and renewables integration
Intelligent grid connection
Easy integration of renewables with automatic-synchronization protection function.
ABB Ability™ global and local support

10 Digital solution centers

40 Digital service centers
ABB Ability™ electrification offering

- **INTEGRATION**
  - Data Center Infrastructure Mgmt
  - ABB Data Center Automation

- **EFFICIENCY**
  - Electrical control system
  - ABB Zenon

- **FLEXIBILITY**
  - Substation protection and control
  - SSC600, REX640, Relion®

- **AVAILABILITY**
  - Load shedding and peak shaving
  - cPMS

- **RELIABILITY**
  - Switchgear condition monitoring
  - SWICOM

- **SAFETY**
  - Arc detection and suppression
  - REA, TVOC, UFES

**Plant control**

- **Cloud base applications**

**MV-Switchgear**

- **Electrical Control**

**LV Power centers, UPS**

- **LV Distribution boards**

- **PDU**

**Electrical system asset health**
- MyRemoteCare

**Cyber asset management**
- Data Care

**Energy monitoring**
- EDCS

**AIS / GIS, primary and secondary**
- MV Digital switchgears

**Bus transfer, ring reconfiguration**
- Relion, HSTS, Emax2, Loop Control

**Condition and energy monitoring**
- MNS® / NeoGear™ Digital, MNS Up