
Simplified challenges with a focused solution

Applications for
data center

START

Index

01

Introduction & Key trends

Key challenges and trends
Introduction to applications
Overview of applications
for data center

02

Intelligent distribution

Solution for main and sub
distribution boards IEC

03

Switching and protection

System plus system (2N)
electrical distribution IEC

04

Continuous Power

Solution for main and sub
distribution boards IEC

Selectivity solution for UPS
Network IEC / UL

Containerized power
distribution for IT Loads IEC / UL

05

Transfer Switching

Redundant Power Systems in
Data Centers UL

06

Arc Flash Mitigation

Solution for UPS battery
system IEC

07

Data center cooling

Motor Starting and protection
solution – IEC / UL

To discover more

Application Finder

Rate us

The Evolution of Data Centers

Meeting Growing Demands and Sustainability Challenges.

In recent years, data centers have undergone significant transformations driven by technological advancements, increased connectivity, and the insatiable appetite for digital services.

The demand for data centers has surged dramatically:

In the United States alone, power consumption is projected to reach 35 gigawatts (GW) by 2030, up from 17 GW in 2022. Innovative solutions such as intelligent distribution help to reduce the carbon footprint and operational costs.

The need for rapid deployment has accelerated data center construction. Traditional multi-year projects have given way to modular designs and pre-fabricated components. Modular data centers allow for flexible expansion, scalability ensures that data centers can grow seamlessly as demand increases.

Data centers are notorious energy consumers due to their continuous operation and cooling needs. However, there's a growing emphasis on energy efficiency. Data center operators are actively seeking ways to minimize environmental impact.

With our extensive portfolio and digital expertise, we stand ready to collaborate with you at any stage of the process. Explore our applications and prepare for an exceptional experience throughout your journey.

67%

of DTC owners

“Expect budget increase due to capacity expansion and efficiency improvements”

1 Introduction & Key trends

2 Intelligent Distribution

3 Switching and Protection

4 Continuous Power

5 Transfer Switching

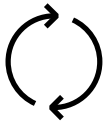
6 Arc Flash Mitigation

7 Data Center Cooling

Applications

Not only pre-configured packages!

Our tried-and-tested Applications simplify the process: faster selection, easy installation, and quicker results.



BUILT AROUND YOU

ABB's deep domain expertise offers proven solutions and expert support, all tailored to your sector's challenges.



MAXIMIZED RELIABILITY

Minimize unplanned downtime and enhance reliability with tried-and-tested solutions designed by our experts to achieve selectivity and integration.



TIME-SAVING

Save time during the design phase, avoid errors and speed up your projects with ready-made solutions built on your needs.



1 Introduction & Key trends

2 Intelligent Distribution

3 Switching and Protection

4 Continuous Power

5 Transfer Switching

6 Arc Flash Mitigation

7 Data Center Cooling



Switching & Protection

Continuous Power

Transfer switching

Arc Flash Mitigation

Data Center Cooling

1 Introduction & Key trends

2 Intelligent Distribution

3 Switching and Protection

4 Continuous Power

5 Transfer Switching

6 Arc Flash Mitigation

7 Data Center Cooling

Application Overview

		End user	Consultant / EPC	Panel Builder	OEM	System Integrator	Distributor
Intelligent distribution	Solution for MDB	●				●	●
Switching and Protection	System Plus System		●				
Continuous Power	Selectivity		●	●			
	Selectivity with UPS		●		●		
	Containerized solution				●	●	
Transfer switching	Redundant Power Systems			●			
Arch Flash Mitigation	Solution for UPS battery				●		
Data Center cooling				●	●		●

1 Introduction & Key trends

2 Intelligent Distribution

3 Switching and Protection

4 Continuous Power

5 Transfer Switching

6 Arc Flash Mitigation

7 Data Center Cooling

Intelligent Distribution

Solution for main and sub distribution boards IEC

Your challenge



Optimizing how energy usage is metered and monitored

You need to guarantee accurate data, connectivity and maximize functionality with a minimal footprint.

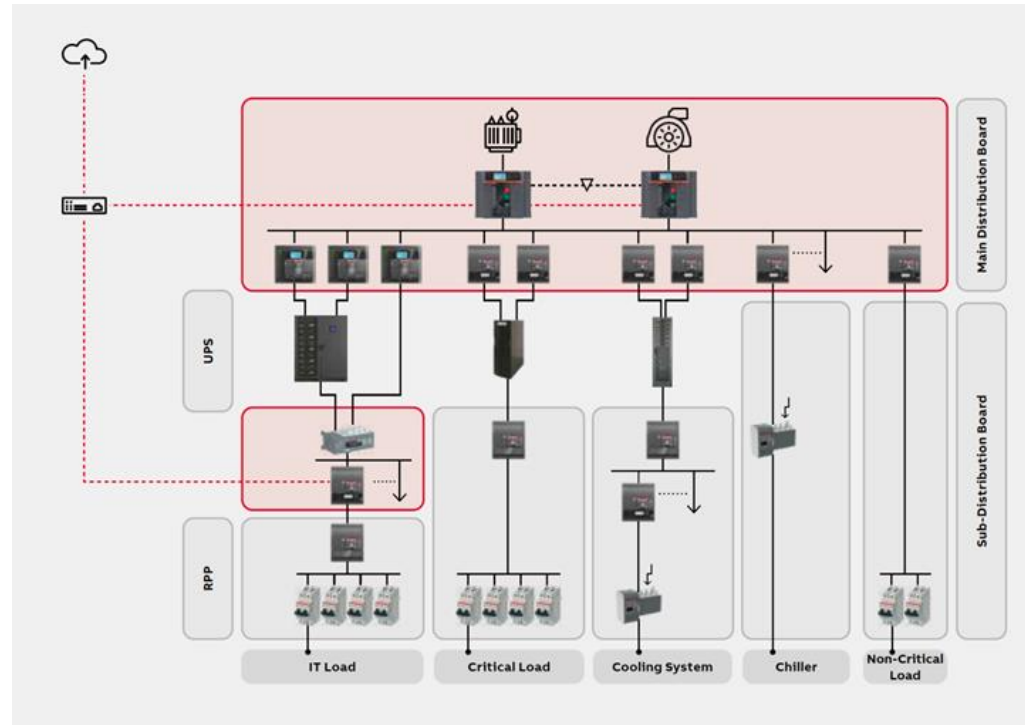


Your focused solution

To reduce electrical distribution losses and ensure service continuity with 24/7 monitoring of electrical parameters.



GO TO THE TECHNICAL DOCUMENTS



- Scalable solution, from essential to measure PUE to advanced for exhaustive monitoring
- Exploit predictive maintenance to safeguard installation and reduce operational costs

1 Introduction & Key trends

2 Intelligent Distribution

3 Switching and Protection

4 Continuous Power

5 Transfer Switching

6 Arc Flash Mitigation

7 Data Center Cooling

PREVIOUS

NEXT

Intelligent Distribution

Solution for main and sub distribution boards IEC

Application Note

A step-by-step journey from end-use specifications and challenges to ABB solution.



GO

White Paper

A guide through different Applications within the same segment.



GO

Reference Bill of Materials

To speed up your projects with fixed and open BOMs.



GO

1

Introduction & Key trends

2

Intelligent Distribution

3

Switching and Protection

4

Continuous Power

5

Transfer Switching

6

Arc Flash Mitigation

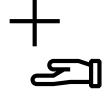
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Data Center Cooling

Switching and protection

System plus system (2N) electrical distribution IEC

Your challenge



Maximize performance of data center

Increase protection and energy efficiency reducing data center design time.

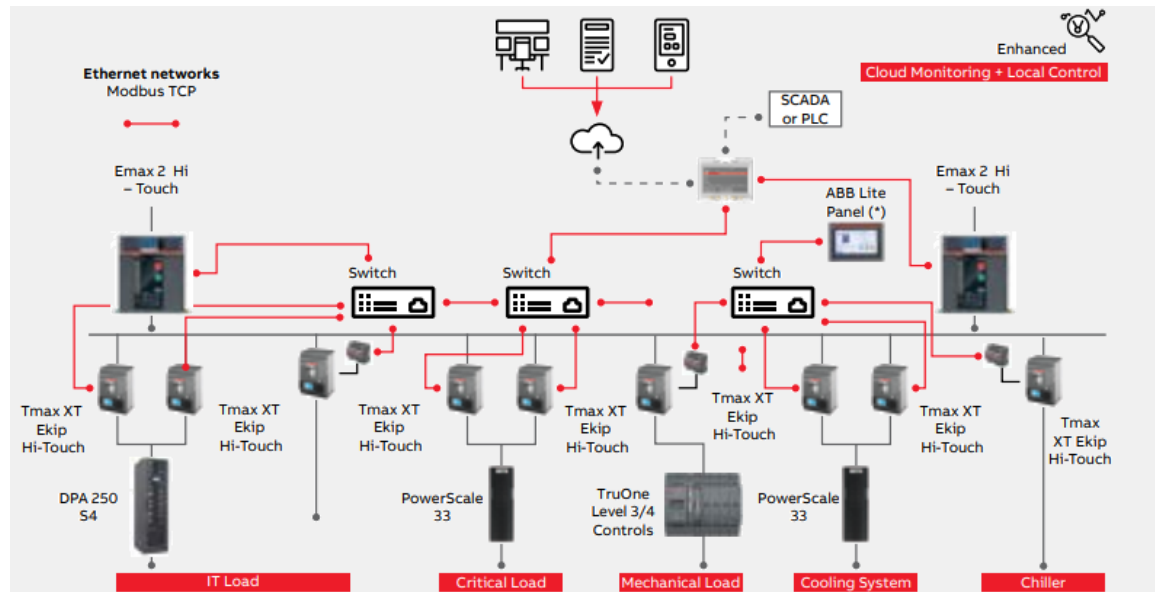
Your focused solution



An example of a fully designed low voltage power distribution for a data center along with its main components and ABB applications.

GO TO THE TECHNICAL DOCUMENTS

Figurative single-line diagram of side A of the System plus system Data Center



- Suggested products for modern data center
- Overview of ABB Applications

1 Introduction & Key trends

2 Intelligent Distribution

3 **Switching and Protection**

4 Continuous Power

5 Transfer Switching

6 Arc Flash Mitigation

7 Data Center Cooling

PREVIOUS

NEXT

Switching and protection

System plus system (2N) electrical distribution IEC

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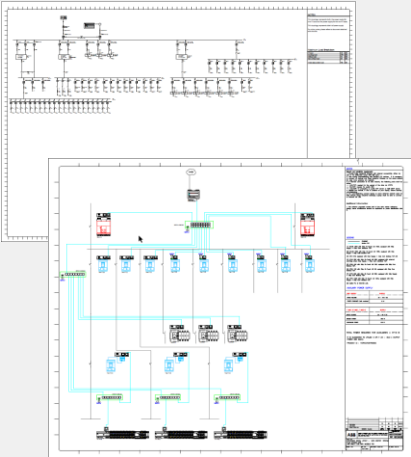
A step-by-step journey from end-use specifications and challenges to ABB solution.



GO

Reference Technical package

Technical drawings to ease your design phase.



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Reference Bill of Materials

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GO

1

Introduction & Key trends

2

Intelligent Distribution

3

Switching and Protection

4

Continuous Power

5

Transfer Switching

6

Arc Flash Mitigation

7

Data Center Cooling

Continuous Power

Solution for main and sub distribution boards IEC

Your challenge

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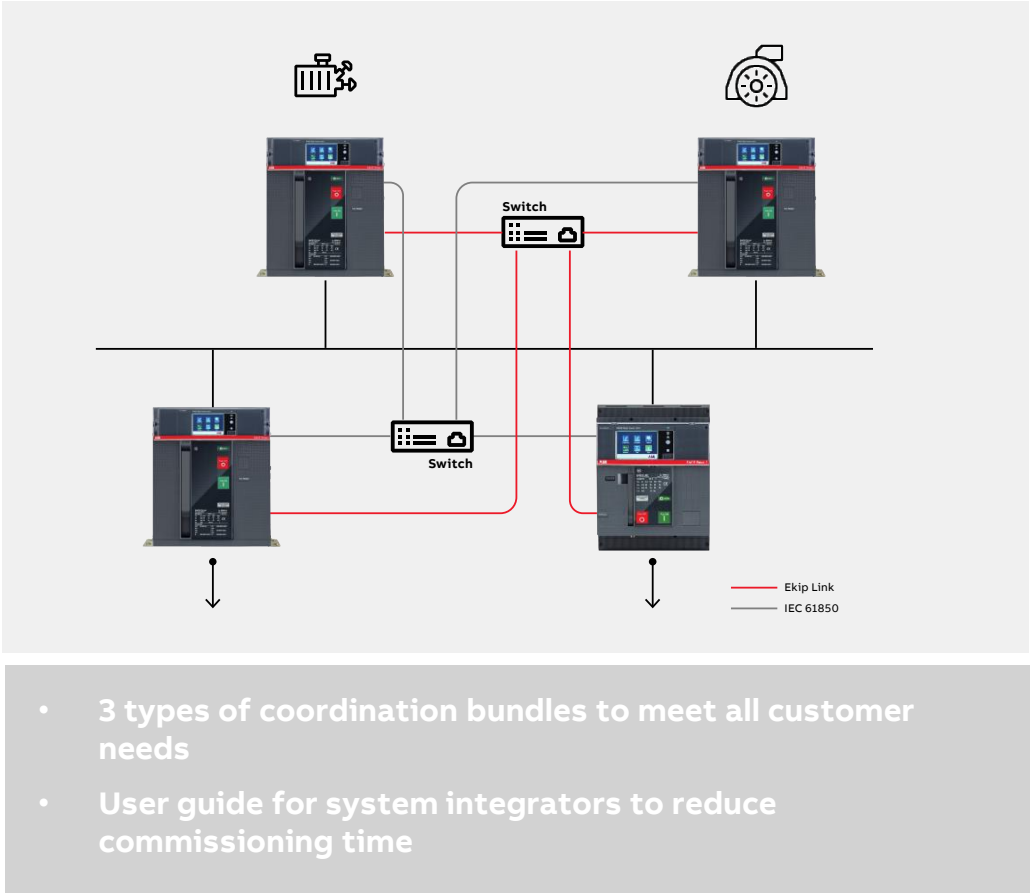
Your focused solution

Ensuring optimal power reliability

Your data center requires reliable, efficient 24/7 power critical. Outages can have a huge impact on operational costs, causing data loss, corrupted files, ruined equipment, reputational damage, and more..

A focused solution to ensure uninterrupted power for critical loads to safeguard data, assets and personnel in data center.

Figurative single-line diagram with logic selectivity



1	Introduction & Key trends
2	Intelligent Distribution
3	Switching and Protection
4	Continuous Power
5	Transfer Switching
6	Arc Flash Mitigation
7	Data Center Cooling

Continuous Power

Solution for main and sub distribution boards IEC

Application Note

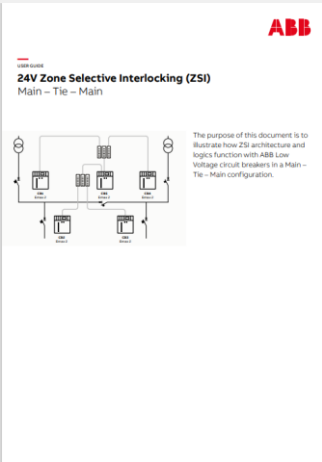
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User Guide

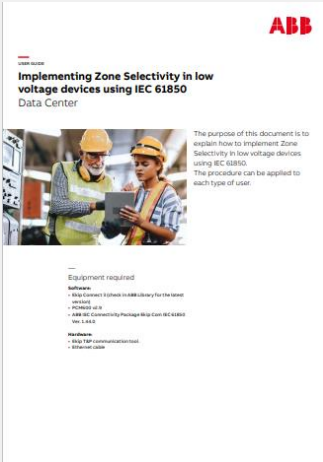
A guide through different Applications within the same segment.



GO

User Guide

A guide through different Applications within the same segment.



GO

Reference Bill of Materials

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GO

1

Introduction & Key trends

2

Intelligent Distribution

3

Switching and Protection

4

Continuous Power

5

Transfer Switching

6

Arc Flash Mitigation

7

Data Center Cooling

Continuous Power

Selectivity solution for UPS Network IEC / UL

Your challenge



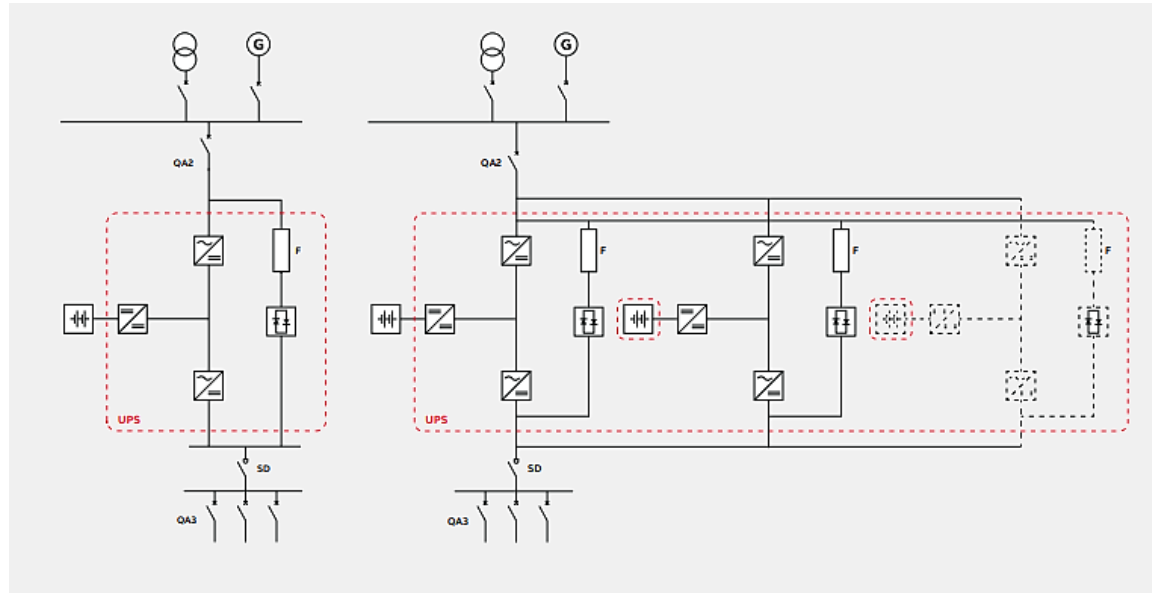
Your focused solution

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A focused solution to ensure UPS's selectivity with upstream and downstream breakers and achieve improved operations.

Figurative single-line diagram with logic selectivity



- Easy selection of upstream and downstream devices to ensure selectivity

- 1 Introduction & Key trends
- 2 Intelligent Distribution
- 3 Switching and Protection
- 4 **Continuous Power**
- 5 Transfer Switching
- 6 Arc Flash Mitigation
- 7 Data Center Cooling




Continuous Power

Selectivity solution for UPS Network IEC / UL

UPS Network IEC

Application Note


A step-by-step journey from end-use specifications and challenges to ABB solution.



Continuous Power for UPS networks' selectivity in Data Centers IEC

What is Continuous Power?
Continuous Power is a way of providing a continuous and uninterrupted power supply to critical loads. It is achieved by using a combination of UPS and generator sets, which can take over the load in the event of a power outage. This ensures that the power supply is always available, even in the event of a power outage.

Why you need Continuous Power solutions
Data Centers are critical infrastructure facilities that house the world's most important data. They are the backbone of the global economy, and their downtime can be catastrophic. Therefore, it is essential to ensure that the power supply to these facilities is always available, even in the event of a power outage. Continuous Power solutions provide the best way to achieve this, as they ensure that the power supply is always available, even in the event of a power outage.

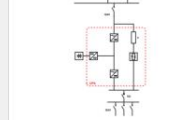


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Reference Bill of Materials

To speed up your projects with fixed and open BOMs.




PowerWave 33 53
Available Configurations

Single Input Feed

Red Input Feed

Model	Power (kW)	Power (kVA)	Power (MVA)	Power (MW)	Power (MVA)	Power (MW)	Power (MVA)
33-100	100	125	150	175	200	225	250
33-200	200	250	300	350	400	450	500
33-300	300	375	450	525	600	675	750
33-400	400	500	600	700	800	900	1000
33-500	500	625	750	875	1000	1125	1250
33-600	600	750	900	1050	1200	1350	1500
33-700	700	875	1050	1225	1400	1575	1750
33-800	800	1000	1200	1400	1600	1800	2000
33-900	900	1125	1350	1575	1800	2025	2250
33-1000	1000	1250	1500	1750	2000	2250	2500




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UPS Network UL

Application Note


A step-by-step journey from end-use specifications and challenges to ABB solution.



Continuous Power for UPS networks' Selectivity in Data Centers UL

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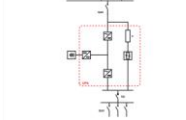


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GO

1 Introduction & Key trends

2 Intelligent Distribution

3 Switching and Protection

4 Continuous Power

5 Transfer Switching

6 Arc Flash Mitigation

7 Data Center Cooling

PREVIOUS

NEXT

Continuous Power

Containerized power distribution for IT Loads IEC / UL

Your challenge

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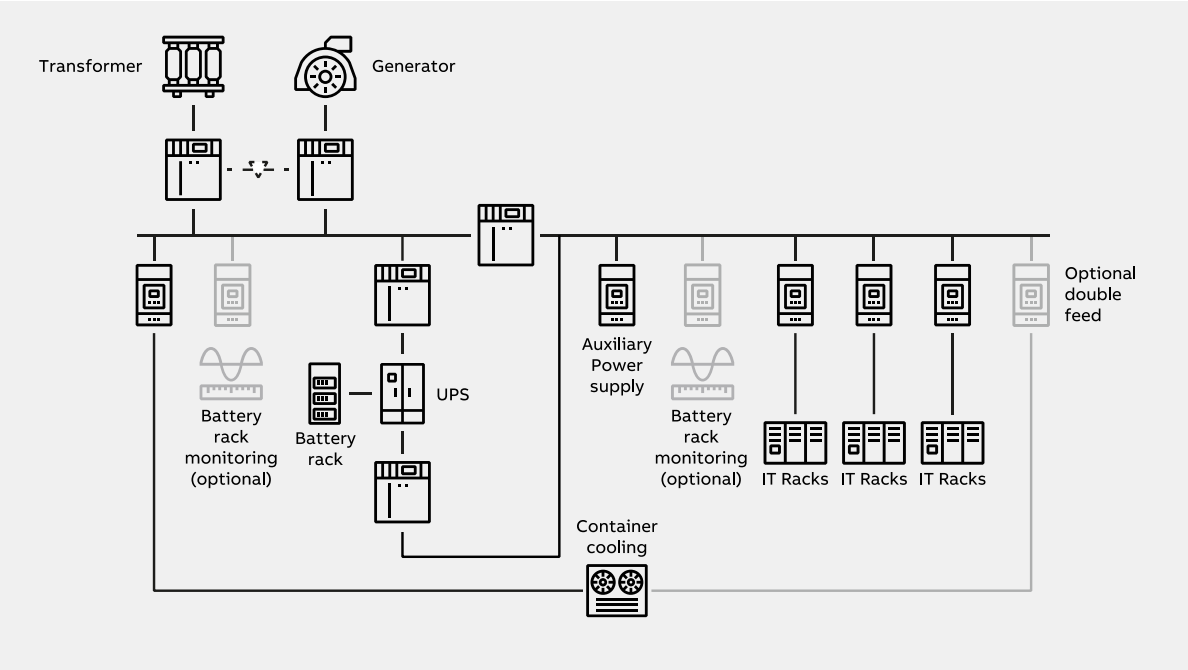
Your focused solution

Ensuring optimal power reliability

Your data center requires modularity and scalable solution so that entire design time is reduced

A focused solution to ensure modular solution to be fitted into container.

Containerized power distribution system for IT Loads



- Modular and compact design
- Improves reliability while minimizing environmental impact

1	Introduction & Key trends
2	Intelligent Distribution
3	Switching and Protection
4	Continuous Power
5	Transfer Switching
6	Arc Flash Mitigation
7	Data Center Cooling

Continuous Power

Containerized power distribution for IT Loads IEC

Application Note

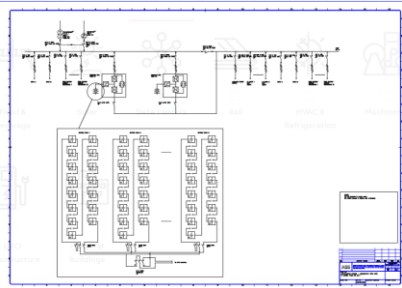
A step-by-step journey from end-use specifications and challenges to ABB solution.



GO

Reference Technical package

Technical drawings to ease your design phase.



GO

Reference Bill of Materials

To speed up your projects with fixed and open BOMs.



GO

1

Introduction & Key trends

2

Intelligent Distribution

3

Switching and Protection

4

Continuous Power

5

Transfer Switching

6

Arc Flash Mitigation

7

Data Center Cooling

Continuous Power

Containerized power distribution for IT Loads UL

Application Note

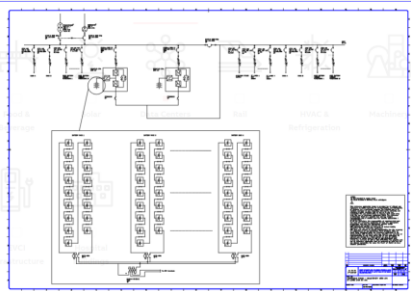
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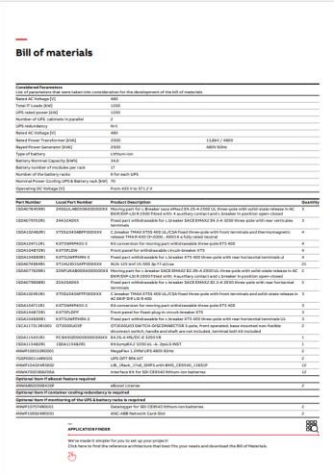
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GO

Reference Bill of Materials

To speed up your projects with fixed and open BOMs.



GO

1

Introduction & Key trends

2

Intelligent Distribution

3

Switching and Protection

4

Continuous Power

5

Transfer Switching

6

Arc Flash Mitigation

7

Data Center Cooling

Transfer Switching

Redundant Power Systems in Data Centers UL

Your challenge



Your focused solution



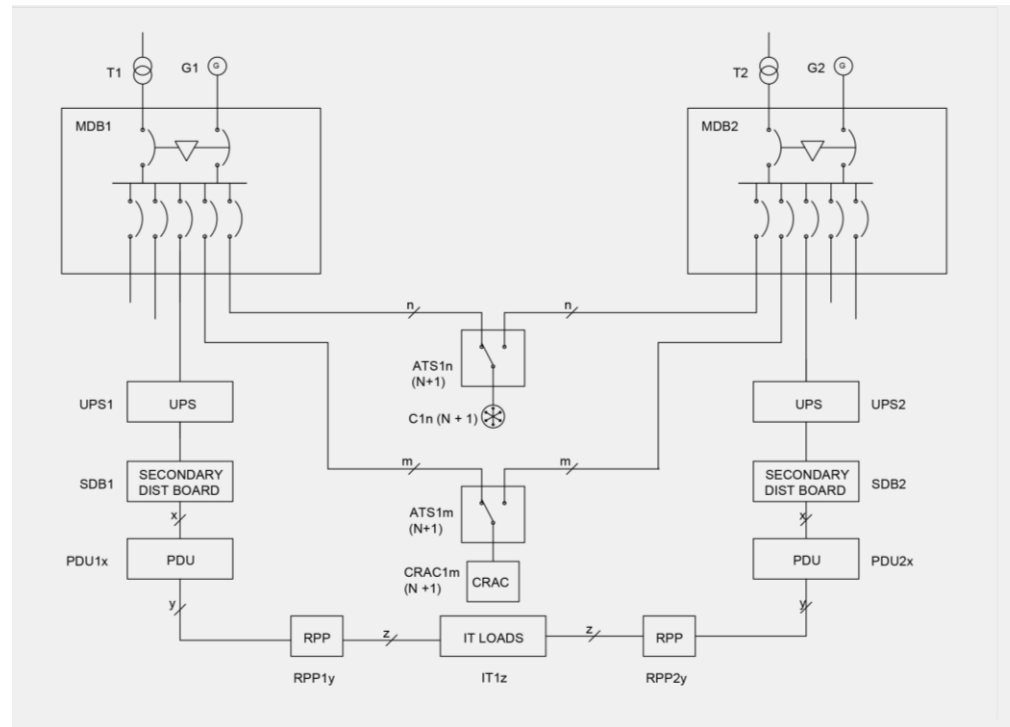
GO TO THE TECHNICAL DOCUMENTS

Get outstanding reliability and ensure continuity of service for all types of electrical loads

Whether you need to ensure steady power delivery to IT loads or simply keep the lights on, your need is “one-stop shop” for transfer switch solutions.

A guide to the right component selection for each transfer switching in data center.

Reference Design: ATS in Redundant (2N) Data Centers



- One stop shop
- Rely on pre-configured and pre-tested ABB applications

1 Introduction & Key trends

2 Intelligent Distribution

3 Switching and Protection

4 Continuous Power

5 **Transfer Switching**

6 Arc Flash Mitigation

7 Data Center Cooling

PREVIOUS

NEXT

Transfer Switching

Redundant Power Systems in Data Centers UL

Application Note

A step-by-step journey from end-use specifications and challenges to ABB solution.



GO

1 Introduction & Key trends

2 Intelligent Distribution

3 Switching and Protection

4 Continuous Power

5 **Transfer Switching**

6 Arc Flash Mitigation

7 Data Center Cooling

Arc Flash Mitigation

Solution for UPS battery system IEC

Your challenge



Active protection to reduce the impact of an Arc

Arc flashes are an ongoing risk in high-power facilities, in addition to passive protection, an active protection can increase safety.

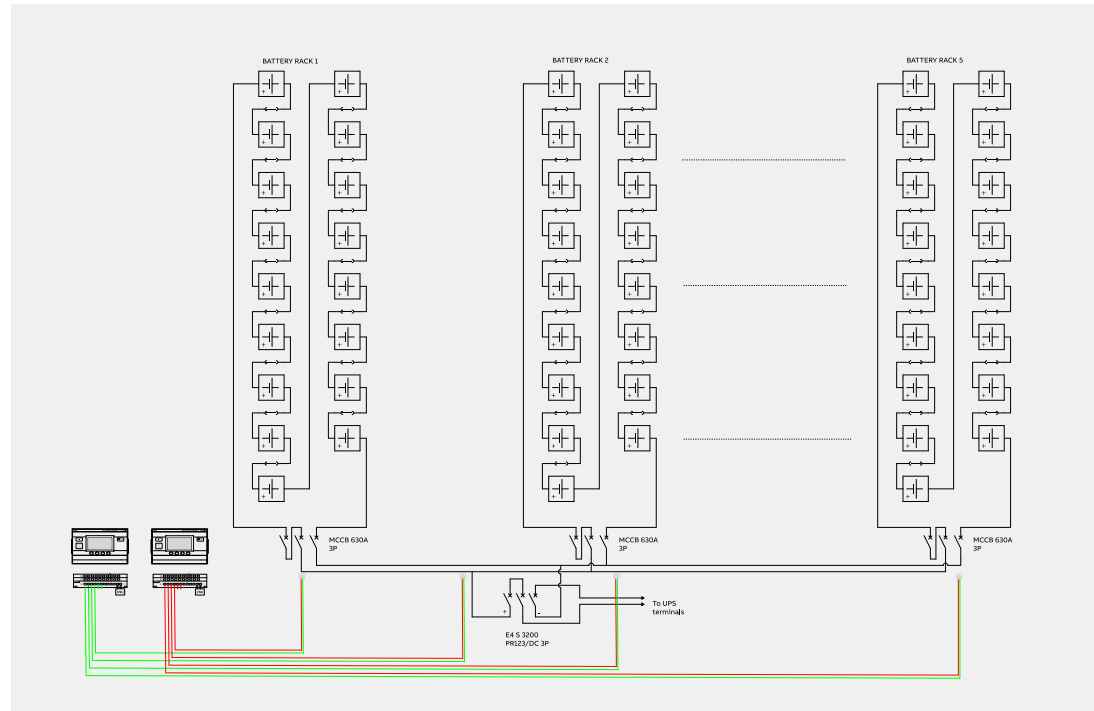
Your focused solution

A focused solution to increase the safety of equipment and personnel with active protection of UPS battery system that reduce arc flashes.



GO TO THE TECHNICAL DOCUMENTS

Arc flash application for 2940 kWh UPS battery system



- Reduced downtime, equipment damage and recovery costs.
- Best in-class efficiency of up to 97% in double conversion mode and up to 99% in eBoost mode.

1 Introduction & Key trends

2 Intelligent Distribution

3 Switching and Protection

4 Continuous Power

5 Transfer Switching

6 Arc Flash Mitigation

7 Data Center Cooling

PREVIOUS

NEXT

Arc Flash Mitigation

Solution for UPS battery system IEC

Application Note

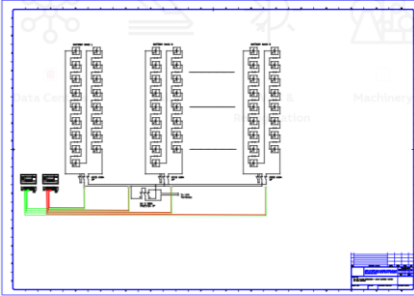
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GO

Reference Technical package

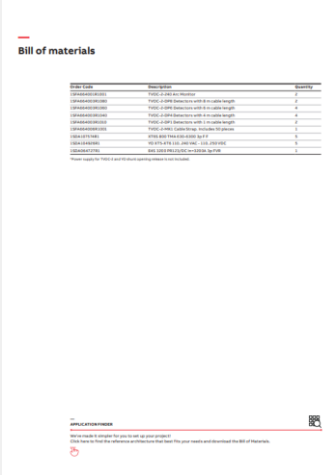
Technical drawings to ease your design phase.



GO

Reference Bill of Materials

To speed up your projects with fixed and open BOMs.



GO

- 1

Introduction & Key trends
- 2

Intelligent Distribution
- 3

Switching and Protection
- 4

Continuous Power
- 5

Transfer Switching
- 6

Arc Flash Mitigation
- 7

Data Center Cooling

Data Center Cooling

Motor Starting and Protection Solutions IEC/UL

Your challenge



40% of data center energy usage is attributed to cooling, making it crucial to optimize the efficiency of fans, pumps, and compressors.

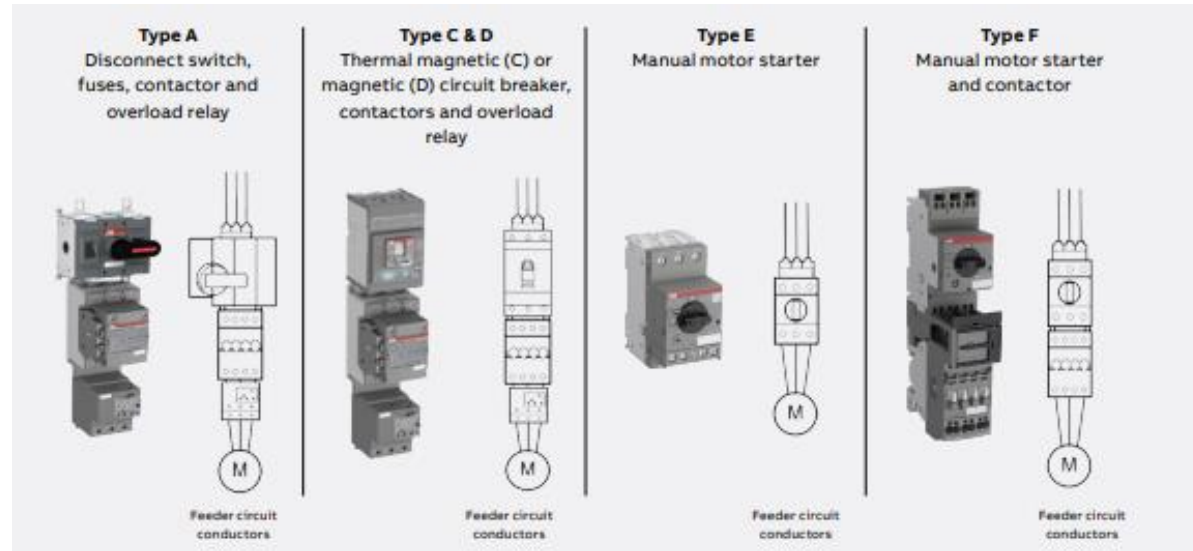
Your focused solution



ABB's solutions provide a comprehensive range of technologies and expertise that can help HVAC OEMs design and implement effective and efficient cooling solutions for data centers

GO TO THE TECHNICAL DOCUMENTS

UL coordinated solutions



- Reduce 80% of energy consumption of the HVAC control circuit system
- Reduce 50% control panel assembly time
- Save up to 35% of the space in the chiller control panel

1 Introduction & Key trends

2 Intelligent Distribution

3 Switching and Protection

4 Continuous Power

5 Transfer Switching

6 Arc Flash Mitigation

7 Data Center Cooling

PREVIOUS

NEXT

Data Center Cooling

Motor Starting and Protection Solutions IEC/UL

Brochure

A step-by-step journey from end-use specifications and challenges to ABB solution.



GO

- 1 Introduction & Key trends
- 2 Intelligent Distribution
- 3 Switching and Protection
- 4 Continuous Power
- 5 Transfer Switching
- 6 Arc Flash Mitigation
- 7 Data Center Cooling

Application Finder



Application Note

Continuous Power solutions for Containerized power distribution in Data Centers

1750KW N+1 IT Loads | IEC Solution



Are you searching for perfect coordinated UPS and power distribution solutions for IT loads? Take a look at the pre-designed ABB solution.

UPSs play a vital role in providing power continuity for IT loads in a data center, but a perfect continuous power solution must include a resilient power distribution system coordinated with the UPS.

What is continuous power distribution with UPS?

It is the capability of converting, when needed, power from AC input to DC output and distributing power to the load. It is a reliable power distribution system to supply your IT loads, all pre-designed solutions are the right choice.

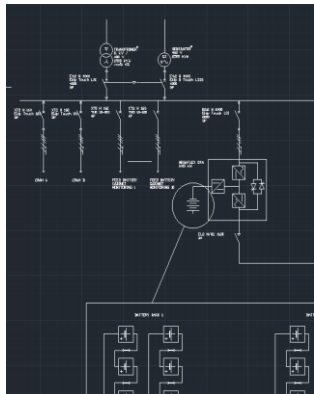
Why you need an UPS solution for distribution safety?

Containerized Power Supply Applications ensure continuous power. It is applied to critical loads under specific installation conditions, with a 4-hour fully continuous operation to ensure enough proper coordination with the protection devices, provided that only the backup of the battery affected by the fault clears the event.

Main benefits:

- Secure system & reliability
- High redundancy and pre-designed availability
- Scalability
- High power density with minimizing environmental impact, reducing energy losses, lowering costs and use of materials
- Modular design
- Complete solution suitable for containers
- Simple & intuitive
- Low operational complexity, lower installation & maintenance

Part Number	Local Part Number	Product Description	Quantity
1SDA0735H9L		MOVING PART FOR C-BREAKER SACE EMAX E4.2N 4000 THREE-POLE WITH SOLID-STATE RELEASE IN AC EXP1 TOUCH-LSI R 4000 FITTED WITH 4 AUXILIARY CONTACT AND C-BREAKER IN POSITION OPEN-CLOSED	1
1SDA0735E9L		FIXED PART WITHDRAWABLE FOR C-BREAKER SACE EMAX E4.2 4000 THREE-POLE WITH REAR HORIZONTAL TERMINALS (VER. V)	1
1SDA0740B9R		FRONT TERMINALS UPPER 3po FOR FIXED PART WITHDRAWABLE (INSTALL) E4.2	1
1SDA0680E9L		BREAKING PART MAX XT2H 360 FIXED THREE-POLE WITH FRONT TERMINALS	4
1SDA0735E9L		MOVING PART FOR C-BREAKER SACE EMAX E2.2N 2000 THREE-POLE WITH SOLID-STATE RELEASE IN AC EXP1 TOUCH-LSI R 2000 FITTED WITH 4 AUXILIARY CONTACT AND C-BREAKER IN POSITION OPEN-CLOSED	2
1SDA0735D9R		FIXED PART WITHDRAWABLE FOR C-BREAKER SACE EMAX E2.2 2000 THREE-POLE WITH REAR HORIZONTAL TERMINALS	2
1SDA0740B9R		FRONT TERMINALS LOWER 3po FOR FIXED PART WITHDRAWABLE (INSTALL) E2.2	2
1SDA0600E9R		C-BREAKER SWITCH-DISCONNECTOR EMAX K2B1MS 2000 FIXED FOUR-POLE WITH FRONT	2



Application Note

A step-by-step journey from end-use specifications and challenges to ABB solution.

Reference Bill of Materials

To speed up your projects with fixed and open BOMs.

Reference Single Line Diagram

Technical drawings to ease your design phase.

Application Finder

Find your reference Architecture in one search!

Segment



Battery Energy Storage Systems



Food & Beverage



Solar



Data Centers



Rail



HVAC & Refrigeration



Machinery

Standard
End use

Select...
Select...



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APPLICATION FINDER

Find the reference architecture tailored to your needs and speed up your project thanks to our new **Application Finder Tool!**

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