Energize the Future with High Power Density

Webinar

2022

Smart - Power Distribution Unit / Remote Power Panel

Welcome

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Introduction

EXPRESS ACCESS

- Secure your spot for a free consultation
- How to configure your Server Room Distribution
- More Information at the end of this event

Data Center

Data Centers are critical for everyday life

Data Centers

The backbone of the digital society

Data centers are critical for everyday life

Drivers for global ICT* growth:

- Developing world demand
- Ubiquitous communication
- Social media
- Regulation/legal
- Big data and analytics

*Information Communication Technologies

Data center customer needs

- Project speed , in size and number of facilities
- 24/7 availability
- Energy management
- Cyber security
- Environmental responsibility

Data Centers

The backbone of the digital society

A market with continuous growth

Market Outlook

11% CAGR data center construction growth (2020-2025)

$38.8B global spend on colocation services by 2023 (HIS Market)

Number of hyperscale data centers globally **338** in 2016 vs **628** by end of 2021

COVID-19 is driving data center demand

Industry challenges

6-9 months needed to build a data center

37% of data center outages occur because of power supply failure, 22% because of IT system errors

12,5* datacenters renovated in next 3 years

COVID-19 is impacting data center construction

*per organization

https://datacenters.abb.com/

Your Data Center Partner

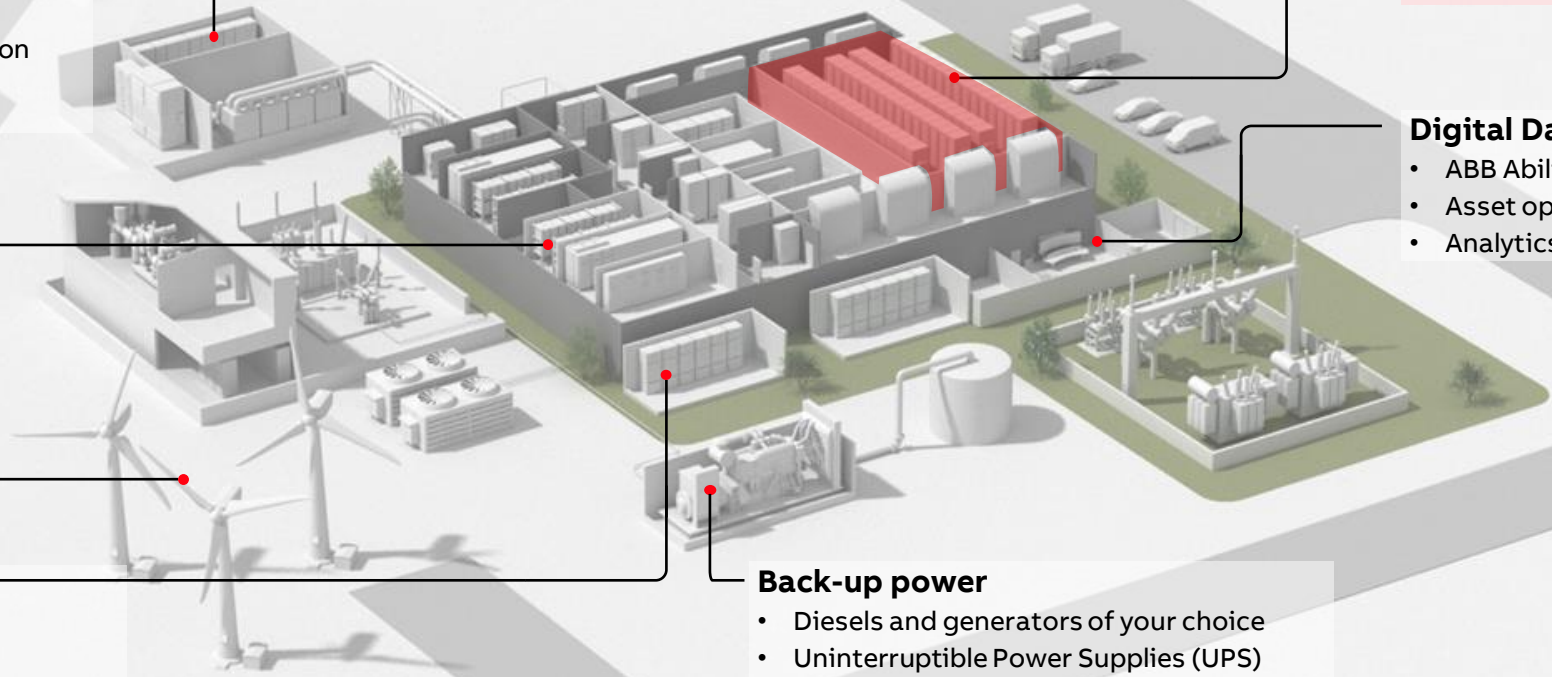
Integrating renewables, power, automation and services

HVAC components
- High efficiency motors
- Variable speed drives
- ABB Ability™ electrical Distribution Control System (DCS)

MV power distribution
- Protection relays
- Distribution transformers
- Active voltage conditioning

Renewable integration

Power Quality
- Harmonics active filters
- Power factor correction
- Active voltage conditioner



LV power distribution
- LV switchgear
- Remote Power Panels
- Busway Distribution Solutions
- ABB AbilityTM electrical Distribution Control System (DCS)

Digital Datacenter Operations (DDO)
- ABB Ability™ data center automation
- Asset optimization
- Analytics engine

Back-up power
- Diesels and generators of your choice
- Uninterruptible Power Supplies (UPS)
- Battery Energy Storage Systems (BESS)

Complete portfolio of products, solutions and services for the data center industry

What other challenges can we solve for you?

Critical elastic infrastructure solutions for Serverius

Data center providers in the Netherlands

Situation

- **CUSTOMER**: Serverius operates two data centers located between the largest internet backbones of Amsterdam and Frankfurt

Challenge

- **NEEDS:**
  - **Modernize its data center** in Meppel, ensuring that it is fully equipped for further expansion and to meet the ever-increasing demands of its customers.
  - **Minimize downtime** for existing customers and achieving a higher level of quality.

ABB solution

- Data center is carried out completely redundantly – from the grid operator's incoming power supply to the final racks in the data floor.

System:

- **ABB's SMISSLINE TP system**: the world's first touch-safe busbar system is another critical element of the Severius modernization. This allows load-free modules and components to be made live and removed without the use of Personal Protective Equipment (PPE) to protect against electrical hazards.
- **Circuit Monitoring System (CMS)** system for energy consumption monitoring. This compact CMS is ideally suited for power monitoring and analysis, and energy efficiency optimization.

ABB is keeping the power on at DODIT data center

Mission Critical Power and Automation Infrastructures

Singapore

CHALLENGE

Christopher Han, DODIT MD, " ABB listened to our needs and came in with a great value proposition on scalable solutions which lowers massive upfront capital and operating expenses. This is important for growing data centers like us. With ABB Ability™ , it also enables us to perform proactive maintenance across our fleet of electrical equipment by gathering the data and sending the information to our engineers to rectify any issues before it happens, preventing costly downtime"

SOLUTION

Medium-voltage switchgear, low voltage products : Emax 2, SMISSLINE TP, CMS 700, MCCB, MCB, RCCB, and ABB Ability™ Data Center Automation.

OUTCOME

A flexible and energy-efficient medium-voltage solution.

Save time during the Planning Phase

Design and Specification Teams and Consultants

Benefits

Energy transparency
Clear visibility of energy consumption is made possible at branch level.

One sensor for all currents
Measurement of any kind of current – DC, AC or mixed- up to 160A

Maximum reliability and security
Utmost data security in CMS-700 / SCU100 thanks to encrypted SNMP v3 and SSL certificate.

OWNER
DESIGN CONSULTANT
ENGINEERING COMPANY

Get help from the new Server Room Sub-Distribution Configurator

Busway or Remote Power Panel, IEC or UL, with a constant focus on energy density, safety and flexibility, ABB's solution guides you through your Data Center planning phase.

Configuration in less than 10 minutes

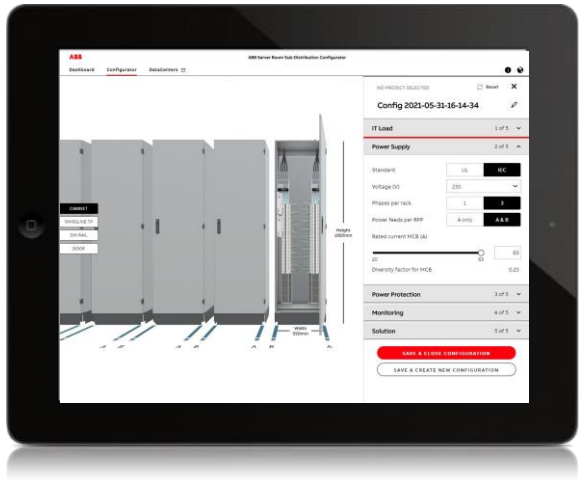
3D visualization

Energy Distribution for Data Center

ABB Server Room Sub-Distribution Configurator

Access:

- Via Google Chrome: http://abbrpp.hiddenltd.com/
- Via iOS (iPad only): «ABB Data Centers 3D» in the App Store
- Available in 8 languages: German, English, French, Spanish, Russian, Chinese and Japanese



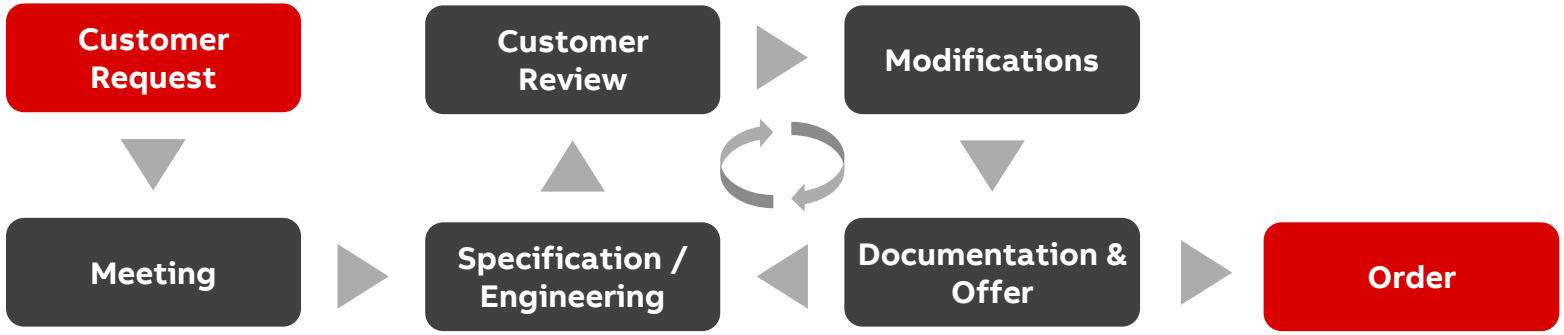
Energy Distribution for Data Center

How to save time with pre-type tested solutions

Approach

Preconfigured RPP with Configurator[1]

Customized Project incl. Engineering



Energy Distribution for Data Center

ABB Server Room Sub-Distribution Configurator

iPad

Access:

Via iOS (iPad only): «ABB Data Centers 3D» in the App Store

QR Code for iPad

Google Chrome

Access:

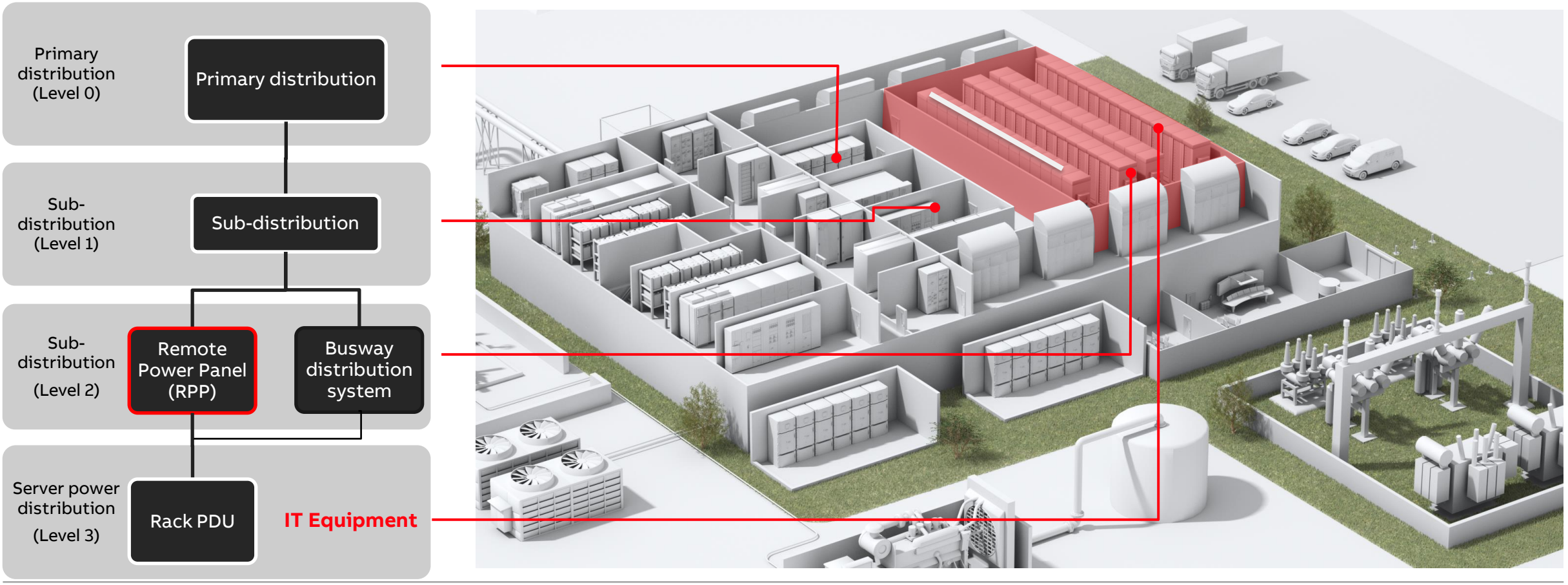
Via Google Chrome Browser: http://abbrpp.hiddenltd.com/

QR Code for Browser

Products & Solutions for Sub-distribution

Energy Distribution for Data Center

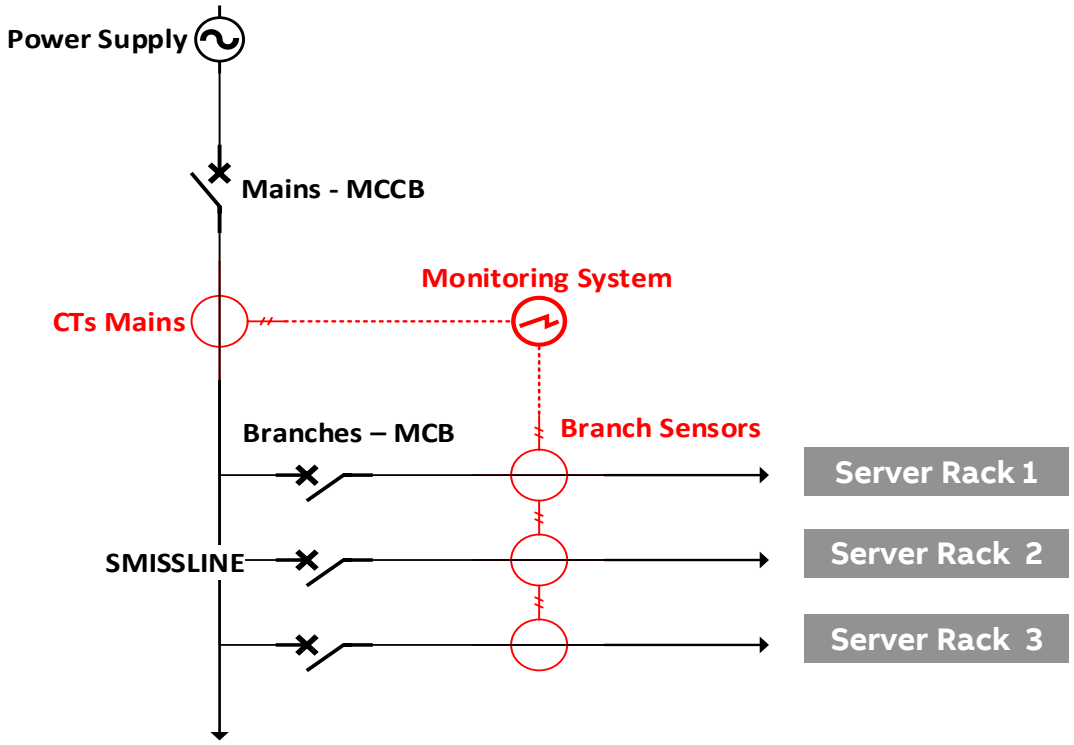
Power Distribution Levels



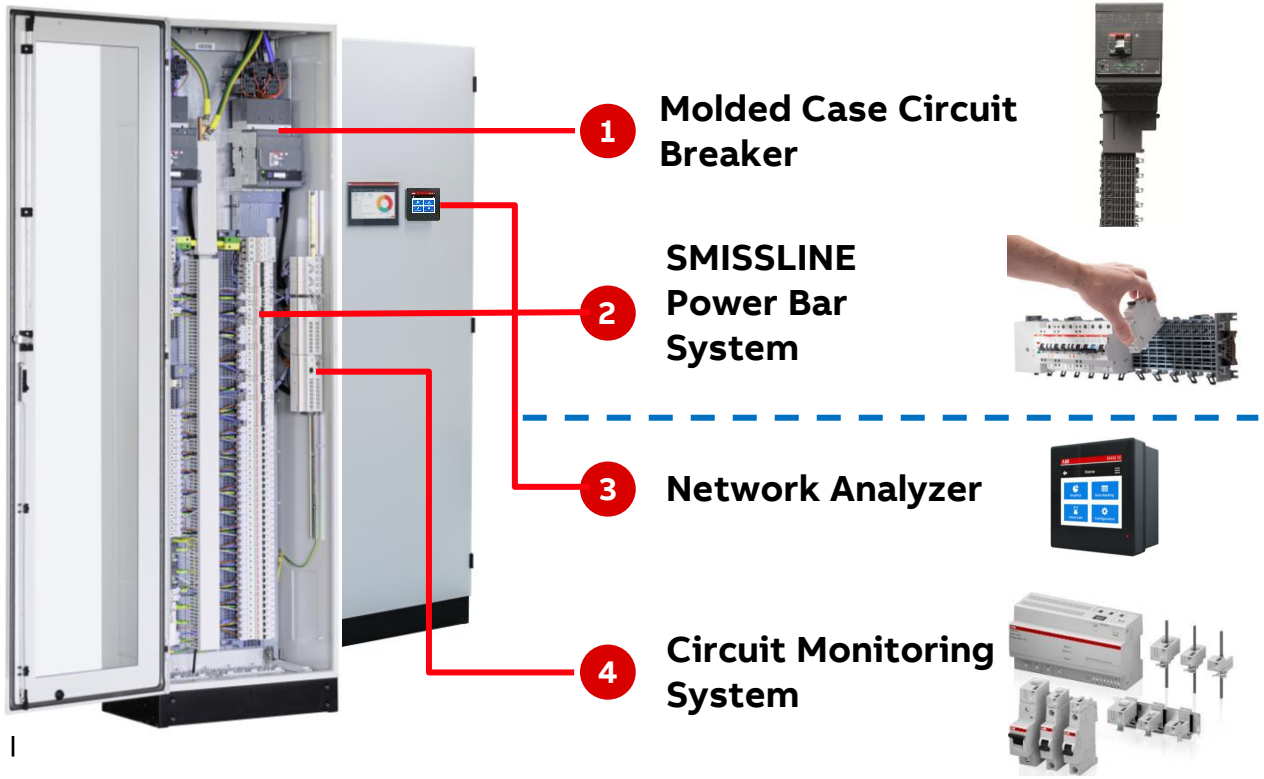
Energy Distribution for Data Center

Remote Power Panels

Schematic Diagram



Main Components



Energy Distribution for Data Center

Main Components for RPP

Molded Case Circuit Breaker

- High breaking capacity in compact dimensions
- Increased safety for your whole Data Center
- For more information add an intelligent module like the Ekip Display

SMISSLINE TP System

- Add or change devices under voltage
- Touch proof operation without personal protective equipment

Network Analyzer

- Measures the efficiency and power consumption of your RPP
- All information about voltage and current on a quick sight
- Protocols like RS485 allow an integration in your Control-System

Circuit Monitoring System

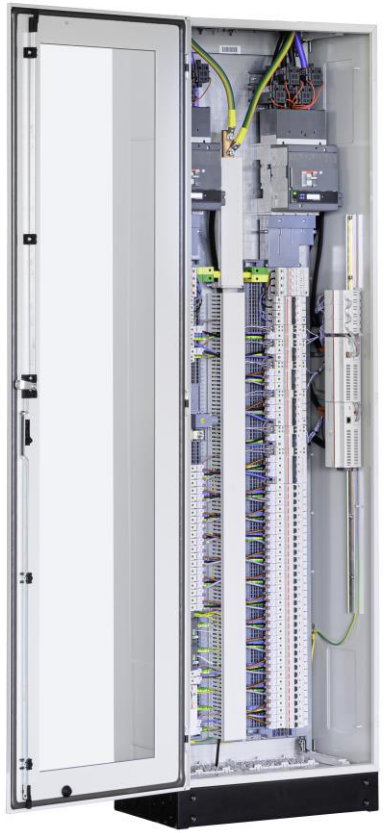
- Retrofit into existing installations
- Commissioning with integrated webserver
- AC and DC measurement without additional space
- Scalable and flexible bus wiring

Energy Distribution for Data Center

Configuration variants providing full flexibility in scaling-up your sub-distribution

RPP-250A

RPP-400A



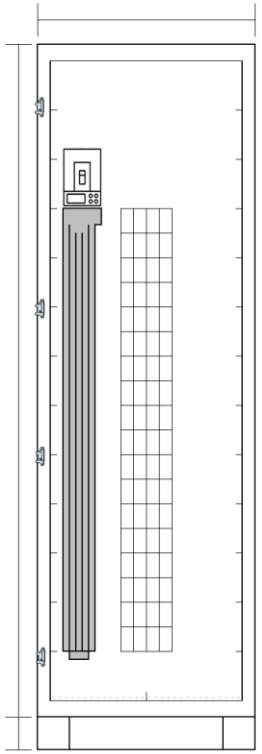
RPP-630A

RPP-800A

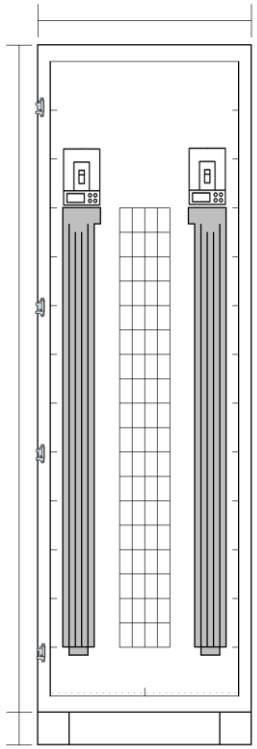
Energy Distribution for Data Center

Behind the curtains of the configuration variants

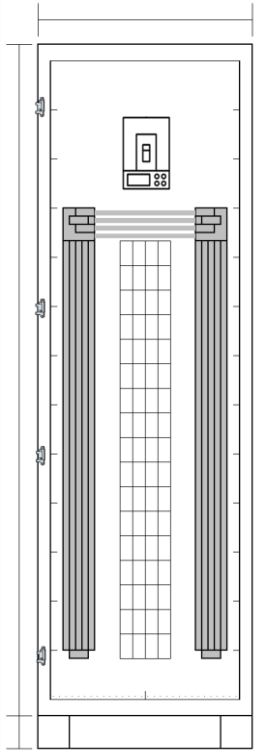
1x RPP-250A with 1 SMISSLINE modules up to **128/84*** connections



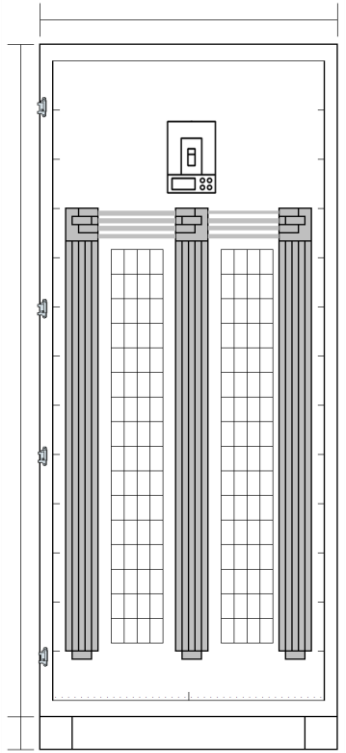
2x RPP-250A with 2 SMISSLINE modules up to **128/84*** connections



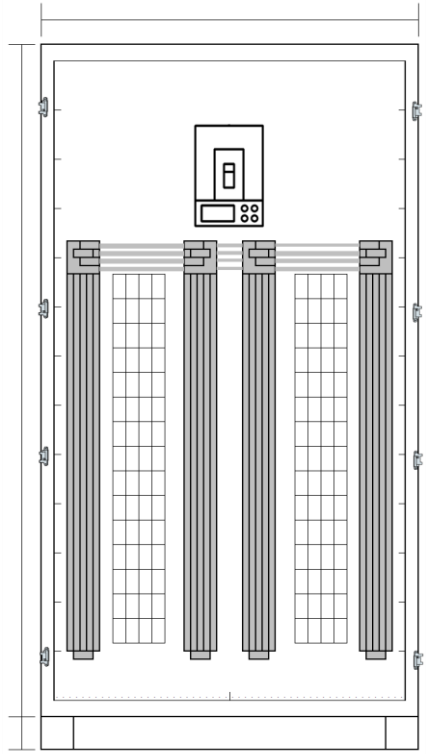
RPP-400A with 2 SMISSLINE modules up to **128/84*** connections



2x RPP-630A with 3 SMISSLINE modules up to **180/120*** connections



RPP-800A with 4 SMISSLINE modules up to **256/168*** connections



*Including remote tripping indication devices

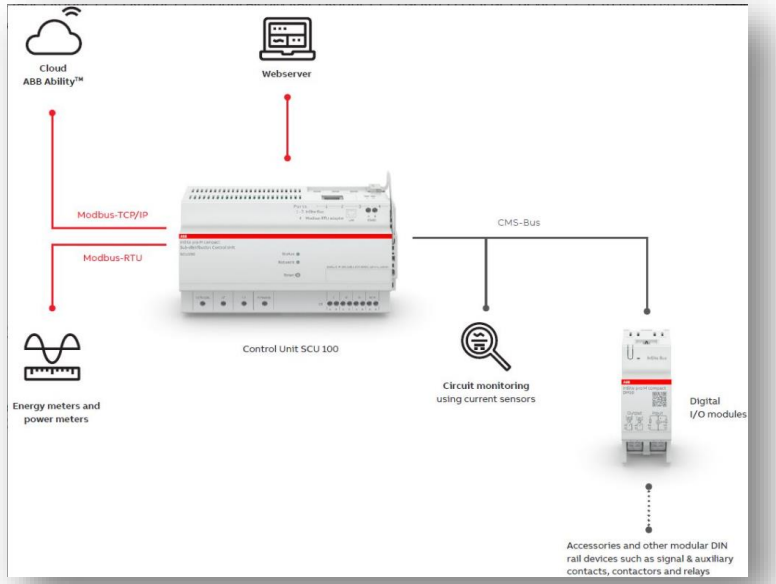
Main elements for Energy Sub-distribution in Server Room

SMISSLINE

Plug-in socket system which allows load-free plugging in and unplugging of live devices without PPE

Branch Monitoring System

A complete solution for monitoring electrical parameters in distribution panels, enabling power monitoring and energy efficiency analysis in buildings and critical power applications



Energy Distribution for Data Center

SMISSLINE Power Bar – Designed to withstand

SMISSLINE Touch Proof and Power Bar

125A

250A

Technical features

Overload and short-circuit protection EN61439-6

Conditional IEC:

- 100kA/ABB Tmax XT4 250 A 415V for 125A/250A system
- 25kA/ABB Tmax T/XT 250 A 690V for 125A/250A system

Unconditional IEC:

Rated peak withstand current (Ipk) Main circuit: 30 kA

Rated voltage Un: IEC: 690V AC 1000V DC;

Max. rated current: 125A; 250A

Approvals (without additional socket):

EN61439-6 VDE, UL508A for 125A and 250A system

DNV/GL

CCC is for a busbar system not needed

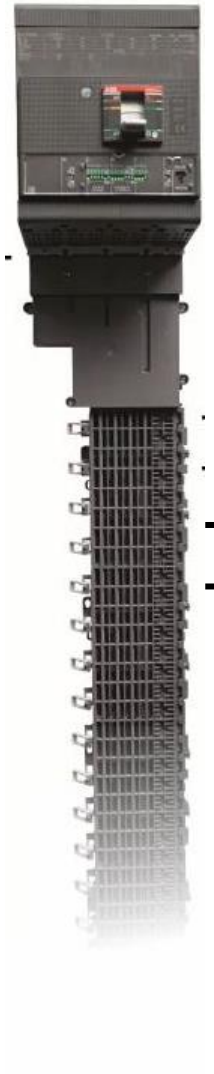
The new SMISSLINE Power Bar

Designed to withstand

Direct Feed connection to
Molded Case Circuit Breaker

Optional devices: Heat Sinks
They can reduce the average temperature at the XT4 by 15K

Busbar combination of 3P-3P+N
From 125A – 250A configuration of phases at your fingertips

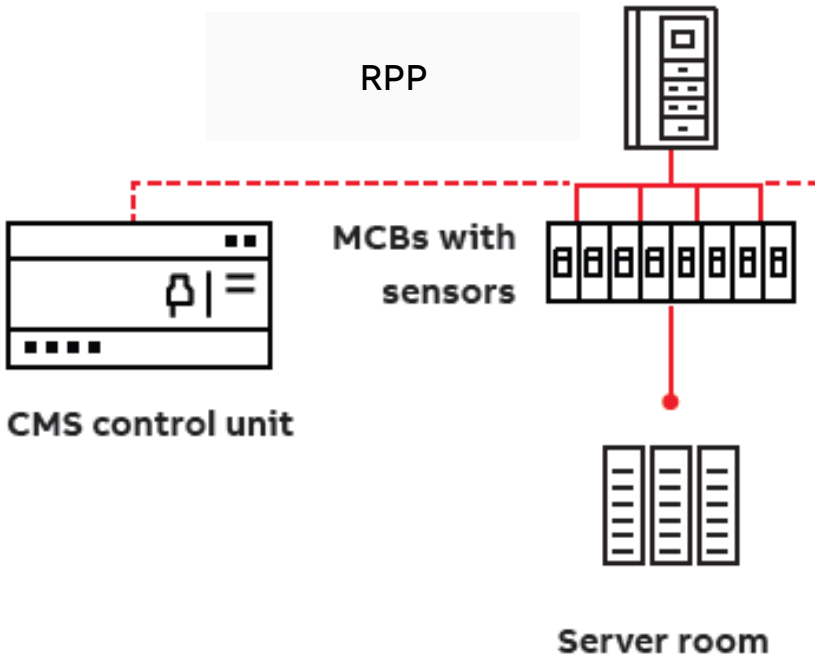


Quick and Simple installation
Position, tip back, nap I, lock and connect

Safely working without personal protection under power load-free plugging in and unplugging

Circuit Monitoring System

System Topology



System Description

Circuit Monitoring System – CMS is an ultra-compact and high-performance multichannel measurement system for AC and DC branch monitoring up to 96 sensors.

It represents a complete solution for monitoring electrical parameters in distribution panels, enabling power monitoring and energy efficiency analysis in buildings and critical power applications

Measuring Parameters

Mains
Measurement from mains

- Current [A]
- Voltage [V]
- Power factor
- THD V, I [%]
- Energy: Active [kWh], reactive [varh], apparent [VAh]
- Power: Active [W], reactive [var], apparent [VA]

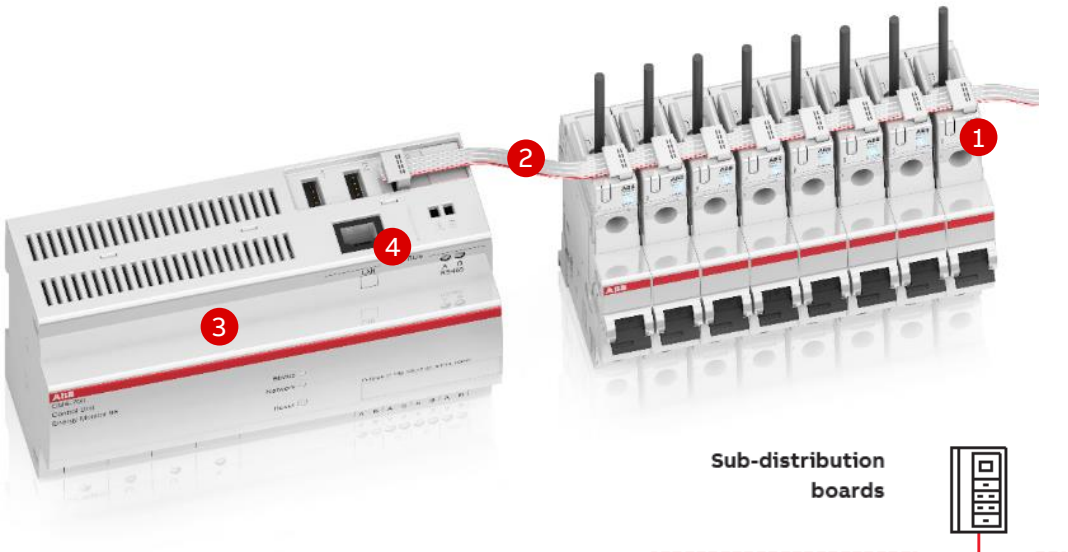
Branches
Measurement from the branches

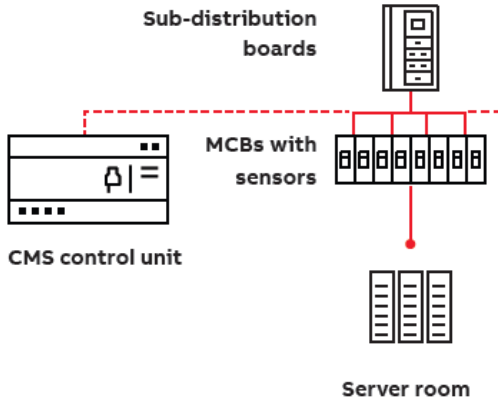
- AC Current TRMS [A]
- DC Current TRMS [A]

Calculations from the branches

- Active power [W]
- Active energy [kWh]

How the CMS system works?



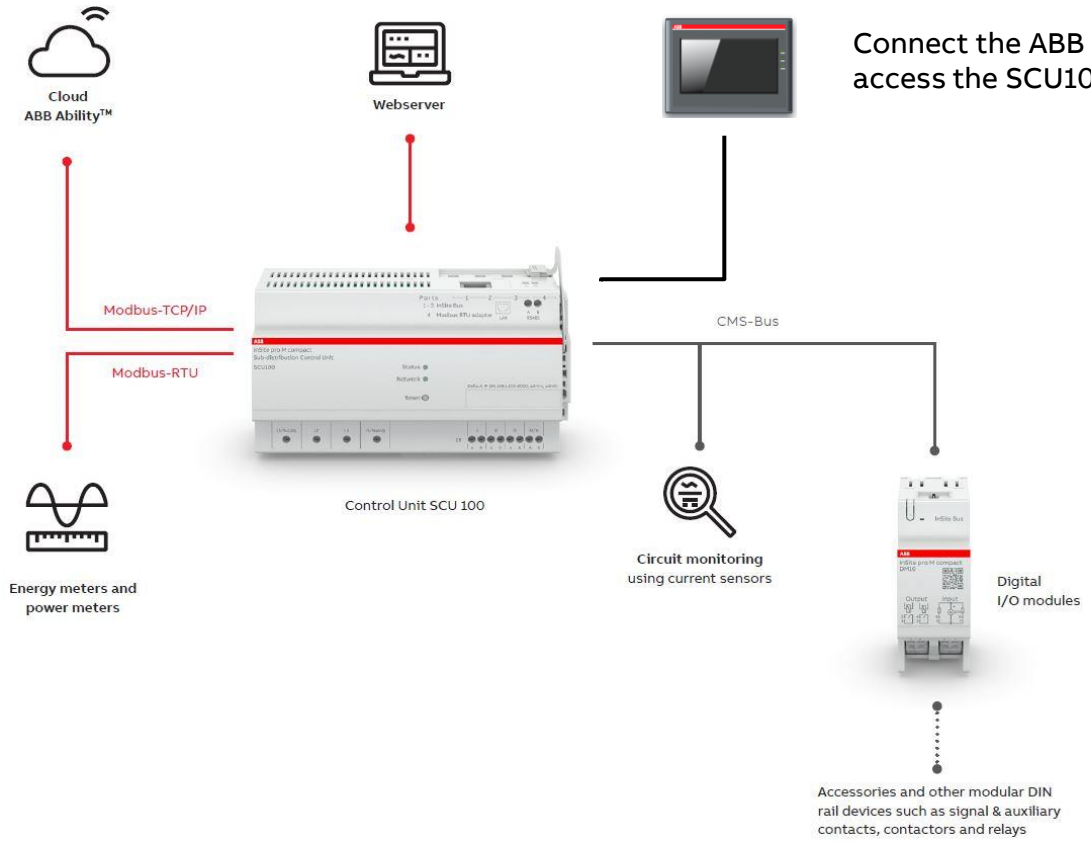


1. CMS sensors allow both AC and DC branch monitoring, providing clear visibility of energy consumption for each single line.
2. Sensors are connected to the Control Unit by means of a flexible flat cable, with fully customizable positioning of sensors where needed.
3. The Control Unit evaluates the measurement data picked up by the sensors and makes it available via the built-in interfaces.
4. Depending on the unit, several embedded communication protocols are available for smooth network integration: Modbus RTU, Modbus TCP/IP, SNMP v1/v2 and encrypted v3.
5. The built-in Web UI of CMS-700 / SCU 100 allows the complete commissioning of the system, as well as visualization and easy export of the measured data.

CMS Web User Interface Overview

Access real-data...

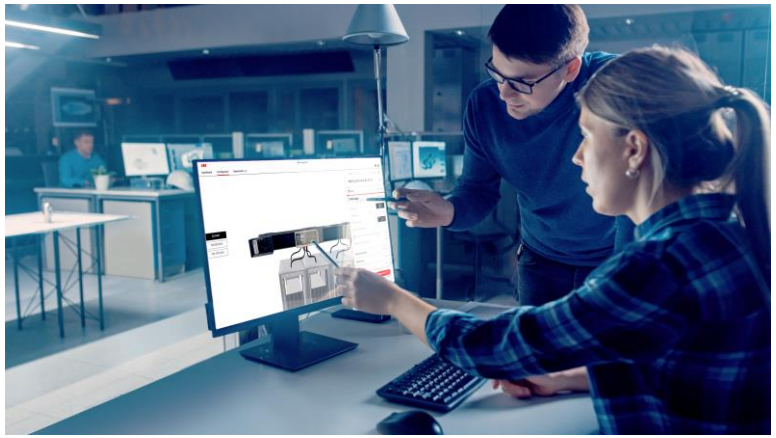
Thanks to the built-in Web UI, any internet browser can be used to carry out the complete commissioning of the system, as well as visualization and easy export (manually or automatically) of the measured data from the control unit.



Connect the ABB Lite Panel and access the SCU100's WebUI

EXPRESS ACCESS IN 3 EASY STEPS

REGISTER FOR A FREE CONSULTATION WITH AN ABB EXPERT



SCAN ME

Limited to the first 50 registrations!

1. SCAN THE CODE
2. FILL OUT THE REGISTRATION FORM
3. WE WILL SCHEDULE A CALL WITH YOU

Thank you!

Nico Ninov **Rami Karroum**

Let’s keep in touch