Low voltage Power Distribution

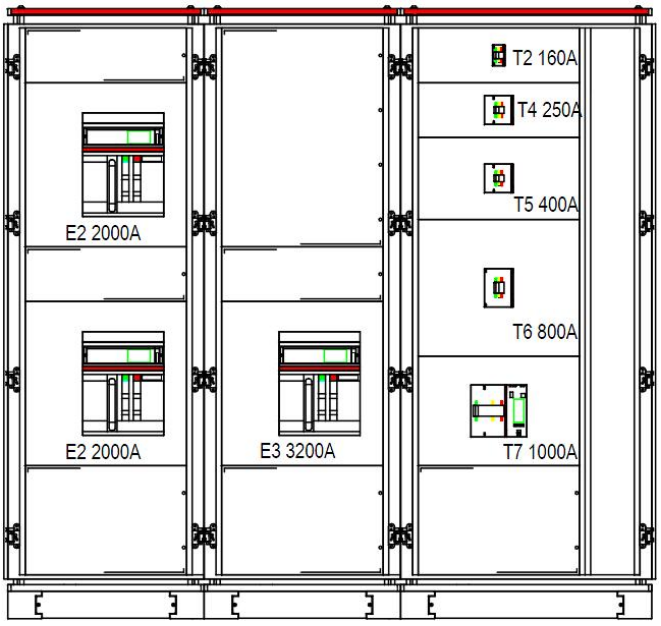


ABB offers Safe, Reliable and compact low voltage switchboard solutions for data center application. The offered solution complies to latest international standards like

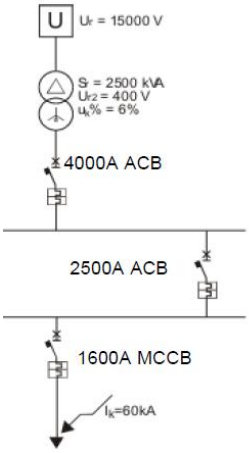
1. Low Voltage Switchboard complies to IEC 60439-1/BS EN 60439
2. Degree of protection complies to IEC 60529.
3. Over Voltage Category to II
4. Degree of protection against mechanical impact shall be IK10 in
5. Accordance IEC 62262 for blind doors and IK09 for glazed doors
6. Internal arc containment test in accordance to IEC61641

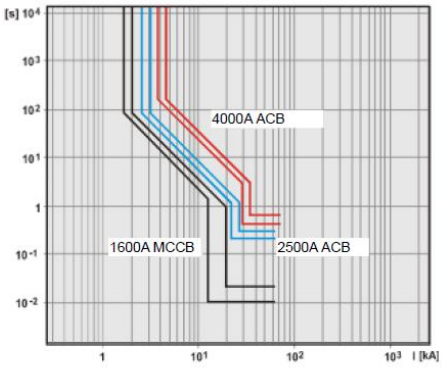
The LV switchboards are completely designed by ABB complying international regulations. To ensure safety operation personnel, Switchboard has undergone stringent tests prescribed by international regulations. The system is completely modular in nature provides utmost flexibility to user to accommodate any changes even when equipment is at site.

Safe, Reliable and low life cycle cost circuit breakers solution

1. Circuit breakers with least watt loss for efficient in-panel performance.
2. Selection of bus bar materials to have least watt loss.
3. Circuit Breakers with highest mechanical life which provides longer life cycle.
4. Circuit breakers with highest electrical life.
5. Circuit breakers with proper discrimination
6. Circuit breakers with multiple communication options which ensures ease of facility management
   - ❑ Wired communication with different protocols
   - ❑ Wireless communication

Perfectly coordinated Circuit Breaker Solution

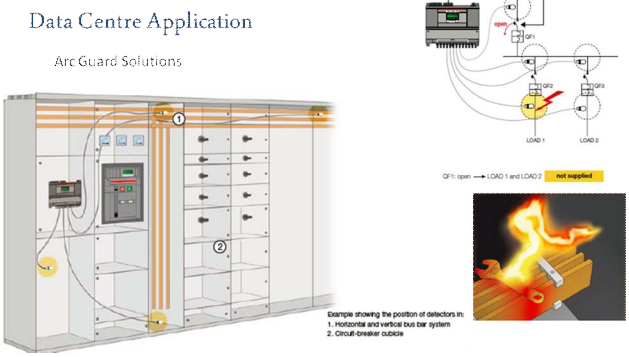




Coordinated devices to:

1. Guarantee safety for people and installations
2. Identify and exclude only the zone affected by a problem
3. Limiting the effects of a malfunction
4. Reducing the stress on components(Cables/Loads) in the affected zone
5. Ensuring service continuity with good quality supply voltage for best efficiency of the overall system avoiding unwanted tripping which leads to loss of production.

Safe Data Center operation



ACTIVE PROTECTION

To ensure safety of the data centers, ABB offers active protection against any internal faults within the switch board.

Arc guard limits the destructive effect of arc by use of arc detectors. Arc guard system ensures safety for both operating personnel as well as equipment.

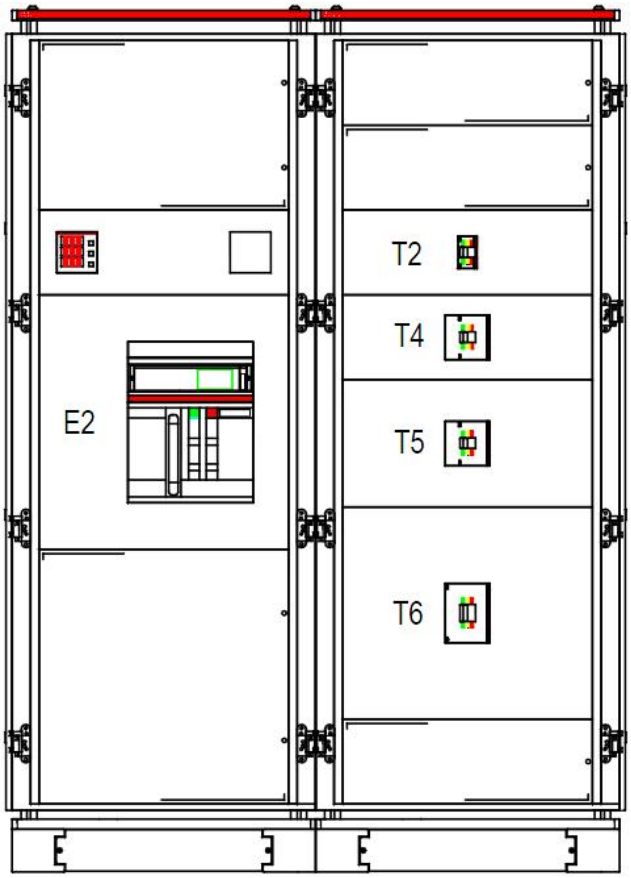
Arc detectors located in various critical locations of the switchboard ensures incomer is disconnected in the event of formation of arc within the switchboard.

Power Distribution units

The power distribution shall be modular in construction with option for modification at field level. The enclosure system shall be bolted and modular in nature.

Applicable standards

- Circuit Breakers offered shall comply IEC 60947-2
- Ingress protection shall comply with IEC 60529



Technical Features

The enclosure system is supplied by ABB. The enclosure is made out of minimum of 2.0mm thick sheet steel with ingress protection of IP65. The enclosure is having glass door for viewing for complete height of the panel. All live parts are completely shrouded to have maximum safety of the operating personnel.

The PDU is available up to current rating 800A. The PDU id offered both copper and aluminium bus bars.

The Power distribution unit full fills the requirement of single incomer, Dual incomer and Dual incomer with bypass and static transfer switch option. The circuit breakers are of draw out/Plug in type for easy online replacement.

The system offered is modular and scalable. It is possible to extend to PDU without a major shutdown. Load feeder wise electrical parameters are transferred cyclically to BMS station or Energy management station. With this facility management is in a position to view energy consumption by each client level.

The PDU employs operator interface screen (touch screen) in front of the panel. It shall be access all parameters from these touch panels and shall also display status circuit breakers. Each PDU shall incorporate minimum of 7inch touch screen for this purpose.

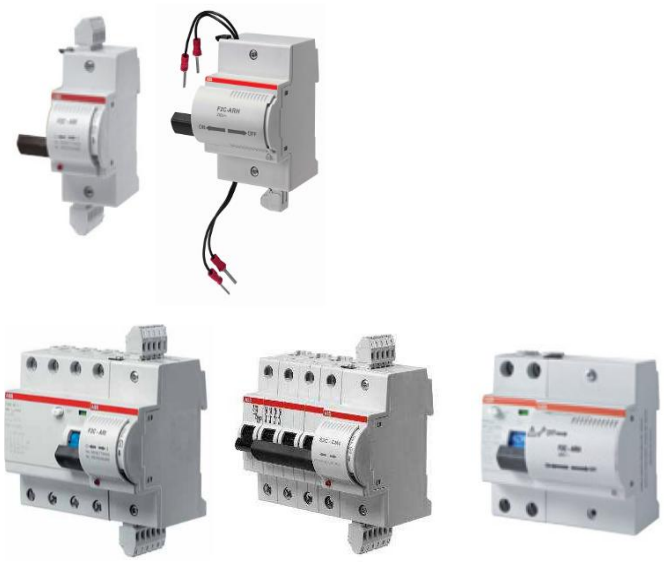
The circuit breakers (MCCB) offered are having inbuilt protection releases which are communication capable in nature. The electrical parameters and events are transferred cyclically to energy management station or BMS station via modbus protocol.

The PDU employs for final load circuits miniature circuit breakers are of plug in type with auto reclosing facility. This is to ensure that the circuit breakers are automatically reclosed in the event of trip (limited to 3 reclosing). Beyond which the information is transferred to EMS/BMS station about the status of the circuit breakers.

The circuit breakers offered are with lowest watt loss performance for best system efficiency in the market. The PDU has an option of incorporating K13 or K20 rated Transformer. The efficiency of these transformers are high to ensure lower losses. Neutral of MCCB is of 200% rating to compensate for network harmonic currents and unbalanced current.

The PDU has an option of cable entry either from bottom or from top. The PDU design is such that for general service requirement, It shall be front accessible.

Auto Reclosing Feature



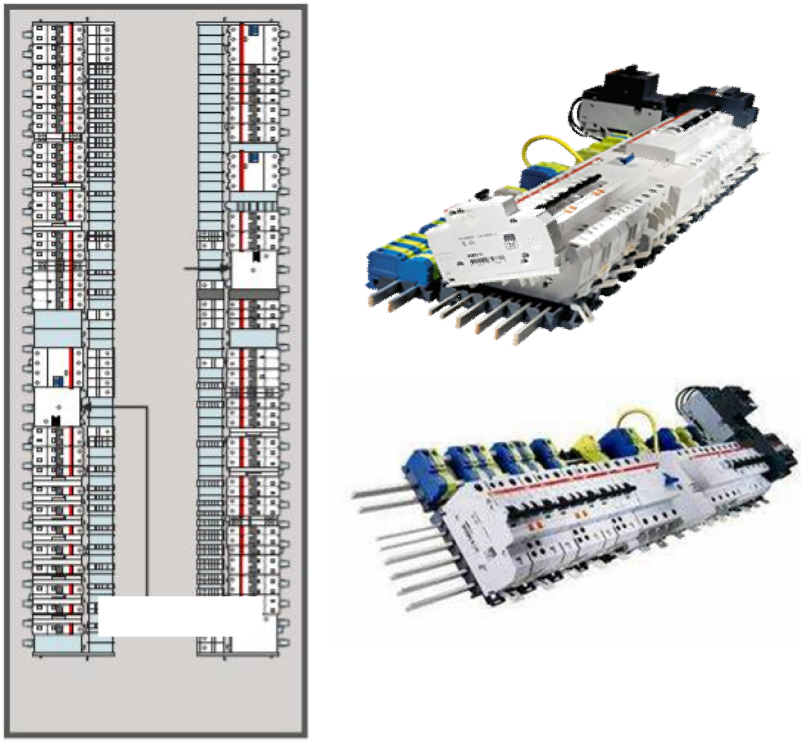
AUTO RECLOSING DEVICES

The final protection devices which are feeding servers and other critical equipment in a data centers can be fitted with auto reclosing devices.

There is always a possibility of nuisance tripping due to surges where the auto reclosers can switch the circuit breakers without much of down time. This brings down the down time of servers.

The reclosers attempts maximum of 3 times to reclose the circuit breakers. If fault persists, no reclosing takes place during 4th attempt

Pluggable safe Solutions



SMISSLINE

The protection devices are snapped into plug-in socket. It ensures lot of time savings and additionally it provides user benefit of quick and easy exchangeability of devices. Any addition of load calls for only plugging and connecting additional devices.

The new generation bus bar system is tested in accordance IEC 60439 offers

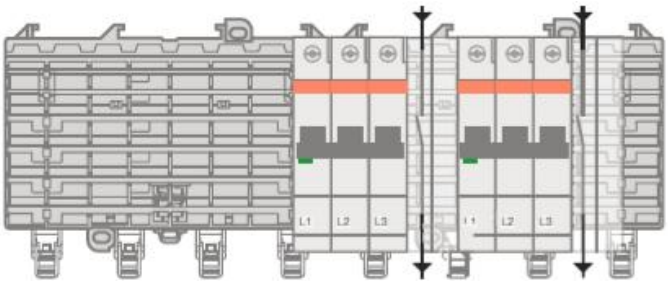
- Fast, Flexibility and modularity
- Choice of selection of devices
- Easy upgradability
- Time saving
- Most important aspect of reliability and safety

Solutions for Data centre application

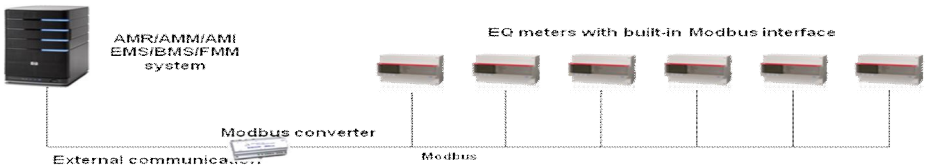
Load Distribution
The load distribution can be modified at site and phase connection can be identified without removing devices.

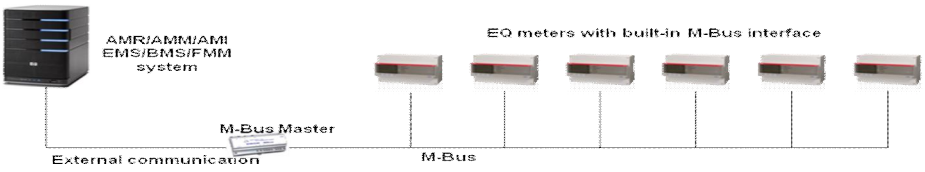
Flexibility
SMISSLINE makes it possible to plan the requirement even before system is known. Loads can be reassigned very easily. Entire installation can be reassigned with ease.

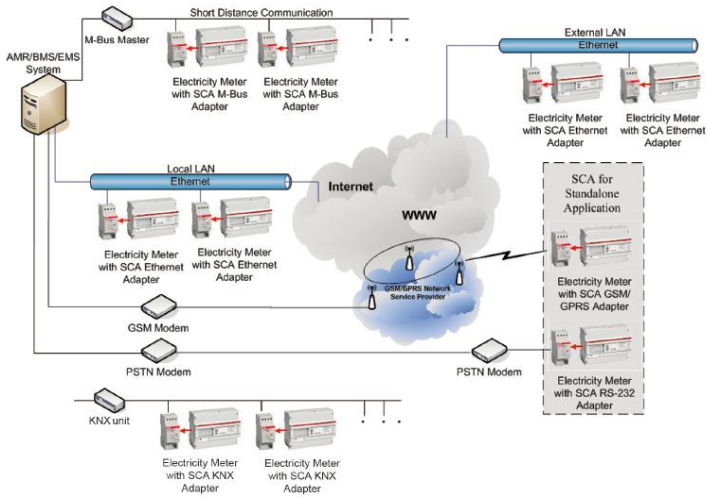
Freedom
SMISSLINE provides freedom of choice of mounting mixed poles of MCB's next to each other



Branch Circuit Monitoring Devices







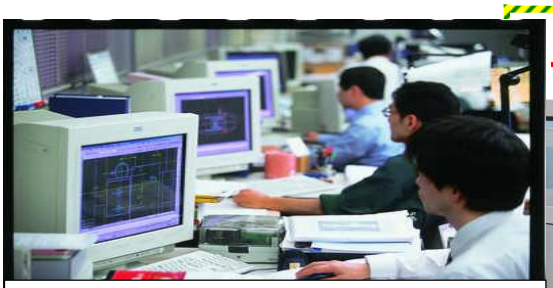
Key applications
- Billing applications
- Applications in Commercial buildings
- Application in Industry
- Object metering

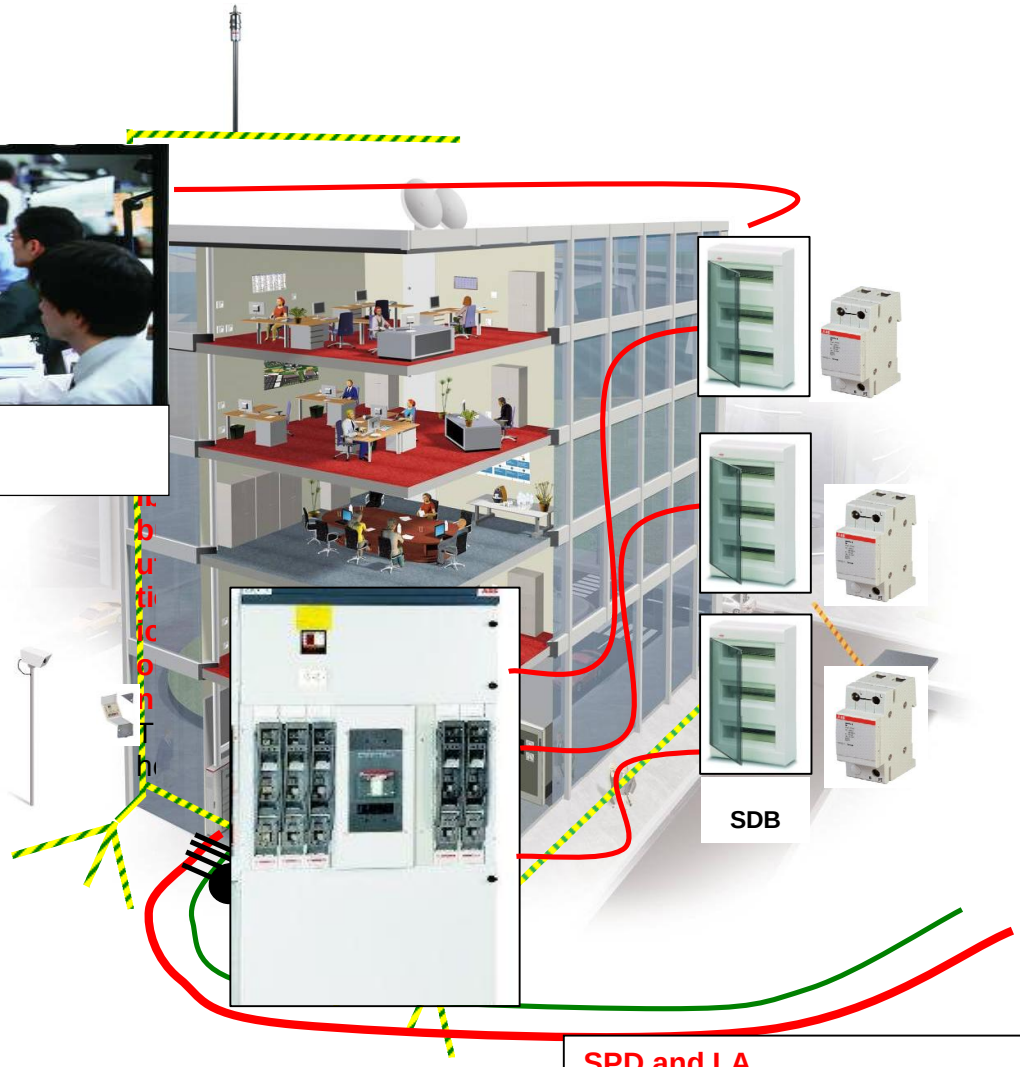
Key performance
- 3 phase
- Direct connected up to 80 A
- Transformer connected 1, 2 or 5 A
- Active or active and reactive energy
- Accuracy class: B or A (Cl.1 or Cl.2) (DELTAplus), B (Cl.1) (DELTAmax)
- Wide voltage range (100 - 500 V AC)
- LCD with 7 digits (7 mm digits)
- Optional 2 or 4 tariffs
- Low power consumption
- Tariff control via inputs or communication (only DELTAplus)

Additional for DELTAmax
- Tariff control via internal clock
- Previous values (daily or month)
- Load profile (15, 30 or 60 min interval)
- Max demand (15, 30 or 60 min interval)
- Current harmonics and Total Harmonic Distortion (THD) (up to 9th harmonic)
- Event log
- Power outage time
- Time controlled outputs

Solutions for Data centre application

Surge Protecting Devices and Lightning Arrestors





SPD and LA

ABB offers wide range of Surge protection devices and Lighting protection devices suitable for various surge protection application.

These devices safeguards the complete installation and equipment against surges and lightning

Contact us for further information on Low Voltage solution for Data Centers

ABB Limited
Design Institute
88/3, 88/6, Basavanahalli Village
562123, Bangalore North, Karnataka, INDIA
email: Ramprasad.satyam@in.abb.com

003/2012