Solutions for Data center application

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
- Low Voltage Switchboard complies to IEC 60439-1/BS EN 60439
- Degree of protection complies to IEC 60529
- Over Voltage Category to II
- Degree of protection against mechanical impact shall be IK 10 in
- Accordance IEC 62262 for blind doors and IK09 for glazed doors
- 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.
**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 1.5mm 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.

**Mirage 200/250/400/630/800 Amps**
The Mirage type tested MCCB panel boards have been designed for easy handling and quick, simple installation for the electrical contractor.
Auto Reclosing Feature

Mirage complies with IEC 60439 requirements with plug and play feature.

Compact MCCB design ensures maximum cabling area within the enclosures.

The solutions offers optional features like metering cubicle, cable extension box and free standing pedestal.

Removable top & bottom gland plates are provided for ease of installation and cabling. The removal of these also allows for fitting of additional items such as top and bottom extension boxes, plinths and metering panels.

Auto Reclosing devices

Te 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

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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

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

Measurement in power distribution units has never been so compact and perfectly integrated. It is finally possible to monitor the individual circuits of an installation.

The CMS is the perfect solution for areas where high system availability is required. This includes industrial facilities, banks, insurance companies or public buildings such as hospitals or airports, which depend heavily on their electronic systems operating smoothly. Failures here lead to major financial losses. The sensors are the most important part of the system and their compact size is impressive. The sensors can be easily installed anywhere and they do not cause any problems during installation or commissioning.

Whether AC, DC or mixed current, CMS sensors capture all types of current within a measurement range of 0–80 A (TRMS). Even upper sidebands in the signal trace are captured.

Every sensor has its own signal processing microprocessor, meaning measurement data is transmitted digitally via the bus interface to the control unit.

Energy management system

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) (DELTApplus), B (Cl. 1) (DELTAmx)
- Wide voltage range (7 mm digits)
- Optional 2 or 4 tariffs
- Low power consumption
- Tariff control via inputs or communication (only DELTApplus)

Additional for DELTAmx
- 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

Surge Protecting Devices and Lightning Arrestors

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