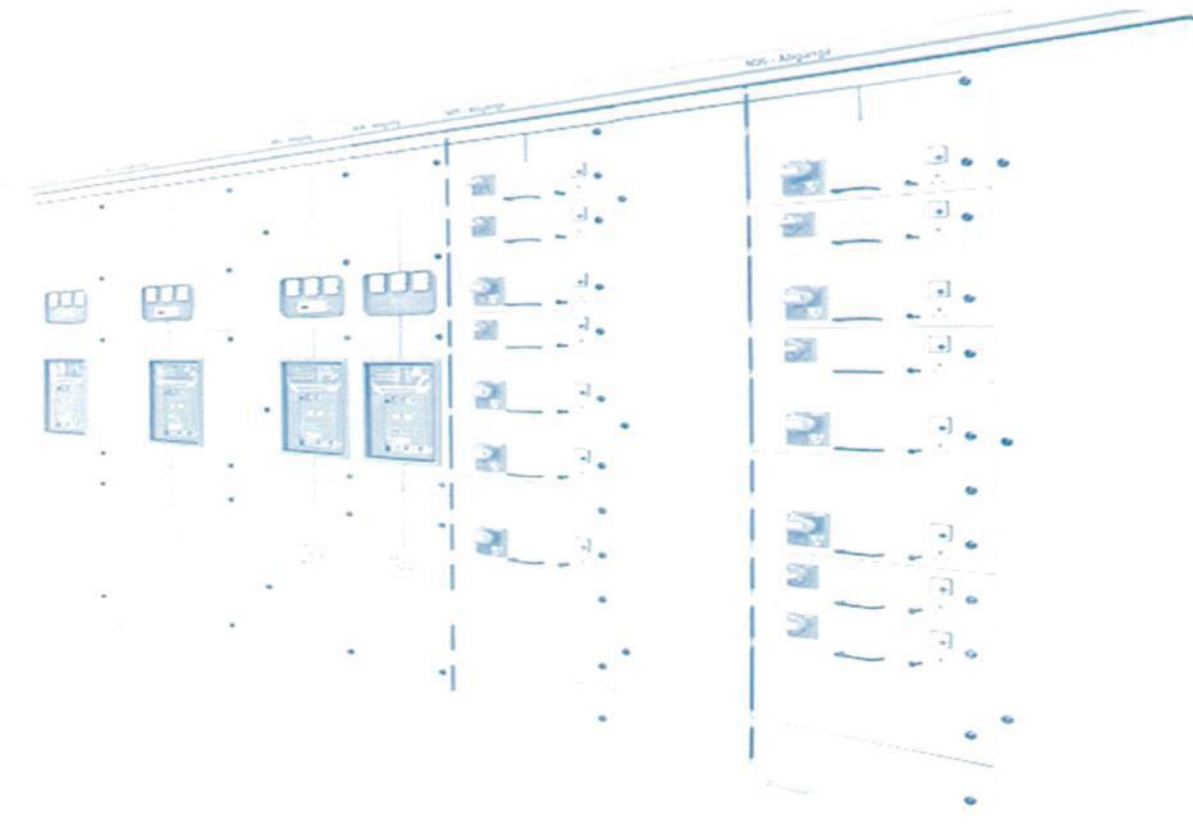


-Highest availability is our philosophy- safety is a must-



HIGH DENSITY MCC

Introduction

Electrical Energy should be distributed safe and controlled

For human safety, most of the industrial companies defined, for the operation of their electrical switchgears three lines of defense to avoid accidents by the hazardous potential of electrical energy what are:

Third line: regulation: using special cloth and following the electrical safety rules

Second Line: limitation: additional mechanical measures

First Line: prevention: measures of encapsulation of parts which are alive.

The heart of switchboards in draw-out-technology is its contacting-device, what is responsible to take the energy from the bus-bar-system.

Prevention means, that the contacting device, the vertical bus-section and the outgoing-plug form up a hermetic encapsulation what means **an arc-fault- free-zone.**

Prevention also means the technical advantages of the pressure-contacts.

The difference between finger-contacts and the pressure-contact is how to eliminate and reduce the undesired effects of the magnetic-forces but to reinforce the contacting pressure.

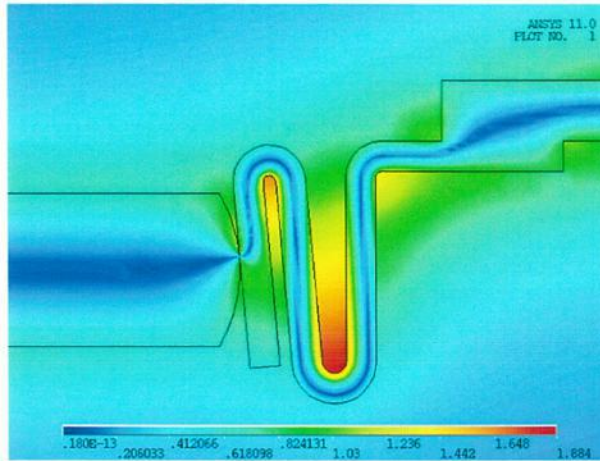
Requirements

Contacting device with its patented, innovative and arc-safe pressure contact:

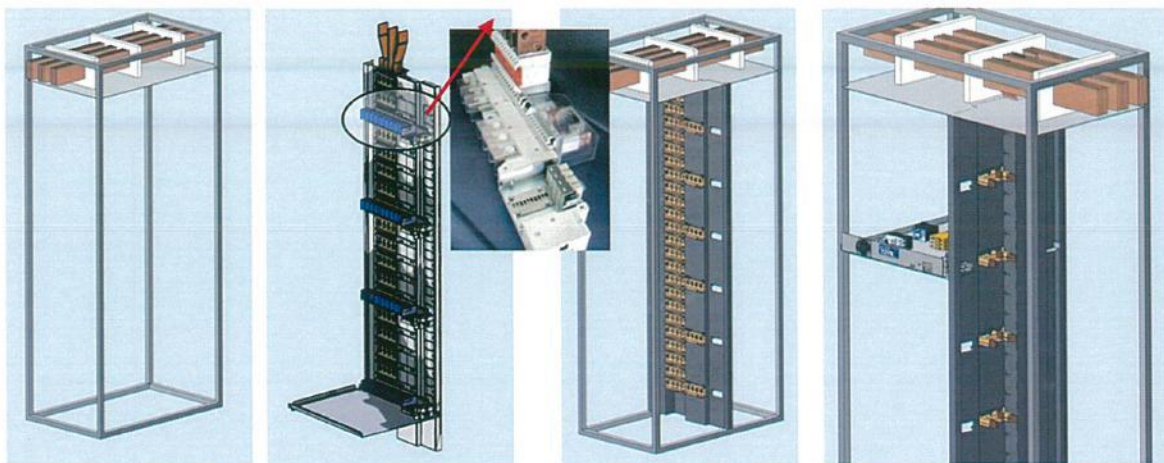
- The drawer-units are constructed in such a way, that the contacting device, the vertical bus-section and the power-plug form up together an hermetic encapsulation, what means an arc-fault- free-zone.
- The vertical bus section is completely insulated, from phase to phase as well as from phase to earth to reduce the risk of an internal arc-fault.
- The insulation of the vertical bus-section is that strong, that there is nearly no movement of the vertical bus-bars which could influence the contacting-pressure of the plug-system.
- The contacting-device is constructed in such a way that under no circumstances the contacting pressure will be reduced or even lost during a short-circuit.
- Moving the drawer to operating-position or test-position does not influence the protection-degree of the switch- board.
- Moving to operate-position is possible while the whole power-cabling stays fixed (Power-cabling should not be moved to avoid breaking wires).
- The contacting-device is of self-cleaning type when pushing or turning it to operating-position, so that it will be maintenance free.
- The contacting device is constructed and dimensioned in such a way, that the contacting-pressure will be reinforced during a short circuit. This reinforcement will not be reduced or lost by the interact of magnetic fields which could reach drastically ratings during a short circuit.
- Each power-contact is completely insulated to its neighbour-contact and to earth, that in case of a contact-arc flash, ionized gases cannot short-circuit two phases or a phase to earth. The fault will be kept within the individual contacting chamber.
- The contacting-device is not influenced from mechanical tolerances which could influence the contacting-pressure.
- The contacting device should be tested for 725V, 65 kA for highest limited short circuit; what could arise in combination with a fuse or MCCB.
- All power-contacts as well as control-plugs disappear behind the drawer-frame to provide damages during transportation.

INNOVATIVE PRESSURE CONTACT

-The pressure contact within the contacting module is developed together with the Fraunhofer-Institute and grants a reinforcement of the contacting-pressure in case of a short circuit.



The special outline of the internal copper-layer increases the contacting-pressure.



It is easy to implement the “energy-and signal-transfer-wall” to existing panel frames. Together with the contacting module the whole system becomes a self protecting unit with highest characteristics concerning short-circuit and is additionally proofed by “IPH in Berlin” to be arc-safe. The vertical bus-section which is completely encapsulated from phase to phase, the individual power-plugs located where necessary are ready to take individual drawers in steps of 75mm.

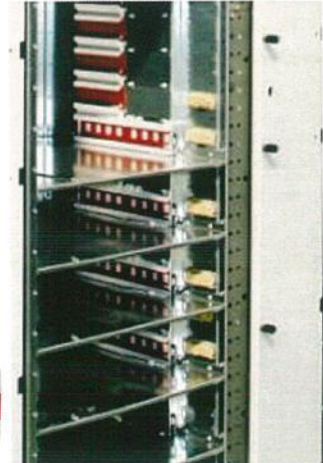
The drawers will be inserted on a double sheeted bottom. Within this bottom all power- and control-connections to terminals will be done. Power- and control-wiring can be wired to terminals at the back as well as to the side.



brings low voltage switchgears to a new level of safety and state of the art.

ARC SAFE Vertical Bus-section

- The vertical bus-section is completely insulated also from phase to phase.
- Any change of drawer modules can be rearranged during voltage is alive.
- The "Automatic Shutter" is mechanically interlocked, and can additionally be padlocked.
- Accredited testing laboratories have certified the bus duct as "arc safe".



ARC FAULT FREE contacting device

- The movable and switchable contacting-module forms together with the insulators of the vertical bus-section (bus-bar –module) and the outgoing plug (outgoing-module) an arc-fault –free zone.

