Principle - a new combination of well known technologies

The whole main circuit is solid insulated; and the surface is covered by a screen connected to the earth to ensure the most efficient harsh environment withstand.

- Busbar and cable connections insulation in EPDM.
- Vacuum bottle encapsulation and earthing switch tank in epoxy resin.

Innovations

Shielded Solid Insulation System – 2SIS brings the benefit of withstand to harsh environment while modular. Drastically reduces internal arc probability, increasing the availability.

Main points to remember

- Premset is the only range that combines four advantages for customers:
  - insensitivity to harsh environments.
  - extremely low of internal arc probability occurrence.
  - compact size.
  - high modularity of equipment.
- The innovations provided by 2SIS strongly improve the safety and long life of switchgear, while preventive maintenance free.
- 2SIS = real added value for the whole chain of users, panelbuilders, contractors, operators and service people.
- Faster, easier to install, and more reliable than any other range.
Innovations

**Shielded Solid Insulation System – 2SIS**

*brings the benefit of withstand to harsh environment while modular*

Drastically reduces internal arc probability, increasing the availability

**Advantages** - all advantages of AIS and GIS cubicles: modularity and harsh environment withstand

- Schneider Electric is the first to achieve combination of modularity and harsh environment withstand *without SF6*.
- Shielded insulation for cable connection is *highly appreciated* for years by Electrical Utilities: Premset is extending the same technology for the entire switchgear.
- Premset has an *excellent behaviour* in harsh environment:
  - the 2SIS design allows achieving long life expectation in harsh environment installation,
  - high quality process and material are mastered.
  - ageing tests that have been done with temperature, humidity, voltage, together with mechanical constraints have proven the harsh environment withstand improvement compared to traditional products.
- Less internal arc occurrences ensure *large increase of availability* of equipment.

Internal arc probability is drastically reduced because *insulating performance is not affected* by humidity or weather condition or possible gas leakage or electrical field variation.

- Easy to install with *simple procedure*.
  - *no need to align exactly* functional units to be connected (5mm acceptance tolerance in the three dimensions)
  - simple and high quality MV connection thanks to *flat connection* (Schneider Electric patent)
  - only *2 different connection components* for every switchboard configuration (busbar on top, bottom bar and vertical links)
- *Long service operation is ensured* in all possible indoor harsh environment conditions (dust, pollution, humidity, temperature changes,…)

**FAQ**

- **Could the busbar be damaged during erection?**
  No problem if usual storage conditions and installation procedures are applied.
- **Is it possible to install other MV connections or links than Premset ones?**
  It is not possible because connections and links are integral parts of the Premset system. Order and storage management are easy (only 2 different connection components for every switchboard configuration).
- **What is the solid insulation life expectation?**
  Mechanical functions and electrical performances have been optimized by high tech 3D design. High quality insulation materials (EPDM, high performances epoxy resin…) and industrial process allow reaching a long life expectation even in harsh environment, as ageing tests have proven it.
- **What is a flat interface?**
  Flat interface is the evolution of the traditional MV conical interface (existing since the eighties). Flat interface allows a simple and high quality installation.
- **What is the link between internal arc withstand and availability?**
  There is no link between internal arc withstand performance and probability of occurrence…so no link with availability:
  - availability of the network is high if probability of internal arc occurrence is very low. Premset ensures very low internal arc occurrence probability.
  - in case of internal arc, availability will depend on damage and time to repair.
- **If internal arc occurrence probability is extremely low, why does Premset include internal arc option?**
  Internal arc option is dedicated to answer requirements included in some specifications.

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