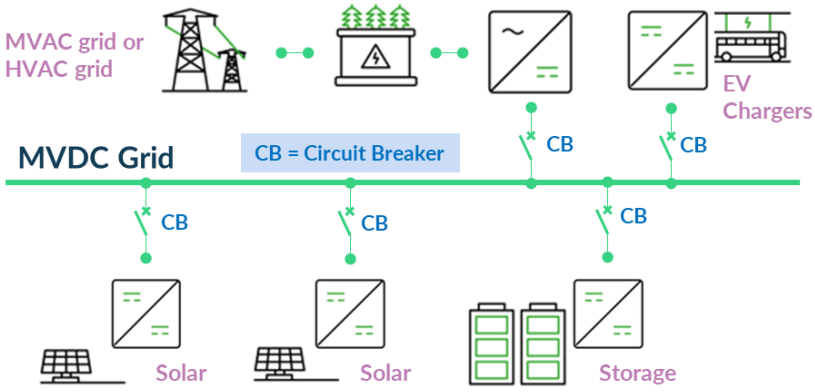
Circuit Breaker for Medium Voltage DC grids

CONTEXT

Medium Voltage DC grids are expected to accompany the massive integration of distributed renewable energy sources to an increasing number of DC loads. Power electronics converters are playing a great role in this transition as they enhance the grid's flexibility. These converters need protection from short-circuits. Up to now, DC breakers are limited to 3 kV. MVDC breakers are a key enabler to protect MVDC networks.

SuperGrid Institute has developed a breakthrough hybrid MVDC breaker.



TECHNOLOGY DESCRIPTION

Our hybrid DC breaker technology is based on 3 main elements :

- A Vacuum Interrupter (conducting the nominal current)
- An IGBT stack (for the current switching)
- A surge arrestor (for the energy absorption)

We focused on the targeted specifications of the DC breakers:

- MVDC applications: ±2.5 kV DC and more
- Nominal current: 2 kA
- Breaking current: 6 kA
- Internal commutation: 1 msec (typical)

You have other needs or technical specifications?
Do not hesitate to contact us.

APPLICATION DOMAIN

- MVDC distribution grids
- Photovoltaic farms with storage
- Railways (future grid)

ADVANTAGES

- Scalable with modular designs
- Negligible on-state losses
- Very fast breaking

TRL SCALE

TESTED PROTOTYPE