

Control and Monitoring

Embedded protection allows pre-engineered solutions with optimized performances

Wide range of protection chains, optimized for smartgrid applications of MV networks.

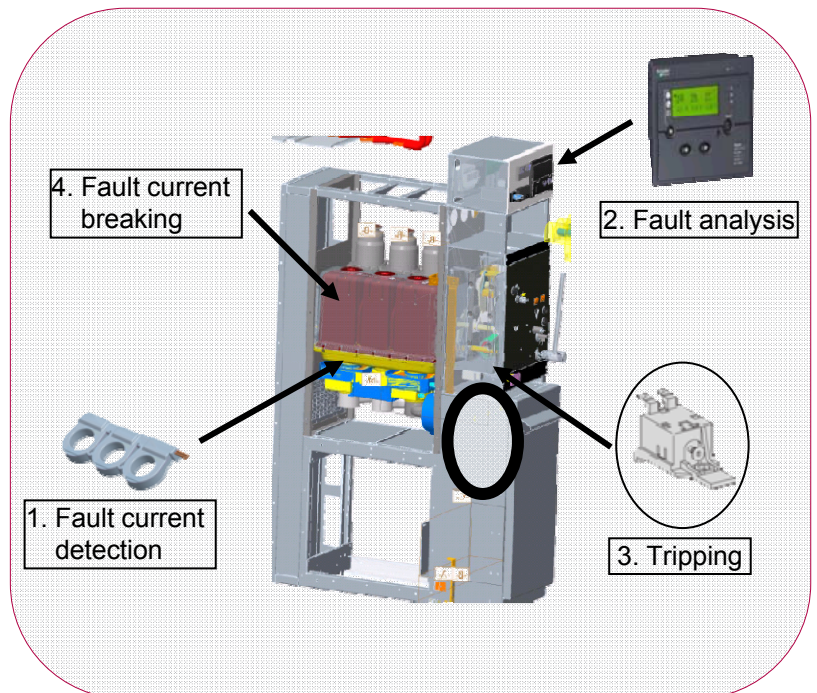


Principle - Embedded protection consists in integrating **optimized components** in switchgear module (CT + relay + tripping coil + CB) in order **to fulfil the required performances** for transformer, incomer, feeder or bus-riser protection.

The whole protection chain is integrated and pretested by Schneider Electric.

In Premset system, **two types of solutions** are available :

- **fully integrated self powered protection chain** : CT + VIP + Mitop + CB
- **supply powered protection chain** : LPCT + Sepam + MX tripping coil + CB



Main points to remember

- *Integrated self-powered protection chain Premset provides improvements and simplifications on 3 criteria: smaller size, higher costeffectiveness and higher performances.*
- *Schneider Electric always has been a front runner in integrated circuit-breaker solutions, both for low voltage and medium voltage products.*
- *VIP self-powered protection relays allow the best continuity of service with reduced maintenance.*
- *Premset protection solution is very quick and easy to install.*

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Advantages: Premset integrated protection provides efficient protection chain and improves the availability of the network.

- Better optimization of embedded protection in switchgear module allows
 - reduced size components :
 - cost effectiveness
 - easiness of the setting
 - higher performances in sensitivity
 - robustness
- Schneider Electric proposes several types of self powered protection relays :
 - VIP40 = Simple transformer protection with dedicated curve to protect against overload, short circuit.
 - VIP45 = VIP40 + earth fault
 - VIP400 = Transformer + Substation protection with standard curve (DT & IDMT)
 - VIP410 (dual power relay) = VIP400 + auxiliary power supply allowing more functions
- VIP increases the availability of the MV network :
 - insensitive to voltage drop due to faults
 - not dependent on UPS system (weak point of simple electrical installation)
 - not dependent on external environment (EMC, LV over voltage) because no external connection
- For more complex and more advanced functions, a large variety of supply powered relays may be chosen from the Schneider Electric catalog.
- With Premset, Schneider Electric proposes a fully configured switching solution including a plug and play protection chain
 - no CT selection and calculation
 - tests already done by Schneider Electric
 - type tested offer



FAQ

- **Are current transformers complying with international standards?**
CT characteristics are defined in accordance with IEC standards 60044-8 (LPCT) & 60044-1 (CT)
- **Is it possible to add measurement functions?**
There already are some basic measurement functions in VIP relays. It is also easy to add measurement functions with additional CTs and power meters.
- **Is it possible to use traditional CTs?**
For VIP protection, it is not possible.
For an open solution with Sepam or competitor relay, it is always possible, but the solution will not be embedded and pre-engineered.

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