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PCS100 Medium Voltage UPS
High fault rating makes circuit protection easy

Installing power protection equipment does not always mean you need to redesign your circuit protection. The PCS100 MV UPS has a high fault current rating meaning circuit protection can operate as expected.

Benefits of the PCS100 MV UPS

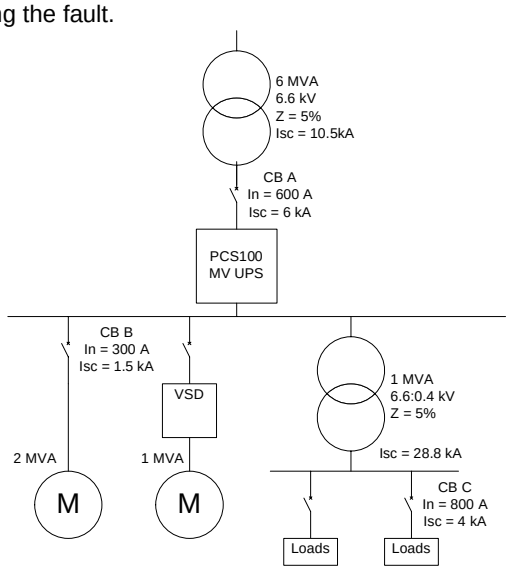
- Complete power protection of your facility
- Compact when compared to other solutions
- Low cost of ownership due to efficiency of 99.5 percent and low maintenance, long life design

The truth about UPS fault current levels

Not all UPSs can provide the necessary current levels to trip protection in the case of a fault. This often means a compromise is made when installing power protection equipment or protection devices must be replaced for more sensitive types, adding cost and increasing the risk of nuisance tripping.

PCS100 MV UPS Operation

ABB's PCS100 MV UPS uses robust semiconductor technology (manufactured by ABB) to connect the utility to the load. During normal operation it is this semiconductor switch that will conduct fault currents in the event of a downstream fault. Other UPSs may limit their current on the output. This current may be insufficient to trip the protection device, and isolate the fault, before the UPS must trip to protect itself. If the UPS trips then all the loads are dropped, rather than just isolating the fault.



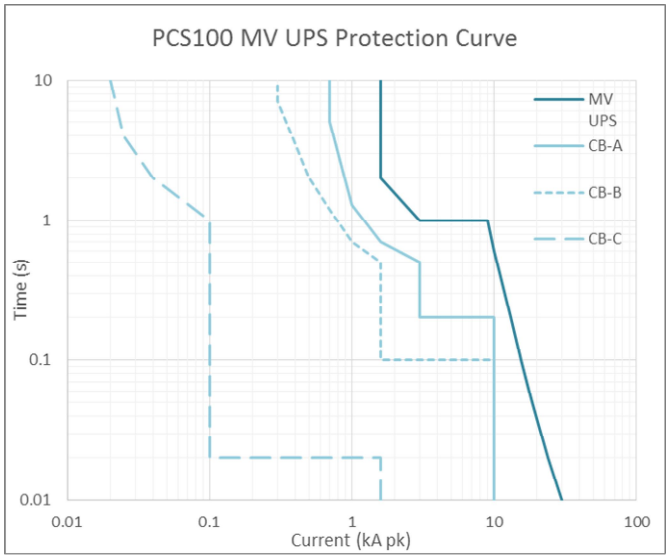
A simplified MV critical process single line diagram (SLD).

What happens with faults in the LV network?

If a short circuit was to happen in a downstream LV branch then the peak fault current will be limited by the step down transformer. In the example SLD, a fault in one of the LV loads will result in 1.8 kA flowing in the UPS (300 percent current). The PCS100 MV UPS can tolerate this level of current with ample time for the LV circuit breaker (CB-C) to clear and keep the rest of the plant running.

What happens with faults in the MV network?

At medium voltage the peak fault currents are limited only by the impedance of the upstream feeder. In the example SLD a fault current of 10.5 kA will be flowing in the UPS if there is a fault in the MV motor or VSD. The PCS100 MV UPS can tolerate this current for up to 1 second, allowing time for circuit breakers to clear. If fuses are employed then higher fault levels can be tolerated due to the faster clearing time of fuses.



This graph shows the PCS100 MV UPS and circuit breaker withstand times vs. current.

Contact

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